



Vacuum Pump  
Vacuum Solvent Recovery System  
Vacuum Meter And Controller



# Vacuum Pump

The ability to handle difficult and different vacuum challenges quickly.

Wiggins is your general laboratory companion and provides products that can be used in all kinds of laboratory environments. ChemVak is a product line in vacuum technology offering an extensive range of vacuum pumps for all applications. Including :



Chemical resistant diaphragm pumps which can be used in the chemical, pharmaceutical, petrochemical and other industries

Chemical resistant diaphragm pump  
Frequency conversion chemical resistant vacuum pump



Chemical resistant diaphragm pump

Vacuum solvent recovery which can be used to get right vacuum conditions for various application



Vacuum Solvent recovery system



Oil-free piston vacuum pump, no pollution, no need for oil changes

Oil-free piston vacuum pump

Oil-sealed rotary vane vacuum pumps are widely used traditional vacuum pumps in research and production



Rotary vane vacuum pump



## Vacuum pump selection guide

Before selecting a vacuum pump, please let us introduce a few basic concepts about vacuum.



### ▶ Vacuum

The degree of gas content in a vacuum state is usually expressed by the vacuum. The value read from the vacuum gauge is called the degree of vacuum. The vacuum value is the value that indicates that the actual value of the system pressure is lower than the atmospheric pressure. The value shown on the gauge is also called the gauge pressure, usually called the ultimate relative pressure. That is: Vacuum = atmospheric pressure - absolute pressure (atmospheric pressure is generally taken 1013.25mbar, the ultimate vacuum of the oil-free piston pump can reach about 30mbar, the ultimate vacuum of the chemical resistant diaphragm pump can reach 1mbar, and the ultimate vacuum of the rotary vane oil pump is about 0.0004mbar.



### ▶ Ultimate relative pressure

The relative pressure is how much lower the measured internal pressure is than the "atmospheric pressure", indicating that the actual value of the system pressure is lower than the value of atmospheric pressure. Since the air inside the container is pumped, the pressure inside the container is always lower than the pressure outside the container. Therefore, when using relative pressure or gauge pressure, the value must be preceded by a negative sign, indicating that the internal pressure of the container is lower than the external pressure.



### ▶ Ultimate absolute pressure

Absolute pressure refers to how much higher the measured internal pressure is than "theoretical vacuum (theoretical vacuum pressure value is 0Pa)". The object it compares is the absolute vacuum pressure value of the theoretical state. Due to technological limitations, we cannot pump the internal pressure to the absolute vacuum value of 0Pa in any case. Therefore, the vacuum value drawn by the vacuum pump is higher than the theoretical vacuum value. So when expressed in absolute vacuum, there is no negative sign in front of the value.



### ▶ Pumping speed

The pumping speed is a measure of the pumping speed of the vacuum pump. The general unit is expressed in L/min and m<sup>3</sup>/h. It is a parameter to make up for the air leakage rate. It is not difficult to understand, in theory, when pumping a container of the same volume, why is it easy for a vacuum pump with a large pumping capacity to pump the vacuum we need, while a vacuum pump with a small pumping capacity is so slow or even unable to pump the vacuum we want? Because It is always impossible for the pipeline or container to be absolutely air-free, and the large amount of air extraction makes up for the reduction of the vacuum degree caused by the air leakage, so the air volume can easily be pumped to the ideal vacuum value. It is suggested here that when the theoretical pumping capacity is calculated, we try to choose a vacuum pump with a higher pumping capacity. The specific calculation formula of the pumping volume will be introduced below.



After understanding the basic parameters of vacuum pumps such as vacuum degree, absolute pressure and relative pressure, we can enter the formal selection of vacuum pumps.



### The required vacuum of the experimental process

The working pressure of the vacuum pump should meet the working pressure requirements of the process. The vacuum degree of the chemical resistant diaphragm pump should be half to an order of magnitude higher than the vacuum degree of the vacuum equipment. The vacuum must be at least 50mbar-10mbar), and the rotary vane oil pump must be an order of magnitude higher than the vacuum equipment.



### The required pumping speed of the experimental process

The vacuum pump requires the pumping rate (that is, the ability of the vacuum pump to discharge gas, liquid, and solid under its working pressure), the general unit: m<sup>3</sup>/h, L/min, L/s, etc. The specific calculation method can refer to the following formula to calculate and select by yourself. Of course, the selection of vacuum pumps is a comprehensive process involving relevant experience and other factors.

$$S=(V/t) \times \ln(P1/P2)$$

S is the pumping rate of the vacuum pump (L/s)

V is the volume of the vacuum chamber (L)

t is the time required to reach the required vacuum (s)

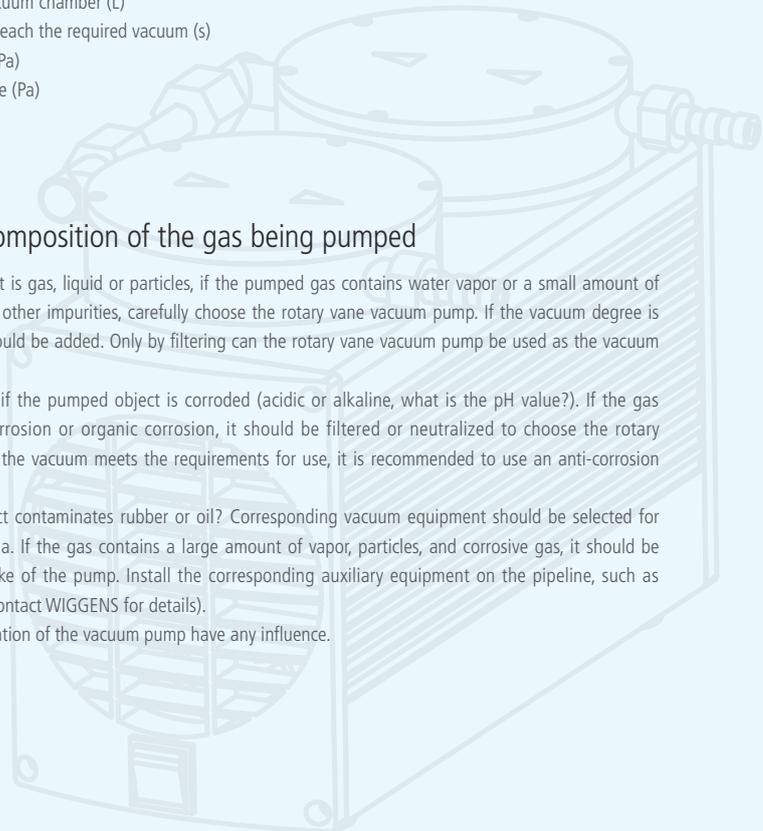
P1 is the initial pressure (Pa)

P2 is the required pressure (Pa)



### Determine the composition of the gas being pumped

- > 1- If the pumped object is gas, liquid or particles, if the pumped gas contains water vapor or a small amount of particles and dust and other impurities, carefully choose the rotary vane vacuum pump. If the vacuum degree is high, a filter device should be added. Only by filtering can the rotary vane vacuum pump be used as the vacuum obtaining equipment.
- > 2- Please let us know if the pumped object is corroded (acidic or alkaline, what is the pH value?). If the gas contains acid-base corrosion or organic corrosion, it should be filtered or neutralized to choose the rotary vane vacuum pump. If the vacuum meets the requirements for use, it is recommended to use an anti-corrosion diaphragm pump.
- > 3- If the pumped object contaminates rubber or oil? Corresponding vacuum equipment should be selected for different pumped media. If the gas contains a large amount of vapor, particles, and corrosive gas, it should be considered in the intake of the pump. Install the corresponding auxiliary equipment on the pipeline, such as condenser, filter, etc. (contact WIGGENS for details).
- > 4- If the noise and vibration of the vacuum pump have any influence.



# Application Guide

Application	Picture	Description	Pump speed / Vacuum	Recommended vacuum pump
Conventional vacuum requirements		Compact, portable, with certain corrosion resistance	25L/min 13mbar	A410 
Vacuum filtration system		The filtered sample is non-corrosive	34L/min 100mbar	V400 
		The filtered sample is corrosive and requires high corrosion resistance of the vacuum pump	34L/min 120mbar	C400 
Glass vacuum dryer		It is recommended to use a chemical resistant diaphragm vacuum pump. In addition, a vacuum gauge and a vacuum regulating valve are also required	22L/min 100mbar	C410 
Vacuum drying oven		The samples are usually aqueous, acidic or alkaline solutions, so chemical resistant diaphragm vacuum pumps are often recommended	37L/min 2-4mbar	C920Z 
Vacuum centrifugal concentrator		Chemical resistant diaphragm vacuum pumps usually do not require maintenance, and the ultimate vacuum is only 1-2mbar	37L/min 2-4mbar	C920Z 
		Rotary vane oil pump can reach extremely high vacuum, but it needs to be used with cold trap	180L/min $4 \times 10^{-4}$ mbar	R-8D 
Freeze dryer		Rotary vane oil pump is usually used, equipped with oil mist filter and cold trap	180L/min $4 \times 10^{-4}$ mbar	R-8D 

Application	Picture	Description	Pump speed / Vacuum	Recommended vacuum pump	
Rotary evaporator		0.5~3L evaporating flask, which requires high corrosion resistance of the vacuum pump, and usually needs to be used with a vacuum controller	25L/min 13mbar	C410	
		6~20L evaporating flask, which requires high corrosion resistance of the vacuum pump, and usually needs to be used with a vacuum controller	60L/min 2mbar	C960T	
		50~100L evaporating flask has high requirements for the corrosion resistance of the vacuum pump, and usually needs to be used with a vacuum controller	145L/min 8mbar	C2000T	
Multi-channel vacuum applications		Rotary vane oil pump can provide a large enough pumping rate, but it needs a matching cold trap	360L/min $4 \times 10^{-4}$ mbar	R-24D	
Biochemical liquid suction pump		After biochemical culture, it is used to separate tissues from culture fluid	25~40L/min 100mbar	BioVac series	
Vacuum controller		Able to set and control the Vacuum control range: vacuum degree of the system 0.1~1000mbar		DVR series	
Digital vacuum gauge		Able to display the vacuum degree of the system in real time	Vacuum measurement range: 0.1~1000mbar	VDM series	



New Entry Level for  
Anti-Corrosion Diaphragm Pump



A410

A510

## Chemical Resistant Diaphragm Pump (A Series)

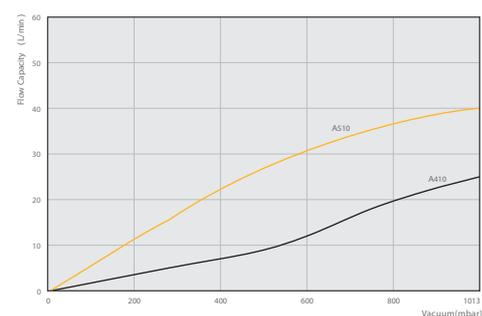
- > Chemvak A series are chemical resistant diaphragm vacuum pumps which can be used in the chemical, pharmaceutical, petrochemical and other industries, such as suction filtration, vacuum distillation, rotational evaporation, vacuum concentration, centrifugal concentration, solid phase extraction and so on.
- > A series pumps can be widely used for hard acidic, basic and solvent vapors by utilizing corrosion proof PTFE on all the wetted surfaces. The vacuum chamber and the drive chamber are separated and sealed, ensuring a longer working life of mechanical components
- > Chemvak A series pumps are driven by diaphragm, without the need of lubricant, regular oil changes and maintenance; with no oil pollution.
- > Driven direct by motor with no additional belt-driven transmission; the quality vibration-proof assembly makes Chemvak A series run at the lowest noise level among all other equivalent pumps.
- > Cost-effective, reliable, unique structural design, noise less than 50dB.
- > A variety of models are available to meet the various needs of the laboratory, with a minimum vacuum of up to 8 mbar.
- > Every motor of Chemvak A series pumps has a built-in thermal protection device to shut off the pump automatically when overheated and then resume working when the temperature cools down.

### Features

- > No pollution when working
- > Can be used for suction of high temperature steam or condensate
- > Overheat protection and power insurance
- > Chemical resistant design
- > Suitable for corrosive gases and steam media
- > Environmentally friendly design
- > Strong tightness

Model / Specifications	A410	A510
Order No.	170410	170510
Flow rate [m <sup>3</sup> /h] at atm. pressure	1.5	2.4
Flow rate [l/min] at atm. pressure	25	40
Ultimate vacuum [mbar abs.]	13	8
Max. Power P [W]	95	245
Max. current [A]	0.6	1
Motor speed [rpm]	1450	1450
Pump head	Double stage	Double stage
Hose connections [mm]	10	10
Noise [dB]	50	60
Dimensions W x H x D [mm]	230×155×173	290×190×210
Weight [kg]	4.5	10
Power supply	220V/50Hz	220V/50Hz

Chemical Resistant Diaphragm Pumps Flow curve



Note: Above data is based on the 220V/50Hz instrument



## Chemical Resistant Diaphragm Pump (C Series)

C series construction with PTFE makes them very resistant to chemical vapors from inlet to exhaust and very tolerant to condensates. Pumping chambers are hermetical ensuring long lifetimes of mechanical parts.

Most importantly, diaphragm pumps are oil-free, with vastly reduced service demands compared with oil sealed pumps. They eliminate the cost of water and its contamination well-known from water-jet aspirators, and the waste-oil disposal of rotary vane pumps.

They are chemical resistant diaphragm vacuum pumps which can be widely used for hard acidic, basic and solvent vapors by utilizing corrosion proof PTFE on all the wetted surfaces. Through innovative mechanical technology and human considerations, we have made C series to be quiet, safe, maintenance-free and cost effective vacuum pumps.

### Features

#### High chemical resistant

All wetted parts of C series pump are made of PTFE which is ideal for extremely aggressive / corrosive gases and vapors.

#### Long-term durable

Head cover and diaphragm made of PTFE/PTFE-coated with stability core for unsurpassed long-term performance

#### No air pollution, maintenance free

Chemvak C series pumps are driven by diaphragm, without the need of lubricant, regular oil changes and maintenance; with no oil pollution.

#### Practical

- > smooth surfaces for easy cleaning
- > sealing system provides reduced leakage rates for improved ultimate vacuum

#### Quiet and low vibration

Driven direct by motor with no additional belt-driven transmission; the quality vibration-proof assembly makes Chemvak C series run at the lowest noise level among all other equivalent pumps.

#### Thermal protection device

Every motor of Chemvak C series pumps has a built-in thermal protection device to shut off the pump automatically when overheated and then resume working when the temperature cools down.

#### International safety certification

CE certification

#### The stability core principle: for unprecedented long-term performance

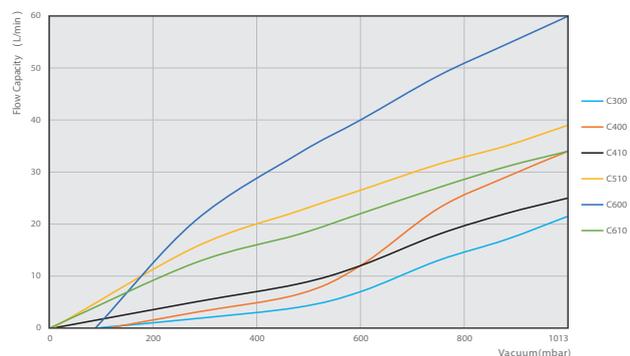
chemistry diaphragm pumps provide optimum performance and unsurpassed service intervals even in harsh chemical applications. We achieve this unmatched reliability by manufacturing the most highly stressed components – the head cover and clamping disk.

- > high quality PTFE coated EPDM provides long term chemical resistance
- > this thick-walled, diffusion resistant, molded fluoroplastic is supported by a stable metallic core for durability
- > mechanical precision finishing ensures reproducible WIGGENS quality

## Application

- > Chemical and petrochemical Industry
- > Pharma Industry
- > Filtration processes
- > Vacuum distillation
- > Rotary evaporation
- > Vacuum and centrifugal concentration
- > Solid phase extraction
- > Conventional drying and gel drying
- > Advanced substitute for water-jet pumps

## Chemical Resistant Diaphragm Pumps Flow curve



Note: Above data is based on the 220V/50Hz instrument

## Packages

### Package 1 includes

The pump with vacuum trap, regulator and vacuum gauge (order no. 169311-06)



### Package 2 includes

The pump with vacuum trap, regulator and digital meter DVM150C (order no. 169312-06)



### Package 3 includes

The pump with chemical resistant vacuum controller DVR480, Vacuum trap



Model / Specifications	C300	C400	C410	C420	C510	C520	C600	C602	C610
Order No.	169300	169400	169410	169420	169510	169520	169600	169602	169610
Flow rate [m <sup>3</sup> /h] at atm. pressure	1.32	2.04	1.5	1.5	2.04	3.0	3.6	4.2	2.22
Flow rate [l/min] at atm. pressure	22	34	25	25	34	50	60	70	37
Ultimate vacuum [mbar abs.]	100	120	13	13	8	8	90	80	2~4
Max. Power P [W]	60	95	95	95	245	245	270	270	270
Max. current [A]	0.5	0.5	0.5	0.5	1.1	1.1	1.1	1.1	1.1
Motor speed [rpm]	1450	1450	1450	1450	1450	1450	1450	1450	1450
Pump head	Single stage	Single stage	Double stage	Double stage	Double stage	Double stage	Single stage	Single stage	Double stage
Hose connections [mm]	10	10	10	10	10	10	10	10	10
Noise [dB]	50	50	50	50	60	55	60	55	60
Dimensions W x H x D [mm]	233×110×210	294×156×195	294×156×195	294×156×195	380×156×226	380×156×226	380×162×226	380×156×226	380×171×226
Weight [kg]	6	8.5	8.5	8.5	13.2	14.5	13.2	14.5	13.8
Power supply	220V/50Hz								

# Chemical Resistant Diaphragm Pump

## Fast pumping speed

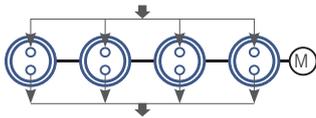
C900 series chemical resistant diaphragm pumps are ideally suited for pumping aggressive gases and vapors in a vacuum range down to 1mbar and pumping speed up to 95L/min

### Features

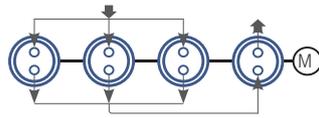
- > All wetted parts are made of chemical resistant materials
- > Fast pumping speed
- > Low noise
- > Overheat protection
- > Vacuum can be controlled by manual valve, vacuum controller
- > Easy and convenient for maintenance



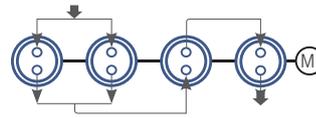
The motor drives the pump head to vacuum



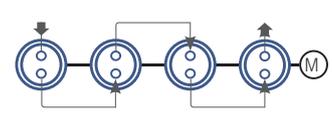
C900E with single stage of pump head



C920Z with double stage of pump head



C960T with Triple stage of pump head



C980V with quadruple stage of pump head



Model / Specifications	C900E	C920Z	C960T	C980V
Order No.	169900	169920	169960	169980
Flow rate [m <sup>3</sup> /h] at atm. pressure	5.7	4.5	3.6	2.4
Flow rate [l/min] at atm. pressure	95	75	60	40
Ultimate vacuum [mbar abs.]	< 30	< 8	< 2	< 1
Max. Power P [W]	370	370	370	370
Motor speed [rpm]	1425	1425	1425	1425
Pump head	Single stage	Double stage	Triple stage	Quadruple stage
Hose connections [mm]	10	10	10	10
Noise [dB]	50	50	50	50
Dimensions W x H x D [mm]	440×270×240	440×270×240	440×270×240	440×270×240
Weight [kg]	21.5	21.5	21.5	21.5
Power supply	220V/50Hz	220V/50Hz	220V/50Hz	220V/50Hz

## Chemical Resistant Diaphragm Pump

### Variable-frequency vacuum pump, fast pumping speed

Chemical resistant diaphragm pumps are ideally suited for pumping aggressive gases and vapors in a vacuum range down to 1mbar. and pumping speed up to 95L/min

The variable-frequency pump needs to be connected with the variable-frequency controller to control the vacuum by adjusting the speed of the motor, which is especially suitable for the vacuum control of large-capacity system. It not only ensures a faster pumping speed, but also obtains a stable vacuum.



Variable-frequency vacuum pump W/O frequency controller

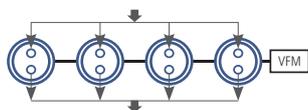
### Features

- > All wetted parts are made of chemical resistant materials
- > Variable frequency motor for fast pumping speed
- > Low noise
- > Overheat protection
- > Vacuum can be controlled by manual valve, vacuum controller or variable frequency controller
- > Easy and convenient for maintenance

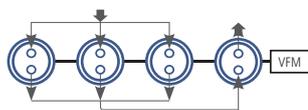


Variable-frequency vacuum pump W/ frequency controller

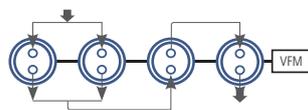
The motor drives the pump head to vacuum



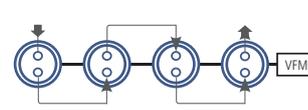
C900EF with variable frequency motor and single stage of pump head



C920ZF with variable frequency motor and double stage of pump head



C960TF with variable frequency motor and triple stage of pump head



C980VF with variable frequency motor and quadruple stage of pump head

Model / Specifications	C900EF	C920ZF	C960TF	C980VF
Order No. (W/O frequency controller)	169900B	169920B	169960B	169980B
Order No. (W/ frequency controller)	169901B	169921B	169961B	169981B
Flow rate [m <sup>3</sup> /h] at atm. pressure	5.7	4.5	3.6	2.4
Flow rate [l/min] at atm. pressure	95	75	60	40
Ultimate vacuum [mbar abs.]	< 30	< 8	< 2	< 1
Max. Power P [W]	370	370	370	370
Motor speed [rpm]	0~1380/0~1680 <sup>1)</sup>	0~1380/0~1680 <sup>1)</sup>	0~1380/0~1680 <sup>1)</sup>	0~1380/0~1680 <sup>1)</sup>
Pump head	Single stage	Double stage	Triple stage	Quadruple stage
Hose connections [mm]	10	10	10	10
Noise [dB]	50	50	50	50
Dimensions W x H x D [mm]	440×270×240	440×270×240	440×270×240	440×270×240
Weight [kg]	21.5	21.5	21.5	21.5
Variable frequency vacuum controller	Order separately	Order separately	Order separately	Order separately
Power supply	200 - 240V, 50/60Hz			

<sup>1)</sup> means the motor speed range of 50Hz and 60Hz models respectively

## Frequency Conversion Chemical Resistant Vacuum Systems

### Integrated variable frequency controller

- > A new generation of intelligent vacuum technology, modular design, integrated variable frequency pumps and control units, compact design, light weight. It can adjust the speed of the diaphragm pump by frequency conversion motor and controller, controlling the vacuum pressure more accurately.
- > PID Self-tuning for vacuum control, the controller automatically changes the PID value according to the artificial intelligence logic algorithm, accurately adjusting the motor speed and stabilizing the precise vacuum degree.
- > This series of chemical resistant vacuum pumps are suitable for the treatment of corrosive gases in the chemical, pharmaceutical, petrochemical and other industries, such as extraction, vacuum distillation, rotational evaporation, vacuum concentration, centrifugal concentration, solid phase extraction and other uses.
- > All parts in contact with gas and condensate are made of high-quality PTFE. The gas chamber and drive chamber are separated and sealed to ensure a long life of the mechanical parts
- > Overheat protection, automatic shutdown when the temperature is too high, and automatic start when it goes back to the normal temperature, to ensure the security and stability of the system.

### Features

- > Vacuum stability, easy to control, high control precision
- > Excellent chemical and vapour resistance
- > In the high vacuum degree, the performance is still very good.
- > Long life, simple and convenient for maintenance.
- > Simple and convenient to work in a stable and lasting way
- > Small structural size, energy conservation and environmental protection
- > High level of protection for motor, suitable for various environments

### Application

- > Vacuum distillation for large volume
- > Large capacity reaction kettle
- > Large capacity vacuum filtration
- > Vacuum enrichment
- > Vacuum drying
- > Various applications in the semiconductor industry



**Standard Configuration:**  
The vacuum system integrated variable frequency controller, and also includes vacuum trap, regulator and vacuum gauge (order no. 169311-06)

Model / Specifications	C900EEF	C920ZEF	C960TEF	C980VEF
Order No.	169900C	169920C	169960C	169980C
Flow rate [m <sup>3</sup> /h] at atm. pressure	5.7	4.5	3.6	2.4
Flow rate [l/min] at atm. pressure	95	75	60	40
Ultimate vacuum [mbar abs.]	< 30	< 8	< 2	< 1
Vacuum setting range [mbar abs.]	0.1~1000	0.1~1000	0.1~1000	0.1~1000
Max. Power P [W]	400	400	400	400
Motor speed [rpm]	0~1380/0~1680 <sup>1)</sup>	0~1380/0~1680 <sup>1)</sup>	0~1380/0~1680 <sup>1)</sup>	0~1380/0~1680 <sup>1)</sup>
Pump head	Single stage	Double stage	Triple stage	Quadruple stage
Hose connections [mm]	10	10	10	10
Noise [dB]	50	50	50	50
Dimensions W x H x D [mm]	440×270×240	440×270×240	440×270×240	440×270×240
Weight [kg]	21.5	21.5	21.5	21.5
Power supply	200 - 240V, 50/60Hz			

1) means the motor speed range of 50Hz and 60Hz models respectively

## Chemical Resistant Diaphragm Pump

Fast pumping speed for industrial applications

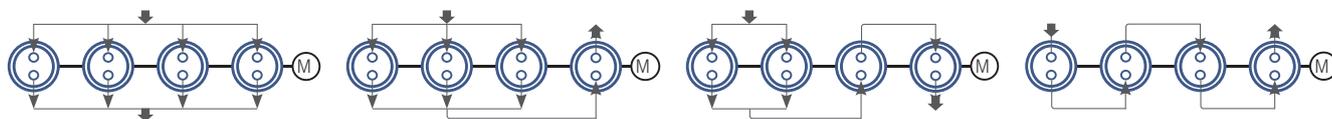
C1200 series chemical resistant diaphragm pumps are ideally suited for pumping aggressive gases and vapors in a vacuum range down to 1mbar and pumping speed up to 120L/min.

### Features

- > All wetted parts are made of chemical resistant materials
- > Fast pumping speed
- > Low noise
- > Overheat protection
- > Vacuum can be controlled by manual valve, vacuum controller
- > Easy and convenient for maintenance



The motor drives the pump head to vacuum



C1200E with single stage of pump head

C1200Z with double stage of pump head

C1200T with triple stage of pump head

C1200V with quadruple stage of pump head

Model / Specifications	C1200E	C1200Z	C1200T	C1200V
Order No.	W1031201	W1031202	W1031203	W1031204
Flow rate [m <sup>3</sup> /h] at atm. pressure	7.2	5.7	4.2	3
Flow rate [l/min] at atm. pressure	120	95	70	50
Ultimate vacuum [mbar abs.]	< 80	< 8	< 2	< 1
Max. Power P [W]	370	370	370	370
Max. current [A]	2	2	2	2
Motor speed [rpm]	1380	1380	1380	1380
Pump head	Single stage	Double stage	Triple stage	Quadruple stage
Hose connections of inlet	KF25 <sup>1)</sup>	KF25 <sup>1)</sup>	KF25 <sup>1)</sup>	KF25 <sup>1)</sup>
Hose connections of outlet	G1/2 <sup>1)</sup>	G1/2 <sup>1)</sup>	G1/2 <sup>1)</sup>	G1/2 <sup>1)</sup>
Noise [dB]	50	50	50	50
Dimensions W x H x D [mm]	440×270×240	440×270×240	440×270×240	440×270×240
Weight [kg]	21.5	21.5	21.5	21.5
Power supply	220~240V/50Hz	220~240V/50Hz	220~240V/50Hz	220~240V/50Hz

1) Included with Vacuum pump: 2 barbed fittings for tubing 16 mm inner dia.

## Chemical Resistant Diaphragm Pump

### Fast pumping speed for industrial applications

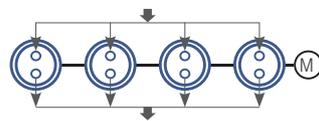
C2000 series chemical resistant diaphragm pumps are ideally suited for pumping aggressive gases and vapors in a vacuum range down to 1mbar and pumping speed up to 245L/min.

#### Features

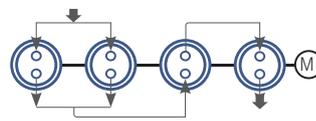
- > All wetted parts are made of chemical resistant materials
- > Fast pumping speed
- > Low noise
- > Overheat protection
- > Vacuum can be controlled by manual valve, vacuum controller
- > Easy and convenient for maintenance



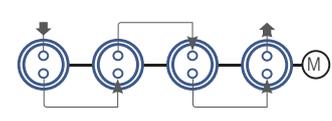
The motor drives the pump head to vacuum



C2000E with single stage of pump head



C2000T with triple stage of pump head



C2000V with quadruple stage of pump head

Model / Specifications	C2000E	C2000T	C2000V
Order No.	W1032001	W1032002	W1032003
Flow rate [m <sup>3</sup> /h] at atm. pressure	14.7	10.8	9.0
Flow rate [l/min] at atm. pressure	245	180	150
Ultimate vacuum [mbar abs.]	< 70	< 2	< 1
Max. Power P [W]	750	750	750
Motor speed [rpm]	1380	1380	1380
Pump head	Single stage	Triple stage	Quadruple stage
Hose connections of inlet	KF25 <sup>1)</sup>	KF25 <sup>1)</sup>	KF25 <sup>1)</sup>
Hose connections of outlet	G1/2 <sup>1)</sup>	G1/2 <sup>1)</sup>	G1/2 <sup>1)</sup>
Noise [dB]	60	60	60
Dimensions W x H x D [mm]	615×285×386	615×285×386	615×285×386
Weight [kg]	41	41	41
Power supply	220~240V/50Hz	220~240V/50Hz	220~240V/50Hz

## Chemical Resistant Diaphragm Pump Variable-frequency vacuum pump, fast pumping speed

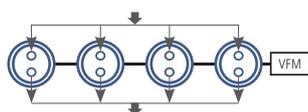
Chemical resistant diaphragm pumps are ideally suited for pumping aggressive gases and vapors in a vacuum range down to 1mbar.

### Features

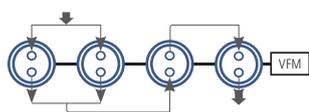
- > All wetted parts are made of chemical resistant materials
- > Variable frequency motor for fast pumping speed
- > Low noise
- > Overheat protection
- > Vacuum can be controlled by manual valve, vacuum controller or variable frequency controller
- > Easy and convenient for maintenance



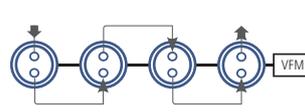
The motor drives the pump head to vacuum



C2000EEF with variable frequency motor and single stage of pump head



C1450TEF / C2000TEF with variable frequency motor and triple stage of pump head



C2000VEF with variable frequency motor and quadruple stage of pump head

The variable-frequency pump needs to be connected with the variable-frequency controller to control the vacuum by adjusting the speed of the motor, which is especially suitable for the vacuum control of large-capacity system. not only ensures a faster pumping speed, but also obtains a stable vacuum.



C1450TEF

Model / Specifications	C2000EEF	C2000TEF	C2000VEF	C1450TEF
Order No.	W1032011	W1032012	W1032013	1691450C
Flow rate [m <sup>3</sup> /h] at atm. pressure	14.4	10.2	7.8	
Flow rate [l/min] at atm. pressure	270	210	160	145
Ultimate vacuum [mbar abs.]	< 70	< 2	< 1	< 8
Max. Power P [W]	750	750	750	600
Motor speed [rpm]	0~1380	0~1380	0~1380	0~1400
Pump head	Single stage	Triple stage	Quadruple stage	Triple stage
Hose connections of inlet	KF25 <sup>1)</sup>	KF25 <sup>1)</sup>	KF25 <sup>1)</sup>	10mm
Hose connections of outlet	G1/2 <sup>1)</sup>	G1/2 <sup>1)</sup>	G1/2 <sup>1)</sup>	G1/2
Noise [dB]	60	60	60	65
Dimensions W x H x D [mm]	615×285×386	615×285×386	615×285×386	635×280×200
Weight [kg]	41	41	41	36.5
Power supply	200 - 240V, 50/60Hz			

## Vacuum Solvent Recovery System

This chemistry vacuum system has a wide range of applications like evacuation, evaporation and pumping of gases and vapors in chemical, biological and pharmaceutical laboratories. This system is ideal for high vacuum requirements with high boiling solvents. Typical applications are rotary evaporators and drying ovens.

The separator at the inlet, made of glass with a protective coating, retains particles and liquid droplets.

The waste vapor condenser at the outlet is highly efficient and compact. The condenser enables efficient recycling of solvents and active protection of the environment outstanding chemical resistance and superior vapor tolerance

- > exceptionally high performance even at low vacuum
- > excellent ultimate vacuum even with gas ballast
- > whisper quiet and very low vibration
- > excellent environmental friendliness due to efficient solvent recovery

- > Sealed system to enable a good distillation environment
- > Precise control of the evaporation process
- > Compact and environmental friendly design
- > Low noise

- > Buffer bottle prevents particles from damaging the pump
- > Direct electric connection
- > Ultimate vacuum range: 1-30 mbar
- > Flow rate range: 25-95 L/min

### CSH System

The inlet of the CSH System is connected to a segregation bottle, whereas the outlet is connected to a condenser, which is used to condensate and recover the solvent.

Model	CSH410	CSH510	CSH520	CSH610
Build in Pump Type	C410	C510	C520	C610
Power (W)	95	245	150	245
Ultimate Vacuum (mbar)	13	8	8	2
Max. Flow Rate (l/min)	25	34	50	34
Outlet Size (outer diameter in mm)	10	10	10	10
Weight (kg)	12.5	15.8	15.8	16.6
Order No.	900512	900513	900515	900514



CSH System  
Includes chemical resistant diaphragm pump, separator, condenser, tubing

### CSC System

The inlet of the CSC System is connected to a segregation flask, whereas the outlet is connected to a condenser, which is used to condensate and recover the solvent. In addition, the system contains a vacuum controller to set, display, and control the vacuum.

Fully automated vacuum generation system comprising chemical resistant diaphragm vacuum pump, base plate, high performance condenser, segregation flask, vacuum control device and valves.

Model	CSC410	CSC510	CSC520	CSC610
Build in Pump Type	C410	C510	C520	C610
Power (W)	95	245	150	245
Ultimate Vacuum (mbar)	13	8	8	2
Max. Flow Rate (l/min)	25	34	50	34
Outlet Size (outer diameter in mm)	10	10	10	10
Weight (kg)	16	19.3	19.3	20.1
Order No.	900522	900523	900525	900524



CSC System  
Includes chemical resistant diaphragm pump, vacuum controller, separator, condenser, tubing

## CSC Systems (Frequency conversion model)

- > New generation of intelligent vacuum technology, modular design, integrated variable frequency pumps and control units, compact design, light weight.
- > PID Self-tuning for vacuum control, the controller automatically changes the PID value according to the artificial intelligence logic algorithm, accurately adjusting the motor speed to get the precise vacuum value.
- > All parts in contact with gas and condensate are made of high-quality PTFE. The gas chamber and drive chamber are separated and sealed to ensure a long life of the mechanical parts
- > It can be directly connected to the power supply and working system.
- > Recovery flasks at air inlet to prevent solid particles and liquid water from entering the pump chamber.

Model	CSC900E	CSC920Z	CSC960T	CSC980V
Power (W)	400	400	400	400
Resolution	0.1mbar	0.1mbar	0.1mbar	0.1mbar
Setting range	0.1-1000mbar	0.1-1000mbar	0.1-1000mbar	0.1-1000mbar
Max. vacuum (mbar)	< 30	< 8	< 2	< 1
Max. Flow Rate (L/min)	95	75	60	40
Outlet (mm)	10	10	10	10
Weight (kg)	25	25	25	25
Noise Level (dB)	50	50	50	50
Order No.	900532	900533	900534	900535



CSC System (Frequency conversion)  
Includes chemical resistant diaphragm pump, variable frequency controller, separator, condenser, tubing

## Chemical Resistant Vacuum Controller

- > Wide measurement and control range
- > Control the vacuum down to 0.1 mbar
- > Up to 5-step program control
- > All parts that come into contact with gases and vapors are made of PTFE or highly durable ceramic to ensure high chemical resistance
- > Bright LED display and convenient on-touch control
- > RS-232 and analog connection available
- > Pressure release feature for easy vacuum system installation
- > Direct electric control of the vacuum pump
- > Energy saving and environmental friendly
- > Suitable for continuous operation

### Specifications

Model	DVR480	DVR480-Pro
Order No.	900414-1	900414-2
Voltage	100-240V, 50/60Hz	100-240V, 50/60Hz
Displayed Vacuum Accuracy	0.1 mbar	0.1 mbar
Controllable Range	0.1...1000 mbar	0.1...1000 mbar
Measurement Accuracy	0.25%FS	0.1%FS
Display	LED	LED
Control Mode	On-Touch	On-Touch
Timer / Program	Yes / Up to 5 Steps	Yes / Up to 5 Steps
Pressure Release Feature	Yes	Yes
Electrical Control of the Pump	Yes	Yes
Protection Category	IP40	IP40
Corrosion resistance	All parts that come into contact with gases are made of PTFE or highly durable ceramic to ensure the resistance to various acid, base, or organic solvent gases.	



DVR480



Analog Signal Input and Output Port  
RS-232 / RS-485, Modbus

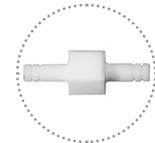
## Accessories For Chemical Resistant Diaphragm Pumps

### General Purpose Valves

A range of plug valves for applications with demand for pressure and temperature, with max. pressure at 1 bar and max. vacuum at 7mbar.

**Note:** Rapid changes in temperature in excess of 25°C /min may cause these valves to leak due to the expansion properties of PTFE. It can be sterilised at 135°C .

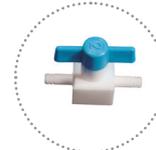
Order No.	Outer Diameter/mm	Bore (mm)	Order No.	Outer Diameter/mm	Bore (mm)
	mm	mm		mm	mm
<b>Straight Through Bayonet</b>			<b>Straight Through Connector</b>		
016.702.5.2	4.5	2	016.902.5.2	4.5	2
016.702.2	6.0	2	016.902.2	6.0	2
016.703.7.2	6.8	3	016.903.7.2	6.8	3
016.703.2	8.0	3	016.903.2	8.0	3
016.704.9.2	9.0	4	016.904.9.2	9.0	4
016.704.2	10.0	4	016.904.2	10.0	4
016.705.2	11.0	5	016.905.2	11.0	5
<b>Straight Through Screw</b>			<b>L-Shape Connector</b>		
016.1202.6.2	6	2	016.1002.5.2	4.5	2
016.1203.2	8	3	016.1002.2	6.0	2
016.1204.2	8	4	016.1003.7.2	6.8	3
			016.1003.2	8.0	3
			016.1004.9.2	9.0	4
			016.1004.2	10.0	4
			016.1005.2	11.0	5
<b>T-Shape Bayonet</b>			<b>T-Shape Connector</b>		
016.802.5.2	4.5	2	016.1102.5.2	4.5	2
016.802.2	6.0	2	016.1102.2	6.0	2
016.803.7.2	6.8	3	016.1103.7.2	6.8	3
016.803.2	8.0	3	016.1103.2	8.0	3
016.804.9.2	9.0	4	016.1104.9.2	9.0	4
016.804.2	10.0	4	016.1104.2	10.0	4
016.805.2	11.0	5	016.1105.2	11.0	5
<b>T-Shape Screw</b>			<b>4-Way Connector</b>		
016.1302.6.2	6	2	016.1112.5.2	4.5	2
016.1303.2	8	3	016.1112.2	6.0	2
016.1304.2	8	4	016.1113.7.2	6.8	3
			016.1113.2	8.0	3
			016.1114.9.2	9.0	4
			016.1114.2	10.0	4
			016.1115.2	11.0	5



Straight Through Connector



L-Shape Connector



Straight Through Bayonet



T-Shape Connector



Straight Through Screw



4-Way Connector



T-Shape Bayonet



T-Shape Screw

## Accessories For Chemical Resistant Diaphragm Pumps

### PTFE Connector

Order No.	Description
C410015	Diameter: 10mm, suitable for C300, 400, 410, 510, 600, 610, 900E, 920Z and 960T



PTFE Connector with O-ring

### Adapter ( Flange to screw thread )

Order No.	Description
C410055	KF25 to screw thread, suitable for C300, 400, 410, 510, 600, 610, 900E, 920Z and 960T



Adapter ( Flange to screw thread )

### Silencer

Order No.	Description
C900E030	suitable for chemical resistant diaphragm pumps



Silencer

### Diaphragm and Valve Plate Sets

Order No.	Description
410001	Diaphragm and Valve Plate Set, 1 diaphragm and 2 valve plate, suitable for C300/400/410
510001	Diaphragm and Valve Plate Set, 1 diaphragm and 2 valve plate, suitable for C510/600/610/900E/920Z/960T/980V
C410005	Diaphragm, suitable for C300/400/410, 1/pk
C510011	Diaphragm, suitable for C510/600/610/900E/920Z/960T/980V, 1/pk
C510013	Valve Plate, suitable for C300/400/410/510/600/610/900E/920Z/960T/980V, 1/pk



Diaphragm



Valve Plate

### Tubing

Order No.	Outer Diameter, mm	Inner Diameter, mm	Thickness, mm	Length, m
<b>PTFE Tubing</b>				
016.1706.01	6	4	1	1
016.1708.01	8	6	1	1
016.1712.01	12	10	1	1
016.1714.01	14	12	1	1
<b>Viton Tubing</b>				
168000-01	12	6	3	1
168001-01	14	8	3	1
168002-01	16	10	3	1

Length upon request (min. 1 m)



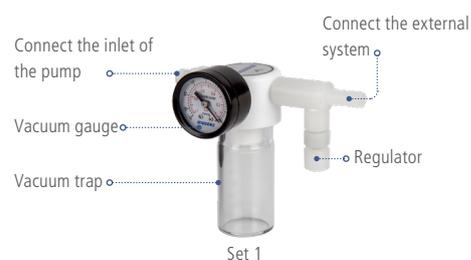
PTFE Tubing



Viton Tubing

### Chemical Resistant Vacuum Regulator / Filter Equipment

Order No.	Description
169311-06	Set 1 (Includes vacuum trap, regulator and vacuum gauge )
169312-06	Set 2 (Includes vacuum trap, regulator and digital meter DVM150C )
169313-06	Regulator



Part	Material	Part	Material
Pressure Regulating Valve	PVDF	Filter Bottle	Borosilicate Glass
Filter cartridge	PTFE	Adapter	PTFE
Filter Bracket	ABS	Vacuum Sensor	Stainless Steel

## Digital Vacuum Meter

- > Designed for chemical resistant diaphragm pumps
- > Compact design, flange connector, strong tightness
- > TFT high brightness screen, easy for observation from multiple angles or long distance
- > Can be directly connected to vacuum pump by flange connection

Models	DVM150C
Voltage	100-240V, 50/60Hz
Display screen	High brightness TFT
Display resolution	0.1-1000mbar
Testing range	0-1000mbar
Material of sensor	Ceramic
Material for contact parts of the gas	PTFE and Ceramic
Size of the meter	100*65*55mm
Order No.	15060-01



## Application Guide

### For rotary evaporator



Pump models	Max. vacuum (mbar)	Flow Rate (L/min)	Suitable for
C410	13 mbar	25 L/min	1L / 2.5L
C510	8 mbar	34 L/min	5L
C600	90 mbar	60 L/min	10L
C610	2 mbar	34 L/min	5L
C920Z	8 mbar	75 L/min	50L,100L

### For vacuum oven



Pump models	Max. vacuum (mbar)	Flow Rate (L/min)	Suitable for
C410	13 mbar	25 L/min	15L
C510	8 mbar	34 L/min	45L
C600	90 mbar	60 L/min	60L
C610	2 mbar	34 L/min	30L

### For vacuum concentrator



Pump models	Max. vacuum (mbar)	Flow Rate (L/min)
C410	13mbar	25L/min
C510	8 mbar	34 L/min
C600	90 mbar	60 L/min
C610	2 mbar	34 L/min

### For vacuum freeze dryer



Pump models	Max. vacuum (mbar)	Flow Rate (L/min)
R-8D	4x10 <sup>-4</sup> mbar	180 L/min
R-17D	4x10 <sup>-4</sup> mbar	283 L/min
R-24D	4x10 <sup>-4</sup> mbar	360 L/min
R-36D	4x10 <sup>-4</sup> mbar	540L/min

# Oil-Free Piston Vacuum Pump

Chemvak V series vacuum pump is a piston-powered, oil-free pump. With innovative electronic, mechanical technology and human design concept, compact and light weight, clean and maintenance free, safe and comfortable.

## Features

### No air pollution, maintenance free

Chemvak V series pumps are driven by piston, without the need of lubricant, regular oil changes and maintenance; with no oil pollution.

### Moisture trap with filter cartridge

Chemvak V series pumps are equipped with filter cartridge in air inlet to filter particle and moisture to prolong the life of pump.

### Oil-free

The oil-free piston vacuum pump provides continuous, reliable, high flow vacuum for your container.

### Vacuum regulator

Chemvak V series pumps are equipped with vacuum regulator to adjust vacuum.

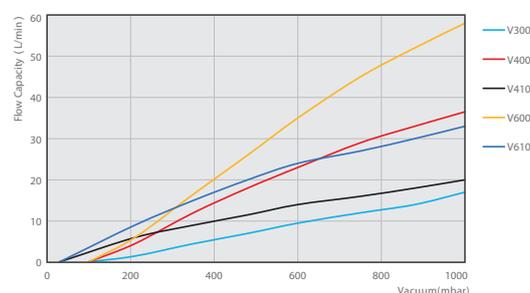
### Thermal protection device

Every motor of Chemvak V series pumps has a built-in thermal protection device to shut off the pump automatically when overheated and then resume working when the temperature cools down.

## Application

- > Biology laboratories
- > Food industry
- > Microbiological detection
- > Vacuum extraction
- > Liquid filtration
- > Vacuum drying
- > Suspended solids measurement

## Oil-Free Piston Vacuum Pumps flow curve



Note: Above data is based on the 220V/50Hz instrument



Model / Specifications	V300DC	V300	V400	V410	V430	V600	V610	V800	V810
Order No.	167330	167300	167400	167410	167430	167600	167610	167800	167810
Flow rate [m <sup>3</sup> /h] at atm. pressure	1.02	1.02	2.04	1.14	1.68	3.6	2.4	4.8	3
Flow rate [l/min] at atm. pressure	17	17	34	19	28	60	40	80	50
Ultimate vacuum [mbar abs.]	150	100	100	30	150/5.5	100	30	100	30
Max. Power P [W]	35	60	80	80	125	190	210	220	220
Max. current [A]	3	0.3	0.4	0.4	0.6	1	1	1	1
Motor speed [rpm]	1450	1450	1450	1450	1450	1450	1450	1450	1450
Hose connections [mm]	9	9	9	9	9	9	9	9	9
Noise [dB]	50	50	60	50	50	52	52	52	52
Dimensions W x H x D [mm]	272x142x165	272x142x165	310x152x165	310x152x165	247x235x200	350x170x195	350x170x195	350x170x195	350x170x195
Weight [kg]	4.4	4.4	5.4	5.4	5.5	8.6	8.6	8.6	8.6
Power supply	DC12	220V/50Hz							

## Accessories For Oil-Free Piston Pumps

### Connectors



Description	Suitable for	Order No.
<b>Connectors</b>		
Outlet Diameter 9.5 mm	Oil-Free Piston Pumps	167300-20
Outlet Diameter 8 mm	Oil-Free Piston Pumps	167300-21
Outlet Diameter 6.4 mm	Oil-Free Piston Pumps	167300-26
Outlet Diameter 4.8 mm	Oil-Free Piston Pumps	167300-23
Outlet Diameter 3.2 mm	Oil-Free Piston Pumps	167300-24

#### L-Shape Connector

Outlet Diameter 8 mm	Oil-Free Piston Pumps	167300-25
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#### Quick Connection Outlets

Outlet Diameter 12 mm	Oil-Free Piston Pumps	168100-12
Outlet Diameter 10 mm	Oil-Free Piston Pumps	168100-10
Outlet Diameter 8 mm	Oil-Free Piston Pumps	168100-08
Outlet Diameter 6 mm	Oil-Free Piston Pumps	168100-06
Outlet Diameter 4 mm	Oil-Free Piston Pumps	168100-04

### Silencer

Description	Suitable for	Order No.
Silencer	V300/400/410/V430	167300-42
Silencer	V600/610/V800/V810	167600-42

### Tubing

Outer Diameter mm	Inner Diameter mm	Thickness mm	Length m	Suitable for	Order No.
<b>PER Tubes</b>					
6	4	1	1	A,C,V Pumps	168010-01
8	6	1	1	A,C,V Pumps	168011-01
10	8	1	1	A,C,V Pumps	168012-01
12	10	1	1	A,C,V Pumps	168013-01
<b>Silicon Tubes</b>					
12	6	3	1	V Pumps	168020-01
14	8	3	1	V Pumps	168021-01
16	10	3	1	V Pumps	168022-01

Length upon request (min. 1m)

### Foot Pedal

Description	Suitable for	Order No.
Foot Pedal	Applicable to C and V Series Vacuum Pumps	167200-41

### Non-Chemical-Resistant Filtration Device

Description	Order No.
Non-Chemical-Resistant Filtration Device Set 1(incl. pressure gauge)	167300-05

# Rotary Vane Vacuum Pump

Oil-sealed Rotary Vane vacuum pumps are widely used traditional vacuum pumps in research and production, which can be used independently, or serve as backing pumps for molecular pumps or diffusion pumps. Wiggins' direct driven rotary vane pumps are available as one and two-stage versions, covering the range from desktop lab pumps to production line pumps, with low noise and stable working temperature for common voltages and frequencies, long lifespan, and outstanding reliability for chemical applications. Various application areas may include vacuum distillation, vacuum filtration, vacuum inspection, vacuum freeze drying, vacuum coating, vacuum leak detection, vacuum packaging, vacuum adsorption, etc.



R-4SN



R-8SN



R-16SN



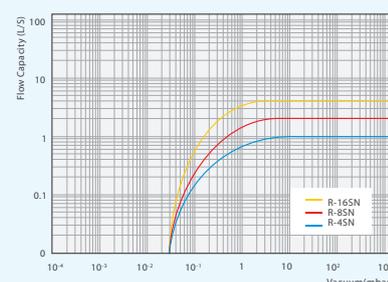
Oil level indication



Connector and adapter



## Pumping rate curve



Note: Above data is based on the 220V/50Hz instrument

Model / Specifications	R-4SN	R-8SN	R-16SN
Order No.	900101	900102	900104
Flow rate [m <sup>3</sup> /h] at atm. pressure	3	7.2	14.4
Flow rate [l/min] at atm. pressure	50	120	240
Ultimate vacuum [mbar abs.]	2.5 x10 <sup>-2</sup>	2.5 x10 <sup>-2</sup>	2.5 x10 <sup>-2</sup>
Max. Power P [W]	180	250	550
Motor speed [rpm]	1400	1400	1400
Hose connections of inlet	SAE 3/8" / UNF 7/16-20	SAE 3/8" / UNF 7/16-20	DN25KF
Hose connections of outlet	DN25KF	DN25KF	DN25KF
Oil filling volume [L]	0.25	0.33	1
IP code	IP40	IP40	IP40
Noise [dB]	54	54	54
Dimensions W x H x D [mm]	314×280×122	314×288×142	512×300×158
Weight [kg]	9	11	22
Power supply	220V/50Hz	220V/50Hz	220V/50Hz



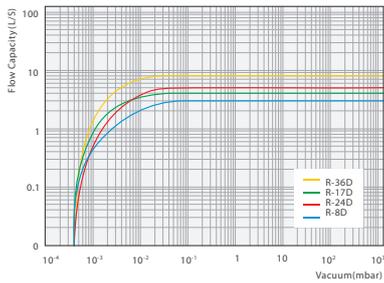
## Features

- > Compact structure
- > Very good sealing
- > No returning throughput
- > Oil-spout prevention
- > Low noise
- > Oil-observation window
- > Handle for easy transportation
- > High flow rate
- > Low and stable ultimate vacuum
- > High evaporation resistance
- > Comparatively high chemical resistance
- > High longevity
- > Low maintenance rate
- > Low oil mist
- > Gas ballast valve
- > Overcurrent protection

## Application

- > Vacuum distillation
- > Vacuum filtration
- > Vacuum testing
- > Vacuum freeze drying
- > Vacuum plating
- > Leak detection
- > Vacuum packaging
- > Vacuum sorption
- > As a backing pump for turbo-molecular pumps or diffusion pumps

## Pumping rate curve



Note: Above data is based on the 220V/50Hz instrument

Model / Specifications	R-8D	R-17D	R-24D	R-36D
Order No.	900111	900112	900025	900035
Flow rate [m <sup>3</sup> /h] at atm. pressure	10.8	16.8	21.6	32.4
Flow rate [l/min] at atm. pressure	180	280	360	540
Ultimate vacuum [mbar abs.]	4.0 x10 <sup>-4</sup>	4.0 x10 <sup>-4</sup>	4.0 x10 <sup>-4</sup>	4.0 x10 <sup>-4</sup>
Max. Power P [W]	550	750	750	1100
Motor speed [rpm]	1400	1400	1400	1400
Hose connections of inlet	DN25KF	DN25KF	DN25KF	DN25KF
Hose connections of outlet	DN25KF	DN25KF	DN25KF	DN25KF
Oil filling volume [L]	1.1	1.4	1.9	2.1
IP code	IP44	IP44	IP44	IP44
Noise [dB]	54	54	56	56
Dimensions W x H x D [mm]	485 x 252 x 165	510 x 252 x 165	570 x 288 x 205	600 x 288 x 205
Weight [kg]	29	31	37	39
Power supply	220V/50Hz	220V/50Hz	220V/50Hz	220V/50Hz

## Accessories for Rotary Vane Vacuum Pumps



900111-1      900101-1



Dust Filter



Flange adapter



Adapter



①

②

③④



### Oil Mist Filter, Condensate Separator, Dust Filter

The gas pumping out from the outlet often has some oil mist, which will effect the ambient, and sometimes is harmful. Chemvak's exhaust filter can almost stop all the oil mist and let it flow back to the pump and can reduce noise as well.

Name	Suitable for	Order No.
Oil mist trap	R-4SN, R-8SN (Direct connection, outlet DN25KF)	900101-1
Oil mist trap	R-16SN, R-8D, R-17D, R-24D, R-36D (Direct connection, outlet DN25KF)	900111-1
Filter element for oil mist trap	Replacement for 900111-1 oil mist trap	900111-2
Condensate separator	R-16SN, R-8D, R-17D, R-24D, R-36D	900111-3
Dust filter	R-16SN, R-8D, R-17D, R-24D, R-36D	900111-4

### Adppter

Name	Description	Order No.
Adppter	Specification: 3/8 SAE; Outlet Diameter: 8mm; R-4SN / R-8SN	168900-82
Adppter	Specification: 3/8 SAE; Outlet Diameter: 10mm; R-4SN / R-8SN	168900-83
Adppter	Specification: 3/8 SAE; Outlet Diameter: 12mm; R-4SN / R-8SN	168900-84
Flange adppter	Inlet: DN25KF; Outlet Diameter: 8mm; Suitable for R-16SN, R-8D, R-17D, R-24D, R-36D	168900-08
Flange adppter	Inlet: DN25KF; Outlet Diameter: 10mm; Suitable for R-16SN, R-8D, R-17D, R-24D, R-36D	168900-10
Flange adppter	Inlet: DN25KF; Outlet Diameter: 12mm; Suitable for R-16SN, R-8D, R-17D, R-24D, R-36D	168900-12
Flange adppter	Inlet: DN25KF; Outlet Diameter: 19mm; Suitable for R-16SN, R-8D, R-17D, R-24D, R-36D	168900-19
Flange adppter	Inlet: DN25KF; Outlet Diameter: 25mm; Suitable for R-16SN, R-8D, R-17D, R-24D, R-36D	168900-25

### Digital Vacuum Meter

- > Designed for rotary vane pumps
- > Compact design, flange connector, strong tightness
- > TFT high brightness screen, easy for observation from multiple angles or long distance
- > Can be directly connected to vacuum pump by flange connection, material for contact parts of the gas is stainless steel

Models	Display resolution	Testing range	Material of sensor	Size of the meter	Order No.
DVM150Pro	0.001mbar	0.001-9.999mbar	PIRANI	100*65*55mm	15060-02
No.	Description	Order No.			
①	Connector, KF16 to KF25, suitable for R-16SN, R-8D, R-17D, R-24D, R-36D	DVM150BJFL001			
②	Connector, KF16 to threaded connector, suitable for R-4SN, R-8SN	DVM150BJFL002			
③	KF16 flange clamp	BJFL003			
④	KF25 flange clamp	BJFL004			

### Highspeed Pump Oil

ChemVak highspeed oil employs a very good lubricant function, and has a high emulsion and oxidation resistance. It helps maintain the longevity of the system and reach a stable ultimate vacuum.

Specifications	Order No.
500 mL	900100-04
1 L	900100-05
5 L	900100-02
10 L	900100-03

### Thick Vacuum Tubing

Thick rubber tube, which can be used for very high-vacuum applications

Inner Diameter(mm)	Thickness (mm)	Length(m)	Order No.
8	5	1	22690-06
10	9.5	1	22690-11
12	9.5	1	22690-13
19	9.5	1	22690-21
25	9.5	1	22690-26

### Krytox LVP High-Vacuum Grease

Very stable, incombustible silicon grease, which is suitable for high-vacuum systems. In high-vacuum environments or high personal risk environments it can be used as a lubricant or sealing compound for plugs, valves, and connecting pieces. It can be used in laboratory or pilot equipment

Specifications	Order No.
2 oz.	8116-10

# Electrical Aspirator Pump

## Portable dual-channel, water-jet aspirator pump.

VE-11 creates a vacuum using an aspirator pump that is dependent on the vapor pressure of water. Ideal for rotary vacuum evaporators, decompressing distillatories, vacuum dryers, and vacuum filtering units.

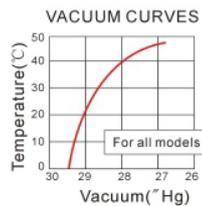
### Features

- > Economic use of resources
- > High flow rate up to 36 L/min
- > Vacuum can be regulated between 20 mmHg and 74 mmHg
- > Employs two water flow and gas suction devices, a check valve, and an upstream prevention device
- > Housing is made of PP to enhance longevity
- > Small amounts of liquid in the machine don't harm the system. Built-in circulating pump and water tank makes this unit portable and eliminates water waste.
- > Circulating pump continuously forces water quietly across a set of aspirators, and therefore clean and efficient.
- > Included (2) metal aspirators to create a vacuum with a built-in check valve to prevent backflow of water into the aspirator pump.
- > Submerged parts: 304 stainless steel, polypropylene silicone, and nickel-coated brass.
- > Tank features a drain port and spigot for easy water changes.
- > Unlike other vacuum pumps the VE-11 can suck a little bit of solvent. (water)



### Included Accessories

- > Tank / Aspirating pump / Tank closure.
- > Two aspirators.
- > Two ø6mm (0.02") silicone rubber tube 20cm (0.7 ft) in length and an additional ø6mm (0.02") silicone rubber tube 100cm (3.3 ft) in length.



### VE-11

with optional vacuum gauge / regulator

### Specifications & Ordering Information

Model	VE-11	
Max. Flow Rate	36 L/min (18 L/min*2)	
Water Tank Capacity(L)	9.5 L	
Motor Power(W)	150 W	
Material (Water Tank)	Polypropylene	
Dimensions	Water Tank(WxDxH)	298 x 210 x 227
	Case(WxDxH)	330 x 265 x 390
	Absorption nozzle	9.5 Ø x 2
	Overflow nozzle	17 Ø
Safety Devices	Fuse, check valve, overheat protection	
Weight (kg)	5.7	
Order No.	900701	

### Application Area

- > Filtration
- > Distillation
- > Rotary evaporation



Vacuum Gauge / Regulator (Option)

### Optional Accessories

- > Vacuum gauge / regulator: to monitor and control the vacuum pressure. (between 0.0267~0.0998MPa / 7.9~29.5" Hg)
- > Cooling coil: to prevent vacuum from decreasing due to temperature increase.

### Accessories

Description	Order No.
Vacuum Gauge / Regulator	900701-1
VC-10 Cooling Coil	900701-2
ET-02 Aspirator	900701-3



VC-10 Cooling Coil



ET-02 Aspirator



## Single position vacuum filtration system

### Portable vacuum filtration system



### Bench-top vacuum filtration system



### Vacuum pump and filtration sets



## Multi-position vacuum filtration system

### Spin-lock type



BioVac 330B

BioVac 630B

Quick installation, easy to clean

P63

### Quick-insert type



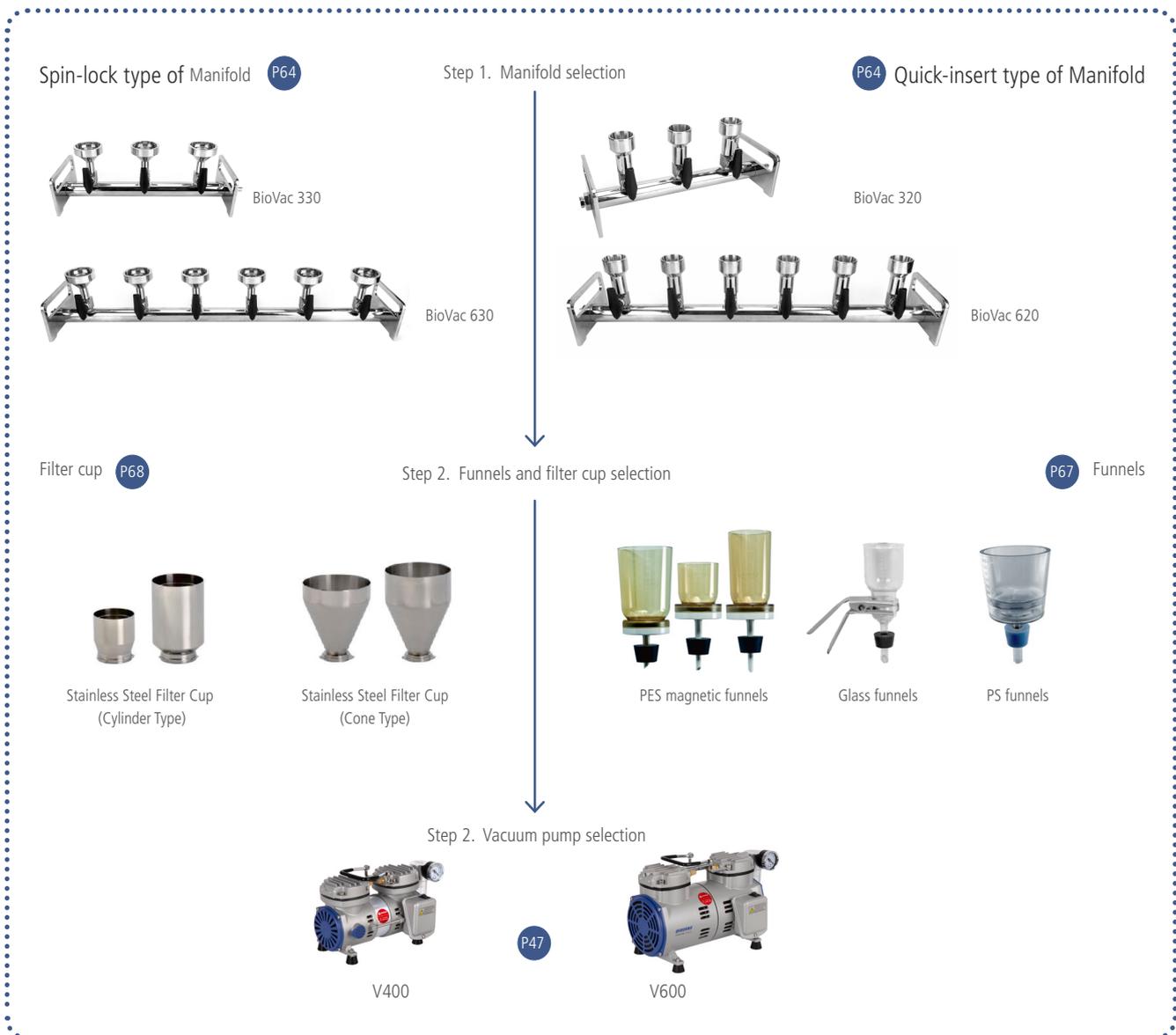
BioVac 320A

BioVac 320B

Suitable for magnetic funnel, glass funnel, quick installation

P63

### Vacuum pump and filtration sets



# Portable vacuum filtration system

## All-In-One Systems

- > Compact and portable design
- > Combines all necessary items for filtration
- > Large varieties of filtration flasks
- > Oil-free vacuum provision
- > Easy maintenance
- > Low noise level
- > Manual pressure control
- > Availability of chemical resistant systems



Product	Content	Application	Contained Filtration Glass Set
VF203A	<ul style="list-style-type: none"> <li>&gt; Oil-free vacuum pump</li> <li>&gt; VF6 filtration flask set</li> <li>&gt; Silicone tube</li> <li>&gt; 0.2 µm water-blocking filter</li> <li>&gt; Fiberglass filter membrane fiberglass filter membrane (47mm / 1 µm)</li> </ul>	Normal filtration Suspended solids measurement	
VF203B	<ul style="list-style-type: none"> <li>&gt; Oil-free vacuum pump</li> <li>&gt; VF2 filtration flask set</li> <li>&gt; Dragon 100 lab burner</li> <li>&gt; Silicone tube</li> <li>&gt; 0.2 µm water-blocking filter</li> <li>&gt; Fiberglass filter membrane fiberglass filter membrane (47mm / 1 µm)</li> </ul>	Normal filtration Microorganism determination	
VF205A	<ul style="list-style-type: none"> <li>&gt; Strong oil-free vacuum pump</li> <li>&gt; VF6 filtration flask set</li> <li>&gt; Silicone tube</li> <li>&gt; 0.2 µm water-blocking filter</li> <li>&gt; Fiberglass filter membrane fiberglass filter membrane (47mm / 1 µm)</li> </ul>	Normal filtration Suspended solids measurement	
VF205B	<ul style="list-style-type: none"> <li>&gt; Strong Oil-free vacuum pump</li> <li>&gt; VF2 filtration flask set</li> <li>&gt; Dragon 100 lab burner</li> <li>&gt; Silicone tube</li> <li>&gt; 0.2 µm water-blocking filter</li> <li>&gt; Fiberglass filter membrane fiberglass filter membrane (47mm / 1 µm)</li> </ul>	Normal filtration Microorganism determination	
VF204	<ul style="list-style-type: none"> <li>&gt; Chemical resistant vacuum pump</li> <li>&gt; VF3 filtration flask set</li> <li>&gt; High-pressure resistant tube</li> <li>&gt; 0.2 µm water-blocking filter</li> </ul>	HPLC Gas chromatography AA micro-analysis Mobile phase decontamination	
VF214	<ul style="list-style-type: none"> <li>&gt; Strong chemical resistant vacuum pump</li> <li>&gt; VF3 filtration flask set</li> <li>&gt; High-pressure resistant tube</li> <li>&gt; 0.2 µm water-blocking filter</li> </ul>	HPLC Gas chromatography AA micro-analysis Mobile phase decontamination	

## Specifications

Model	VF 203A	VF 203B	VF 205A	VF 205B	VF 204	VF 214
Working mode	All-In-One Filtration System		All-In-One Filtration System		Chemical Resistant Vacuum Filtration System	
Power (W)	60	60	80	80	60	95
Ultimate vacuum(mbar)	150	150	150	150	100	13
Max. Flow Rate(L/min)	17 L/min	17 L/min	34 L/min	34 L/min	22 L/min	25 L/min
Tube I.D. (mm)	8	8	8	8	8	8
Motor Speed (rpm)	1450	1450	1450	1450	1450	1450
Weight (kg)	7.1	7.1	7.5	7.5	7.1	8.3
Noise Level (dB)	50	50	60	60	50	50
Contained Filtration Glass Set	VF6	VF2	VF6	VF2	VF3	VF3
Order No.	167203A	167203B	167205A	167205B	169204	169214

# Bench-top vacuum filtration system

## Features

- > Wide range of pumps and filtration flasks
- > High quality components
- > Quick filtration results
- > Easily exchangeable elements

## Application

- > Suspended solids measurement
- > HPLC
- > Gas chromatography
- > AA micro-analysis
- > Mobile phase decontamination
- > Food and beverages industry
- > Pharma industry



V300A



V300B



V300SS



C300A

Product	Features	Components	Application
V300A	<ul style="list-style-type: none"> <li>&gt; Modular design</li> <li>&gt; Environmental friendly</li> <li>&gt; Maintenance-free</li> <li>&gt; Low noise</li> <li>&gt; Added filters for enhanced pump longevity</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Oil-free vacuum pump</li> <li>&gt; VF6 filtration flask set</li> <li>&gt; Silicone tube</li> <li>&gt; Fiberglass filter membranes (47mm / 1 μm)</li> <li>&gt; PTFE disc filter</li> </ul>	<ul style="list-style-type: none"> <li>Water quality measurement</li> <li>Normal liquid filtration</li> </ul>
V300B	<ul style="list-style-type: none"> <li>&gt; Modular design</li> <li>&gt; Magnetic Stability Cup</li> <li>&gt; Environmental friendly</li> <li>&gt; Maintenance-free</li> <li>&gt; Low noise</li> <li>&gt; Added filters for enhanced pump longevity</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Oil-free vacuum pump</li> <li>&gt; VF1 magnetic filtration flask set</li> <li>&gt; Silicone tube</li> <li>&gt; Fiberglass filter membranes (47mm / 1 μm)</li> <li>&gt; PTFE disc filter</li> </ul>	<ul style="list-style-type: none"> <li>Suspended solids measurement</li> <li>Normal liquid filtration</li> </ul>
V300SS	<ul style="list-style-type: none"> <li>&gt; Modular design</li> <li>&gt; Flame-sterilizable</li> <li>&gt; Spin-Lock system</li> <li>&gt; Environmental friendly</li> <li>&gt; Maintenance-free</li> <li>&gt; Low noise</li> <li>&gt; Added filters for enhanced pump longevity</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Oil-free vacuum pump</li> <li>&gt; VF2 filtration flask set</li> <li>&gt; Dragon 100 lab burner</li> <li>&gt; Silicone tube</li> <li>&gt; Fiberglass filter membranes (47mm / 1 μm)</li> <li>&gt; PTFE disc filter</li> </ul>	<ul style="list-style-type: none"> <li>Microbiological detection</li> <li>All kinds of liquid filtration</li> </ul>
C300A	<ul style="list-style-type: none"> <li>&gt; Chemical Resistance</li> <li>&gt; Modular design</li> <li>&gt; Environmental friendly</li> <li>&gt; Low maintenance</li> <li>&gt; Low noise</li> <li>&gt; Added filters for enhanced pump longevity</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Chemical resistant vacuum pump</li> <li>&gt; VF3 filtration flask set</li> <li>&gt; High-pressure resistant tube</li> <li>&gt; PTFE disc filter</li> </ul>	<ul style="list-style-type: none"> <li>Sample pretreatment for HPLC, GC, and AA analysis</li> <li>All kinds of solvent purification (mobile phase)</li> </ul>

## Specifications

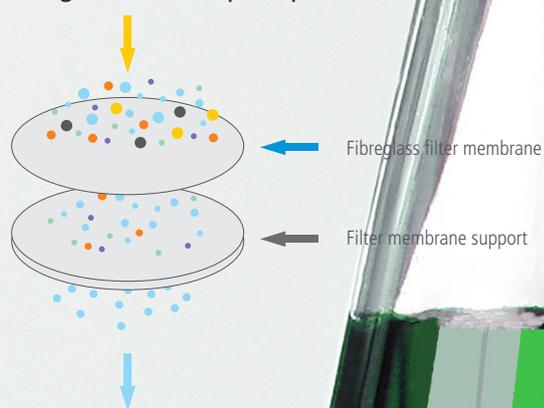
Model	V300A	V300B	V300SS	C300A
Flow Rate of the Pump(l/min)	17 l/min	17 l/min	17 l/min	22 l/min
Ultimate Vacuum(mbar)	150 mbar	150 mbar	150 mbar	210 mbar
Filtration Glass Set	VF6	VF1	VF2	VF3
Suction Bottle Capacity(ml)	1000 ml	1000 ml	1000 ml	1000 ml
Filter Diameter(mm)	47/50 mm	47/50 mm	47/50 mm	47/50 mm
Filter Flask Capacity(ml)	300 ml	300 ml	100 ml	300 ml
Filter Flask Material	(Glass Filter Cup)	(Magnetic Filter Cup)	(Stainless Steel Filter Cup)	(Glass Filter Cup)
Effective Filtration Area(cm <sup>2</sup> )	8 cm <sup>2</sup>	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>	8 cm <sup>2</sup>
Tube I.D. (mm)	8 mm	8 mm	8 mm	8 mm
Order No.	167301	167302	167303	169301

# Filtration Set

- > Vacuum filtration technique is widely used in liquid filtration in microbiological detection, suspended solid detection, sample pre-process or solvent purification, mostly for microanalysis of HPLC, GC, or AA in food, medicine, beverage, drinking water, etc.
- > This unique design combines a filtration funnel with a receiver flask with drain, together with magnetic weighted base, guaranteeing the efficiency and stability.

Model	VF1	VF2	VF3	VF5	VF6	VF7	VF8
Funnel	PES	SUS316	Borosilicate Glass	Borosilicate Glass	Borosilicate Glass	Borosilicate Glass	Borosilicate Glass
Funnel Base	PES	SUS316	Borosilicate Glass	Borosilicate Glass	Borosilicate Glass	Borosilicate Glass	Borosilicate Glass
Material Membrane Support	PP	SUS316	Borosilicate Glass	Borosilicate Glass	Borosilicate Glass	Stainless Steel Micro-Strainer	Stainless Steel Micro-Strainer
Stopper	Silicon	Silicon	--	Silicon	Silicon	Silicon	Silicon
Receiver Flask with Drain	Borosilicate Glass	Borosilicate Glass	Borosilicate Glass	Borosilicate Glass	Borosilicate Glass	Borosilicate Glass	Borosilicate Glass
Funnel Capacity	300 ml	100 ml	250 ml	15ml	250 ml	250 ml	15ml
Filtration Flask Capacity	1000 ml	1000 ml	1000 ml	125ml	1000 ml	1000 ml	125ml
Filter Diameter	47 mm	47 mm	47 mm	25mm	47 mm	47 mm	25mm
Effective Filtration Area	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>	8 cm <sup>2</sup>	2.2cm <sup>2</sup>	8 cm <sup>2</sup>	8 cm <sup>2</sup>	2.2cm <sup>2</sup>
Tube I.D. (mm)	8 mm	8 mm	8 mm	8 mm	8 mm	8 mm	8 mm

Drawing for filtration principle



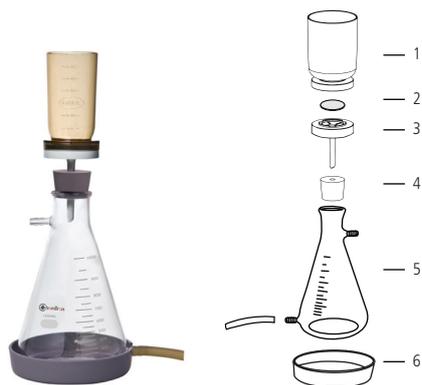
Model	VF9	VF10	VF11	VF12	VF30	VF32	VF33
Funnel	SUS316	Borosilicate Glass	SUS316	Borosilicate Glass	PES	SUS316	SUS316
Funnel Base	SUS316	Borosilicate Glass	SUS316	Borosilicate Glass	PES	SUS316	SUS316
Material Membrane Support	SUS316	Borosilicate Glass	SUS316	Borosilicate Glass	PP	SUS316	SUS316
Stopper	Silicon	--	Silicon	Silicon	Silicon	Silicon	Silicon
Receiver Flask with Drain	Borosilicate Glass						
Funnel Capacity	300 ml	1000 ml	500 ml	300 ml	300 ml	100 ml	300 ml
Filtration Flask Capacity	1000 ml	4000 ml	2000 ml	1000 ml	1000 ml	1000 ml	1000 ml
Filter Diameter	47 mm						
Effective Filtration Area	9.6 cm <sup>2</sup>						
Tube I.D. (mm)	8 mm						

## Order Information

### 300ml Magnetic Filtration set

47mm, PP membrane support

For solvent purification, general filtration and waste inhalation



### 100ml Stainless Steel Filtration Set

47mm, Stainless steel membrane support

For filtration requiring the sterilization such as microbiology test or use for purification of corrosive liquid, solvent etc.



#### VF1 167200-01

Magnetic filter funnel 300 ml (1+2+3+4)	167100-18
1 300 ml Magnetic filter cup	167000-34
2 PP Membrane support	167000-37
3 PES Filtration base	167000-35
4 Silicone stopper	167110-16
5 Receiver flask with drain, 1000 ml	167300-08
6 Weighted base	167200-04

#### VF2 167200-02

100ml Stainless steel filter holder (1+2+3+4)	167103-10
1 Stainless steel funnel, 100 ml	167103-61
2 Stainless steel support screen	167100-31
3 Stainless steel support base	167103-60
4 Silicone stopper	167110-16
5 Receiver flask with drain, 1000 ml	167300-08
6 Weighted base	167200-04

### 300ml Stainless Steel Filtration Set

47mm, Stainless steel membrane support

For filtration requiring the sterilization such as microbiology test or use for purification of corrosive liquid, solvent etc.



VF9	167200-09
300ml Stainless steel filter holder (1+2+3+4)	167103-30
1 Stainless steel funnel, 300 ml	167103-63
2 Stainless steel membrane support	167100-31
3 Stainless steel support base	167103-60
4 Silicone stopper	167110-16
5 Receiver flask with drain, 1000 ml	167300-08
6 Weighted base	167200-04

### 500ml Stainless Steel Filtration Set

47mm, Stainless steel membrane support

For filtration requiring the sterilization such as microbiology test or use for purification of corrosive liquid, solvent etc.

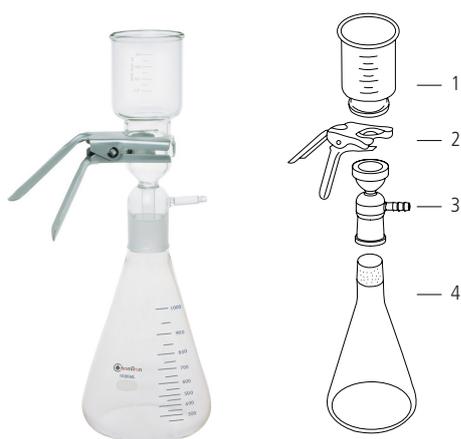


VF11	167200-11
500ml Stainless steel filter holder (1+2+3+4)	167103-50
1 Stainless steel funnel, 500 ml	167103-65
2 Stainless steel membrane support	167100-31
3 Stainless steel support base	167103-60
4 Silicone stopper	167110-16
5 Receiver flask with drain, 2000 ml	167200-13

### 250ml Glass Filtration Set

47mm, Sintered glass membrane support

Ideal for the purification of organic, corrosive liquid such as solvent (mobile phase) for HPLC analysis.

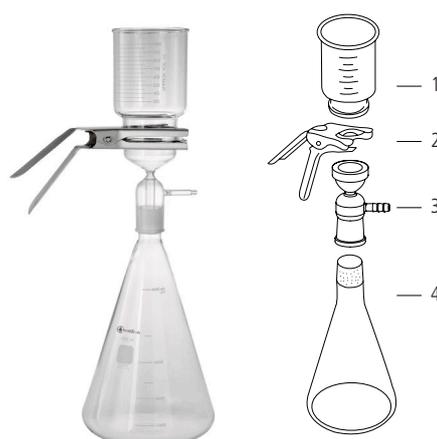


VF3	167200-03
250ml Glass filter holder (1+2+3)	167120-30
1 Glass funnel, 250 ml	167210-03
2 Aluminum magnesium alloy clamp	167240-01
3 Glass support base & tubulated cap	167230-01
4 Ground joint flask, 1000 ml	167250-01

### 1000ml Glass Filtration Set

47mm, Sintered glass membrane support

Ideal for the purification of organic, corrosive liquid such as solvent (mobile phase) for HPLC analysis.

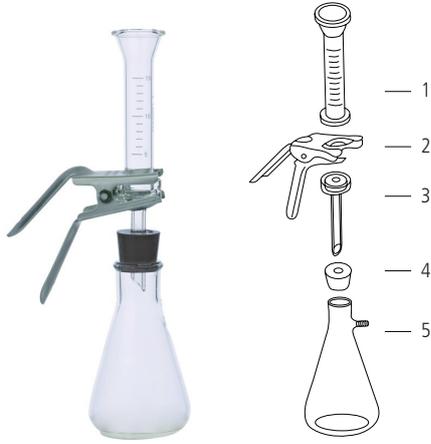


VF10	167200-10
1000ml Glass filter holder (1+2+3)	167210-35
1 Glass funnel, 1000 ml	167210-10
2 Anodized aluminum clamp	167240-01
3 Glass support base & tubulated cap	167230-01
4 Ground joint flask, 4000 ml	167250-06

### 15ml Small Volume Glass Filtration Set

25mm, Sintered glass membrane support

Ideal for small volume vacuum filtration for biological analysis or particulate contamination analysis.



#### VF5

167200-05

15 ml Glass filter holder (1+2+3+4)	167120-32
1 Glass funnel, 15 ml	167220-15
2 Anodized aluminum clamp	167240-05
3 Glass support base	167230-04
4 Silicone stopper	167110-18
5 125 ml Receiver flask	167250-05

### 15ml Small Volume Glass Filtration Set

25mm, Stainless steel membrane support

Ideal for small volume vacuum filtration for biological analysis or particulate contamination analysis.



#### VF8

167200-08

15 ml Glass filter holder (1+2+3+4+5)	167120-40
1 Glass funnel, 15 ml	167220-15
2 Anodized aluminum clamp	167240-05
3 Stainless steel support screen	167230-32
4 Glass support base	167230-08
5 Silicone stopper	167110-18
6 125 ml Receiver flask	167250-05

### 250ml Glass Filtration Set

47mm, Sintered glass membrane support

Ideal for solvent purification and general filtration for microbiology, suspended solid analysis etc.



#### VF6

167200-06

250ml Glass filter holder (1+2+3+4)	167120-31
1 Glass funnel, 250 ml	167210-03
2 Anodized aluminum clamp	167240-01
3 Glass support base	167230-03
4 Silicone stopper	167110-17
5 Receiver flask, 1000 ml	167250-03

### 250ml Glass Filtration Set

47mm, Stainless steel membrane support

Ideal for solvent purification and general filtration for microbiology, suspended solid analysis etc.



#### VF7

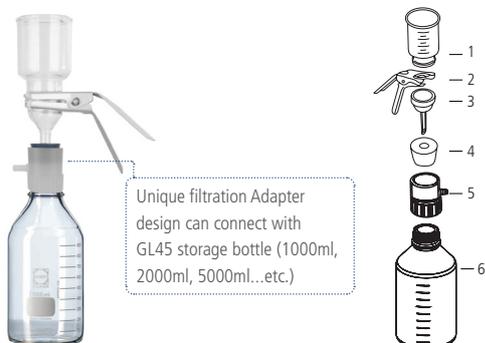
167200-07

250ml Glass filter holder (1+2+3+4+5)	167120-33
1 250 ml Glass Filter Cup	167210-03
2 Anodized aluminum clamp	167240-01
3 Stainless steel support screen	167230-31
4 Glass support base	167230-07
5 Silicone stopper	167110-17
6 Receiver flask, 1000 ml	167250-03

## 250ml Glass Filtration Set

47mm, Sintered glass membrane support

Ideal for the purification of organic, corrosive liquid such as solvent (mobile phase) for HPLC analysis.



VF12	167200-12
250ml Glass filter holder (1+2+3+4)	167120-31
1 Glass funnel, 250 ml	167210-03
2 Anodized aluminum clamp	167240-01
3 Glass support base	167230-03
4 Silicone stopper	167110-16
5 Filtration adapter	167000-65
6 1000ml Glass storage bottle (Duran)	21801545

## 300ml PES Magnetic Filtration set

47mm, PP membrane support, float to prevent overflow

For general filtration and waste inhalation



VF30	197010-30
Magnetic filter funnel 300 ml (2+3+4+5)	167100-18
1 PP Funnel Lid	167130-32
2 Magnetic filter cup, 300ml	167000-34
3 PP Membrane support	167000-37
4 PES support base	167000-35
5 Silicone stopper	167110-16
PC waste bottle with cover,1000 ml (6+7+8)	197000-11-PC
6 PC cover	197000-32-PC
7 Overflow protection	197000-39
8 PC bottle, 1000 ml	197000-31-PC

## 100ml Stainless Steel Filtration Set

47mm, Stainless steel membrane support, float to prevent overflow

For filtration requiring the sterilization such as microbiology test or use for purification of corrosive liquid, solvent etc.



VF32	197010-32
100ml Stainless steel filter holder (1+2+3+4)	167103-10
1 Stainless steel funnel, 100 ml	167103-61
2 Stainless steel membrane support	167100-31
3 Stainless steel support base	167103-60
4 Silicone stopper	167110-16
PC waste bottle with cover,1000 ml (5+6+7)	197000-11-PC
5 PC cover	197000-32-PC
6 Overflow protection	197000-39
7 PC bottle, 1000 ml	197000-31-PC

## 300ml Stainless Steel Filtration Set

47mm, Stainless steel membrane support, float to prevent overflow

For filtration requiring the sterilization such as microbiology test or use for purification of corrosive liquid, solvent etc.



VF33	197010-33
300ml Stainless steel filter holder (1+2+3+4)	167103-30
1 Stainless steel funnel, 300 ml	167103-63
2 Stainless steel membrane support	167100-31
3 Stainless steel support base	167103-60
4 Silicone stopper	167110-16
PC waste bottle with cover,1000 ml (5+6+7)	197000-11-PC
5 PC cover	197000-32-PC
6 Overflow protection	197000-39
7 PC bottle, 1000 ml	197000-31-PC

# Multi-Position Filtration System

## Features

The manifold is made of SS316

All parts of a manifold are made of SS316 which are excellent chemical resistant and can be fast sterilized by autoclaving.

The spin-lock design

The manifold uses a spin-lock connection which facilitates fast and stable installation without clamps.

Individual control valve

Each branch permits individual control.

Compatible to different sizes of funnels

manifolds are available to fit 100, 300, 500ml funnel at your option.

Magnetic filter holder is included

Magnetic filter holder allows one-handed operation, and prevents possible twisting and tearing of the membrane.

## Application

- > Biological laboratories
- > Chemical industry
- > Microbiological detection
- > All kinds of liquid filtration



## Specifications

Model	BioVac330B	BioVac630B	BioVac320A	BioVac320B
Max. Flow Rate	34 l/min	58 l/min	34 l/min	34 l/min
Ultimate Vacuum(mbar)	150 mbar	150 mbar	150 mbar	150 mbar
Waste Bottle (Capacity in ml/ Material)	3000 ml, PC	3000 ml, PC	3000 ml, PC	3000 ml, PC
Number of Branches	3	6	3	3
Manifold Material	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Filter Diameter(mm)	47 / 50 mm	47 / 50 mm	47 / 50 mm	47 / 50 mm
Filter Cup (Capacity in ml/ Material)	100 ml Stainless Steel	100 ml Stainless Steel	300 ml Magnetic	250 ml Glass
Effective Filtration Area(cm <sup>2</sup> )	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>
Tube I.D. (mm)	8 mm	8 mm	8 mm	8 mm

## configuration

	Model	Order No.						
Model	BioVac330B	167403	BioVac630B	167601	BioVac320A	167405	BioVac320B	167406
Contains								
Pump	V400	167400	V600	167600	V400	167400	V400	167400
Manifold	BioVac330 3-branch Stainless steel	167103-23	BioVac630 6-branch Stainless steel	167103-26	BioVac320 3-branch Stainless steel	167110-23	BioVac320 3-branch Stainless steel	167110-23
Filter Cups	3 x 100 ml Stainless steel	167103-61	6 x 100 ml Stainless steel	167103-61	3 x 300 ml PES (magnetic base)	167100-18	3 x 250 ml Glass	167120-31
Waste Bottle	3000 ml / PC	167200-33						
Bunsen Burner	Dragon 100	177100-00	Dragon 100	177100-00	Without	Without	Without	Without
Filter Membranes	Pall GN-6 MCE *	167100-52						
Silicon Tube	2 x 1m	168021-01						

\* Pall GN-6 MCE / 0.45µm, 200 pcs

## Multi-Position Manifolds

Vacuum filtration is widely used in laboratory for various tests such as microorganism test in food, pharmacy, beverage, drinking water industries and suspended solid test in environment protection field, sample or solution pretreatment before HPLC, GC, AA analysis etc.

WIGGENS is one of the leading suppliers of vacuum filtration apparatuses in the world. WIGGENS manufactures quality and cost effective vacuum pumps, compressors, manifolds as well as funnels and filters for different applications, wiggens offer you total solution for vacuum filtration.

### Features

#### The manifold is made of SS316

All parts of BioVac 330, 630 manifold are made of SS316. which are excellent chemical resistant and can be fast sterilized by flame and steam.

#### The spin-lock design

The manifold uses a spin-lock connection which facilitates fast and stable installation without clamps

#### Individual control valve

Each branch permits individual control.

#### Compatible to different sizes of funnels

BioVac 330 and 630 manifolds are available to fit 100, 300, 500ml funnel at your option.



3-branch stainless steel manifold BioVac330  
Order No.: 167103-23



Stainless Steel Filter Cup (Cylinder Type)



3-branch Stainless Steel Manifold set (100ml, 300ml, 500ml)  
Order No.: 167103-24, 167101-23, 167101-24

### 3-branch Stainless Steel Manifold set

Model	BioVac330	BioVac331	BioVac333	BioVac335
Order No.	167103-23	167103-24	167101-23	167101-24
Number of Branches	3	3	3	3
Filter Diameter(mm)	47/50	47/50	47/50	47/50
Effective Filtration Area	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>
Tube I.D. (mm)	8	8	8	8
Dimensions(L×W×H) cm	50×15×15cm	80×15×20cm	50×15×23cm	50×15×26cm
Filter Cup Material	/	Stainless Steel	Stainless Steel	Stainless Steel
Filter Cup Capacity (mL)	/	100ml	300ml	500ml
Product Description	3-branch stainless steel manifold BioVac 330	3-branch stainless steel manifold BioVac 330 + 3 x 100ml Stainless Steel Filter Cups	3-branch stainless steel manifold BioVac 330 +3 x 300ml Stainless Steel Filter Cups	3-branch stainless steel manifold BioVac 330+3 x 500ml Stainless Steel Filter Cups



The 6-branch stainless steel manifold BioVac 630  
Order No.: 167103-26



Stainless Steel Filter Cup (Cylinder Type)



6-branch Stainless Steel Manifold set BioVac 631  
Order No.: 167103-27

### 6-branch Stainless Steel Manifold set

Model	BioVac630	BioVac631	BioVac633	BioVac635
Order No.	167103-26	167103-27	167101-26	167101-27
Number of Branches	6	6	6	6
Filter Diameter(mm)	47/50	47/50	47/50	47/50
Effective Filtration Area	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>
Tube I.D. (mm)	8	8	8	8
Dimensions(L×W×H) cm	80×15×15	80×15×20	80×15×23	80×15×26
Filter Cup Material	/	Stainless Steel	Stainless Steel	Stainless Steel
Filter Cup Capacity (mL)	/	100ml	300ml	500ml
Product Description	6-branch stainless steel manifold BioVac 630	6-branch stainless steel manifold BioVac 630 + 6 x 100ml Stainless Steel Filter Cups	6-branch stainless steel manifold BioVac 630 +6 x 300ml Stainless Steel Filter Cups	6-branch stainless steel manifold BioVac 630+6 x 500ml Stainless Steel Filter Cups

## Multi-Position Filtration Manifolds

### 3-branch Stainless Steel Manifold set



Model	BioVac320	BioVac341	BioVac343	BioVac345	BioVac351	BioVac353	BioVac355	BioVac363	BioVac364
Order No.	167110-23	167111-31	167111-33	167111-35	167112-31	167112-33	167112-35	167113-33	167113-34
Number of Branches	3	3	3	3	3	3	3	3	3
Filter Diameter(mm)	47/50	47/50	47/50	47/50	47/50	47/50	47/50	47/50	47/50
Effective Filtration Area	9.6 cm <sup>2</sup>								
Tube I.D. (mm)	8	8	8	8	8	8	8	8	8
Dimensions(L×W×H) cm	50×15×12	50×15×23	50×15×27	50×15×30	50×15×30	50×15×30	50×15×33	50×15×30	50×15×30
Filter Cup Material	Without	Stainless Steel	Stainless Steel	Stainless Steel	Magnetic	Magnetic	Magnetic	Borosilicate Glass	Glass funnel with Micro-Strainer
Filter Cup Capacity (mL)	Without	100	300	500	150	300	500	250	250

### 6-branch Stainless Steel Manifold set



Model	BioVac620	BioVac641	BioVac643	BioVac645	BioVac651	BioVac653	BioVac655	BioVac663	BioVac664
Order No.	167110-26	167111-61	167111-63	167111-65	167112-61	167112-63	167112-65	167113-63	167113-64
Number of Branches	6	6	6	6	6	6	6	6	6
Filter Diameter(mm)	47/50	47/50	47/50	47/50	47/50	47/50	47/50	47/50	47/50
Effective Filtration Area	9.6 cm <sup>2</sup>								
Tube I.D. (mm)	8	8	8	8	8	8	8	8	8
Dimensions(L×W×H) cm	80×15×12cm	80×15×23cm	80×15×27cm	80×15×30cm	80×15×30cm	80×15×30cm	80×15×33cm	80×15×30cm	80×15×30cm
Filter Cup Material	Without	Stainless Steel	Stainless Steel	Stainless Steel	Magnetic	Magnetic	Magnetic	Borosilicate Glass	Glass funnel with Micro-Strainer
Filter Cup Capacity (mL)	Without	100	300	500	150	300	500	250	250

## Customized Assembling Options for Multi-Position Filtration System

Wiggins offers free assembling options, allowing customers to design their own filtration system based on different application requirements.

### Filtration System Components Package I

Vacuum pump ①、PP/PC Waste Bottle ②、Filter Membranes ④、Silicon Tubing ⑤、Filtration combination ⑥



Multi-Position Filtration System

### Configuration Table for Multi-Position Filtration System

No.	Name				
1	Vacuum pump	V400	V600	V410	V610
	Order No.	167400	167600	167410	167610
2	Suction bottle	1000ml	2000ml	3000ml	-
	Order No.	167200-31	167200-32	167200-33	-
4	Filter Membranes	Fiberglass Filter Membranes	MCE Filter Paper	-	-
	Order No.	167100-20	167100-52	-	-
5	Silicon Tubing	Outer Diameter 14mm, Inner Diameter 8mm, Length 1m		-	-
	Order No.	167021-01		-	-
6	Combination	BioVac351, BioVac353, BioVac355, BioVac363, BioVac364, BioVac651, BioVac653, BioVac655, BioVac663, BioVac664, BioVac311, BioVac313, BioVac315, BioVac301, BioVac303, BioVac305, BioVac323, BioVac324,			

### Filtration System Components Package II

Vacuum pump ①、PP/PC Waste Bottle ②、Lab Burners ③、Filter Membranes ④、Silicon Tubing ⑤、Filtration combination ⑥



Multi-Position Filtration System

### Configuration Table for Multi-Position Filtration System

No.	Name				
1	Vacuum pump	V400	V600	V410	V610
	Order No.	167400	167600	167410	167610
2	Suction bottle	1000ml	2000ml	3000ml	-
	Order No.	167200-31	167200-32	167200-33	-
3	Lab Burners	Dragon 100	Dragon 220	-	-
	Order No.	177100-00	177220-00	-	-
4	Filter Membranes	Fiberglass Filter Membranes	MCE Filter Paper	-	-
	Order No.	167100-20	167100-52	-	-
5	Silicon Tubing	Outer Diameter 14mm, Inner Diameter 8mm, Length 1m		-	-
	Order No.	167021-01		-	-
6	Combination	BioVac331, BioVac333, BioVac335, BioVac631, BioVac633, BioVac635, BioVac341, BioVac343, BioVac345, BioVac641, BioVac643, BioVac645			

# Accessories For Filtration System

## 47mm Glass Funnel Holder

### Features

- > Made of chemical-resistant borosilicate glass
- > High temperature resistant
- > Autoclavable

### Specifications

Materials	Glass Funnel	Glass funnel with support screen
Funnel	Borosilicate Glass	Borosilicate Glass
Funnel Base	Borosilicate Glass	Borosilicate Glass
Membrane Support	Sintered Glass	Stainless Steel Support Screen + PTFE Gasket
Clamp	Aluminum	Aluminum

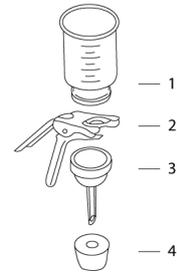
Type		
Funnel Capacity(ml)	250 ml	250 ml
Filter Diameter(mm)	47 mm	47 mm
Effective Filtration Area(cm <sup>2</sup> )	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>

### Ordering Information

47mm Glass Funnel	167120-31
250ml Glass Filter Cup	167210-03
Aluminum Clamp	167240-01
47mm Glass Filter Base	167230-03
Silicon Rubber	167110-16



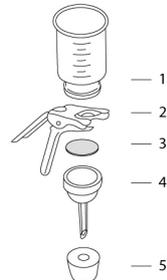
Glass Funnel



47mm Glass Funnel with Micro Strainer	167120-33
250ml Glass Filter Cup	167210-03
Aluminum Clamp	167240-01
Stainless Steel Support Screen	167230-31
47mm Glass Filter Base	167230-07
Silicon Rubber	167110-16



Glass funnel with support screen

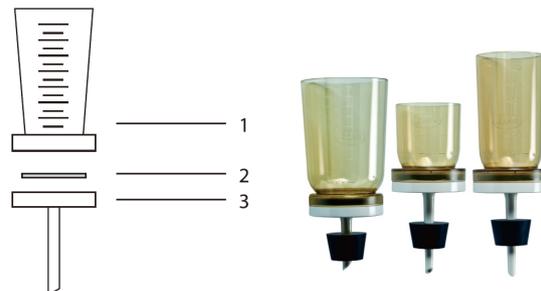


## PES Funnels With Magnetic Base

- > Unique magnetic connection design
- > No clamps needed
- > High temperature sterilization possible

Materious	
Filter Cup	PES
Membrane Support	PP
Filter Base	PES
Rubber	Silicon

Specifications	
Magnetic filter funnel 150 ml	167130-15
Magnetic filter funnel 300 ml	167100-18
Magnetic filter funnel 500 ml	167130-50



## 47mm Stainless Steel Funnel

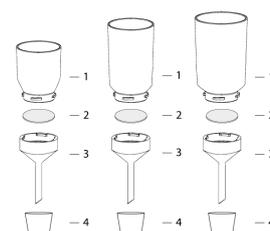
- > Quick and effective spin-lock system
- > No clamp needed
- > SUS316 stainless steel
- > Heat sterilization can be applied



167103-10    167103-30    167103-50

### Specification

Materious	100 ml	300 ml	500 ml
Funnel	SUS316	SUS316	SUS316
Funnel Base	SUS316	SUS316	SUS316
Membrance Support	SUS316	SUS316	SUS316
Funnel Lid	SUS316	SUS316	SUS316
<b>Type</b>			
Funnel Capacity(ml)	100 ml	300 ml	500 ml
Filter Diameter(mm)	47 / 50 mm	47 / 50 mm	47 / 50 mm
Effective Filtration Area(cm <sup>2</sup> )	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>



### Ordering Information

100 ml Stainless Steel Funnel	167103-10
100ml stainless steel filter cup	167103-61
Stainless Steel Support Screen	167100-31
47mm stainless steel filter base	167103-60
Silicon Rubber	167110-17
300 ml Stainless Steel Funnel	167103-30
300 ml	167103-63
Stainless Steel Support Screen	167100-31
47mm stainless steel filter base	167103-60
Silicon Rubber	167110-17
500 ml Stainless Steel Funnel	167103-50
500ml stainless steel filter base	167103-65
stainless steel Support Screen	167100-31
47mm stainless steel filter base	167103-60
Silicon Rubber	167110-17

## Stainless Steel Filter Cup (Cylinder Type)



Order No.	167103-61	167103-63	167103-65
Filter Cup	SUS316	SUS316	SUS316
Funnel Capacity(ml)	100 ml	300 ml	500 ml
Filter Diameter(mm)	47 / 50 mm	47 / 50 mm	47 / 50 mm
Effective Filtration Area(cm <sup>2</sup> )	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>
Suitable for	BioVac 330/630	BioVac 330/630	BioVac 330/630

## Stainless Steel Filter Cup (Cone Type)



Order No.	167102-50	167102-75	167102-99
Filter Cup	SUS316	SUS316	SUS316
Funnel Capacity(ml)	500 ml	700 ml	1000 ml
Filter Diameter(mm)	47 / 50 mm	47 / 50 mm	47 / 50 mm
Effective Filtration Area(cm <sup>2</sup> )	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>
Suitable for	BioVac 300/600	BioVac 300/600	BioVac 300/600

## Stainless Steel Funnel Lid



Description	Order No.
100 ml Stainless Steel Funnel Lid, Suitable for 100 ml Stainless Steel Filter Cup (Cylinder Type)	167103-11
300 ml Stainless Steel Funnel Lid, Suitable for 300 ml Stainless Steel Filter Cup (Cylinder Type)	167103-13
500 ml Stainless Steel Funnel Lid, Suitable for 500 ml Stainless Steel Filter Cup (Cylinder Type)	167103-15
Stainless Steel Funnel Lid, Suitable for 500 ml / 750 ml / 1000 ml Stainless Steel Filter Cups (Cone Type)	167110-20

## PP Funnel Lid



Order No.	167130-32	
Specification	Material	
Suitable for Funnel	Pall 4242	Main Body    PP
Number of Inlets	3	Cover        Silicon
Inlet Type	Female luer slip	Filter Material    PTFE
Filter Diameter	25 mm	Pore Size        0.2 μm
Package	1	

## Filtration Flask for Liquids

Order No.	167100-13	167100-14
Includes		
Glass bottle	167300-08	167300-08
Rubber stopper	167110-16	167110-17
Magnetic base	167200-04	167200-04
Specification		
Capacity	1000 ml	1000 ml
Inlet / Outlet Diameter	8 mm	8 mm
Water Outlet	Yes	Yes
The diameter of hole in center of rubber stopper	Ø15mm	Ø9.5mm



## Weighted Base

Description	Order No.
1000 ml Filtration Flask Base with a Unique Stabilization Design	167200-04



## Disc Filter

Name	Pinhead Filter	Small Disc Filter	Big Disc Filter
Order No.	194225-01	167200-35	167200-36
Brand	Pall	Pall	Pall
Filter Diameter / Pore Size	25 mm / 0.2 µm	37 mm / 0.2 µm	50 mm / 0.2 µm
Outer Diameter	30 mm	45 mm	73 mm
Material	PTFE	PTFE	PTFE
Outer Material	PP	PP	PP
Number of Filters per Package	1	1	1



## Filter Membranes

Name	Fiberglass Filter Membranes	MCE Filter Paper
Order No.	167100-20	167100-52
Brand	Pall	Pall
Filter Diameter	47 mm	47 mm
Filter Pore Size	1 µm	0.45 µm
Material	Fiberglass	MCE
Number of Filters per Package	100	200



## Silicon Tubing

Order No.	Outer Diameter (mm)	Inner Diameter (mm)	Thickness (mm)	Length (m)
168020-01	12	6	3	1
168021-01	14	8	3	1
168022-01	16	10	3	1



167201-31    167201-33    167200-31    167200-33

## PP/PC Waste Bottle

Material						
Order No.	167201-31	167201-33	167200-31	167201-32	167200-32	167200-33
Bottle	PC	PC	PC	PC	PC	PC
Bottle Cover	316L	PC	PC	PC	PC	PC
Spill-Proof Buoy	PP	PP	PP	PP	PP	PP
Description						
Capacity(ml)	1000 ml	2500 ml	1000 ml	1500 ml	2000 ml	3000 ml
Outlet(mm)	8 mm					
Spill-Proof Buoy	Yes	Yes	Yes	Yes	Yes	Yes
Autoclavability (121°C)	Yes	Yes	Yes	Yes	Yes	Yes

## Glass Waste Bottle

Description	Material	
Order No.	167120-34	
Capacity	4000 ml	Bottle    Glass
Outlet	8 mm	Bottle Lid    Stainless Steel
Spill-Proof Buoy	Yes	Float Switch    PP
Autoclavability (121°C)	Yes	



## Stand for Waste Bottle

Description	Order No.
Stand for waste bottle designed for stabilizing the bottle in filtration work	167200-39



## Foot Pedal

Description	Order No.
Suitable for C series and V series vacuum pumps	167200-41

## Silicon Drainage Tubing

Order No.	Outer Diameter (mm)	Inner Diameter (mm)	Thickness (mm)	Length (m)
168030-01	12	8	2	1