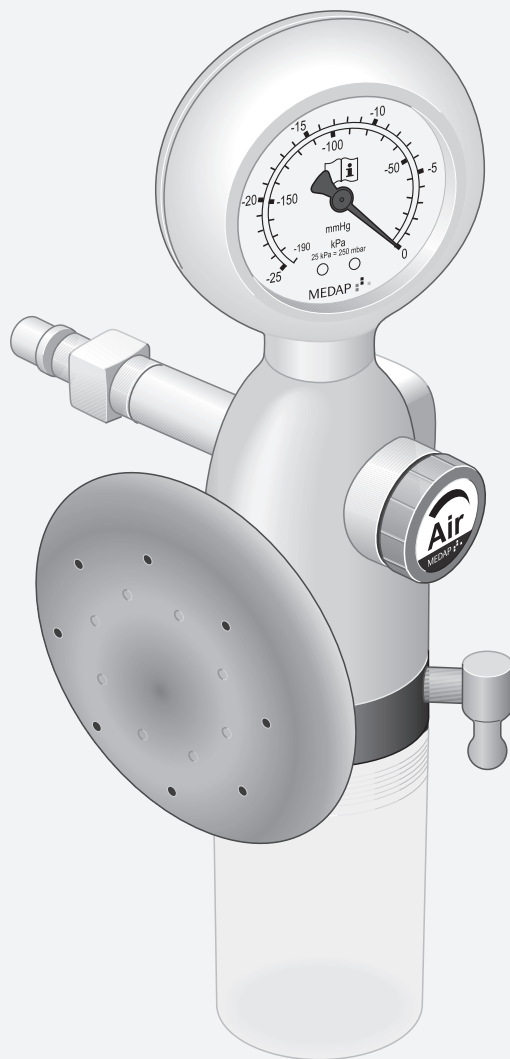


OPERATING INSTRUCTIONS
TAPPING UNIT FOR DRAINAGE
MEDAP-FINA AIR D 150

MEDAP 



Subject to technical modification!

Illustrations and technical specifications may vary slightly from those in these Operating Instructions as a result of ongoing product development.

V07 2018-02



Table of contents

1	Introduction	5
1.1	Foreword	5
1.2	How to use these operating instructions	5
1.2.1	Abbreviations	5
1.2.2	Symbols	5
1.2.2.1	Cross-references	5
1.2.2.2	Actions and responses	5
1.2.3	Definitions	6
1.2.3.1	Design of safety notes	6
1.2.3.2	Structure of notes	6
1.3	Symbols used.....	6
1.4	Disposal.....	7
1.4.1	Packing	7
1.4.2	ATMOS products.....	7
1.5	Overview	8
1.5.1	Overview of FINA AIR D 150.....	8
1.5.2	Overview of FINA AIR D 150 variants	9
1.6	Basic requirements.....	9
1.6.1	Use in accordance with the intended purpose	9
1.6.2	Applicable standards.....	10
1.6.3	Intended purpose	10
1.6.4	Versions	11
1.6.5	Interface description.....	11
1.6.5.1	Vacuum connection tube	11
1.6.5.2	Hydrophobic bacterial and viral filter	12
1.6.5.3	Septic fluid jar including septic fluid jar cap	12
1.6.5.4	Suction tube.....	12
1.6.5.5	Utensil.....	12
1.6.5.6	Mechanical overflow protection	12
2	Safety notes	13
2.1	General safety notes	13
2.2	Product safety notes.....	13
3	Initial operation.....	15
3.1	Equipment inspection	15
3.2	Mounting.....	15
3.2.1	Mount the vacuum gauge	15
3.2.2	Inserting the bacterial filter paper.....	16
3.2.3	Connection to the terminal unit	16



- 3.2.3.1 General 16
 - 3.2.3.2 Version A 17
 - 3.2.3.3 Version B 17
 - 3.2.4 Assembly of septic fluid jar and accessories 17
- 4 Operation 20**
- 4.1 Functional test 20
- 4.2 Working with the unit 20
- 5 Taking the unit out of operation 22**
- 5.1 Completing the aspiration process 22
- 6 Cleaning and disinfection 23**
- 6.1 General 23
- 6.2 Cleaning 24
 - 6.2.1 General 24
 - 6.2.2 Cleaning procedure 24
- 6.3 Disinfection 24
 - 6.3.1 General 24
 - 6.3.2 Suitable disinfectants 25
 - 6.3.3 Disinfection procedure 25
- 6.4 Safety notes 25
- 7 Maintenance 27**
- 7.1 General 27
- 7.2 Period tests 27
- 7.3 Malfunctions and troubleshooting 27
- 7.4 Repairs 28
- 7.5 Service hotline: 28
- 7.6 Spare parts 29
- 7.7 Sending in the device 29
- 8 Technical specifications 30**
- 8.1 General 30
- 8.2 Ambient conditions 30
- 8.3 Technical specifications 30
- 8.4 Dimensions and weight 30
- 9 Approved accessories 31**
- 9.1 Standard scope of delivery 31
- 9.2 Accessories 31
- 9.3 Consumables 31

1 Introduction

1.1 Foreword

Your facility has selected the leading-edge medical technology made by ATMOS. We sincerely appreciate the trust you have placed in us.

1.2 How to use these operating instructions

These operating instructions are provided to familiarise you with the features of this ATMOS product. They are subdivided into several chapters.

Please note:

- Please read these operating instructions carefully and completely before using the product for the first time.
- Always proceed in accordance with the information contained herein.
- Store these operating instructions in a location near the product.

1.2.1 Abbreviations

EN	European standard
EEC	European Economic Community
VDE	Verband der Elektrotechnik Elektronik Informationstechnik (Association for Electrical, Electronic & Information Technology)

1.2.2 Symbols

1.2.2.1 Cross-references

References to other pages in these operating instructions are identified with a double arrow symbol „»“.

1.2.2.2 Actions and responses




The „☒“ symbol identifies an action taken by the user while the „✓“ symbol identifies the reaction that this will induce in the system.

Example:

- ☒ Turn on the light switch.
 - ✓ Lamp lights up.

1.2.3 Definitions



1.2.3.1 Design of safety notes

Pictogram	Descriptor	Text
	DANGER! Indicates a direct and immediate risk to persons, which may be fatal or result in most serious injury.	The text for the safety note describes the type of risk and how to avert it.
	WARNING! Indicates a potential risk to persons or property which may result in health hazard or grave property damage.	
	CAUTION! Indicates a potential risk to property which may result in property damage.	

Tab. 1: Design of safety notes

1.2.3.2 Structure of notes





Notes not referring to personal injury or property damage are structured as follows:








Pictogram	Descriptor	Reference to
	NOTE	Supplementary assistance or further useful information without potential injury to persons or property damage is described in the text of the note.
	ENVIRONMENT	Information regarding proper disposal.

Tab. 2: Structure of notes

1.3 Symbols used

Symbols are attached to products, type plates and packaging.

Symbols	Identification
	Labelling for products which were developed and are marketed in compliance with the 93/42/EEC Medical Products Directive. Class Is, Im, IIa, IIb and III products are also marked with the identifying number for the notified body.
	Labelling in compliance with the ISO 15223-1 standard. Symbol for "Product number".
	Labelling in compliance with the ISO 15223-1 standard. Symbol for "Serial number".
	Labelling in compliance with the ISO 15223-1 standard. Symbol for "Follow Operating Instructions".

Symbols	Identification
	Labelling in compliance with the ISO 15223-1 standard. Symbol for "Name and address of the manufacturer as well as date of manufacture".
>PA<	Material designation for the plastic PA (polyamide).
	Packaging label. Symbol for "Keep dry".
	Packaging label. Symbol for "Caution! Do not overturn."
	Packaging label. Symbol for "Top".
	Labelling in compliance with the ISO 15223-1 standard. Symbol for "Temperature limitations".
	Labelling in compliance with the ISO 15223-1 standard. Symbol for "Relative humidity".
	Labelling in compliance with the ISO 15223-1 standard. Symbol for "Atmospheric pressure".

Tab. 3: Symbols

1.4 Disposal



WARNING!

Infection hazard!

The product or some of its components may be contaminated after use.

Clean and disinfect the product before disposal.

1.4.1 Packing

The packing is made of materials compatible with the environment. ATMOS will dispose of the packing materials upon request.

1.4.2 ATMOS products

ATMOS will take back used products or those which are no longer in service. Please contact your ATMOS representative for more detailed information.

1.5 Overview

1.5.1 Overview of FINA AIR D 150

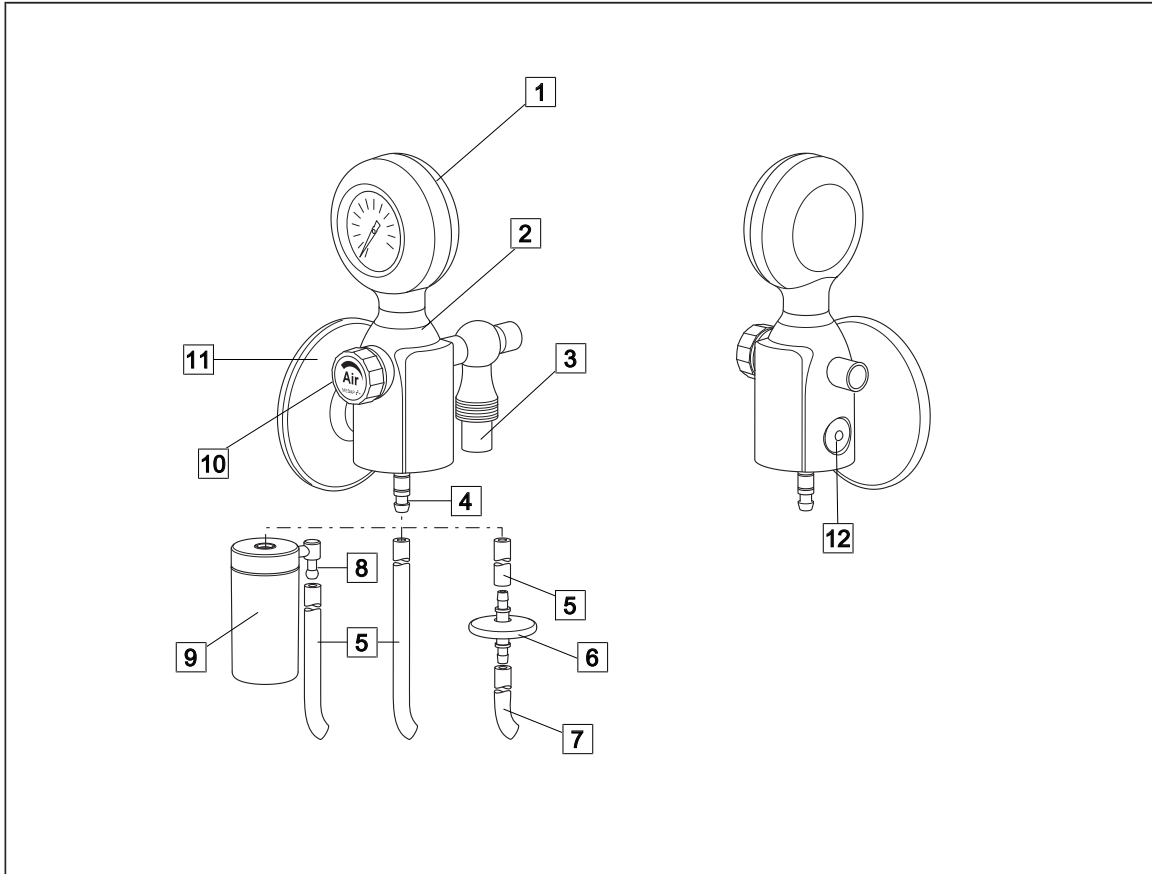


Fig. 1: Overview of FINA AIR D 150

- | | |
|--|---|
| 1 Vacuum gauge | 7 Vacuum connection tube |
| 2 Housing | 8 Tube adapter mechanical overflow protection |
| 3 NIST connection | 9 Mechanical overflow protection |
| 4 Tube adapter | 10 Regulating valve |
| 5 Vacuum connection tube | 11 Bacterial filter housing |
| 6 Hydrophobic bacterial and viral filter | 12 Pressure-relief valve |

1.5.2 Overview of FINA AIR D 150 variants

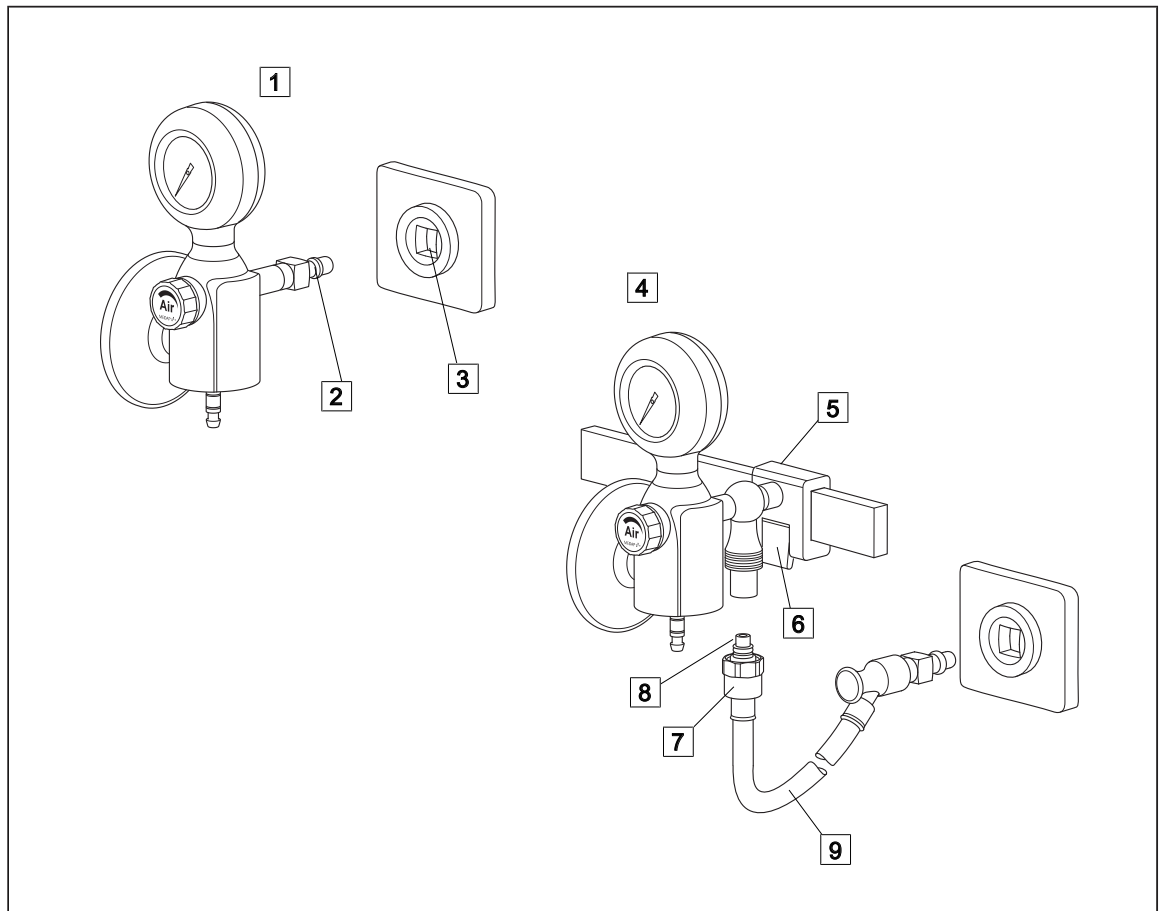


Fig. 2: Overview of FINA AIR D 150 variants

- | | |
|---|-------------------------|
| 1 Version A | 5 Rail clamp |
| Tapping unit with integrated gas pin | 6 Locking lever |
| 2 Plug | 7 NIST nipple |
| 3 Terminal unit | 8 NIST screw connection |
| 4 Version B | 9 Connection tube |
| Tapping unit with rail clamp and NIST connection | |

1.6 Basic requirements

1.6.1 Use in accordance with the intended purpose

Product

As per appendix IX of the Medical Products Directive 93/42/EU this product belongs to class IIa. In accordance with this directive the product may only be used by persons who have been instructed how to use this product by an authorised person.

This product is to be used exclusively for human medicine.

When employed in a commercial or business use, this product shall be entered in the inventory.

Accessories

Accessories or combinations of accessories may be utilised only as and when indicated in these operating instructions.

Other accessories, combinations of accessories and consumable items may be used only if they have a valid certification, are intended expressly for the particular use and will not adversely affect performance, the prescribed ambient conditions or safety requirements.

1.6.2 Applicable standards

The product satisfies the basic requirements set forth in Annex I to the 93/42/EU Directive drafted by the Medical Products Council (Medical Products Directive) as well as the applicable national (German) codes and the Medical Products Act in Germany. This has also been demonstrated through the application of the corresponding standards, which have been harmonised with the 93/42/EEC Directive.

1.6.3 Intended purpose

Name:	FINA AIR D 150
Main function:	Aspiration of secretion, blood and serous fluids.
Medical indications / application:	The FINA AIR D 150 is designed for the precise regulation of vacuum and used for postoperative aspiration of wound exudate, septic fluid, blood or serous fluids. Additional fields of application are the aspiration of air as well as rinsing and wound drainage.
Specification of the main function:	Drainage and temporarily collection of body fluids. For compressed air supply, FINA AIR D 150 is connected to a terminal unit compressed air of a central medical gas supply system with a pressure of 500 kPa \pm 10 %. A septic fluid jar which has to be used, allows a temporary collection of the derived body fluids.
User profile:	Doctor, medically trained staff
Patient groups:	Patients of all ages
Application organ:	Natural and artificial body orifices
Application time:	For continuous operation; in practice short-term use on the patient (< 30 days)
Application site:	The application site is the clinical environment and doctor's practices which do have a central compressed air supply system. The application of the product may only be performed by medically trained and introduced staff.
Contraindications:	The FINA AIR D 150 may not be used for the following purposes: <ul style="list-style-type: none"> • Outside the medical sector • In MR areas • In the home care sector • Being operated directly by the patient • For vacuum extraction • For the aspiration of flammable or explosive liquids • For the aspiration of smoke that is generated during HF and laser surgery without the connection of an intermediate smoke filter • For thoracic drainages • For surgical aspiration • For bronchial aspiration

The product is:	Active
Sterility:	No sterile product
Single-use product / reprocessing:	The device and parts of the accessories are reusable. For information on reprocessing, cleaning and disinfection please see the operating instructions.

1.6.4 Versions

The connection of the terminal unit to FINA AIR D 150 depends on the model being used:

Version A: Tapping unit with integrated gas pin

- FINA AIR D 150 is fitted directly to the terminal unit.

Version B: Tapping unit with rail clamp and NIST connection

- FINA AIR D 150 is designed for mounting to an equipment rail 25 x 10 mm and is supplied via a NIST connection with compressed air from a terminal unit connected using a connection tube with probe.

Products and accessories are only permitted with the ISO colour coding. In Germany, Austria and Switzerland, products with neutral colour coding are also permitted.



NOTE

The products are supplied with ISO coding. The scope of delivery includes a label for neutral colour coding.

- FINA AIR D 150 Wall MEDAP (REF 5752 4964)
- FINA AIR D 150 Wall DIN (REF 5752 4965)
- FINA AIR D 150 Equipment rail (REF 5752 4966)

1.6.5 Interface description

All devices and accessories which are combined with the tapping unit must be listed in the accessories list or meet the specifications of the interface description. The configuration of the overall system as well as the functional testing are subject to the overall responsibility of the medical staff. Functionality and suitability of the connected accessory for each intended application must be checked by the operator before every use. This includes the functionality of the connector components, its air tightness and suitability regarding material properties, working pressure and flow rate.

1.6.5.1 Vacuum connection tube

The vacuum connection tube is used to connect the tapping unit and the septic fluid jar.

Technical specifications

- Shore hardness of 60
- Inside diameter 6 mm
- Length 50 (±10 cm)
- Vacuum resistant down to -95 kPa (may not collapse).

Prerequisites

- The internal diameter of the vacuum connection tube should match the outer diameter of the tube connector on the septic fluid jar cap of the pump.

The vacuum connection tube will be referred to only as "connection tube" below.

1.6.5.2 Hydrophobic bacterial and viral filter

In its function as overflow protection device, the hydrophobic bacterial and viral filter protects the product against ingress of particles, fluid and foam. In its function as bacterial and viral filter, it protects the product from the ingress of bacteria and viruses.

Prerequisites

- Pore size $\leq 1.0 \mu\text{m}$
- The tube connector must match the tube being used.
- The hydrophobic bacterial and viral filter must close tightly against water passage at an absolute pressure of up to 10 kPa.
- If required, observe direction of flow (see note on the hydrophobic bacterial and viral filter).

1.6.5.3 Septic fluid jar including septic fluid jar cap

The septic fluid jar and septic fluid jar cap are used to collect the secretions extracted.

Prerequisites

- Low leakage.
- Always fasten the septic fluid jar securely.
- The outer diameter of the tube connector on the patient side should match the inner diameter of the suction tube.

1.6.5.4 Suction tube

The suction tube acts as the connection between the septic fluid jar and the utensil.

Technical specifications

- Shore hardness of 60
- Inner diameter of 6 - 8 mm
- Length 1.3 m - 3.0 m
- Vacuum resistant down to -95 kPa (may not collapse).

Prerequisites:

- The outer diameter of the tube connector on the patient side of the septic fluid jar must match the inner diameter of the suction tube.

1.6.5.5 Utensil

Suction catheters or lances, for example, are referred to as utensils. The utensils are used to extract septic fluids.

Prerequisites

- The inner diameter of the utensil's connector must match the outer diameter of the suction tube.
- The utensil must be sterilisable or a sterile single-use item.
- Biocompatibility

1.6.5.6 Mechanical overflow protection

The mechanical overflow protection device protects the product from the ingress of fluids. Tube connector must match the vacuum connection tube.

2 Safety notes

2.1 General safety notes

**WARNING!**

Risk of injury!
Hazard resulting from incorrect handling.

Be absolutely sure to observe the operating instructions for all the products used in the configuration.

**WARNING!**

Risk of injury!
ATMOS products may be used only when fully functional.

Check to ensure that the ATMOS product is fully functional and in good working order prior to use.

2.2 Product safety notes

**DANGER!**

Infection hazard due to oversuction!

To avoid the ingress of fluid or foam into the product or the vacuum source, a hydrophobic bacterial filter must be used. If secretions enter into the insides of the unit, the product must immediately be taken out of operation. Clean and disinfect the product and have it repaired by a service technician authorised by ATMOS to do so.

**DANGER!**

Infection hazard due to contamination!

To avoid the ingress of fluid or foam into the product or the vacuum source, a hydrophobic bacterial filter must be used. If bacteria or viruses enter into the inside of the unit, the product must immediately be taken out of operation. Clean and disinfect the product and have it repaired by a service technician authorised by ATMOS to do so.

**DANGER!**

Risk of injury to mucous membranes!

Endobronchial aspiration in paediatrics and neonatology requires particularly careful limitation of the vacuum. For the regular endobronchial aspiration in paediatrics and neonatology, ATMOS also offers paediatric versions with a higher level of setting convenience.

**WARNING!**

Impacts!
Impacts may cause damage to sensitive, precision mechanical components.
Do not expose the product to impacts.

**WARNING!**

Measuring accuracy / oversuction!
The product may only be operated in a vertical position.

**WARNING!**

Foaming!

Foam may be created when extracting secretion. Foam is detrimental to the functioning of the mechanical overflow protection. This raises the risk that secretions may penetrate the product and cause it to break down.

Use an ordinary foam inhibitor.

**WARNING!**

Risk to patient!

Use the special tapping unit for thoracic draining for vacuum limiting in the regulating range less than 3 kPa, in particular in thoracic drainage.

**WARNING!**

Backflow of aspirated secretion!

In the event of oversuction, the aspirated secretion may flow back to the patient if there is secretion still left in the suction tube.

Before replacing the septic fluid jar in the event of oversuction or switching off the vacuum, always remove the tube from the patient first.

**WARNING!**

Non-permissible load!

If the permissible load is exceeded, leakages may occur at the connection between terminal unit and probe.

In accordance with DIN EN ISO 9170-1, the overall weight of the product and accessories may not exceed 2 kg.

**WARNING!**

Risk of injury!

Replace the hydrophobic bacterial and viral filter immediately if it is discoloured, contaminated or oversucked.

Furthermore the filter must be exchanged, if the vacuum displayed is above -0.3 bar / 30 kPa when the vacuum controller is in the „max“ position and the suction hose is open.

**WARNING!**

Risk of injury!

The product may not be used for the following purposes or under the following conditions:

- Never throw, hit or drop the unit.
- The product is not suitable for vacuum extraction.
- The product may not be used without a hydrophobic filter.
- The product may not be used without a bacterial and viral filter.
- The product may not be used without a septic fluid jar.
- Do not hold or lift the product by the vacuum gauge.
- The vacuum gauge is not autoclavable.
- During storage, the unit should be protected against damage by, e.g. cloths.

3 Initial operation

3.1 Equipment inspection



DANGER!

Product testing!

Only product parts which are in perfect condition can ensure proper functioning of the product. The product parts will thus have to be carefully inspected before mounting.



DANGER!

Infection hazard!

Contaminated components may be hazardous to the patient's health.

Prepare the product according to the hygiene guidelines before using it. Clean and disinfect the product.



NOTE

In order to ensure the functionality, carry out a functional check prior to use.

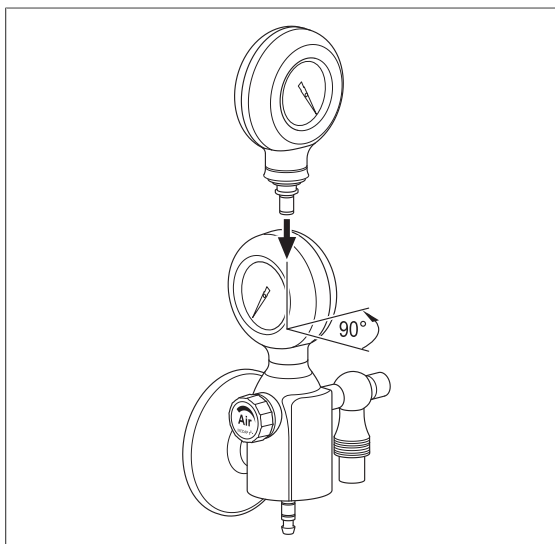
3.2 Mounting

3.2.1 Mount the vacuum gauge



NOTE

The vacuum gauge connection is pressure range specific. If it is not possible to assemble the vacuum gauge, check the scale maximum and the unit designation to see whether the parts can actually match.



☒ Insert the vacuum gauge into the basic unit with a 90° twist and press downwards to stop. Turn the vacuum gauge about 90° to the front to lock it.

Fig. 3: Assembly of vacuum gauge

3.2.2 Inserting the bacterial filter paper

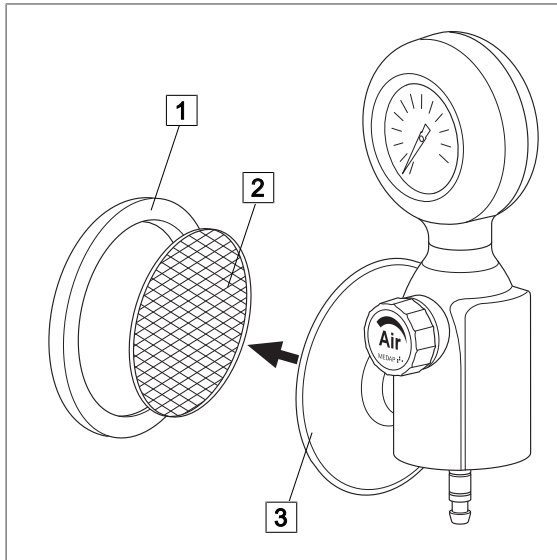


WARNING!

Infection hazard!

When in use, change bacterial filter paper every day.

Dispose of used bacterial filter papers in compliance with hygiene guidelines.



- Unscrew the bacterial filter cap (1) anticlockwise.
- Insert the bacterial filter paper (2) into the bacterial filter cap.
 - ✓ The finely textured side points towards the product (3).
- Gently screw the bacterial filter cap back on in clockwise direction.

Fig. 4: Inserting the bacterial filter paper

3.2.3 Connection to the terminal unit

3.2.3.1 General



NOTE

Please refer to the manufacturer's instructions for the particular terminal unit for information on connecting the gas probe to the terminal unit.

3.2.3.2 Version A

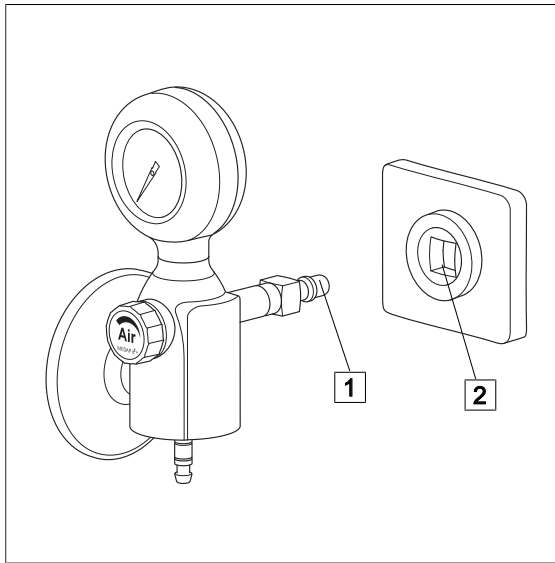


Fig. 5: Version A

Tapping unit with integrated gas pin

- ☒ The tapping unit (1) is plugged directly into the terminal unit (2).

3.2.3.3 Version B

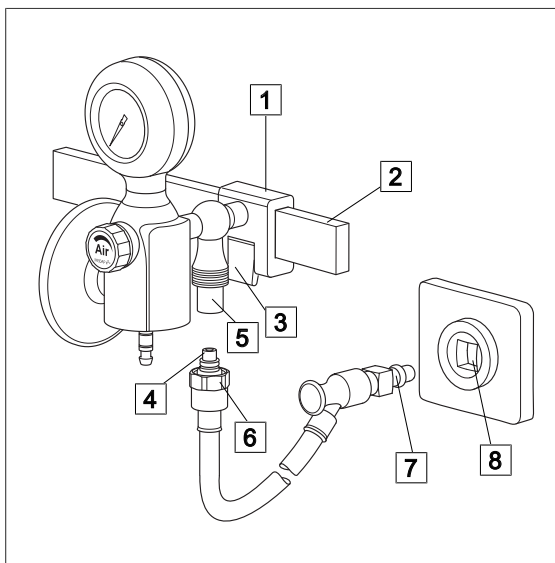


Fig. 6: Version B

Tapping units with rail clamp and NIST connection

- ☒ With the upper edge of the guide groove at the front, position the rail clamp (1) at a slight angle onto the equipment rail (2) and then press it against the equipment rail and allow it click into place.
- ☒ Make sure that the rail clamp is correctly secured and that the tapping unit is in a stable position on the equipment rail. The locking lever (3) must be flush with the rairmounted stand holder.
- ☒ Insert the NIST nipple (4) of the connection tube into the NIST connection (5) of the tapping unit and tighten down the NIST screw connection (6) by hand.
- ☒ Plug the gas probe (7) of the connection tube into the terminal unit (8).

3.2.4 Assembly of septic fluid jar and accessories



WARNING!

Tensile forces!

The connected accessories must not exert any mechanical forces which could adversely affect the secure seating of the product.



WARNING!

Tensile forces!

Hold the basic unit with one hand when installing or removing accessories in order to compensate for the tensile forces which are created.

**NOTE**

Refer to the manufacturer's instructions for additional information on the use of the septic fluid jar and the extraction utensil.

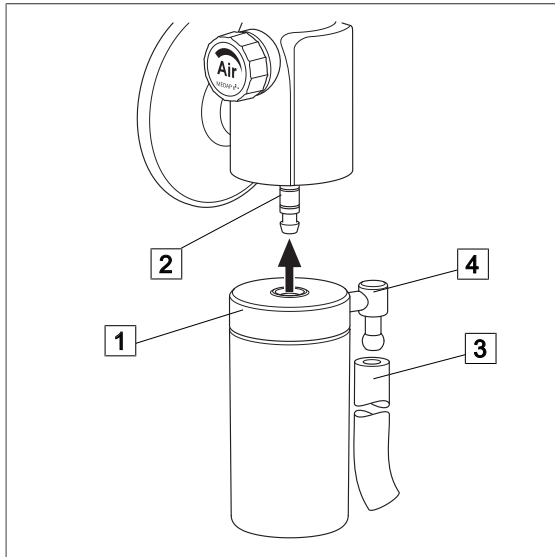


Fig. 7: Connection of mechanical overflow protection

Connection of mechanical overflow protection

- ☒ Plug the overflow protection device (1) directly on the tube connector (2) on the housing of the tapping unit and press upwards to the stop.
- ☒ Attach the connection tube (3) to the tube connector (4) of the mechanical overflow protection device and connect it with the appropriate tube connector of the septic fluid jar.
- ☒ For disassembly, first remove the connection tube from the tube connector of the mechanical overflow protection device. Then remove the complete overflow protection device with lid from the tube connector of the tapping unit. Hold the tapping unit steady with one hand while doing so.

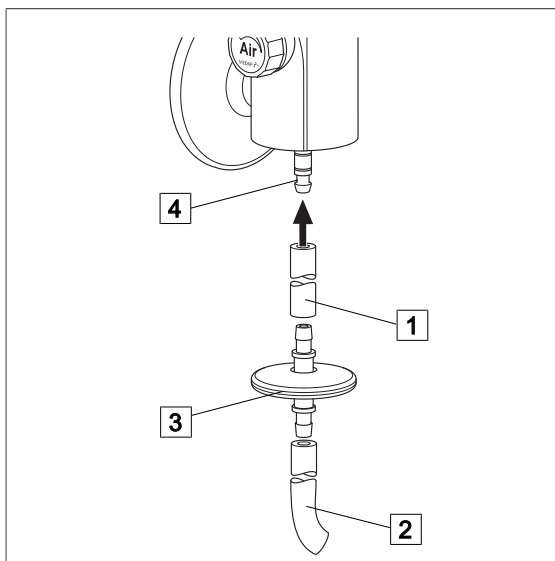


Fig. 8: Connection of hydrophobic filter

Connection of hydrophobic bacterial and viral filter

- ☒ The connection tubes (1) and (2) are plugged onto the tube connectors of the hydrophobic bacterial and viral filter (3).
- ☒ Check the flow direction of the bacterial and viral filter. The inlet side must face the patient, the outlet must face the tapping unit.
- ☒ Then plug the connection tube to the tube connector (4) on the housing of the tapping unit.
- ☒ Connect the connection tube with the intended tube connector of the septic fluid jar.

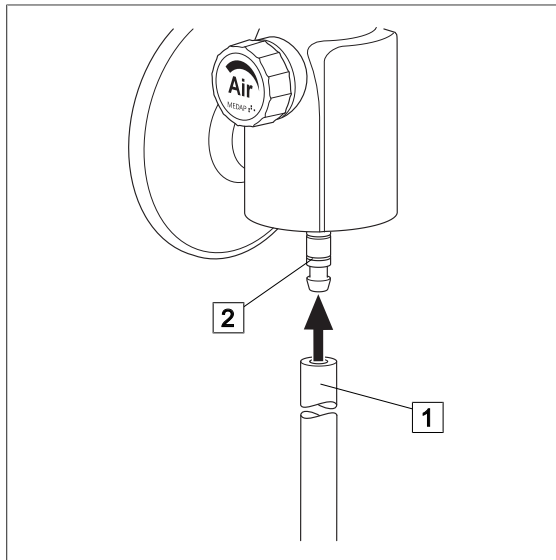


Fig. 9: Connection of septic fluid jar

Connection septic fluid jar with integrated hydrophobic bacterial and viral filter

- ☒ Attach the connection tube (1) to the tube connector (2) on the housing of the tapping unit and connect to the tube connector of the septic fluid jar.

4 Operation

4.1 Functional test

**DANGER!**

Functional check!

The product is used in the treatment of patients. Any restriction in the unit's performance can result in serious complications in treatment.

Perform a complete functional check every time before using the unit.

Prior to use the following functional check must be performed:

Version A: Tapping unit with integrated gas pin

- The tapping unit is correctly plugged into the terminal unit.

Version B: Tapping unit with rail clamp

- The tapping unit is locked firmly to the equipment rail.

All versions:

- The product has been properly cleaned and no contamination is present.
- The regulating valve can be easily turned.
- The hydrophobic overflow protection device and the bacterial and viral filter are mounted, fully functional and no residue is trapped in it.
- A bacterial filter paper is inserted.
- The tube connectors are firmly seated and tightly sealed and no mechanical forces are acting on the tubes.
- The plastic and rubber components are in perfect condition and show no signs of ageing.
- A septic fluid jar is connected to the tapping unit.

4.2 Working with the unit

**DANGER!**

Infection hazard!

In the event of oversuction, the hydrophobic bacterial and viral filter must no longer be used.

Replace the hydrophobic bacterial and viral filter with a new one.

**WARNING!**

Vacuum setting!

Make the vacuum settings very carefully! The regulating mechanism is sensitive.

**WARNING!**

Air inlet!

The bore hole in the underside of the unit must always be kept free, so that airflow is always ensured.

**NOTE**

Check the vacuum setting once again immediately before using the unit!

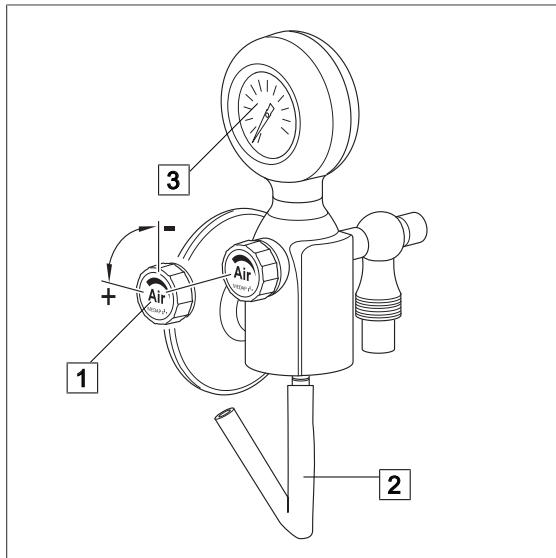


Fig. 10: Setting the vacuum level

Setting the vacuum for treatment

- ☒ Close the regulating valve (1) until stop. Turn in clockwise direction.
- ☒ Bend the tube A (2) leading to the septic fluid jar and set the vacuum with the regulating valve while doing so. Turn anticlockwise. Read the value on the vacuum gauge (3). In case of malfunctions, e.g. insufficient vacuum level, refer to the troubleshooting table for the cause.
- ☒ Use the control valve to set the required value for the treatment.
Increase the vacuum: Turn the control valve anti-clockwise.
Lower the vacuum: Turn control valve clockwise.

5 Taking the unit out of operation

5.1 Completing the aspiration process

**NOTE**

Refer to the medical gas distributor instructions for information regarding detaching the gas probe from the medical gas distributor.

- Remove the suction tube from the patient.
- Close the regulating valve.
- Empty the septic fluid jar and clean or replace it.
- Remove the connection tubes and the overflow protection device / the hydrophobic bacterial and viral filter from the tapping unit and the septic fluid jar and recondition or dispose of.
- Clean the components.
- Disconnect the gas probe from the terminal unit.

Version B: Tapping unit with rail clamp and NIST connection

- Remove the product from the equipment rail. For this purpose, pull the locking lever and lift the unit off the equipment rail.

6 Cleaning and disinfection

6.1 General

The product must be wipe or spray disinfected after every use.

**DANGER!**

Risk due to incorrect use of detergents and disinfectants!

It is strictly advised to observe the manufacturer instructions regarding how to use the detergents and disinfectants as well as the valid hospital hygiene rules.

**DANGER!**

Infection hazard!

Product may be contaminated.

Always wear gloves for cleaning and disinfection.

**DANGER!**

Infection hazard!

Particles of grime may become encapsulated and lead to the product not reaching the desired germ-reduction after disinfection.

Before disinfection, the product must be cleaned thoroughly of contamination and encapsulated particles of grime.

**CAUTION!**

Improper cleaning and disinfection can cause property damage!

Do **not** use the following products for cleaning and disinfection:

- Products containing alcohol (e. g. hand disinfectants)
- Halogenides (e. g. fluorides, chlorides, bromides, iodides)
- Dehalogenating compounds (e. g. fluorine, chlorine, bromine, iodine)
- Products that may scratch the surface (e. g. scouring agents, wire brushes, wire wool)
- Standard commercial solvents (e. g. benzene, thinner)
- Water containing iron particles
- Cleaning sponges containing iron
- Products containing hydrochloric acid

Use a soft, lint free cloth or a soft nylon brush to clean the product.

**CAUTION!**

Improper cleaning and disinfection can cause property damage!

Use only as much detergent and disinfectant as required.

**CAUTION!**

Improper cleaning and disinfection can cause property damage!

After each cleaning and disinfection process, carry out the functionality test.

6.2 Cleaning

6.2.1 General



NOTE

Use only all-purpose cleaners which are slightly alkaline (soap solution) and contain tensides and phosphates as the active cleaning agents.

In the event of heavily contaminated surfaces, use concentrated multi-purpose detergent.



CAUTION!

Improper cleaning can cause property damage!

Residues of physiological saline solutions (e. g. sodium chloride) can attack the surfaces of the product.

Remove residues of physiological saline solutions with a cloth dipped in clean water. Then dry the product with a dry, lint free cloth.



CAUTION!

Improper cleaning can cause property damage!

Do not spray cleaning agent directly into the joints or gaps and never use a high-pressure cleaning unit!

6.2.2 Cleaning procedure

- Use the correct dose of multi-purpose detergent with water for the degree of surface contamination and in accordance with the instructions of the detergent manufacturer.
- Thoroughly wipe off the product with a soft cloth slightly wetted in a multi-purpose detergent solution.
- Ensure that the product is free of contamination and encapsulated particles of grime.
- Thoroughly wipe off the product with a soft cloth dipped in clean water.
- Ensure that the product is free of detergent residues.
- Dry product with a dry, absorbent and lint free cloth.
 - ✓ This will help to reduce pathogen growth on the product's surface.
- Wipe disinfect the product after every cleaning process.

6.3 Disinfection

6.3.1 General



NOTE

In the event of product surfaces that are very dirty, carry out an additional cleaning procedure before disinfecting.



DANGER!

Reduced performance!

Only clean the product by manual disinfection.

Ensure that no disinfectants enter the unit. Check the functionality of the product after each disinfection.



CAUTION!

Material damage due to excessive exposure times!

Exceeding the specified exposure time of the disinfectant may damage the surfaces.

Observe the specified exposure time of the disinfectant manufacturer.

6.3.2 Suitable disinfectants

Only surface disinfectants based on the following combinations of active ingredients may be used for disinfection:

- Aldehydes
- Quarternary ammonium compounds
- Guanidine derivatives

Ingredient group	Active ingredients
Aldehydes	2-ethyl-1-hexanal, formaldehyde, glutardialdehyde, glyoxal, o-phthaldialdehyde, succinaldehyde
Quarternary ammonium compounds	Alkyl-didecyl-polyoxethyl ammonium propionate, alkyl-dimethyl-alkylbenzyl ammonium chloride, alkyl-dimethyl-ethyl ammonium chloride, alkyl-dimethyl-ethylbenzyl ammonium chloride, benzalkonium propionate, benzalkonium chloride (alkyl-dimethyl-benzyl ammonium chloride, coco-dimethyl-benzyl ammonium chloride, lauryl-dimethylbenzyl ammonium chloride, myristyl-dimethyl-benzyl ammonium chloride), benzethonium chloride, benzyl-dihydroxyethyl-coco-alkyl ammonium chloride, dialkyl-dimethyl ammonium chloride (didecyldimethyl ammonium chloride), didecyl-methyl-oxyethyl ammonium propionate, mecetronium-ethyl sulfate, methyl-benzethonium chloride, n-octyl-dimethyl-benzyl ammonium chloride
Guanidine derivatives	Alkyl-biguanide, chlorhexidine-digluconate, cocospropylene-diamine guanidinium diacetate, oligomeric biguanide, polyhexamethylene biguanide hydrochloride (oligo-diimino imido-carbonyl imino-hexamethylene, polyhexanide)

Tab. 4: Active ingredients of disinfectants

6.3.3 Disinfection procedure

- Wipe disinfect the product in accordance with the instructions of the disinfectant manufacturer after every cleaning process.
- Ensure that the product is free of disinfectant residue.
- Perform visual and functional inspections.

6.4 Safety notes



DANGER!

Risk to patient!

Oversuction of products results in them no longer being functional. There is considerable risk to the patient if the tapping unit is not cleaned properly after being exposed to oversuction, as safety equipment could be clogged.

After oversuction, products must be dismantled and cleaned thoroughly by authorised service staff.

**CAUTION!**

Property damage due to sterilisation!
Do not sterilise the product.

**DANGER!**

Health hazard!
The product may not be disassembled for cleaning or disinfection. During cleaning and disinfection, pay attention to ensure that no cleaning agent, disinfectant or other contamination is able to enter the product.

**CAUTION!**

Property damage!
Using non-colour-fast drapes can cause discolouration of surfaces.
Only use colour-fast drapes.

**NOTE**

For the cleaning and disinfection of versions B, disconnect the connection tube with the NIST screw connection from the tapping unit.

7 Maintenance

7.1 General

Maintenance, repairs and period tests may only be carried out by persons who have the appropriate technical knowledge and are familiar with the product. To carry out these measures the person must have the necessary test devices and original spare parts.

ATMOS recommends: Work should be carried out by an authorized ATMOS service partner. This ensures that repairs and testing are carried out professionally, original spare parts are used and warranty claims remain unaffected.



DANGER!

Health hazard!

The product is used in the treatment of patients. The product or some of its components may be contaminated.

Clean and disinfect the product before maintenance and repair. Repair work may be performed by personnel authorized by ATMOS.

7.2 Period tests

At least every 5 years a test must be performed.

7.3 Malfunctions and troubleshooting

Defect	Source of malfunction	Corrective actions
<ul style="list-style-type: none"> • No or low vacuum • No or reduced flow rate • Regulation of displacement not possible 	No vacuum gauge connected	Attach the vacuum gauge in accordance with the operating instructions
	The intermediate tube is not connected to tapping unit	Connect intermediate tube according to operating instructions
	Intermediate tube too long	Shorten intermediate tube to a maximum length of 50 cm
	Bacterial filter and / or sound absorber insert congested	Replace bacterial filter and / or sound absorber insert
	Intermediate tubes collapse	Use special intermediate tubes (vacuum proof up to -95 kPa)
	Full septic fluid jar, overflow protection system closed	Empty/replace septic fluid jar, replace overflow protection system
	Oversuction of hydrophobic bacterial and viral filter	Replace hydrophobic bacterial and viral filter
	Bacterial filter paper clogged	Replace bacterial filter paper
	Seal damaged	Replace seal
Suction system is leaking	Check suction system	

Defect	Source of malfunction	Corrective actions
	Central supply system failure	Contact technical service
	Probe connection loose	
	Vacuum gauge is defective	
	Gas-jet pump is defective	
	Regulating valve is defective	
Vacuum gauge does not fit	An attempt has been made to connect the vacuum gauge to the tapping unit with the scale pointing forwards	Always insert vacuum gauge with a 90° twist and then turn it to the front
	Vacuum gauge for the incorrect pressure range	Select vacuum gauge for the correct pressure range (see data plate), connections are coded
Oversuction of device despite protective system	Tapping unit and overflow protection device mounted at an angle	Operate tapping unit in a vertical position only
	Overflow protection device contaminated	Clean overflow protection device
	No foam inhibitor used	Use standard commercial foam inhibitor
Gas probe does not fit into the terminal unit	Terminal unit for the wrong gas type	Check gas type and use another terminal unit
Jumps in vacuum gauge indication	Silicone washer is not tight on the sealing edge of the pressure-relief valve seat	Position silicone washer correctly (ensure that the silicone washer is centred and tight on the sealing edge of the pressure-relief valve seat)

Tab. 5: Corrective actions

7.4 Repairs

The following may require repairs from the manufacturer or an authorized service partner:

- Liquid has penetrated the device.
- The performance has significantly decreased.
- Inexplicable notifications appear.
- Abnormal noises occur.
- Functional faults cannot be rectified according to the measures in chapter Malfunctions and troubleshooting [▶▶ page 27].

If defects are detected the product may not be used any longer.

Make a note of the deficiencies and the REF number on the data plate and inform the responsible ATMOS Service.

Observe the information in chapter Sending in the device [▶▶ page 29].

7.5 Service hotline:

+49 7653 689-0

7.6 Spare parts

5752 2103	Vacuum gauge for drainage
5752 5013	Bacterial filter cap (5 pieces)
5752 4929	Sound absorber set FINA AIR
5752 5004	Bacterial filter set FINA AIR D 150 / P 350 / B 800

Tab. 6: Spare parts

7.7 Sending in the device

- Remove and properly dispose of consumables.
- Clean and disinfect the product and accessories according to the operating instructions.
- Place used accessories with the product.
- Fill in the form QD 434 „Delivery complaint / return shipment“ and the respective **decontamination certificate**.

This form is enclosed with each delivery and can be found at www.atmosmed.com.

- The device must be well padded and packed in suitable packaging.
- Place the form QD 434 „Delivery complaint / return shipment“ and the respective **decontamination certificate** in an envelope.
- Affix the envelope to the outside of the package.
- Send the product to ATMOS or to your dealer.

8 Technical specifications

8.1 General

Classification as per Annex IX of the 93/42/EEC Directive	Class IIa
---	-----------

8.2 Ambient conditions

Temperature: Shipping / storage	-15 °C to +50 °C
Temperature: Operation	+10 °C to +40 °C
Relative humidity: Shipping / storage	10 % to 95 %
Relative humidity: Operation	30 % to 75 %
Atmospheric pressure: Shipping / storage	700 hPa to 1060 hPa
Atmospheric pressure: Operation	700 hPa to 1060 hPa

8.3 Technical specifications

Nominal pressure of gas supply (compressed air)	500 kPa* \pm 10%
Vacuum regulation range	0 to -13 kPa*
Flow rate (freeflow)**	min. 8 l/min
Opening pressure of pressure-relief valve on patient side	approx. 0.05 kPa
Excess pressure on patient side	max. 0.60 kPa
Air consumption gas-jet pump	approx. 14 l/min. at 500 kPa
Vacuum gauge	Accuracy class 2.5
Year of manufacture	First two digits of the serial number

* 100 kPa = 1 bar = 1000 mbar = 750 mmHg

** in accordance with EN 10079-3. Depending on the design of the gas supply system, the actual performance of the tapping unit may be reduced.

8.4 Dimensions and weight

Dimensions (L x W x H)	139 x 89 x 189 mm
Weight	1130 g

9 Approved accessories

9.1 Standard scope of delivery

5750 3774	Neutral colour coding label
-----------	-----------------------------

Tab. 7: Standard scope of delivery

9.2 Accessories

The following accessories are not part of the scope of delivery and must be ordered separately.

5752 1698	Mechanical overflow protection
5750 7577	Aspiration set for equipment rail / 1 l
5750 7579	Aspiration set for equipment rail / 3 l
5752 3330	Aspiration set for equipment rail / 1 l
	AIR connection tube with NIST screw connector (see MEDAP tube list)

Tab. 8: Accessories

9.3 Consumables

5750 0630	Hydrophobic bacterial and viral filter
5750 5045	Bacterial filter paper (100 pieces)
5750 5467	Vacuum connection tube, 6 x 12 mm, by the meter

Tab. 9: Consumables



■ **Manufacturer:**

ATMOS
MedizinTechnik GmbH & Co. KG
Ludwig-Kegel-Str. 16
79853 Lenzkirch
GERMANY
Phone: +49 7653 689-0
www.atmosmed.com