

English

OPERATING MANUAL

Multi-position Filtration Systems

BioVac 330B / BioVac 630B



WIGGENS
THE MAGIC MOTION

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Congratulations!

You have made an excellent choice.

WIGGENS thanks you for the trust you have placed in us.

This operating manual has been designed to help you gain an understanding of the operation and possible applications of our instruments. For optimal utilization of all functions, we recommend that you thoroughly study this manual prior to beginning operation.

Unpacking and Inspecting

Please unpack the device carefully. Check that the package is right-side-up and then open it. Check that model of the product is one that you ordered. Check that there is no damage. If there is any damage, file a damage claim with the carrier. In the case of any damage a damage report should be requested immediately. These instructions must be followed fully for us to guarantee our full support of your claim for protecting against loss from concealed damage. The form required for filing such a claim will be provided by the carrier.

Changes without prior notification reserved

Important: keep operating manual for future use

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1. Intended Use

Vacuum filtration is widely done 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, In other words, we offer you total solution for vacuum filtration

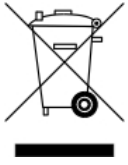
2. Operator Responsibility

The products of *WIGGENS* ensure safe operation when installed, operated, and maintained according to common safety regulations. This section explains the potential dangers that may arise when operating the instrument and also specifies the most important safety precautions to preclude these dangers as far as possible.

- The operator is responsible for the qualification of the personnel operating the instrument.
- The personnel operating the instrument should be regularly instructed about the dangers involved with their job activities as well as measures to avert these dangers.
- Make sure all persons tasked with operating, installing, and maintaining the instrument have read and understand the safety information and operating instructions.
- When using hazardous materials or materials that could become hazardous, the instrument may be operated only by persons who are absolutely familiar with these materials and the instrument. These persons must be fully aware of possible risks.
- Only qualified personnel are authorized to perform configuration, installation, maintenance and repairs of the instrument.
- Routine operation can also be carried out by untrained personnel who should however be instructed by trained personnel.

If you have any questions concerning the operation of your instrument or the information in this manual, please contact us!

2.1. Disposal



At the end of its service life the instrument is to be disposed of in accordance with the local regulations specified for the disposal of electronic industry waste in an environmentally friendly manner.



The products described in the operating instructions conform to the requirements of the following European guidelines:

Low voltage regulations with respect to legal harmonization of the member countries concerning electric devices for use within certain voltage limits.

EMC guideline with respect to legal harmonization of the member countries concerning electromagnetic compatibility.

APPROVALS European	EN61326-1: 2013, 2014/30/EU EN61010-1: 2010, 2014/35/EU EN60204-1: 2006, 2006/42/EC EN50581: 2012, 2011/65/EU
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2.2. Technical Specifications

Model	BioVac330B	BioVac630B
Max. Flow Rate	34 l/min	58 l/min
Ultimate Vacuum(mbar)	150 mbar	150 mbar
Waste Bottle (Capacity in ml/ Material)	3000 ml, PC	3000 ml, PC
Number of Branches	3	6
Manifold Material	Stainless Steel	Stainless Steel
Filter Diameter(mm)	47 / 50 mm	47 / 50 mm
Filter Cup (Capacity in ml/ Material)	100 ml Stainless Steel	100 ml Stainless Steel
Effective Filtration Area(cm ²)	9.6 cm ²	9.6 cm ²
Outlet Diameter(mm)	8 mm	8 mm




Ordering Information

Model	BioVac330B	BioVac630B	
Order No.	167403	167601	
Contains	Pump	V400	V600
	Order No.	167400	167600
	Manifold	BioVac330 3-branch /Stainless steel	BioVac630 6-branch /Stainless steel
	Order No.	167103-23	167103-26
	Filter Cups	3 x 100 ml / Stainless steel	6 x 100 ml / Stainless steel
	Order No.	167103-61	167103-61
	Waste Bottle	3000 ml / PC	3000 ml / PC
	Order No.	167200-33	167200-33
	Bunsen Burner	Dragon 100	Dragon 100
	Order No.	177100-00	177100-00
	Filter Membranes	Pall GN-6 MCE / 0.45µm, 200 pcs	Pall GN-6 MCE / 0.45µm, 200 pcs
	Order No.	167100-52	167100-52
	Silicon Tube	2 x 1m	2 x 1m
	Order No.:	168021-01	168021-01






3. Safety Instructions

3.1. Explanation of Safety Notes


In addition to the safety warnings listed, warnings are posted throughout the operating manual. These warnings are designated by an exclamation mark inside an equilateral triangle. "Warning of a dangerous situation (Attention! Please follow the documentation)."

Symbol	Additional term / Description
<p>Warning signs</p> 	<p>The danger is classified using a signal word. Read and follow these important instructions for averting dangers.</p> <p>Warning! Describes a possibly highly dangerous situation. If these instructions are not followed, serious injury and danger to life could result.</p> <hr/> <p>Caution! Describes a possibly dangerous situation. If this is not avoided, slight or minor injuries could result. A warning of possible property damage may also be contained in the text.</p> <hr/> <p>Notice! Describes a possibly harmful situation. If this is not avoided, the product or anything in its surroundings can be damaged.</p>
	<p>Note! Draws attention to something special.</p>
	<p>Important! Indicates usage tips and other useful information.</p>

3.2. For Your Protection

- Make sure you read and understand all instructions and safety precautions listed in this manual before installing or operating your instrument.
- Keep the operation instructions in a place where they can be accessed by everyone.
- Connect the instrument to a power socket with earthing contact (PE-protective earth).
- The power supply plug serves as a safe disconnecting device from the line and must always be easily accessible.
- Do not stay in the area below the instrument.
- Make sure the product is checked for proper condition regularly (depending on the conditions of use). Regularly check (at least every 2 months) the proper condition of the mandatory, warning, prohibition and safety labels.
- Never operate damaged equipment.
- Always turn off the instrument and disconnect the mains cable from the power source before performing any service or maintenance procedures, or before moving the instrument.
- Transport the instrument with care.
- Never operate instruments with damaged mains power cables.
- Observe all warning labels.
- Never remove warning labels.
- Repairs are to be carried out only by qualified service personnel
-  **Warning!** Never use the pump with any flammable gas or toxic material.
-  **Warning!** Before using a medium, check whether the medium can be transferred danger-free in the specific application case.
-  **Warning!** Ensure that the system is not subject to any risks of explosion, also in extreme operating situations (temperature, pressure) or in case of malfunctions.
-  **Warning!** Only transfer gases which remain stable under the Vacuum and temperatures occurring in the pump.
- Laboratory equipment or additional components connected to a pump have to be suitable for use with the pneumatic capabilities of the pump
-  **Warning!** Make sure the temperature of the medium is always sufficiently below the ignition temperature of the medium, to avoid ignition or explosion.
- If necessary, consider any external sources of energy, such as radiation, that may add heat to the medium.
- Never put your fingers or foreign matter into ventilation holes of the fan cover

3.3. For protection of the equipment

- You have received a product designed for industrial and experimental use. Nevertheless, avoid strikes to the housing, vibrations, damage to the operating-element panel, and contamination.
- Make sure that the mains power supply has low impedance to avoid any negative effects on instruments being operated on the same mains.
- Do not expose the unit to sunlight.
- Sudden drops may cause damage in the interior of the instrument.
- When finished with the pumping operation, do not turn off the pump at once but continue to run the vacuum filtration system for at least two minutes in order to draw out the mist and tiny liquids to prolong the service life of the pump.
- The filter cartridge (optional) is used to absorb moisture and dust. Replace it when it is saturated to maintain a high pumping efficiency.
- Never use the pump with any flammable gas or toxic material.
- Press the power switch to interrupt the pump, rather than disconnect the main power plug directly.
- When in an emergency, disconnect the main power plug.
- Protect the filtration system from vibrations, jolts and external damage.
- The pump is not recommended for use underground.
- The pump is not suitable for transferring dusts.
-  **Warning!** An overpressure must not be applied to the suction side of the pump.
- The pumps must not be modified. If a wearing part is replaced, the original function of the pump must be checked by reaching the specified ultimate vacuum.

4. Operating Procedures

4.1. Environmental Operating Conditions

The Multi-Position Filtration Manifolds must operate in the following conditions:

- Indoors
- Altitudes up to 2000 meters
- Temperatures from +5°C to +40°C
- Maximum relative humidity 80% for temperatures up to +31°C, linear decrease down to 50% relative humidity at a temperature of +40°C
- Max. mains fluctuation of ± 10 % are permissible
- Overvoltage category II

4.2. Installation

4.2.1. Install the manifold

1. Place the manifold on a stable, flat surface.
2. Put the membrane support into the funnel base.
3. Put your required filter membranes on the membrane support.
4. Put the funnel on the funnel base then rotate the funnel clockwise to fix it tightly;

4.2.2. Install the Filtration System



Fig. 1

1. Using the silicon tube to connect the vacuum inlet of the vacuum pump ④ and vacuum outlet of the buffer reservoir/waste bottle (③—the outlet joint Marked with "VACUUM" on bottle lid and near the spill-proof buoy).
2. Using the silicon tube to connect the buffer reservoir/waste bottle's inlet (②—the inlet joint Marked with "PATIENT" on bottle lid) to the manifold's outlet ①.
3. Make sure all the joints of tubes are completely tight and without leakage.



The main part of the manifold are made of SUS316 stainless steel (except the valve handle). Each branch and funnel can be controlled independently by valve, and the wet part can be sterilized by flame (Dragon 100 Bunsen burner) directly to save from steam sterilization time.



Since the knob of the valve is not made of stainless steel, So when we use the Bunsen burner for flame sterilization, please avoid the flame direct spray to the knob.



Caution!

- Before using the manifold, please make sure you have a vacuum source (e.g. WIGGENS V400 Vacuum Pump, if 6-branch, WIGGENS 600 is recommended).
- It is always recommended to install a suction bottle between the manifold and vacuum pump to prevent water from flowing into vacuum pump.

4.3. Operation

1. Firstly, make sure all valves are in off position.
2. If necessary, using a burner (e.g. Dragon 100) to sterilize each cup and all of the stainless steel part of the manifold.
Caution: Please note the knob of the valve is not made of stainless steel, So when we use the Bunsen burner for sterilization, please avoid the flame direct spray to the knob;
3. Put the filter membrane on the membrane support then screw the S.S. funnel on each base of the manifold (Fig. 1)
4. Turn on the vacuum pump and adjust the vacuum capacity as desired.
5. Pour the sample water into the cup and turn the valve to up position to vacuum and filtrate independently.
6. After filtration, remove the filter paper and clean the manifold.

5. Cleaning and Maintenance

5.1. Routine Cleaning

5.1.1. Clean the multi-position manifold

After finishing the experiment, remember washing the funnel and manifold to keep it clean.

Do not clean the manifold with any stiff brush that will scratch the manifold surface.

The whole manifold and part of the waste bottle are able to be steam sterilized in autoclave.



Caution!

since the spill-proof buoy of the waste bottle is made of "PP", so when using high temperature steam sterilization please take the spill-proof buoy out;

5.1.2. Clean the pump

Wipe the housing of the pump with a damp cloth using a mild soap and water solution.

- Before switching off the pump, flush it with air (if necessary for safety reasons: with an inert gas) for about five minutes under atmospheric conditions (ambient pressure).
- Only use solvents for cleaning if the head materials cannot be attacked (check the resistance of the material!).
- Before using another than the recommended method for cleaning or decontamination, the user must ascertain with WIGGENS this method does not destroy the instrument



Note:

- Do not use chlorine bleach, chlorine-based cleanser, abrasives, ammonia, steel wool or scouring pads with metal content or similar harsh solvents or abrasives. These may damage the surface of the instrument.
- When cleaning, make sure that no liquids enter the inside of the housing.

5.2. Maintenance

5.2.1. Routine maintenance

Neglecting maintenance and inspection can cause poor performance and pump failure.

To remove debris accumulated in the vacuum pump, operate the pump several times for 3-5 seconds (once a day) with its inlet open to atmospheric air (or open the purge gas valve if one is installed).

Allow the pump to cool down before doing maintenance. Performing maintenance immediately after shutdown can cause bodily injury such as burns.

Switch off electric source

Be sure to switch off the electrical power before maintenance or inspection. Failure to do so can cause bodily injury from electric shock or rotating objects.

More frequent maintenance is required if the ambient temperature is too high. The maintenance interval is based on 5 - 40 °C ambient temperature and 25 °C average yearly temperature.

Shorten the maintenance interval if the ambient temperature is higher. Otherwise, the pump may fail prematurely.

The maintenance schedule assumes that the pump is exposed to clean gas only.

You must shorten the maintenance interval when pumping vapor since vapor temperature, disposal volume, disposal frequency and substances in the vapor influence the pump's operation.

5.2.2. Clean/ replace the pump cartridge

The filter cartridge of the pump is used to absorb moisture and dust. Please replace the cartridge when it is saturated to maintain proper pumping efficiency.

1. First, remove the moisture trap cup by rotating it counterclockwise. Second, remove the cartridge in the same way, then replace a new one.
2. Pour the water out of the moisture trap cup when it is filled with water.

5.2.3. Ordering spare parts

When ordering spare parts, please give:

- Machine type
- Manufacturing number, see type plate
- Item number and designation of the spare part.

Repair

Please only send devices in for repair that have been cleaned and are free of materials which might present health hazards. For this, use the "certificate of compliance" form which you can obtain from *WIGGENS*. If your appliance requires repair, return it in its original packaging. Storage packaging is not sufficient when sending the device - also use appropriate transport packaging.

6. Transport and Storage

- Clean the pump so that it is free from any materials which may be harmful to the health. Provide a material safety data sheet where appropriate.
- Place the pump unit and its parts into the original packing or a container with necessary protection to prevent damage during transport. Seal the original packing or container with packing tape.
- Store the packed unit in a dry place.



CAUTION!

Failure to clean, maintenance, and handle the pump as outlined can lead to damages or be harmful to the health.

7. Accessories and Spare Parts

7.1. Stainless Steel Filter Cup (Cylinder Type)

The unit (3-place or 6-place) is compatible to any of the following SS cup based on your application.



Funnel Capacity(ml)	100 ml	300 ml	500 ml
Material	SUS316	SUS316	SUS316
Filter Diameter(mm)	47 / 50 mm	47 / 50 mm	47 / 50 mm
Effective Filtration Area(cm)	9.6 cm ²	9.6 cm ²	9.6 cm ²
Order No.	167103-61	167103-63	167103-65

7.2. Stainless Steel Funnel Lid

Model/Name	Description	Order No.
 <p>Stainless Steel Funnel Lid</p>	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

8. Service

8.1. Trouble-Shooting

Cause	Remedy
The pump does not react after turning on the On / Off Switch	<ol style="list-style-type: none"> 1. Ensure that the mains electricity plug is plugged into a working socket outlet and check if the On / Off Switch is in the "on" position. 2. If the On / Off Switch is in the "on" position, release the vacuum, disconnect the pump from the power source and let the pump cool down, and investigate the reason for overheating 3. After cooling down, connect the pump to the power source and try again 4. If there is no reaction after several attempts, please contact the WIGGENS support.
The pump does not reach the designated ultimate vacuum	<ol style="list-style-type: none"> 1. Check if all tubing is tight and if there is a leakage at any point 2. Disconnect the pump from all other sources, connect it directly to a vacuum controller / vacuum gauge, and block the gas intake 3. If the pump still does not reach the designated ultimate vacuum, please contact the WIGGENS support. Diaphragms, valve plates, or seal rings might be worn out.



WIGGENS reserves the right to carry out technical modifications with repairs for providing improved performance of the instrument.

8.2. Warranty

WIGGENS warrants its products against defects in material or in workmanship, when used under appropriate conditions and in accordance with appropriate operating instructions

Under no circumstances shall *WIGGENS* be liable for indirect, consequential or special damages of any kind.

WIGGENS reserves the right to any technical changes without prior notice.

For a Period of TWO YEARS.

This limited warranty covers parts and labor.

WIGGENS reserves the right to decide the validity of any warranty claim. In case of faults arising either due to faulty materials or workmanship, parts will be repaired or replaced free of charge.

Any other compensation claims, such as consumables, damages caused by corrosion or accidental breakage, are excluded from this guarantee.

This warranty may only be altered by a specifically published amendment. No individual has authorization to alter the provisions of this warranty policy or its amendments.

8.3. Contact/Technical Service

If your device is not working properly:

- Please inform *WIGGENS* Instruments by using our contact information.
- You have contacted *WIGGENS* Instruments?
- Copy and complete the Conformation of condition of unit from these operating instructions.
- Please repack the device appropriately for transport and send to *WIGGENS* Instruments together with the Confirmation of condition of unit.

Our contact details

WIGGENS GmbH

Add: Gässlesweg 22-24, 75334 Straubenhardt, Germany

Tel.: 0049 7248 4529088

Wiggins Co., Ltd.

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Confirmation of condition of unit

In the case of repair, copy and complete the Confirmation of condition of unit and send it to *WIGGENS* Instruments.

1. Details about the unit

Product number

Serial number

Reason for repair

2. Has the device been cleaned, decontaminated/sterilized?

Yes

No

3. Is the unit in a condition which does not represent any health threats for the staff of our service department?

Yes

No

If not, which substances has the unit come into contact with?

4. Legally binding declaration

The customer is aware of being legally liable to *WIGGENS* Instruments for any damages arising from incomplete and incorrect information.

Date

Signature

Company stamp

Please Note

The shipper is responsible for the return of the goods in well-packed condition, suitable for the mode of transport.

Sender information

Name

Company

Department, research group Street

Zip code, city

Country

Phone

E-mail



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