



Technology for Vacuum Systems

Instructions for use



**8-channel tip adapter
with ejector**



After sales service:

Contact your local dealer or call +49 9342 808-5500.

Trademark index:

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Safety information!

Important information!

WARNING

-  **Keep this manual complete and accessible to personnel at all times!**
-  **Read this manual carefully before installing or operating the equipment. Observe the instructions contained in this manual.**
-  **Do not modify the equipment without authorization.**

NOTICE

This manual is an integral part of the equipment described therein. It describes the safe and proper use of the equipment.

Make operating personnel aware of dangers arising from the device and the used substances.

VACUUBRAND disclaims any liability for inappropriate use of the equipment and for damage from failure to follow instructions contained in this manual.

This manual is only to be used and distributed in its complete and original form. It is strictly the users' responsibility to check carefully the applicability of the guidance in this manual with respect to his product.

Manual-no.: 20901322

The following signal word panels and safety symbols are used throughout this manual:



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury and death.



➡ DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.



☞ WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.



• CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



NOTICE is used to address practices not related to personal injury.

Formatting used in this manual:

Note: The signal word panels in all sections of this manual always refer to all paragraphs of the same format (➡ / ☞ / • / plain text) following each signal word panel.

General information

! WARNING

- ☞ **Read and comply with this manual before installing or operating the equipment.**
- ☞ **Before operating the equipment read and comply with the section "Cleaning and decontamination"!**

NOTICE

Remove all packing material, remove the product from its packing-box and inspect the equipment.

If the equipment is damaged, notify the supplier and the carrier in writing within three days; state the item number of the product together with the order number and the supplier's invoice number. Retain all packing material for inspection.

Do not use the equipment if it is damaged.

Intended use

! WARNING

- ☞ The device may only be used by well trained and skilled personnel.
- ☞ The device may not be used for in vivo applications (e. g., not at humans or animals).

NOTICE

Ensure that the equipment and all components are suitable for the intended application. Use the system only for **aspiration of liquids**.

Setting up

NOTICE

The 8-channel tip adapter with ejector is intended to be connect to a VACUUBRAND VHC^{pro}. The VHC^{pro} is intended to be connect to a suitable suction system, e. g., VACUUBRAND BVC systems.

Comply with all **applicable and relevant safety requirements** (regulations and guidelines), **implement the required actions and adopt suitable safety measures**.

Ambient conditions

⚠ CAUTION

- The systems are designed for **ambient temperatures** during operation between +10°C and +40°C. Check the maximum temperatures.

Operating conditions

⚠ DANGER

- ➔ The devices are **not suitable** to aspirate:
 - flammable mixtures
 - **unstable substances**
 - substances which react explosively under **impact** (mechanical stress) and/or when being exposed to **elevated temperatures** without air,
 - **self inflammable** substances,
 - substances which are **inflammable without air** and
 - **explosive substance**
- ➔ The devices have **no approval** for operation below ground.

⚠ WARNING

- ☞ The devices are **not suitable** for aspiration of dust.

⚠ CAUTION

- **Take into consideration interactions and chemical reactions of the aspirated media.**
- Ensure that the materials of the wetted parts are compatible with the aspirated substances, see section "Technical data".

NOTICE

If aspirating **different substances**, it is recommended that the aspiration hose be purged prior to changing the media in order to rinse out residues and to avoid reactions of the substances with each other and with the materials.

Safety during operation

⚠ DANGER

- ➡ Ensure that while operating the device no persons can be endangered.
- ➡ Wear personal protection equipment.
- ➡ Comply with requirements when using infectious liquids, pathogenic germs, toxic, radioactive or aggressive substances.
- ➡ Prior to operation check all relevant safety and health requirements and determine the applicability of regulatory limitations prior to use if necessary.
- ➡ Comply with material safety data sheets and notes on safe use of the manufacturer.
- ➡ Comply with the biosafety level of the laboratory.
- ➡ Use appropriate safety work materials and methods if necessary, e. g., steam sterilization, sterilization indicators or germicides. For notes concerning the sterilization of wetted parts, see the “Technical Data” section and “Cleaning and decontaminating”. It is the user’s responsibility to ensure effective sterilization.
- ➡ Never operate a defective or damaged device.

⚠ WARNING

- ☞ Comply with applicable regulations when disposing of chemicals. Take into consideration that chemicals may be polluted.
- ☞ Use only **OEM spare parts and accessories**; otherwise safety and performance of the equipment as well as the electromagnetic compatibility of the equipment might be reduced.
- ☞ In case of leaks, aspirated substances might be released into the environment. Comply especially with notes on operation and use.

NOTICE

Ensure that, in case of failure, the system will always return to a safe status. Provide appropriate protective measures (i.e., precautions which allow for the requirements of the respective application) even for the case of failure and **malfunction**.

Maintenance and repair

DANGER

- ➡ Attention: The device might be contaminated with noxious or otherwise dangerous substances that have been aspirated during operation. Ensure that the device is decontaminated before maintenance.

WARNING

- ☞ Take adequate precautions to protect people from the effects of dangerous substances if contamination has occurred. Wear appropriate safety-clothing when you come in contact with contaminated components.

NOTICE

Ensure that **maintenance** is done only by suitably trained and supervised technicians. Ensure that the maintenance technician is familiar with the safety procedures which relate to the products processed by the system.

In order to comply with law (occupational, health and safety regulations, safety at work law and regulations for environmental protection) vacuum pumps, components and measuring instruments returned to the manufacturer can be repaired only when certain procedures (see section "**Repair - Maintenance - Return - Calibration**") are followed.

Technical data

Type		8-channel tip adapter with ejector
Permissible ambient temperature storage / operation	°F °C	14 to 140 / 50 to 104 (-10 to +60 / +10 to +40)
Autoclaving		121°C and 2 bar absolute (1 bar overpressure)
Adapter for		pipette tips 2 - 200 µl and 5 - 300 µl
Distance between nose cones	mm	9
Dimensions L x W x H approx.	mm	80 x 42 x 118
Weight approx.	g	80

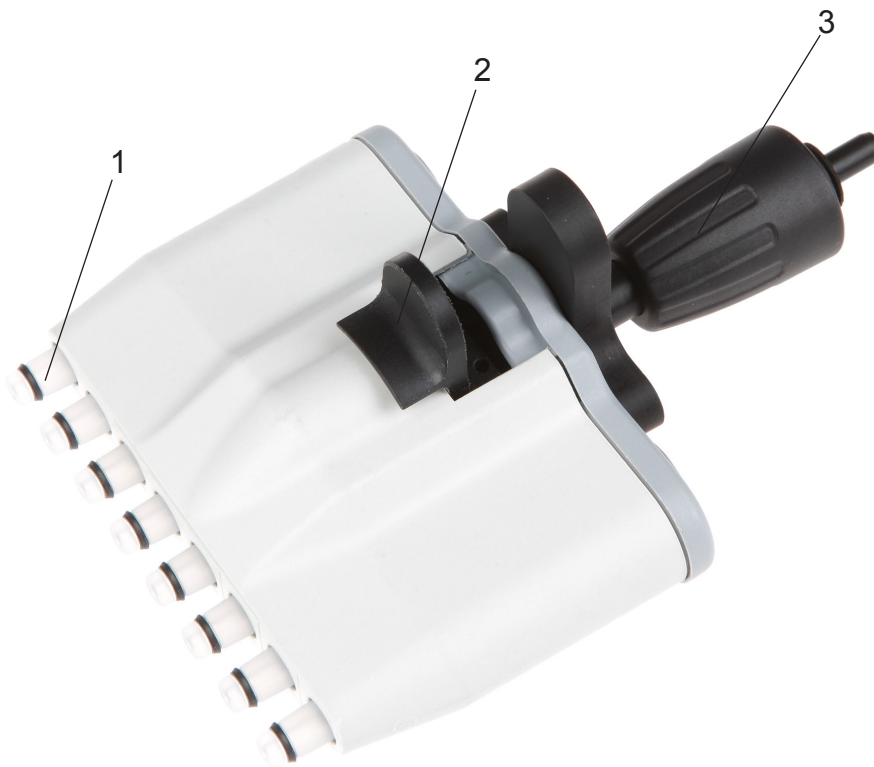
Materials of the 8-channel adapter

Wetted parts	Not wetted parts
Stainless steel, PP with and without glass fibre, PPS, PVDF, FKM, EPDM, silicone	Stainless steel, PTFE with carbon, PP with and without glass fibre, PPS with glass fibre

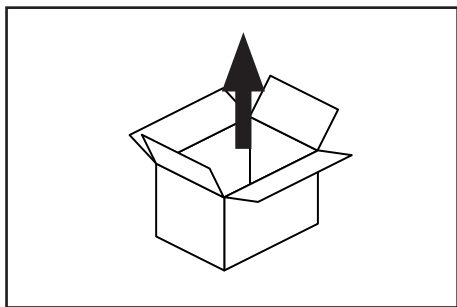
We reserve the right for technical modifications without prior notice!

System parts

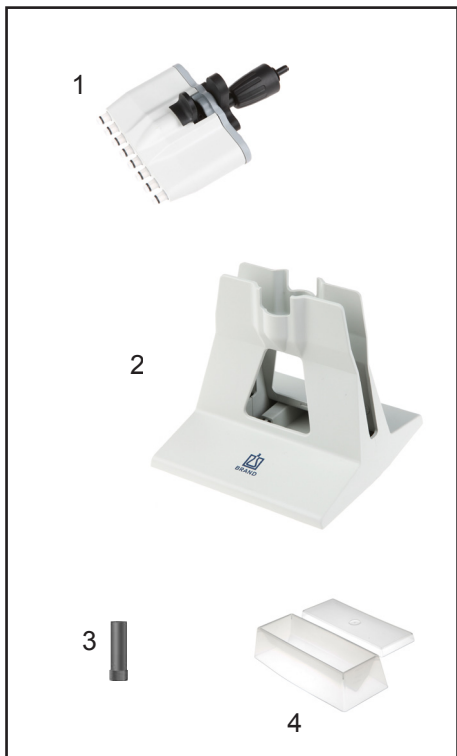
Position	Designation
1	nose cone with O-ring
2	ejector
3	screw cap



Use and operation



Unpack the equipment.



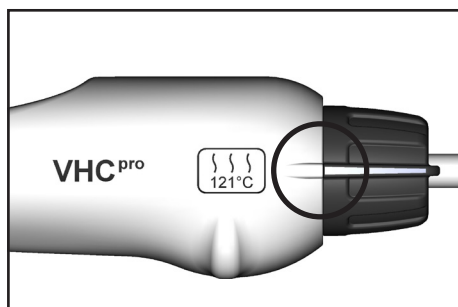
Scope of delivery

- 8-channel adapter (1)
- bench-top rack (2)
- mounting tool for nose cones (3)
- reagent reservoir / bowl for disinfectant (4)

NOTICE

The 8-channel tip adapter with ejector is intended to be connected to a VACUUBRAND VHC^{pro}.

Assembling the adapter



Ensure that there is no liquid in the tube to avoid risk of contamination.

Aspirate until the aspiration tube is empty and decontaminate if necessary.

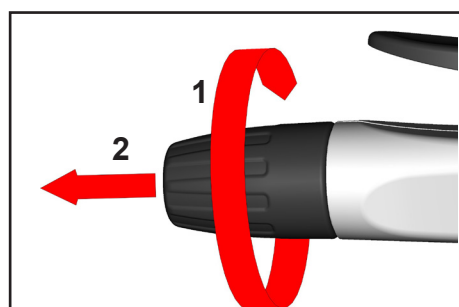
Select continuous aspiration.

We recommend to switch off vacuum supply or to close connection to the vacuum supply.

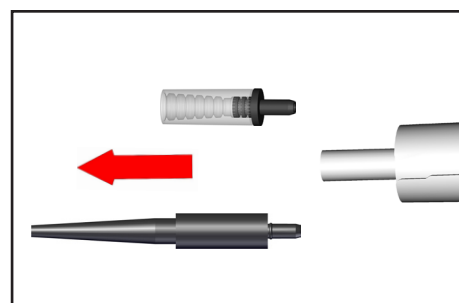
Remove pipette if necessary.

DANGER

- ➡ Attention: Liquid in the tube may leak. Adopt suitable measures to prevent the release of dangerous, toxic, explosive, corrosive, noxious or polluting fluids, vapors and gases. In such cases, use an appropriate collecting and disposal system and take protective action for personnel, equipment and environment.

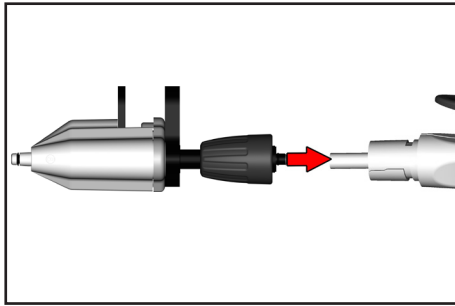


Turn cap (1) and remove (2).



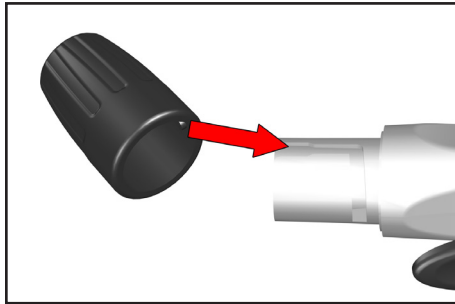
Pull existing adapter with hose out of the VHC^{pro}.

Remove adapter from hose.

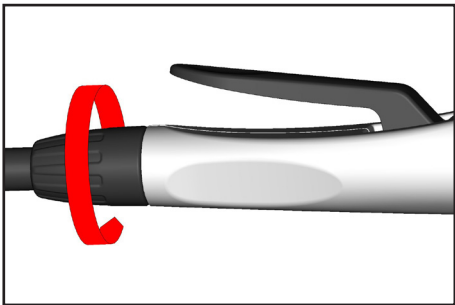


Attach 8-channel adapter to the hose.

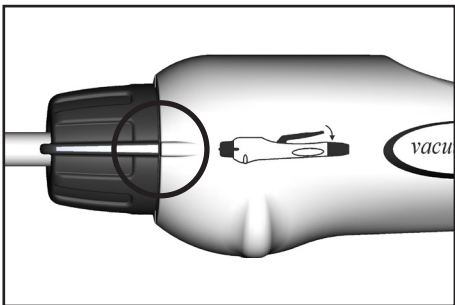
Pull the 8-channel adapter with hose back in the VHC^{pro}.



Obey mark at the cap when reassembling the cap.

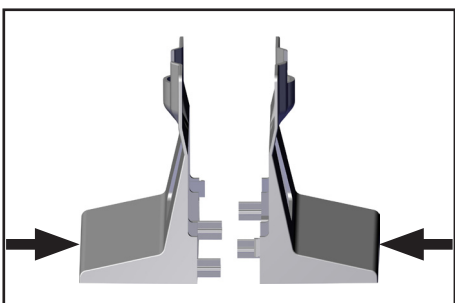


Screw cap hand tight.



Set the VHC^{pro} to “Aspiration” if necessary.

Assembling the bench-top rack



Stick together the both halves of the bench-top rack correctly.

NOTICE

➡ Attention: It is not possible to disassemble the bench-top rack nondestructively.

Prior to aspiration



Insert pipette tips.
Ensure that the tips are securely seated.
Align the adapter. The adapter can turn freely in both directions.

Attention: Pipette tips are disposables items. Never insert filled pipettes due to risk of contamination and infection. Wear protective gloves!

Aspiration of liquids



Use only appropriate vessels.
Dip pipette tip into the liquid.

Setting aspiration at the VHC^{pro}: Press the lever until the liquid has been aspirated. Release the lever to stop aspiration.

Setting continuous aspiration at the VHC^{pro}: In setting continuous aspiration it is not necessary to press the lever. Remove pipette from liquid to stop aspiration. If necessary set the adjusting knob to “Aspiration” to stop continuous aspiration.

Ejecting the tips



Hold the device over a suitable disposal container and press the ejector to the stop.

Don't lay the instrument horizontal when the tips are filled. Liquid may enter and contaminate the instrument or the environment.

After aspiration



At the end of aspiration, continue to aspirate until there is no more liquid in the aspiration tubing and purge with cleaning or disinfectant agent (suck through) if necessary.

Use reagent reservoir / bowl for disinfectant (enclosed in delivery) if necessary.

Eject pipette tips.

Attention: Risk of contamination and infection. Wear protective gloves and eye protection! Dispose of pipettes according to appropriate regulations.



We recommend to store the device without tips, placed upright in the supplied bench-top rack.

Cleaning and decontaminating



Autoclaving

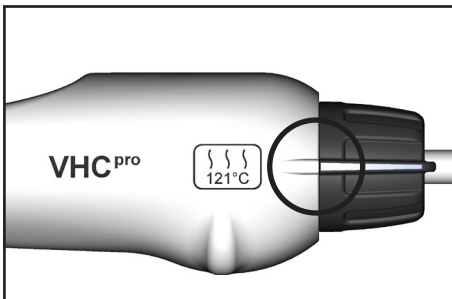
The VacuuHandControl VHC^{pro} with adapters and aspiration hose is designated for steam sterilization at 121°C and 2 bar absolute (1 bar overpressure). Time of exposure according to DIN 58946 $t_e = 20$ minutes.

Ensure not to exceed a temperature of 121°C.

Comply with instructions for use of the manufacturer of the autoclave.

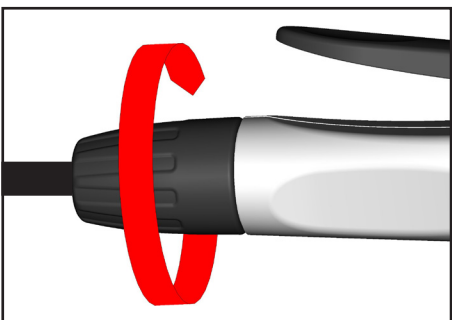
NOTICE

It is the user's responsibility to ensure effective autoclaving.

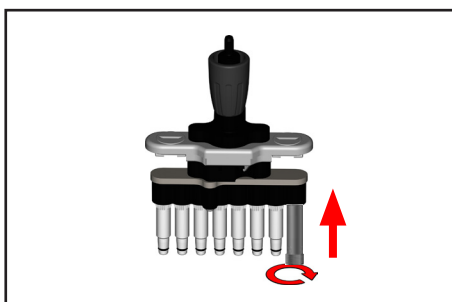


NOTICE

Prior to autoclaving set the VHC^{pro} to "autoclaving".

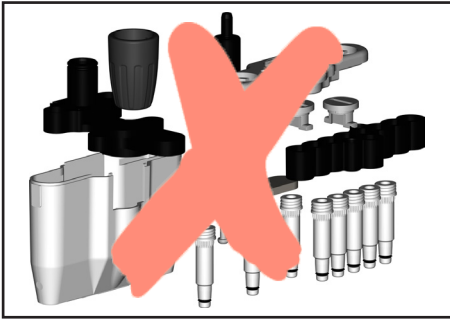


Prior to autoclaving loose the cap.



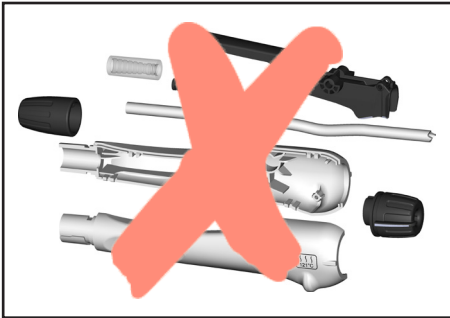
NOTICE

After autoclaving tighten the nose cones if necessary with the mounting tool (enclosed in delivery), see section „Replacing the nose cones“.

**NOTICE**

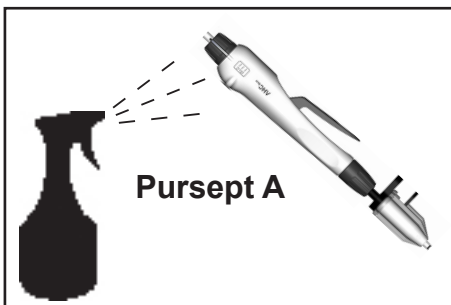
It is not possible to disassemble the 8-channel adapter completely.

It is possible to replace the nose cones, see section “Replacing the nose cones”.

**NOTICE**

It is not possible to disassemble the VHC^{pro} completely.

It is possible to disassemble and replace the adapters, the screw cap and the aspiration hose, see manual of the VHC^{pro}. If the housing opens lightly by mistake, e. g., if the handle is fallen down, press the gap together by hand. Perform a function test.

**Chemical disinfection**

A wiping and spray disinfection is possible by using the germicide Pursept A.

NOTICE

Over time, discoloration and material changes (e.g., resiliency, elasticity/tightness, cracking) due to repeated steam sterilizations may occur.

Important notes on use of disinfectants

Aggressive disinfectants which release chlorine or oxygen radicals, e.g., sodium hypochlorite (chlorine bleach) or peroxide compounds can corrode the materials.

☞ Therefore, prolonged use of these disinfectants is strongly discouraged. After brief disinfecting operations, rinse thoroughly to avoid leaving residues of disinfectant.

The use of the disinfectant **Sekusept® Plus** (Manufacturer: Ecolab GmbH & Co OHG, Düsseldorf, Germany) in extensive in-house testing did not cause any damage. Hence the disinfectant Sekusept® Plus is preferred. Comply with use and safety instructions of the manufacturer!

CAUTION

- ☞ Using corrosive disinfectants may result in damage, malfunction and/or failure of the equipment.
- ☞ Chlorine may damage the materials of the equipment or the vacuum supply.
- ☞ Leaking of liquid from a damaged aspiration system may lead to exposure of personnel and material or to damage/destruction of wetted equipment or laboratory furniture.
- ☞ For information about the compatibility with the materials, ask the manufacturer of the disinfectant.
- ☞ The materials of the system are listed in the section "Technical data".

Accessories and spare parts



Set of nose cones (8 pieces)**20635589**
with O-rings and mounting tool



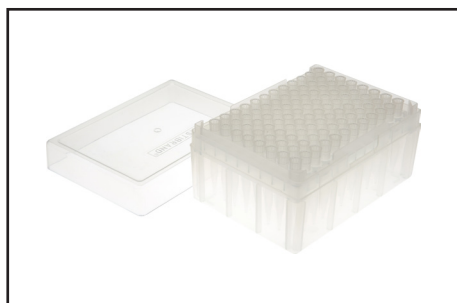
Bench-top rack for 8-channel tip adapter ..**20635584**



VacuuHandControl VHC^{pro}**20688061**

Spare hose for VHC**20636156**
(minimum order quantity 2 m)

For further accessories and spare parts see
manual of the VHC^{pro}.



Pipettes or pipette tips are available from
BRAND GMBH + CO KG (www.brand.de/en)
via laboratory products distributors.

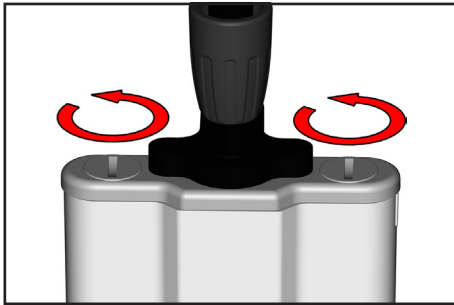
Troubleshooting

Fault	Possible cause	Remedy
☐ No aspiration at the VHC ^{pro} . Pipette drips.	➔ Adapter or aspiration tube defective? ➔ Aspiration hose kinked? ➔ Aspiration hose clogged or agglutinated? ➔ Pipette fits loosely or fits bad? ➔ Leak in the system? ➔ No vacuum?	✓ Replace adapter with aspiration hose. ✓ Correct hose guide. ✓ Remove clogged or agglutinated hose section or replace hose. ✓ Connect pipette securely or choose an appropriate adapter. ✓ Check the system for leaks. ✓ Check the vacuum system.
☐ Pipette does not held properly in the adapter.	➔ Adapter wet or greasy? ➔ Pipette with improper diameter selected? ➔ Seal at the nose cone defective?	✓ Clean or replace adapter. ✓ Choose appropriate pipette or change adapter. ✓ Replace nose cone.
☐ Liquid is aspirated slowly or not at all.	➔ Pipette or nose cone clogged or damaged?	✓ Clean or replace pipettes or nose cones.

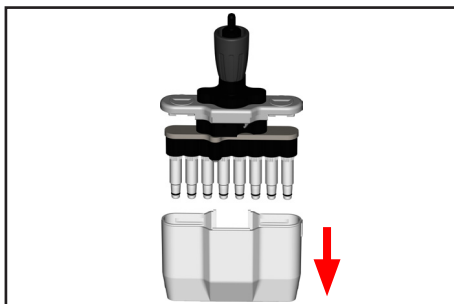
Replacing the nose cones

Tools required:

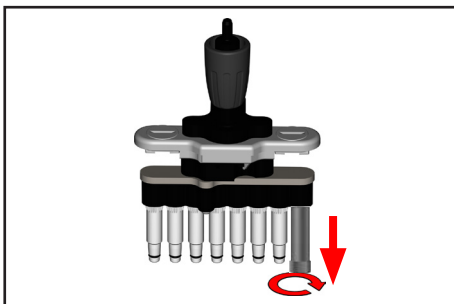
- Flat-bladed screw driver or coin
- Mounting tool for nose cones



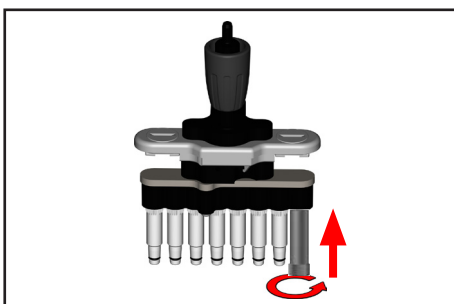
Turn both closures of the housing cover 90° (e.g., using a coin).



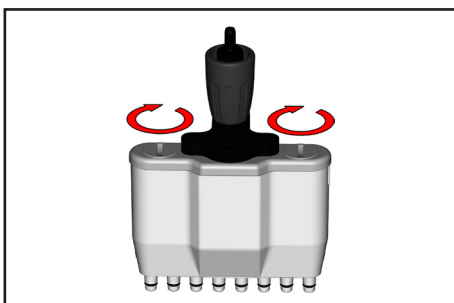
Slide off the housing.



Use the mounting tool to unscrew the nose cone.



Position new nose cone and screw hand-tight using the mounting tool.



Reassemble the 8-channel adapter.

Repair - Maintenance - Return - Calibration

IMPORTANT

Every employer (user) is held responsible for the health and safety of his employees. This also applies to service personnel performing repair, maintenance, return or calibration.

The **health and safety clearance form** informs the contractor about any possible contamination of the device and forms the basis for the risk assessment.

In case of devices which have been in contact with biological substances of risk level 2 contact the VACUUBRAND service absolutely before dispatching the device. These devices have to be completely disassembled and decontaminated by the user prior to shipment. Do not return devices which have been in contact biological substances of risk level 3 or 4. These devices cannot be checked, maintained or repaired. Also decontaminated devices must not returned to VACUUBRAND due to a residual risk.

The same conditions apply to on-site work.

No repair, maintenance, return or calibration is possible unless the correctly completed health and safety clearance form is returned. Devices sent are rejected if applicable. Send a completed copy of the **health and safety clearance form** to us in advance. The declaration must arrive before the equipment. Enclose a second completed copy with the product.

Remove all components from the device that are no original VACUUBRAND components. VACUUBRAND will not be responsible for lost or damaged components that are no original components.

Drain the device completely of fluids and residues. Decontaminate the device. Close all openings airtight especially if using substances hazardous to health.

To expedite repair and to reduce costs, please enclose a detailed description of the problem and the product's operating conditions with every product returned.

If you do not wish a repair on the basis of our **quotation**, the device may be returned to you disassembled and at your expense.

In many cases, the components must be cleaned in the factory prior to repair.

For cleaning we use an environmentally friendly water based process. Unfortunately the combined attack of elevated temperature, cleaning agent, ultrasonic treatment and mechanical stress (from pressurised water) may result in damage to the paint. Please mark in the health and safety clearance form if you wish a repaint at your expense just in case such a damage should occur. We will also replace parts for cosmetic reasons at your request and at your expense.

Before returning the device

Pack the device properly, if necessary, please order original packaging materials at your costs.

Mark the package completely

Enclose the completed health and safety clearance form.

Notify the carrier of any possible contamination if required.

Scrapping and waste disposal

Dispose of the equipment and any components removed from it safely in accordance with all local and national safety and environmental requirements. Particular care must be taken with components and waste oil which have been contaminated with dangerous substances from your processes. Do not incinerate fluoroelastomer seals and O-rings. You may authorize us to dispose of the equipment **at your expense**. Otherwise we return the device at your expense.

Health and safety clearance form

1. Device (Model):

2. Serial no.:

3. Reason for return / malfunction:

4. Has the device been used in a copper process step (e.g., semiconductor production): ☐ yes ☐ no

5. Substances (gases, liquids, solids, biological material, e. g. bacteria, viruses) in contact with the device / which have been pumped:

.....

.....

.....

6. Risk level of the used biological material: ☐ none ☐ 1 ☐ 2* ☐ 3** ☐ 4**

* Contact the VACUUBRAND service absolutely before dispatching the device.

** Devices which have been in contact with biological substances of risk level 3 or 4 cannot be checked, maintained or repaired. Also decontaminated devices must not returned to VACUUBRAND due to a residual risk.

7. Radioactive contamination: ☐ yes ☐ no

8. Prior to return to the factory the device has been decontaminated: ☐ yes ☐ no

Description of the decontamination method and the test / verification procedure:

.....

9. All parts of the device are free of hazardous, harmful substances: ☐ yes ☐ no

10. Protective measures required for service staff:

.....

11. If the paint is damaged, we wish a repaint or a replacement of parts for reason of appearance (repaint and replacement at customer's expense): ☐ yes ☐ no

12. Legally binding declaration

We assure for the returned device that all substances, which have been in contact with the device are listed in section 5 and that the information is complete and that we have not withheld any information. We declare that all measures - where applicable - have been taken listed in section "Repair - Maintenance - Return - Calibration". By our signature below, we acknowledge that we accept liability for any damage caused by providing incomplete or incorrect information and that we shall indemnify VACUUBRAND from any claims as regards damages from third parties. We are aware that as expressed in § 823 BGB (Public Law Code of Germany) we are directly liable for injuries or damages suffered by third parties, particularly VACUUBRAND employees occupied with handling/repairing the product. Shipping of the device must take place according to regulations.

Name: Signature:

Job title: Company's seal:

Date:

Release for repair grant by VACUUBRAND (date / signature):

Protective measures: ☐ Protective gloves, safety goggles ☐ Hood ☐ External cleaning

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