



VACUUM  
SOLUTIONS

2022











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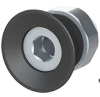

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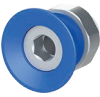





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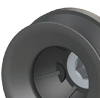

## STANDARD SUCTION CUPS

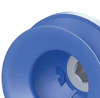

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			VG.B22E	98
			VG.B33E	100
			VG.B42E	102
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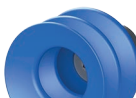

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			VG.B11H	94
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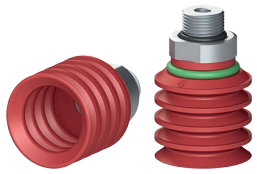
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## STANDARD SUCTION CUPS

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	<b>VG.B</b>	SIL 50 FDA		
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		VG.B11F		294
		VG.B16F		296
		VG.B22F		298
		VG.B33F		300
		VG.B42F		302
	VG.B53F		304	


	<b>VG.BPG</b>	SIL 50 FDA		
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	<b>VG.LPG</b>	SIL 50 FDA		
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		VG.LPG41F	<b>NEW</b>	264
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	<b>VG.LB</b>	SIL 50 FDA		
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		VG.LB9F		318
		VG.LB11F		320
		VG.LB16F		322
		VG.LB22F		324
		VG.LB33F		326
		VG.LB42F		328
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	<b>VG.LPG</b>	SIL 50 FDA		
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	<b>VG.LB.SFO</b>	SIL 50 FDA		
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		VG.LB22F.SFO		334
		VG.LB33F.SFO		336
		VG.LB42F.SFO		338
		VG.LB53F.SFO		340

	<b>VG.U</b>	SIL 50 FDA		
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		VG.U9F		276
		VG.U11F		278
		VG.U16F		280
		VG.U22F		282
		VG.U33F		284
		VG.U42F		286
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	<b>VG.FP</b>	SIL 50 FDA		
		VG.FP15F		342
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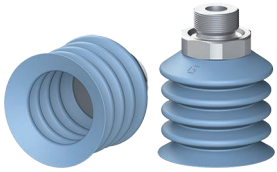
	<b>VG.FO</b>	SIL 50 FDA		
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## FOOD-GRADE SUCTION CUPS (FDA-COMPLIANT, DETECTABLE)

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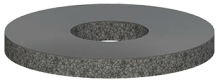



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## VACUUM PUMPS

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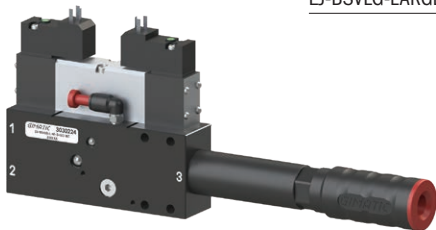
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VSET2050F18
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VSNTG1210
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VSNTG2050F14
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VSNTF2050-NO
VSNTF30100-NC
VSNTF30100-NO

### VSRTF 484



VSRTF2050-NC
VSRTF2050-NO
VSRTF30100-NC
VSRTF30100-NO

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VAB14M14F-NC
VAB18M18F-NO
VAB14M14F-NO

## VACUUM ACTUATORS

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## FILTERS

**FILTR** 502



Gimatic is a leading company that has operated in the industrial automation market for over 35 years. Thanks to its expertise, flexibility and extensive use of new technologies in systems design and implementation, Gimatic is able to offer specific solutions for any application.

Successfully present in the automation sector since its origins, the company boasts today a wide range of products with more than 3500 product codes on catalogue and 180 patents registered.

Gimatic has always had automation in its DNA. In order to achieve an even higher competitive edge in the market, Gimatic started to dedicate itself to pneumatic grippers and combined sensors, first as a technological exploration. Looking firmly towards the future, Gimatic decided in 2001 to actively collaborate with manufacturers and installers of plastic moulding machines and soon became the undisputed leader in EOAT (End Of Arm Tooling) systems.

The expertise in precision mechanics – gained through a successful presence in the handling market – combined with the know-how in sensor electronics made possible the birth of mechatronics in 2012. This is how the first products of the mechatronics range were born (2- and 3-jaw electric parallel grippers and electric actuators), a range that in 2013 already counted over 50 products.

What makes a company competitive is its continuous desire to grow. Gimatic has demonstrated this again by investing in the industrial vacuum sector, which therefore allows to provide its customers with complete gripping solutions, with advanced control systems and high quality components.

Always attentive to technological innovation, Gimatic has made it possible to achieve a high level of integration of its products, services (for example 3D printing and laser cutting) and technologies in an Information Technology perspective. Integration also made possible by the presence of a production plant consisting of more than 70 CNC machining centers in view of Industry 4.0, able to process any type of material: stainless steel, tempered steel, aluminium, titanium, technopolymers and zamak...



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**Gimatic designs and builds bespoke solutions for its customers' applications.**



## PARTNERS OF EXCELLENCE

Gimatic's highly qualified staff develops and designs solutions for specific vacuum applications, also thanks to the support of a global network of subsidiaries, some of which play the important role of Competence Center. This makes it possible to centralise new experiences, to enable technology transfer and training on advanced technologies, as well as to have a unified approach and a global quality standard.

Gimatic has always been quality-oriented in its internal processes and in the products and services offered, a natural vocation for quality that has led to the ISO 9001 and ISO 14001 certifications.



**+35**

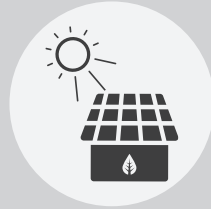
YEARS OF EXPERIENCE

**+3500**

CODES ON CATALOGUE

**+180**

PATENTS REGISTERED



**ECO-FRIENDLY  
PRODUCTION**



**VERTICAL PRODUCTION**



**INTERNSHIPS /  
COLLABORATIONS WITH  
UNIVERSITIES**



**EOAT TRACEABILITY**



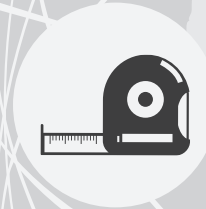
**CENTRE OF COMPETENCE**



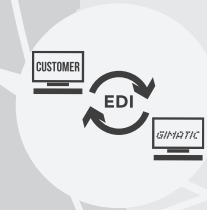
**+35 YEARS OF SUCCESS**



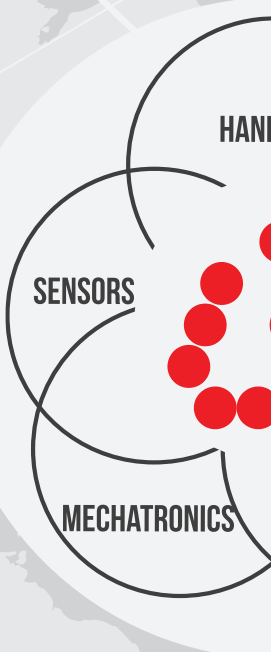
**PRODUCT WARRANTY**



**BESPOKE APPROACH**



**DEDICATED ELECTRONIC INTERFACE**



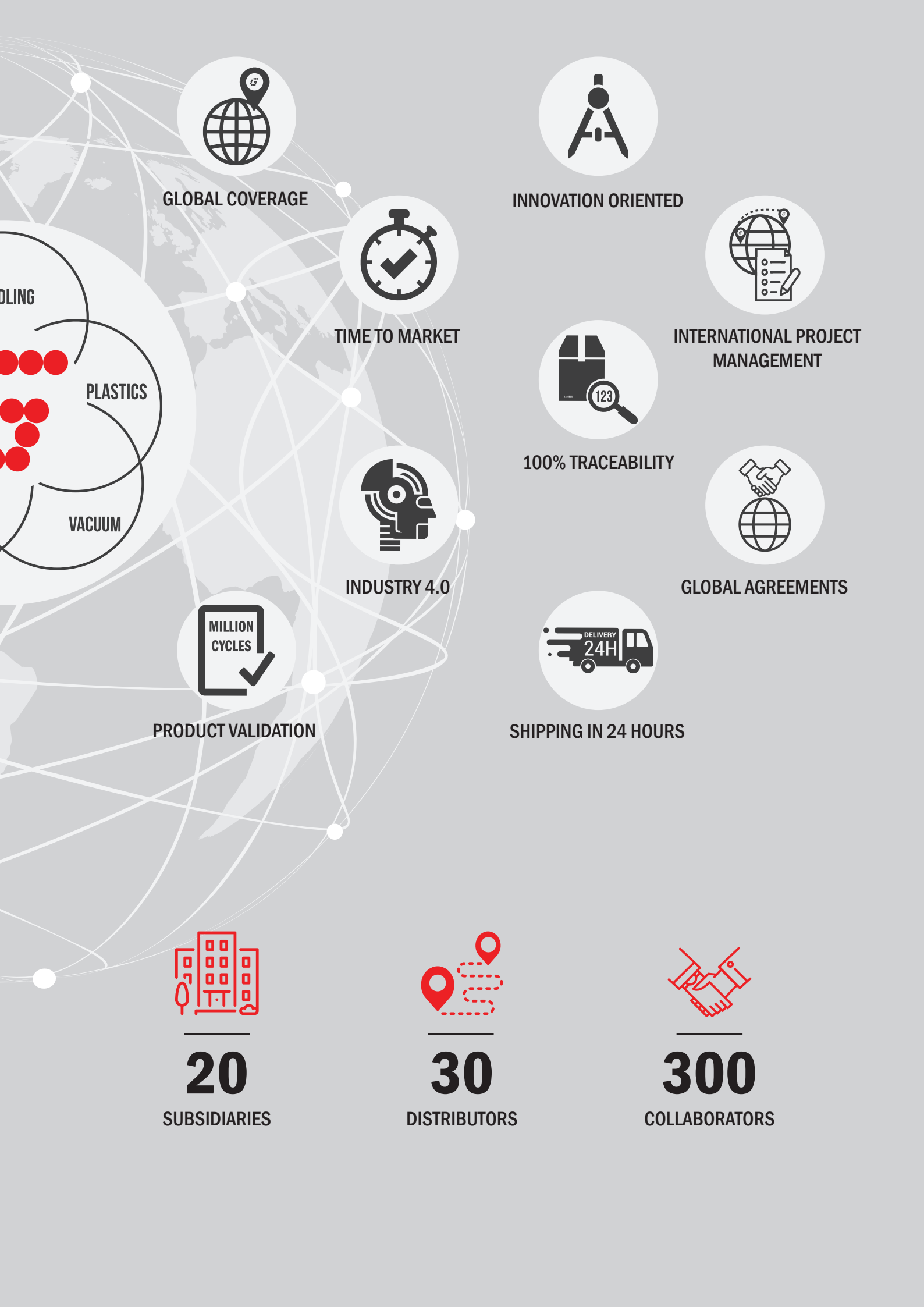
## **EXPANSIVE INNOVATION**

Customers can count on a widespread, organised and reliable network of 30 distributors and 20 subsidiaries, essential to ensure a continuous flow of new products. Thanks to Gimatic's efficient processes, products are shipped within 24 hours from the order with official warranty. Efficiency, in view of Industry 4.0, also in terms of after-sales and preventive maintenance thanks to the traceability of systems through RFID technology, dedicated electronic interfaces, parts documentation and CAD files.

Not only does the sales network sell Gimatic's products, it also serves the important function of collecting users' requests. This, in turn, helps to build specific solutions for the required applications and to continuously improve the products offered.

Gimatic's latest challenge is its internationalisation pushed to the highest levels. The direct and indirect distribution network is an important factor that drives large international groups to collaborate with Gimatic. For this reason the opening of new branches is not only the result of local opportunities but follows a much larger project of support and dissemination of quality standards.





GLOBAL COVERAGE



INNOVATION ORIENTED



TIME TO MARKET



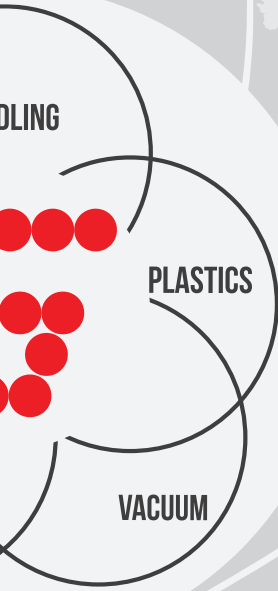
INTERNATIONAL PROJECT MANAGEMENT



100% TRACEABILITY



GLOBAL AGREEMENTS



INDUSTRY 4.0



SHIPPING IN 24 HOURS



PRODUCT VALIDATION



20

SUBSIDIARIES



30

DISTRIBUTORS



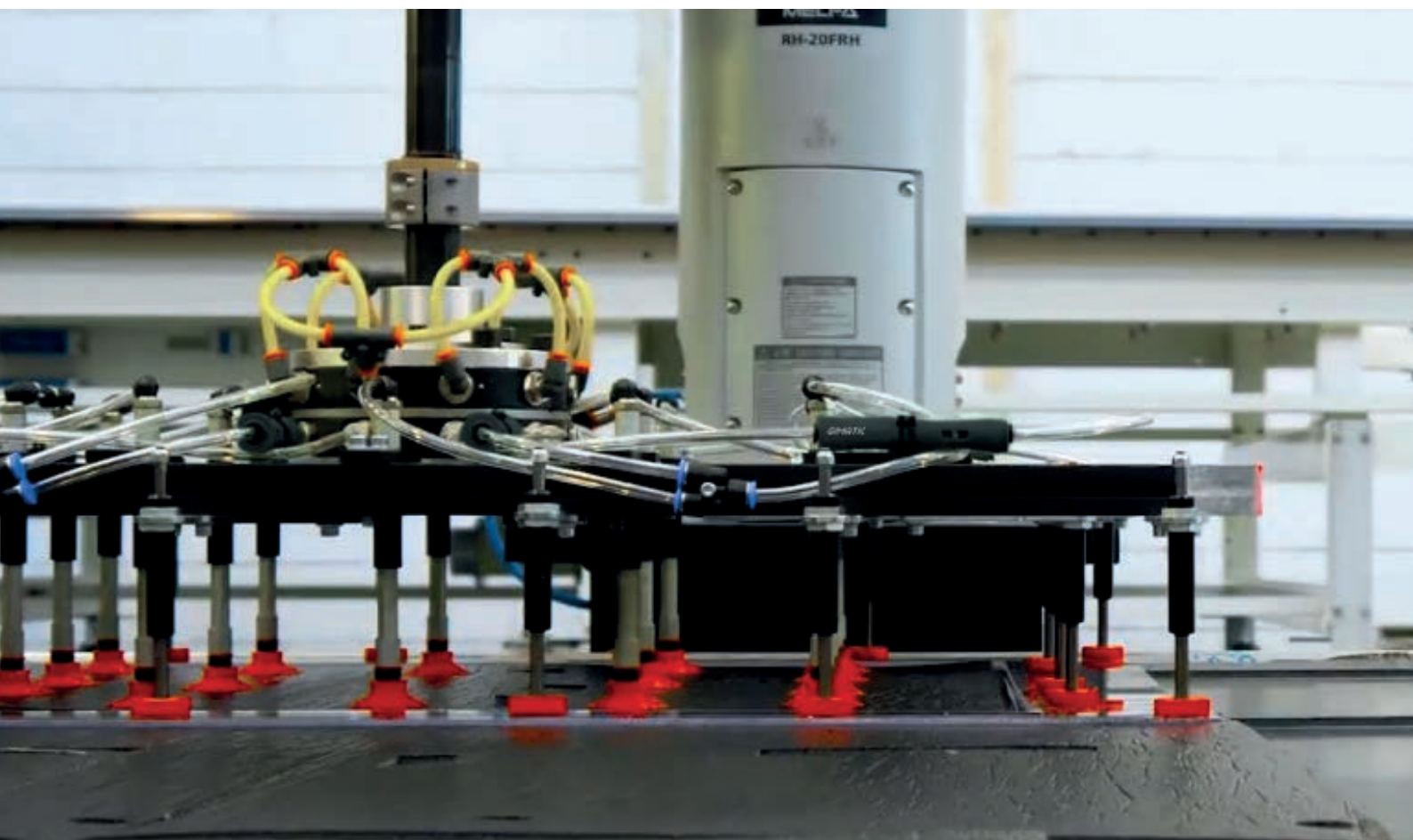
300

COLLABORATORS

### INDUSTRIES

Thanks to its extreme versatility and a wealth of experiences acquired in over thirty-five years, Gimatic is able to fully satisfy all needs in the most innovative industrial sectors.

Gimatic has always been particularly attentive to the training of its staff and of its sales network. For this reason training courses dedicated to the vacuum technologies for industrial automation are organised. Moreover, Gimatic maintains close relationships with research institutes and universities in order attract young talents, offering them job opportunities at the end of their studies.



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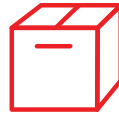
Gimatic maintains close relationships with research institutes and universities



**AUTOMOTIVE**



**ASSEMBLY**



**PACKAGING**



**FOOD & BEVERAGE**



**SHEET METAL**



**PHARMACEUTICAL AND  
MEDICAL**



**ELECTRONIC**



**WOOD**



**GLASS**



**HOUSEHOLD APPLIANCES**



**COBOTS**



**LOGISTICS**



## DEFINITION OF ATMOSPHERIC PRESSURE

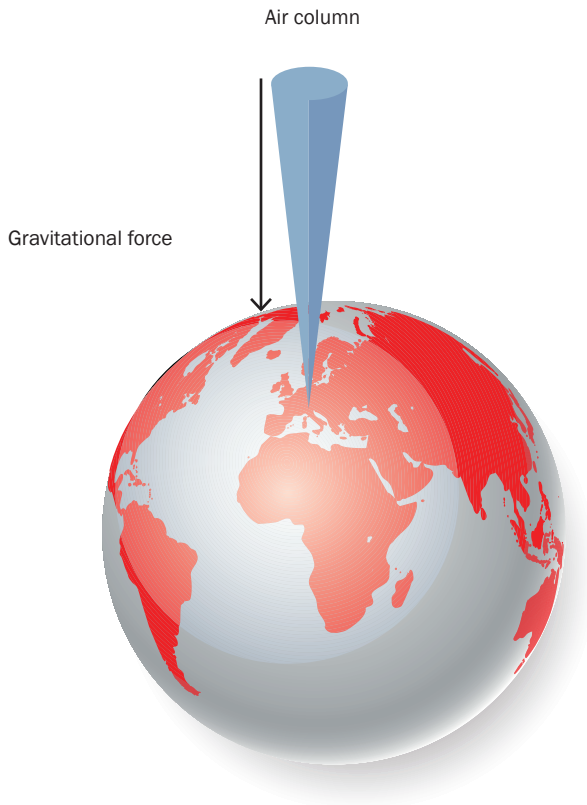
Before defining what Vacuum is and what is the correct terminology to be used in this field it is important to know the meaning of atmospheric pressure.

The earth is surrounded by layers of gas mixtures (atmosphere).

The atmosphere surrounding the earth has its own weight.

Atmospheric pressure is defined as the force per unit area exerted against a surface by the weight of the air above that surface. And that is exactly the force magnitude we work with when we use the vacuum. It is a limited magnitude: atmospheric pressure cannot be increased.

It is measured in the International System in Pascal and with a measuring instrument called barometer.



The atmospheric pressure is higher at sea level than at a point on top of a mountain, because the air mass above the point on the mountain is lower than the air mass above the point at sea level.



# DEFINITION OF VACUUM

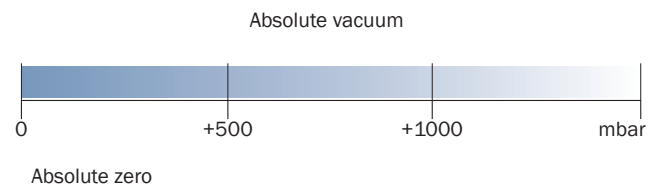
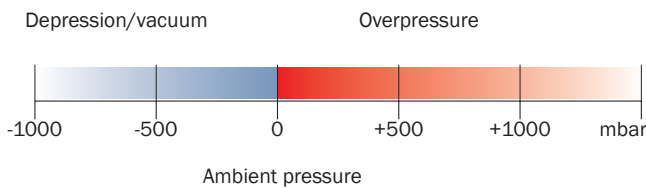
In the industrial vacuum sector, different terms and units of measurement are used with regard to pressure and air flow rate. To this end, the meaning of these quantities should be clarified.

## VACUUM AS RELATIVE VALUE

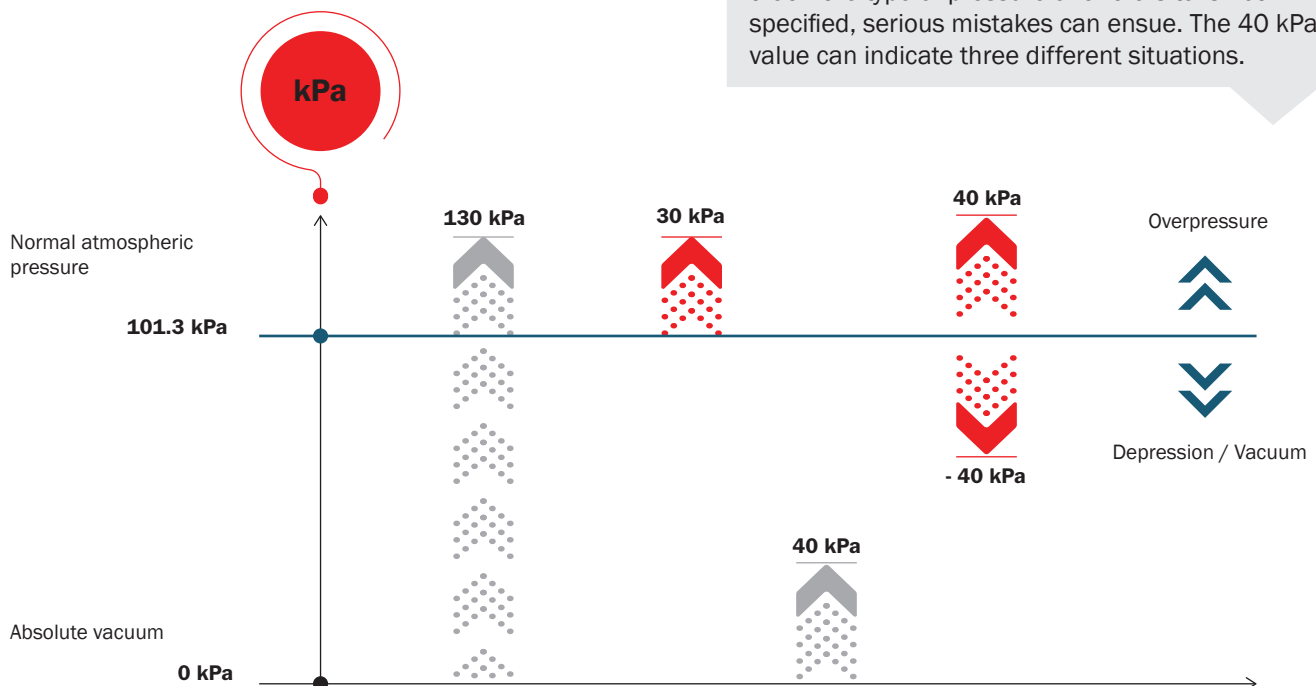
In the field of vacuum technology, vacuum is indicated as a relative value, which means that the depression is indicated in relation to the ambient pressure. The vacuum value indicated is preceded by a negative sign because the ambient pressure is indicated with 0 mbar as a reference point.

## VACUUM AS ABSOLUTE VALUE

In the scientific field vacuum is indicated as an absolute value. In this case, the absolute zero is used as a reference point, i.e. space without air (e.g. cosmic space). In such a way the vacuum value always has a positive sign. The "absolute vacuum" is intended as the absence of matter in a volume, but this cannot be achieved as it is not possible to completely eliminate all gases. Since a zero pressure value is practically unreachable, the vacuum level value will be a decimal number with the more zeros after the decimal point the lower the pressure value is, i.e. the higher the vacuum level value is.



The diagram shows the relationship between absolute, relative and negative pressure. This shows that if the type of pressure one refers to is not specified, serious mistakes can ensue. The 40 kPa value can indicate three different situations.



## DEFINITION OF PRESSURE

Pressure is defined as the amount of force per unit area applied perpendicularly to the surface of an object.

Gases are made up of a large number of particles, which are constantly moving. When these particles collide on a surface, such collisions generate a thrust, measurable as force. The pressure is the sum of all the forces produced by the particles, per unit area. The particles that make up the gases, when in thermodynamic equilibrium, are uniformly distributed in space, so the gas pressure and composition are uniform at every point of the reference area. It should therefore be noted that there is only one type of pressure, whose starting value is 0 (absolute vacuum). All values above 0 are indicated as absolute pressure. As mentioned above, the value of atmospheric pressure at sea level is 101.3 kPa and is used as a reference point when talking about relative pressure, which can be either negative (depression) or positive (overpressure).

## UNIT FOR MEASUREMENT OF PRESSURE

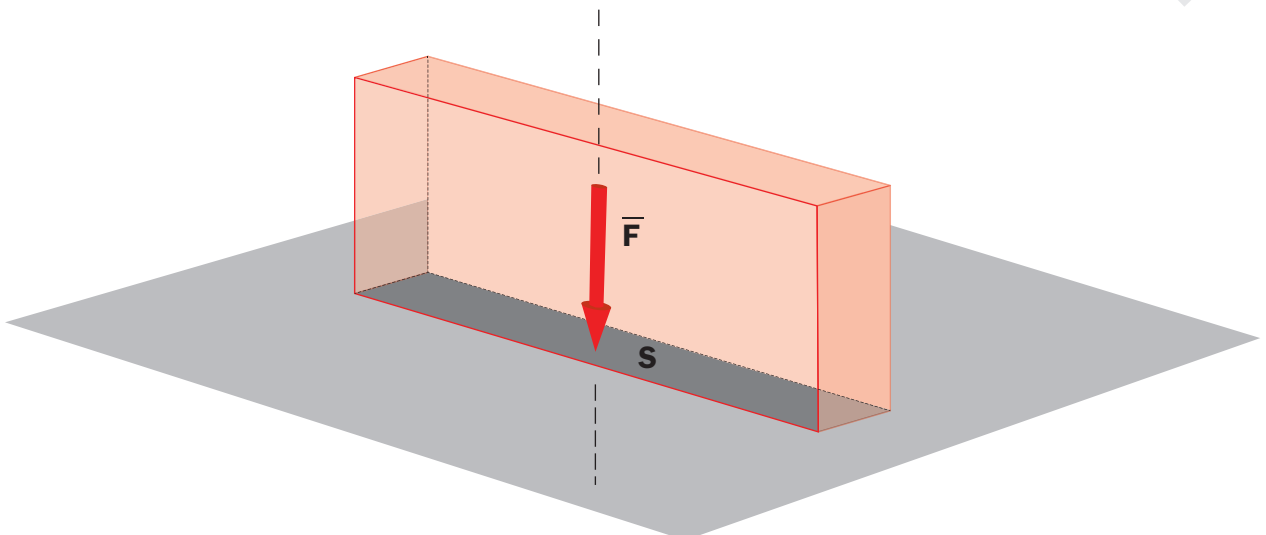
The S.I. unit for measurement of pressure is the Pascal (Pa):

1 Pascal corresponds to the force of 1 N acting on an area of 1 m<sup>2</sup>.

Pa multiples are kPa and MPa.

Let us consider a surface S, arranged horizontally, and a force F acting perpendicular to it. Pressure is defined as the ratio between the force F and the surface on which it acts:

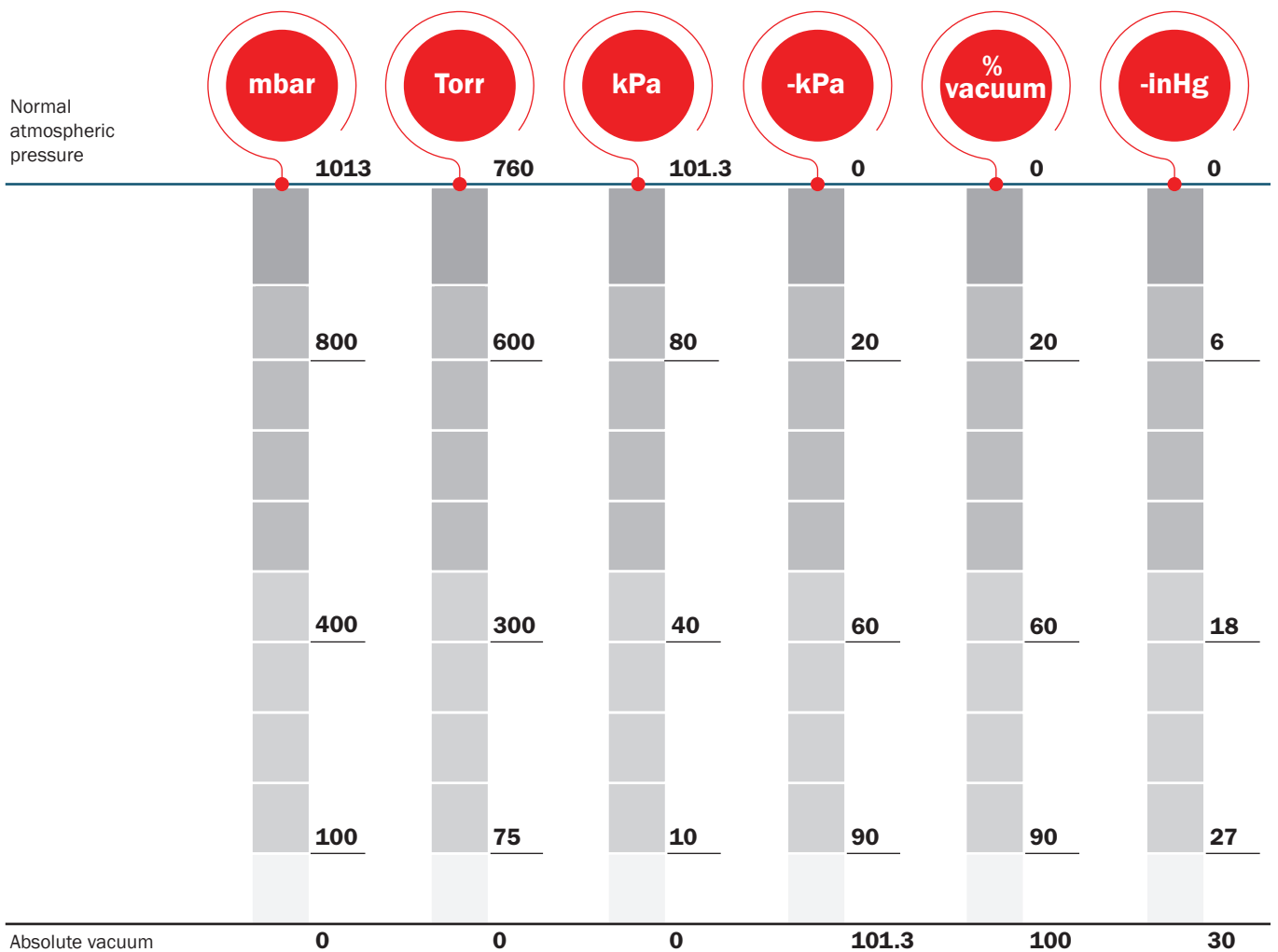
$$p = F / S$$





## UNITS FOR MEASUREMENT OF VACUUM

In the industrial vacuum sector, different terms and units of measurement are used with regard to pressure and air flow rate.



## **CORRECT TERMINOLOGY TO BE ADOPTED IN INDUSTRIAL VACUUM**

The terminology used in the vacuum sector must be consistent in the case of either electromechanical or compressed air systems. Only by speaking the same language can real comparisons be made. The most important terms to understand and use when performing a vacuum circuit are the following:

### **FLOW RATE**

The rate at which atmospheric pressure is evacuated within a system, or the amount of air flowing through a pump.  $Q = V/t$

The flow rate also determines the ability to compensate for any leaks. The evacuation speed is inversely proportional to the vacuum level.

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### **FREE AIR FLOW RATE**

Determines the amount of air evacuated at a pressure equal to atmospheric pressure. The term is often used by manufacturers of vacuum pumps to indicate their characteristics.

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### **VACUUM LEVEL**

The term defines the pressure level within a circuit, which is usually measured in kPa.

The vacuum level determines the lifting force of a suction cup, or the amount of residual atmosphere.

As the vacuum level increases, the evacuation rate decreases.

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### **COMPRESSED AIR**

It is the energy source that powers a pneumatic vacuum pump. Compressed air is comparable to the electricity that powers an electromechanical vacuum pump.

It is supplied by a compressor and is distributed by means of suitably dimensioned pipes.

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### **COMPRESSED AIR PRESSURE**

The compressed air pressure is measured in bar.

The optimum performance of a compressed air pump is achieved by balancing the pressure delivered by the compressor with the required vacuum level.

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### **EVACUATION TIME**

The time required to evacuate a given volume of air at a specific vacuum level measured in s/l.

$$\text{Evacuation time} = \frac{\text{Required gripping time}}{\text{System volume}}$$

---

## CONSUMPTION

In industrial vacuum, the consumption of an air pump is measured in NI/min or NI/s

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### NORMAL LITRE (NI)

The normal litre is the volume that a certain amount (mass) of gas would occupy if it were returned to atmospheric pressure.

We can therefore say that the normal litre is used to measure the mass of a gas.

The gases are compressible, therefore their quantity cannot be indicated by simply indicating the volume they occupy, but the pressure at which they are must also be indicated.

Using normal litres is useful to compare gas volumes at different pressures.

In the case of mechanical vacuum pumps it is used to clearly indicate the suction air flow rate.

In the case of pneumatic vacuum pumps, it also serves to correctly indicate the consumption of compressed air that generates the vacuum.

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### LIFTING FORCE

The lifting capacity of a suction cup is determined by the ratio between the pressure and the contact surface area.

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### VOLUME

The total area of a circuit including all spaces as well as the application area.

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## VACUUM CLASSIFICATION

The vacuum is usually divided into three application areas, which depend on the vacuum level required.

### LOW VACUUM LEVEL

Used in all those applications where a high air flow rate is required. The vacuum level is usually between 0 and -20 kPa.

Electromechanical impeller pumps are usually used in this segment. Screen printing on fabrics is one of the typical applications that require a low vacuum level and a high suction flow rate. (Application for ventilation, cooling or cleaning).

### INDUSTRIAL VACUUM

The term industrial vacuum means a vacuum between -20 and -99 kPa. This range covers most applications. Industrial vacuum is used in applications that require material handling, lifting and sealing.

### PROCESS VACUUM

These are applications where the vacuum level reached can exceed -99 kPa. Usually the unit of measurement used is Torr. The suction flow rate is minimal and scientific applications include space simulations. (Coating with molecular deposit)

The highest vacuum level reached on earth deviates significantly from the absolute vacuum value, which remains a purely theoretical value. Even in space and therefore in the absence of atmosphere there is a minimal presence of atoms.

## VACUUM PRODUCTS

### HOW TO CREATE A VACUUM

Although there are several ways to create vacuum, two are the main methods used to generate it, and they employ:

#### PNEUMATIC EJECTOR PUMPS

#### COMPRESSED AIR PUMPS

Vacuum pumps, usually defined as vacuum generators, use the Bernoulli's principle which states that a relationship exists between pressure and speed: as the speed of a moving fluid (air or water) increases, the pressure within the fluid decreases and vice versa.

#### EJECTOR

The principle of operation of air vacuum generators consists of injecting compressed air into a conical nozzle called ejector. The compressed air through the conical nozzle reaches a supersonic speed that attracts low pressure molecules.

The external atmospheric pressure will flow, trying to restore balance to the system. The mix of compressed air passing through the ejector and the air at external atmospheric pressure flows through the exhaust.

The vacuum level that an ejector can reach depends on the ejector configuration.

#### SINGLE-STAGE EJECTOR

#### MULTISTAGE EJECTOR

#### GIMATIC MULTISTAGE EJECTOR

Gimatic develops and produces (in Italy) multistage ejectors, identified with the acronym EJ.

Our cartridge ejectors are available in three sizes (EJ-SMALL, EJ-MEDIUM, EJ-LARGE). These ejectors ensure excellent performance at both high and low feed pressures.

## MECHANICAL PUMPS

The fundamental characteristic, common to all mechanical pumps, is that they convey a certain volume of air from the suction area to the discharge area, thus creating a depression. Mechanical pumps are generally driven by an electric motor, sometimes by an internal combustion engine, hydraulic or pneumatic.

### VOLUMETRIC PUMPS

Volumetric pumps mechanically move the trapped fluid volumes through the system. On the inlet side the volume expands, while on the outlet side (exhaust) the volume contracts. Therefore the volume per revolution is fixed, and in theory is constant, regardless of outlet pressure, inlet depression or fluid properties. The volumetric pumps are self-priming, i.e. they create strong depressions at the inlet. The behaviour of volumetric pumps is different from that of centrifugal pumps, as the latter rely on the pulse of the accelerated fluid to provide flow rate to the pressure and are very sensitive to pressure changes. Volumetric pumps include vane pumps and lobe pumps.

### BLOWER PUMPS

The centrifugal blower pump is composed of a suction pipe that conveys the gas sucked at the inlet. The pump contains a closed impeller with axial inlet and radial outlet. A radial diffuser, located inside, converts the impeller's output kinetic energy into pressure energy. These pumps work at very low vacuum levels, are able to move large masses of air and have a high suction flow rate.

#### VANE

#### LOBE

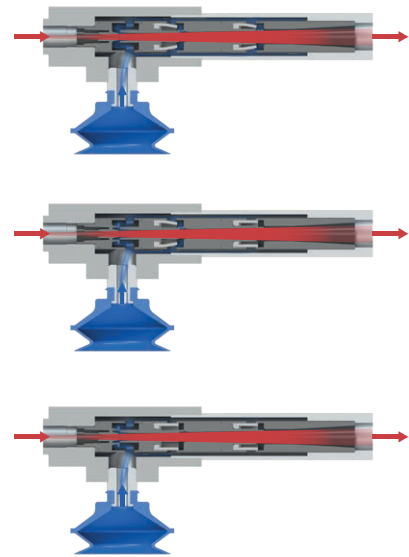
## VACUUM PRODUCTS PRINCIPLES OF OPERATION

### GIMATIC MULTISTAGE EJECTOR

The Gimatic "EJ" ejectors are composed of several De Laval nozzles arranged in series that use the exhaust air from the previous nozzle for their feeding, thus reducing noise and increasing pump efficiency.

The diameter of the nozzle is proportional to the air suction capacity and is inversely proportional to the vacuum level generated.

The better performance resulting from a higher number of stages with relevant ejector, allows to optimise the performance of the pump. Every stage can reach a different level of vacuum. When, due to the combined action of the various ejectors, the pressure present in the common stage reaches a value higher than the reference ejector, this causes the closure of the individual rubber membranes (flaps) in sequence, leaving only the high vacuum stage open. The external atmosphere flows through the common stage in an attempt to rebalance the pressure in the system. Compressed air and external atmosphere are mixed and flow through the exhaust.



#### SINGLE-STAGE EJECTOR

##### COMPRESSED AIR CONSUMPTION

The ratio of air consumed to suction flow rate is rarely higher than 1:1. Historically, this has led to considering the system to be inefficient.

##### NOISE LEVEL

90 decibel.



#### GIMATIC EJ MULTISTAGE EJECTOR

##### COMPRESSED AIR CONSUMPTION

It exploits the kinetic energy of compressed air that passes through De Laval nozzles. The passage of compressed air through a series of suitably sized ejectors allows a gradual expansion of the air.

In this case the ratio of consumption to suction air flow rate is on average three times more efficient, with an efficiency equal to 3:1.

##### NOISE LEVEL

In the case of the Gimatic multi-stage ejector, the noise level is reduced to values between 55 and 75 decibels.



## MECHANICAL PUMPS

### VOLUMETRIC VANE PUMPS

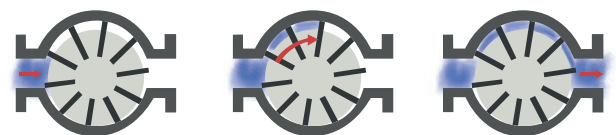
Vane pumps have only one rotating element pointing in an eccentric direction with respect to the pump cavity. The rotating element contains several vanes that can slide or deform to fit the profile of the cavity wall. The vanes form a sliding seal positioned against the cavity wall, holding the volume of the fluid at the inlet and allowing it to flow out towards the outlet. Vane pumps are particularly insensitive to pressure changes, as the vanes are in contact with the cavity wall. However, the sliding movement between the vanes and the wall creates noise, risk of pollution of the conveyed fluid and a frequent need for maintenance. (Figure 1)

### BLOWER PUMPS

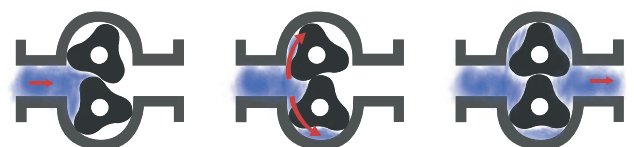
In this type of pumps, the gas is sucked into the chamber from the loading opening. When the gas enters through the side channel the movement of the impeller transmits a certain speed to the gas in the direction of rotation. The centrifugal force of the impeller vanes accelerates the gas outwards and the pressure increases. Each rotation increases the kinetic energy, with a further increase of the pressure in the side channel. The channel narrows towards the rotor, dragging the gas away from the impeller vanes to discharge it through the exhaust silencer. (Figure 3)

### VOLUMETRIC LOBE PUMPS

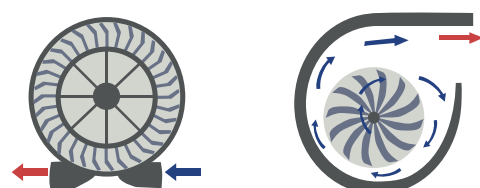
These pumps have lobe-shaped elements instead of gears. Each lobe-shaped element is driven by a motor. This eliminates contact between the two lobes, reducing wear and minimising fluid friction. Usually this type of pumps are characterised by high heat emissions and high noise levels. (Figure 2)



1. Volumetric vane pump operation



2. Volumetric lobe pump operation



3. Blower pump operation

## **SIZING OF VACUUM SYSTEMS**

In order to achieve greater efficiency and good energy savings, it is important that the systems are expressly designed for the specific application. Likewise, suction cups and their fittings, the model, the size of the vacuum pumps, and relevant accessories and piping, must also be chosen according to the application.

It is extremely important to fix the safety factor during the dimensioning of a vacuum system as well as the type of circuit to be adopted.

### **FACTOR OF SAFETY**

When handling any type of object, the most important condition to be met is the safety of the grip. It is necessary to be sure that the object does not detach from the suction cups before the set release point. For this reason it is always necessary to multiply the weight (plus any inertia force) of the object to be moved by an appropriate safety coefficient:

- 2 in the case of static applications or low-speed handling applications.
- 2.5 or more in the case of medium- and high-speed handling applications.

A parameter that is frequently underestimated when sizing a vacuum system is the choice of the suction cup. It is the device that physically "connects" the object to be manipulated to the gripping system.

### **TYPE OF CIRCUIT**

#### **SEALED SYSTEMS**

When designing this circuit it is necessary to consider the volume, the vacuum level and the evacuation time. In sealed systems, the pump capacity is determined by the speed at which the circuit is evacuated at a certain vacuum level.

This capacity is called evacuation time and is normally specified in s/l.

By multiplying this value by the volume of the entire system, the evacuation time is obtained as a function of the desired vacuum level.

#### **SYSTEMS WITH LEAKS**

In systems with leaks, where it is necessary to handle cardboard boxes, perforated sheet metal or objects with micro-holes, the situation is different. To maintain the desired vacuum level, the pump must have a higher capacity to compensate for leaks. Once the leakage flow has been determined, the most suitable pump is chosen by checking the characteristic curves of the various pump models. In the case of leaks through a hole with a known cross-section, the extent of the leak can be determined. To obtain the total leak flow, multiply the value obtained by the total area. When porous materials have to be handled or when the geometry of the leak path is unknown, the flow rate can be determined by a practical test to be performed with a pump and a vacuum gauge.

## GENERAL INFORMATION FOR CORRECT VACUUM SIZING

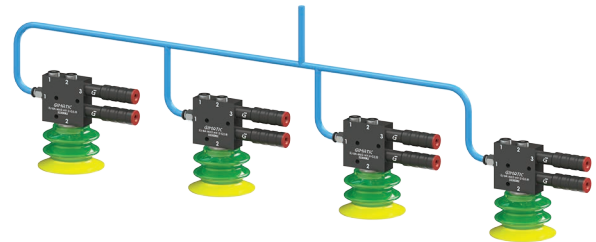
A vacuum circuit can be sized following a centralised or decentralised design.

### CENTRALISED SYSTEM



A centralised system is characterised by a vacuum pump connected to several suction cups. Often used to handle sealed materials such as sheet metal or glass.

### DECENTRALISED SYSTEM



A decentralised system is designed so that each suction cup has a dedicated vacuum generator, which means that all suction cups are independent of each other, usually used in applications with porous surfaces.

#### ADVANTAGES

- Single source of vacuum
- Simple blow-off arrangement
- Easy vacuum level control



#### ADVANTAGES

- Minimised volumes to be evacuated > High gripping and release speed
- Zeroing of pressure drops > Compact pump sizes
- Each suction cup is independent
- Smaller feed pipes

#### DISADVANTAGES

- Long pipes with larger diameter
- Risk of pressure drops
- Requires blow-off valve or vacuum breaker for release of the object



#### DISADVANTAGES

- More complex management of blow-off (non-return valves are required)
- More complex detection of object being picked up
- Possible problems resulting from dirt in the system

## CHOICE OF THE PUMP

After selecting the components that precede it, the pump must be sized considering some of the following parameters:

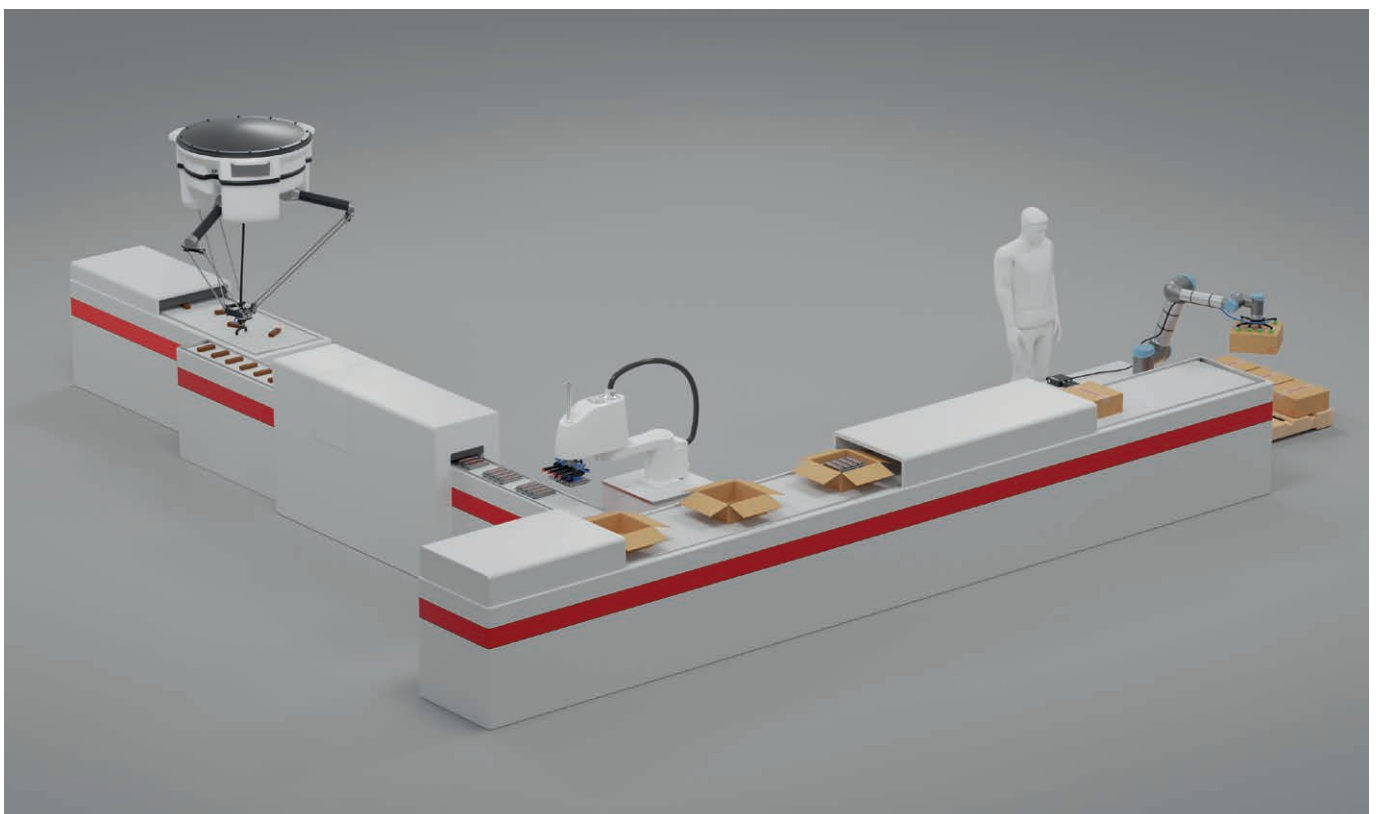
**IS THE CIRCUIT CENTRALISED OR DECENTRALISED?**

**WHAT IS THE SPEED OF THE APPLICATION?**

**POROSITY OF THE MATERIAL?**

**WHAT IS THE VOLUME TO BE EVACUATED?**

**WHAT IS THE REQUIRED VACUUM LEVEL?**



# SUCTION CUPS

## OPERATING PRINCIPLE OF THE SUCTION CUP



When a vacuum-based handling system is implemented, it is necessary to develop a magnitude of forces that will enable the safe handling of products. The suction cup plays a key role in this phase.

Two are the main factors to be considered:

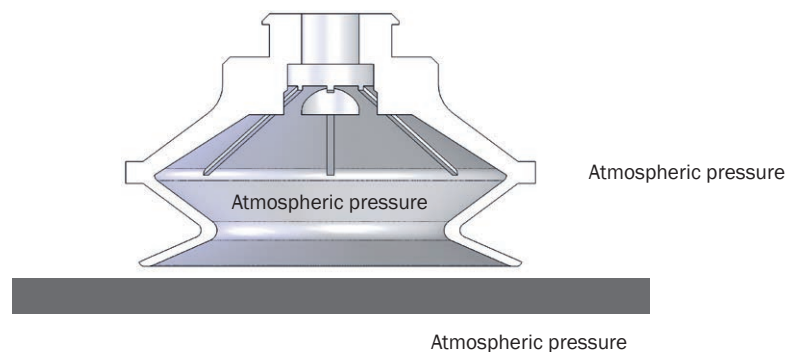
- The shape of the suction cup;
- The characteristics of the lip.

A suction cup with the proper shape is necessary to match perfectly the morphology of the gripped object. The lip, on the other hand, must be able to follow with precision and repeatability the roughness and alterations that the surface of the object may present (the corrugations of a cardboard box or the roughness of a wooden panel).

The suction cup adheres to the surface when the pressure of the surrounding area (atmospheric pressure) is greater than the pressure between the suction cup and the surface. In order to create a depression inside the suction cup, the suction cup is connected to a vacuum pump. The higher is the vacuum level inside the suction cup, the higher is the force that the suction cup can exert.

Finally keep in mind the force of the suction cup will be higher:

- If the contact surface is large
- If the vacuum level is high
- If its shape can properly match with the object



## SIZING OF THE SUCTION CUPS



Besides being influenced by the vacuum level, the lifting force is also strongly influenced by the model of suction cup. To design the circuit it is necessary to start from the point of contact between the suction cup and the object and then go back to the vacuum pump. This method allows the proper sizing of the components and the best performance.

Before selecting a suction cup, the surface, structure, lifting direction, weight and porosity of the object must be considered.

## THE HIGHER THE VACUUM LEVEL, THE GREATER THE ENERGY REQUIREMENT WILL BE



When vacuum is created inside a suction cup that rests on a surface, the suction cup adheres to the surface not just on its own account, but also thanks to the higher external pressure. The lifting force is proportional to the contact surface and the vacuum level. If the vacuum level increases from 60% to 90%, the lifting force increases by a maximum of 1.5 times. In order to limit the energy consumption, it is preferable to limit the vacuum level and instead increase the surface area of the suction cup.

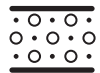
## SURFACE AND STRUCTURE



As well as highlighting the object's dimensions, a visual assessment identifies whether the object is curved or flat. Using the suction cup that best fits the surface is essential. A further contribution could come from the analysis of the structure of the object.

A more careful examination could reveal a certain roughness which, in addition to limiting the use of suction cups, represents a potential leak.

## POROSITY



What is the porosity of the material? This question is very important for the definition of the suction cup format and for the sizing of the pump. Porosity is defined as the amount of air at atmospheric pressure passing through a material subjected to a depression. Glass does not allow air to pass through, while paper, for example, is full of tiny pores.

## MATERIAL



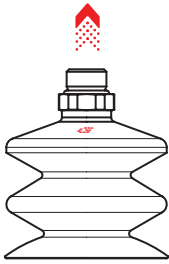
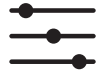
It is often necessary to check the operating temperature required to perform that particular application. Too high temperatures, as in thermoforming, or too low, require the use of suction cups made with special compounds. Silicone is the best solution even if there is a risk of releasing small particles (halo), which makes it difficult to perform a subsequent painting. In this case our HNBR suction cups are the ideal solution.

## SELECTION OF THE SUCTION CUP

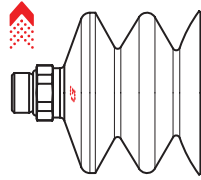


Once the weight and size of the object have been determined, the type and diameter of the suction cup must be determined. The use of the largest possible suction cup allows to reduce the vacuum level. This solution offers a number of advantages including shorter evacuation time, reduced power consumption and longer suction cup life.

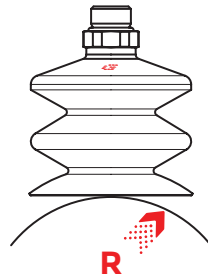
## PARAMETERS



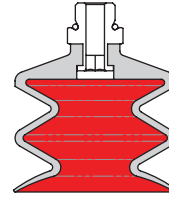
Lifting force [N]  
perpendicular to the  
surface, at various  
vacuum levels



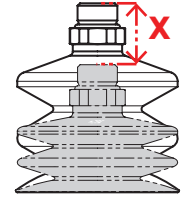
Lifting force [N]  
parallel to the  
surface, at various  
vacuum levels



Min curve radius



Volume



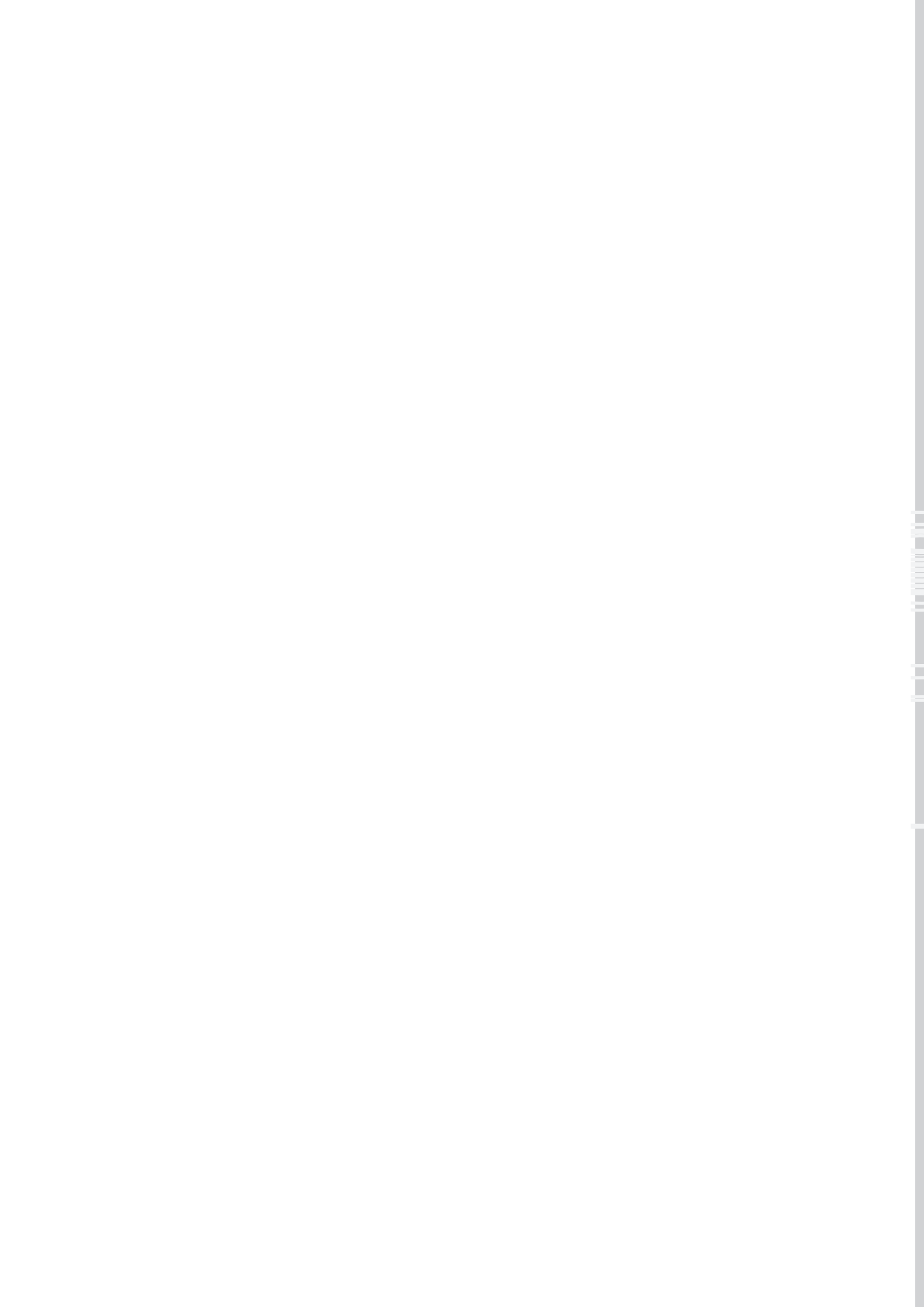
Max vertical  
movement

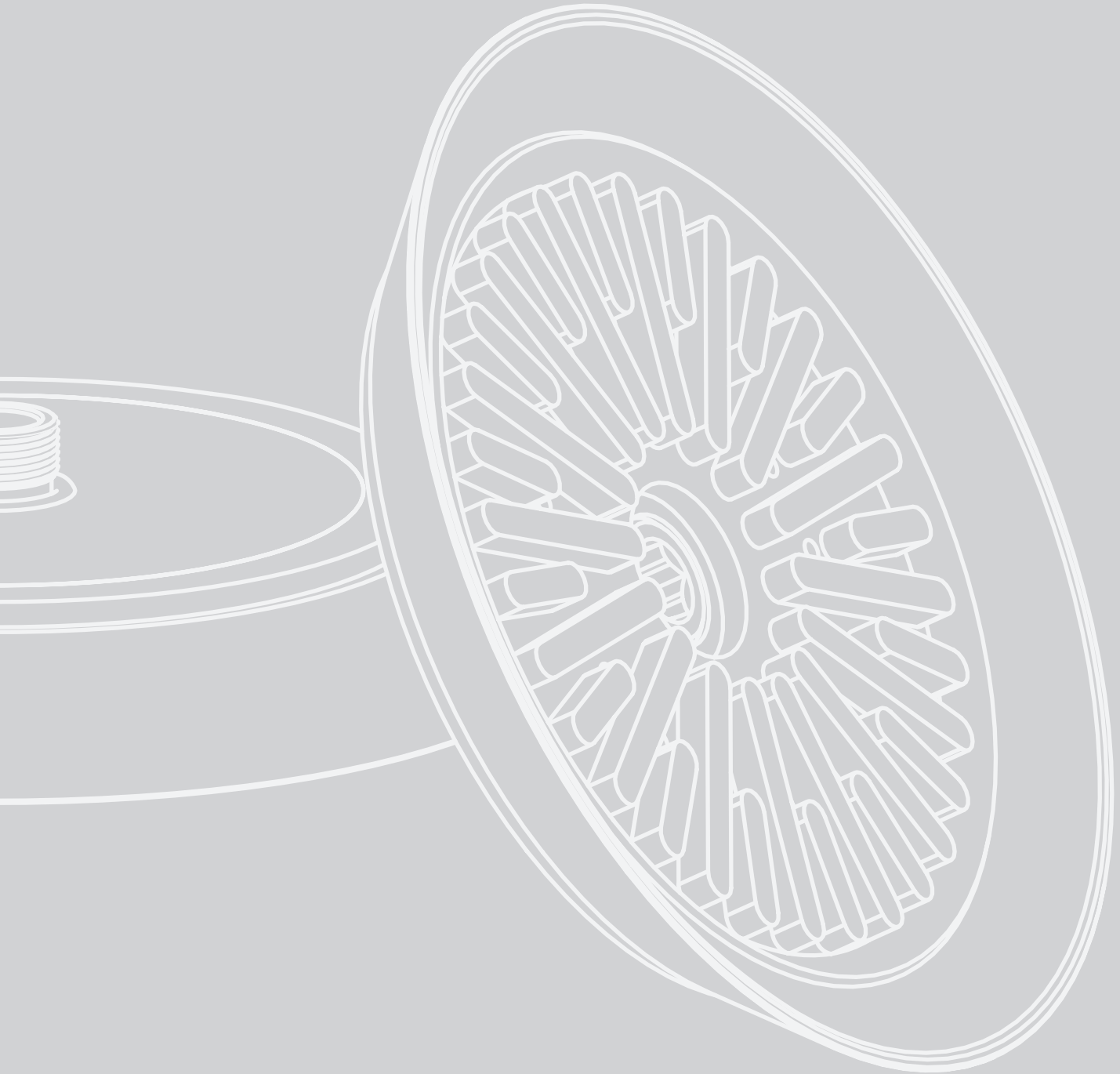
## USEFUL PARAMETERS TO VERIFY



- Use the suction cup that is suitable for the application.
- Pay attention to the type of material and the structure of the surface.
- Determine the type of suction cup material suitable for the application
- Design the system with a suitable safety factor
- Know the possible dynamic forces that could influence the application.
- Distribute the suction cups in relation to the centre of gravity.
- Use the appropriate accessories for the application.
- Consider the type of finish of the surface.
























## SUCTION CUPS

## SUCTION CUP SELECTION BY TYPE OF APPLICATION

Type of suction cup	EPDM	NBR	HNBR	SILICONE	FDA-COMPLIANT SILICONE	DETECTABLE FDA-COMPLIANT SILICONE	POLYURETHANE	PTFE
VG.U 	SHEET METAL, GLASS, PLASTIC	-	GLASS, PLASTIC, MARK-FREE	PLASTIC	FOOD-GRADE (FDA)	-	-	-
VG.B/SFO 	SHEET METAL, GLASS, WOOD, PLASTIC, CARDBOARD	-	GLASS, PLASTIC, MARK-FREE	CARDBOARD	FOOD-GRADE (FDA) UNEVEN AND POROUS SURFACES	-	-	-
VG.CF 	-	SHEET METAL, WOOD, MARBLE	GLASS, PLASTIC, MARK-FREE	CARDBOARD	-	-	-	-
VG.LB/SFO 	-	WOOD	SHEET METAL - PLASTIC - MARK-FREE	-	FOOD-GRADE (FDA)	-	-	-
VG.FP 	-	-	-	BAG OPENING, THIN FILMS/PAPER	FOOD-GRADE (FDA) BAG OPENING, THIN FILMS/PAPER	-	-	-
VG.BC/SBC 	-	-	-	BAGS, FLOW PACKS	-	-	-	-
VG.MB 	-	SHEET METAL, GLASS, OILY SHEET METAL	-	-	-	-	-	-
VG.PAAT 	-	-	-	-	-	-	-	PLASTIC, COMPOSITES, FIBRES
VG.GX 	-	-	-	-	-	-	GLASS, WOOD, CARDBOARD, SHEET METAL	-

Type of suction cup	EPDM	NBR	HNBR	SILICONE	FDA-COMPLIANT SILICONE	DETECTABLE FDA-COMPLIANT SILICONE	POLYURETHANE	PTFE
VG.BP 	-	-	-	-	-	-	GLASS, WOOD, CARDBOARD, SHEET METAL	-
VG.IS 	-	-	-	-	-	-	UNEVEN AND POROUS SURFACES	-
VG.BR/LBR 	-	-	-	-	-	-	THIN FILMS/PAPER - BAGS, FLOW PACKS, OBLONG SNACKS	-
VG.LBO 	-	-	-	-	-	-	LONG AND NARROW OBJECTS, BOTTLES, SHEET METAL TUBES AND PACKAGED OBLONG SNACKS	-
VG.MF 	-	-	-	-	-	-	OILY SHEET METAL	-
VG.BPG/LPG 	-	-	-	-	FOOD-GRADE (FDA) BAGS, FLOW PACKS	-	-	-
VG.FO 	-	-	-	-	FOOD-GRADE (FDA) BAG OPENING, FLOW PACKS, THIN FILMS/PAPER	-	-	-
VG.BDT 	-	-	-	-	-	BAKERY PRODUCTS WITH SEEDS. SILICONE COMPLIANT WITH FDA 21 CFR 177.2600 AND REGULATION (EC) NO 1935/2004, DETECTABLE	-	-

## SELECTION OF MATERIALS

Material	EPDM	NBR	HNBR	SILICONE/FDA-COMPLIANT SILICONE/ DETECTABLE FDA-COMPLIANT SILICONE	POLYURETHANE
Wear resistance	Fair	Excellent	Excellent	Good	Excellent
Oils	Poor	Excellent	Excellent	Poor	Excellent
Weather and ozone	Excellent	Poor	Excellent	Excellent	Excellent
Hydrolysis	Good	Good	Good	Fair	Poor
Petrol	Poor	Good	Excellent	Poor	Poor
Concentrated acids	Poor	Poor	Good	Poor	Poor
Alcohol	Excellent	Good	Good	Good	Good
Oxidation	Excellent	Good	Excellent	Excellent	Good

## AVAILABILITY OF DIAMETERS, MATERIALS AND BELLOWS

Type of suction cup	Material	Diameter (mm)	Number of bellows
VG.U	EPDM, HNBR, SIL, SIL FDA	6, 9, 11, 16, 22, 33, 42, 53	0
VG.B	EPDM, HNBR, NBR, SIL, SIL FDA	6, 9, 11, 16, 22, 33, 42, 53, 77	1
VG.B.SFO	SIL FDA	16, 22, 33, 42, 53	1
VG.CF	NBR 60, HNBR, SIL	16,22, 27, 33, 42, 53, 77, 112, 152	0
VG.LB	NBR, HNBR, SIL FDA	6, 9, 11, 16, 22, 33, 42, 53	2
VG.LB.SFO	SIL FDA	16, 22, 33, 42, 53	2
VG.FP	SIL, SIL FDA	15, 20, 30, 40	4
VG.BC	SIL	40, 50	3
VG.SBC	SIL	40, 50, 63	2
VG.MB	NBR 60	52, 63, 83, 103	1
VG.PAAT	PTFE	16, 20, 30, 40	0
VG.GX	PU50, PU30/60	10, 15, 20, 25, 35, 52, 75	2
VG.BP	PU50, PU30/70	10, 15, 20, 25, 35, 52, 75, 110, 150, 200	1
VG.IS	PU30/60	20, 25, 35, 45, 55, 70	1
VG.BR	PU50	20x45, 30x55	1
VG.LBR	PU50	20x45, 30x55	2
VG.LBO	PU50, PU30/60	40x90	4
VG.MF	PU40	20, 30, 45, 60, 80, 100, 120	0
VG.BPG	SIL FDA	30, 41, 48, 55	1
VG.LPG	SIL FDA	30, 41, 48	3
VG.FO	SIL FDA	26, 33	0
VG.BDT	Detectable SIL FDA-compliant silicone	40	4

## VG.U6S flat silicone suction cups

- Silicone compound
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces

Introduction

Vacuum theory

Suction cups

Vacuum pumps

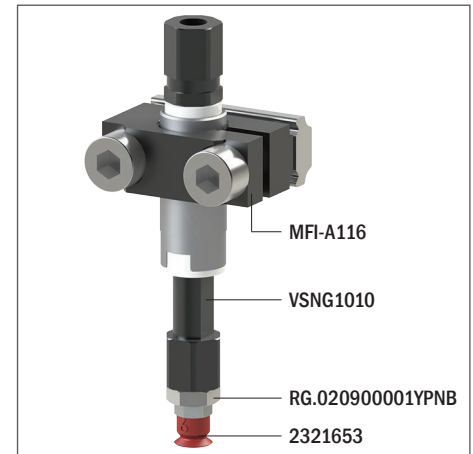
Customised solutions

Suspensions

System accessories



Application example



### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	0.5	1.5	2.5	0.5	1.3	2.2	0.05	5	0.3	0.1

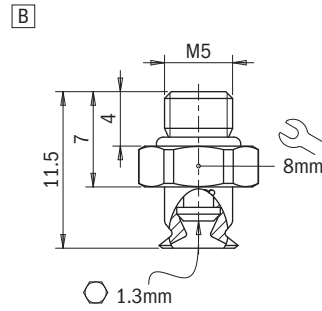
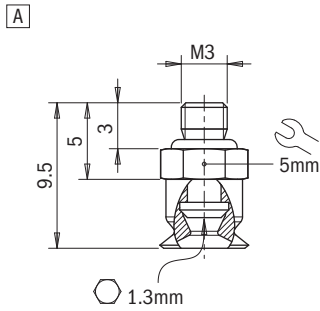
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, SIL	Red	50 Shore	-70 ÷ +200 °C



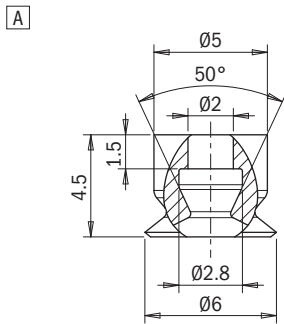
### Ordering information

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U6S.50.M3M.E5	VG.U6 suction cup, silicone, 50 Shore, M3 male, 5 mm hex	2321653
B	VG.U6S.50.M5M.E8	VG.U6 suction cup, silicone, 50 Shore, M5 male, 8 mm hex	2321053



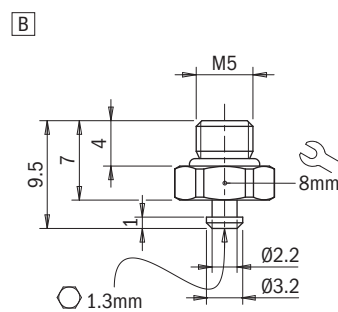
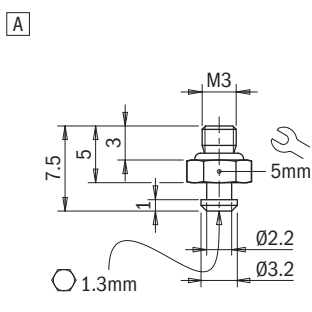
### Ordering information

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U6S.50	VG.U6 suction cup, silicone, 50 Shore	2321654



### Ordering information

Drawing	Alphanumeric code	Fittings	Order code
A	FT.M3M.E5	M3 male fitting, 5 mm hex	2321402
B	FT.M5M.E8.06	M5 male fitting, 8 mm hex	2321005



## VG.U9S flat silicone suction cups

- Silicone compound
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces

Introduction

Vacuum theory

Suction cups

Vacuum pumps

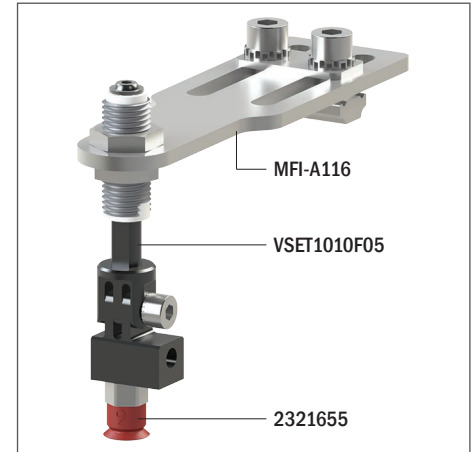
Customised solutions

Suspensions

System accessories



Application example



### Technical data

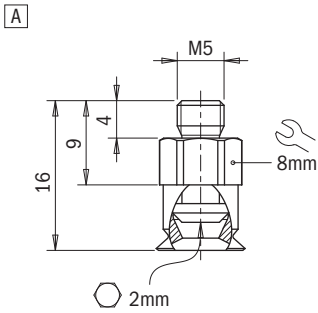
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	1	2.5	3.8	1	2.5	3.5	0.1	6	0.5	0.2

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, SIL	Red	50 Shore	-70 ÷ +200 °C

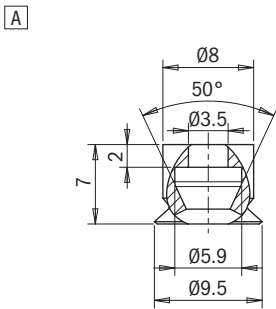
### Ordering information

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U9S.50.M5M.E8	VG.U9 suction cup, silicone, 50 Shore, M5 male, 8 mm hex	2321655



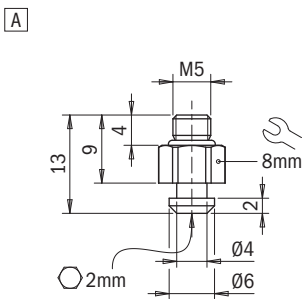
### Ordering information

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U9S.50	VG.U9 suction cup, silicone, 50 Shore	2321656



### Ordering information

Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5M.E8.05	M5 male fitting, 8 mm hex	2321405



## VG.U11S flat silicone suction cups

- Silicone compound
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces

Introduction

Vacuum theory

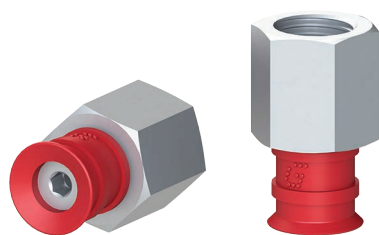
Suction cups

Vacuum pumps

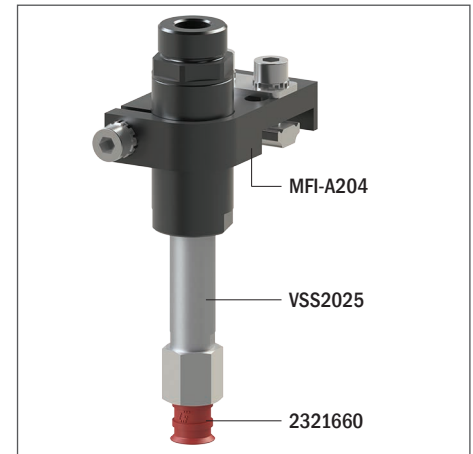
Customised solutions

Suspensions

System accessories



Application example



### Technical data

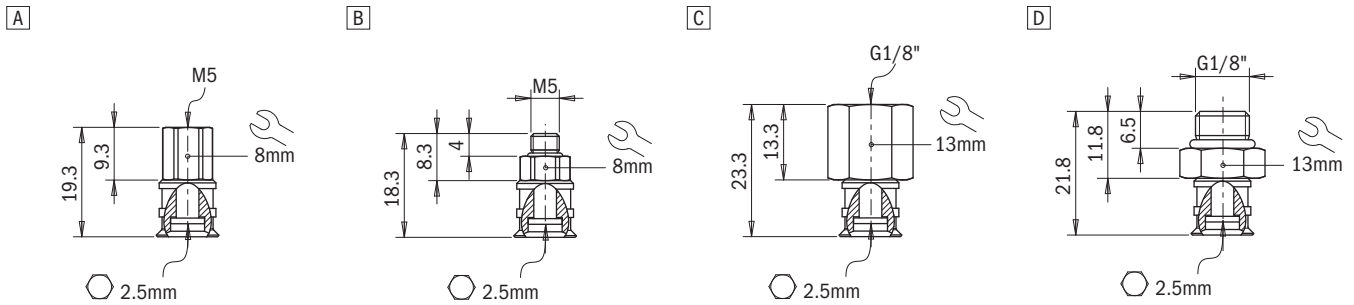
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	1.5	4.1	6.2	1.5	4.1	6.2	0.18	8	0.5	0.5

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, SIL	Red	50 Shore	-70 ÷ +200 °C

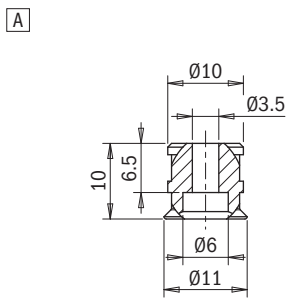
### Ordering information

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U11S.50.M5F.E8	VG.U11 suction cup, silicone, 50 Shore, M5 female, 8 mm hex	2321657
B	VG.U11S.50.M5M.E8	VG.U11 suction cup, silicone, 50 Shore, M5 male, 8 mm hex	2321659
C	VG.U11S.50.G18F.E13	VG.U11 suction cup, silicone, 50 Shore, G1/8" female, 13 mm hex	2321660
D	VG.U11S.50.G18M.E13	VG.U11 suction cup, silicone, 50 Shore, G1/8" male, 13 mm hex	2321661



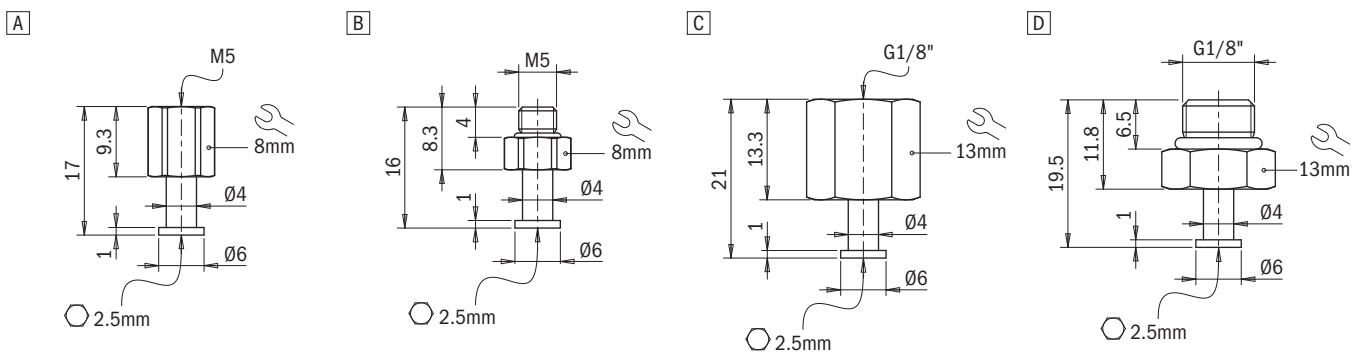
### Ordering information

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U11S.50	VG.U11 suction cup, silicone, 50 Shore	2321658



### Ordering information

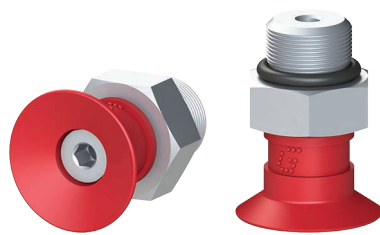
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414



## VG.U16S flat silicone suction cups

- Silicone compound
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces

Application example



### Technical data

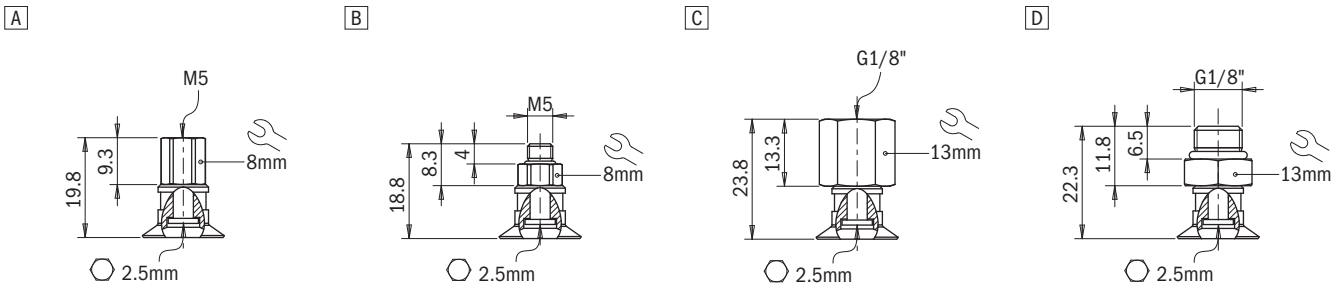
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	3	8.5	11	3	8.5	11	0.5	8	1.5	0.6

### Technical features

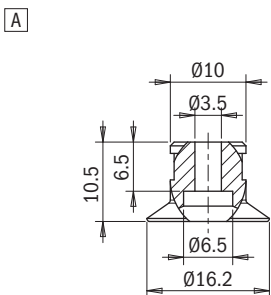
Material	Colour	Hardness	Temperature range
Silicone, SIL	Red	50 Shore	-70 ÷ +200 °C

**Ordering information**

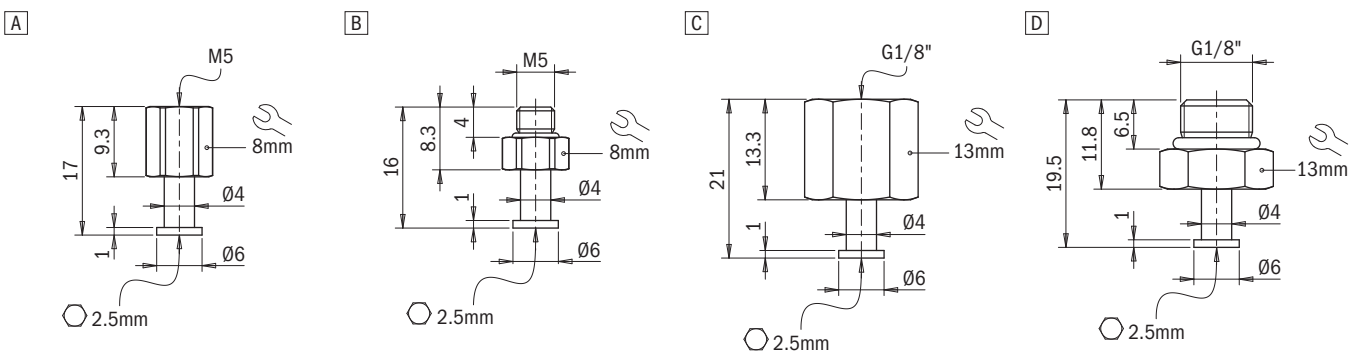
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U16S.50.M5F.E8	VG.U16 suction cup, silicone, 50 Shore, M5 female, 8 mm hex	2321662
B	VG.U16S.50.M5M.E8	VG.U16 suction cup, silicone, 50 Shore, M5 male, 8 mm hex	2321664
C	VG.U16S.50.G18F.E13	VG.U16 suction cup, silicone, 50 Shore, G1/8" female, 13 mm hex	2321665
D	VG.U16S.50.G18M.E13	VG.U16 suction cup, silicone, 50 Shore, G1/8" male, 13 mm hex	2321666


**Identification codes**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U16S.50	VG.U16 suction cup, silicone, 50 Shore	2321663


**Identification codes**

Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414

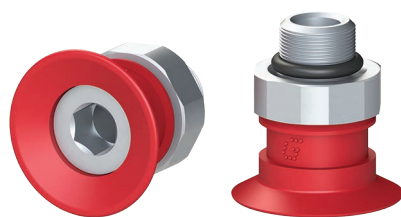




## VG.U22S flat silicone suction cups

- Silicone compound
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces

Application example



### Technical data

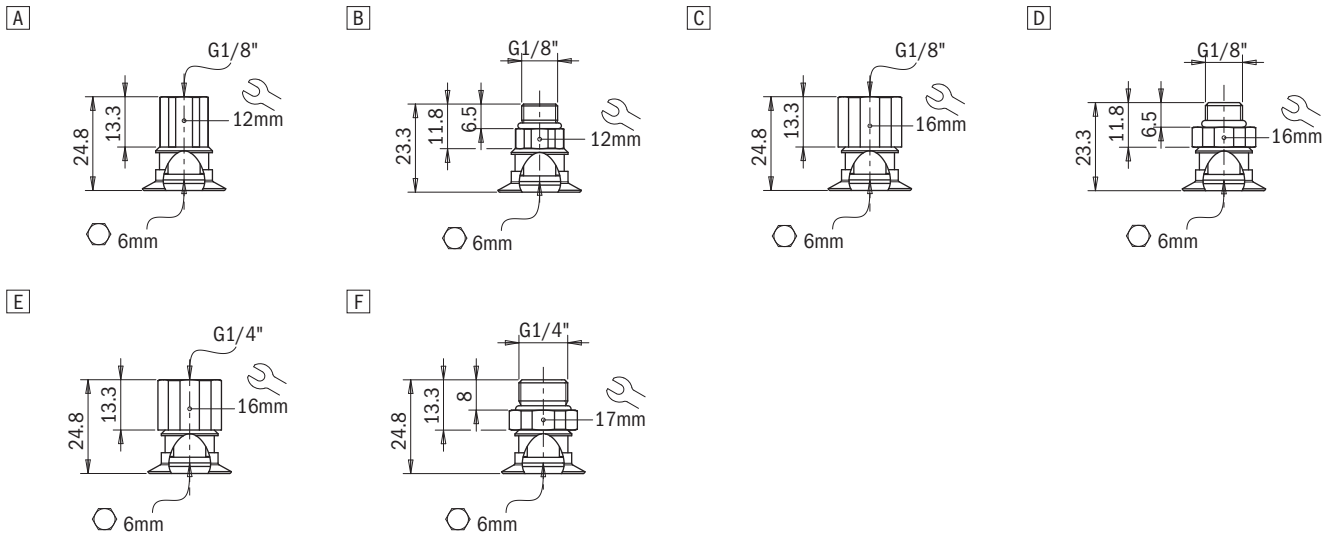
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	5.6	14	20	6	14	20	1	13	2.5	1.1

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, SIL	Red	50 Shore	-70 ÷ +200 °C

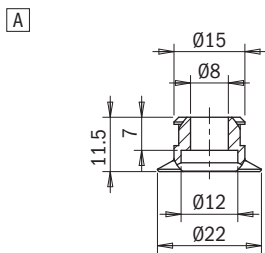
### Ordering information

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U22S.50.G18F.E12	VG.U22 suction cup, silicone, 50 Shore, G1/8" female, 12 mm hex	2321667
B	VG.U22S.50.G18M.E12	VG.U22 suction cup, silicone, 50 Shore, G1/8" male, 12 mm hex	2321669
C	VG.U22S.50.G18F.E16	VG.U22 suction cup, silicone, 50 Shore, G1/8" female, 16 mm hex	2321670
D	VG.U22S.50.G18M.E16	VG.U22 suction cup, silicone, 50 Shore, G1/8" male, 16 mm hex	2321671
E	VG.U22S.50.G14F.E16	VG.U22 suction cup, silicone, 50 Shore, G1/4" female, 16 mm hex	2321672
F	VG.U22S.50.G14M.E17	VG.U22 suction cup, silicone, 50 Shore, G1/4" male, 17 mm hex	2321673



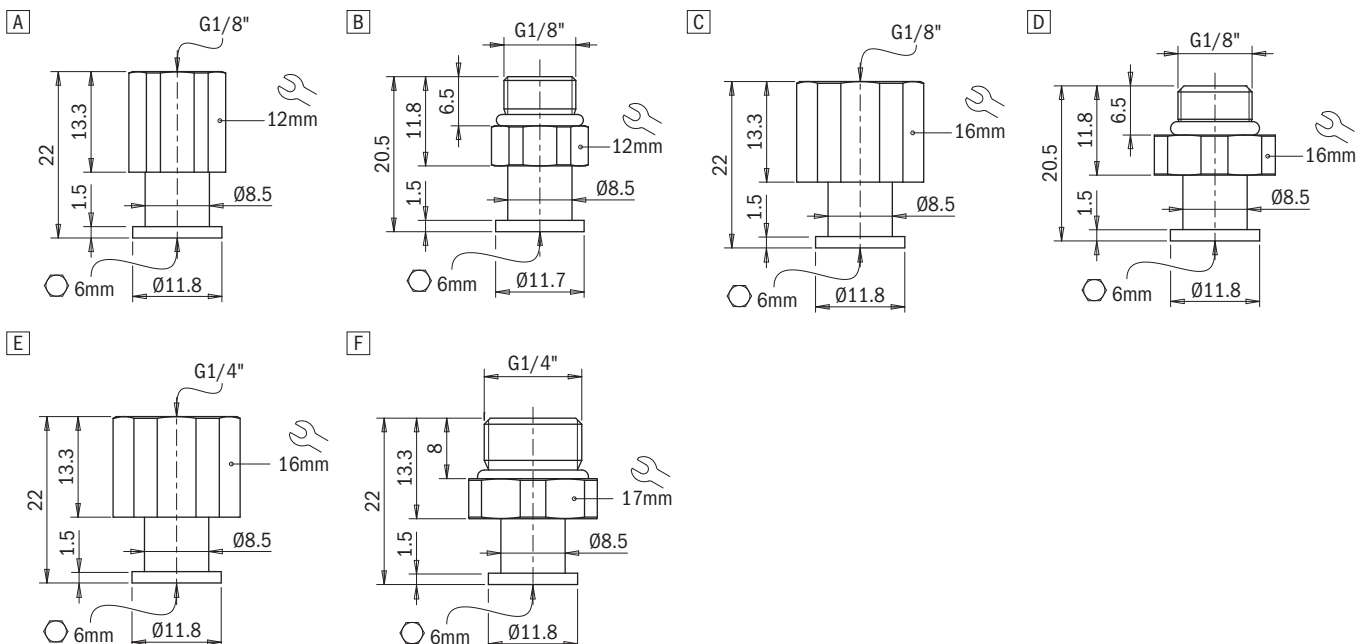
### Ordering information

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U22S.50	VG.U22 suction cup, silicone, 50 Shore	2321668



### Ordering information

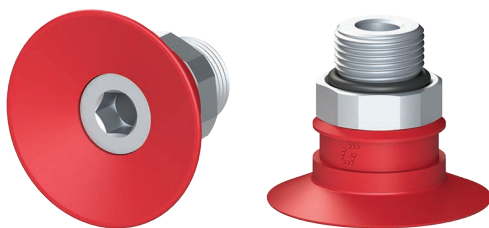
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



## VG.U33S flat silicone suction cups

- Silicone compound
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces

Application example



### Technical data

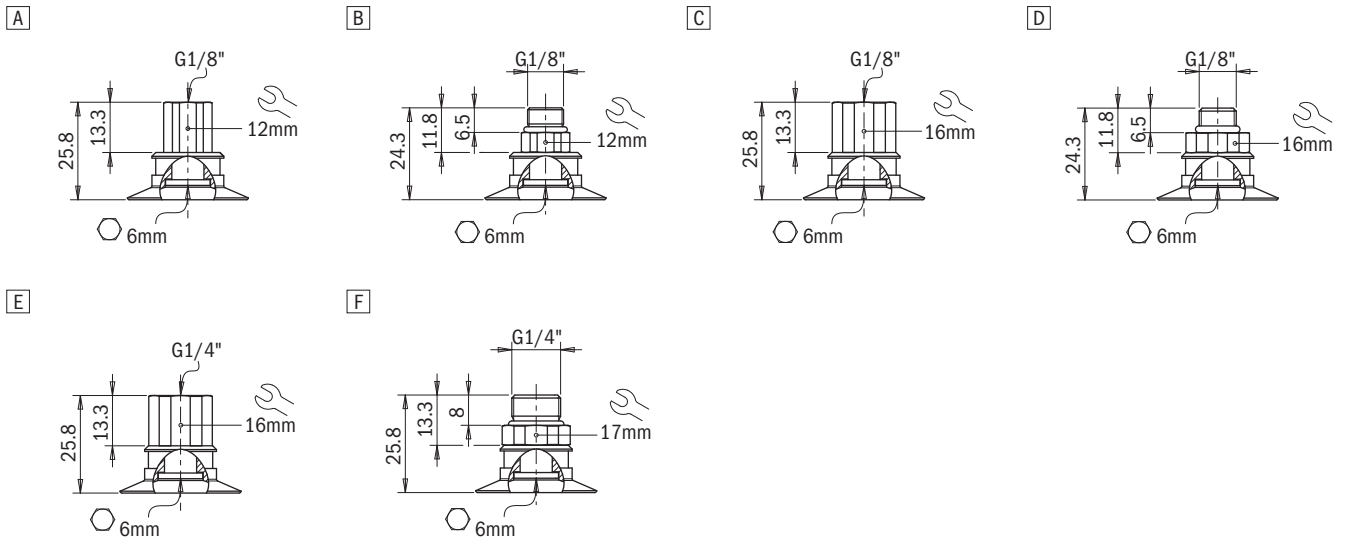
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	11	29	38	8.5	15	12.5	2	20	3.5	2.4

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, SIL	Red	50 Shore	-70 ÷ +200 °C

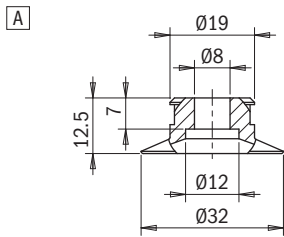
### Ordering information

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U33S.50.G18F.E12	VG.U33 suction cup, silicone, 50 Shore, G1/8" female, 12 mm hex	2321674
B	VG.U33S.50.G18M.E12	VG.U33 suction cup, silicone, 50 Shore, G1/8" male, 12 mm hex	2321676
C	VG.U33S.50.G18F.E16	VG.U33 suction cup, silicone, 50 Shore, G1/8" female, 16 mm hex	2321677
D	VG.U33S.50.G18M.E16	VG.U33 suction cup, silicone, 50 Shore, G1/8" male, 16 mm hex	2321678
E	VG.U33S.50.G14F.E16	VG.U33 suction cup, silicone, 50 Shore, G1/4" female, 16 mm hex	2321679
F	VG.U33S.50.G14M.E17	VG.U33 suction cup, silicone, 50 Shore, G1/4" male, 17 mm hex	2321680



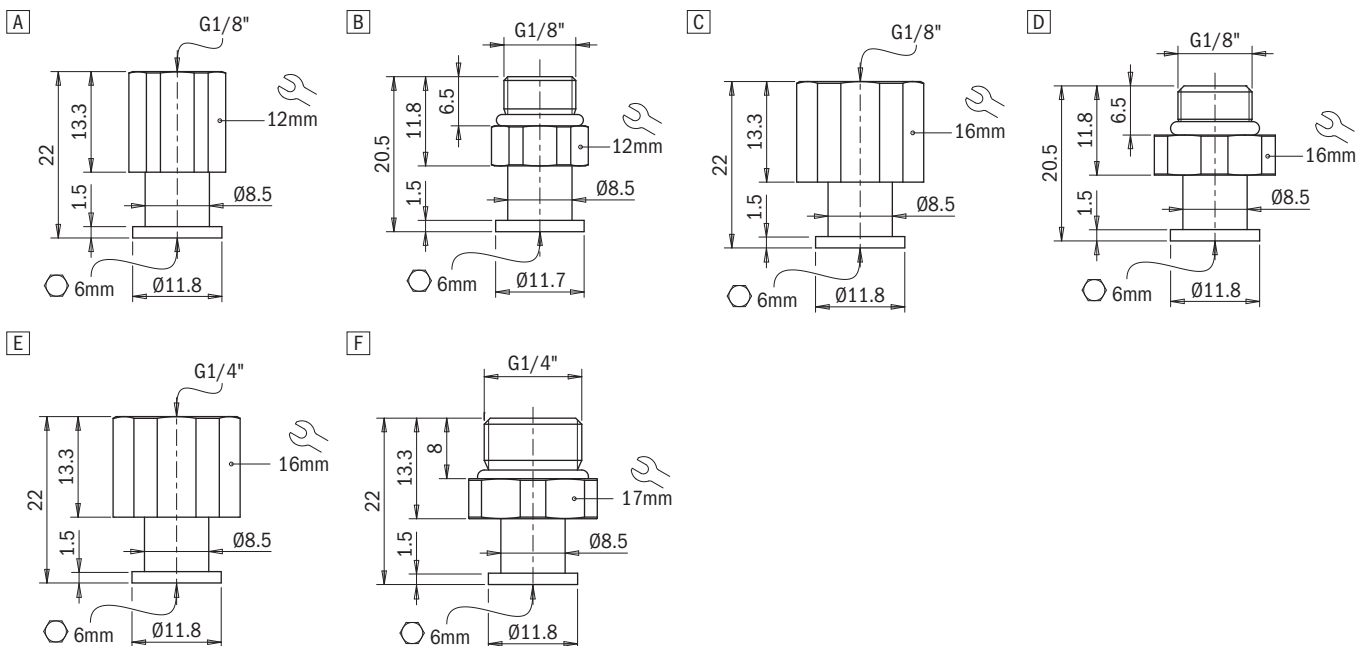
**Ordering information**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U33S.50	VG.U33 suction cup, silicone, 50 Shore	2321675



**Ordering information**

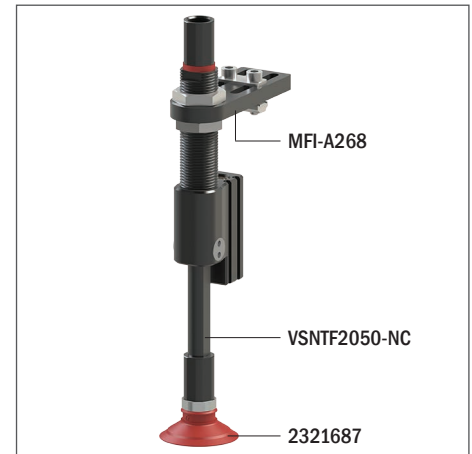
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



## VG.U42S flat silicone suction cups

- Silicone compound
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces

Application example



### Technical data

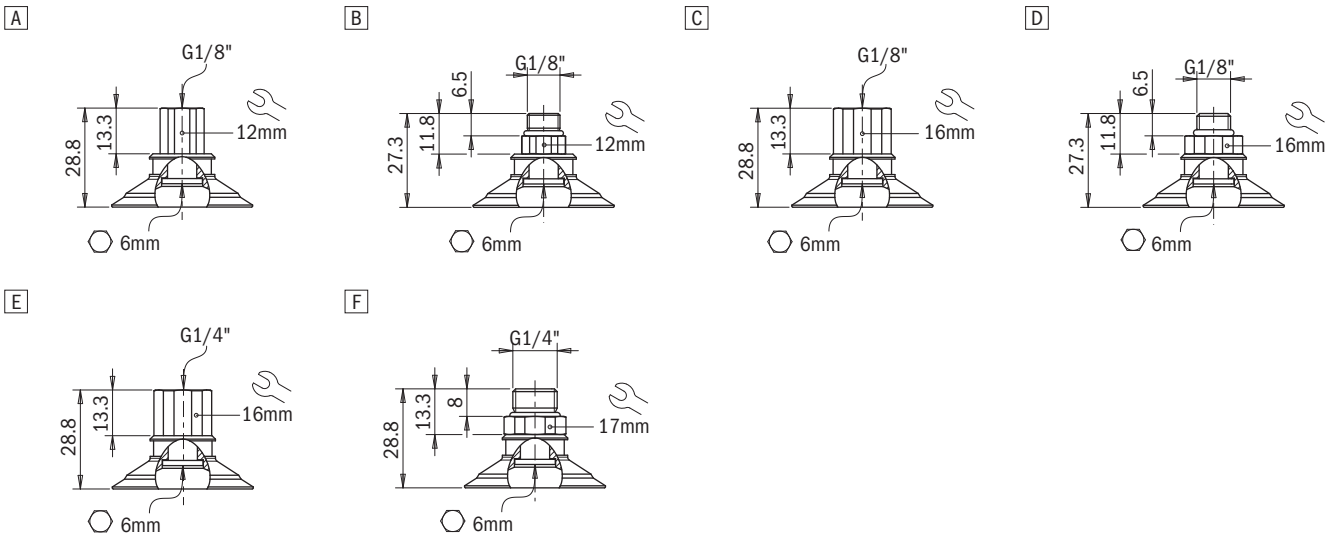
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	21	48.5	58	14	28	36	5.5	30	4.5	4.4

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, SIL	Red	50 Shore	-70 ÷ +200 °C

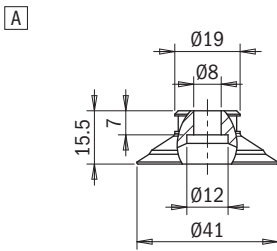
### Ordering information

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U42S.50.G18F.E12	VG.U42 suction cup, silicone, 50 Shore, G1/8" female, 12 mm hex	2321681
B	VG.U42S.50.G18M.E12	VG.U42 suction cup, silicone, 50 Shore, G1/8" male, 12 mm hex	2321683
C	VG.U42S.50.G18F.E16	VG.U42 suction cup, silicone, 50 Shore, G1/8" female, 16 mm hex	2321684
D	VG.U42S.50.G18M.E16	VG.U42 suction cup, silicone, 50 Shore, G1/8" male, 16 mm hex	2321685
E	VG.U42S.50.G14F.E16	VG.U42 suction cup, silicone, 50 Shore, G1/4" female, 16 mm hex	2321686
F	VG.U42S.50.G14M.E17	VG.U42 suction cup, silicone, 50 Shore, G1/4" male, 17 mm hex	2321687



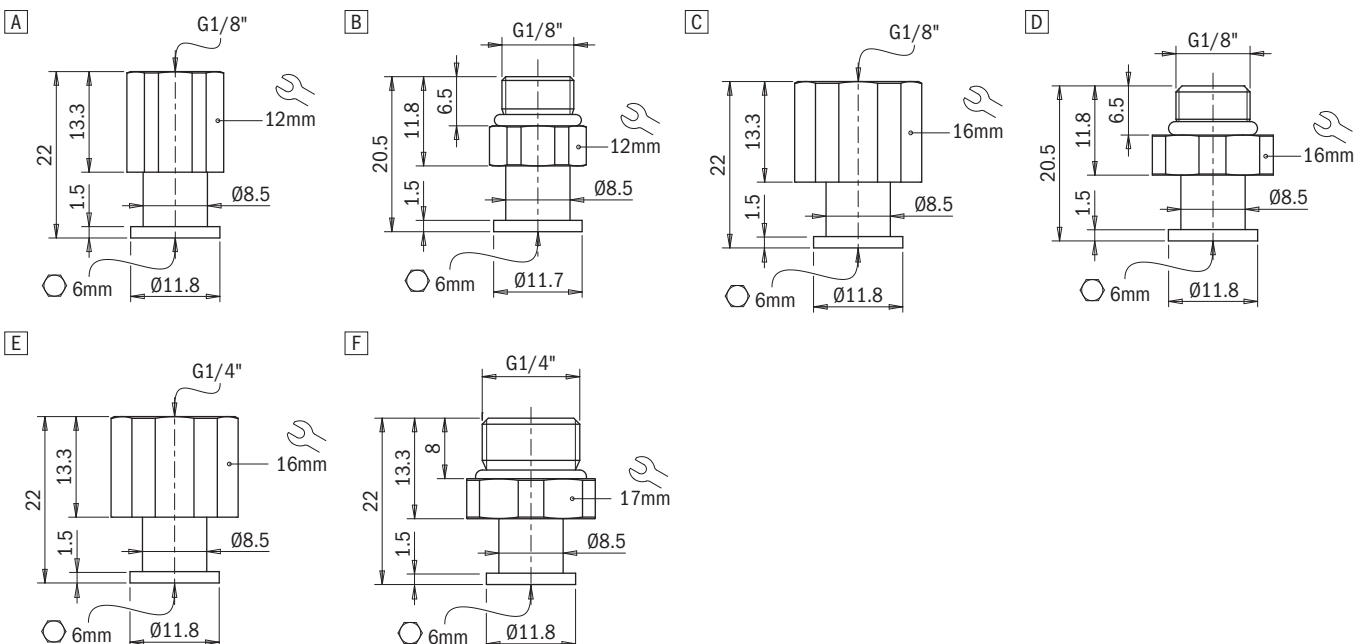
### Ordering information

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U42S.50	VG.U42 suction cup, silicone, 50 Shore	2321682



### Ordering information

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



## VG.U53S flat silicone suction cups

- Silicone compound
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces

Application example



### Technical data

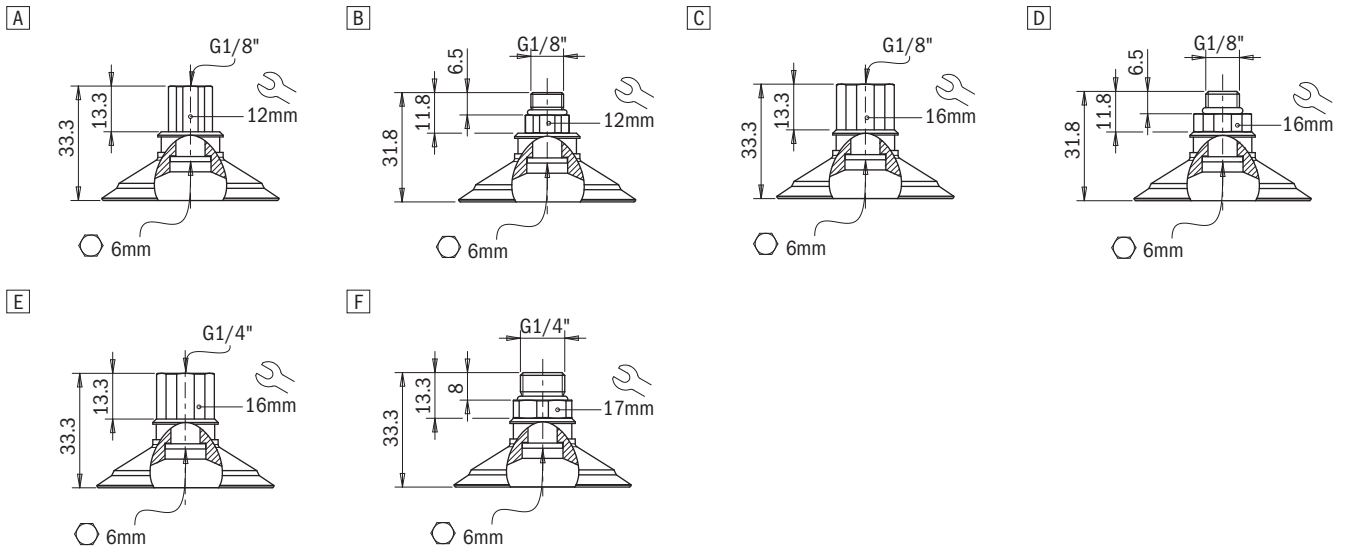
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	37	75	96	20	35	46	12	35	6	7.9

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, SIL	Red	50 Shore	-70 ÷ +200 °C

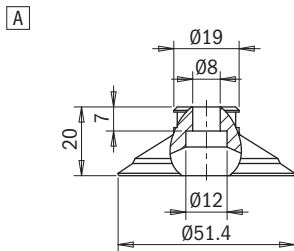
### Ordering information

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U53S.50.G18F.E12	VG.U53 suction cup, silicone, 50 Shore, G1/8" female, 12 mm hex	2321688
B	VG.U53S.50.G18M.E12	VG.U53 suction cup, silicone, 50 Shore, G1/8" male, 12 mm hex	2321690
C	VG.U53S.50.G18F.E16	VG.U53 suction cup, silicone, 50 Shore, G1/8" female, 16 mm hex	2321691
D	VG.U53S.50.G18M.E16	VG.U53 suction cup, silicone, 50 Shore, G1/8" male, 16 mm hex	2321692
E	VG.U53S.50.G14F.E16	VG.U53 suction cup, silicone, 50 Shore, G1/4" female, 16 mm hex	2321693
F	VG.U53S.50.G14M.E17	VG.U53 suction cup, silicone, 50 Shore, G1/4" male, 17 mm hex	2321694



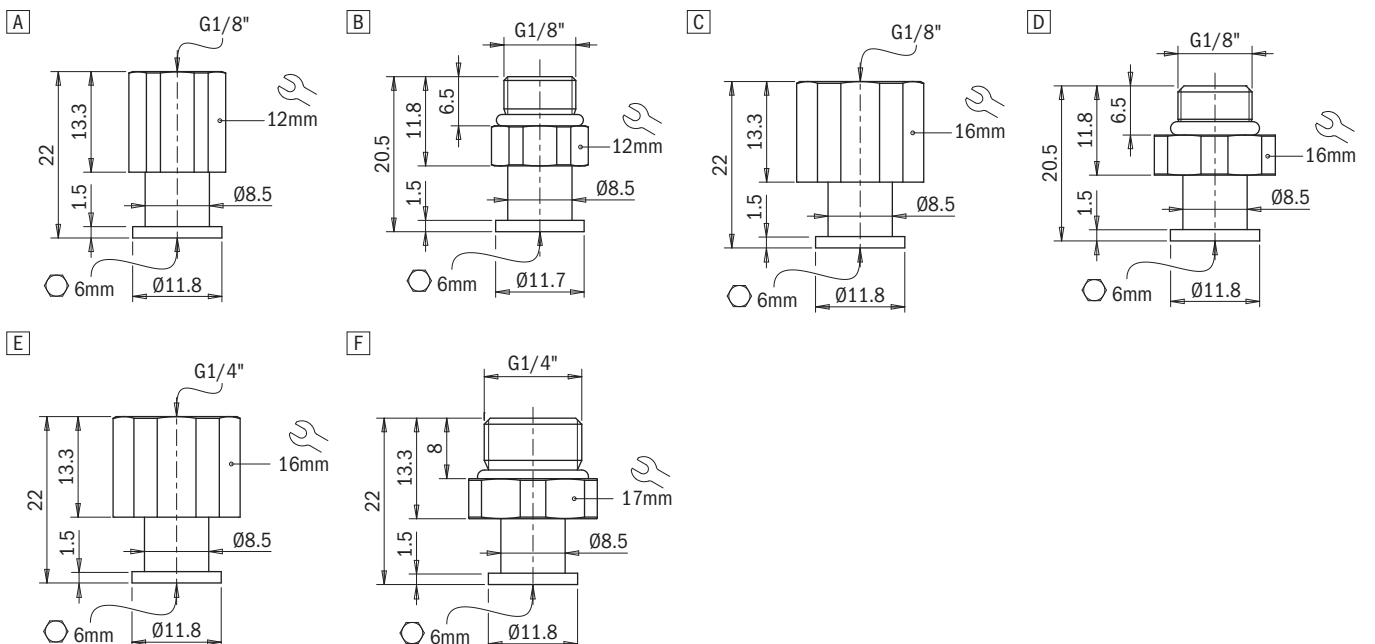
**Ordering information**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U53S.50	VG.U53 suction cup, silicone, 50 Shore	2321689



**Ordering information**

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432

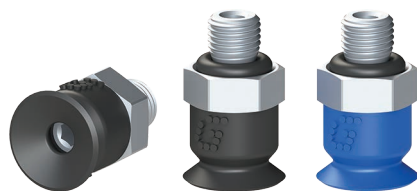
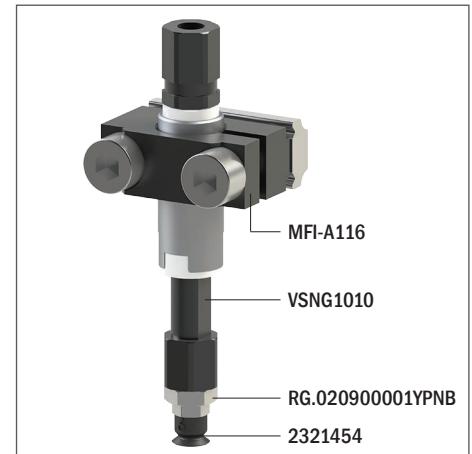




## VG.U6 flat EPDM-HNBR suction cups

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

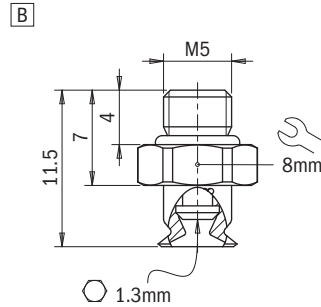
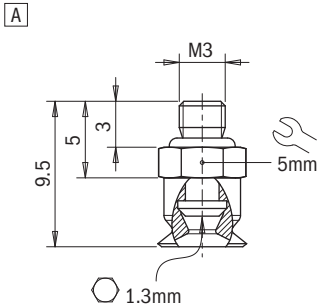
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
EPDM 50	0.5	1.5	2.5	0.5	1.3	2.2	0.05	5	0.3	0.1
HNBR 60	0.5	1.5	2.5	0.5	1.3	2.2	0.05	5	0.3	0.1

### Technical features

Material	Colour	Hardness	Temperature range
EPDM	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

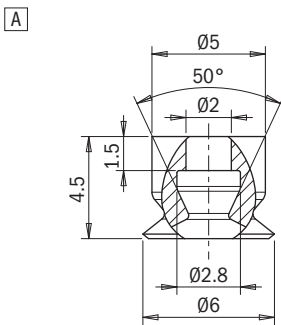
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U6E.50.M3M.E5	VG.U6 suction cup, EPDM, 50 Shore, M3 male, 5 mm hex	2321454
A	VG.U6H.60.M3M.E5	VG.U6 suction cup, HNBR, 60 Shore, M3 male, 5 mm hex	2321456
B	VG.U6E.50.M5M.E8	VG.U6 suction cup, EPDM, 50 Shore, M5 male, 8 mm hex	2321054
B	VG.U6H.60.M5M.E8	VG.U6 suction cup, HNBR, 60 Shore, M5 male, 8 mm hex	2321056



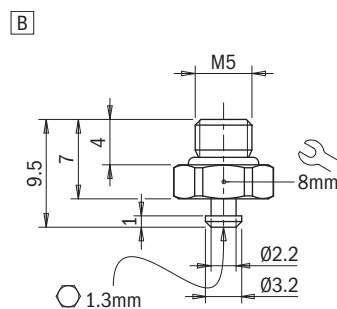
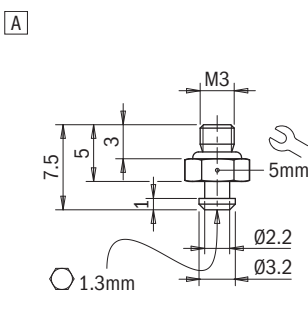
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U6E.50	VG.U6 suction cup, EPDM, 50 Shore	2321455
A	VG.U6H.60	VG.U6 suction cup, HNBR, 60 Shore	2321457



### Identification codes

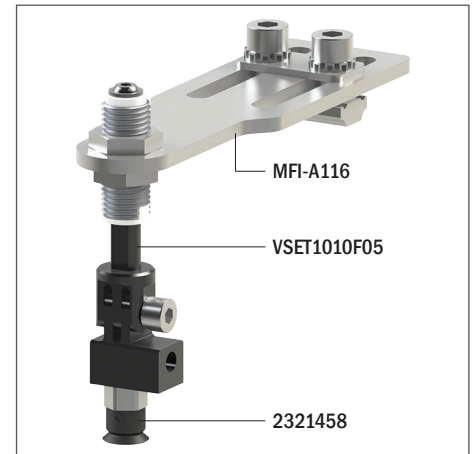
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M3M.E5	M3 male fitting, 5 mm hex	2321402
B	FT.M5M.E8.06	M5 male fitting, 8 mm hex	2321005



## VG.U9 flat EPDM-HNBR suction cups

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
EPDM 50	1	2.5	3.8	1	2.5	3.5	0.1	6	0.5	0.2
HNBR 60	1	2.5	3.8	1	2.5	3.5	0.1	6	0.5	0.2

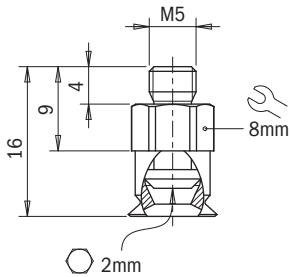
### Technical features

Material	Colour	Hardness	Temperature range
EPDM	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

### Ordering information

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U9E.50.M5M.E8	VG.U9 suction cup, EPDM, 50 Shore, M5 male, 8 mm hex	2321458
A	VG.U9H.60.M5M.E8	VG.U9 suction cup, HNBR, 60 Shore, M5 male, 8 mm hex	2321460

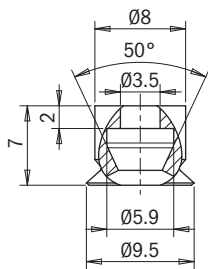
A



### Ordering information

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U9E.50	VG.U9 suction cup, EPDM, 50 Shore	2321459
A	VG.U9H.60	VG.U9 suction cup, HNBR, 60 Shore	2321461

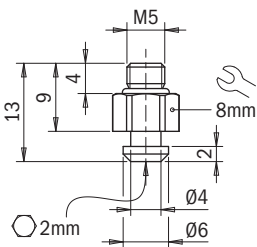
A



### Ordering information

Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5M.E8.05	M5 male fitting, 8 mm hex	2321405

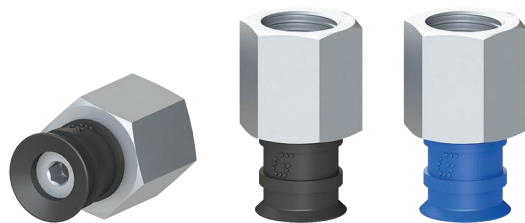
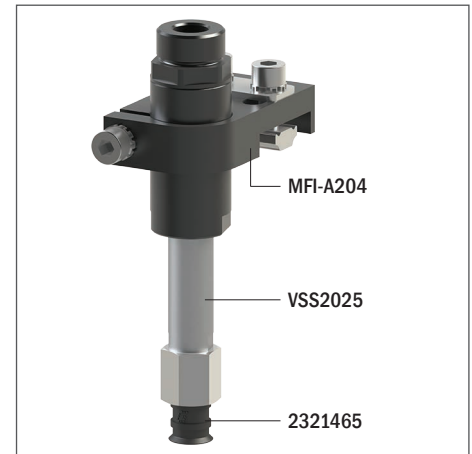
A



## VG.U11 flat EPDM-HNBR suction cups

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

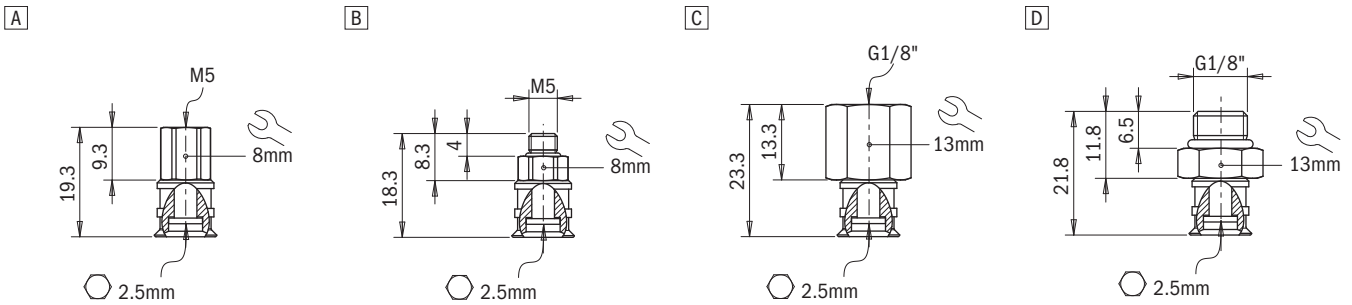
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
EPDM 50	1.5	4.1	6.2	1.5	4.1	6.2	0.18	8	0.5	0.5
HNBR 60	1.5	4.1	6.2	1.5	4.1	6.2	0.18	8	0.5	0.5

### Technical features

Material	Colour	Hardness	Temperature range
EPDM	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

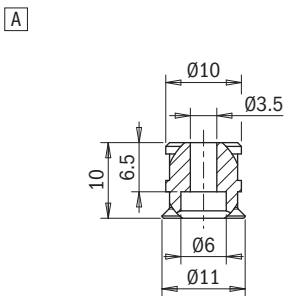
### Ordering information

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U11E.50.M5F.E8	VG.U11 suction cup, EPDM, 50 Shore, M5 female, 8 mm hex	2321462
B	VG.U11E.50.M5M.E8	VG.U11 suction cup, EPDM, 50 Shore, M5 male, 8 mm hex	2321464
C	VG.U11E.50.G18F.E13	VG.U11 suction cup, EPDM, 50 Shore, G1/8" female, 13 mm hex	2321465
D	VG.U11E.50.G18M.E13	VG.U11 suction cup, EPDM, 50 Shore, G1/8" male, 13 mm hex	2321466
A	VG.U11H.60.M5F.E8	VG.U11 suction cup, HNBR, 60 Shore, M5 female, 8 mm hex	2321467
B	VG.U11H.60.M5M.E8	VG.U11 suction cup, HNBR, 60 Shore, M5 male, 8 mm hex	2321469
C	VG.U11H.60.G18F.E13	VG.U11 suction cup, HNBR, 60 Shore, G1/8" female, 13 mm hex	2321470
D	VG.U11H.60.G18M.E13	VG.U11 suction cup, HNBR, 60 Shore, G1/8" male, 13 mm hex	2321471



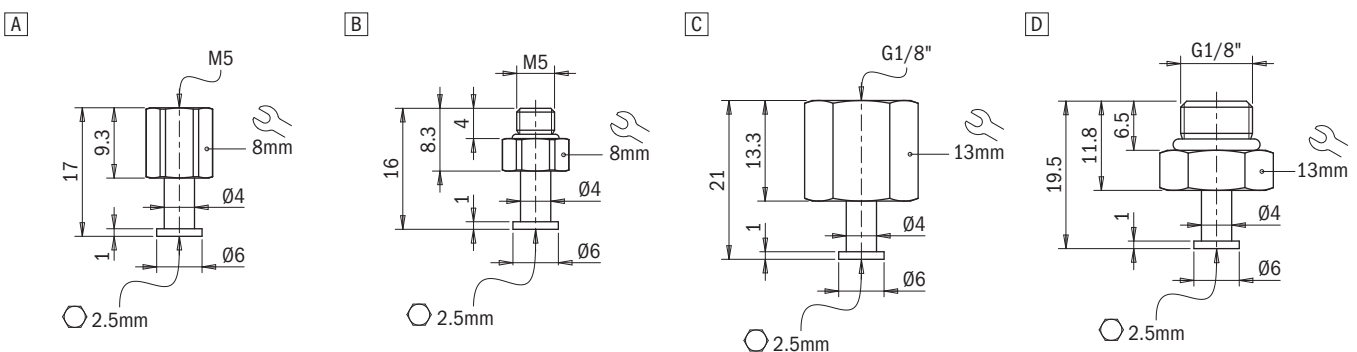
### Ordering information

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U11E.50	VG.U11 suction cup, EPDM, 50 Shore	2321463
A	VG.U11H.60	VG.U11 suction cup, HNBR, 60 Shore	2321468



### Ordering information

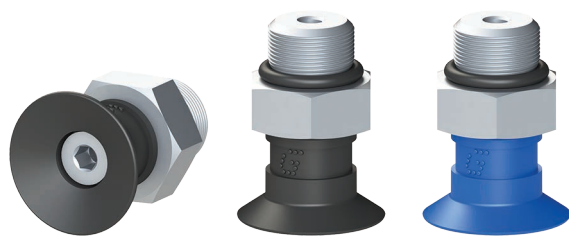
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414



## VG.U16 flat EPDM-HNBR suction cups

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

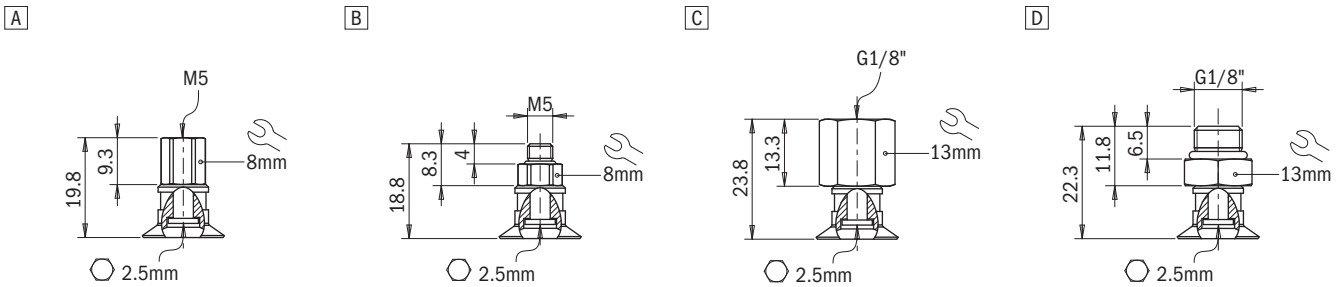
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
EPDM 50	3	8.5	11	3	8.5	11	0.5	8	1.5	0.6
HNBR 60	3	8.5	11	3	8.5	11	0.5	8	1.5	0.6

### Technical features

Material	Colour	Hardness	Temperature range
EPDM	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

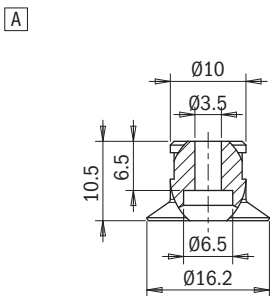
### Ordering information

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U16E.50.M5F.E8	VG.U16 suction cup, EPDM, 50 Shore, M5 female, 8 mm hex	2321472
B	VG.U16E.50.M5M.E8	VG.U16 suction cup, EPDM, 50 Shore, M5 male, 8 mm hex	2321474
C	VG.U16E.50.G18F.E13	VG.U16 suction cup, EPDM, 50 Shore, G1/8" female, 13 mm hex	2321475
D	VG.U16E.50.G18M.E13	VG.U16 suction cup, EPDM, 50 Shore, G1/8" male, 13 mm hex	2321476
A	VG.U16H.60.M5F.E8	VG.U16 suction cup, HNBR, 60 Shore, M5 female, 8 mm hex	2321477
B	VG.U16H.60.M5M.E8	VG.U16 suction cup, HNBR, 60 Shore, M5 male, 8 mm hex	2321479
C	VG.U16H.60.G18F.E13	VG.U16 suction cup, HNBR, 60 Shore, G1/8" female, 13 mm hex	2321480
D	VG.U16H.60.G18M.E13	VG.U16 suction cup, HNBR, 60 Shore, G1/8" male, 13 mm hex	2321481



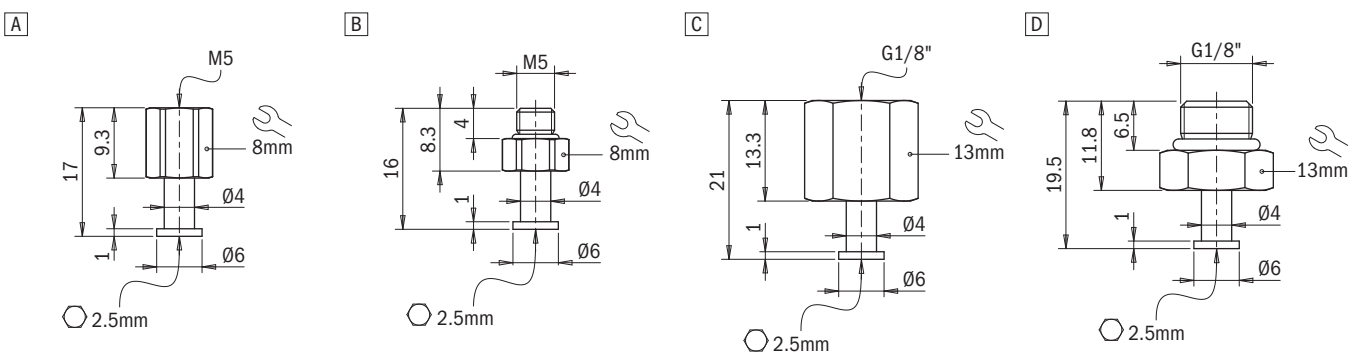
### Ordering information

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U16E.50	VG.U16 suction cup, EPDM, 50 Shore	2321473
A	VG.U16H.60	VG.U16 suction cup, HNBR, 60 Shore	2321478



### Ordering information

Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414

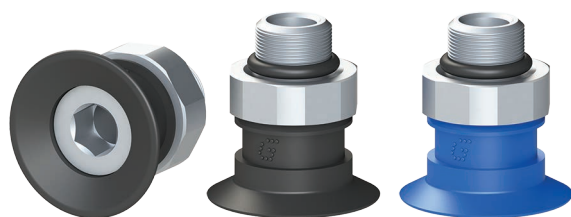




## VG.U22 flat EPDM-HNBR suction cups

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

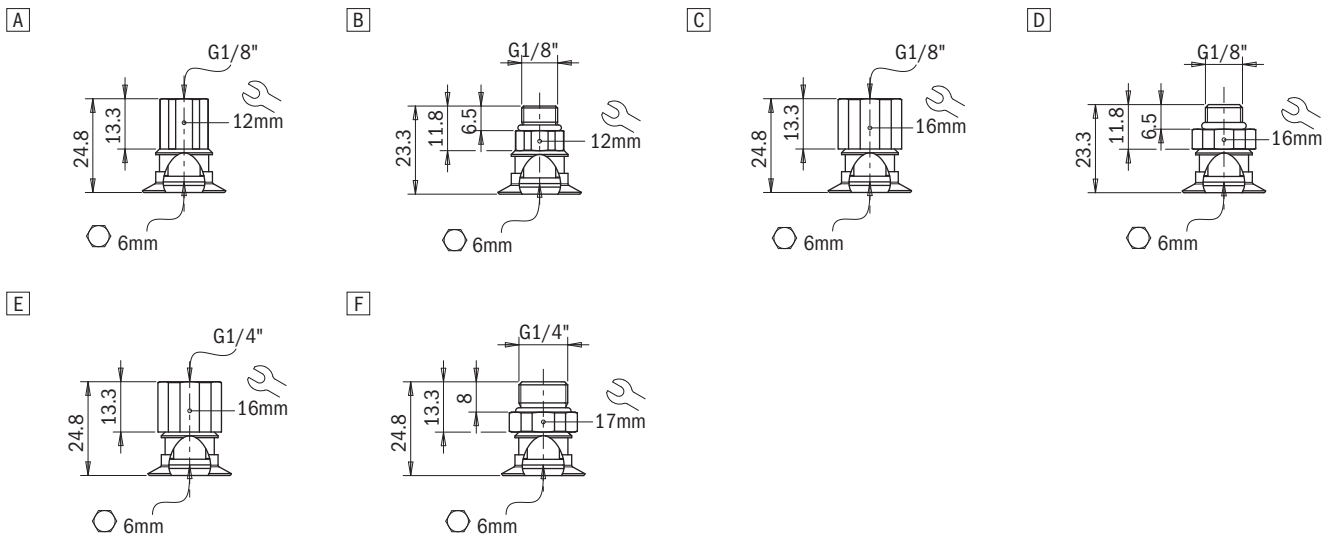
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
EPDM 50	5.6	14	20	6	14	20	1	13	2.5	1.1
HNBR 60	5.6	14	20	6	14	20	1	13	2.5	1.1

### Technical features

Material	Colour	Hardness	Temperature range
EPDM	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

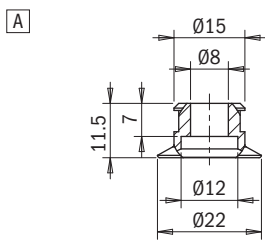
### Ordering information

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U22E.50.G18F.E12	VG.U22 suction cup, EPDM, 50 Shore, G1/8" female, 12 mm hex	2321482
B	VG.U22E.50.G18M.E12	VG.U22 suction cup, EPDM, 50 Shore, G1/8" male, 12 mm hex	2321484
C	VG.U22E.50.G18F.E16	VG.U22 suction cup, EPDM, 50 Shore, G1/8" female, 16 mm hex	2321485
D	VG.U22E.50.G18M.E16	VG.U22 suction cup, EPDM, 50 Shore, G1/8" male, 16 mm hex	2321486
E	VG.U22E.50.G14F.E16	VG.U22 suction cup, EPDM, 50 Shore, G1/4" female, 16 mm hex	2321487
F	VG.U22E.50.G14M.E17	VG.U22 suction cup, EPDM, 50 Shore, G1/4" male, 17 mm hex	2321488
A	VG.U22H.60.G18F.E12	VG.U22 suction cup, HNBR, 60 Shore, G1/8" female, 12 mm hex	2321489
B	VG.U22H.60.G18M.E12	VG.U22 suction cup, HNBR, 60 Shore, G1/8" male, 12 mm hex	2321491
C	VG.U22H.60.G18F.E16	VG.U22 suction cup, HNBR, 60 Shore, G1/8" female, 16 mm hex	2321492
D	VG.U22H.60.G18M.E16	VG.U22 suction cup, HNBR, 60 Shore, G1/8" male, 16 mm hex	2321493
E	VG.U22H.60.G14F.E16	VG.U22 suction cup, HNBR, 60 Shore, G1/4" female, 16 mm hex	2321494
F	VG.U22H.60.G14M.E17	VG.U22 suction cup, HNBR, 60 Shore, G1/4" male, 17 mm hex	2321495



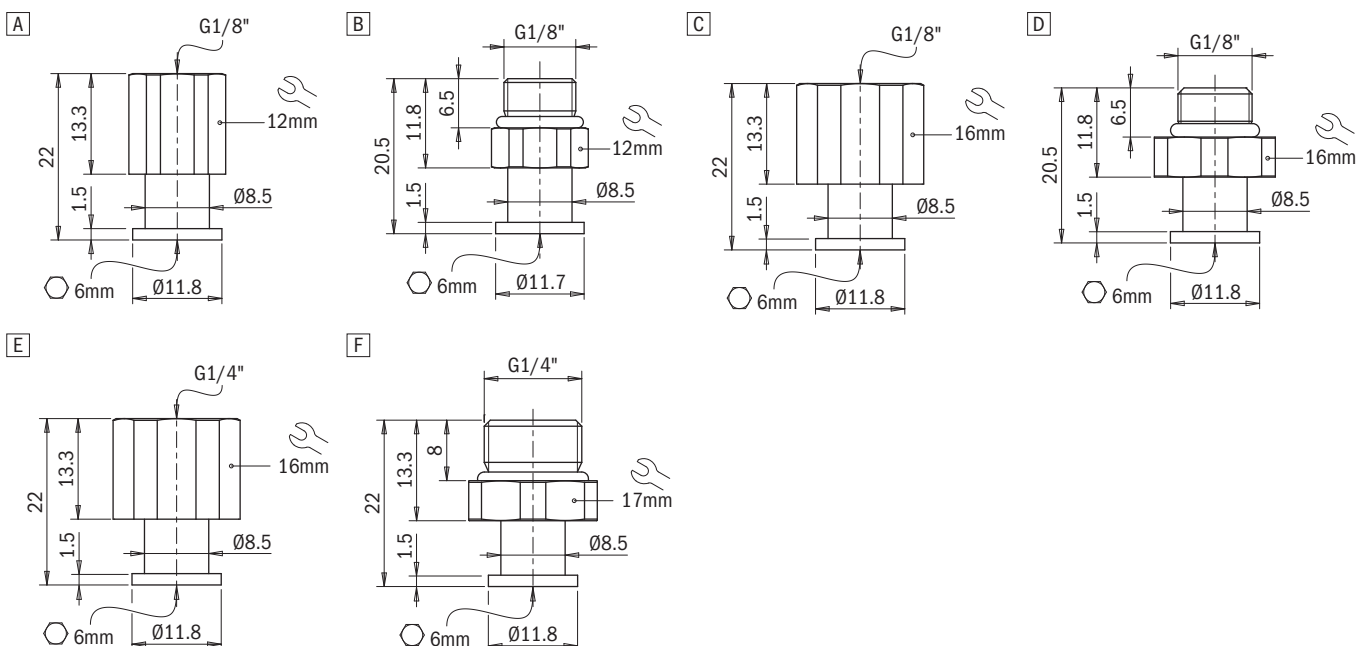
**Ordering information**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U22E.50	VG.U22 suction cup, EPDM, 50 Shore	2321483
A	VG.U22H.60	VG.U22 suction cup, HNBR, 60 Shore	2321490



**Ordering information**

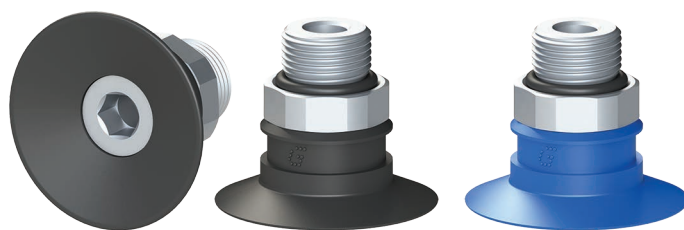
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



## VG.U33 flat EPDM-HNBR suction cups

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

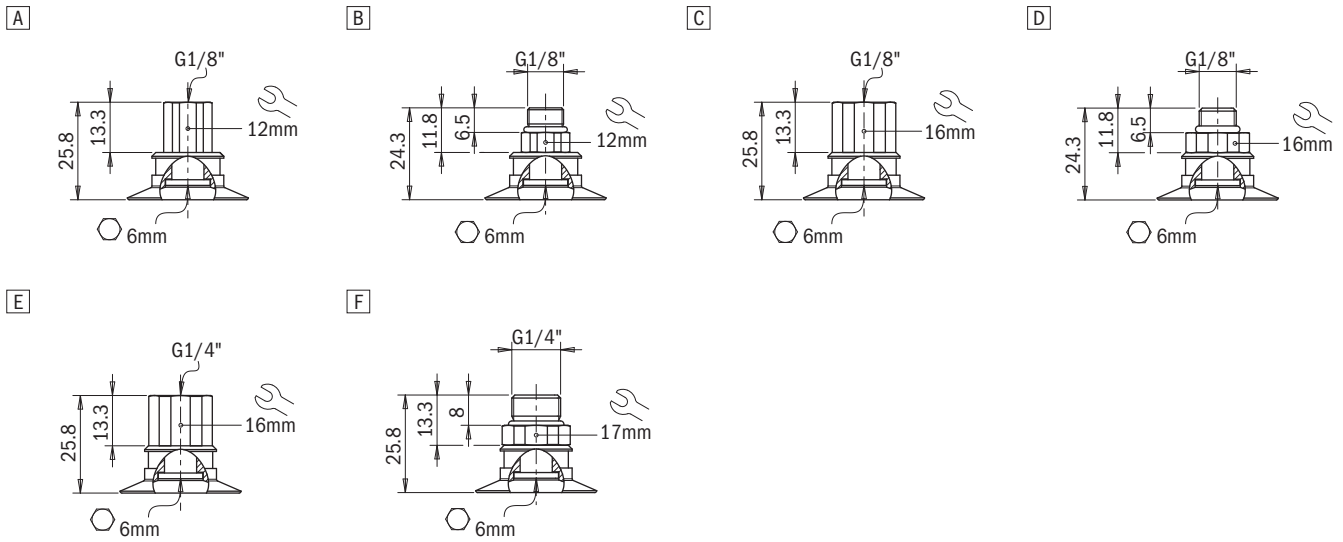
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
EPDM 50	11	29	38	8.5	15	12.5	2	20	3.5	2.4
HNBR 60	11	29	38	8.5	15	12.5	2	20	3.5	2.4

### Technical features

Material	Colour	Hardness	Temperature range
EPDM	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

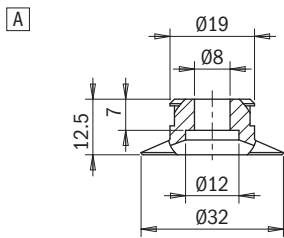
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U33E.50.G18F.E12	VG.U33 suction cup, EPDM, 50 Shore, G1/8" female, 12 mm hex	2321496
B	VG.U33E.50.G18M.E12	VG.U33 suction cup, EPDM, 50 Shore, G1/8" male, 12 mm hex	2321498
C	VG.U33E.50.G18F.E16	VG.U33 suction cup, EPDM, 50 Shore, G1/8" female, 16 mm hex	2321499
D	VG.U33E.50.G18M.E16	VG.U33 suction cup, EPDM, 50 Shore, G1/8" male, 16 mm hex	2321500
E	VG.U33E.50.G14F.E16	VG.U33 suction cup, EPDM, 50 Shore, G1/4" female, 16 mm hex	2321501
F	VG.U33E.50.G14M.E17	VG.U33 suction cup, EPDM, 50 Shore, G1/4" male, 17 mm hex	2321502
A	VG.U33H.60.G18F.E12	VG.U33 suction cup, HNBR, 60 Shore, G1/8" female, 12 mm hex	2321503
B	VG.U33H.60.G18M.E12	VG.U33 suction cup, HNBR, 60 Shore, G1/8" male, 12 mm hex	2321505
C	VG.U33H.60.G18F.E16	VG.U33 suction cup, HNBR, 60 Shore, G1/8" female, 16 mm hex	2321506
D	VG.U33H.60.G18M.E16	VG.U33 suction cup, HNBR, 60 Shore, G1/8" male, 16 mm hex	2321507
E	VG.U33H.60.G14F.E16	VG.U33 suction cup, HNBR, 60 Shore, G1/4" female, 16 mm hex	2321508
F	VG.U33H.60.G14M.E17	VG.U33 suction cup, HNBR, 60 Shore, G1/4" male, 17 mm hex	2321509



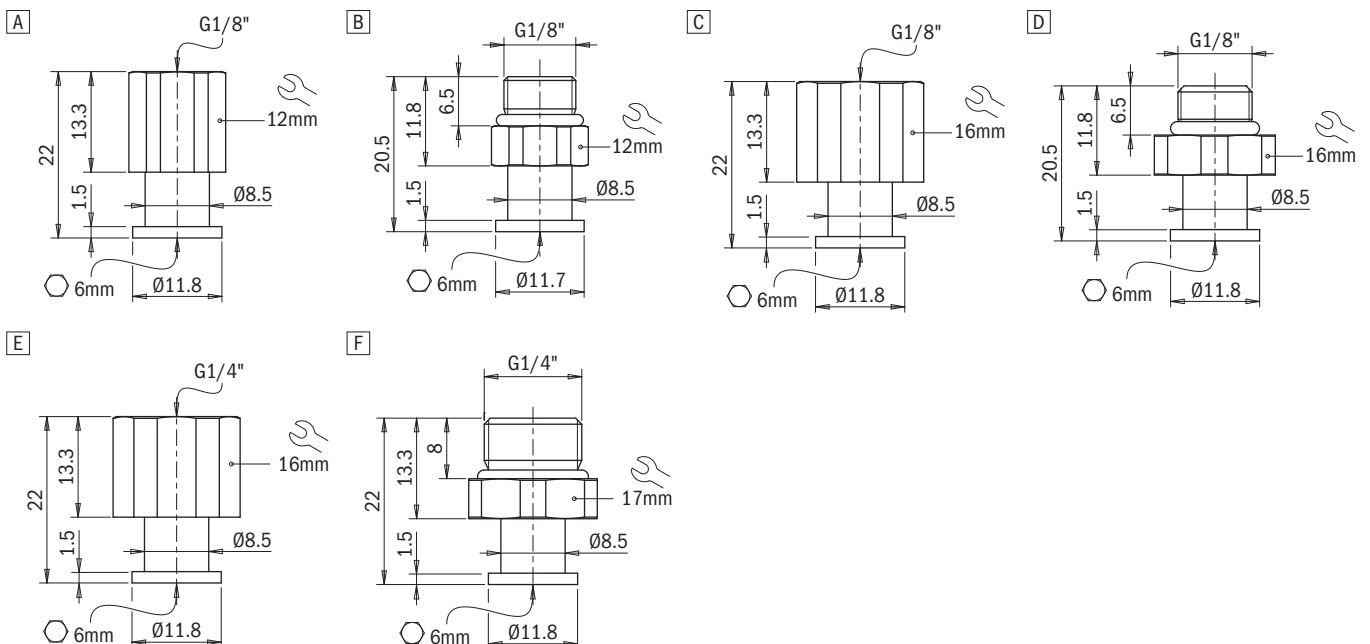
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U33E.50	VG.U33 suction cup, EPDM, 50 Shore	2321497
A	VG.U33H.60	VG.U33 suction cup, HNBR, 60 Shore	2321504



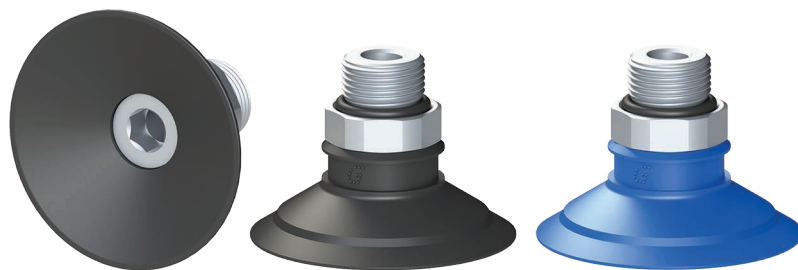
### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432

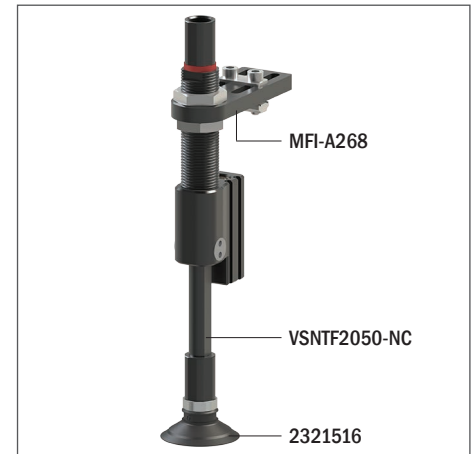


## VG.U42 flat EPDM-HNBR suction cups

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds



Application example



### Technical data

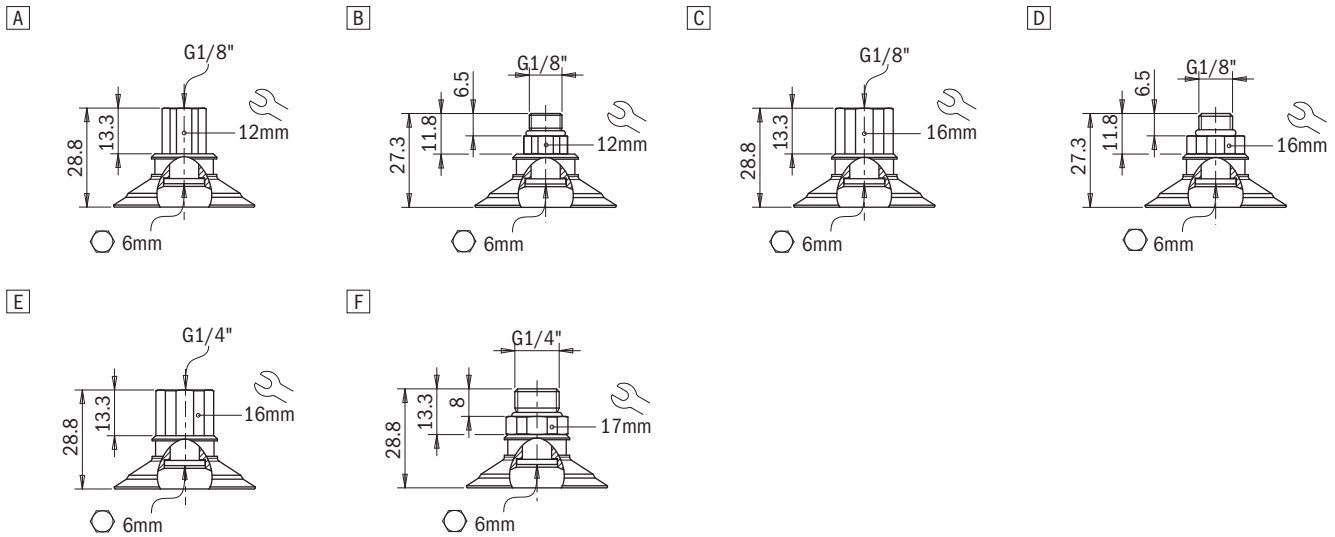
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
EPDM 50	21	48.5	58	14	28	36	5.5	30	4.5	4.4
HNBR 60	21	48.5	58	14	28	36	5.5	30	4.5	4.4

### Technical features

Material	Colour	Hardness	Temperature range
EPDM	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

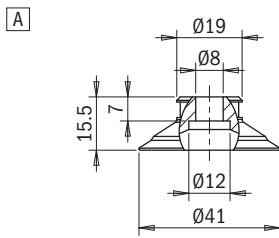
### Ordering information

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U42E.50.G18F.E12	VG.U42 suction cup, EPDM, 50 Shore, G1/8" female, 12 mm hex	2321510
B	VG.U42E.50.G18M.E12	VG.U42 suction cup, EPDM, 50 Shore, G1/8" male, 12 mm hex	2321512
C	VG.U42E.50.G18F.E16	VG.U42 suction cup, EPDM, 50 Shore, G1/8" female, 16 mm hex	2321513
D	VG.U42E.50.G18M.E16	VG.U42 suction cup, EPDM, 50 Shore, G1/8" male, 16 mm hex	2321514
E	VG.U42E.50.G14F.E16	VG.U42 suction cup, EPDM, 50 Shore, G1/4" female, 16 mm hex	2321515
F	VG.U42E.50.G14M.E17	VG.U42 suction cup, EPDM, 50 Shore, G1/4" male, 17 mm hex	2321516
A	VG.U42H.60.G18F.E12	VG.U42 suction cup, HNBR, 60 Shore, G1/8" female, 12 mm hex	2321517
B	VG.U42H.60.G18M.E12	VG.U42 suction cup, HNBR, 60 Shore, G1/8" male, 12 mm hex	2321519
C	VG.U42H.60.G18F.E16	VG.U42 suction cup, HNBR, 60 Shore, G1/8" female, 16 mm hex	2321520
D	VG.U42H.60.G18M.E16	VG.U42 suction cup, HNBR, 60 Shore, G1/8" male, 16 mm hex	2321521
E	VG.U42H.60.G14F.E16	VG.U42 suction cup, HNBR, 60 Shore, G1/4" female, 16 mm hex	2321522
F	VG.U42H.60.G14M.E17	VG.U42 suction cup, HNBR, 60 Shore, G1/4" male, 17 mm hex	2321523



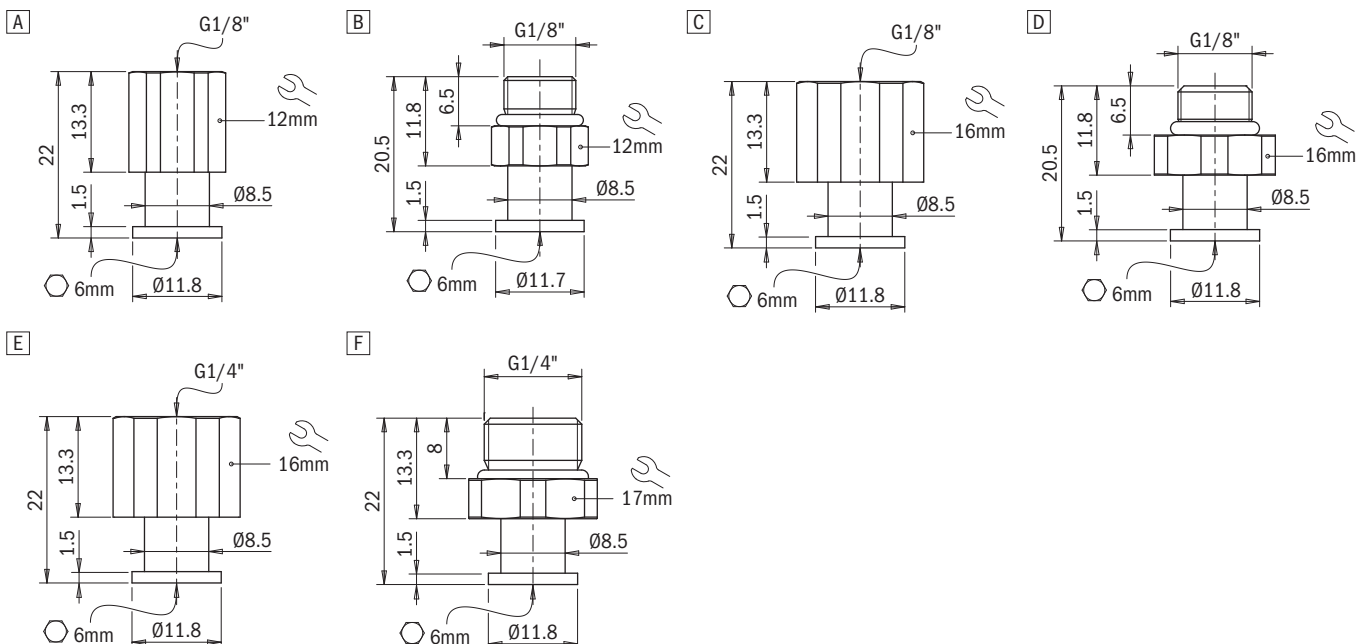
### Ordering information

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U42E.50	VG.U42 suction cup, EPDM, 50 Shore	2321511
A	VG.U42H.60	VG.U42 suction cup, HNBR, 60 Shore	2321518



### Ordering information

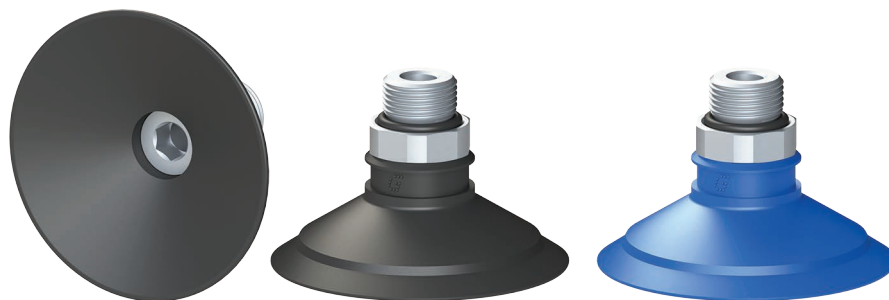
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



## VG.U53 flat EPDM-HNBR suction cups

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

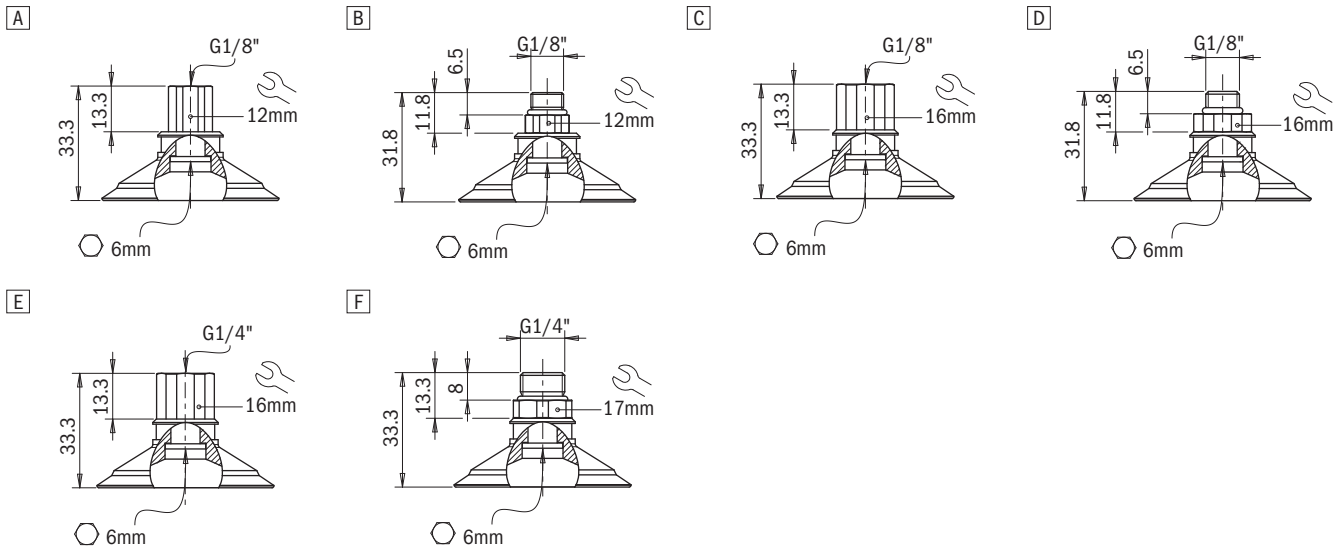
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
EPDM 50	37	75	96	20	35	46	12	35	6	7.9
HNBR 60	37	75	96	20	35	46	12	35	6	7.9

### Technical features

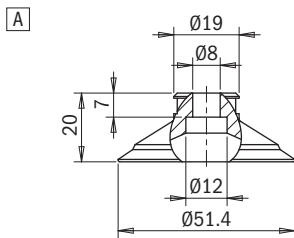
Material	Colour	Hardness	Temperature range
EPDM	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

### Ordering information

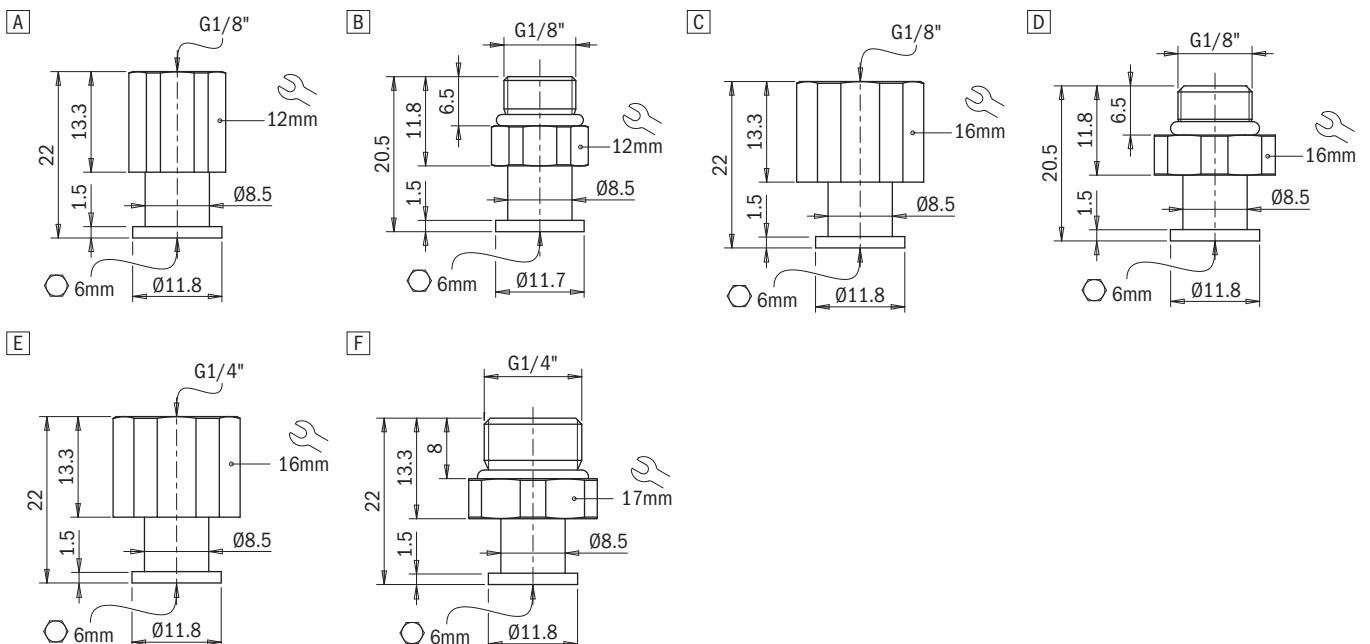
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U53E.50.G18F.E12	VG.U53 suction cup, EPDM, 50 Shore, G1/8" female, 12 mm hex	2321524
B	VG.U53E.50.G18M.E12	VG.U53 suction cup, EPDM, 50 Shore, G1/8" male, 12 mm hex	2321526
C	VG.U53E.50.G18F.E16	VG.U53 suction cup, EPDM, 50 Shore, G1/8" female, 16 mm hex	2321527
D	VG.U53E.50.G18M.E16	VG.U53 suction cup, EPDM, 50 Shore, G1/8" male, 16 mm hex	2321528
E	VG.U53E.50.G14F.E16	VG.U53 suction cup, EPDM, 50 Shore, G1/4" female, 16 mm hex	2321529
F	VG.U53E.50.G14M.E17	VG.U53 suction cup, EPDM, 50 Shore, G1/4" male, 17 mm hex	2321530
A	VG.U53H.60.G18F.E12	VG.U53 suction cup, HNBR, 60 Shore, G1/8" female, 12 mm hex	2321531
B	VG.U53H.60.G18M.E12	VG.U53 suction cup, HNBR, 60 Shore, G1/8" male, 12 mm hex	2321533
C	VG.U53H.60.G18F.E16	VG.U53 suction cup, HNBR, 60 Shore, G1/8" female, 16 mm hex	2321534
D	VG.U53H.60.G18M.E16	VG.U53 suction cup, HNBR, 60 Shore, G1/8" male, 16 mm hex	2321535
E	VG.U53H.60.G14F.E16	VG.U53 suction cup, HNBR, 60 Shore, G1/4" female, 16 mm hex	2321536
F	VG.U53H.60.G14M.E17	VG.U53 suction cup, HNBR, 60 Shore, G1/4" male, 17 mm hex	2321537


**Ordering information**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U53E.50	VG.U53 suction cup, EPDM, 50 Shore	2321525
A	VG.U53H.60	VG.U53 suction cup, HNBR, 60 Shore	2321532


**Ordering information**

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432

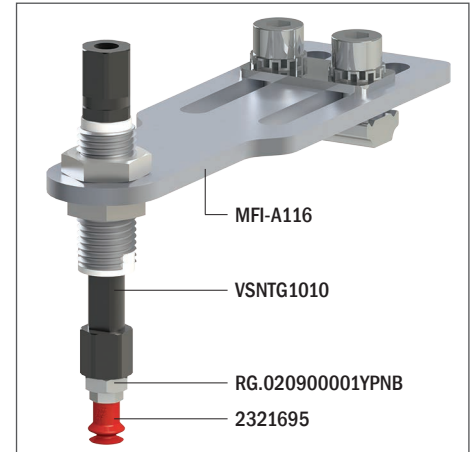




## VG.B6S bellows suction cups in silicone

- Silicone compound
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height

Application example



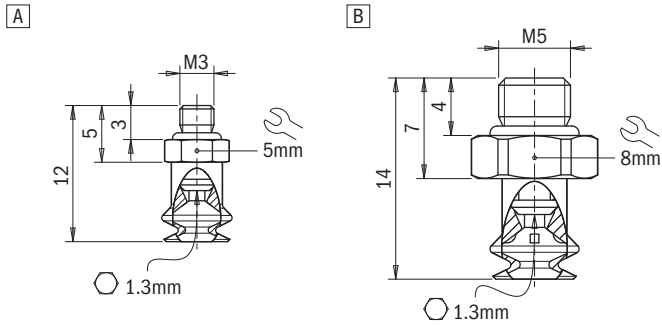
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	0.25	0.78	1.1	–	–	–	0.05	1.5	1.5	0.1

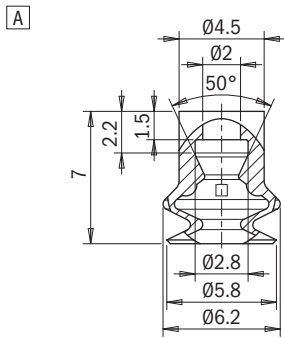
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, SIL	Red	50 Shore	-70 ÷ +200 °C

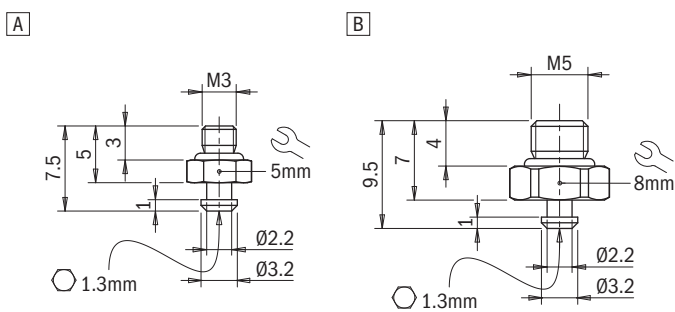
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B6S.50.M3M.E5	VG.B6 suction cup, silicone, 50 Shore, M3 Male, 5 mm hex	2321695
B	VG.B6S.50.M5M.E8	VG.B6 suction cup, silicone, 50 Shore, M5 Male, 8 mm hex	2321095



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B6S.50	VG.B6 suction cup, silicone, 50 Shore	2321696



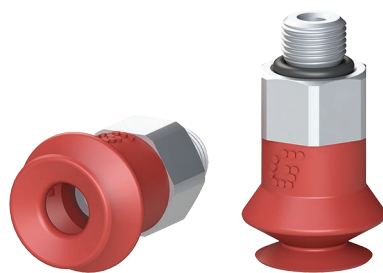
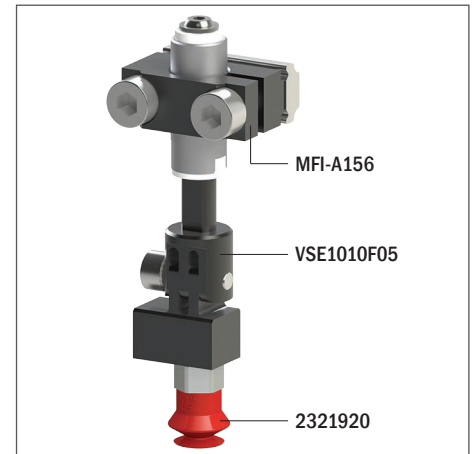
Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M3M.E5	M3 male fitting, hex, 5 mm	2321402
B	FT.M5M.E8.06	M5 male fitting, hex, 8 mm	2321005



## VG.B9S bellows suction cups in silicone

- Silicone compound
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height

Application example



### Technical data

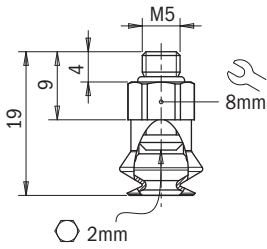
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	0.82	1.5	2.3	–	–	–	0.15	1.9	3.5	0.3

### Technical features

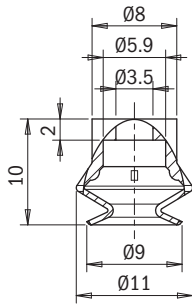
Material	Colour	Hardness	Temperature range
Silicone, SIL	Red	50 Shore	-70 ÷ +200 °C

**Identification codes**

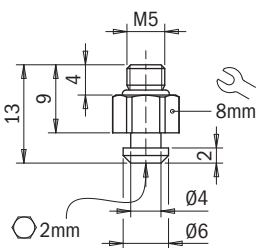
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B9S.50.M5M.E8	VG.B9 suction cup, silicone, 50 Shore, M5 male, 8 mm hex	2321920

**A**

**Identification codes**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B9S.50	VG.B9 suction cup, silicone, 50 Shore	2321921

**A**

**Identification codes**

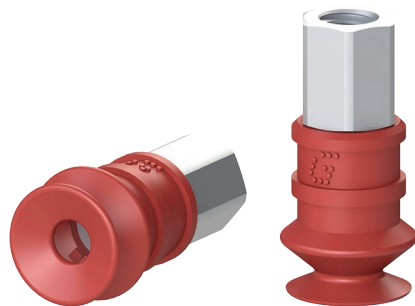
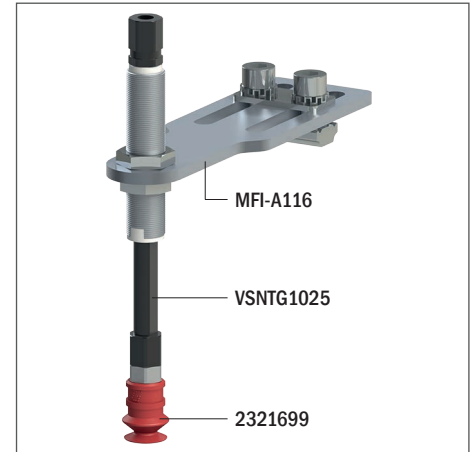
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5M.E8.05	M5 male fitting, 8 mm hex	2321405

**A**


## VG.B11S bellows suction cups in silicone

- Silicone compound
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height

Application example



### Technical data

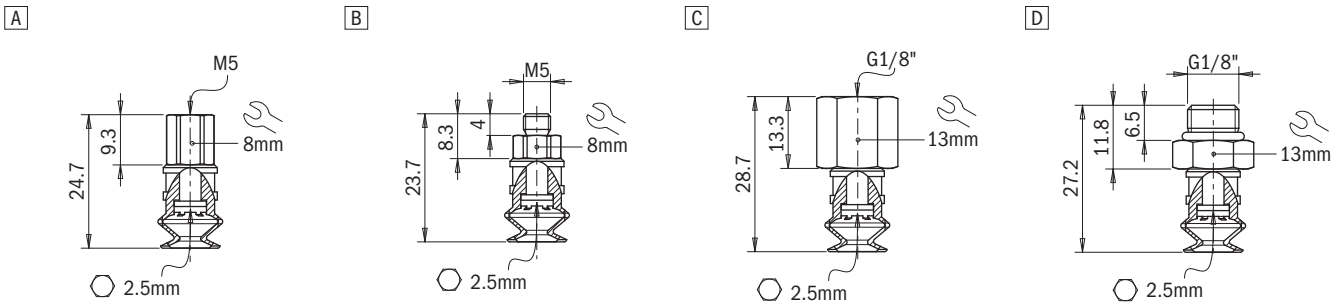
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	1.3	3.4	4.6	1.7	2.42	2.81	0.48	4	4.5	0.7

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, SIL	Red	50 Shore	-70 ÷ +200 °C

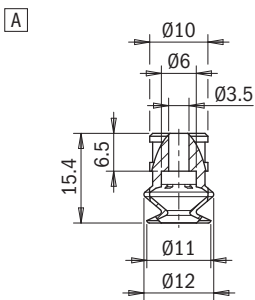
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B11S.50.M5F.E8	VG.B11 suction cup, silicone, 50 Shore, M5 female, 8 mm hex	2321697
B	VG.B11S.50.M5M.E8	VG.B11 suction cup, silicone, 50 Shore, M5 male, 8 mm hex	2321699
C	VG.B11S.50.G18F.E13	VG.B11 suction cup, silicone, 50 Shore, G1/8" female, 13 mm hex	2321700
D	VG.B11S.50.G18M.E13	VG.B11 suction cup, silicone, 50 Shore, G1/8" male, 13 mm hex	2321701



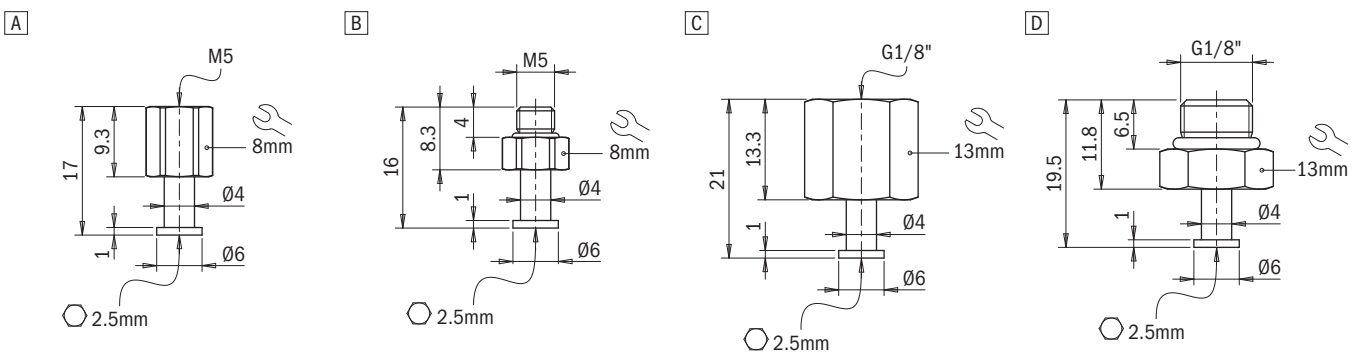
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B11S.50	VG.B11 suction cup, silicone, 50 Shore	2321698



### Identification codes

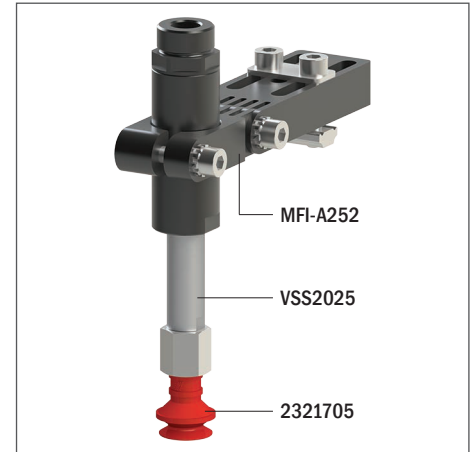
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414



## VG.B16S bellows suction cups in silicone

- Silicone compound
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height

Application example

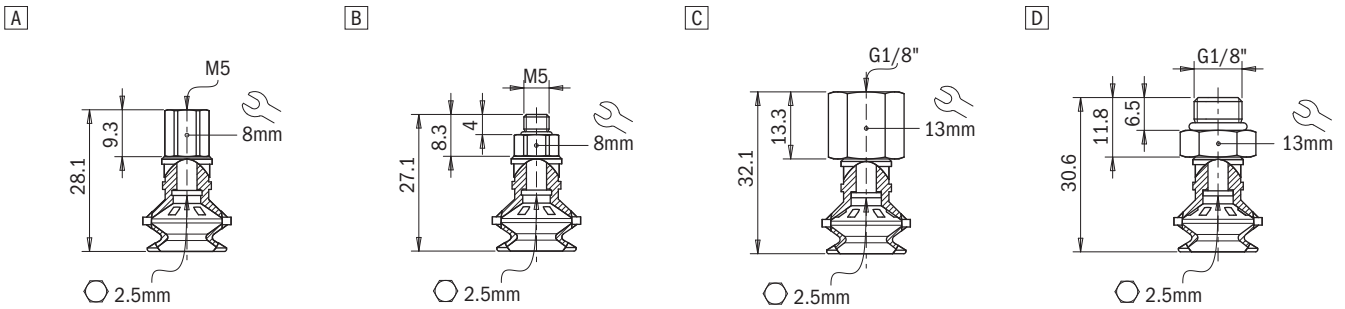


Technical data										
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	3	5.8	8.5	1.71	3.1	3.9	1.1	5	6.5	2.1

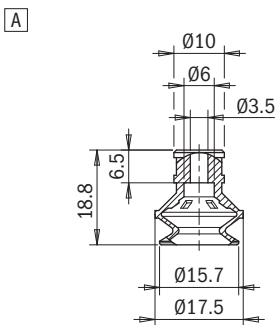
Technical features			
Material	Colour	Hardness	Temperature range
Silicone, SIL	Red	50 Shore	-70 ÷ +200 °C

**Identification codes**

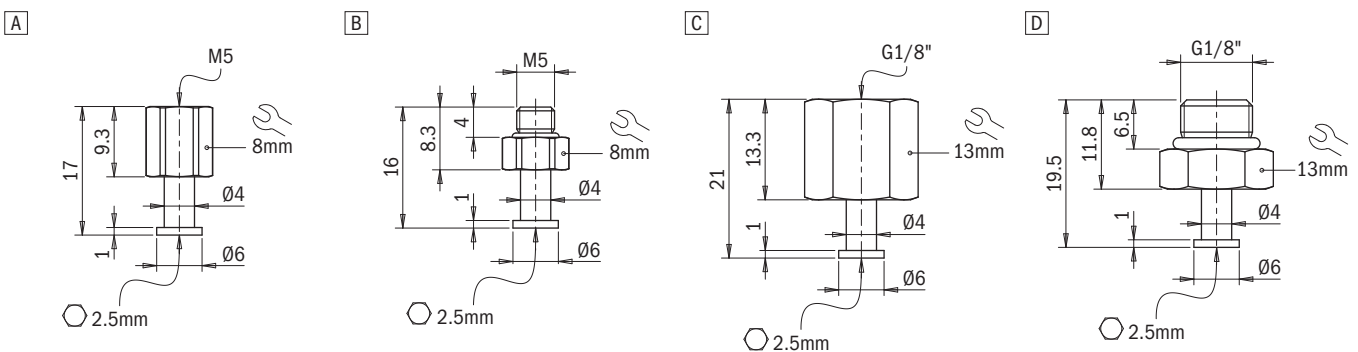
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B16S.50.M5F.E8	VG.B16 suction cup, silicone, 50 Shore, M5 female, 8 mm hex	2321702
B	VG.B16S.50.M5M.E8	VG.B16 suction cup, silicone, 50 Shore, M5 male, 8 mm hex	2321704
C	VG.B16S.50.G18F.E13	VG.B16 suction cup, silicone, 50 Shore, G1/8" female, 13 mm hex	2321705
D	VG.B16S.50.G18M.E13	VG.B16 suction cup, silicone, 50 Shore, G1/8" male, 13 mm hex	2321706


**Identification codes**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B16S.50	VG.B16 suction cup, silicone, 50 Shore	2321703


**Identification codes**

Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414

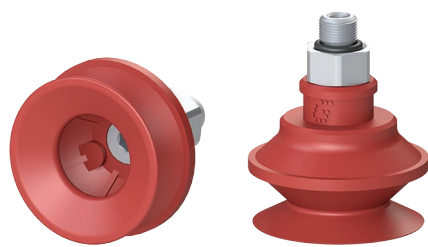
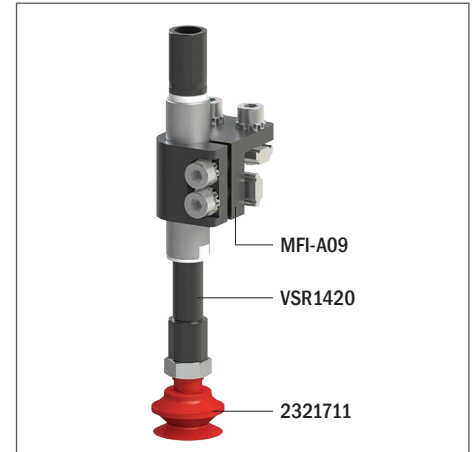




## VG.B22S bellows suction cups in silicone

- Silicone compound
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height

Application example



### Technical data

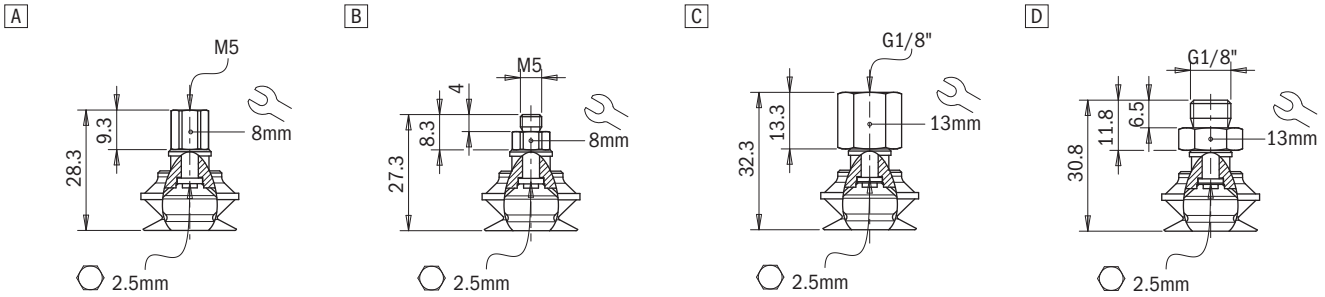
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	5.5	13	14	2.92	5.5	8.3	2.7	10	10	1.8

### Technical features

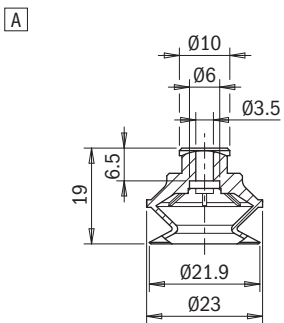
Material	Colour	Hardness	Temperature range
Silicone, SIL	Red	50 Shore	-70 ÷ +200 °C

**Identification codes**

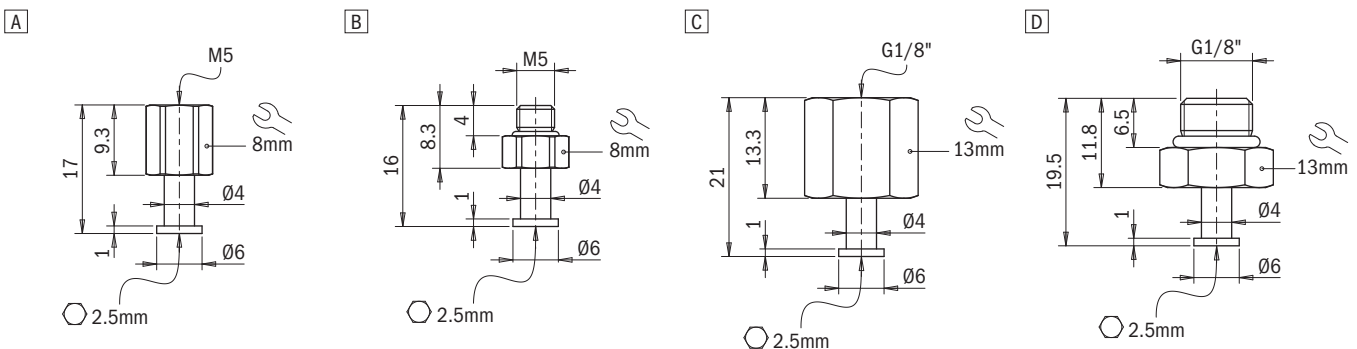
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B22S.50.M5F.E8	VG.B22 suction cup, silicone, 50 Shore, M5 female, 8 mm hex	2321707
B	VG.B22S.50.M5M.E8	VG.B22 suction cup, silicone, 50 Shore, M5 male, 8 mm hex	2321709
C	VG.B22S.50.G18F.E13	VG.B22 suction cup, silicone, 50 Shore, G1/8" female, 13 mm hex	2321710
D	VG.B22S.50.G18M.E13	VG.B22 suction cup, silicone, 50 Shore, G1/8" male, 13 mm hex	2321711


**Identification codes**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B22S.50	VG.B22 suction cup, silicone, 50 Shore	2321708


**Identification codes**

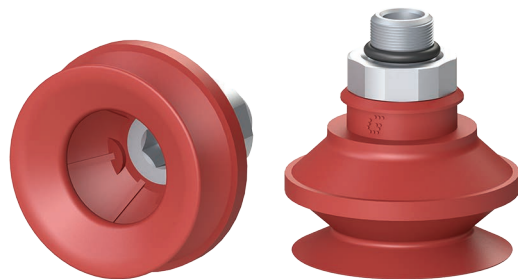
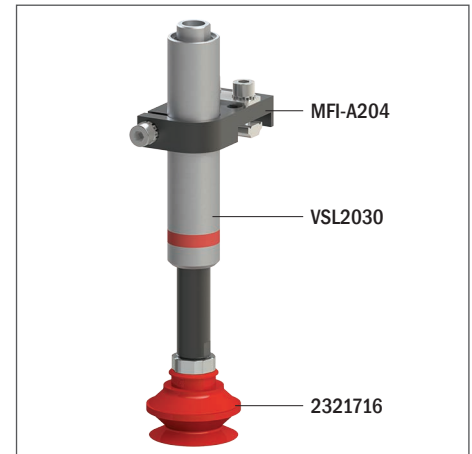
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414



## VG.B33S bellows suction cups in silicone

- Silicone compound
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height

Application example



### Technical data

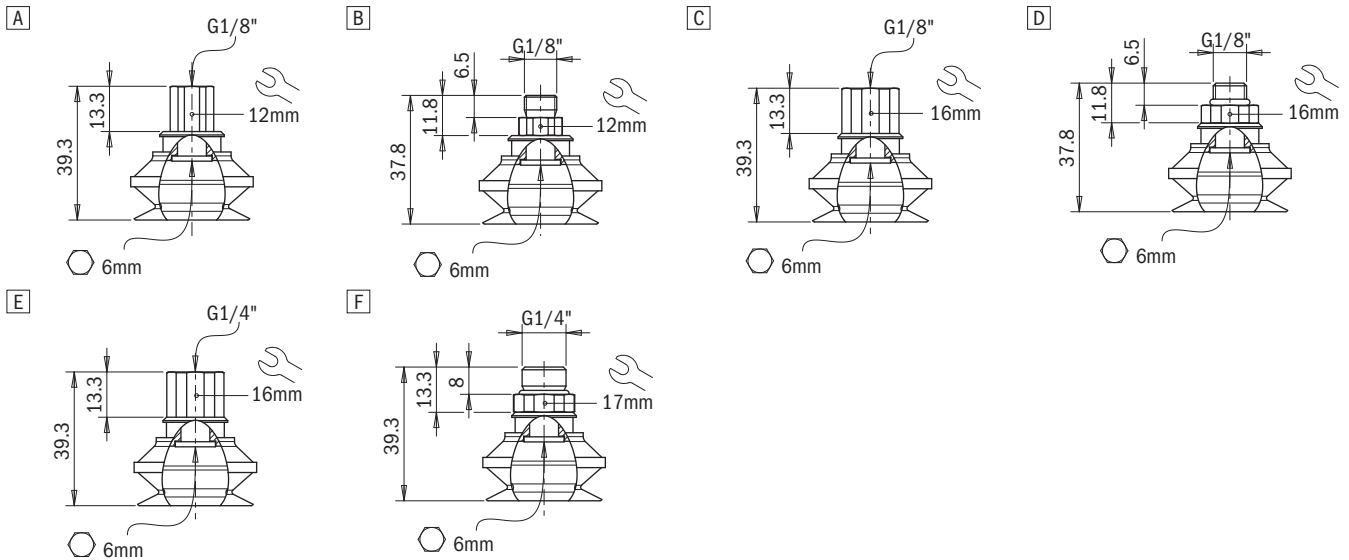
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	12	23	26	9.5	16.6	22.5	10	15	15	5.8

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, SIL	Red	50 Shore	-70 ÷ +200 °C

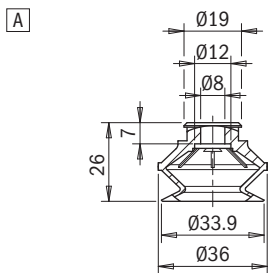
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B33S.50.G18F.E12	VG.B33 suction cup, silicone, 50 Shore, G1/8" female, 12 mm hex	2321712
B	VG.B33S.50.G18M.E12	VG.B33 suction cup, silicone, 50 Shore, G1/8" male, 12 mm hex	2321714
C	VG.B33S.50.G18F.E16	VG.B33 suction cup, silicone, 50 Shore, G1/8" female, 16 mm hex	2321715
D	VG.B33S.50.G18M.E16	VG.B33 suction cup, silicone, 50 Shore, G1/8" male, 16 mm hex	2321716
E	VG.B33S.50.G14F.E16	VG.B33 suction cup, silicone, 50 Shore, G1/4" female, 16 mm hex	2321717
F	VG.B33S.50.G14M.E17	VG.B33 suction cup, silicone, 50 Shore, G1/4" male, 17 mm hex	2321718



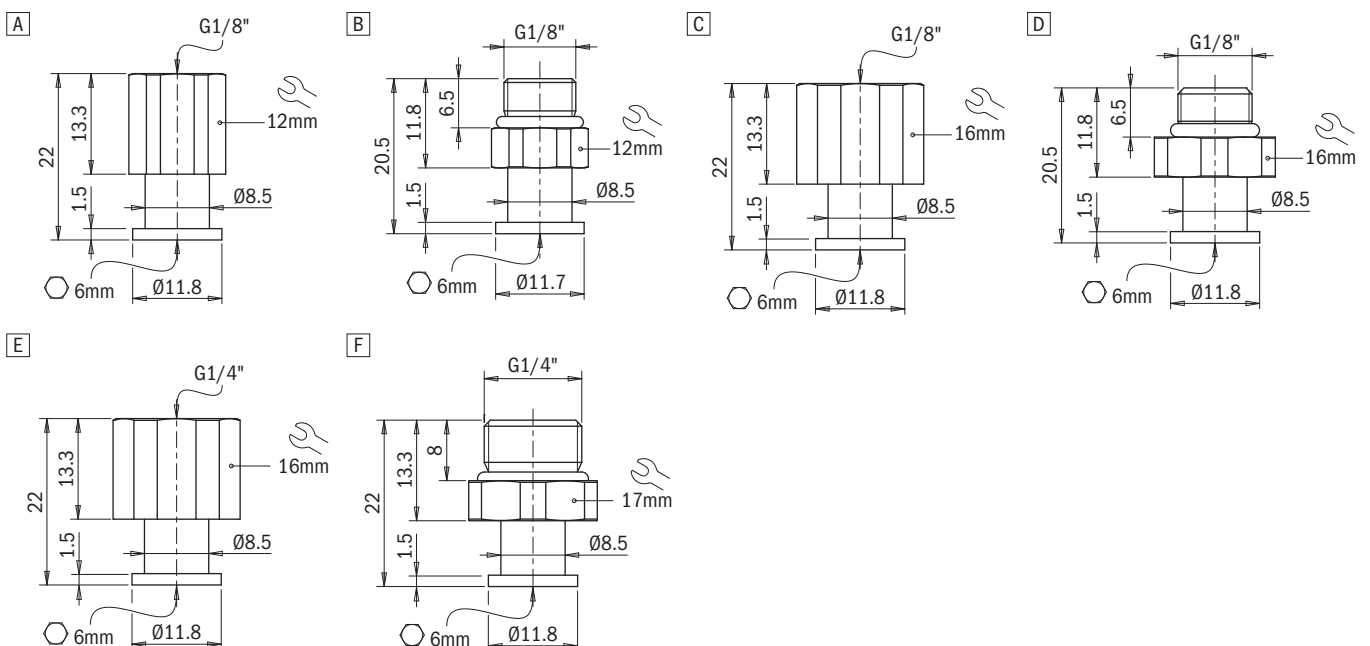
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B33S.50	VG.B33 suction cup, silicone, 50 Shore	2321713



### Identification codes

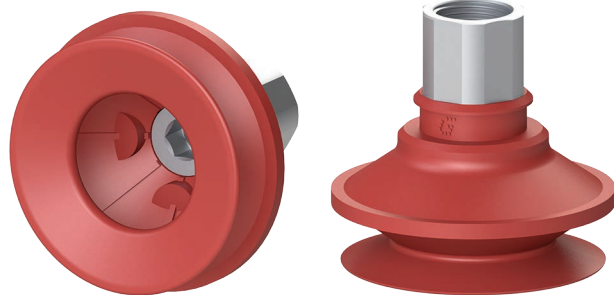
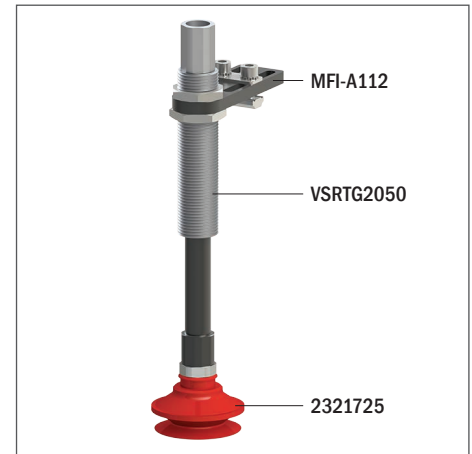
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



## VG.B42S bellows suction cups in silicone

- Silicone compound
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height

Application example



### Technical data

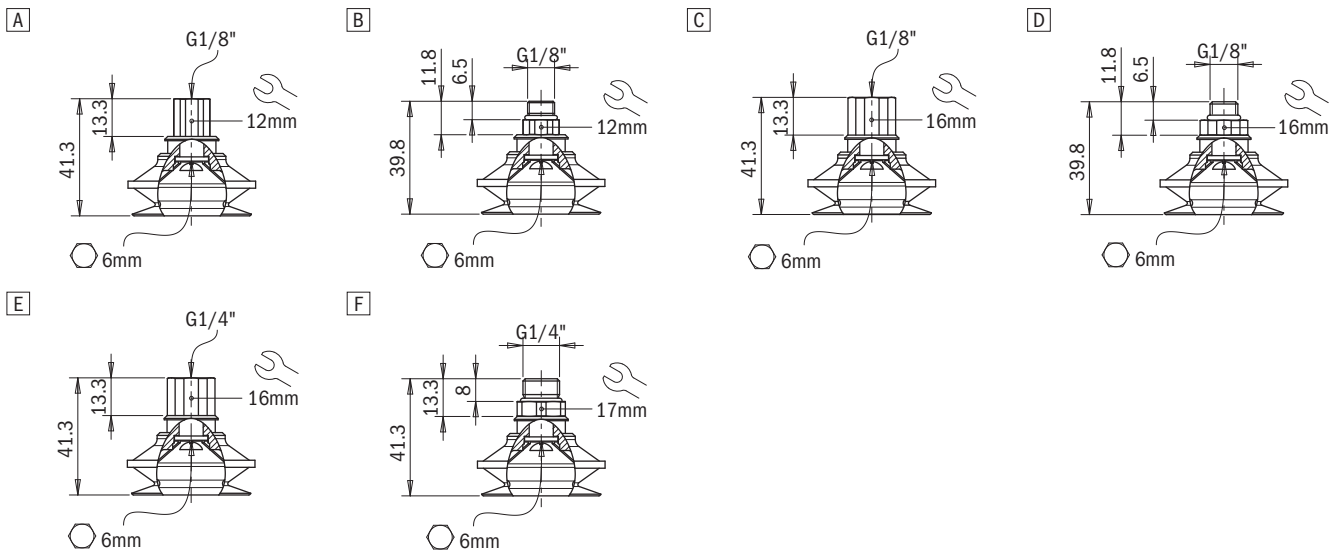
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	20	46	53	17.2	26.3	30.7	15	20	12	8.6

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, SIL	Red	50 Shore	-70 ÷ +200 °C

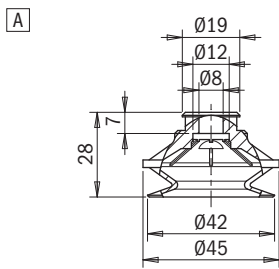
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B42S.50.G18F.E12	VG.B42 suction cup, silicone, 50 Shore, G1/8" female, 12 mm hex	2321719
B	VG.B42S.50.G18M.E12	VG.B42 suction cup, silicone, 50 Shore, G1/8" male, 12 mm hex	2321721
C	VG.B42S.50.G18F.E16	VG.B42 suction cup, silicone, 50 Shore, G1/8" female, 16 mm hex	2321722
D	VG.B42S.50.G18M.E16	VG.B42 suction cup, silicone, 50 Shore, G1/8" male, 16 mm hex	2321723
E	VG.B42S.50.G14F.E16	VG.B42 suction cup, silicone, 50 Shore, G1/4" female, 16 mm hex	2321724
F	VG.B42S.50.G14M.E17	VG.B42 suction cup, silicone, 50 Shore, G1/4" male, 17 mm hex	2321725



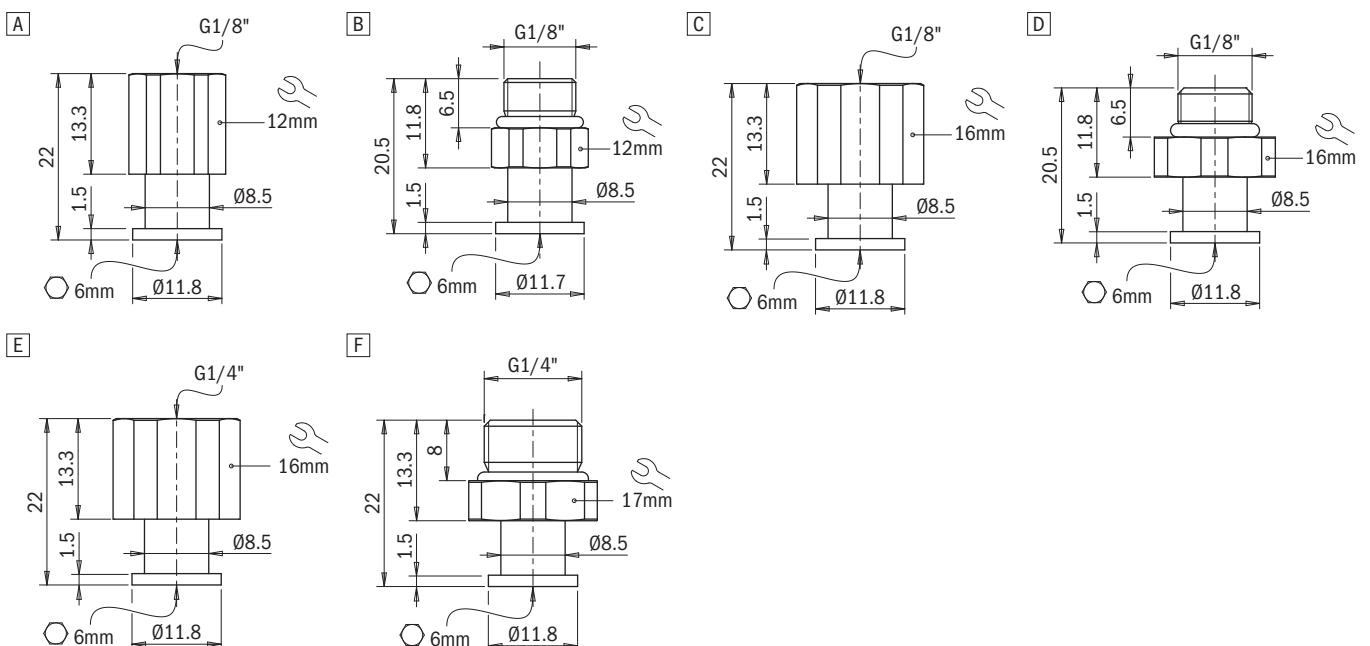
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B42S.50	VG.B42 suction cup, silicone, 50 Shore	2321720



### Identification codes

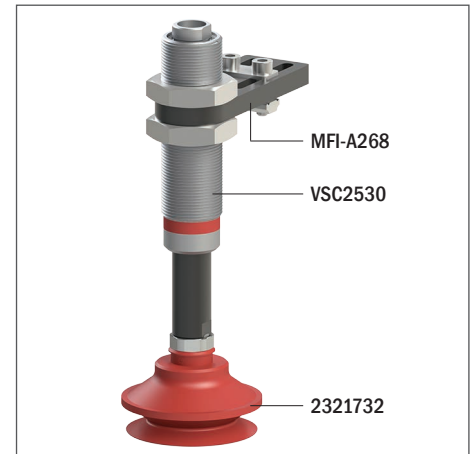
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



## VG.B53S bellows suction cups in silicone

- Silicone compound
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height

Application example



### Technical data

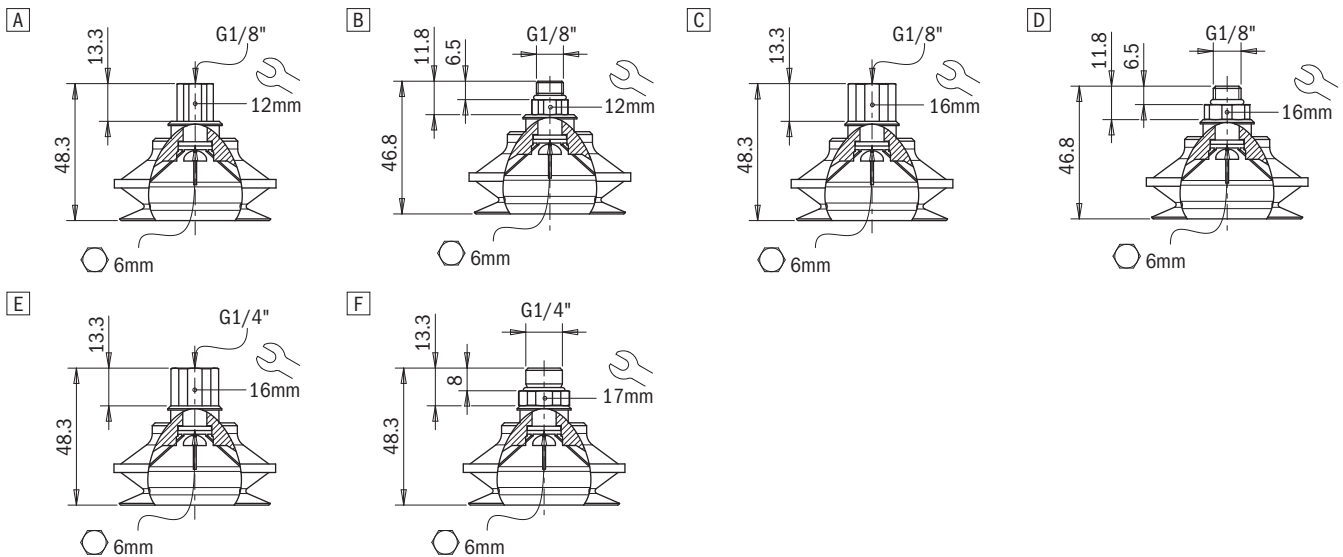
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	32	64.5	90	24.5	51.3	60.5	32	30	19	15.4

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, SIL	Red	50 Shore	-70 ÷ +200 °C

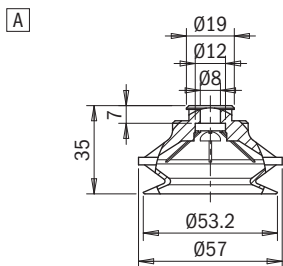
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B53S.50.G18F.E12	VG.B53 suction cup, silicone, 50 Shore, G1/8" female, 12 mm hex	2321726
B	VG.B53S.50.G18M.E12	VG.B53 suction cup, silicone, 50 Shore, G1/8" male, 12 mm hex	2321728
C	VG.B53S.50.G18F.E16	VG.B53 suction cup, silicone, 50 Shore, G1/8" female, 16 mm hex	2321729
D	VG.B53S.50.G18M.E16	VG.B53 suction cup, silicone, 50 Shore, G1/8" male, 16 mm hex	2321730
E	VG.B53S.50.G14F.E16	VG.B53 suction cup, silicone, 50 Shore, G1/4" female, 16 mm hex	2321731
F	VG.B53S.50.G14M.E17	VG.B53 suction cup, silicone, 50 Shore, G1/4" male, 17 mm hex	2321732



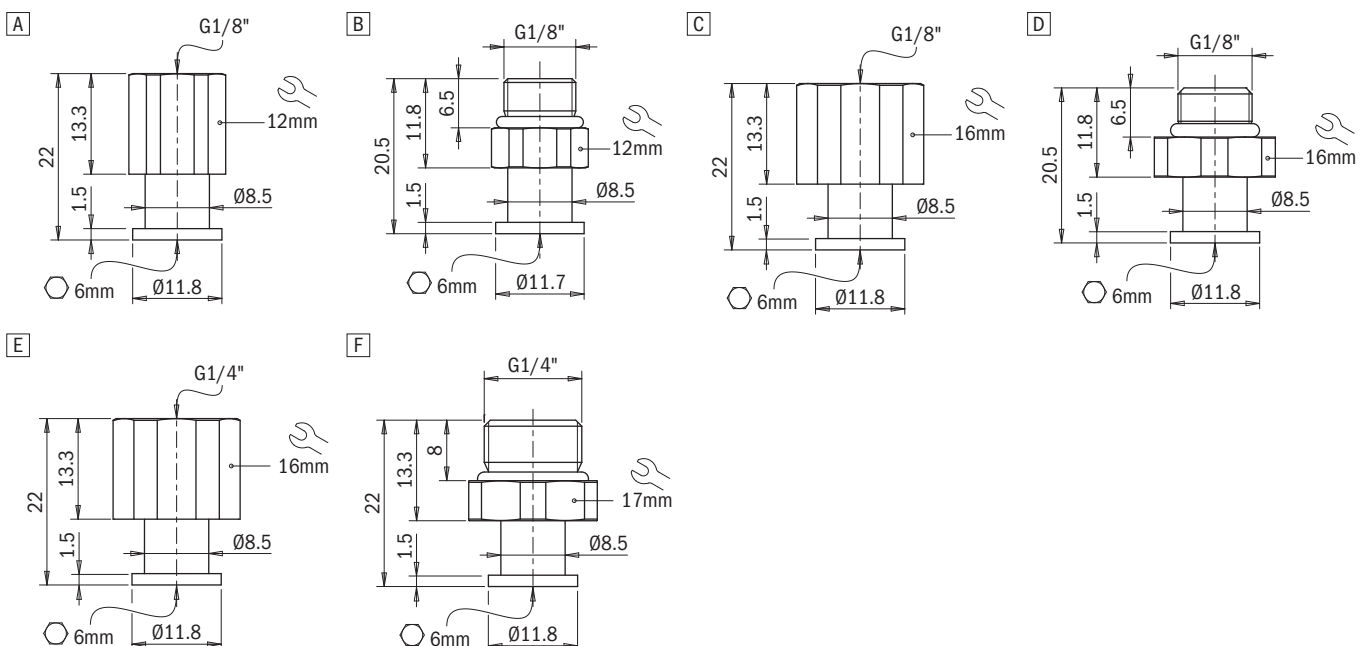
#### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B53S.50	VG.B53 suction cup, silicone, 50 Shore	2321727



#### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432

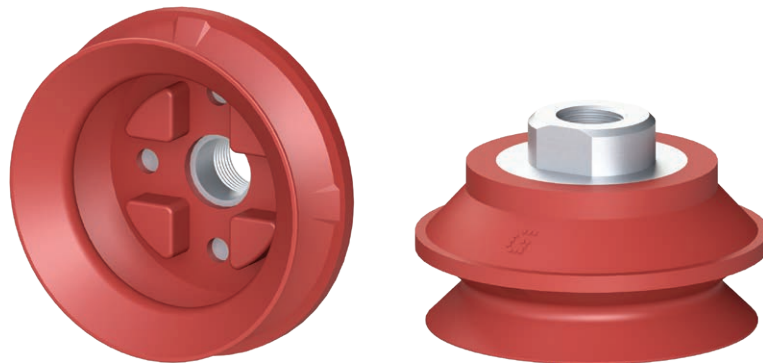




## VG.B77S bellows suction cups in silicone

- Ideal for palletisation and depalletisation applications
- Silicone compound
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height

Application example



### Technical data

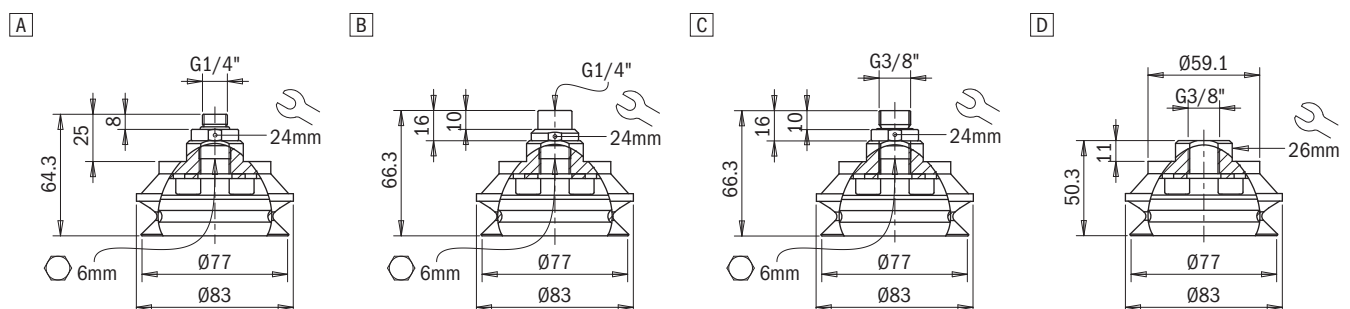
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	78	173	231	66	125	157	110	40	24	37

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, SIL	Red	50 Shore	-70 ÷ +200 °C

### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B77S.50.G14M	VG.B77 suction cup, silicone, 50 Shore, G1/4" male	2322177
B	VG.B77S.50.G14F	VG.B77 suction cup, silicone, 50 Shore, G1/4" female	2322178
C	VG.B77S.50.G38M	VG.B77 suction cup, silicone, 50 Shore, G3/8" male	2322179
D	VG.B77S.50.G38F	VG.B77 suction cup, silicone, 50 Shore, G3/8" female	2322180

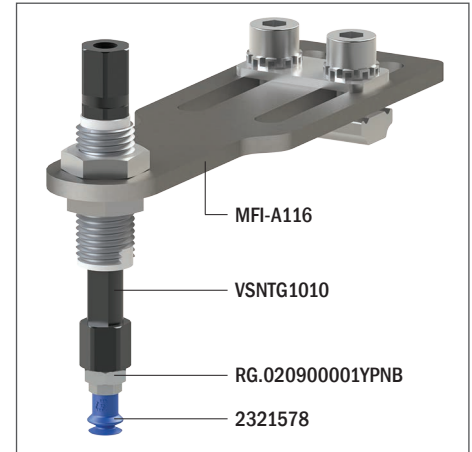




## VG.B6 EPDM-HNBR bellows suction cups

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

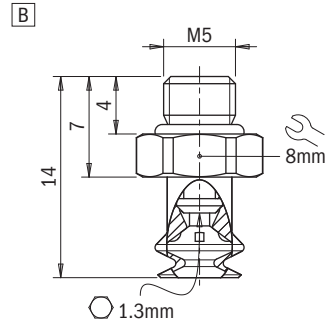
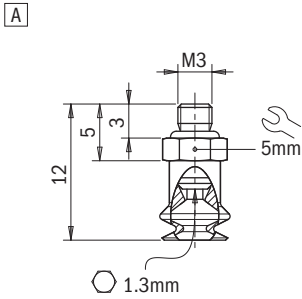
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
EPDM 50	0.25	0.78	1.1	–	–	–	0.05	1.5	1.5	0.1
HNBR 60	0.25	0.78	1.1	–	–	–	0.05	1.5	1.5	0.1

### Technical features

Material	Colour	Hardness	Temperature range
EPDM	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

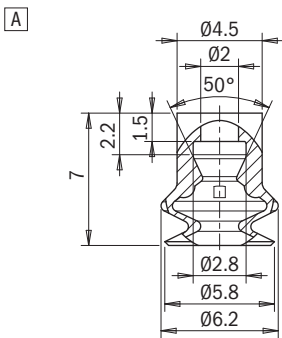
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B6E.50.M3M.E5	VG.B6 suction cup, EPDM, 50 Shore, M3 male, 5 mm hex	2321576
A	VG.B6H.60.M3M.E5	VG.B6 suction cup, HNBR, 60 Shore, M3 male, 5 mm hex	2321578
B	VG.B6E.50.M5M.E8	VG.B6 suction cup, EPDM, 50 Shore, M5 male, 8 mm hex	2321076
B	VG.B6H.60.M5M.E8	VG.B6 suction cup, HNBR, 60 Shore, M5 male, 8 mm hex	2321078



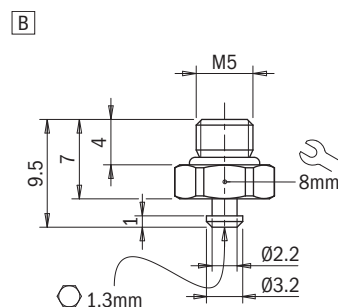
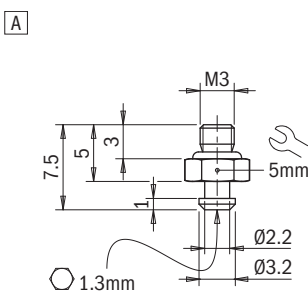
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B6E.50	VG.B6 suction cup, EPDM, 50 Shore	2321577
A	VG.B6H.60	VG.B6 suction cup, HNBR, 60 Shore	2321579



### Identification codes

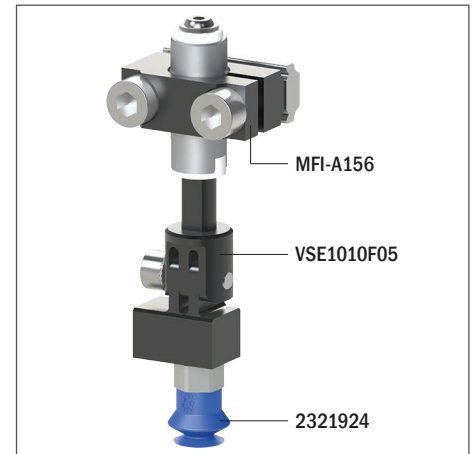
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M3M.E5	M3 male fitting, hex, 5 mm	2321402
B	FT.M5M.E8.06	M5 male fitting, hex, 8 mm	2321005



## VG.B9 EPDM-HNBR bellows suction cups

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

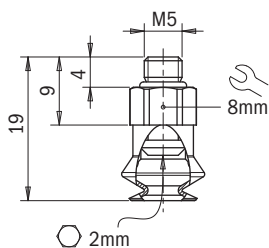
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
EPDM 50	0.82	1.5	2.3	–	–	–	0.15	1.9	3.5	0.3
HNBR 60	0.82	1.5	2.3	–	–	–	0.15	1.9	3.5	0.3

### Technical features

Material	Colour	Hardness	Temperature range
EPDM	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

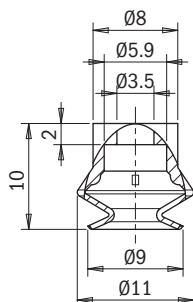
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B9E.50.M5M.E8	VG.B9 suction cup, EPDM, 50 Shore, M5 male, 8 mm hex	2321922
A	VG.B9H.60.M5M.E8	VG.B9 suction cup, HNBR, 60 Shore, M5 male, 8 mm hex	2321924

A



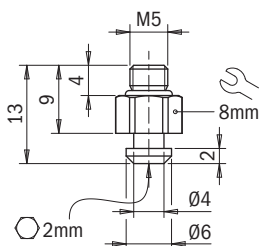
Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B9E.50	VG.B9 suction cup, EPDM, 50 Shore	2321923
A	VG.B9H.60	VG.B9 suction cup, HNBR, 60 Shore	2321925

A



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5M.E8.05	M5 male fitting, 8 mm hex	2321405

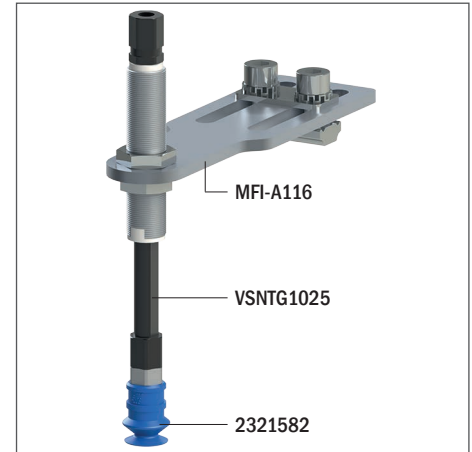
A



## VG.B11 EPDM-HNBR bellows suction cups

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

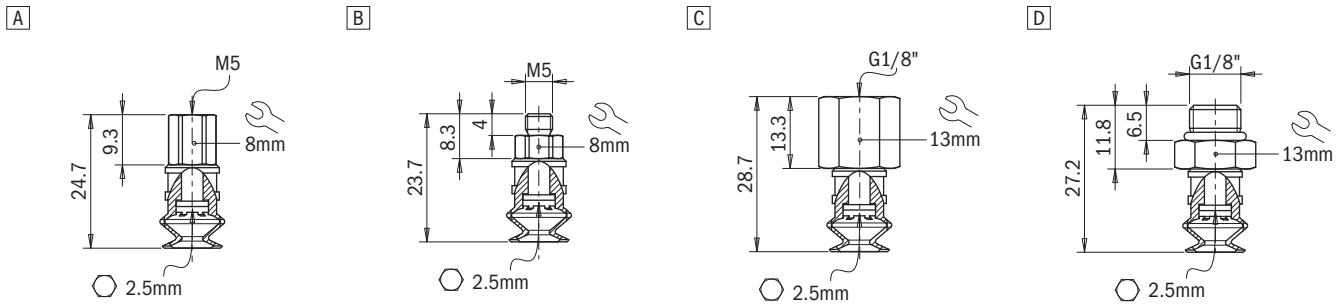
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
EPDM 50	1.3	3.4	4.6	1.7	2.42	2.81	0.48	4	4.5	0.7
HNBR 60	1.3	3.4	4.6	1.7	2.42	2.81	0.48	4	4.5	0.7

### Technical features

Material	Colour	Hardness	Temperature range
EPDM	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

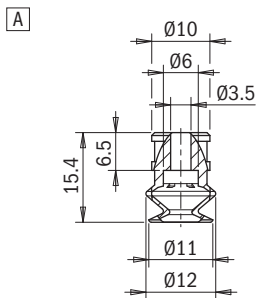
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B11E.50.M5F.E8	VG.B11 suction cup, EPDM, 50 Shore, M5 female, 8 mm hex	2321580
B	VG.B11E.50.M5M.E8	VG.B11 suction cup, EPDM, 50 Shore, M5 male, 8 mm hex	2321582
C	VG.B11E.50.G18F.E13	VG.B11 suction cup, EPDM, 50 Shore, G1/8" female, 13 mm hex	2321583
D	VG.B11E.50.G18M.E13	VG.B11 suction cup, EPDM, 50 Shore, G1/8" male, 13 mm hex	2321584
A	VG.B11H.60.M5F.E8	VG.B11 suction cup, HNBR, 60 Shore, M5 female, 8 mm hex	2321585
B	VG.B11H.60.M5M.E8	VG.B11 suction cup, HNBR, 60 Shore, M5 male, 8 mm hex	2321587
C	VG.B11H.60.G18F.E13	VG.B11 suction cup, HNBR, 60 Shore, G1/8" female, 13 mm hex	2321588
D	VG.B11H.60.G18M.E13	VG.B11 suction cup, HNBR, 60 Shore, G1/8" male, 13 mm hex	2321589



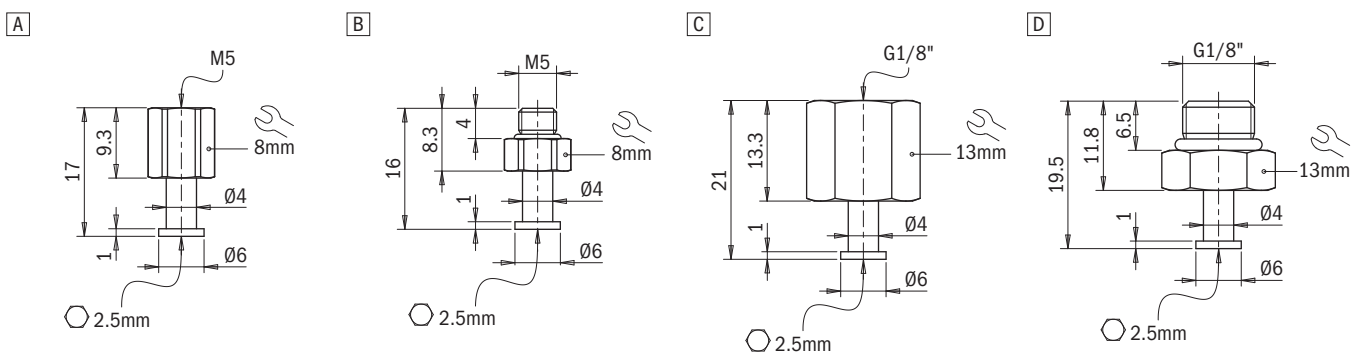
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B11E.50	VG.B11 suction cup, EPDM, 50 Shore	2321581
A	VG.B11H.60	VG.B11 suction cup, HNBR, 60 Shore	2321586



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414

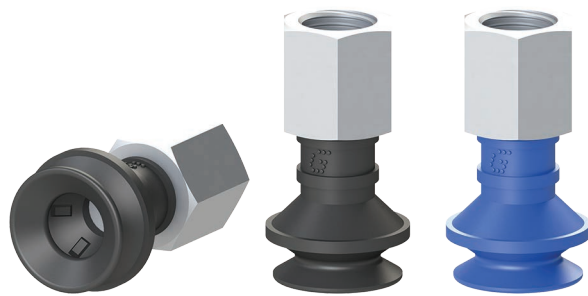
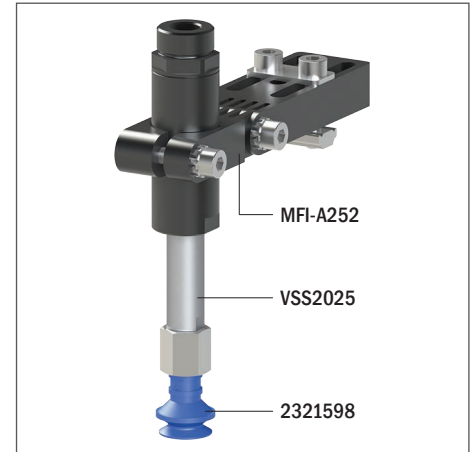




## VG.B16 EPDM-HNBR bellows suction cups

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

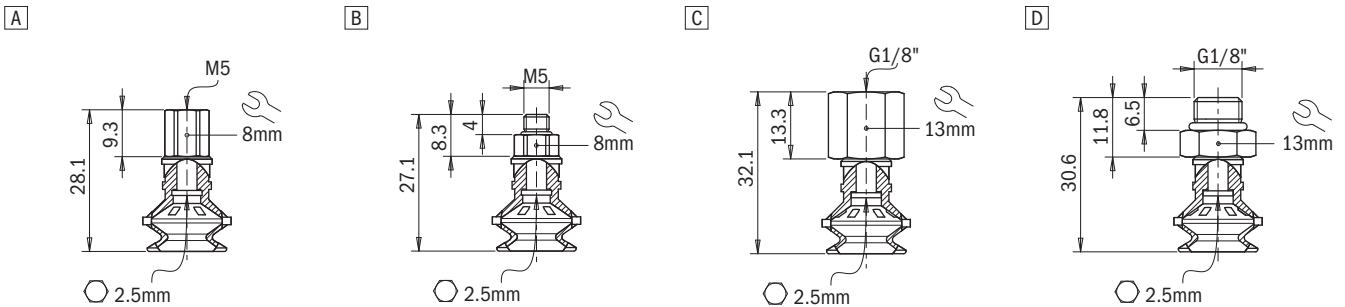
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
EPDM 50	3	5.8	8.5	1.71	3.1	3.9	1.1	5	6.5	2.1
HNBR 60	3	5.8	8.5	1.71	3.1	3.9	1.1	5	6.5	2.1

### Technical features

Material	Colour	Hardness	Temperature range
EPDM	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

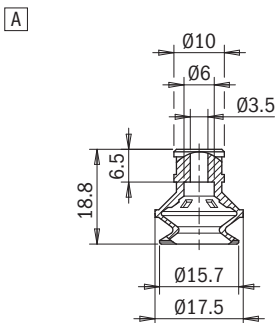
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B16E.50.M5F.E8	VG.B16 suction cup, EPDM, 50 Shore, M5 female, 8 mm hex	2321590
B	VG.B16E.50.M5M.E8	VG.B16 suction cup, EPDM, 50 Shore, M5 male, 8 mm hex	2321592
C	VG.B16E.50.G18F.E13	VG.B16 suction cup, EPDM, 50 Shore, G1/8" female, 13 mm hex	2321593
D	VG.B16E.50.G18M.E13	VG.B16 suction cup, EPDM, 50 Shore, G1/8" male, 13 mm hex	2321594
A	VG.B16H.60.M5F.E8	VG.B16 suction cup, HNBR, 60 Shore, M5 female, 8 mm hex	2321595
B	VG.B16H.60.M5M.E8	VG.B16 suction cup, HNBR, 60 Shore, M5 male, 8 mm hex	2321597
C	VG.B16H.60.G18F.E13	VG.B16 suction cup, HNBR, 60 Shore, G1/8" female, 13 mm hex	2321598
D	VG.B16H.60.G18M.E13	VG.B16 suction cup, HNBR, 60 Shore, G1/8" male, 13 mm hex	2321599



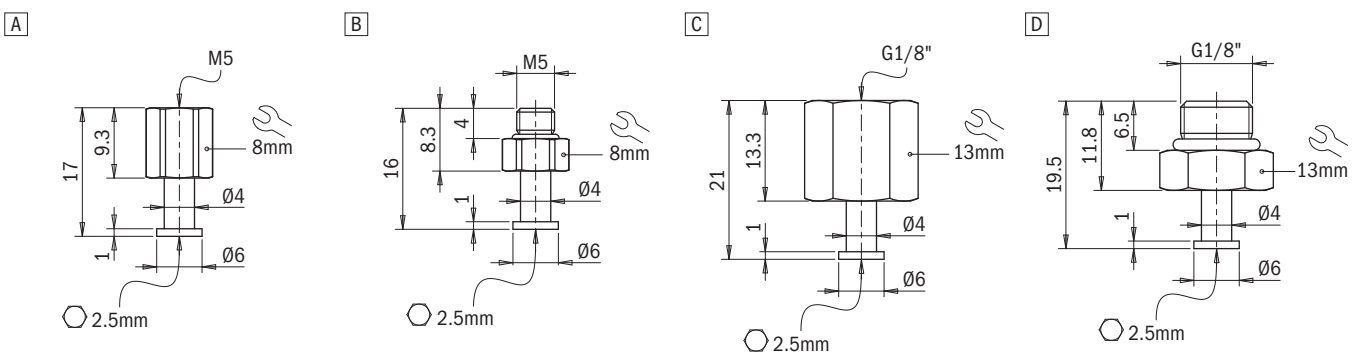
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B16E.50	VG.B16 suction cup, EPDM, 50 Shore	2321591
A	VG.B16H.60	VG.B16 suction cup, HNBR, 60 Shore	2321596



### Identification codes

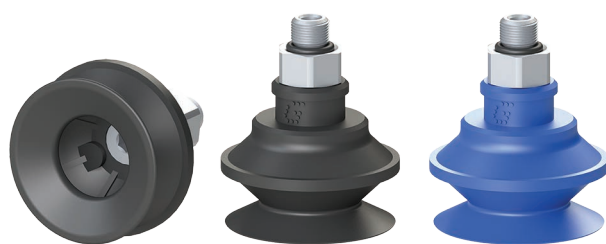
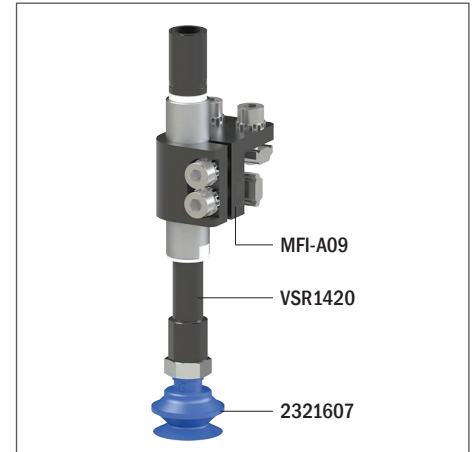
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414



## VG.B22 EPDM-HNBR bellows suction cups

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

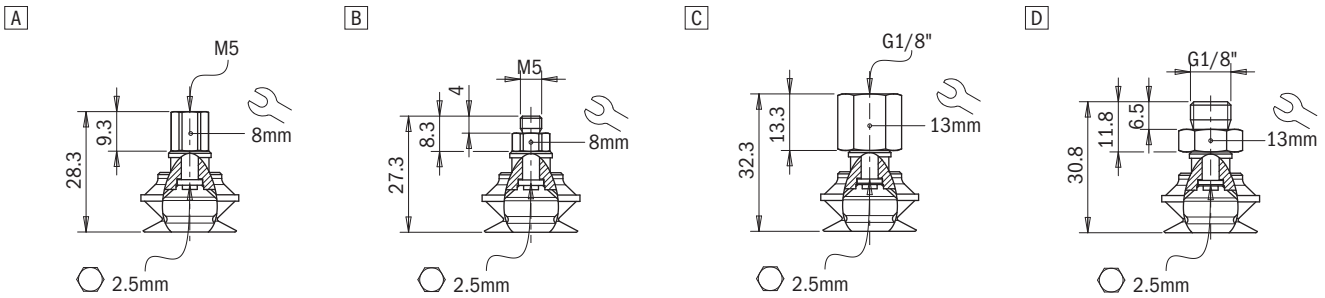
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
EPDM 50	5.5	13	14	2.92	5.5	8.3	2.7	10	10	1.8
HNBR 60	5.5	13	14	2.92	5.5	8.3	2.7	10	10	1.8

### Technical features

Material	Colour	Hardness	Temperature range
EPDM	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

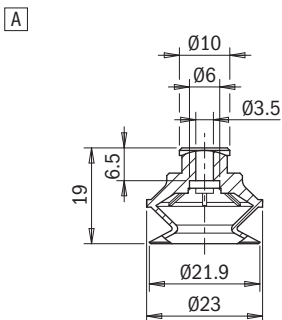
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B22E.50.M5F.E8	VG.B22 suction cup, EPDM, 50 Shore, M5 female, 8 mm hex	2321600
B	VG.B22E.50.M5M.E8	VG.B22 suction cup, EPDM, 50 Shore, M5 male, 8 mm hex	2321602
C	VG.B22E.50.G18F.E13	VG.B22 suction cup, EPDM, 50 Shore, G1/8" female, 13 mm hex	2321603
D	VG.B22E.50.G18M.E13	VG.B22 suction cup, EPDM, 50 Shore, G1/8" male, 13 mm hex	2321604
A	VG.B22H.60.M5F.E8	VG.B22 suction cup, HNBR, 60 Shore, M5 female, 8 mm hex	2321605
B	VG.B22H.60.M5M.E8	VG.B22 suction cup, HNBR, 60 Shore, M5 male, 8 mm hex	2321607
C	VG.B22H.60.G18F.E13	VG.B22 suction cup, HNBR, 60 Shore, G1/8" female, 13 mm hex	2321608
D	VG.B22H.60.G18M.E13	VG.B22 suction cup, HNBR, 60 Shore, G1/8" male, 13 mm hex	2321609



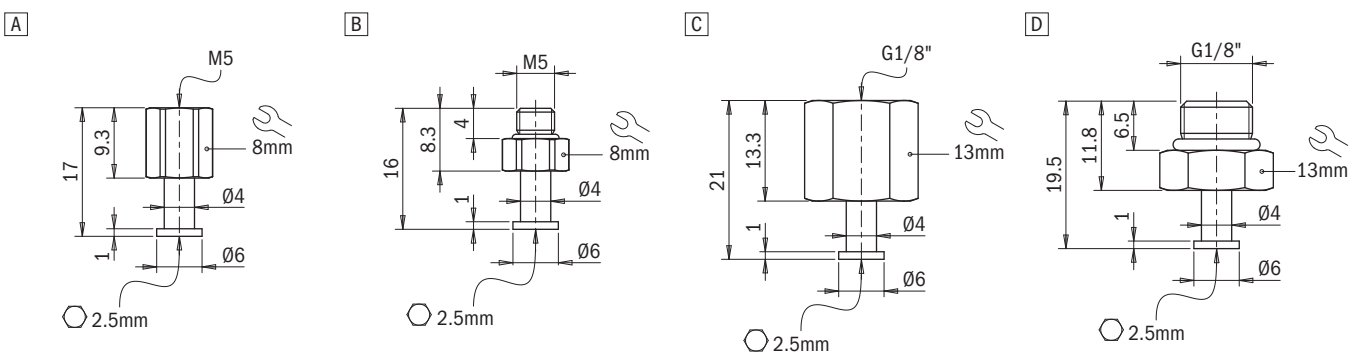
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B22E.50	VG.B22 suction cup, EPDM, 50 Shore	2321601
A	VG.B22H.60	VG.B22 suction cup, HNBR, 60 Shore	2321606



### Identification codes

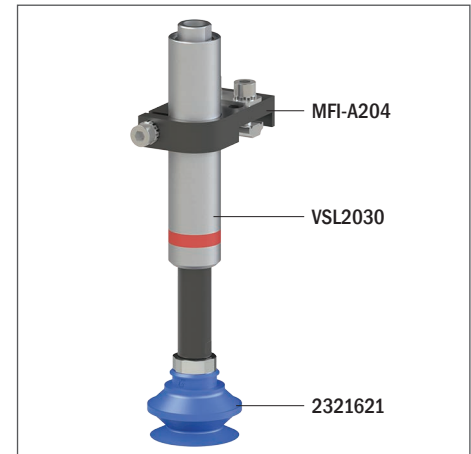
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414



## VG.B33 EPDM-HNBR bellows suction cups

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

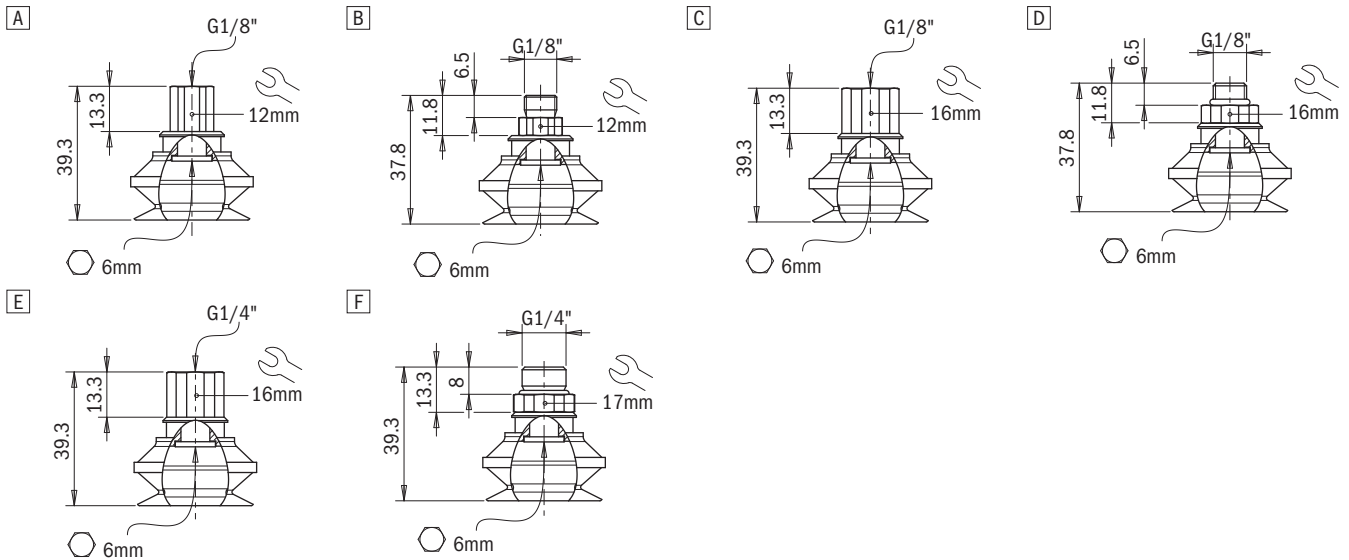
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
EPDM 50	12	23	26	9.5	16.6	22.5	10	15	15	5.8
HNBR 60	12	23	26	9.5	16.6	22.5	10	15	15	5.8

### Technical features

Material	Colour	Hardness	Temperature range
EPDM	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

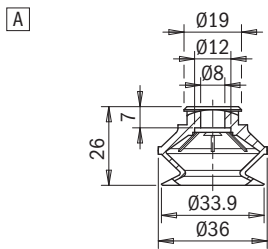
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B33E.50.G18F.E12	VG.B33 suction cup, EPDM, 50 Shore, G1/8" female, 12 mm hex	2321610
B	VG.B33E.50.G18M.E12	VG.B33 suction cup, EPDM, 50 Shore, G1/8" male, 12 mm hex	2321612
C	VG.B33E.50.G18F.E16	VG.B33 suction cup, EPDM, 50 Shore, G1/8" female, 16 mm hex	2321613
D	VG.B33E.50.G18M.E16	VG.B33 suction cup, EPDM, 50 Shore, G1/8" male, 16 mm hex	2321614
E	VG.B33E.50.G14F.E16	VG.B33 suction cup, EPDM, 50 Shore, G1/4" female, 16 mm hex	2321615
F	VG.B33E.50.G14M.E17	VG.B33 suction cup, EPDM, 50 Shore, G1/4" male, 17 mm hex	2321616
A	VG.B33H.60.G18F.E12	VG.B33 suction cup, HNBR, 60 Shore, G1/8" female, 12 mm hex	2321617
B	VG.B33H.60.G18M.E12	VG.B33 suction cup, HNBR, 60 Shore, G1/8" male, 12 mm hex	2321619
C	VG.B33H.60.G18F.E16	VG.B33 suction cup, HNBR, 60 Shore, G1/8" female, 16 mm hex	2321620
D	VG.B33H.60.G18M.E16	VG.B33 suction cup, HNBR, 60 Shore, G1/8" male, 16 mm hex	2321621
E	VG.B33H.60.G14F.E16	VG.B33 suction cup, HNBR, 60 Shore, G1/4" female, 16 mm hex	2321622
F	VG.B33H.60.G14M.E17	VG.B33 suction cup, HNBR, 60 Shore, G1/4" male, 17 mm hex	2321623



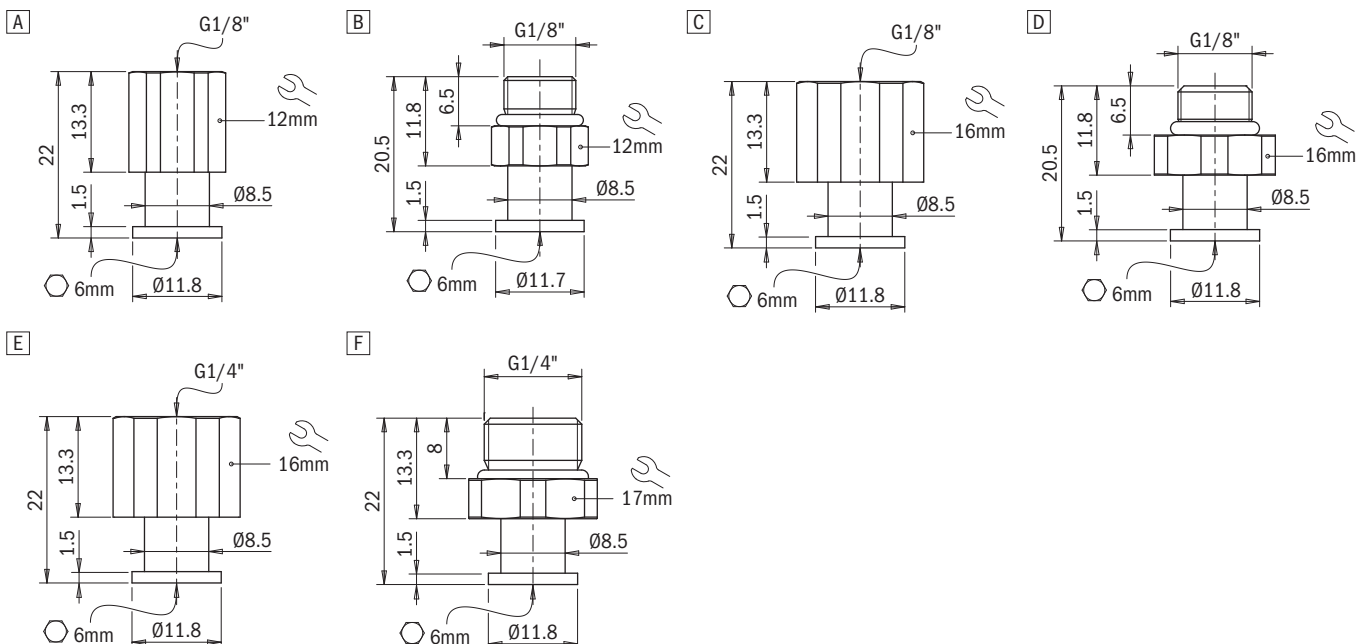
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B33E.50	VG.B33 suction cup, EPDM, 50 Shore	2321611
A	VG.B33H.60	VG.B33 suction cup, HNBR, 60 Shore	2321618



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



## VG.B42 EPDM-HNBR bellows suction cups

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

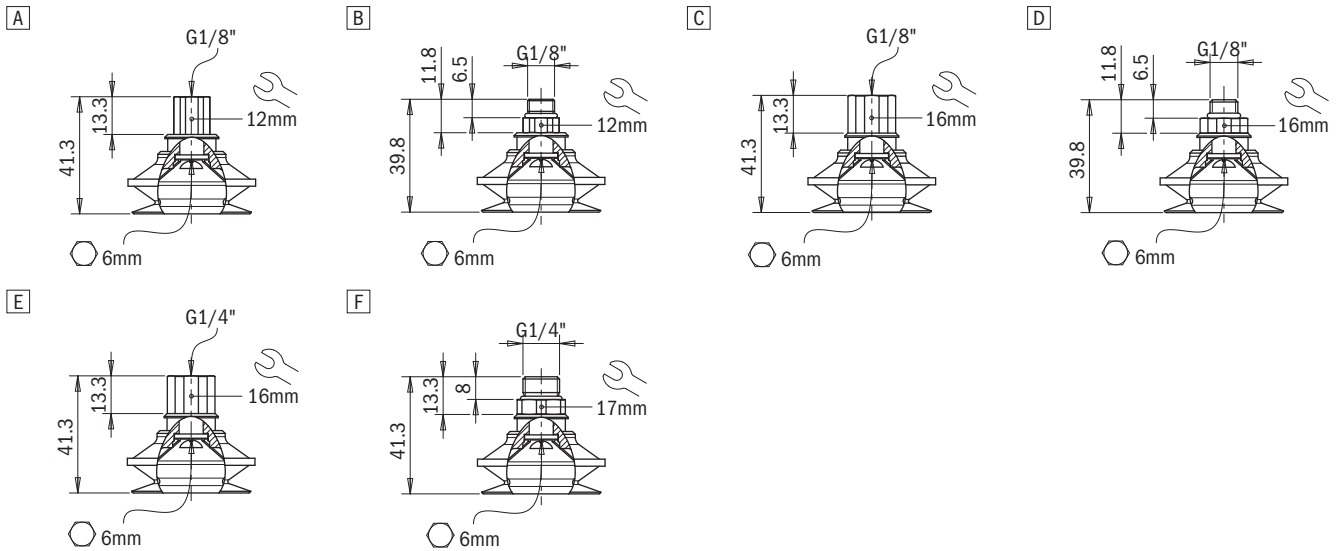
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
EPDM 50	20	46	53	17.2	26.3	30.7	15	20	12	8.6
HNBR 60	20	46	53	17.2	26.3	30.7	15	20	12	8.6

### Technical features

Material	Colour	Hardness	Temperature range
EPDM	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

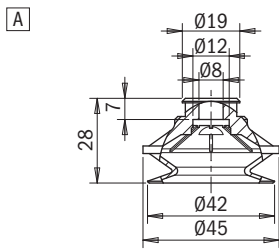
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B42E.50.G18F.E12	VG.B42 suction cup, EPDM, 50 Shore, G1/8" female, 12 mm hex	2321624
B	VG.B42E.50.G18M.E12	VG.B42 suction cup, EPDM, 50 Shore, G1/8" male, 12 mm hex	2321626
C	VG.B42E.50.G18F.E16	VG.B42 suction cup, EPDM, 50 Shore, G1/8" female, 16 mm hex	2321627
D	VG.B42E.50.G18M.E16	VG.B42 suction cup, EPDM, 50 Shore, G1/8" male, 16 mm hex	2321628
E	VG.B42E.50.G14F.E16	VG.B42 suction cup, EPDM, 50 Shore, G1/4" female, 16 mm hex	2321629
F	VG.B42E.50.G14M.E17	VG.B42 suction cup, EPDM, 50 Shore, G1/4" male, 17 mm hex	2321630
A	VG.B42H.60.G18F.E12	VG.B42 suction cup, HNBR, 60 Shore, G1/8" female, 12 mm hex	2321631
B	VG.B42H.60.G18M.E12	VG.B42 suction cup, HNBR, 60 Shore, G1/8" male, 12 mm hex	2321633
C	VG.B42H.60.G18F.E16	VG.B42 suction cup, HNBR, 60 Shore, G1/8" female, 16 mm hex	2321635
D	VG.B42H.60.G18M.E16	VG.B42 suction cup, HNBR, 60 Shore, G1/8" male, 16 mm hex	2321636
E	VG.B42H.60.G14F.E16	VG.B42 suction cup, HNBR, 60 Shore, G1/4" female, 16 mm hex	2321637
F	VG.B42H.60.G14M.E17	VG.B42 suction cup, HNBR, 60 Shore, G1/4" male, 17 mm hex	2321638



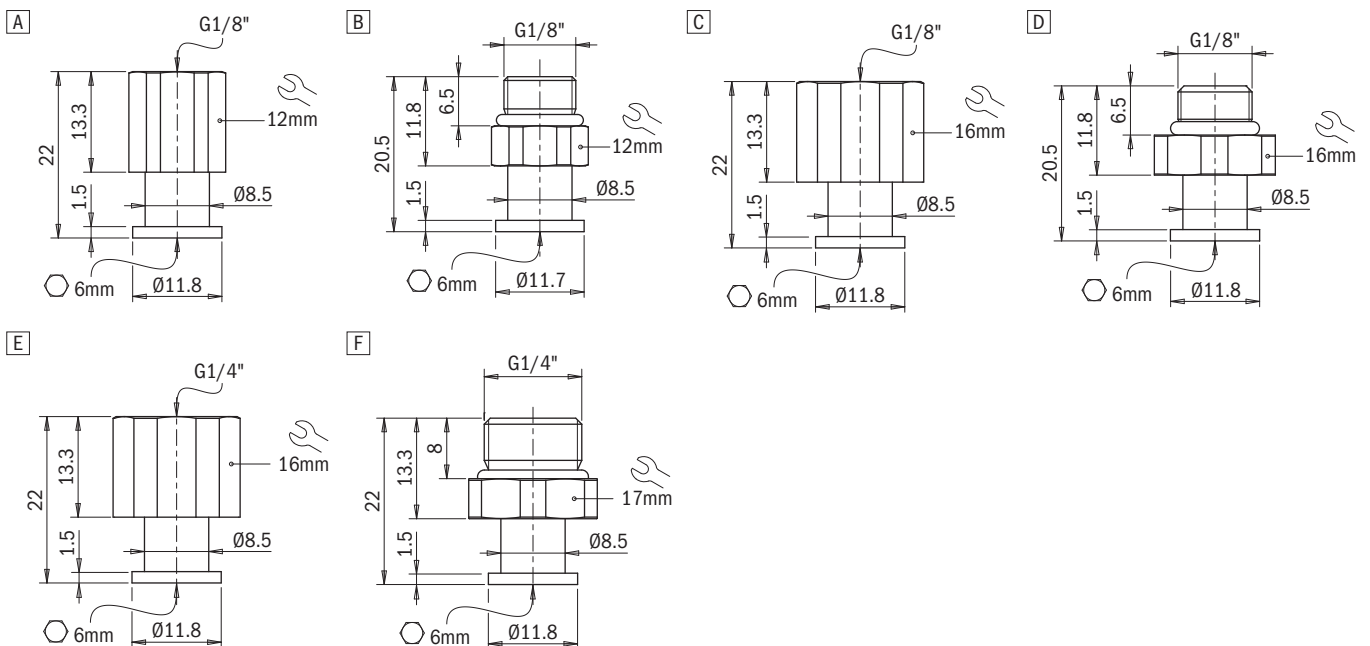
**Identification codes**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B42E.50	VG.B42 suction cup, EPDM, 50 Shore	2321625
A	VG.B42H.60	VG.B42 suction cup, HNBR, 60 Shore	2321632



**Identification codes**

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432





## VG.B53 EPDM-HNBR bellows suction cups

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

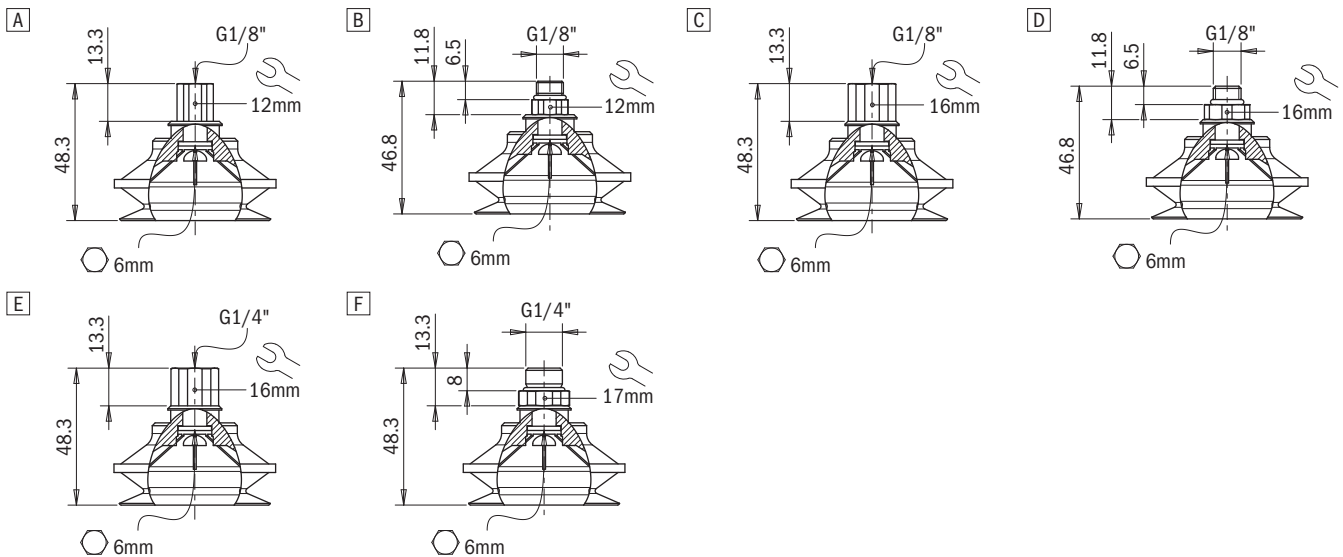
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
EPDM 50	32	64.5	90	24.5	51.3	60.5	32	30	19	15.4
HNBR 60	32	64.5	90	24.5	51.3	60.5	32	30	19	15.4

### Technical features

Material	Colour	Hardness	Temperature range
EPDM	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

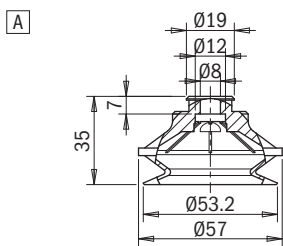
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B53E.50.G18F.E12	VG.B53 suction cup, EPDM, 50 Shore, G1/8" female, 12 mm hex	2321639
B	VG.B53E.50.G18M.E12	VG.B53 suction cup, EPDM, 50 Shore, G1/8" male, 12 mm hex	2321641
C	VG.B53E.50.G18F.E16	VG.B53 suction cup, EPDM, 50 Shore, G1/8" female, 16 mm hex	2321642
D	VG.B53E.50.G18M.E16	VG.B53 suction cup, EPDM, 50 Shore, G1/8" male, 16 mm hex	2321643
E	VG.B53E.50.G14F.E16	VG.B53 suction cup, EPDM, 50 Shore, G1/4" female, 16 mm hex	2321644
F	VG.B53E.50.G14M.E17	VG.B53 suction cup, EPDM, 50 Shore, G1/4" male, 17 mm hex	2321645
A	VG.B53H.60.G18F.E12	VG.B53 suction cup, HNBR, 60 Shore, G1/8" female, 12 mm hex	2321646
B	VG.B53H.60.G18M.E12	VG.B53 suction cup, HNBR, 60 Shore, G1/8" male, 12 mm hex	2321648
C	VG.B53H.60.G18F.E16	VG.B53 suction cup, HNBR, 60 Shore, G1/8" female, 16 mm hex	2321649
D	VG.B53H.60.G18M.E16	VG.B53 suction cup, HNBR, 60 Shore, G1/8" male, 16 mm hex	2321650
E	VG.B53H.60.G14F.E16	VG.B53 suction cup, HNBR, 60 Shore, G1/4" female, 16 mm hex	2321651
F	VG.B53H.60.G14M.E17	VG.B53 suction cup, HNBR, 60 Shore, G1/4" male, 17 mm hex	2321652



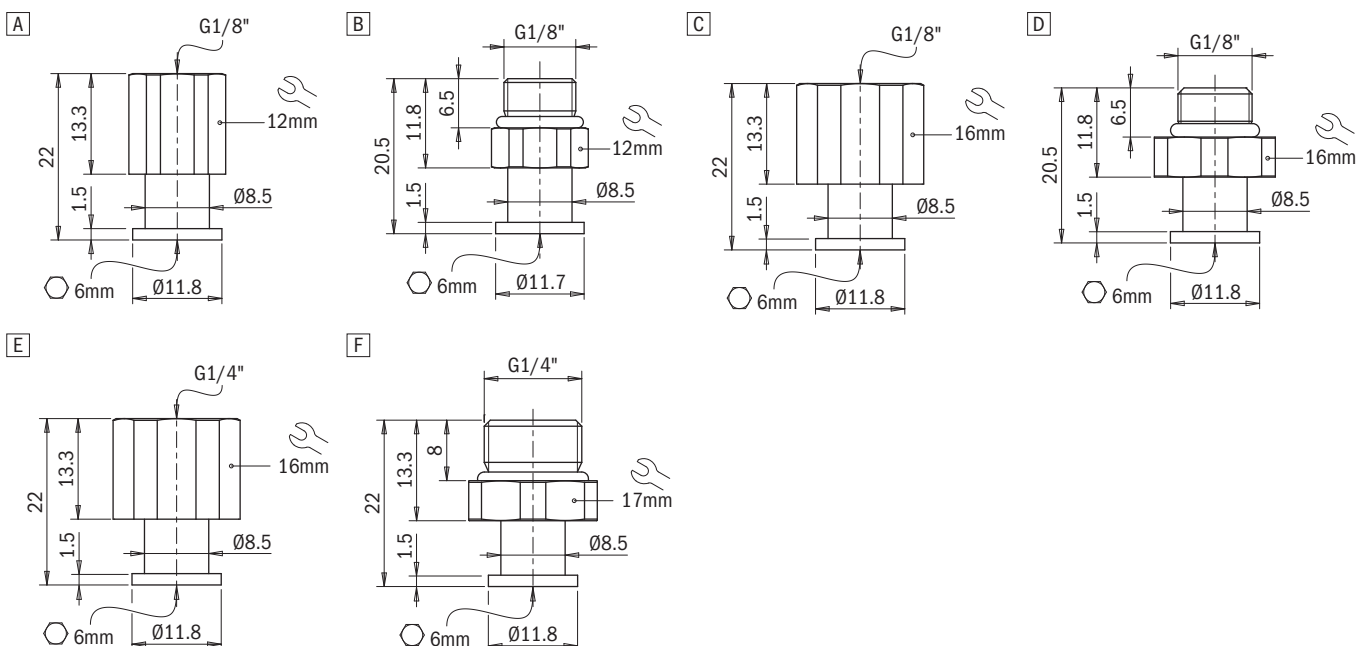
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B53E.50	VG.B53 suction cup, EPDM, 50 Shore	2321640
A	VG.B53H.60	VG.B53 suction cup, HNBR, 60 Shore	2321647



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



## VG.B77 NBR bellows suction cups

- Ideal for palletisation and depalletisation applications
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height



Application example



### Technical data

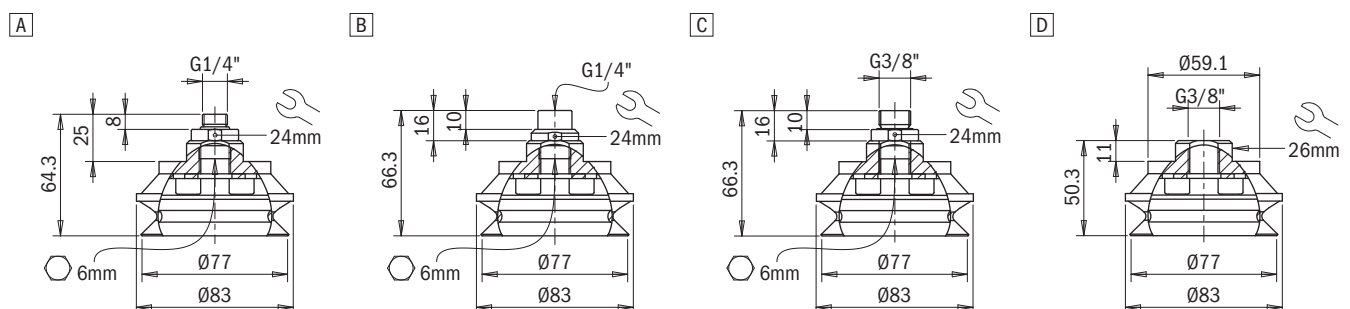
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 60	78	173	231	66	125	157	110	40	24	35

### Technical features

Material	Colour	Hardness	Temperature range
NBR	Black	60 Shore	-30 ÷ +100 °C

### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B77N.60.G14M	VG.B77 suction cup, NBR, 60 Shore, G1/4" male	2322189
B	VG.B77N.60.G14F	VG.B77 suction cup, NBR, 60 Shore, G1/4" female	2322190
C	VG.B77N.60.G38M	VG.B77 suction cup, NBR, 60 Shore, G3/8" male	2322191
D	VG.B77N.60.G38F	VG.B77 suction cup, NBR, 60 Shore, G3/8" female	2322192

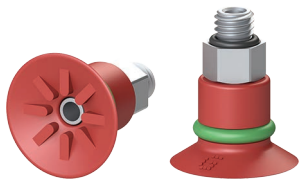
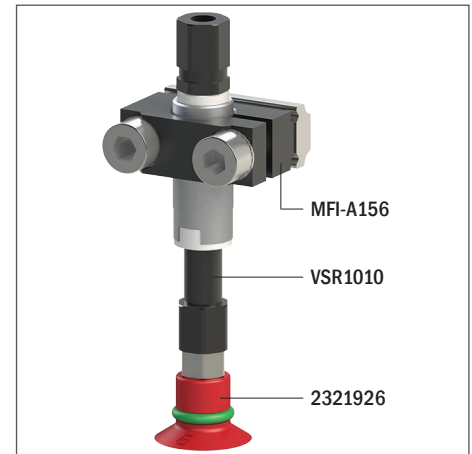




## VG.CF16 flat suction cups, silicone, with reinforcements

- Ideal for handling plastic parts, dry sheet metal and cardboard
- Suitable for items with flat surfaces
- Suitable for handling items with lifting force parallel to the surface thanks to the reinforcements that increase friction and prevent deformations
- The silicone version enables to work at high and low temperatures

Application example



### Technical data

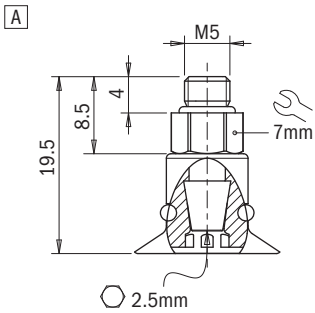
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	3.3	8.7	10.1	3.2	6.5	7.6	0.37	13	1	0.7

### Technical features

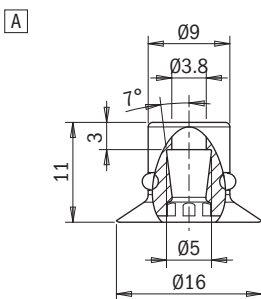
Material	Colour	Hardness	Temperature range
Silicone	Red	50 Shore	-70 ÷ +200 °C

**Identification codes**

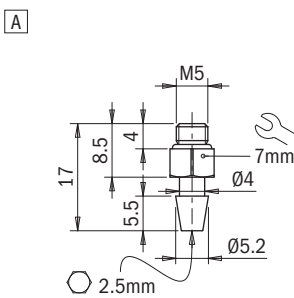
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.CF16S.50.M5M	VG.CF16 suction cup, silicone, 50 shore, M5 male	2321926


**Identification codes**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.CF16S.50	VG.CF16 suction cup, silicone, 50 Shore	2321927


**Identification codes**

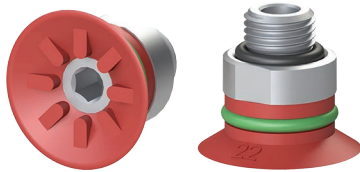
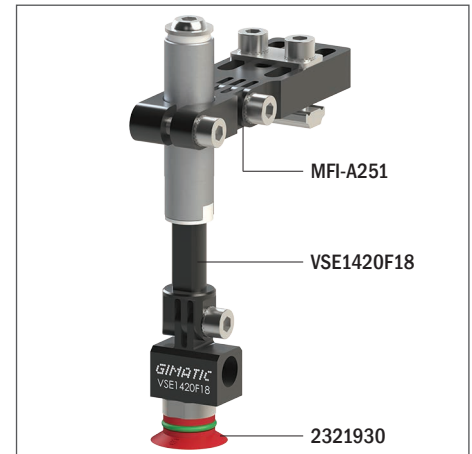
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5M	M5 male fitting	1600005



## VG.CF22 flat suction cups, silicone, with reinforcements

- Ideal for handling plastic parts, dry sheet metal and cardboard
- Suitable for items with flat surfaces
- Suitable for handling items with lifting force parallel to the surface thanks to the reinforcements that increase friction and prevent deformations
- The silicone version enables to work at high and low temperatures

Application example



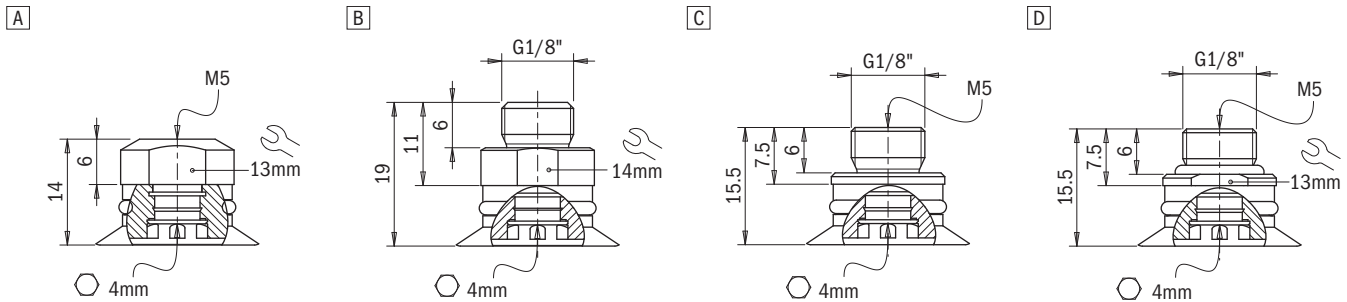
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	6.1	13.7	18.7	5.1	8.2	8.5	1	18	1.5	1.1

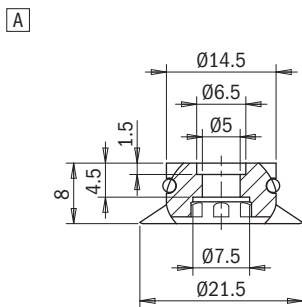
### Technical features

Material	Colour	Hardness	Temperature range
Silicone	Red	50 Shore	-70 ÷ +200 °C

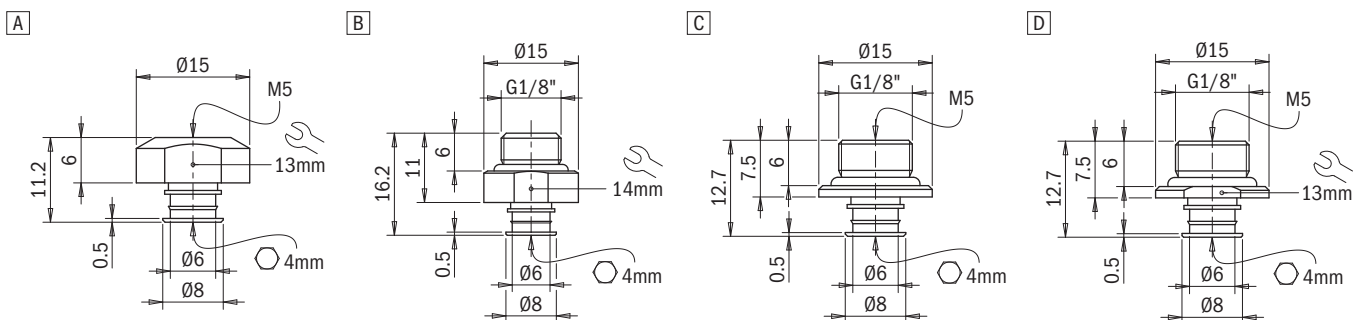
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.CF22S.50.M5F	VG.CF22 suction cup, silicone, 50 shore, M5 female	2321928
B	VG.CF22S.50.G18M	VG.CF22 suction cup, silicone, 50 Shore, G1/8" male	2321930
C	VG.CF22S.50.G18MF	VG.CF22 suction cup, silicone, 50 Shore, G1/8" male/M5 female	2321931
D	VG.CF22S.50.G18MFV	VG.CF22 suction cup, silicone, 50 Shore, G1/8" male/M5 female with valve	2321932



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.CF22S.50	VG.CF22 suction cup, silicone, 50 Shore	2321929



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F	Fitting, M5 Female	1700006
B	FT.G18M.17	G1/8" male fitting	1700018
C	FT.G18M.M5F	Fitting, G1/8" male/ M5 female	1700016
D	FT.G18M.M5F.VF	G1/8" male / M5 female fitting, with valve	1700017

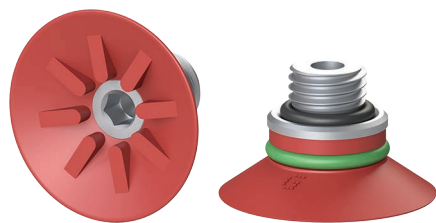
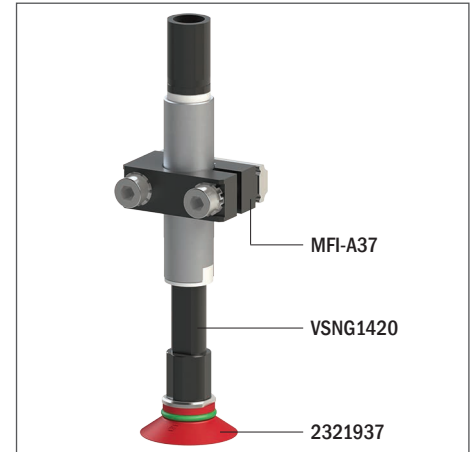




## VG.CF27 flat suction cups, silicone, with reinforcements

- Ideal for handling plastic parts, dry sheet metal and cardboard
- Suitable for items with flat surfaces
- Suitable for handling items with lifting force parallel to the surface thanks to the reinforcements that increase friction and prevent deformations
- The silicone version enables to work at high and low temperatures

Application example



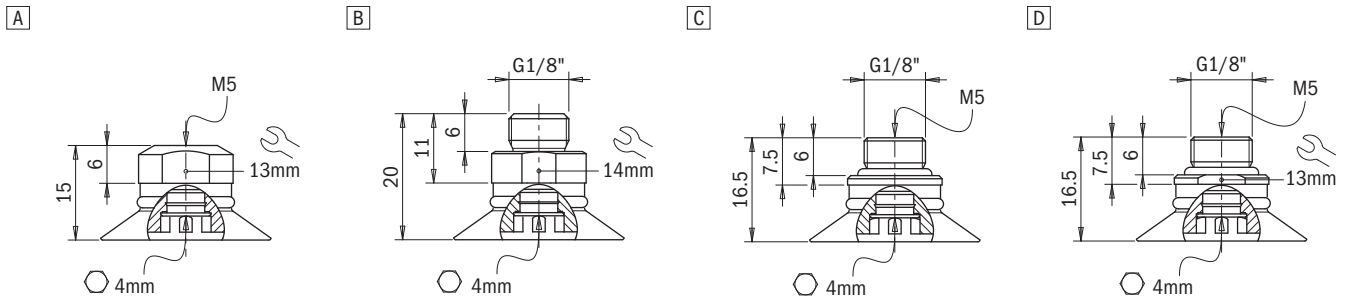
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	8.9	21.6	29.1	8.3	9.3	10.2	1.1	22	1.5	1.5

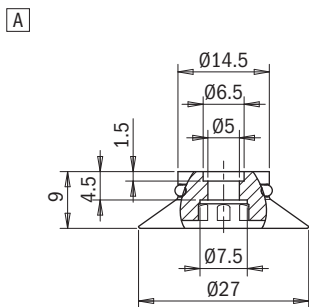
### Technical features

Material	Colour	Hardness	Temperature range
Silicone	Red	50 Shore	-70 ÷ +200 °C

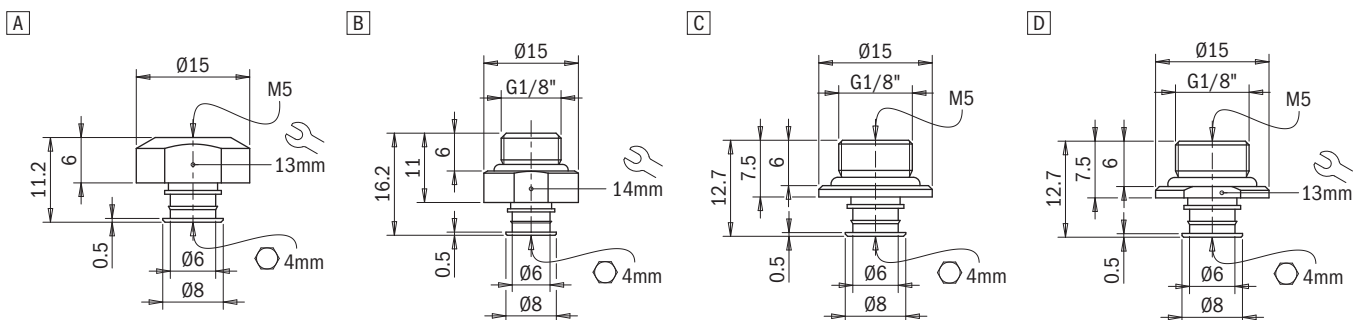
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.CF27S.50.M5F	VG.CF27 suction cup, silicone, 50 Shore, M5 female	2321933
B	VG.CF27S.50.G18M	VG.CF27 suction cup, silicone, 50 Shore, G1/8" male	2321935
C	VG.CF27S.50.G18MF	VG.CF27 suction cup, silicone, 50 Shore, G1/8" male/M5 female	2321936
D	VG.CF27S.50.G18MFV	VG.CF27 suction cup, silicone, 50 Shore, G1/8" male/M5 female with valve	2321937



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.CF27S.50	VG.CF27 suction cup, silicone, 50 Shore	2321934



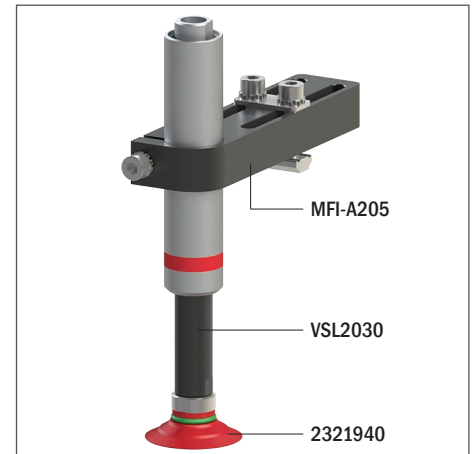
Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F	Fitting, M5 female	1700006
B	FT.G18M.17	G1/8" male fitting	1700018
C	FT.G18M.M5F	Fitting, G1/8" Male/ M5 female	1700016
D	FT.G18M.M5F.VF	G1/8" male / M5 female fitting, with valve	1700017



## VG.CF33 flat suction cups, silicone, with reinforcements

- Ideal for handling plastic parts, dry sheet metal and cardboard
- Suitable for items with flat surfaces
- Suitable for handling items with lifting force parallel to the surface thanks to the reinforcements that increase friction and prevent deformations
- The silicone version enables to work at high and low temperatures

Application example



### Technical data

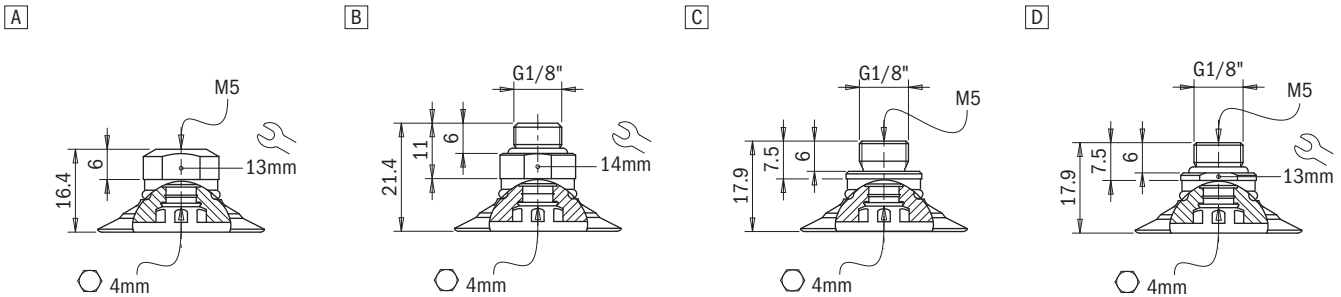
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	12.4	32.3	41.5	11	16.2	20.8	2	25	2	2.1

### Technical features

Material	Colour	Hardness	Temperature range
Silicone	Red	50 Shore	-70 ÷ +200 °C

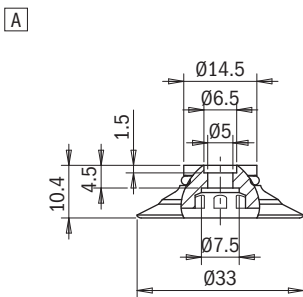
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.CF33S.50.M5F	VG.CF33 suction cup, silicone, 50 Shore, M5 female	2321938
B	VG.CF33S.50.G18M	VG.CF33 suction cup, silicone, 50 Shore, G1/8" male	2321940
C	VG.CF33S.50.G18MF	VG.CF33 suction cup, silicone, 50 Shore, G1/8" male/M5 female	2321941
D	VG.CF33S.50.G18MFV	VG.CF33 suction cup, silicone, 50 Shore, G1/8" male/M5 female with valve	2321942



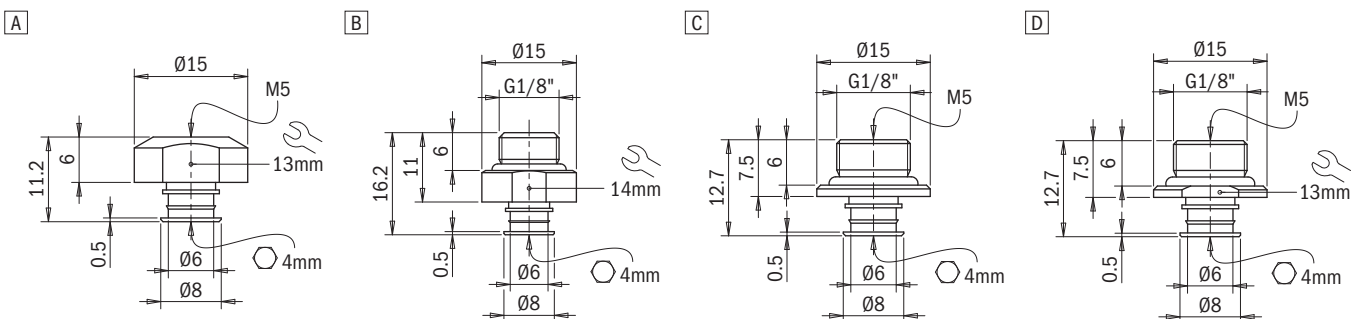
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.CF33S.50	VG.CF33 suction cup, silicone, 50 Shore	2321939



### Identification codes

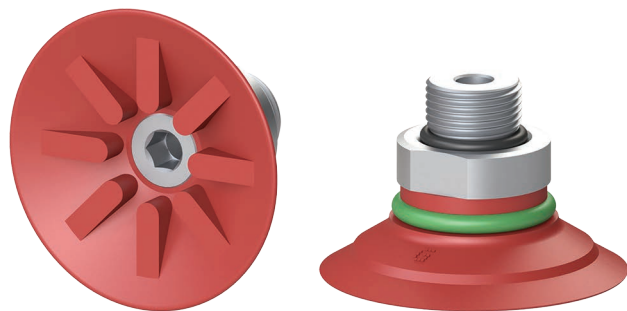
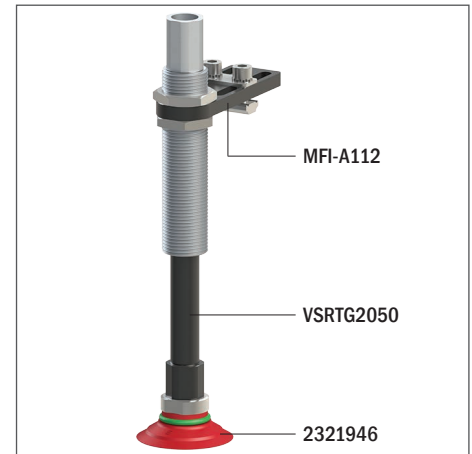
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F	Fitting, M5 female	1700006
B	FT.G18M.17	G1/8" male fitting	1700018
C	FT.G18M.M5F	G1/8" male / M5 female fitting	1700016
D	FT.G18M.M5F.VF	G1/8" male / M5 female fitting, with valve	1700017



## VG.CF42 flat suction cups, silicone, with reinforcements

- Ideal for handling plastic parts, dry sheet metal and cardboard
- Suitable for items with flat surfaces
- Suitable for handling items with lifting force parallel to the surface thanks to the reinforcements that increase friction and prevent deformations
- The silicone version enables to work at high and low temperatures

Application example



### Technical data

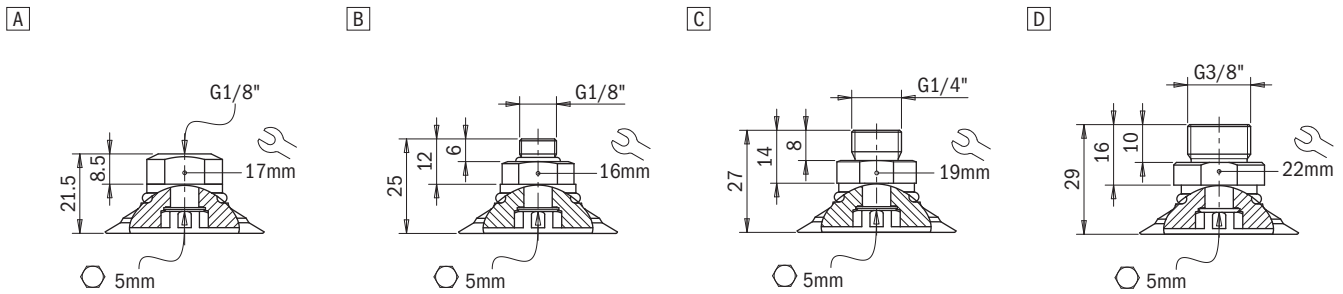
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	21.8	52	68	15	24.5	31	4.8	52	1.8	5.2

### Technical features

Material	Colour	Hardness	Temperature range
Silicone	Red	50 Shore	-70 ÷ +200 °C

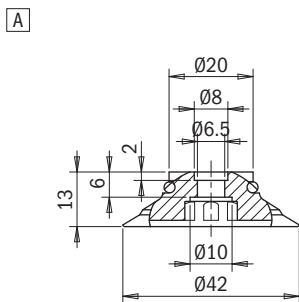
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.CF42S.50.G18F	VG.CF42 suction cup, silicone, 50 Shore, G1/8" female	2321943
B	VG.CF42S.50.G18M	VG.CF42 suction cup, silicone, 50 Shore, G1/8" male	2321945
C	VG.CF42S.50.G14M	VG.CF42 suction cup, silicone, 50 Shore, G1/4" male	2321946
D	VG.CF42S.50.G38M	VG.CF42 suction cup, silicone, 50 Shore, G3/8" male	2321947



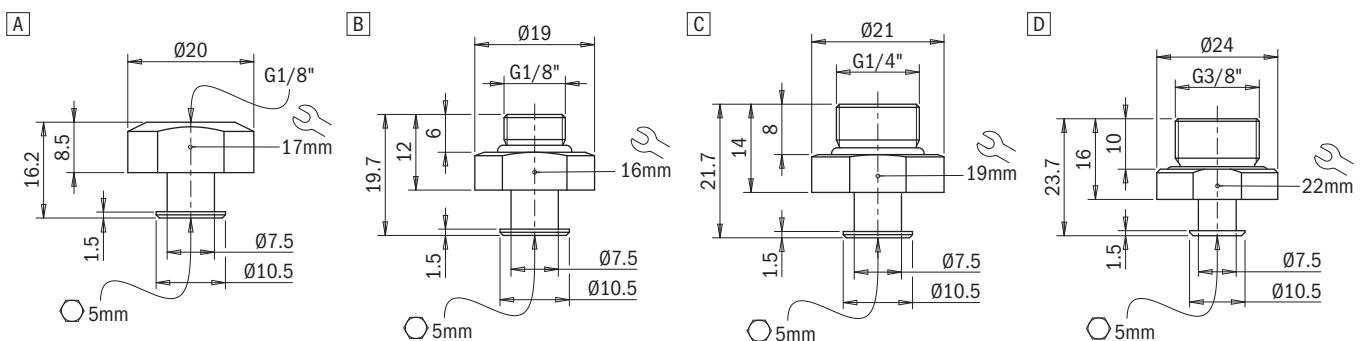
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.CF42S.50	VG.CF42 suction cup, silicone, 50 Shore	2321944



### Identification codes

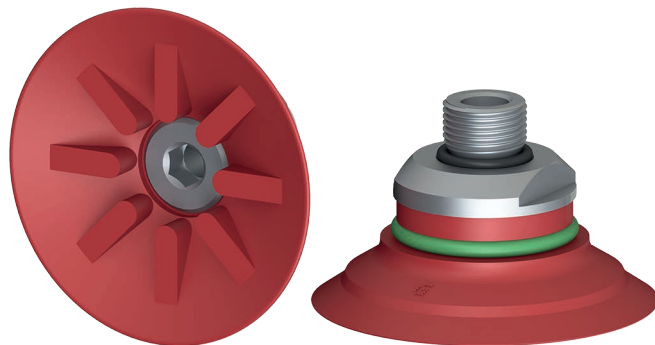
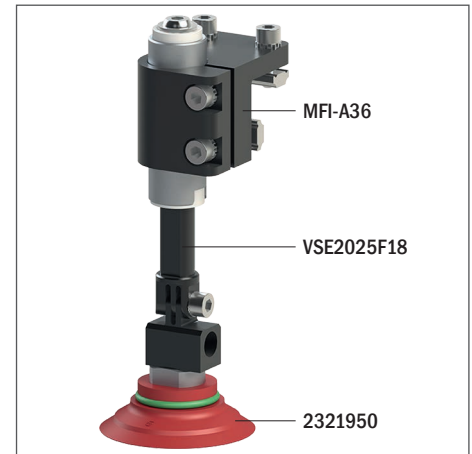
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.18	G1/8" female fitting	1800019
B	FT.G18M.18	G1/8" male fitting	1800018
C	FT.G14M.18	G1/4" male fitting	1800014
D	FT.G38M.18	G3/8" male fitting	1800038



## VG.CF53 flat suction cups, silicone, with reinforcements

- Ideal for handling plastic parts, dry sheet metal and cardboard
- Suitable for items with flat surfaces
- Suitable for handling items with lifting force parallel to the surface thanks to the reinforcements that increase friction and prevent deformations
- The silicone version enables to work at high and low temperatures

Application example



### Technical data

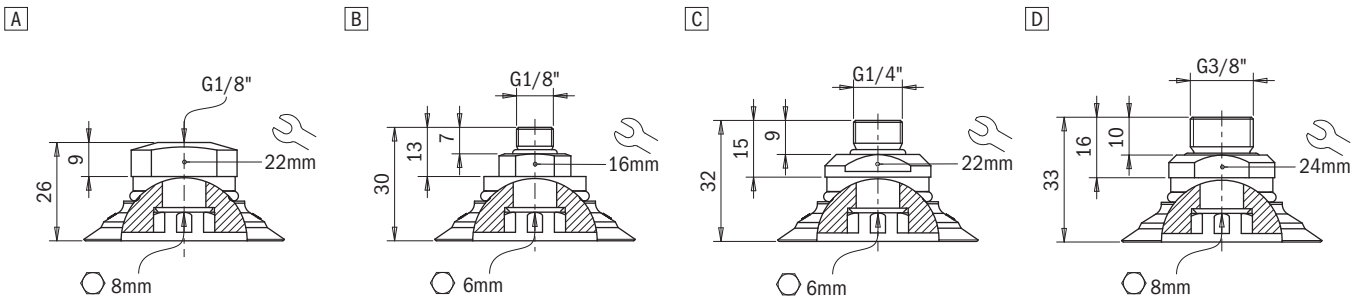
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	36.7	72	98	25	42	49	10	55	2.2	10.8

### Technical features

Material	Colour	Hardness	Temperature range
Silicone	Red	50 Shore	-70 ÷ +200 °C

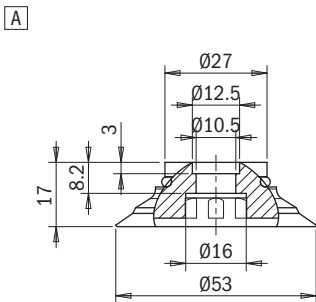
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.CF53S.50.G18F	VG.CF53 suction cup, silicone, 50 Shore, G1/8" female	2321948
B	VG.CF53S.50.G18M	VG.CF53 suction cup, silicone, 50 Shore, G1/8" male	2321950
C	VG.CF53S.50.G14M	VG.CF53 suction cup, silicone, 50 Shore, G1/4" male	2321951
D	VG.CF53S.50.G38M	VG.CF53 suction cup, silicone, 50 Shore, G3/8" male	2321952



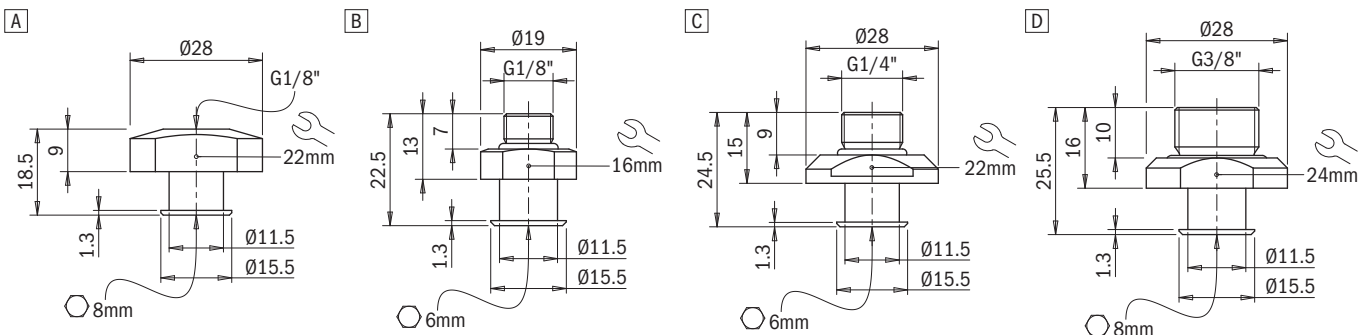
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.CF53S.50	VG.CF53 suction cup, silicone, 50 Shore	2321949



### Identification codes

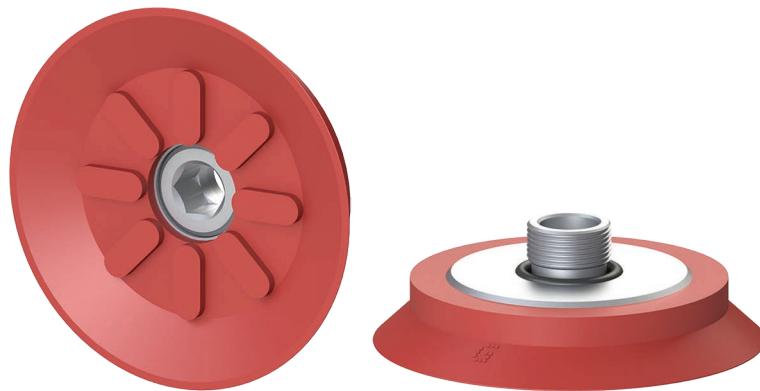
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.19	G1/8" female fitting	1900019
B	FT.G18M.19	G1/8" male fitting	1900018
C	FT.G14M.19	G1/4" male fitting	1900014
D	FT.G38M.198	G3/8" male fitting	1900038



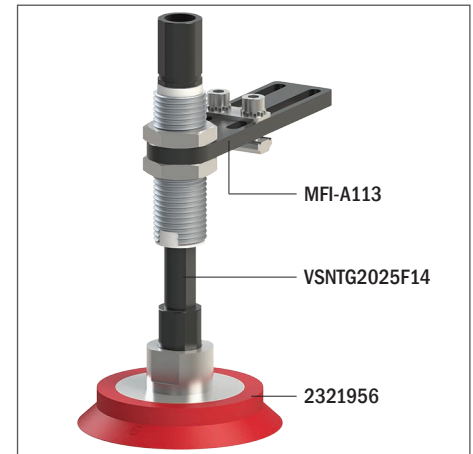


## VG.CF77 flat suction cups, silicone, with reinforcements

- Ideal for handling plastic parts, dry sheet metal and cardboard
- Suitable for items with flat surfaces
- Suitable for handling items with lifting force parallel to the surface thanks to the reinforcements that increase friction and prevent deformations
- The silicone version enables to work at high and low temperatures



Application example



### Technical data

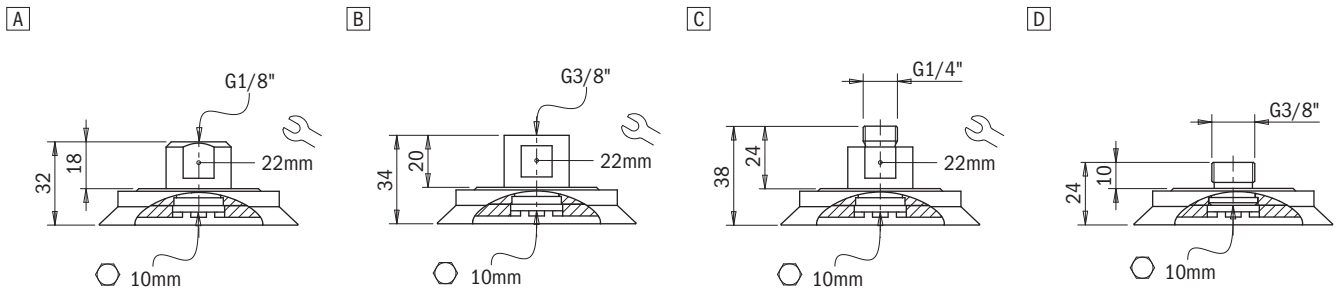
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	90	215	290	60	118	145	20	150	3	31.3

### Technical features

Material	Colour	Hardness	Temperature range
Silicone	Red	50 Shore	-70 ÷ +200 °C

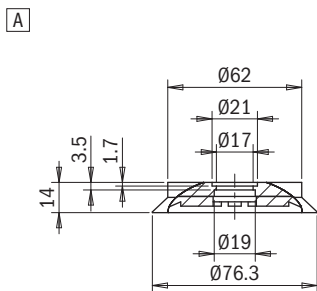
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.CF77S.50.G18F	VG.CF77 suction cup, silicone, 50 Shore, G1/8" female	2321953
B	VG.CF77S.50.G38F	VG.CF77 suction cup, silicone, 50 Shore, G3/8" female	2321955
C	VG.CF77S.50.G14M	VG.CF77 suction cup, silicone, 50 Shore, G1/4" male	2321956
D	VG.CF77S.50.G38M	VG.CF77 suction cup, silicone, 50 Shore, G3/8" male	2321957



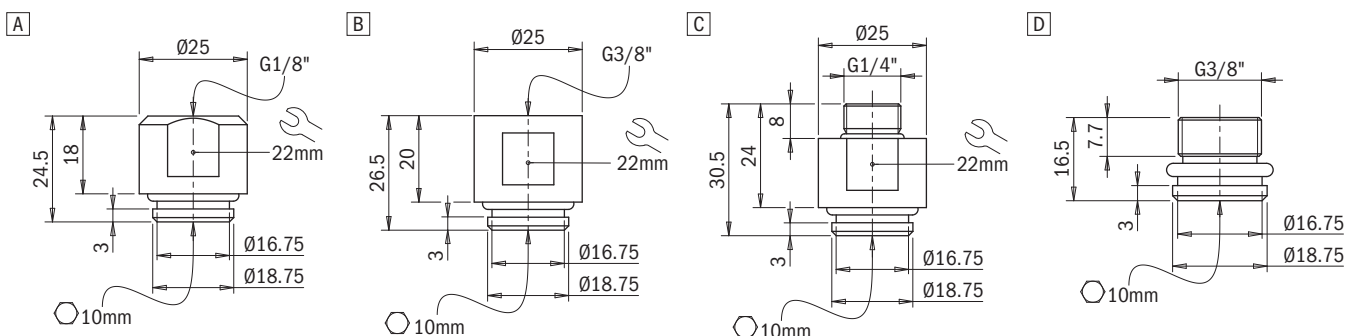
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.CF77S.50	VG.CF77 suction cup, silicone, 50 Shore	2321954



### Identification codes

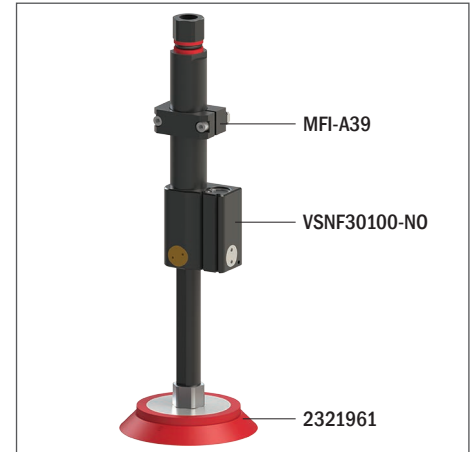
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.16	G1/8" female fitting	1600008
B	FT.G38F	G3/8" female fitting	1600009
C	FT.G14M.16	G1/4" male fitting	1600010
D	FT.G38M.199	G3/8" male fitting	1900039



## VG.CF112 flat suction cups, silicone, with reinforcements

- Ideal for handling plastic parts, dry sheet metal and cardboard
- Suitable for items with flat surfaces
- Suitable for handling items with lifting force parallel to the surface thanks to the reinforcements that increase friction and prevent deformations
- The silicone version enables to work at high and low temperatures

Application example



### Technical data

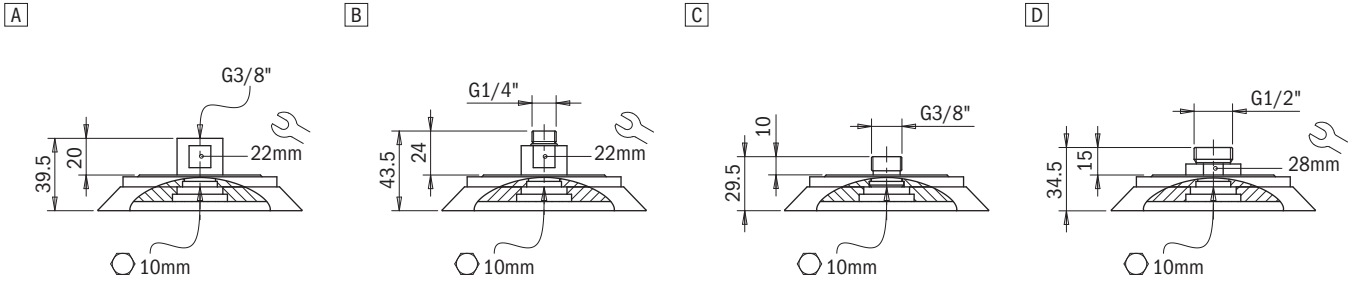
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	160	465	570	145	259	310	70	250	4	80.2

### Technical features

Material	Colour	Hardness	Temperature range
Silicone	Red	50 Shore	-70 ÷ +200 °C

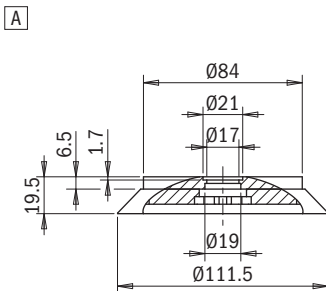
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.CF112S.50.G38F	VG.CF112 suction cup, silicone, 50 Shore, G3/8" female	2321958
B	VG.CF112S.50.G14M	VG.CF112 suction cup, silicone, 50 Shore, G1/4" male	2321960
C	VG.CF112S.50.G38M	VG.CF112 suction cup, silicone, 50 Shore, G3/8" male	2321961
D	VG.CF112S.50.G12M	VG.CF112 suction cup, silicone, 50 Shore, G1/2" male	2321962



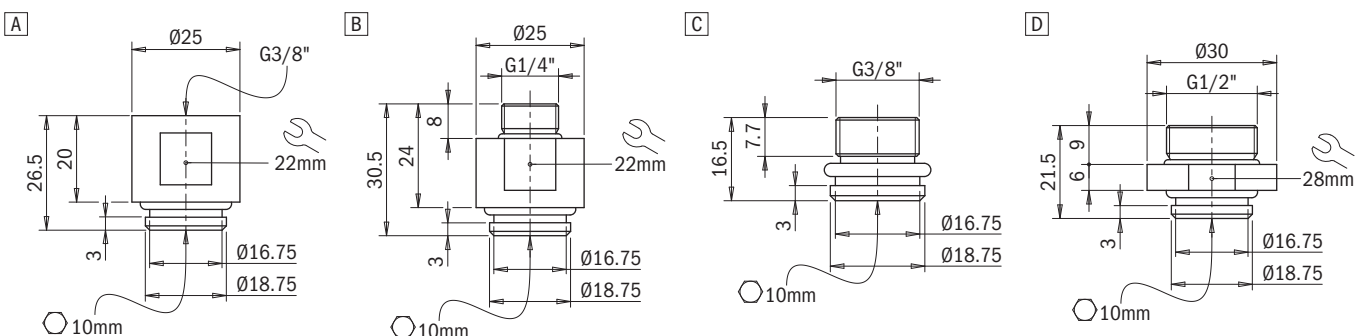
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.CF112S.50	VG.CF112 suction cup, silicone, 50 Shore	2321959



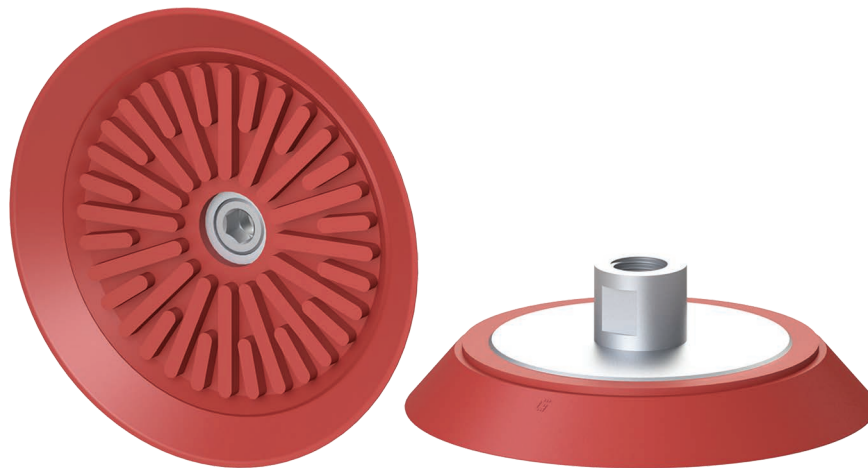
### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G38F	G3/8" female fitting	1600009
B	FT.G14M.16	G1/4" male fitting	1600010
C	FT.G38M.199	G3/8" male fitting	1900039
D	FT.G12M.16	G1/2" male fitting	1600015



## VG.CF152 flat suction cups, silicone, with reinforcements

- Ideal for handling plastic parts, dry sheet metal and cardboard
- Suitable for items with flat surfaces
- Suitable for handling items with lifting force parallel to the surface thanks to the reinforcements that increase friction and prevent deformations
- The silicone version enables to work at high and low temperatures



Application example



### Technical data

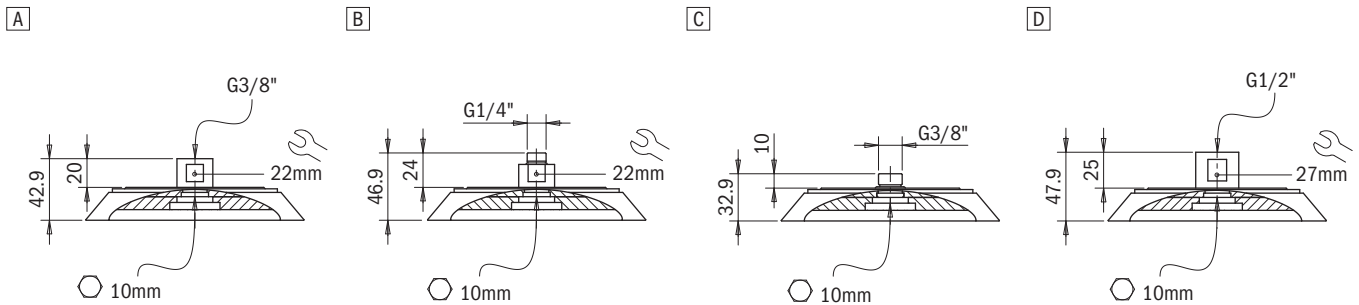
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	310	900	1195	245	620	815	160	500	6	178

### Technical features

Material	Colour	Hardness	Temperature range
Silicone	Red	50 Shore	-70 ÷ +200 °C

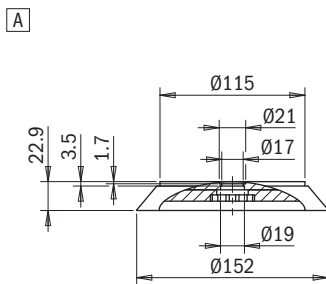
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.CF152S.50.G38F	VG.CF152 suction cup, silicone, 50 Shore, G3/8" female	2321963
B	VG.CF152S.50.G14M	VG.CF152 suction cup, silicone, 50 Shore, G1/4" male	2321965
C	VG.CF152S.50.G38M	VG.CF152 suction cup, silicone, 50 Shore, G3/8" male	2321966
D	VG.CF152S.50.G12F	VG.CF152 suction cup, silicone, 50 Shore, G1/2" female	2321967



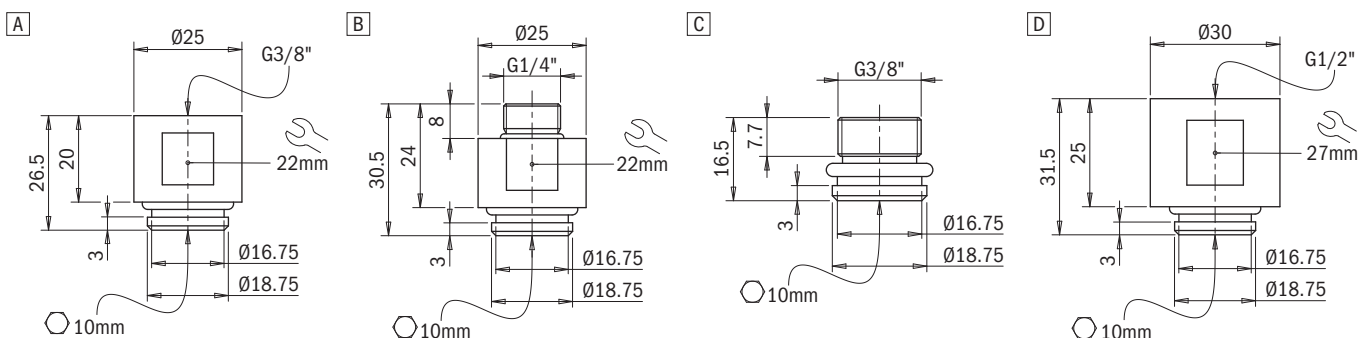
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.CF152S.50	VG.CF152 suction cup, silicone, 50 Shore	2321964



### Identification codes

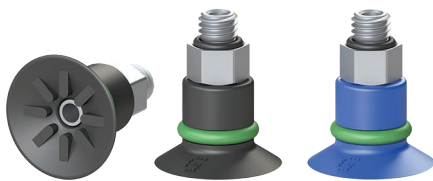
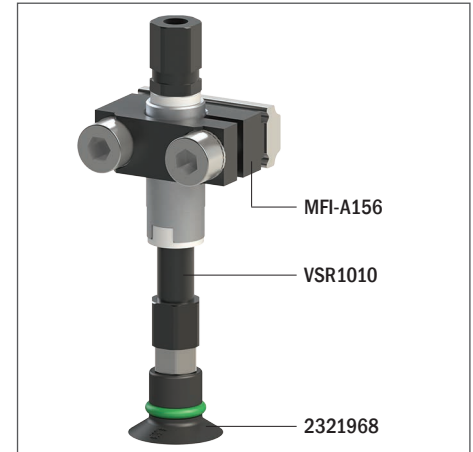
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G38F	G3/8" female fitting	1600009
B	FT.G14M.16	G1/4" male fitting	1600010
C	FT.G38M.199	G3/8" male fitting	1900039
D	FT.G12F	G1/2" female fitting	1600019



## VG.CF16 flat suction cups, NBR-HNBR, with reinforcements

- Ideal for handling plastic parts and dry sheet metal
- Suitable for items with flat surfaces
- Suitable for handling items with lifting force parallel to the surface thanks to the reinforcements that increase friction and prevent deformations
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds
- HNBR and NBR compounds are ideal for applications where contamination of the material must be avoided (PWIS)

Application example



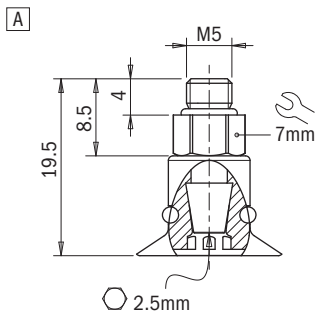
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 60	3.3	8.7	10.1	3.2	6.5	7.6	0.37	13	1	0.8
HNBR 60	3.3	8.7	10.1	3.2	6.5	7.6	0.37	13	1	0.8

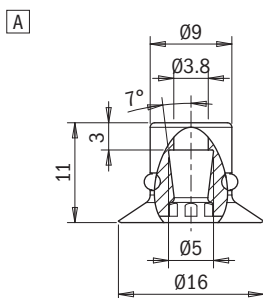
### Technical features

Material	Colour	Hardness	Temperature range
NBR	Black	60 Shore	-30 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

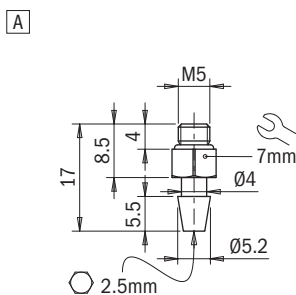
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.CF16N.60.M5M	VG.CF16 suction cup, NBR, 60 Shore, M5 male	2321968
A	VG.CF16H.60.M5M	VG.CF16 suction cup, HNBR, 60 Shore, M5 male	2322010



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.CF16N.60	VG.CF16 suction cup, NBR, 60 Shore	2321969
A	VG.CF16H.60	VG.CF16 suction cup, HNBR, 60 Shore	2322011



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5M	M5 male fitting	1600005

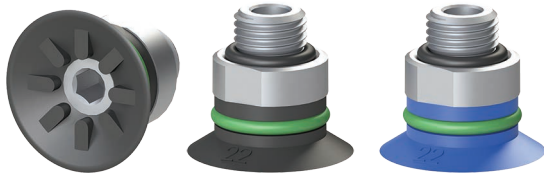
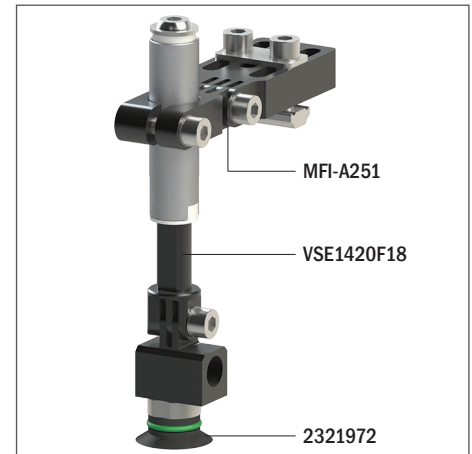




## VG.CF22 flat suction cups, NBR-HNBR, with reinforcements

- Ideal for handling plastic parts and dry sheet metal
- Suitable for items with flat surfaces
- Suitable for handling items with lifting force parallel to the surface thanks to the reinforcements that increase friction and prevent deformations
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds
- HNBR and NBR compounds are ideal for applications where contamination of the material must be avoided (PWIS)

Application example



### Technical data

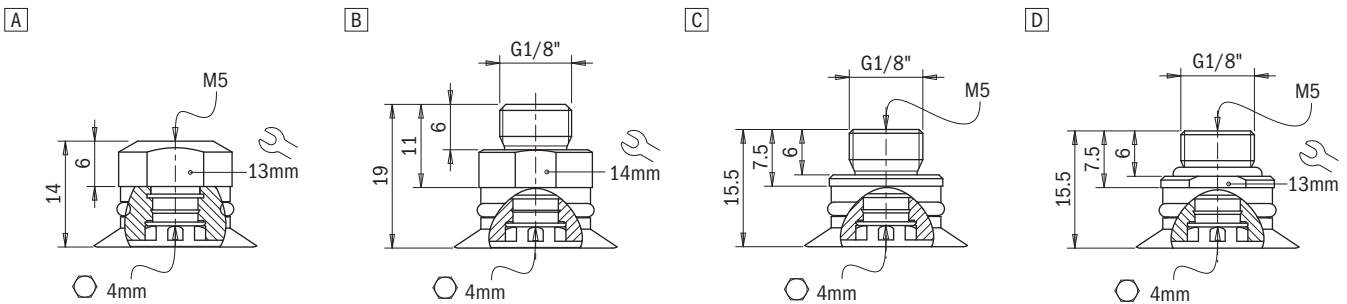
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 60	6.1	13.7	18.7	5.1	8.2	8.5	1	18	1.5	1.3
HNBR 60	6.1	13.7	18.7	5.1	8.2	8.5	1	18	1.5	1.1

### Technical features

Material	Colour	Hardness	Temperature range
NBR	Black	60 Shore	-30 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

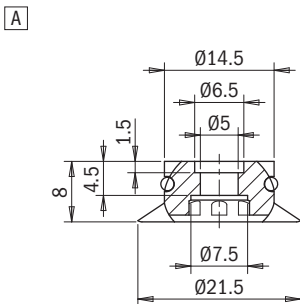
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.CF22N.60.M5F	VG.CF22 suction cup, NBR, 60 Shore, M5 female	2321970
B	VG.CF22N.60.G18M	VG.CF22 suction cup, NBR, 60 Shore, G1/8" male	2321972
C	VG.CF22N.60.G18MF	VG.CF22 suction cup, NBR, 60 Shore, G1/8" male/M5 female	2321973
D	VG.CF22N.60.G18MFV	VG.CF22 suction cup, NBR, 60 Shore, G1/8" male/M5 female with valve	2321974
A	VG.CF22H.60.M5F	VG.CF22 suction cup, HNBR, 60 Shore, M5 female	2322012
B	VG.CF22H.60.G18M	VG.CF22 suction cup, HNBR, 60 Shore, G1/8" male	2322014
C	VG.CF22H.60.G18MF	VG.CF22 suction cup, HNBR, 60 Shore, G1/8" male/M5 female	2322015
D	VG.CF22H.60.G18MFV	VG.CF22 suction cup, HNBR, 60 Shore, G1/8" male/M5 female with valve	2322016



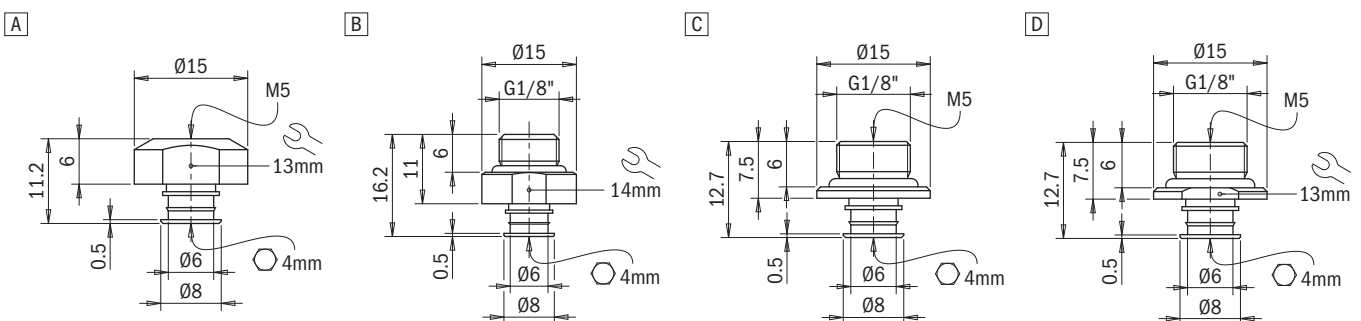
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.CF22N.60	VG.CF22 suction cup, NBR, 60 Shore	2321971
A	VG.CF22H.60	VG.CF22 suction cup, HNBR, 60 Shore	2322013



### Identification codes

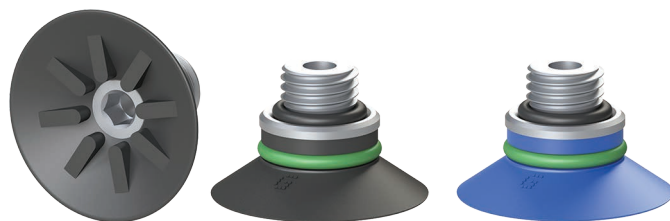
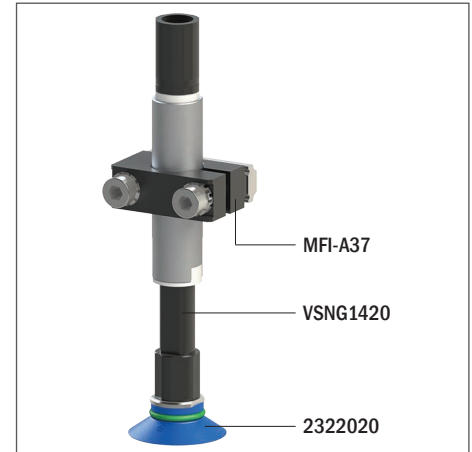
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F	Fitting, M5 female	1700006
B	FT.G18M.17	G1/8" male fitting	1700018
C	FT.G18M.M5F	G1/8" male / M5 female fitting	1700016
D	FT.G18M.M5F.VF	G1/8" male / M5 female fitting, with valve	1700017



## VG.CF27 flat suction cups, NBR-HNBR, with reinforcements

- Ideal for handling plastic parts and dry sheet metal
- Suitable for items with flat surfaces
- Suitable for handling items with lifting force parallel to the surface thanks to the reinforcements that increase friction and prevent deformations
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds
- HNBR and NBR compounds are ideal for applications where contamination of the material must be avoided (PWIS)

Application example



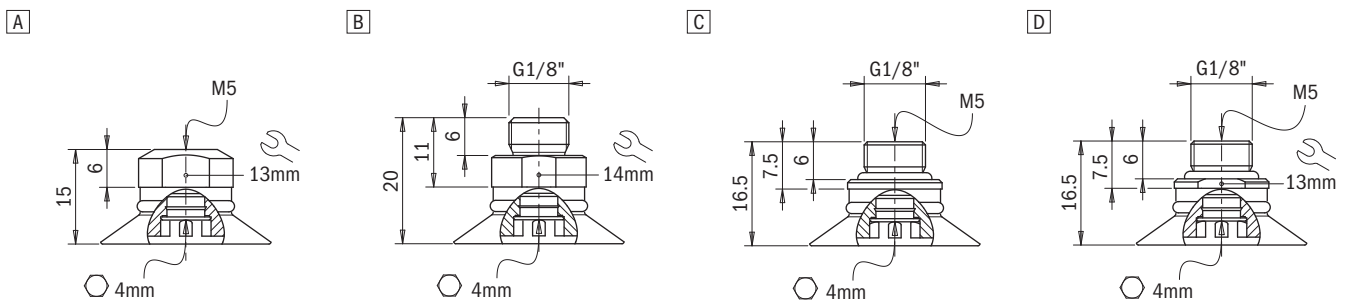
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 60	8.9	21.6	29.1	8.3	9.3	10.2	1.1	22	1.5	1.8
HNBR 60	8.9	21.6	29.1	8.3	9.3	10.2	1.1	22	1.5	1.5

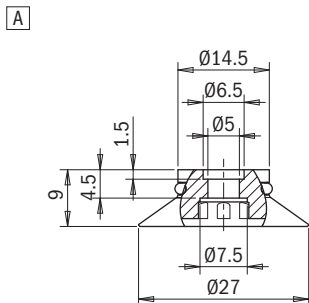
### Technical features

Material	Colour	Hardness	Temperature range
NBR	Black	60 Shore	-30 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

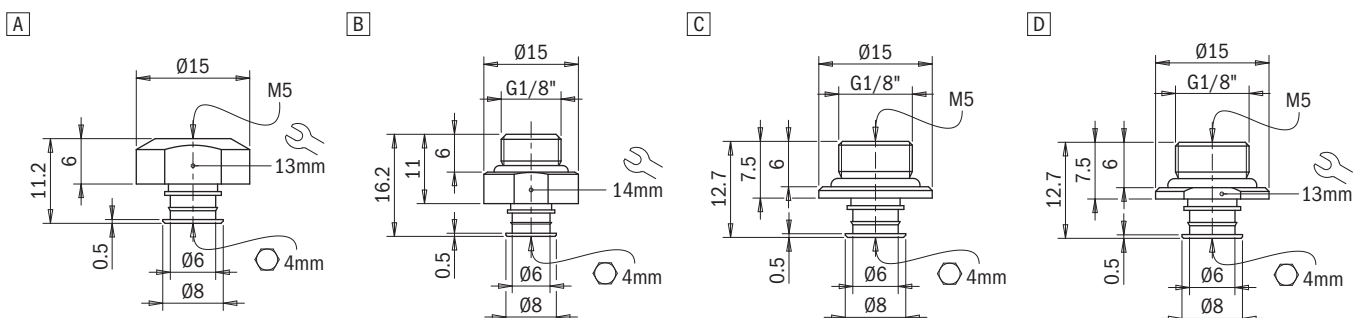
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.CF27N.60.M5F	VG.CF27 suction cup, NBR, 60 Shore, M5 female	2321975
B	VG.CF27N.60.G18M	VG.CF27 suction cup, NBR, 60 Shore, G1/8" male	2321977
C	VG.CF27N.60.G18MF	VG.CF27 suction cup, NBR, 60 Shore, G1/8" male/M5 female	2321978
D	VG.CF27N.60.G18MFV	VG.CF27 suction cup, NBR, 60 Shore, G1/8" male/M5 female with valve	2321979
A	VG.CF27H.60.M5F	VG.CF27 suction cup, HNBR, 60 Shore, M5 female	2322017
B	VG.CF27H.60.G18M	VG.CF27 suction cup, HNBR, 60 Shore, G1/8" male	2322019
C	VG.CF27H.60.G18MF	VG.CF27 suction cup, HNBR, 60 Shore, G1/8" male/M5 female	2322020
D	VG.CF27H.60.G18MFV	VG.CF27 suction cup, HNBR, 60 Shore, G1/8" male/M5 female with valve	2322021



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.CF27N.60	VG.CF27 suction cup, NBR, 60 Shore	2321976
A	VG.CF27H.60	VG.CF27 suction cup, HNBR, 60 Shore	2322018



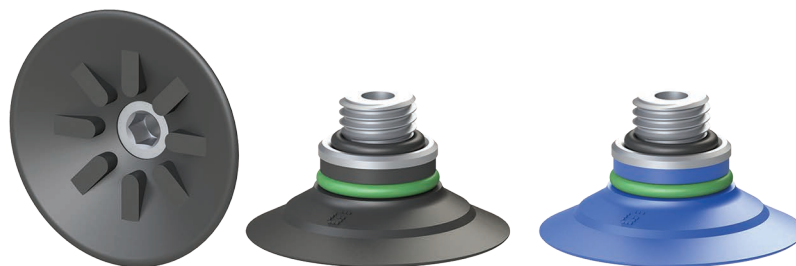
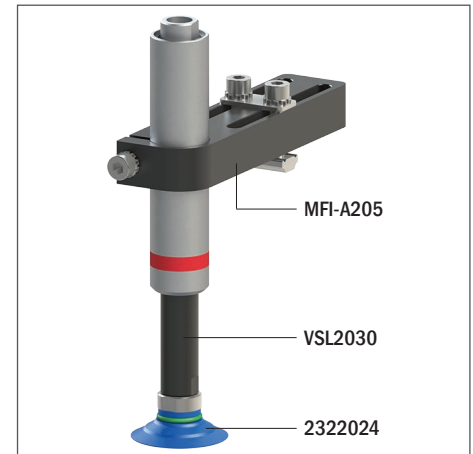
Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F	Fitting, M5 female	1700006
B	FT.G18M.17	G1/8" male fitting	1700018
C	FT.G18M.M5F	G1/8" male / M5 female fitting	1700016
D	FT.G18M.M5F.VF	G1/8" male / M5 female fitting, with valve	1700017



## VG.CF33 flat suction cups, NBR-HNBR, with reinforcements

- Ideal for handling plastic parts and dry sheet metal
- Suitable for items with flat surfaces
- Suitable for handling items with lifting force parallel to the surface thanks to the reinforcements that increase friction and prevent deformations
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds
- HNBR and NBR compounds are ideal for applications where contamination of the material must be avoided (PWIS)

Application example



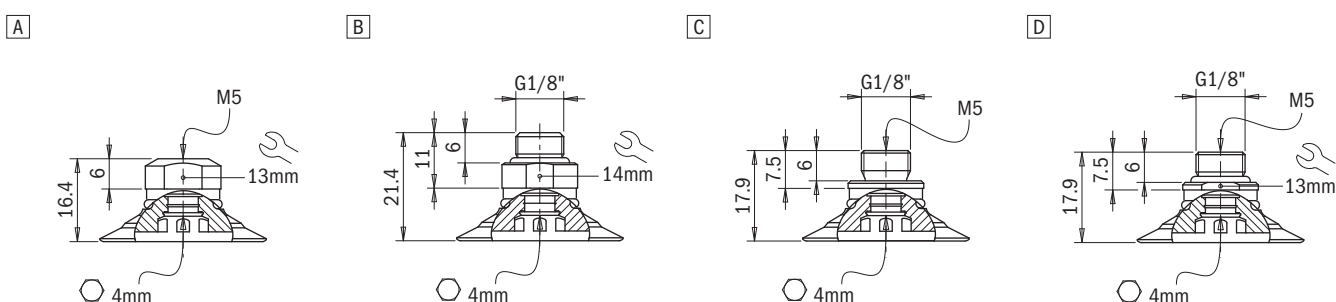
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 60	12.4	32.3	41.5	11	16.2	20.8	2	25	2	2.6
HNBR 60	12.4	32.3	41.5	11	16.2	20.8	2	25	2	2.1

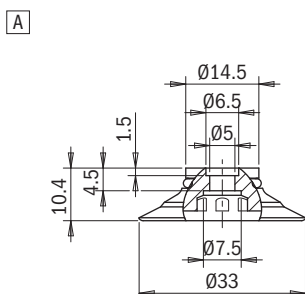
### Technical features

Material	Colour	Hardness	Temperature range
NBR	Black	60 Shore	-30 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

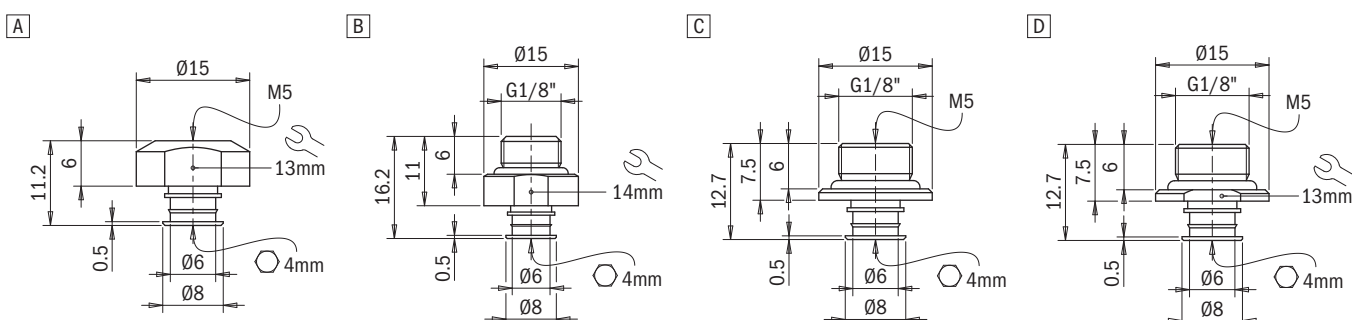
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.CF33N.60.M5F	VG.CF33 suction cup, NBR, 60 Shore, M5 female	2321980
B	VG.CF33N.60.G18M	VG.CF33 suction cup, NBR, 60 Shore, G1/8" male	2321982
C	VG.CF33N.60.G18MF	VG.CF33 suction cup, NBR, 60 Shore, G1/8" male/M5 female	2321983
D	VG.CF33N.60.G18MFV	VG.CF33 suction cup, NBR, 60 Shore, G1/8" male/M5 female with valve	2321984
A	VG.CF33H.60.M5F	VG.CF33 suction cup, HNBR, 60 Shore, M5 female	2322022
B	VG.CF33H.60.G18M	VG.CF33 suction cup, HNBR, 60 Shore, G1/8" male	2322024
C	VG.CF33H.60.G18MF	VG.CF33 suction cup, HNBR, 60 Shore, G1/8" male/M5 female	2322025
D	VG.CF33H.60.G18MFV	VG.CF33 suction cup, HNBR, 60 Shore, G1/8" male/M5 female with valve	2322026



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.CF33N.60	VG.CF33 suction cup, NBR, 60 Shore	2321981
A	VG.CF33H.60	VG.CF33 suction cup, HNBR, 60 Shore	2322023



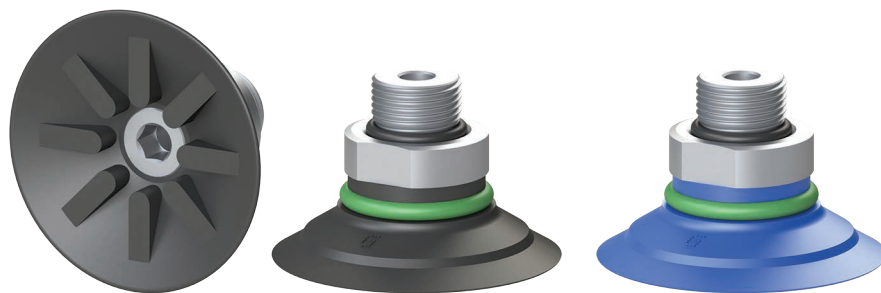
Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F	Fitting, M5 female	1700006
B	FT.G18M.17	G1/8" male fitting	1700018
C	FT.G18M.M5F	G1/8" male / M5 female fitting	1700016
D	FT.G18M.M5F.VF	G1/8" male / M5 female fitting, with valve	1700017



## VG.CF42 flat suction cups, NBR-HNBR, with reinforcements

- Ideal for handling plastic parts and dry sheet metal
- Suitable for items with flat surfaces
- Suitable for handling items with lifting force parallel to the surface thanks to the reinforcements that increase friction and prevent deformations
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds
- HNBR and NBR compounds are ideal for applications where contamination of the material must be avoided (PWIS)

Application example



### Technical data

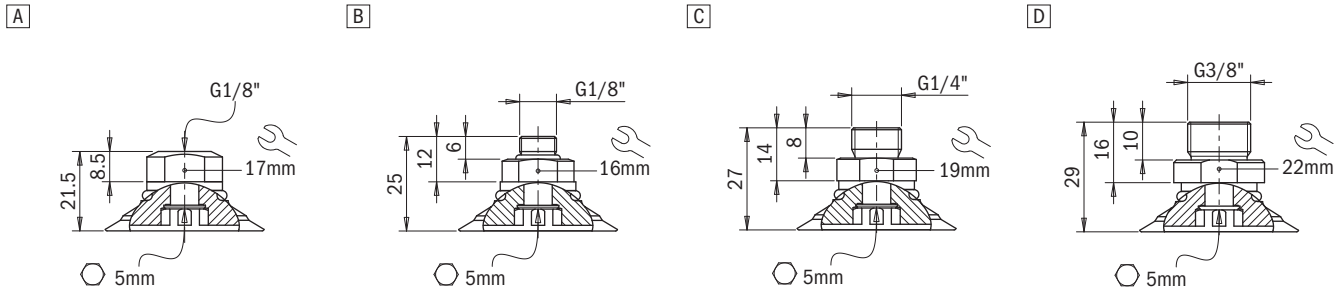
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 60	21.8	52	68	15	24.5	31	4.8	52	1.8	6.3
HNBR 60	21.8	52	68	15	24.5	31	4.8	52	1.8	5.2

### Technical features

Material	Colour	Hardness	Temperature range
NBR	Black	60 Shore	-30 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

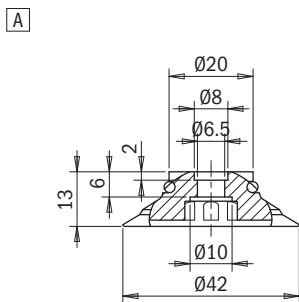
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.CF42N.60.G18F	VG.CF42 suction cup, NBR, 60 Shore, G1/8" female	2321985
B	VG.CF42N.60.G18M	VG.CF42 suction cup, NBR, 60 Shore, G1/8" male	2321987
C	VG.CF42N.60.G14M	VG.CF42 suction cup, NBR, 60 Shore, G1/4" male	2321988
D	VG.CF42N.60.G38M	VG.CF42 suction cup, NBR, 60 Shore, G3/8" male	2321989
A	VG.CF42H.60.G18F	VG.CF42 suction cup, HNBR, 60 Shore, G1/8" female	2322027
B	VG.CF42H.60.G18M	VG.CF42 suction cup, HNBR, 60 Shore, G1/8" male	2322029
C	VG.CF42H.60.G14M	VG.CF42 suction cup, HNBR, 60 Shore, G1/4" male	2322030
D	VG.CF42H.60.G38M	VG.CF42 suction cup, HNBR, 60 Shore, G3/8" male	2322031



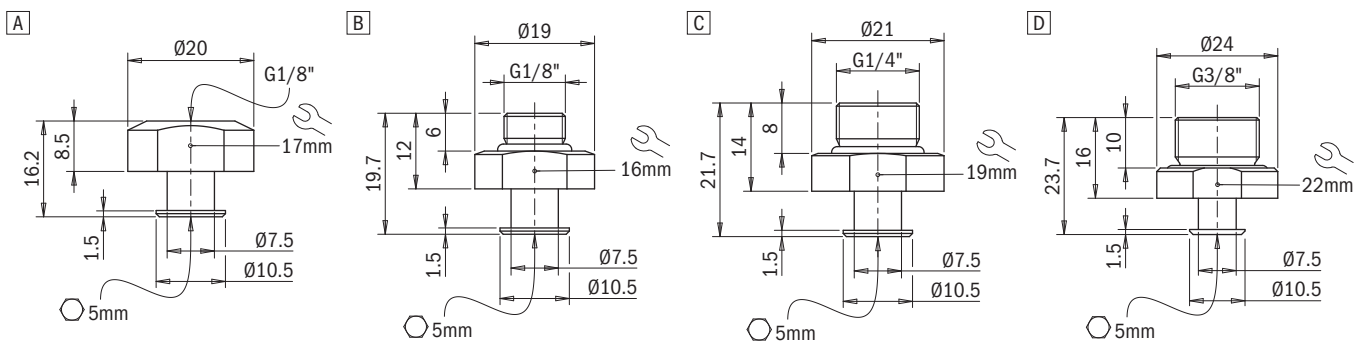
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.CF42N.60	VG.CF42 suction cup, NBR, 60 Shore	2321986
A	VG.CF42H.60	VG.CF42 suction cup, HNBR, 60 Shore	2322028



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.18	G1/8" female fitting	1800019
B	FT.G18M.18	G1/8" male fitting	1800018
C	FT.G14M.18	G1/4" male fitting	1800014
D	FT.G38M.18	G3/8" male fitting	1800038

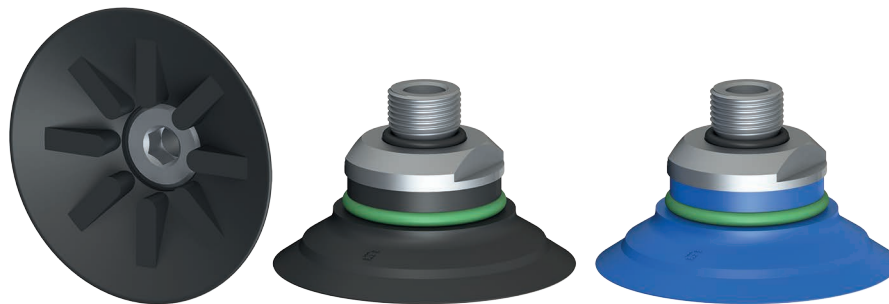




## VG.CF53 flat suction cups, NBR-HNBR, with reinforcements

- Ideal for handling plastic parts and dry sheet metal
- Suitable for items with flat surfaces
- Suitable for handling items with lifting force parallel to the surface thanks to the reinforcements that increase friction and prevent deformations
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds
- HNBR and NBR compounds are ideal for applications where contamination of the material must be avoided (PWIS)

Application example



### Technical data

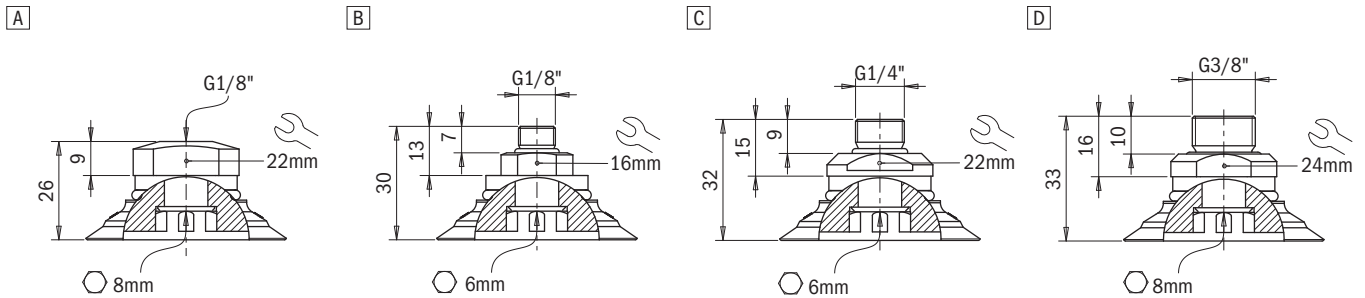
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 60	36.7	72	98	25	42	49	10	55	2.2	13.1
HNBR 60	36.7	72	98	25	42	49	10	55	2.2	10.8

### Technical features

Material	Colour	Hardness	Temperature range
NBR	Black	60 Shore	-30 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

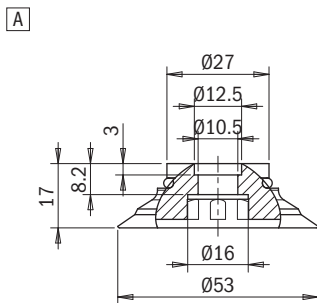
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.CF53N.60.G18F	VG.CF53 suction cup, NBR, 60 Shore, G1/8" female	2321990
B	VG.CF53N.60.G18M	VG.CF53 suction cup, NBR, 60 Shore, G1/8" male	2321992
C	VG.CF53N.60.G14M	VG.CF53 suction cup, NBR, 60 Shore, G1/4" male	2321993
D	VG.CF53N.60.G38M	VG.CF53 suction cup, NBR, 60 Shore, G3/8" male	2321994
A	VG.CF53H.60.G18F	VG.CF53 suction cup, HNBR, 60 Shore, G1/8" female	2322032
B	VG.CF53H.60.G18M	VG.CF53 suction cup, HNBR, 60 Shore, G1/8" male	2322034
C	VG.CF53H.60.G14M	VG.CF53 suction cup, HNBR, 60 Shore, G1/4" male	2322035
D	VG.CF53H.60.G38M	VG.CF53 suction cup, HNBR, 60 Shore, G3/8" male	2322036



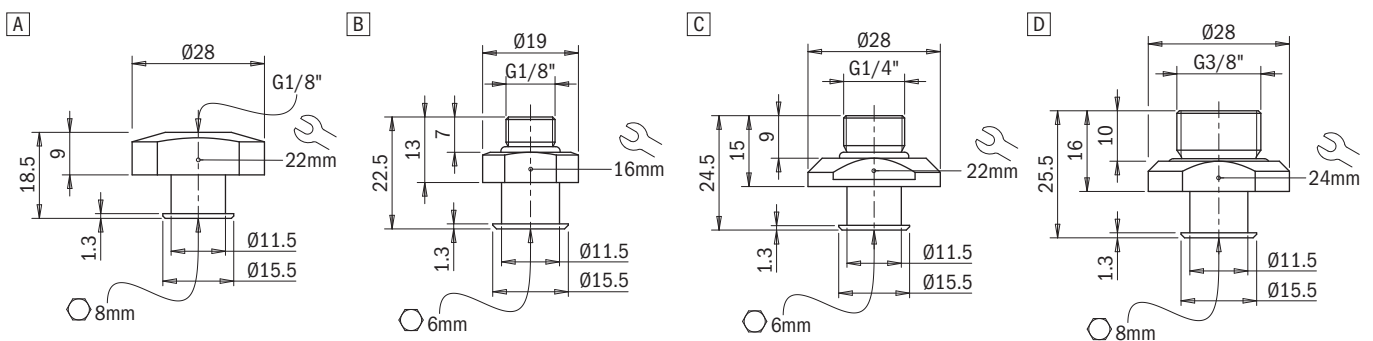
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.CF53N.60	VG.CF53 suction cup, NBR, 60 Shore	2321991
A	VG.CF53H.60	VG.CF53 suction cup, HNBR, 60 Shore	2322033



### Identification codes

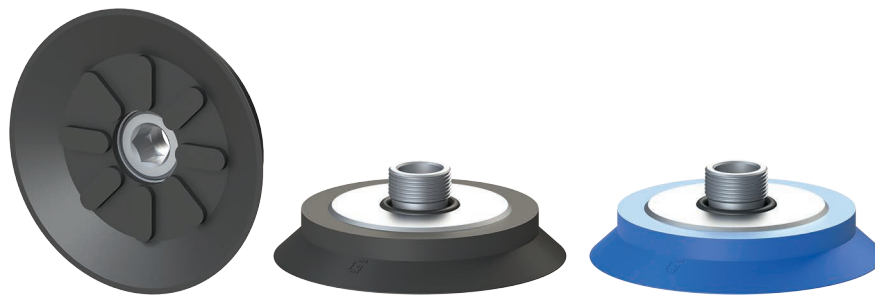
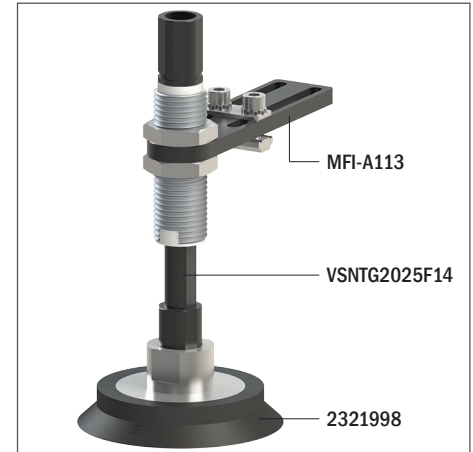
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.19	G1/8" female fitting	1900019
B	FT.G18M.19	G1/8" male fitting	1900018
C	FT.G14M.19	G1/4" male fitting	1900014
D	FT.G38M.198	G3/8" male fitting	1900038



## VG.CF77 flat suction cups, NBR-HNBR, with reinforcements

- Ideal for handling plastic parts and dry sheet metal
- Suitable for items with flat surfaces
- Suitable for handling items with lifting force parallel to the surface thanks to the reinforcements that increase friction and prevent deformations
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds
- HNBR and NBR compounds are ideal for applications where contamination of the material must be avoided (PWIS)

Application example



### Technical data

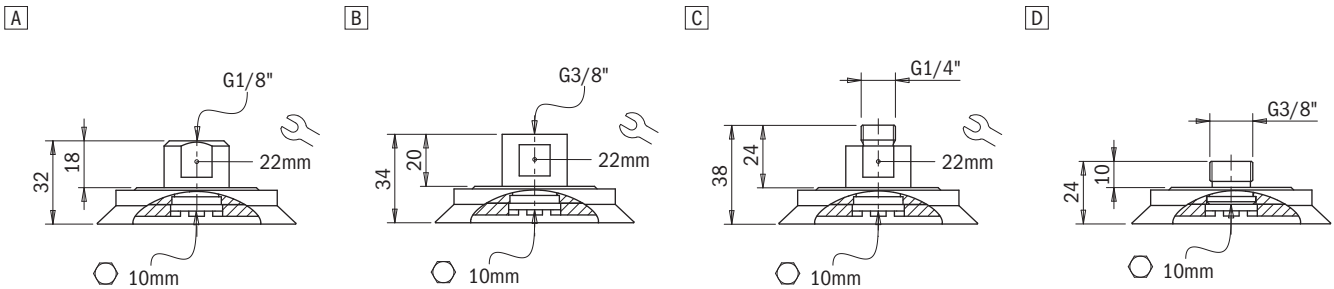
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 60	90	215	290	60	118	145	20	150	3	38.6
HNBR 60	90	215	290	60	118	145	20	150	3	31.3

### Technical features

Material	Colour	Hardness	Temperature range
NBR	Black	60 Shore	-30 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

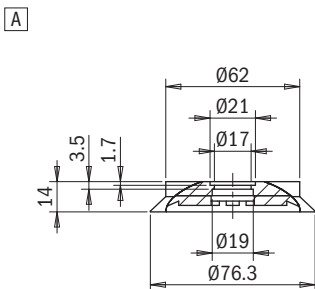
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.CF77N.60.G18F	VG.CF77 suction cup, NBR, 60 Shore, G1/8" female	2321995
B	VG.CF77N.60.G38F	VG.CF77 suction cup, NBR, 60 Shore, G3/8" female	2321997
C	VG.CF77N.60.G14M	VG.CF77 suction cup, NBR, 60 Shore, G1/4" male	2321998
D	VG.CF77N.60.G38M	VG.CF77 suction cup, NBR, 60 Shore, G3/8" male	2321999
A	VG.CF77H.60.G18F	VG.CF77 suction cup, HNBR, 60 Shore, G1/8" female	2322037
B	VG.CF77H.60.G38F	VG.CF77 suction cup, HNBR, 60 Shore, G3/8" female	2322039
C	VG.CF77H.60.G14M	VG.CF77 suction cup, HNBR, 60 Shore, G1/4" male	2322040
D	VG.CF77H.60.G38M	VG.CF77 suction cup, HNBR, 60 Shore, G3/8" male	2322041



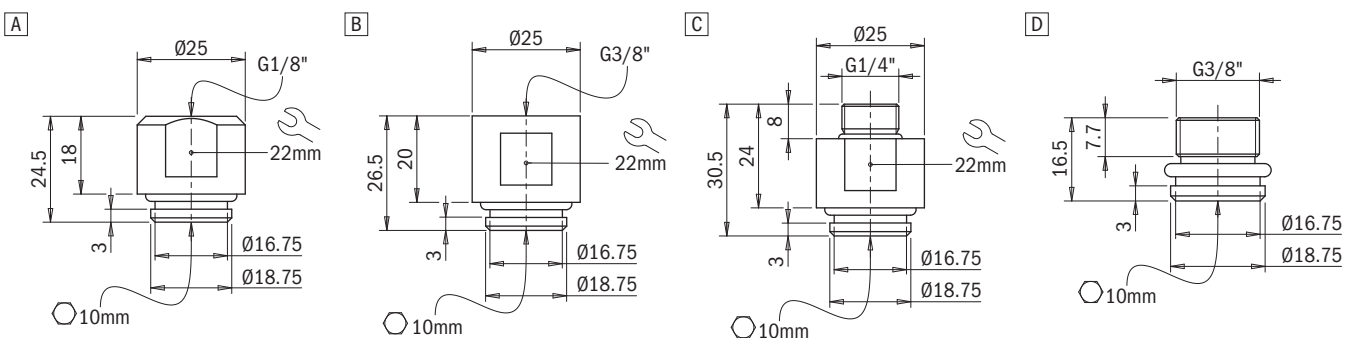
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.CF77N.60	VG.CF77 suction cup, NBR, 60 Shore	2321996
A	VG.CF77H.60	VG.CF77 suction cup, HNBR, 60 Shore	2322038



### Identification codes

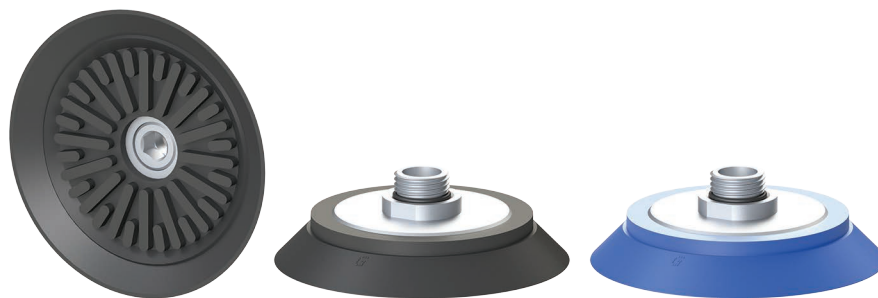
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.16	G1/8" female fitting	1600008
B	FT.G38F	G3/8" female fitting	1600009
C	FT.G14M.16	G1/4" male fitting	1600010
D	FT.G38M.199	G3/8" male fitting	1900039



## VG.CF112 flat suction cups, NBR-HNBR, with reinforcements

- Ideal for handling plastic parts and dry sheet metal
- Suitable for items with flat surfaces
- Suitable for handling items with lifting force parallel to the surface thanks to the reinforcements that increase friction and prevent deformations
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds
- HNBR and NBR compounds are ideal for applications where contamination of the material must be avoided (PWIS)

Application example



### Technical data

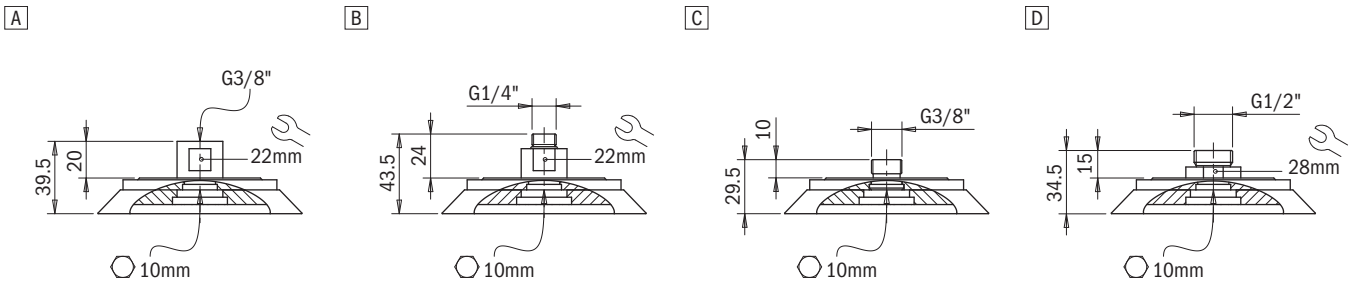
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 60	160	465	570	145	259	310	70	250	4	98.6
HNBR 60	160	465	570	145	259	310	70	250	4	80.2

### Technical features

Material	Colour	Hardness	Temperature range
NBR	Black	60 Shore	-30 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

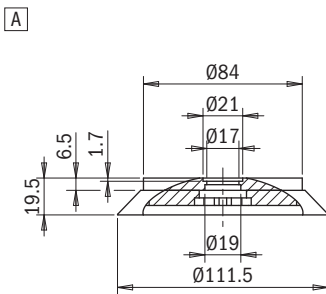
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.CF112N.60.G38F	VG.CF112 suction cup, NBR, 60 Shore, G3/8" female	2322000
B	VG.CF112N.60.G14M	VG.CF112 suction cup, NBR, 60 Shore, G1/4" male	2322002
C	VG.CF112N.60.G38M	VG.CF112 suction cup, NBR, 60 Shore, G3/8" male	2322003
D	VG.CF112N.60.G12M	VG.CF112 suction cup, NBR, 60 Shore, G1/2" male	2322004
A	VG.CF112H.60.G38F	VG.CF112 suction cup, HNBR, 60 Shore, G3/8" female	2322042
B	VG.CF112H.60.G14M	VG.CF112 suction cup, HNBR, 60 Shore, G1/4" male	2322044
C	VG.CF112H.60.G38M	VG.CF112 suction cup, HNBR, 60 Shore, G3/8" male	2322045
D	VG.CF112H.60.G12M	VG.CF112 suction cup, HNBR, 60 Shore, G1/2" male	2322046



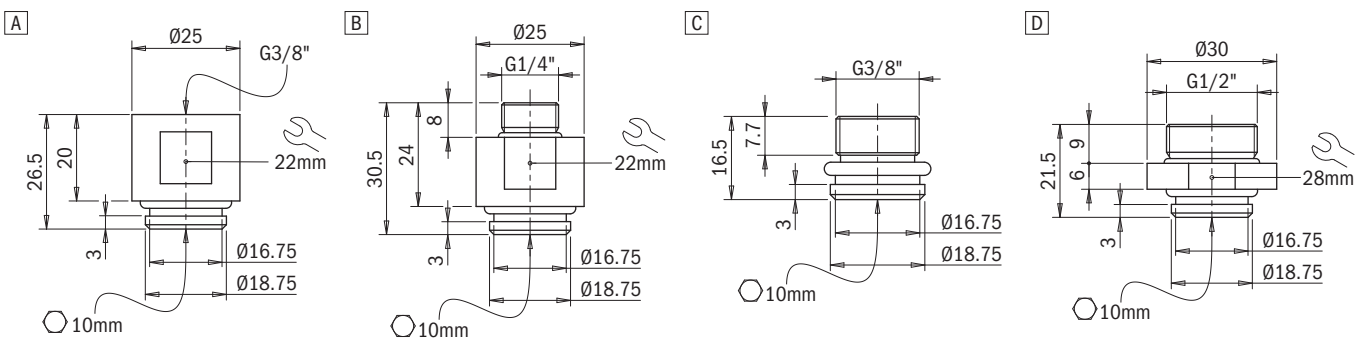
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.CF112N.60	VG.CF112 suction cup, NBR, 60 Shore	2322001
A	VG.CF112H.60	VG.CF112 suction cup, HNBR, 60 Shore	2322043



### Identification codes

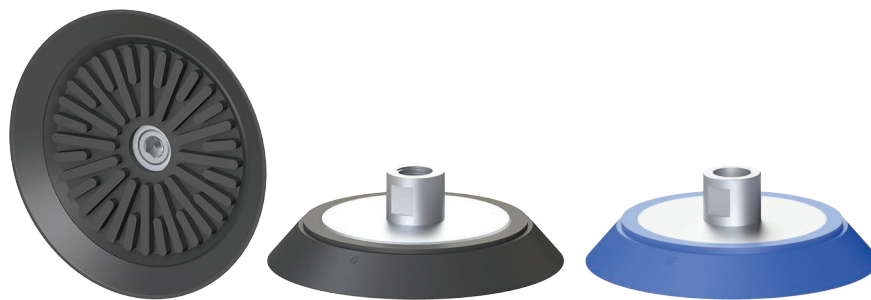
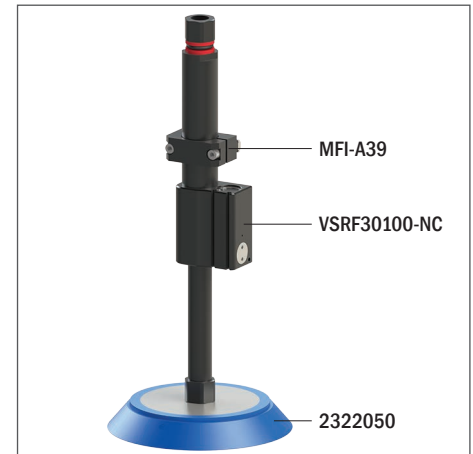
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G38F	G3/8" female fitting	1600009
B	FT.G14M.16	G1/4" male fitting	1600010
C	FT.G38M.199	G3/8" male fitting	1900039
D	FT.G12M.16	G1/2" male fitting	1600015



## VG.CF152 flat suction cups, NBR-HNBR, with reinforcements

- Ideal for handling plastic parts and dry sheet metal
- Suitable for items with flat surfaces
- Suitable for handling items with lifting force parallel to the surface thanks to the reinforcements that increase friction and prevent deformations
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds
- HNBR and NBR compounds are ideal for applications where contamination of the material must be avoided (PWIS)

Application example



### Technical data

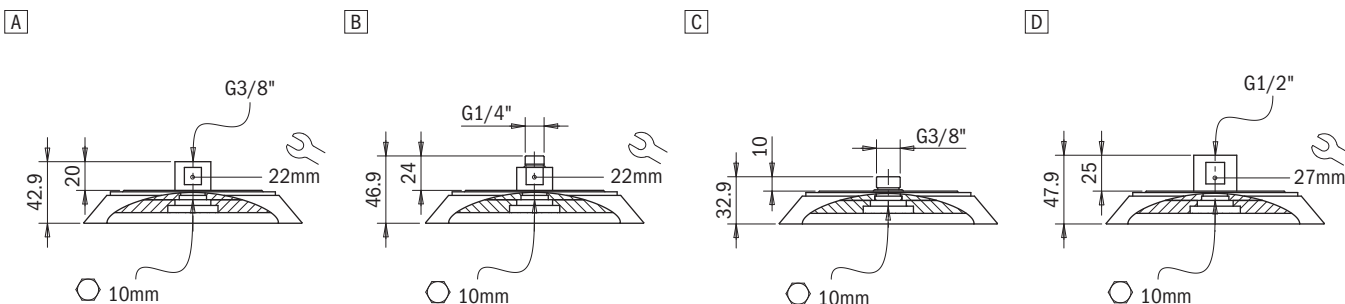
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 60	310	900	1195	245	620	815	160	500	6	219
HNBR 60	310	900	1195	245	620	815	160	500	6	178

### Technical features

Material	Colour	Hardness	Temperature range
NBR	Black	60 Shore	-30 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

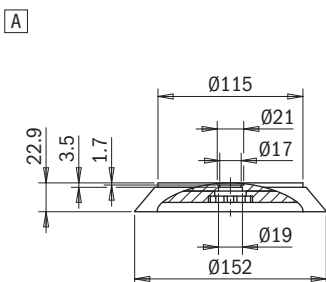
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.CF152N.60.G38F	VG.CF152 suction cup, NBR, 60 Shore, G3/8" female	2322005
B	VG.CF152N.60.G14M	VG.CF152 suction cup, NBR, 60 Shore, G1/4" male	2322007
C	VG.CF152N.60.G38M	VG.CF152 suction cup, NBR, 60 Shore, G3/8" male	2322008
D	VG.CF152N.60.G12F	VG.CF152 suction cup, NBR, 60 Shore, G1/2" female	2322009
A	VG.CF152H.60.G38F	VG.CF152 suction cup, HNBR, 60 Shore, G3/8" female	2322047
B	VG.CF152H.60.G14M	VG.CF152 suction cup, HNBR, 60 Shore, G1/4" male	2322049
C	VG.CF152H.60.G38M	VG.CF152 suction cup, HNBR, 60 Shore, G3/8" male	2322050
D	VG.CF152H.60.G12F	VG.CF152 suction cup, HNBR, 60 Shore, G1/2" female	2322051



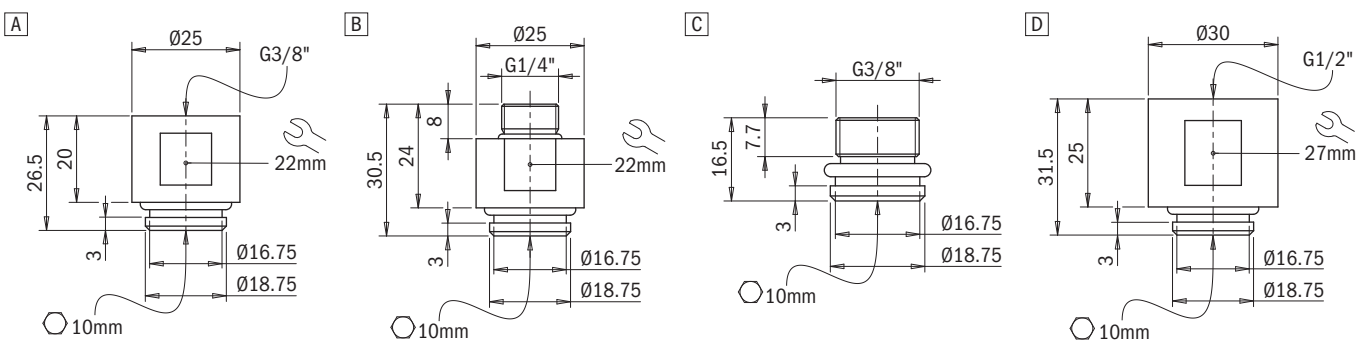
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.CF152N.60	VG.CF152 suction cup, NBR, 60 Shore	2322006
A	VG.CF152H.60	VG.CF152 suction cup, HNBR, 60 Shore	2322048



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G38F	G3/8" female fitting	1600009
B	FT.G14M.16	G1/4" male fitting	1600010
C	FT.G38M.199	G3/8" male fitting	1900039
D	FT.G12F	G1/2" female fitting	1600019

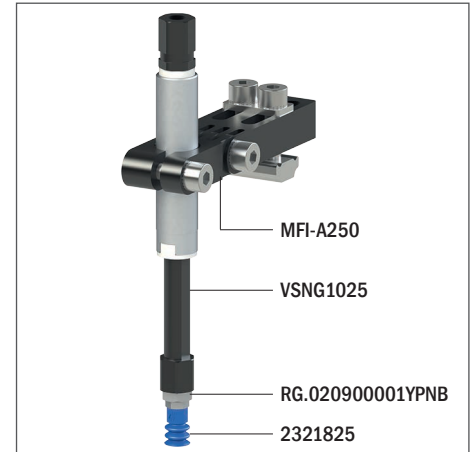




## VG.LB6 bellows suction cups in NBR-HNBR

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height
- Ideal for leafing through and picking up thin metal sheets, glass sheets, chipboard or pressed wood panels, plastic laminates
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

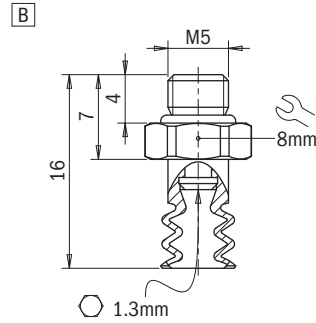
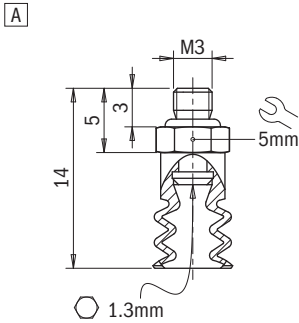
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 50	0.4	1.1	1.7	–	–	–	0.033	8	3	0.1
HNBR 60	0.4	1.1	1.7	–	–	–	0.033	8	3	0.1

### Technical features

Material	Colour	Hardness	Temperature range
NBR	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

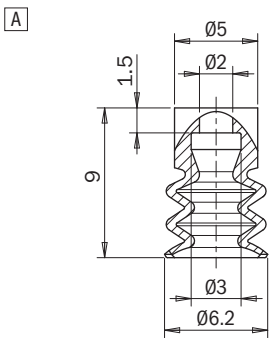
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB6N.50.M3M.E5	VG.LB6 suction cup, NBR, 50 Shore, M3 male, 5 mm hex	2321823
A	VG.LB6H.60.M3M.E5	VG.LB6 suction cup, HNBR, 60 Shore, M3 male, 5 mm hex	2321825
B	VG.LB6N.50.M5M.E8	VG.LB6 suction cup, NBR, 50 Shore, M5 male, 8 mm hex	2321023
B	VG.LB6H.60.M5M.E8	VG.LB6 suction cup, HNBR, 60 Shore, M5 male, 8 mm hex	2321025



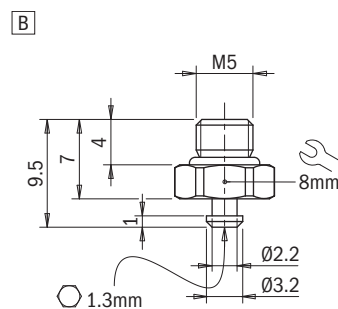
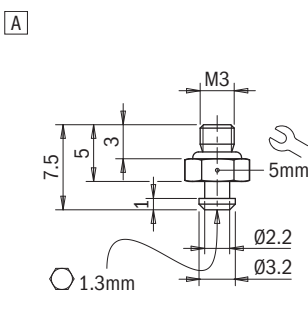
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LB6N.50	VG.LB6 suction cup, NBR, 50 Shore	2321824
A	VG.LB6H.60	VG.LB6 suction cup, HNBR, 60 Shore	2321826



### Identification codes

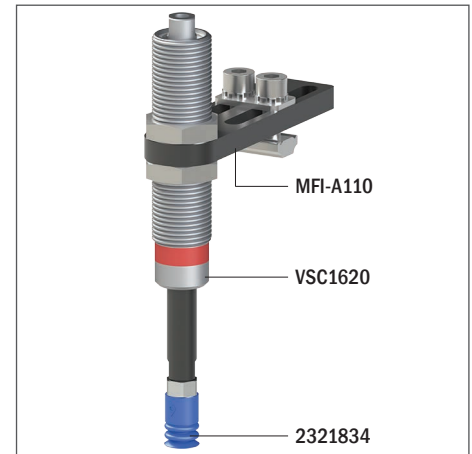
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M3M.E5	M3 male fitting, 5 mm hex	2321402
B	FT.M5M.E8.06	M5 male fitting, 8 mm hex	2321005



## VG.LB9 bellows suction cups in NBR-HNBR

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height
- Ideal for leafing through and picking up thin metal sheets, glass sheets, chipboard or pressed wood panels, plastic laminates
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

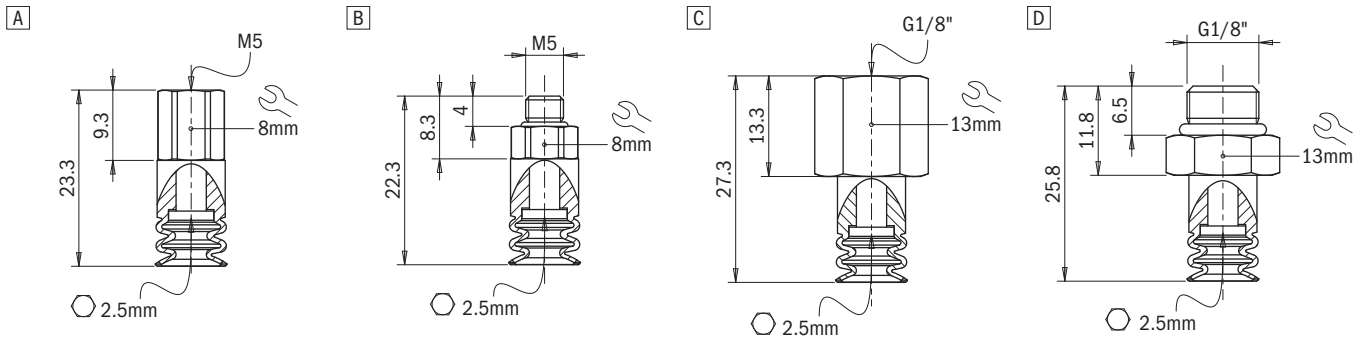
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 50	1.1	3	4.2	–	–	–	0.15	10	4	0.7
HNBR 60	1.1	3	4.2	–	–	–	0.15	10	4	0.5

### Technical features

Material	Colour	Hardness	Temperature range
NBR	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

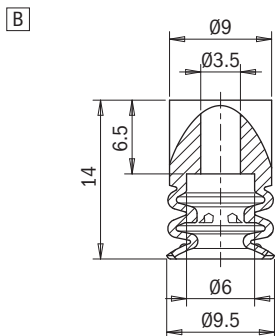
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB9N.50.M5F.E8	VG.LB9 suction cup, NBR, 50 Shore, M5 female, 8 mm hex	2321827
B	VG.LB9N.50.M5M.E8	VG.LB9 suction cup, NBR, 50 Shore, M5 male, 8 mm hex	2321829
C	VG.LB9N.50.G18F.E13	VG.LB9 suction cup, NBR, 50 Shore, G1/8" female, 13 mm hex	2321830
D	VG.LB9N.50.G18M.E13	VG.LB9 suction cup, NBR, 50 Shore, G1/8" male, 13 mm hex	2321831
A	VG.LB9H.60.M5F.E8	VG.LB9 suction cup, HNBR, 60 Shore, M5 female, 8 mm hex	2321832
B	VG.LB9H.60.M5M.E8	VG.LB9 suction cup, HNBR, 60 Shore, M5 male, 8 mm hex	2321834
C	VG.LB9H.60.G18F.E13	VG.LB9 suction cup, HNBR, 60 Shore, G1/8" female, 13 mm hex	2321835
D	VG.LB9H.60.G18M.E13	VG.LB9 suction cup, HNBR, 60 Shore, G1/8" male, 13 mm hex	2321836



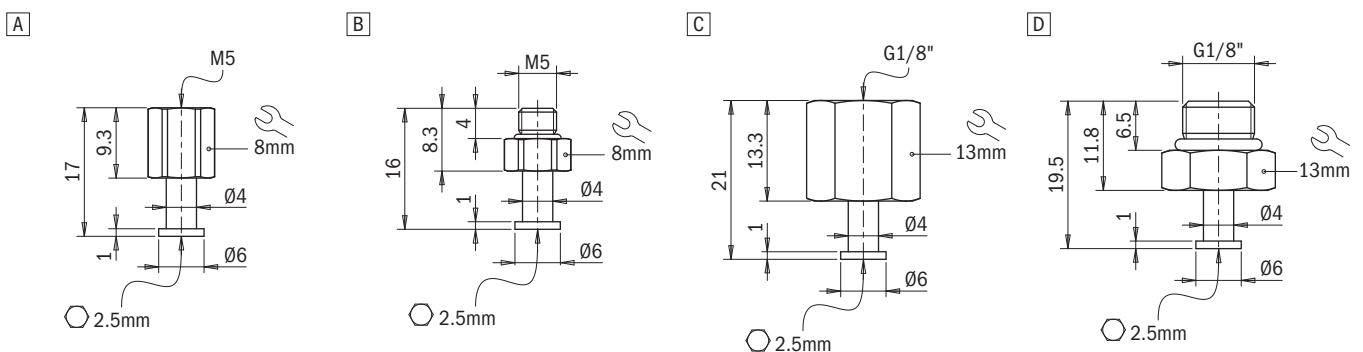
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LB9N.50	VG.LB9 suction cup, NBR, 50 Shore	2321828
A	VG.LB9H.60	VG.LB9 suction cup, HNBR, 60 Shore	2321833



### Identification codes

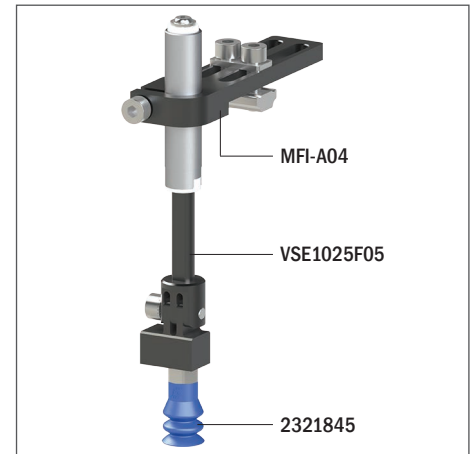
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414



## VG.LB11 bellows suction cups in NBR-HNBR

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height
- Ideal for leafing through and picking up thin metal sheets, glass sheets, chipboard or pressed wood panels, plastic laminates
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

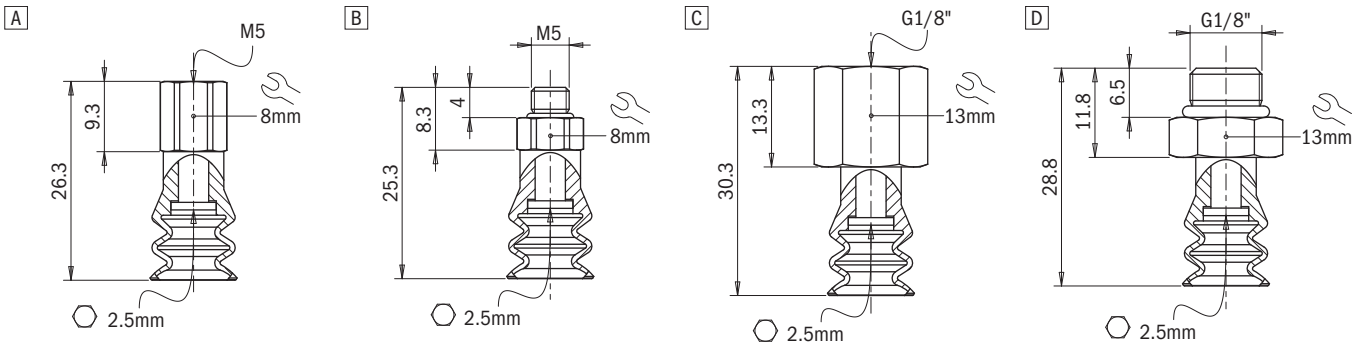
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 50	1.7	4.3	6.6	–	–	–	0.6	13	7	0.8
HNBR 60	1.7	4.3	6.6	–	–	–	0.6	13	7	0.6

### Technical features

Material	Colour	Hardness	Temperature range
NBR	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

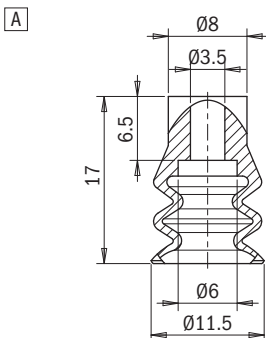
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB11N.50.M5F.E8	VG.LB11 suction cup, NBR, 50 Shore, M5 female, 8 mm hex	2321837
B	VG.LB11N.50.M5M.E8	VG.LB11 suction cup, NBR, 50 Shore, M5 male, 8 mm hex	2321839
C	VG.LB11N.50.G18F.E13	VG.LB11 suction cup, NBR, 50 Shore, G1/8" female, 13 mm hex	2321840
D	VG.LB11N.50.G18M.E13	VG.LB11 suction cup, NBR, 50 Shore, G1/8" male, 13 mm hex	2321841
A	VG.LB11H.60.M5F.E8	VG.LB11 suction cup, HNBR, 60 Shore, M5 female, 8 mm hex	2321842
B	VG.LB11H.60.M5M.E8	VG.LB11 suction cup, HNBR, 60 Shore, M5 male, 8 mm hex	2321845
C	VG.LB11H.60.G18F.E13	VG.LB11 suction cup, HNBR, 60 Shore, G1/8" female, 13 mm hex	2321846
D	VG.LB11H.60.G18M.E13	VG.LB11 suction cup, HNBR, 60 Shore, G1/8" male, 13 mm hex	2321847



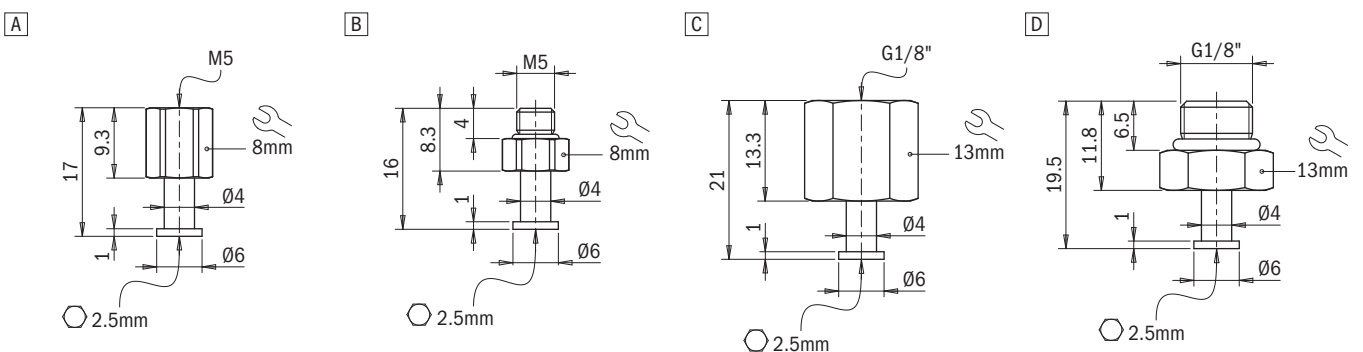
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LB11N.50	VG.LB11 suction cup, NBR, 50 Shore	2321838
A	VG.LB11H.60	VG.LB11 suction cup, HNBR, 60 Shore	2321843



### Identification codes

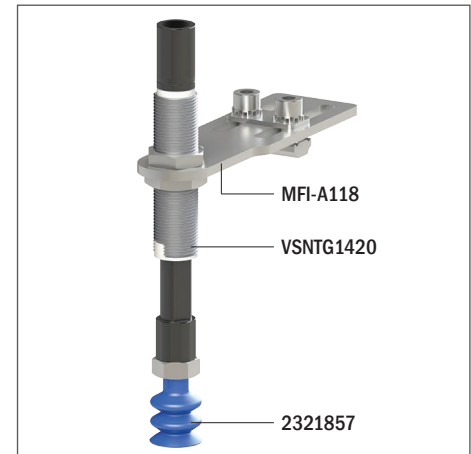
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414



## VG.LB16 bellows suction cups in NBR-HNBR

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height
- Ideal for leafing through and picking up thin metal sheets, glass sheets, chipboard or pressed wood panels, plastic laminates
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

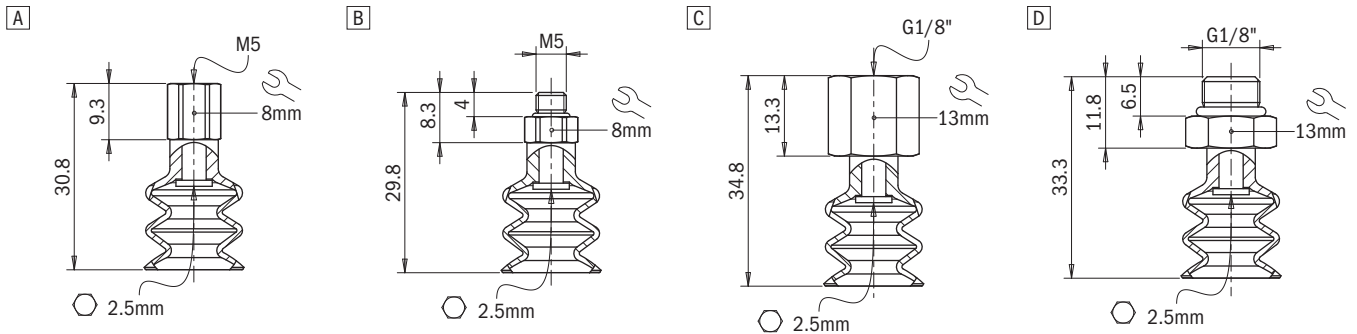
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 50	3.6	9.4	13.2	–	–	–	1.92	18	9	1.3
HNBR 60	3.6	9.4	13.2	–	–	–	1.92	18	9	1.1

### Technical features

Material	Colour	Hardness	Temperature range
NBR	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

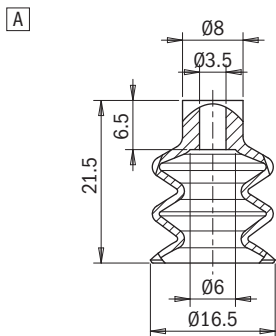
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB16N.50.M5F.E8	VG.LB16 suction cup, NBR, 50 Shore, M5 female, 8 mm hex	2321848
B	VG.LB16N.50.M5M.E8	VG.LB16 suction cup, NBR, 50 Shore, M5 male, 8 mm hex	2321850
C	VG.LB16N.50.G18F.E13	VG.LB16 suction cup, NBR, 50 Shore, G1/8" female, 13 mm hex	2321851
D	VG.LB16N.50.G18M.E13	VG.LB16 suction cup, NBR, 50 Shore, G1/8" male, 13 mm hex	2321852
A	VG.LB16H.60.M5F.E8	VG.LB16 suction cup, HNBR, 60 Shore, M5 female, 8 mm hex	2321853
B	VG.LB16H.60.M5M.E8	VG.LB16 suction cup, HNBR, 60 Shore, M5 male, 8 mm hex	2321855
C	VG.LB16H.60.G18F.E13	VG.LB16 suction cup, HNBR, 60 Shore, G1/8" female, 13 mm hex	2321856
D	VG.LB16H.60.G18M.E13	VG.LB16 suction cup, HNBR, 60 Shore, G1/8" male, 13 mm hex	2321857



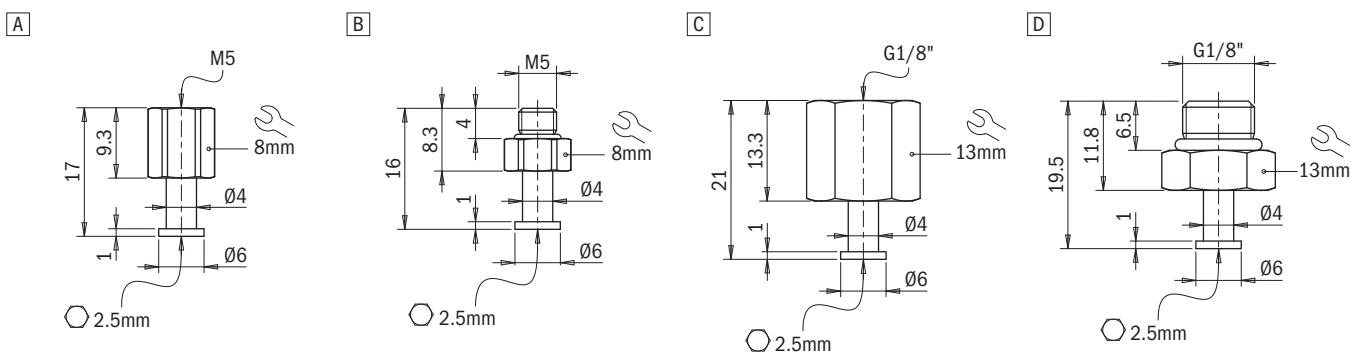
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LB16N.50	VG.LB16 suction cup, NBR, 50 Shore	2321849
A	VG.LB16H.60	VG.LB16 suction cup, HNBR, 60 Shore	2321854



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414

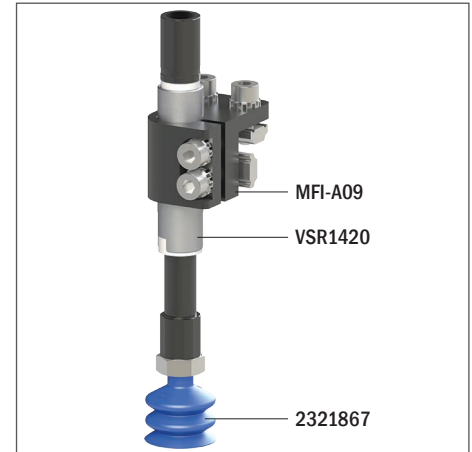




## VG.LB22 bellows suction cups in NBR-HNBR

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height
- Ideal for leafing through and picking up thin metal sheets, glass sheets, chipboard or pressed wood panels, plastic laminates
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

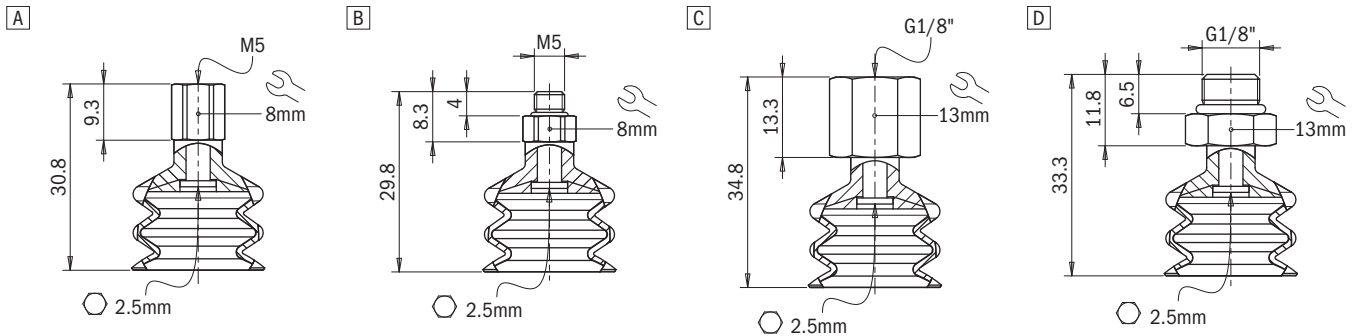
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 50	6.2	16.1	23.4	–	–	–	2	30	18	2.5
HNBR 60	6.2	16.1	23.4	–	–	–	2	30	18	2

### Technical features

Material	Colour	Hardness	Temperature range
NBR	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

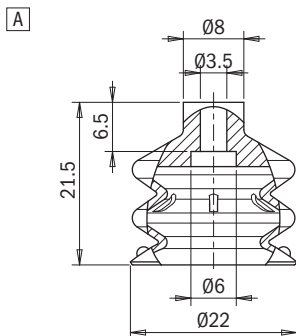
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB22N.50.M5F.E8	VG.LB22 suction cup, NBR, 50 Shore, M5 female, 8 mm hex	2321858
B	VG.LB22N.50.M5M.E8	VG.LB22 suction cup, NBR, 50 Shore, M5 male, 8 mm hex	2321860
C	VG.LB22N.50.G18F.E13	VG.LB22 suction cup, NBR, 50 Shore, G1/8" female, 13 mm hex	2321861
D	VG.LB22N.50.G18M.E13	VG.LB22 suction cup, NBR, 50 Shore, G1/8" male, 13 mm hex	2321862
A	VG.LB22H.60.M5F.E8	VG.LB22 suction cup, HNBR, 60 Shore, M5 female, 8 mm hex	2321863
B	VG.LB22H.60.M5M.E8	VG.LB22 suction cup, HNBR, 60 Shore, M5 male, 8 mm hex	2321865
C	VG.LB22H.60.G18F.E13	VG.LB22 suction cup, HNBR, 60 Shore, G1/8" female, 13 mm hex	2321866
D	VG.LB22H.60.G18M.E13	VG.LB22 suction cup, HNBR, 60 Shore, G1/8" male, 13 mm hex	2321867



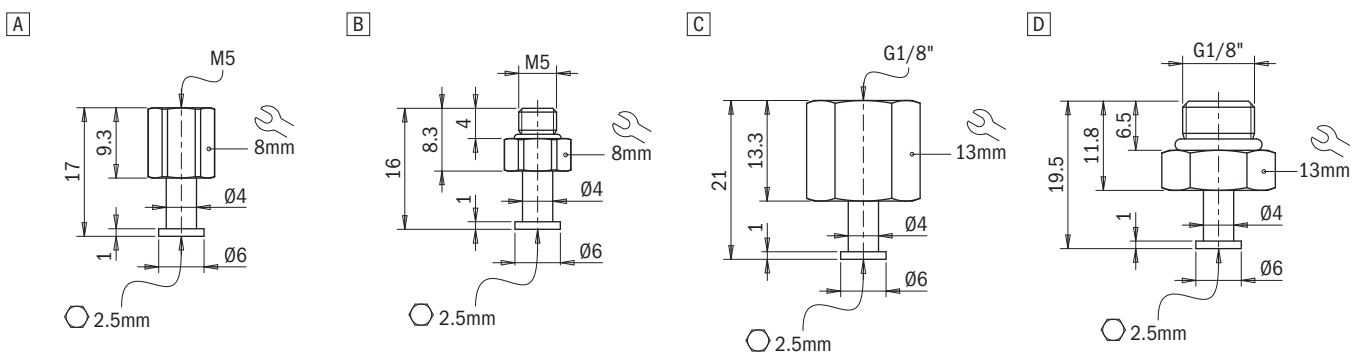
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LB22N.50	VG.LB22 suction cup, NBR, 50 Shore	2321859
A	VG.LB22H.60	VG.LB22 suction cup, HNBR, 60 Shore	2321864



### Identification codes

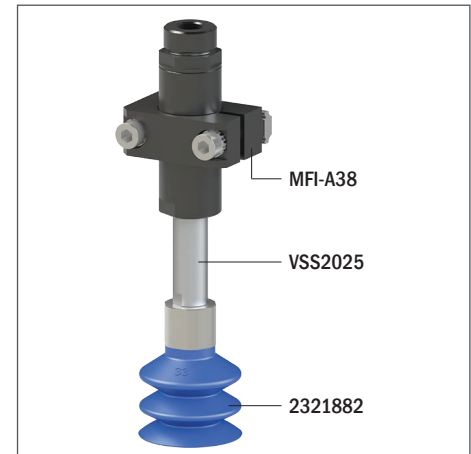
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414



## VG.LB33 bellows suction cups in NBR-HNBR

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height
- Ideal for leafing through and picking up thin metal sheets, glass sheets, chipboard or pressed wood panels, plastic laminates
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

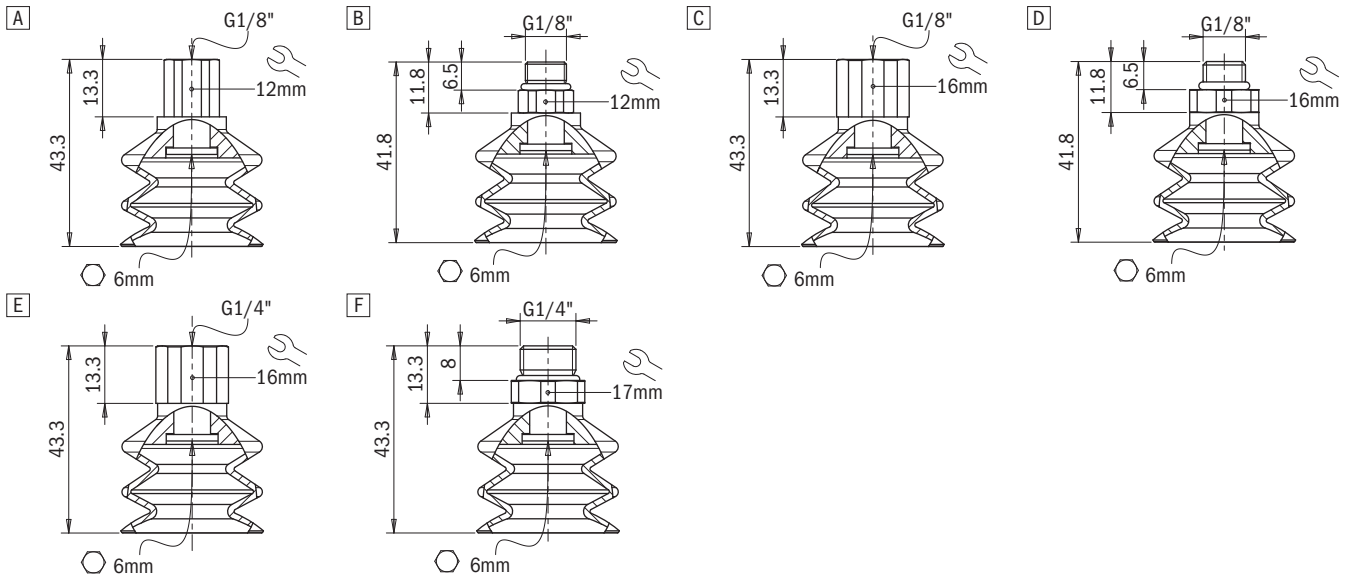
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 50	13.9	40.4	52.3	–	–	–	10	35	15	8.3
HNBR 60	13.9	40.4	52.3	–	–	–	10	35	15	6.7

### Technical features

Material	Colour	Hardness	Temperature range
NBR	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

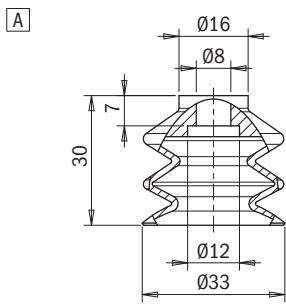
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB33N.50.G18F.E12	VG.LB33 suction cup, NBR, 50 Shore, G1/8" female, 12 mm hex	2321872
B	VG.LB33N.50.G18M.E12	VG.LB33 suction cup, NBR, 50 Shore, G1/8" male, 12 mm hex	2321874
C	VG.LB33N.50.G18F.E16	VG.LB33 suction cup, NBR, 50 Shore, G1/8" female, 16 mm hex	2321875
D	VG.LB33N.50.G18M.E16	VG.LB33 suction cup, NBR, 50 Shore, G1/8" male, 16 mm hex	2321876
E	VG.LB33N.50.G14F.E16	VG.LB33 suction cup, NBR, 50 Shore, G1/4" female, 16 mm hex	2321877
F	VG.LB33N.50.G14M.E17	VG.LB33 suction cup, NBR, 50 Shore, G1/4" male, 17 mm hex	2321878
A	VG.LB33H.60.G18F.E12	VG.LB33 suction cup, HNBR, 60 Shore, G1/8" female, 12 mm hex	2321879
B	VG.LB33H.60.G18M.E12	VG.LB33 suction cup, HNBR, 60 Shore, G1/8" male, 12 mm hex	2321881
C	VG.LB33H.60.G18F.E16	VG.LB33 suction cup, HNBR, 60 Shore, G1/8" female, 16 mm hex	2321882
D	VG.LB33H.60.G18M.E16	VG.LB33 suction cup, HNBR, 60 Shore, G1/8" male, 16 mm hex	2321883
E	VG.LB33H.60.G14F.E16	VG.LB33 suction cup, HNBR, 60 Shore, G1/4" female, 16 mm hex	2321884
F	VG.LB33H.60.G14M.E17	VG.LB33 suction cup, HNBR, 60 Shore, G1/4" male, 17 mm hex	2321885



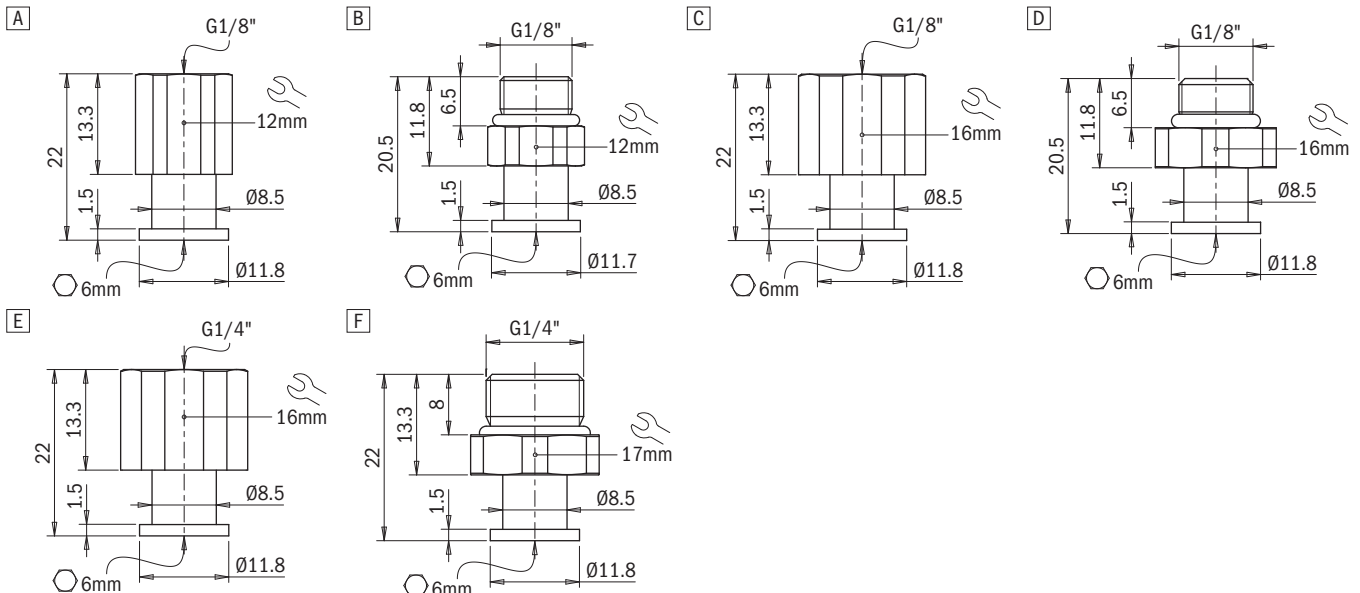
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LB33N.50	VG.LB33 suction cup, NBR, 50 Shore	2321873
A	VG.LB33H.60	VG.LB33 suction cup, HNBR, 60 Shore	2321880



### Identification codes

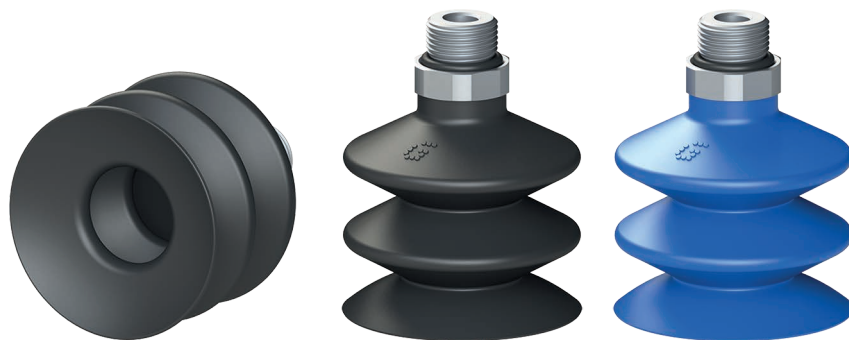
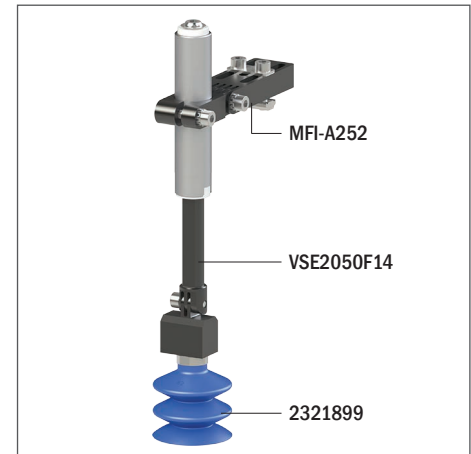
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



## VG.LB42 bellows suction cups in NBR-HNBR

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height
- Ideal for leafing through and picking up thin metal sheets, glass sheets, chipboard or pressed wood panels, plastic laminates
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

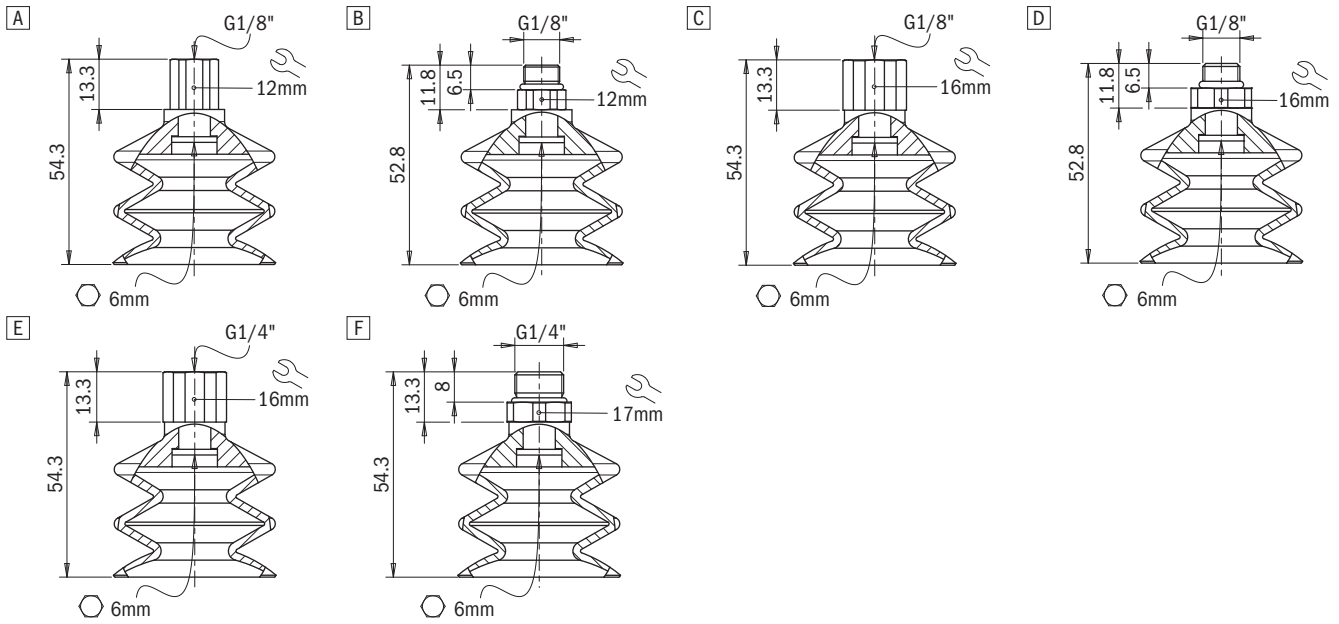
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 50	25.2	70.2	85.5	—	—	—	19	75	20	19.1
HNBR 60	25.2	70.2	85.5	—	—	—	19	75	20	15.5

### Technical features

Material	Colour	Hardness	Temperature range
NBR	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

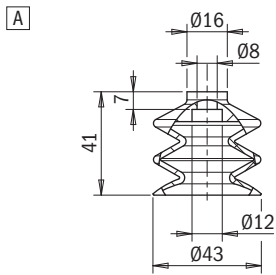
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB42N.50.G18F.E12	VG.LB42 suction cup, NBR, 50 Shore, G1/8" female, 12 mm hex	2321886
B	VG.LB42N.50.G18M.E12	VG.LB42 suction cup, NBR, 50 Shore, G1/8" male, 12 mm hex	2321888
C	VG.LB42N.50.G18F.E16	VG.LB42 suction cup, NBR, 50 Shore, G1/8" female, 16 mm hex	2321889
D	VG.LB42N.50.G18M.E16	VG.LB42 suction cup, NBR, 50 Shore, G1/8" male, 16 mm hex	2321890
E	VG.LB42N.50.G14F.E16	VG.LB42 suction cup, NBR, 50 Shore, G1/4" female, 16 mm hex	2321891
F	VG.LB42N.50.G14M.E17	VG.LB42 suction cup, NBR, 50 Shore, G1/4" male, 17 mm hex	2321892
A	VG.LB42H.60.G18F.E12	VG.LB42 suction cup, HNBR, 60 Shore, G1/8" female, 12 mm hex	2321893
B	VG.LB42H.60.G18M.E12	VG.LB42 suction cup, HNBR, 60 Shore, G1/8" male, 12 mm hex	2321895
C	VG.LB42H.60.G18F.E16	VG.LB42 suction cup, HNBR, 60 Shore, G1/8" female, 16 mm hex	2321896
D	VG.LB42H.60.G18M.E16	VG.LB42 suction cup, HNBR, 60 Shore, G1/8" male, 16 mm hex	2321897
E	VG.LB42H.60.G14F.E16	VG.LB42 suction cup, HNBR, 60 Shore, G1/4" female, 16 mm hex	2321898
F	VG.LB42H.60.G14M.E17	VG.LB42 suction cup, HNBR, 60 Shore, G1/4" male, 17 mm hex	2321899



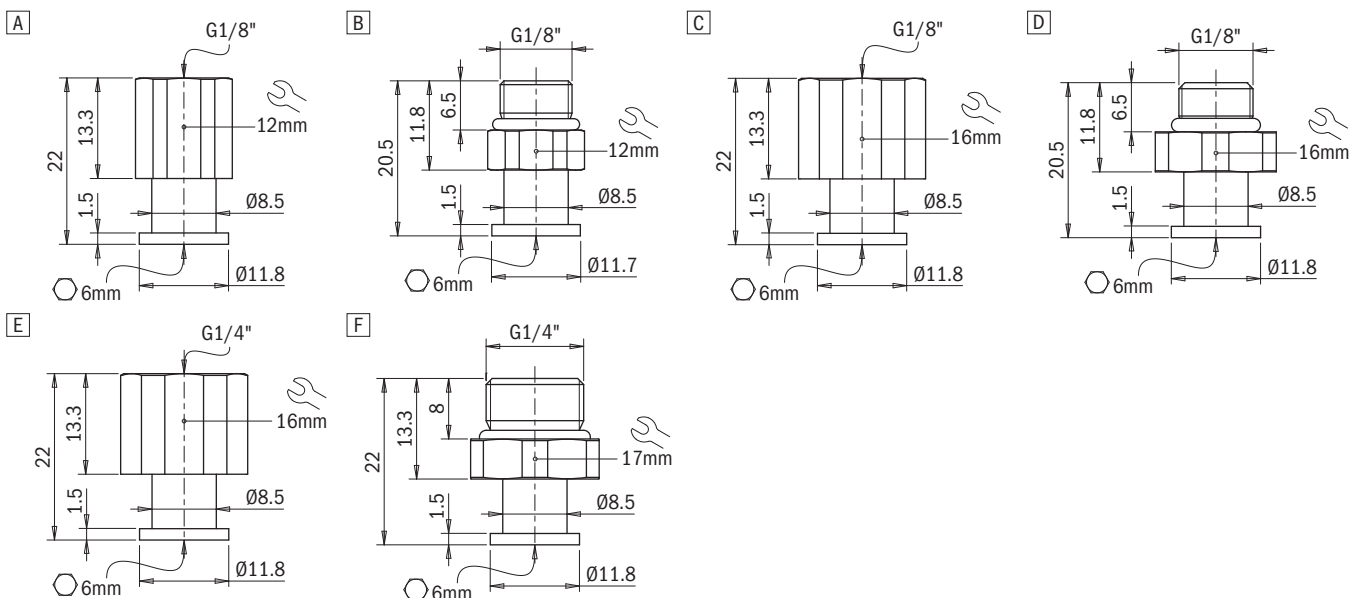
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LB42N.50	VG.LB42 suction cup, NBR, 50 Shore	2321887
A	VG.LB42H.60	VG.LB42 suction cup, HNBR, 60 Shore	2321894



### Identification codes

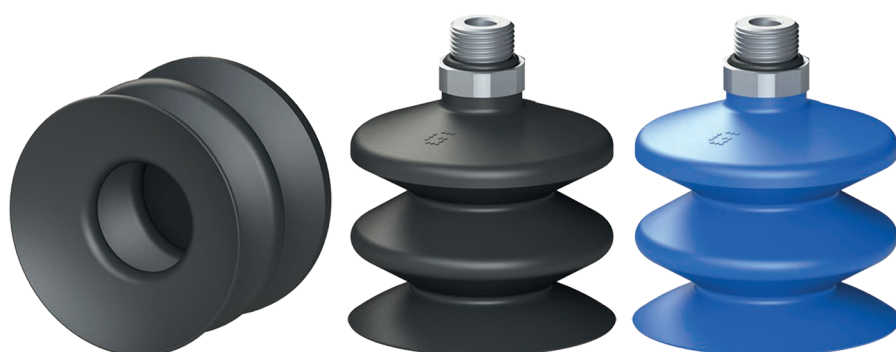
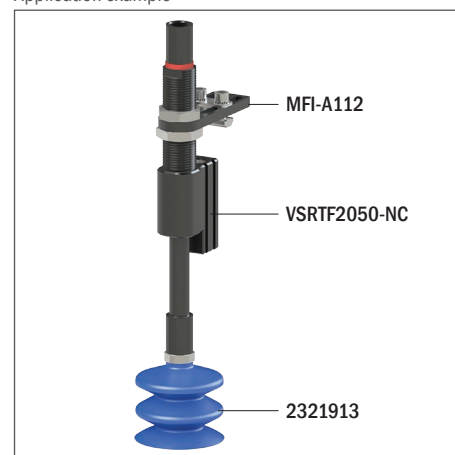
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



## VG.LB53 bellows suction cups in NBR-HNBR

- Suitable for handling plastic parts
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height
- Ideal for leafing through and picking up thin metal sheets, glass sheets, chipboard or pressed wood panels, plastic laminates
- The HNBR version enables to work at high temperatures, whereas silicone or other mixtures may release traces of material. Ideal for applications where contamination of the material must be avoided (PWIS)
- The HNBR compound is robust and wear resistant, suitable for the removal of hot plastic parts from the relevant moulds

Application example



### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 50	40.3	102.8	106.7	–	–	–	37	80	25	31.5
HNBR 60	40.3	102.8	106.7	–	–	–	37	80	25	25.6

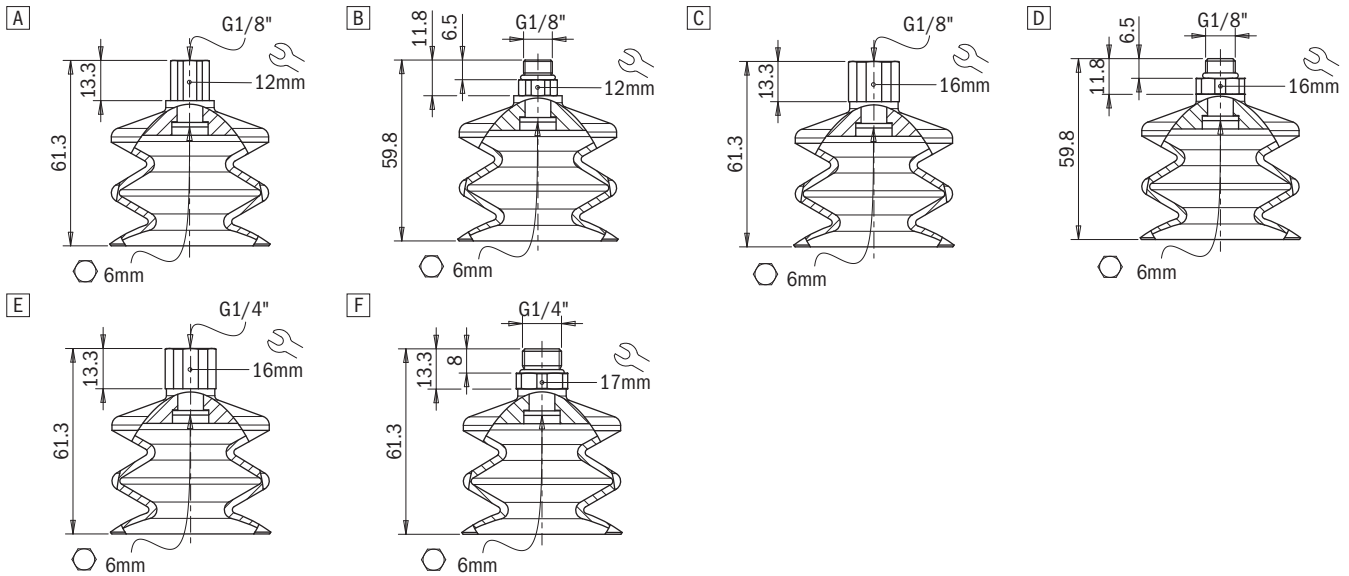
### Technical features

Material	Colour	Hardness	Temperature range
NBR	Black	50 Shore	-40 ÷ +100 °C
HNBR	Blue	60 Shore	-25 ÷ +150 °C

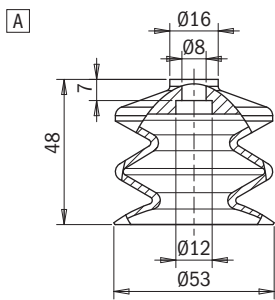
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB53N.50.G18F.E12	VG.LB53 suction cup, NBR, 50 Shore, G1/8" female, 12 mm hex	2321900
B	VG.LB53N.50.G18M.E12	VG.LB53 suction cup, NBR, 50 Shore, G1/8" male, 12 mm hex	2321902
C	VG.LB53N.50.G18F.E16	VG.LB53 suction cup, NBR, 50 Shore, G1/8" female, 16 mm hex	2321903
D	VG.LB53N.50.G18M.E16	VG.LB53 suction cup, NBR, 50 Shore, G1/8" male, 16 mm hex	2321904
E	VG.LB53N.50.G14F.E16	VG.LB53 suction cup, NBR, 50 Shore, G1/4" female, 16 mm hex	2321905
F	VG.LB53N.50.G14M.E17	VG.LB53 suction cup, NBR, 50 Shore, G1/4" male, 17 mm hex	2321906
A	VG.LB53H.60.G18F.E12	VG.LB53 suction cup, HNBR, 60 Shore, G1/8" female, 12 mm hex	2321907
B	VG.LB53H.60.G18M.E12	VG.LB53 suction cup, HNBR, 60 Shore, G1/8" male, 12 mm hex	2321909
C	VG.LB53H.60.G18F.E16	VG.LB53 suction cup, HNBR, 60 Shore, G1/8" female, 16 mm hex	2321910
D	VG.LB53H.60.G18M.E16	VG.LB53 suction cup, HNBR, 60 Shore, G1/8" male, 16 mm hex	2321911
E	VG.LB53H.60.G14F.E16	VG.LB53 suction cup, HNBR, 60 Shore, G1/4" female, 16 mm hex	2321912
F	VG.LB53H.60.G14M.E17	VG.LB53 suction cup, HNBR, 60 Shore, G1/4" male, 17 mm hex	2321913

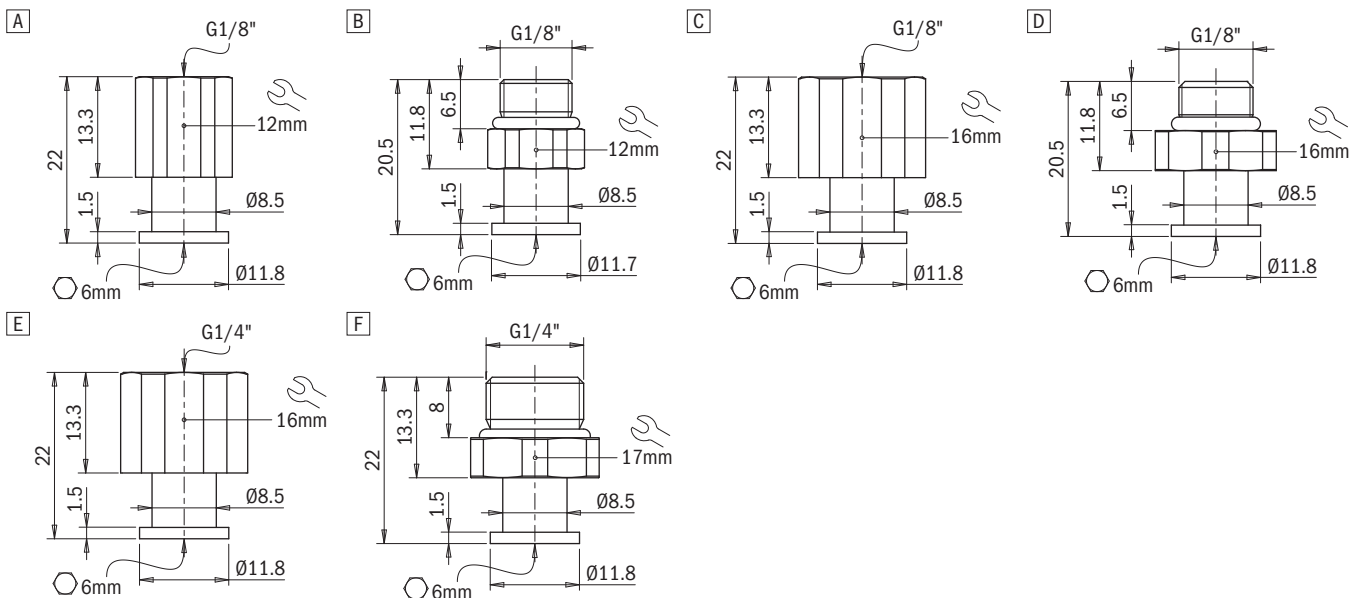



**Identification codes**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LB53N.50	VG.LB53 suction cup, NBR, 50 Shore	2321901
A	VG.LB53H.60	VG.LB53 suction cup, HNBR, 60 Shore	2321908


**Identification codes**

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432





## VG.FP15S multi-bellows suction cups in silicone

- Ideal for handling packaged snack foods
- Suitable for level compensation
- High vertical movement, useful for separating thin parts

Introduction

Vacuum theory

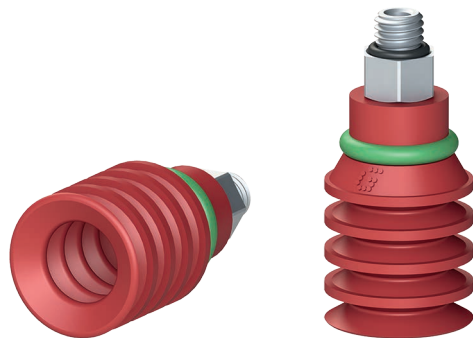
Suction cups

Vacuum pumps

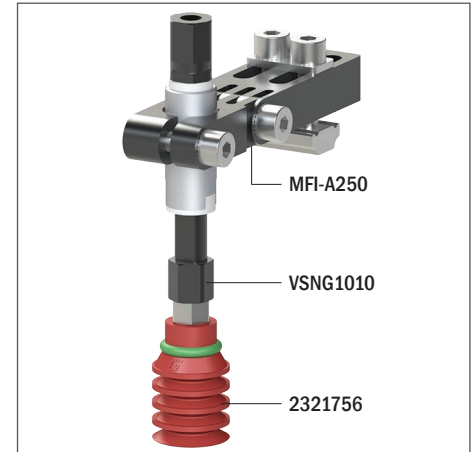
Customised solutions

Suspensions

System accessories



Application example



### Technical data

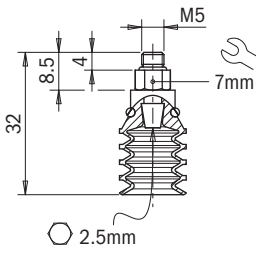
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	0.20	0.23	–	–	–	–	1.05	2	8	0.9

### Technical features

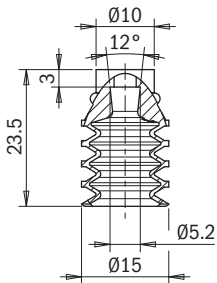
Material	Colour	Hardness	Temperature range
Silicone	Red	50 Shore	-70 ÷ +200 °C

**Identification codes**

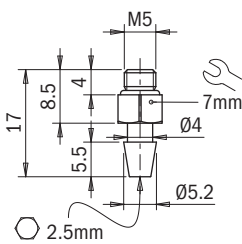
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.FP15S.50.M5M	VG.FP15 suction cup, silicone, 50 Shore, M5 male	2321756

**A**

**Identification codes**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.FP15S.50	VG.FP15 suction cup, silicone, 50 Shore	2322052

**A**

**Identification codes**

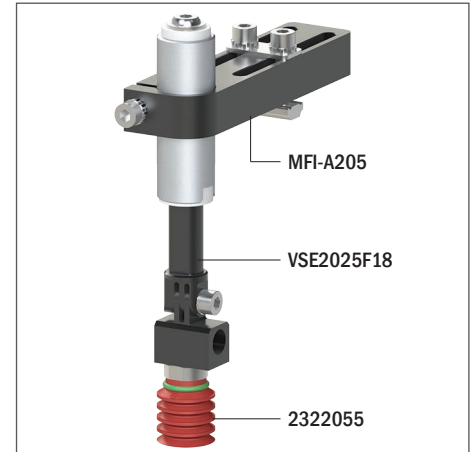
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5M	M5 male fitting	1600005

**A**


## VG.FP20S multi-bellows suction cups in silicone

- Ideal for handling packaged snack foods
- Suitable for level compensation
- High vertical movement, useful for separating thin parts
- It can be equipped with a perforated disc to increase stability and to allow the handling of thin films

Application example

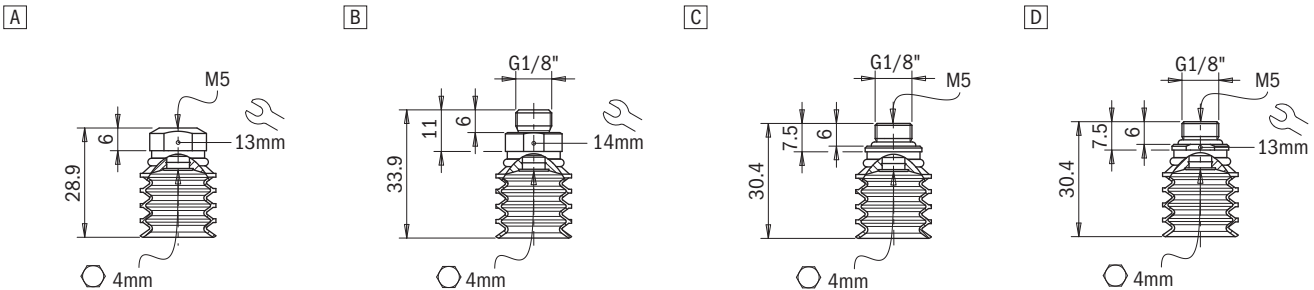


Technical data										
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	0.35	0.7	–	–	–	–	4	4	13	3

Technical features			
Material	Colour	Hardness	Temperature range
Silicone	Red	50 Shore	-70 ÷ +200 °C

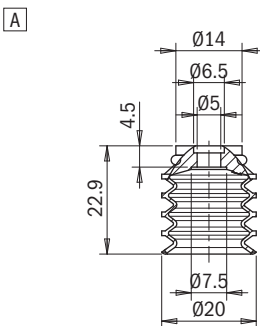
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.FP20S.50.M5F	VG.FP20 suction cup, silicone, 50 Shore, M5 female	2322053
B	VG.FP20S.50.G18M	VG.FP20 suction cup, silicone, 50 Shore, G1/8" male	2322055
C	VG.FP20S.50.G18MF	VG.FP20 suction cup, silicone, 50 Shore, G1/8" male/M5 female	2322056
D	VG.FP20S.50.G18MFV	VG.FP20 suction cup, silicone, 50 Shore, G1/8" male/M5 female with valve	2322057



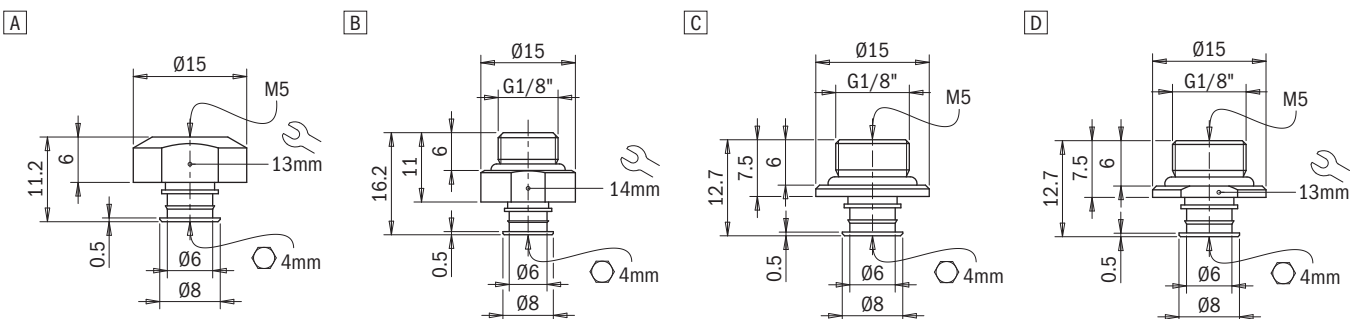
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.FP20S.50	VG.FP20 suction cup, silicone, 50 Shore	2322054



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F	Fitting, M5 female	1700006
B	FT.G18M.17	G1/8" male fitting	1700018
C	FT.G18M.M5F	Fitting, G1/8" male/ M5 female	1700016
D	FT.G18M.M5F.VF	G1/8" male / M5 female fitting, with valve	1700017



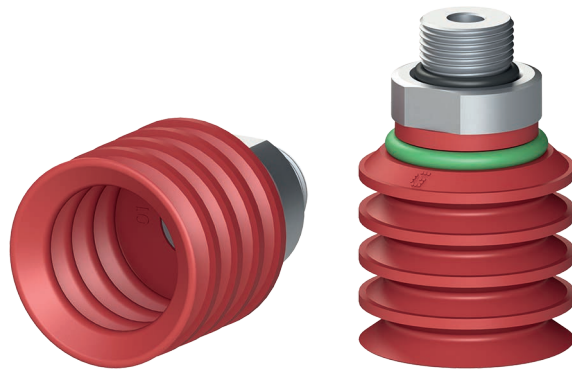
### Identification codes

Alphanumeric code	Disc	Order code
AC.DF20	Perforated disc for thin films, diameter 20 mm	2321780

## VG.FP30S multi-bellows suction cups in silicone

- Ideal for handling packaged snack foods
- Suitable for level compensation
- High vertical movement, useful for separating thin parts
- It can be equipped with a perforated disc to increase stability and to allow the handling of thin films

Application example



### Technical data

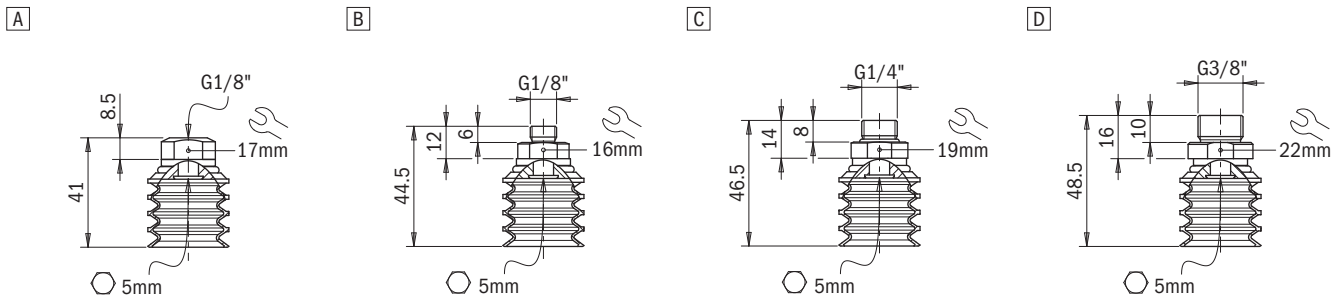
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	6.5	10.3	–	–	–	–	10	8	20	7

### Technical features

Material	Colour	Hardness	Temperature range
Silicone	Red	50 Shore	-70 ÷ +200 °C

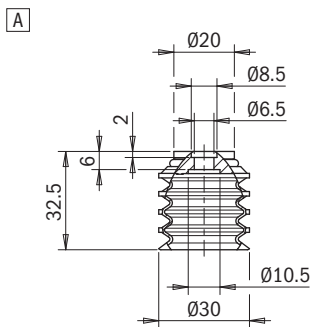
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.FP30S.50.G18F	VG.FP30 suction cup, silicone, 50 Shore, G1/8" female	2322058
B	VG.FP30S.50.G18M	VG.FP30 suction cup, silicone, 50 Shore, G1/8" male	2322060
C	VG.FP30S.50.G14M	VG.FP30 suction cup, silicone, 50 Shore, G1/4" male	2322061
D	VG.FP30S.50.G38M	VG.FP30 suction cup, silicone, 50 Shore, G3/8" male	2322062



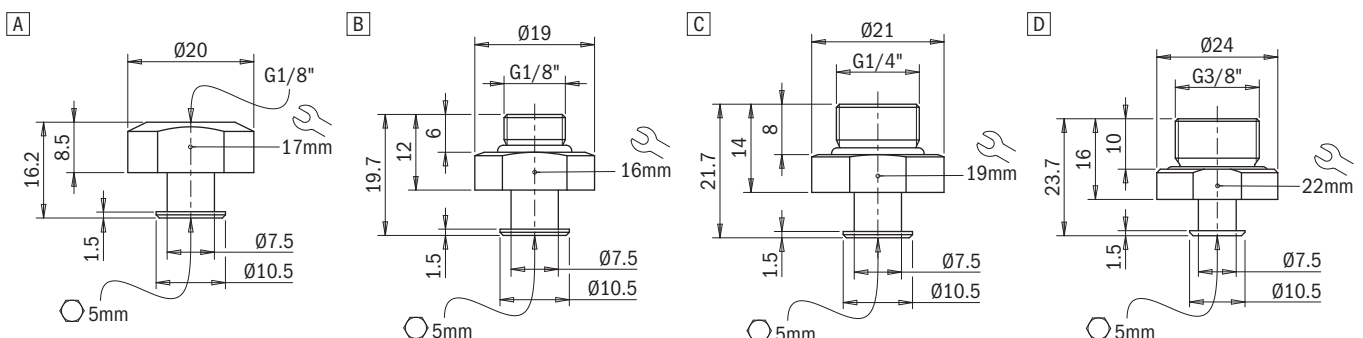
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.FP30S.50	VG.FP30 suction cup, silicone, 50 Shore	2322059



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.18	G1/8" female fitting	1800019
B	FT.G18M.18	G1/8" male fitting	1800018
C	FT.G14M.18	G1/4" male fitting	1800014
D	FT.G38M.18	G3/8" male fitting	1800038

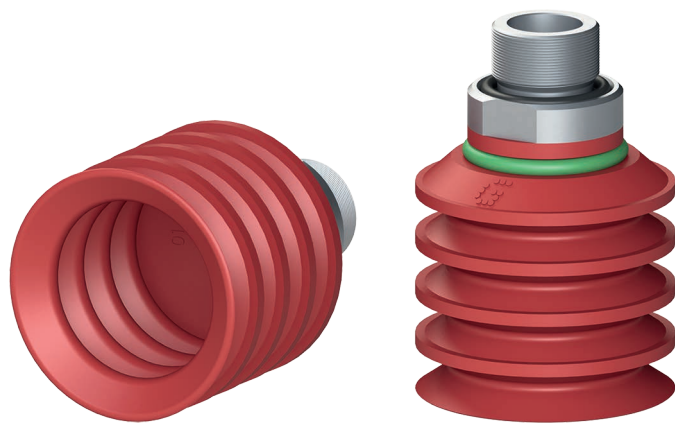


### Identification codes

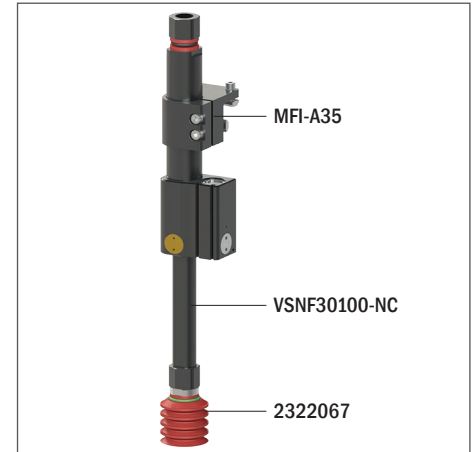
Alphanumeric code	Disc	Order code
AC.DF30	Perforated disc for thin films, diameter 30 mm	2321781

## VG.FP40S multi-bellows suction cups in silicone

- Ideal for handling packaged snack foods
- Suitable for level compensation
- High vertical movement, useful for separating thin parts
- It can be equipped with a perforated disc to increase stability and to allow the handling of thin films



Application example



### Technical data

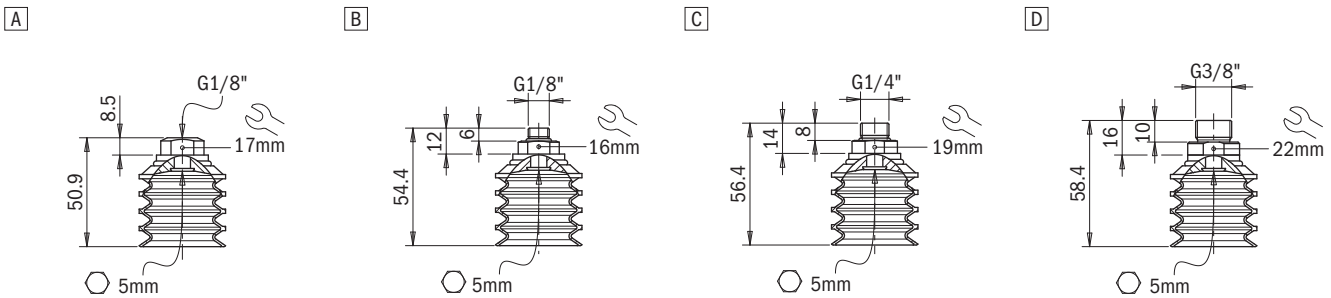
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50	10.8	31.5	–	–	–	–	27	11	33	10

### Technical features

Material	Colour	Hardness	Temperature range
Silicone	Red	50 Shore	-70 ÷ +200 °C

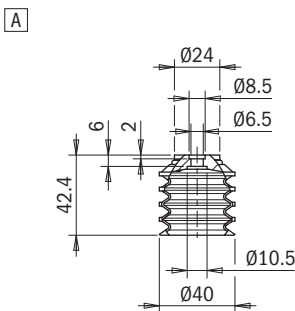
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.FP40S.50.G18F	VG.FP40 suction cup, silicone, 50 Shore, G1/8" female	2322063
B	VG.FP40S.50.G18M	VG.FP40 suction cup, silicone, 50 Shore, G1/8" male	2322065
C	VG.FP40S.50.G14M	VG.FP40 suction cup, silicone, 50 Shore, G1/4" male	2322066
D	VG.FP40S.50.G38M	VG.FP40 suction cup, silicone, 50 Shore, G3/8" male	2322067



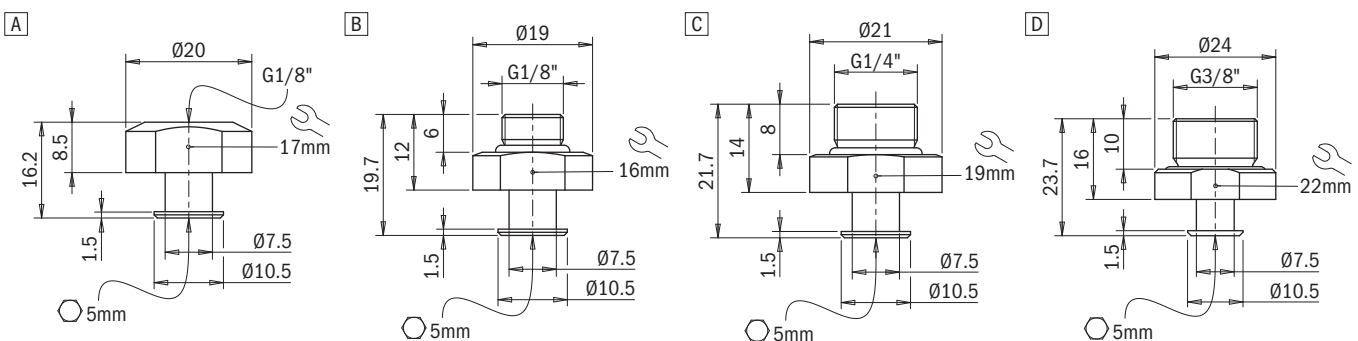
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.FP40S.50	VG.FP40 suction cup, silicone, 50 Shore	2322064



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.18	G1/8" female fitting	1800019
B	FT.G18M.18	G1/8" male fitting	1800018
C	FT.G14M.18	G1/4" male fitting	1800014
D	FT.G38M.18	G3/8" male fitting	1800038



### Identification codes

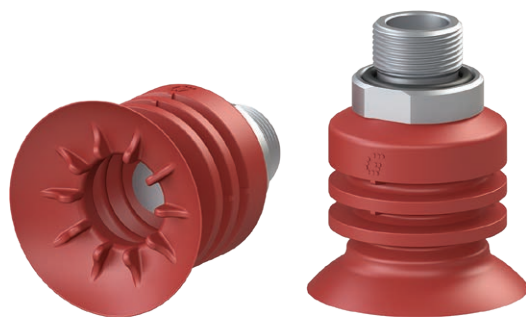
Alphanumeric code	Disc	Order code
AC.DF40	Perforated disc for thin films, diameter 40 mm	2321755



## VG.SBC40S multibellows suction cups in silicone

- Ideal for handling bags containing fragile products and bags with liquids and frozen foods
- Strong bellows, soft and flexible lip and special high flow rate fittings
- Version with 2.5 bellows
- High stability in very fast packaging processes (case packer and Pick & Place applications)

Application example



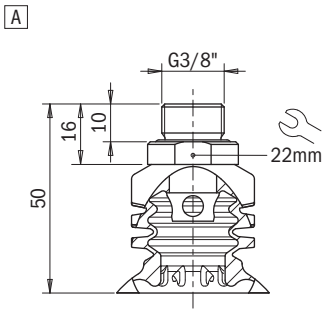
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels		Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa				
SIL 40	14.5	17.5	11	22	13	12.5

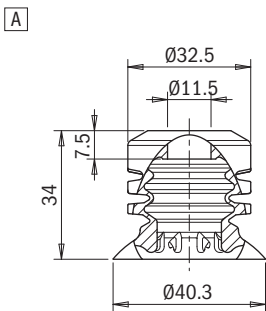
### Technical features

Material	Colour	Hardness	Temperature range
Silicone 40	Red	40 Shore	-70 ÷ +200 °C

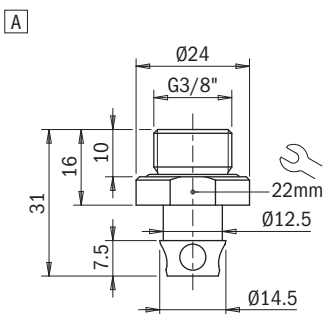
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.SBC40S.40.G38M	VG.SBC40 suction cup, silicone, 40 Shore, G3/8" male	1322143



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.SBC40S.40	VG.SBC40 suction cup, silicone, 40 Shore	1322144



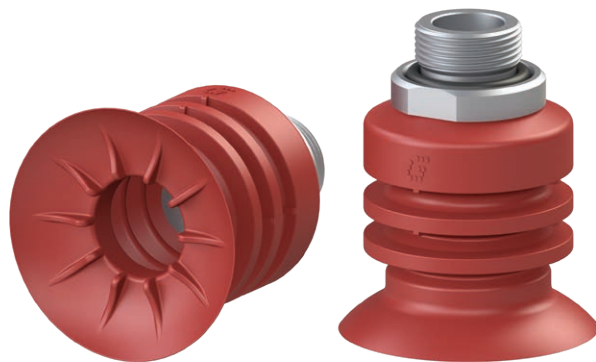
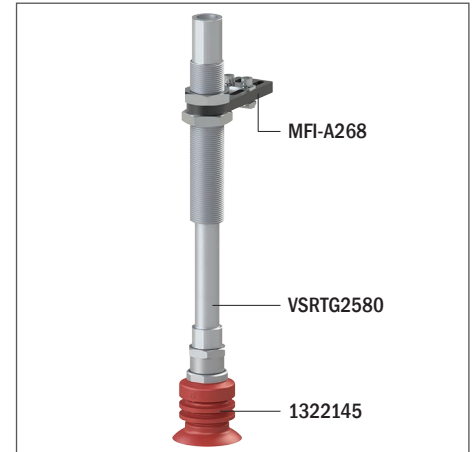
Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G38M	G3/8" male fitting	2000038



## VG.SBC50S multibellows suction cups in silicone

- Ideal for handling bags containing fragile products and bags with liquids and frozen foods
- Strong bellows, soft and flexible lip and special high flow rate fittings
- Version with 2.5 bellows
- High stability in very fast packaging processes (case packer and Pick & Place applications)

Application example



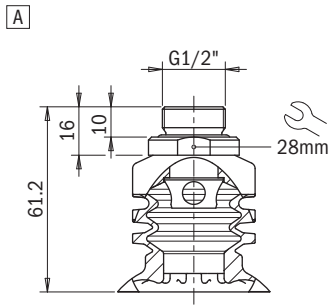
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels		Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa				
SIL 40	24.7	30.5	24	30	14	25

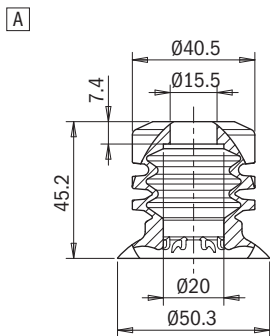
### Technical features

Material	Colour	Hardness	Temperature range
Silicone 40	Red	40 Shore	-70 ÷ +200 °C

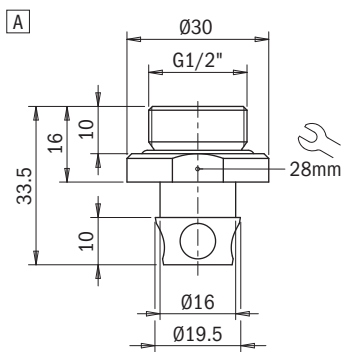
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.SBC50S.40.G12M	VG.SBC50 suction cup, silicone, 40 Shore, G1/2" male	1322145



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.SBC50S.40	VG.SBC50 suction cup, silicone, 40 Shore	1322146



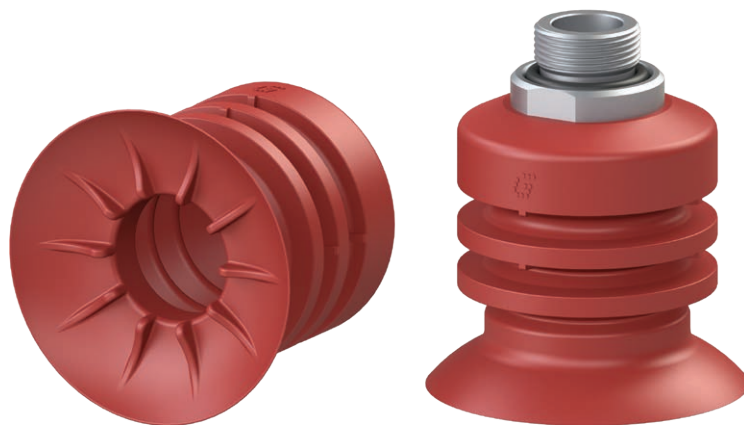
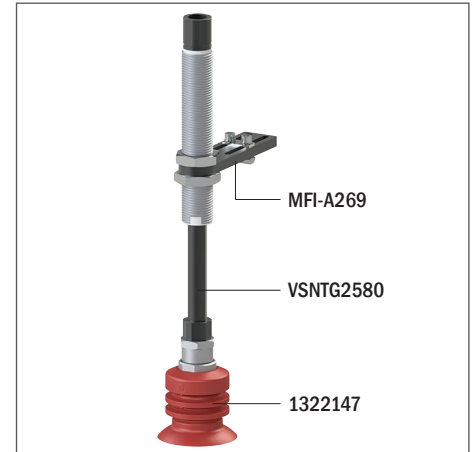
Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G12M	G1/2" male fitting	2000012



## VG.SBC63S multibellows suction cups in silicone

- Ideal for handling bags containing fragile products and bags with liquids and frozen foods
- Strong bellows, soft and flexible lip and special high flow rate fittings
- Version with 2.5 bellows
- High stability in very fast packaging processes (case packer and Pick & Place applications)

Application example



### Technical data

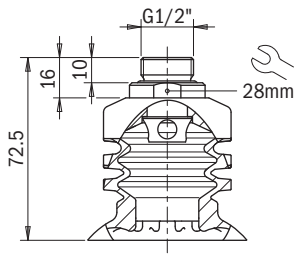
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels		Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa				
SIL 40	42.6	53.2	46.5	40	19	50

### Technical features

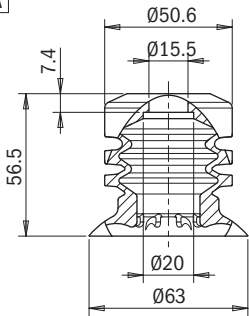
Material	Colour	Hardness	Temperature range
Silicone 40	Red	40 Shore	-70 ÷ +200 °C

**Identification codes**

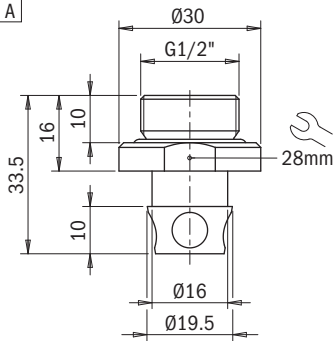
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.SBC63S.40.G12M	VG.SBC63 suction cup, silicone, 40 Shore, G1/2" male	1322147

**A**

**Identification codes**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.SBC63S.40	VG.SBC63 suction cup, silicone, 40 Shore	1322148

**A**

**Identification codes**

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G12M	G1/2" male fitting	2000012

**A**


## VG.BC40S multi-bellows suction cups in silicone

- Ideal for handling bags containing fragile products and bags with liquids and frozen foods
- Strong bellows, soft and flexible lip and special high flow rate fittings
- Version with 4.5 bellows
- They enable to compensate for level differences

Application example



### Technical data

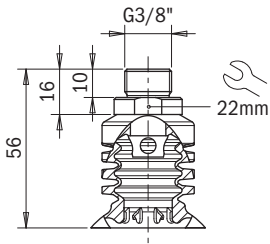
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels		Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa				
SIL 40	14.4	15.3	14	22	20	10

### Technical features

Material	Colour	Hardness	Temperature range
Silicone 40	Red	40 Shore	-70 ÷ +200 °C

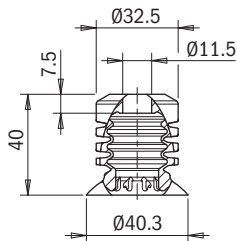
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BC40S.40.G38M	VG.BC40 suction cup, silicone, 40 Shore, G3/8" male	2322143

A



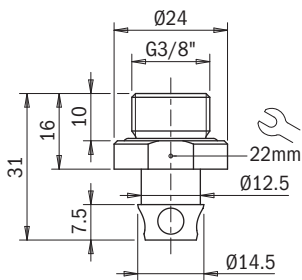
Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.BC40S.40	VG.BC40 suction cup, silicone, 40 Shore	2322144

A



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G38M.20	G3/8" male fitting	2000038

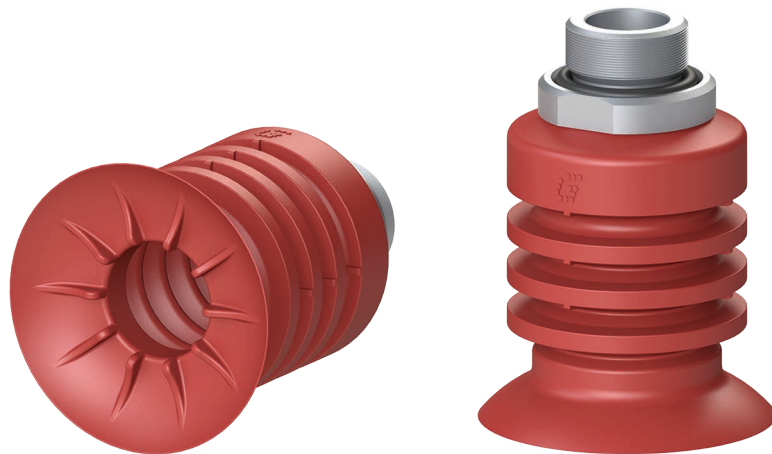
A



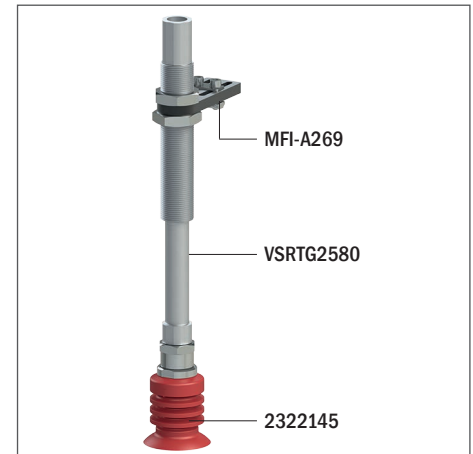


## VG.BC50S multi-bellows suction cups in silicone

- Ideal for handling bags containing fragile products and bags with liquids and frozen foods
- Strong bellows, soft and flexible lip and special high flow rate fittings
- Version with 4.5 bellows
- They enable to compensate for level differences



Application example



### Technical data

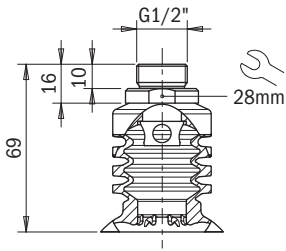
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels		Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa				
SIL 40	26.3	28.2	26	30	18	29

### Technical features

Material	Colour	Hardness	Temperature range
Silicone 40	Red	40 Shore	-70 ÷ +200 °C

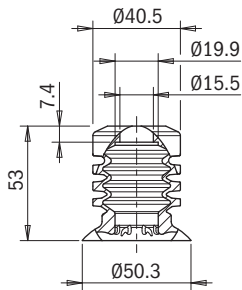
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BC50S.40.G12M	VG.BC50 suction cup, silicone, 40 Shore, G1/2" male	2322145

A



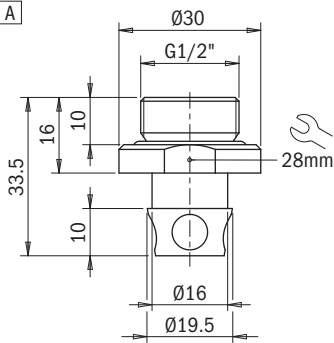
Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.BC50S.40	VG.BC50 suction cup, silicone, 40 Shore	2322146

A



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G12M.20	G1/2" male fitting	2000012

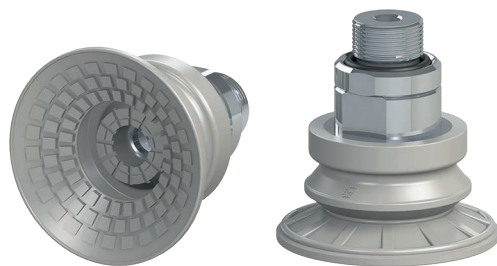
A



## VG.MB52 bellows suction cup with non-slip cleats in NBR

- Ideal for handling oiled sheet metal in stamping processes
- Handling of flat glass and shaped glass
- Special cleats that increase friction on lubricated surfaces
- Ideal for applications where contamination of the material must be avoided (PWIS)
- Bellows suction cups in NBR, 60 Shore, with vulcanised fitting
- Internal supports help to prevent deformation of thin sheet metal
- Suitable for handling flat and slightly curved surfaces thanks to the wide lip

Application example



### Technical data

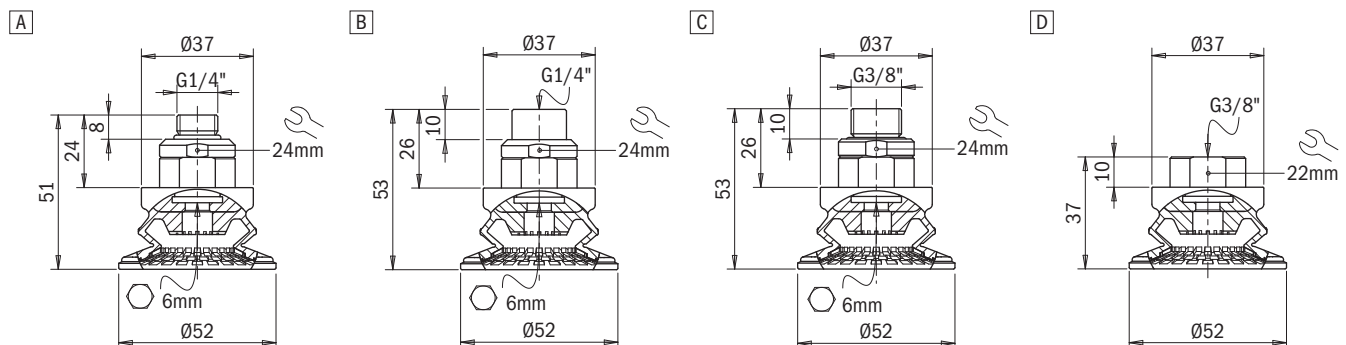
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 60	39.1	103.5	139.5	27.3	89.5	120.5	18	29.5	11	28

### Technical features

Material	Colour	Hardness	Temperature range
NBR 60	Grey	60 Shore	-30 ÷ +100 °C

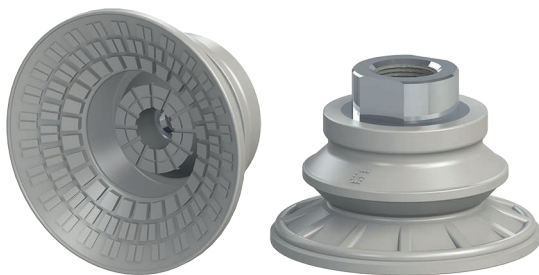
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Ordering code
A	VG.MB52.60.G14M	VG.MB52 suction cup, NBR, 60 Shore, G1/4" male	3100040
B	VG.MB52.60.G14F	VG.MB52 suction cup, NBR, 60 Shore, G1/4" female	3100041
C	VG.MB52.60.G38M	VG.MB52 suction cup, NBR, 60 Shore, G3/8" male	3100042
D	VG.MB52.60.G38F	VG.MB52 suction cup, NBR, 60 Shore, G3/8" female	3100043

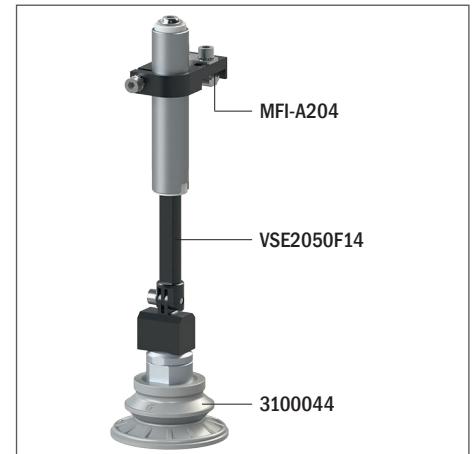


## VG.MB63 bellows suction cup with non-slip cleats in NBR

- Ideal for handling oiled sheet metal in stamping processes
- Handling of flat glass and shaped glass
- Special cleats that increase friction on lubricated surfaces
- Ideal for applications where contamination of the material must be avoided (PWIS)
- Bellows suction cups in NBR, 60 Shore, with vulcanised fitting
- Internal supports help to prevent deformation of thin sheet metal
- Suitable for handling flat and slightly curved surfaces thanks to the wide lip



Application example



### Technical data

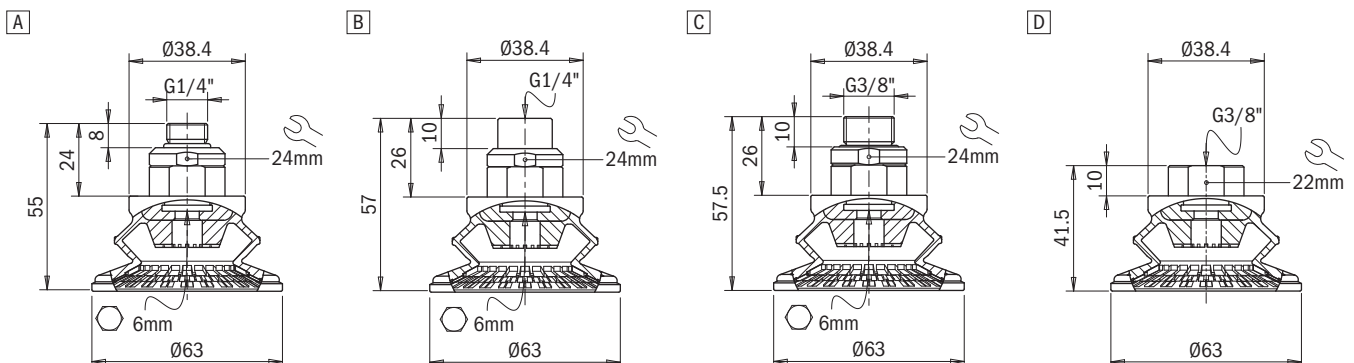
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 60	60.2	149.5	190.5	63.5	156.5	202	30.5	40	14	41

### Technical features

Material	Colour	Hardness	Temperature range
NBR 60	Grey	60 Shore	-30 ÷ +100 °C

### Identification codes

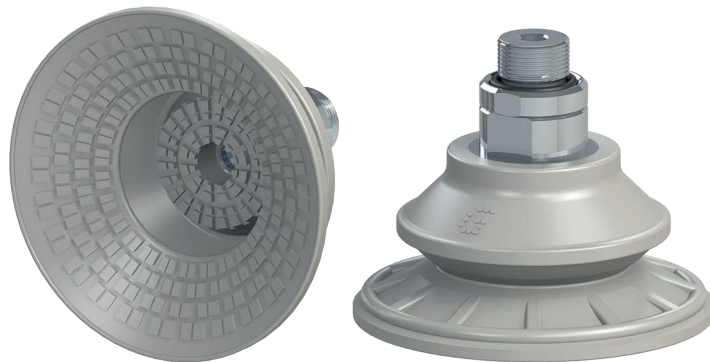
Drawing	Alphanumeric code	Suction cups with fitting	Ordering code
A	VG.MB63.60.G14M	VG.MB63 suction cup, NBR, 60 Shore, G1/4" male	3100044
B	VG.MB63.60.G14F	VG.MB63 suction cup, NBR, 60 Shore, G1/4" female	3100045
C	VG.MB63.60.G38M	VG.MB63 suction cup, NBR, 60 Shore, G3/8" male	3100046
D	VG.MB63.60.G38F	VG.MB63 suction cup, NBR, 60 Shore, G3/8" female	3100047



## VG.MB83 bellows suction cup with non-slip cleats in NBR

- Ideal for handling oiled sheet metal in stamping processes
- Handling of flat glass and shaped glass
- Special cleats that increase friction on lubricated surfaces
- Ideal for applications where contamination of the material must be avoided (PWIS)
- Bellows suction cups in NBR, 60 Shore, with vulcanised fitting
- Internal supports help to prevent deformation of thin sheet metal
- Suitable for handling flat and slightly curved surfaces thanks to the wide lip

Application example



### Technical data

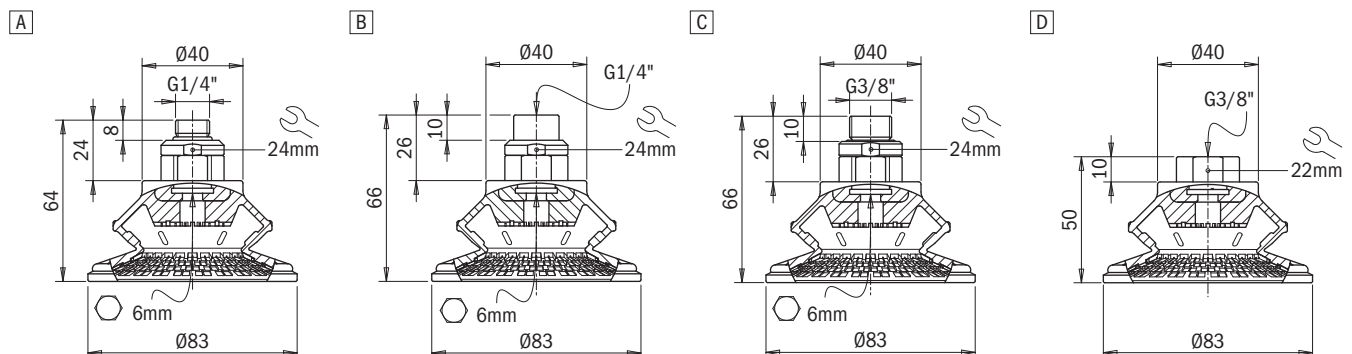
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 60	105	239.5	312	107.5	242.5	318.5	67	45	21.5	59.5

### Technical features

Material	Colour	Hardness	Temperature range
NBR 60	Grey	60 Shore	-30 ÷ +100 °C

### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Ordering code
A	VG.MB83.60.G14M	VG.MB83 suction cup, NBR, 60 Shore, G1/4" male	3100048
B	VG.MB83.60.G14F	VG.MB83 suction cup, NBR, 60 Shore, G1/4" female	3100049
C	VG.MB83.60.G38M	VG.MB83 suction cup, NBR, 60 Shore, G3/8" male	3100050
D	VG.MB83.60.G38F	VG.MB83 suction cup, NBR, 60 Shore, G3/8" female	3100051



## VG.MB103 bellows suction cup with non-slip cleats in NBR

- Ideal for handling oiled sheet metal in stamping processes
- Handling of flat glass and shaped glass
- Special cleats that increase friction on lubricated surfaces
- Ideal for applications where contamination of the material must be avoided (PWIS)
- Bellows suction cups in NBR, 60 Shore, with vulcanised fitting
- Internal supports help to prevent deformation of thin sheet metal
- Suitable for handling flat and slightly curved surfaces thanks to the wide lip



Application example



### Technical data

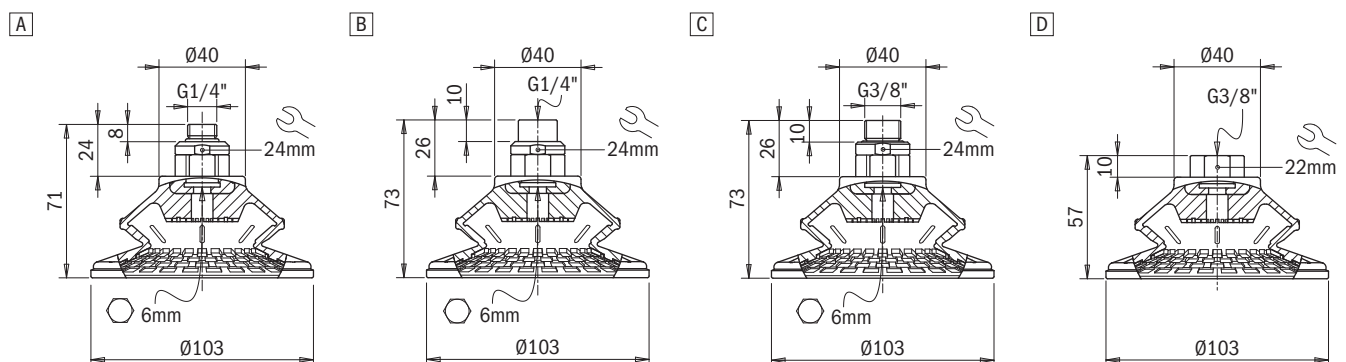
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
NBR 60	160	325	405	163	330	408	108	63	23	85.5

### Technical features

Material	Colour	Hardness	Temperature range
NBR 60	Grey	60 Shore	-30 ÷ +100 °C

### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Ordering code
A	VG.MB103.60.G14M	VG.MB103 suction cup, NBR, 60 Shore, G1/4" male	3100052
B	VG.MB103.60.G14F	VG.MB103 suction cup, NBR, 60 Shore, G1/4" female	3100053
C	VG.MB103.60.G38M	VG.MB103 suction cup, NBR, 60 Shore, G3/8" male	3100054
D	VG.MB103.60.G38F	VG.MB103 suction cup, NBR, 60 Shore, G3/8" female	3100055

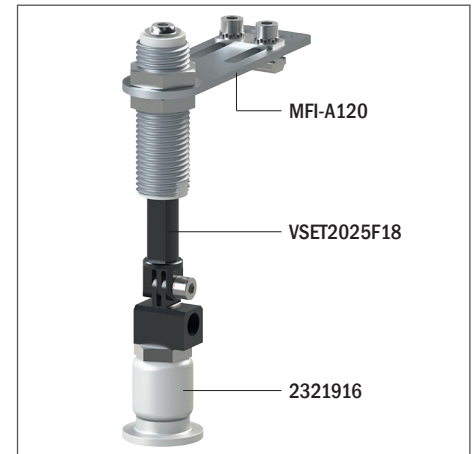


## VG.PAAT flat PTFE suction cups, 16 - 20 - 30 - 40

- Suction cup in PTFE
- Silicone compensator
- Stainless steel fitting
- Suitable for high working temperatures up to 300 °C
- PTFE does not stick to polymers or hot fibres
- The elastic suspension allows axial and angular movements



Application example



### Technical data

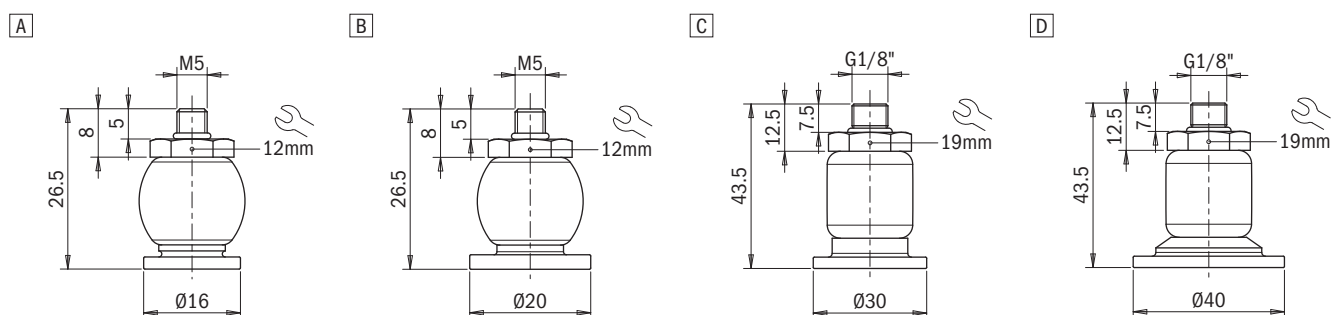
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	
PAAT16R - PTFE	–	6	8	9
PAAT20R - PTFE	–	8.2	13	9
PAAT30R - PTFE	–	9	14	37
PAAT40R - PTFE	–	9.6	15	37

### Technical features

Material	Colour	Temperature range
PTFE	White	-20 ÷ +300 °C

### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.PAAT.16R	VG.PAAT.16R PTFE suction cup, M5 male	2321914
B	VG.PAAT.20R	VG.PAAT.20R PTFE suction cup, M5 male	2321915
C	VG.PAAT.30R	VG.PAAT.30R PTFE suction cup, G1/8" male	2321916
D	VG.PAAT.40R	VG.PAAT.40R PTFE suction cup, G1/8" male	2321917



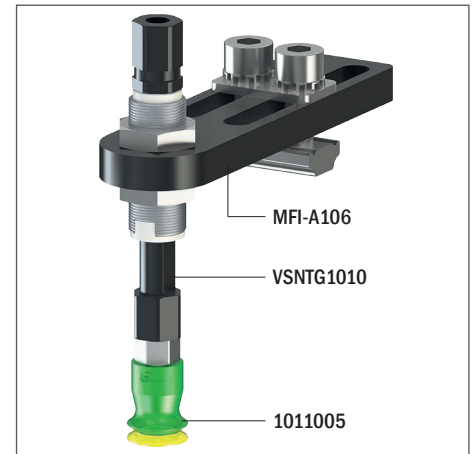




## VG.BP10 suction cups in polyurethane with bellows

- Suitable for minimal level compensations, with high stability
- Excellent gripping performance on corrugated or porous surfaces, or non-sealed surfaces, such as cardboard, plastic items and composite materials with uneven surface
- Also suitable for applications with lifting forces parallel to the surface
- Features an exceptional elastic memory
- Available with 50 Shore hardness, green colour
- Available with 30/70 Shore hardness. The two-colour suction cup is robust and flexible at the same time

Application example



### Technical data

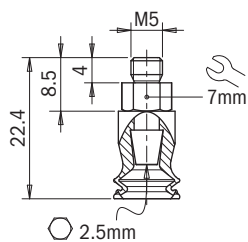
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/70	2.1	2.4	3.9	1.1	2.1	2.5	0.19	4	3	0.5
PU50	2.1	2	3.9	1.5	2.5	3	0.19	6	3	0.5

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/70 Shore	Yellow / Green	30/70 Shore	+10 ÷ +45 °C
Polyurethane PU, 50 Shore	Green	50 Shore	+10 ÷ +45 °C

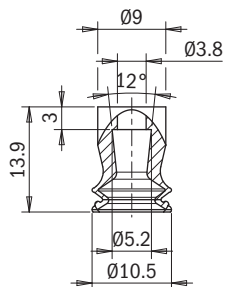
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BP10.30/70.M5M	VG.BP10 suction cup, polyurethane, 30/70 Shore, M5 male	1011005
A	VG.BP10.50.M5M	VG.BP10 suction cup, polyurethane, 50 Shore, M5 male	1021005

A



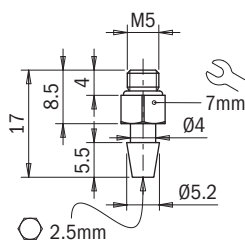
Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
B	VG.BP10.30/70	VG.BP10 suction cup, polyurethane, 30/70 Shore	1011000
B	VG.BP10.50	VG.BP10 suction cup, polyurethane, 50 Shore	1021000

B



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5M	M5 male fitting	1600005

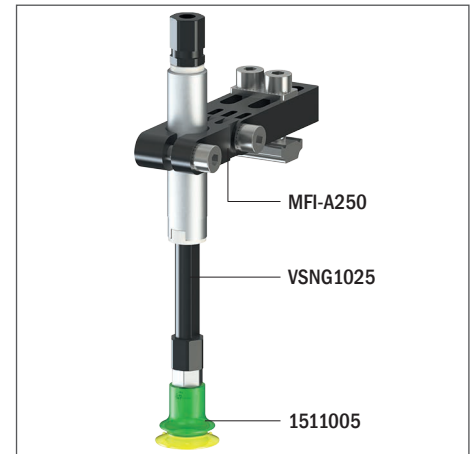
A



## VG.BP15 suction cups in polyurethane with bellows

- Suitable for minimal level compensations, with high stability
- Excellent gripping performance on corrugated or porous surfaces, or non-sealed surfaces, such as cardboard, plastic items and composite materials with uneven surface
- Also suitable for applications with lifting forces parallel to the surface
- Features an exceptional elastic memory
- Available with 50 Shore hardness, green colour
- Available with 30/70 Shore hardness. The two-colour suction cup is robust and flexible at the same time

Application example



### Technical data

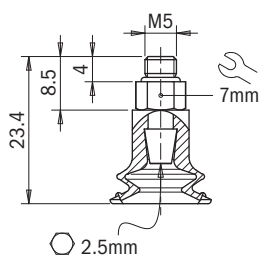
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/70	3.9	6.9	9.1	2.5	5.1	9.2	0.4	5.5	3.4	0.8
PU50	3.9	9.1	12.8	2.8	5.3	8.4	0.4	10	3.4	0.8

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/70 Shore	Yellow / Green	30/70 Shore	+10 ÷ +45 °C
Polyurethane PU, 50 Shore	Green	50 Shore	+10 ÷ +45 °C

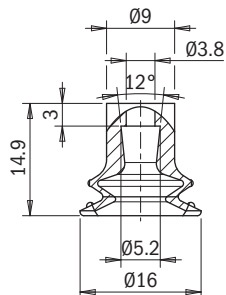
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BP15.30/70.M5M	VG.BP15 suction cup, polyurethane, 30/70 Shore, M5 male	1511005
A	VG.BP15.50.M5M	VG.BP15 suction cup, polyurethane, 50 Shore, M5 male	1521005

A



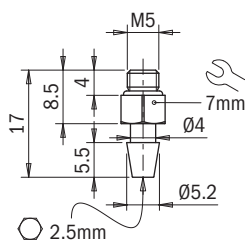
Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
B	VG.BP15.30/70	VG.BP15 suction cup, polyurethane, 30/70 Shore	1511000
B	VG.BP15.50	VG.BP15 suction cup, polyurethane, 50 Shore	1521000

B



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5M	M5 male fitting	1600005

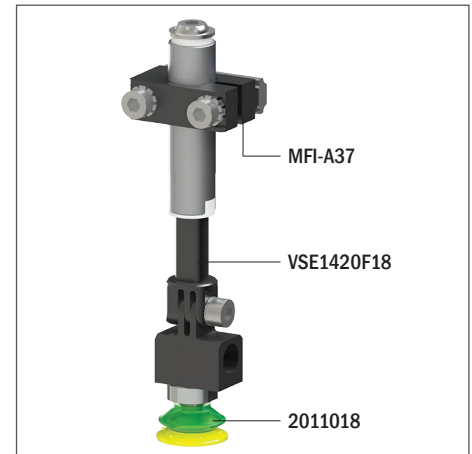
A



## VG.BP20 suction cups in polyurethane with bellows

- Suitable for minimal level compensations, with high stability
- Excellent gripping performance on corrugated or porous surfaces, or non-sealed surfaces, such as cardboard, plastic items and composite materials with uneven surface
- Also suitable for applications with lifting forces parallel to the surface
- Features an exceptional elastic memory
- Available with 50 Shore hardness, green colour
- Available with 30/70 Shore hardness. The two-colour suction cup is robust and flexible at the same time

Application example



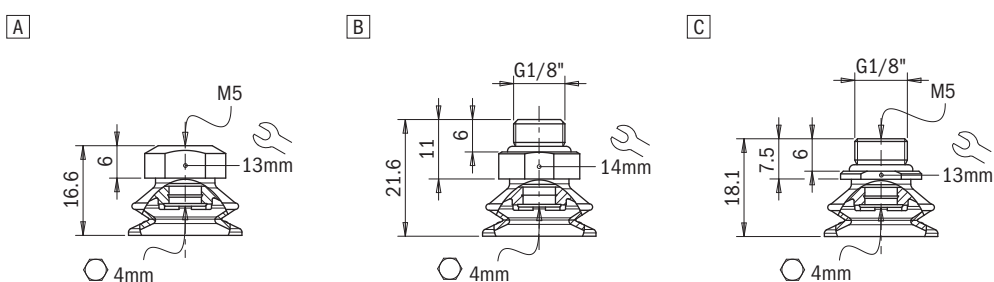
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/70	5	14.3	15.1	3.5	7.3	9.9	1.04	5.5	4.6	1.1
PU50	5.6	14.9	22.1	6.9	10	15.2	1.04	9	4.6	1.1

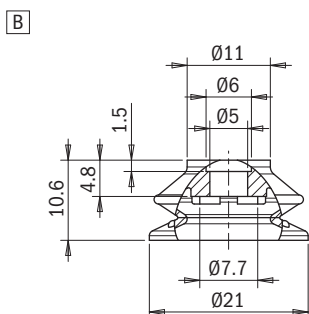
### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/70 Shore	Yellow / Green	30/70 Shore	+10 ÷ +45 °C
Polyurethane PU, 50 Shore	Green	50 Shore	+10 ÷ +45 °C

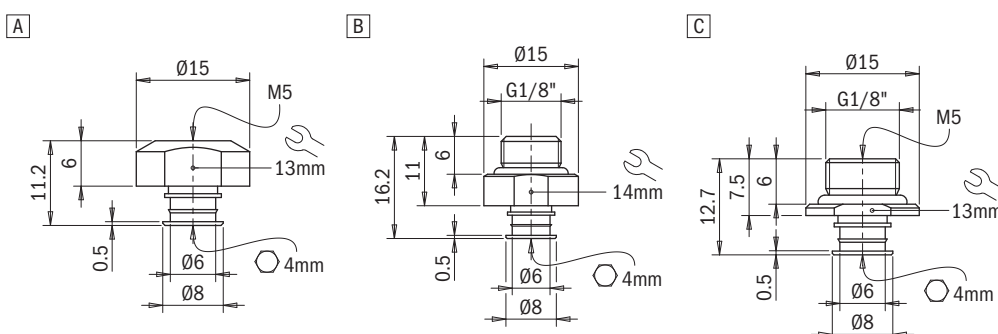
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BP20.30/70.M5F	VG.BP20 suction cup, polyurethane, 30/70 Shore, M5 female	2011006
B	VG.BP20.30/70.G18M	VG.BP20 suction cup, polyurethane, 30/70 Shore, G1/8" male	2011018
C	VG.BP20.30/70.G18MF	VG.BP20 suction cup, polyurethane, 30/70 Shore, G1/8" male / M5 female	2011016
C	VG.BP20.30/70.G18M5FV	VG.BP20 suction cup, polyurethane, 30/70 Shore, G1/8" male / M5 female, with flow control valve	2011007
A	VG.BP20.50.M5F	VG.BP20 suction cup, polyurethane, 50 Shore, M5 female	2021006
B	VG.BP20.50.G18M	VG.BP20 suction cup, polyurethane, 50 Shore, G1/8" male	2021018
C	VG.BP20.50.G18MF	VG.BP20 suction cup, polyurethane, 50 Shore, G1/8" male / M5 female	2021016
C	VG.BP20.50.G18MFV	VG.BP20 suction cup, polyurethane, 50 Shore, G1/8" male / M5 female, with flow control valve	2021007



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
B	VG.BP20.30/70	VG.BP20 suction cup, polyurethane, 30/70 Shore	2011000
B	VG.BP20.50	VG.BP20 suction cup, polyurethane, 50 Shore	2021000



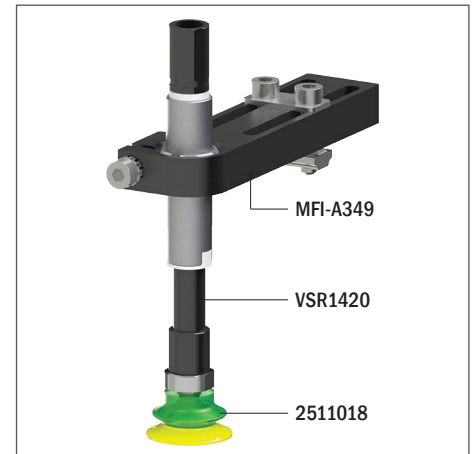
Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F	Fitting, M5 female	1700006
B	FT.G18M.17	G1/8" male fitting	1700018
C	FT.G18M.M5F	G1/8" male / M5 female fitting	1700016
C	FT.G18M.M5F.VF	G1/8" male / M5 female fitting, with valve	1700017



## VG.BP25 polyurethane suction cups with bellows

- Suitable for minimal level compensations, with high stability
- Excellent gripping performance on corrugated or porous surfaces, or non-sealed surfaces, such as cardboard, plastic items and composite materials with uneven surface
- Also suitable for applications with lifting forces parallel to the surface
- Features an exceptional elastic memory
- Available with 50 Shore hardness, green colour
- Available with 30/70 Shore hardness. The two-colour suction cup is robust and flexible at the same time

Application example



### Technical data

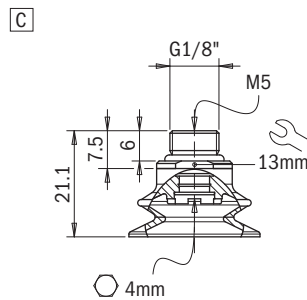
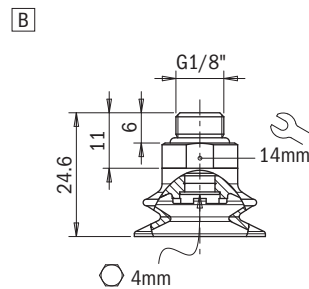
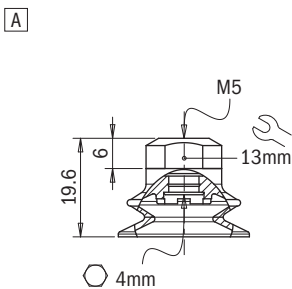
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/70	8.2	18	23.9	8.1	11.9	15.2	1.63	9	5.5	1.8
PU50	8.7	24.8	32.2	8.3	12.9	18.2	1.63	11	5.5	1.8

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/70 Shore	Yellow / Green	30/70 Shore	+10 ÷ +45 °C
Polyurethane PU, 50 Shore	Green	50 Shore	+10 ÷ +45 °C

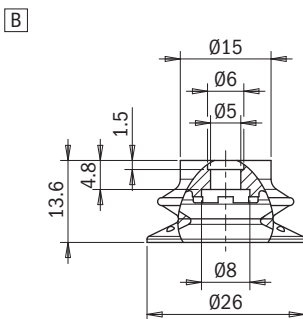
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BP25.30/70.M5F	VG.BP25 suction cup, polyurethane, 30/70 Shore, M5 female	2511006
B	VG.BP25.30/70.G18M	VG.BP25 suction cup, polyurethane, 30/70 Shore, G1/8" male	2511018
C	VG.BP25.30/70.G18MF	VG.BP25 suction cup, polyurethane, 30/70 Shore, G1/8" male / M5 female	2511016
C	VG.BP25.30/70.G18MFV	VG.BP25 suction cup, polyurethane, 30/70 Shore, G1/8" male / M5 female, with flow control valve	2511007
A	VG.BP25.50.M5F	VG.BP25 suction cup, polyurethane, 50 Shore, M5 female	2521006
B	VG.BP25.50.G18M	VG.BP25 suction cup, polyurethane, 50 Shore, G1/8" male	2521018
C	VG.BP25.50.G18MF	VG.BP25 suction cup, polyurethane, 50 Shore, G1/8" male / M5 female	2521016
C	VG.BP25.50.G18MFV	VG.BP25 suction cup, polyurethane, 50 Shore, G1/8" male / M5 female, with flow control valve	2521007



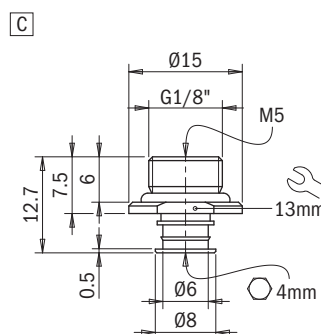
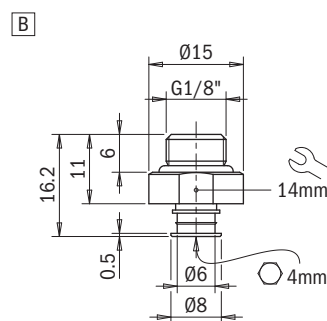
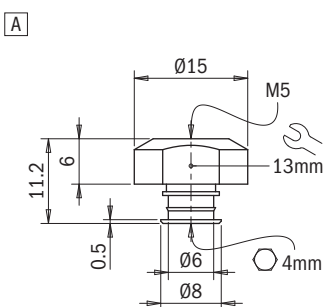
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
B	VG.BP25.30/70	VG.BP25 suction cup, polyurethane, 30/70 Shore	2511000
B	VG.BP25.50	VG.BP25 suction cup, polyurethane, 50 Shore	2521000



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F	Fitting, M5 female	1700006
B	FT.G18M.17	G1/8" male fitting	1700018
C	FT.G18M.M5F	G1/8" male / M5 female fitting	1700016
C	FT.G18M.M5F.VF	G1/8" male / M5 female fitting, with flow control valve	1700017





## VG.BP35 suction cups in polyurethane with bellows

- Suitable for minimal level compensations, with high stability
- Excellent gripping performance on corrugated or porous surfaces, or non-sealed surfaces, such as cardboard, plastic items and composite materials with uneven surface
- Also suitable for applications with lifting forces parallel to the surface
- Features an exceptional elastic memory
- Available with 50 Shore hardness, green colour
- Available with 30/70 Shore hardness. The two-colour suction cup is robust and flexible at the same time

Application example



### Technical data

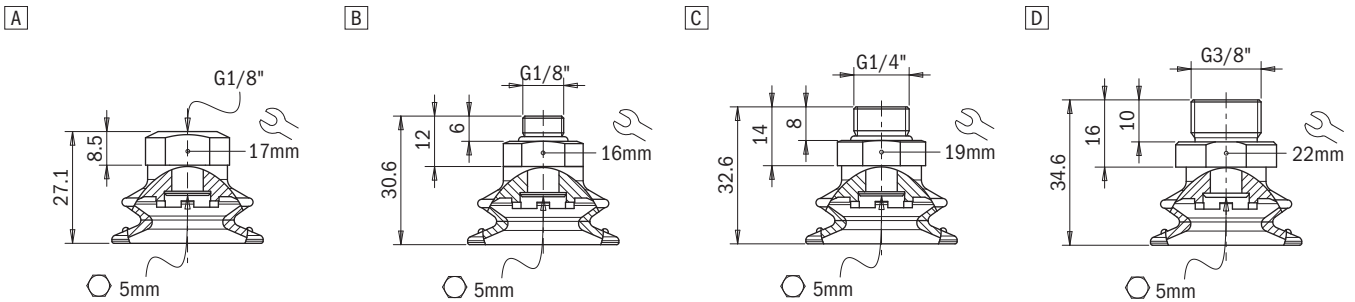
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/70	15	38	40	13	30	35	4.4	16	9.5	5.1
PU50	17.8	49	44	15	33	42	4.4	17.5	9.5	5.1

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/70 Shore	Yellow / Green	30/70 Shore	+10 ÷ +45 °C
Polyurethane PU, 50 Shore	Green	50 Shore	+10 ÷ +45 °C

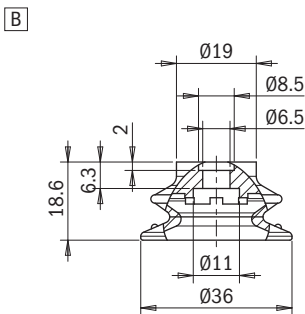
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BP35.30/70.G18F	VG.BP35 suction cup, polyurethane, 30/70 Shore, G1/8" female	3511019
B	VG.BP35.30/70.G18M	VG.BP35 suction cup, polyurethane, 30/70 Shore, G1/8" male	3511018
C	VG.BP35.30/70.G14M	VG.BP35 suction cup, polyurethane, 30/70 Shore, G1/4" male	3511014
D	VG.BP35.30/70.G38M	VG.BP35 suction cup, polyurethane, 30/70 Shore, G3/8" male	3511038
A	VG.BP35.50.G18F	VG.BP35 suction cup, polyurethane, 50 Shore, G1/8" female	3521019
B	VG.BP35.50.G18M	VG.BP35 suction cup, polyurethane, 50 Shore, G1/8" male	3521018
C	VG.BP35.50.G14M	VG.BP35 suction cup, polyurethane, 50 Shore, G1/4" male	3521014
D	VG.BP35.50.G38M	VG.BP35 suction cup, polyurethane, 50 Shore, G3/8" male	3521038



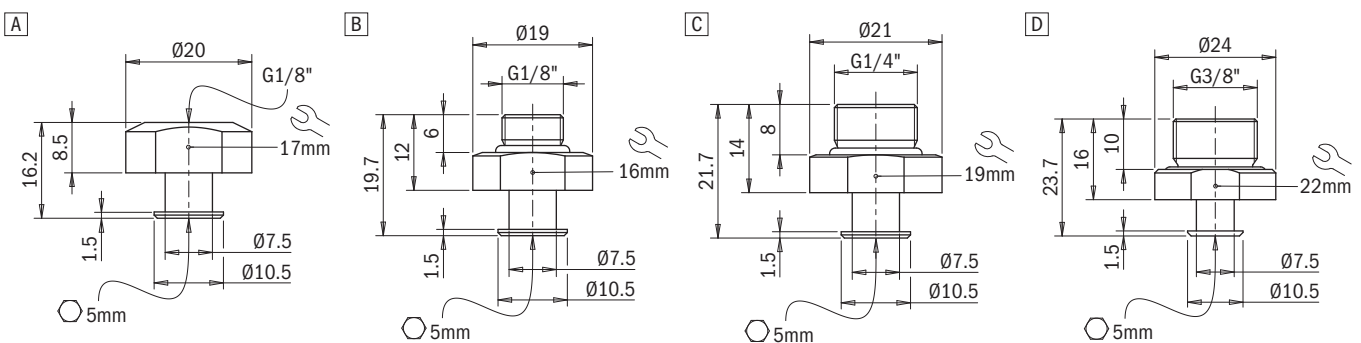
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
B	VG.BP35.30/70	VG.BP35 suction cup, polyurethane, 30/70 Shore	3511000
B	VG.BP35.50	VG.BP35 suction cup, polyurethane, 50 Shore	3521000



### Identification codes

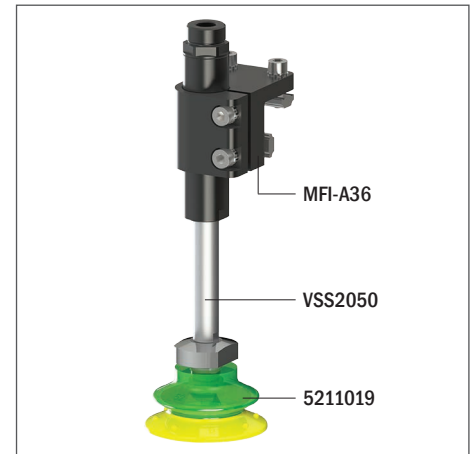
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.18	G1/8" female fitting	1800019
B	FT.G18M.18	G1/8" male fitting	1800018
C	FT.G14M.18	G1/4" male fitting	1800014
D	FT.G38M.18	G3/8" male fitting	1800038



## VG.BP52 suction cups in polyurethane with bellows

- Suitable for minimal level compensations, with high stability
- Excellent gripping performance on corrugated or porous surfaces, or non-sealed surfaces, such as cardboard, plastic items and composite materials with uneven surface
- Also suitable for applications with lifting forces parallel to the surface
- Features an exceptional elastic memory
- Available with 50 Shore hardness, green colour
- Available with 30/70 Shore hardness. The two-colour suction cup is robust and flexible at the same time

Application example



### Technical data

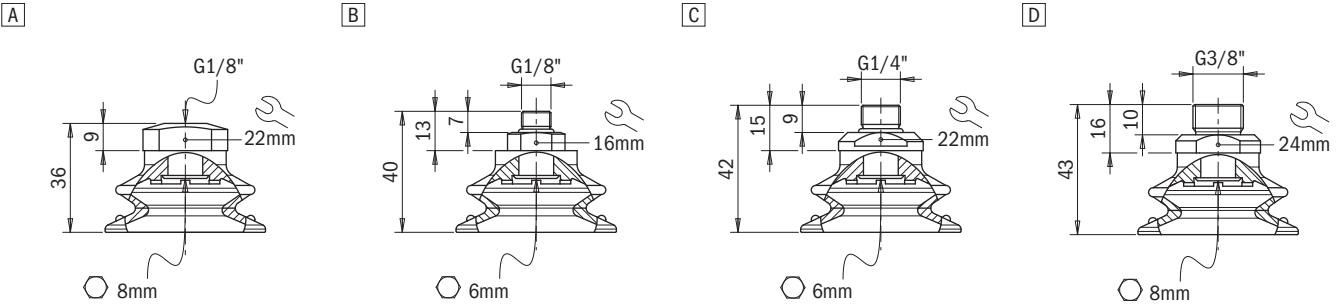
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/70	34.8	90	86	30	65	80	13.3	25	11.2	14.2
PU50	41.6	103	100	39	69	88	13.3	29	11.2	14.1

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/70 Shore	Yellow / Green	30/70 Shore	+10 ÷ +45 °C
Polyurethane PU, 50 Shore	Green	50 Shore	+10 ÷ +45 °C

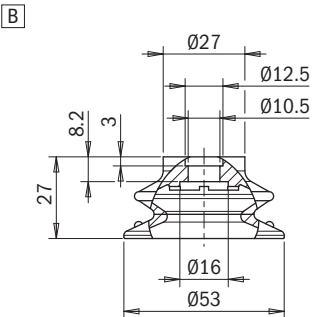
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BP52.30/70.G18F	VG.BP52 suction cup, polyurethane, 30/70 Shore, G1/8" female	5211019
B	VG.BP52.30/70.G18M	VG.BP52 suction cup, polyurethane, 30/70 Shore, G1/8" male	5211018
C	VG.BP52.30/70.G14M	VG.BP52 suction cup, polyurethane, 30/70 Shore, G1/4" male	5211014
D	VG.BP52.30/70.G38M	VG.BP52 suction cup, polyurethane, 30/70 Shore, G3/8" male	5211038
A	VG.BP52.50.G18F	VG.BP52 suction cup, polyurethane, 50 Shore, G1/8" female	5221019
B	VG.BP52.50.G18M	VG.BP52 suction cup, polyurethane, 50 Shore, G1/8" male	5221018
C	VG.BP52.50.G14M	VG.BP52 suction cup, polyurethane, 50 Shore, G1/4" male	5221014
D	VG.BP52.50.G38M	VG.BP52 suction cup, polyurethane, 50 Shore, G3/8" male	5221038



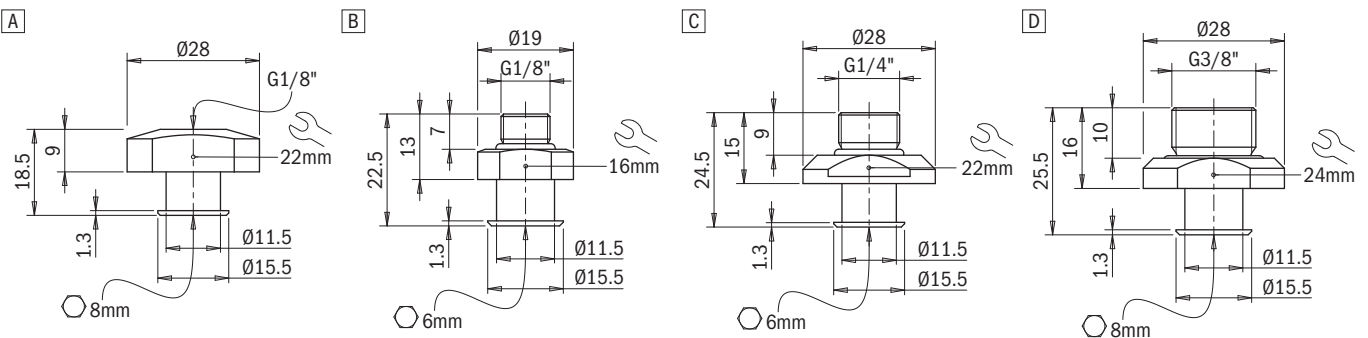
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
B	VG.BP52.30/70	VG.BP52 suction cup, polyurethane, 30/70 Shore	5211000
B	VG.BP52.50	VG.BP52 suction cup, polyurethane, 50 Shore	5221000



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.19	G1/8" female fitting	1900019
B	FT.G18M.19	G1/8" male fitting	1900018
C	FT.G14M.19	G1/4" male fitting	1900014
D	FT.G38M.198	G3/8" male fitting	1900038



## VG.BP75 suction cups in polyurethane with bellows

- Suitable for minimal level compensations, with high stability
- Excellent gripping performance on corrugated or porous surfaces, or non-sealed surfaces, such as cardboard, plastic items and composite materials with uneven surface
- Also suitable for applications with lifting forces parallel to the surface
- Features an exceptional elastic memory
- Available with 50 Shore hardness, green colour
- Available with 30/70 Shore hardness. The two-colour suction cup is robust and flexible at the same time

Application example



### Technical data

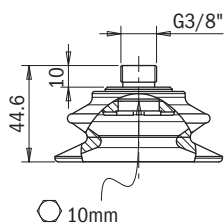
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/70	78.2	190	230	60.9	152	183	42.8	50	16	39.7
PU50	92.4	254	297	80.2	197	230	42.8	60	16	39.7

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/70 Shore	Yellow / Green	30/70 Shore	+10 ÷ +45 °C
Polyurethane PU, 50 Shore	Green	50 Shore	+10 ÷ +45 °C

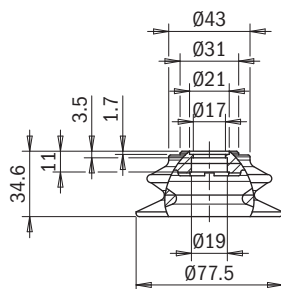
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BP75.30/70.G38M	VG.BP75 suction cup, polyurethane, 30/70 Shore, G3/8" male	7511038
A	VG.BP75.50.G38M	VG.BP75 suction cup, polyurethane, 50 Shore, G3/8" male	7521038

A



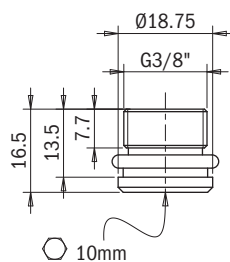
Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
B	VG.BP75.30/70	VG.BP75 suction cup, polyurethane, 30/70 Shore	7511000
B	VG.BP75.50	VG.BP75 suction cup, polyurethane, 50 Shore	7521000

B



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G38M.199	G3/8" male fitting	1900039

A



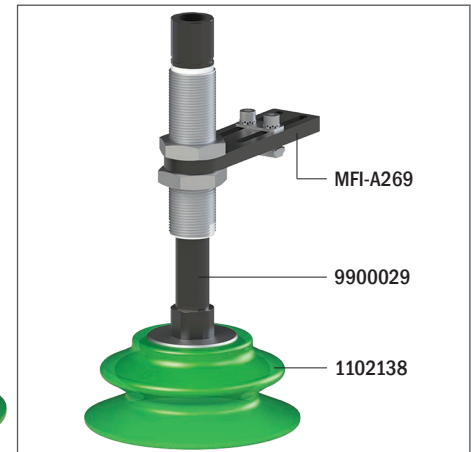
## VG.BP110 suction cups in polyurethane with bellows

- Suitable for minimal level compensations, with high stability
- Excellent gripping performance on corrugated or porous surfaces, or non-sealed surfaces, such as cardboard, plastic items and composite materials with uneven surface
- Also suitable for applications with lifting forces parallel to the surface
- Features an exceptional elastic memory
- Available with 50 Shore hardness, green colour
- Available with 30/70 Shore hardness. The two-colour suction cup is robust and flexible at the same time

**NEW**



Application example



### Technical data

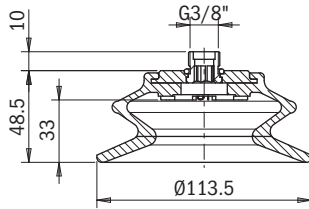
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/70	178	464	602	170	351	431	123	80	23.5	172
PU50	201	440	500	190	379	458	123	90	23.5	172

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/70 Shore	Yellow / Green	30/70 Shore	+10 + +45 °C
Polyurethane PU, 50 Shore	Green	50 Shore	+10 + +45 °C

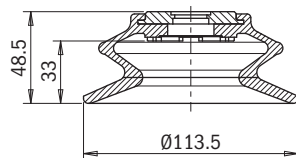
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BP110.30/70.G38M	VG.BP110 suction cup, polyurethane, 30/70 Shore, G3/8" male	1101138
A	VG.BP110.50.G38M	VG.BP110 suction cup, polyurethane, 50 Shore, G3/8" male	1102138

A



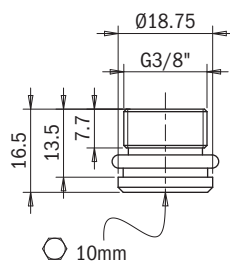
Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
B	VG.BP110.30/70	VG.BP110 suction cup, polyurethane, 30/70 Shore	1101100
B	VG.BP110.50	VG.BP110 suction cup, polyurethane, 50 Shore	1101200

A



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G38M.199	G3/8" male fitting	1900039

A





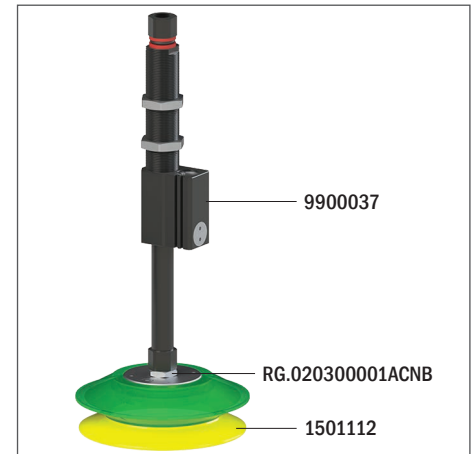
## VG.BP150 suction cups in polyurethane with bellows

- Suitable for minimal level compensations, with high stability
- Excellent gripping performance on corrugated or porous surfaces, or non-sealed surfaces, such as cardboard, plastic items and composite materials with uneven surface
- Also suitable for applications with lifting forces parallel to the surface
- The fitting is a co-moulded aluminium plate
- 4 metric blind holes are available to ensure a tighter fixing
- Supplementary G1/8" vacuum fitting
- Available with 50 Shore hardness, green colour
- Available with 30/70 Shore hardness. The two-colour suction cup is robust and flexible at the same time

**NEW**



Application example



### Technical data

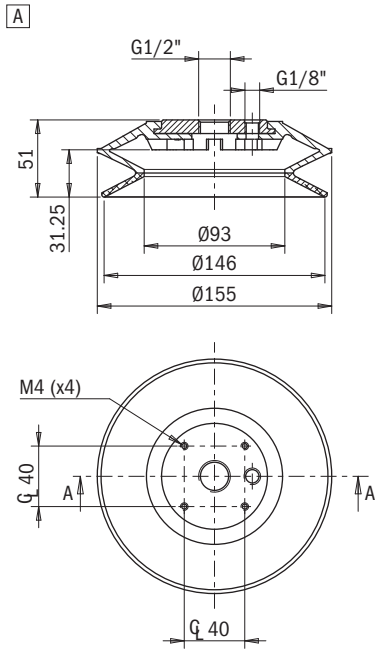
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/70	291	653	885	190	635	865	379	175	30	323
PU50	300	660	891	195	640	870	379	175	30	323

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/70 Shore	Yellow / Green	30/70 Shore	+10 + +45 °C
Polyurethane PU, 50 Shore	Green	50 Shore	+10 + +45 °C

**Identification codes**

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BP150.30/70.G12F	VG.BP150 suction cup, polyurethane, 30/70 Shore, G1/2" female	1501112
A	VG.BP150.50.G12F	VG.BP150 suction cup, polyurethane, 50 Shore, G1/2" female	1502112



## VG.BP200 suction cups in polyurethane with bellows

- Suitable for minimal level compensations, with high stability
- Excellent gripping performance on corrugated or porous surfaces, or non-sealed surfaces, such as cardboard, plastic items and composite materials with uneven surface
- Also suitable for applications with lifting forces parallel to the surface
- The fitting is a co-moulded aluminium plate
- 4 metric blind holes are available to ensure a tighter fixing
- Supplementary G1/8" vacuum fitting
- Available with 50 Shore hardness, green colour
- Available with 30/70 Shore hardness. The two-colour suction cup is robust and flexible at the same time

**NEW**



Application example



### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/70	449	1083	1781	990	970	1700	718	270	31	713
PU50	1010	1450	2010	995	975	1710	718	270	31	713

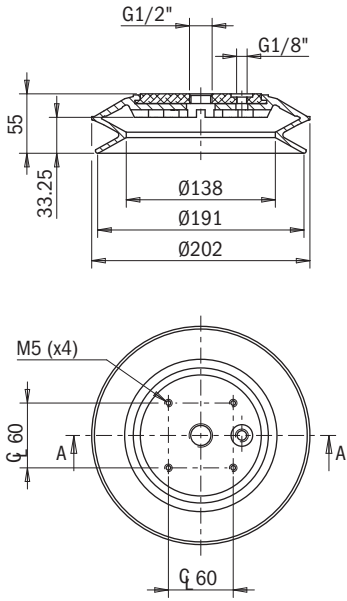
### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/70 Shore	Yellow / Green	30/70 Shore	+10 + +45 °C
Polyurethane PU, 50 Shore	Green	50 Shore	+10 + +45 °C

**Identification codes**

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BP200.30/70.G12F	VG.BP200 suction cup, polyurethane, 30/70 Shore, G1/2" female	2001112
A	VG.BP200.50.G12F	VG.BP200 suction cup, polyurethane, 50 Shore, G1/2" female	2002112

A



Introduction

Vacuum theory

Suction cups

Vacuum pumps

Customised solutions

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System accessories

## VG.GX10P suction cups in polyurethane

- Suitable for compensating for different heights
- Ideal for handling items with porous and uneven surface
- Features an exceptional elastic memory
- Available with 50 Shore hardness, green colour
- Available with 30/60 Shore hardness. The two-colour suction cup is robust and flexible at the same time

Application example



### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/60	1.2	2.3	3.4	–	–	–	0.56	4	4.5	0.6
PU50	1.2	2.4	3.3	–	–	–	0.56	6	4.5	0.6

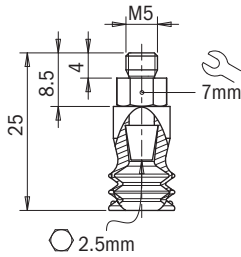
### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/60 Shore	Yellow / Green	30/60 Shore	+10 ÷ +45 °C
Polyurethane PU, 50 Shore	Green	50 Shore	+10 ÷ +45 °C

### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.GX10P.30/60.M5M	VG.GX10P suction cup, polyurethane, 30/60 Shore, M5 male	1010005
A	VG.GX10P.50.M5M	VG.GX10P suction cup, polyurethane, 50 Shore, M5 male	1020005

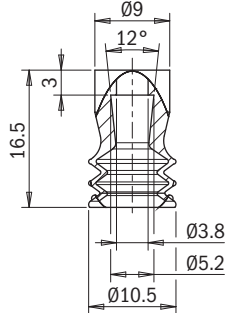
A



### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
B	VG.GX10P.30/60	VG.GX10P suction cup, polyurethane, 30/60 Shore	1010000
B	VG.GX10P.50	VG.GX10P suction cup, polyurethane, 50 Shore	1020000

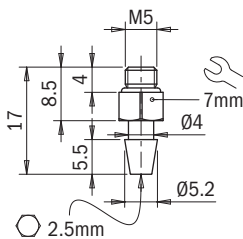
B



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5M	M5 male fitting	1600005

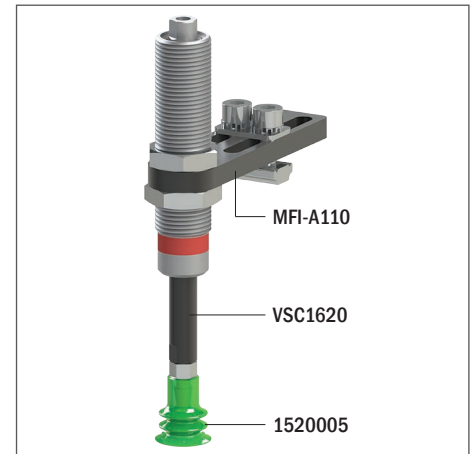
A



## VG.GX15P suction cups in polyurethane

- Suitable for compensating for different heights
- Ideal for handling items with porous and uneven surface
- Features an exceptional elastic memory
- Available with 50 Shore hardness, green colour
- Available with 30/60 Shore hardness. The two-colour suction cup is robust and flexible at the same time

Application example



### Technical data

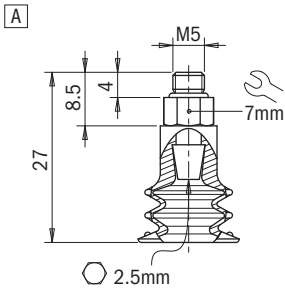
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/60	2.9	6.9	5.5	–	–	–	0.92	5.5	5.5	0.9
PU50	3.2	9.1	6.2	–	–	–	0.92	6	5.5	0.9

### Technical features

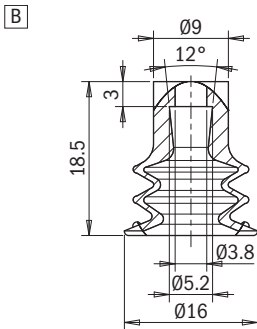
Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/60 Shore	Yellow / Green	30/60 Shore	+10 + +45 °C
Polyurethane PU, 50 Shore	Green	50 Shore	+10 + +45 °C

**Identification codes**

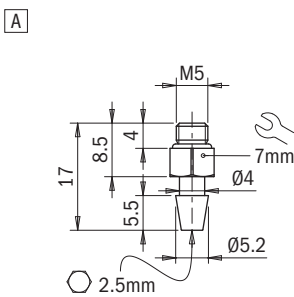
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.GX15P.30/60.M5M	VG.GX15P suction cup, polyurethane, 30/60 Shore, M5 male	1510005
A	VG.GX15P.50.M5M	VG.GX15P suction cup, polyurethane, 50 Shore, M5 male	1520005


**Identification codes**

Drawing	Alphanumeric code	Suction cups	Order code
B	VG.GX15P.30/60	VG.GX15P suction cup, polyurethane, 30/60 Shore	1510000
B	VG.GX15P.50	VG.GX15P suction cup, polyurethane, 50 Shore	1520000


**Identification codes**

Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5M	M5 male fitting	1600005





## VG.GX20P suction cups in polyurethane

- Suitable for compensating for different heights
- Ideal for handling items with porous and uneven surface
- Features an exceptional elastic memory
- Available with 50 Shore hardness, green colour
- Available with 30/60 Shore hardness. The two-colour suction cup is robust and flexible at the same time

Application example



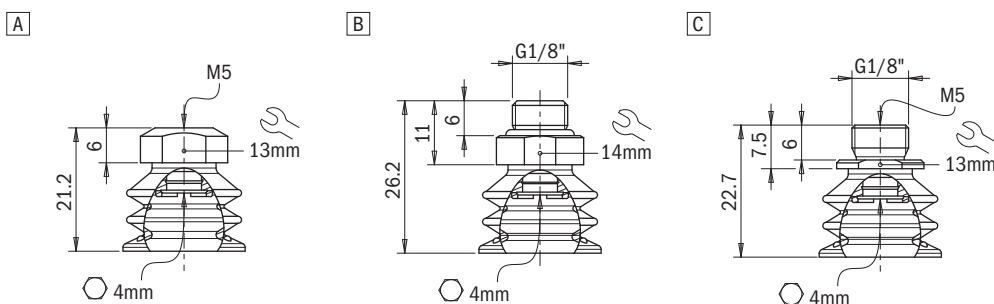
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/60	4.6	10.9	12.1	–	–	–	1.16	8.5	6.5	1.4
PU50	5.7	14.2	13.1	–	–	–	1.16	10	6.5	1.4

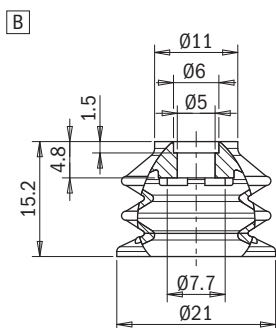
### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/60 Shore	Yellow / Green	30/60 Shore	+10 + +45 °C
Polyurethane PU, 50 Shore	Green	50 Shore	+10 + +45 °C

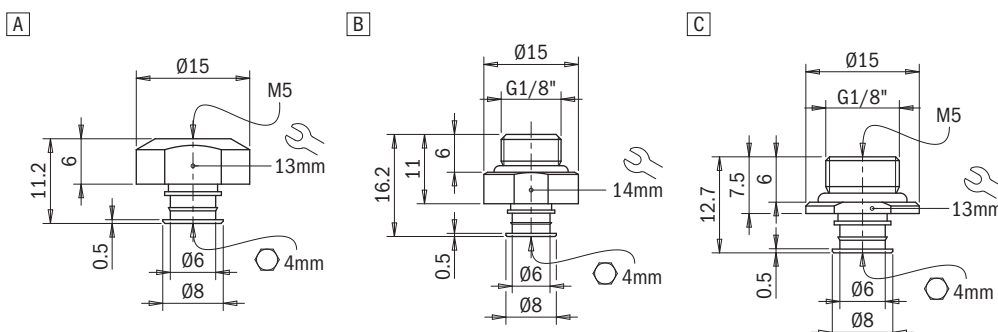
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.GX20P.30/60.M5F	VG.GX20P suction cup, polyurethane, 30/60 Shore, M5 female	2010006
B	VG.GX20P.30/60.G18M	VG.GX20P suction cup, polyurethane, 30/60 Shore, G1/8" male	2010018
C	VG.GX20P.30/60.G18MF	VG.GX20P suction cup, polyurethane, 30/60 Shore, G1/8" male / M5 female	2010016
C	VG.GX20P.30/60.G18MFV	VG.GX20P suction cup, polyurethane, 30/60 Shore, G1/8" male / M5 female, with flow control valve	2010007
A	VG.GX20P.50.M5F	VG.GX20P suction cup, polyurethane, 50 Shore, M5 female	2020006
B	VG.GX20P.50.G18M	VG.GX20P suction cup, polyurethane, 50 Shore, G1/8" male	2020018
C	VG.GX20P.50.G18MF	VG.GX20P suction cup, polyurethane, 50 Shore, G1/8" male / M5 female	2020016
C	VG.GX20P.50.G18MFV	VG.GX20P suction cup, polyurethane, 50 Shore, G1/8" male / M5 female, with flow control valve	2020007



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
B	VG.GX20P.30/60	VG.GX20P suction cup, polyurethane, 30/60 Shore	2010000
B	VG.GX20P.50	VG.GX20P suction cup, polyurethane, 50 Shore	2020000



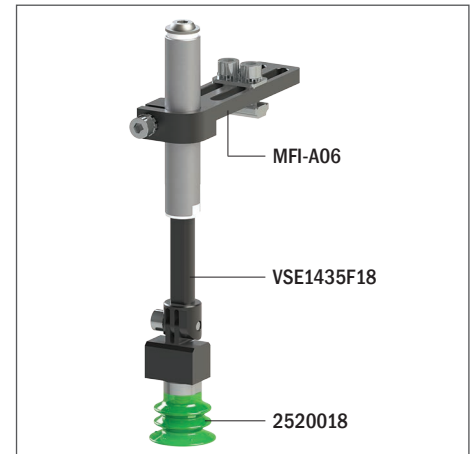
Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F	Fitting, M5 female	1700006
B	FT.G18M.17	G1/8" male fitting	1700018
C	FT.G18M.M5F	G1/8" male / M5 female fitting	1700016
C	FT.G18M.M5F.VF	G1/8" male / M5 female fitting, with valve	1700017



## VG.GX25P suction cups in polyurethane

- Suitable for compensating for different heights
- Ideal for handling items with porous and uneven surface
- Features an exceptional elastic memory
- Available with 50 Shore hardness, green colour
- Available with 30/60 Shore hardness. The two-colour suction cup is robust and flexible at the same time

Application example



### Technical data

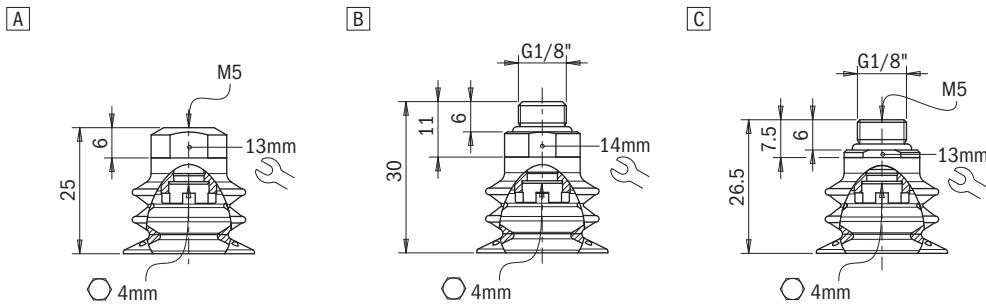
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/60	7.1	13.9	18	—	—	—	3	6	8.5	2.5
PU50	8.5	15.2	17.8	—	—	—	3	8.1	8.5	2.5

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/60 Shore	Yellow / Green	30/60 Shore	+10 ÷ +45 °C
Polyurethane PU, 50 Shore	Green	50 Shore	+10 ÷ +45 °C

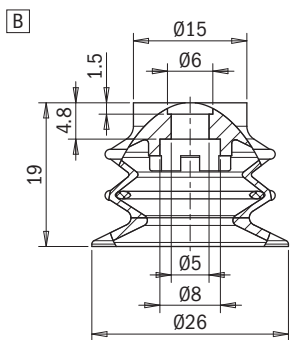
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.GX25P.30/60.M5F	VG.GX25P suction cup, polyurethane, 30/60 Shore, with internal filter, M5 female	2510006
B	VG.GX25P.30/60.G18M	VG.GX25P suction cup, polyurethane, 30/60 Shore, with internal filter, G1/8" male	2510018
C	VG.GX25P.30/60.G18MF	VG.GX25P suction cup, polyurethane, 30/60 Shore, with internal filter, G1/8" male / M5 female	2510016
C	VG.GX25P.30/60.G18MFV	VG.GX25P suction cup, polyurethane, 30/60 Shore, with internal filter, G1/8" male / M5 female, with flow control valve	2510007
A	VG.GX25P.50.M5F	VG.GX25P suction cup, polyurethane, 50 Shore, with internal filter, M5 female	2520006
B	VG.GX25P.50.G18M	VG.GX25P suction cup, polyurethane, 50 Shore, with internal filter, G1/8" male	2520018
C	VG.GX25P.50.G18MF	VG.GX25P suction cup, polyurethane, 50 Shore, with internal filter, G1/8" male / M5 female	2520016
C	VG.GX25P.50.G18MFV	VG.GX25P suction cup, polyurethane, 50 Shore, with internal filter, G1/8" male / M5 female, with flow control valve	2520007



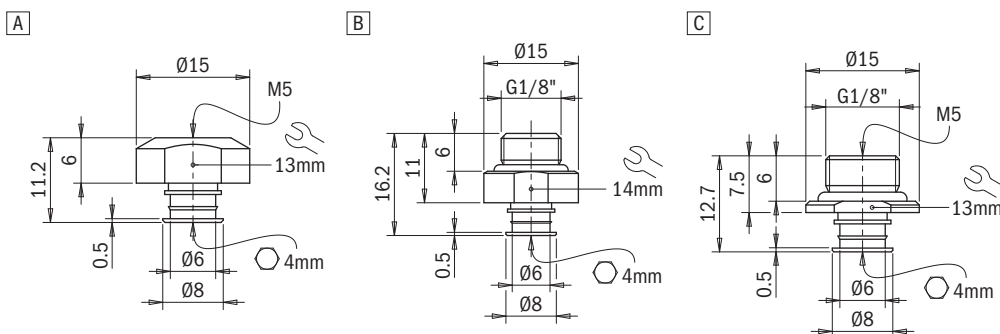
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
B	VG.GX25P.30/60	VG.GX25P suction cup, polyurethane, 30/60 Shore, with internal filter	2510000
B	VG.GX25P.50	VG.GX25P suction cup, polyurethane, 50 Shore, with internal filter	2520000



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F	Fitting, M5 female	1700006
B	FT.G18M.17	G1/8" male fitting	1700018
C	FT.G18M.M5F	G1/8" male / M5 female fitting	1700016
C	FT.G18M.M5F.VF	G1/8" male / M5 female fitting, with valve	1700017



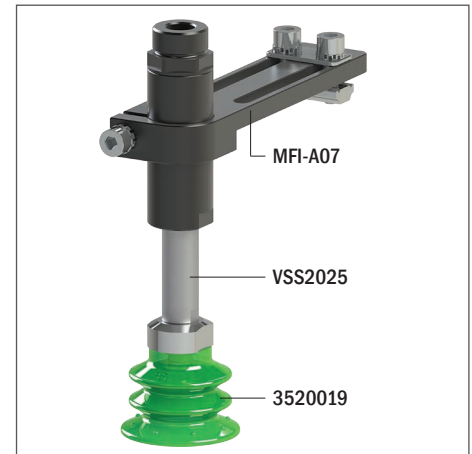
### Identification codes

Alphanumeric code	Filters	Order code
FILT.DGX25	Disc filter, Ø25 mm (10 pieces)	2500001

## VG.GX35P suction cups in polyurethane

- Suitable for compensating for different heights
- Ideal for handling items with porous and uneven surface
- Features an exceptional elastic memory
- Available with 50 Shore hardness, green colour
- Available with 30/60 Shore hardness. The two-colour suction cup is robust and flexible at the same time

Application example



### Technical data

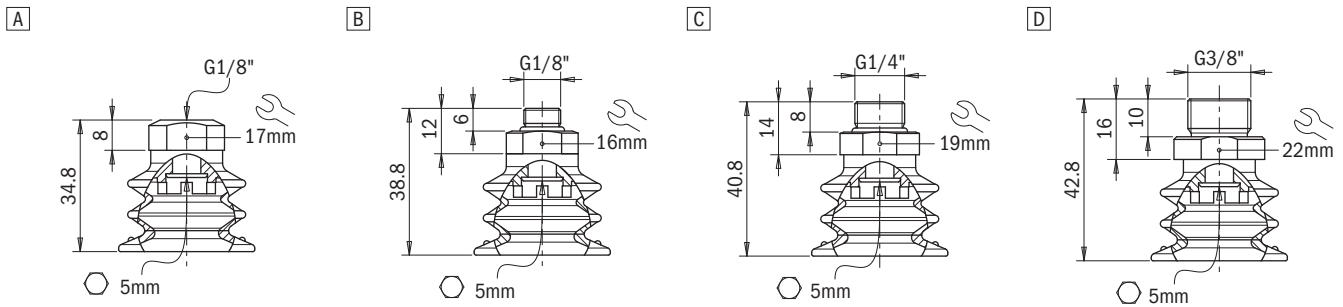
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/60	13.9	25	37	–	–	–	10	10	14	6.4
PU50	17.2	31	35	–	–	–	10	10	14	6.4

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/60 Shore	Yellow / Green	30/60 Shore	+10 ÷ +45 °C
Polyurethane PU, 50 Shore	Green	50 Shore	+10 ÷ +45 °C

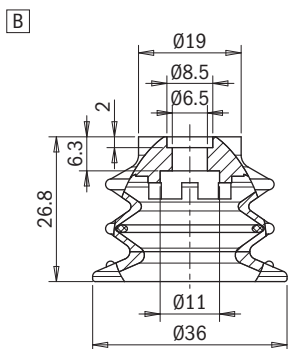
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.GX35P.30/60.G18F	VG.GX35P suction cup, polyurethane, 30/60 Shore, with internal filter, G1/8" female	3510019
B	VG.GX35P.30/60.G18M	VG.GX35P suction cup, polyurethane, 30/60 Shore, with internal filter, G1/8" male	3510018
C	VG.GX35P.30/60.G14M	VG.GX35P suction cup, polyurethane, 30/60 Shore, with internal filter, G1/4" male	3510014
D	VG.GX35P.30/60.G38M	VG.GX35P suction cup, polyurethane, 30/60 Shore, with internal filter, G3/8" male	3510038
A	VG.GX35P.50.G18F	VG.GX35P suction cup, polyurethane, 50 Shore, with internal filter, G1/8" female	3520019
B	VG.GX35P.50.G18M	VG.GX35P suction cup, polyurethane, 50 Shore, with internal filter, G1/8" male	3520018
C	VG.GX35P.50.G14M	VG.GX35P suction cup, polyurethane, 50 Shore, with internal filter, G1/4" male	3520014
D	VG.GX35P.50.G38M	VG.GX35P suction cup, polyurethane, 50 Shore, with internal filter, G3/8" male	3520038



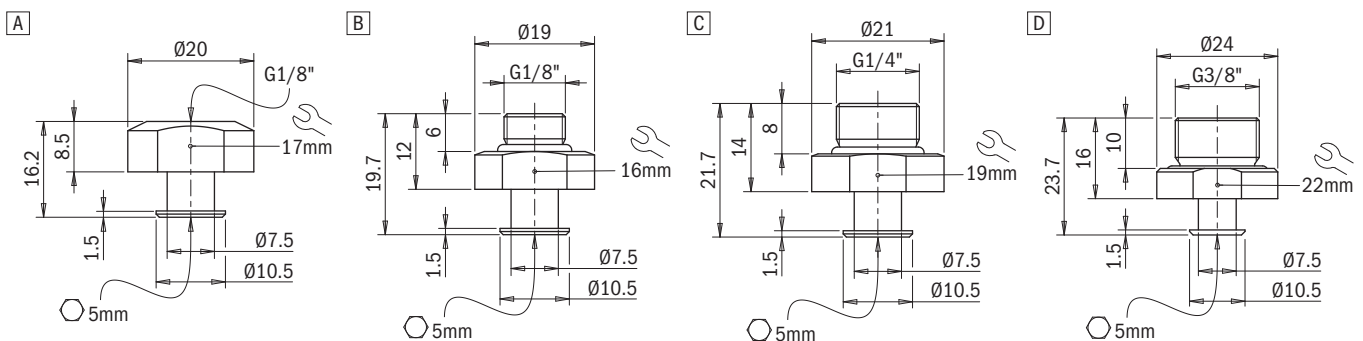
#### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
B	VG.GX35P.30/60	VG.GX35P suction cup, polyurethane, 30/60 Shore, with internal filter	3510000
B	VG.GX35P.50	VG.GX35P suction cup, polyurethane, 50 Shore, with internal filter	3520000



#### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.18	G1/8" female fitting	1800019
B	FT.G18M.18	G1/8" male fitting	1800018
C	FT.G14M.18	G1/4" male fitting	1800014
D	FT.G38M.18	G3/8" male fitting	1800038



#### Identification codes

Alphanumeric code	Filters	Order code
FILT.DGX35	Disc filter, Ø35 mm (10 pieces)	3500001

## VG.GX52P suction cups in polyurethane

- Suitable for compensating for different heights
- Ideal for handling items with porous and uneven surface
- Features an exceptional elastic memory
- Available with 50 Shore hardness, green colour
- Available with 30/60 Shore hardness. The two-colour suction cup is robust and flexible at the same time



Application example



### Technical data

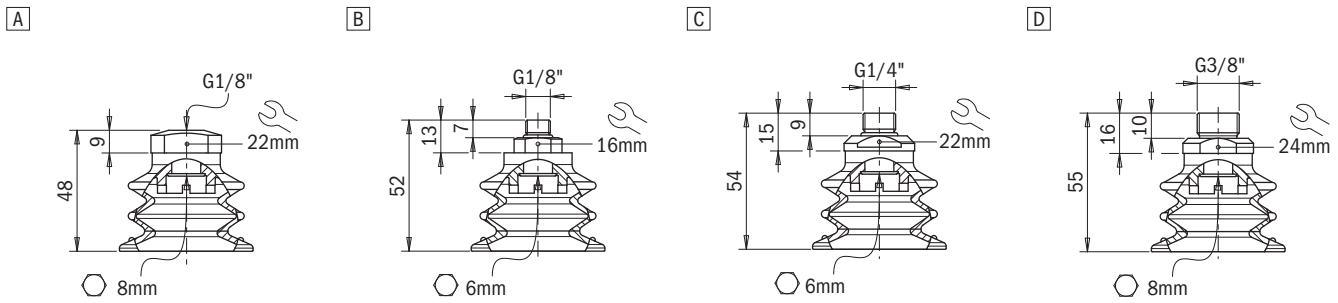
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/60	33	60	86	–	–	–	30	32	19	20.9
PU50	33.7	58.7	78	–	–	–	30	32	19	20.7

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/60 Shore	Yellow / Green	30/60 Shore	+10 ÷ +45 °C
Polyurethane PU, 50 Shore	Green	50 Shore	+10 ÷ +45 °C

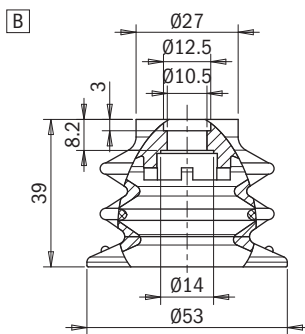
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.GX52P.30/60.G18F	VG.GX52P suction cup, polyurethane, 30/60 Shore, with internal filter, G1/8" female	5210019
B	VG.GX52P.30/60.G18M	VG.GX52P suction cup, polyurethane, 30/60 Shore, with internal filter, G1/8" male	5210018
C	VG.GX52P.30/60.G14M	VG.GX52P suction cup, polyurethane, 30/60 Shore, with internal filter, G1/4" male	5210014
D	VG.GX52P.30/60.G38M	VG.GX52P suction cup, polyurethane, 30/60 Shore, with internal filter, G3/8" male	5210038
A	VG.GX52P.50.G18F	VG.GX52P suction cup, polyurethane, 50 Shore, with internal filter, G1/8" female	5220019
B	VG.GX52P.50.G18M	VG.GX52P suction cup, polyurethane, 50 Shore, with internal filter, G1/8" male	5220018
C	VG.GX52P.50.G14M	VG.GX52P suction cup, polyurethane, 50 Shore, with internal filter, G1/4" male	5220014
D	VG.GX52P.50.G38M	VG.GX52P suction cup, polyurethane, 50 Shore, with internal filter, G3/8" male	5220038



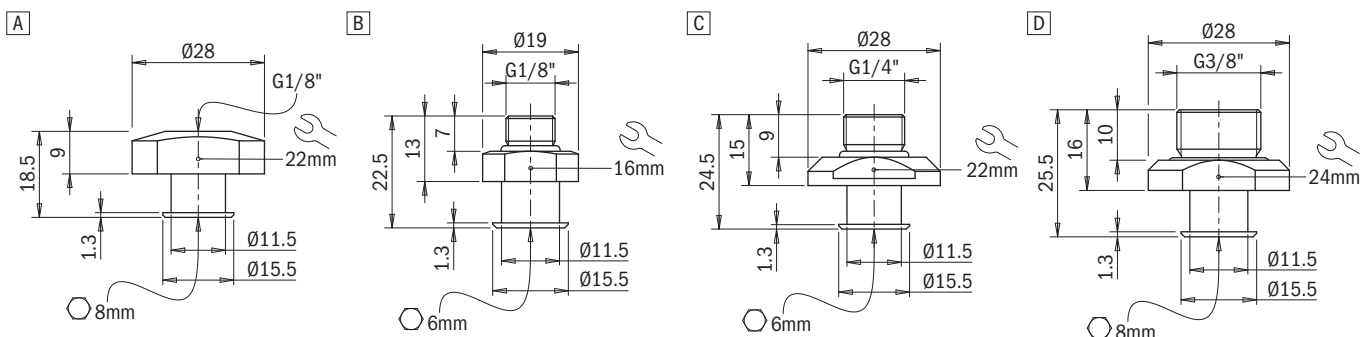
#### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
B	VG.GX52P.30/60	VG.GX52P suction cup, polyurethane, 30/60 Shore, with internal filter	5210000
B	VG.GX52P.50	VG.GX52P suction cup, polyurethane, 50 Shore, with internal filter	5220000



#### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.19	G1/8" female fitting	1900019
B	FT.G18M.19	G1/8" male fitting	1900018
C	FT.G14M.19	G1/4" male fitting	1900014
D	FT.G38M.198	G3/8" male fitting	1900038



#### Identification codes

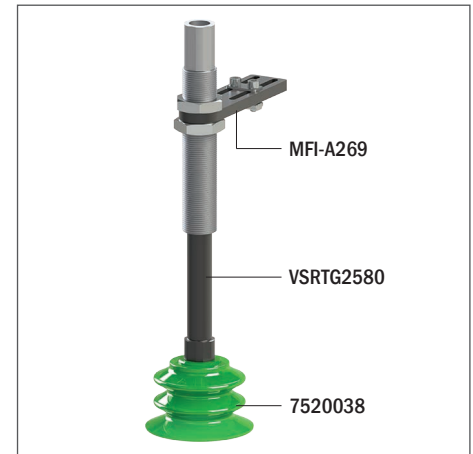
Alphanumeric code	Filters	Order code
FILT.DGX52	Disc filter, Ø52 mm (10 pieces)	5200001



## VG.GX75P suction cups in polyurethane

- Suitable for compensating for different heights
- Ideal for handling items with porous and uneven surface
- Features an exceptional elastic memory
- Available with 50 Shore hardness, green colour
- Available with 30/60 Shore hardness. The two-colour suction cup is robust and flexible at the same time

Application example



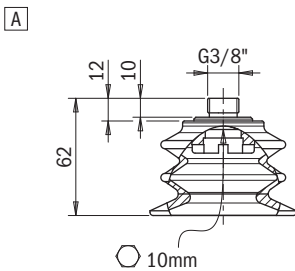
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/60	75	150	162	–	–	–	80	23	25	56
PU50	90	190	186	–	–	–	80	23	25	56

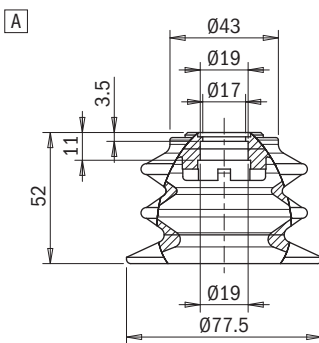
### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/60 Shore	Yellow / Green	30/60 Shore	+10 + +45 °C
Polyurethane PU, 50 Shore	Green	50 Shore	+10 + +45 °C

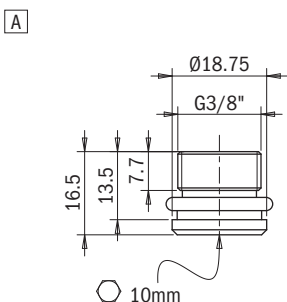
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.GX75P.30/60.G38M	VG.GX75P suction cup, polyurethane, 30/60 Shore, with internal filter, G3/8" male	7510038
A	VG.GX75P.50.G38M	VG.GX75P suction cup, polyurethane, 50 Shore, with internal filter, G3/8" male	7520038



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.GX75P.30/60	VG.GX75P suction cup, polyurethane, 30/60 Shore, with internal filter	7510000
A	VG.GX75P.50	VG.GX75P suction cup, polyurethane, 50 Shore, with internal filter	7520000



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G38M.199	G3/8" male fitting	1900039

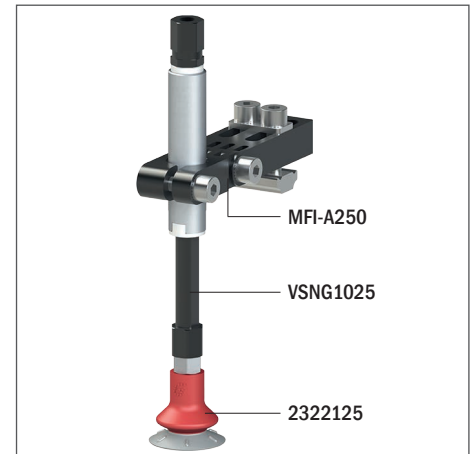


Identification codes		
Alphanumeric code	Filters	Order code
FILT.DGX75	Disc filter, Ø75 mm (10 pieces)	7500001

## VG.IS20P bellows suction cups in polyurethane

- Ideal to handle uneven and rough surfaces
- High flexibility: the wide yet thin lip allows for adaptation to uneven surfaces
- Polyurethane material with double hardness, 30/60 Shore
- Good resistance to wear

Application example



### Technical data

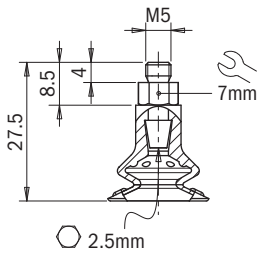
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/60	3.7	8.4	9.9	3.2	6.2	9.1	1.04	5.5	4.6	1.2

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/60 Shore	Grey / Red	30/60 Shore	+10 ÷ +45 °C

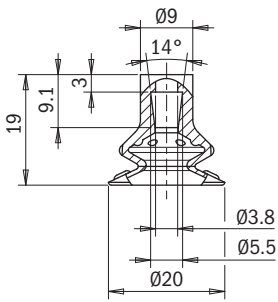
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.IS20P.30/60.M5M	VG.IS20 suction cup, polyurethane, 30/60 Shore, M5 male	2322125

A



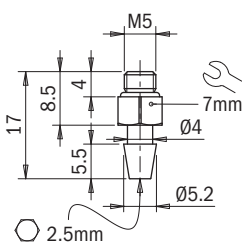
Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.IS20P.30/60	VG.IS20 suction cup, polyurethane, 30/60 Shore	2322126

A



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5M	M5 male fitting	1600005

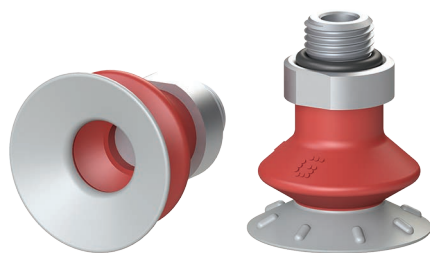
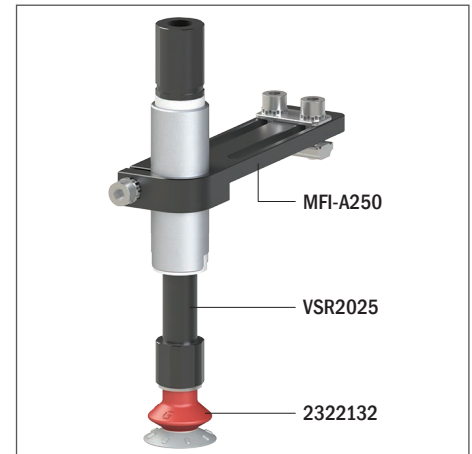
A



## VG.IS25P bellows suction cups in polyurethane

- Ideal to handle uneven and rough surfaces
- High flexibility: the wide yet thin lip allows for adaptation to uneven surfaces
- Polyurethane material with double hardness, 30/60 Shore
- Good resistance to wear

Application example



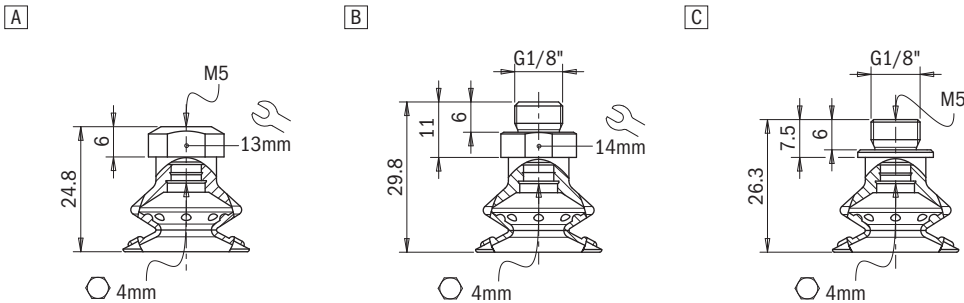
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/60	5.7	12.5	13.4	4.1	7.2	14.1	1.63	9	5.5	1.8

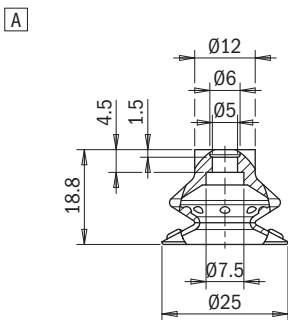
### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/60 Shore	Grey / Red	30/60 Shore	+10 ÷ +45 °C

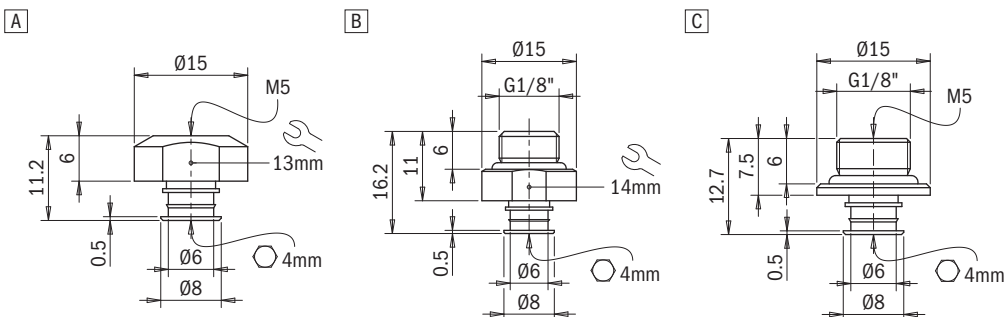
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.IS25P.30/60.M5F	VG.IS25 suction cup, polyurethane, 30/60 Shore, M5 female	2322129
B	VG.IS25P.30/60.G18M	VG.IS25 suction cup, polyurethane, 30/60 Shore, G1/8" male	2322131
C	VG.IS25P.30/60.G18MF	VG.IS25 suction cup, polyurethane, 30/60 Shore, G1/8" male / M5 female	2322132



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.IS25P.30/60	VG.IS25 suction cup, polyurethane, 30/60 Shore	2322130



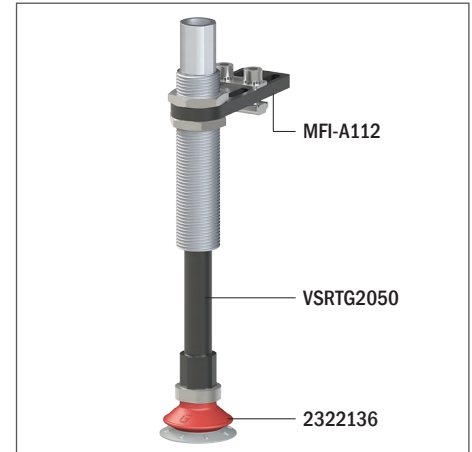
Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F	Fitting, M5 female	1700006
B	FT.G18M.17	G1/8" male fitting	1700018
C	FT.G18M.M5F	Fitting, G1/8" male/ M5 female	1700016



## VG.IS35P bellows suction cups in polyurethane

- Ideal to handle uneven and rough surfaces
- High flexibility: the wide yet thin lip allows for adaptation to uneven surfaces
- Polyurethane material with double hardness, 30/60 Shore
- Good resistance to wear

Application example



### Technical data

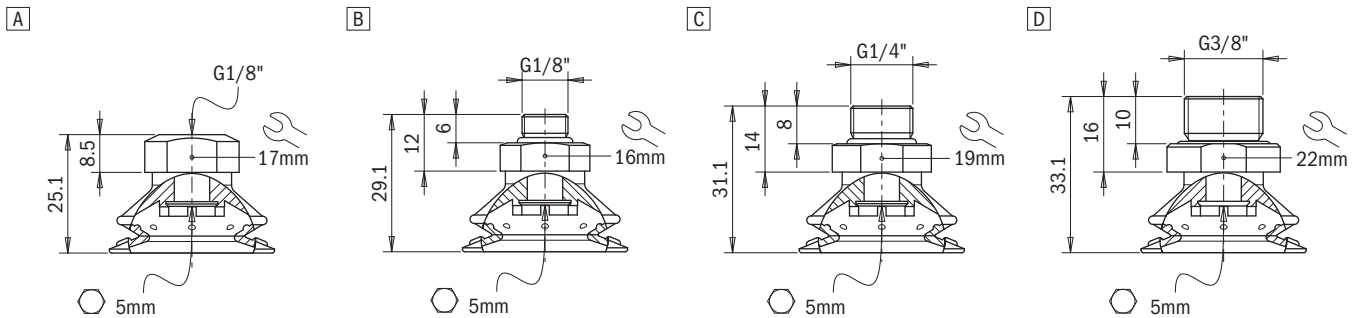
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/60	12.9	33.4	42.3	13	30	34	4.2	16	9.5	4.1

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/60 Shore	Grey / Red	30/60 Shore	+10 ÷ +45 °C

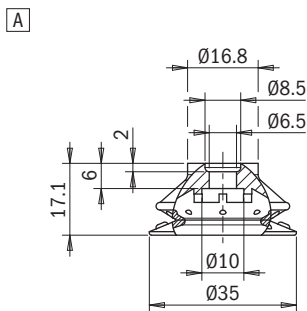
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.IS35P.30/60.G18F	VG.IS35 suction cup, polyurethane, 30/60 Shore, G1/8" female	2322133
B	VG.IS35P.30/60.G18M	VG.IS35 suction cup, polyurethane, 30/60 Shore, G1/8" male	2322135
C	VG.IS35P.30/60.G14M	VG.IS35 suction cup, polyurethane, 30/60 Shore, G1/4" male	2322136
D	VG.IS35P.30/60.G38M	VG.IS35 suction cup, polyurethane, 30/60 Shore, G3/8" male	2322137



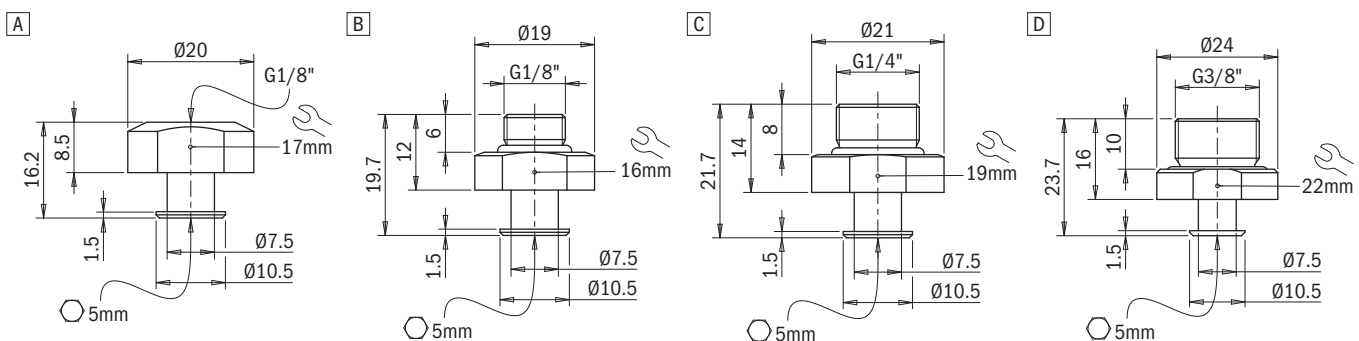
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.IS35P.30/60	VG.IS35 suction cup, polyurethane, 30/60 Shore	2322134



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.18	G1/8" female fitting	1800019
B	FT.G18M.18	G1/8" male fitting	1800018
C	FT.G14M.18	G1/4" male fitting	1800014
D	FT.G38M.18	G3/8" male fitting	1800038

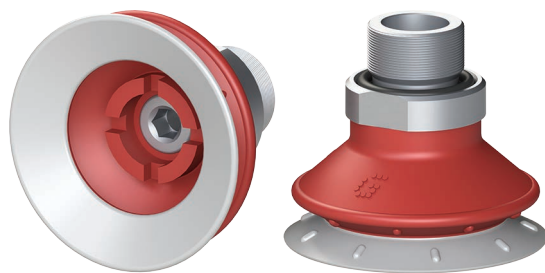
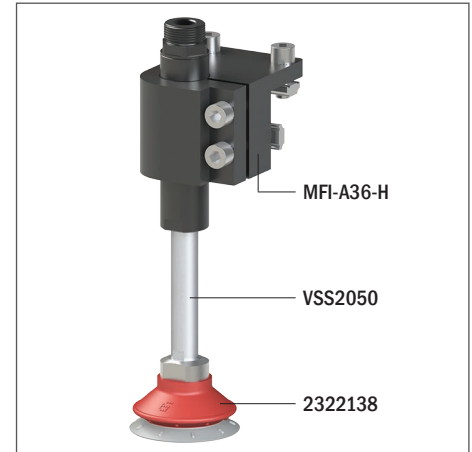




## VG.IS45P bellows suction cups in polyurethane

- Ideal to handle uneven and rough surfaces
- High flexibility: the wide yet thin lip allows for adaptation to uneven surfaces
- Polyurethane material with double hardness, 30/60 Shore
- Good resistance to wear

Application example



### Technical data

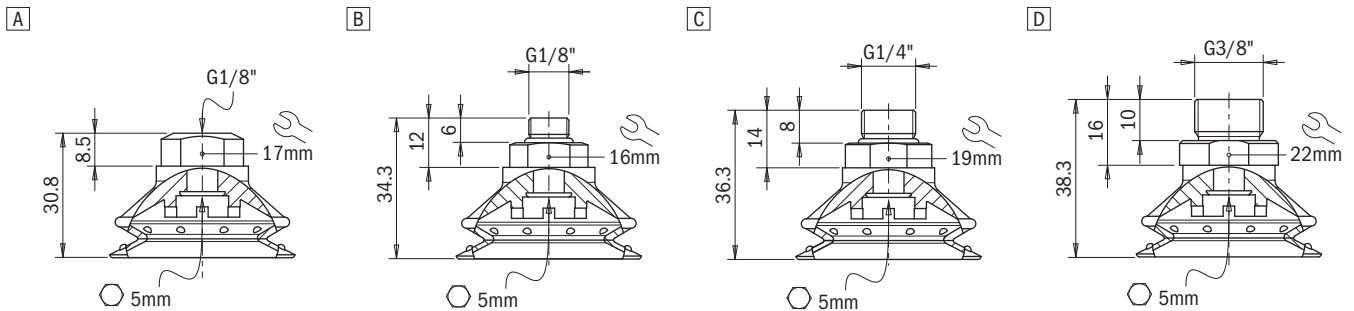
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/60	20.5	44.3	63	15	36	42	14	19	12	8.8

### Technical features

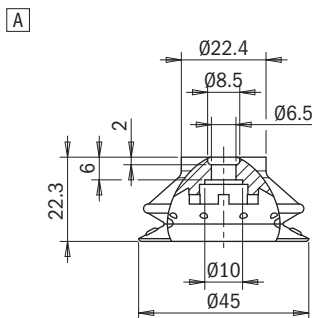
Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/60 Shore	Grey / Red	30/60 Shore	+10 ÷ +45 °C

**Identification codes**

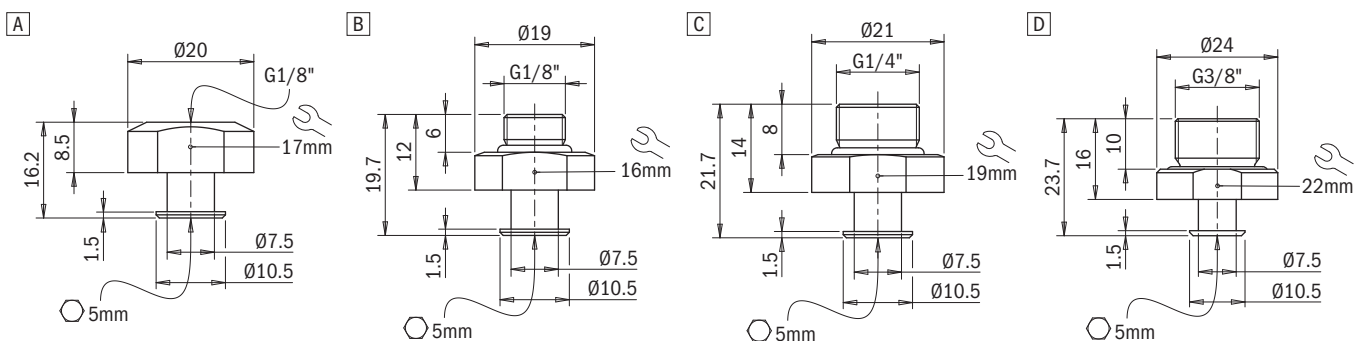
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.IS45P.30/60.G18F	VG.IS45 suction cup, polyurethane, 30/60 Shore, G1/8" female	2322138
B	VG.IS45P.30/60.G18M	VG.IS45 suction cup, polyurethane, 30/60 Shore, G1/8" male	2322140
C	VG.IS45P.30/60.G14M	VG.IS45 suction cup, polyurethane, 30/60 Shore, G1/4" male	2322141
D	VG.IS45P.30/60.G38M	VG.IS45 suction cup, polyurethane, 30/60 Shore, G3/8" male	2322142


**Identification codes**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.IS45P.30/60	VG.IS45 suction cup, polyurethane, 30/60 Shore	2322139


**Identification codes**

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.18	G1/8" female fitting	1800019
B	FT.G18M.18	G1/8" male fitting	1800018
C	FT.G14M.18	G1/4" male fitting	1800014
D	FT.G38M.18	G3/8" male fitting	1800038



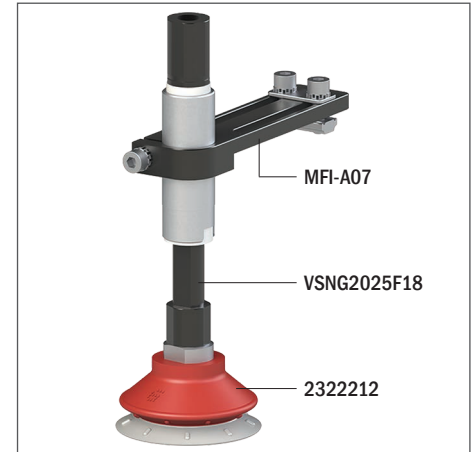
## VG.IS55P bellows suction cups in polyurethane

- Ideal to handle uneven and rough surfaces
- High flexibility: the wide yet thin lip allows for adaptation to uneven surfaces
- Polyurethane material with double hardness, 30/60 Shore
- Good resistance to wear

**NEW**



Application example



### Technical data

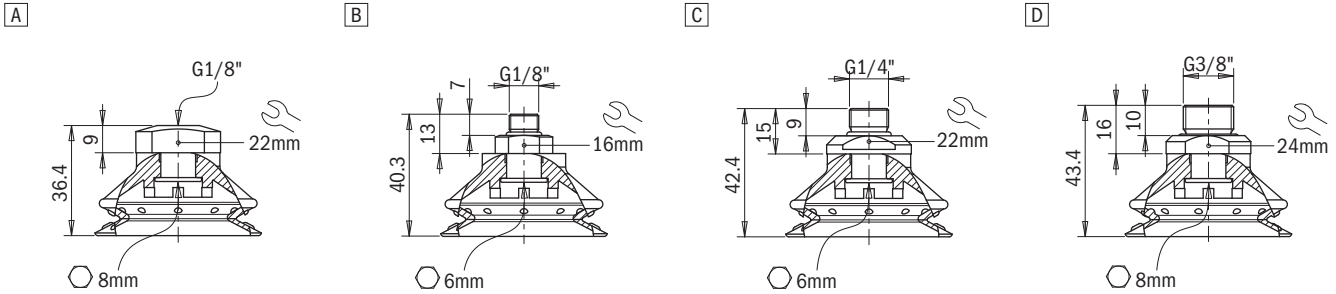
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/60	33.8	78.4	99.7	28.3	70.2	78.7	13	24	11.3	16.2

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/60 Shore	Grey / Red	30/60 Shore	+10 ÷ +45 °C

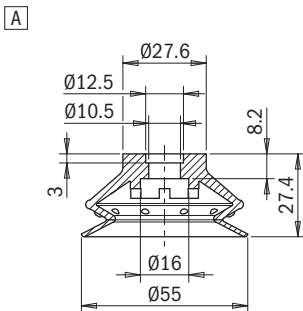
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.IS55P.30/60.G18M	VG.IS55 suction cup, polyurethane, 30/60 Shore, G1/8" female	2322212
B	VG.IS55P.30/60.G18F	VG.IS55 suction cup, polyurethane, 30/60 Shore, G1/8" male	2322213
C	VG.IS55P.30/60.G14M	VG.IS55 suction cup, polyurethane, 30/60 Shore, G1/4" male	2322214
D	VG.IS55P.30/60.G38M	VG.IS55 suction cup, polyurethane, 30/60 Shore, G3/8" male	2322215



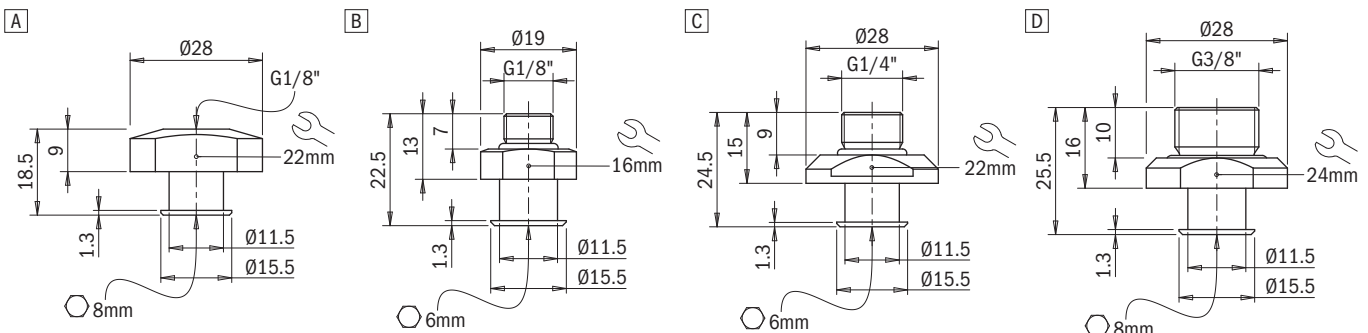
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.IS55P.30/60	VG.IS55 suction cup, polyurethane, 30/60 Shore	2322211



### Identification codes

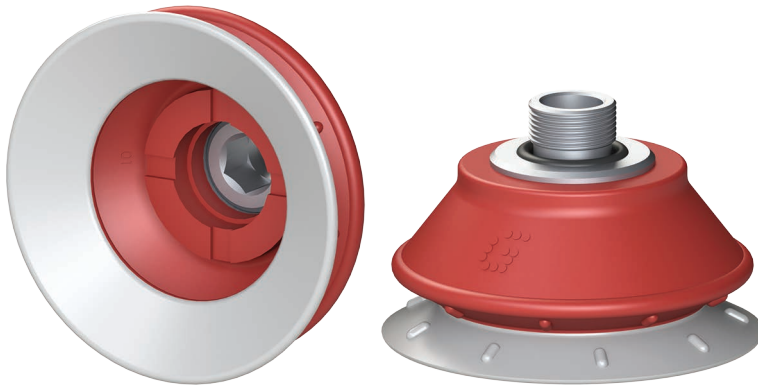
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.19	G1/8" female fitting	1900019
B	FT.G18M.19	G1/8" male fitting	1900018
C	FT.G14M.19	G1/4" male fitting	1900014
D	FT.G38M.198	G3/8" male fitting	1900038



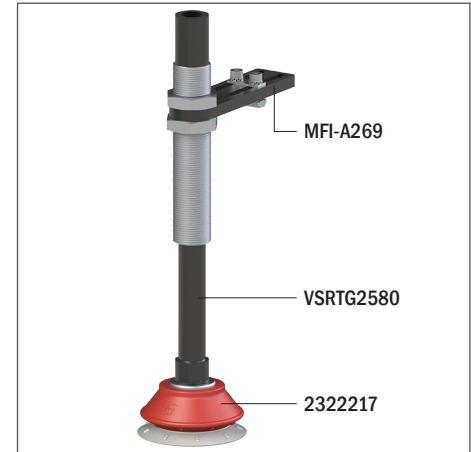
## VG.IS70P bellows suction cups in polyurethane

- Ideal to handle uneven and rough surfaces
- High flexibility: the wide yet thin lip allows for adaptation to uneven surfaces
- Polyurethane material with double hardness, 30/60 Shore
- Good resistance to wear

**NEW**



Application example



### Technical data

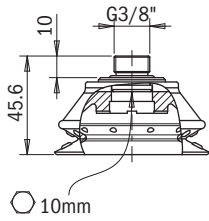
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/60	60.4	113.5	170.3	42.3	75.2	123.1	41.5	51	16.3	40

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/60 Shore	Grey / Red	30/60 Shore	+10 ÷ +45 °C

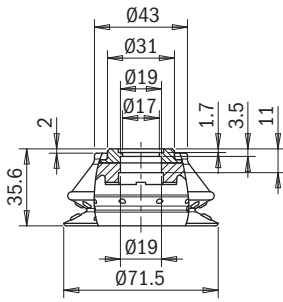
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.IS70P.30/60.G38M	VG.IS70 suction cup, polyurethane, 30/60 Shore, G3/8" male	2322217

A



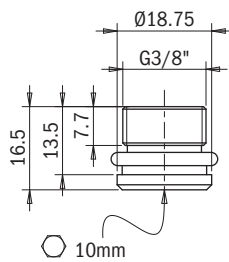
Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.IS70P.30/60	VG.IS70 suction cup, polyurethane, 30/60 Shore	2322216

A



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G38M.199	G3/8" male fitting	1900039

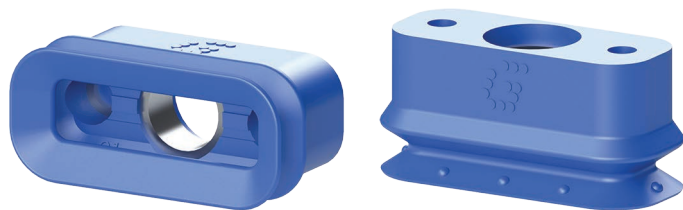
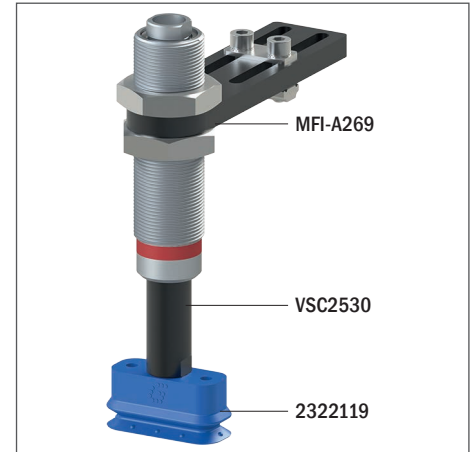
A



## VG.BR20X45 rectangular bellows suction cups in polyurethane

- Suitable for handling snack foods and food bars in flow packs
- Version with 1.5 bellows
- Ideal for picking up an object and placing it on its side
- Thin lip capable of adapting perfectly to the plastic film

Application example



### Technical data

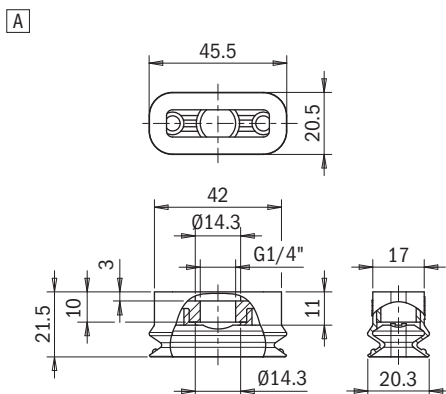
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU50	15.2	26.4	39.3	21.2	33.4	54	6.1	15	6	7.5

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU50 Shore	Blue	50 Shore	+10 ÷ +45 °C

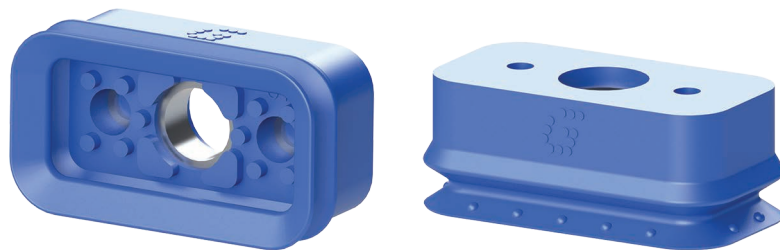
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BR20X45P.50.G14F	VG.BR20X45 suction cup, polyurethane, 50 Shore, G1/4" Female	2322119

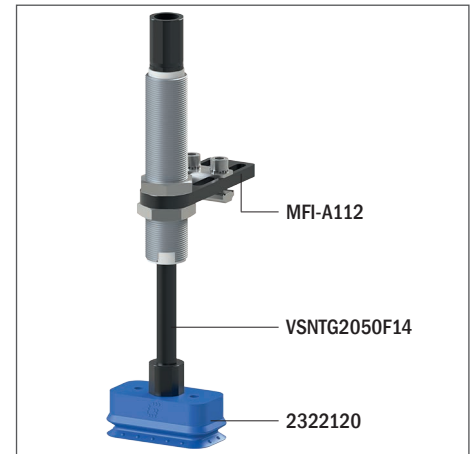


## VG.BR30X55 rectangular bellows suction cups in polyurethane

- Suitable for handling snack foods and food bars in flow packs
- Version with 1.5 bellows
- Capable of handling objects with small level differences
- Suitable for applications where grips are parallel or perpendicular to the surface
- Lip capable of adapting perfectly to the plastic film
- Ideal for picking up an object and placing it on its side
- The embossed tread pattern prevents damage to the handled product and implosion of the lip



Application example



### Technical data

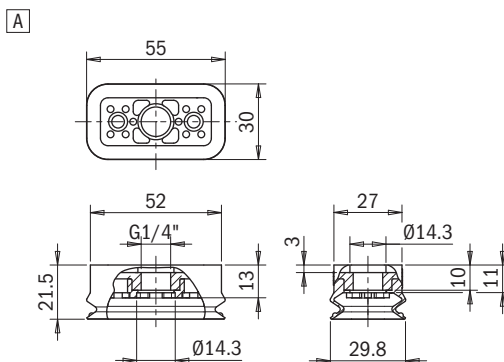
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU50	23.4	65.3	88.4	24.2	65.4	89.2	16	28	7	16.2

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU50 Shore	Blue	50 Shore	+10 ÷ +45 °C

### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BR30X55P.50.G14F	VG.BR30X55 suction cup, polyurethane, 50 Shore, G1/4" Female	2322120

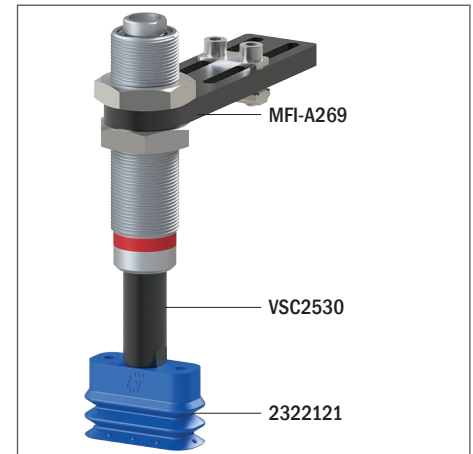




## VG.LBR20X45 rectangular bellows suction cups in polyurethane

- Suitable for handling snack foods and food bars in flow packs
- Version with 2.5 bellows
- Ideal for picking up an object and placing it on its side
- Thin lip capable of adapting perfectly to the plastic film
- Suitable for major level compensations, snack foods with uneven surface

Application example



### Technical data

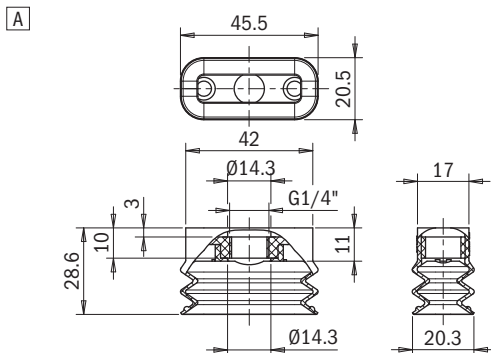
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU50	14.8	27.5	37.4	21.2	33.4	57.6	8.9	15	12	9.3

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU50 Shore	Blue	50 Shore	+10 ÷ +45 °C

### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LBR20X45P.50.G14F	VG.LBR20X45 suction cup, polyurethane, 50 Shore, G1/4" female	2322121



### Identification codes

Alphanumeric code	Insert	Order code
AC.IR20X45	Perforated reinforcement insert, 20x45 mm	2322122

## VG.LBR30X55 rectangular bellows suction cups in polyurethane

- Suitable for handling snack foods and food bars in flow packs
- Version with 2.5 bellows
- Capable of handling objects with small level differences
- Suitable for applications where grips are parallel or perpendicular to the surface
- Lip capable of adapting perfectly to the plastic film
- Ideal for picking up an object and placing it on its side
- Suitable for major level compensations, snack foods with uneven surface
- The embossed tread pattern prevents damage to the handled product and implosion of the lip



Application example



### Technical data

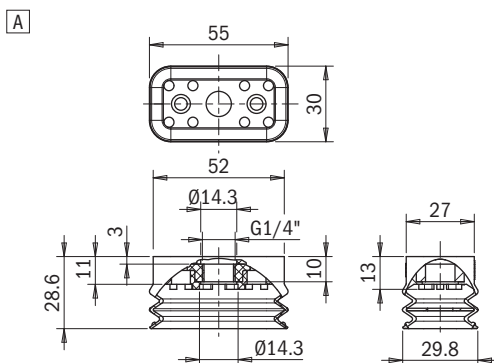
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU50	24.1	72.7	95.3	20.2	49.5	60.2	18.1	28	14	18.9

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU50 Shore	Blue	50 Shore	+10 ÷ +45 °C

### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LBR30X55P.50.G14F	VG.LBR30X55 suction cup, polyurethane, 50 Shore, G1/4" female	2322123



### Identification codes

Alphanumeric code	Insert	Order code
AC.IR30X55	Perforated reinforcement insert, 30x55 mm	2322124

## VG.LB040X90P bellows suction cups in polyurethane

- Suitable for handling long, narrow objects such as: bottles, sheet metal tubes and oblong packaged snacks
- Available in the 50 Shore green or 30/60 Shore green/yellow versions
- The 30/60 Shore version is also ideal for handling Doypack pouches containing liquids. The enhanced lip, wide and flexible, allows for adaptation to uneven surfaces
- Strengthening inserts guarantee high stability

NEW



Application example



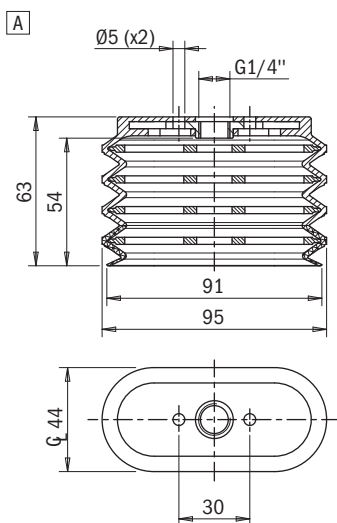
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU30/60	45	119	167	41	87	122	105.3	28	31.2	76.5
PU50	46	128	182	40	84	120	105.3	28.4	31.2	76.5

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU, 30/60 Shore	Yellow / Green	30/60 Shore	+10 + +45 °C
Polyurethane PU, 60 Shore	Green	50 Shore	+10 + +45 °C

Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB040X90P.30/60.G14F.R	VG.LB040X90 suction cup, polyurethane, 30/60 Shore, G1/4" female, reinforced with internal inserts	2322223
A	VG.LB040X90P.50.G14F.R	VG.LB040X90 suction cup, polyurethane, 50 Shore, G1/4" female, reinforced with internal inserts	2322222



Identification codes		
Alphanumeric code	Insert	Order code
AC.IO40X90	Perforated reinforcement insert, 40x90 mm (4 pieces)	2322224

## VG.MF20P flat suction cup with non-slip tread pattern in polyurethane

- Ideal for handling oiled sheet metal in stamping processes
- Special tread pattern that increases friction on lubricated surfaces
- Excellent stability

Introduction

Vacuum theory

Suction cups

Vacuum pumps

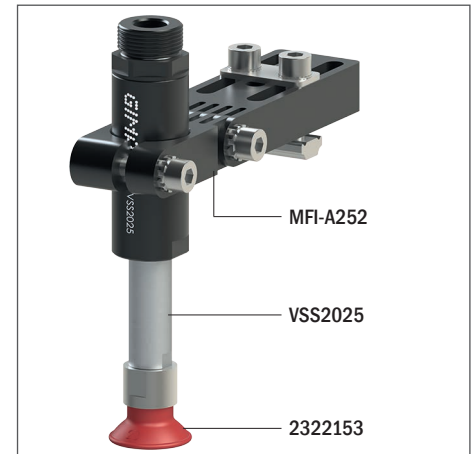
Customised solutions

Suspensions

System accessories



Application example



### Technical data

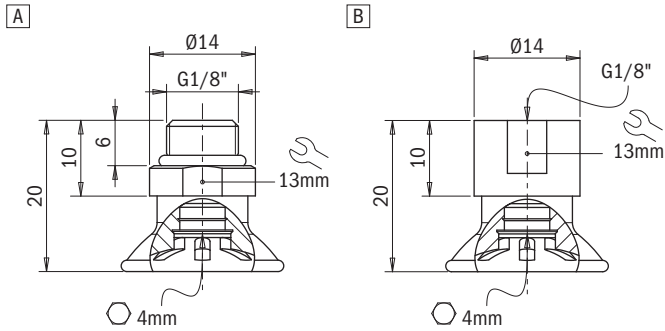
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU40	5.1	12.4	16.5	5.1	9	12	1	25	1.9	1

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU40 Shore	Red	40 Shore	+10 ÷ +45 °C

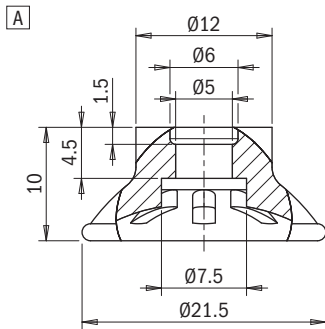
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.MF20P.40.G18M	VG.MF20 suction cup, polyurethane, 40 Shore, G1/8" male	2322151
B	VG.MF20P.40.G18F	VG.MF20 suction cup, polyurethane, 40 Shore, G1/8" female	2322153



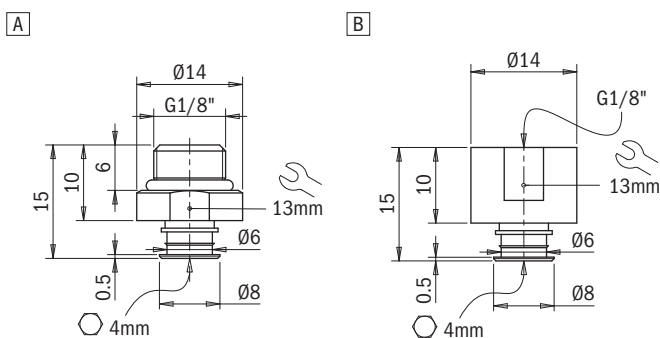
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.MF20P.40	VG.MF20 suction cup, polyurethane, 40 Shore	2322152



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18M.20	G1/8" male fitting	2000018
B	FT.G18F.20	G1/8" female fitting	2000019



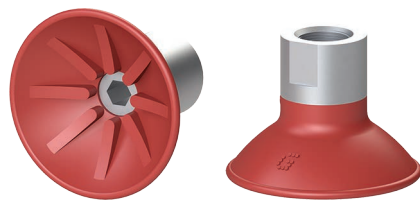
## VG.MF30P flat suction cup with non-slip tread pattern in polyurethane

- Ideal for handling oiled sheet metal in stamping processes
- Special tread pattern that increases friction on lubricated surfaces
- Excellent stability

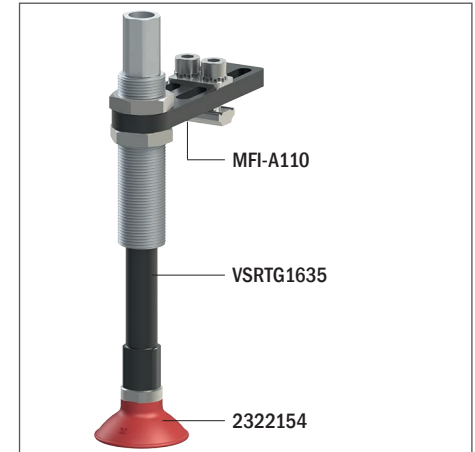
Introduction

Vacuum theory

Suction cups



Application example



Vacuum pumps

Customised solutions

Suspensions

System accessories

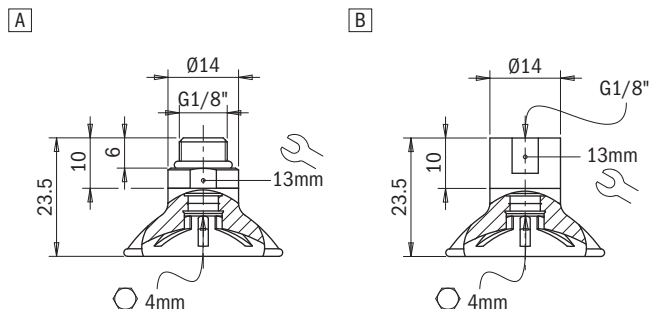
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU40	10	33	48	26	40	49	4.8	30	5.3	2.3

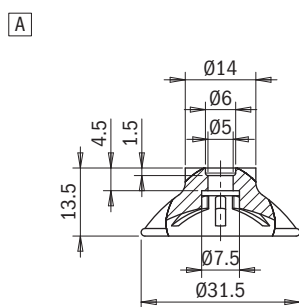
### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU40 Shore	Red	40 Shore	+10 ÷ +45 °C

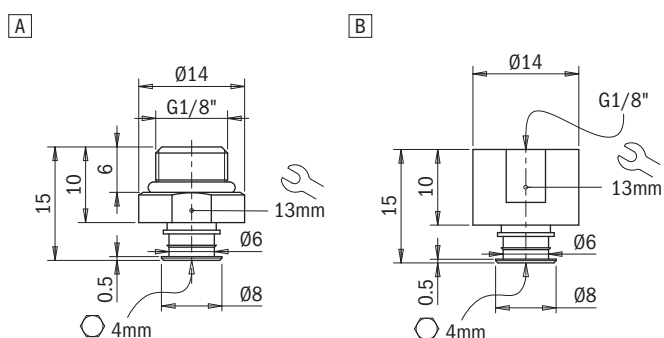
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.MF30P.40.G18M	VG.MF30 suction cup, polyurethane, 40 Shore, G1/8" male	2322154
B	VG.MF30P.40.G18F	VG.MF30 suction cup, polyurethane, 40 Shore, G1/8" female	2322156



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.MF30P.40	VG.MF30 suction cup, polyurethane, 40 Shore	2322155



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18M.20	G1/8" male fitting	2000018
B	FT.G18F.20	G1/8" female fitting	2000019

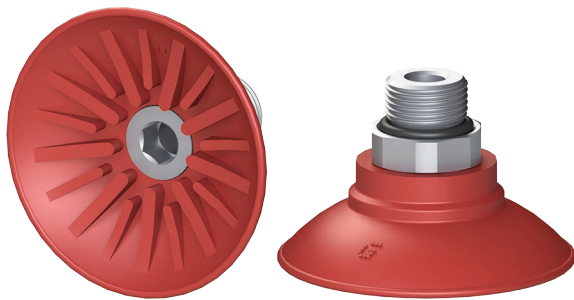




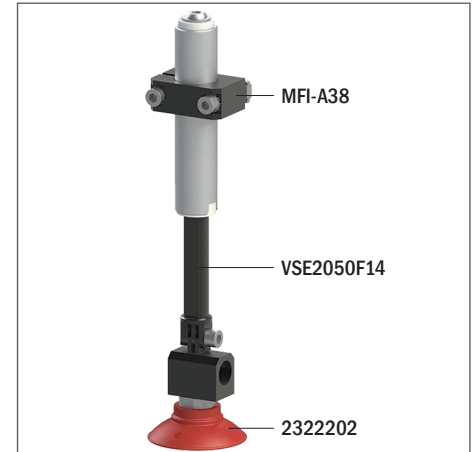
## VG.MF45P flat suction cup with non-slip tread pattern in polyurethane

- Ideal for handling oiled sheet metal in stamping processes
- Special tread pattern that increases friction on lubricated surfaces
- Excellent stability

**NEW**



Application example



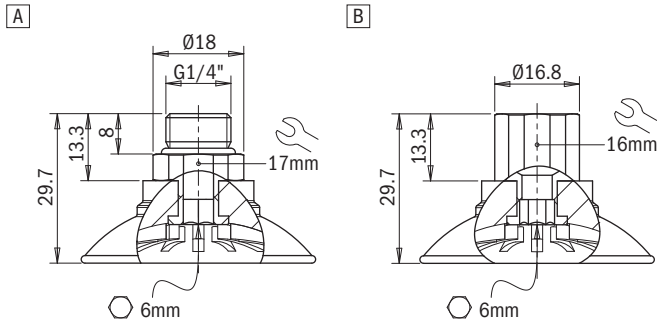
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU40	24.2	70.5	92.6	40.2	80.3	93	9.8	50	5.3	25

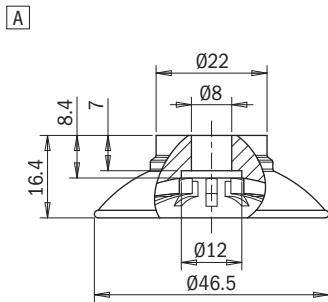
### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU40 Shore	Red	40 Shore	+10 ÷ +45 °C

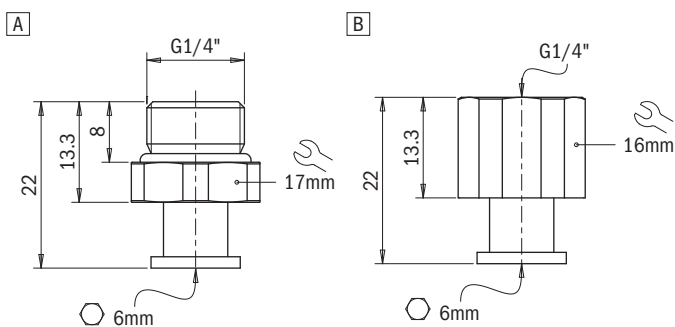
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.MF45P.40.G14M	VG.MF45 suction cup, polyurethane, 40 Shore, G1/4" male	2322202
B	VG.MF45P.40.G14F	VG.MF45 suction cup, polyurethane, 40 Shore, G1/4" female	2322203



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.MF45P.40	VG.MF45 suction cup, polyurethane, 40 Shore	2322201



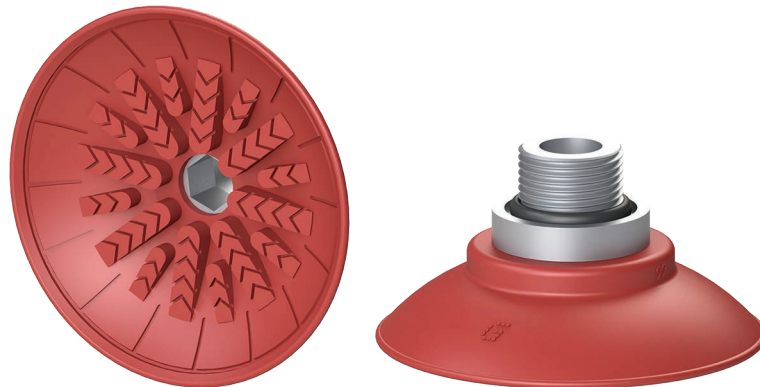
Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G14M.20	G1/4" male fitting	2321432
B	FT.G14F.20	G1/4" female fitting	2321430



## VG.MF60P flat suction cup with non-slip tread pattern in polyurethane

- Ideal for handling lubricated sheet metal in stamping processes
- Special tread pattern that increases friction on lubricated surfaces
- Vulcanised fittings for greater stability during fastening, the suction cups can withstand high shear forces

Application example



### Technical data

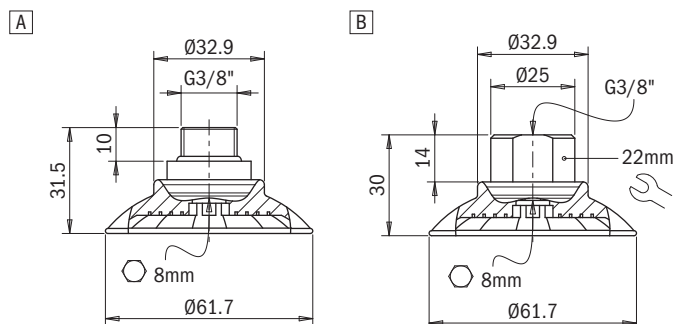
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU40	49	95	115	50	85	118	25	58	5.4	29

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU40 Shore	Red	40 Shore	+10 ÷ +45 °C

### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.MF60P.40.G38M	VG.MF60 suction cup, polyurethane, 40 Shore, G3/8" male	2322157
B	VG.MF60P.40.G38F	VG.MF60 suction cup, polyurethane, 40 Shore, G3/8" female	2322158



## VG.MF80P flat suction cup with non-slip tread pattern in polyurethane

- Ideal for handling lubricated sheet metal in stamping processes
- Special tread pattern that increases friction on lubricated surfaces
- Vulcanised fittings for greater stability during fastening, the suction cups can withstand high shear forces



Application example



### Technical data

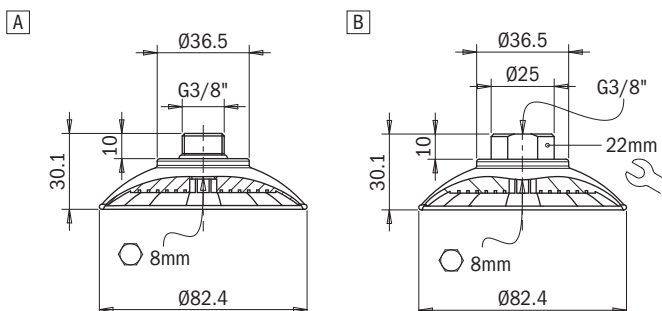
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU40	80	188	238	93	190	240	31	79	7.1	47

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU40 Shore	Red	40 Shore	+10 ÷ +45 °C

### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.MF80P.40.G38M	VG.MF80 suction cup, polyurethane, 40 Shore, G3/8" male	2322159
B	VG.MF80P.40.G38F	VG.MF80 suction cup, polyurethane, 40 Shore, G3/8" female	2322160



## VG.MF100P flat suction cup with non-slip tread pattern in polyurethane

- Ideal for handling lubricated sheet metal in stamping processes
- Special tread pattern that increases friction on lubricated surfaces
- Vulcanised fittings for greater stability during fastening, the suction cups can withstand high shear forces



Application example



### Technical data

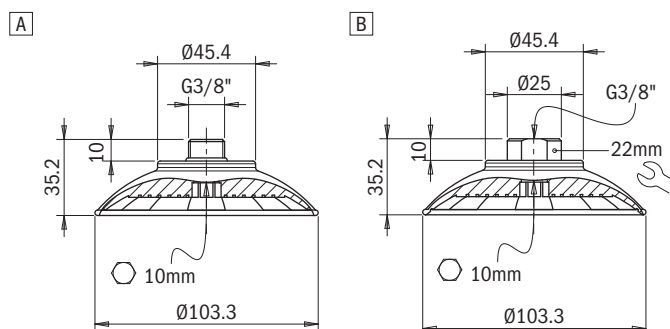
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU40	140	300	390	178	320	410	81	110	10.3	60

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU40 Shore	Red	40 Shore	+10 + +45 °C

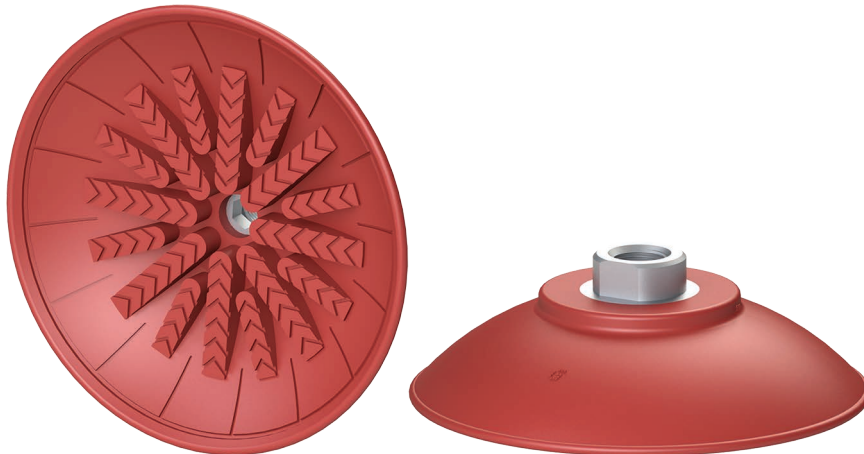
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.MF100P.40.G38M	VG.MF100 suction cup, polyurethane, 40 Shore, G3/8" male	2322161
B	VG.MF100P.40.G38F	VG.MF100 suction cup, polyurethane, 40 Shore, G3/8" female	2322162



## VG.MF120P flat suction cup with non-slip tread pattern in polyurethane

- Ideal for handling lubricated sheet metal in stamping processes
- Special tread pattern that increases friction on lubricated surfaces
- Vulcanised fittings for greater stability during fastening, the suction cups can withstand high shear forces



Application example



### Technical data

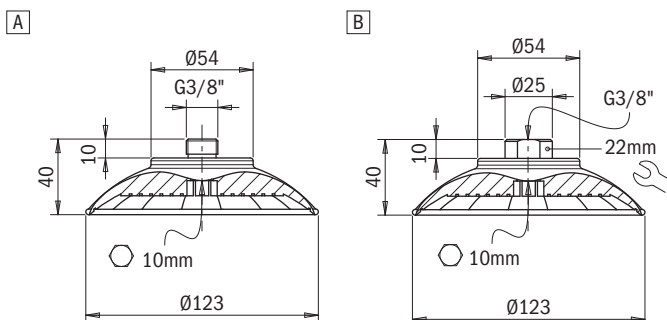
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
PU40	226	630	850	200	500	790	210	155	12.5	63

### Technical features

Material	Colour	Hardness	Temperature range
Polyurethane PU40 Shore	Red	40 Shore	+10 ÷ +45 °C

### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.MF120P.40.G38M	VG.MF120 suction cup, polyurethane, 40 Shore, G3/8" male	2322163
B	VG.MF120P.40.G38F	VG.MF120 suction cup, polyurethane, 40 Shore, G3/8" female	2322164



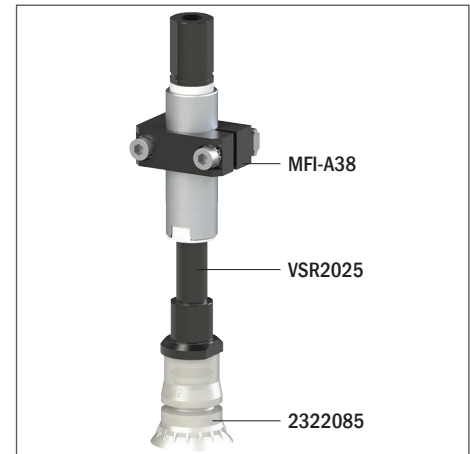
## VG.BPG30F multi-bellows suction cups in FDA-compliant silicone

- Suitable for handling bags, pouches and flexible packages for solids and liquids
- Version with 1.5 bellows
- Suction cups in FDA-compliant silicone
- Reinforced bellows for higher grip stability
- The lip of the suction cup has been designed to maximise the grip and allow perfect adhesion even on wrinkles without damaging the grip surfaces

**NEW**



Application example



### Technical data

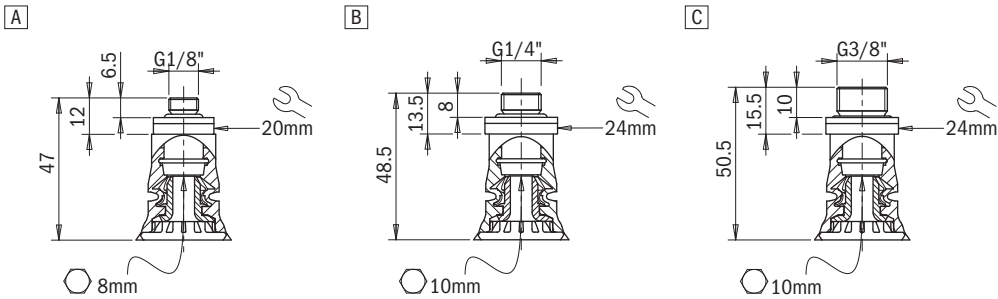
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-50 kPa	-60 kPa	-20 kPa	-50 kPa	-60 kPa				
SIL 40 FDA	9.4	16.8	18.5	6.7	11	11.8	7.3	15	3	7.5

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	40 Shore	-70 ÷ +200 °C

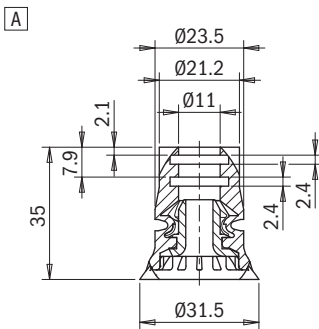
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BPG30F.40.G18M	VG.BPG30 suction cup, FDA-compliant silicone, 40 Shore, with internal insert, G1/8" male	2322085
B	VG.BPG30F.40.G14M	VG.BPG30 suction cup, FDA-compliant silicone, 40 Shore, with internal insert, G1/4" male	2322087
C	VG.BPG30F.40.G38M	VG.BPG30 suction cup, FDA-compliant silicone, 40 Shore, with internal insert, G3/8" male	2322088



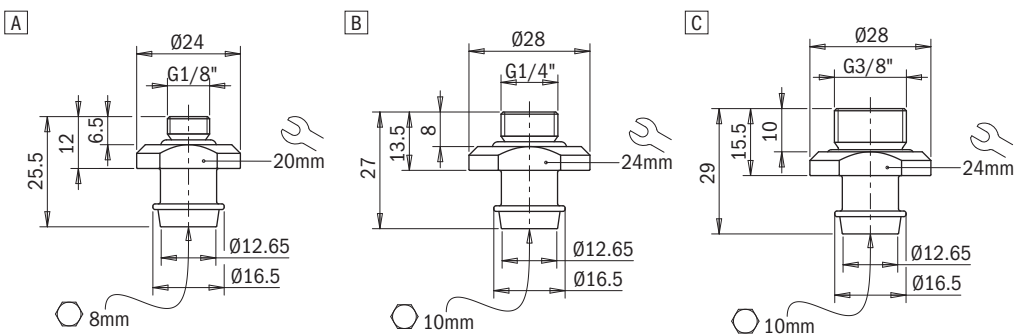
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.BPG30F.40	VG.BPG30 suction cup, FDA-compliant silicone, 40 Shore, with internal insert	2322086



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18M.E8	G1/8" male fitting	1900017
B	FT.G14M.E10	G1/4" male fitting	1900013
C	FT.G38M.E10	G3/8" male fitting	1900037



### Identification codes

Alphanumeric code	Insert	Order code
AC.BPG30	Spare insert for flow packs, size 30 mm in PA12 GB material	2302147



## VG.BPG41F multi-bellows suction cups in FDA-compliant silicone

- Suitable for handling bags, pouches and flexible packages for solids and liquids
- Version with 1.5 bellows
- Suction cups in FDA-compliant silicone
- Reinforced bellows for higher grip stability
- The lip of the suction cup has been designed to maximise the grip and allow perfect adhesion even on wrinkles without damaging the grip surfaces

**NEW**



Application example



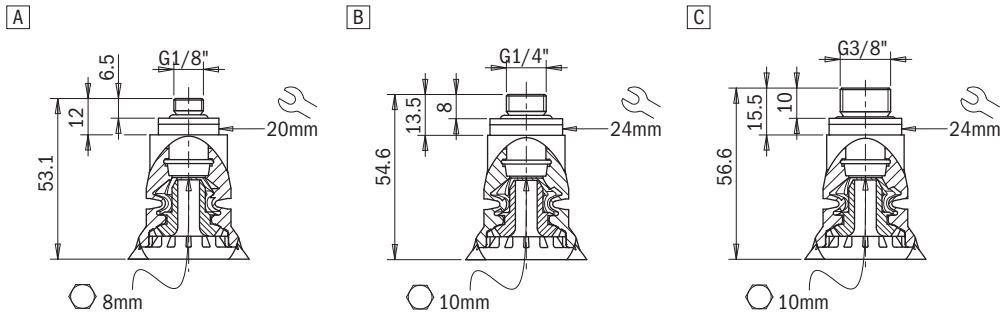
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-50 kPa	-60 kPa	-20 kPa	-50 kPa	-60 kPa				
SIL 40 FDA	14	19.4	23.7	8.3	13	15.9	13.4	20.5	3.5	13.7

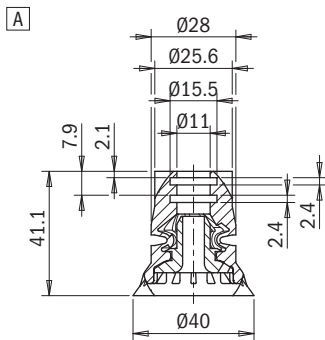
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	40 Shore	-70 ÷ +200 °C

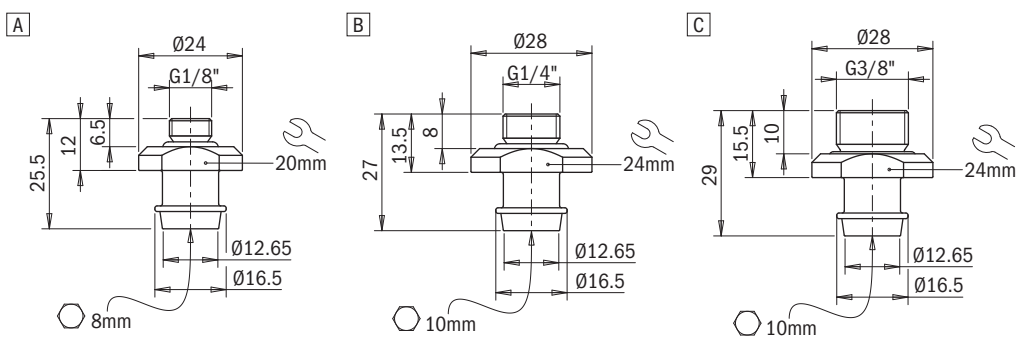
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BPG41F.40.G18M	VG.BPG41 suction cup, FDA-compliant silicone, 40 Shore, with internal insert, G1/8" male	2322089
B	VG.BPG41F.40.G14M	VG.BPG41 suction cup, FDA-compliant silicone, 40 Shore, with internal insert, G1/4" male	2322091
C	VG.BPG41F.40.G38M	VG.BPG41 suction cup, FDA-compliant silicone, 40 Shore, with internal insert, G3/8" male	2322092



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.BPG41F.40	VG.BPG41 suction cup, FDA-compliant silicone, 40 Shore, with internal insert	2322090



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18M.E8	G1/8" male fitting	1900017
B	FT.G14M.E10	G1/4" male fitting	1900013
C	FT.G38M.E10	G3/8" male fitting	1900037



Identification codes		
Alphanumeric code	Insert	Order code
AC.BPG41	Spare insert for flow packs, size 41 mm in PA12 GB material	2302148

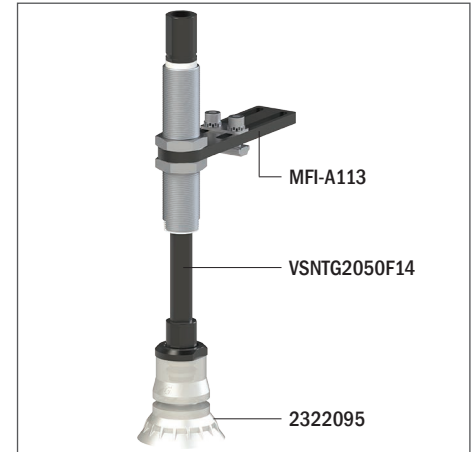
## VG.BPG48F multi-bellows suction cups in FDA-compliant silicone

- Suitable for handling bags, pouches and flexible packages for solids and liquids
- Version with 1.5 bellows
- Suction cups in FDA-compliant silicone
- Reinforced bellows for higher grip stability
- The lip of the suction cup has been designed to maximise the grip and allow perfect adhesion even on wrinkles without damaging the grip surfaces

**NEW**



Application example



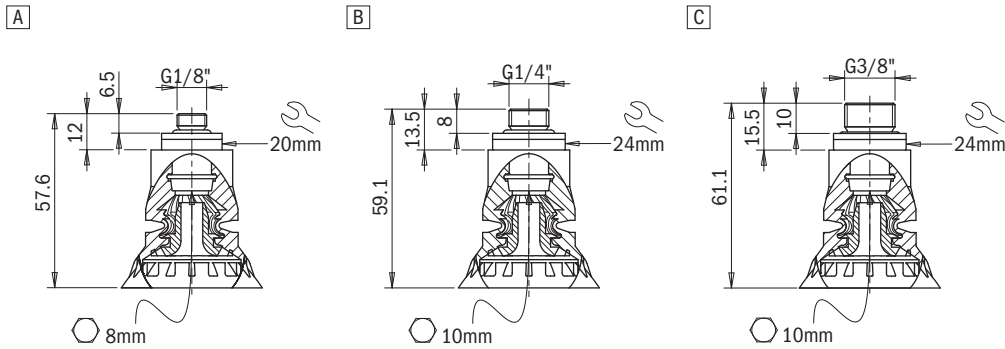
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-50 kPa	-60 kPa	-20 kPa	-50 kPa	-60 kPa				
SIL 40 FDA	19.8	26	32.9	10.9	16.5	22	17.9	24	4	18.4

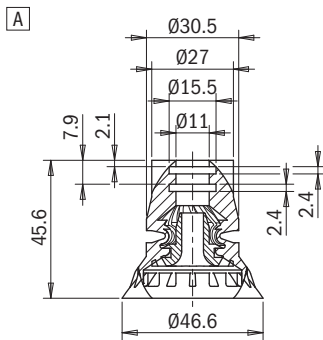
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	40 Shore	-70 ÷ +200 °C

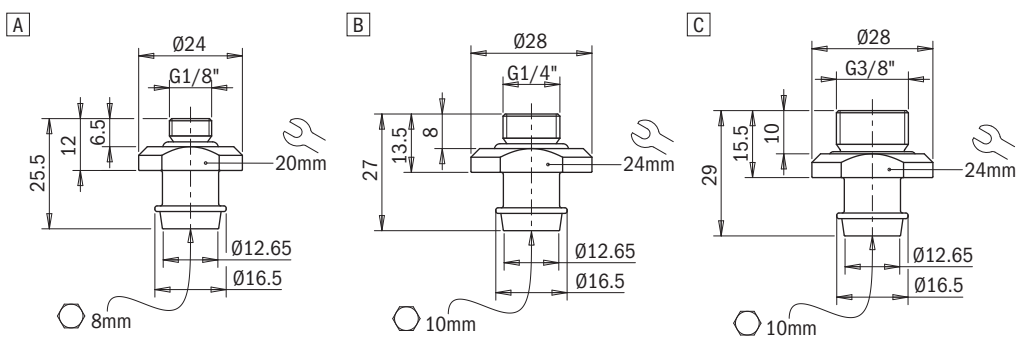
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BPG48F.40.G18M	VG.BPG48 suction cup, FDA-compliant silicone, 40 Shore, with internal insert, G1/8" male	2322093
B	VG.BPG48F.40.G14M	VG.BPG48 suction cup, FDA-compliant silicone, 40 Shore, with internal insert, G1/4" male	2322095
C	VG.BPG48F.40.G38M	VG.BPG48 suction cup, FDA-compliant silicone, 40 Shore, with internal insert, G3/8" male	2322096



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.BPG48F.40	VG.BPG48 suction cup, FDA-compliant silicone, 40 Shore, with internal insert	2322094



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18M.E8	G1/8" male fitting	1900017
B	FT.G14M.E10	G1/4" male fitting	1900013
C	FT.G38M.E10	G3/8" male fitting	1900037



Identification codes		
Alphanumeric code	Insert	Order code
AC.BPG48	Spare insert for flow packs, size 48 mm in PA12 GB material	2302149

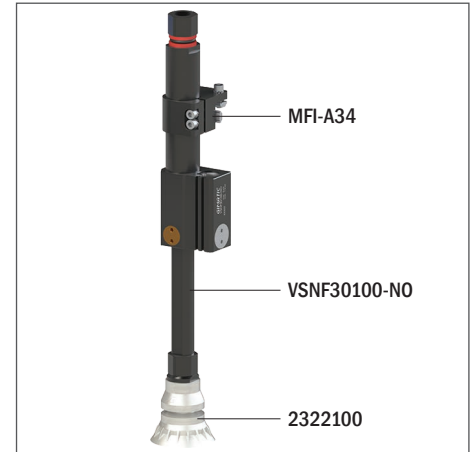
## VG.BPG55F multi-bellows suction cups in FDA-compliant silicone

- Suitable for handling bags, pouches and flexible packages for solids and liquids
- Version with 1.5 bellows
- Suction cups in FDA-compliant silicone
- Reinforced bellows for higher grip stability
- The lip of the suction cup has been designed to maximise the grip and allow perfect adhesion even on wrinkles without damaging the grip surfaces

**NEW**



Fixing example



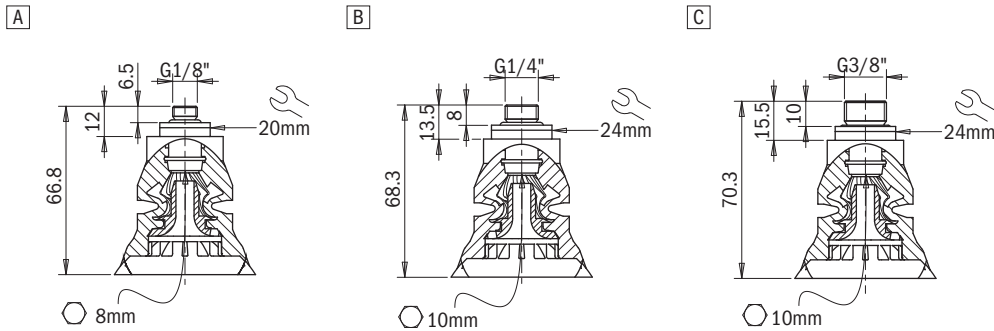
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-50 kPa	-60 kPa	-20 kPa	-50 kPa	-60 kPa				
SIL 40 FDA	22	35.8	48.7	15.2	22.3	31.2	31.8	27.5	5.3	32.5

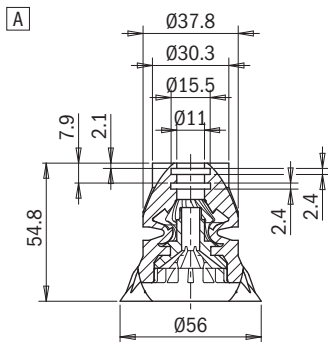
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	40 Shore	-70 ÷ +200 °C

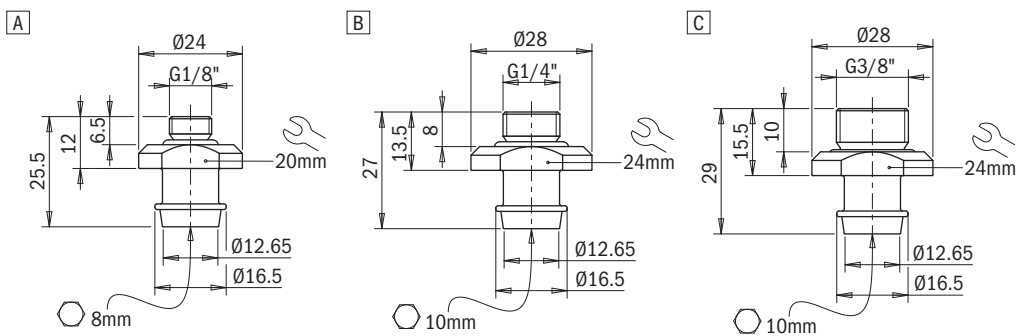
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BPG55F.40.G18M	VG.BPG55 suction cup, FDA-compliant silicone, 40 Shore, with internal insert, G1/8" male	2322097
B	VG.BPG55F.40.G14M	VG.BPG55 suction cup, FDA-compliant silicone, 40 Shore, with internal insert, G1/4" male	2322099
C	VG.BPG55F.40.G38M	VG.BPG55 suction cup, FDA-compliant silicone, 40 Shore, with internal insert, G3/8" male	2322100



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.BPG55F.40	VG.BPG55 suction cup, FDA-compliant silicone, 40 Shore, with internal insert	2322098



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18M.E8	G1/8" male fitting	1900017
B	FT.G14M.E10	G1/4" male fitting	1900013
C	FT.G38M.E10	G3/8" male fitting	1900037



Identification codes		
Alphanumeric code	Insert	Order code
AC.BPG55	Spare insert for flow packs, size 55 mm in PA12 GB material	2302150

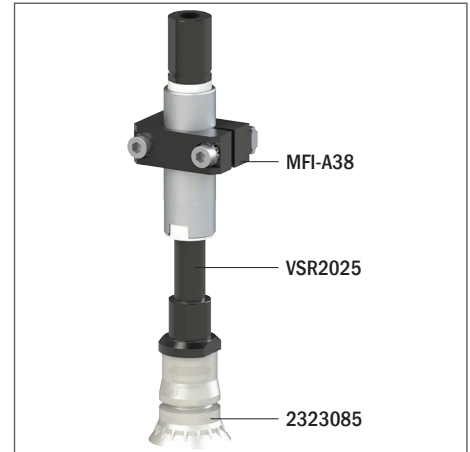
## VG.BPG30FSI multi-bellows suction cups in FDA-compliant silicone

- Suitable for handling bags, pouches and flexible packages for solids and liquids
- Version with 1.5 bellows
- Suction cups in FDA-compliant silicone
- Ideal for handling unpackaged food products such as pralines or biscuits with porous and uneven surfaces
- Reinforced bellows for higher grip stability
- The lip of the suction cup has been designed to maximise the grip and allow perfect adhesion even on wrinkles without damaging the grip surfaces

**NEW**



Application example



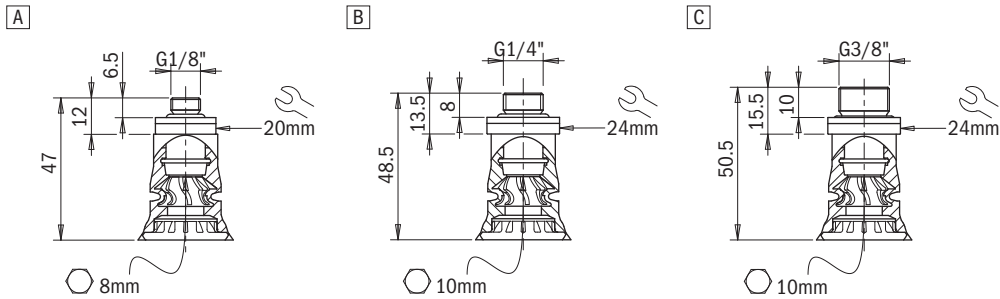
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-50 kPa	-60 kPa	-20 kPa	-50 kPa	-60 kPa				
SIL 40 FDA	9.4	16.8	18.5	6.7	11	11.8	7.3	15	3	7.5

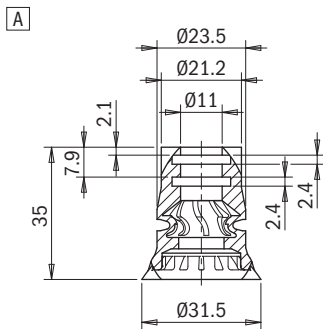
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	40 Shore	-70 ÷ +200 °C

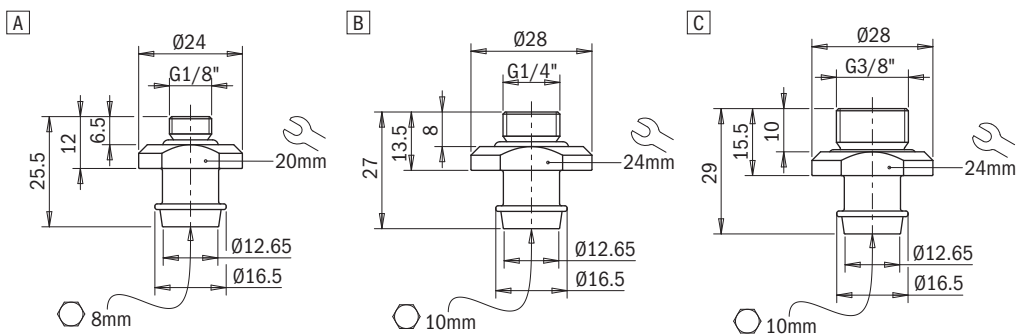
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BPG30FSI.40.G18M	VG.BPG30 suction cup, FDA-compliant silicone, 40 Shore, G1/8" male	2323085
B	VG.BPG30FSI.40.G14M	VG.BPG30 suction cup, FDA-compliant silicone, 40 Shore, G1/4" male	2323087
C	VG.BPG30FSI.40.G38M	VG.BPG30 suction cup, FDA-compliant silicone, 40 Shore, G3/8" male	2323088



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.BPG30FSI.40	VG.BPG30 suction cup, FDA-compliant silicone, 40 Shore	2323086



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18M.E8	G1/8" male fitting	1900017
B	FT.G14M.E10	G1/4" male fitting	1900013
C	FT.G38M.E10	G3/8" male fitting	1900037





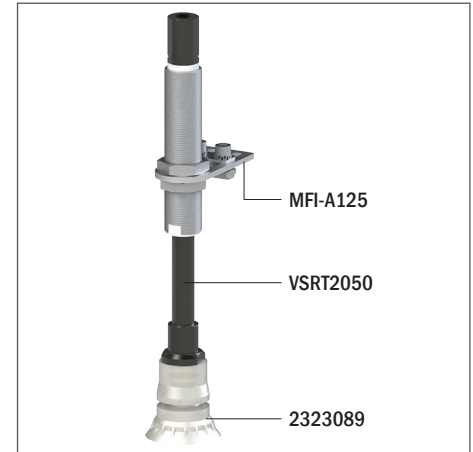
## VG.BPG41FSI multi-bellows suction cups in FDA-compliant silicone

- Suitable for handling bags, pouches and flexible packages for solids and liquids
- Version with 1.5 bellows
- Suction cups in FDA-compliant silicone
- Ideal for handling unpackaged food products such as pralines or biscuits with porous and uneven surfaces
- Reinforced bellows for higher grip stability
- The lip of the suction cup has been designed to maximise the grip and allow perfect adhesion even on wrinkles without damaging the grip surfaces

**NEW**



Application example



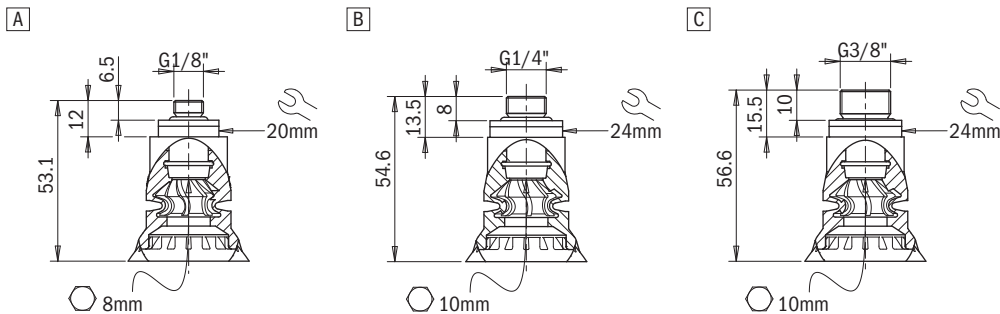
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-50 kPa	-60 kPa	-20 kPa	-50 kPa	-60 kPa				
SIL 40 FDA	14	19.4	23.7	8.3	13	15.9	13.4	20.5	3.5	13.7

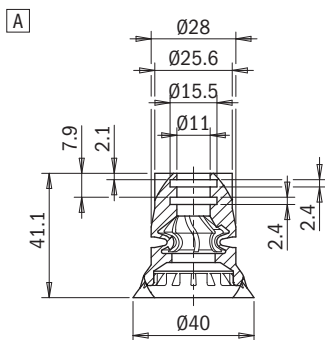
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	40 Shore	-70 ÷ +200 °C

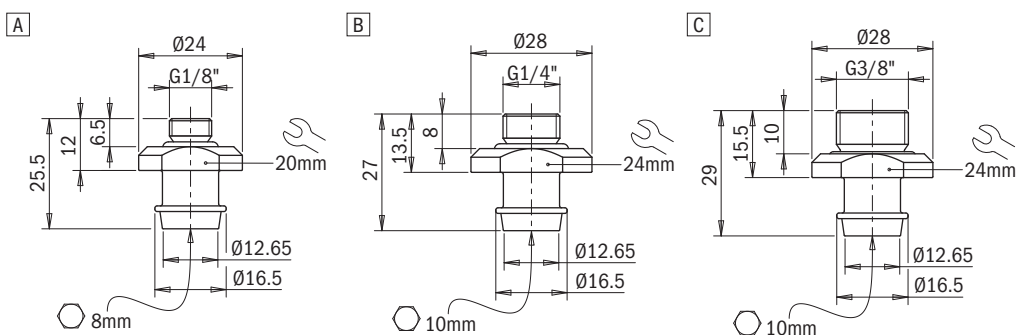
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BPG41FSI.40.G18M	VG.BPG41 suction cup, FDA-compliant silicone, 40 Shore, G1/8" male	2323089
B	VG.BPG41FSI.40.G14M	VG.BPG41 suction cup, FDA-compliant silicone, 40 Shore, G1/4" male	2323091
C	VG.BPG41FSI.40.G38M	VG.BPG41 suction cup, FDA-compliant silicone, 40 Shore, G3/8" male	2323092



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.BPG41FSI.40	VG.BPG41 suction cup, FDA-compliant silicone, 40 Shore	2323090



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18M.E8	G1/8" male fitting	1900017
B	FT.G14M.E10	G1/4" male fitting	1900013
C	FT.G38M.E10	G3/8" male fitting	1900037



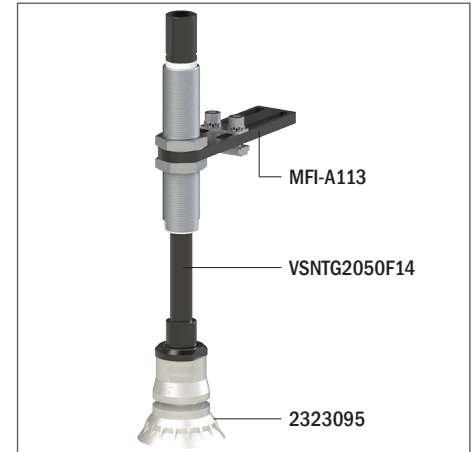
## VG.BPG48FSI multi-bellows suction cups in FDA-compliant silicone

- Suitable for handling bags, pouches and flexible packages for solids and liquids
- Version with 1.5 bellows
- Suction cups in FDA-compliant silicone
- Ideal for handling unpackaged food products such as pralines or biscuits with porous and uneven surfaces
- Reinforced bellows for higher grip stability
- The lip of the suction cup has been designed to maximise the grip and allow perfect adhesion even on wrinkles without damaging the grip surfaces

**NEW**



Application example



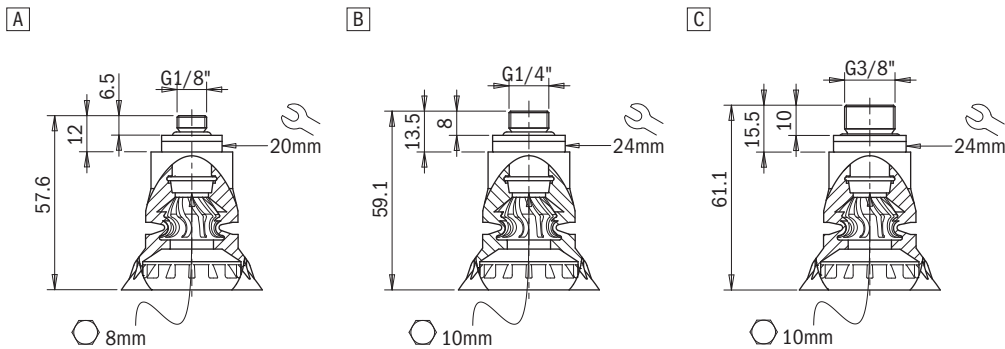
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-50 kPa	-60 kPa	-20 kPa	-50 kPa	-60 kPa				
SIL 40 FDA	19.8	26	32.9	10.9	16.5	22	17.9	24	4	18.4

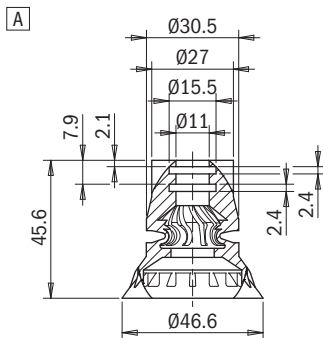
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	40 Shore	-70 ÷ +200 °C

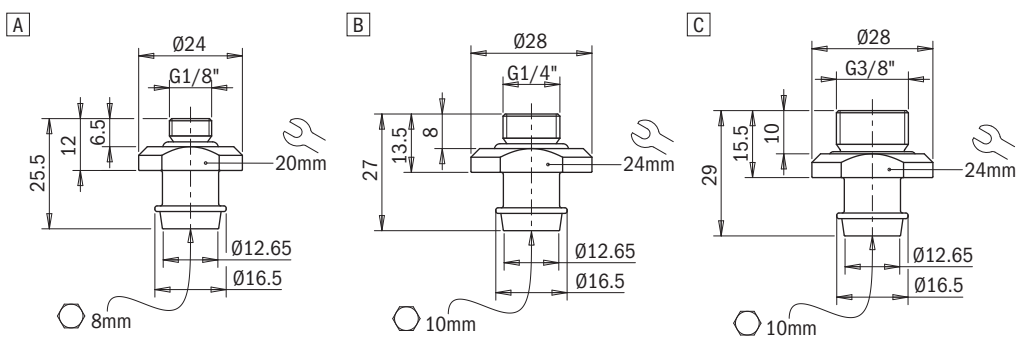
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BPG48FSI.40.G18M	VG.BPG48 suction cup, FDA-compliant silicone, 40 Shore, G1/8" male	2323093
B	VG.BPG48FSI.40.G14M	VG.BPG48 suction cup, FDA-compliant silicone, 40 Shore, G1/4" male	2323095
C	VG.BPG48FSI.40.G38M	VG.BPG48 suction cup, FDA-compliant silicone, 40 Shore, G3/8" male	2323096



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.BPG48FSI.40	VG.BPG48 suction cup, FDA-compliant silicone, 40 Shore	2323094



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18M.E8	G1/8" male fitting	1900017
B	FT.G14M.E10	G1/4" male fitting	1900013
C	FT.G38M.E10	G3/8" male fitting	1900037



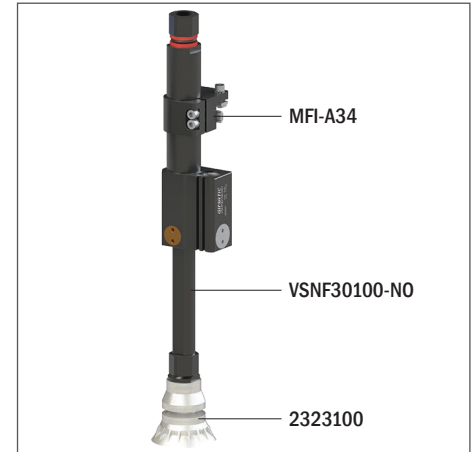
## VG.BPG55FSI multi-bellows suction cups in FDA-compliant silicone

- Suitable for handling bags, pouches and flexible packages for solids and liquids
- Version with 1.5 bellows
- Suction cups in FDA-compliant silicone
- Ideal for handling unpackaged food products such as pralines or biscuits with porous and uneven surfaces
- Reinforced bellows for higher grip stability
- The lip of the suction cup has been designed to maximise the grip and allow perfect adhesion even on wrinkles without damaging the grip surfaces

**NEW**



Fixing example



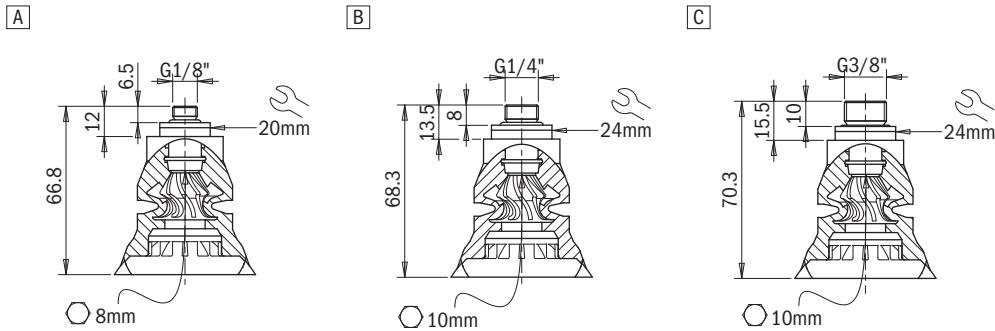
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-50 kPa	-60 kPa	-20 kPa	-50 kPa	-60 kPa				
SIL 40 FDA	22	35.8	48.7	15.2	22.3	31.2	31.8	27.5	5.3	32.5

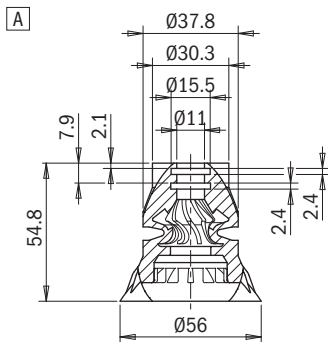
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	40 Shore	-70 ÷ +200 °C

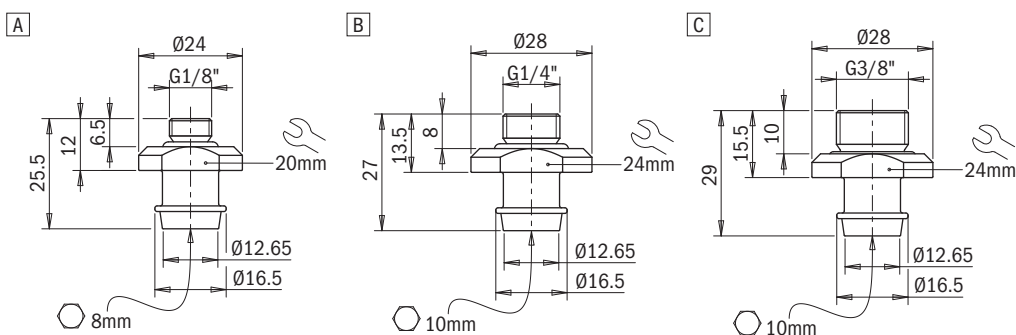
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BPG55FSI.40.G18M	VG.BPG55 suction cup, FDA-compliant silicone, 40 Shore, G1/8" male	2323097
B	VG.BPG55FSI.40.G14M	VG.BPG55 suction cup, FDA-compliant silicone, 40 Shore, G1/4" male	2323099
C	VG.BPG55FSI.40.G38M	VG.BPG55 suction cup, FDA-compliant silicone, 40 Shore, G3/8" male	2323100



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.BPG55FSI.40	VG.BPG55 suction cup, FDA-compliant silicone, 40 Shore	2323098



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18M.E8	G1/8" male fitting	1900017
B	FT.G14M.E10	G1/4" male fitting	1900013
C	FT.G38M.E10	G3/8" male fitting	1900037



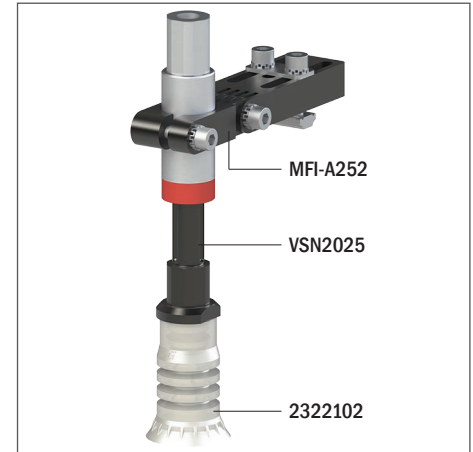
## VG.LPG30F multi-bellows suction cups in FDA-compliant silicone

- Suitable for handling bags, pouches and flexible packages for solids and liquids
- Version with 3.5 bellows
- Suction cups in FDA-compliant silicone
- Reinforced bellows for higher grip stability
- The lip of the suction cup has been designed to maximise the grip and allow perfect adhesion even on wrinkles without damaging the grip surfaces

**NEW**



Application example



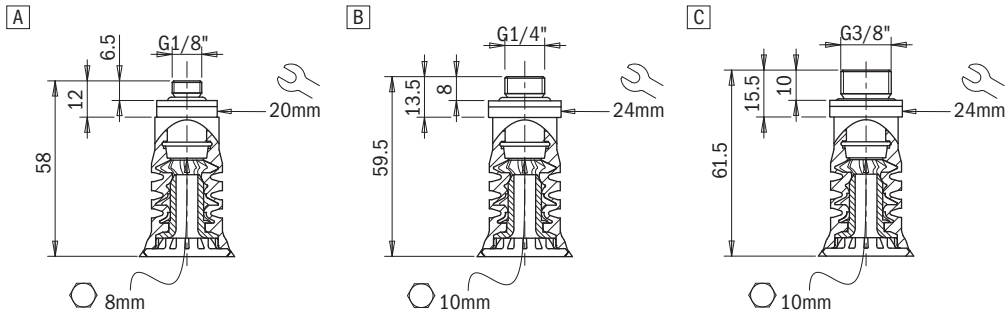
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-50 kPa	-60 kPa	-20 kPa	-50 kPa	-60 kPa				
SIL 40 FDA	9.0	16.0	17.5	–	–	–	10.5	15	9	10.7

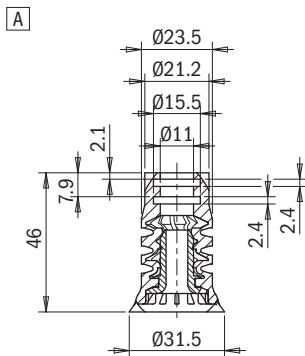
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	40 Shore	-70 ÷ +200 °C

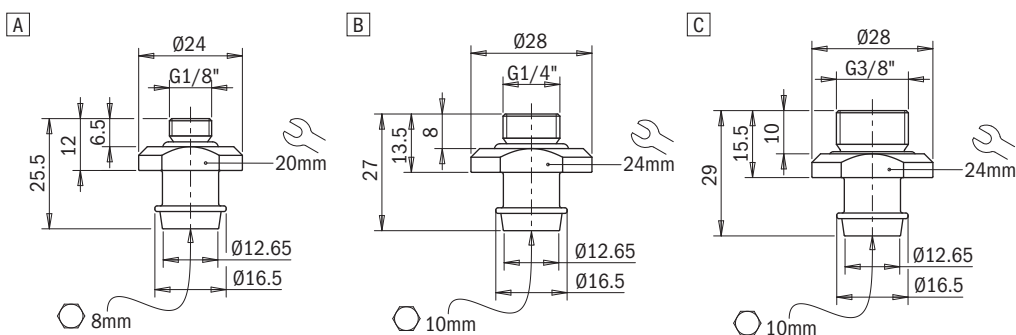
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LPG30F.40.G18M	VG.LPG30 suction cup, FDA-compliant silicone, 40 Shore, with internal insert, G1/8" male	2322102
B	VG.LPG30F.40.G14M	VG.LPG30 suction cup, FDA-compliant silicone, 40 Shore, with internal insert, G1/4" male	2322104
C	VG.LPG30F.40.G38M	VG.LPG30 suction cup, FDA-compliant silicone, 40 Shore, with internal insert, G3/8" male	2322105



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LPG30F.40	VG.LPG30 suction cup, FDA-compliant silicone, 40 Shore, with internal insert	2322103



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18M.E8	G1/8" male fitting	1900017
B	FT.G14M.E10	G1/4" male fitting	1900013
C	FT.G38M.E10	G3/8" male fitting	1900037



Identification codes		
Alphanumeric code	Insert	Order code
AC.LPG30	Spare insert for flow packs, size 30 mm in PA12 GB material	2322147



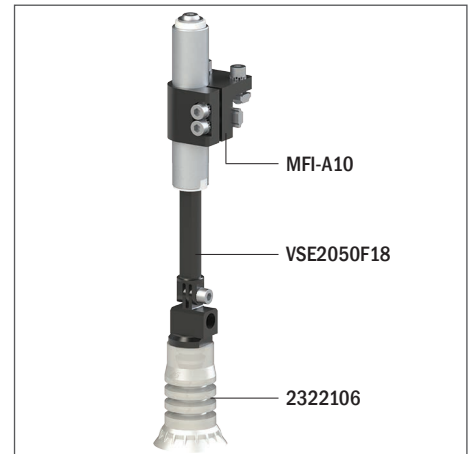
## VG.LPG41F multi-bellows suction cups in FDA-compliant silicone

- Suitable for handling bags, pouches and flexible packages for solids and liquids
- Version with 3.5 bellows
- Suction cups in FDA-compliant silicone
- Reinforced bellows for higher grip stability
- The lip of the suction cup has been designed to maximise the grip and allow perfect adhesion even on wrinkles without damaging the grip surfaces

**NEW**



Application example



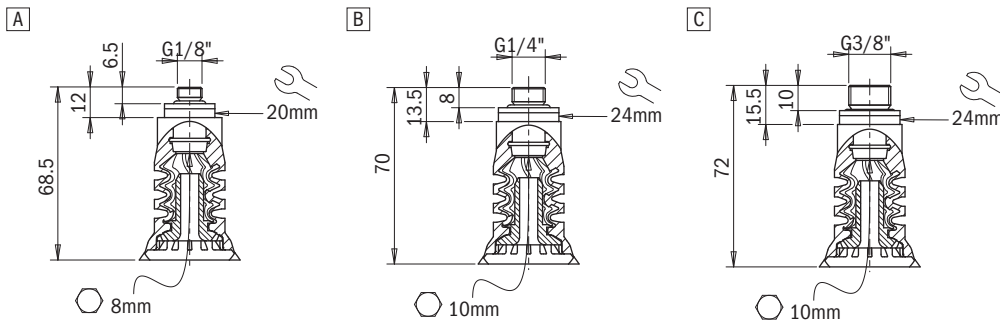
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-50 kPa	-60 kPa	-20 kPa	-50 kPa	-60 kPa				
SIL 40 FDA	13	18.6	22.5	–	–	–	17.3	20.5	10.5	17.7

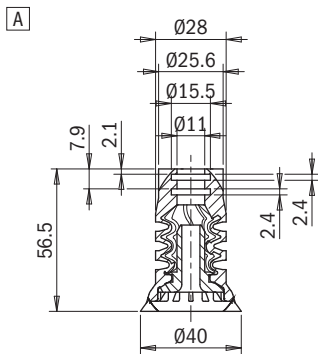
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	40 Shore	-70 ÷ +200 °C

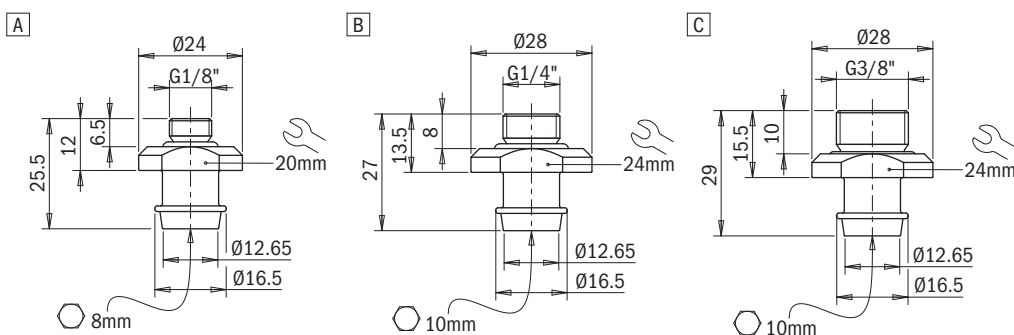
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LPG41F.40.G18M	VG.LPG41 suction cup, FDA-compliant silicone, 40 Shore, with internal insert, G1/8" male	2322106
B	VG.LPG41F.40.G14M	VG.LPG41 suction cup, FDA-compliant silicone, 40 Shore, with internal insert, G1/4" male	2322108
C	VG.LPG41F.40.G38M	VG.LPG41 suction cup, FDA-compliant silicone, 40 Shore, with internal insert, G3/8" male	2322109



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LPG41F.40	VG.LPG41 suction cup, FDA-compliant silicone, 40 Shore, with internal insert	2322107



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18M.E8	G1/8" male fitting	1900017
B	FT.G14M.E10	G1/4" male fitting	1900013
C	FT.G38M.E10	G3/8" male fitting	1900037



Identification codes		
Alphanumeric code	Insert	Order code
AC.LPG41	Spare insert for flow packs, size 41 mm in PA12 GB material	2322148

## VG.LPG48F multi-bellows suction cups in FDA-compliant silicone

- Suitable for handling bags, pouches and flexible packages for solids and liquids
- Version with 3.5 bellows
- Suction cups in FDA-compliant silicone
- Reinforced bellows for higher grip stability
- The lip of the suction cup has been designed to maximise the grip and allow perfect adhesion even on wrinkles without damaging the grip surfaces

NEW



Application example



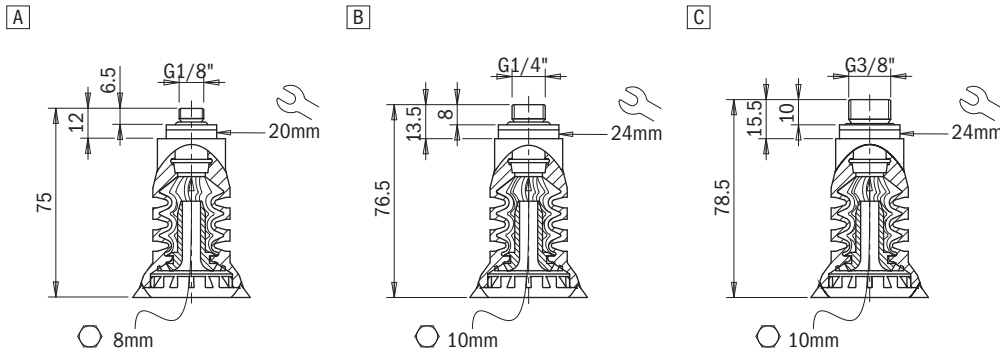
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-50 kPa	-60 kPa	-20 kPa	-50 kPa	-60 kPa				
SIL 40 FDA	19.6	25	32.5	–	–	–	23.7	24	12	24

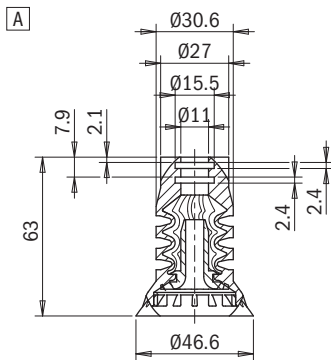
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	40 Shore	-70 ÷ +200 °C

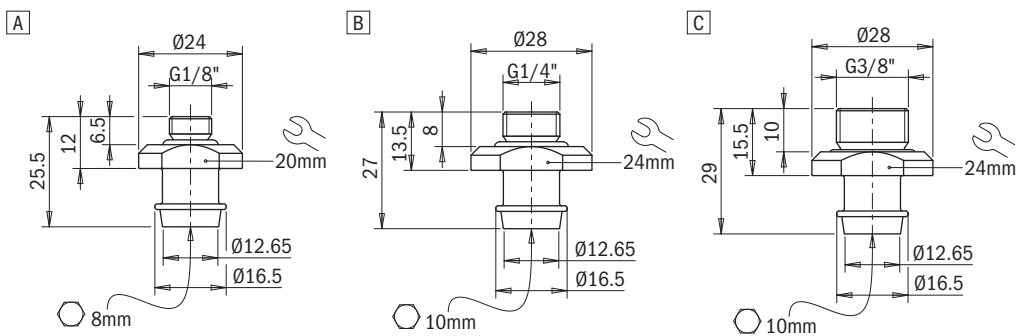
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LPG48F.40.G18M	VG.LPG48 suction cup, FDA-compliant silicone, 40 Shore, with internal insert, G1/8" male	2322110
B	VG.LPG48F.40.G14M	VG.LPG48 suction cup, FDA-compliant silicone, 40 Shore, with internal insert, G1/4" male	2322112
C	VG.LPG48F.40.G38M	VG.LPG48 suction cup, FDA-compliant silicone, 40 Shore, with internal insert, G3/8" male	2322113



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LPG48F.40	VG.LPG48 suction cup, FDA-compliant silicone, 40 Shore, with internal insert	2322111



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18M.E8	G1/8" male fitting	1900017
B	FT.G14M.E10	G1/4" male fitting	1900013
C	FT.G38M.E10	G3/8" male fitting	1900037



Identification codes		
Alphanumeric code	Insert	Order code
AC.LPG48	Spare insert for flow packs, size 48 mm in PA12 GB material	2322149

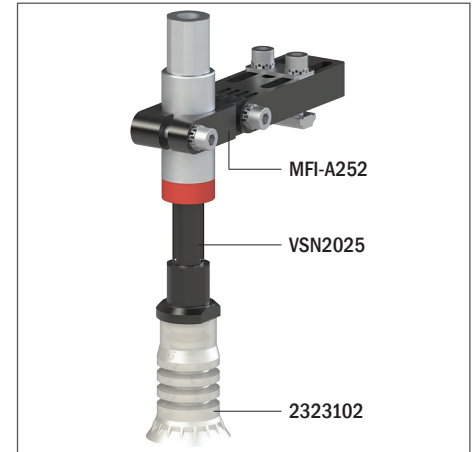
## VG.LPG30FSI multi-bellows suction cups in FDA-compliant silicone

- Suitable for handling bags, pouches and flexible packages for solids and liquids
- Version with 3.5 bellows
- Suction cups in FDA-compliant silicone
- Ideal for handling unpackaged food products such as pralines or biscuits with porous and uneven surfaces
- Reinforced bellows for higher grip stability
- The lip of the suction cup has been designed to maximise the grip and allow perfect adhesion even on wrinkles without damaging the grip surfaces

**NEW**



Application example



### Technical data

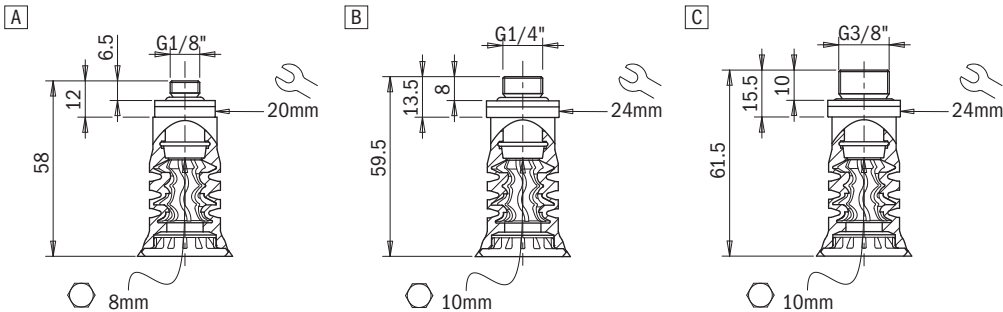
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-50 kPa	-60 kPa	-20 kPa	-50 kPa	-60 kPa				
SIL 40 FDA	9.0	16.0	17.5	–	–	–	10.5	15	9	10.7

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	40 Shore	-70 ÷ +200 °C

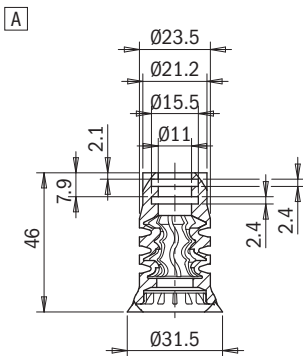
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LPG30FSI.40.G18M	VG.LPG30 suction cup, FDA-compliant silicone, 40 Shore, G1/8" male	2323102
B	VG.LPG30FSI.40.G14M	VG.LPG30 suction cup, FDA-compliant silicone, 40 Shore, G1/4" male	2323104
C	VG.LPG30FSI.40.G38M	VG.LPG30 suction cup, FDA-compliant silicone, 40 Shore, G3/8" male	2323105



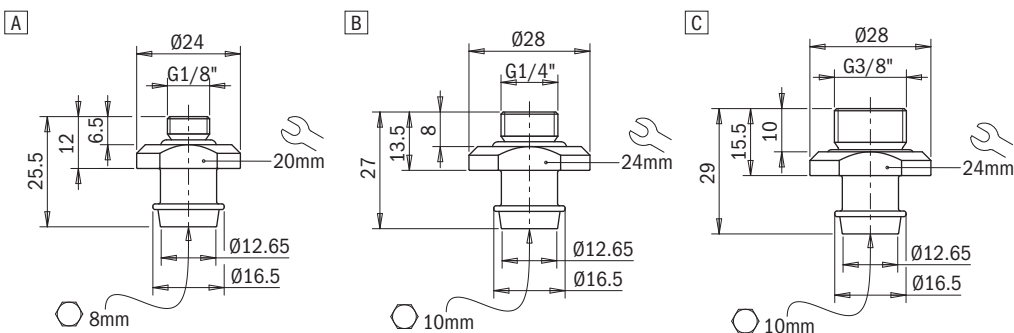
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LPG30FSI.40	VG.LPG30 suction cup, FDA-compliant silicone, 40 Shore	2323103



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18M.E8	G1/8" male fitting	1900017
B	FT.G14M.E10	G1/4" male fitting	1900013
C	FT.G38M.E10	G3/8" male fitting	1900037



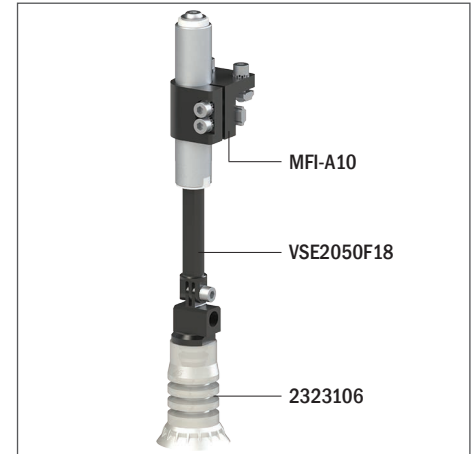
## VG.LPG41FSI multi-bellows suction cups in FDA-compliant silicone

- Suitable for handling bags, pouches and flexible packages for solids and liquids
- Version with 3.5 bellows
- Suction cups in FDA-compliant silicone
- Ideal for handling unpackaged food products such as pralines or biscuits with porous and uneven surfaces
- Reinforced bellows for higher grip stability
- The lip of the suction cup has been designed to maximise the grip and allow perfect adhesion even on wrinkles without damaging the grip surfaces

NEW



Application example



### Technical data

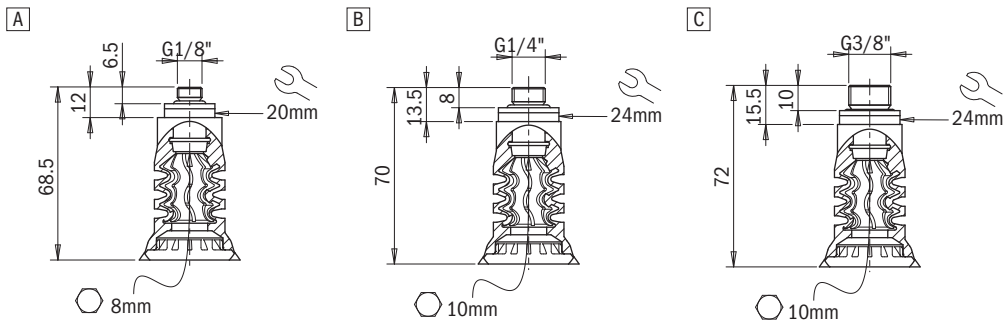
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-50 kPa	-60 kPa	-20 kPa	-50 kPa	-60 kPa				
SIL 40 FDA	13	18.6	22.5	–	–	–	17.3	20.5	10.5	17.7

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	40 Shore	-70 ÷ +200 °C

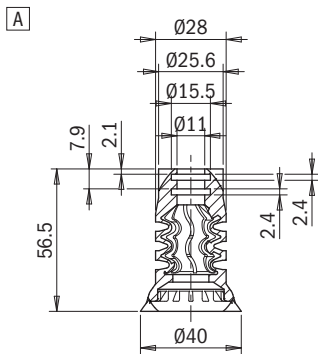
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LPG41FSI.40.G18M	VG.LPG41 suction cup, FDA-compliant silicone, 40 Shore, G1/8" male	2323106
B	VG.LPG41FSI.40.G14M	VG.LPG41 suction cup, FDA-compliant silicone, 40 Shore, G1/4" male	2323108
C	VG.LPG41FSI.40.G38M	VG.LPG41 suction cup, FDA-compliant silicone, 40 Shore, G3/8" male	2323109



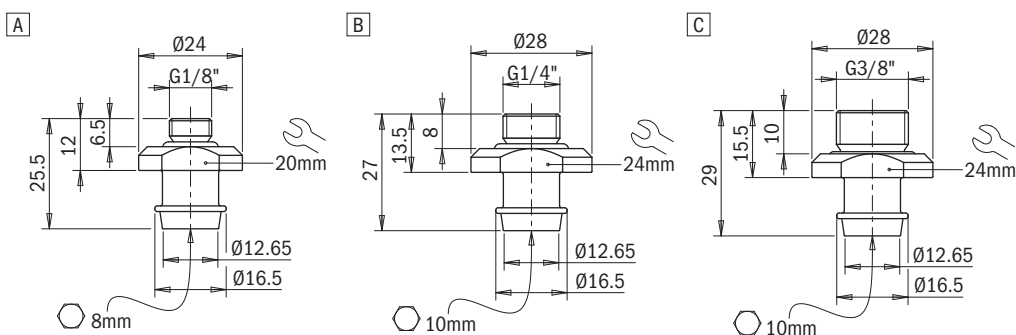
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LPG41FSI.40	VG.LPG41 suction cup, FDA-compliant silicone, 40 Shore	2323107



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18M.E8	G1/8" male fitting	1900017
B	FT.G14M.E10	G1/4" male fitting	1900013
C	FT.G38M.E10	G3/8" male fitting	1900037





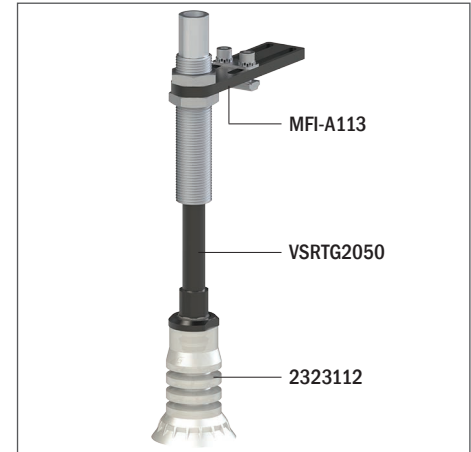
## VG.LPG48FSI multi-bellows suction cups in FDA-compliant silicone

- Suitable for handling bags, pouches and flexible packages for solids and liquids
- Version with 3.5 bellows
- Suction cups in FDA-compliant silicone
- Ideal for handling unpackaged food products such as pralines or biscuits with porous and uneven surfaces
- Reinforced bellows for higher grip stability
- The lip of the suction cup has been designed to maximise the grip and allow perfect adhesion even on wrinkles without damaging the grip surfaces

**NEW**



Application example



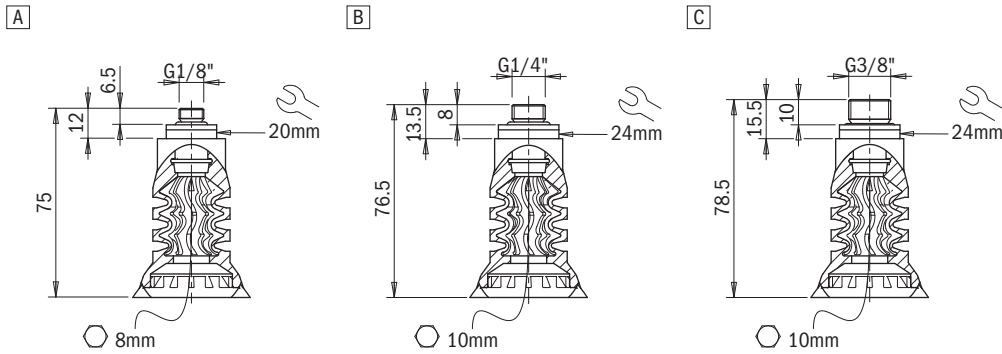
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-50 kPa	-60 kPa	-20 kPa	-50 kPa	-60 kPa				
SIL 40 FDA	19.6	25	32.5	–	–	–	23.7	24	12	24

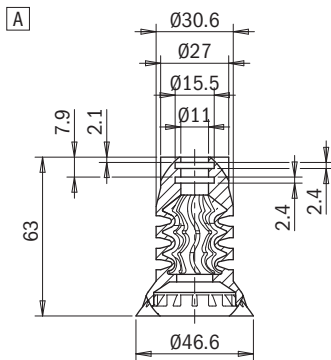
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	40 Shore	-70 ÷ +200 °C

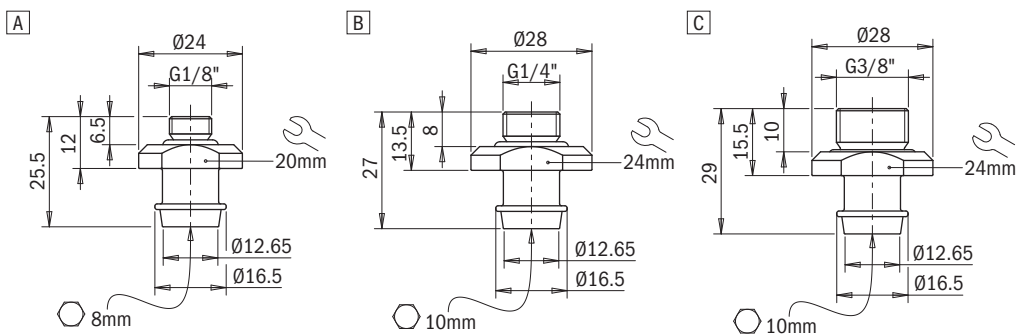
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LPG48FSI.40.G18M	VG.LPG48 suction cup, FDA-compliant silicone, 40 Shore, G1/8" male	2323110
B	VG.LPG48FSI.40.G14M	VG.LPG48 suction cup, FDA-compliant silicone, 40 Shore, G1/4" male	2323112
C	VG.LPG48FSI.40.G38M	VG.LPG48 suction cup, FDA-compliant silicone, 40 Shore, G3/8" male	2323113



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LPG48FSI.40	VG.LPG48 suction cup, FDA-compliant silicone, 40 Shore	2323111



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18M.E8	G1/8" male fitting	1900017
B	FT.G14M.E10	G1/4" male fitting	1900013
C	FT.G38M.E10	G3/8" male fitting	1900037



## VG.U6F flat FDA-compliant silicone suction cups

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces

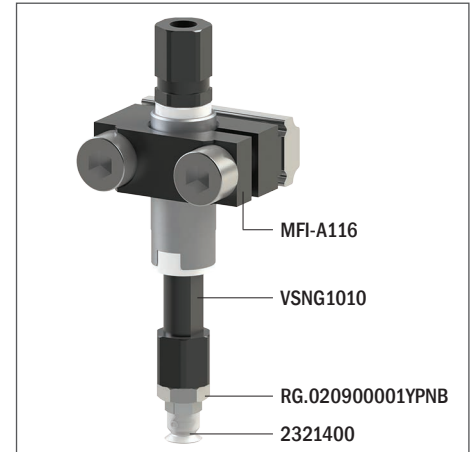
Introduction

Vacuum theory

Suction cups



Application example



Vacuum pumps

Customised solutions

Suspensions

System accessories

### Technical data

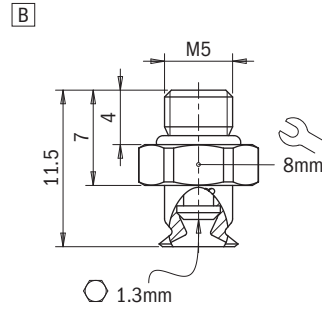
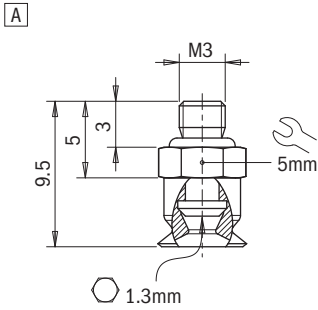
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	0.5	1.5	2.5	0.5	1.3	2.2	0.05	5	0.3	0.14

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

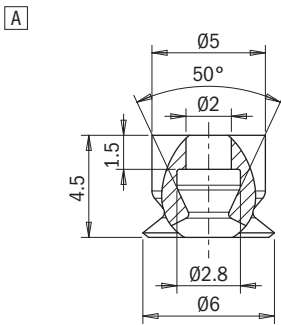
### Ordering information

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U6F.50.M3M.E5	VG.U6 suction cup, FDA-compliant silicone, 50 Shore, M3 male, 5 mm hex	2321400
B	VG.U6F.50.M5M.E8	VG.U6 suction cup, FDA-compliant silicone, 50 Shore, M5 male, 8 mm hex	2321000



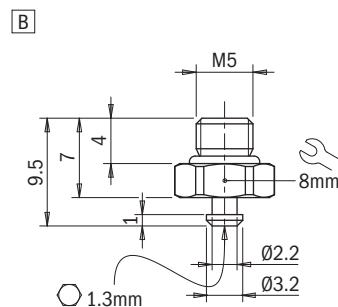
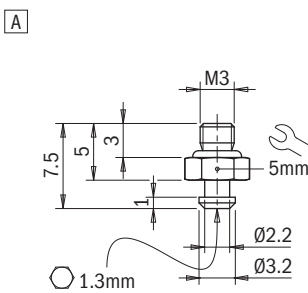
### Ordering information

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U6F.50	VG.U6 suction cup, FDA-compliant silicone, 50 Shore	2321401



### Ordering information

Drawing	Alphanumeric code	Fittings	Order code
A	FT.M3M.E5	M3 male fitting, 5 mm hex	2321402
B	FT.M5M.E8.06	M5 male fitting, 8 mm hex	2321005



## VG.U9F flat FDA-compliant silicone suction cups

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces

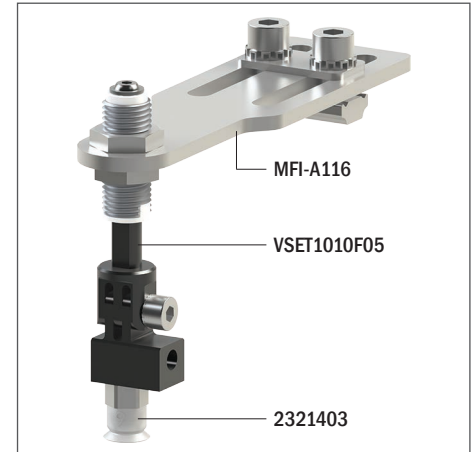
Introduction

Vacuum theory

Suction cups



Application example



Vacuum pumps

Customised solutions

Suspensions

System accessories

### Technical data

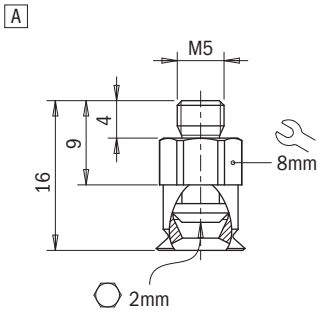
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	1	2.5	3.8	1	2.5	3.5	0.1	6	0.5	0.2

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

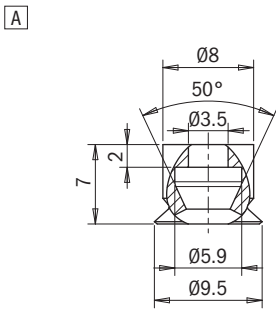
### Ordering information

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U9F.50.M5M.E8	VG.U9 suction cup, FDA-compliant silicone, 50 Shore, M5 male, 8 mm hex	2321403



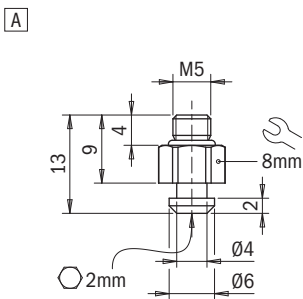
### Ordering information

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U9F.50	VG.U9 suction cup, FDA-compliant silicone, 50 Shore	2321404



### Ordering information

Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5M.E8.05	M5 male fitting, 8 mm hex	2321405



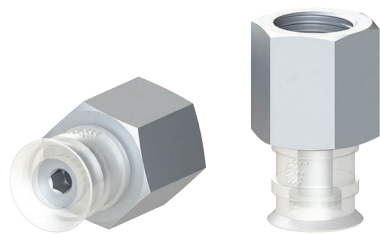
## VG.U11F flat FDA-compliant silicone suction cups

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces

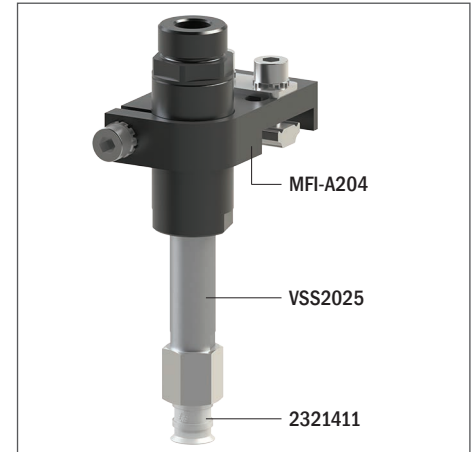
Introduction

Vacuum theory

Suction cups



Application example



Vacuum pumps

Customised solutions

Suspensions

System accessories

### Technical data

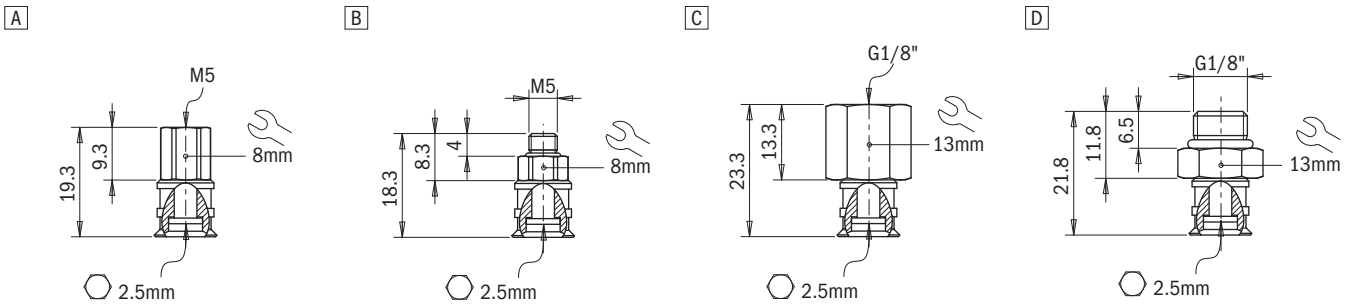
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	1.5	4.1	6.2	1.5	4.1	6.2	0.18	8	0.5	0.5

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

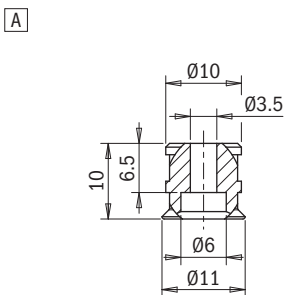
### Ordering information

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U11F.50.M5F.E8	VG.U11 suction cup, FDA-compliant silicone, 50 Shore, M5 female, 8 mm hex	2321406
B	VG.U11F.50.M5M.E8	VG.U11 suction cup, FDA-compliant silicone, 50 Shore, M5 male, 8 mm hex	2321409
C	VG.U11F.50.G18F.E13	VG.U11 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 13 mm hex	2321411
D	VG.U11F.50.G18M.E13	VG.U11 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 13 mm hex	2321413



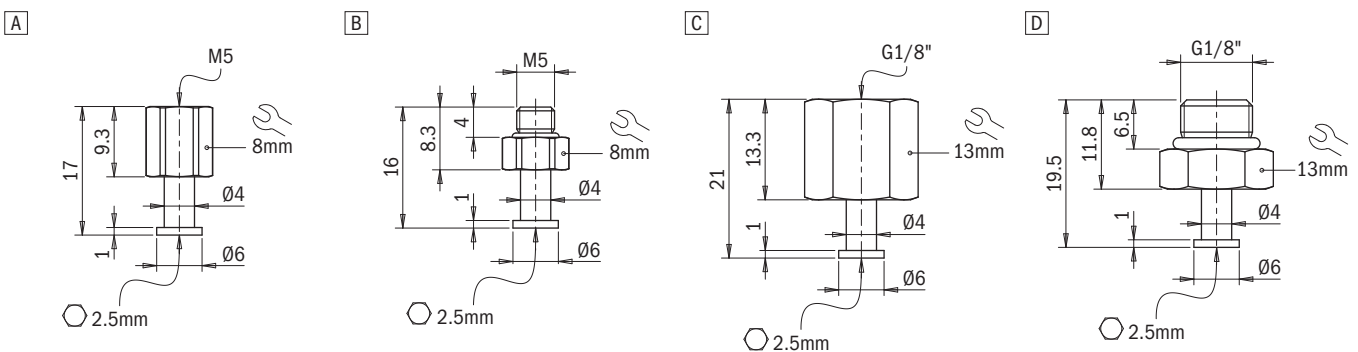
### Ordering information

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U11F.50	VG.U11 suction cup, FDA-compliant silicone, 50 Shore	2321407



### Ordering information

Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414





## VG.U16F flat FDA-compliant silicone suction cups

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces

Introduction

Vacuum theory

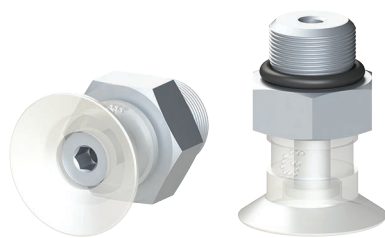
Suction cups

Vacuum pumps

Customised solutions

Suspensions

System accessories



Application example



### Technical data

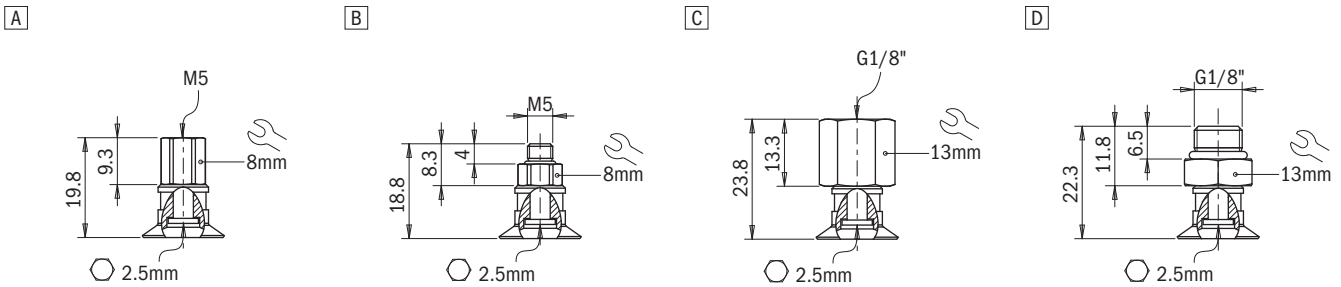
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	3	8.5	11	3	8.5	11	0.5	8	1.5	0.6

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

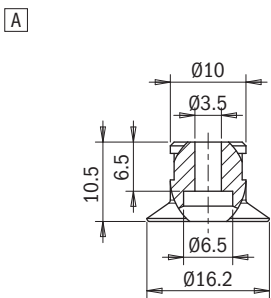
### Ordering information

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U16F.50.M5F.E8	VG.U16 suction cup, FDA-compliant silicone, 50 Shore, M5 female, 8 mm hex	2321415
B	VG.U16F.50.M5M.E8	VG.U16 suction cup, FDA-compliant silicone, 50 Shore, M5 male, 8 mm hex	2321417
C	VG.U16F.50.G18F.E13	VG.U16 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 13 mm hex	2321418
D	VG.U16F.50.G18M.E13	VG.U16 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 13 mm hex	2321419



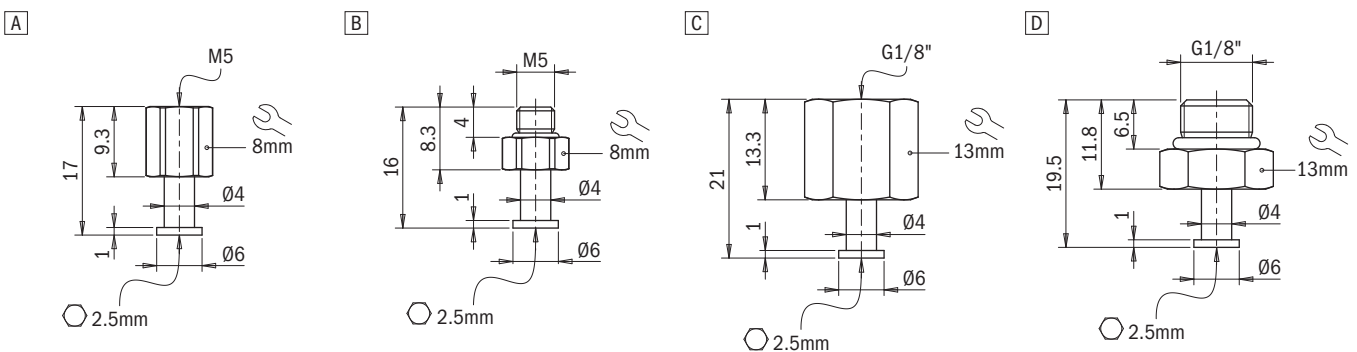
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U16F.50	VG.U16 suction cup, FDA-compliant silicone, 50 Shore	2321416



### Identification codes

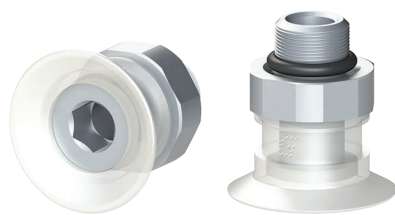
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414



## VG.U22F flat FDA-compliant silicone suction cups

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces

Application example



### Technical data

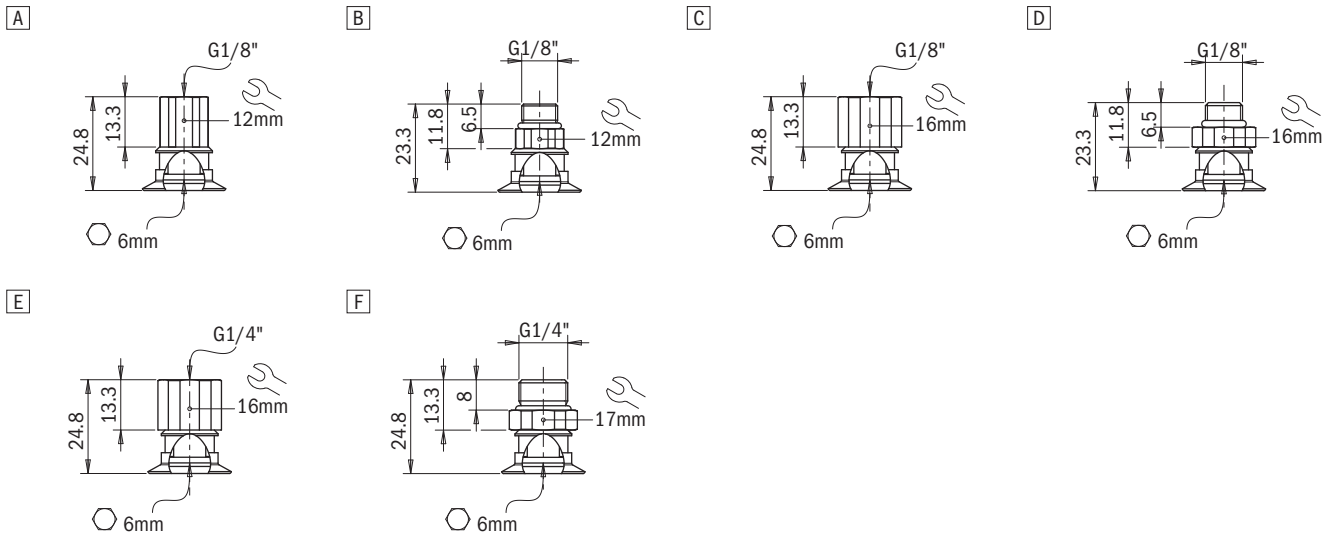
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	5.6	14	20	6	14	20	1	13	2.5	1.1

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

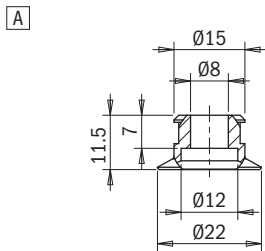
### Ordering information

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U22F.50.G18F.E12	VG.U22 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 12 mm hex	2321420
B	VG.U22F.50.G18M.E12	VG.U22 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 12 mm hex	2321423
C	VG.U22F.50.G18F.E16	VG.U22 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 16 mm hex	2321425
D	VG.U22F.50.G18M.E16	VG.U22 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 16 mm hex	2321427
E	VG.U22F.50.G14F.E16	VG.U22 suction cup, FDA-compliant silicone, 50 Shore, G1/4" female, 16 mm hex	2321429
F	VG.U22F.50.G14M.E17	VG.U22 suction cup, FDA-compliant silicone, 50 Shore, G1/4" male, 17 mm hex	2321431



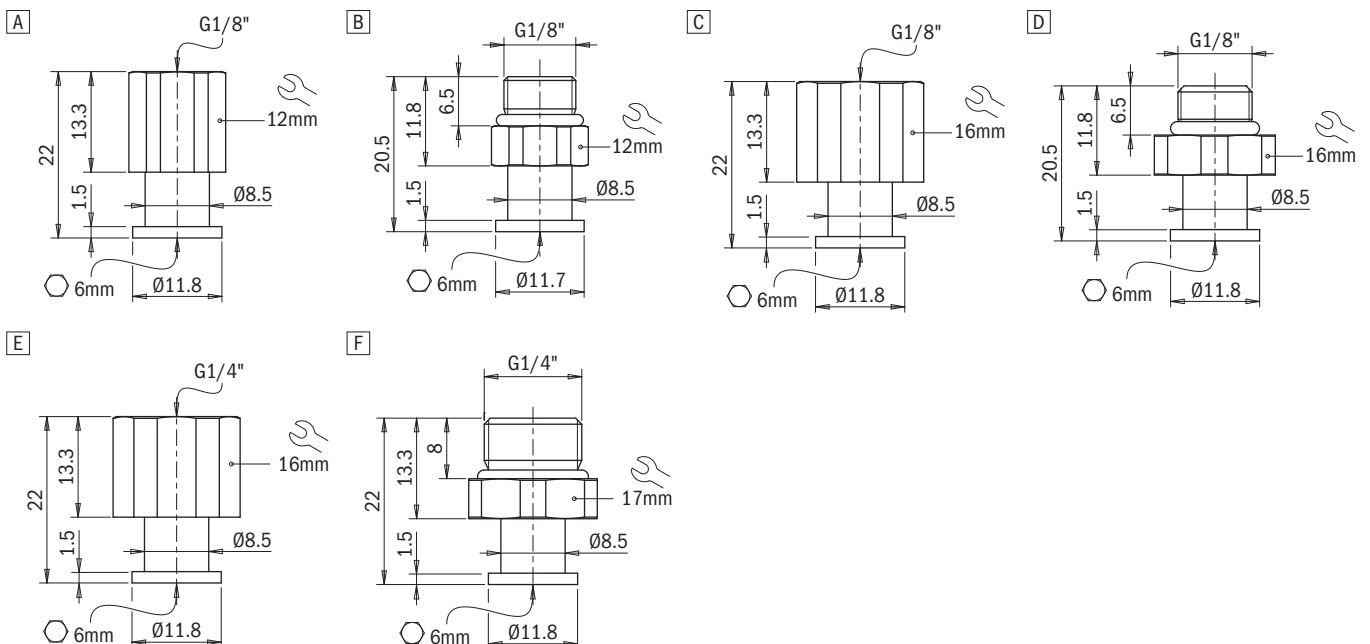
### Ordering information

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U22F.50	VG.U22 suction cup, FDA-compliant silicone, 50 Shore	2321421



### Ordering information

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



## VG.U33F flat FDA-compliant silicone suction cups

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces

Application example



### Technical data

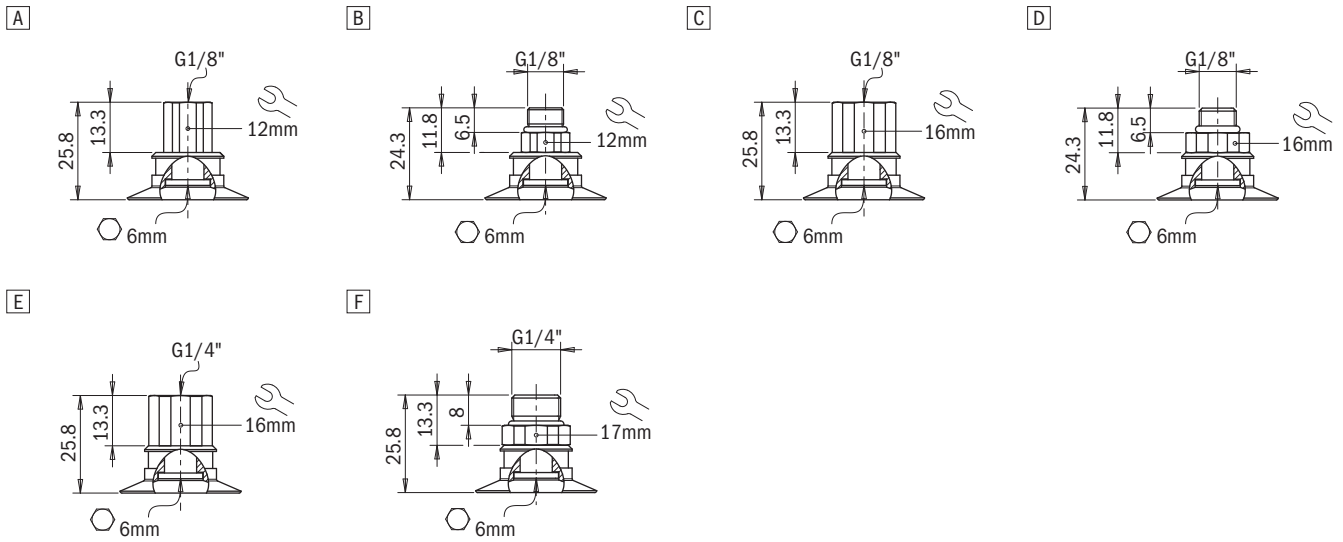
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	11	29	38	8.5	15	12.5	2	20	3.5	2.4

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

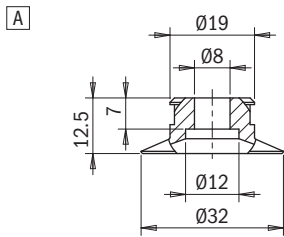
### Ordering information

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U33F.50.G18F.E12	VG.U33 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 12 mm hex	2321433
B	VG.U33F.50.G18M.E12	VG.U33 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 12 mm hex	2321435
C	VG.U33F.50.G18F.E16	VG.U33 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 16 mm hex	2321436
D	VG.U33F.50.G18M.E16	VG.U33 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 16 mm hex	2321437
E	VG.U33F.50.G14F.E16	VG.U33 suction cup, FDA-compliant silicone, 50 Shore, G1/4" female, 16 mm hex	2321438
F	VG.U33F.50.G14M.E17	VG.U33 suction cup, FDA-compliant silicone, 50 Shore, G1/4" male, 17 mm hex	2321439



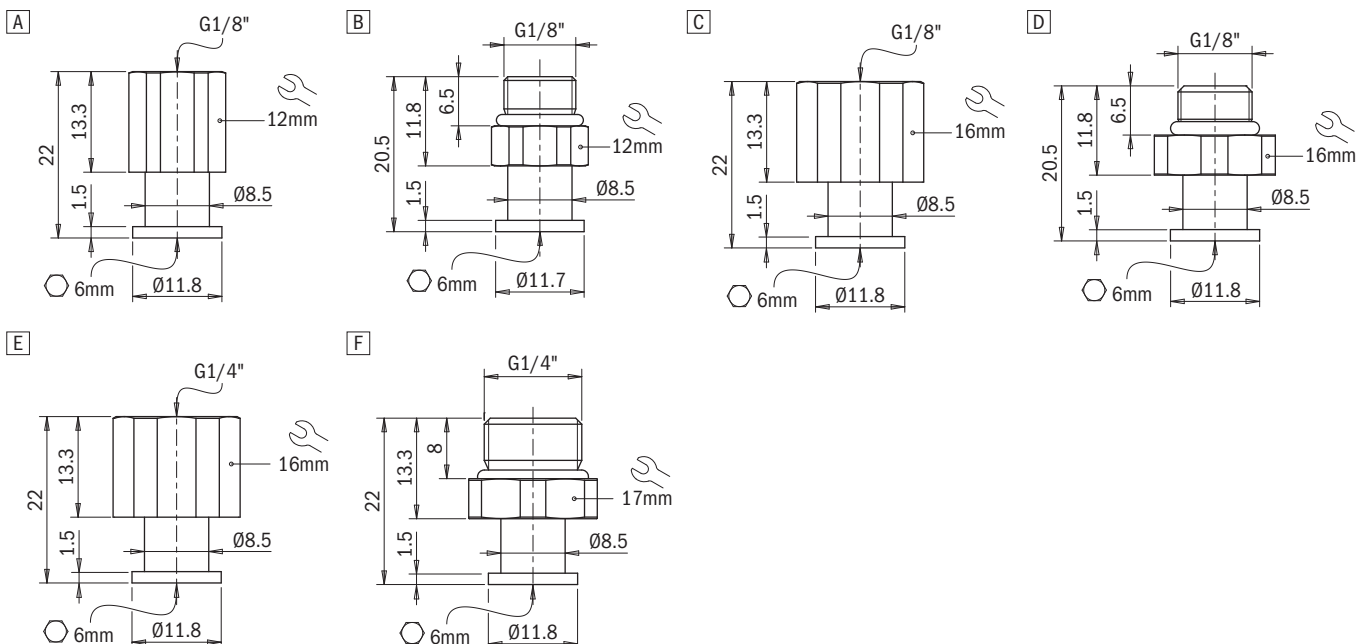
### Ordering information

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U33F.50	VG.U33 suction cup, FDA-compliant silicone, 50 Shore	2321434



### Ordering information

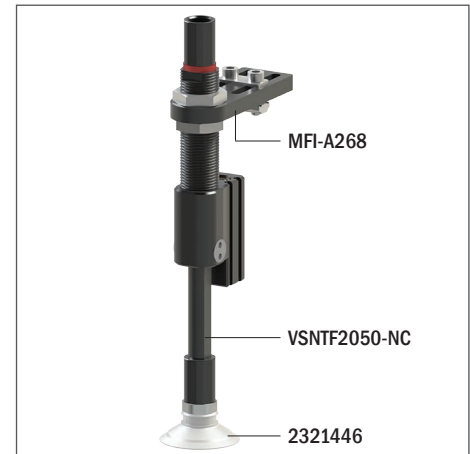
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



## VG.U42F flat FDA-compliant silicone suction cups

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces

Application example



### Technical data

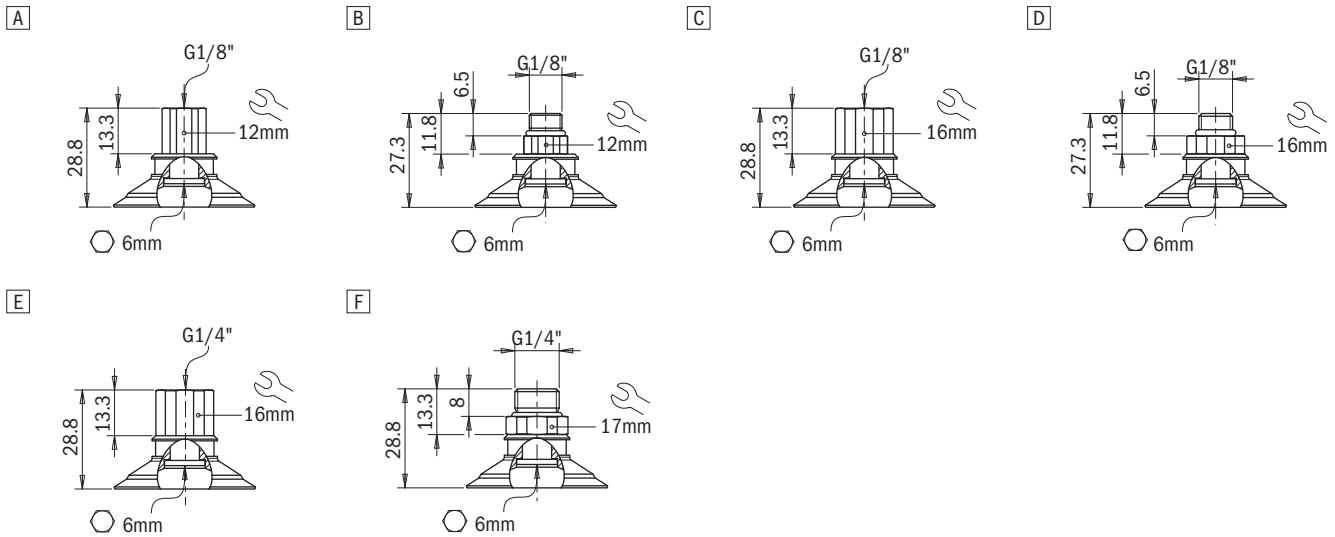
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	21	48.5	58	14	28	36	5.5	30	4.5	4.4

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

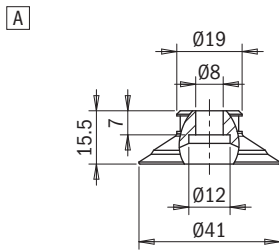
### Ordering information

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U42F.50.G18F.E12	VG.U42 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 12 mm hex	2321440
B	VG.U42F.50.G18M.E12	VG.U42 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 12 mm hex	2321442
C	VG.U42F.50.G18F.E16	VG.U42 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 16 mm hex	2321443
D	VG.U42F.50.G18M.E16	VG.U42 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 16 mm hex	2321444
E	VG.U42F.50.G14F.E16	VG.U42 suction cup, FDA-compliant silicone, 50 Shore, G1/4" female, 16 mm hex	2321445
F	VG.U42F.50.G14M.E17	VG.U42 suction cup, FDA-compliant silicone, 50 Shore, G1/4" male, 17 mm hex	2321446



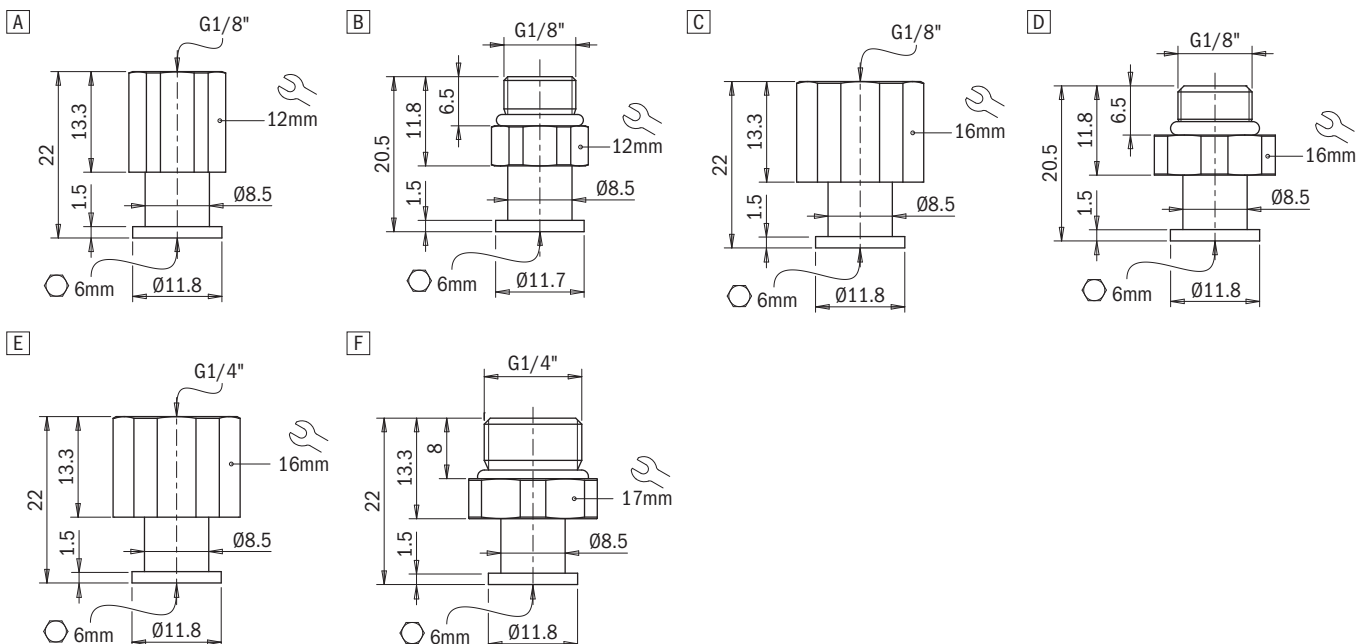
### Ordering information

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U42F.50	VG.U42 suction cup, FDA-compliant silicone, 50 Shore	2321441



### Ordering information

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432





## VG.U53F flat FDA-compliant silicone suction cups

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces

Application example



### Technical data

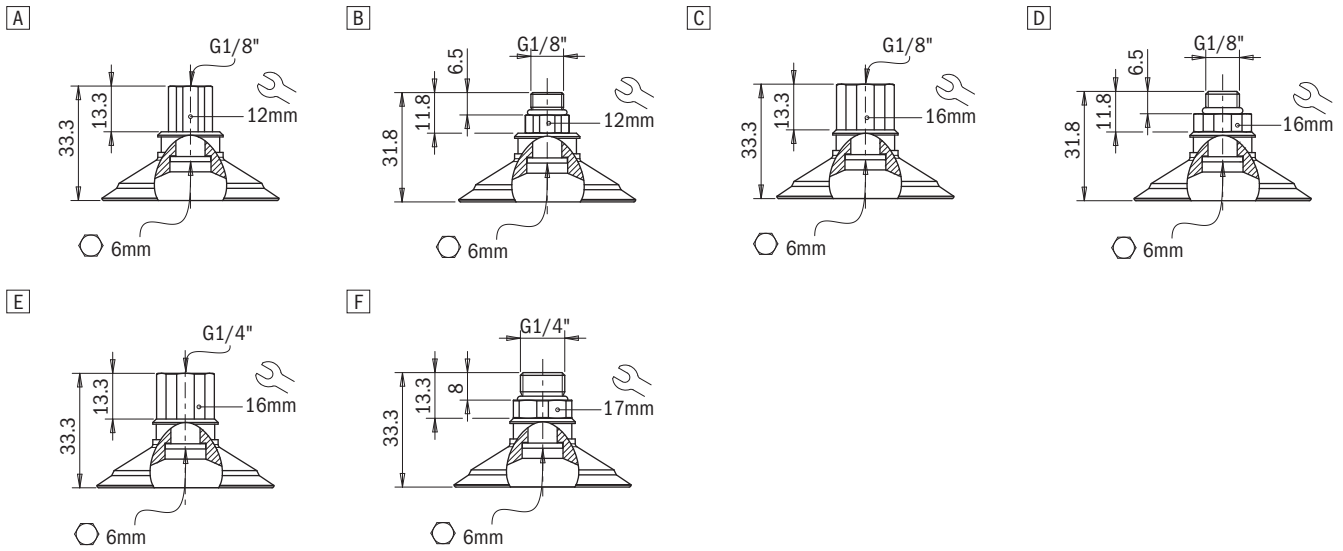
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	37	75	96	20	35	46	12	35	6	8

### Technical features

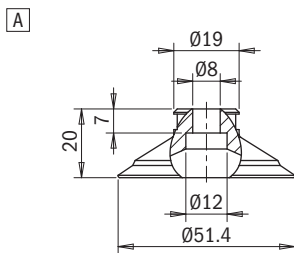
Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

### Ordering information

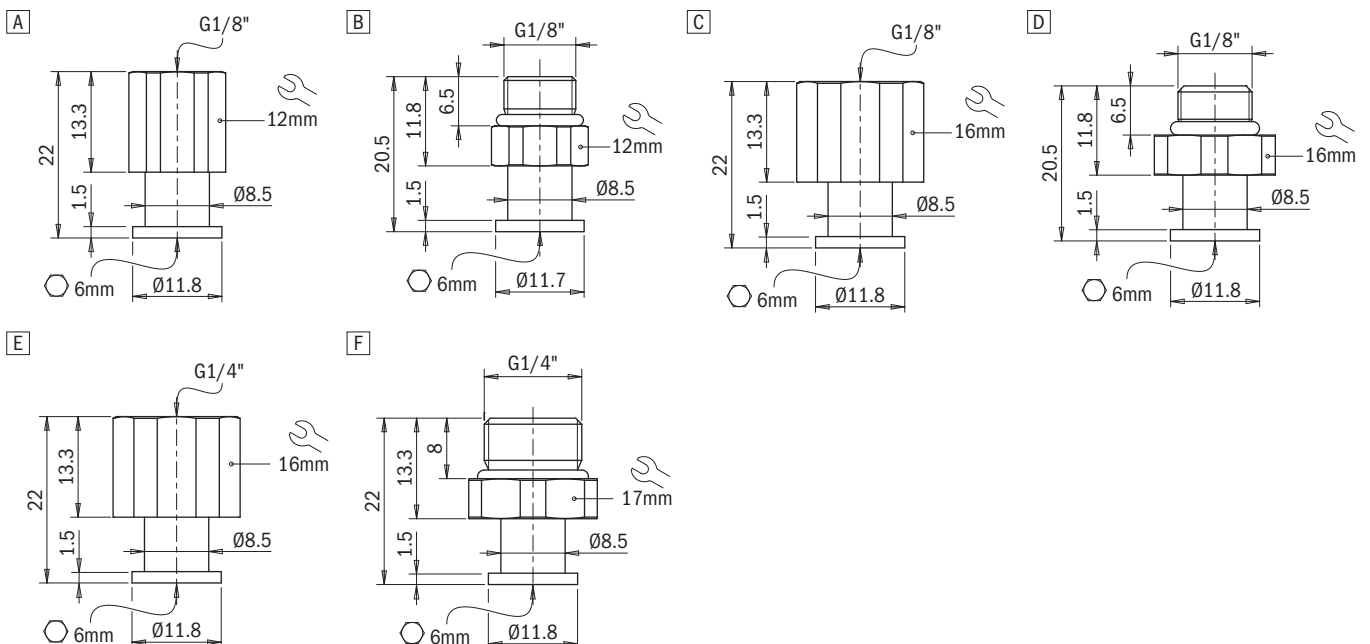
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.U53F.50.G18F.E12	VG.U53 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 12 mm hex	2321447
B	VG.U53F.50.G18M.E12	VG.U53 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 12 mm hex	2321449
C	VG.U53F.50.G18F.E16	VG.U53 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 16 mm hex	2321450
D	VG.U53F.50.G18M.E16	VG.U53 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 16 mm hex	2321451
E	VG.U53F.50.G14F.E16	VG.U53 suction cup, FDA-compliant silicone, 50 Shore, G1/4" female, 16 mm hex	2321452
F	VG.U53F.50.G14M.E17	VG.U53 suction cup, FDA-compliant silicone, 50 Shore, G1/4" male, 17 mm hex	2321453


**Ordering information**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.U53F.50	VG.U53 suction cup, FDA-compliant silicone, 50 Shore	2321448


**Ordering information**

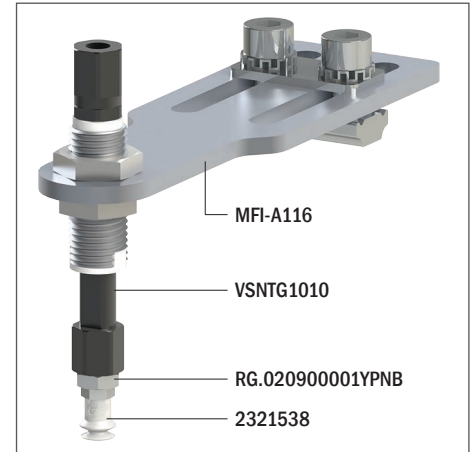
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



## VG.B6F bellows suction cups in FDA-compliant silicone

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height

Application example



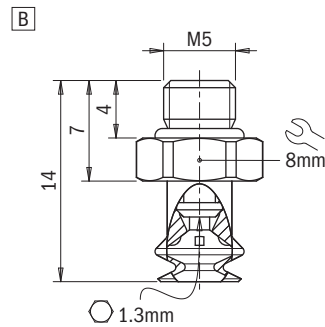
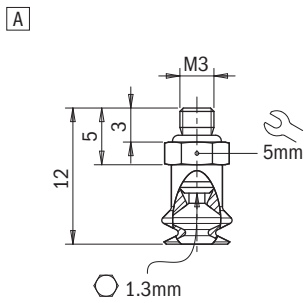
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	0.25	0.78	1.1	–	–	–	0.05	1.5	1.5	0.1

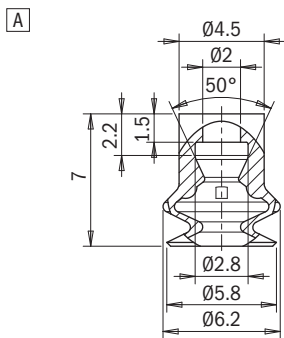
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

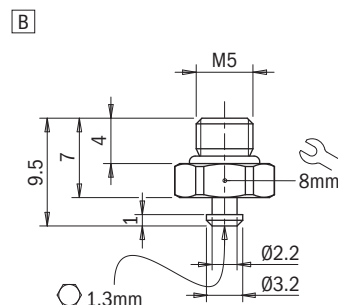
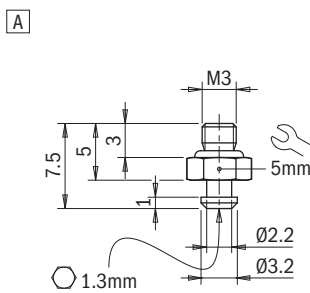
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B6F.50.M3M.E5	VG.B6 suction cup, FDA-compliant silicone, 50 Shore, M3 Male, 5 mm hex	2321538
B	VG.B6F.50.M5M.E8	VG.B6 suction cup, FDA-compliant silicone, 50 Shore, M5 Male, 8 mm hex	2321038



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B6F.50	VG.B6 suction cup, FDA-compliant silicone, 50 Shore	2321539



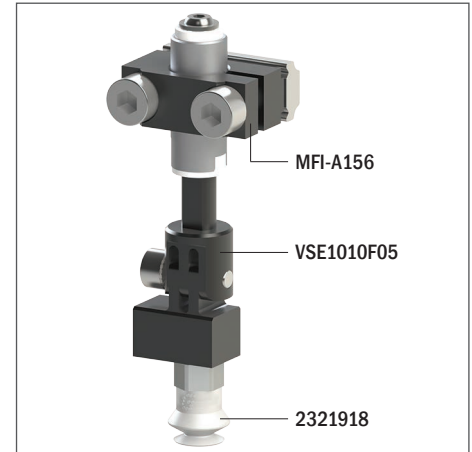
Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M3M.E5	M3 male fitting, hex, 5 mm	2321402
B	FT.M5M.E8.06	M5 male fitting, hex, 8 mm	2321005



## VG.B9F bellows suction cups in FDA-compliant silicone

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height

Application example



### Technical data

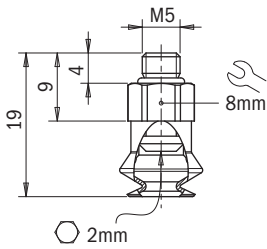
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	0.82	1.5	2.3	–	–	–	0.15	1.9	3.5	0.3

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

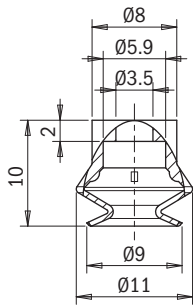
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B9F.50.M5M.E8	VG.B9 suction cup, FDA-compliant silicone, 50 Shore, M5 male, 8 mm hex	2321918

A



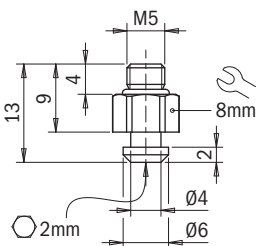
Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B9F.50	VG.B9 suction cup, FDA-compliant silicone, 50 Shore	2321919

A



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5M.E8.05	M5 male fitting, 8 mm hex	2321405

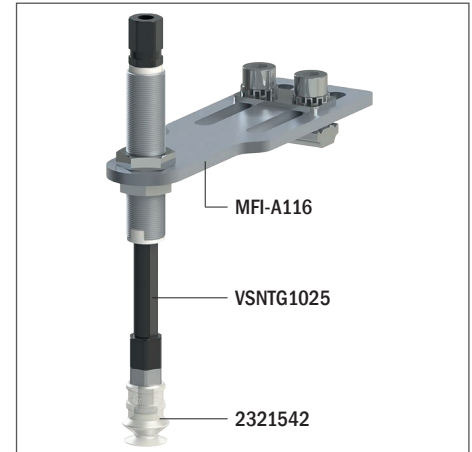
A



## VG.B11F bellows suction cups in FDA-compliant silicone

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height

Application example



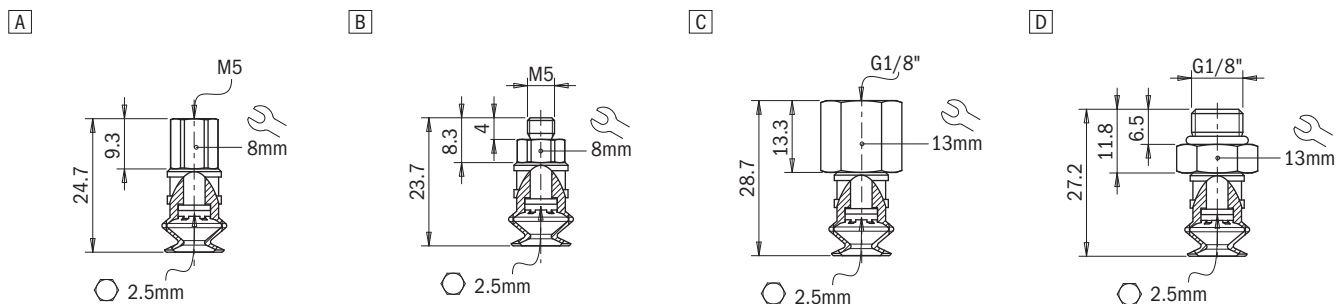
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	1.3	3.4	4.6	1.7	2.42	2.81	0.48	4	4.5	1.3

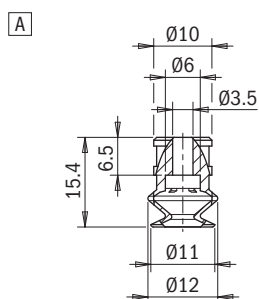
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

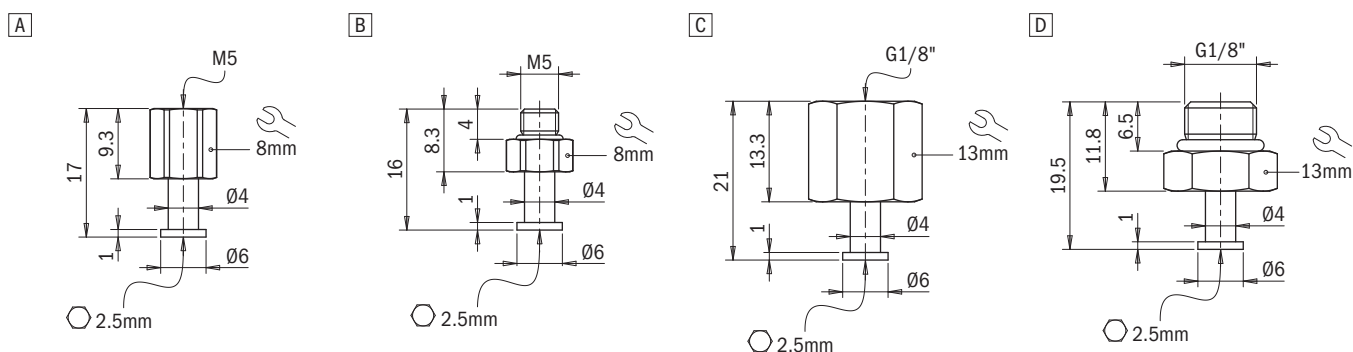
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B11F.50.M5F.E8	VG.B11 suction cup, FDA-compliant silicone, 50 Shore, M5 female, 8 mm hex	2321540
B	VG.B11F.50.M5M.E8	VG.B11 suction cup, FDA-compliant silicone, 50 Shore, M5 male, 8 mm hex	2321542
C	VG.B11F.50.G18F.E13	VG.B11 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 13 mm hex	2321543
D	VG.B11F.50.G18M.E13	VG.B11 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 13 mm hex	2321544



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B11F.50	VG.B11 suction cup, FDA-compliant silicone, 50 Shore	2321541



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414

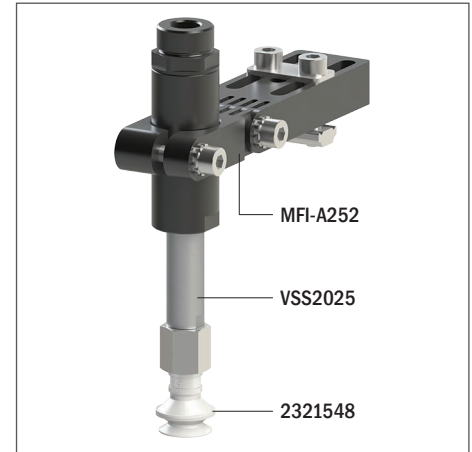




## VG.B16F bellows suction cups in FDA-compliant silicone

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height

Application example



### Technical data

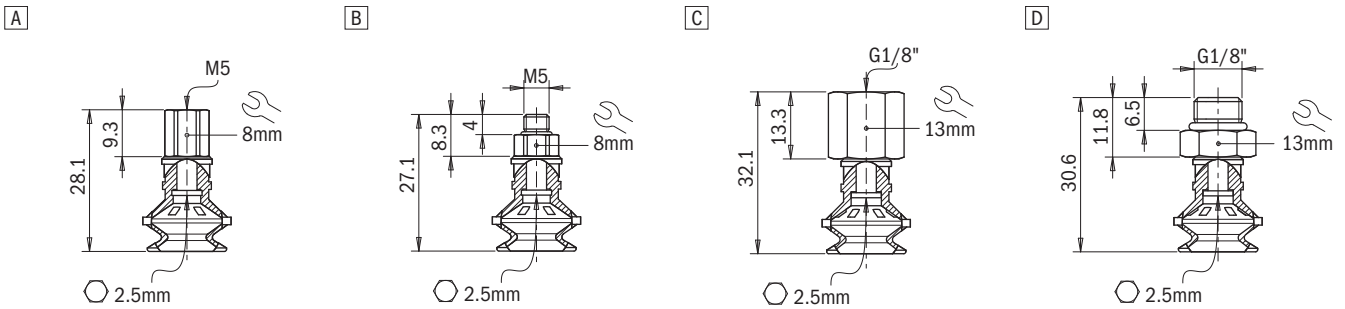
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	3	5.8	8.5	1.71	3.1	3.9	1.1	5	6.5	2.1

### Technical features

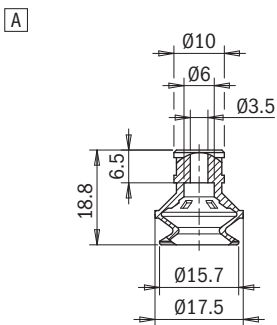
Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

**Identification codes**

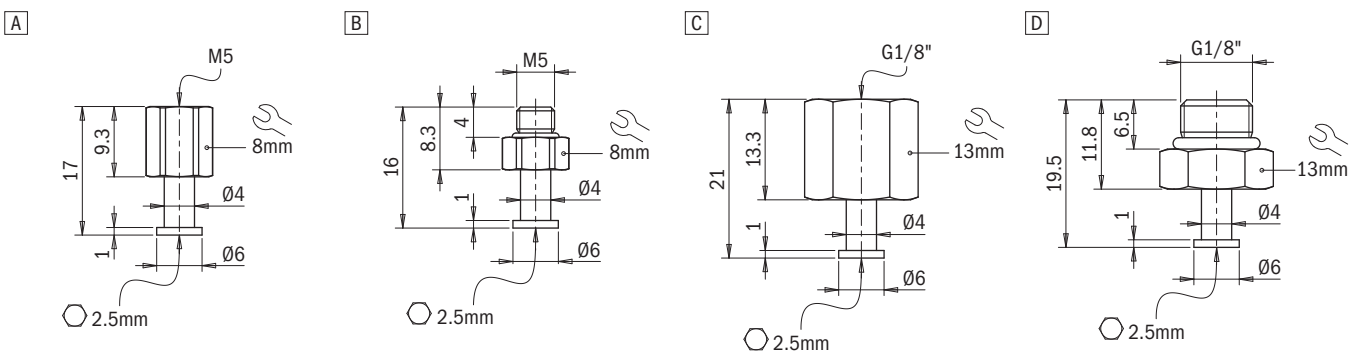
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B16F.50.M5F.E8	VG.B16 suction cup, FDA-compliant silicone, 50 Shore, M5 female, 8 mm hex	2321545
B	VG.B16F.50.M5M.E8	VG.B16 suction cup, FDA-compliant silicone, 50 Shore, M5 male, 8 mm hex	2321547
C	VG.B16F.50.G18F.E13	VG.B16 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 13 mm hex	2321548
D	VG.B16F.50.G18M.E13	VG.B16 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 13 mm hex	2321549


**Identification codes**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B16F.50	VG.B16 suction cup, FDA-compliant silicone, 50 Shore	2321546


**Identification codes**

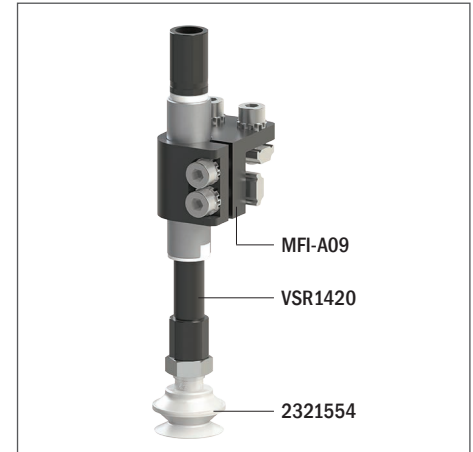
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414



## VG.B22F bellows suction cups in FDA-compliant silicone

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height

Application example



### Technical data

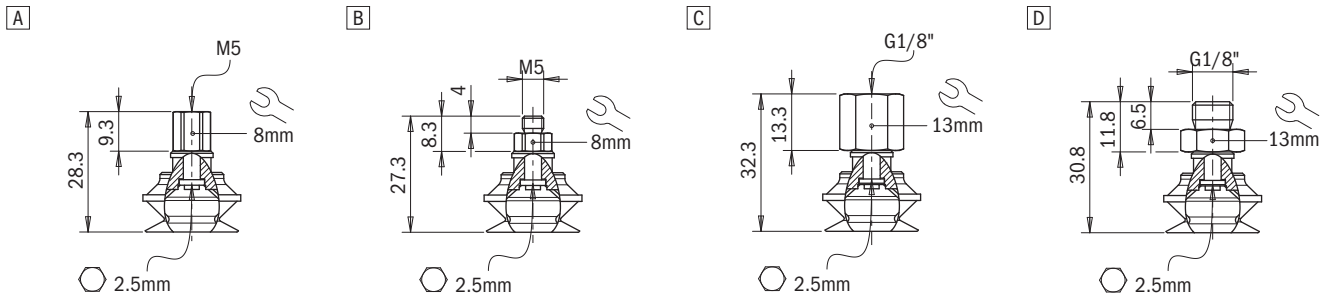
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	5.5	13	14	2.92	5.5	8.3	2.7	10	10	1.9

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

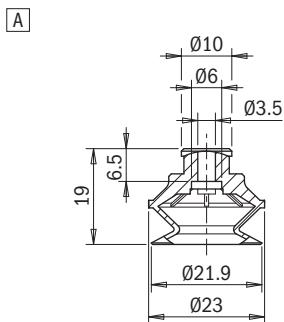
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B22F.50.M5F.E8	VG.B22 suction cup, FDA-compliant silicone, 50 Shore, M5 female, 8 mm hex	2321550
B	VG.B22F.50.M5M.E8	VG.B22 suction cup, FDA-compliant silicone, 50 Shore, M5 male, 8 mm hex	2321552
C	VG.B22F.50.G18F.E13	VG.B22 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 13 mm hex	2321553
D	VG.B22F.50.G18M.E13	VG.B22 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 13 mm hex	2321554



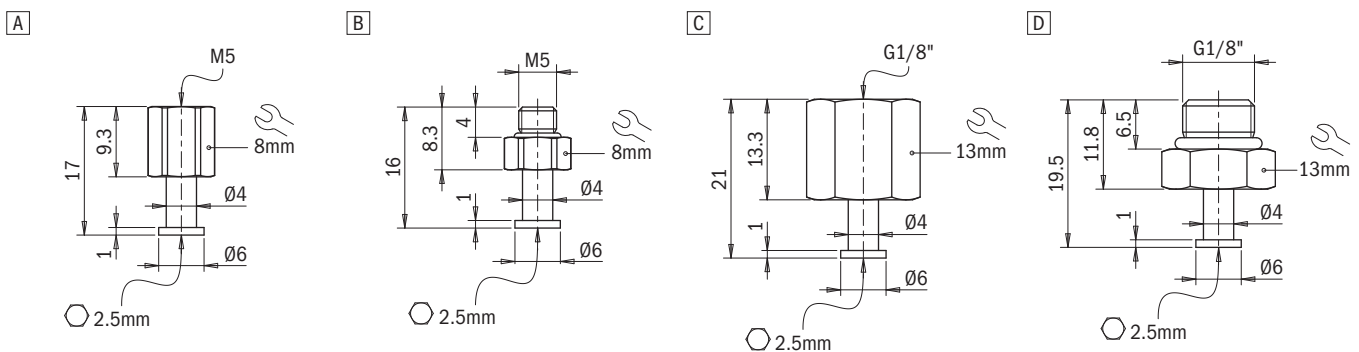
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B22F.50	VG.B22 suction cup, FDA-compliant silicone, 50 Shore	2321551



### Identification codes

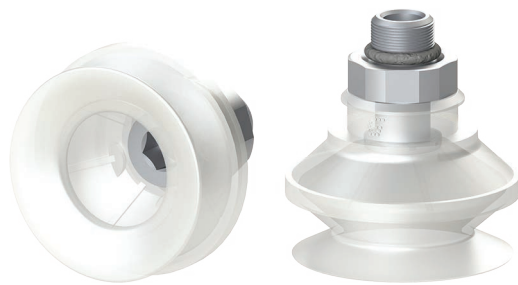
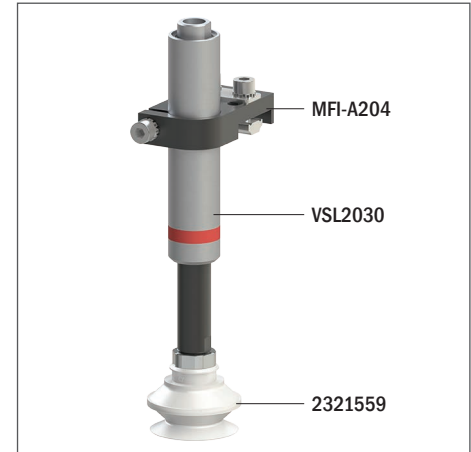
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414



## VG.B33F bellows suction cups in FDA-compliant silicone

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height

Application example



### Technical data

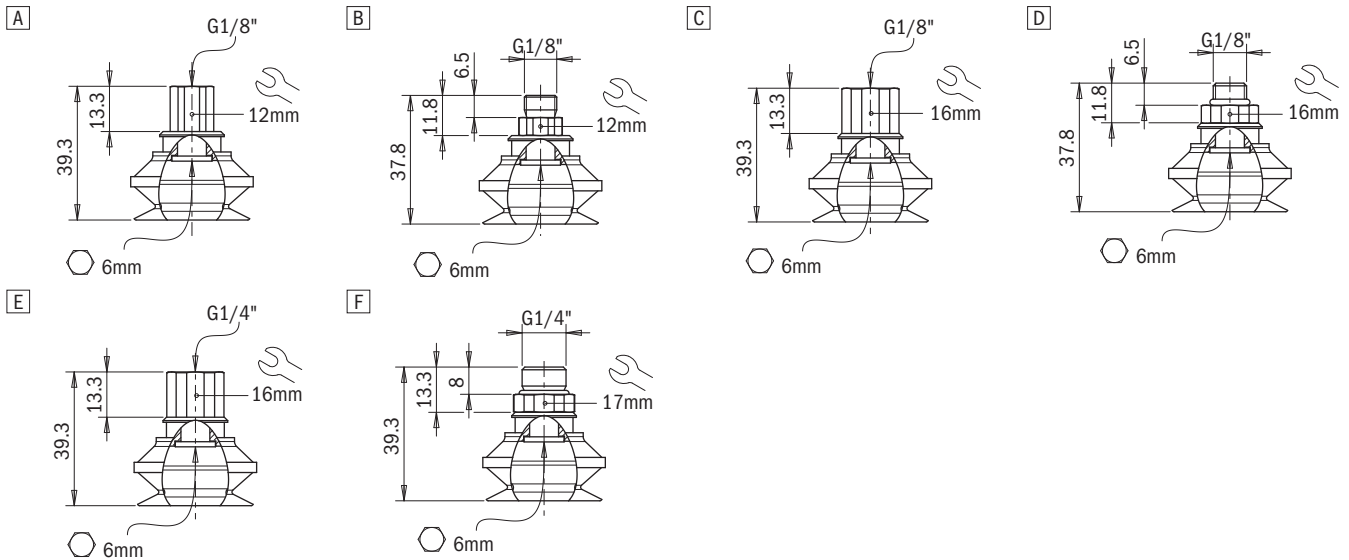
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	12	23	26	9.5	16.6	22.5	10	15	15	5.9

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

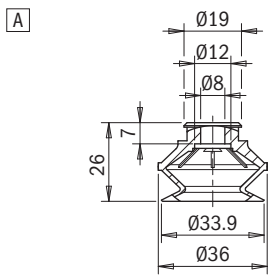
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B33F.50.G18F.E12	VG.B33 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 12 mm hex	2321555
B	VG.B33F.50.G18M.E12	VG.B33 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 12 mm hex	2321557
C	VG.B33F.50.G18F.E16	VG.B33 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 16 mm hex	2321558
D	VG.B33F.50.G18M.E16	VG.B33 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 16 mm hex	2321559
E	VG.B33F.50.G14F.E16	VG.B33 suction cup, FDA-compliant silicone, 50 Shore, G1/4" female, 16 mm hex	2321560
F	VG.B33F.50.G14M.E17	VG.B33 suction cup, FDA-compliant silicone, 50 Shore, G1/4" male, 17 mm hex	2321561



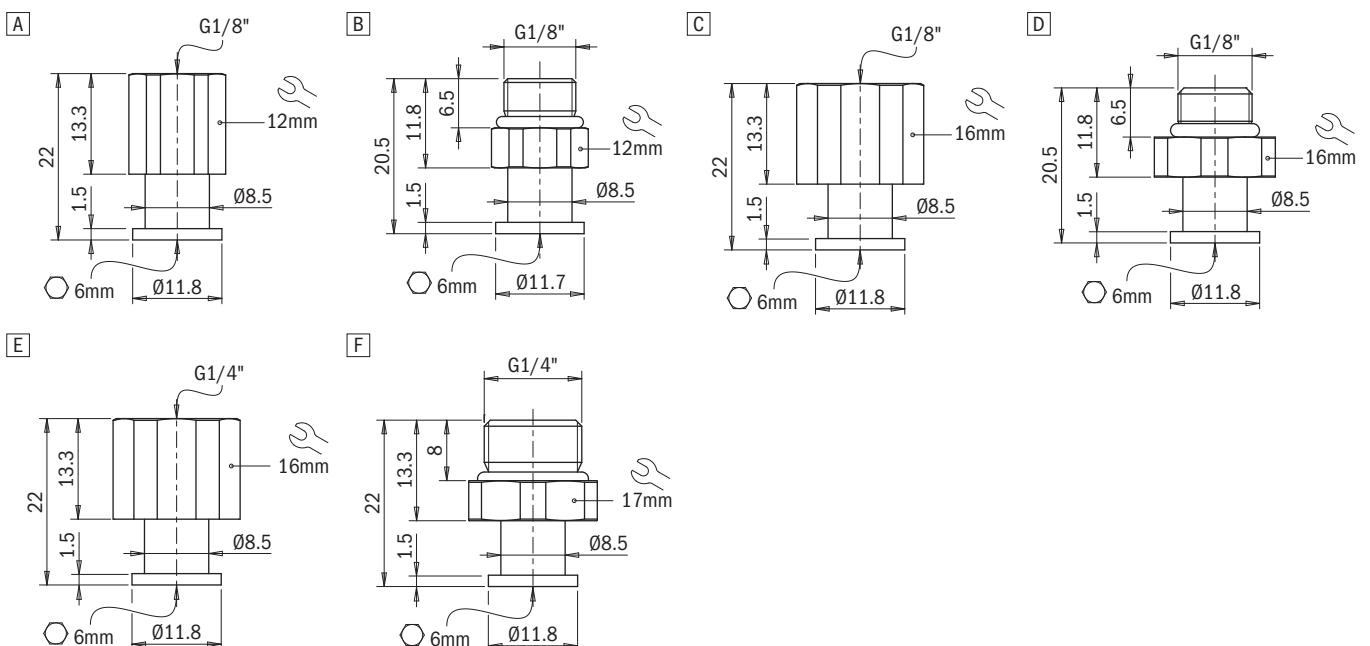
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B33F.50	VG.B33 suction cup, FDA-compliant silicone, 50 Shore	2321556



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



## VG.B42F bellows suction cups in FDA-compliant silicone

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height

Application example



### Technical data

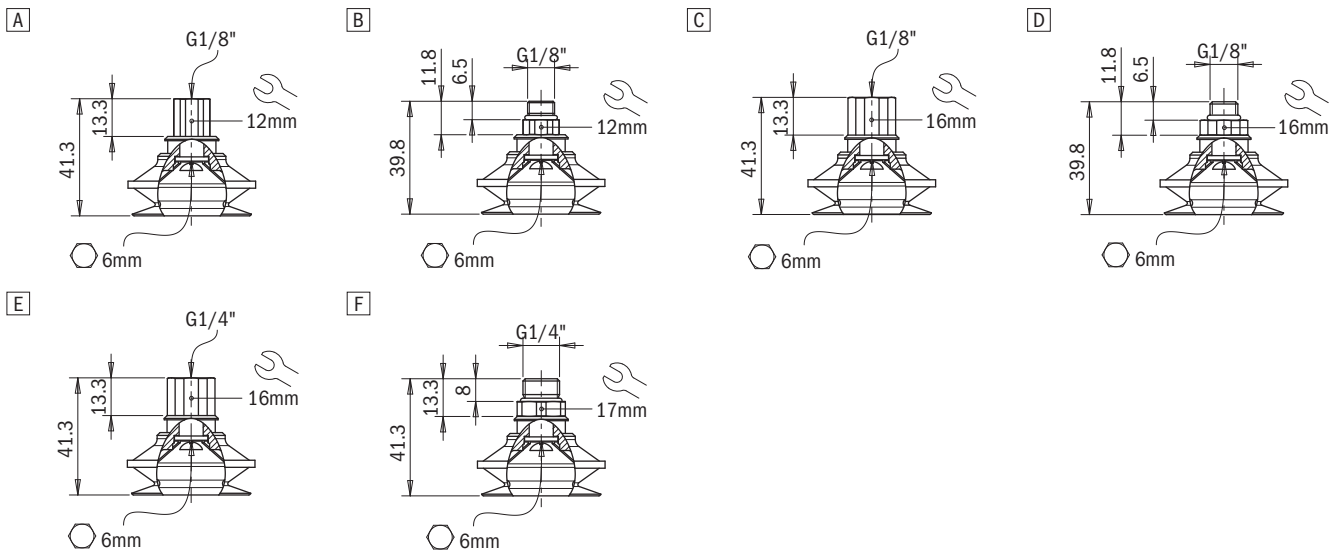
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	20	46	53	17.2	26.3	30.7	15	20	12	8.8

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

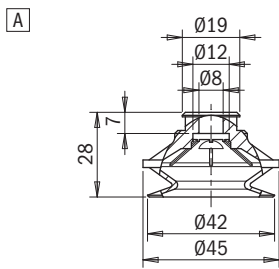
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B42F.50.G18F.E12	VG.B42 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 12 mm hex	2321562
B	VG.B42F.50.G18M.E12	VG.B42 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 12 mm hex	2321564
C	VG.B42F.50.G18F.E16	VG.B42 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 16 mm hex	2321565
D	VG.B42F.50.G18M.E16	VG.B42 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 16 mm hex	2321566
E	VG.B42F.50.G14F.E16	VG.B42 suction cup, FDA-compliant silicone, 50 Shore, G1/4" female, 16 mm hex	2321567
F	VG.B42F.50.G14M.E17	VG.B42 suction cup, FDA-compliant silicone, 50 Shore, G1/4" male, 17 mm hex	2321568



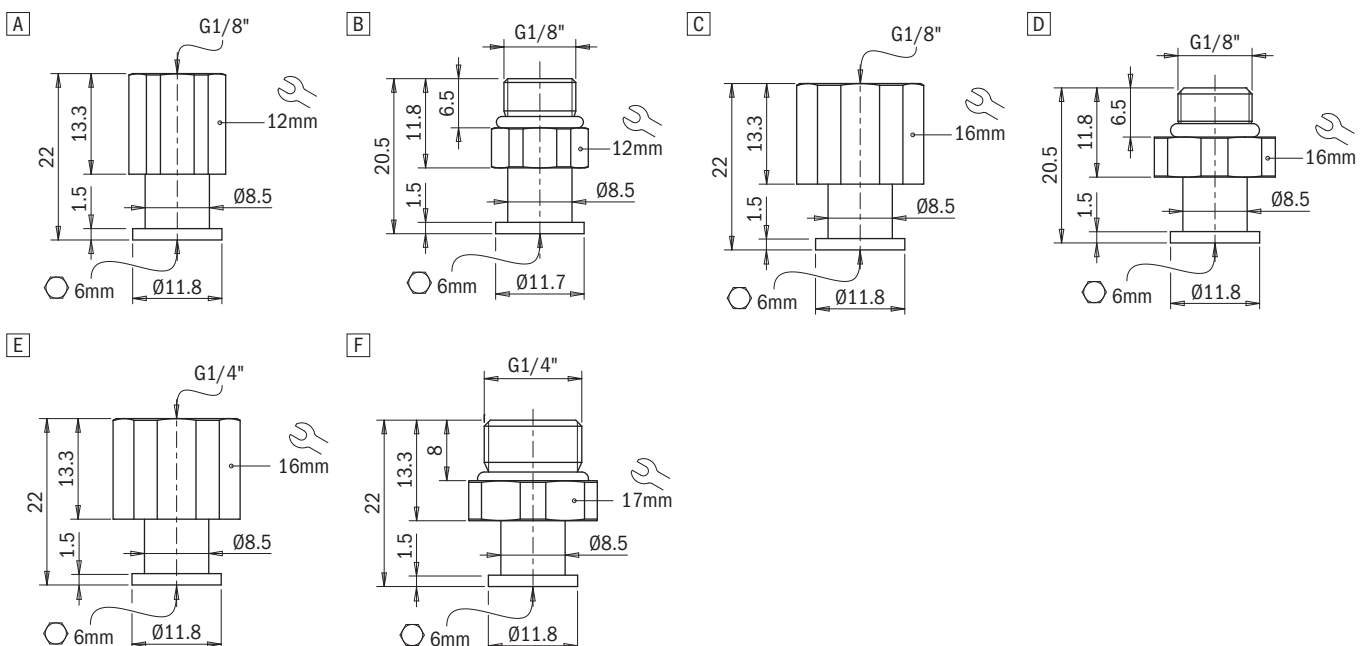
**Identification codes**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B42F.50	VG.B42 suction cup, FDA-compliant silicone, 50 Shore	2321563



**Identification codes**

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432

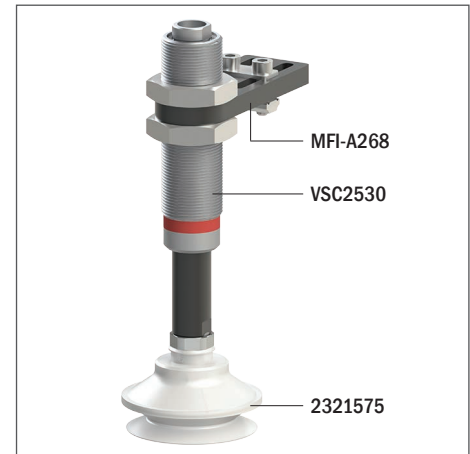




## VG.B53F bellows suction cups in FDA-compliant silicone

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Suitable for objects with flat or slightly curved surfaces
- They enable to compensate for differences in height

Application example



### Technical data

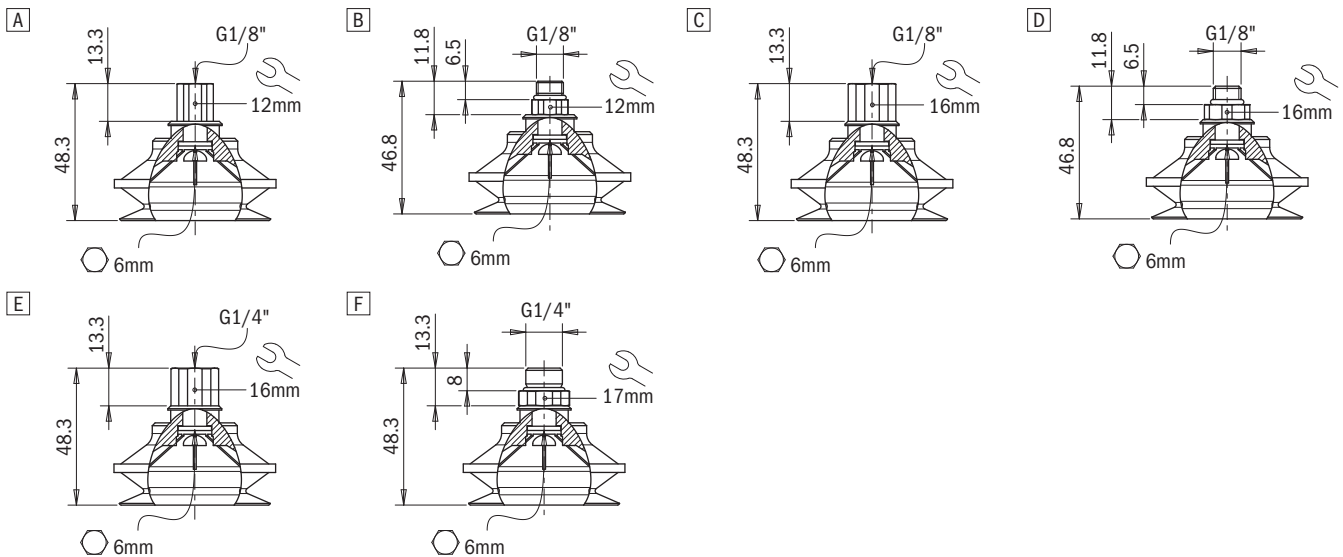
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	32	64.5	90	24.5	51.3	60.5	32	30	19	15.7

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

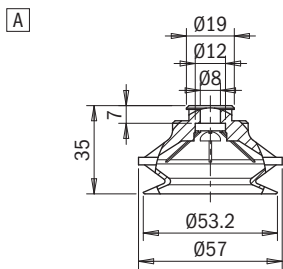
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B53F.50.G18F.E12	VG.B53 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 12 mm hex	2321569
B	VG.B53F.50.G18M.E12	VG.B53 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 12 mm hex	2321571
C	VG.B53F.50.G18F.E16	VG.B53 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 16 mm hex	2321572
D	VG.B53F.50.G18M.E16	VG.B53 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 16 mm hex	2321573
E	VG.B53F.50.G14F.E16	VG.B53 suction cup, FDA-compliant silicone, 50 Shore, G1/4" female, 16 mm hex	2321574
F	VG.B53F.50.G14M.E17	VG.B53 suction cup, FDA-compliant silicone, 50 Shore, G1/4" male, 17 mm hex	2321575



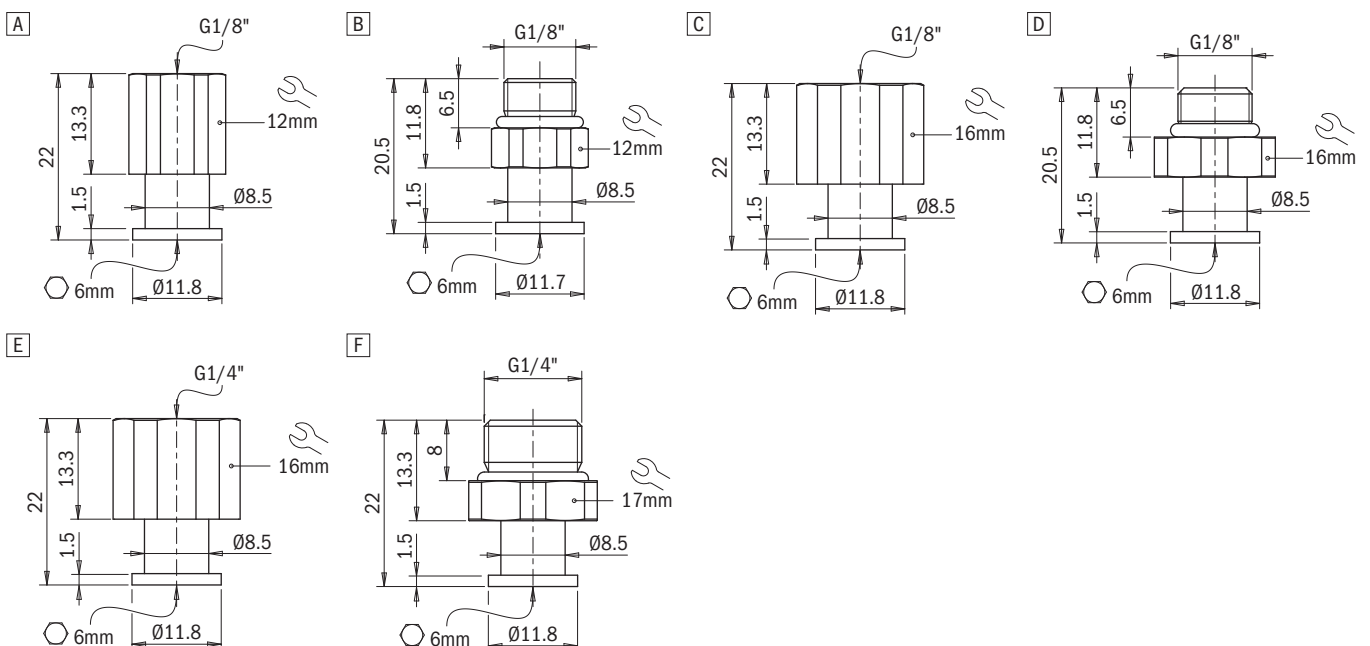
#### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B53F.50	VG.B53 suction cup, FDA-compliant silicone, 50 Shore	2321570



#### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432

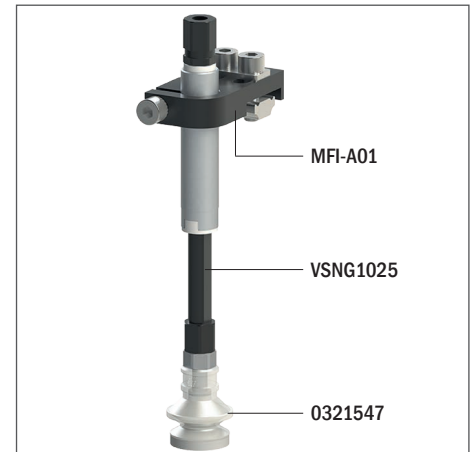


# Suction cups / FDA-compliant silicone with ring in silicone foam

## VG.B16F.SFO bellows suction cups in FDA-compliant silicone with silicone foam ring

- Ideal to handle uneven and porous surfaces
- High adaptability on rough wood panels, corrugated sheet metal and non-slip sheet metal
- Ring in mark-free silicone foam

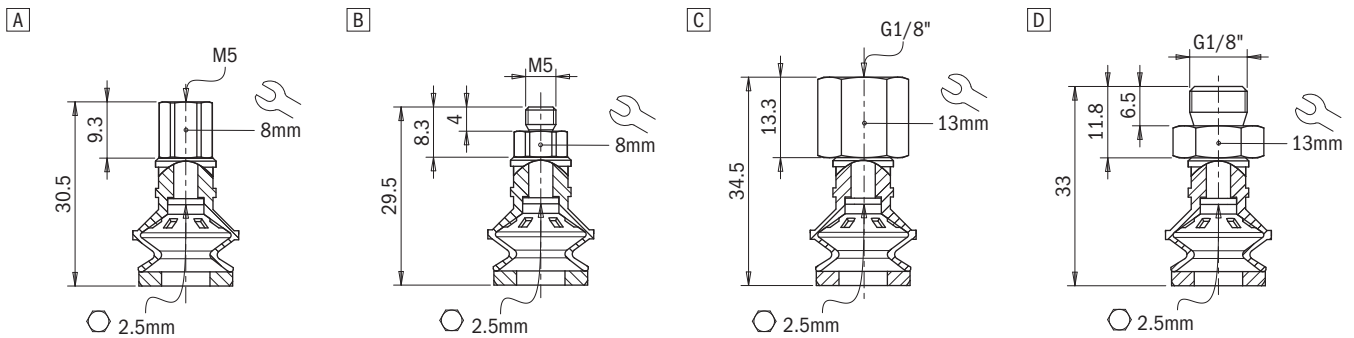
Application example



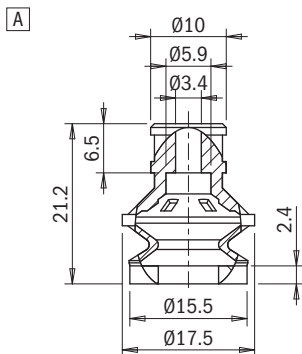
### Technical features

Material	Colour	Temperature range
Silicone, FDA SIL	Transparent	-55 ÷ +200 °C

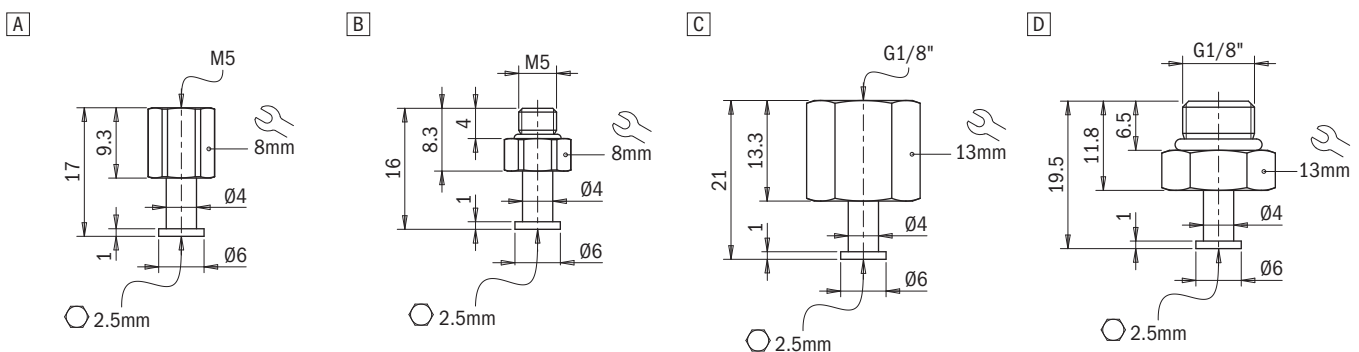
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B16F.50.M5F.E8.SFO	VG.B16 suction cup, FDA-compliant silicone, 50 Shore, M5 female, 8 mm hex with silicone foam ring	0321545
B	VG.B16F.50.M5M.E8.SFO	VG.B16 suction cup, FDA-compliant silicone, 50 Shore, M5 male, 8 mm hex with silicone foam ring	0321547
C	VG.B16F.50.G18F.E13.SFO	VG.B16 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 13 mm hex with silicone foam ring	0321548
D	VG.B16F.50.G18M.E13.SFO	VG.B16 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 13 mm hex with silicone foam ring	0321549



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B16F.SFO	VG.B16 suction cup in FDA-compliant silicone, 50 Shore, with silicone foam ring	0321546



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414

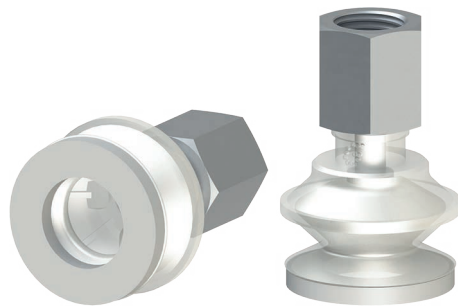
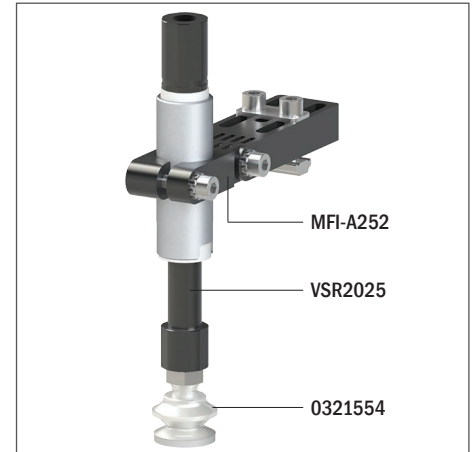


# Suction cups / FDA-compliant silicone with ring in silicone foam

## VG.B22F.SFO bellows suction cups in FDA-compliant silicone with silicone foam ring

- Ideal to handle uneven and porous surfaces
- High adaptability on rough wood panels, corrugated sheet metal and non-slip sheet metal
- Ring in mark-free silicone foam

Application example

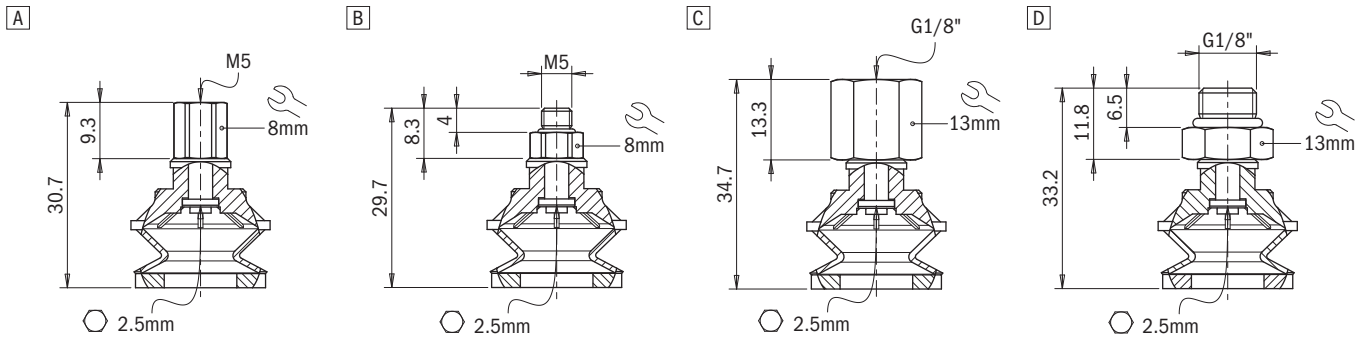


### Technical features

Material	Colour	Temperature range
Silicone, FDA SIL	Transparent	-55 ÷ +200 °C

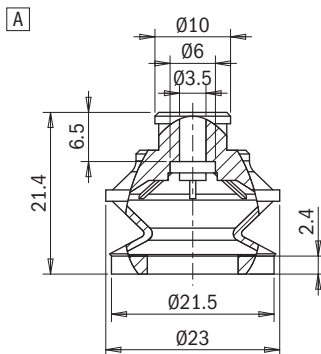
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B22F.50.M5F.E8.SFO	VG.B22 suction cup, FDA-compliant silicone, 50 Shore, M5 female, 8 mm hex with silicone foam ring	0321550
B	VG.B22F.50.M5M.E8.SFO	VG.B22 suction cup, FDA-compliant silicone, 50 Shore, M5 male, 8 mm hex with silicone foam ring	0321552
C	VG.B22F.50.G18F.E13.SFO	VG.B22 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 13 mm hex with silicone foam ring	0321553
D	VG.B22F.50.G18M.E13.SFO	VG.B22 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 13 mm hex with silicone foam ring	0321554



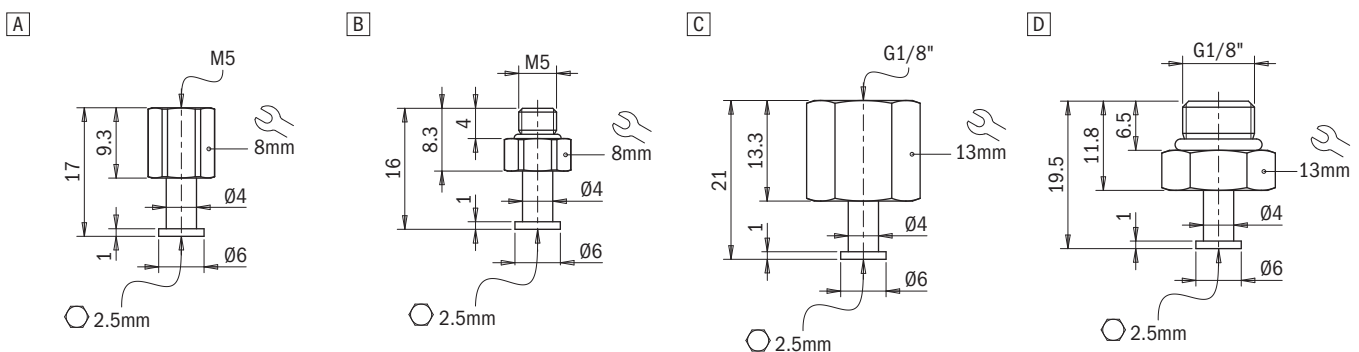
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B22F.SFO	VG.B22 suction cup in FDA-compliant silicone, 50 Shore, with silicone foam ring	0321551



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414



# Suction cups / FDA-compliant silicone with ring in silicone foam

## VG.B33F.SFO bellows suction cups in FDA-compliant silicone with silicone foam ring

- Ideal to handle uneven and porous surfaces
- High adaptability on rough wood panels, corrugated sheet metal and non-slip sheet metal
- Ring in mark-free silicone foam

Application example

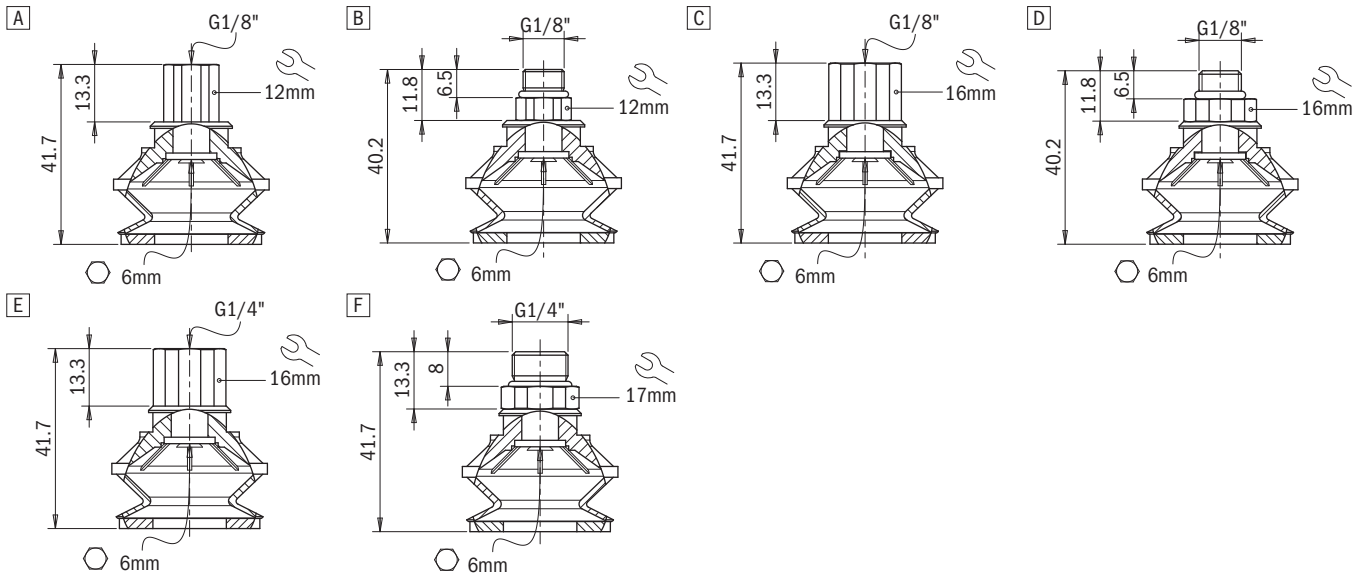


### Technical features

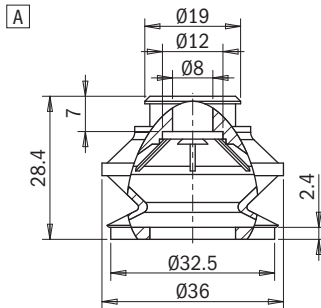
Material	Colour	Temperature range
Silicone, FDA SIL	Transparent	-55 ÷ +200 °C

### Identification codes

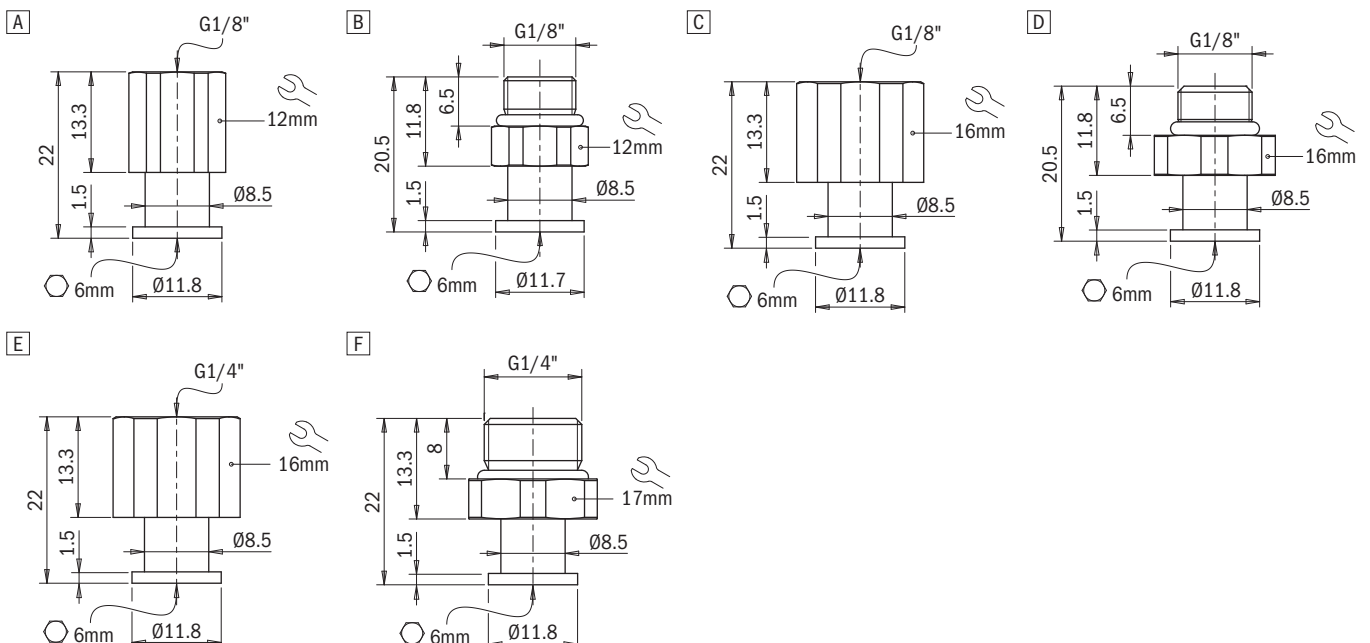
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B33F.50.G18F.E12.SFO	VG.B33 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 12 mm hex with silicone foam ring	0321555
B	VG.B33F.50.G18M.E12.SFO	VG.B33 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 12 mm hex with silicone foam ring	0321557
C	VG.B33F.50.G18F.E16.SFO	VG.B33 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 16 mm hex with silicone foam ring	0321558
D	VG.B33F.50.G18M.E16.SFO	VG.B22 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 16 mm hex with silicone foam ring	0321559
E	VG.B33F.50.G14F.E16.SFO	VG.B33 suction cup, FDA-compliant silicone, 50 Shore, G1/4" female, 16 mm hex with silicone foam ring	0321560
F	VG.B33F.50.G14M.E17.SFO	VG.B33 suction cup, FDA-compliant silicone, 50 Shore, G1/4" male, 17 mm hex with silicone foam ring	0321561


**Identification codes**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B33F.SFO	VG.B33 suction cup in FDA-compliant silicone, 50 Shore, with silicone foam ring	0321556


**Identification codes**

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



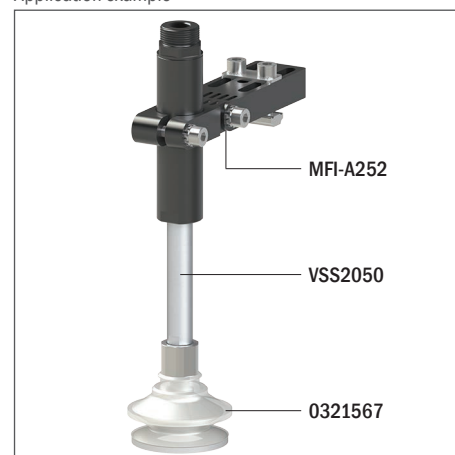


# Suction cups / FDA-compliant silicone with ring in silicone foam

## VG.B42F.SFO bellows suction cups in FDA-compliant silicone with silicone foam ring

- Ideal to handle uneven and porous surfaces
- High adaptability on rough wood panels, corrugated sheet metal and non-slip sheet metal
- Ring in mark-free silicone foam

Application example

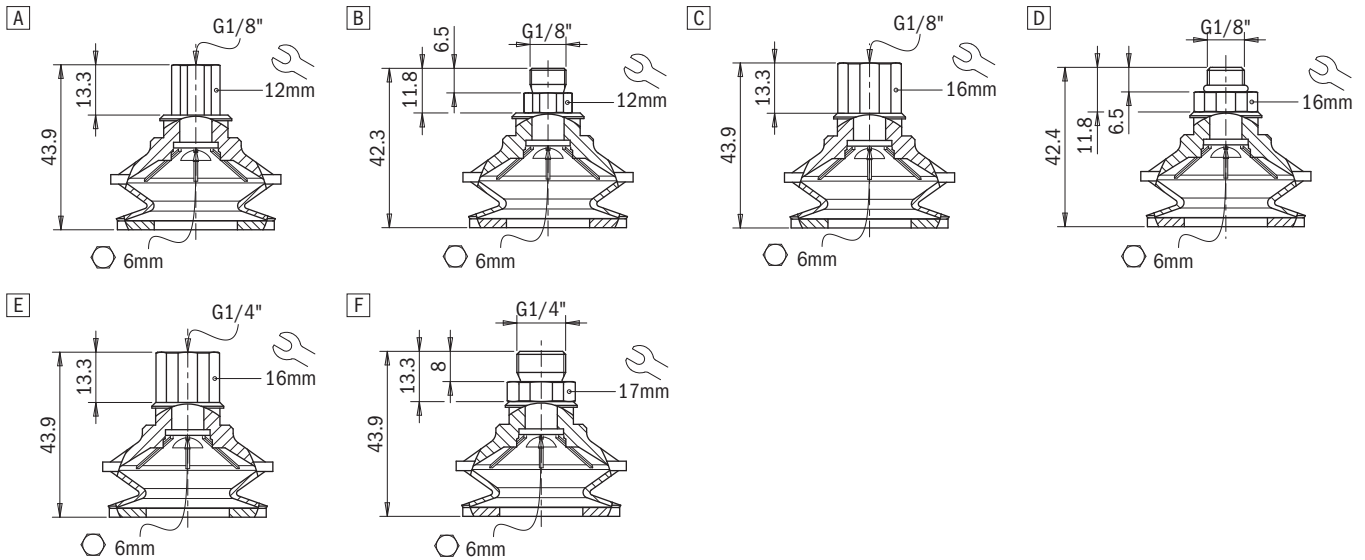


### Technical features

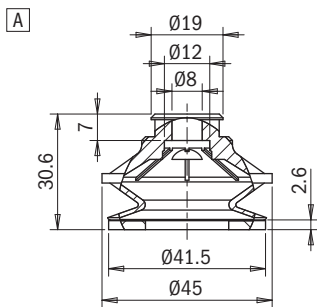
Material	Colour	Temperature range
Silicone, FDA SIL	Transparent	-55 ÷ +200 °C

### Identification codes

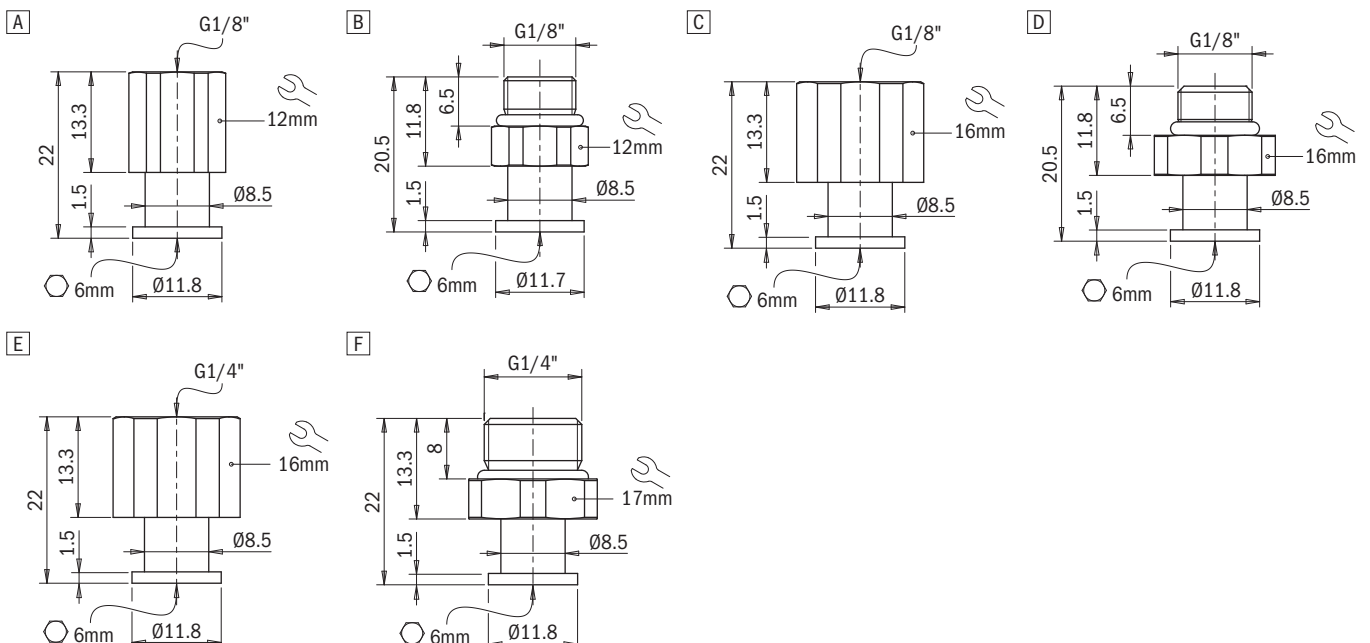
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B42F.50.G18F.E12.SFO	VG.B42 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 12 mm hex with silicone foam ring	0321562
B	VG.B42F.50.G18M.E12.SFO	VG.B42 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 12 mm hex with silicone foam ring	0321564
C	VG.B42F.50.G18F.E16.SFO	VG.B42 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 16 mm hex with silicone foam ring	0321565
D	VG.B42F.50.G18M.E16.SFO	VG.B42 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 16 mm hex with silicone foam ring	0321566
E	VG.B42F.50.G14F.E16.SFO	VG.B42 suction cup, FDA-compliant silicone, 50 Shore, G1/4" female, 16 mm hex with silicone foam ring	0321567
F	VG.B42F.50.G14M.E17.SFO	VG.B42 suction cup, FDA-compliant silicone, 50 Shore, G1/4" male, 17 mm hex with silicone foam ring	0321568


**Identification codes**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B42F.SFO	VG.B42 suction cup in FDA-compliant silicone, 50 Shore, with silicone foam ring	0321563


**Identification codes**

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



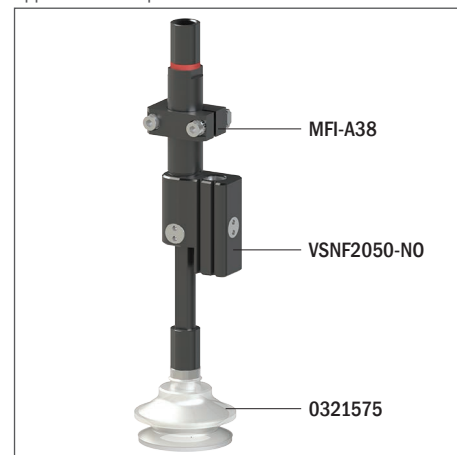
# Suction cups / FDA-compliant silicone with ring in silicone foam

## VG.B53F.SFO bellows suction cups in FDA-compliant silicone with silicone foam ring

- Ideal to handle uneven and porous surfaces
- High adaptability on rough wood panels, corrugated sheet metal and non-slip sheet metal
- Ring in mark-free silicone foam



Application example

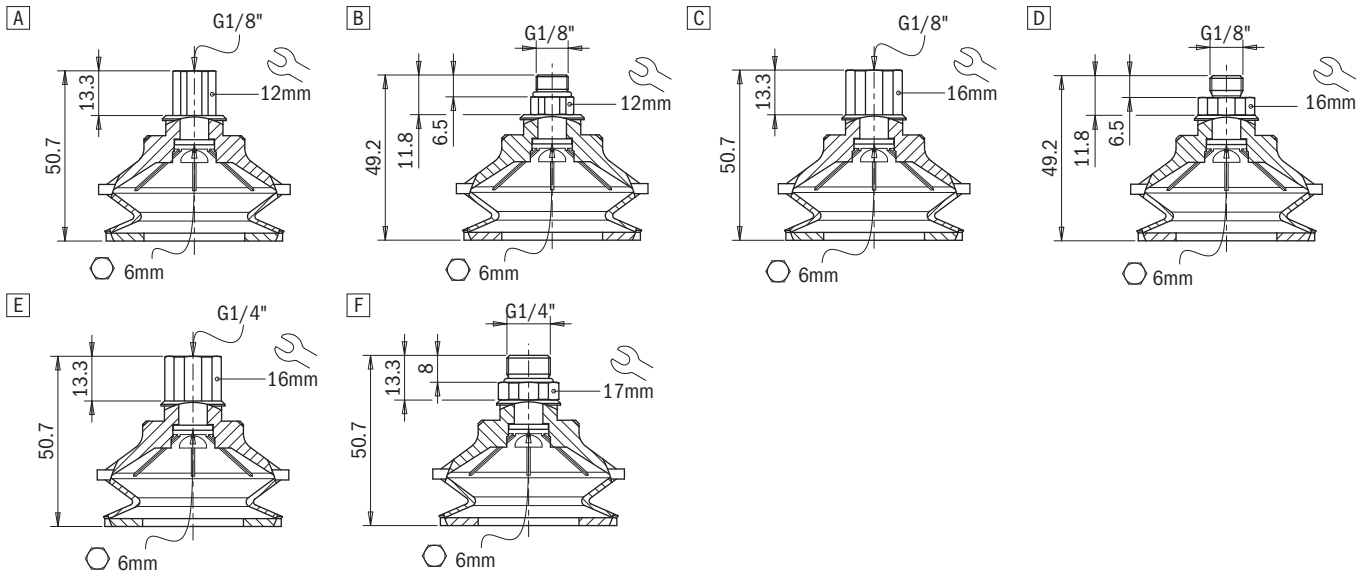


### Technical features

Material	Colour	Temperature range
Silicone, FDA SIL	Transparent	-55 ÷ +200 °C

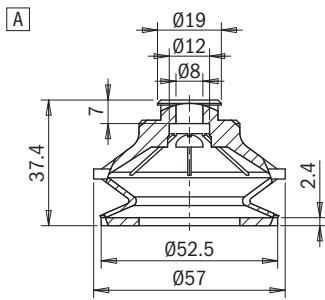
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.B53F.50.G18F.E12.SFO	VG.B53 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 12 mm hex with silicone foam ring	0321569
B	VG.B53F.50.G18M.E12.SFO	VG.B53 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 12 mm hex with silicone foam ring	0321571
C	VG.B53F.50.G18F.E16.SFO	VG.B53 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 16 mm hex with silicone foam ring	0321572
D	VG.B53F.50.G18M.E16.SFO	VG.B53 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 16 mm hex with silicone foam ring	0321573
E	VG.B53F.50.G14F.E16.SFO	VG.B53 suction cup, FDA-compliant silicone, 50 Shore, G1/4" female, 16 mm hex with silicone foam ring	0321574
F	VG.B53F.50.G14M.E17.SFO	VG.B53 suction cup, FDA-compliant silicone, 50 Shore, G1/4" male, 17 mm hex with silicone foam ring	0321575



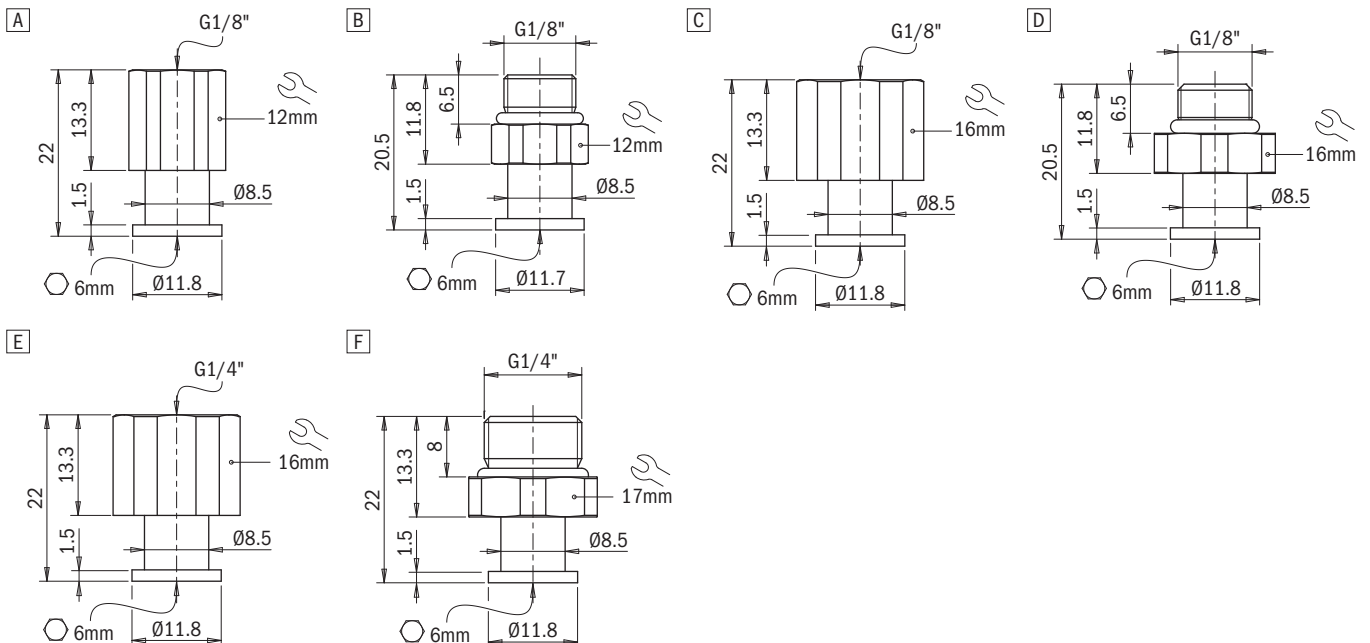
**Identification codes**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.B53F.SFO	VG.B53 suction cup in FDA-compliant silicone, 50 Shore, with silicone foam ring	0321570



**Identification codes**

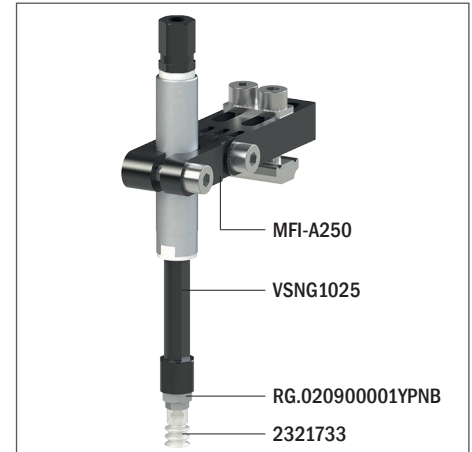
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



## VG.LB6F bellows suction cups in FDA-compliant silicone

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Enables to compensate for height differences and work with uneven or porous surfaces
- Ideal for leafing through and picking up fine items

Application example



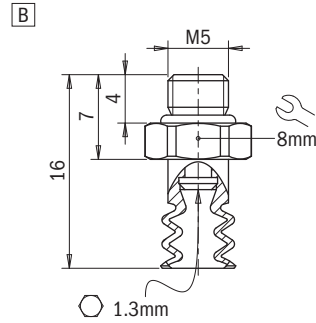
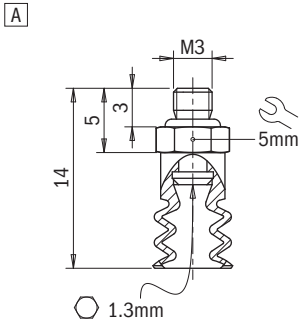
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	0.4	1.1	1.7	–	–	–	0.033	8	3	0.1

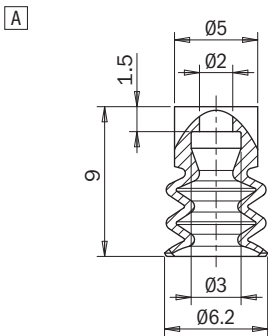
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

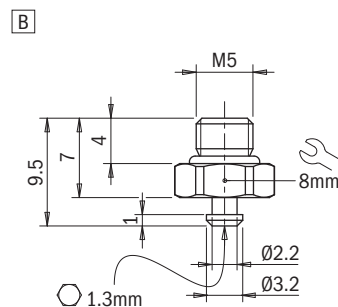
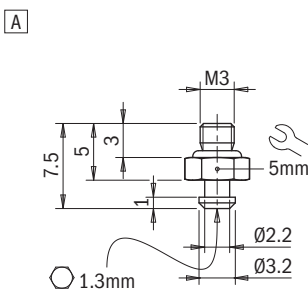
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB6F.50.M3M.E5	VG.LB6 suction cup, FDA-compliant silicone, 50 Shore, M3 male, 5 mm hex	2321733
B	VG.LB6F.50.M5M.E8	VG.LB6 suction cup, FDA-compliant silicone, 50 Shore, M5 male, 8 mm hex	2321033



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LB6F.50	VG.LB6 suction cup, FDA-compliant silicone, 50 Shore	2321734



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M3M.E5	M3 male fitting, 5 mm hex	2321402
B	FT.M5M.E8.06	M5 male fitting, 8 mm hex	2321005



## VG.LB9F bellows suction cups in FDA-compliant silicone

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Enables to compensate for height differences and work with uneven or porous surfaces
- Ideal for leafing through and picking up fine items

Application example



### Technical data

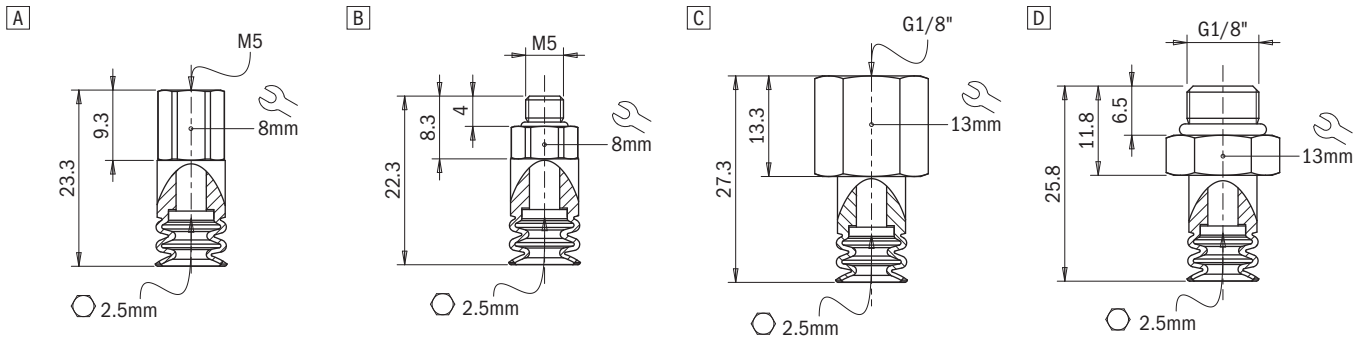
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	1.1	3	4.2	–	–	–	0.15	10	4	0.6

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

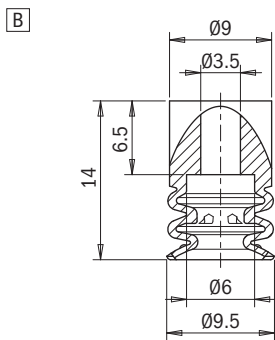
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB9F.50.M5F.E8	VG.LB9 suction cup, FDA-compliant silicone, 50 Shore, M5 female, 8 mm hex	2321735
B	VG.LB9F.50.M5M.E8	VG.LB9 suction cup, FDA-compliant silicone, 50 Shore, M5 male, 8 mm hex	2321737
C	VG.LB9F.50.G18F.E13	VG.LB9 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 13 mm hex	2321738
D	VG.LB9F.50.G18M.E13	VG.LB9 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 13 mm hex	2321739



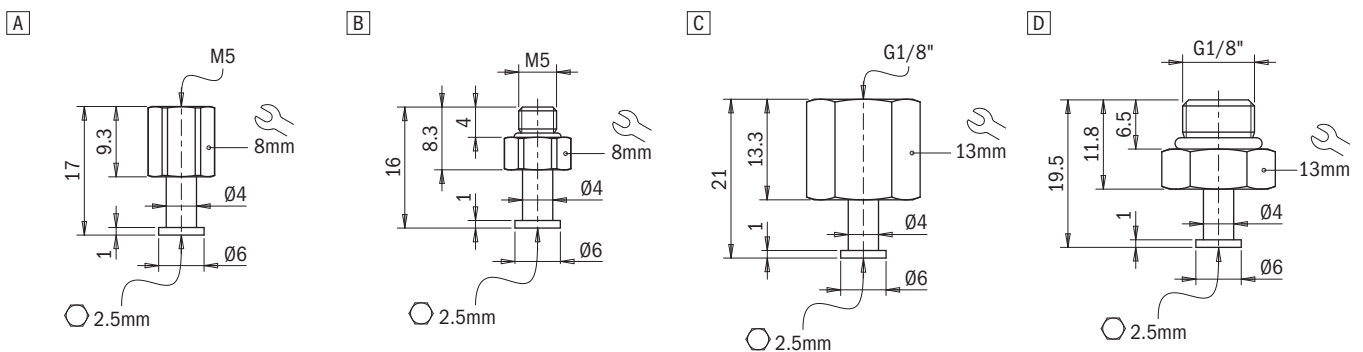
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LB9F.50	VG.LB9 suction cup, FDA-compliant silicone, 50 Shore	2321736



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414

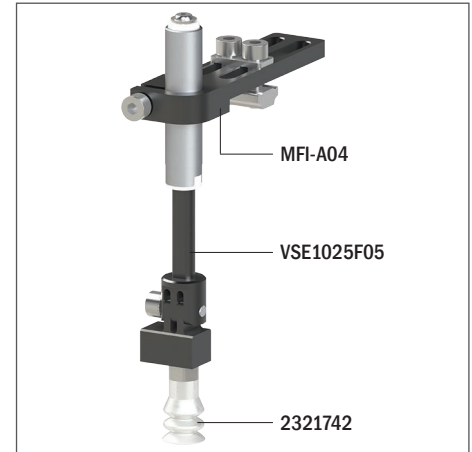




## VG.LB11F bellows suction cups in FDA-compliant silicone

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Enables to compensate for height differences and work with uneven or porous surfaces
- Ideal for leafing through and picking up fine items

Application example



### Technical data

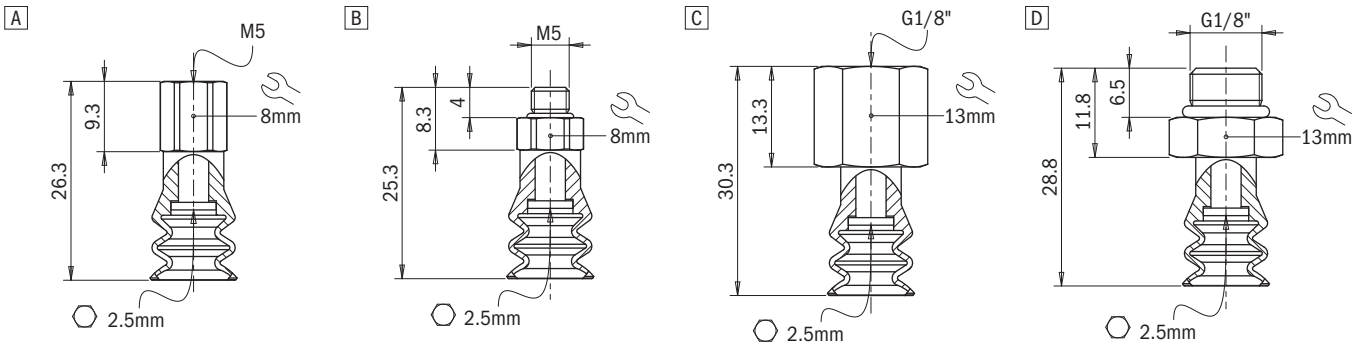
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	1.7	4.3	6.6	–	–	–	0.6	13	7	0.6

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

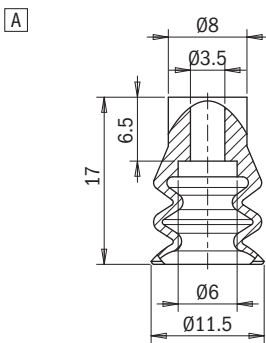
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB11F.50.M5F.E8	VG.LB11 suction cup, FDA-compliant silicone, 50 Shore, M5 female, 8 mm hex	2321740
B	VG.LB11F.50.M5M.E8	VG.LB11 suction cup, FDA-compliant silicone, 50 Shore, M5 male, 8 mm hex	2321742
C	VG.LB11F.50.G18F.E13	VG.LB11 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 13 mm hex	2321743
D	VG.LB11F.50.G18M.E13	VG.LB11 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 13 mm hex	2321744



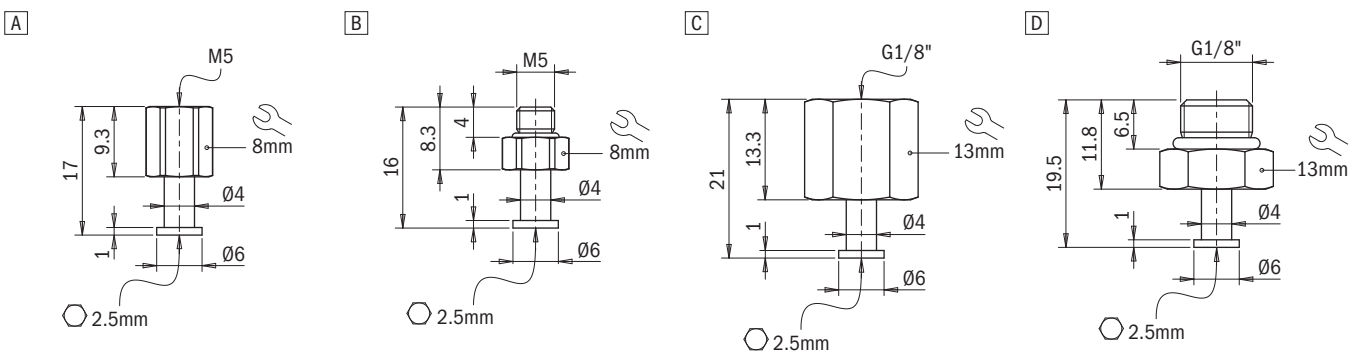
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LB11F.50	VG.LB11 suction cup, FDA-compliant silicone, 50 Shore	2321741



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414



## VG.LB16F bellows suction cups in FDA-compliant silicone

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Enables to compensate for height differences and work with uneven or porous surfaces
- Ideal for leafing through and picking up fine items

Application example



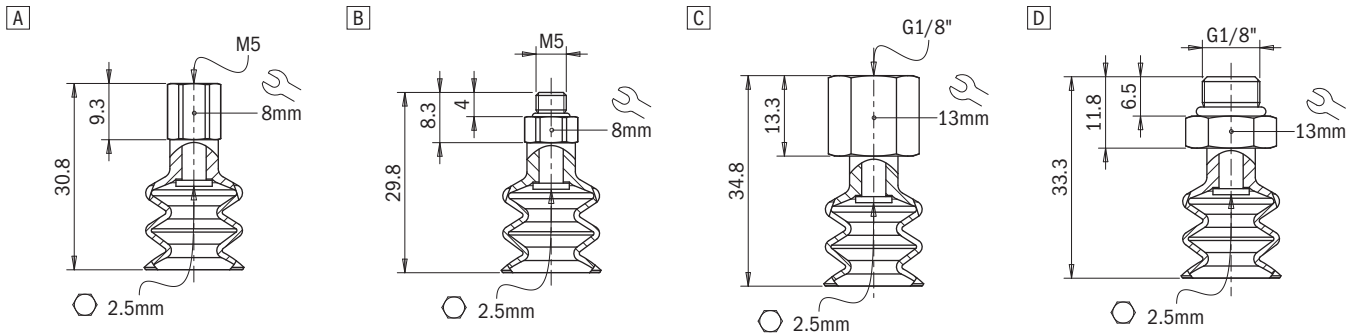
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	3.6	9.4	13.2	–	–	–	1.92	18	9	1.1

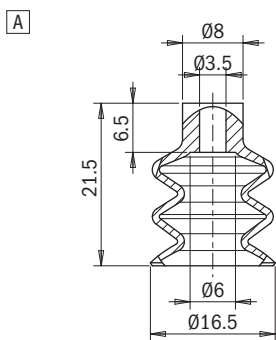
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

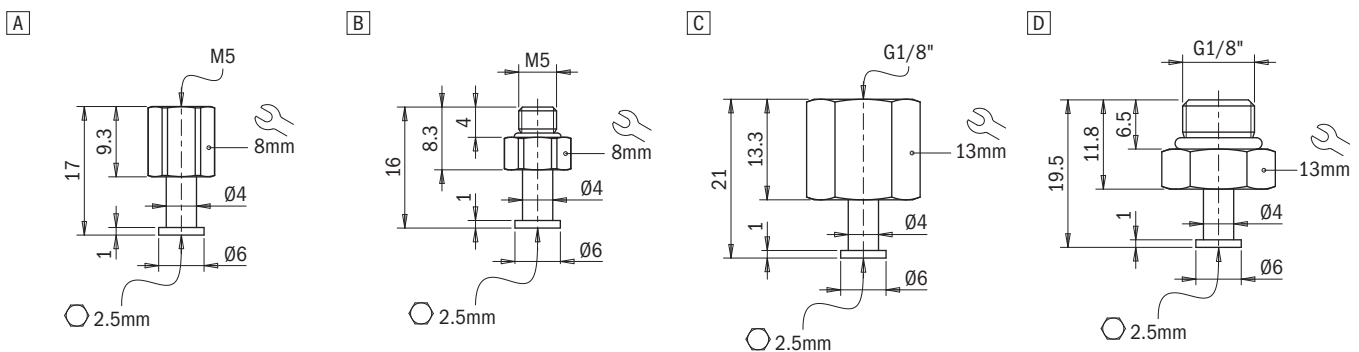
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB16F.50.M5F.E8	VG.LB16 suction cup, FDA-compliant silicone, 50 Shore, M5 female, 8 mm hex	2321745
B	VG.LB16F.50.M5M.E8	VG.LB16 suction cup, FDA-compliant silicone, 50 Shore, M5 male, 8 mm hex	2321747
C	VG.LB16F.50.G18F.E13	VG.LB16 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 13 mm hex	2321748
D	VG.LB16F.50.G18M.E13	VG.LB16 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 13 mm hex	2321749



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LB16F.50	VG.LB16 suction cup, FDA-compliant silicone, 50 Shore	2321746



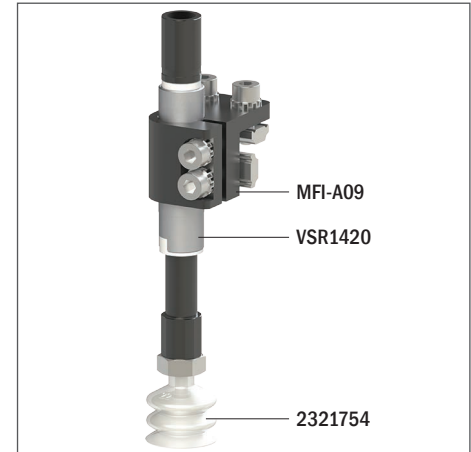
Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414



## VG.LB22F bellows suction cups in FDA-compliant silicone

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Enables to compensate for height differences and work with uneven or porous surfaces
- Ideal for leafing through and picking up fine items

Application example



### Technical data

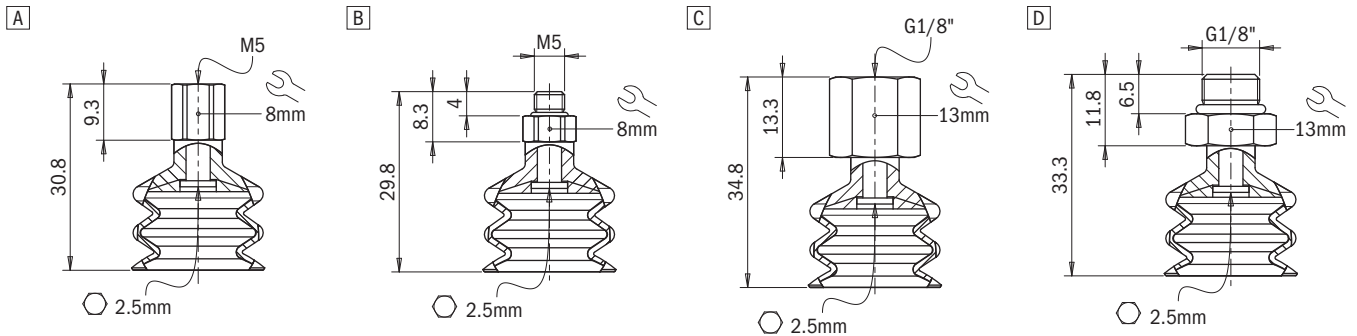
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	6.2	16.1	23.4	—	—	—	2	30	18	2.1

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

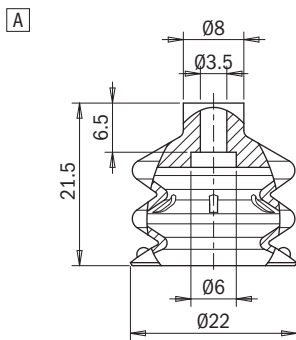
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB22F.50.M5F.E8	VG.LB22 suction cup, FDA-compliant silicone, 50 Shore, M5 female, 8 mm hex	2321750
B	VG.LB22F.50.M5M.E8	VG.LB22 suction cup, FDA-compliant silicone, 50 Shore, M5 male, 8 mm hex	2321752
C	VG.LB22F.50.G18F.E13	VG.LB22 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 13 mm hex	2321753
D	VG.LB22F.50.G18M.E13	VG.LB22 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 13 mm hex	2321754



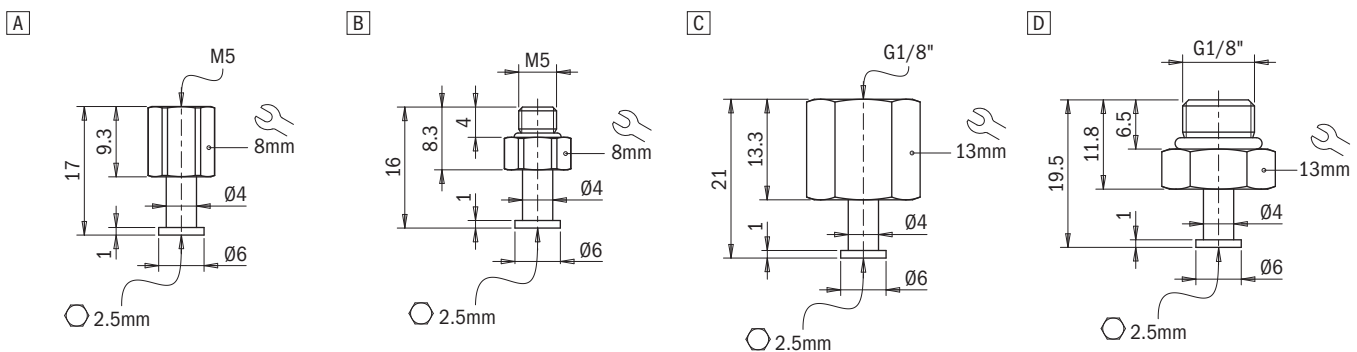
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LB22F.50	VG.LB22 suction cup, FDA-compliant silicone, 50 Shore	2321751



### Identification codes

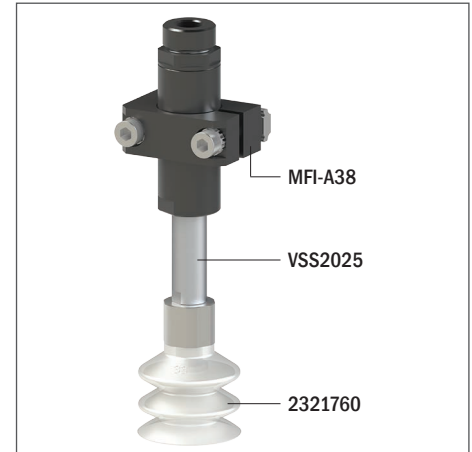
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414



## VG.LB33F bellows suction cups in FDA-compliant silicone

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Enables to compensate for height differences and work with uneven or porous surfaces
- Ideal for leafing through and picking up fine items

Application example



### Technical data

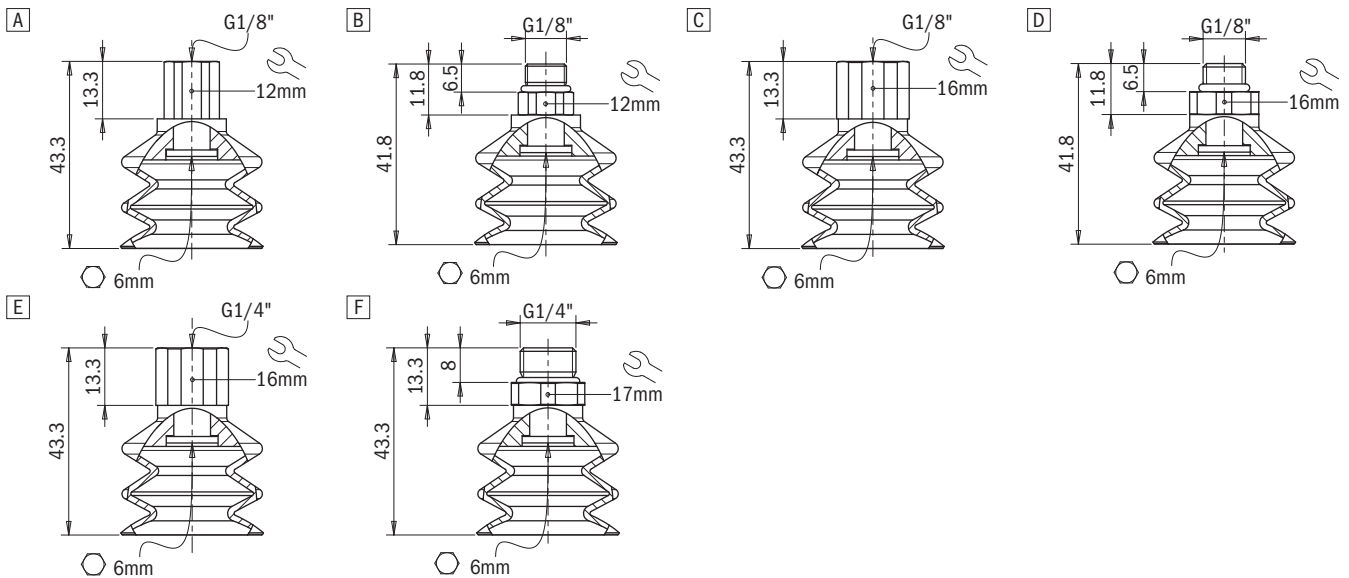
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	13.9	40.4	52.3	–	–	–	10	35	15	6.9

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

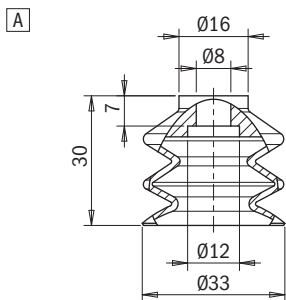
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB33F.50.G18F.E12	VG.LB33 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 12 mm hex	2321757
B	VG.LB33F.50.G18M.E12	VG.LB33 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 12 mm hex	2321759
C	VG.LB33F.50.G18F.E16	VG.LB33 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 16 mm hex	2321760
D	VG.LB33F.50.G18M.E16	VG.LB33 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 16 mm hex	2321761
E	VG.LB33F.50.G14F.E16	VG.LB33 suction cup, FDA-compliant silicone, 50 Shore, G1/4" female, 16 mm hex	2321762
F	VG.LB33F.50.G14M.E17	VG.LB33 suction cup, FDA-compliant silicone, 50 Shore, G1/4" male, 17 mm hex	2321763



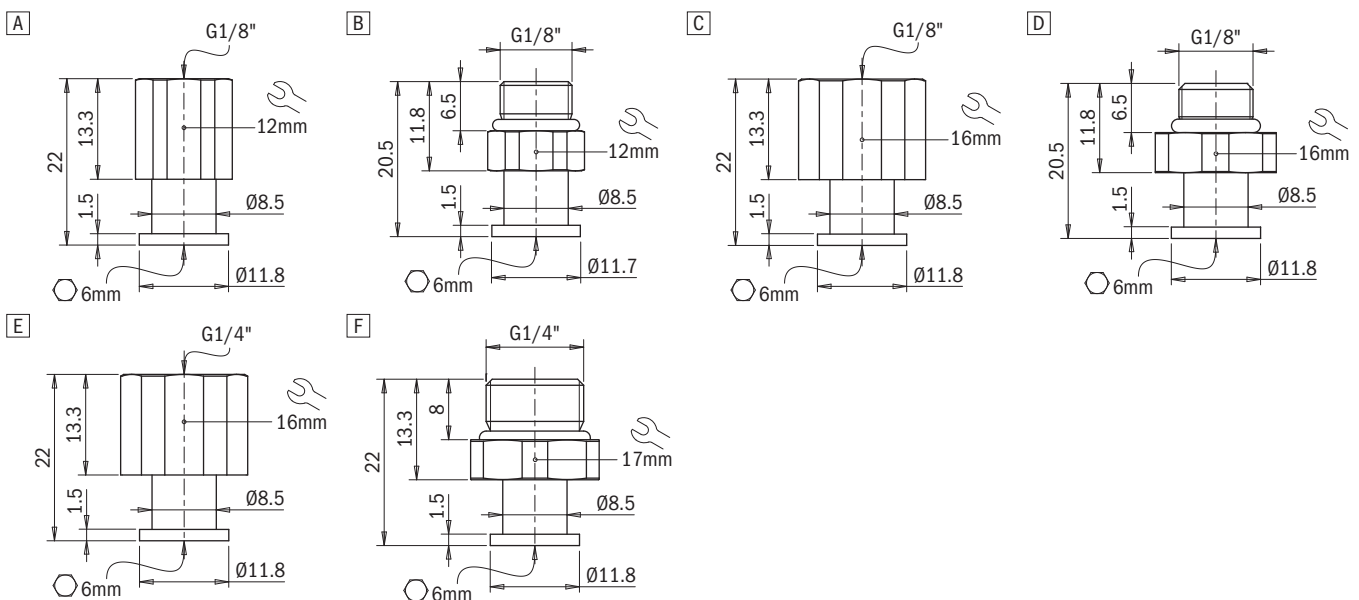
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LB33F.50	VG.LB33 suction cup, FDA-compliant silicone, 50 Shore	2321758



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432

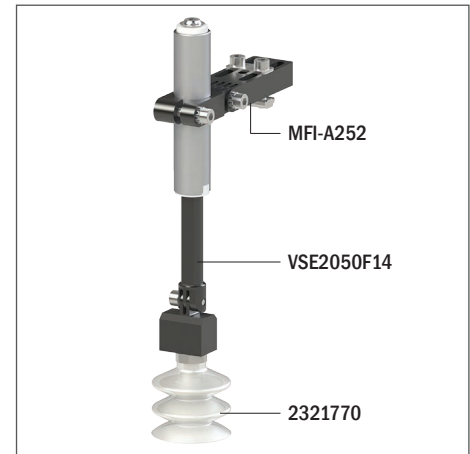




## VG.LB42F bellows suction cups in FDA-compliant silicone

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Enables to compensate for height differences and work with uneven or porous surfaces
- Ideal for leafing through and picking up fine items

Application example



### Technical data

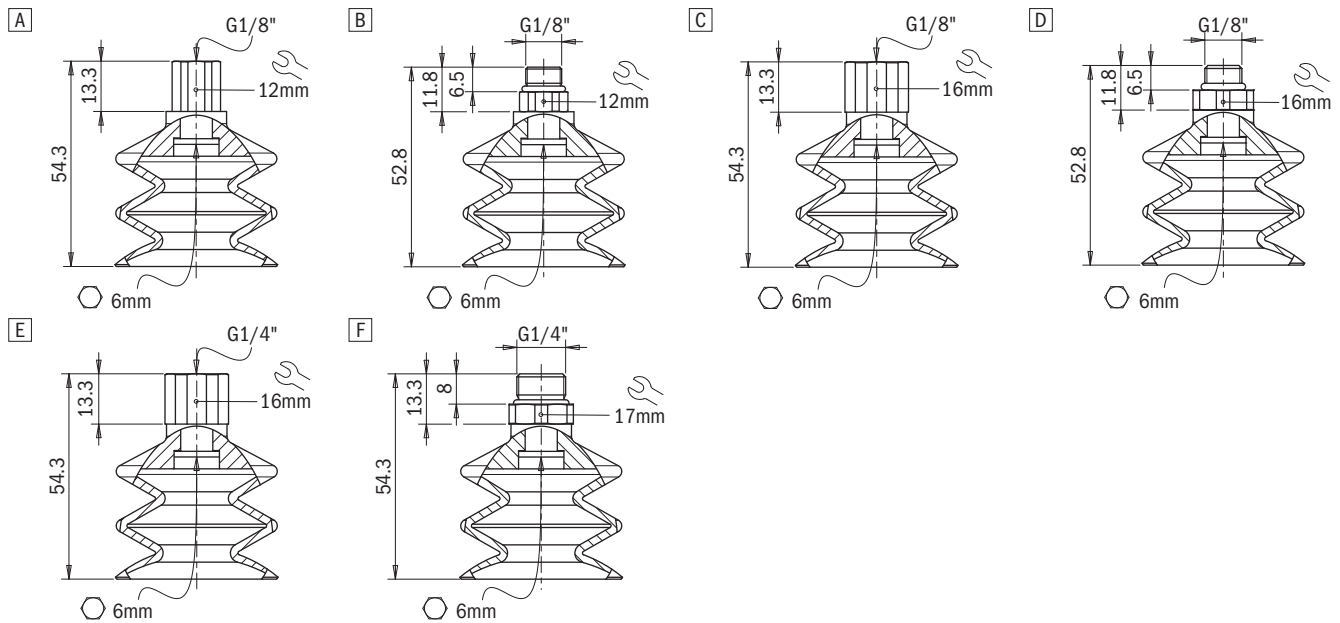
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	25.2	70.2	85.5	—	—	—	19	75	20	15.8

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

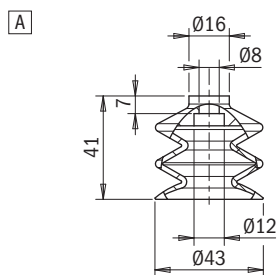
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB42F.50.G18F.E12	VG.LB42 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 12 mm hex	2321764
B	VG.LB42F.50.G18M.E12	VG.LB42 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 12 mm hex	2321766
C	VG.LB42F.50.G18F.E16	VG.LB42 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 16 mm hex	2321767
D	VG.LB42F.50.G18M.E16	VG.LB42 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 16 mm hex	2321768
E	VG.LB42F.50.G14F.E16	VG.LB42 suction cup, FDA-compliant silicone, 50 Shore, G1/4" female, 16 mm hex	2321769
F	VG.LB42F.50.G14M.E17	VG.LB42 suction cup, FDA-compliant silicone, 50 Shore, G1/4" male, 17 mm hex	2321770



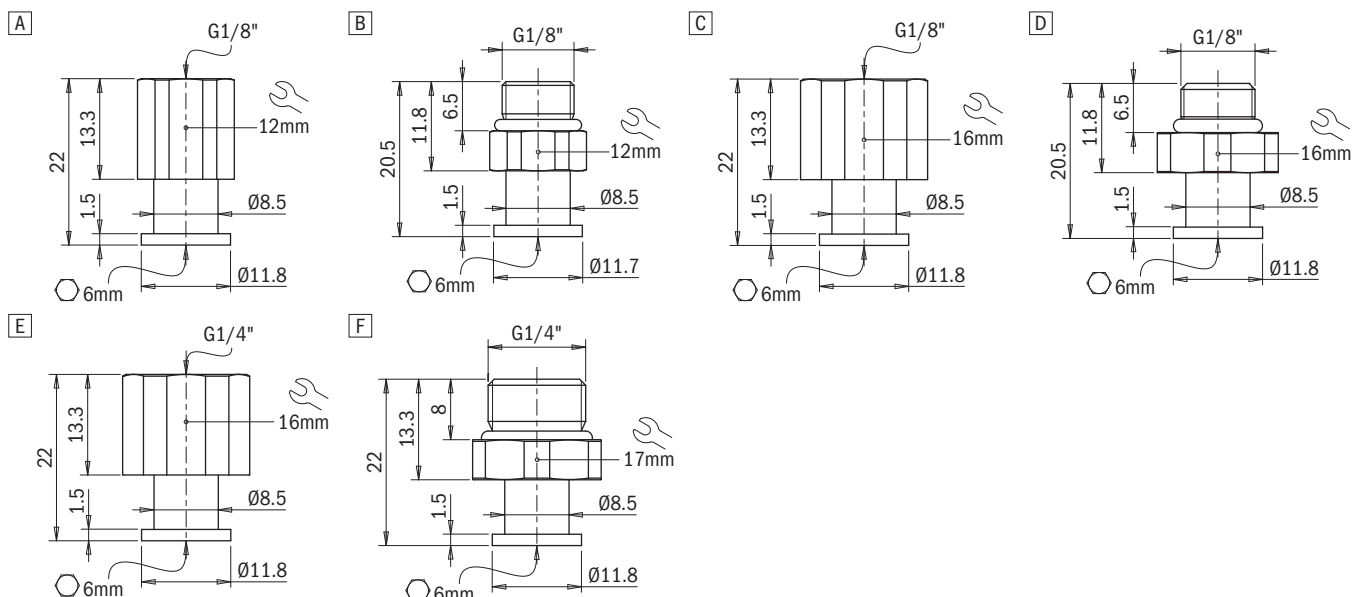
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LB42F.50	VG.LB42 suction cup, FDA-compliant silicone, 50 Shore	2321765



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432

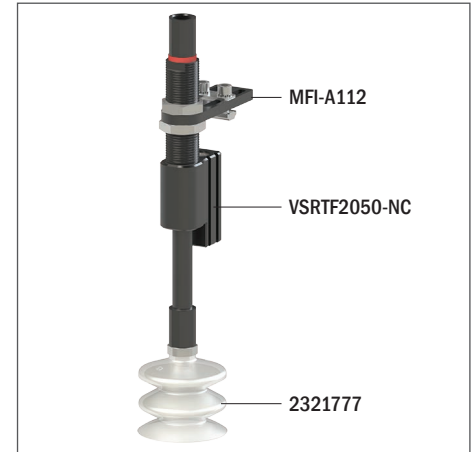


## VG.LB53F bellows suction cups in FDA-compliant silicone

- Food-grade silicone compound (FDA-approved)
- Suitable for high working temperatures
- Enables to compensate for height differences and work with uneven or porous surfaces
- Ideal for leafing through and picking up fine items



Application example



### Technical data

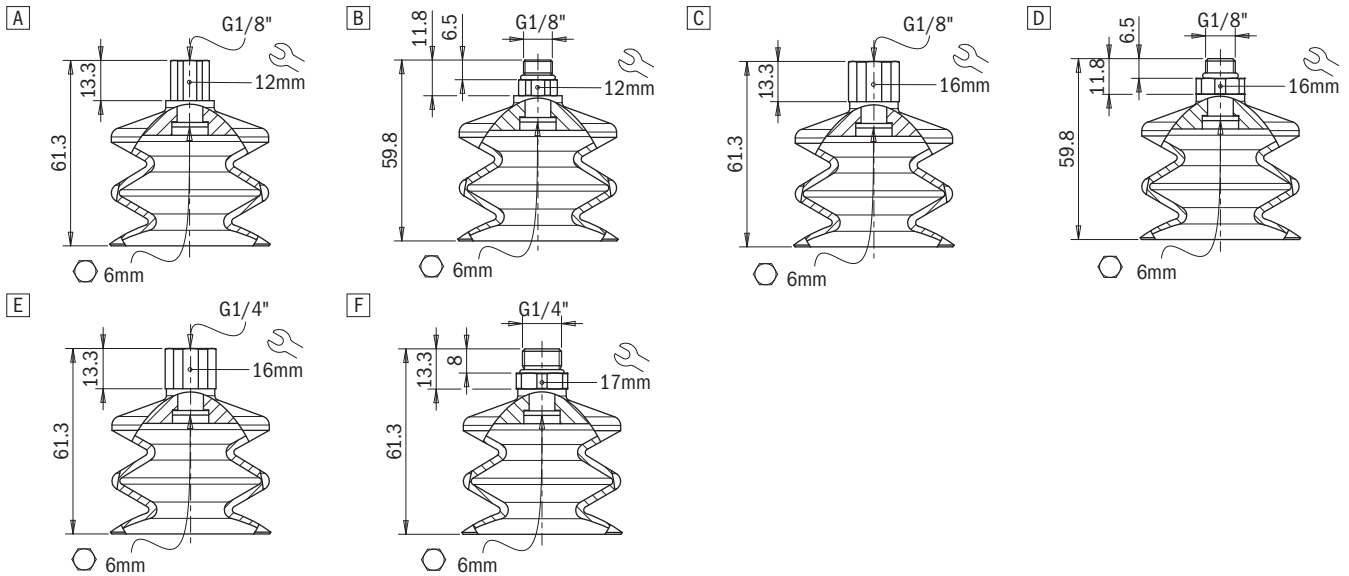
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vert. movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	34.3	58.1	67.2	–	–	–	37	80	25	26.1

### Technical features

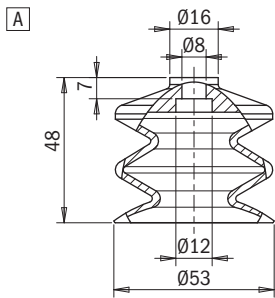
Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

### Identification codes

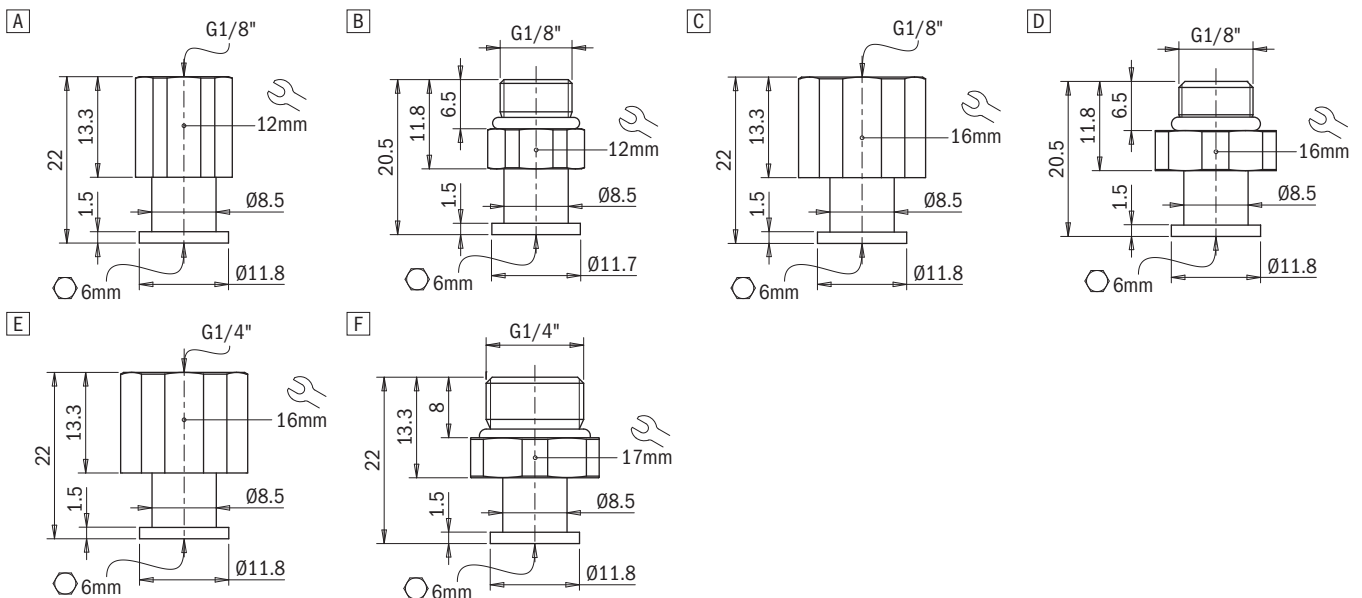
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB53F.50.G18F.E12	VG.LB53 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 12 mm hex	2321771
B	VG.LB53F.50.G18M.E12	VG.LB53 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 12 mm hex	2321773
C	VG.LB53F.50.G18F.E16	VG.LB53 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 16 mm hex	2321774
D	VG.LB53F.50.G18M.E16	VG.LB53 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 16 mm hex	2321775
E	VG.LB53F.50.G14F.E16	VG.LB53 suction cup, FDA-compliant silicone, 50 Shore, G1/4" female, 16 mm hex	2321776
F	VG.LB53F.50.G14M.E17	VG.LB53 suction cup, FDA-compliant silicone, 50 Shore, G1/4" male, 17 mm hex	2321777


**Identification codes**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LB53F.50	VG.LB53 suction cup, FDA-compliant silicone, 50 Shore	2321772


**Identification codes**

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



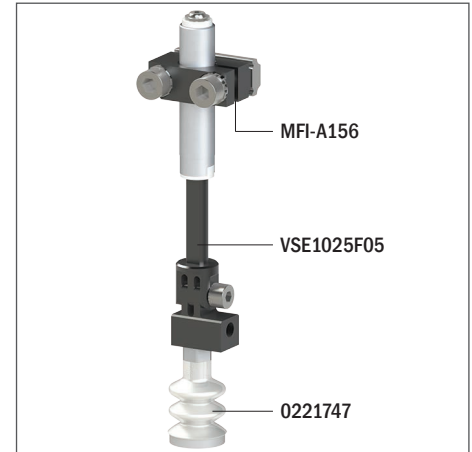
# Suction cups / FDA-compliant silicone with ring in silicone foam

## VG.LB16F.SFO bellows suction cups in FDA-compliant silicone with silicone foam ring

- Ideal to handle uneven and porous surfaces
- High adaptability on rough wood panels, corrugated sheet metal and non-slip sheet metal
- Ring in mark-free silicone foam
- They enable to compensate for differences in height



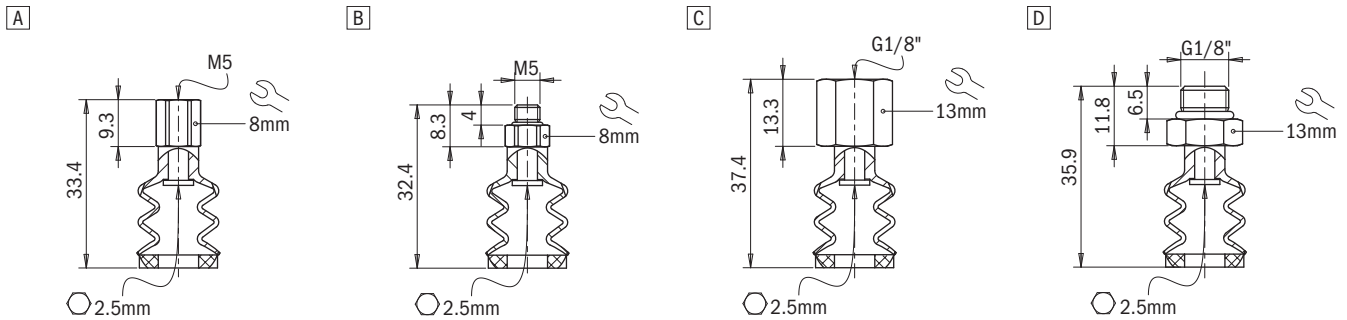
Application example



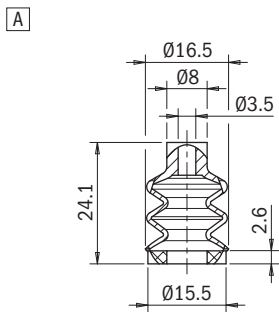
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

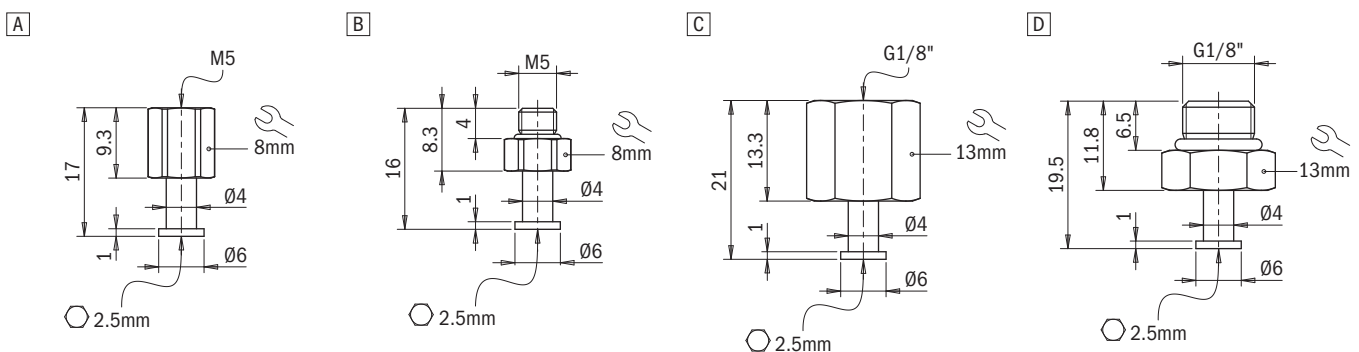
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB16F.50.M5F.E8.SFO	VG.LB16 suction cup, FDA-compliant silicone, 50 Shore, M5 female, 8 mm hex with silicone foam ring	0221745
B	VG.LB16F.50.M5M.E8.SFO	VG.LB16 suction cup, FDA-compliant silicone, 50 Shore, M5 male, 8 mm hex with silicone foam ring	0221747
C	VG.LB16F.50.G18F.E13.SFO	VG.LB16 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 13 mm hex with silicone foam ring	0221748
D	VG.LB16F.50.G18M.E13.SFO	VG.LB16 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 13 mm hex with silicone foam ring	0221749



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LB16F.50.SFO	VG.LB16 suction cup, FDA-compliant silicone, 50 Shore, with silicone foam ring	0221746



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414

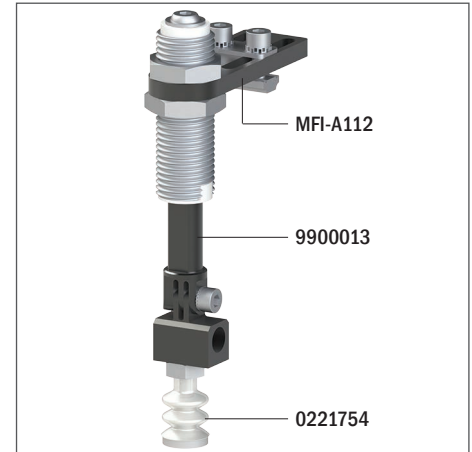


# Suction cups / FDA-compliant silicone with ring in silicone foam

## VG.LB22F.SFO bellows suction cups in FDA-compliant silicone with silicone foam ring

- Ideal to handle uneven and porous surfaces
- High adaptability on rough wood panels, corrugated sheet metal and non-slip sheet metal
- Ring in mark-free silicone foam
- They enable to compensate for differences in height

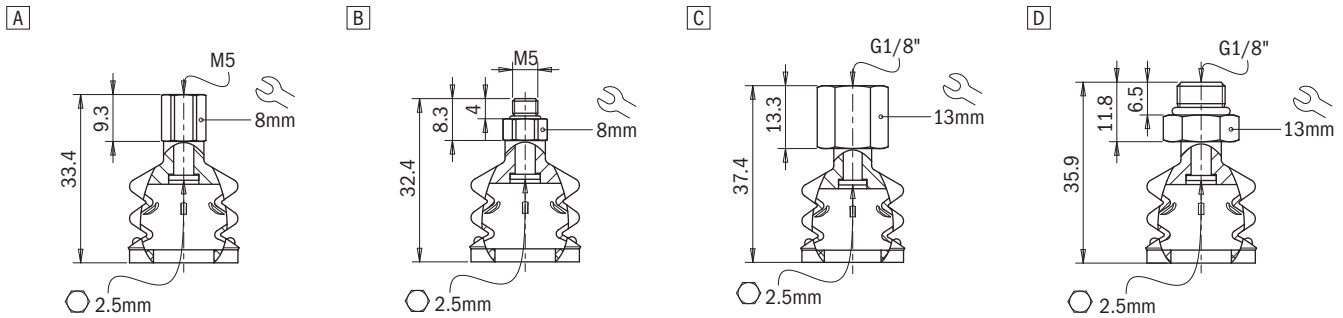
Application example



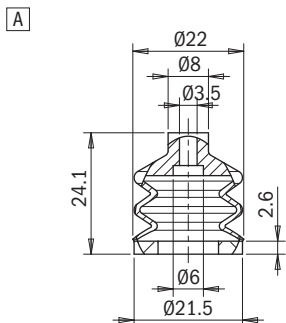
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

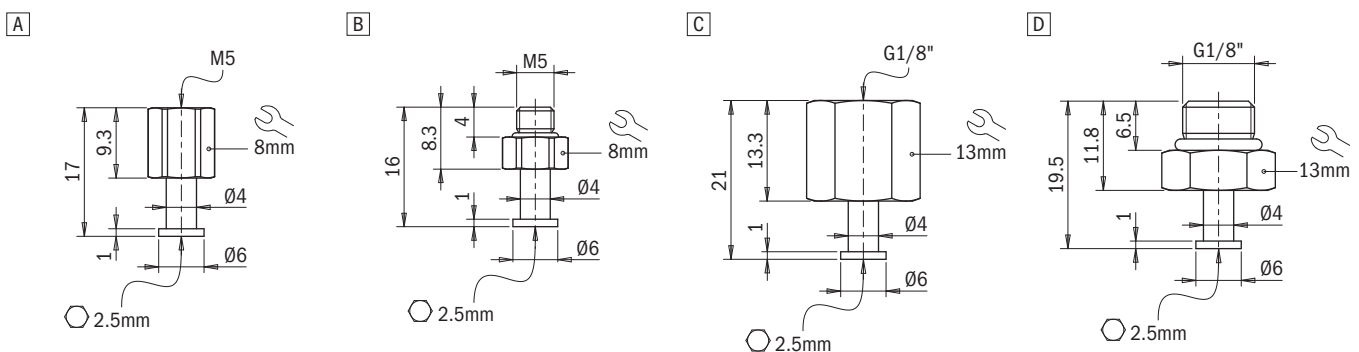
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB22F.50.M5F.E8.SFO	VG.LB22 suction cup, FDA-compliant silicone, 50 Shore, M5 female, 8 mm hex with silicone foam ring	0221750
B	VG.LB22F.50.M5M.E8.SFO	VG.LB22 suction cup, FDA-compliant silicone, 50 Shore, M5 male, 8 mm hex with silicone foam ring	0221752
C	VG.LB22F.50.G18F.E13.SFO	VG.LB22 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 13 mm hex with silicone foam ring	0221753
D	VG.LB22F.50.G18M.E13.SFO	VG.LB22 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 13 mm hex with silicone foam ring	0221754



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LB22F.50.SFO	VG.LB22 suction cup, FDA-compliant silicone, 50 Shore, with silicone foam ring	0221751



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F.E8	M5 female fitting, 8 mm hex	2321408
B	FT.M5M.E8	M5 male fitting, 8 mm hex	2321410
C	FT.G18F.E13	G1/8" female fitting, 13 mm hex	2321412
D	FT.G18M.E13	G1/8" male fitting, 13 mm hex	2321414



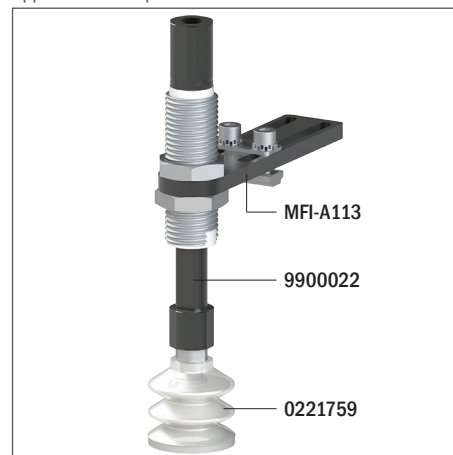


# Suction cups / FDA-compliant silicone with ring in silicone foam

## VG.LB33F.SFO bellows suction cups in FDA-compliant silicone with silicone foam ring

- Ideal to handle uneven and porous surfaces
- High adaptability on rough wood panels, corrugated sheet metal and non-slip sheet metal
- Ring in mark-free silicone foam
- They enable to compensate for differences in height

Application example

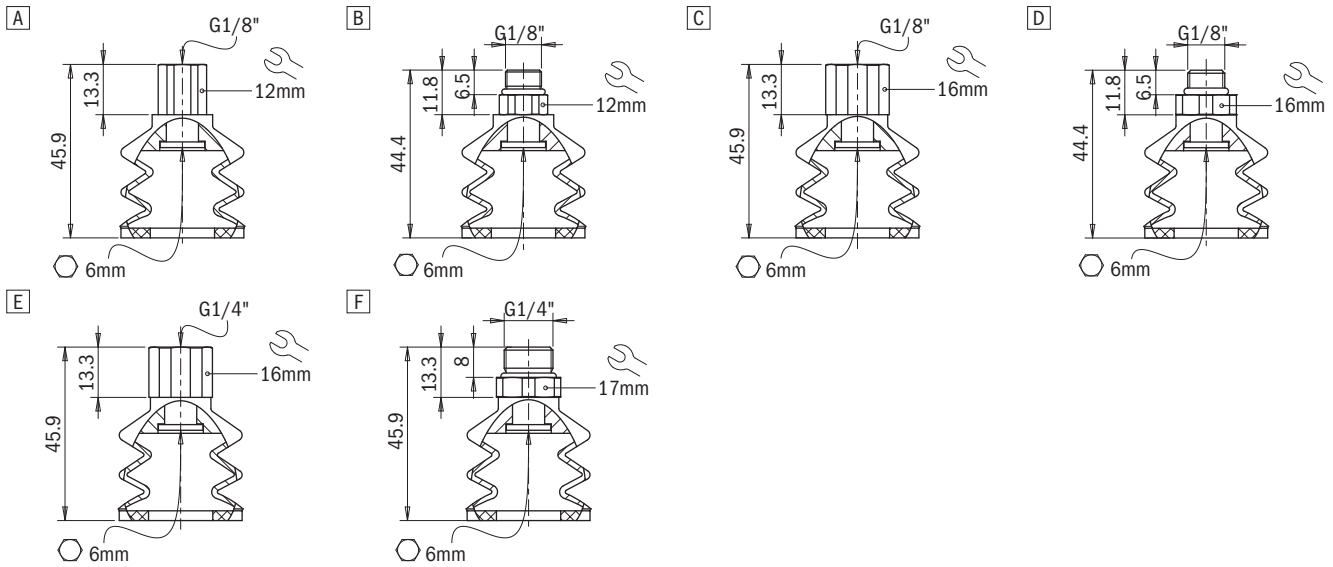


### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

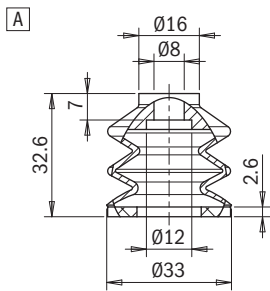
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB33F.50.G18F.E12.SFO	VG.LB33 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 12 mm hex with silicone foam ring	0221757
B	VG.LB33F.50.G18M.E12.SFO	VG.LB33 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 12 mm hex with silicone foam ring	0221759
C	VG.LB33F.50.G18F.E16.SFO	VG.LB33 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 16 mm hex with silicone foam ring	0221760
D	VG.LB33F.50.G18M.E16.SFO	VG.LB33 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 16 mm hex with silicone foam ring	0221761
E	VG.LB33F.50.G14F.E16.SFO	VG.LB33 suction cup, FDA-compliant silicone, 50 Shore, G1/4" female, 16 mm hex with silicone foam ring	0221762
F	VG.LB33F.50.G14M.E17.SFO	VG.LB33 suction cup, FDA-compliant silicone, 50 Shore, G1/4" male, 17 mm hex with silicone foam ring	0221763



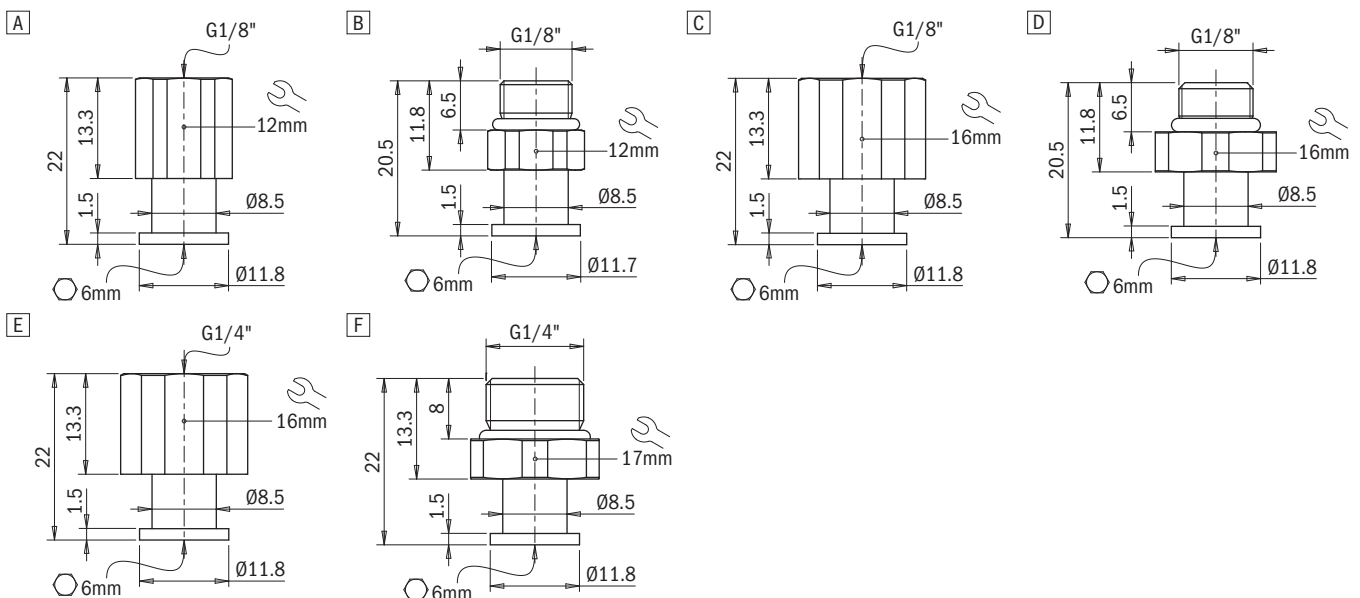
**Identification codes**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LB33F.50.SFO	VG.LB33 suction cup, FDA-compliant silicone, 50 Shore, with silicone foam ring	0221758



**Identification codes**

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



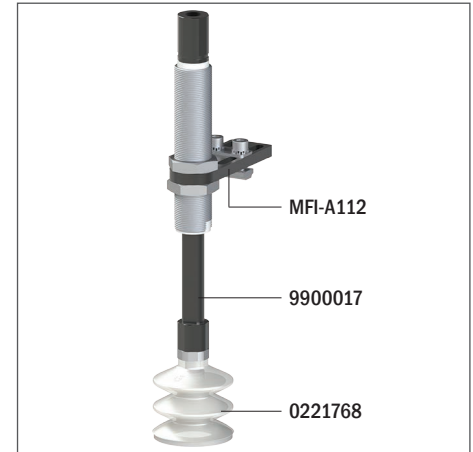
# Suction cups / FDA-compliant silicone with ring in silicone foam

## VG.LB42F.SFO bellows suction cups in FDA-compliant silicone with silicone foam ring

- Ideal to handle uneven and porous surfaces
- High adaptability on rough wood panels, corrugated sheet metal and non-slip sheet metal
- Ring in mark-free silicone foam
- They enable to compensate for differences in height



Application example

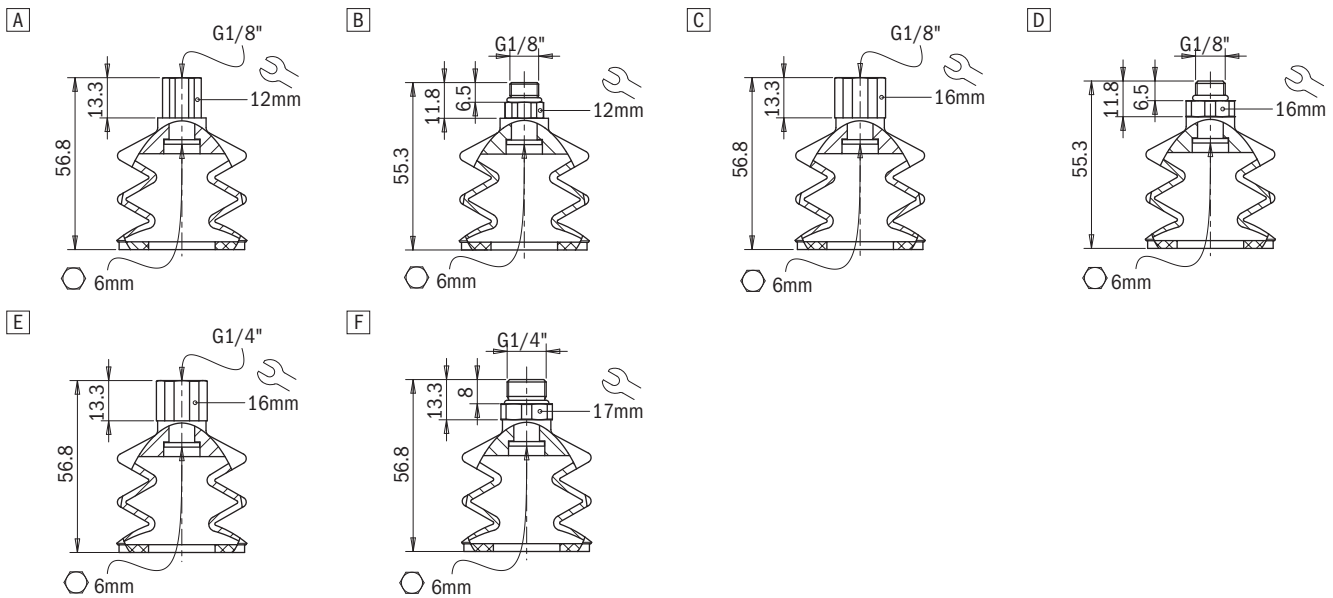


### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

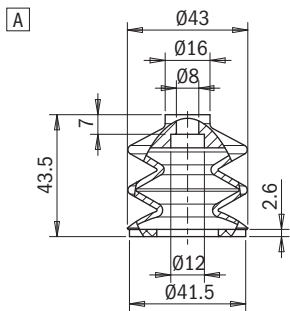
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB42F.50.G18F.E12.SFO	VG.LB42 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 12 mm hex with silicone foam ring	0221764
B	VG.LB42F.50.G18M.E12.SFO	VG.LB42 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 12 mm hex with silicone foam ring	0221766
C	VG.LB42F.50.G18F.E16.SFO	VG.LB42 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 16 mm hex with silicone foam ring	0221767
D	VG.LB42F.50.G18M.E16.SFO	VG.LB42 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 16 mm hex with silicone foam ring	0221768
E	VG.LB42F.50.G14F.E16.SFO	VG.LB42 suction cup, FDA-compliant silicone, 50 Shore, G1/4" female, 16 mm hex with silicone foam ring	0221769
F	VG.LB42F.50.G14M.E17.SFO	VG.LB42 suction cup, FDA-compliant silicone, 50 Shore, G1/4" male, 17 mm hex with silicone foam ring	0221770



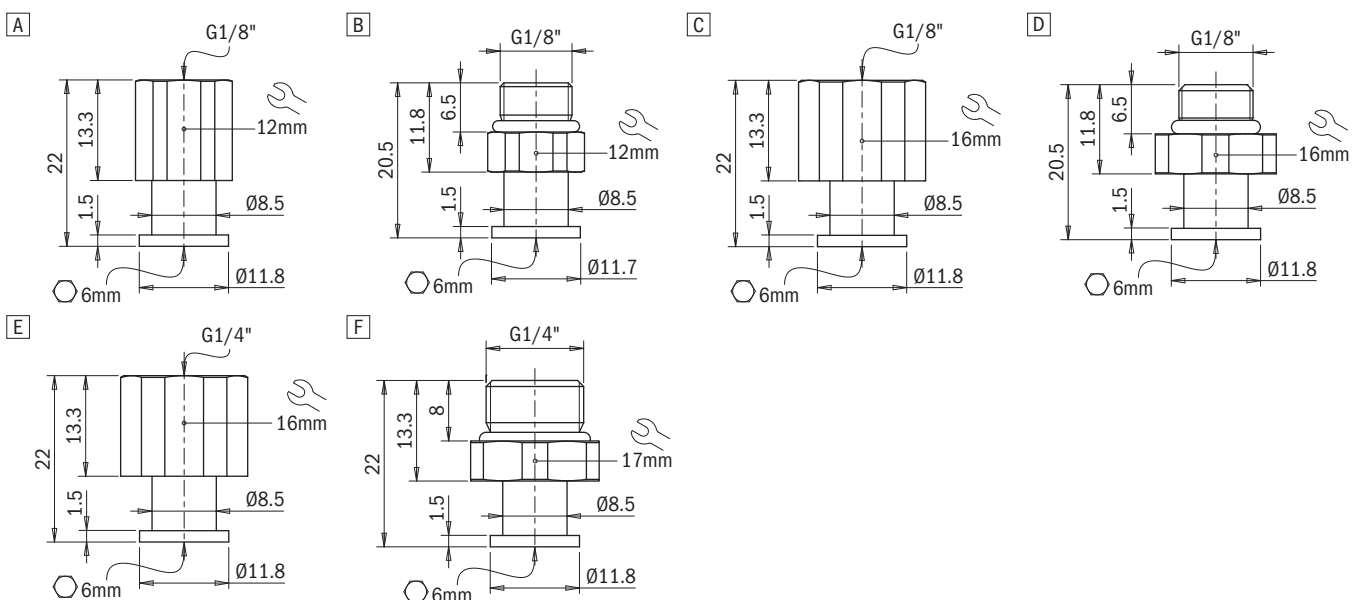
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LB42F.50.SF0	VG.LB42 suction cup, FDA-compliant silicone, 50 Shore, with silicone foam ring	0221765



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



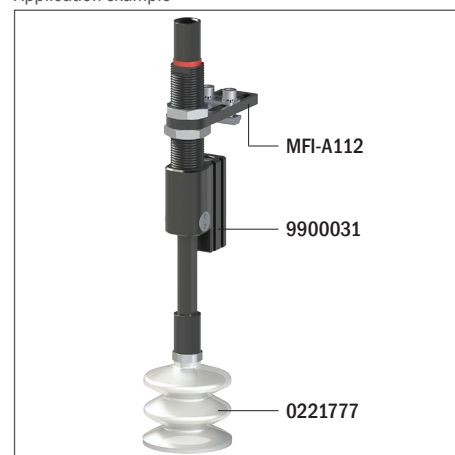
# Suction cups / FDA-compliant silicone with ring in silicone foam

## VG.LB53F.SFO bellows suction cups in FDA-compliant silicone with silicone foam ring

- Ideal to handle uneven and porous surfaces
- High adaptability on rough wood panels, corrugated sheet metal and non-slip sheet metal
- Ring in mark-free silicone foam
- They enable to compensate for differences in height



Application example

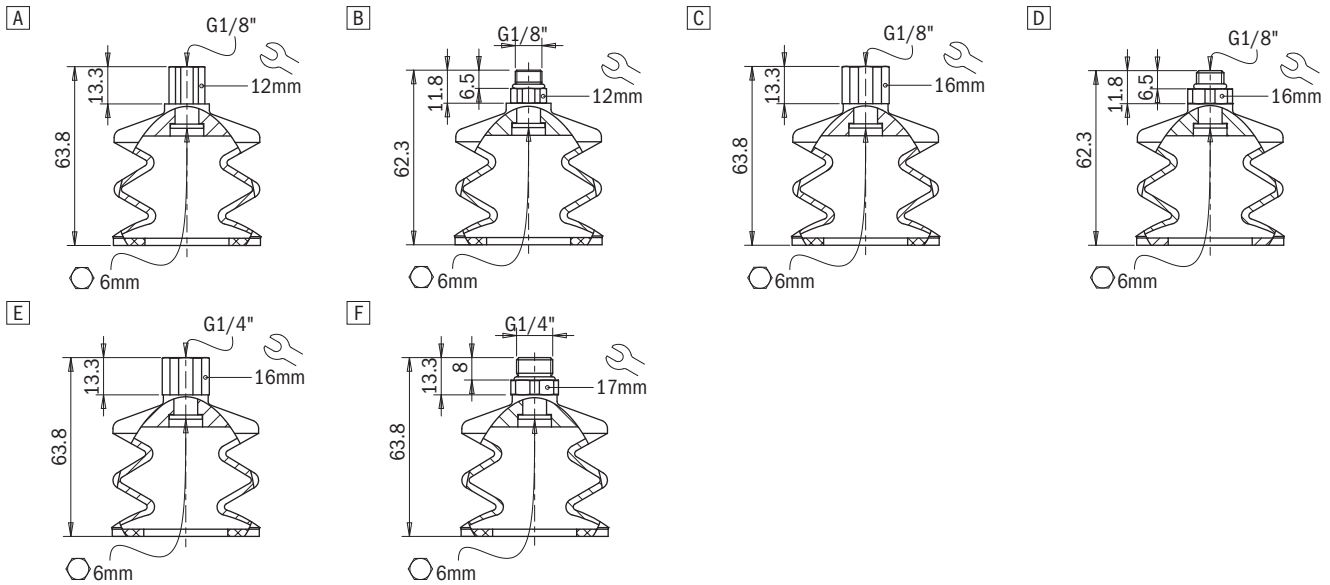


### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

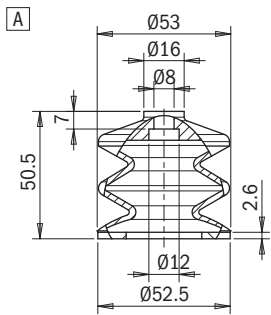
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.LB53F.50.G18F.E12.SFO	VG.LB53 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 12 mm hex with silicone foam ring	0221771
B	VG.LB53F.50.G18M.E12.SFO	VG.LB53 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 12 mm hex with silicone foam ring	0221773
C	VG.LB53F.50.G18F.E16.SFO	VG.LB53 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female, 16 mm hex with silicone foam ring	0221774
D	VG.LB53F.50.G18M.E16.SFO	VG.LB53 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male, 16 mm hex with silicone foam ring	0221775
E	VG.LB53F.50.G14F.E16.SFO	VG.LB53 suction cup, FDA-compliant silicone, 50 Shore, G1/4" female, 16 mm hex with silicone foam ring	0221776
F	VG.LB53F.50.G14M.E17.SFO	VG.LB53 suction cup, FDA-compliant silicone, 50 Shore, G1/4" male, 17 mm hex with silicone foam ring	0221777



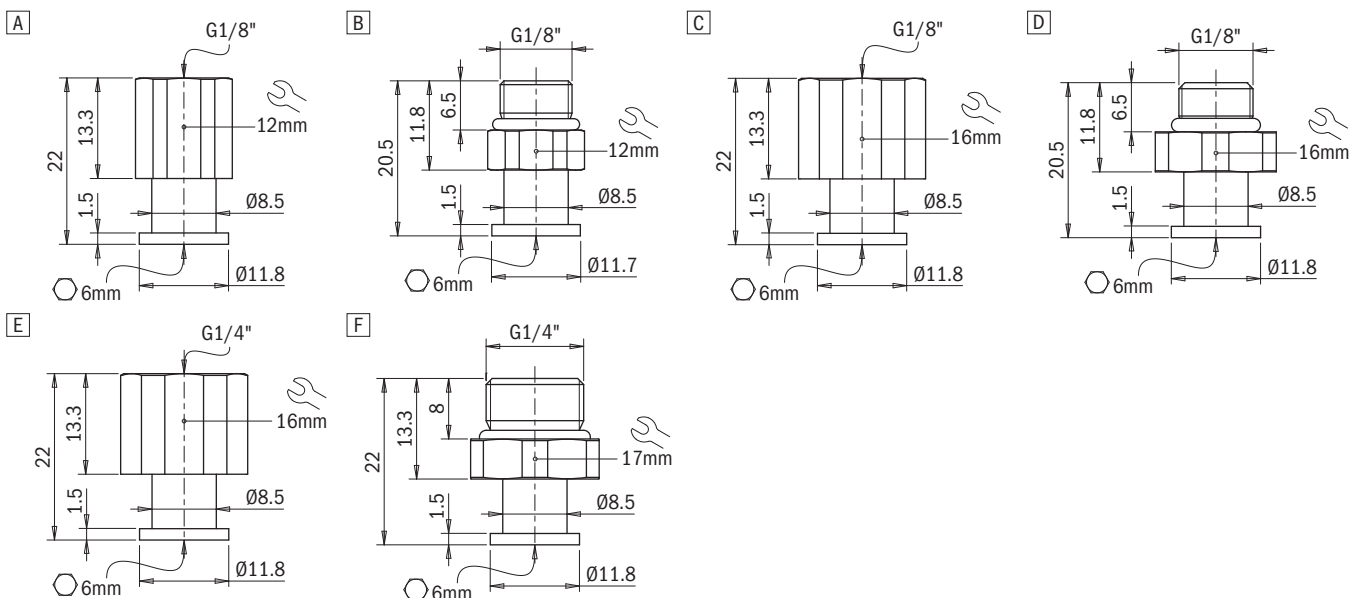
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.LB53F.50.SF0	VG.LB53 suction cup, FDA-compliant silicone, 50 Shore, with silicone foam ring	0221772



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.E12	G1/8" female fitting, 12 mm hex	2321422
B	FT.G18M.E12	G1/8" male fitting, 12 mm hex	2321424
C	FT.G18F.E16	G1/8" female fitting, 16 mm hex	2321426
D	FT.G18M.E16	G1/8" male fitting, 16 mm hex	2321428
E	FT.G14F.E16	G1/4" female fitting, 16 mm hex	2321430
F	FT.G14M.E17	G1/4" male fitting, 17 mm hex	2321432



## VG.FP15F multi-bellows suction cups in FDA-compliant silicone

- The silicone is FDA-compliant and therefore suitable for handling unpackaged food
- Suitable for level compensation
- High vertical movement, useful for separating thin parts

Introduction

Vacuum theory

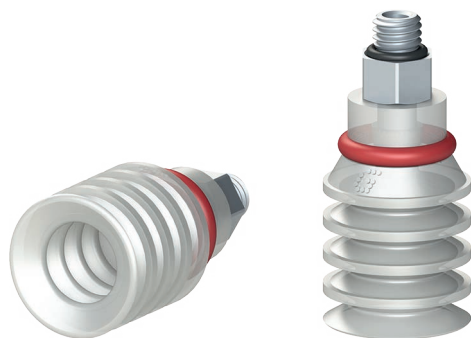
Suction cups

Vacuum pumps

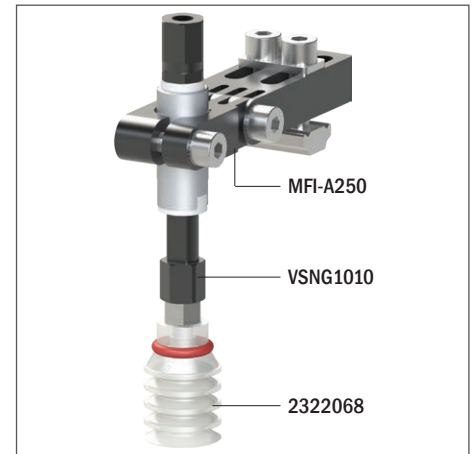
Customised solutions

Suspensions

System accessories



Application example



### Technical data

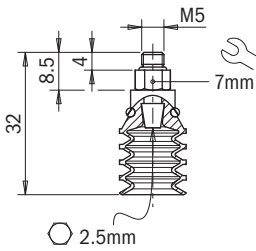
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	0.2	0.23	–	–	–	–	1.05	2	8	0.9

### Technical features

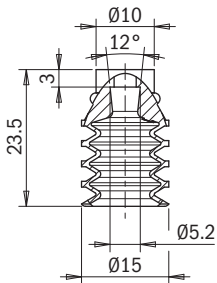
Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

**Identification codes**

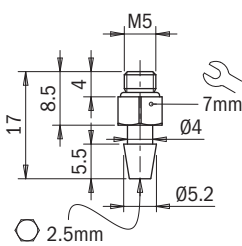
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.FP15F.50.M5M	VG.FP15 suction cup, FDA-compliant silicone, 50 Shore, M5 male	2322068

**A**

**Identification codes**

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.FP15F.50	VG.FP15 suction cup, FDA-compliant silicone, 50 Shore	2322069

**A**

**Identification codes**

Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5M	M5 male fitting	1600005

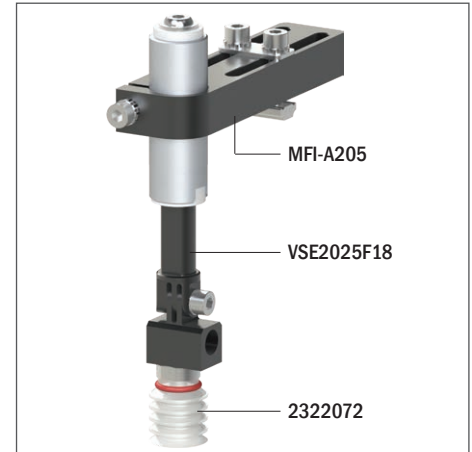
**A**




## VG.FP20F multi-bellows suction cups in FDA-compliant silicone

- The silicone is FDA-compliant and therefore suitable for handling unpackaged food
- Suitable for level compensation
- High vertical movement, useful for separating thin parts
- It can be equipped with a perforated disc to increase stability and to allow the handling of thin films

Application example



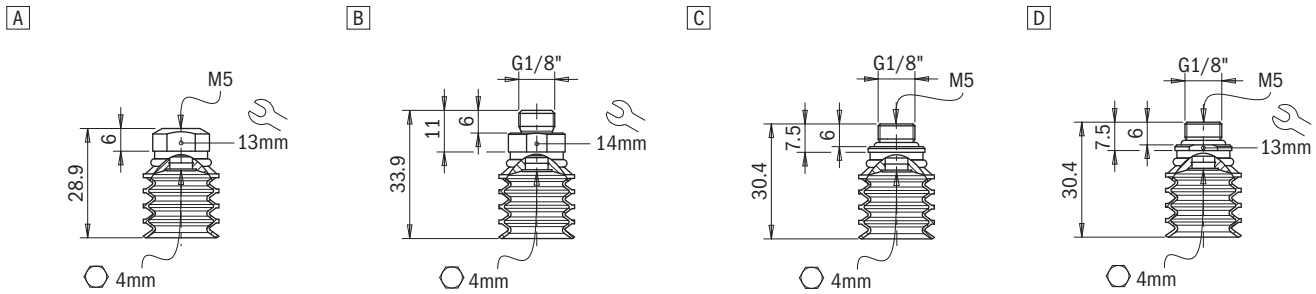
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL FDA 50	0.35	0.7	–	–	–	–	4	4	13	3

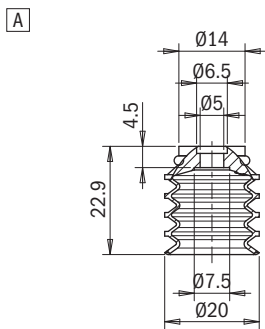
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

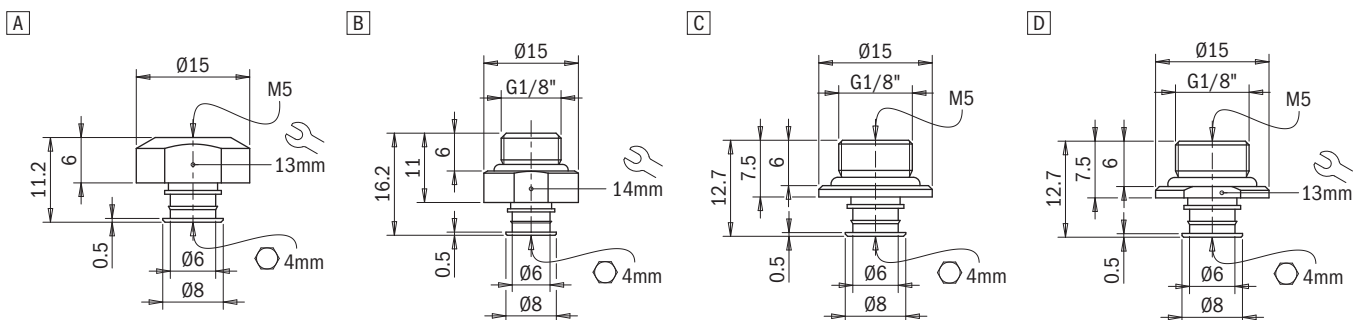
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.FP20F.50.M5F	VG.FP20 suction cup, FDA-compliant silicone, 50 Shore, M5 female	2322070
B	VG.FP20F.50.G18M	VG.FP20 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male	2322072
C	VG.FP20F.50.G18MF	VG.FP20 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male / M5 female	2322073
D	VG.FP20F.50.G18MFV	VG.FP20 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male/M5 female with valve	2322074



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.FP20F.50	VG.FP20 suction cup, FDA-compliant silicone, 50 Shore	2322071



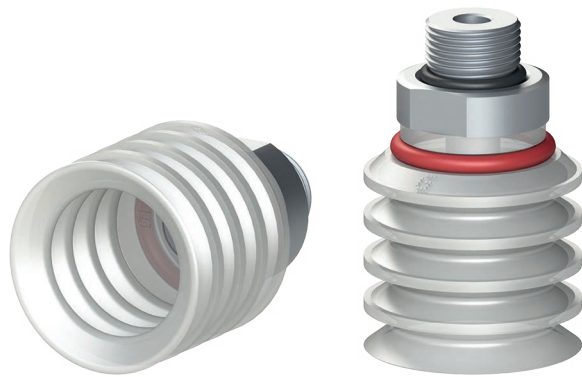
Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.M5F	Fitting, M5 female	1700006
B	FT.G18M.17	G1/8" male fitting	1700018
C	FT.G18M.M5F	Fitting, G1/8" male/ M5 female	1700016
D	FT.G18M.M5F.VF	G1/8" male / M5 female fitting, with valve	1700017



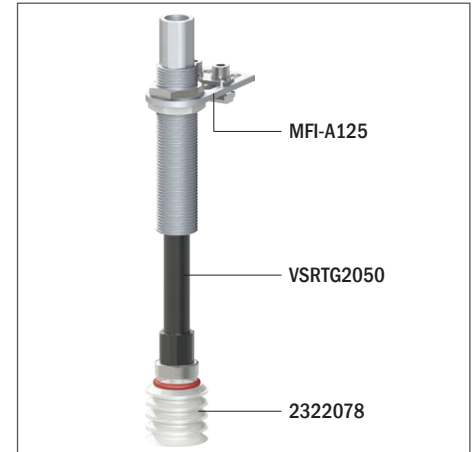
Identification codes		
Alphanumeric code	Disc	Order code
AC.DF20	Perforated disc for thin films, diameter 20 mm	2321780

## VG.FP30F multi-bellows suction cups in FDA-compliant silicone

- The silicone is FDA-compliant and therefore suitable for handling unpackaged food
- Suitable for level compensation
- High vertical movement, useful for separating thin parts
- It can be equipped with a perforated disc to increase stability and to allow the handling of thin films



Application example



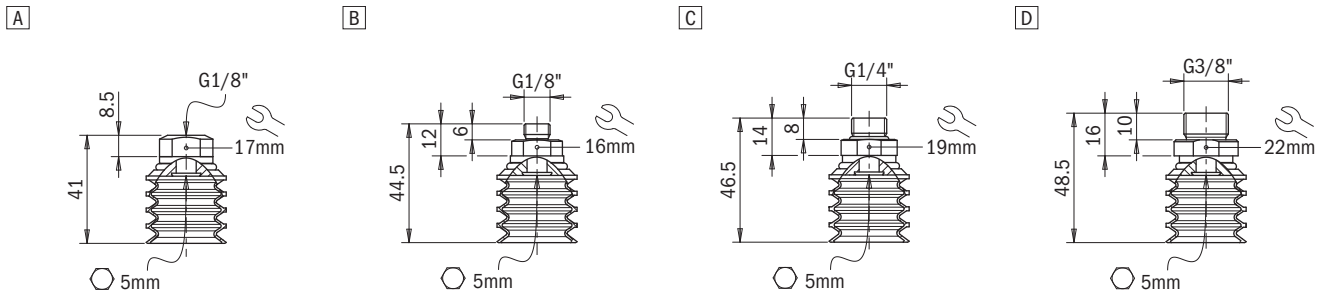
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL FDA 50	6.5	10.3	–	–	–	–	10	8	20	7

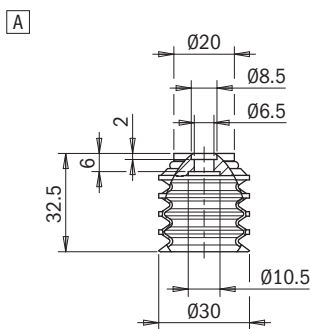
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

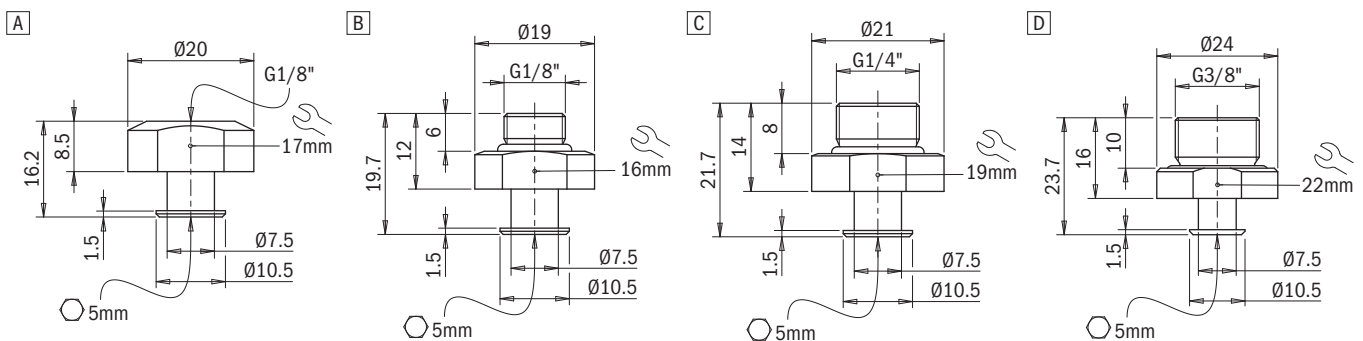
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.FP30F.50.G18F	VG.FP30 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female	2322075
B	VG.FP30F.50.G18M	VG.FP30 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male	2322077
C	VG.FP30F.50.G14M	VG.FP30 suction cup, FDA-compliant silicone, 50 Shore, G1/4" male	2322078
D	VG.FP30F.50.G38M	VG.FP30 suction cup, FDA-compliant silicone, 50 Shore, G3/8" male	2322079



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.FP30F.50	VG.FP30 suction cup, FDA-compliant silicone, 50 Shore	2322076



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.18	G1/8" female fitting	1800019
B	FT.G18M.18	G1/8" male fitting	1800018
C	FT.G14M.18	G1/4" male fitting	1800014
D	FT.G38M.18	G3/8" male fitting	1800038



Identification codes		
Alphanumeric code	Disc	Order code
AC.DF30	Perforated disc for thin films, diameter 30 mm	2321781

## VG.FP40F multi-bellows suction cups in FDA-compliant silicone

- The silicone is FDA-compliant and therefore suitable for handling unpackaged food
- Suitable for level compensation
- High vertical movement, useful for separating thin parts
- It can be equipped with a perforated disc to increase stability and to allow the handling of thin films

Application example



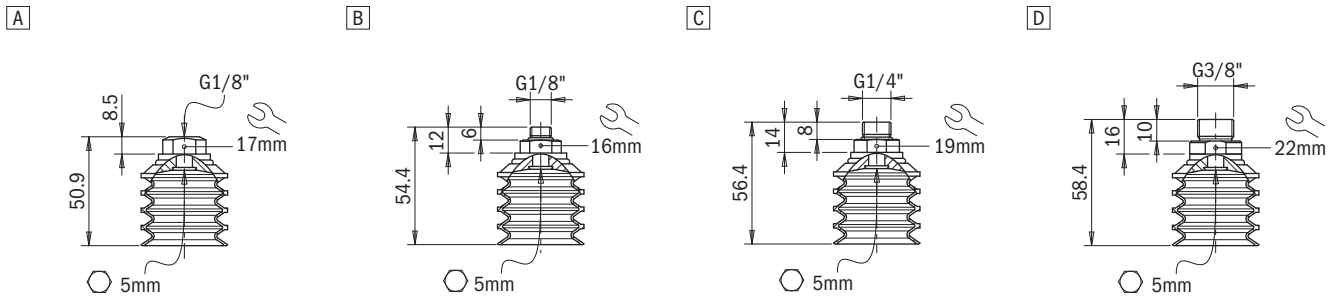
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL FDA 50	10.8	31.5	–	–	–	–	27	11	33	10

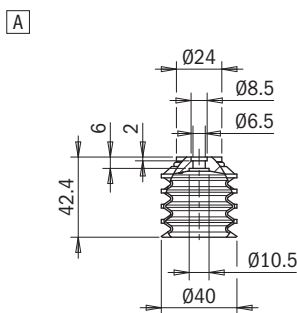
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

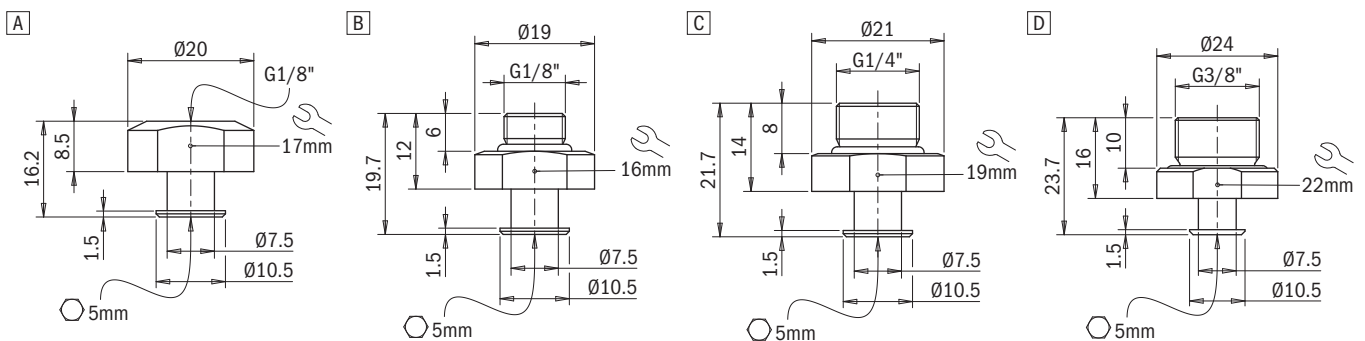
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.FP40F.50.G18F	VG.FP40 suction cup, FDA-compliant silicone, 50 Shore, G1/8" female	2322080
B	VG.FP40F.50.G18M	VG.FP40 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male	2322082
C	VG.FP40F.50.G14M	VG.FP40 suction cup, FDA-compliant silicone, 50 Shore, G1/4" male	2322083
D	VG.FP40F.50.G38M	VG.FP40 suction cup, FDA-compliant silicone, 50 Shore, G3/8" male	2322084



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.FP40F.50	VG.FP40 suction cup, FDA-compliant silicone, 50 Shore	2322081



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18F.18	G1/8" female fitting	1800019
B	FT.G18M.18	G1/8" male fitting	1800018
C	FT.G14M.18	G1/4" male fitting	1800014
D	FT.G38M.18	G3/8" male fitting	1800038



Identification codes		
Alphanumeric code	Disc	Order code
AC.DF40	Perforated disc for thin films, diameter 40 mm	2321755

## VG.F026F flat suction cups in FDA-compliant silicone with reinforcements and thin lip

- Suitable for opening bags and handling thin and delicate objects such as sheets and film
- The internal texture and the thin lip prevent damage to the handled object while maintaining its flatness
- Suction cups in FDA-approved transparent silicone

Application example



### Technical data

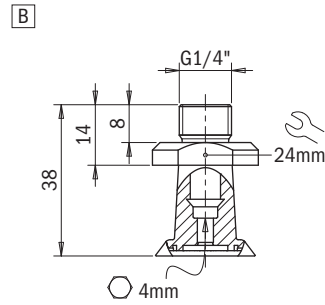
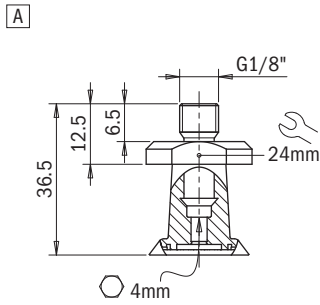
Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	10	25.1	30	9	20	25	1.6	25	1.5	4

### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

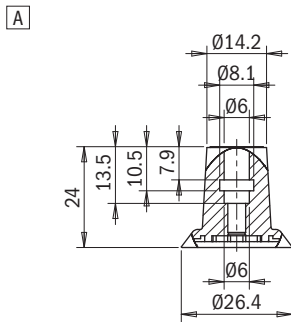
### Identification codes

Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.FO26F.50.G18M	VG.FO26 suction cup, FDA-compliant silicone, 50 Shore, G1/8" male	2322165
B	VG.FO26F.50.G14M	VG.FO26 suction cup, FDA-compliant silicone, 50 Shore, G1/4" male	2322167



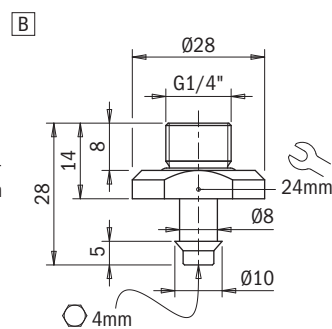
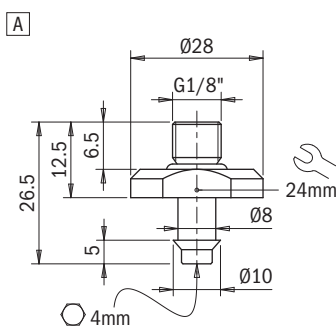
### Identification codes

Drawing	Alphanumeric code	Suction cups	Order code
A	VG.FO26F.50	VG.FO26 suction cup, FDA-compliant silicone, 50 Shore	2322166



### Identification codes

Drawing	Alphanumeric code	Fittings	Order code
A	FT.G18M.30	G1/8" male fitting	3000018
B	FT.G14M.30	G1/4" male fitting	3000014

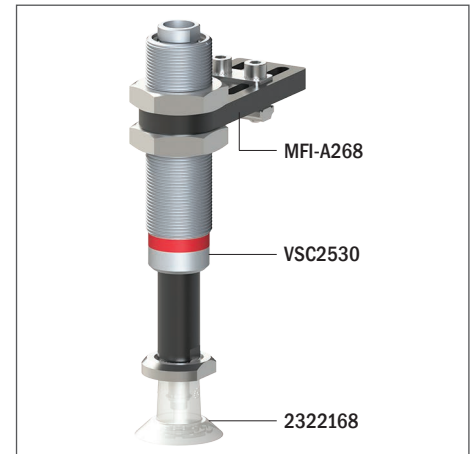




## VG.F033F flat suction cups in FDA-compliant silicone with reinforcements and thin lip

- Suitable for opening bags and handling thin and delicate objects such as sheets and film
- The internal texture and the thin lip prevent damage to the handled object while maintaining its flatness
- Suction cups in FDA-approved transparent silicone

Application example



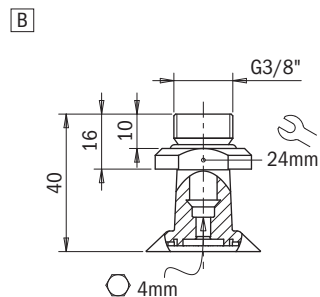
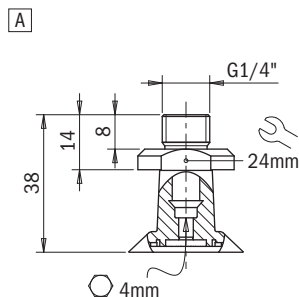
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL 50 FDA	16.2	38.3	49.2	13	30	39	2.1	35	1.5	5

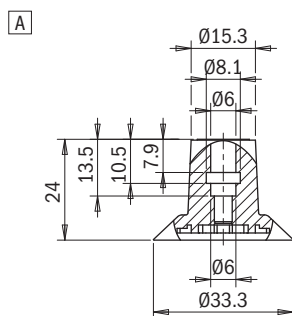
### Technical features

Material	Colour	Hardness	Temperature range
Silicone, FDA SIL	Transparent	50 Shore	-70 ÷ +200 °C

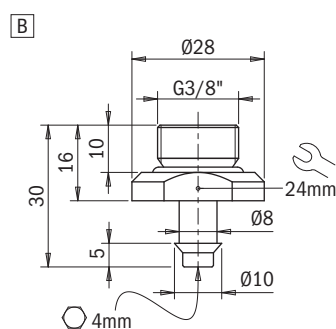
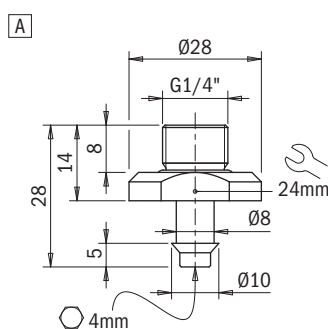
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.F033F.50.G14M	VG.F033 suction cup, FDA-compliant silicone, 50 Shore, G1/4" male	2322168
B	VG.F033F.50.G38M	VG.F033 suction cup, FDA-compliant silicone, 50 Shore, G3/8" male	2322170



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.F033F.50	VG.F033 suction cup, FDA-compliant silicone, 50 Shore	2322169



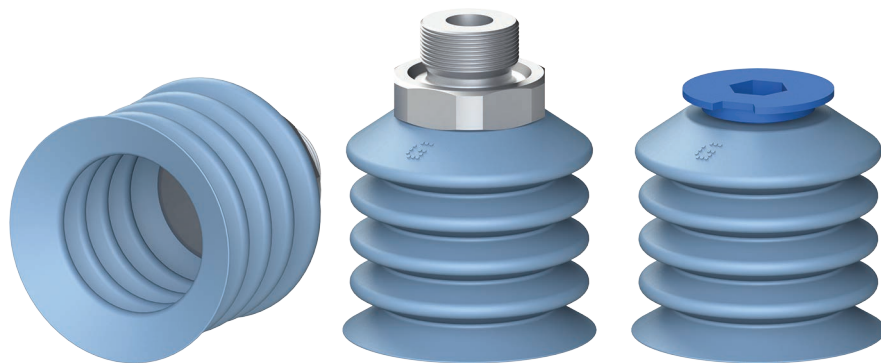
Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G14M.30	G1/4" male fitting	3000014
B	FT.G38M.30	G3/8" male fitting	3000038



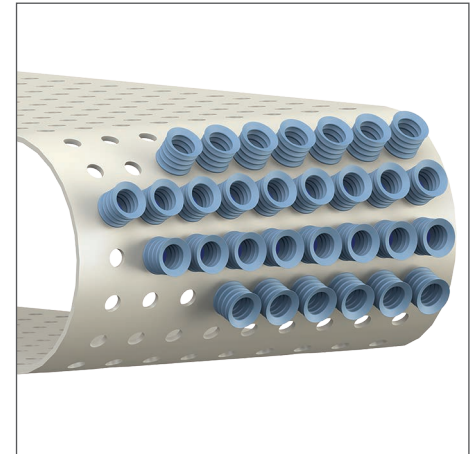
## VG.BDT40 multi-bellows suction cups in detectable FDA-compliant silicone

- Ideal for handling food products
- Detectable FDA-compliant silicone compliant with FDA 21 CFR 177.2600 standards
- Available with separable, acid-resistant, food-grade stainless steel fitting
- Easy to clean thanks to the hygienic design with no cavities where food dust or dirt might build up
- Available with clips for connection to demoulders in the bakery sector

**NEW**



Application example



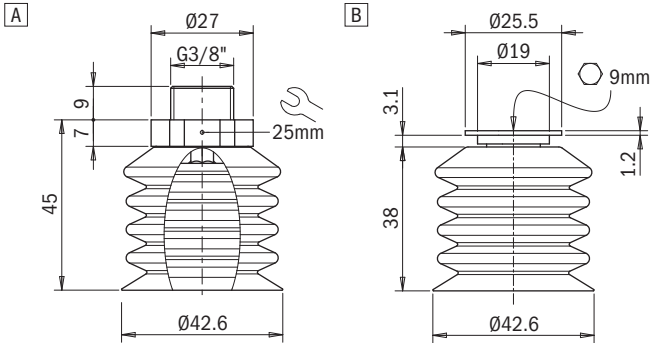
### Technical data

Material	Lifting force [N] perpendicular to the surface, at various vacuum levels			Lifting force [N] parallel to the surface, at various vacuum levels			Volume [cm <sup>3</sup> ]	Min curve radius [mm]	Max vertical movement [mm]	Suction cup weight [g]
	-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa				
SIL40 FDA RIL	14.3	23.5	–	4.6	19.4	–	29.0	15.9	28.0	8.2

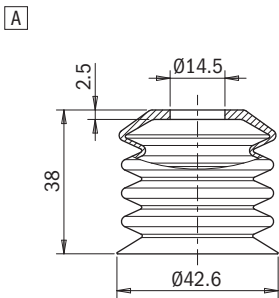
### Technical features

Material	Colour	Hardness	Temperature range
Detectable SIL FDA-compliant silicone	Blue	40 Shore	-40 ÷ +200 °C

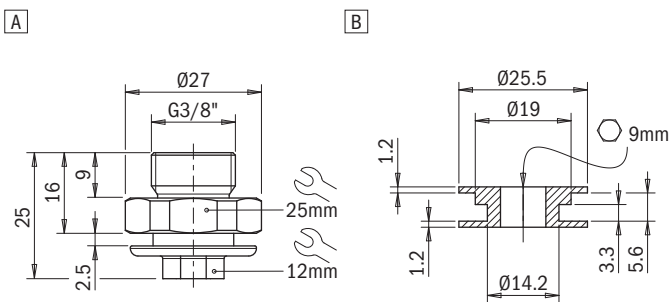
Identification codes			
Drawing	Alphanumeric code	Suction cups with fitting	Order code
A	VG.BDT40F40.G38M	VG.BDT40 suction cup, detectable FDA-compliant silicone, 40 Shore, G3/8" male, 25 mm hex, stainless steel	2322174
B	VG.BDT40F40.CF	VG.BDT40 suction cup, detectable FDA-compliant silicone, 40 Shore, fixing clip, 9 mm hex	2322176



Identification codes			
Drawing	Alphanumeric code	Suction cups	Order code
A	VG.BDT40F40	VG.BDT40 suction cup, detectable FDA-compliant silicone, 40 Shore	2322175



Identification codes			
Drawing	Alphanumeric code	Fittings	Order code
A	FT.G38M.E26.INOX	G3/8" male fitting, 25 mm hex, stainless steel	1500038
B	FT.9.CLIP	Fixing clip connection, 9 mm hex	1500009



## Rings in EPDM foam and silicone foam

- Ideal to handle porous and corrugated surfaces
- High adaptability on rough wood panels and corrugated sheet metal
- EPDM: thickness 5 and 10 mm for diameters 20, 30, 40 and 50 mm
- Silicone: 2 mm thickness for diameters of 15, 20, 30, 40 and 50 mm
- The silicone version is mark-free

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Application example

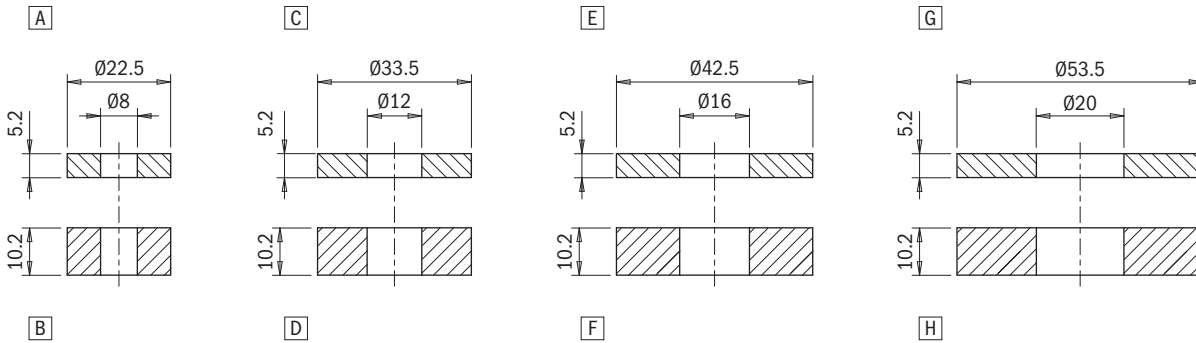


### Technical features

Material	Colour	Temperature range
EPDM	Black	-40 ÷ +135 °C
SIL	White	-55 ÷ +200 °C

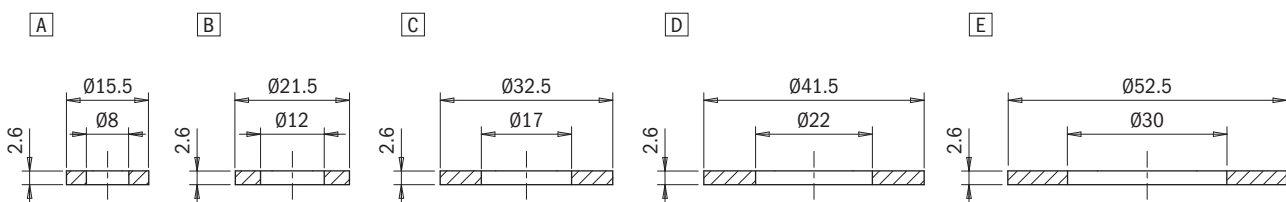
### Identification codes

Drawing	Alphanumeric code	Rings in EPDM foam	Order code
A	VG.FOAM22-5	Ring in EPDM foam for suction cups, diameter 20 mm, thickness 5 mm	0000001
B	VG.FOAM22-10	Ring in EPDM foam for suction cups, diameter 20 mm, thickness 10 mm	0000002
C	VG.FOAM33-5	Ring in EPDM foam for suction cups, diameter 30 mm, thickness 5 mm	0000003
D	VG.FOAM33-10	Ring in EPDM foam for suction cups, diameter 30 mm, thickness 10 mm	0000004
E	VG.FOAM42-5	Ring in EPDM foam for suction cups, diameter 40 mm, thickness 5 mm	0000005
F	VG.FOAM42-10	Ring in EPDM foam for suction cups, diameter 40 mm, thickness 10 mm	0000006
G	VG.FOAM53-5	Ring in EPDM foam for suction cups, diameter 50 mm, thickness 5 mm	0000007
H	VG.FOAM53-10	Ring in EPDM foam for suction cups, diameter 50 mm, thickness 10 mm	0000008

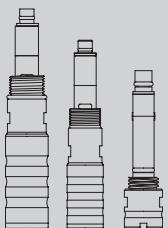
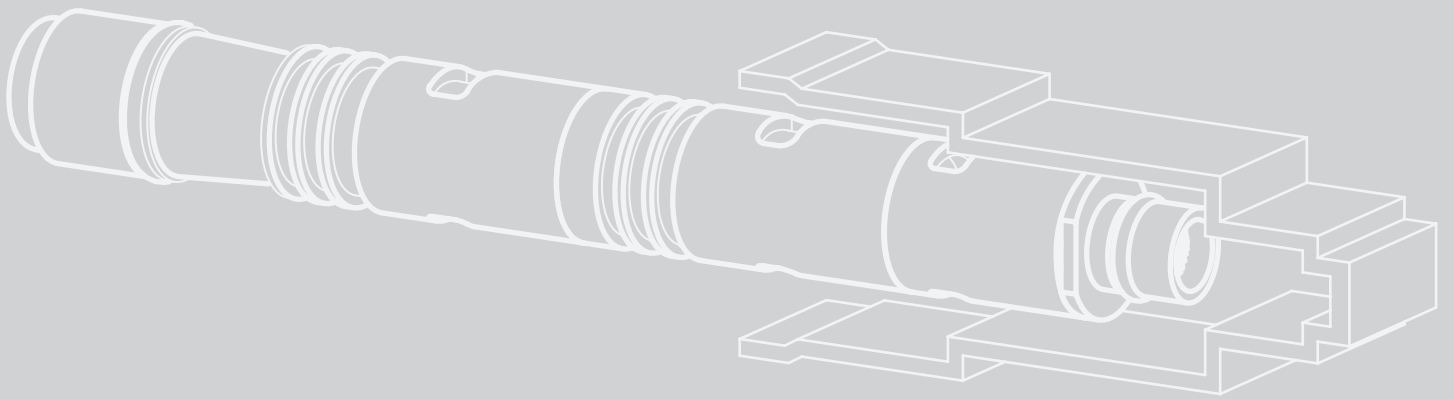


### Identification codes

Drawing	Alphanumeric code	Rings in silicone foam	Order code
A	VG.FOAM-SI-16-2	Silicone foam for suction cups, diameter 15 mm, thickness 2 mm	0000009
B	VG.FOAM-SI-22-2	Silicone foam for suction cups, diameter 20 mm, thickness 2 mm	0000010
C	VG.FOAM-SI-32-2	Silicone foam for suction cups, diameter 30 mm, thickness 2 mm	0000011
D	VG.FOAM-SI-42-2	Silicone foam for suction cups, diameter 40 mm, thickness 2 mm	0000012
E	VG.FOAM-SI-53-2	Silicone foam for suction cups, diameter 50 mm, thickness 2 mm	0000013







## **MULTISTAGE CARTRIDGES FOR INTEGRATION**



## EJ CARTRIDGE SELECTION GUIDE

Gimatic's EJ multistage cartridges are available in 3 sizes:

- EJ-SMALL
- EJ-MEDIUM
- EJ-LARGE

Each multi-stage cartridge has different characteristics depending on the model.

Size	Model	Vacuum level	Low feed pressure	High vacuum level	High suction flow rate	High initial flow rate
SMALL	EJ-SMALL-LP-2	-82 kPa	X			
	EJ-SMALL-HF-2	-78 kPa			X	
	EJ-SMALL-HV-2	-92 kPa		X		
MEDIUM	EJ-MEDIUM-LP-2	-90 kPa	X			
	EJ-MEDIUM-LP-3	-90 kPa	X			X
	EJ-MEDIUM-HF-2	-73 kPa			X	
	EJ-MEDIUM-HF-3	-73 kPa			X	X
	EJ-MEDIUM-HV-2	-94 kPa		X		
	EJ-MEDIUM-HV-3	-94 kPa		X		X
LARGE	EJ-LARGE-LP-2	-90 kPa	X			
	EJ-LARGE-LP-3	-90 kPa	X			X
	EJ-LARGE-HF-2	-73 kPa			X	
	EJ-LARGE-HF-3	-73 kPa			X	X
	EJ-LARGE-HV-2	-94 kPa		X		
	EJ-LARGE-HV-3	-94 kPa		X		X

## CHARACTERISTICS



### EJ-LP (LOW PRESSURE)

The EJ-LP cartridges can reach a high vacuum level with low feed pressure.

They are recommended both in applications such as the handling of glass panels or metal sheets and in all sealed circuits, where a good flow rate at a high vacuum level is required.

### EJ-HF (HIGH FLOW)

EJ-HF cartridges evacuate large volumes of air. They are therefore suitable for handling porous objects such as cardboard, wood and materials with uneven surfaces.

Ideal where it is necessary to evacuate large volumes of air to keep the circuit at a certain level of vacuum during the production cycle, compensating for any leaks.

### EJ-HV (HIGH VACUUM)

EJ-HV cartridges are ideal for sealed applications such as glass panel handling, metal sheet handling and thermoforming applications.

## MATERIALS



PA= Polyamide, Nylon®

Al= Aluminium

NBR= Nitrile

SS= Stainless steel

## RECOMMENDED TUBE DIMENSIONS (internal diameter)



Connections	EJ-SMALL cartridge	EJ-MEDIUM cartridge	EJ-LARGE cartridge
Compressed air	≥ 2.5 mm	≥ 4 mm	≥ 6 mm
Vacuum	≥ 2.5 mm	≥ 8 mm	≥ 12 mm
Exhaust	≥ 8 mm	≥ 10 mm	≥ 15 mm

\* Applies to pipes up to 1.5 m long

## GIMATIC CARTRIDGE EJECTORS FOR INTEGRATED SOLUTIONS

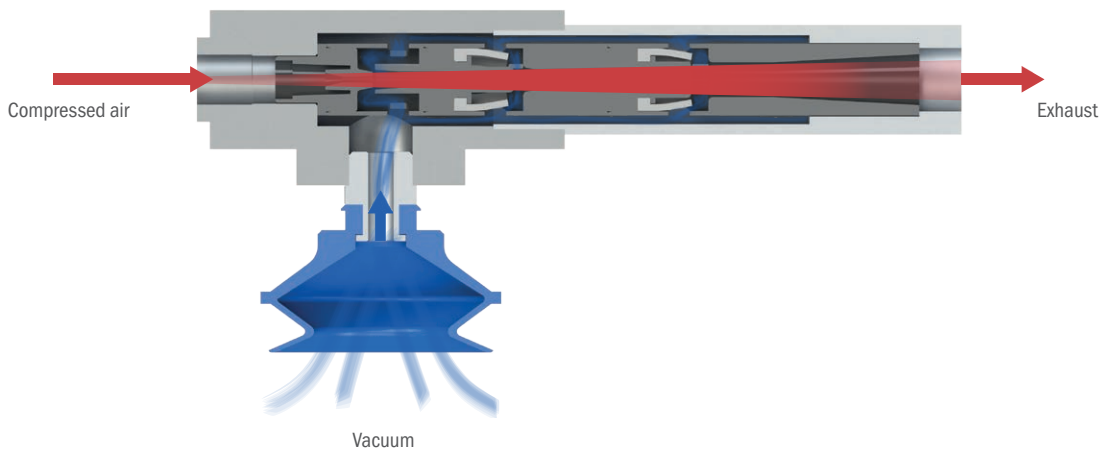
Gimatic's multi-stage cartridge ejectors create vacuum using compressed air. Our vacuum pumps are compact in size, efficient and reliable, ideal to meet the integration requirements of our customers. They allow the development of flexible, modular and lightweight vacuum systems.

Modularity and flexibility enable to meet market changes, with reduced costs and increased productivity. Gimatic develops and manufactures products with high quality standards, which allow to improve production processes with reduced energy consumption.



### OPERATING PRINCIPLE OF GIMATIC'S EJ CARTRIDGES

When compressed air passes through the nozzles, the air is sucked by means of the compressed air flow. The suction is generated at each stage, resulting in the generation of vacuum.



## LOW ENERGY CONSUMPTION AND REDUCED DOWNTIME



Integrating the EJ cartridges right into the machines enables to generate vacuum near the point of use, which makes the most of the energy employed and increases the operating speed, eliminating pressure drops and possible inefficiencies of the vacuum circuit.

## INTEGRATION - ADVANTAGES

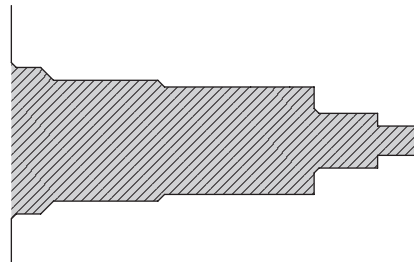


Bringing the pump closer to the point of use guarantees:

- Greater Efficiency
- Reduced energy consumption
- Better monitoring of the system
- Reduced gripping and release times

## HOW TO INTEGRATE THE EJ MULTISTAGE CARTRIDGES

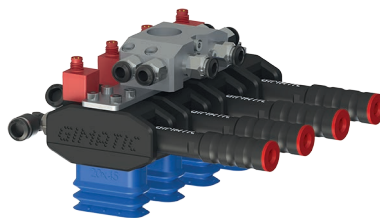
Simply make a hole and insert the suction cartridge to obtain a completely integrated vacuum system.



## EXAMPLES OF INTEGRATION



EJ-SMALL cartridge in-line integration



Decentralised EOAT with rapid prototyping



Integration of EJ-MEDIUM cartridges on EOAT in rapid prototyping - Pick-and-Place application

## EJ-SMALL-LP-2 cartridges

- Two-stage EJ-SMALL-LP-2 cartridge with extremely compact dimensions
- Can be integrated near the gripping point, lightweight
- Ideal for high speed Pick & Place applications
- Suitable for handling sealed objects
- Maximum vacuum level (-82 kPa)
- Available in the cartridge-only or cartridge with holder versions



### Technical features

Max feed pressure	0.7 MPa
Temperature range	-10 ÷ +80 °C
Weight	0.6 ÷ 1.9 g

### Suction flow rate

Feed pressure [MPa]	Air consumption [NI/s]	Suction flow rate [NI/s] at different vacuum levels [kPa]								Max vacuum [kPa]
		0	-10	-20	-30	-40	-50	-60	-70	
0.12	0.11	0.18	0.08	0.05	0.038	0.023	–	–	–	-50
0.15	0.13	0.20	0.09	0.06	0.05	0.04	0.02	–	–	-65
0.22	0.17	0.25	0.18	0.08	0.05	0.04	0.025	0.018	0.0053	-82

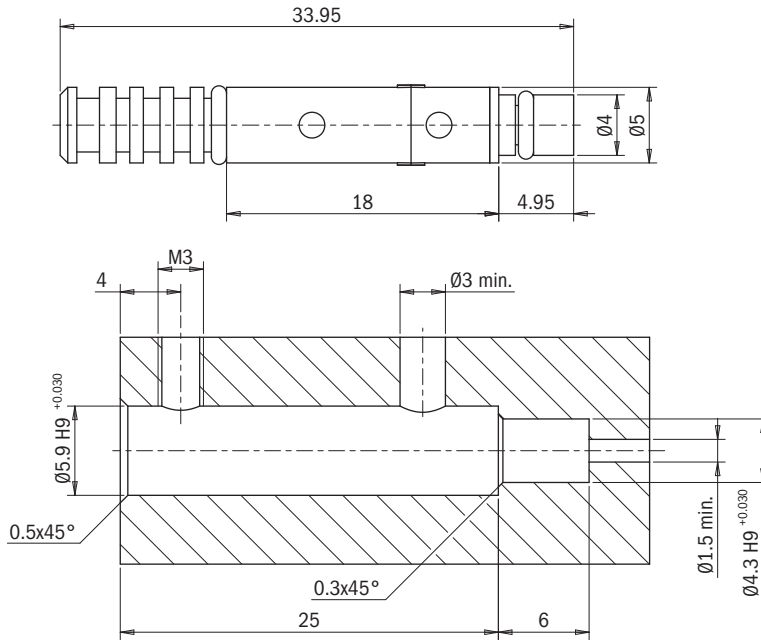
### Evacuation time

Feed pressure [MPa]	Air consumption [NI/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]								Max vacuum [kPa]
		-10	-20	-30	-40	-50	-60	-70	-80	
0.12	0.11	0.77	2.31	4.58	7.9	16.6	–	–	–	-50
0.15	0.13	0.69	2.02	3.84	6.1	9.4	19.4	–	–	-65
0.22	0.17	0.47	1.23	2.77	5	8.07	12.7	21.3	59.01	-82

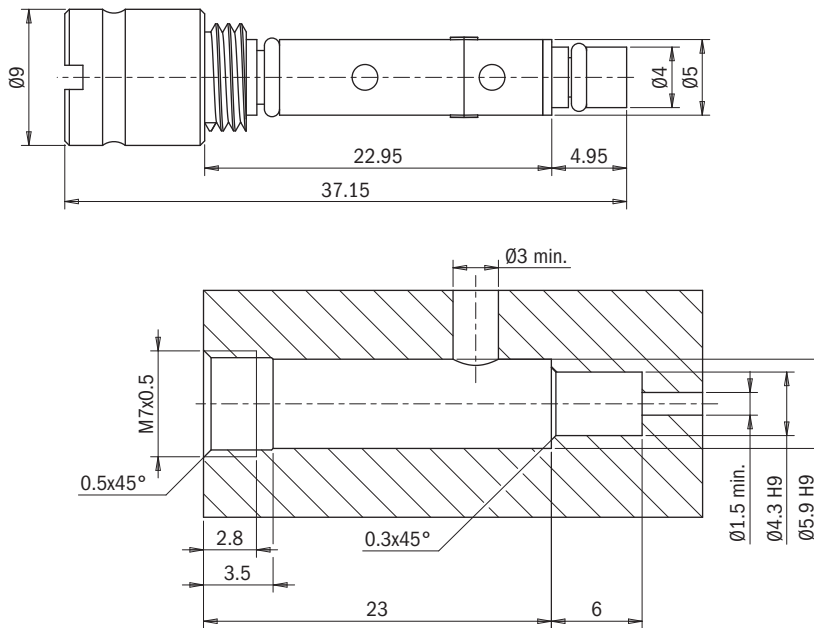
**Identification codes**

Drawing	Alphanumeric code	Description	Order code
A	EJ-S-LP-2	EJ-SMALL-LP-2 without holder	3300001
B	EJ-S-LP-2-H	EJ-SMALL-LP-2 with holder	3300002

**A**



**B**



## EJ-SMALL-HF-2

- Two-stage EJ-SMALL-HF-2 cartridge with extremely compact dimensions
- Can be integrated near the gripping point, lightweight
- Ideal for high speed Pick & Place applications
- Suitable for handling porous objects
- Maximum vacuum level (-78 kPa)
- Available in the cartridge-only or cartridge with holder versions

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### Technical features

Max feed pressure	0.7 MPa
Temperature range	-10 ÷ +80 °C
Weight	0.6 ÷ 1.9 g

### Suction flow rate

Feed pressure [MPa]	Air consumption [l/s]	Suction flow rate [l/s] at different vacuum levels [kPa]								Max vacuum [kPa]
		0	-10	-20	-30	-40	-50	-60	-70	
0.4	0.12	0.26	0.13	0.08	0.07	0.06	0.04	0.02	—	-65
0.5	0.13	0.28	0.16	0.09	0.08	0.05	0.04	0.02	—	-72
0.6	0.15	0.29	0.18	0.10	0.08	0.05	0.041	0.033	0.025	-78

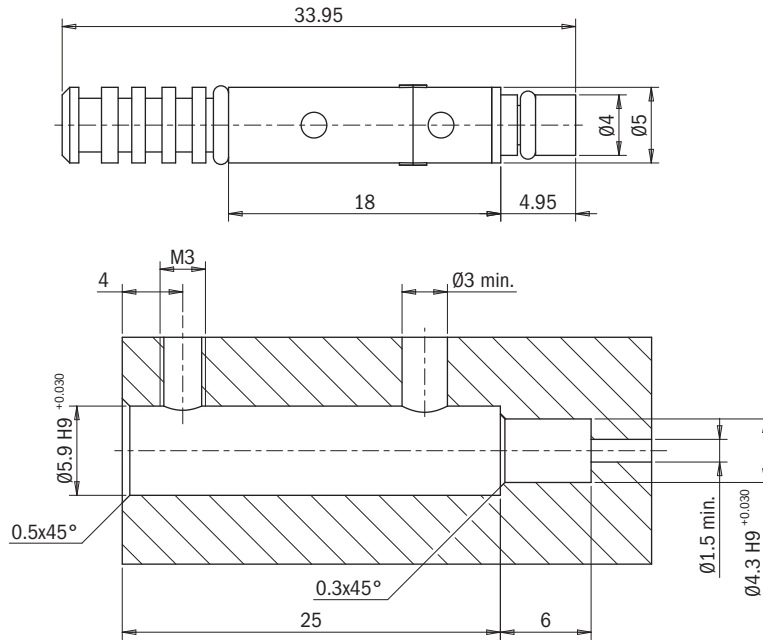
### Evacuation time

Feed pressure [MPa]	Air consumption [l/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]							Max vacuum [kPa]
		-10	-20	-30	-40	-50	-60	-70	
0.4	0.12	0.51	1.47	2.8	4.3	6.3	9.7	—	-65
0.5	0.13	0.45	1.25	2.43	4.0	6.2	9.5	—	-72
0.6	0.15	0.43	1.14	2.25	3.8	6.0	8.7	12.1	-78

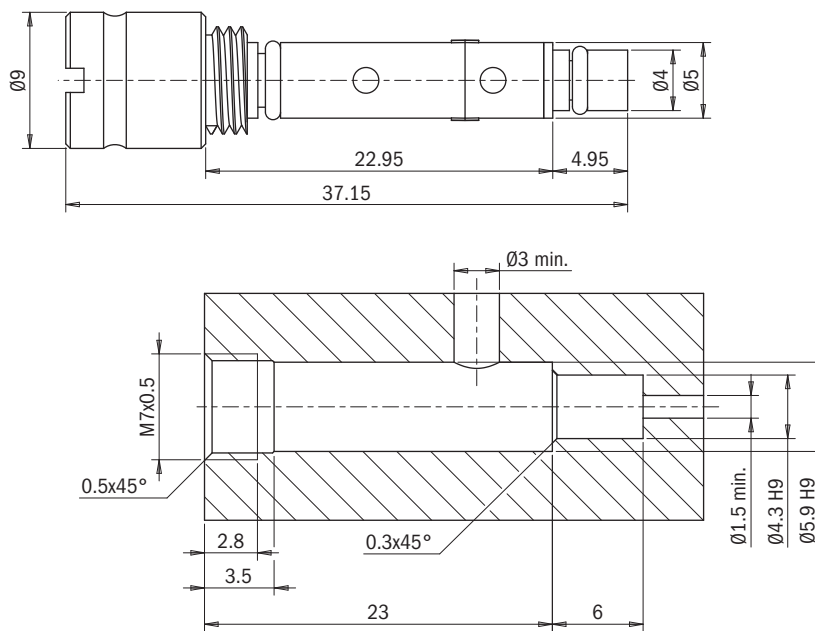
### Identification codes

Drawing	Alphanumeric code	Description	Order code
A	EJ-S-HF-2	EJ-SMALL-HF-2 without holder	3300003
B	EJ-S-HF-2-H	EJ-SMALL-HF-2 with holder	3300004

A



B





## EJ-SMALL-HV-2

- Two-stage EJ-SMALL-HV-2 cartridge with extremely compact dimensions
- Can be integrated near the gripping point, lightweight
- Ideal for high speed Pick & Place applications
- Fast response times at high vacuum levels
- Suitable for handling sealed objects
- Maximum vacuum level (-92 kPa)
- Available in the cartridge-only or cartridge with holder versions

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### Technical features

Max feed pressure	0.7 MPa
Temperature range	-10 ÷ +80 °C
Weight	0.6 ÷ 1.9 g

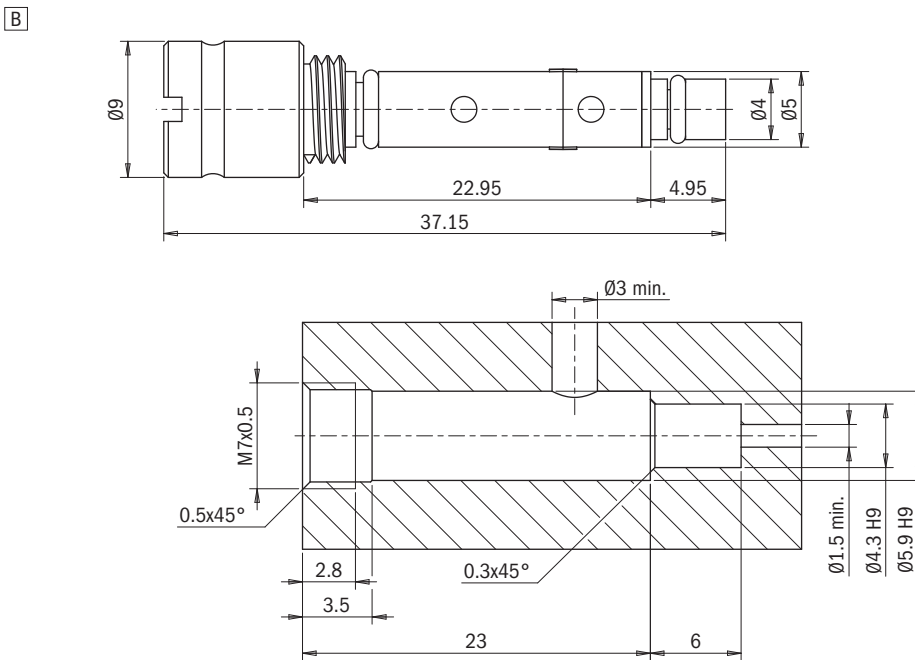
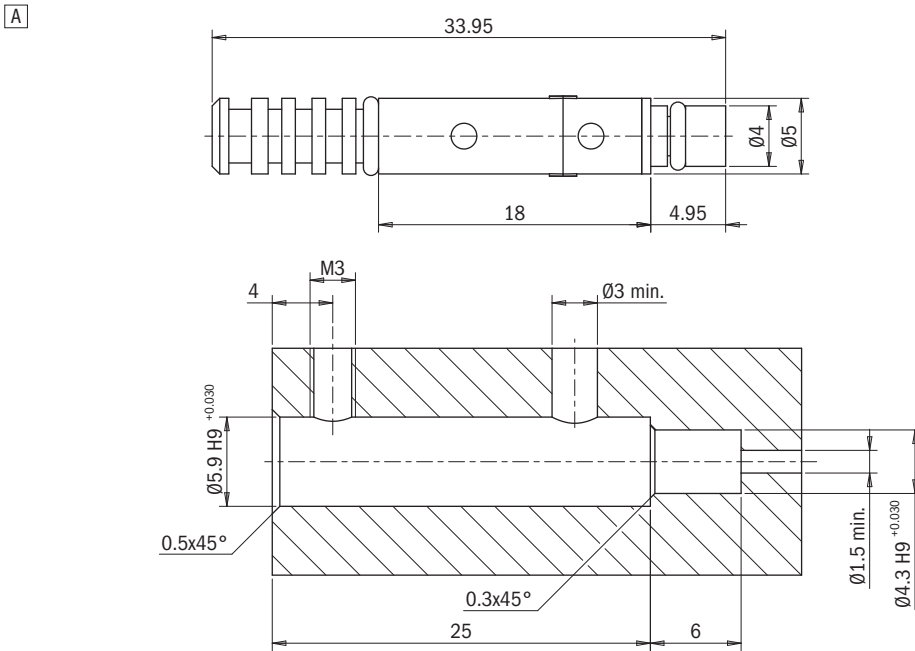
### Suction flow rate

Feed pressure [MPa]	Air consumption [l/s]	Suction flow rate [l/s] at different vacuum levels [kPa]									Max vacuum [kPa]
		0	-10	-20	-30	-40	-50	-60	-70	-80	
0.5	0.13	0.22	0.16	0.10	0.06	0.05	0.04	0.02	0.01	0.010	-92
0.55	0.14	0.23	0.17	0.10	0.05	0.04	0.03	0.02	0.01	0.004	-91
0.6	0.15	0.23	0.16	0.08	0.05	0.04	0.03	0.02	0.01	0.005	-90

### Evacuation time

Feed pressure [MPa]	Air consumption [l/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]								Max vacuum [kPa]
		-10	-20	-30	-40	-50	-60	-70	-80	
0.5	0.13	0.53	1.30	2.55	4.4	6.6	9.9	16.6	36.6	-92
0.55	0.14	0.50	1.24	2.57	4.8	7.7	11.7	18.3	32.6	-91
0.6	0.15	0.51	1.35	2.88	5.1	8.0	12.1	18.6	32.1	-90

Identification codes			
Drawing	Alphanumeric code	Description	Order code
A	EJ-S-HV-2	EJ-SMALL-HV-2 without holder	3300005
B	EJ-S-HV-2-H	EJ-SMALL-HV-2 with holder	3300006



## EJ-MEDIUM-LP-2

- Two-stage EJ-MEDIUM-LP-2 cartridge with compact dimensions
- Can be integrated near the gripping point, lightweight
- Suitable and reliable even in the case of fluctuations in feed pressure
- Ideal for handling sealed objects
- Maximum vacuum level (-90 kPa)
- Available in the cartridge-only or cartridge with holder and integrated silencer versions



### Technical features

Max feed pressure	0.7 MPa
Temperature range	-10 ÷ +80 °C
Weight	2.4 ÷ 15 g

### Suction flow rate

Feed pressure [MPa]	Air consumption [l/s]	Suction flow rate [l/s] at different vacuum levels [kPa]										Max vacuum [kPa]
		0	-10	-20	-30	-40	-50	-60	-70	-80		
0.2	0.33	0.57	0.41	0.23	0.12	0.07	—	—	—	—	-55	
0.35	0.48	0.68	0.62	0.45	0.26	0.18	0.13	0.1	0.06	0.03	-90	
0.4	0.55	0.67	0.61	0.53	0.38	0.23	0.12	0.09	0.06	0.02	-89	

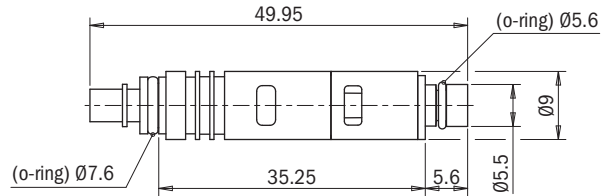
### Evacuation time

Feed pressure [MPa]	Air consumption [l/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]									Max vacuum [kPa]
		-10	-20	-30	-40	-50	-60	-70	-80		
0.2	0.33	0.21	0.52	1.09	2.1	—	—	—	—	-55	
0.35	0.48	0.16	0.32	0.6	1.1	1.7	2.6	3.8	6.1	-90	
0.4	0.55	0.17	0.33	0.55	0.9	1.5	2.4	3.7	7.1	-89	

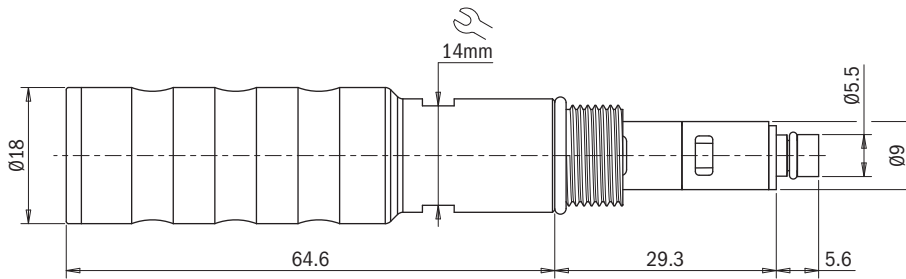
### Identification codes

Drawing	Alphanumeric code	Description	Order code
A	EJ-M-LP-2	EJ-MEDIUM-LP-2 without holder	3300007
B	EJ-M-LP-2-HS	EJ-MEDIUM-LP-2 with holder and integrated silencer	3300008
C	EJ-M-LP-2-NR	EJ-MEDIUM-LP-2 with non-return valve	3300009
D	EJ-M-LP-2-NR-HS	EJ-MEDIUM-LP-2 with holder, integrated silencer and non-return valve	3300010
E	EJ-M-LP-2-H	EJ-MEDIUM-LP-2 with holder	3300059

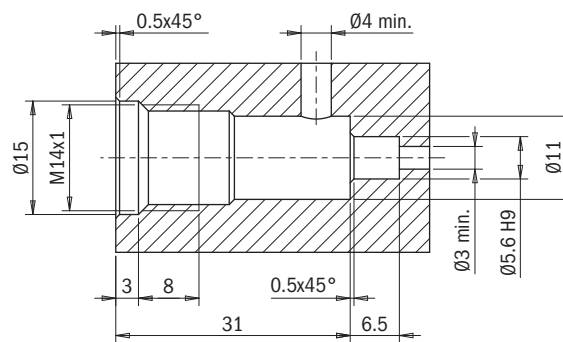
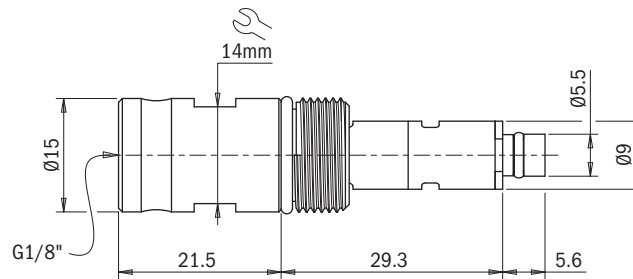
A C



B D



E



## EJ-MEDIUM-LP-3

- Three-stage EJ-MEDIUM-LP-3 cartridge with compact dimensions
- High initial flow rate, reduces gripping time
- Can be integrated near the gripping point, lightweight
- Suitable and reliable even in the case of fluctuations in feed pressure
- Ideal for handling sealed objects
- Maximum vacuum level (-90 kPa)
- Available in the cartridge-only or cartridge with holder and integrated silencer versions



### Technical features

Max feed pressure	0.7 MPa
Temperature range	-10 ÷ +80 °C
Weight	4 ÷ 18.7 g

### Suction flow rate

Feed pressure [MPa]	Air consumption [l/s]	Suction flow rate [l/s] at different vacuum levels [kPa]										Max vacuum [kPa]
		0	-10	-20	-30	-40	-50	-60	-70	-80		
0.2	0.33	0.9	0.41	0.23	0.12	0.07	—	—	—	—	-55	
0.35	0.48	1.6	0.73	0.45	0.26	0.18	0.14	0.10	0.06	0.03	-90	
0.4	0.55	1.5	0.71	0.53	0.38	0.24	0.12	0.09	0.06	0.02	-89	

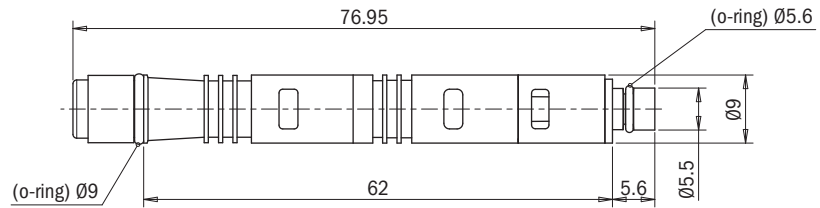
### Evacuation time

Feed pressure [MPa]	Air consumption [l/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]									Max vacuum [kPa]
		-10	-20	-30	-40	-50	-60	-70	-80		
0.2	0.33	0.15	0.45	1.09	2.1	—	—	—	—	-55	
0.35	0.48	0.06	0.20	0.50	1.1	1.7	2.6	3.8	6.1	-90	
0.4	0.55	0.08	0.23	0.44	0.76	1.4	2.4	3.7	7.1	-89	

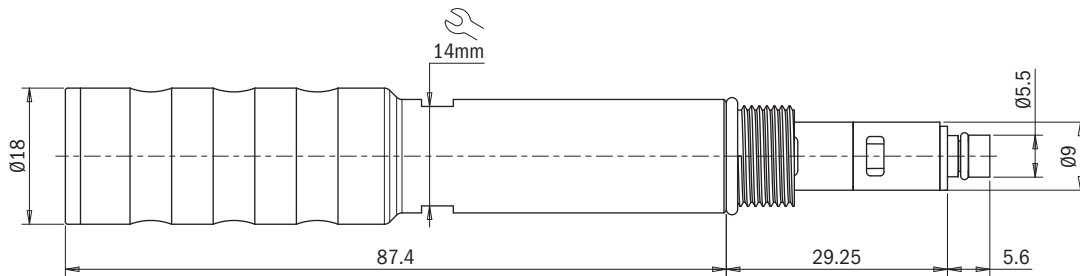
### Identification codes

Drawing	Alphanumeric code	Description	Order code
A	EJ-M-LP-3	EJ-MEDIUM-LP-3 without holder	3300019
B	EJ-M-LP-3-HS	EJ-MEDIUM-LP-3 with holder and integrated silencer	3300020
C	EJ-M-LP-3-NR	EJ-MEDIUM-LP-3 with non-return valve	3300021
D	EJ-M-LP-3-NR-HS	EJ-MEDIUM-LP-3 with holder, integrated silencer and non-return valve	3300022
E	EJ-M-LP-3-H	EJ-MEDIUM-LP-3 with holder	3300062

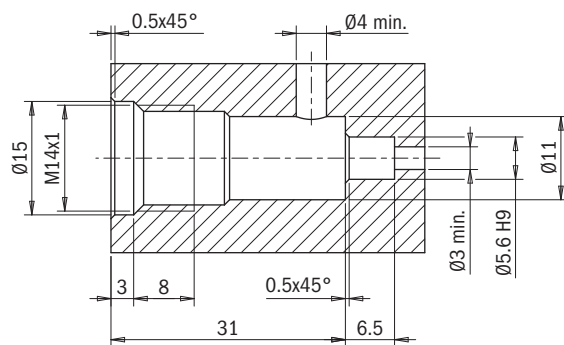
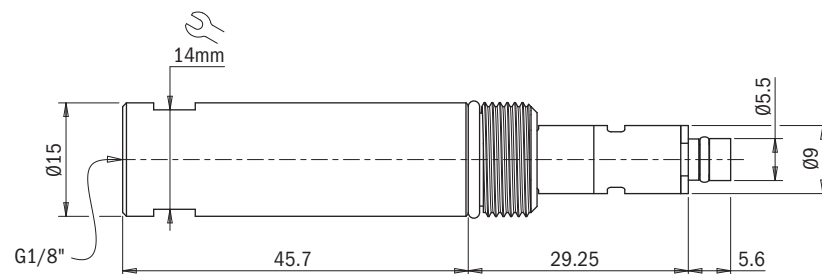
A C



B D



E



## EJ-MEDIUM-HF-2

- Two-stage EJ-MEDIUM-HF-2 cartridge with compact dimensions
- Can be integrated near the gripping point, lightweight
- Suitable for handling objects with uneven or porous surfaces
- Maximum vacuum level (-73 kPa)
- Available in the cartridge-only or cartridge with holder and integrated silencer versions



### Technical features

Max feed pressure	0.7 MPa
Temperature range	-10 ÷ +80 °C
Weight	2.2 ÷ 15 g

### Suction flow rate

Feed pressure [MPa]	Air consumption [NI/s]	Suction flow rate [NI/s] at different vacuum levels [kPa]								Max vacuum [kPa]
		0	-10	-20	-30	-40	-50	-60	-70	
0.4	0.32	0.70	0.54	0.33	0.26	0.20	0.14	—	—	-60
0.5	0.39	0.76	0.62	0.42	0.28	0.19	0.15	0.06	0.01	-69
0.6	0.43	0.78	0.68	0.52	0.31	0.21	0.15	0.10	0.08	-73

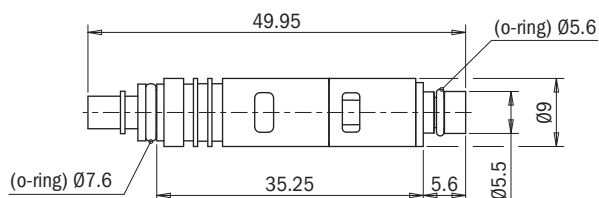
### Evacuation time

Feed pressure [MPa]	Air consumption [NI/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]							Max vacuum [kPa]
		-10	-20	-30	-40	-50	-60	-70	
0.4	0.32	0.16	0.39	0.72	1.1	1.9	3.6	—	-60
0.5	0.39	0.14	0.34	0.62	1	1.6	2.6	4.7	-69
0.6	0.43	0.13	0.30	0.54	0.9	1.5	2.3	3.2	-73

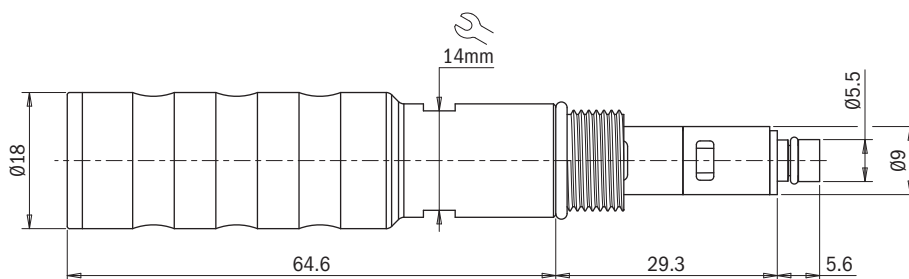
### Identification codes

Drawing	Alphanumeric code	Description	Order code
A	EJ-M-HF-2	EJ-MEDIUM-HF-2 without holder	3300011
B	EJ-M-HF-2-HS	EJ-MEDIUM-HF-2 with holder and integrated silencer	3300012
C	EJ-M-HF-2-NR	EJ-MEDIUM-HF-2 with non-return valve	3300013
D	EJ-M-HF-2-NR-HS	EJ-MEDIUM-HF-2 with holder, integrated silencer and non-return valve	3300014
E	EJ-M-HF-2-H	EJ-MEDIUM-HF-2 with holder	3300058

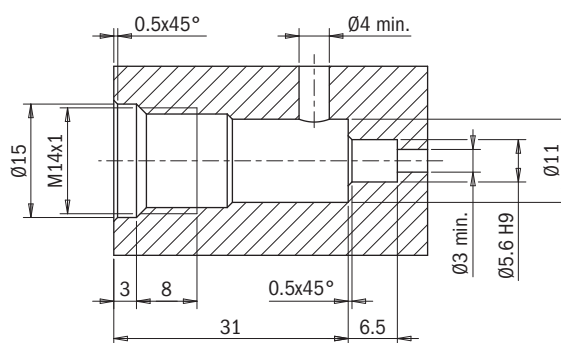
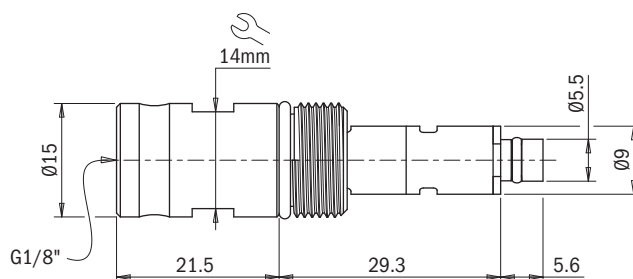
A C



B D



E





## EJ-MEDIUM-HF-3

- Three-stage EJ-MEDIUM-HF-3 cartridge with compact dimensions
- High initial flow rate, reduces gripping time
- Suitable for handling objects with uneven or porous surfaces
- Can be integrated near the gripping point, lightweight
- Maximum vacuum level (-73 kPa)
- Available in the cartridge-only or cartridge with holder and integrated silencer versions



### Technical features

Max feed pressure	0.7 MPa
Temperature range	-10 ÷ +80 °C
Weight	4 ÷ 18.7 g

### Suction flow rate

Feed pressure [MPa]	Air consumption [l/s]	Suction flow rate [l/s] at different vacuum levels [kPa]								Max vacuum [kPa]
		0	-10	-20	-30	-40	-50	-60	-70	
0.4	0.32	1	0.57	0.36	0.26	0.20	0.14	—	—	-60
0.5	0.39	1.22	0.64	0.46	0.28	0.19	0.15	0.06	0.01	-70
0.6	0.43	1.35	0.75	0.55	0.31	0.21	0.15	0.10	0.08	-73

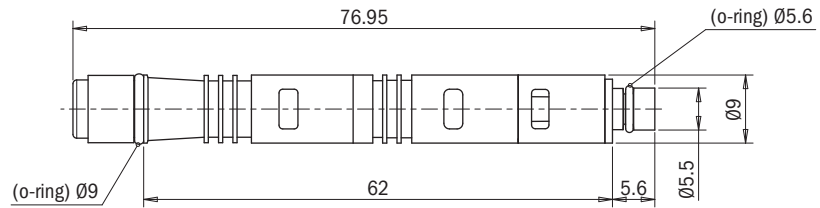
### Evacuation time

Feed pressure [MPa]	Air consumption [l/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]							Max vacuum [kPa]
		-10	-20	-30	-40	-50	-60	-70	
0.4	0.32	0.13	0.34	0.66	1.1	1.9	3.6	—	-60
0.5	0.39	0.11	0.29	0.55	0.9	1.5	2.3	4.6	-70
0.6	0.43	0.1	0.25	0.48	0.8	1.3	2.3	3.2	-73

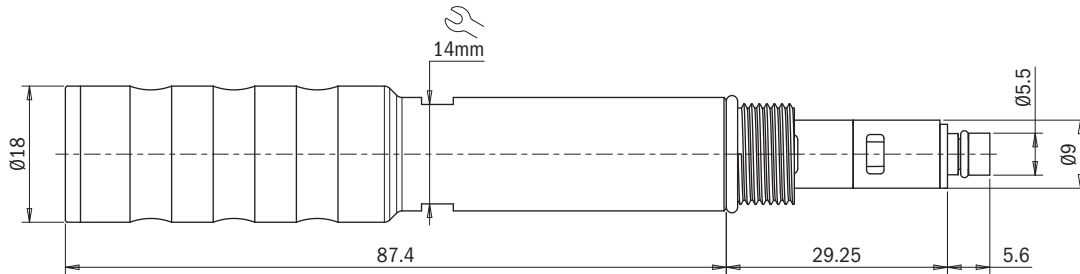
### Identification codes

Drawing	Alphanumeric code	Description	Order code
A	EJ-M-HF-3	EJ-MEDIUM-HF-3 without holder	3300023
B	EJ-M-HF-3-HS	EJ-MEDIUM-HF-3 with holder and integrated silencer	3300024
C	EJ-M-HF-3-NR	EJ-MEDIUM-HF-3 with non-return valve	3300025
D	EJ-M-HF-3-NR-HS	EJ-MEDIUM-HF-3 with holder, integrated silencer and non-return valve	3300026
E	EJ-M-HF-3-H	EJ-MEDIUM-HF-3 with holder	3300061

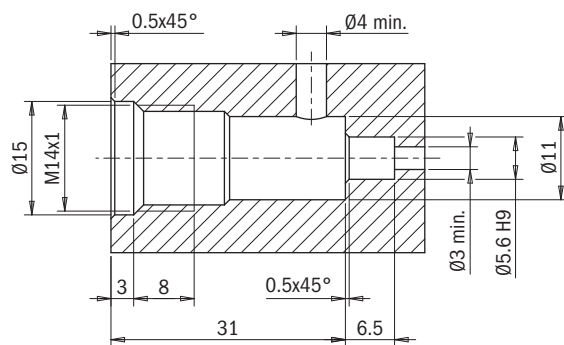
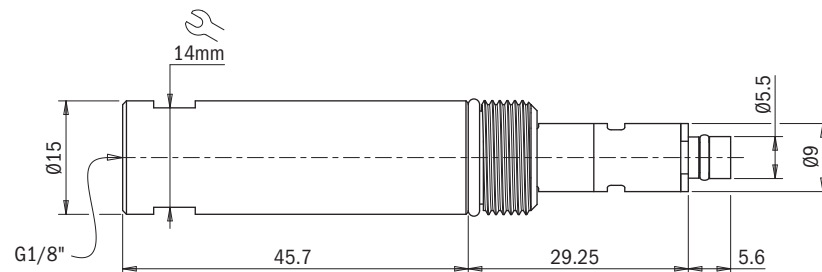
A C



B D



E



## EJ-MEDIUM-HV-2

- Two-stage EJ-MEDIUM-HV-2 cartridge with compact dimensions
- Can be integrated near the gripping point, lightweight
- Suitable for handling sealed objects
- Fast response times at high vacuum levels
- Maximum vacuum level (-94 kPa)
- Available in the cartridge-only or cartridge with holder and integrated silencer versions



### Technical features

Max feed pressure	0.7 MPa
Temperature range	-10 ÷ +80 °C
Weight	2.2 ÷ 15 g

### Suction flow rate

Feed pressure [MPa]	Air consumption [l/s]	Suction flow rate [l/s] at different vacuum levels [kPa]										Max vacuum [kPa]
		0	-10	-20	-30	-40	-50	-60	-70	-80	-90	
0.5	0.47	0.76	0.63	0.54	0.32	0.17	0.15	0.11	0.07	0.05	0.01	-94
0.55	0.54	0.77	0.64	0.54	0.33	0.20	0.15	0.10	0.07	0.04	0.01	-92
0.6	0.55	0.74	0.63	0.53	0.47	0.29	0.14	0.10	0.08	0.05	0.01	-93

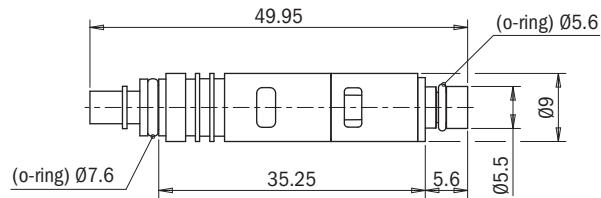
### Evacuation time

Feed pressure [MPa]	Air consumption [l/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]										Max vacuum [kPa]
		-10	-20	-30	-40	-50	-60	-70	-80	-90		
0.5	0.47	0.14	0.32	0.55	1.0	1.6	2.4	3.5	5.1	8.7	-94	
0.55	0.54	0.14	0.31	0.54	0.9	1.5	2.3	3.5	5.3	8.7	-92	
0.6	0.55	0.15	0.32	0.52	0.8	1.3	2.1	3.2	4.7	8.6	-93	

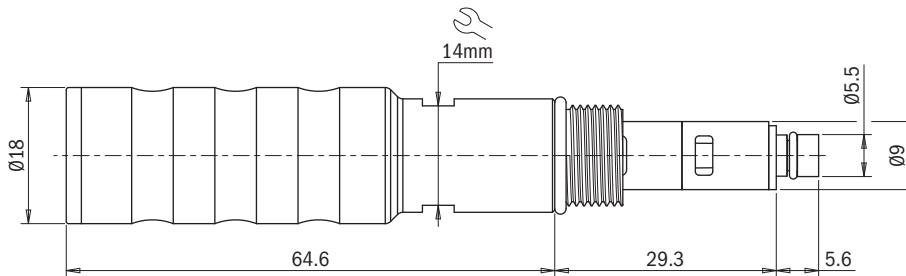
**Identification codes**

Drawing	Alphanumeric code	Description	Order code
A	EJ-M-HV-2	EJ-MEDIUM-HV-2 without holder	3300015
B	EJ-M-HV-2-HS	EJ-MEDIUM-HV-2 with holder and integrated silencer	3300016
C	EJ-M-HV-2-NR	EJ-MEDIUM-HV-2 with non-return valve	3300017
D	EJ-M-HV-2-NR-HS	EJ-MEDIUM-HV-2 with holder, integrated silencer and non-return valve	3300018
E	EJ-M-HV-2-H	EJ-MEDIUM-HV-2 with holder	3300057

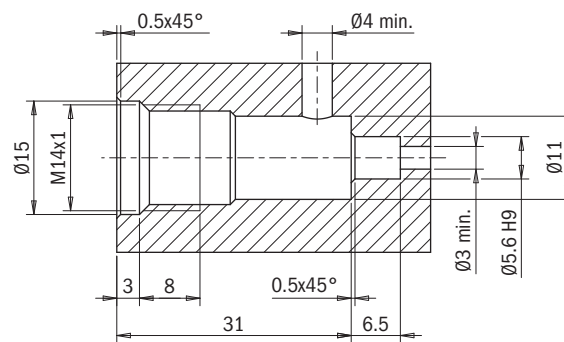
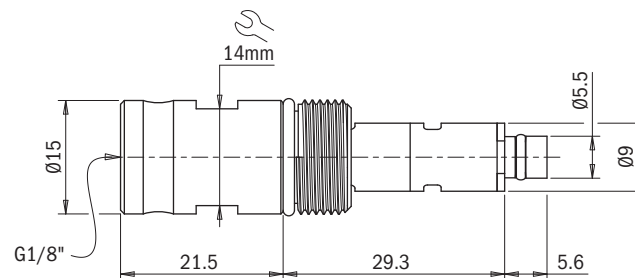
A C



B D



E



## EJ-MEDIUM-HV-3

- Three-stage EJ-MEDIUM-HV-3 cartridge with compact dimensions
- High initial flow rate, reduces gripping time
- Suitable for handling sealed objects
- Fast response times at high vacuum levels
- Maximum vacuum level (-94 kPa)
- Available in the cartridge-only or cartridge with holder and integrated silencer versions



### Technical features

Max feed pressure	0.7 MPa
Temperature range	-10 ÷ +80 °C
Weight	3.9 ÷ 18.7 g

### Suction flow rate

Feed pressure [MPa]	Air consumption [NI/s]	Suction flow rate [NI/s] at different vacuum levels [kPa]										Max vacuum [kPa]
		0	-10	-20	-30	-40	-50	-60	-70	-80	-90	
0.5	0.47	1.47	0.78	0.54	0.32	0.17	0.15	0.11	0.07	0.05	0.01	-94
0.55	0.54	1.48	0.79	0.54	0.33	0.20	0.15	0.10	0.07	0.04	0.01	-92
0.6	0.55	1.45	0.79	0.53	0.42	0.3	0.14	0.10	0.08	0.04	0.01	-93

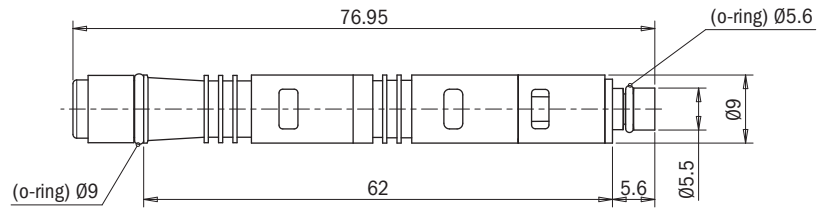
### Evacuation time

Feed pressure [MPa]	Air consumption [NI/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]										Max vacuum [kPa]
		-10	-20	-30	-40	-50	-60	-70	-80	-90		
0.5	0.47	0.08	0.24	0.47	0.88	1.6	2.4	3.5	5.1	8.7	-94	
0.55	0.54	0.09	0.24	0.47	0.85	1.4	2.2	3.4	5.2	8.7	-92	
0.6	0.55	0.09	0.25	0.45	0.70	1.3	2.1	3.2	4.7	8.6	-93	

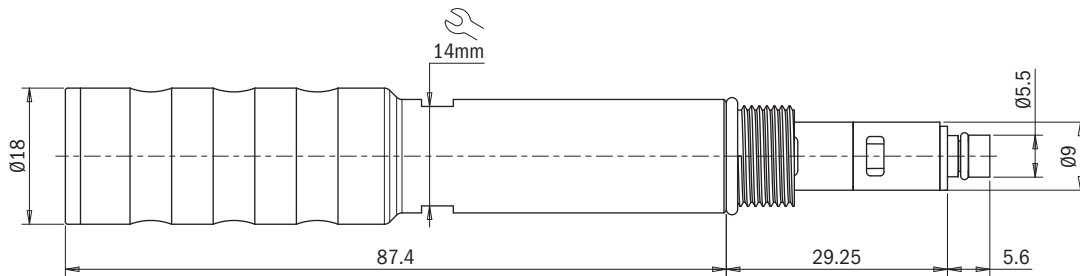
### Identification codes

Drawing	Alphanumeric code	Description	Order code
A	EJ-M-HV-3	EJ-MEDIUM-HV-3 without holder	3300027
B	EJ-M-HV-3-HS	EJ-MEDIUM-HV-3 with holder and integrated silencer	3300028
C	EJ-M-HV-3-NR	EJ-MEDIUM-HV-3 with non-return valve	3300029
D	EJ-M-HV-3-NR-HS	EJ-MEDIUM-HV-3 with holder, integrated silencer and non-return valve	3300030
E	EJ-M-HV-3-H	EJ-MEDIUM-HV-3 with holder	3300060

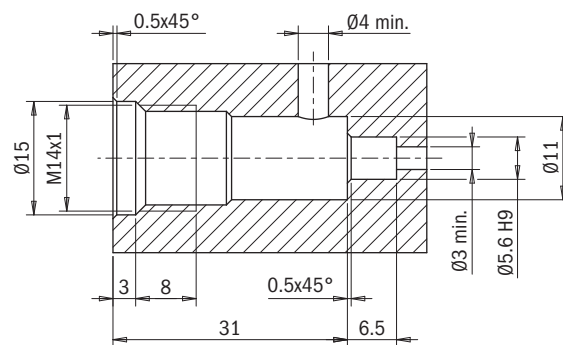
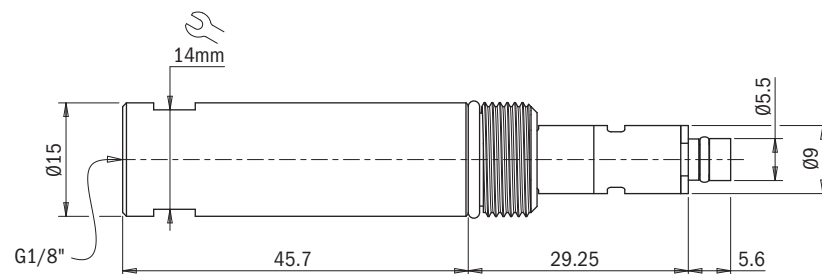
A C



B D



E



## EJ-LARGE-LP-2

- Two-stage EJ-LARGE-LP-2 cartridge, small-sized
- Can be integrated near the gripping point
- Suitable and reliable even in the case of fluctuations in feed pressure
- Ideal for handling sealed objects
- Maximum vacuum level (-90 kPa)
- Available in the cartridge-only or cartridge with holder and integrated silencer versions



### Technical features

Max feed pressure	0.7 MPa
Temperature range	-10 ÷ +80 °C
Weight	15.3 ÷ 68.7 g

### Suction flow rate

Feed pressure [MPa]	Air consumption [NI/s]	Suction flow rate [NI/s] at different vacuum levels [kPa]										Max vacuum [kPa]
		0	-10	-20	-30	-40	-50	-60	-70	-80	-90	
0.2	1.5	2.6	1.6	1.0	0.7	0.4	0.14	—	—	—	-60	
0.35	2.3	2.9	2.6	1.8	1.4	0.94	0.47	0.29	0.25	0.08	-90	
0.4	2.6	2.8	2.5	2.1	1.5	1.1	0.66	0.36	0.26	0.08	-89	

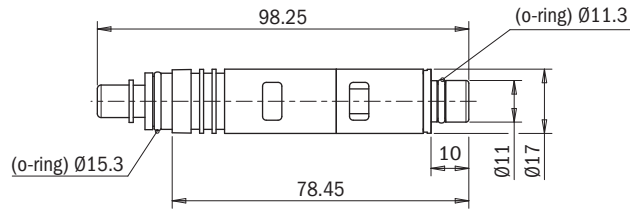
### Evacuation time

Feed pressure [MPa]	Air consumption [NI/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]										Max vacuum [kPa]
		-10	-20	-30	-40	-50	-60	-70	-80	-90	-90	
0.2	1.5	0.05	0.12	0.24	0.4	0.8	—	—	—	—	-60	
0.35	2.3	0.04	0.08	0.14	0.2	0.4	0.6	1.0	1.6	—	-90	
0.4	2.6	0.04	0.07	0.14	0.19	0.3	0.5	0.8	1.4	—	-89	

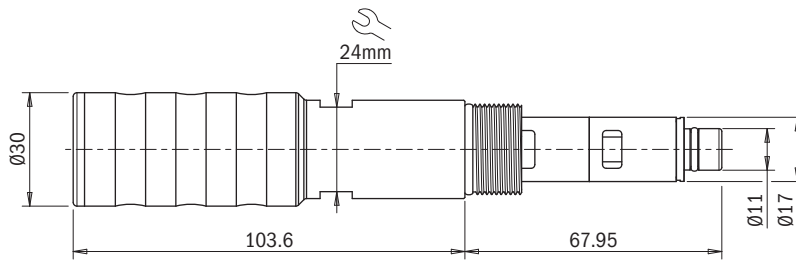
**Identification codes**

Drawing	Alphanumeric code	Description	Order code
A	EJ-L-LP-2	EJ-LARGE-LP-2 without holder	3300033
B	EJ-L-LP-2-HS	EJ-LARGE-LP-2 with holder and integrated silencer	3300034
C	EJ-L-LP-2-NR	EJ-LARGE-LP-2 with non-return valve	3300035
D	EJ-L-LP-2-NR-HS	EJ-LARGE-LP-2 with holder, integrated silencer and non-return valve	3300036
E	EJ-L-LP-2-H	EJ-LARGE-LP-2 with holder	3300065

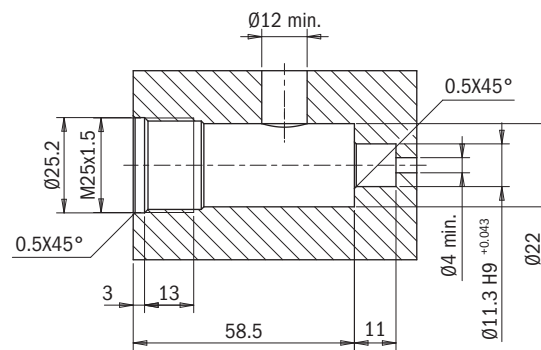
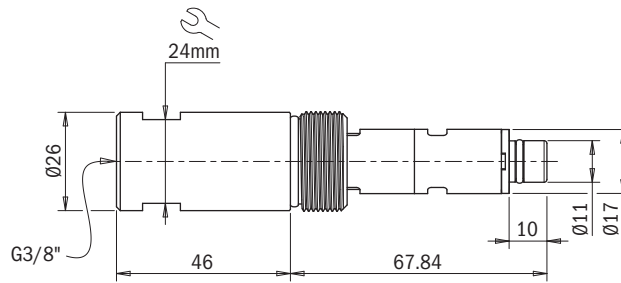
A C



B D



E





## EJ-LARGE-LP-3

- Three-stage EJ-LARGE-LP-3 cartridge with compact dimensions
- High initial flow rate, reduces gripping time
- Can be integrated near the gripping point
- Suitable and reliable even in the case of fluctuations in feed pressure
- Ideal for handling sealed objects
- Maximum vacuum level (-90 kPa)
- Available in the cartridge-only or cartridge with holder and integrated silencer versions



### Technical features

Max feed pressure	0.7 MPa
Temperature range	-10 ÷ +80 °C
Weight	24.4 ÷ 84.4 g

### Suction flow rate

Feed pressure [MPa]	Air consumption [l/s]	Suction flow rate [l/s] at different vacuum levels [kPa]										Max vacuum [kPa]
		0	-10	-20	-30	-40	-50	-60	-70	-80	-90	
0.2	1.5	4.0	1.6	1.0	0.7	0.4	0.14	–	–	–	–	-60
0.35	2.3	5.6	2.6	1.8	1.4	0.94	0.47	0.29	0.25	0.08	0.08	-90
0.4	2.6	5.7	2.5	2.1	1.5	1.1	0.66	0.36	0.26	0.08	0.08	-89

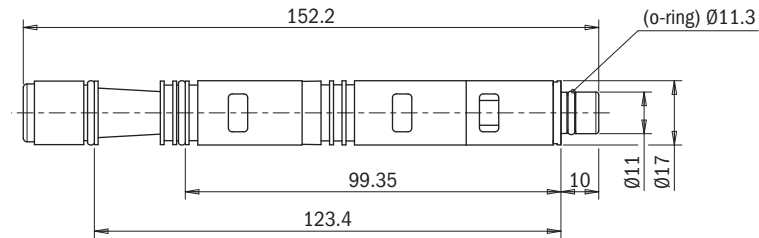
### Evacuation time

Feed pressure [MPa]	Air consumption [l/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]										Max vacuum [kPa]
		-10	-20	-30	-40	-50	-60	-70	-80	-90	-90	
0.2	1.5	0.04	0.11	0.23	0.4	0.8	–	–	–	–	–	-60
0.35	2.3	0.02	0.07	0.13	0.2	0.4	0.6	1.0	1.6	–	–	-90
0.4	2.6	0.02	0.07	0.12	0.2	0.3	0.5	0.8	1.4	–	–	-89

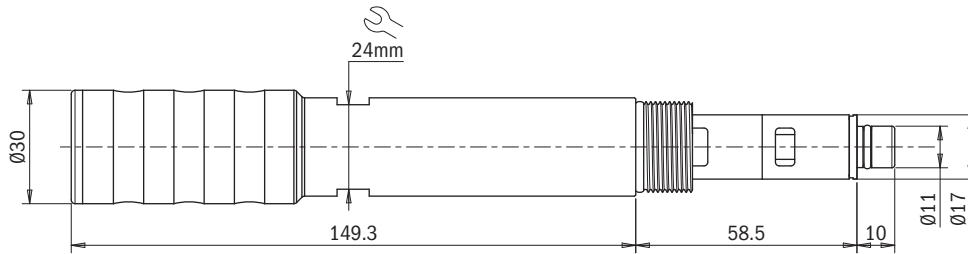
### Identification codes

Drawing	Alphanumeric code	Description	Order code
A	EJ-L-LP-3	EJ-LARGE-LP-3 without holder	3300037
B	EJ-L-LP-3-HS	EJ-LARGE-LP-3 with holder and integrated silencer	3300038
C	EJ-L-LP-3-NR	EJ-LARGE-LP-3 with non-return valve	3300039
D	EJ-L-LP-3-NR-HS	EJ-LARGE-LP-3 with holder, integrated silencer and non-return valve	3300040
E	EJ-L-LP-3-H	EJ-LARGE-LP-3 with holder	3300068

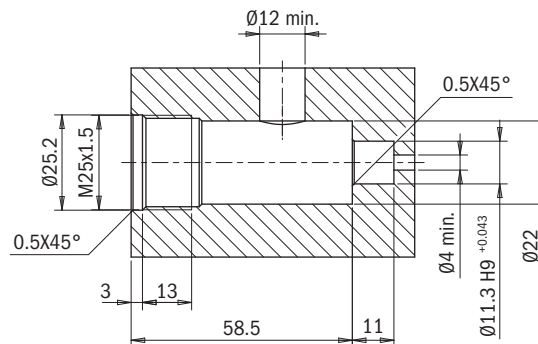
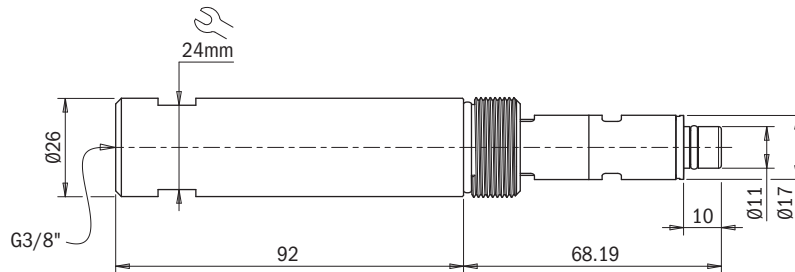
A C



B D



E



## EJ-LARGE-HF-2

- Two-stage EJ-LARGE-HF-2 cartridge with compact dimensions
- Can be integrated near the gripping point
- Ideal for handling objects with uneven or porous surfaces
- Suitable for removing large volumes of air
- Able to compensate for any losses on the gripping surface
- Maximum vacuum level (-73 kPa)
- Available in the cartridge-only or cartridge with holder and integrated silencer versions



### Technical features

Max feed pressure	0.7 MPa
Temperature range	-10 ÷ +80 °C
Weight	15.3 ÷ 68.7 g

### Suction flow rate

Feed pressure [MPa]	Air consumption [NI/s]	Suction flow rate [NI/s] at different vacuum levels [kPa]								Max vacuum [kPa]
		0	-10	-20	-30	-40	-50	-60	-70	
0.4	1.3	3.0	2.6	1.8	1.1	0.80	0.38	0.1	—	-60
0.5	1.5	3.1	2.8	2.1	1.4	0.86	0.60	0.30	0.18	-70
0.6	1.7	3.2	3.0	2.5	1.7	0.89	0.62	0.51	0.31	-73

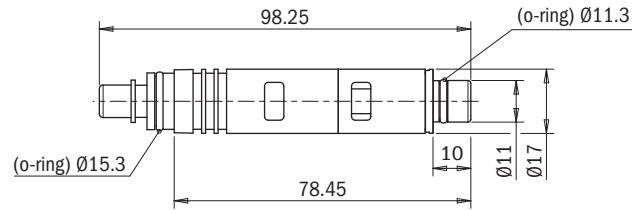
### Evacuation time

Feed pressure [MPa]	Air consumption [NI/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]							Max vacuum [kPa]
		-10	-20	-30	-40	-50	-60	-70	
0.4	1.3	0.04	0.08	0.15	0.2	0.3	0.5	—	-60
0.5	1.5	0.03	0.07	0.13	0.2	0.3	0.5	0.7	-70
0.6	1.7	0.03	0.07	0.12	0.19	0.3	0.4	0.7	-73

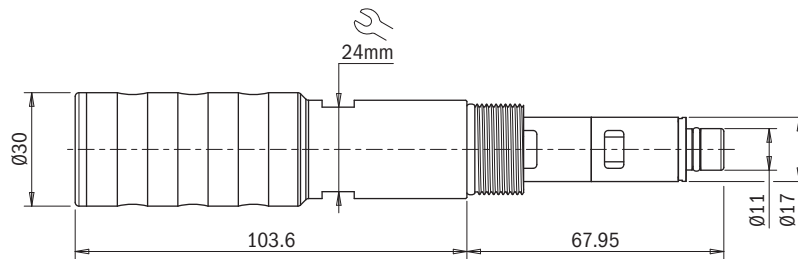
### Identification codes

Drawing	Alphanumeric code	Description	Order code
A	EJ-L-HF-2	EJ-LARGE-HF-2 without holder	3300041
B	EJ-L-HF-2-HS	EJ-LARGE-HF-2 with holder and integrated silencer	3300042
C	EJ-L-HF-2-NR	EJ-LARGE-HF-2 with non-return valve	3300043
D	EJ-L-HF-2-NR-HS	EJ-LARGE-HF-2 with holder, integrated silencer and non-return valve	3300044
E	EJ-L-HF-2-H	EJ-LARGE-HF-2 with holder	3300064

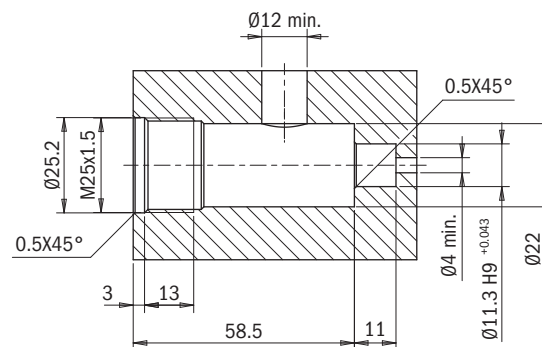
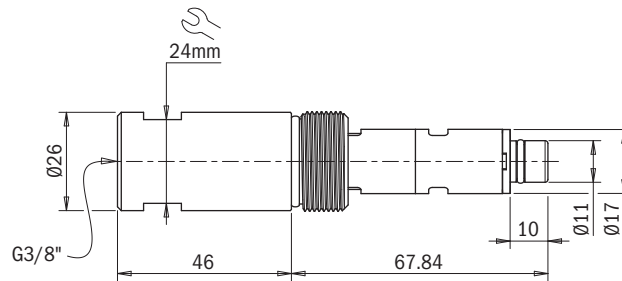
A C



B D



E



## EJ-LARGE-HF-3

- Three-stage EJ-LARGE-HF-3 cartridge with compact dimensions
- High initial flow rate, reduces gripping time
- Suitable for handling objects with uneven or porous surfaces
- Can be integrated near the gripping point
- Able to compensate for any losses on the gripping surface
- High suction flow rate with low energy consumption
- Maximum vacuum level (-73 kPa)
- Available in the cartridge-only or cartridge with holder and integrated silencer versions



### Technical features

Max feed pressure	0.7 MPa
Temperature range	-10 ÷ +80 °C
Weight	24.4 ÷ 84.4 g

### Suction flow rate

Feed pressure [MPa]	Air consumption [l/s]	Suction flow rate [l/s] at different vacuum levels [kPa]								Max vacuum [kPa]
		0	-10	-20	-30	-40	-50	-60	-70	
0.4	1.3	4.9	2.9	1.8	1.1	0.80	0.38	0.1	—	-60
0.5	1.5	5.6	3.2	2.1	1.4	0.86	0.60	0.30	0.18	-70
0.6	1.7	5.9	3.5	2.5	1.7	0.89	0.62	0.51	0.31	-73

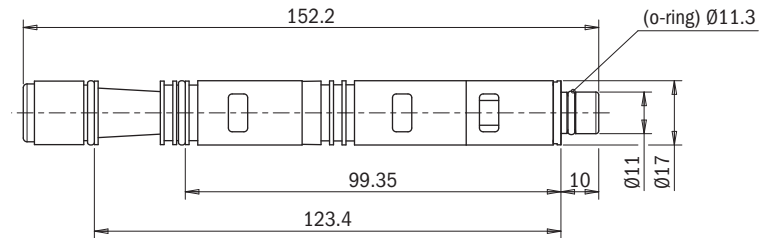
### Evacuation time

Feed pressure [MPa]	Air consumption [l/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]							Max vacuum [kPa]
		-10	-20	-30	-40	-50	-60	-70	
0.4	1.3	0.03	0.07	0.14	0.2	0.3	0.5	—	-60
0.5	1.5	0.02	0.06	0.12	0.2	0.3	0.5	0.7	-70
0.6	1.7	0.02	0.05	0.10	0.19	0.3	0.4	0.7	-73

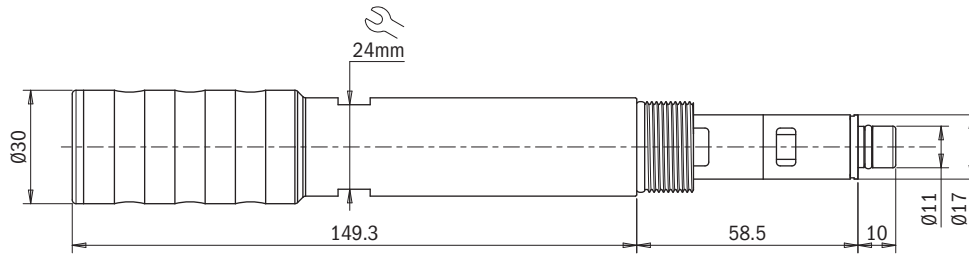
### Identification codes

Drawing	Alphanumeric code	Description	Order code
A	EJ-L-HF-3	EJ-LARGE-HF-3 without holder	3300045
B	EJ-L-HF-3-HS	EJ-LARGE-HF-3 with holder and integrated silencer	3300046
C	EJ-L-HF-3-NR	EJ-LARGE-HF-3 with non-return valve	3300047
D	EJ-L-HF-3-NR-HS	EJ-LARGE-HF-3 with holder, integrated silencer and non-return valve	3300048
E	EJ-L-HF-3-H	EJ-LARGE-HF-3 with holder	3300067

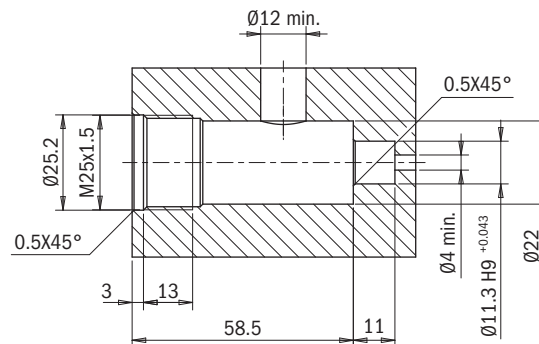
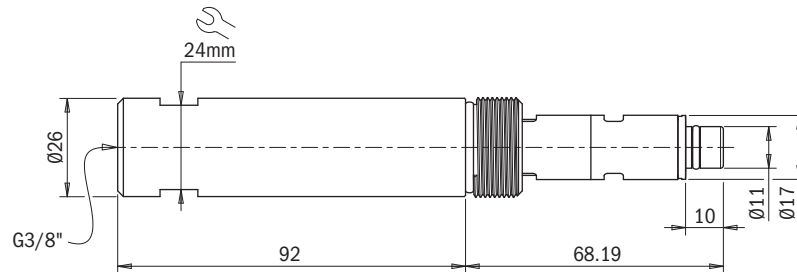
A C



B D



E



## EJ-LARGE-HV-2

- Two-stage EJ-LARGE-HV-2 cartridge with compact dimensions
- Can be integrated near the gripping point
- Suitable for handling sealed objects, while being effective on porous products thanks to the high suction flow rate (between -30 and -50 kPa)
- Fast response times at high vacuum levels
- Maximum vacuum level (-94 kPa)
- Available in the cartridge-only or cartridge with holder and integrated silencer versions



### Technical features

Max feed pressure	0.7 MPa
Temperature range	-10 ÷ +80 °C
Weight	15.3 ÷ 68.7 g

### Suction flow rate

Feed pressure [MPa]	Air consumption [l/s]	Suction flow rate [l/s] at different vacuum levels [kPa]										Max vacuum [kPa]
		0	-10	-20	-30	-40	-50	-60	-70	-80	-90	
0.45	1.82	2.8	2.3	1.7	1.0	0.70	0.58	0.40	0.31	0.18	0.03	-90
0.5	1.93	2.6	2.4	1.7	1.3	0.70	0.55	0.40	0.31	0.15	0.02	-94
0.6	2.33	2.7	2.4	2.0	1.6	1.03	0.68	0.36	0.30	0.14	0.02	-92

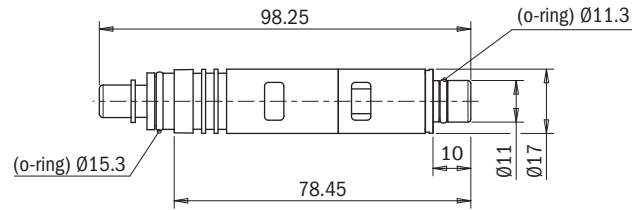
### Evacuation time

Feed pressure [MPa]	Air consumption [l/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]										Max vacuum [kPa]
		-10	-20	-30	-40	-50	-60	-70	-80	-90		
0.45	1.82	0.04	0.08	0.13	0.2	0.4	0.5	0.7	1.0	2.3	-90	
0.5	1.93	0.04	0.09	0.16	0.3	0.4	0.6	0.9	1.3	2.5	-94	
0.6	2.33	0.04	0.08	0.14	0.2	0.3	0.5	0.8	1.3	2.3	-92	

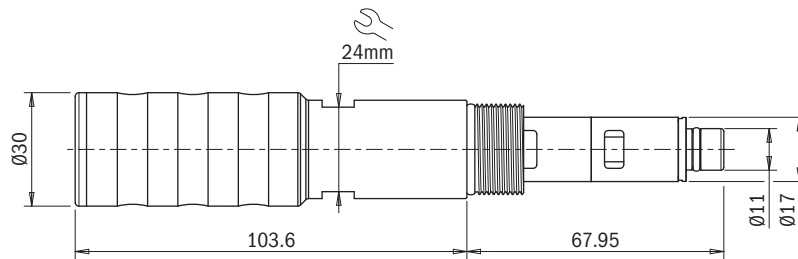
**Identification codes**

Drawing	Alphanumeric code	Description	Order code
A	EJ-L-HV-2	EJ-LARGE-HV-2 without holder	3300049
B	EJ-L-HV-2-HS	EJ-LARGE-HV-2 with holder and integrated silencer	3300050
C	EJ-L-HV-2-NR	EJ-LARGE-HV-2 with non-return valve	3300051
D	EJ-L-HV-2-NR-HS	EJ-LARGE-HV-2 with holder, integrated silencer and non-return valve	3300052
E	EJ-L-HV-2-H	EJ-LARGE-HV-2 with holder	3300063

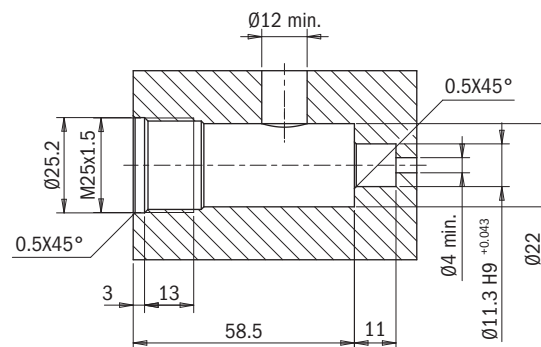
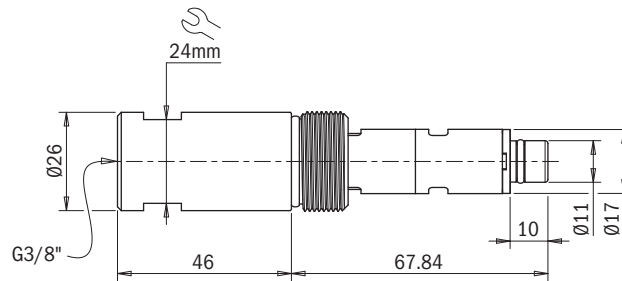
A C



B D



E





## EJ-LARGE-HV-3

- Three-stage EJ-LARGE-HV-3 cartridge with compact dimensions
- High initial flow rate, reduces gripping time
- Suitable for handling sealed objects, while being effective on porous products thanks to the high suction flow rate (between -30 and -50 kPa)
- Fast response times at high vacuum levels
- Maximum vacuum level (-94 kPa)
- Available in the cartridge-only or cartridge with holder and integrated silencer versions



### Technical features

Max feed pressure	0.7 MPa
Temperature range	-10 ÷ +80 °C
Weight	24.4 ÷ 84.4 g

### Suction flow rate

Feed pressure [MPa]	Air consumption [l/s]	Suction flow rate [l/s] at different vacuum levels [kPa]										Max vacuum [kPa]
		0	-10	-20	-30	-40	-50	-60	-70	-80	-90	
0.45	1.82	5.9	3.0	2.1	1.3	0.70	0.58	0.40	0.31	0.18	0.03	-90
0.5	1.93	6.0	3.7	2.1	1.9	0.79	0.55	0.40	0.31	0.15	0.02	-94
0.6	2.33	5.9	3.2	2.2	1.7	1.03	0.68	0.36	0.30	0.14	0.02	-92

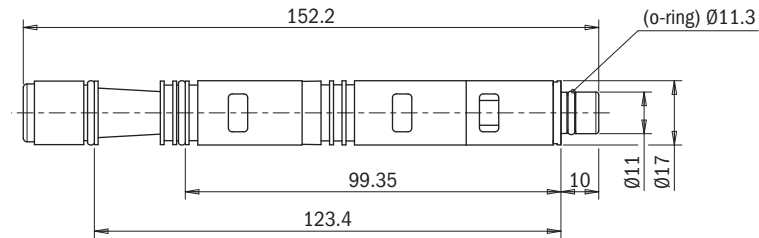
### Evacuation time

Feed pressure [MPa]	Air consumption [l/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]										Max vacuum [kPa]
		-10	-20	-30	-40	-50	-60	-70	-80	-90		
0.45	1.82	0.02	0.06	0.12	0.2	0.4	0.5	0.7	1.0	2.3	-90	
0.5	1.93	0.02	0.06	0.10	0.2	0.3	0.4	0.7	1.1	2.4	-94	
0.6	2.33	0.02	0.06	0.11	0.2	0.3	0.5	0.8	1.3	2.3	-92	

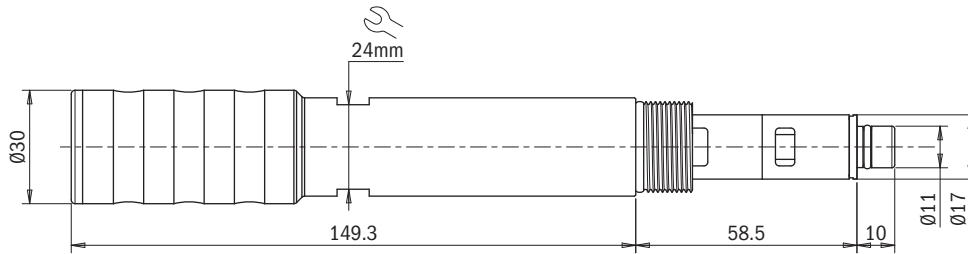
### Identification codes

Drawing	Alphanumeric code	Description	Order code
A	EJ-L-HV-3	EJ-LARGE-HV-3 without holder	3300053
B	EJ-L-HV-3-HS	EJ-LARGE-HV-3 with holder and integrated silencer	3300054
C	EJ-L-HV-3-NR	EJ-LARGE-HV-3 with non-return valve	3300055
D	EJ-L-HV-3-NR-HS	EJ-LARGE-HV-3 with holder, integrated silencer and non-return valve	3300056
E	EJ-L-HV-3-H	EJ-LARGE-HV-3 with holder	3300066

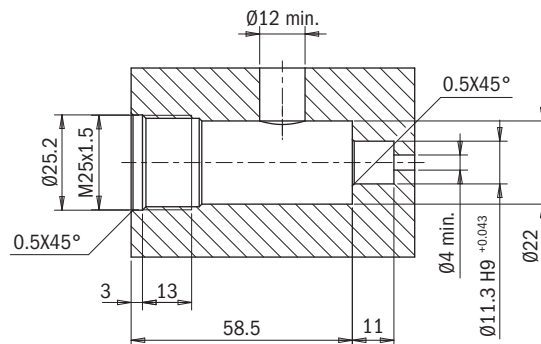
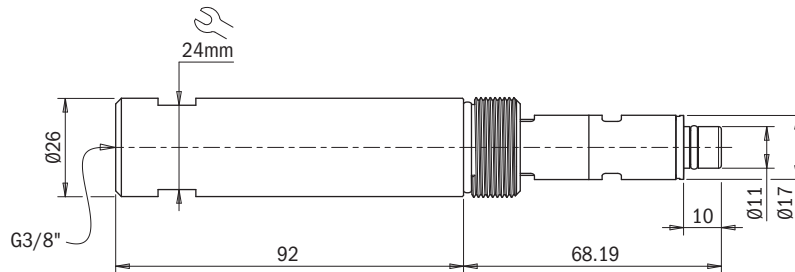
A C



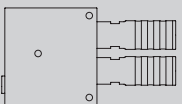
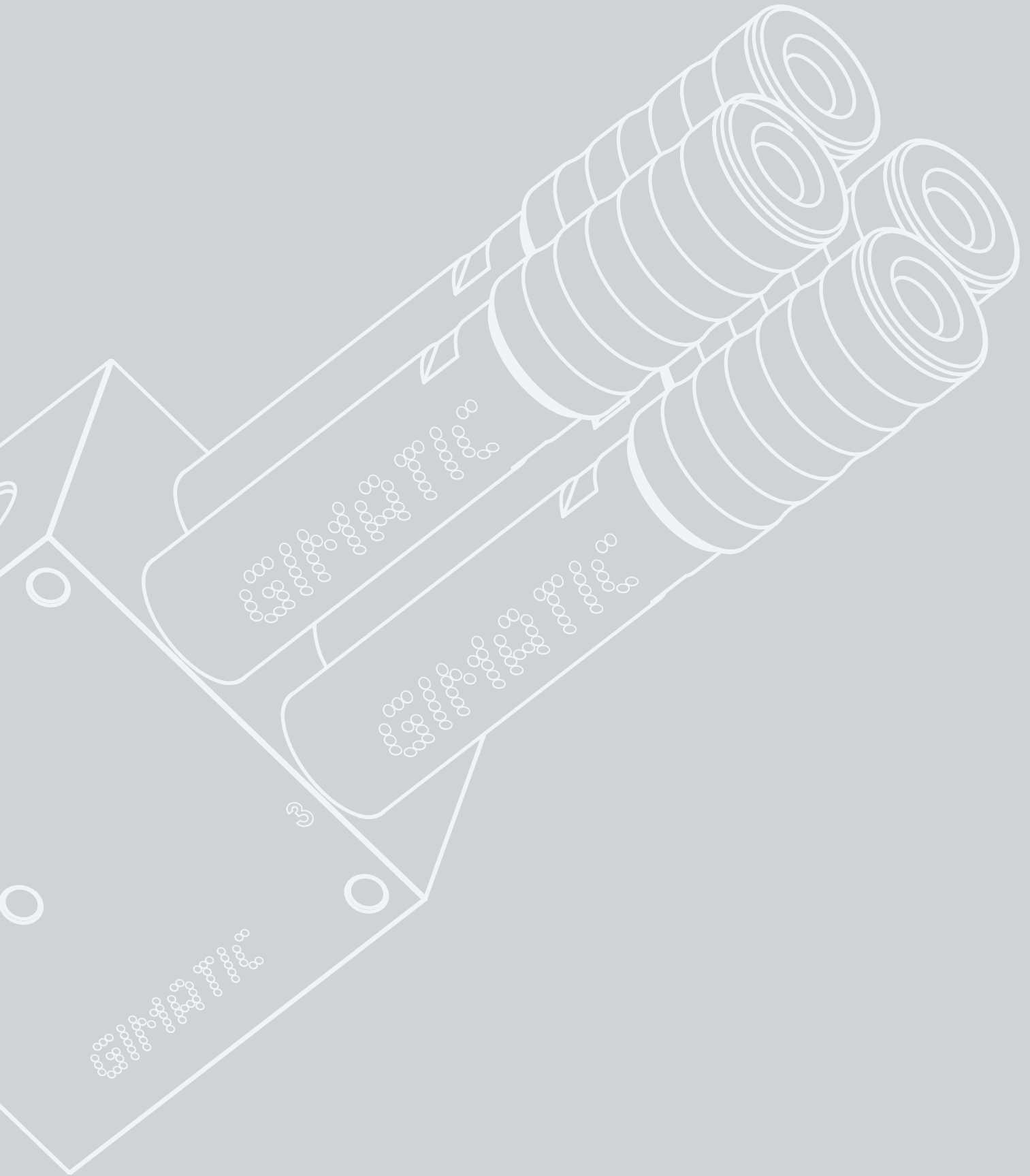
B D



E
























## VACUUM PUMPS


## VACUUM PUMP SIZES

Size	Vacuum pump		Max suction flow rate
SMALL	EJ-LINE-SMALL		0.18 ÷ 0.50 [l/s]
	EJ-SYS-SMALL		
	EJ-ATM-LINE-SMALLX2		

Size	Vacuum pump		Max suction flow rate
MEDIUM	EJ-LINE-MEDIUM		0.57 ÷ 2.7 [Nl/s]
	EJ-BA-MEDIUM		
	EJ-BA-MEDIUMX2		
	EJ-SYS-MEDIUM		
	EJ-SLG-MEDIUM		
	EJ-ATM-MEDIUM		
	EJ-BLOWOFF-MEDIUM		
	EJ-BLOWOFF-MEDIUMX2		
	EJ-BSV-MEDIUM		

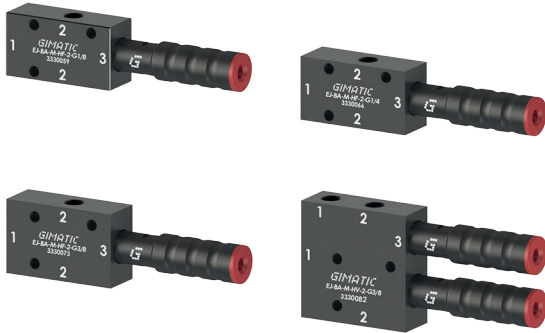
# VACUUM PUMP SIZES

Size	Vacuum pump	Max suction flow rate	
LARGE	EJ-SYS-LARGE		2.6 ÷ 24 [NI/s]
	EJ-SLG-LARGE		
	EJ-BLOWOFF-LARGE		
	EJ-BSVLG-LARGE-ISO		
	EJ-MLG-LARGE2		
	EJ-MLG-LARGE3		
	EJ-MLG-LARGE4		
	EJ-CEN-LARGE		

Size	Vacuum pump		Max suction flow rate
LARGE - BATTERY	EJ-XPRO		2.6 ÷ 12.8 [NI/s]



## VACUUM PUMP DESCRIPTION



### EJ-BA

The EJ-BA vacuum pumps consist of an anodised aluminium manifold, which guarantees high strength and while allowing compact dimensions. They can integrate the EJ-MEDIUM cartridges in the 2 and 3-stage versions with integrated silencer.



### EJ-LINE

EJ-LINE pumps have superior vacuum characteristics even at low or fluctuating mains pressure. In-line design to optimise overall dimensions. The aluminium body provides high strength, the thread in the vacuum port allows direct fixing of the suction cup, avoiding the need of additional pipes or fittings.



### EJ-SYS

The EJ-SYS range of vacuum pumps allows to simplify the sizing and the installation in a vacuum circuit. Vacuum pumps suitable for both decentralized and centralized circuits, thanks to the high suction flow rate of the EJ-SYS-LARGE version.



### EJ-SLG

The EJ-SLG vacuum pumps consist of a POM housing, which makes the pump extremely lightweight and compact. Both the EJ-SLG-MEDIUM and the EJ-SLG-LARGE solutions are available in two- and three-stage versions with integrated silencer. Possibility of prearrangement with pre-set Gimatic digital vacuum switch, VACSW-3N203-G (PNP) and VACSW-3M203-G (NPN) version.

## EJ-ATM

Vacuum pump developed for sealed applications where, due to the high vacuum reached, an atmospheric release is required, in order to reduce the time of detachment of the handled item and to speed up the movement of the gripping tool. The key features are low weight, low energy consumption and easy installation.



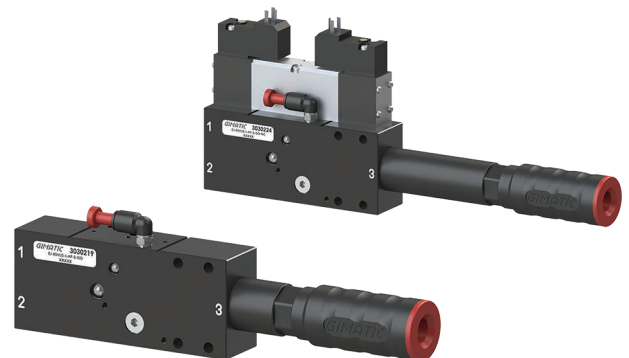
## EJ-BLOWOFF / EJ-BSV

The EJ-BLOWOFF vacuum pump is the right choice for high frequency Pick-and-Place applications. The built-in blow-off tank allows to release the handled object very quickly while keeping the EJ-MEDIUM cartridge clean, avoiding clogging in particularly dusty environments. Available in the version with 1 and 2 two-stage EJ-MEDIUM cartridges. The EJ-BSV version features an integrated 3/2 valve in the NC or NO version.



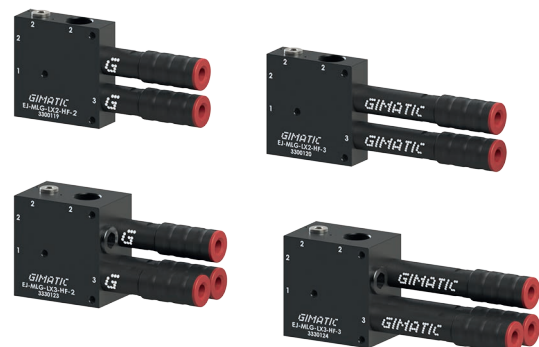
## EJ-BSVL

Vacuum pump ideal for centralized or decentralized applications with integrated ISO vacuum/blow-off valve, suitable for handling parts with sealed or porous surfaces. Extremely lightweight POM body with ISO design, available in the two- or three-stage EJ-LARGE versions.



## EJ-MLG

The design of the EJ-MLG vacuum pumps (body in POM) allows the integration of up to 4 EJ-LARGE cartridges, with 2 or 3 stages, making the vacuum pump a modular and flexible solution. Developed mainly for centralized applications, to simultaneously manage several suction cups or several users of the vacuum circuit.



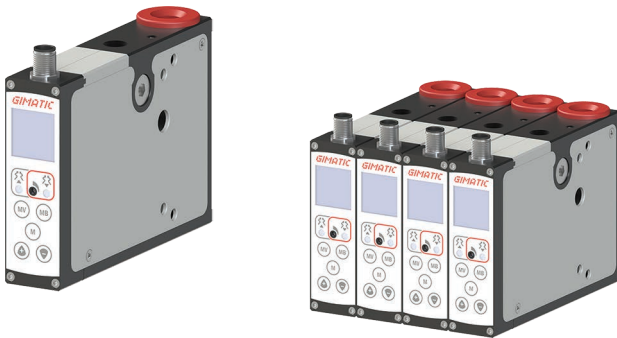
## VACUUM PUMP DESCRIPTION



### EJ-CEN

Modular and configurable pump available in the configuration with 5 to 16 two-stage EJ-LARGE cartridges. It meets the requirements of centralised and decentralised applications where a high suction flow rate is required. Maintenance-free compact yet sturdy design.

It can also be used as a blowing pump in applications with overpressure up to 0.15 MPa.



### EJ-XPRO

Configurable vacuum pump with integrated control logic, featuring an energy-saving system that saves up to 95% compressed air in sealed applications. Available with two-stage EJ-LARGE cartridges.



### EJ-BBT

The EJ-BBT vacuum generators are based on the Coanda principle and allow to achieve a high suction flow rate at low vacuum levels. This is particularly useful when handling porous and at the same time delicate objects. Also suitable for transporting waste materials (chips) or for cooling surfaces with high temperatures.



## EJ-BA-MEDIUM

- Ideal for decentralized applications
- Low power consumption
- Can be integrated near the gripping point, lightweight
- G1/8" - G1/4" - G3/8" vacuum ports
- Auxiliary vacuum port, for possible blow-off or monitoring of the G1/8" system
- Available with two- and three-stage EJ-MEDIUM cartridge (EJ-LP, EJ-HF, EJ-HV)

### Typical applications

- Handling of sealed items such as parts in glass and metal (EJ-HV)
- Packaging, cartoners, case packing machines (EJ-HF, EJ-LP)
- Plastic (moulding)
- Automotive
- Particularly suitable for low cost automated applications

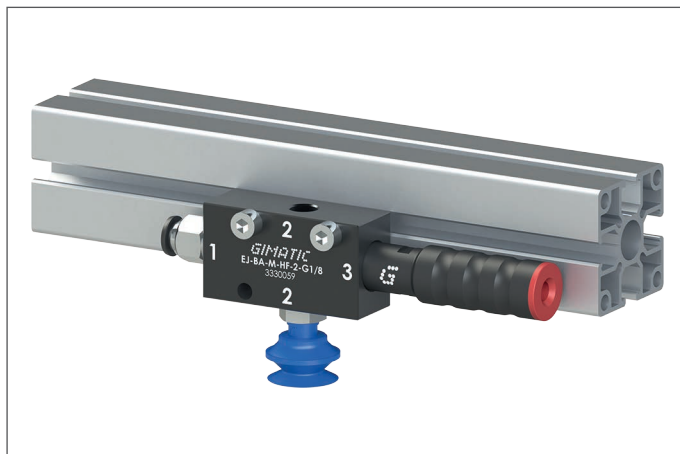
NEW



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### Application example



**Technical features**

Max feed pressure	0.7 MPa
Weight	83 ± 112 g
Material	POM, PA, Al, Nitrile (NBR)
Noise level	< 70 dB

**Suction flow rate**

Model	Feed pressure [MPa]	Air consumption [l/s]	Suction flow rate [l/s] at different vacuum levels [kPa]										Max vacuum [kPa]
			0	-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-BA-M-LP-2	0.4	0.55	0.67	0.61	0.53	0.38	0.23	0.12	0.09	0.06	0.02	–	-89
EJ-BA-M-LP-3	0.4	0.55	1.5	0.71	0.53	0.38	0.23	0.12	0.09	0.06	0.02	–	-89
EJ-BA-M-HF-2	0.6	0.43	0.78	0.68	0.52	0.31	0.21	0.15	0.10	0.08	–	–	-73
EJ-BA-M-HF-3	0.6	0.43	1.35	0.75	0.55	0.31	0.21	0.15	0.10	0.08	–	–	-73
EJ-BA-M-HV-2	0.5	0.47	0.76	0.63	0.54	0.32	0.17	0.15	0.11	0.07	0.05	0.01	-94
EJ-BA-M-HV-3	0.5	0.47	1.47	0.78	0.54	0.32	0.17	0.15	0.11	0.07	0.05	0.01	-94

For technical specifications, regarding the suction flow rate and the air consumption at different pressures, please refer to the technical data sheets of the EJ-MEDIUM cartridges in the two- and three-stage versions

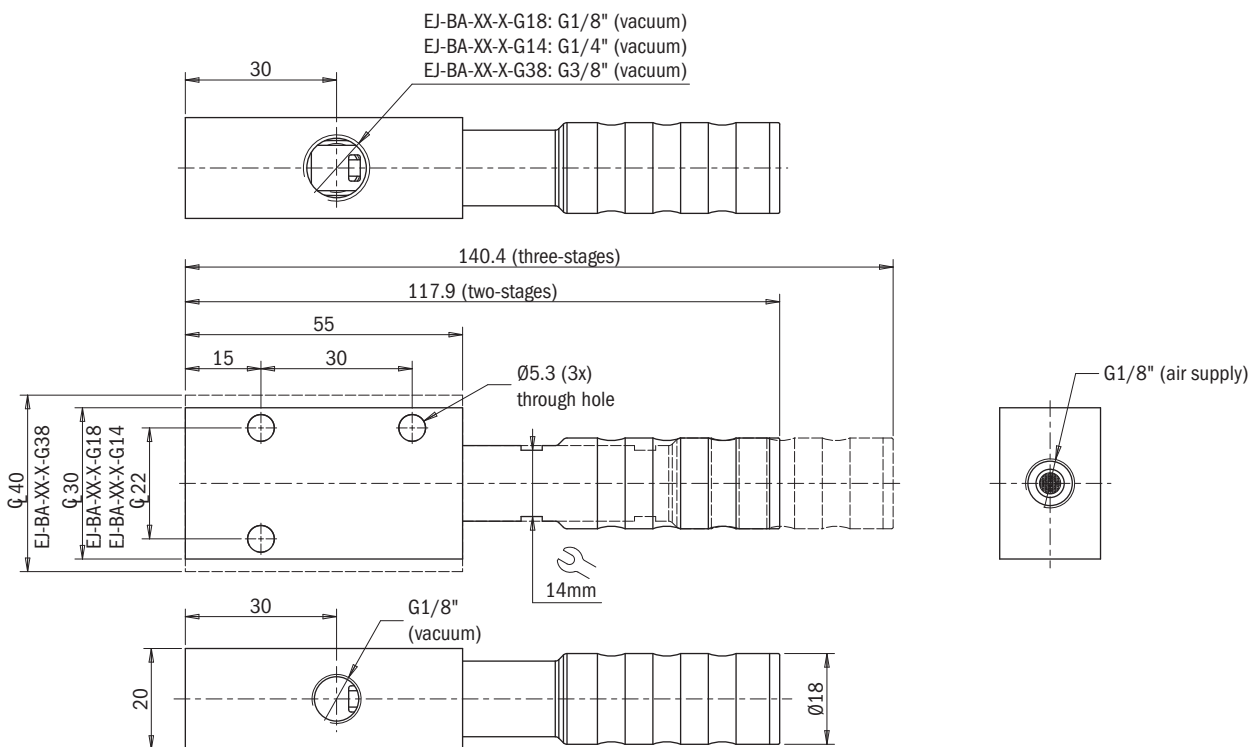
**Evacuation time**

Model	Feed pressure [MPa]	Air consumption [l/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]									Max vacuum [kPa]
			-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-BA-M-LP-2	0.4	0.55	0.17	0.33	0.55	0.9	1.5	2.4	3.7	7.1	–	-89
EJ-BA-M-LP-3	0.4	0.55	0.08	0.23	0.44	0.76	1.4	2.4	3.7	7.1	–	-89
EJ-BA-M-HF-2	0.6	0.43	0.13	0.30	0.54	0.9	1.5	2.3	3.2	–	–	-73
EJ-BA-M-HF-3	0.6	0.43	0.10	0.25	0.48	0.8	1.3	2.3	3.2	–	–	-73
EJ-BA-M-HV-2	0.5	0.47	0.14	0.32	0.55	1.0	1.6	2.4	3.5	5.1	8.7	-94
EJ-BA-M-HV-3	0.5	0.47	0.08	0.24	0.47	0.88	1.6	2.4	3.5	5.1	8.7	-94

For technical specifications regarding the evacuation time and the consumption at different pressures, please refer to the technical data sheets of the EJ-MEDIUM cartridges, in the two- and three-stage versions

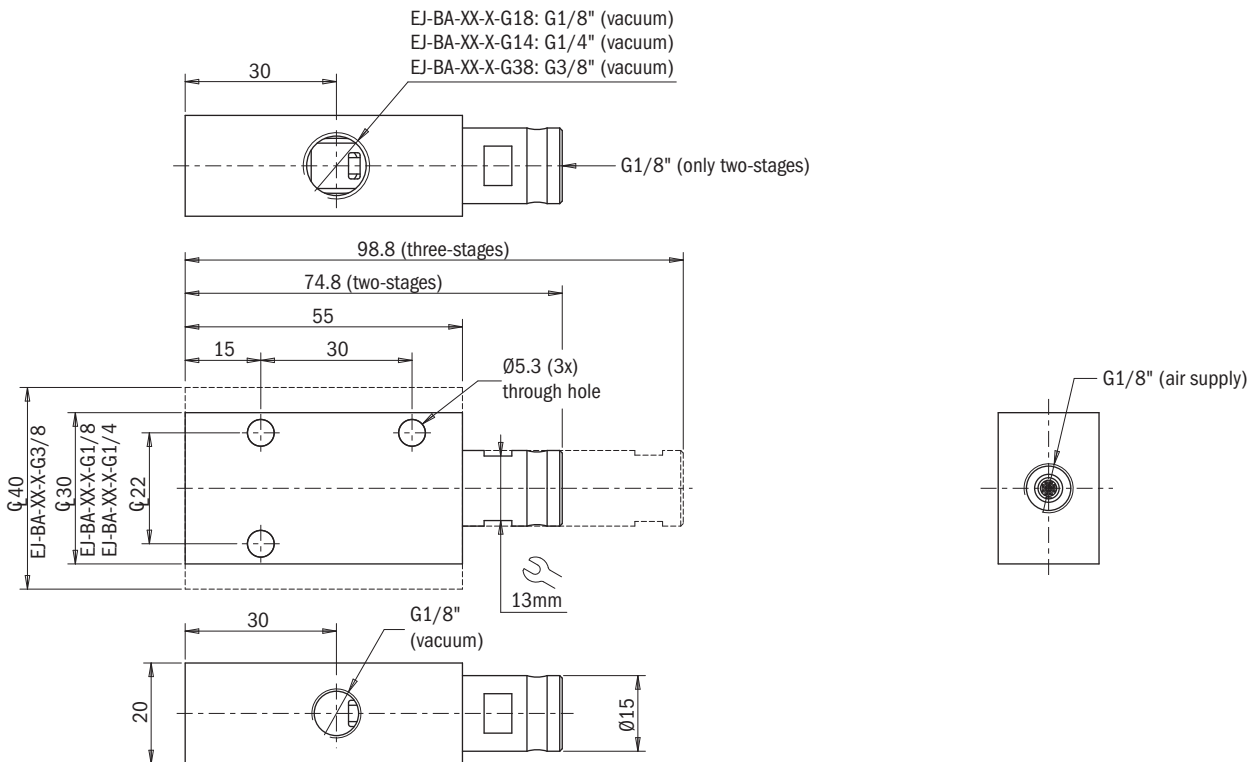
### Identification codes

Alphanumeric code	Description	Order code
EJ-BA-M-LP-2-G1/8	EJ-BA-MEDIUM-LP-2 vacuum pump with holder and integrated silencer, G1/8" vacuum port	3330057
EJ-BA-M-LP-3-G1/8	EJ-BA-MEDIUM-LP-3 vacuum pump with holder and integrated silencer, G1/8" vacuum port	3330058
EJ-BA-M-HF-2-G1/8	EJ-BA-MEDIUM-HF-2 vacuum pump with holder and integrated silencer, G1/8" vacuum port	3330059
EJ-BA-M-HF-3-G1/8	EJ-BA-MEDIUM-HF-3 vacuum pump with holder and integrated silencer, G1/8" vacuum port	3330060
EJ-BA-M-HV-2-G1/8	EJ-BA-MEDIUM-HV-2 vacuum pump with holder and integrated silencer, G1/8" vacuum port	3330061
EJ-BA-M-HV-3-G1/8	EJ-BA-MEDIUM-HV-3 vacuum pump with holder and integrated silencer, G1/8" vacuum port	3330062
EJ-BA-M-LP-2-G1/4	EJ-BA-MEDIUM-LP-2 vacuum pump with holder and integrated silencer, G1/4" vacuum port	3330064
EJ-BA-M-LP-3-G1/4	EJ-BA-MEDIUM-LP-3 vacuum pump with holder and integrated silencer, G1/4" vacuum port	3330065
EJ-BA-M-HF-2-G1/4	EJ-BA-MEDIUM-HF-2 vacuum pump with holder and integrated silencer, G1/4" vacuum port	3330066
EJ-BA-M-HF-3-G1/4	EJ-BA-MEDIUM-HF-3 vacuum pump with holder and integrated silencer, G1/4" vacuum port	3330067
EJ-BA-M-HV-2-G1/4	EJ-BA-MEDIUM-HV-2 vacuum pump with holder and integrated silencer, G1/4" vacuum port	3330068
EJ-BA-M-HV-3-G1/4	EJ-BA-MEDIUM-HV-3 vacuum pump with holder and integrated silencer, G1/4" vacuum port	3330069
EJ-BA-M-LP-2-G3/8	EJ-BA-MEDIUM-LP-2 vacuum pump with holder and integrated silencer, G3/8" vacuum port	3330071
EJ-BA-M-LP-3-G3/8	EJ-BA-MEDIUM-LP-3 vacuum pump with holder and integrated silencer, G3/8" vacuum port	3330072
EJ-BA-M-HF-2-G3/8	EJ-BA-MEDIUM-HF-2 vacuum pump with holder and integrated silencer, G3/8" vacuum port	3330073
EJ-BA-M-HF-3-G3/8	EJ-BA-MEDIUM-HF-3 vacuum pump with holder and integrated silencer, G3/8" vacuum port	3330074
EJ-BA-M-HV-2-G3/8	EJ-BA-MEDIUM-HV-2 vacuum pump with holder and integrated silencer, G3/8" vacuum port	3330075
EJ-BA-M-HV-3-G3/8	EJ-BA-MEDIUM-HV-3 vacuum pump with holder and integrated silencer, G3/8" vacuum port	3330076



Identification codes			
Alphanumeric code		Description	Order code
EJ-BA-M-LP-2-G1/8-H	<b>NEW</b>	EJ-BA-MEDIUM-LP-2 vacuum pump with holder, G1/8" vacuum port	3331057
EJ-BA-M-HF-2-G1/8-H	<b>NEW</b>	EJ-BA-MEDIUM-HF-2 vacuum pump with holder, G1/8" vacuum port	3331059
EJ-BA-M-HV-2-G1/8-H	<b>NEW</b>	EJ-BA-MEDIUM-HV-2 vacuum pump with holder, G1/8" vacuum port	3331061
EJ-BA-M-LP-2-G1/4-H	<b>NEW</b>	EJ-BA-MEDIUM-LP-2 vacuum pump with holder, G1/4" vacuum port	3331064
EJ-BA-M-HF-2-G1/4-H	<b>NEW</b>	EJ-BA-MEDIUM-HF-2 vacuum pump with holder, G1/4" vacuum port	3331066
EJ-BA-M-HV-2-G1/4-H	<b>NEW</b>	EJ-BA-MEDIUM-HV-2 vacuum pump with holder, G1/4" vacuum port	3331068
EJ-BA-M-LP-2-G3/8-H	<b>NEW</b>	EJ-BA-MEDIUM-LP-2 vacuum pump with holder, G3/8" vacuum port	3331071
EJ-BA-M-HF-2-G3/8-H	<b>NEW</b>	EJ-BA-MEDIUM-HF-2 vacuum pump with holder, G3/8" vacuum port	3331073
EJ-BA-M-HV-2-G3/8-H	<b>NEW</b>	EJ-BA-MEDIUM-HV-2 vacuum pump with holder, G3/8" vacuum port	3331075

3-stage configurations are also available on request





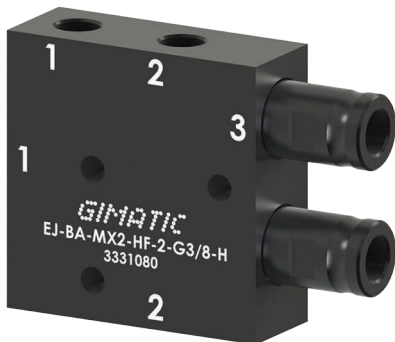
## EJ-BA-MEDIUMX2

- Ideal for decentralized applications
- High ratio between suction flow rate and compressed air consumption
- Can be integrated near the gripping point, lightweight
- G3/8" vacuum port
- Auxiliary vacuum port, for possible blow-off or monitoring of the G1/8" system
- Available with two- and three-stage EJ-MEDIUM cartridge (EJ-LP, EJ-HF, EJ-HV)

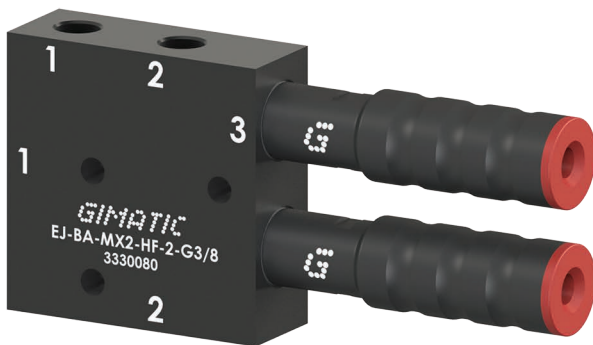
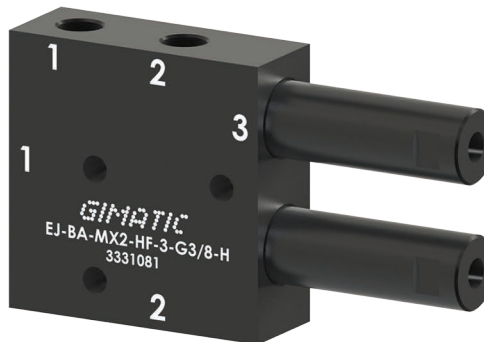
### Typical applications

- Handling of sealed items such as parts in glass and metal (EJ-HV)
- Packaging (cartoners, case packing machines) (EJ-HF, EJ-LP)
- Plastic (moulding)
- Automotive

NEW



NEW



### Application example



**Technical features**

Max feed pressure	0.7 MPa
Weight	151 ± 158 g
Material	POM, PA, Al, Nitrile (NBR)
Noise level	< 70 dB

**Suction flow rate**

Model	Feed pressure [MPa]	Air consumption [l/s]	Suction flow rate [l/s] at different vacuum levels [kPa]										Max vacuum [kPa]
			0	-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-BA-MX2-LP-2-G3/8	0.4	1.1	1.34	1.22	1.06	0.76	0.46	0.24	0.18	0.12	0.04	–	-89
EJ-BA-MX2-LP-3-G3/8	0.4	1.1	3	1.42	1.06	0.76	0.46	0.24	0.18	0.12	0.04	–	-89
EJ-BA-MX2-HF-2-G3/8	0.6	0.86	1.56	1.36	1.04	0.62	0.42	0.30	0.20	0.16	–	–	-73
EJ-BA-MX2-HF-3-G3/8	0.6	0.86	2.70	1.50	1.10	0.62	0.42	0.30	0.20	0.16	–	–	-73
EJ-BA-MX2-HV-2-G3/8	0.5	0.94	1.52	1.26	1.08	0.64	0.34	0.30	0.22	0.14	0.01	0.02	-94
EJ-BA-MX2-HV-3-G3/8	0.5	0.94	2.94	1.56	1.08	0.64	0.34	0.30	0.22	0.14	0.01	0.02	-94

For technical specifications, regarding the suction flow rate and the air consumption at different pressures, please refer to the technical data sheets of the EJ-MEDIUM cartridges in the two- and three-stage versions

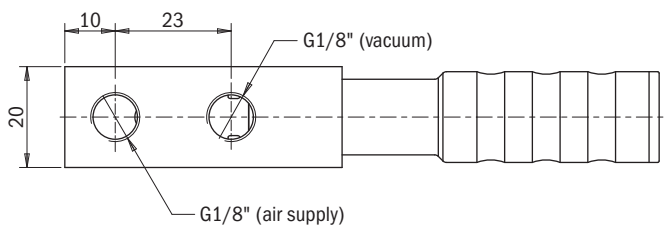
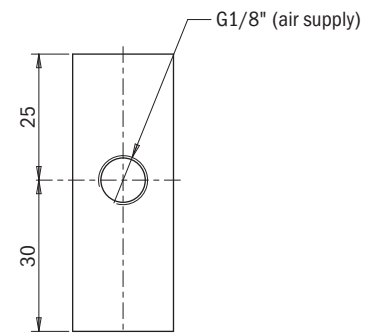
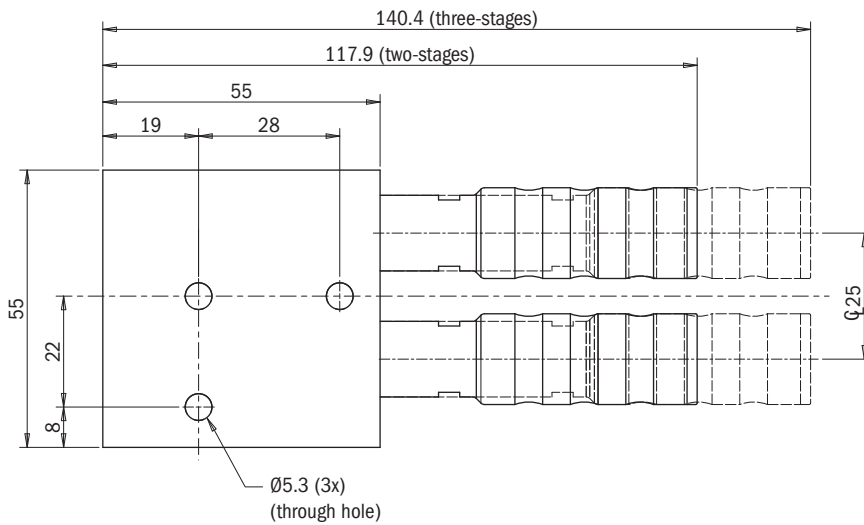
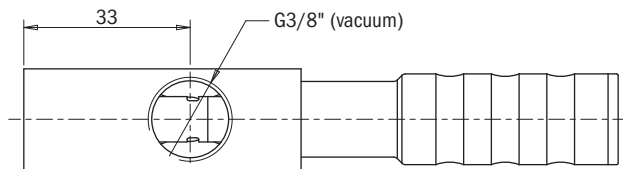
**Evacuation time**

Model	Feed pressure [MPa]	Air consumption [l/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]									Max vacuum [kPa]
			-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-BA-MX2-LP-2-G3/8	0.4	1.1	0.085	0.165	0.275	0.45	0.75	1.2	1.85	3.55	–	-89
EJ-BA-MX2-LP-3-G3/8	0.4	1.1	0.04	0.115	0.22	0.38	0.70	1.2	1.85	3.55	–	-89
EJ-BA-MX2-HF-2-G3/8	0.6	0.86	0.065	0.15	0.27	0.45	0.75	1.15	1.6	–	–	-73
EJ-BA-MX2-HF-3-G3/8	0.6	0.86	0.05	0.125	0.24	0.40	0.65	1.15	1.6	–	–	-73
EJ-BA-MX2-HV-2-G3/8	0.5	0.94	0.07	0.16	0.275	0.50	0.88	1.2	1.75	2.55	4.35	-94
EJ-BA-MX2-HV-3-G3/8	0.5	0.94	0.08	0.24	0.47	0.88	0.80	1.2	1.75	2.55	4.35	-94

For technical specifications regarding the evacuation time and the consumption at different pressures, please refer to the technical data sheets of the EJ-MEDIUM cartridges, in the two- and three-stage versions

### Identification codes

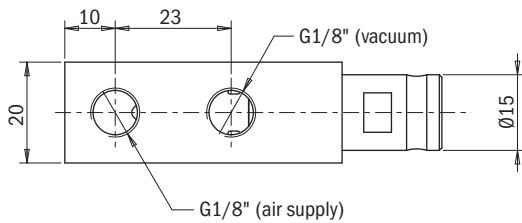
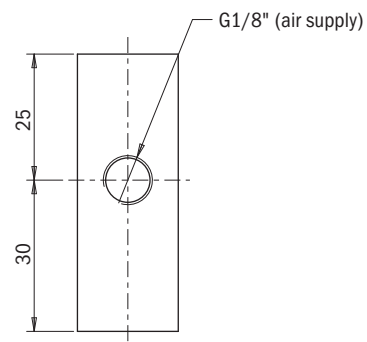
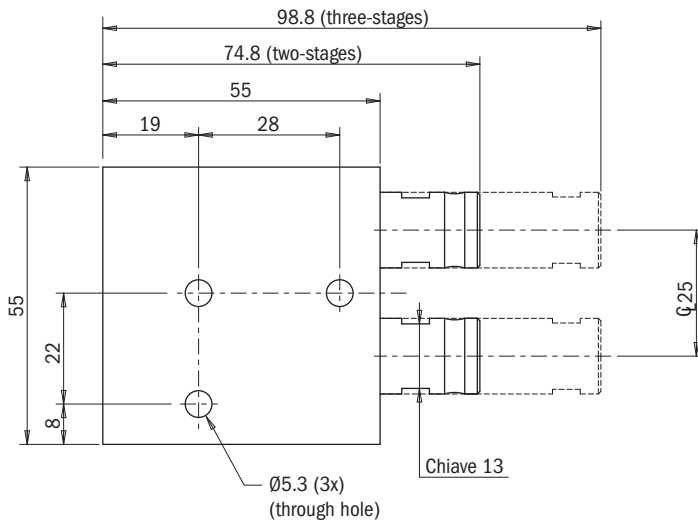
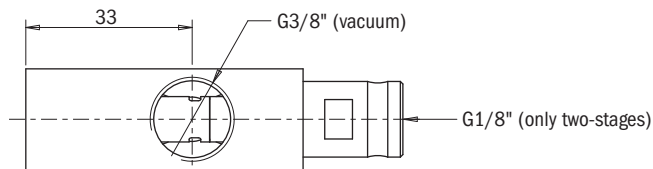
Alphanumeric code	Description	Order code
EJ-BA-MX2-LP-2-G3/8	EJ-BA-MEDIUMX2-LP-2 vacuum pump with holder and integrated silencer, G3/8" vacuum port	3330078
EJ-BA-MX2-LP-3-G3/8	EJ-BA-MEDIUMX2-LP-3 vacuum pump with holder and integrated silencer, G3/8" vacuum port	3330079
EJ-BA-MX2-HF-2-G3/8	EJ-BA-MEDIUMX2-HF-2 vacuum pump with holder and integrated silencer, G3/8" vacuum port	3330080
EJ-BA-MX2-HF-3-G3/8	EJ-BA-MEDIUMX2-HF-3 vacuum pump with holder and integrated silencer, G3/8" vacuum port	3330081
EJ-BA-MX2-HV-2-G3/8	EJ-BA-MEDIUMX2-HV-2 vacuum pump with holder and integrated silencer, G3/8" vacuum port	3330082
EJ-BA-MX2-HV-3-G3/8	EJ-BA-MEDIUMX2-HV-3 vacuum pump with holder and integrated silencer, G3/8" vacuum port	3330083



### Identification codes

Alphanumeric code	Description	Order code
EJ-BA-MX2-LP-2-G3/8-H <b>NEW</b>	EJ-BA-MEDIUMX2-LP-2 vacuum pump with holder, G3/8" vacuum port	3331078
EJ-BA-MX2-HF-2-G3/8-H <b>NEW</b>	EJ-BA-MEDIUMX2-HF-2 vacuum pump with holder, G3/8" vacuum port	3331080
EJ-BA-MX2-HV-2-G3/8-H <b>NEW</b>	EJ-BA-MEDIUMX2-HV-2 vacuum pump with holder, G3/8" vacuum port	3331082

3-stage configurations are also available on request



## EJ-LINE-SMALL

- Can be integrated near the gripping point, lightweight
- Clampable in-line design, to optimise overall dimensions
- No reduction of suction flow rate
- Flexible, enables the use of in-line or elbow fittings
- G1/8" vacuum ports
- Available with the two-stage EJ-SMALL cartridge (EJ-LP, EJ-HF, EJ-HV)

### Typical applications

- Automated equipment for plastic moulding
- Handling of metal sheets or plates (laser cutting, bending and punching machines)
- Pick-and-place (labelling machines)



Application example



### Technical features

Max feed pressure	0.7 MPa
Weight	16.5 g
Material	PA, Al, Nitrile (NBR)
Noise level	< 70 dB

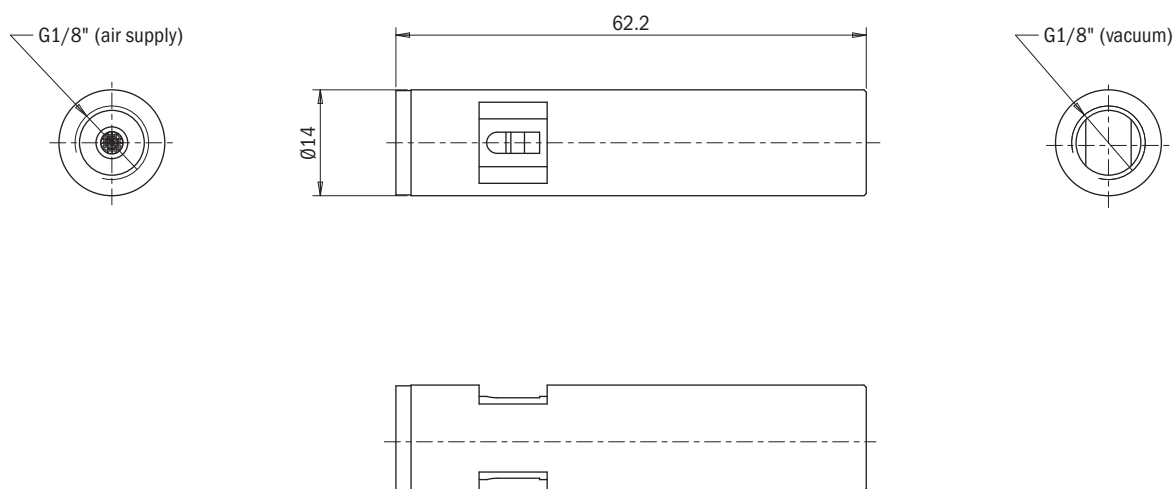
### Suction flow rate

Model	Feed pressure [MPa]	Air consumption [NI/s]	Suction flow rate [NI/s] at different vacuum levels [kPa]										Max vacuum [kPa]
			0	-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-LINE-S-LP-2-G1/8	0.22	0.17	0.25	0.18	0.08	0.05	0.04	0.025	0.018	0.0053	–	–	-82
EJ-LINE-S-HF-2-G1/8	0.6	0.15	0.29	0.18	0.10	0.08	0.05	0.041	0.033	0.025	–	–	-78
EJ-LINE-S-HV-2-G1/8	0.5	0.13	0.22	0.16	0.10	0.06	0.05	0.04	0.02	0.01	0.01	–	-92

For technical specifications, regarding the suction flow rate and the air consumption at different pressures, please refer to the technical data sheets of the EJ-SMALL-2 cartridges

Evacuation time												
Model	Feed pressure [MPa]	Air consumption [Nl/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]									Max vacuum [kPa]
			-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-LINE-S-LP-2-G1/8	0.22	0.17	0.47	1.23	2.77	5.0	8.07	12.70	21.30	59.01	–	-82
EJ-LINE-S-HF-2-G1/8	0.6	0.15	0.43	1.14	2.25	3.8	6.0	8.7	12.1	–	–	-78
EJ-LINE-S-HV-2-G1/8	0.5	0.13	0.53	1.30	2.55	4.4	6.6	9.9	16.6	36.6	–	-92

For technical specifications regarding evacuation time and consumption at different pressures, please refer to the technical data sheets of the EJ-SMALL-2 cartridges



Identification codes		
Alphanumeric code	Description	Order code
EJ-LINE-S-LP-2-G1/8	EJ-LINE-SMALL-LP-2 G1/8" vacuum pump	3330084
EJ-LINE-S-HF-2-G1/8	EJ-LINE-SMALL-HF-2 G1/8" vacuum pump	3330085
EJ-LINE-S-HV-2-G1/8	EJ-LINE-SMALL-HV-2 G1/8" vacuum pump	3330086

## EJ-LINE-MEDIUM

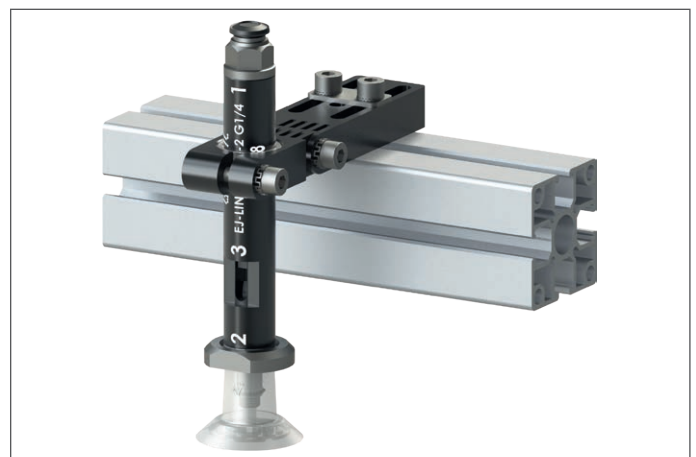
- Can be integrated near the gripping point, lightweight
- Clampable in-line design, to optimise overall dimensions
- No reduction of suction flow rate
- Flexible, enables the use of in-line or elbow fittings
- Fast response times and high energy efficiency
- G1/4" vacuum ports
- Available with two-stage EJ-MEDIUM cartridge (EJ-LP, EJ-HF, EJ-HV)

### Typical applications

- Automated equipment for plastic moulding
- Handling of metal sheets or plates (laser cutting, bending and punching machines)
- Pick-and-place (labelling machines)



Application example



### Technical features

Max feed pressure	0.7 MPa
Weight	27 g
Material	PA, Al, Nitrile (NBR)
Noise level	< 70 dB

### Suction flow rate

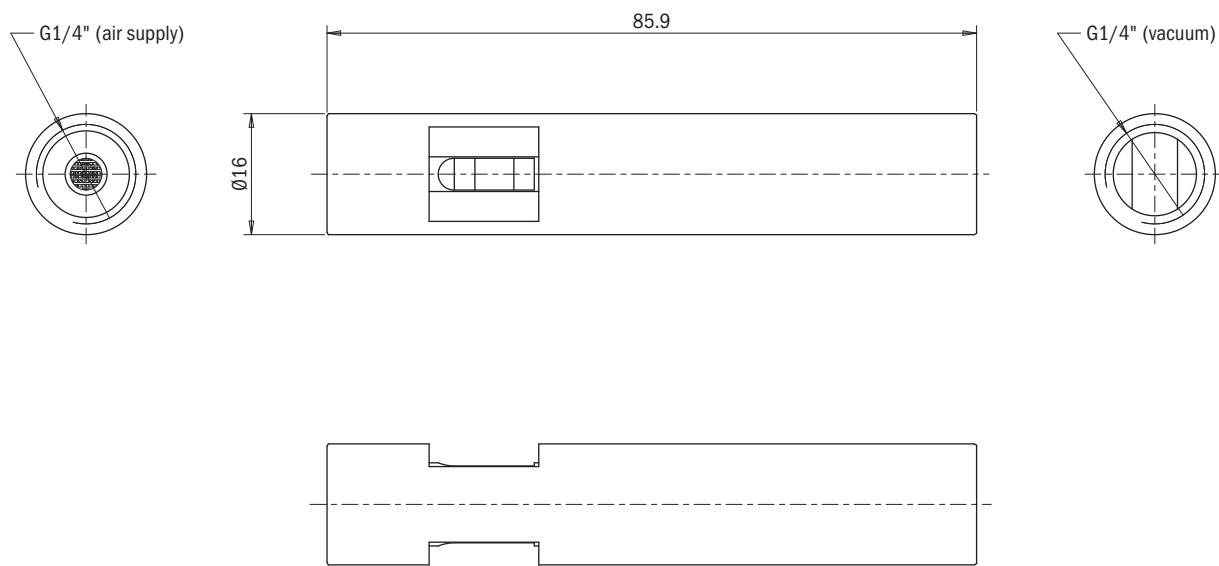
Model	Feed pressure [MPa]	Air consumption [l/s]	Suction flow rate [l/s] at different vacuum levels [kPa]											Max vacuum [kPa]
			0	-10	-20	-30	-40	-50	-60	-70	-80	-90		
EJ-LINE-M-LP-2-G1/4	0.4	0.55	0.67	0.61	0.53	0.38	0.23	0.12	0.09	0.06	0.02	–	-89	
EJ-LINE-M-HF-2-G1/4	0.6	0.43	0.78	0.68	0.52	0.31	0.21	0.15	0.10	0.08	–	–	-73	
EJ-LINE-M-HV-2-G1/4	0.5	0.47	0.76	0.63	0.54	0.32	0.17	0.15	0.11	0.07	0.05	0.01	-94	

For technical specifications, regarding the suction flow rate and the air consumption at different pressures, please refer to the technical data sheets of the EJ-MEDIUM cartridges in the two-stage version

### Evacuation time

Model	Feed pressure [MPa]	Air consumption [NI/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]									Max vacuum [kPa]
			-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-LINE-M-LP-2-G1/4	0.4	0.55	0.17	0.33	0.55	0.9	1.5	2.4	3.7	7.1	—	-89
EJ-LINE-M-HF-2-G1/4	0.6	0.43	0.13	0.30	0.54	0.9	1.5	2.3	3.2	—	—	-73
EJ-LINE-M-HV-2-G1/4	0.5	0.47	0.14	0.32	0.55	1.0	1.6	2.4	3.5	5.1	8.7	-94

For technical specifications regarding the evacuation time and the consumption at different pressures, please refer to the technical data sheets of the EJ-MEDIUM cartridges, in the two-stage version



### Identification codes

Alphanumeric code	Description	Order code
EJ-LINE-M-LP-2-G1/4	EJ-LINE-MEDIUM-LP-2 G1/4" vacuum pump	3330087
EJ-LINE-M-HF-2-G1/4	EJ-LINE-MEDIUM-HF-2 G1/4" vacuum pump	3330088
EJ-LINE-M-HV-2-G1/4	EJ-LINE-MEDIUM-HV-2 G1/4" vacuum pump	3330089



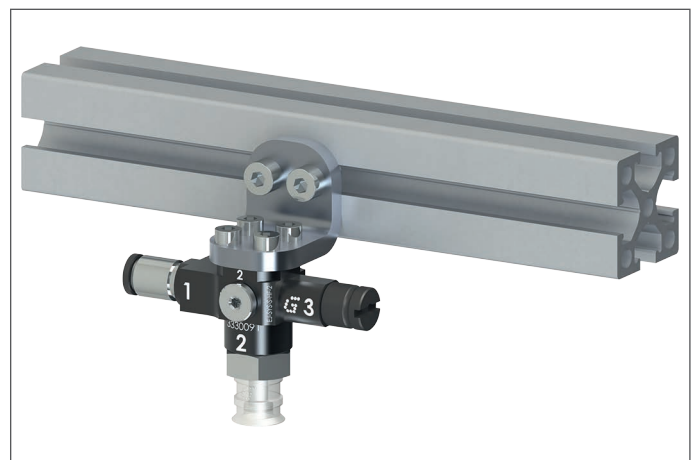
## EJ-SYS-SMALL

- Ideal for decentralized applications
- Can be integrated near the gripping point, lightweight
- Anodised aluminium body
- Available with the two-stage EJ-SMALL cartridge (EJ-LP, EJ-HF, EJ-HV )

### Typical applications

- Robotics
- Plastic (moulding)
- Handling of small objects, electronics and semiconductors industries

Application example



### Technical features

Max feed pressure	0.7 MPa
Weight	12.4 g
Material	PA, SS, Al, Nitrile (NBR)
Noise level	< 70 dB

### Suction flow rate

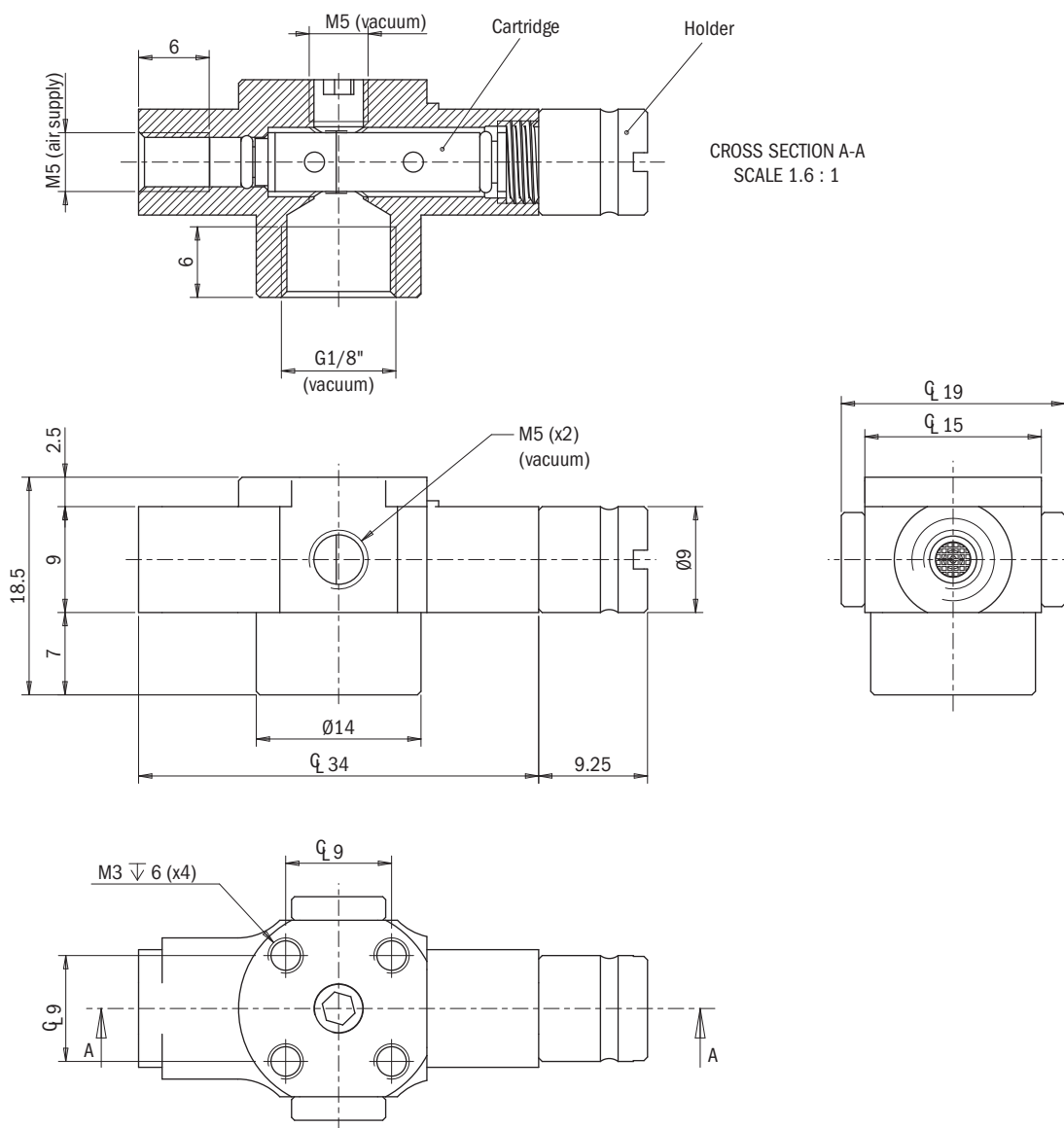
Model	Feed pressure [MPa]	Air consumption [NI/s]	Suction flow rate [NI/s] at different vacuum levels [kPa]										Max vacuum [kPa]
			0	-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-SYS-S-LP-2	0.22	0.17	0.25	0.18	0.08	0.05	0.04	0.025	0.018	0.0053	–	–	-82
EJ-SYS-S-HF-2	0.6	0.15	0.29	0.18	0.10	0.08	0.05	0.041	0.033	0.025	–	–	-78
EJ-SYS-S-HV-2	0.5	0.13	0.22	0.16	0.10	0.06	0.05	0.04	0.02	0.01	0.01	–	-92

For technical specifications, regarding the suction flow rate and the air consumption at different pressures, please refer to the technical data sheets of the two-stage EJ-SMALL cartridges

### Evacuation time

Model	Feed pressure [MPa]	Air consumption [l/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]									Max vacuum [kPa]
			-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-SYS-S-LP-2	0.22	0.17	0.47	1.23	2.77	5.0	8.07	12.70	21.30	59.01	–	-82
EJ-SYS-S-HF-2	0.6	0.15	0.43	1.14	2.25	3.8	6.0	8.7	12.1	–	–	-78
EJ-SYS-S-HV-2	0.5	0.13	0.53	1.30	2.55	4.4	6.6	9.9	16.6	36.6	–	-92

For technical specifications regarding evacuation time and consumption at different pressures, please refer to the technical data sheets of the two-stage EJ-SMALL cartridges



### Identification codes

Alphanumeric code

Description

Order code

- EJ-SYS-SMALL-LP-2 vacuum pump with holder
- EJ-SYS-SMALL-HF-2 vacuum pump with holder
- EJ-SYS-SMALL-HV-2 vacuum pump with holder

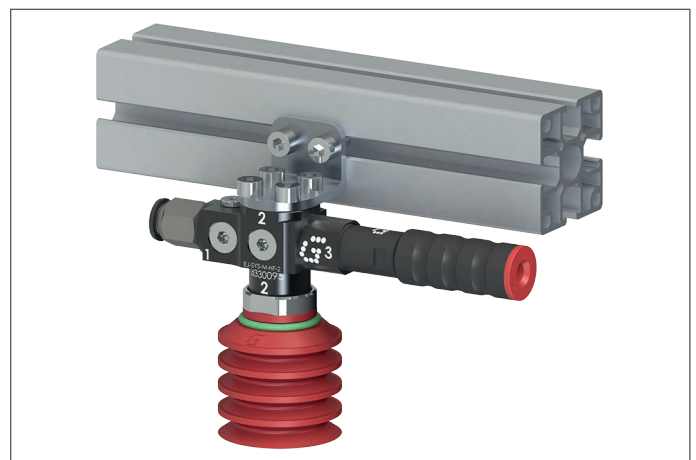
## EJ-SYS-MEDIUM

- Ideal for decentralized applications
- Easy installation and positioning thanks to several mounting options
- Anodised aluminium body
- G3/8" vacuum port
- Integrated silencer
- The three-stage cartridge offers a higher initial flow rate, ideal for high speed applications
- Available with two- and three-stage EJ-MEDIUM cartridge (EJ-LP, EJ-HF, EJ-HV)

### Typical applications

- Particularly suitable for sealed applications where high speed and reliability is required (EJ-HV)
- Packaging (forming machines, case packers), opening and closing of cardboard boxes (EJ-LP, EJ-HF)
- Pick-and-Place for handling electronic components

Application example



### Technical features

Max feed pressure	0.7 MPa
Weight	61 ± 65 g
Material	PA, POM, SS, Al, Nitrile (NBR)
Noise level	< 70 dB

### Suction flow rate

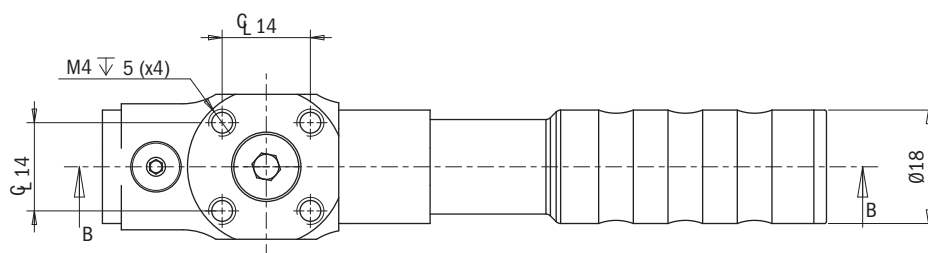
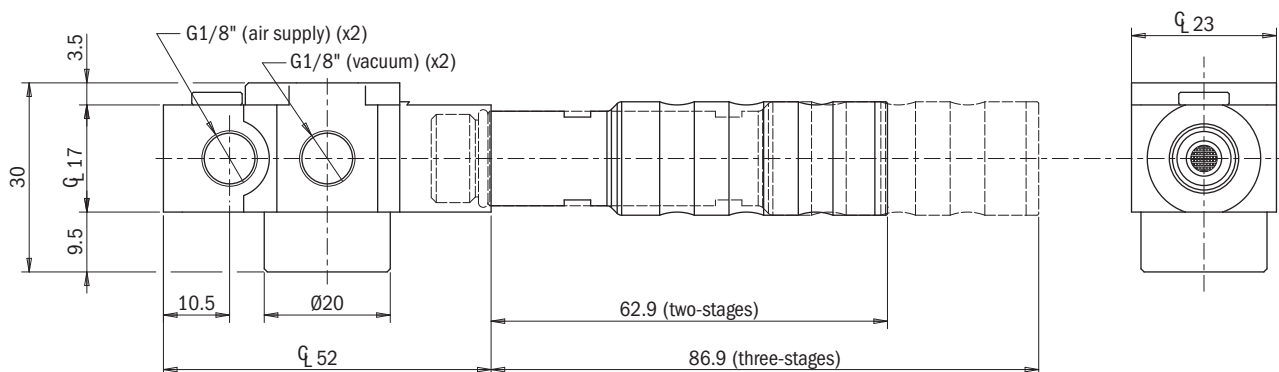
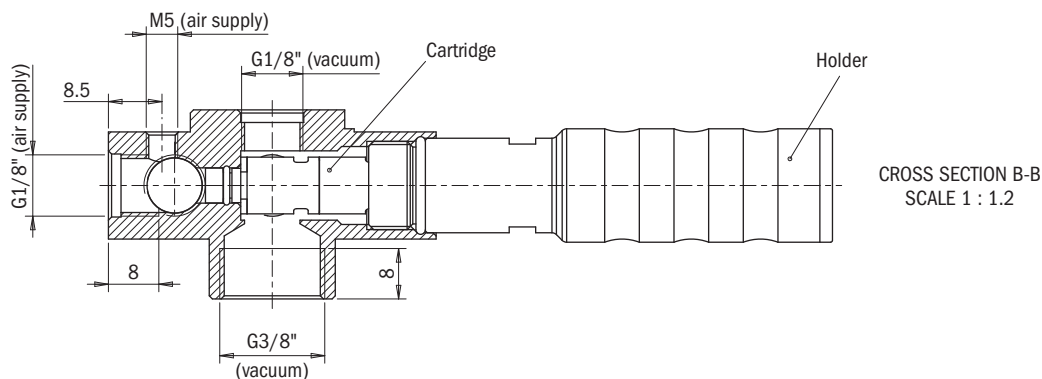
Model	Feed pressure [MPa]	Air consumption [l/s]	Suction flow rate [l/s] at different vacuum levels [kPa]											Max vacuum [kPa]
			0	-10	-20	-30	-40	-50	-60	-70	-80	-90		
EJ-SYS-M-LP-2	0.4	0.55	0.67	0.61	0.53	0.38	0.23	0.12	0.09	0.06	0.02	–	-89	
EJ-SYS-M-LP-3	0.4	0.55	1.5	0.71	0.53	0.38	0.23	0.12	0.09	0.06	0.02	–	-89	
EJ-SYS-M-HF-2	0.6	0.43	0.78	0.68	0.52	0.31	0.21	0.15	0.10	0.08	–	–	-73	
EJ-SYS-M-HF-3	0.6	0.43	1.35	0.75	0.55	0.31	0.21	0.15	0.10	0.08	–	–	-73	
EJ-SYS-M-HV-2	0.5	0.47	0.76	0.63	0.54	0.32	0.17	0.15	0.11	0.07	0.05	0.01	-94	
EJ-SYS-M-HV-3	0.5	0.47	1.47	0.78	0.54	0.32	0.17	0.15	0.11	0.07	0.05	0.01	-94	

For technical specifications, regarding the suction flow rate and the air consumption at different pressures, please refer to the technical data sheets of the EJ-MEDIUM cartridges in the two- and three-stage versions

### Evacuation time

Model	Feed pressure [MPa]	Air consumption [l/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]										Max vacuum [kPa]
			-10	-20	-30	-40	-50	-60	-70	-80	-90		
EJ-SYS-M-LP-2	0.4	0.55	0.17	0.33	0.55	0.9	1.5	2.4	3.7	7.1	—	-89	
EJ-SYS-M-LP-3	0.4	0.55	0.08	0.23	0.44	0.76	1.4	2.4	3.7	7.1	—	-89	
EJ-SYS-M-HF-2	0.6	0.43	0.13	0.30	0.54	0.9	1.5	2.3	3.2	—	—	-73	
EJ-SYS-M-HF-3	0.6	0.43	0.10	0.25	0.48	0.8	1.3	2.3	3.2	—	—	-73	
EJ-SYS-M-HV-2	0.5	0.47	0.14	0.32	0.55	1.0	1.6	2.4	3.5	5.1	8.7	-94	
EJ-SYS-M-HV-3	0.5	0.47	0.08	0.24	0.47	0.88	1.6	2.4	3.5	5.1	8.7	-94	

For technical specifications regarding the evacuation time and the consumption at different pressures, please refer to the technical data sheets of the EJ-MEDIUM cartridges, in the two- and three-stage versions



### Identification codes

Alphanumeric code	Description	Order code
EJ-SYS-M-LP-2	EJ-SYS-MEDIUM-LP-2 vacuum pump with holder and integrated silencer	3330093
EJ-SYS-M-LP-3	EJ-SYS-MEDIUM-LP-3 vacuum pump with holder and integrated silencer	3330094
EJ-SYS-M-HF-2	EJ-SYS-MEDIUM-HF-2 vacuum pump with holder and integrated silencer	3330095
EJ-SYS-M-HF-3	EJ-SYS-MEDIUM-HF-3 vacuum pump with holder and integrated silencer	3330096
EJ-SYS-M-HV-2	EJ-SYS-MEDIUM-HV-2 vacuum pump with holder and integrated silencer	3330097
EJ-SYS-M-HV-3	EJ-SYS-MEDIUM-HV-3 vacuum pump with holder and integrated silencer	3330098

## EJ-SYS-LARGE

- Ideal for centralized applications
- Easy installation and positioning thanks to several mounting options
- Anodised aluminium body
- High suction flow rate, with low energy consumption
- G1/2" vacuum port
- Integrated silencer
- The three-stage cartridge offers a higher initial flow rate, ideal for high speed applications
- Available with two- and three-stage EJ-LARGE cartridge (EJ-LP, EJ-HF, EJ-HV)

### Typical applications

- Particularly suitable for sealed applications, handling of glass, sheet metal, marble (EJ-HV)
- Handling of porous items, cardboard, wood and leaking surfaces (EJ-HF, EJ-LP)
- Rotary machines and cartoners



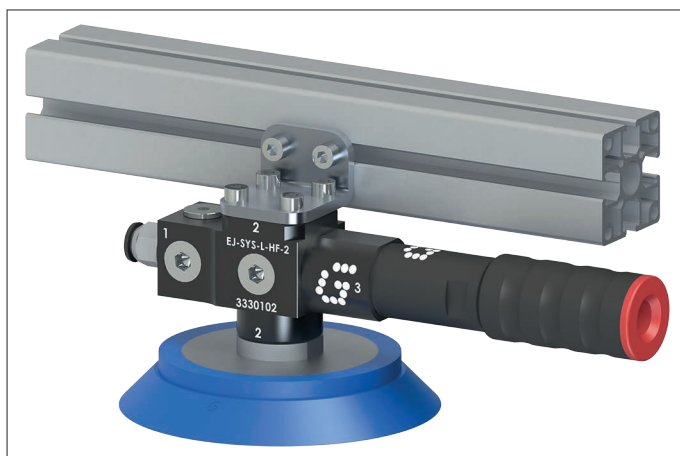
NEW



NEW



### Application example



**Technical features**

Max feed pressure	0.7 MPa
Weight	225 ± 241 g
Material	PA, SS, Al, Nitrile (NBR)
Noise level	< 70 dB

**Suction flow rate**

Model	Feed pressure [MPa]	Air consumption [l/s]	Suction flow rate [l/s] at different vacuum levels [kPa]										Max vacuum [kPa]
			0	-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-SYS-L-LP-2	0.4	2.6	2.8	2.5	2.1	1.5	1.1	0.66	0.36	0.26	0.08	–	-89
EJ-SYS-L-LP-3	0.4	2.6	5.7	2.5	2.1	1.5	1.1	0.66	0.36	0.26	0.08	–	-89
EJ-SYS-L-HF-2	0.6	1.7	3.2	3.0	2.5	1.7	0.89	0.62	0.51	0.31	–	–	-73
EJ-SYS-L-HF-3	0.6	1.7	5.9	3.5	2.5	1.7	0.89	0.62	0.51	0.31	–	–	-73
EJ-SYS-L-HV-2	0.5	1.93	2.6	2.4	1.7	1.3	0.70	0.55	0.40	0.31	0.15	0.02	-94
EJ-SYS-L-HV-3	0.5	1.93	6.0	3.7	2.1	1.9	0.79	0.55	0.40	0.31	0.15	0.02	-94

For technical specifications, regarding the suction flow rate and the air consumption at different pressures, please refer to the technical data sheets of the EJ-LARGE cartridges in the two- and three-stage versions

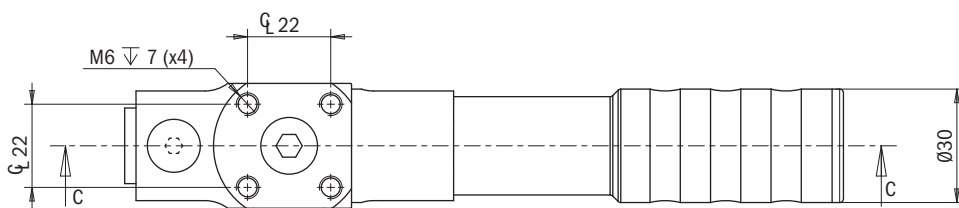
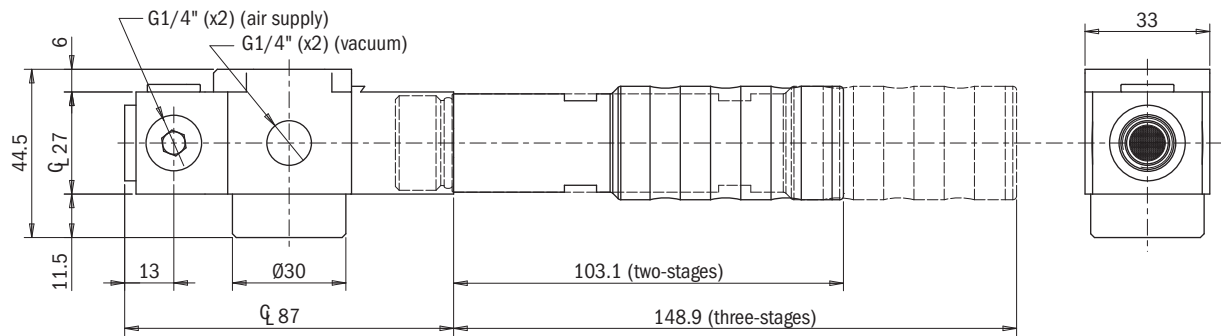
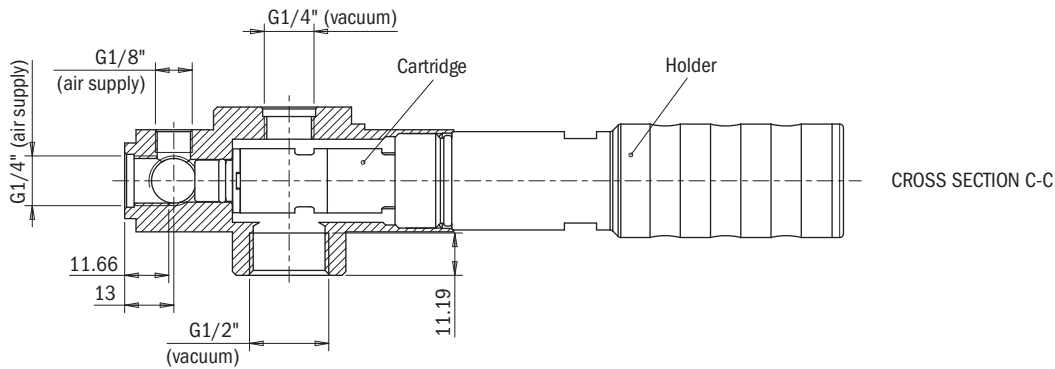
**Evacuation time**

Model	Feed pressure [MPa]	Air consumption [l/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]									Max vacuum [kPa]
			-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-SYS-L-LP-2	0.4	2.6	0.04	0.07	0.14	0.19	0.3	0.5	0.8	1.4	–	-89
EJ-SYS-L-LP-3	0.4	2.6	0.02	0.07	0.12	0.2	0.3	0.5	0.8	1.4	–	-89
EJ-SYS-L-HF-2	0.6	1.7	0.03	0.07	0.12	0.19	0.3	0.4	0.7	–	–	-73
EJ-SYS-L-HF-3	0.6	1.7	0.02	0.05	0.10	0.19	0.3	0.4	0.7	–	–	-73
EJ-SYS-L-HV-2	0.5	1.93	0.04	0.09	0.16	0.3	0.4	0.6	0.9	1.3	2.5	-94
EJ-SYS-L-HV-3	0.5	1.93	0.02	0.06	0.10	0.2	0.3	0.4	0.7	1.1	2.4	-94

For technical specifications regarding the evacuation time and the consumption at different pressures, please refer to the technical data sheets of the EJ-LARGE cartridges, in the two- and three-stage versions

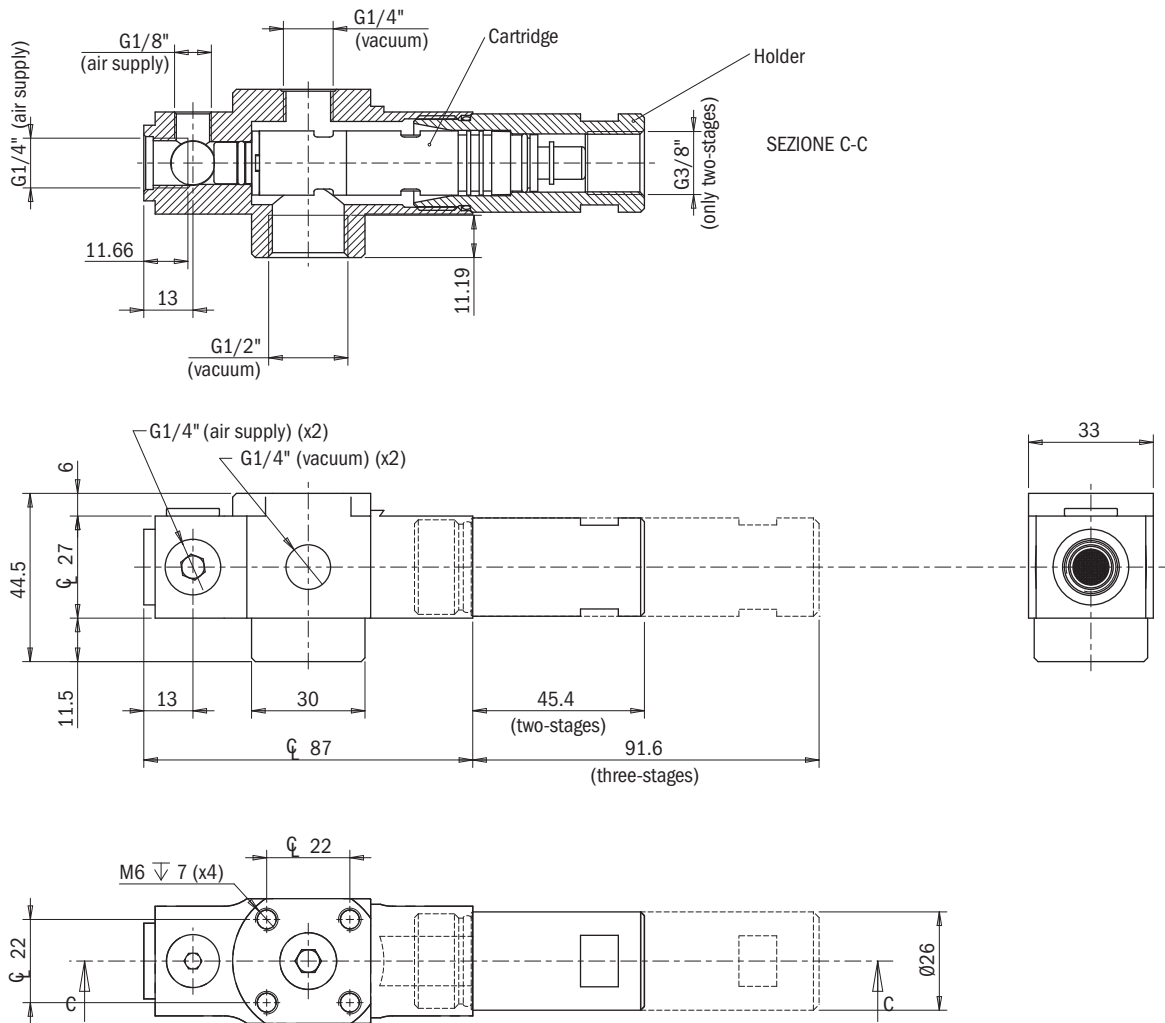
### Identification codes

Alphanumeric code	Description	Order code
EJ-SYS-L-LP-2	EJ-SYS-LARGE-LP-2 vacuum pump with holder and integrated silencer	3330100
EJ-SYS-L-LP-3	EJ-SYS-LARGE-LP-3 vacuum pump with holder and integrated silencer	3330101
EJ-SYS-L-HF-2	EJ-SYS-LARGE-HF-2 vacuum pump with holder and integrated silencer	3330102
EJ-SYS-L-HF-3	EJ-SYS-LARGE-HF-3 vacuum pump with holder and integrated silencer	3330103
EJ-SYS-L-HV-2	EJ-SYS-LARGE-HV-2 vacuum pump with holder and integrated silencer	3330104
EJ-SYS-L-HV-3	EJ-SYS-LARGE-HV-3 vacuum pump with holder and integrated silencer	3330105



### Identification codes

Alphanumeric code		Description	Order code
EJ-SYS-L-HF-2-H	<b>NEW</b>	EJ-SYS-LARGE-HF-2 vacuum pump with holder	3331102
EJ-SYS-L-HF-3-H	<b>NEW</b>	EJ-SYS-LARGE-HF-3 vacuum pump with holder	3331103





## EJ-SLG-MEDIUM

- Ideal for decentralized applications
- Easy installation and positioning thanks to several mounting options
- Low weight for direct integration on robot or on EOAT
- G3/8" vacuum port
- Integrated silencer
- Multiple vacuum connections
- Single supply connection
- Prearranged with VACSW-3N203-G (PNP) and VACSW-3M203-G (NPN) vacuum switches
- Available with two- and three-stage EJ-MEDIUM cartridge (EJ-LP, EJ-HF, EJ-HV)

### Typical applications

- Where a vacuum pump with high suction flow rate and extremely low weights is required (cosmetic industry applications)
- Packaging machines, for the food and pharmaceutical sector
- Where low weights and compact dimensions are required (PKM-Delta Robot)



Application example



### Technical features

Max feed pressure	0.7 MPa
Weight	46 ± 50 g
Material	PA, SS, POM, Nitrile (NBR)
Noise level	< 70 dB

### Suction flow rate

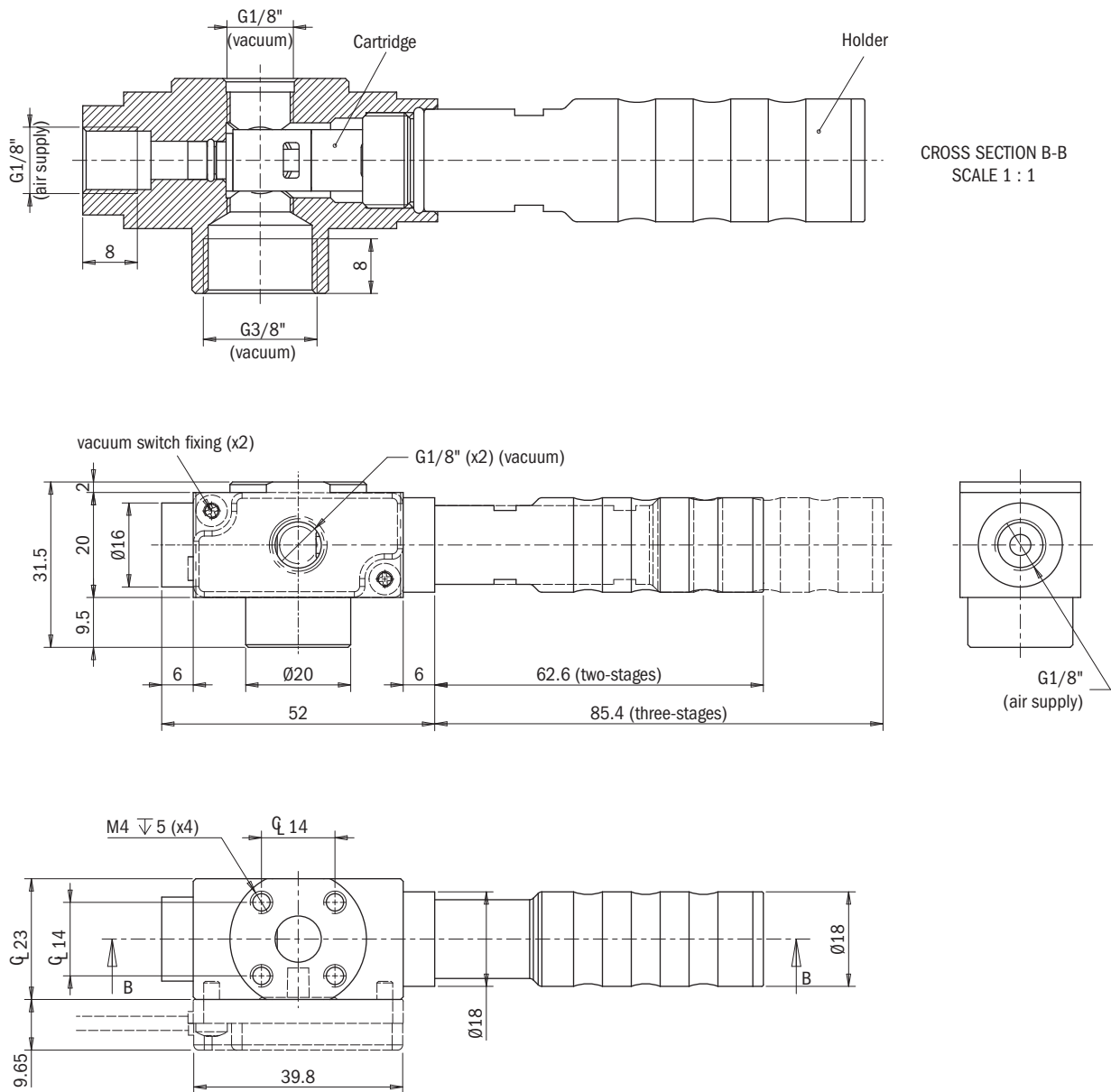
Model	Feed pressure [MPa]	Air consumption [l/s]	Suction flow rate [l/s] at different vacuum levels [kPa]										Max vacuum [kPa]
			0	-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-SLG-M-LP-2	0.4	0.55	0.67	0.61	0.53	0.38	0.23	0.12	0.09	0.06	0.02	–	-89
EJ-SLG-M-LP-3	0.4	0.55	1.5	0.71	0.53	0.38	0.23	0.12	0.09	0.06	0.02	–	-89
EJ-SLG-M-HF-2	0.6	0.43	0.78	0.68	0.52	0.31	0.21	0.15	0.10	0.08	–	–	-73
EJ-SLG-M-HF-3	0.6	0.43	1.35	0.75	0.55	0.31	0.21	0.15	0.10	0.08	–	–	-73
EJ-SLG-M-HV-2	0.5	0.47	0.76	0.63	0.54	0.32	0.17	0.15	0.11	0.07	0.05	0.01	-94
EJ-SLG-M-HV-3	0.5	0.47	1.47	0.78	0.54	0.32	0.17	0.15	0.11	0.07	0.05	0.01	-94

For technical specifications, regarding the suction flow rate and the air consumption at different pressures, please refer to the technical data sheets of the EJ-MEDIUM cartridges in the two- and three-stage versions

### Evacuation time

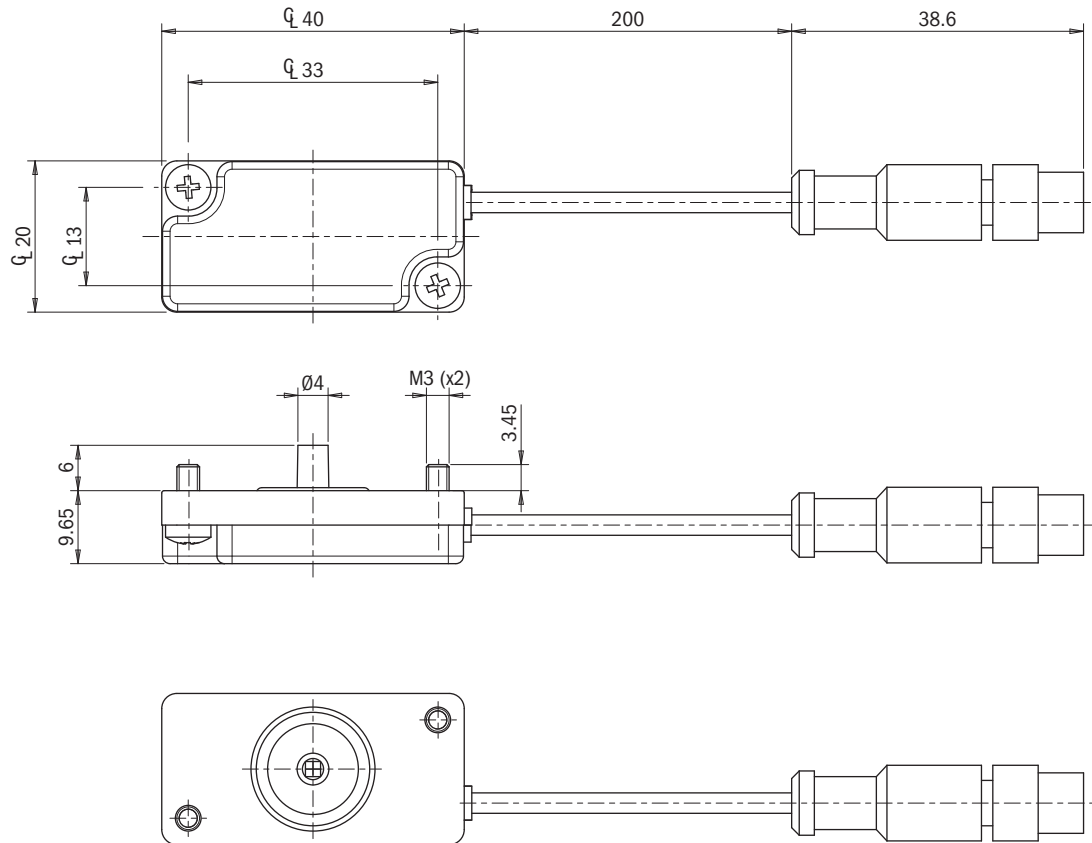
Model	Feed pressure [MPa]	Air consumption [NI/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]										Max vacuum [kPa]
			-10	-20	-30	-40	-50	-60	-70	-80	-90		
EJ-SLG-M-LP-2	0.4	0.55	0.17	0.33	0.55	0.9	1.5	2.4	3.7	7.1	—	-89	
EJ-SLG-M-LP-3	0.4	0.55	0.08	0.23	0.44	0.76	1.4	2.4	3.7	7.1	—	-89	
EJ-SLG-M-HF-2	0.6	0.43	0.13	0.30	0.54	0.9	1.5	2.3	3.2	—	—	-73	
EJ-SLG-M-HF-3	0.6	0.43	0.10	0.25	0.48	0.8	1.3	2.3	3.2	—	—	-73	
EJ-SLG-M-HV-2	0.5	0.47	0.14	0.32	0.55	1.0	1.6	2.4	3.5	5.1	8.7	-94	
EJ-SLG-M-HV-3	0.5	0.47	0.08	0.24	0.47	0.88	1.6	2.4	3.5	5.1	8.7	-94	

For technical specifications regarding the evacuation time and the consumption at different pressures, please refer to the technical data sheets of the EJ-MEDIUM cartridges, in the two- and three-stage versions



**Identification codes**

Alphanumeric code	Description	Order code
EJ-SLG-M-LP-2	EJ-SLG-MEDIUM-LP-2 vacuum pump with holder and integrated silencer	3330106
EJ-SLG-M-LP-3	EJ-SLG-MEDIUM-LP-3 vacuum pump with holder and integrated silencer	3330107
EJ-SLG-M-HF-2	EJ-SLG-MEDIUM-HF-2 vacuum pump with holder and integrated silencer	3330108
EJ-SLG-M-HF-3	EJ-SLG-MEDIUM-HF-3 vacuum pump with holder and integrated silencer	3330109
EJ-SLG-M-HV-2	EJ-SLG-MEDIUM-HV-2 vacuum pump with holder and integrated silencer	3330110
EJ-SLG-M-HV-3	EJ-SLG-MEDIUM-HV-3 vacuum pump with holder and integrated silencer	3330111


**Identification codes**

Alphanumeric code	Description	Order code
VACSW-30-3N203-G	Pre-set vacuum switch PNP -30 kPa with digital output, cable L= 30 cm with M8x1 3-LPn male connector	3030119
VACSW-50-3N203-G	Pre-set vacuum switch PNP -50 kPa with digital output, cable L= 30 cm with M8x1 3-LPn male connector	3030120
VACSW-70-3N203-G	Pre-set vacuum switch PNP -70 kPa with digital output, cable L= 30 cm with M8x1 3-LPn male connector	3030121
VACSW-30-3M203-G	Pre-set vacuum switch NPN -30 kPa with digital output, cable L= 30 cm with M8x1 3-LPn male connector	3030122
VACSW-50-3M203-G	Pre-set vacuum switch NPN -50 kPa with digital output, cable L= 30 cm with M8x1 3-LPn male connector	3030123
VACSW-70-3M203-G	Pre-set vacuum switch NPN -70 kPa with digital output, cable L= 30 cm with M8x1 3-LPn male connector	3030124

For more information and technical data on the pre-set vacuum switches described, see the accessories section on page 494



## EJ-SLG-LARGE

- Ideal for centralized applications
- Easy installation and positioning thanks to several mounting options
- G1/2" vacuum port
- Integrated silencer
- Multiple vacuum connections
- Prearranged with VACSW-3N203-G (PNP) and VACSW-3M203-G (NPN) vacuum switches
- Available with two- and three-stage EJ-LARGE cartridge (EJ-LP, EJ-HF, EJ-HV)

### Typical applications

- Packaging machines, for the food and pharmaceutical sector
- Where low weights and compact dimensions are required (PKM-Delta Robot)
- Machines for the wood industry, where a high suction flow rate is required



NEW



NEW



### Application example



**Technical features**

Max feed pressure	0.7 MPa
Weight	143 ± 159 g
Material	PA, SS, POM, Nitrile (NBR)
Noise level	< 70 dB

**Suction flow rate**

Model	Feed pressure [MPa]	Air consumption [Nl/s]	Suction flow rate [Nl/s] at different vacuum levels [kPa]										Max vacuum [kPa]
			0	-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-SLG-L-LP-2	0.4	2.6	2.8	2.5	2.1	1.5	1.1	0.66	0.36	0.26	0.08	–	-89
EJ-SLG-L-LP-3	0.4	2.6	5.7	2.5	2.1	1.5	1.1	0.66	0.36	0.26	0.08	–	-89
EJ-SLG-L-HF-2	0.6	1.7	3.2	3.0	2.5	1.7	0.89	0.62	0.51	0.31	–	–	-73
EJ-SLG-L-HF-3	0.6	1.7	5.9	3.5	2.5	1.7	0.89	0.62	0.51	0.31	–	–	-73
EJ-SLG-L-HV-2	0.5	1.93	2.6	2.4	1.7	1.3	0.70	0.55	0.40	0.31	0.15	0.02	-94
EJ-SLG-L-HV-3	0.5	1.93	6.0	3.7	2.1	1.9	0.79	0.55	0.40	0.31	0.15	0.02	-94

For technical specifications, regarding the suction flow rate and the air consumption at different pressures, please refer to the technical data sheets of the EJ-LARGE cartridges in the two- and three-stage versions

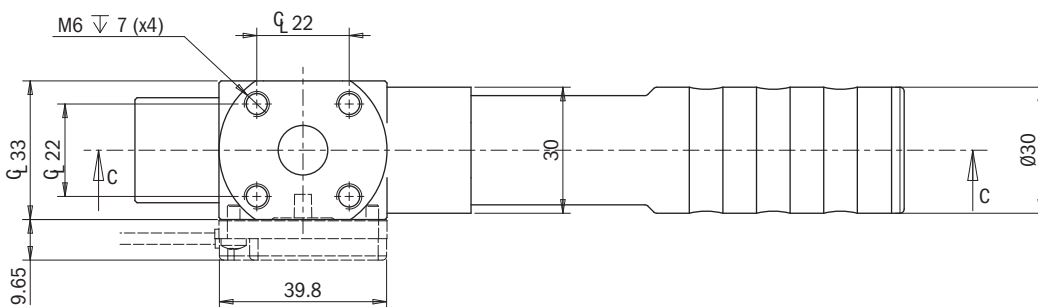
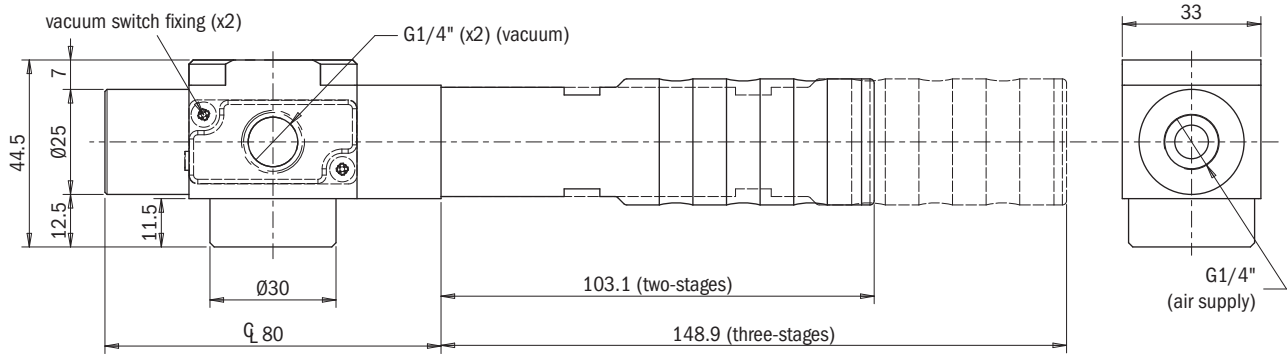
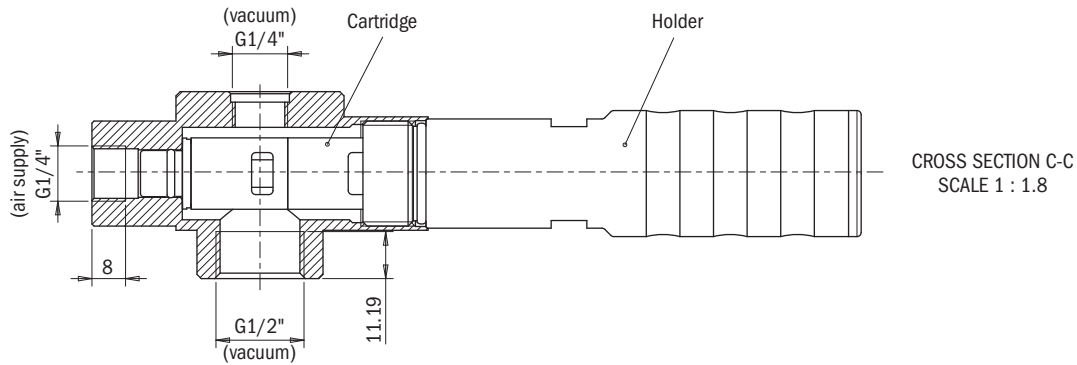
**Evacuation time**

Model	Feed pressure [MPa]	Air consumption [Nl/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]										Max vacuum [kPa]
			-10	-20	-30	-40	-50	-60	-70	-80	-90		
EJ-SLG-L-LP-2	0.4	2.6	0.04	0.07	0.14	0.19	0.3	0.5	0.8	1.4	–	-89	
EJ-SLG-L-LP-3	0.4	2.6	0.02	0.07	0.12	0.2	0.3	0.5	0.8	1.4	–	-89	
EJ-SLG-L-HF-2	0.6	1.7	0.03	0.07	0.12	0.19	0.3	0.4	0.7	–	–	-73	
EJ-SLG-L-HF-3	0.6	1.7	0.02	0.05	0.10	0.19	0.3	0.4	0.7	–	–	-73	
EJ-SLG-L-HV-2	0.5	1.93	0.04	0.09	0.16	0.3	0.4	0.6	0.9	1.3	2.5	-94	
EJ-SLG-L-HV-3	0.5	1.93	0.02	0.06	0.10	0.2	0.3	0.4	0.7	1.1	2.4	-94	

For technical specifications regarding the evacuation time and the consumption at different pressures, please refer to the technical data sheets of the EJ-LARGE cartridges, in the two- and three-stage versions

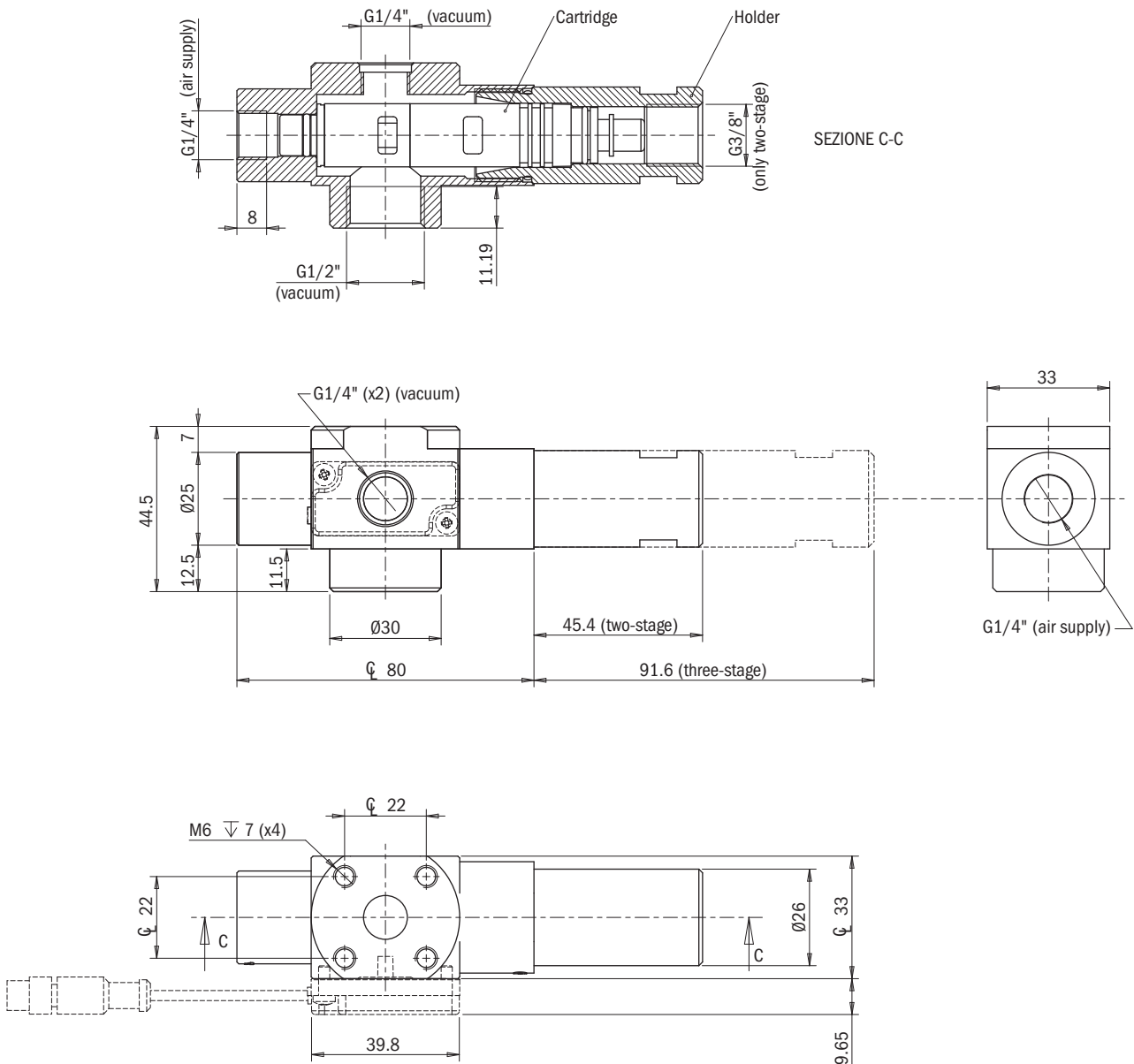
### Identification codes

Alphanumeric code	Description	Order code
EJ-SLG-L-LP-2	EJ-SLG-LARGE-LP-2 vacuum pump with holder and integrated silencer	3330113
EJ-SLG-L-LP-3	EJ-SLG-LARGE-LP-3 vacuum pump with holder and integrated silencer	3330114
EJ-SLG-L-HF-2	EJ-SLG-LARGE-HF-2 vacuum pump with holder and integrated silencer	3330115
EJ-SLG-L-HF-3	EJ-SLG-LARGE-HF-3 vacuum pump with holder and integrated silencer	3330116
EJ-SLG-L-HV-2	EJ-SLG-LARGE-HV-2 vacuum pump with holder and integrated silencer	3330117
EJ-SLG-L-HV-3	EJ-SLG-LARGE-HV-3 vacuum pump with holder and integrated silencer	3330118



### Identification codes

Alphanumeric code		Description	Order code
EJ-SLG-L-HF-2-H	<b>NEW</b>	EJ-SLG-LARGE-HF-2 vacuum pump with holder	3331115
EJ-SLG-L-HF-3-H	<b>NEW</b>	EJ-SLG-LARGE-HF-3 vacuum pump with holder	3331116

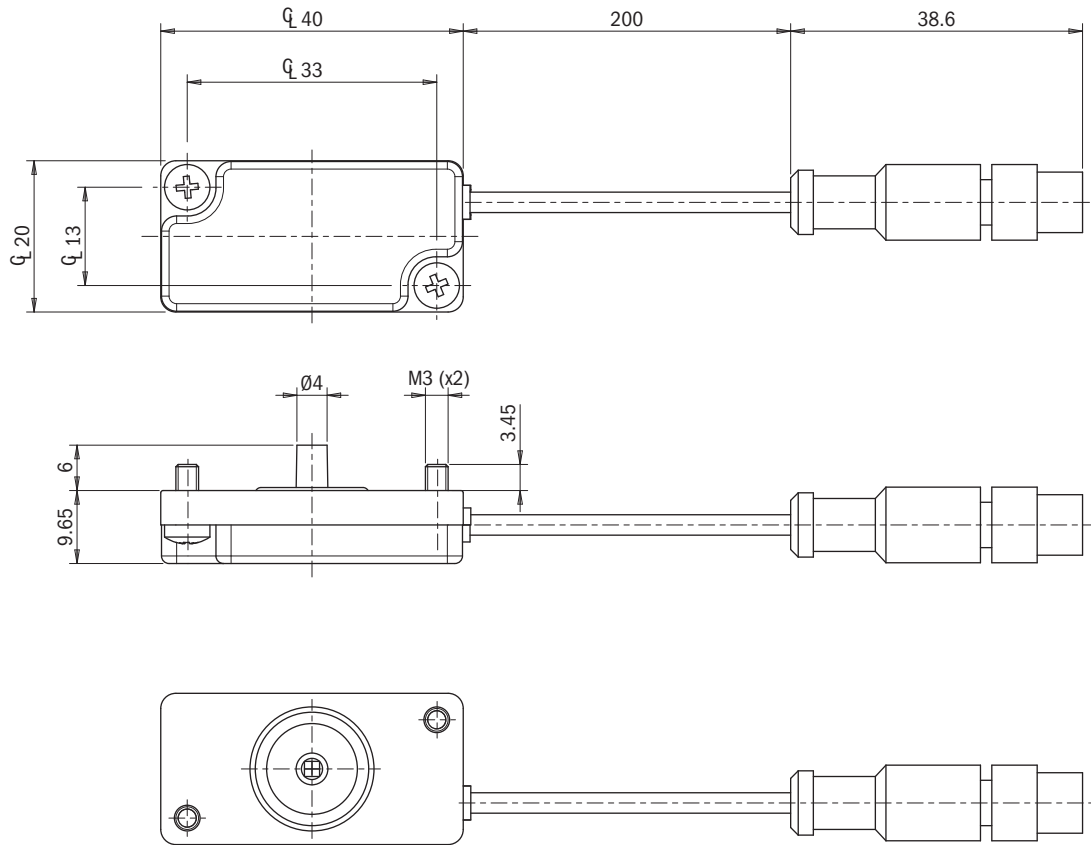




**Identification codes**

Alphanumeric code	Description	Order code
VACSW-30-3N203-G	Pre-set vacuum switch PNP -30 kPa with digital output, cable L= 30 cm with M8x1 3-LPn male connector	3030119
VACSW-50-3N203-G	Pre-set vacuum switch PNP -50 kPa with digital output, cable L= 30 cm with M8x1 3-LPn male connector	3030120
VACSW-70-3N203-G	Pre-set vacuum switch PNP -70 kPa with digital output, cable L= 30 cm with M8x1 3-LPn male connector	3030121
VACSW-30-3M203-G	Pre-set vacuum switch NPN -30 kPa with digital output, cable L= 30 cm with M8x1 3-LPn male connector	3030122
VACSW-50-3M203-G	Pre-set vacuum switch NPN -50 kPa with digital output, cable L= 30 cm with M8x1 3-LPn male connector	3030123
VACSW-70-3M203-G	Pre-set vacuum switch NPN -70 kPa with digital output, cable L= 30 cm with M8x1 3-LPn male connector	3030124

For more information and technical data on the pre-set vacuum switches described, please see the accessories section on page 494



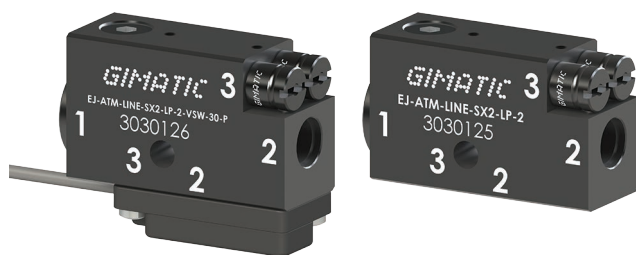


## EJ-ATM-LINE-SMALLX2-LP-2

- Restores the atmospheric pressure inside the gripping device to enable the quick release of the product
- Suitable for sealed applications to reduce cycle time
- Available with Gimatic's integrated vacuum switch, pre-set (-30, -50 and -70 kPa), in the PNP and NPN versions
- Vacuum ports, in-line or L-shaped
- A single 3/2 valve controls the vacuum pump and the ATM release device
- Anodised aluminium manifold
- Multiple G1/8" vacuum ports
- Available with two two-stage EJ-SMALL cartridges (EJ-LP), low feed pressure

### Typical applications

- Robotic cells for handling parts in transformation processes, for instance when serving bending machines, sheet metal forming presses and bending processes
- Glass handling machines
- Packaging machines, for the food and pharmaceutical sector



Application example



### Technical features

Max feed pressure	0.7 MPa
Weight	66.5 + 73.5 g
Material	PA, SS, Al, Nitrile (NBR)
Noise level	< 70 dB

### Suction flow rate

Model	Feed pressure [MPa]	Air consumption [NI/s]	Suction flow rate [NI/s] at different vacuum levels [kPa]											Max vacuum [kPa]
			0	-10	-20	-30	-40	-50	-60	-70	-80	-90		
EJ-ATM-LINE-SX2-LP-2	0.22	0.34	0.5	0.36	0.16	0.1	0.08	0.05	0.036	0.0106	–	–	-82	

For technical specifications regarding the suction flow rate and the air consumption at different pressures, refer to the technical data sheets of the two-stage EJ-SMALL-LP cartridges and multiply by two the values reported at the different vacuum levels

### Evacuation time

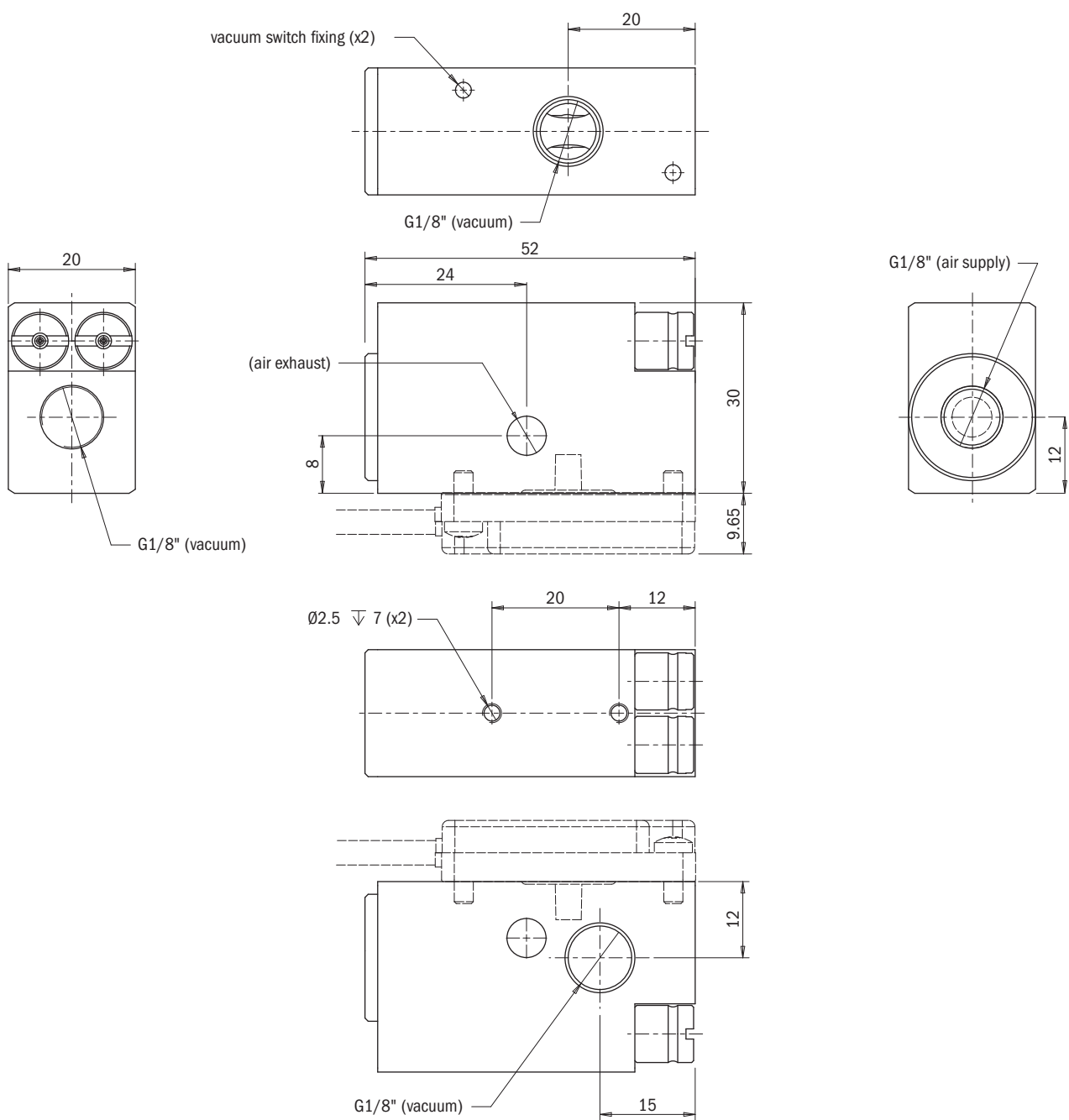
Model	Feed pressure [MPa]	Air consumption [NI/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]									Max vacuum [kPa]
			-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-ATM-LINE-SX2-LP-2	0.22	0.34	0.23	0.61	1.38	2.5	4.03	6.35	10.65	29.5	–	-82

For technical specifications regarding the evacuation time and the consumption at different pressures refer to the technical data sheets of the EJ-SMALL-LP cartridges and divide by two the reported values

### Identification codes

Alphanumeric code	Description	Order code
EJ-ATM-LINE-SX2-LP-2	EJ-ATM-LINE-SMALLX2-LP-2 vacuum pump with holder	3030125
EJ-ATM-LINE-SX2-LP-2-VSW-30-P	EJ-ATM-LINE-SMALLX2-LP-2 vacuum pump with holder, pre-set vacuum switch PNP -30 kPa	3030126
EJ-ATM-LINE-SX2-LP-2-VSW-50-P	EJ-ATM-LINE-SMALLX2-LP-2 vacuum pump with holder, pre-set vacuum switch PNP -50 kPa	3030127
EJ-ATM-LINE-SX2-LP-2-VSW-70-P	EJ-ATM-LINE-SMALLX2-LP-2 vacuum pump with holder, pre-set vacuum switch PNP -70 kPa	3030128
EJ-ATM-LINE-SX2-LP-2-VSW-30-N	EJ-ATM-LINE-SMALLX2-LP-2 vacuum pump with holder, pre-set vacuum switch NPN -30 kPa	3030129
EJ-ATM-LINE-SX2-LP-2-VSW-50-N	EJ-ATM-LINE-SMALLX2-LP-2 vacuum pump with holder, pre-set vacuum switch NPN -50 kPa	3030130
EJ-ATM-LINE-SX2-LP-2-VSW-70-N	EJ-ATM-LINE-SMALLX2-LP-2 vacuum pump with holder, pre-set vacuum switch NPN -70 kPa	3030131

For more information and technical data on the pre-set vacuum switches described, please see the accessories section on page 494



## EJ-ATM-MEDIUM-HV-2

- Restores the atmospheric pressure inside the gripping device to enable the quick release of the product
- Suitable for sealed applications to reduce cycle time
- G3/8" vacuum port
- Integrated silencer
- Multiple vacuum connections
- Available with Gimatic's integrated vacuum switch, pre-set (-30, -50 and -70 kPa), in the PNP and NPN versions
- A single 3/2 valve controls the vacuum pump and the ATM release device
- Anodised aluminium manifold
- Available with the two-stage EJ-MEDIUM cartridge (EJ-HV)

### Typical applications

- Robotic cells for handling parts in transformation processes, for instance when serving bending machines, sheet metal forming presses and bending processes
- Glass handling machines
- Packaging machines, for the food and pharmaceutical sector



Application example



### Technical features

Max feed pressure	0.7 MPa
Weight	213 ± 220 g
Material	PA, SS, POM, Nitrile (NBR)
Noise level	< 70 dB

### Suction flow rate

Model	Feed pressure [MPa]	Air consumption [l/s]	Suction flow rate [l/s] at different vacuum levels [kPa]										Max vacuum [kPa]
			0	-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-ATM-M-HV-2	0.5	0.47	0.76	0.63	0.54	0.32	0.17	0.15	0.11	0.07	0.05	0.01	-94

For technical specifications, regarding the suction flow rate and the air consumption at different pressures, please refer to the technical data sheets of the two-stage EJ-MEDIUM-HV cartridges

### Evacuation time

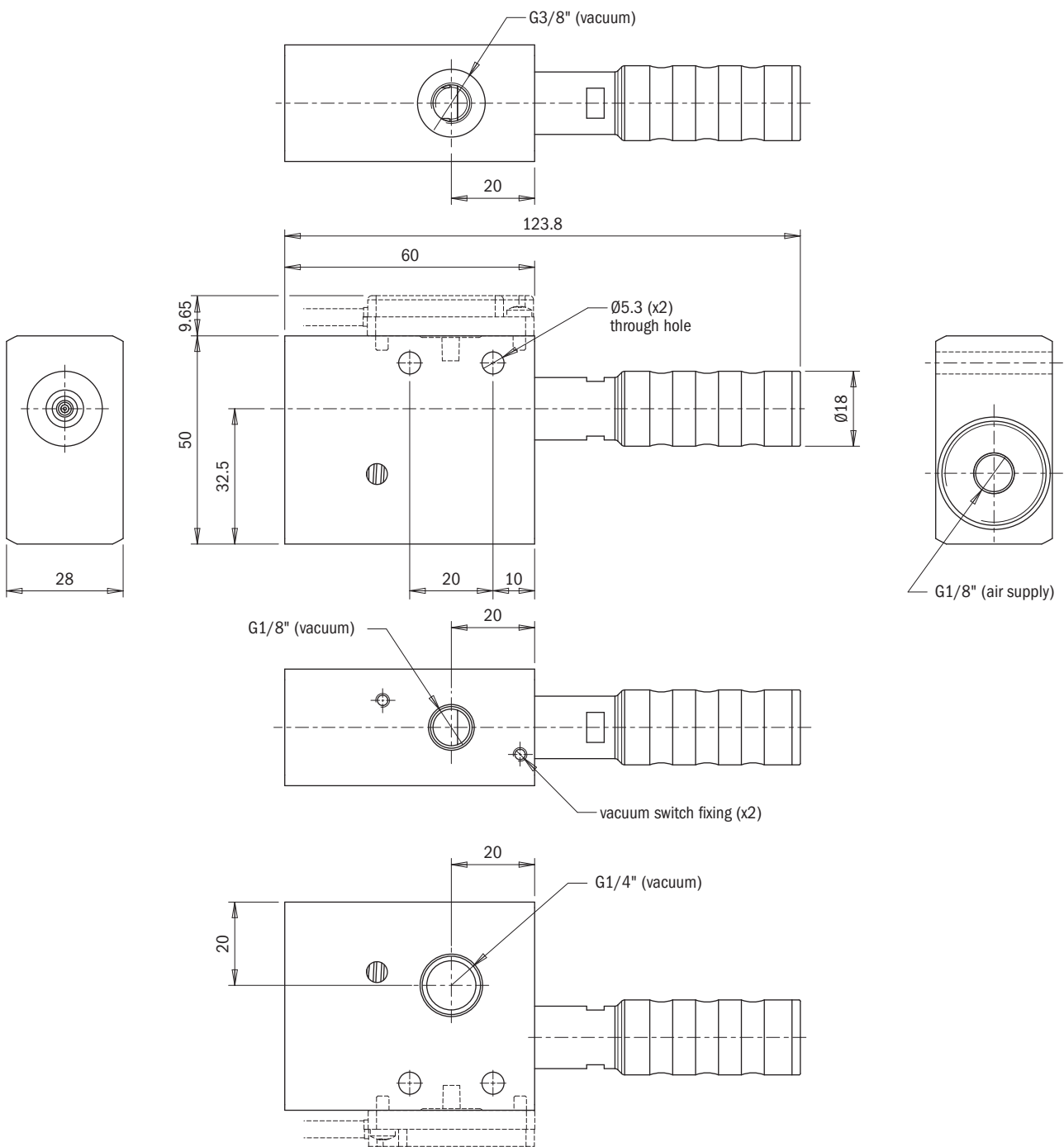
Model	Feed pressure [MPa]	Air consumption [l/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]									Max vacuum [kPa]
			-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-ATM-M-HV-2	0.5	0.47	0.14	0.32	0.55	1.0	1.6	2.4	3.5	5.1	8.7	-94

For technical specifications regarding evacuation time and consumption at different pressures, please refer to the technical data sheets of the two-stage EJ-MEDIUM-HV cartridges

### Identification codes

Alphanumeric code	Description	Order code
EJ-ATM-M-HV-2	EJ-ATM-MEDIUM-HV-2 vacuum pump with holder and integrated silencer	3100001
EJ-ATM-M-HV-2-VSW-30-P	EJ-ATM-MEDIUM-HV-2 vacuum pump with holder and integrated silencer, pre-set vacuum switch PNP -30 kPa	3100002
EJ-ATM-M-HV-2-VSW-50-P	EJ-ATM-MEDIUM-HV-2 vacuum pump with holder and integrated silencer, pre-set vacuum switch PNP -50 kPa	3100003
EJ-ATM-M-HV-2-VSW-70-P	EJ-ATM-MEDIUM-HV-2 vacuum pump with holder and integrated silencer, pre-set vacuum switch PNP -70 kPa	3100004
EJ-ATM-M-HV-2-VSW-30-N	EJ-ATM-MEDIUM-HV-2 vacuum pump with holder and integrated silencer, pre-set vacuum switch NPN -30 kPa	3100005
EJ-ATM-M-HV-2-VSW-50-N	EJ-ATM-MEDIUM-HV-2 vacuum pump with holder and integrated silencer, pre-set vacuum switch NPN -50 kPa	3100006
EJ-ATM-M-HV-2-VSW-70-N	EJ-ATM-MEDIUM-HV-2 vacuum pump with holder and integrated silencer, pre-set vacuum switch NPN -70 kPa	3100007

For more information and technical data on the pre-set vacuum switches described, see the accessories section on page 494



## EJ-BLOWOFF-MEDIUM-HF-2

- Ideal for applications in dusty environments
- Adjustable blow-off for quick release and cleaning of the EJ cartridge
- Tank capacity 10 cm<sup>3</sup>
- Available with Gimatic's integrated vacuum switch, pre-set (-30, -50 and -70 kPa), in the PNP and NPN versions
- No additional valves are required, as only one 3/2 valve controls both the vacuum pump and the blow-off function
- Integrated silencer
- Anodised aluminium manifold
- Available with one two-stage EJ-MEDIUM cartridge (EJ-HF), high suction flow rate and low energy consumption

### Typical applications

- Packaging machines, for the food and pharmaceutical sector
- Handling of cosmetic products
- Pick-up of porous items (cardboard, wooden sheets)

Introduction

Vacuum theory

Suction cups

Vacuum pumps

Customised solutions

Suspensions

System accessories



Application example



### Technical features

Max feed pressure	0.7 MPa
Weight	200 ± 207 g
Material	PA, SS, POM, Al, Nitrile (NBR)
Noise level	< 70 dB

### Suction flow rate

Model	Feed pressure [MPa]	Air consumption [l/s]	Suction flow rate [l/s] at different vacuum levels [kPa]										Max vacuum [kPa]
			0	-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-BLOWOFF-M-HF-2	0.6	0.43	0.78	0.68	0.52	0.31	0.21	0.15	0.10	0.08	–	–	-73

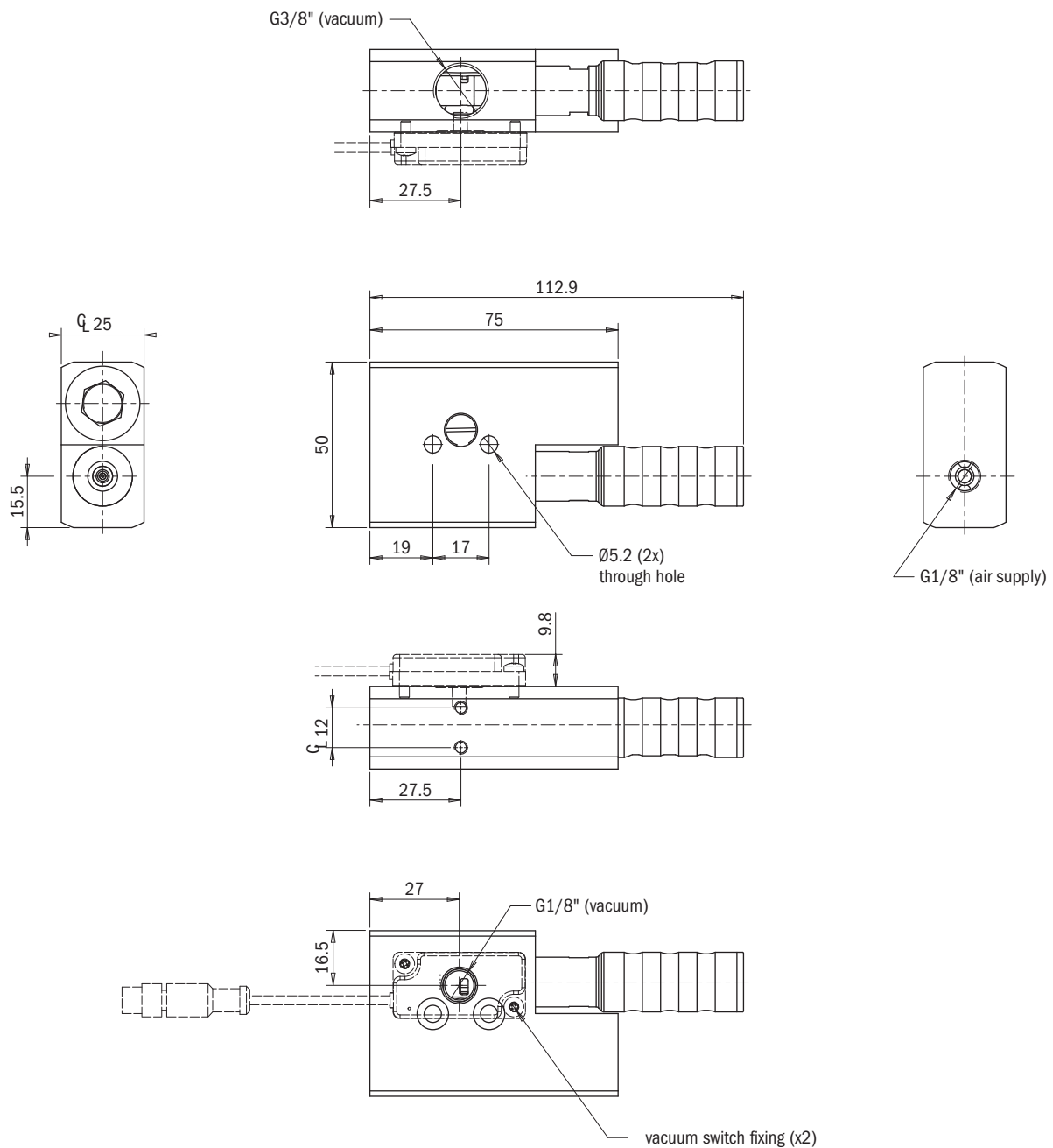
For technical specifications, regarding the suction flow rate and the air consumption at different pressures, please refer to the technical data sheets of the EJ-MEDIUM-HF cartridges in the two-stage version

### Evacuation time

Model	Feed pressure [MPa]	Air consumption [l/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]									Max vacuum [kPa]
			-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-BLOWOFF-M-HF-2	0.6	0.43	0.13	0.30	0.54	0.9	1.5	2.3	3.2	–	–	-73

For technical specifications regarding the evacuation time and the consumption at different pressures, please refer to the technical data sheets of the EJ-MEDIUM cartridges, in the two-stage version

Identification codes		
Alphanumeric code	Description	Order code
EJ-BLOWOFF-M-HF-2	EJ-BLOWOFF-MEDIUM-HF-2 vacuum pump with holder and integrated silencer	3030132
EJ-BLOWOFF-M-HF-2-VSW-30-P	EJ-BLOWOFF-MEDIUM-HF-2 vacuum pump with holder and integrated silencer, pre-set vacuum switch PNP -30 kPa	3030133
EJ-BLOWOFF-M-HF-2-VSW-50-P	EJ-BLOWOFF-MEDIUM-HF-2 vacuum pump with holder and integrated silencer, pre-set vacuum switch PNP -50 kPa	3030134
EJ-BLOWOFF-M-HF-2-VSW-70-P	EJ-BLOWOFF-MEDIUM-HF-2 vacuum pump with holder and integrated silencer, pre-set vacuum switch PNP -70 kPa	3030135
EJ-BLOWOFF-M-HF-2-VSW-30-N	EJ-BLOWOFF-MEDIUM-HF-2 vacuum pump with holder and integrated silencer, pre-set vacuum switch NPN -30 kPa	3030136
EJ-BLOWOFF-M-HF-2-VSW-50-N	EJ-BLOWOFF-MEDIUM-HF-2 vacuum pump with holder and integrated silencer, pre-set vacuum switch NPN -50 kPa	3030137
EJ-BLOWOFF-M-HF-2-VSW-70-N	EJ-BLOWOFF-MEDIUM-HF-2 vacuum pump with holder and integrated silencer, pre-set vacuum switch NPN -70 kPa	3030138





## EJ-BLOWOFF-MEDIUMX2-HF-2

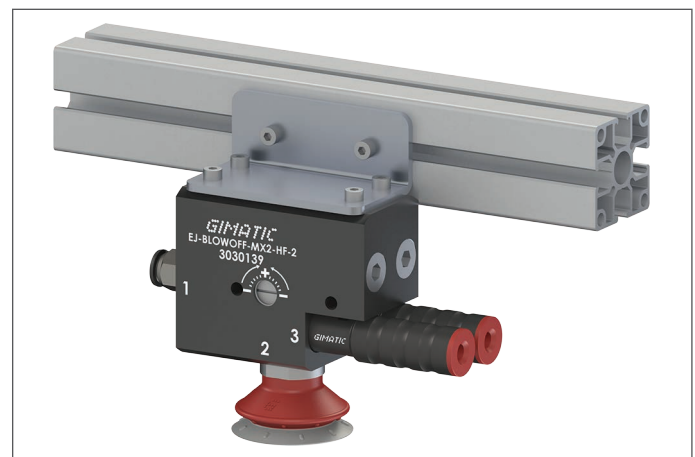
- Ideal for applications in dusty environments
- Adjustable blow-off for quick release and cleaning of the EJ cartridge
- Tank capacity 15 cm<sup>3</sup>
- G3/8" vacuum port
- Available with Gimatic's integrated vacuum switch, pre-set (-30, -50 and -70 kPa), in the PNP and NPN versions
- Multiple vacuum connections
- No additional valves are required, as only one 3/2 valve controls both the vacuum pump and the blow-off function
- Integrated silencer
- Manifold in POM
- Available with two two-stage EJ-MEDIUM cartridges (EJ-HF), high suction flow rate and low energy consumption

### Typical applications

- Packaging machines, for the food and pharmaceutical sector
- Handling of cosmetic products
- Pick-up of porous items (cardboard, wooden sheets)



Application example



### Technical features

Max feed pressure	0.7 MPa
Weight	256 ± 263 g
Material	PA, SS, Al, POM, Nitrile (NBR)
Noise level	< 70 dB

### Suction flow rate

Model	Feed pressure [MPa]	Air consumption [NI/s]	Suction flow rate [NI/s] at different vacuum levels [kPa]										Max vacuum [kPa]
			0	-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-BLOWOFF-MX2-HF-2	0.6	0.86	1.56	1.36	1.04	0.62	0.42	0.30	0.20	0.16	–	–	-73

For technical specifications regarding the suction flow rate and the air consumption at different pressures, refer to the technical data sheets of the two-stage EJ-MEDIUM-HF cartridges and multiply by 2 the values reported at the different vacuum levels

### Evacuation time

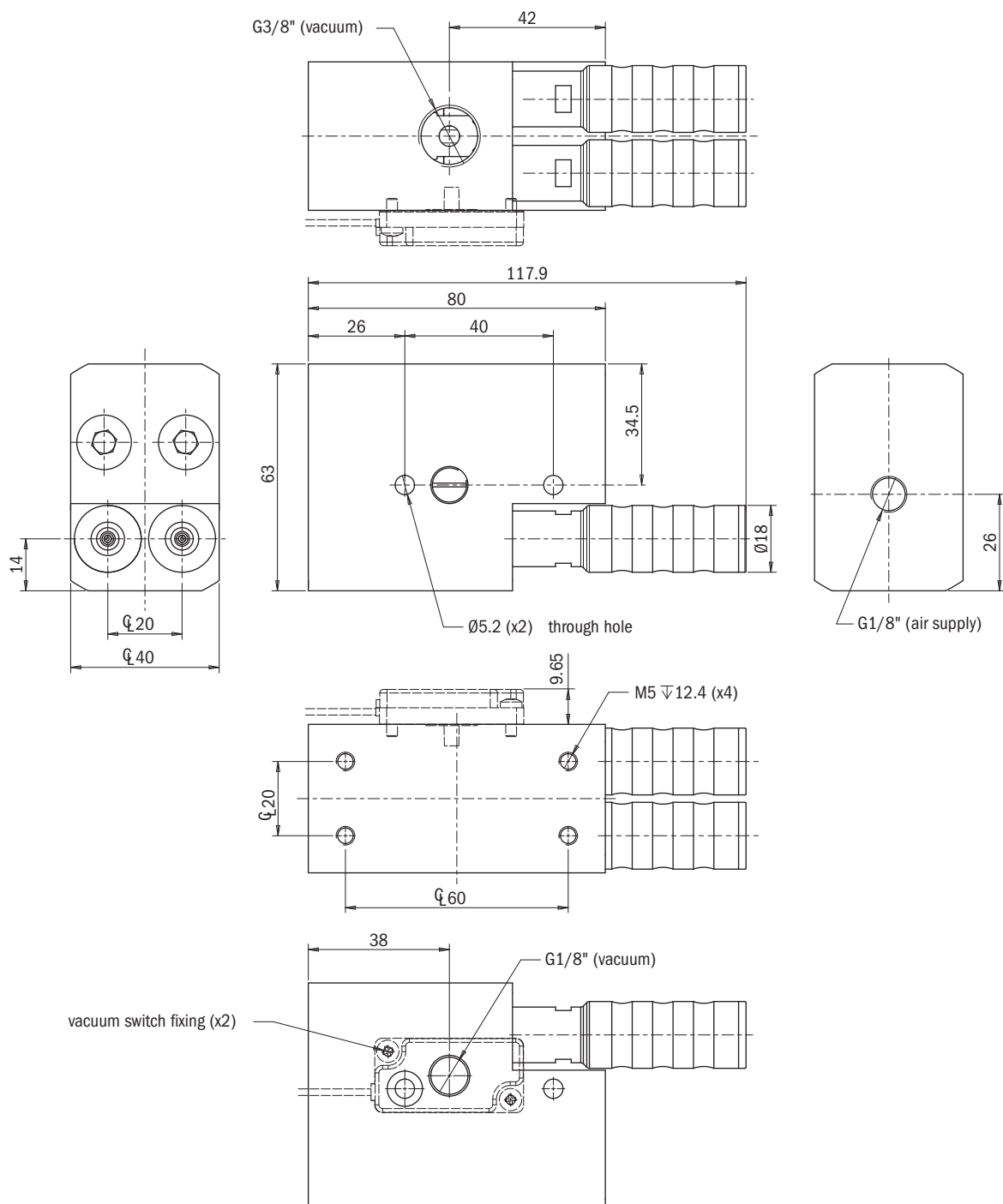
Model	Feed pressure [MPa]	Air consumption [NI/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]									Max vacuum [kPa]
			-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-BLOWOFF-MX2-HF-2	0.6	0.86	0.065	0.15	0.27	0.45	0.75	1.15	1.6	–	–	-73

For technical specifications regarding the evacuation time and the consumption at different pressures refer to the technical data sheets of the two-stage EJ-MEDIUM-HF cartridges and divide by 2 the reported values

### Identification codes

Alphanumeric code	Description	Order code
EJ-BLOWOFF-MX2-HF-2	EJ-BLOWOFF-MEDIUMX2-HF-2 vacuum pump with holder and integrated silencer	3030139
EJ-BLOWOFF-MX2-HF-2-VSW-30-P	EJ-BLOWOFF-MEDIUMX2-HF-2 vacuum pump with holder and integrated silencer, pre-set vacuum switch PNP -30 kPa	3030140
EJ-BLOWOFF-MX2-HF-2-VSW-50-P	EJ-BLOWOFF-MEDIUMX2-HF-2 vacuum pump with holder and integrated silencer, pre-set vacuum switch PNP -50 kPa	3030141
EJ-BLOWOFF-MX2-HF-2-VSW-70-P	EJ-BLOWOFF-MEDIUMX2-HF-2 vacuum pump with holder and integrated silencer, pre-set vacuum switch PNP -70 kPa	3030142
EJ-BLOWOFF-MX2-HF-2-VSW-30-N	EJ-BLOWOFF-MEDIUMX2-HF-2 vacuum pump with holder and integrated silencer, pre-set vacuum switch NPN -30 kPa	3030143
EJ-BLOWOFF-MX2-HF-2-VSW-50-N	EJ-BLOWOFF-MEDIUMX2-HF-2 vacuum pump with holder and integrated silencer, pre-set vacuum switch NPN -50 kPa	3030144
EJ-BLOWOFF-MX2-HF-2-VSW-70-N	EJ-BLOWOFF-MEDIUMX2-HF-2 vacuum pump with holder and integrated silencer, pre-set vacuum switch NPN -70 kPa	3030145

For more information and technical data on the pre-set vacuum switches described, see the accessories section on page 494



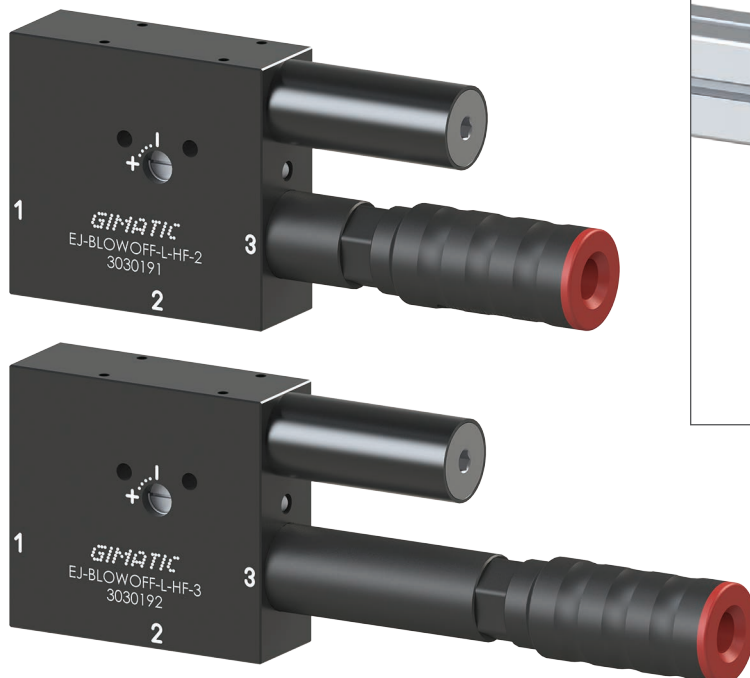
## EJ-BLOWOFF-LARGE

- Ideal for centralized applications
- Easy installation and positioning thanks to several mounting options
- Ideal for applications in dusty environments
- Adjustable blow-off for quick release and cleaning of the EJ-Large cartridge
- Tank capacity 25 cm<sup>3</sup>
- G1/2" vacuum port
- Integrated silencer
- Multiple vacuum connections
- Prearranged with VACSW-3N203-G B (PNP) and VACSW-3M203-G (NPN) vacuum switches
- Manifold in POM
- Available with two- and three-stage EJ-LARGE cartridges (EJ-HF – EJ-HV)

### Typical applications

- Packaging machines, for the food and pharmaceutical sector
- Machines for the wood industry and for handling porous products
- Machines for the cosmetic industry

NEW



Application example



### Technical features

Max feed pressure	0.7 MPa
Weight	305 ± 320 g
Material	PA, SS, POM, Al, Nitrile (NBR)
Noise level	< 70 dB

### Suction flow rate

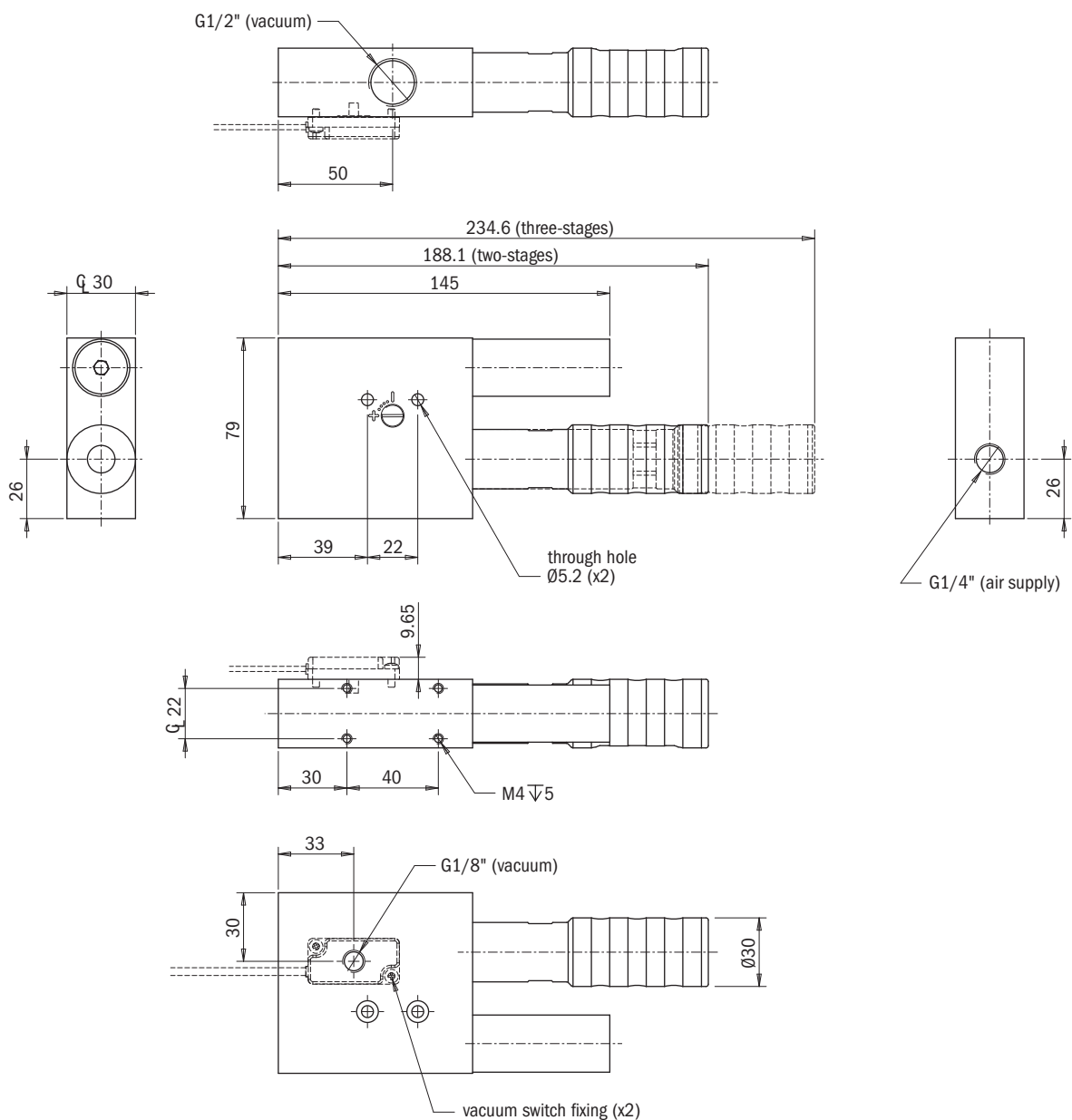
Model	Feed pressure [MPa]	Air consumption [Nl/s]	Suction flow rate [Nl/s] at different vacuum levels [kPa]											Max vacuum [kPa]
			0	-10	-20	-30	-40	-50	-60	-70	-80	-90		
EJ-BLOWOFF-L-HF-2	0.6	1.7	3.2	3.0	2.5	1.7	0.89	0.62	0.51	0.31	-	-	-73	
EJ-BLOWOFF-L-HF-3	0.6	1.7	5.9	3.5	2.5	1.7	0.89	0.62	0.51	0.31	-	-	-73	
EJ-BLOWOFF-L-HV-2	0.5	1.93	2.6	2.4	1.7	1.3	0.70	0.55	0.40	0.31	0.15	0.02	-94	
EJ-BLOWOFF-L-HV-3	0.5	1.93	6.0	3.7	2.1	1.9	0.79	0.55	0.40	0.31	0.15	0.02	-94	

For technical specifications, regarding the suction flow rate and the air consumption at different pressures, please refer to the technical data sheets of the EJ-LARGE cartridges in the two- and three-stage versions

### Evacuation time

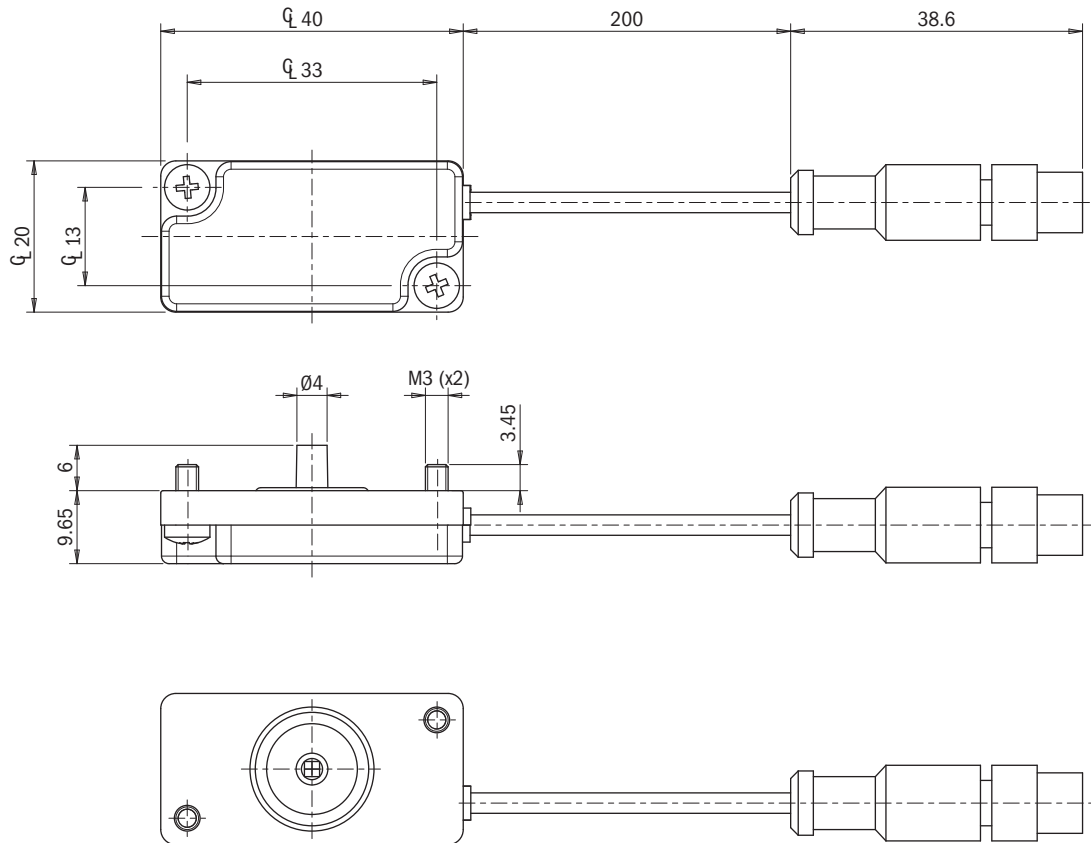
Model	Feed pressure [MPa]	Air consumption [l/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]										Max vacuum [kPa]
			-10	-20	-30	-40	-50	-60	-70	-80	-90		
EJ-BLOWOFF-L-HF-2	0.6	1.7	0.03	0.07	0.12	0.19	0.3	0.4	0.7	—	—	-73	
EJ-BLOWOFF-L-HF-3	0.6	1.7	0.02	0.05	0.10	0.19	0.3	0.4	0.7	—	—	-73	
EJ-BLOWOFF-L-HV-2	0.5	1.93	0.04	0.09	0.16	0.3	0.4	0.6	0.9	1.3	2.5	-94	
EJ-BLOWOFF-L-HV-3	0.5	1.93	0.02	0.06	0.10	0.2	0.3	0.4	0.7	1.1	2.4	-94	

For technical specifications regarding the evacuation time and the consumption at different pressures, please refer to the technical data sheets of the EJ-LARGE cartridges, in the two- and three-stage versions



### Identification codes

Alphanumeric code	Description	Order code
EJ-BLOWOFF-L-HF-2	EJ-BLOWOFF-LARGE-HF-2 vacuum pump with holder and integrated silencer, G1/2" vacuum port	3030191
EJ-BLOWOFF-L-HF-3	EJ-BLOWOFF-LARGE-HF-3 vacuum pump with holder and integrated silencer, G1/2" vacuum port	3030192
EJ-BLOWOFF-L-HV-2	EJ-BLOWOFF-LARGE-HV-2 vacuum pump with holder and integrated silencer, G1/2" vacuum port	3030193
EJ-BLOWOFF-L-HV-3	EJ-BLOWOFF-LARGE-HV-3 vacuum pump with holder and integrated silencer, G1/2" vacuum port	3030194



### Identification codes

Alphanumeric code	Description	Order code
VACSW-30-3N203-G	Pre-set vacuum switch PNP -30 kPa with digital output, cable L= 30 cm with M8x1 3-LPn male connector	3030119
VACSW-50-3N203-G	Pre-set vacuum switch PNP -50 kPa with digital output, cable L= 30 cm with M8x1 3-LPn male connector	3030120
VACSW-70-3N203-G	Pre-set vacuum switch PNP -70 kPa with digital output, cable L= 30 cm with M8x1 3-LPn male connector	3030121
VACSW-30-3M203-G	Pre-set vacuum switch NPN -30 kPa with digital output, cable L= 30 cm with M8x1 3-LPn male connector	3030122
VACSW-50-3M203-G	Pre-set vacuum switch NPN -50 kPa with digital output, cable L= 30 cm with M8x1 3-LPn male connector	3030123
VACSW-70-3M203-G	Pre-set vacuum switch NPN -70 kPa with digital output, cable L= 30 cm with M8x1 3-LPn male connector	3030124

For more information and technical data on the pre-set vacuum switches described, please see the accessories section on page 494



## EJ-BSV-MEDIUM

- Ideal for applications in dusty environments
- Adjustable blow-off for quick release and cleaning of the EJ cartridge
- Tank capacity 10 cm<sup>3</sup>
- Available with Gimatic's integrated vacuum switch, pre-set (-30, -50 and -70 kPa), in the PNP and NPN versions
- The 3/2 valve (NC, NO) feeds the vacuum pump and the blow-off function
- Integrated silencer
- Anodised aluminium manifold
- Available with one two-stage EJ-MEDIUM cartridge (EJ-HF, EJ-HV), high suction flow rate and low energy consumption

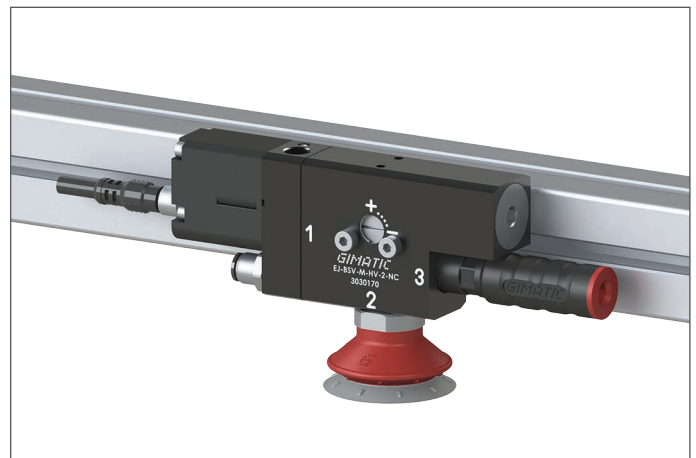
### Typical applications

- Packaging machines, for the food and pharmaceutical sector
- Handling of cosmetic products
- Pick-up of porous items (cardboard, wooden sheets)

**NEW**



Application example



### Technical features

Max feed pressure	0.7 MPa
Weight	250 ± 257 g
Material	PA, SS, POM, Al, Nitrile (NBR)
Noise level	< 70 dB
Solenoid valve opening response time	< 15 ms
Solenoid valve closing response time	< 10 ms
Power supply	24 V
Power absorption	1.2 W
Valve IP rating	IP56

### Suction flow rate

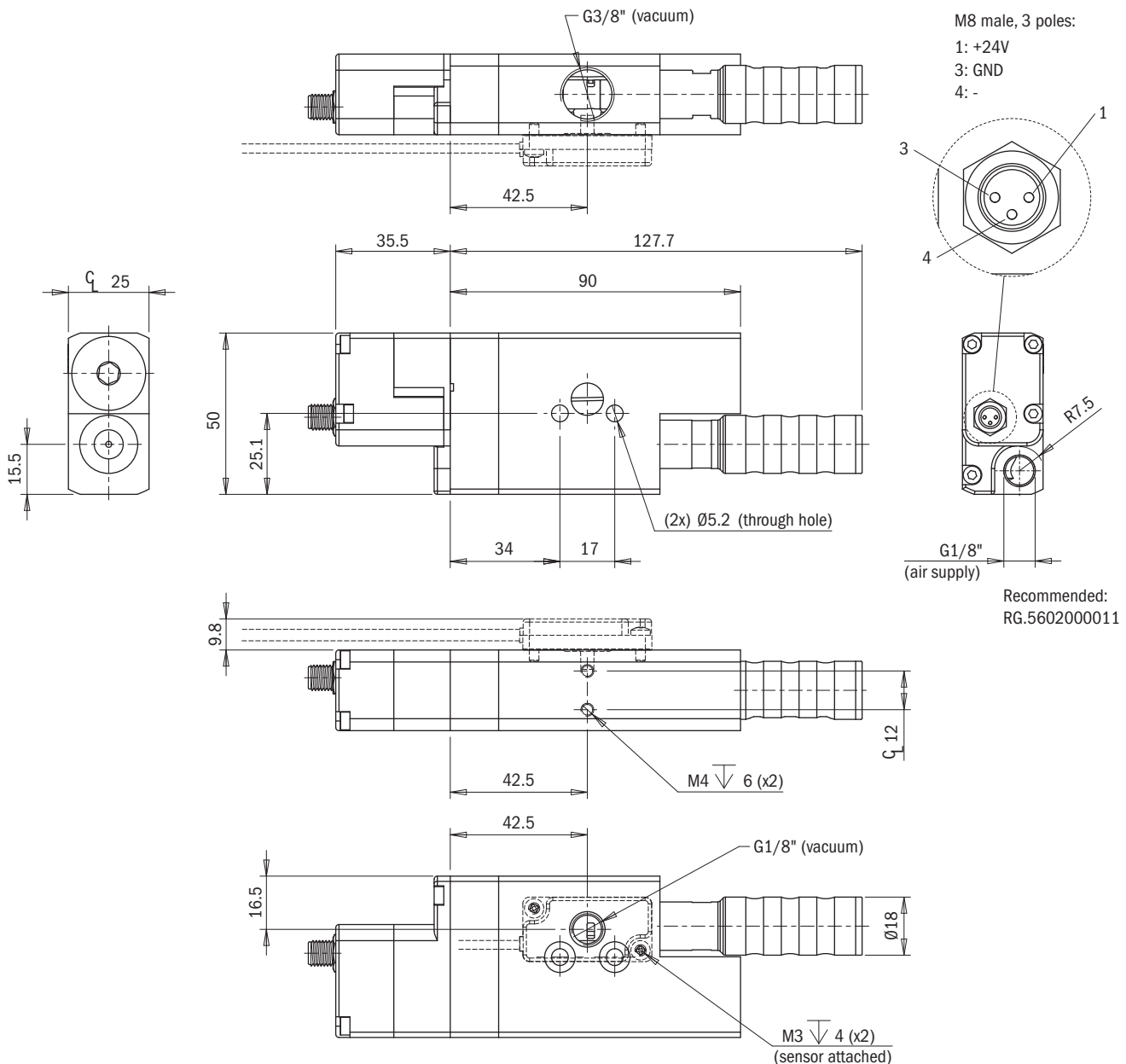
Model	Feed pressure [MPa]	Air consumption [l/s]	Suction flow rate [l/s] at different vacuum levels [kPa]										Max vacuum [kPa]
			0	-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-BSV-M-HF-2	0.6	0.43	0.78	0.68	0.52	0.31	0.21	0.15	0.10	0.08	—	—	-73
EJ-BSV-M-HV-2	0.5	0.47	0.76	0.63	0.54	0.32	0.17	0.15	0.11	0.07	0.05	0.01	-94

For technical specifications, regarding the suction flow rate and the air consumption at different pressures, please refer to the technical data sheets of the EJ-MEDIUM cartridges in the two-stage version

### Evacuation time

Model	Feed pressure [MPa]	Air consumption [l/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]										Max vacuum [kPa]
			-10	-20	-30	-40	-50	-60	-70	-80	-90		
EJ-BSV-M-HF-2	0.6	0.43	0.13	0.30	0.54	0.9	1.5	2.3	3.2	—	—	-73	
EJ-BSV-M-HV-2	0.5	0.47	0.14	0.32	0.55	1.0	1.6	2.4	3.5	5.1	8.7	-94	

For technical specifications regarding the evacuation time and the consumption at different pressures, please refer to the technical data sheets of the EJ-MEDIUM cartridges, in the two-stage version





Identification codes		
Alphanumeric code	Description	Order code
EJ-BSV-M-HF-2-NC	EJ-BLOWOFF-MEDIUM-HF-2 vacuum pump, electrically driven, NC, with holder and integrated silencer	3030198
EJ-BSV-M-HF-2-NC-VSW-30-P	EJ-BLOWOFF-MEDIUM-HF-2 vacuum pump, electrically driven, NC, with holder and integrated silencer, pre-set vacuum switch PNP -30 kPa	3030199
EJ-BSV-M-HF-2-NC-VSW-50-P	EJ-BLOWOFF-MEDIUM-HF-2 vacuum pump, electrically driven, NC, with holder and integrated silencer, pre-set vacuum switch PNP -50 kPa	3030200
EJ-BSV-M-HF-2-NC-VSW-70-P	EJ-BLOWOFF-MEDIUM-HF-2 vacuum pump, electrically driven, NC, with holder and integrated silencer, pre-set vacuum switch PNP -70 kPa	3030201
EJ-BSV-M-HF-2-NC-VSW-30-N	EJ-BLOWOFF-MEDIUM-HF-2 vacuum pump, electrically driven, NC, with holder and integrated silencer, pre-set vacuum switch NPN -30 kPa	3030202
EJ-BSV-M-HF-2-NC-VSW-50-N	EJ-BLOWOFF-MEDIUM-HF-2 vacuum pump, electrically driven, NC, with holder and integrated silencer, pre-set vacuum switch NPN -50 kPa	3030203
EJ-BSV-M-HF-2-NC-VSW-70-N	EJ-BLOWOFF-MEDIUM-HF-2 vacuum pump, electrically driven, NC, with holder and integrated silencer, pre-set vacuum switch NPN -70 kPa	3030204
EJ-BSV-M-HF-2-NO	EJ-BLOWOFF-MEDIUM-HF-2 vacuum pump, electrically driven, NO, with holder and integrated silencer	3030212
EJ-BSV-M-HF-2-NO-VSW-30-P	EJ-BLOWOFF-MEDIUM-HF-2 vacuum pump, electrically driven, NO, with holder and integrated silencer, pre-set vacuum switch PNP -30 kPa	3030213
EJ-BSV-M-HF-2-NO-VSW-50-P	EJ-BLOWOFF-MEDIUM-HF-2 vacuum pump, electrically driven, NO, with holder and integrated silencer, pre-set vacuum switch PNP -50 kPa	3030214
EJ-BSV-M-HF-2-NO-VSW-70-P	EJ-BLOWOFF-MEDIUM-HF-2 vacuum pump, electrically driven, NO, with holder and integrated silencer, pre-set vacuum switch PNP -70 kPa	3030215
EJ-BSV-M-HF-2-NO-VSW-30-N	EJ-BLOWOFF-MEDIUM-HF-2 vacuum pump, electrically driven, NO, with holder and integrated silencer, pre-set vacuum switch NPN -30 kPa	3030216
EJ-BSV-M-HF-2-NO-VSW-50-N	EJ-BLOWOFF-MEDIUM-HF-2 vacuum pump, electrically driven, NO, with holder and integrated silencer, pre-set vacuum switch NPN -50 kPa	3030217
EJ-BSV-M-HF-2-NO-VSW-70-N	EJ-BLOWOFF-MEDIUM-HF-2 vacuum pump, electrically driven, NO, with holder and integrated silencer, pre-set vacuum switch NPN -70 kPa	3030218

For more information and technical data on the pre-set vacuum switches described, please see the accessories section on page 494

Identification codes		
Alphanumeric code	Description	Order code
EJ-BSV-M-HV-2-NC	EJ-BLOWOFF-MEDIUM-HV-2 vacuum pump, electrically driven, NC, with holder and integrated silencer	3030170
EJ-BSV-M-HV-2-NC-VSW-30-P	EJ-BLOWOFF-MEDIUM-HV-2 vacuum pump, electrically driven, NC, with holder and integrated silencer, pre-set vacuum switch PNP -30 kPa	3030171
EJ-BSV-M-HV-2-NC-VSW-50-P	EJ-BLOWOFF-MEDIUM-HV-2 vacuum pump, electrically driven, NC, with holder and integrated silencer, pre-set vacuum switch PNP -50 kPa	3030172
EJ-BSV-M-HV-2-NC-VSW-70-P	EJ-BLOWOFF-MEDIUM-HV-2 vacuum pump, electrically driven, NC, with holder and integrated silencer, pre-set vacuum switch PNP -70 kPa	3030173
EJ-BSV-M-HV-2-NC-VSW-30-N	EJ-BLOWOFF-MEDIUM-HV-2 vacuum pump, electrically driven, NC, with holder and integrated silencer, pre-set vacuum switch NPN -30 kPa	3030174
EJ-BSV-M-HV-2-NC-VSW-50-N	EJ-BLOWOFF-MEDIUM-HV-2 vacuum pump, electrically driven, NC, with holder and integrated silencer, pre-set vacuum switch NPN -50 kPa	3030175
EJ-BSV-M-HV-2-NC-VSW-70-N	EJ-BLOWOFF-MEDIUM-HV-2 vacuum pump, electrically driven, NC, with holder and integrated silencer, pre-set vacuum switch NPN -70 kPa	3030176
EJ-BSV-M-HV-2-NO	EJ-BLOWOFF-MEDIUM-HV-2 vacuum pump, electrically driven, NO, with holder and integrated silencer	3030184
EJ-BSV-M-HV-2-NO-VSW-30-P	EJ-BLOWOFF-MEDIUM-HV-2 vacuum pump, electrically driven, NO, with holder and integrated silencer, pre-set vacuum switch PNP -30 kPa	3030185
EJ-BSV-M-HV-2-NO-VSW-50-P	EJ-BLOWOFF-MEDIUM-HV-2 vacuum pump, electrically driven, NO, with holder and integrated silencer, pre-set vacuum switch PNP -50 kPa	3030186
EJ-BSV-M-HV-2-NO-VSW-70-P	EJ-BLOWOFF-MEDIUM-HV-2 vacuum pump, electrically driven, NO, with holder and integrated silencer, pre-set vacuum switch PNP -70 kPa	3030187
EJ-BSV-M-HV-2-NO-VSW-30-N	EJ-BLOWOFF-MEDIUM-HV-2 vacuum pump, electrically driven, NO, with holder and integrated silencer, pre-set vacuum switch NPN -30 kPa	3030188
EJ-BSV-M-HV-2-NO-VSW-50-N	EJ-BLOWOFF-MEDIUM-HV-2 vacuum pump, electrically driven, NO, with holder and integrated silencer, pre-set vacuum switch NPN -50 kPa	3030189
EJ-BSV-M-HV-2-NO-VSW-70-N	EJ-BLOWOFF-MEDIUM-HV-2 vacuum pump, electrically driven, NO, with holder and integrated silencer, pre-set vacuum switch NPN -70 kPa	3030190

For more information and technical data on the pre-set vacuum switches described, please see the accessories section on page 494

## EJ-BSVLG-LARGE-ISO

- Ideal for centralized and decentralized applications
- Excellent ratio between suction flow rate and compressed air consumption
- Available with ON/OFF vacuum valve, blow-off, and integrated manual override control
- POM manifold prepared for mounting ISO 15407-1 (18 mm) valve of type 2x 3/2 NC or 5/3 with closed centre
- Available with two- and three-stage EJ-LARGE cartridges (EJ-HF and EJ-HV)
- Additional vacuum ports for mounting a vacuum switch
- In-line design for greater dirt tolerance
- Installable in series

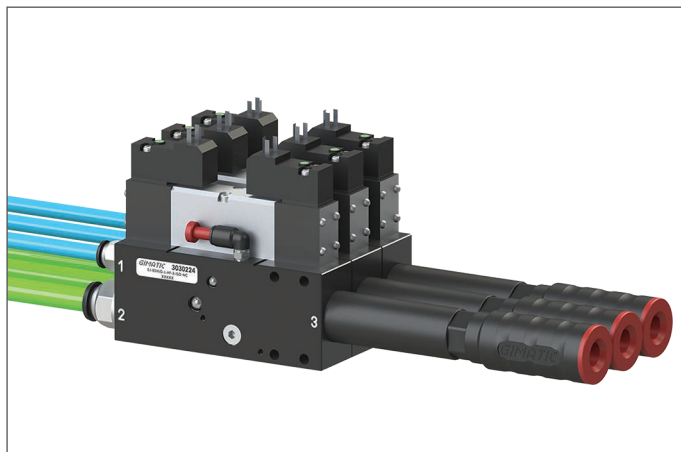
### Typical applications

- Case packing and cartoning machines
- In applications that require an integrated control system with reduced weight and compact dimensions (electronics sector)
- Handling objects with heavy weights and porous surfaces

NEW



### Application example



### Pump technical features

Max feed pressure	0.7 MPa
Weight (with solenoid valve)	260 (450) g
Material	SS, POM, Al, Nitrile (NBR)
Noise level	<70 dB
Operating temperature	-5 + +50 °C

### Solenoid valve technical features (optional)

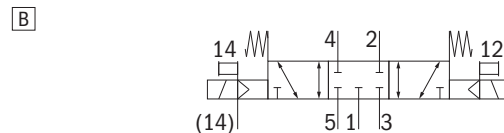
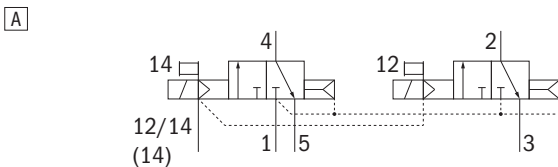
Brand	Norgren	
Model	V415A22D-C313A	
Operation	2x 3/2 Normally closed (NC), spring loaded	A
Type of electrical connection	DIN 43 650 Model C	
Drive voltage	24 Vcc ±10%	
Power absorption	1.2 W	
IP rating	IP65; NEMA 4	
Piloting	External	
Standard	ISO 15407-1: VDMA 24 563	

### Features of compatible valves

Standard	ISO 15407-1 (18 mm)			
Required piloting	External			
Operation	2x 3/2 NC	A	5/3 CC	B
Piloting outlet	Not conveyed			

### Example of compatible valves

Brand	Coding	Lay-out
Aignep	05V SO 7 CC 00	B
Festo	VSVA-B-T32C-AZH-A2-1C1	A
Festo	VSVA-B-T32C-AZH-A2-1R5L	A
Festo	VSVA-B-P53C-ZH-A2-1C1	B
Norgren	V415A22D-C313A	A



### Suction flow rate

Model	Feed pressure [MPa]	Air consumption [NI/s]	Suction flow rate [NI/s] at different vacuum levels [kPa]										Max vacuum [kPa]
			0	-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-BSVLG-L-HF-2-ISO	0.6	1.7	3.2	3.0	2.5	1.7	0.89	0.62	0.51	0.31	—	—	-73
EJ-BSVLG-L-HF-3-ISO	0.6	1.7	5.9	3.5	2.5	1.7	0.89	0.62	0.51	0.31	—	—	-73
EJ-BSVLG-L-HV-2-ISO	0.5	1.93	2.6	2.4	1.7	1.3	0.70	0.55	0.40	0.31	0.15	0.02	-94
EJ-BSVLG-L-HV-3-ISO	0.5	1.93	6.0	3.7	2.1	1.9	0.79	0.55	0.40	0.31	0.15	0.02	-94

For technical specifications, regarding the suction flow rate and the air consumption at different pressures, please refer to the technical data sheets of the EJ-LARGE cartridges in the two- and three-stage versions

### Evacuation time

Model	Feed pressure [MPa]	Air consumption [NI/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]									Max vacuum [kPa]
			-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-BSVLG-L-HF-2-ISO	0.6	1.7	0.03	0.07	0.12	0.19	0.3	0.4	0.7	—	—	-73
EJ-BSVLG-L-HF-3-ISO	0.6	1.7	0.02	0.05	0.10	0.19	0.3	0.4	0.7	—	—	-73
EJ-BSVLG-L-HV-2-ISO	0.5	1.93	0.04	0.09	0.16	0.3	0.4	0.6	0.9	1.3	2.5	-94
EJ-BSVLG-L-HV-3-ISO	0.5	1.93	0.02	0.06	0.10	0.2	0.3	0.4	0.7	1.1	2.4	-94

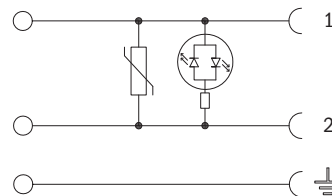
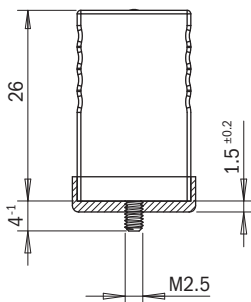
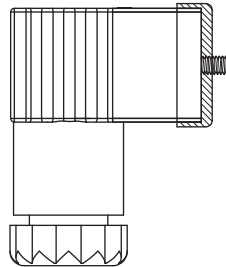
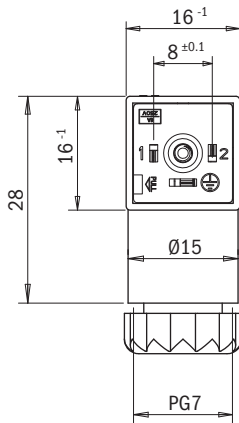
For technical specifications regarding the evacuation time and the consumption at different pressures, please refer to the technical data sheets of the EJ-LARGE cartridges, in the two- and three-stage versions

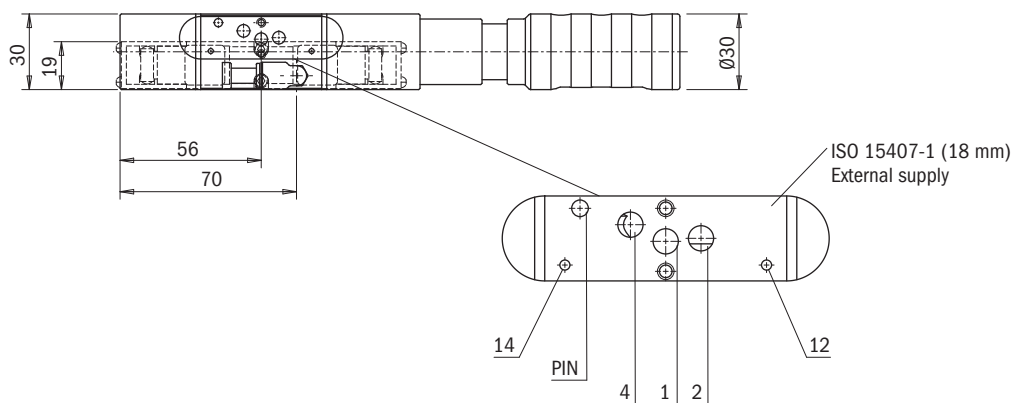
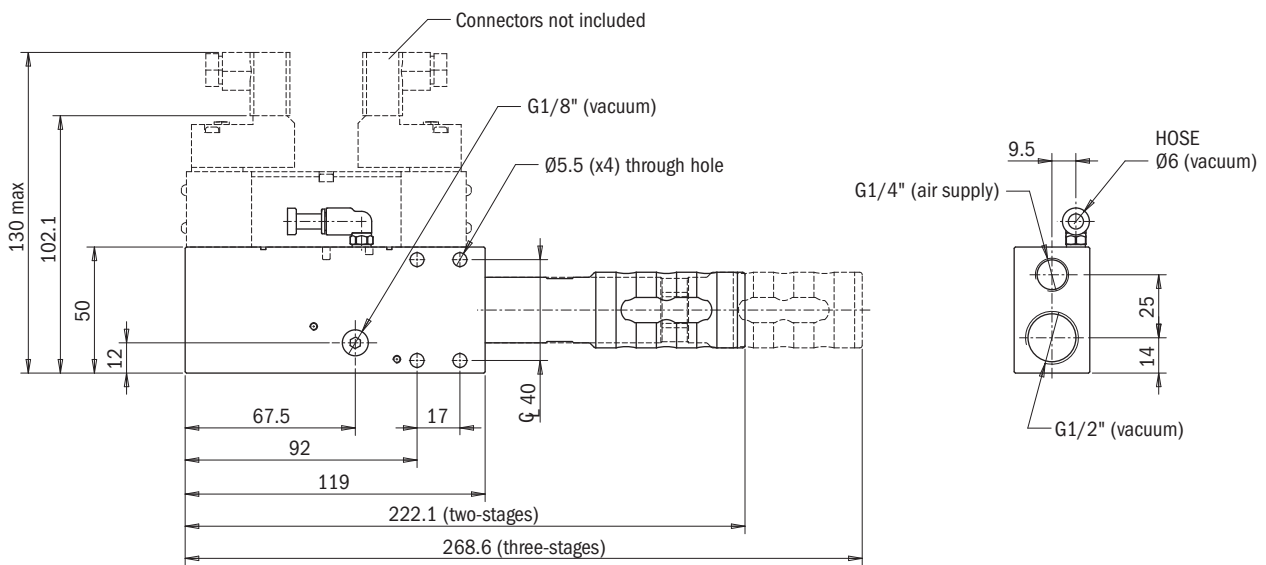
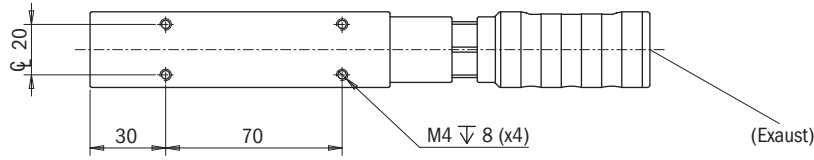
**Identification codes**

Alphanumeric code	Description	Order code
EJ-BSVLG-L-HF-2-ISO	EJ-BSVLG-LARGE-HF-2-ISO vacuum pump with holder and integrated silencer, ready for ISO 15407-1 valve, G1/2" vacuum port	3030219
EJ-BSVLG-L-HF-3-ISO	EJ-BSVLG-LARGE-HF-3-ISO vacuum pump with holder and integrated silencer, ready for ISO 15407-1 valve, G1/2" vacuum port	3030220
EJ-BSVLG-L-HV-2-ISO	EJ-BSVLG-LARGE-HV-2-ISO vacuum pump with holder and integrated silencer, ready for ISO 15407-1 valve, G1/2" vacuum port	3030221
EJ-BSVLG-L-HV-3-ISO	EJ-BSVLG-LARGE-HV-3-ISO vacuum pump with holder and integrated silencer, ready for ISO 15407-1 valve, G1/2" vacuum port	3030222
EJ-BSVLG-L-HF-2-ISO-NC	EJ-BSVLG-LARGE-HF-ISO-2 vacuum pump with holder and integrated silencer, with ISO 15407-1 3/2 x2 NC solenoid valve for vacuum and blow-off, G1/2" vacuum port	3030223
EJ-BSVLG-L-HF-3-ISO-NC	EJ-BSVLG-LARGE-HF-3-ISO vacuum pump with holder and integrated silencer, with ISO 15407-1 3/2 x2 NC solenoid valve for vacuum and blow-off, G1/2" vacuum port	3030224
EJ-BSVLG-L-HV-2-ISO-NC	EJ-BSVLG-LARGE-HV-ISO-2 vacuum pump with holder and integrated silencer, with ISO 15407-1 3/2 x2 NC solenoid valve for vacuum and blow-off, G1/2" vacuum port	3030225
EJ-BSVLG-L-HV-3-ISO-NC	EJ-BSVLG-LARGE-HV-3-ISO vacuum pump with holder and integrated silencer, with ISO 15407-1 3/2 x2 NC solenoid valve for vacuum and blow-off, G1/2" vacuum port	3030226

**Identification codes**

Alphanumeric code	Accessories	Order code
EJ-CON-15MM-24V	Transparent 15 mm connector with LED and VDR, 0 - 24 VDC	3030162





Function	n°
General supply	1
Blowoff	2
Vacuum supply	4
External supply	12 / 14

## EJ-MLG-LARGE

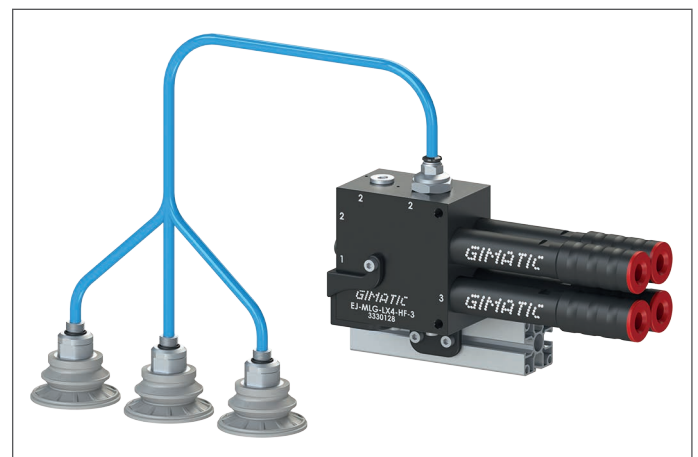
- Ideal for centralized applications
- Low weight, POM body
- G3/4" vacuum port
- Integrated silencer
- Low noise and short cycle time
- Multiple vacuum connections
- Short evacuation time
- Prearranged with VACSW-3N203-G (PNP) and VACSW-3M203-G (NPN) vacuum switches
- Available with two- and three-stage EJ-LARGE cartridge (EJ-HF and EJ-HV)

### Typical applications

- Graphic sector, offset machines, pre- and post-press
- Liquid filling and emptying applications
- Handling of objects with high weights or uneven surfaces



Application example



### Technical features

Max feed pressure	0.7 MPa
Weight	514 ± 1017 g
Material	PA, SS, POM, Nitrile (NBR)
Noise level	70 ± 75 dB

### Suction flow rate

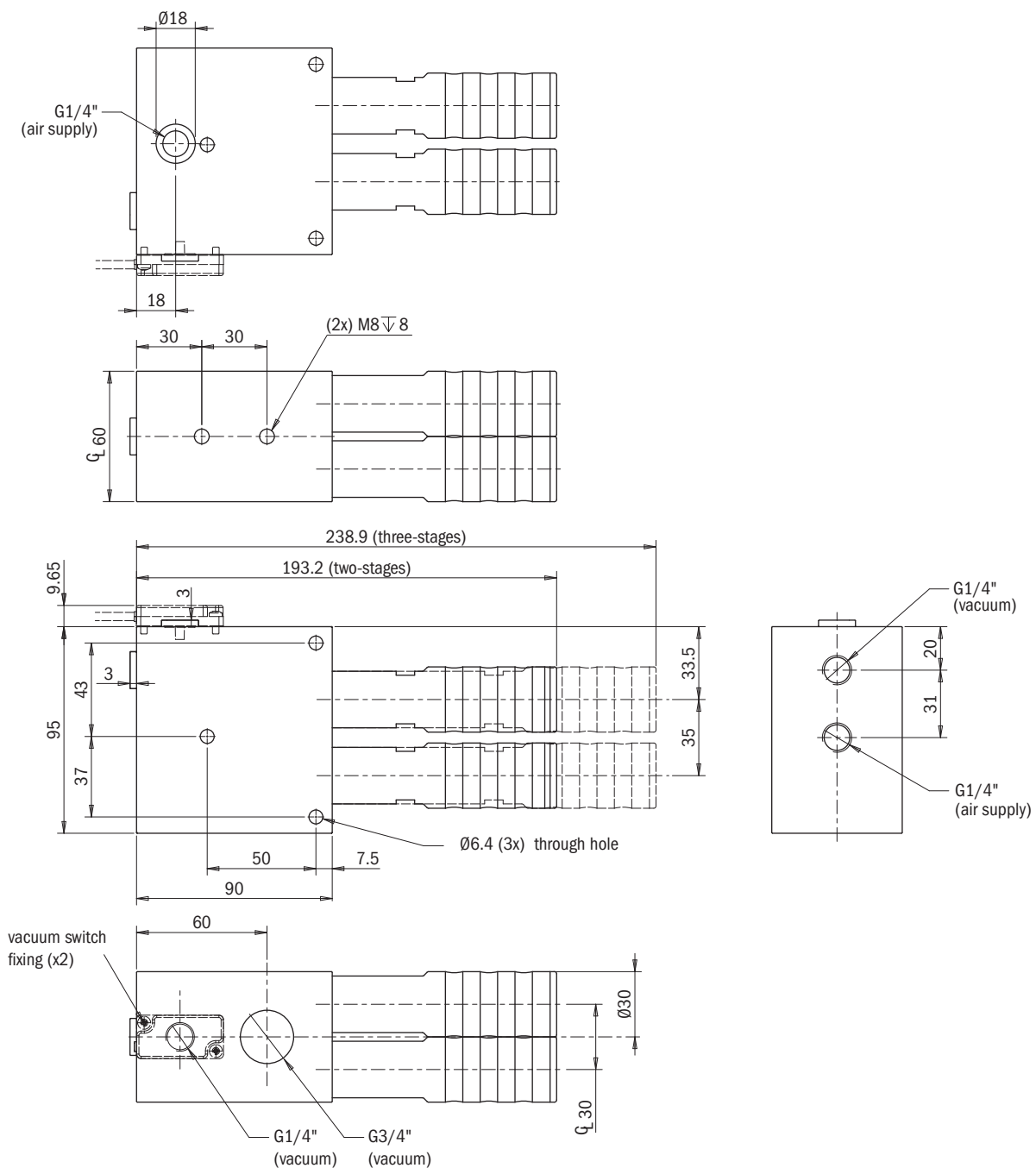
Model	Feed pressure [MPa]	Air consumption [l/s]	Suction flow rate [l/s] at different vacuum levels [kPa]										Max vacuum [kPa]
			0	-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-MLG-LX2-HF-2	0.6	3.4	6.2	6.0	5.0	3.4	1.78	1.24	1.02	0.62	–	–	-73
EJ-MLG-LX2-HF-3	0.6	3.4	11.8	7.0	5.0	3.4	1.78	1.24	1.02	0.62	–	–	-73
EJ-MLG-LX2-HV-2	0.5	3.86	5.2	4.8	3.4	2.6	1.4	1.1	0.8	0.62	0.3	0.04	-94
EJ-MLG-LX2-HV-3	0.5	3.86	12.0	7.4	4.2	3.8	1.58	1.1	0.8	0.62	0.3	0.04	-94
EJ-MLG-LX3-HF-2	0.6	5.1	9.6	9.0	7.5	5.1	2.67	1.86	1.53	0.93	–	–	-73
EJ-MLG-LX3-HF-3	0.6	5.1	17.7	10.5	7.5	5.1	2.67	1.86	1.53	0.93	–	–	-73
EJ-MLG-LX3-HV-2	0.5	5.79	7.8	7.2	5.1	3.9	2.1	1.65	1.2	0.93	0.45	0.06	-94
EJ-MLG-LX3-HV-3	0.5	5.79	18.0	11.1	6.3	5.7	2.37	1.65	1.2	0.93	0.45	0.06	-94
EJ-MLG-LX4-HF-2	0.6	6.8	12.8	12.0	10.0	6.8	3.56	2.48	2.04	1.24	–	–	-73
EJ-MLG-LX4-HF-3	0.6	6.8	23.6	14.0	10.0	6.8	3.56	2.48	2.04	1.24	–	–	-73
EJ-MLG-LX4-HV-2	0.5	7.72	10.4	9.6	6.8	1.3	2.8	2.2	1.6	1.24	0.6	0.08	-94
EJ-MLG-LX4-HV-3	0.5	7.72	24.0	14.8	8.4	7.6	3.16	2.2	1.6	1.24	0.6	0.08	-94

For technical specifications, regarding the suction flow rate and the air consumption at different pressures, please refer to the technical data sheets of the EJ-LARGE cartridges in the two- and three-stage versions

### Evacuation time

Model	Feed pressure [MPa]	Air consumption [NI/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]									Max vacuum [kPa]
			-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-MLG-LX2-HF-2	0.6	3.4	0.015	0.035	0.06	0.095	0.15	0.2	0.35	—	—	-73
EJ-MLG-LX2-HF-3	0.6	3.4	0.01	0.025	0.05	0.095	0.15	0.2	0.35	—	—	-73
EJ-MLG-LX2-HV-2	0.5	3.86	0.02	0.045	0.08	0.15	0.20	0.3	0.45	0.65	1.25	-94
EJ-MLG-LX2-HV-3	0.5	3.86	0.01	0.03	0.05	0.10	0.15	0.2	0.35	0.55	1.2	-94
EJ-MLG-LX3-HF-2	0.6	5.1	0.01	0.023	0.04	0.063	0.10	0.13	0.23	—	—	-73
EJ-MLG-LX3-HF-3	0.6	5.1	0.006	0.016	0.033	0.063	0.10	0.13	0.23	—	—	-73
EJ-MLG-LX3-HV-2	0.5	5.79	0.013	0.03	0.053	0.10	0.13	0.2	0.3	0.43	0.83	-94
EJ-MLG-LX3-HV-3	0.5	5.79	0.006	0.02	0.033	0.066	0.10	0.13	0.23	0.36	0.8	-94
EJ-MLG-LX4-HF-2	0.6	6.8	0.007	0.017	0.03	0.047	0.075	0.10	0.175	—	—	-73
EJ-MLG-LX4-HF-3	0.6	6.8	0.005	0.012	0.025	0.047	0.075	0.10	0.175	—	—	-73
EJ-MLG-LX4-HV-2	0.5	7.72	0.019	0.022	0.04	0.075	0.10	0.15	0.225	0.32	0.62	-94
EJ-MLG-LX4-HV-3	0.5	7.72	0.005	0.015	0.025	0.05	0.075	0.10	0.175	0.27	0.6	-94

For technical specifications regarding the evacuation time and the consumption at different pressures, please refer to the technical data sheets of the EJ-LARGE cartridges, in the two- and three-stage versions





**Identification codes**

Alphanumeric code	Description	Order code
EJ-MLG-LX2-HF-2	EJ-MLG-LARGE2-HF-2 vacuum pump with holder and integrated silencer	3330119
EJ-MLG-LX2-HF-3	EJ-MLG-LARGE2-HF-3 vacuum pump with holder and integrated silencer	3330120
EJ-MLG-LX2-HV-2	EJ-MLG-LARGE2-HV-2 vacuum pump with holder and integrated silencer	3330121
EJ-MLG-LX2-HV-3	EJ-MLG-LARGE2-HV-3 vacuum pump with holder and integrated silencer	3330122
EJ-MLG-LX3-HF-2	EJ-MLG-LARGE3-HF-2 vacuum pump with holder and integrated silencer	3330123
EJ-MLG-LX3-HF-3	EJ-MLG-LARGE3-HF-3 vacuum pump with holder and integrated silencer	3330124
EJ-MLG-LX3-HV-2	EJ-MLG-LARGE3-HV-2 vacuum pump with holder and integrated silencer	3330125
EJ-MLG-LX3-HV-3	EJ-MLG-LARGE3-HV-3 vacuum pump with holder and integrated silencer	3330126
EJ-MLG-LX4-HF-2	EJ-MLG-LARGE4-HF-2 vacuum pump with holder and integrated silencer	3330127
EJ-MLG-LX4-HF-3	EJ-MLG-LARGE4-HF-3 vacuum pump with holder and integrated silencer	3330128
EJ-MLG-LX4-HV-2	EJ-MLG-LARGE4-HV-2 vacuum pump with holder and integrated silencer	3330129
EJ-MLG-LX4-HV-3	EJ-MLG-LARGE4-HV-3 vacuum pump with holder and integrated silencer	3330130

For information on the VACSW-3N203-G (PNP) and VACSW-3M203-G (NPN) vacuum switches, see page 494



## EJ-CEN-LARGE

- Ideal for centralized applications
- Modular and configurable from 5 to 16 two-stage EJ-LARGE cartridges (EJ-HF and EJ-HV)
- Compact size and high suction flow rate
- Sturdy design and low weight (aluminium body and PA12 silencer)
- Possibility of working during suction or blowing (remove silencer)

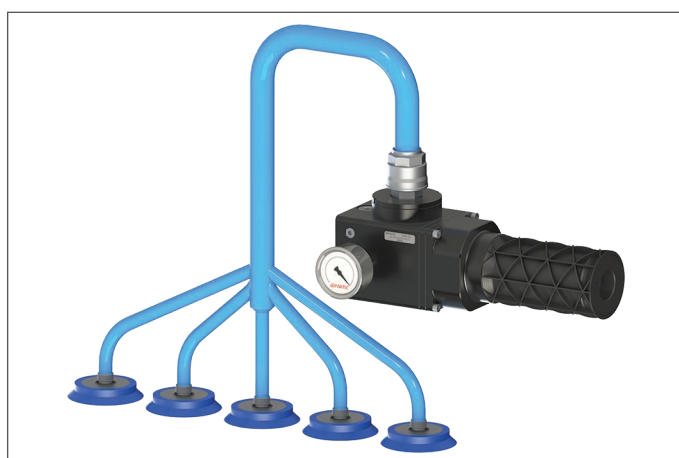
### Typical applications

- Graphic design, offset machines, pre- and post-printing
- Liquid filling and emptying applications
- Handling objects with heavy weights and porous surfaces

**NEW**



Application example



### Technical features

Max feed pressure	0.7 MPa
Weight	1400 ÷ 1700 g
Material	PA12, Al, SS, Nitrile (NBR)
Noise level	< 70 dB

### Suction flow rate

Model	Feed pressure [MPa]	Air consumption [NI/s]	Suction flow rate [NI/s] at different vacuum levels [kPa]										Max vacuum [kPa]
			0	-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-CEN-LX5-HV-2-G1	0.5	9.65	13.1	12.1	8.5	6.9	3.65	2.9	2.14	1.5	0.9	0.16	-94
EJ-CEN-LX6-HV-2-G1	0.5	11.58	15.6	14.4	10.2	8.4	4.36	3.47	2.59	1.91	1.09	0.18	-94
EJ-CEN-LX7-HV-2-G1	0.5	13.51	18.2	16.8	11.9	9.9	5.10	4.05	3.01	2.25	1.24	0.21	-94
EJ-CEN-LX8-HV-2-G1	0.5	15.44	20.8	19.2	13.6	11.4	5.83	4.60	3.42	2.54	1.44	0.24	-94
EJ-CEN-LX9-HV-2-G1-1/2	0.5	17.37	23.4	21.6	14.8	12.9	6.58	5.23	3.86	2.87	1.62	0.27	-94
EJ-CEN-LX10-HV-2-G1-1/2	0.5	19.3	26.1	23.9	16.5	14.4	7.4	5.7	4.3	3.2	1.8	0.31	-94
EJ-CEN-LX11-HV-2-G1-1/2	0.5	21.23	28.6	26.4	18.2	15.9	8.4	6.37	4.72	3.53	1.98	0.32	-94
EJ-CEN-LX12-HV-2-G1-1/2	0.5	23.16	31.2	28.8	19.9	17.4	8.72	6.95	5.16	3.85	2.16	0.36	-94
EJ-CEN-LX13-HV-2-G1-1/2	0.5	25.09	33.8	31.2	21.6	18.9	9.50	7.52	5.53	4.13	2.32	0.39	-94
EJ-CEN-LX14-HV-2-G2	0.5	27.02	36.4	33.6	23.3	20.4	10.3	8.13	6.02	4.45	2.51	0.41	-94
EJ-CEN-LX15-HV-2-G2	0.5	28.95	39.1	35.9	25.1	21.9	10.9	8.7	6.43	4.81	2.71	0.45	-94
EJ-CEN-LX16-HV-2-G2	0.5	30.88	41.6	38.4	26.7	23.4	11.6	9.27	6.85	5.12	2.87	0.47	-94
EJ-CEN-LX5-HF-2-G1	0.6	8.5	16.1	12.5	10.8	8.4	4.3	2.9	2.4	1.69	-	-	-73
EJ-CEN-LX6-HF-2-G1	0.6	10.2	19.2	14.9	11.9	9.9	5.3	3.5	2.9	2.1	-	-	-73
EJ-CEN-LX7-HF-2-G1	0.6	11.9	22.4	17.5	13.4	10.9	6.2	4.3	3.5	2.4	-	-	-73
EJ-CEN-LX8-HF-2-G1	0.6	13.6	25.6	19.5	16.5	11.8	7.1	4.5	4.1	2.7	-	-	-73
EJ-CEN-LX9-HF-2-G1-1/2	0.6	15.3	28.8	22.5	18.4	14.3	7.9	5.3	4.5	3.14	-	-	-73
EJ-CEN-LX10-HF-2-G1-1/2	0.6	17.0	32.0	24.9	19.7	15.8	8.7	6.1	5.0	3.45	-	-	-73
EJ-CEN-LX11-HF-2-G1-1/2	0.6	18.7	35.2	27.5	23.7	16.7	9.6	6.2	5.4	3.83	-	-	-73
EJ-CEN-LX12-HF-2-G1-1/2	0.6	20.4	38.4	29.8	26.4	18.2	10.1	7.1	5.9	4.21	-	-	-73
EJ-CEN-LX13-HF-2-G1-1/2	0.6	22.1	41.4	32.4	28.4	21.7	11.3	7.8	6.4	4.50	-	-	-73
EJ-CEN-LX14-HF-2-G2	0.6	23.8	44.8	34.9	31.0	23.5	12.1	8.3	6.9	4.89	-	-	-73
EJ-CEN-LX15-HF-2-G2	0.6	25.5	47.9	37.5	29.3	24.5	13.6	8.8	7.4	5.25	-	-	-73
EJ-CEN-LX16-HF-2-G2	0.6	27.2	49.9	40.1	35.7	27.2	14.3	9.5	7.9	5.5	-	-	-73

For technical specifications, regarding the suction flow rate and the air consumption at different pressures, please refer to the technical data sheets of the EJ-LARGE cartridges in the two-stage version

### Evacuation time

Model	Feed pressure [MPa]	Air consumption [NI/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]									Max vacuum [kPa]
			-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-CEN-LX5-HV-2-G1	0.5	9.65	0.008	0.018	0.032	0.060	0.074	0.11	0.16	0.24	0.43	-94
EJ-CEN-LX6-HV-2-G1	0.5	11.58	0.007	0.015	0.026	0.050	0.062	0.094	0.14	0.2	0.37	-94
EJ-CEN-LX7-HV-2-G1	0.5	13.51	0.006	0.012	0.022	0.042	0.052	0.080	0.13	0.18	0.30	-94
EJ-CEN-LX8-HV-2-G1	0.5	15.44	0.005	0.011	0.020	0.037	0.047	0.072	0.10	0.15	0.27	-94
EJ-CEN-LX9-HV-2-G1-1/2	0.5	17.37	0.004	0.010	0.018	0.033	0.042	0.063	0.092	0.13	0.24	-94
EJ-CEN-LX10-HV-2-G1-1/2	0.5	19.3	0.004	0.009	0.016	0.030	0.038	0.059	0.084	0.11	0.22	-94
EJ-CEN-LX11-HV-2-G1-1/2	0.5	21.23	0.004	0.008	0.015	0.036	0.034	0.052	0.076	0.11	0.2	-94
EJ-CEN-LX12-HV-2-G1-1/2	0.5	23.16	0.003	0.007	0.013	0.024	0.031	0.047	0.08	0.1	0.18	-94
EJ-CEN-LX13-HV-2-G1-1/2	0.5	25.09	0.003	0.007	0.012	0.023	0.030	0.045	0.065	0.091	0.17	-94
EJ-CEN-LX14-HV-2-G2	0.5	27.02	0.002	0.006	0.011	0.021	0.028	0.042	0.07	0.085	0.15	-94
EJ-CEN-LX15-HV-2-G2	0.5	28.95	0.002	0.006	0.010	0.020	0.025	0.038	0.056	0.08	0.14	-94
EJ-CEN-LX16-HV-2-G2	0.5	30.88	0.002	0.005	0.010	0.018	0.024	0.037	0.055	0.07	0.13	-94
EJ-CEN-LX5-HF-2-G1	0.6	8.5	0.009	0.019	0.034	0.061	0.066	0.11	0.16	-	-	-73
EJ-CEN-LX6-HF-2-G1	0.6	10.2	0.008	0.016	0.027	0.051	0.056	0.089	0.12	-	-	-73
EJ-CEN-LX7-HF-2-G1	0.6	11.9	0.007	0.013	0.024	0.043	0.049	0.075	0.11	-	-	-73
EJ-CEN-LX8-HF-2-G1	0.6	13.6	0.006	0.012	0.021	0.039	0.040	0.067	0.1	-	-	-73
EJ-CEN-LX9-HF-2-G1-1/2	0.6	15.3	0.005	0.012	0.020	0.035	0.037	0.058	0.087	-	-	-73
EJ-CEN-LX10-HF-2-G1-1/2	0.6	17.0	0.005	0.010	0.017	0.031	0.034	0.054	0.08	-	-	-73
EJ-CEN-LX11-HF-2-G1-1/2	0.6	18.7	0.005	0.009	0.016	0.036	0.03	0.048	0.072	-	-	-73
EJ-CEN-LX12-HF-2-G1-1/2	0.6	20.4	0.004	0.008	0.014	0.025	0.028	0.044	0.067	-	-	-73
EJ-CEN-LX13-HF-2-G1-1/2	0.6	22.1	0.004	0.009	0.012	0.023	0.026	0.040	0.063	-	-	-73
EJ-CEN-LX14-HF-2-G2	0.6	23.8	0.003	0.007	0.011	0.021	0.025	0.037	0.057	-	-	-73
EJ-CEN-LX15-HF-2-G2	0.6	25.5	0.003	0.007	0.010	0.020	0.023	0.035	0.052	-	-	-73
EJ-CEN-LX16-HF-2-G2	0.6	27.2	0.003	0.007	0.010	0.019	0.021	0.033	0.04	-	-	-73

For technical specifications regarding the evacuation time and the consumption at different pressures, please refer to the technical data sheets of the EJ-LARGE cartridges, in the two-stage version

### Identification codes for suction applications (integrated silencer)

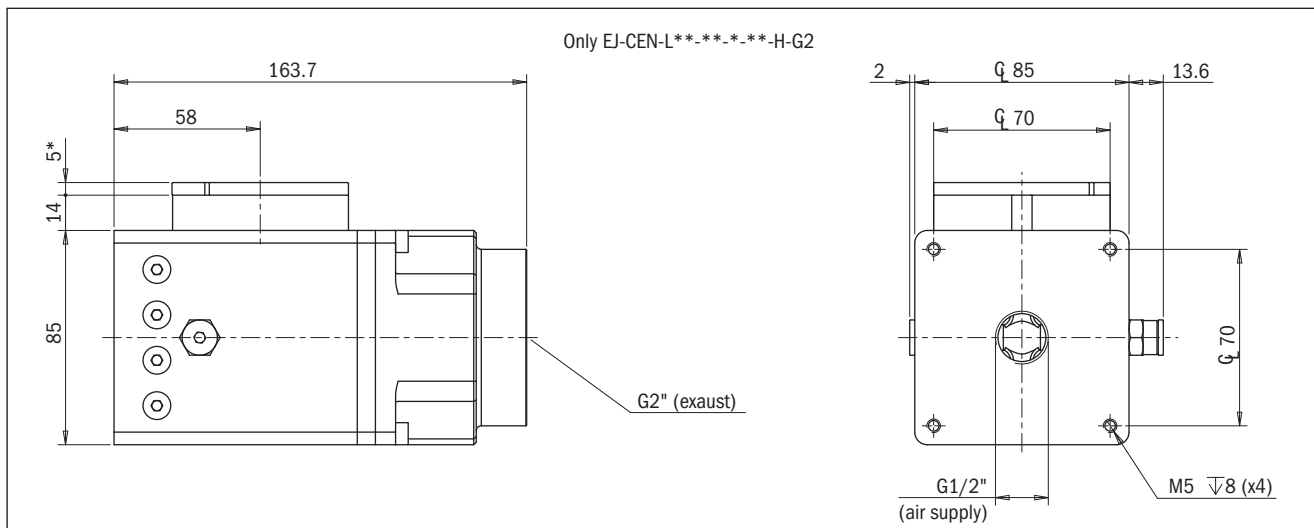
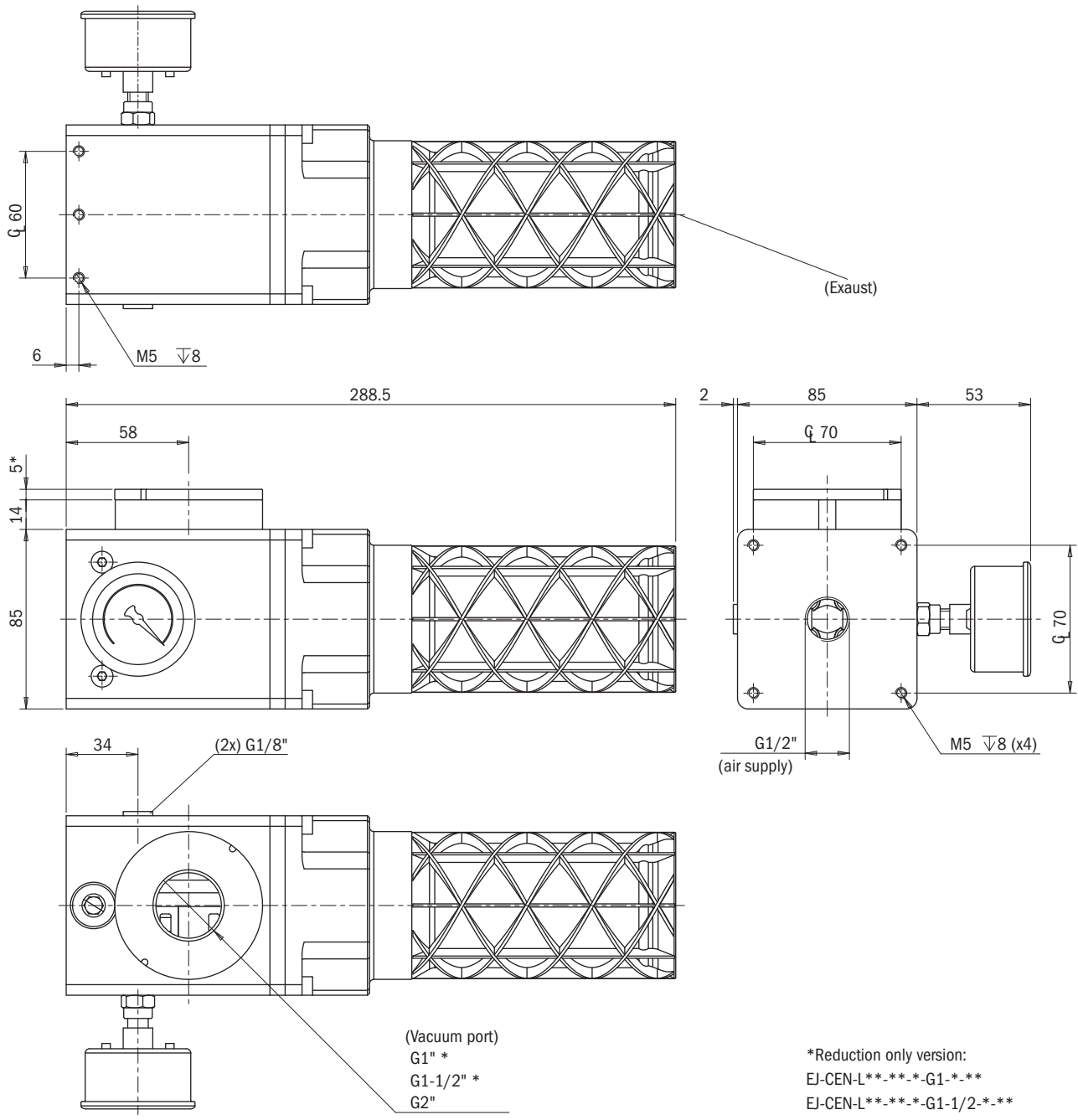
Alphanumeric code	Description	Order code
EJ-CEN-LX5-HV-2-G1	EJ-CEN-LARGEX5-HV vacuum pump with silencer and analogue vacuum gauge, G1" vacuum port	3330135
EJ-CEN-LX6-HV-2-G1	EJ-CEN-LARGEX6-HV vacuum pump with silencer and analogue vacuum gauge, G1" vacuum port	3330136
EJ-CEN-LX7-HV-2-G1	EJ-CEN-LARGEX7-HV vacuum pump with silencer and analogue vacuum gauge, G1" vacuum port	3330137
EJ-CEN-LX8-HV-2-G1	EJ-CEN-LARGEX8-HV vacuum pump with silencer and analogue vacuum gauge, G1" vacuum port	3330138
EJ-CEN-LX9-HV-2-G1-1/2	EJ-CEN-LARGEX9-HV vacuum pump with silencer and analogue vacuum gauge, G1-1/2" vacuum port	3330139
EJ-CEN-LX10-HV-2-G1-1/2	EJ-CEN-LARGEX10-HV vacuum pump with silencer and analogue vacuum gauge, G1-1/2" vacuum port	3330140
EJ-CEN-LX11-HV-2-G1-1/2	EJ-CEN-LARGEX11-HV vacuum pump with silencer and analogue vacuum gauge, G1-1/2" vacuum port	3330141
EJ-CEN-LX12-HV-2-G1-1/2	EJ-CEN-LARGEX12-HV vacuum pump with silencer and analogue vacuum gauge, G1-1/2" vacuum port	3330142
EJ-CEN-LX13-HV-2-G1-1/2	EJ-CEN-LARGEX13-HV vacuum pump with silencer and analogue vacuum gauge, G1-1/2" vacuum port	3330143
EJ-CEN-LX14-HV-2-G2	EJ-CEN-LARGEX14-HV vacuum pump with silencer and analogue vacuum gauge, G2" vacuum port	3330144
EJ-CEN-LX15-HV-2-G2	EJ-CEN-LARGEX15-HV vacuum pump with silencer and analogue vacuum gauge, G2" vacuum port	3330145
EJ-CEN-LX16-HV-2-G2	EJ-CEN-LARGEX16-HV vacuum pump with silencer and analogue vacuum gauge, G2" vacuum port	3330146
EJ-CEN-LX5-HF-2-G1	EJ-CEN-LARGEX5-HF vacuum pump with silencer and analogue vacuum gauge, G1" vacuum port	3330147
EJ-CEN-LX6-HF-2-G1	EJ-CEN-LARGEX6-HF vacuum pump with silencer and analogue vacuum gauge, G1" vacuum port	3330148
EJ-CEN-LX7-HF-2-G1	EJ-CEN-LARGEX7-HF vacuum pump with silencer and analogue vacuum gauge, G1" vacuum port	3330149
EJ-CEN-LX8-HF-2-G1	EJ-CEN-LARGEX8-HF vacuum pump with silencer and analogue vacuum gauge, G1" vacuum port	3330150
EJ-CEN-LX9-HF-2-G1-1/2	EJ-CEN-LARGEX9-HF vacuum pump with silencer and analogue vacuum gauge, G1-1/2" vacuum port	3330151
EJ-CEN-LX10-HF-2-G1-1/2	EJ-CEN-LARGEX10-HF vacuum pump with silencer and analogue vacuum gauge, G1-1/2" vacuum port	3330152
EJ-CEN-LX11-HF-2-G1-1/2	EJ-CEN-LARGEX11-HF vacuum pump with silencer and analogue vacuum gauge, G1-1/2" vacuum port	3330153
EJ-CEN-LX12-HF-2-G1-1/2	EJ-CEN-LARGEX12-HF vacuum pump with silencer and analogue vacuum gauge, G1-1/2" vacuum port	3330154
EJ-CEN-LX13-HF-2-G1-1/2	EJ-CEN-LARGEX13-HF vacuum pump with silencer and analogue vacuum gauge, G1-1/2" vacuum port	3330155
EJ-CEN-LX14-HF-2-G2	EJ-CEN-LARGEX14-HF vacuum pump with silencer and analogue vacuum gauge, G2" vacuum port	3330156
EJ-CEN-LX15-HF-2-G2	EJ-CEN-LARGEX15-HF vacuum pump with silencer and analogue vacuum gauge, G2" vacuum port	3330157
EJ-CEN-LX16-HF-2-G2	EJ-CEN-LARGEX16-HF vacuum pump with silencer and analogue vacuum gauge, G2" vacuum port	3330158

### Identification codes for blowing applications (without integrated silencer)

Alphanumeric code	Description	Order code
EJ-CEN-LX5-HV-2-G1-H-G2	EJ-CEN-LARGEX5-HV vacuum pump, G1" vacuum port, G2" exhaust	3331135
EJ-CEN-LX6-HV-2-G1-H-G2	EJ-CEN-LARGEX6-HV vacuum pump, G1" vacuum port, G2" exhaust	3331136
EJ-CEN-LX7-HV-2-G1-H-G2	EJ-CEN-LARGEX7-HV vacuum pump, G1" vacuum port, G2" exhaust	3331137
EJ-CEN-LX8-HV-2-G1-H-G2	EJ-CEN-LARGEX8-HV vacuum pump, G1" vacuum port, G2" exhaust	3331138
EJ-CEN-LX9-HV-2-G1-1/2-H-G2	EJ-CEN-LARGEX9-HV vacuum pump, G1-1/2" vacuum port, G2" exhaust	3331139
EJ-CEN-LX10-HV-2-G1-1/2-H-G2	EJ-CEN-LARGEX10-HV vacuum pump, G1-1/2" vacuum port, G2" exhaust	3331140
EJ-CEN-LX11-HV-2-G1-1/2-H-G2	EJ-CEN-LARGEX11-HV vacuum pump, G1-1/2" vacuum port, G2" exhaust	3331141
EJ-CEN-LX12-HV-2-G1-1/2-H-G2	EJ-CEN-LARGEX12-HV vacuum pump, G1-1/2" vacuum port, G2" exhaust	3331142
EJ-CEN-LX13-HV-2-G1-1/2-H-G2	EJ-CEN-LARGEX13-HV vacuum pump, G1-1/2" vacuum port, G2" exhaust	3331143
EJ-CEN-LX14-HV-2-G2-H-G2	EJ-CEN-LARGEX14-HV vacuum pump, G2" vacuum port, G2" exhaust	3331144
EJ-CEN-LX15-HV-2-G2-H-G2	EJ-CEN-LARGEX15-HV vacuum pump, G2" vacuum port, G2" exhaust	3331145
EJ-CEN-LX16-HV-2-G2-H-G2	EJ-CEN-LARGEX16-HV vacuum pump, G2" vacuum port, G2" exhaust	3331146
EJ-CEN-LX5-HF-2-G1-H-G2	EJ-CEN-LARGEX5-HF vacuum pump, G1" vacuum port, G2" exhaust	3331147
EJ-CEN-LX6-HF-2-G1-H-G2	EJ-CEN-LARGEX6-HF vacuum pump, G1" vacuum port, G2" exhaust	3331148
EJ-CEN-LX7-HF-2-G1-H-G2	EJ-CEN-LARGEX7-HF vacuum pump, G1" vacuum port, G2" exhaust	3331149
EJ-CEN-LX8-HF-2-G1-H-G2	EJ-CEN-LARGEX8-HF vacuum pump, G1" vacuum port, G2" exhaust	3331150
EJ-CEN-LX9-HF-2-G1-1/2-H-G2	EJ-CEN-LARGEX9-HF vacuum pump, G1-1/2" vacuum port, G2" exhaust	3331151
EJ-CEN-LX10-HF-2-G1-1/2-H-G2	EJ-CEN-LARGEX10-HF vacuum pump, G1-1/2" vacuum port, G2" exhaust	3331152
EJ-CEN-LX11-HF-2-G1-1/2-H-G2	EJ-CEN-LARGEX11-HF vacuum pump, G1-1/2" vacuum port, G2" exhaust	3331153
EJ-CEN-LX12-HF-2-G1-1/2-H-G2	EJ-CEN-LARGEX12-HF vacuum pump, G1-1/2" vacuum port, G2" exhaust	3331154
EJ-CEN-LX13-HF-2-G1-1/2-H-G2	EJ-CEN-LARGEX13-HF vacuum pump, G1-1/2" vacuum port, G2" exhaust	3331155
EJ-CEN-LX14-HF-2-G2-H-G2	EJ-CEN-LARGEX14-HF vacuum pump, G2" vacuum port, G2" exhaust	3331156
EJ-CEN-LX15-HF-2-G2-H-G2	EJ-CEN-LARGEX15-HF vacuum pump, G2" vacuum port, G2" exhaust	3331157
EJ-CEN-LX16-HF-2-G2-H-G2	EJ-CEN-LARGEX16-HF vacuum pump, G2" vacuum port, G2" exhaust	3331158

### Identification codes

Alphanumeric code	Accessories	Order code
EJ-RDC-G2-G1	G2" - G1" adapter	3330159
EJ-RDC-G2-G1-1/2	G2" - G1-1/2" adapter	3330160



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## EJ-XPPO

- Vacuum pump with advanced control functions, available with two-stage EJ-LARGE cartridges (EJ-HF, EJ-HV, EJ-LP)
- Energy saving system (ES), with manual and automatic modes, that saves up to 95% of compressed air in sealed applications
- Blow-off mechanism electrically controllable by pin or automatically at each cycle
- Large TFT colour display with intuitive and easy-to-read menu and pump status indications
- Electrical connection via M12 8-pin connector
- It can be installed in series (max 4 units)

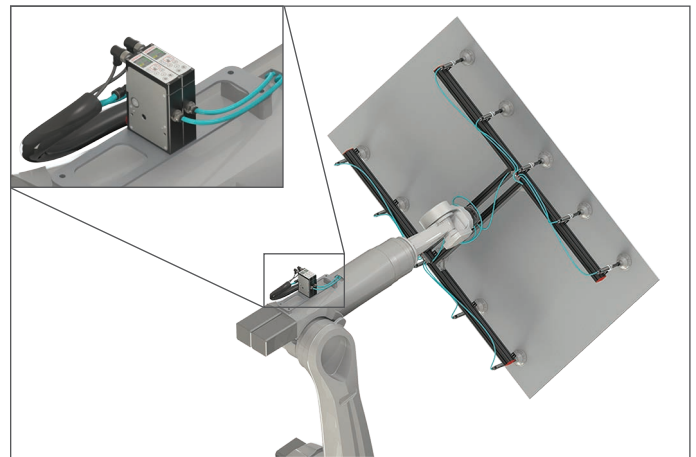
### Typical applications

- Unstacking and transfer from presses
- Removal of plastic parts
- Ergonomic manipulators where safety and ease of use are key features
- In applications that require an integrated control system with reduced weight and compact dimensions (electronics sector)
- Handling of objects with high weight and sealed surface (glass/ sheet metal)

**NEW**



Application example



### Pneumatic specifications

Max feed pressure	0.8 MPa
Minimum supply pressure	0.4 MPa
Maximum air consumption for vacuum generation	156 NI/min
Maximum air consumption for blow-off	220 NI/min
Maximum blow-off flow rate	50 NI/min
Maximum suction flow rate	190 NI/min
Maximum blow-off pressure (zero flow rate)	0.25 bar
Valve opening time	≤ 12 ms
Valve closing time	≤ 5 ms
Supply	Dry air
Pneumatic supply connection	G1/4" female
Vacuum channel connection	G1/2" female
Maximum vacuum level	-95 kPa

### Technical Features

Operating temperature range	0 ÷ +60 °C
Mass	800 g
IP rating	IP54
Materials	Alloy 6082-T6, PA66+FG 30%, AISI 303, TPU, PC
Operating voltage	24 Vdc (±10%)
Electrical connection	M12 8-pin male
Manual controls	Yes, monostable buttons
Vacuum transducer response time	1 ms
Vacuum level analogue output	0-5 Vdc
Valve controls	Digital PNP/NPN

### Suction flow rate

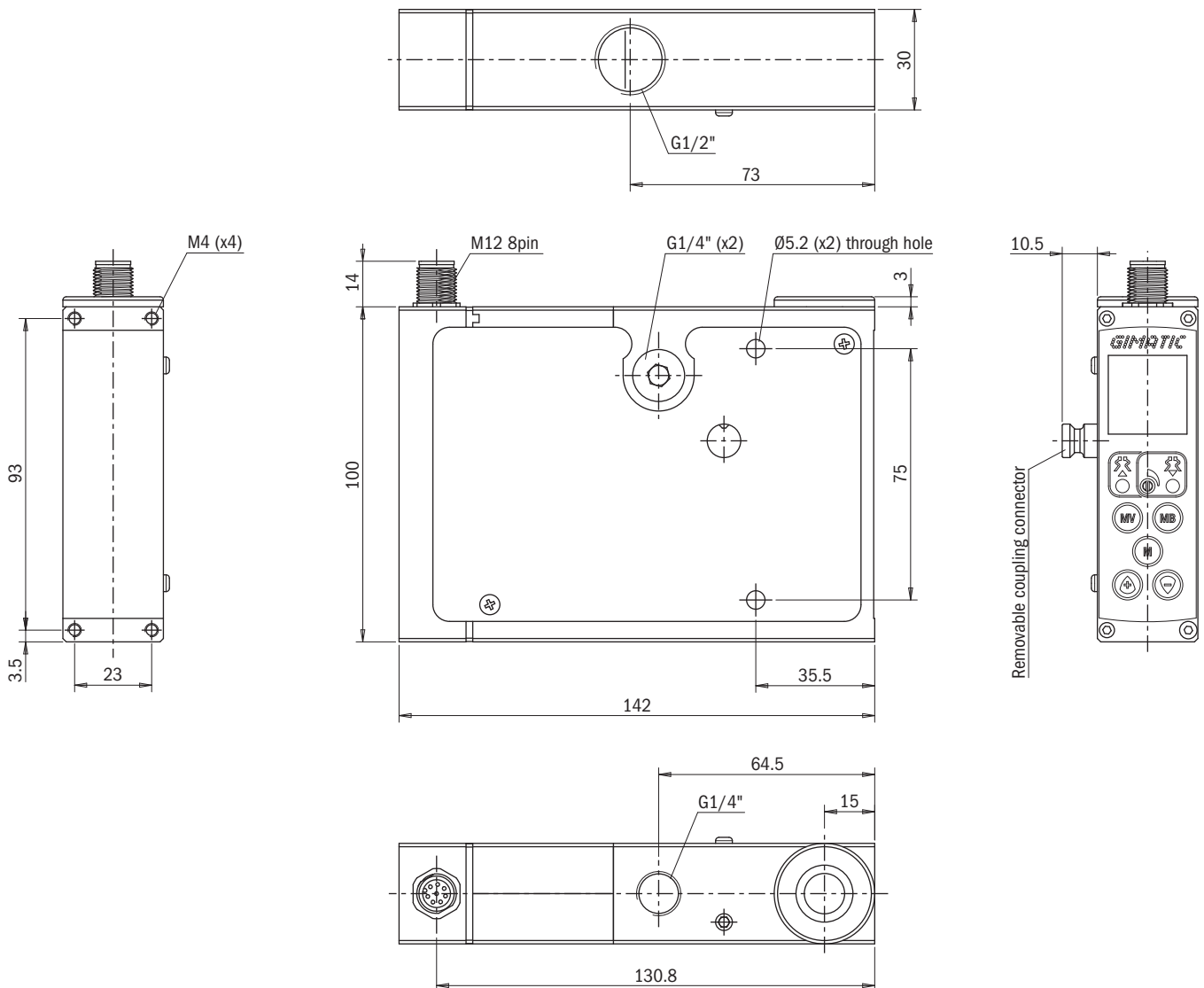
Model	Feed pressure [MPa]	Air consumption [NI/s]	Suction flow rate [NI/s] at different vacuum levels [kPa]										Max vacuum [kPa]
			0	-10	-20	-30	-40	-50	-60	-70	-80	-90	
EJ-XPRO-L-HF-2-NO/NC	0.6	1.7	3.2	3.0	2.5	1.7	0.89	0.62	0.51	0.31	—	—	-73
EJ-XPRO-L-HV-2-NO/NC	0.5	1.93	2.6	2.4	1.7	1.3	0.70	0.55	0.40	0.31	0.15	0.02	-94
EJ-XPRO-L-LP-2-NO/NC	0.4	2.6	2.8	2.5	2.1	1.5	1.1	0.66	0.36	0.26	0.08	—	-89

For technical specifications, regarding the suction flow rate and the air consumption at different pressures, please refer to the technical data sheets of the EJ-LARGE cartridges in the two-stage version

### Evacuation time

Model	Feed pressure [MPa]	Air consumption [NI/s]	Evacuation time [s/l] to reach different vacuum levels [kPa]										Max vacuum [kPa]
			-10	-20	-30	-40	-50	-60	-70	-80	-90		
EJ-XPRO-L-HF-2-NO/NC	0.6	1.7	0.03	0.07	0.12	0.19	0.3	0.4	0.7	—	—	-73	
EJ-XPRO-L-HV-2-NO/NC	0.5	1.93	0.04	0.09	0.16	0.3	0.4	0.6	0.9	1.3	2.5	-94	
EJ-XPRO-L-LP-2-NO/NC	0.4	2.6	0.04	0.07	0.14	0.19	0.3	0.5	0.8	1.4	—	-94	

For technical specifications regarding the evacuation time and the consumption at different pressures, please refer to the technical data sheets of the EJ-LARGE cartridges, in the two-stage version

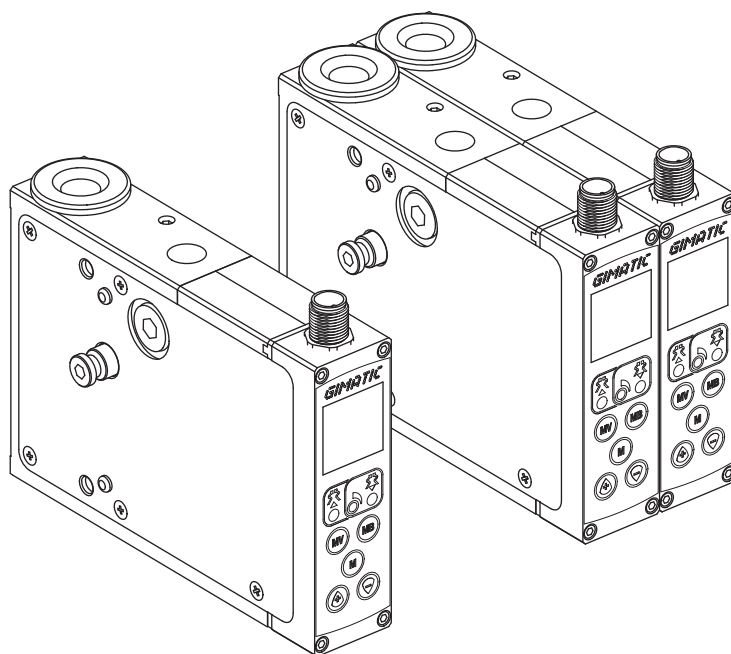




### Identification codes

Alphanumeric code	Description	Order code
EJ-XPRO-L-HF-2-NO	Electronically controlled vacuum pump with integrated display, solenoid valves, keypad and 8-pin M12 connector. Large 2-stage HF cartridge with non-return valve and NO vacuum channel. Configurable as PNP or NPN, 24Vdc logic	3400100
EJ-XPRO-L-HV-2-NO	Electronically controlled vacuum pump with integrated display, solenoid valves, keypad and 8-pin M12 connector. Large 2-stage HV cartridge with non-return valve and NO vacuum channel. Configurable as PNP or NPN, 24Vdc logic	3400101
EJ-XPRO-L-LP-2-NO	Electronically controlled vacuum pump with integrated display, solenoid valves, keypad and 8-pin M12 connector. Large 2-stage LP cartridge with non-return valve and NO vacuum channel. Configurable as PNP or NPN, 24Vdc logic	3400102
EJ-XPRO-L-HF-2-NC	Electronically controlled vacuum pump with integrated display, solenoid valves, keypad and 8-pin M12 connector. Large 2-stage HF cartridge with non-return valve and NC vacuum channel. Configurable as PNP or NPN, 24Vdc logic	3400103
EJ-XPRO-L-HV-2-NC	Electronically controlled vacuum pump with integrated display, solenoid valves, keypad and 8-pin M12 connector. Large 2-stage HV cartridge with non-return valve and NC vacuum channel. Configurable as PNP or NPN, 24Vdc logic	3400104
EJ-XPRO-L-LP-2-NC	Electronically controlled vacuum pump with integrated display, solenoid valves, keypad and 8-pin M12 connector. Large 2-stage LP cartridge with non-return valve and NC vacuum channel. Configurable as PNP or NPN, 24Vdc logic	3400105

For codes relevant to configurations in series, please contact the Gimatic branch that serves your area





## EJ-BBT

- Ideal for applications that require high suction flow rate with low vacuum levels
- Anodised aluminium manifold
- Available in 4 diameters (10, 20, 30 and 40 mm)
- No obstruction of internal passages
- Diameter 10 mm with G3/8" threaded vacuum port to enable direct connection with a suction cup or other gripping devices

### Typical applications

- Exhaust of welding fumes
- Cooling of hot parts or drying of wet parts
- Transport of waste and residual dust
- Various applications in the food industry, which require the exhaust to be drawn away

Application example



### Technical features

Max feed pressure	0.4 MPa
Weight	66 ÷ 557 g
Material	Al, Nitrile (NBR)

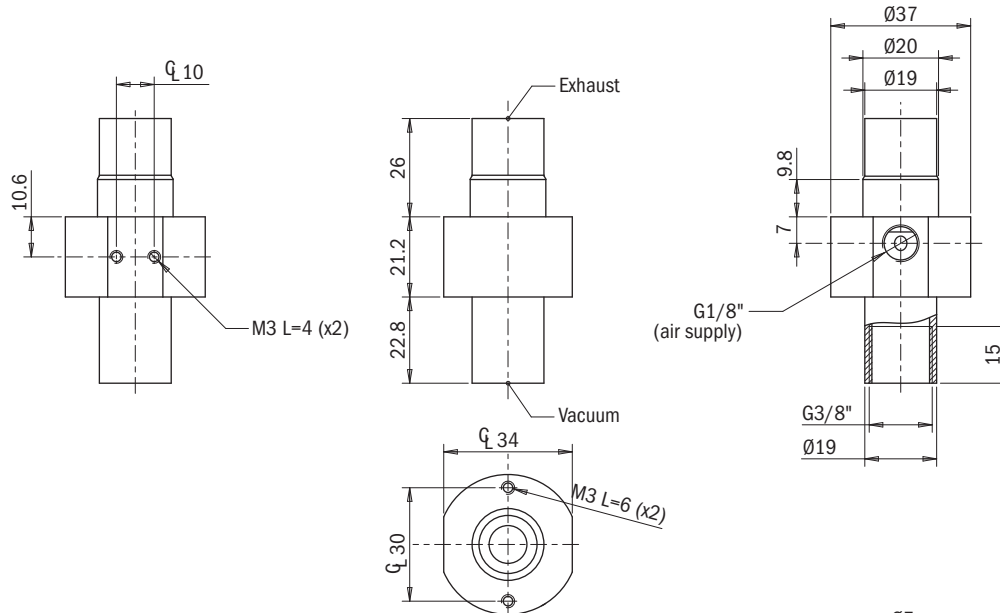
### Suction flow rate

Model	Supply pressure [MPa]	Air consumption [l/s]	Suction flow rate [l/s]
EJ-BBT10	0.2 ÷ 0.4	0.8 ÷ 1.7	6.7 ÷ 10.5
EJ-BBT20	0.2 ÷ 0.4	2.2 ÷ 3.2	15.5 ÷ 21.1
EJ-BBT30	0.2 ÷ 0.4	5.0 ÷ 8.3	18.6 ÷ 32.2
EJ-BBT40	0.2 ÷ 0.4	5.2 ÷ 8.9	21.0 ÷ 40.0

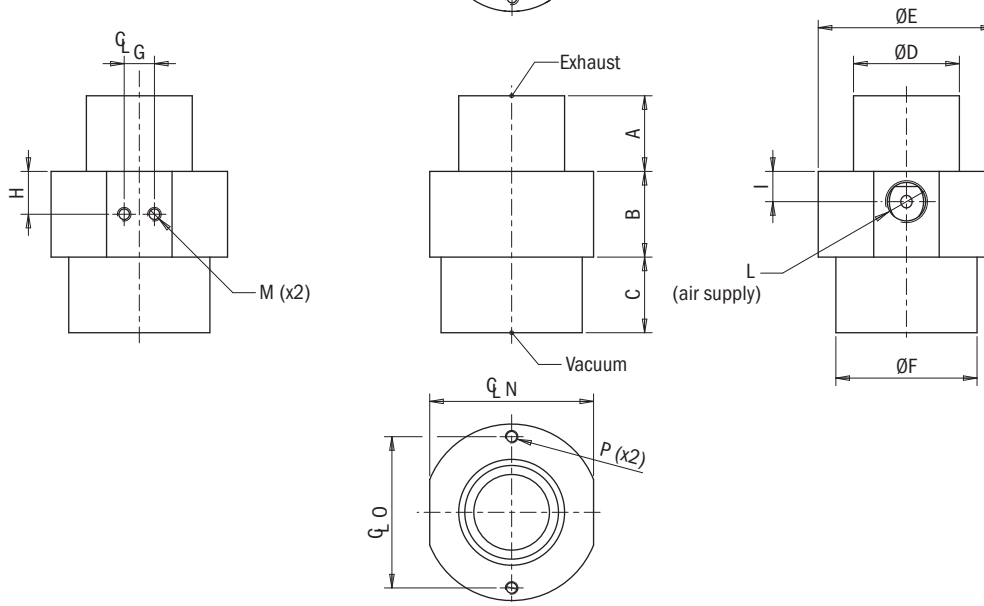
### Identification codes

Alphanumeric code	Description	Order code
EJ-BBT10	Booster BBT10 in aluminium	3330131
EJ-BBT20	Booster BBT20 in aluminium	3330132
EJ-BBT30	Booster BBT30 in aluminium	3330133
EJ-BBT40	Booster BBT40 in aluminium	3330134

EJ-BBT10

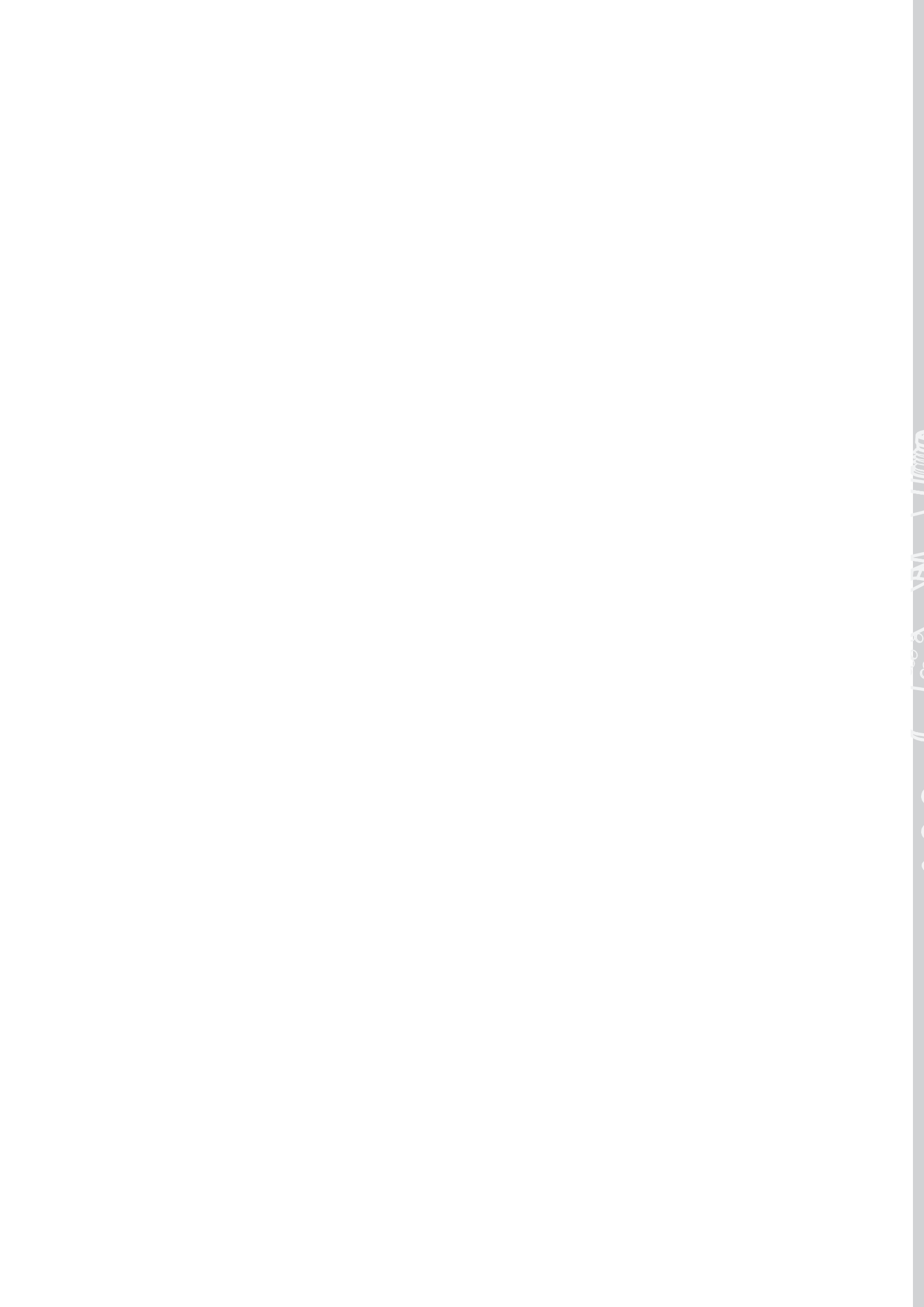


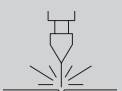
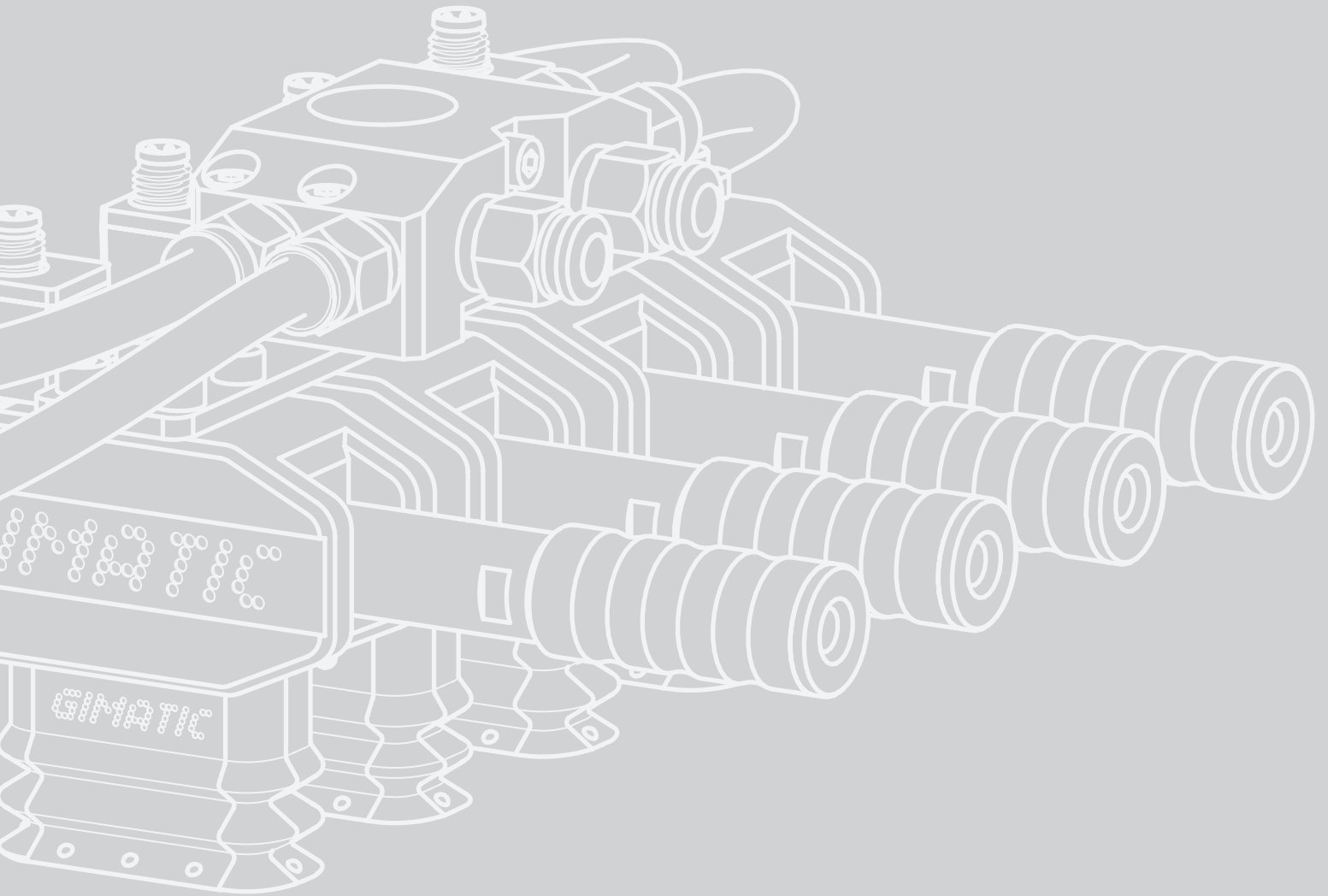
EJ-BBT20  
EJ-BBT30  
EJ-BBT40



### Technical data

	EJ-BBT20	EJ-BBT30	EJ-BBT40
A [mm]	30	30	30
B [mm]	34	34	34
C [mm]	30	30	30
D [mm]	32	42	52
E [mm]	50	70	90
F [mm]	38	56	74
G [mm]	10	12	18
H [mm]	17	17	17
I [mm]	12	12	12
L	G1/4"	G3/8"	G3/8"
M	M4 L=4 mm	M5 L=6 mm	M6 L=8 mm
N [mm]	47	65	85
O [mm]	42	60	76
P	M4 L=8 mm	M5 L=10 mm	M6 L=12 mm





## **CUSTOMISED SOLUTIONS**

## 3D PRINTING

Following the demands of the market, Gimatic has equipped an area for 3D printing service with an HP Multi Jet Fusion system. Through a rapid prototyping service based on the customer's design, we are able to create completely customised gripping solutions that can meet the specific needs of the final customer. This technology makes products with PA12GB (Glass Beads) material, for greater rigidity, allowing our customers to receive products with low weight, high wear resistance and high quality. 3D-printed components can be flocked or fitted with rubber pads (HNBR) to provide a soft touch on the products to be handled. Threaded metal inserts are also available for mounting. 3L laser cutting and 3M metal working services are available.



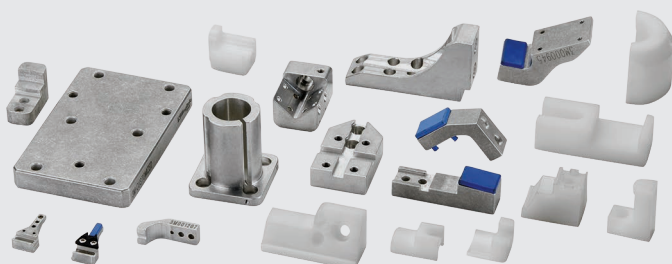
Material technical specifications		Method
Material	PA12 Glass Beads	-
Density of the material	1.3 g/cm <sup>3</sup>	ASTM D792
Tensile strength, max load	30 MPa	ASTM D638
Heat deflection temperature (@ 1.82 MPa)	114°C	ASTM D648 Test Method A

## 3M METAL WORKING

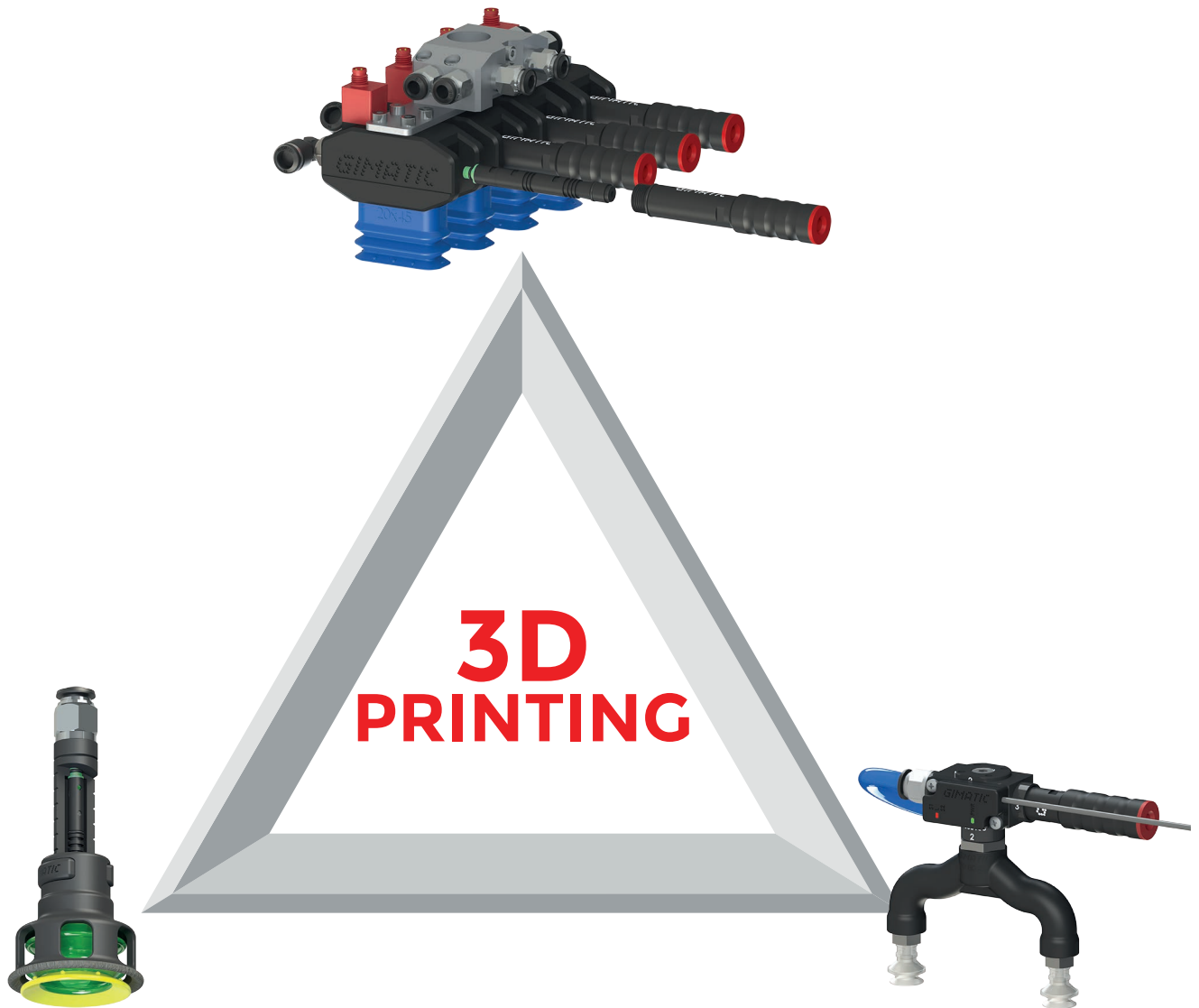
5-axis CNC machining service according to customer's drawing, also for individual parts. Lead time: 5 working days.

Materials:

- Acetal resin (POM)
- Aluminium alloy (6000 series)



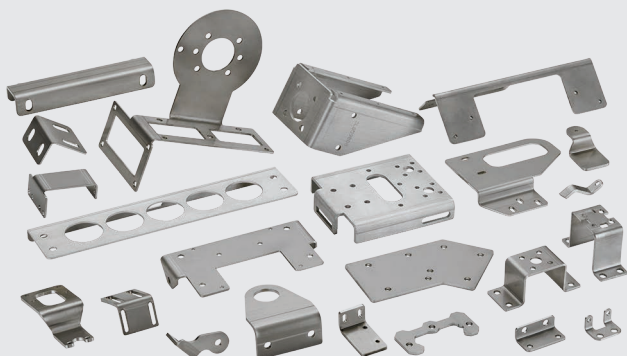
Decentralised EOAT with rapid prototyping



Inline pump with flocked stabilising cap

Custom solutions for Pick-and-Place applications

## 3L LASER CUTTING



Laser cutting and bending service according to customer's drawing also for individual parts (without minimum quantities).

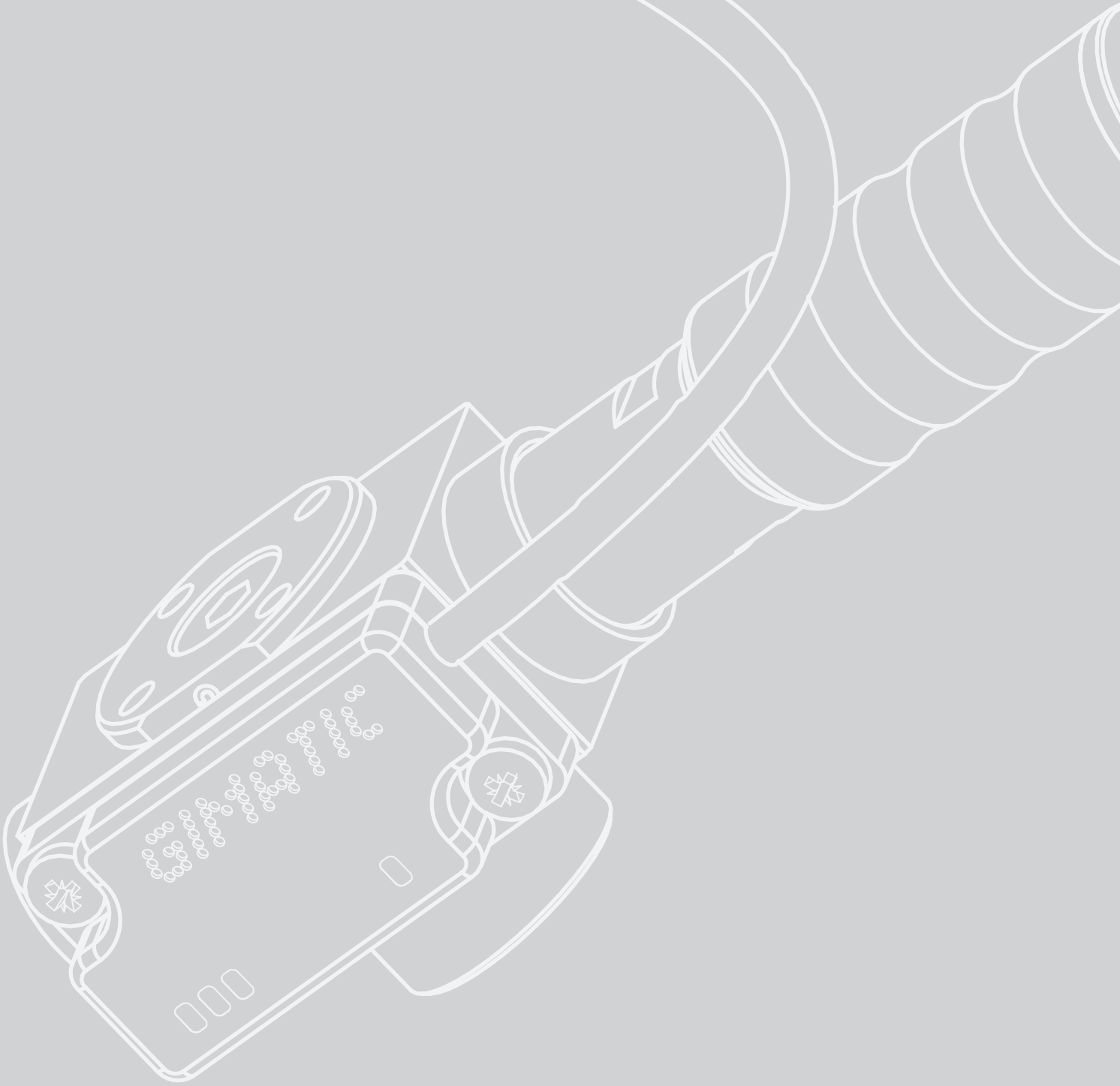
Lead time: 3 working days.

Materials:

- AISI 304 stainless steel (thickness: 1, 2 and 3 mm);
- Aluminium alloy 5754 (thickness 2, 3, 4 and 5 mm).









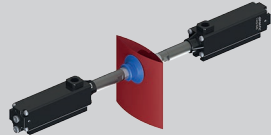













## **SYSTEM ACCESSORIES**

## OVERVIEW OF SYSTEM ACCESSORIES

	System accessories		Notes
Suspensions	VSRT		Rotative suspensions with threaded body
	VSET		Non-rotative suspensions with integral elbow arms
	VSNTG		Threaded-body non rotative telescopic suspensions
	VSNTF		Non-rotative suspensions, with threaded body and brake
	VSRTF		Rotative suspensions, with threaded body and brake

	System accessories		Notes
Ball joints	VAB		Ball joint for suction cups, with brake
Vacuum actuators	VAQ		Vacuum actuator
Vacuum switches	VACSD		Digital vacuum switch with colour display, PNP outputs, NO or NC
	VACSM		Electromechanical vacuum switch preset to -30kPa, -50kPa, -70kPa, PNP or NPN digital output, NO or NC
	VACSW		Digital vacuum switch, preset to -30kPa, -50kPa, -70kPa, PNP or NPN. M8x1 3-pin male connector
	VACSE		Electromechanical vacuum switch, NO/NC, adjustable
	VACSP		Pneumatic vacuum switch, NC, adjustable
	AVG		Analogue spring vacuum gauge
Release systems	AQRV		Valve for quick release by atmospheric pressure, G1/8"
	BNRV		Blow-off non-return valve, G1/8"
Vacuum filters	FILTR		Vacuum filter G1/8", G3/8", G1/2", G3/4" porosity 5 and 35 μm

## Rotative suspensions with threaded body

- Body and rod in anodised aluminium
- Rotating rod
- Operating pressure: -1 to 8 bar
- FDA-H1 food-grade grease

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System accessories



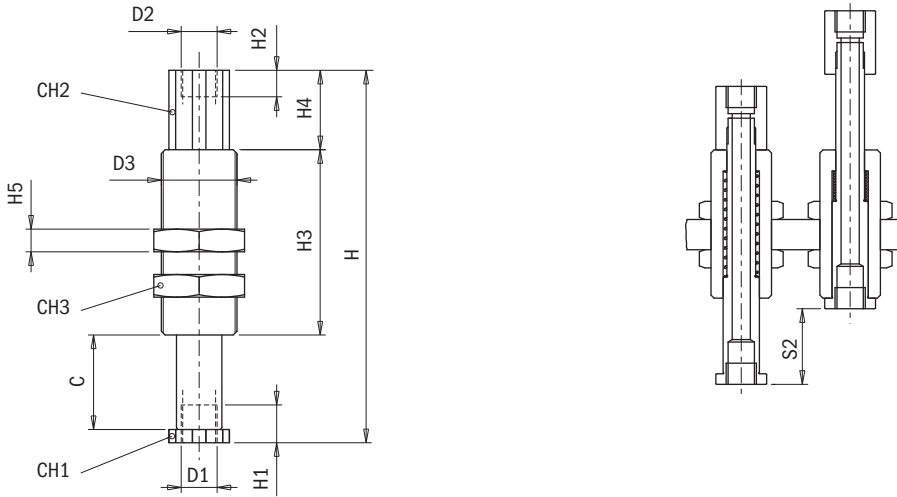
Application example



Technical data								
	VSRT1010	VSRT1025	VSRT1420	VSRT1435	VSRT1620	VSRT1635	VSRT2025	VSRT2050
H [mm]	56	90.5	107	142	107	142	126	183.5
H1 [mm]	5	5	7	7	7	7	10	10
H2 [mm]	5	5	7	7	7	7	10	10
H3 [mm]	24.5	44	52	72	52	72	58	90.5
H4 [mm]	13.5	13.5	22	22	22	22	28	28
H5 [mm]	3.5	3.5	4	4	5	5	6	6
D1	M5	M5	G1/8"	G1/8"	G1/8"	G1/8"	G1/8"	G1/8"
D2	M5	M5	G1/8"	G1/8"	G1/8"	G1/8"	G1/8"	G1/8"
D3	M10x1	M10x1	M14x1.5	M14x1.5	M16x1	M16x1	M20x1.5	M20x1.5
CH1 [mm]	8	8	12	12	12	12	16	16
CH2 [mm]	8	8	12	12	12	12	16	16
CH3 [mm]	13	13	17	17	19	19	24	24
C [mm]	10	25	20	35	20	35	25	50
S2 [mm]	10	25	20	35	20	35	25	50
d [mm]	0	0	0	0	0	0	0	0
K [N/mm]	0.213	0.085	0.268	0.15	0.252	0.137	0.275	0.141
Weight [g]	12	16.5	37	47	46.5	58	90	118

### Identification codes

Alphanumeric code	Description	Order code
VSRT1010	VSRT1010 suspension, M5 female, 10 mm useful stroke	9900001
VSRT1025	VSRT1025 suspension, M5 female, 25 mm useful stroke	9900002
VSRT1420	VSRT1420 suspension, G1/8" female, 20 mm useful stroke	9900003
VSRT1435	VSRT1435 suspension, G1/8" female, 35 mm useful stroke	9900004
VSRT1620	VSRT1620 suspension, G1/8" female, 20 mm useful stroke	9900005
VSRT1635	VSRT1635 suspension, G1/8" female, 35 mm useful stroke	9900006
VSRT2025	VSRT2025 suspension, G1/8" female, 25 mm useful stroke	9900007
VSRT2050	VSRT2050 suspension, G1/8" female, 50 mm useful stroke	9900008

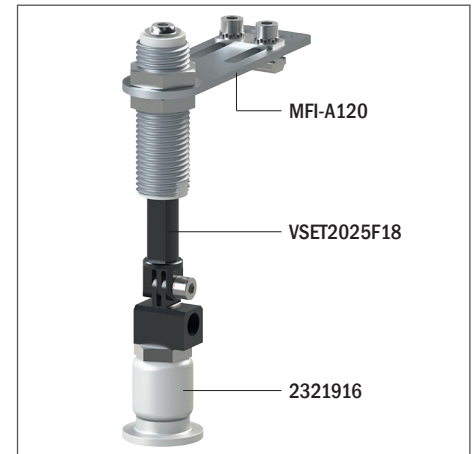


## Non-rotative suspensions with integrated elbow arm and threaded body

- The angle is continuously adjustable between 0° and +/-90°
- External air supply
- Body and rod in anodised aluminium
- Anti-rotation rod with high load capacity
- Operating pressure: -1 to 8 bar
- FDA-H1 food-grade grease



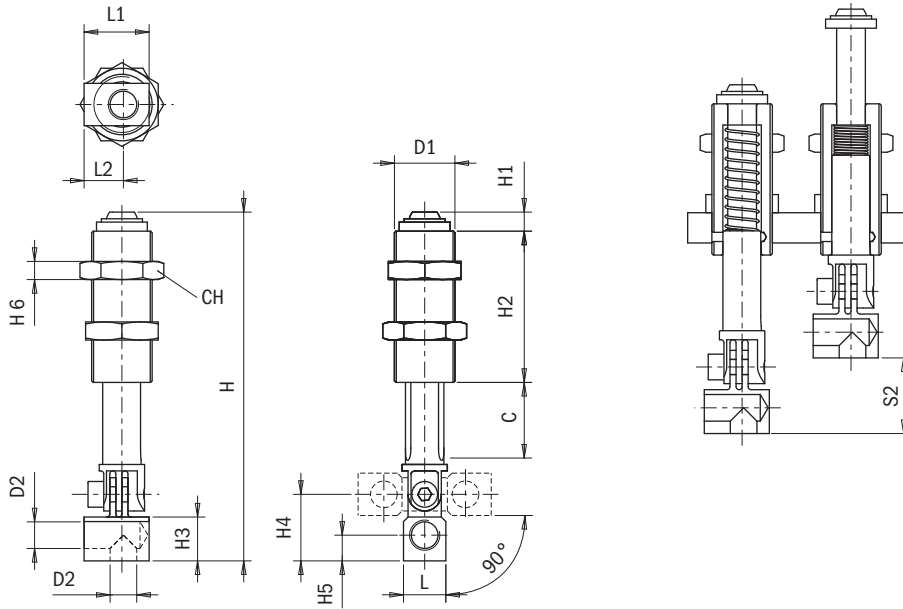
Application example



Technical data								
	VSET1010F05	VSET1025F05	VSET1620F18	VSET1635F18	VSET2025F18	VSET2025F14	VSET2050F18	VSET2050F14
H [mm]	61.8	96.3	108.3	143.3	121.3	127.3	178.8	184.4
H1 [mm]	3.5	3.5	5.5	5.5	6.5	6.5	6.5	6.5
H2 [mm]	24.6	44.1	52.1	72.1	58.1	58.1	90.6	90.6
H3 [mm]	9	9	14.5	14.5	14.5	20.5	14.5	20.5
H4 [mm]	15	15	22	22	22	28	22	28
H5 [mm]	5.5	5.5	8.5	8.5	8.5	12	8.5	12
H6 [mm]	3.5	3.5	5	5	6	6	6	6
D1	M10x1	M10x1	M16x1	M16x1	M20x1.5	M20x1.5	M20x1.5	M20x1.5
D2	M5	M5	G1/8"	G1/8"	G1/8"	G1/4"	G1/8"	G1/4"
L [mm]	10	10	14	14	14	17	14	17
L1 [mm]	16	16	21.5	21.5	21.5	26	21.5	26
L2 [mm]	10.5	10.5	13	13	13	15	13	15
C [mm]	10	25	20	35	25	25	50	50
CH [mm]	13	13	19	19	24	24	24	24
S2 [mm]	10	25	20	35	25	25	50	50
d [mm]	0	0	0	0	0	0	0	0
K [N/mm]	0.213	0.085	0.268	0.150	0.275	0.275	0.141	0.142
Weight [g]	18	23	57	70	88	109	125	142

### Identification codes

Alphanumeric code	Description	Order code
VSET1010F05	VSET1010F05 suspension, M5 female, 10 mm useful stroke	9900009
VSET1025F05	VSET1025F05 suspension, M5 female, 25 mm useful stroke	9900010
VSET1620F18	VSET1620F18 suspension, G1/8" female, 20 mm useful stroke	9900011
VSET1635F18	VSET1635F18 suspension, G1/8" female, 35 mm useful stroke	9900012
VSET2025F18	VSET2025F18 suspension, G1/8" female, 25 mm useful stroke	9900013
VSET2025F14	VSET2025F14 suspension, G1/4" female, 25 mm useful stroke	9900014
VSET2050F18	VSET2050F18 suspension, G1/8" female, 50 mm useful stroke	9900015
VSET2050F14	VSET2050F14 suspension, G1/4" female, 50 mm useful stroke	9900016





## Threaded-body non rotative telescopic suspensions

- Body and rod in anodised aluminium
- Spring in stainless steel
- Anti-rotation rod with high load capacity
- Operating pressure: -1 to 8 bar
- FDA-H1 food-grade grease

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Application example

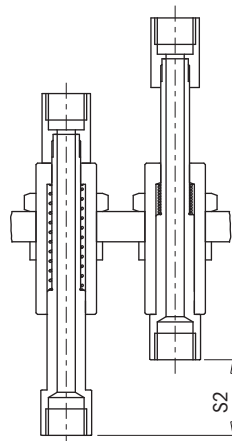
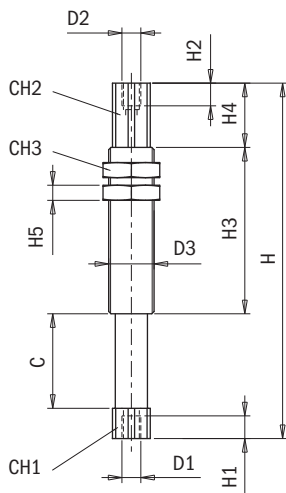


### Technical data

	VSNTG 1010	VSNTG 1025	VSNTG 1210	VSNTG 1225	VSNTG 1420	VSNTG 1435	VSNTG 1620	VSNTG 1635	VSNTG 2025F18	VSNTG 2025F14	VSNTG 2050F18	VSNTG 2050F14	VSNTG 2540	VSNTG 2580
H [mm]	56	90.5	65	99	107	142	107	142	126	126	183.5	183.5	173	263
H1 [mm]	5	5	5.5	5.5	7	7	7	7	10	10	10	10	11	11
H2 [mm]	5	5	5.5	5.5	7	7	7	7	10	10	10	10	11	11
H3 [mm]	24.5	44	30	49	52	72	52	72	58	58	90.5	90.5	90	140
H4 [mm]	13.5	13.5	17	17	22	22	22	22	28	28	28	28	28	28
H5 [mm]	3.5	3.5	4	4	4	4	5	5	6	6	6	6	8	8
D1	M5	M5	M5	M5	G1/8"	G1/8"	G1/8"	G1/8"	G1/8"	G1/4"	G1/8"	G1/4"	G3/8"	G3/8"
D2	M5	M5	M5	M5	G1/8"	G1/8"	G1/8"	G1/8"	G1/8"	G1/4"	G1/8"	G1/4"	G3/8"	G3/8"
D3	M10x1		M12x1		M14x1.5		M16x1		M20x1.5				M25x1.5	
CH1 [mm]	8	8	10	10	12	12	12	12	16	16	16	16	22	22
CH2 [mm]	8	8	10	10	12	12	12	12	16	16	16	16	22	22
CH3 [mm]	13	13	15	15	17	17	19	19	24	24	24	24	32	32
C [mm]	10	25	10	25	20	35	20	35	25	25	50	50	40	80
S2 [mm]	10	25	10	25	20	35	20	35	25	25	50	50	40	80
d [mm]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K [N/mm]	0.213	0.085	0.277	0.108	0.268	0.15	0.252	0.137	0.275	0.258	0.141	0.129	0.230	0.119
Weight [g]	12	16.5	20	26.5	37	47	46.5	58	90	86	118	115	205	275

### Identification codes

Alphanumeric code	Description	Order code
VSNTG1010	VSNTG1010 suspension, M5 female, 10 mm useful stroke	9900019
VSNTG1025	VSNTG1025 suspension, M5 female, 25 mm useful stroke	9900020
VSNTG1210	VSNTG1210 suspension, M5 female, 10 mm useful stroke	9900024
VSNTG1225	VSNTG1225 suspension, M5 female, 25 mm useful stroke	9900025
VSNTG1420	VSNTG1420 suspension, G1/8" female, 20 mm useful stroke	9900026
VSNTG1435	VSNTG1435 suspension, G1/8" female, 35 mm useful stroke	9900021
VSNTG1620	VSNTG1620 suspension, G1/8" female, 20 mm useful stroke	9900027
VSNTG1635	VSNTG1635 suspension, G1/8" female, 35 mm useful stroke	9900028
VSNTG2025F18	VSNTG2025F18 suspension, G1/8" female, 25 mm useful stroke	9900022
VSNTG2025F14	VSNTG2025 suspension, G1/4" female, 25 mm useful stroke	9900018
VSNTG2050F18	VSNTG2050F18 suspension, G1/8" female, 50 mm useful stroke	9900017
VSNTG2050F14	VSNTG2050 suspension, G1/4" female, 50 mm useful stroke	9900023
VSNTG2540	VSNTG2540 suspension, G3/8" female, 40 mm useful stroke	9900029
VSNTG2580	VSNTG2580 suspension, G3/8" female, 80 mm useful stroke	9900030

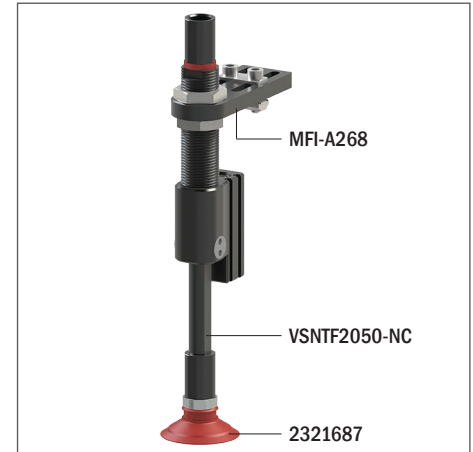


## Non-rotative suspensions, with threaded body and brake

- Aluminium body and steel rod
- Pneumatically-driven device for rod lock (-NO) or unlock (-NC)
- Anti-rotation rod with high load capacity
- FDA-H1 food-grade grease
- Operating pressure: -1 to 8 bar
- Optional sensors (SS or SI type)



Application example

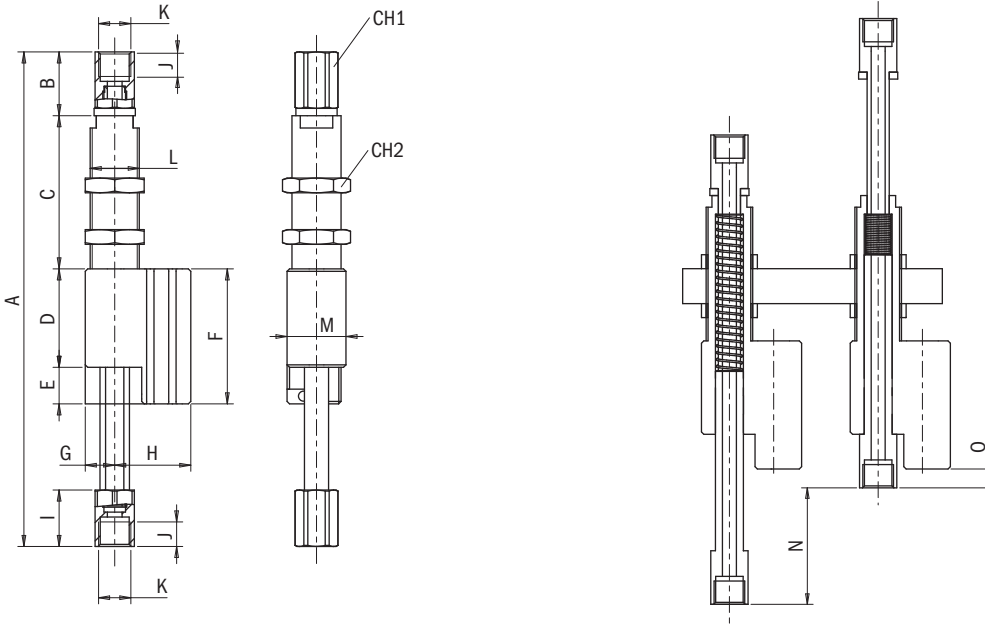


### Technical data

	VSNTF2050-NC	VSNTF2050-NO	VSNTF30100-NC	VSNTF30100-NO
A [mm]	201.5		324.5	
B [mm]	26		28	
C [mm]	62.4		131	
D [mm]	40.1		–	
E [mm]	14.9		–	
F [mm]	55		65.5	
G [mm]	12		17	
H [mm]	31		40	
I [mm]	23		18	
J [mm]	10		13	
K	G1/4"		G3/8"	
L	M20x1.5		M30x1.5	
M [mm]	24		35	
N [mm]	50		100	
O [mm]	8.1		18	
CH1 [mm]	16		24	
CH2 [mm]	24		36	
Weight [g]	270		890	
Detection by magnetic sensor	✓	✓	✓	✓
Detection by inductive sensor	✓	✗	✓	✗
Operating pressure for locking	P1	4 ÷ 7 bar	–	3 ÷ 6 bar
Operating pressure for unlocking	P2	4 ÷ 8 bar	4 ÷ 8 bar	–
Braking force	200 N	80 N x P1 - 150 N	500 N	200 N x P1 - 400 N

### Identification codes

Alphanumeric code	Description	Order code
VSNTF2050-NC	VSNTF2050-NC suspension, G1/4" female, 50 mm useful stroke	9900031
VSNTF2050-NO	VSNTF2050-NO suspension, G1/4" female, 50 mm useful stroke	9900032
VSNTF30100-NC	VSNTF30100-NC suspension, G3/8" female, 100 mm useful stroke	9900033
VSNTF30100-NO	VSNTF30100-NO suspension, G3/8" female, 100 mm useful stroke	9900034



## Rotative suspensions, with threaded body and brake

- Aluminium body and steel rod
- Pneumatically-driven device for rod lock (-NO) or unlock (-NC)
- Rotating rod
- FDA-H1 food-grade grease
- Operating pressure: -1 to 8 bar
- Optional sensors (SS or SI type)



Application example

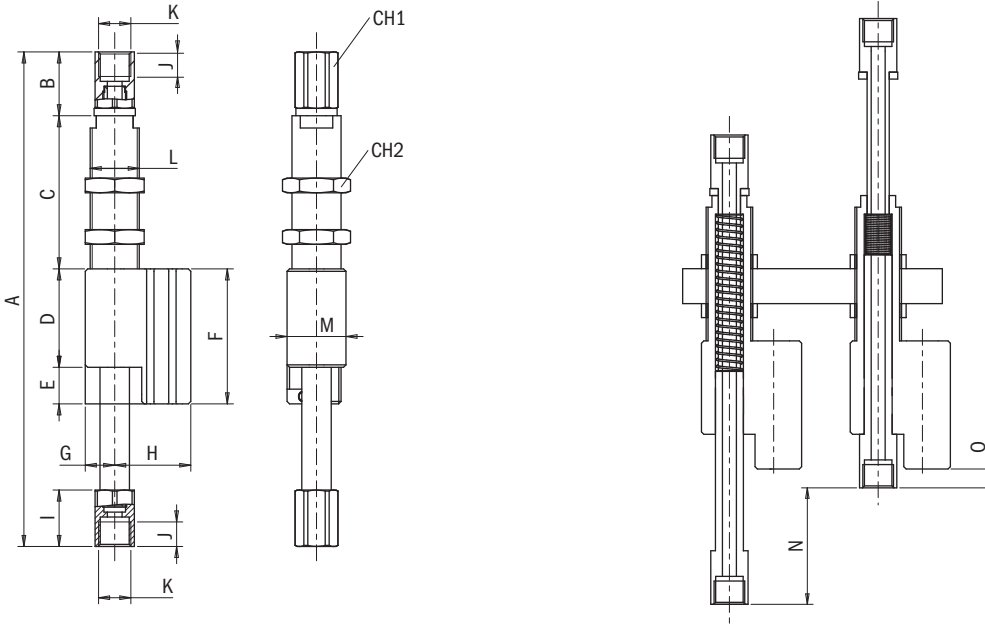


### Technical data

	VSRTF2050-NC	VSRTF2050-NO	VSRTF30100-NC	VSRTF30100-NO
A [mm]	201.5		324.5	
B [mm]	26		28	
C [mm]	62.4		131	
D [mm]	40.1		–	
E [mm]	14.9		–	
F [mm]	55		65.5	
G [mm]	12		17	
H [mm]	31		40	
I [mm]	23		18	
J [mm]	10		13	
K	G1/4"		G3/8"	
L	M20x1.5		M30x1.5	
M [mm]	24		35	
N [mm]	50		100	
O [mm]	8.1		18	
CH1 [mm]	16		24	
CH2 [mm]	24		36	
Weight [g]	270		880	
Detection by magnetic sensor	✓	✓	✓	✓
Detection by inductive sensor	✓	✗	✓	✗
Operating pressure for locking	P1	4 ÷ 7 bar	–	3 ÷ 6 bar
Operating pressure for unlocking	P2	4 ÷ 8 bar	–	–
Braking force	200 N	80 N x P1 - 150 N	500 N	200 N x P1 - 400 N

### Identification codes

Alphanumeric code	Description	Order code
VSRTF2050-NC	VSRTF2050-NC suspension, G1/4" female, 50 mm useful stroke	9900035
VSRTF2050-NO	VSRTF2050-NO suspension, G1/4" female, 50 mm useful stroke	9900036
VSRTF30100-NC	VSRTF30100-NC suspension, G3/8" female, 100 mm useful stroke	9900037
VSRTF30100-NO	VSRTF30100-NO suspension, G3/8" female, 100 mm useful stroke	9900038



## Ball joint for suction cups, with brake

- Pneumatically-driven device for joint lock (-NO) or unlock (-NC)
- Rotation fulcrum very close to the suction cup plane [1]
- Small lateral space taken upon rotation [2]
- Minimal slide of the suction cup upon picking-up
- FDA-H1 food-grade grease
- Operating pressure: -1 to 8 bar
- Two sizes available

Introduction

Vacuum theory

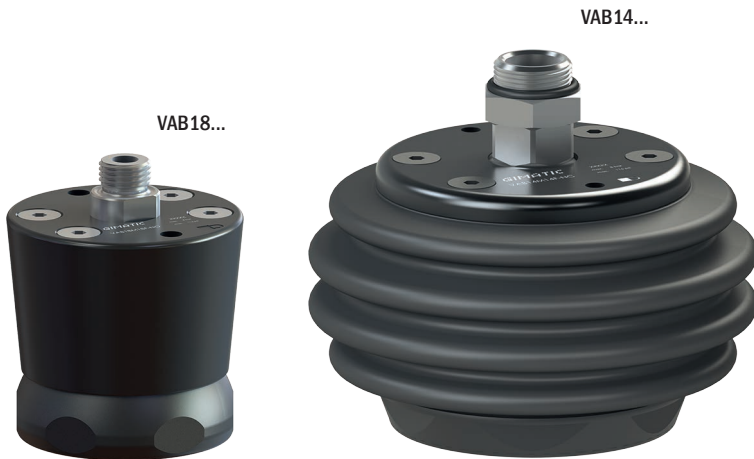
Suction cups

Vacuum pumps

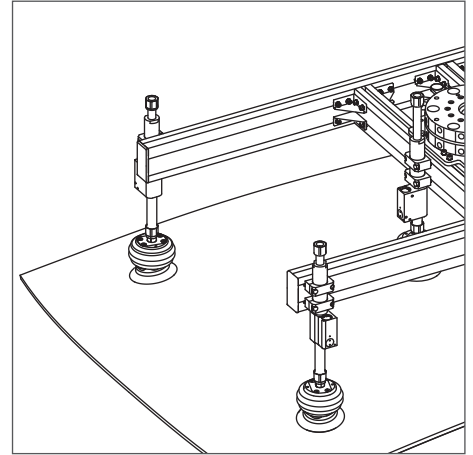
Customised solutions

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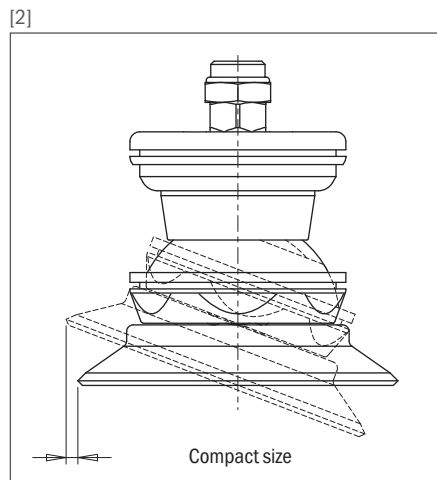
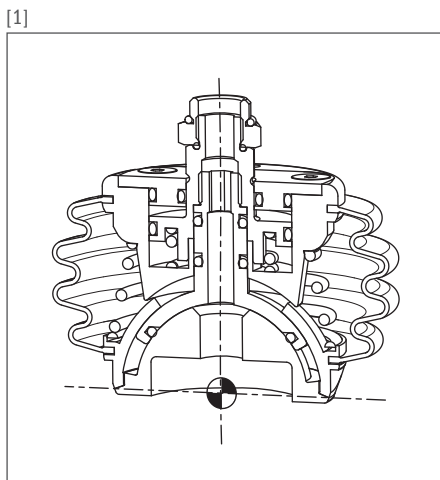


Application example



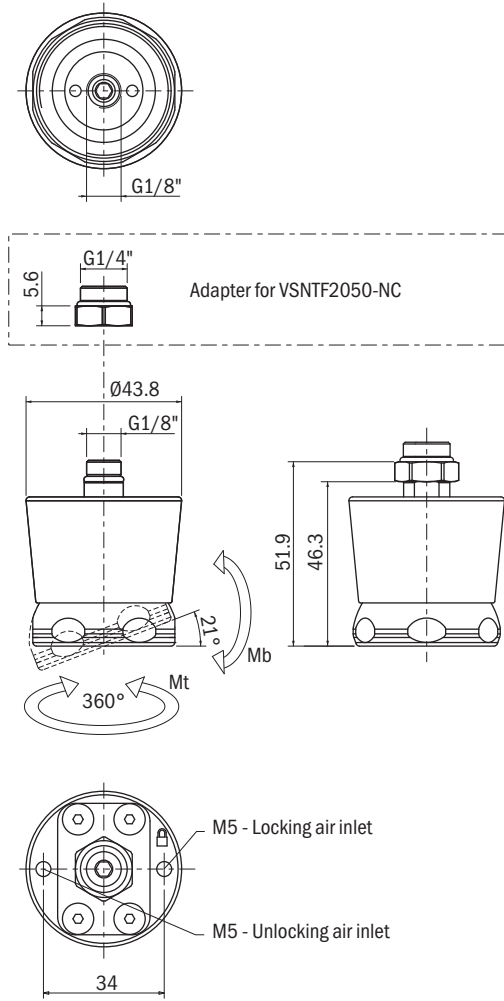
### Technical data

		VAB18M18F-NC	VAB14M14F-NC	VAB18M18F-NO	VAB14M14F-NO
Fluid for lock / unlock		Filtered, lubricated / non lubricated compressed air			
Operating pressure for locking	P1	0 ÷ 8 bar	0 ÷ 8 bar	1 ÷ 8 bar	1 ÷ 8 bar
Operating pressure for unlocking	P2	4 ÷ 8 bar	3 ÷ 8 bar	0 ÷ 8 bar	0 ÷ 8 bar
Air consumption for locking		0 cm <sup>3</sup>	0 cm <sup>3</sup>	2.7 cm <sup>3</sup>	4.3 cm <sup>3</sup>
Air consumption for unlocking		0.4 cm <sup>3</sup>	4.8 cm <sup>3</sup>	0 cm <sup>3</sup>	0 ÷ 4.8 cm <sup>3</sup>
Pressure through the supply duct		-1 ÷ 8 bar			
Operating temperature		+5 ÷ +60 °C			
Stroke		±21°			
Brake torque	Mb	1 Nm + 0.25 Nm x P1	2 Nm + 1 Nm x P1	0.25 Nm x P1	1 Nm x P1
Brake torque	Mt	0.8 Nm + 0.2 Nm x P1	1.8 Nm + 0.7 Nm x P1	0.2 Nm x P1	0.7 Nm x P1
Weight		152 g	420 g	147 g	410 g

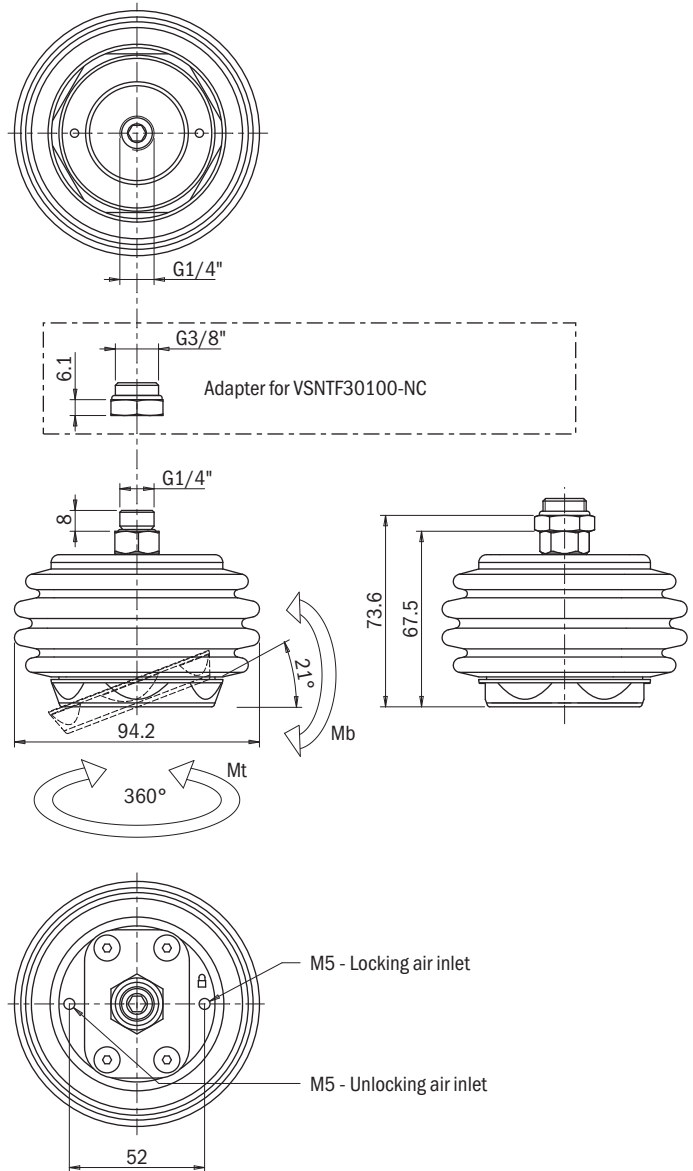


Identification codes		
Alphanumeric code	Description	Order code
VAB18M18F-NC	Ball joint, G1/8" male, G1/8" female, NC	9900039
VAB14M14F-NC	Ball joint, G1/4" male, G1/4" female, NC	9900040
VAB18M18F-NO	Ball joint, G1/8" male, G1/8" female, NO	9900041
VAB14M14F-NO	Ball joint, G1/4" male, G1/4" female, NO	9900042

VAB18...



VAB14...



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## Vacuum actuator

- Operated by vacuum only
- The extension and retraction movements are automatically actuated
- The stroke is self-adjusting
- VAQN option for anti-rotation rod [3]
- The suction cup [1] must be ordered separately

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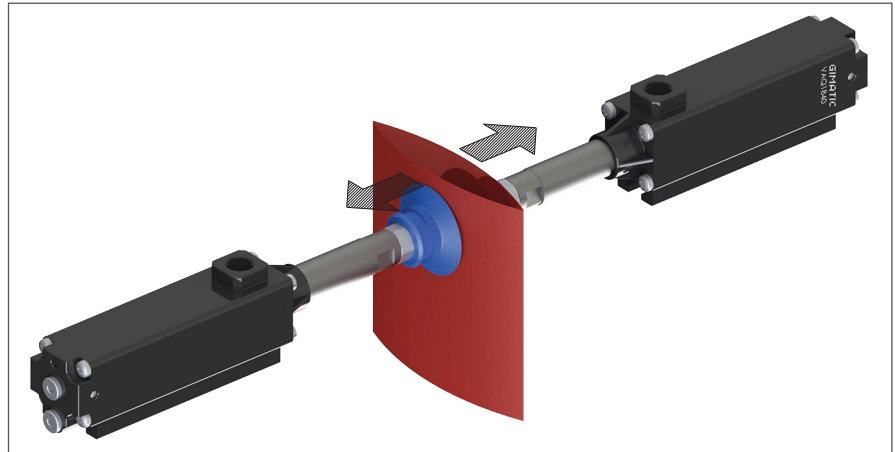
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Application example



### Technical data

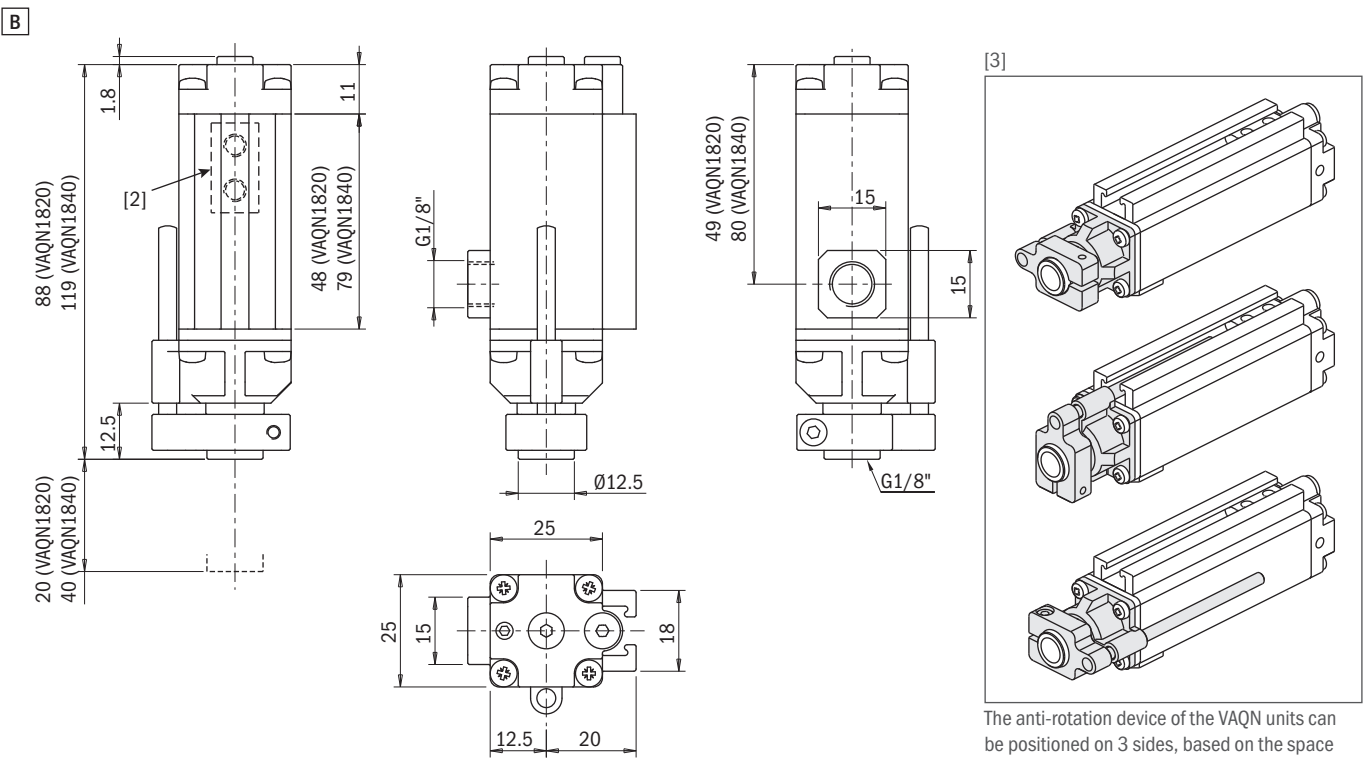
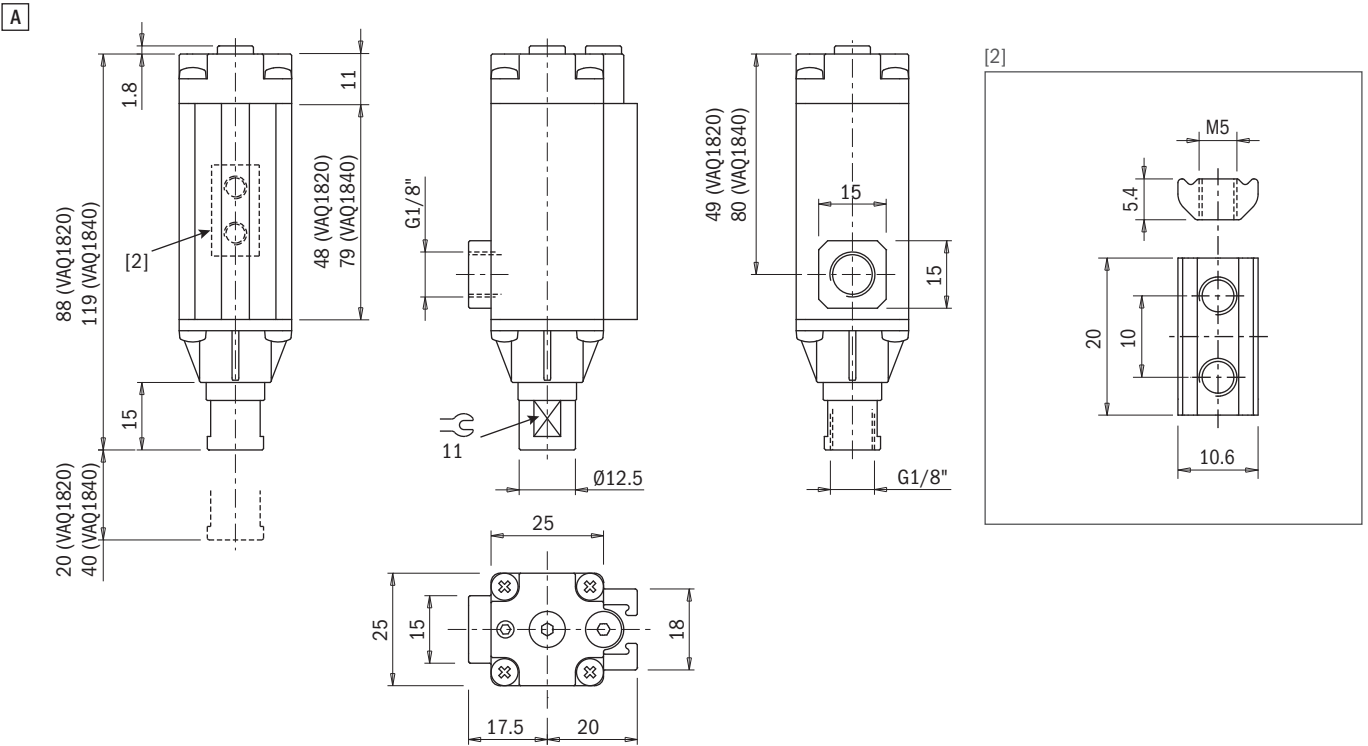
	VAQ1820	VAQ1840	VAQN1820	VAQN1840
Medium	Vacuum -0.3 to -1 bar			
Operating temperature	+10 ÷ +40 °C			
Retraction force at -0.6 bar	10 N			
Maximum recommended load	5 N			
Total stroke	25 mm	55 mm	25 mm	55 mm
Stroke with full force	20 mm	40 mm	20 mm	40 mm
Weight	90 g	125 g	105 g	145 g

[1]



### Identification codes

Drawing	Alphanumeric code	Description	Order code
A	VAQ1820	VAQ1820 vacuum actuator, G1/8" female, 20 mm useful stroke	9900043
A	VAQ1840	VAQ1840 vacuum actuator, G1/8" female, 40 mm useful stroke	9900044
B	VAQN1820	VAQN1820 vacuum actuator with anti-rotation rod, G1/8" female, 20 mm useful stroke	9900045
B	VAQN1840	VAQN1840 vacuum actuator with anti-rotation rod, G1/8" female, 40 mm useful stroke	9900046



The anti-rotation device of the VAQN units can be positioned on 3 sides, based on the space available

## Digital vacuum switch with display

- Easily readable colour display
- Compact in size and lightweight
- 7 units of measurement available (kPa, MPa bar, psi, inHg, mmHg, kgf/cm<sup>2</sup>)
- 2 PNP outputs, NO or NC
- Double display to allow the simultaneous reading of actual values and pre-set values
- “Key lock” indicator light to prevent changes to default settings
- “Energy saving” indicator light with indication on display
- Fixing brackets included

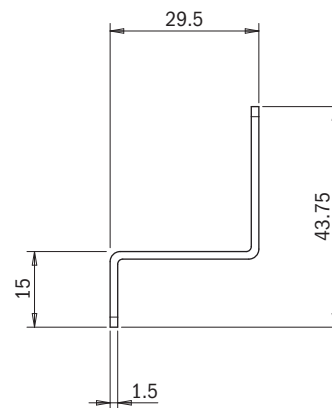
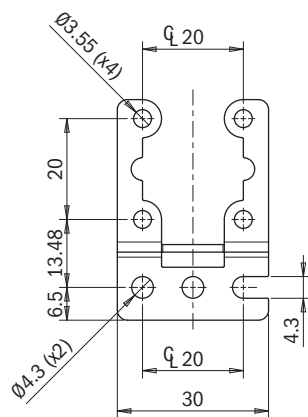
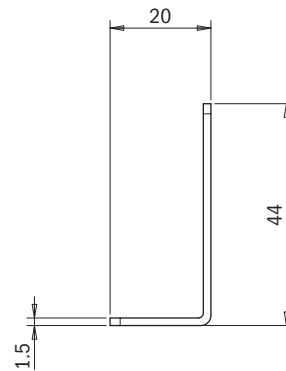
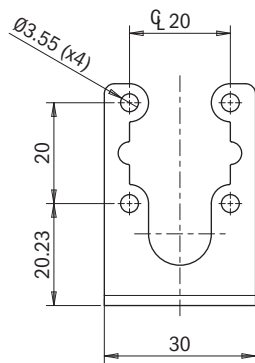
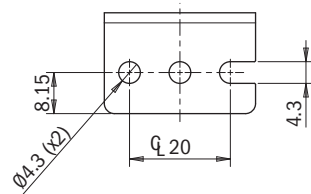
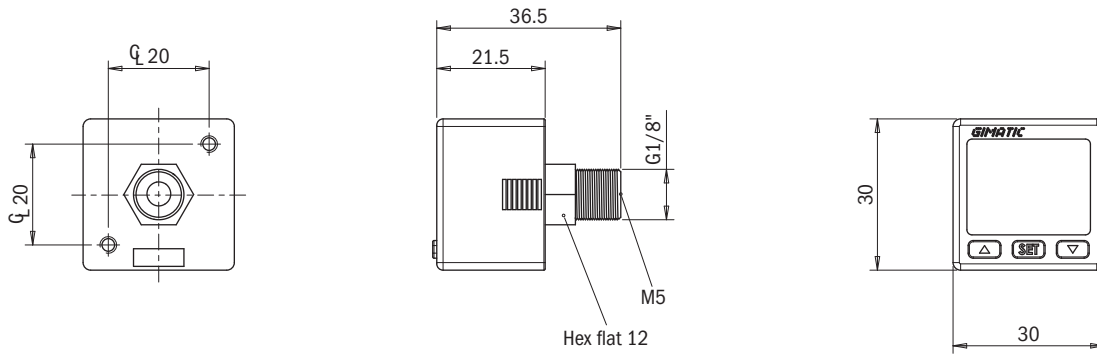


### Technical features

Max feed pressure	500 kPa
Weight	70 g
Temperature range	0 ÷ +50 °C
Operating pressure range	0 ÷ -101.3 kPa
Output type	PNP NO/NC
Hysteresis	1 ÷ 8 kPa
Max current	125 mA
Current consumption	40 mA
Power supply	12 ÷ 24 Vdc
IP rating	IP40
Response time	≤ 2.5 ms

### Identification codes

Alphanumeric code	Description	Order code
VACSDAN220-G	Digital vacuum switch with colour display, with DIN connector	3030157



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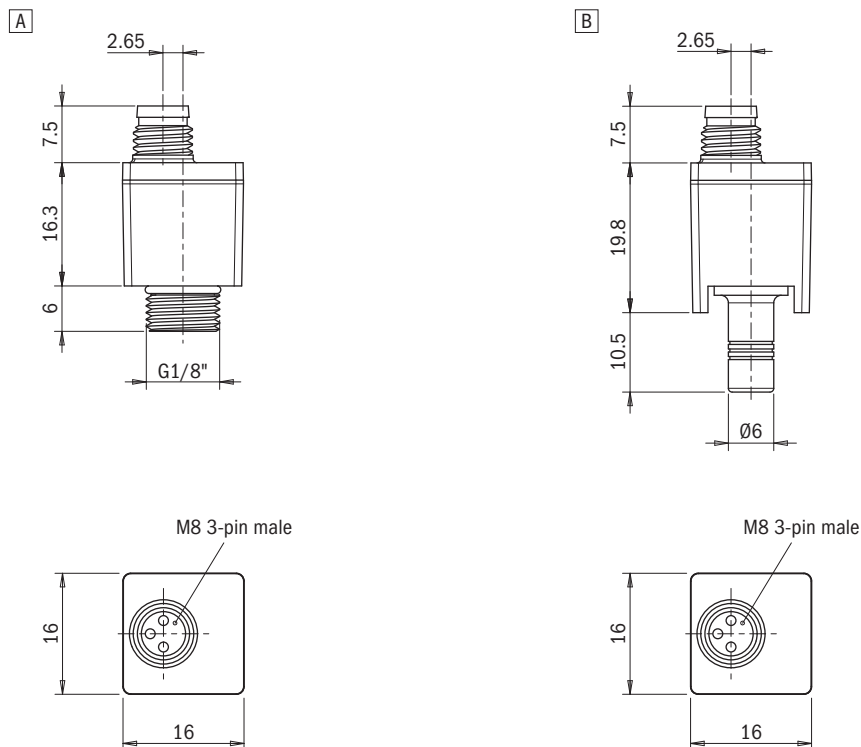
## Pre-set electromechanical vacuum switch

- Converts a vacuum signal into an electric digital signal
- Available in the version pre-set to -30, -50 and -70 kPa, with digital output
- PNP NO/NC or NPN NO/NC output function
- Possibility of connection with G1/8" or with Ø6 mm quick male connector



Technical features	
Weight	5 g
Material	Pa, TPU, SS, CuZn (Au)
Temperature range	-25 ÷ +85 °C
Vacuum connection	Ø6 mm – G1/8"
Output type	NPN - PNP
Hysteresis	6 ± 1 kPa
Electrical connection	M8 3-pin male connector
Power supply	12 ÷ 30 Vdc
IP rating	IP54
Response time	4 ms
Dimensions	16 x 16 x 22 mm
Setting tolerance	-3 ÷ +5 kPa
Max voltage drop (100 mA / 24 V inductive load)	0.055 V
Max current	100 inductive / 400 resistive mA

Identification codes			
Drawing	Alphanumeric code	Description	Order code
A	VACSM-G18-30	Pre-set electromechanical vacuum switch -30 kPa, G1/8" male, PNP/NPN, NO/NC	3030150
B	VACSM-T06-30	Pre-set electromechanical vacuum switch -30 kPa, with Ø6 mm male connection, PNP/NPN, NO/NC	3030151
A	VACSM-G18-50	Pre-set electromechanical vacuum switch -50 kPa, G1/8" male, PNP/NPN, NO/NC	3030152
B	VACSM-T06-50	Pre-set electromechanical vacuum switch -50 kPa, with Ø6 mm male connection, PNP/NPN, NO/NC	3030153
A	VACSM-G18-70	Pre-set electromechanical vacuum switch -70 kPa, G1/8" male, PNP/NPN, NO/NC	3030154
B	VACSM-T06-70	Pre-set electromechanical vacuum switch -70 kPa, with Ø6 mm male connection, PNP/NPN, NO/NC	3030155



Identification codes		
Alphanumeric code	Accessories	Order code
CMGM800320CFGM8003	Extension cable with double M8 3-pin straight male/female connectors, 2 m long cable in PVC material	3030156
CFGM800325	M8 female connector with straight moulded PVC cable	3030146
CFGM800325P	M8 female connector with straight moulded PUR cable	3030148
CFGM890325P	M8 female connector with angled moulded PUR cable	3030149

## Pre-set vacuum switch with digital output

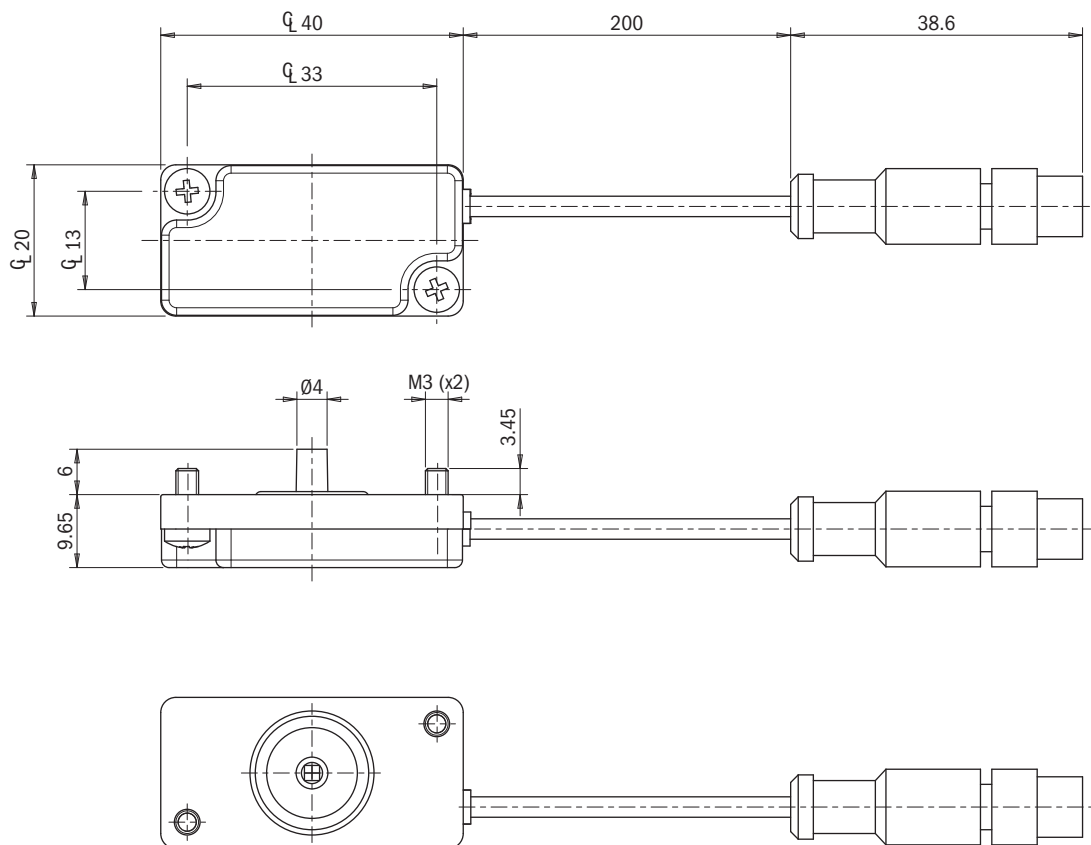
- Converts a vacuum signal into an electric digital signal
- Available in the versions with fixed setting -30, -50 and -70 kPa
- Compact in size and lightweight, reinforced glass fibre
- PNP or NPN output function
- Cable with M8x1 3-pin male connector, L=30 cm
- PWR with 3 LEDs (power supply: green), S1 (output: amber), L (vacuum leakage: red)
- Electrical connectors for wiring supplied separately as accessories L=2.5 m (PVC, PUR)



### Technical features

Maximum overpressure	1 MPa
Weight	9 g
Material	PA66
Temperature range	-20 ÷ +85 °C
Vacuum connection	Ø6 mm
Operating pressure range	0 ÷ -101.3 kPa
Output type	PNP - NPN
Hysteresis	7 kPa
Electrical connection	30-cm cable output with M8 3-pin male connector
Power supply	12 ÷ 24 Vdc (±10%)
IP rating	IP54
Response time	55 ms
Dimensions	40 x 20 x 15 mm

Identification codes		
Alphanumeric code	Description	Order code
VACSW-30-3N203-G	Pre-set vacuum switch, PNP -30 kPa, with digital output, cable L= 30 cm with M8x1 3-pin male connector	3030119
VACSW-50-3N203-G	Pre-set vacuum switch, PNP -50 kPa, with digital output, cable L= 30 cm with M8x1 3-pin male connector	3030120
VACSW-70-3N203-G	Pre-set vacuum switch, PNP -70 kPa, with digital output, cable L= 30 cm with M8x1 3-pin male connector	3030121
VACSW-30-3M203-G	Pre-set vacuum switch NPN -30 kPa with digital output, cable L= 30 cm with M8x1 3-pin male connector	3030122
VACSW-50-3M203-G	Pre-set vacuum switch NPN -50 kPa with digital output, cable L= 30 cm with M8x1 3-pin male connector	3030123
VACSW-70-3M203-G	Pre-set vacuum switch NPN -70 kPa with digital output, cable L= 30 cm with M8x1 3-pin male connector	3030124

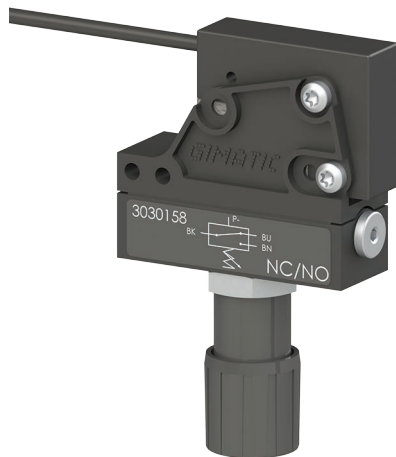


Identification codes		
Alphanumeric code	Accessories	Order code
CMGM800320CFGM8003	Extension cable with double M8 3-pin straight male/female connectors, 2 m long cable in PVC material	3030156
CFGM800325	M8 female connector with straight moulded PVC cable	3030146
CFGM800325P	M8 female connector with straight moulded PUR cable	3030148
CFGM890325P	M8 female connector with angled moulded PUR cable	3030149



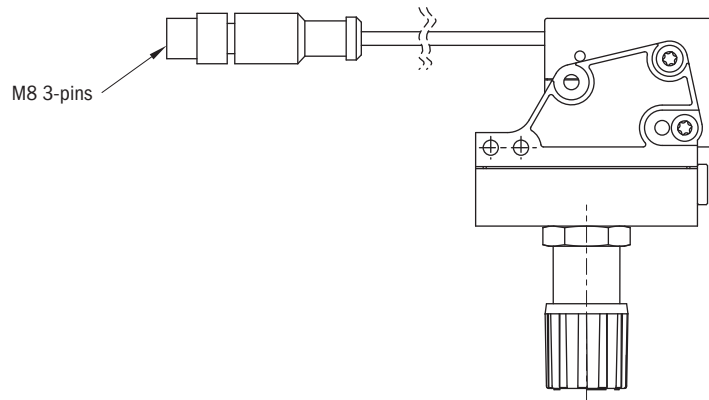
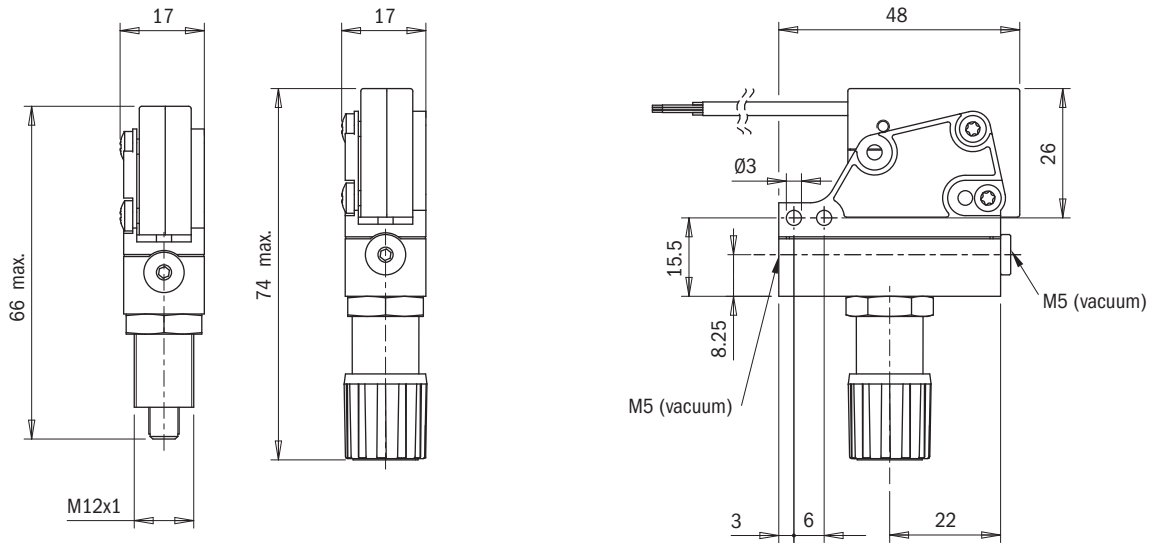
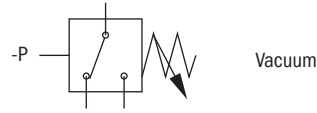
## Electromechanical vacuum switch, NO/NC, adjustable

- Converts a vacuum signal into an electric signal
- Adjustment of the switching threshold by means of screw and handle
- Version with M8 connector output or with free terminals



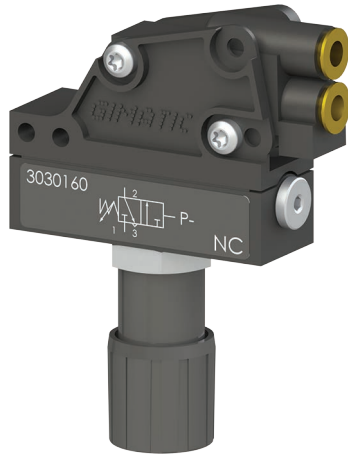
Technical features		
	3030158	3030159
Mass	70 g	70 g
Material	CuZn, PA, PBTP, POM, PVC, SS, Al, Nitrile	CuZn, PA, PBTP, POM, PVC, SS, Al, Nitrile
Temperature range	-20 ÷ +80 °C	-20 ÷ +80 °C
Vacuum connection	M5	M5
Operating pressure range	-15 ÷ -95 kPa	-15 ÷ -95 kPa
Valve configuration	NC, NO	NC, NO
Hysteresis	12 kPa	12 kPa
Cable features	2.5 m long, 3x0.25 mm <sup>2</sup>	300 mm with M8 3-pin male connector
IP rating	IP67	IP67
Max current	4 A	1 A
Max supply voltage	250 Vac	220 Vac
Dimensions	64.5 x 48 x 16.5 mm	64.5 x 48 x 16.5 mm

Identification codes		
Alphanumeric code	Description	Order code
VACSE-4N225-G	Vacuum switch, VACSE series, NO/NC microswitch, adjustable with knob, 250 Vac, 4A, IP67, output for round cable, 2.5 m long, 3x0.25mm <sup>2</sup>	3030158
VACSE-3N203-G	Vacuum switch, VACSE series, NO/NC microswitch, adjustable with knob, 220 Vac, 1A, IP67, 300 mm cable with M8 3-pin male connector	3030159



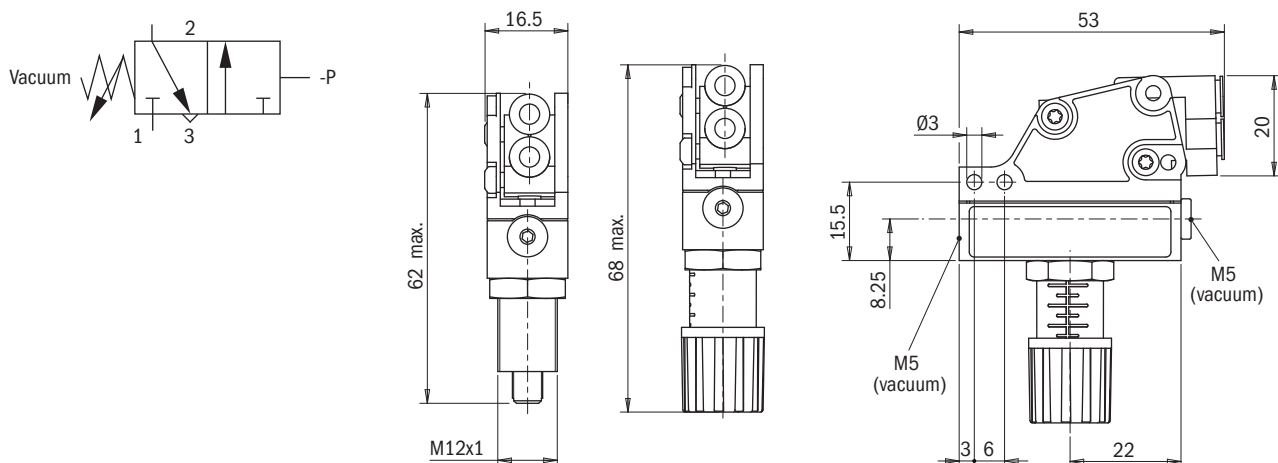
## Pneumatic vacuum switch, NC, adjustable

- Converts a vacuum signal into a pneumatic signal
- Adjustment of the switching threshold by means of screw and handle
- 4mm quick fittings for pneumatic signal



Technical features	
Max feed pressure	0.8 MPa
Mass	50 g
Material	CuZn, PA, POM, SS, Al, Nitrile
Temperature range	-10 ÷ +60 °C
Vacuum connection	M5
Operating pressure range	-15 ÷ -95 kPa
Valve configuration	NC
Hysteresis	12 kPa
Dimensions	60 x 54 x 16 mm

Identification codes		
Alphanumeric code	Description	Order code
VACSP-NC-R	Pneumatic vacuum switch, NC, adjustable	3030160



## Vacuum gauge -100 kPa / -30 inHg

- Analogue spring vacuum gauge
- No power supply required
- Vacuum connections: G1/8" male and M5 female

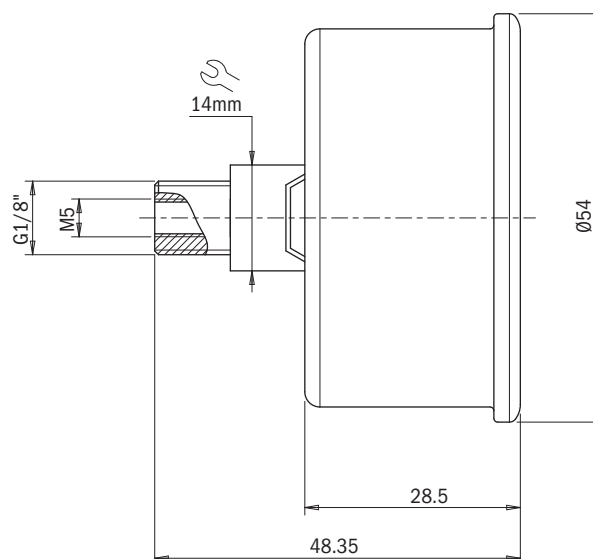


### Technical Features

Materials	SS, CuZn, PC, PA
Weight	110 g
Accuracy	2.5% FS
Signal range	0 ÷ -100 kPa / 0 ÷ -30 inHg

### Identification codes

Alphanumeric code	Description	Order code
AVG-100	Analogue vacuum gauge G1/8", M5, -100 kPa / -30 inHg	3030161



## AQRV atmospheric quick release valve

- Quick release of the manipulated object through the accumulation of network pressure
- Simplifies the vacuum circuit, ON/OFF synchronised with the ejector
- A single 3/2 valve enables to control the ejector and the release device

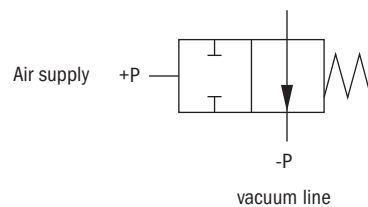
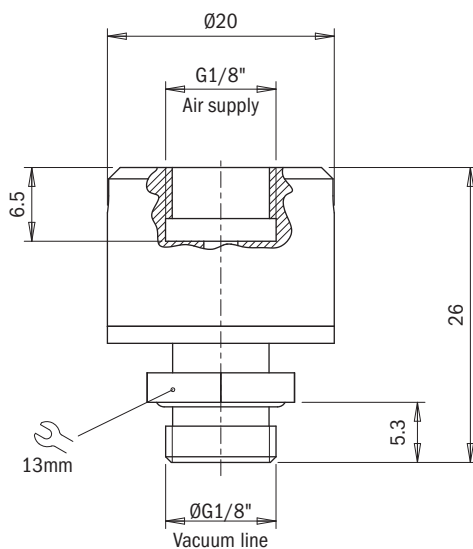


### Technical features

Pressure range	3 ÷ 0.6 MPa
Weight	11 g
Material	CuZn, TPU, NBR
Temperature range	+10 ÷ +50 °C

### Ordering information

Alphanumeric code	Description	Order code
AQRV	Atmospheric quick release valve	3100029



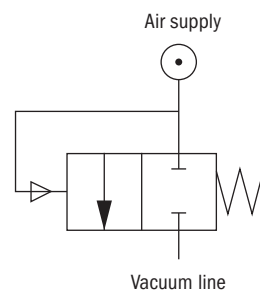
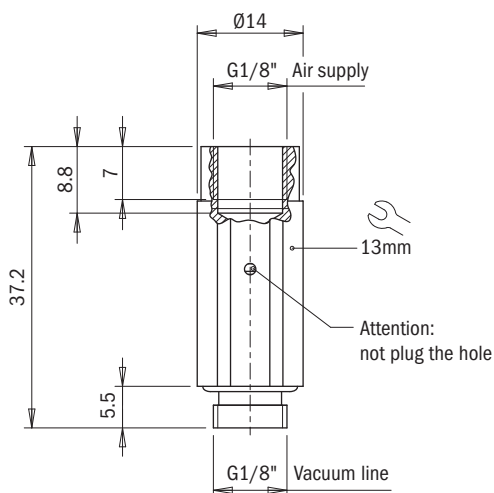
## BNRV Blow-off non-return valve

- Ideal for decentralised applications where a quick release of the manipulated object is required
- Prevents suction through the blow-off lines
- Reduced feed pressure for full valve opening



Technical features	
Pressure range	0.1 ÷ 0.6 MPa
Weight	13 g
Material	CuZn, SS, Al, EPDM, nitrile (NBR)
Temperature range	-20 ÷ +100 °C

Ordering information		
Alphanumeric code	Description	Order code
BNRV	Blow-off non-return valve	3100028



## Vacuum filter

- Nylon vacuum filter
- Polyethylene filter cartridge with 5 µm and 35 µm porosity
- Prevents impurities from reaching the vacuum pump
- Threaded connections for easy installation

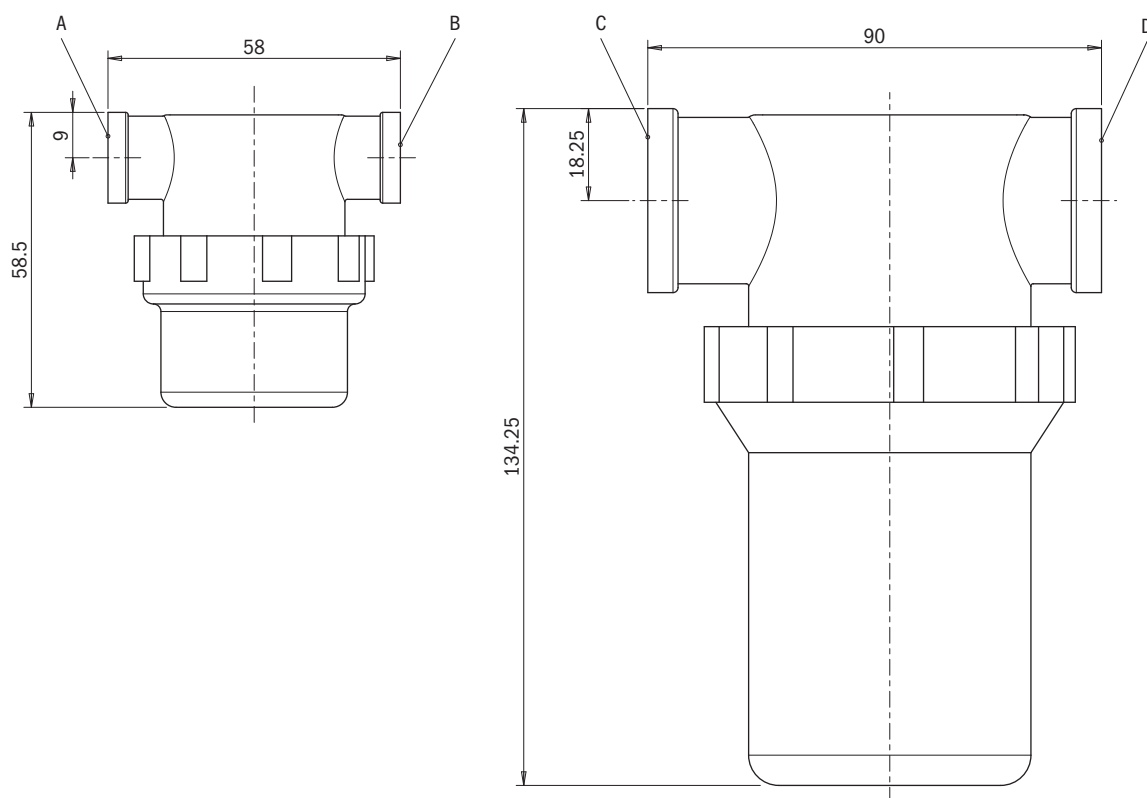


### Technical features

Pressure range	0.2 MPa
Weight	50 ± 185 g
Material	PP, PA, PE
Temperature range	-20 ÷ +80 °C
Porosity	5 ÷ 35 µm
Nominal flow rate	1.4 ÷ 85 NI/s
Internal volume	35 ÷ 675 cm <sup>3</sup>
Filtering area	0.003 ÷ 0.023 m <sup>2</sup>

### Ordering information

Alphanumeric code	Description	Order code
FILTR-G018-05	Vacuum filter G1/8", 5 micron	3100008
FILTR-G038-05	Vacuum filter G3/8", 5 micron	3100009
FILTR-G034-05	Vacuum filter G3/4", 5 micron	3100011
FILTR-G012-05	Vacuum filter G1/2", 5 micron	3100010
CART-G1838-05	Filter cartridge 1/8" & 3/8", 5 micron	3100014
CART-G1234-05	Filter cartridge 1/2" & 3/4", 5 micron	3100015
FILTR-G018-35	Vacuum filter G1/8", 35 micron	3100018
FILTR-G038-35	Vacuum filter G3/8", 35 micron	3100019
FILTR-G034-35	Vacuum filter G3/4", 35 micron	3100021
FILTR-G012-35	Vacuum filter G1/2", 35 micron	3100020
CART-G1838-35	Filter cartridge 1/8" & 3/8", 35 micron	3100024
CART-G1234-35	Filter cartridge 1/2" & 3/4", 35 micron	3100025



	FILTR-G018-05 FILTR-G018-35	FILTR-G038-05 FILTR-G038-35	FILTR-G012-05 FILTR-G012-35	FILTR-G034-05 FILTR-G034-35
A	G1/8"	G3/8"	—	—
B	G1/8"	G3/8"	—	—
C	—	—	G1/2"	G3/4"
D	—	—	G1/2"	G3/4"



## General conditions of sale (the Conditions) applied to its customers (the Customers) by GIMATIC (the Company)

- 1) Context of application of these General Conditions of Sale
  - 1.1) For the purposes of their applicability, the Conditions are the following general conditions of sale, while the Company is GIMATIC S.r.l., with registered office at Via Enzo Ferrari 2/4, (25030) Roncadelle (Brescia) ITALY, and any other investee company or subsidiary company of GIMATIC S.r.l, while the Customer is the legal entity which establishes a business relationship with the Company for the purchase of its products. In the case of purchases made on behalf of third parties, or in any case with delivery to locations other than the consignee specified in the invoice, both parties, the consignee of the products and the billed party, shall be considered Customers for the purposes of the application of these Conditions.
  - 1.2) These Conditions govern the supplier-customer relationship established on each occasion between the Company and the Customer, which may be legally defined as a contract for the distance sale of movable goods, even in the absence of a written agreement; any additional or other conditions, even if referred to or included in the Customer's documents or communications, shall not be valid in relation to the Company unless specifically agreed with the same and confirmed by a written agreement signed by both parties.
  - 1.3) These Conditions shall not apply if there are specific agreements, validly signed by both parties, between the Customer and the Company; the Company also accepts the validity of agreements signed for acceptance, especially where they are formally required as authorisation to finalise the contract, with regard only to provisions which conform to the law in force in Italy with regard to the distance sale of movable goods, if and to the extent that they are applicable.
- 2) Formation of the contract
  - 2.1) In the absence of specific written provisions as referred to above, the sales contract shall be considered finalised at the Company's premises at the time of consignment of the goods to the carrier; failing this, the contract shall be considered not finalised, without any liability on the part of the Company for any reason or with regard to any expectation, claim or right.
  - 2.2) In the event of changes or even partial non-acceptance, the Company shall provide rapid notification of the changes made with regard to quantity, quality and delivery method and dates, and the Customer shall state its disagreement, or exercise the right to withdraw, by no later than the day after the date of dispatch of the Company's notification, or by any later term stated therein; in the event that no comments or other instructions are received from the Customer, the changes to the order shall be considered tacitly accepted.
- 3) Place and date of delivery
  - 3.1) The Company fulfils each and every obligation through the consignment of the products to the carrier at its plant located at Via Enzo Ferrari 2/4, (25030) Roncadelle (Brescia) ITALY; it shall therefore not be liable for any kind of customs duty or any other related charges, even if specifically linked to transport, exportation, embarkation or any other method of delivery to the Customer.
- 3.2) Similarly, the price shall not include any system design, or installation and/or testing of equipment, training courses, assistance for installation and any other cost not specifically and formally agreed which, however, may be quoted for separately; the products shall be consigned to the carrier in their original packaging, and any other requirements or demands on the part of the Customer, if agreed and accepted, shall be charged to the latter directly in the invoice.
- 4) Technical data, drawings, documents and non-disclosure obligation, origin of the goods
  - 4.1) The data in the Company's official catalogue are the only binding data for assessment of the product's conformity; the Company reserves the right to make changes to its products in response to continuous improvements in technology and construction, at any time and without notice; the changes shall be recorded in the product datasheet published periodically in the Company's official catalogue.
  - 4.2) Even if products are not patented by the Company, their distinctive configuration and characteristics form an integral part of the Company's intangible assets and may not be copied, replicated, adapted or used in any way, even in dual use mode or by reverse engineering.
  - 4.3) Unless specifically published on the Company's official site, any specific features, procedures for use or other technical specifications in the documentation provided to the Customer shall be considered protected by the safeguards envisaged by current legislation for know-how and intellectual property.
  - 4.4) Unless otherwise stated, the Company's finished products are assumed to be of Italian origin; however, it is understood that any requests for a certificate of origin shall imply a delay of the times required and a careful analysis on a case-by-case basis, involving all those included in the product's specific supply chain, especially in the case of spare parts, consumables or accessories to the finished product.
- 5) Payments and retention of ownership
  - 5.1) Unless otherwise agreed, Customers shall make payments within the terms stated in the invoice, to the agreed bank; any disputes arising between the parties shall not relieve the Customer of the obligation to comply with the payment conditions and terms.
  - 5.2) In the event of late payment, the Customer shall be obliged to pay interest on the arrears, to be calculated as of right and with no need for a formal notice, up to the maximum amount permitted by the law, with the rate of interest applied by the agreed bank; however, the company reserves the right to claim any additional damages and to terminate all contract relationships as of right.
  - 5.3) The Company shall retain ownership of the products until the Customer has made full payment of the agreed price to the Company, or to the investee company through which the sale was made.
  - 5.4) In the event that the Customer defaults on its payment obligation, the Company reserves the right to demand return

of the products already delivered to the Customer, which shall forfeit the right to acquire ownership of the same, with retroactive effect.

- 6) Termination of relationship and refusal to trade
  - 6.1) In the event that the Customer is in arrears with the payments due, reduces the guarantees it had provided, or fails to provide the guarantees it had promised, the Company reserves the right to suspend the sales relationship without notice.
  - 6.2) Unless otherwise specifically agreed through a written document validly signed by both parties, all supply relationships, including those arising from verbal or unsigned agreements, or any other form of accord, shall be considered terminated as of right, with no need for formal notification, if the Customer is put into liquidation or is the subject of any form of bankruptcy proceedings.
  - 6.3) In all cases, the Company reserves the right to refuse to fulfil the Customer's orders, even those already accepted, if the Customer
    - i) has failed to make payments due to the Company or one of its investee companies or distributors;
    - ii) is in dispute with or has lodged any claims or complaints against the Company or one of its investee companies or distributors;
    - iii) breaches the non-disclosure obligations contained in point 4 above;
- 7) Applicable Law and Legal Jurisdiction
  - 7.1) The sales relationships between the parties, including those concerning sales with delivery abroad, are governed by Italian law; Brescia Law Court shall have sole jurisdiction over any dispute relating to the execution, interpretation, validity, termination, and cessation of trading and/or contract relations between the parties.



















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We reserve the right to make alterations.

Full technical information on the product and the relevant User Guide are available in our website.





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Sales Network