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

V09 2017-08
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<th>Title</th>
<th>Page</th>
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Introduction

1.1 How to use these operating instructions

1.1.1 General
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.

1.1.2 Symbols

1.1.2.1 Cross-references
References to other pages in these operating instructions are identified with a double arrow symbol “→”.

1.1.2.2 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.

1.1.3 Definitions

1.1.3.1 Design of safety notes

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>Descriptor</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Exclamation Mark]</td>
<td>DANGER!</td>
<td>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.</td>
</tr>
<tr>
<td>![Exclamation Mark]</td>
<td>WARNING!</td>
<td>Indicates a potential risk to persons or property which may result in health hazard or grave property damage.</td>
</tr>
<tr>
<td>![Exclamation Mark]</td>
<td>CAUTION!</td>
<td>Indicates a potential risk to property which may result in property damage.</td>
</tr>
</tbody>
</table>

Tab. 1: Design of safety notes
1.1.3.2 Design for other notes

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>Descriptor</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="NOTE" /></td>
<td>NOTE</td>
<td>Supplementary assistance or further useful information without potential injury to persons or property damage is described in the text of the note.</td>
</tr>
</tbody>
</table>

Tab. 2: Design for other notes

1.1.4 Symbols used
Symbols are attached to products, type plates and packaging.

<table>
<thead>
<tr>
<th>Symbols</th>
<th>Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="CE" /></td>
<td>Labelling for Class I products, developed and marketed in compliance with Medical Device Directive 93/42/EEC.</td>
</tr>
<tr>
<td><img src="image" alt="Labelling" /></td>
<td>Labelling in compliance with the IEC 60601-1 standard. Symbol for &quot;Follow Operating Instructions&quot;.</td>
</tr>
<tr>
<td><img src="image" alt="Label" /></td>
<td>Labelling in compliance with the ISO 15223-1 standard. Symbol for &quot;Name and address of the manufacturer as well as date of manufacture&quot;.</td>
</tr>
<tr>
<td><img src="image" alt="REF" /></td>
<td>Labelling in compliance with the ISO 15223-1 standard. Symbol for &quot;Product number&quot;.</td>
</tr>
<tr>
<td><img src="image" alt="Packaging" /></td>
<td>Packaging label. Symbol for &quot;Keep dry&quot;.</td>
</tr>
<tr>
<td><img src="image" alt="Labelling" /></td>
<td>Labelling in compliance with the ISO 15223-1 standard. Symbol for &quot;Temperature limitations&quot;.</td>
</tr>
<tr>
<td><img src="image" alt="Labelling" /></td>
<td>Labelling in compliance with the ISO 15223-1 standard. Symbol for &quot;Relative humidity&quot;.</td>
</tr>
<tr>
<td><img src="image" alt="Labelling" /></td>
<td>Labelling in compliance with the ISO 15223-1 standard. Symbol for &quot;Atmospheric pressure&quot;.</td>
</tr>
</tbody>
</table>

Tab. 3: Symbols
1.2 Disposal

1.2.1 General

Used products or parts thereof may be contaminated. To prevent potential infection, please clean and disinfect the product prior to return/disposal.

1.2.2 Packing

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

1.2.3 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.

1.3 Basic requirements

1.3.1 Use in accordance with the intended purpose

This product is a Class I medical device according to the Medical Device Directive 93/42/EEC. This product is to be used exclusively for human medicine. Patients may be placed on the device and put in position only under the supervision of medical personnel.

Accessories

Accessories or combinations of accessories may be utilised only as and when indicated in these operating instructions. Use other accessories, combinations and parts subject to wear only if these are intended expressly for the application and will not adversely affect performance features or safety requirements.

1.3.2 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 is certified by compliance with harmonised standards such as IEC 60601-1 and related standards and the respective special sections.

1.3.3 Intended purpose

Name: Connection tubes anaesthetic gas scavenging systems

Main function: Removal of anaesthetic gases

Medical indications / application: The connection tube anaesthetic gas scavenging systems removes no longer required anaesthetic gases from the operating room.
| Specification of the main function: | The connection tube anaesthetic gas scavenging system connects the expiration outlet of an anaesthetic machine with a connection plug for the anaesthetic gas scavenging system which, in turn is plugged into the terminal unit for the anaesthetic gas scavenging system (AGSS) of a central gas supply. A distinction is made between the two versions:  
- Connection tube anaesthetic gas scavenging system with shunt air opening at the patient side connection  
- Connection tube anaesthetic gas scavenging system without shunt air opening at the patient side connection |

| User profile: | Doctor, medically trained staff |
| Patient groups: | Patients of all ages |
| Application organ: | Lung |
| 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 gas supply system. The application of the product may only be performed by medically trained and introduced staff. |
| Contraindications: | The connection tubes anaesthetic gas scavenging systems may not be used:  
- Outside the medical sector  
- For liquids |
| The product is: | Not active |
| Sterility: | No sterile product |
| Single-use product / reprocessing: | The product and parts of the accessories are reusable. For information on reprocessing, cleaning and disinfection please see the operating instructions. |
2 Safety notes

2.1 Principal safety notes

DANGER!
Danger to life!
Hazard resulting from incorrect handling.
Be absolutely sure to observe the operating instructions for all the products used in the configuration.

DANGER!
Risk of suffocation!
If the connection tube without shunt air opening is used in connection with anaesthetic machines according to older standards, the breathing air is extracted by means of vacuum by the anaesthetic gas scavenging system.
When using older anaesthetic machines, no vacuum may be permitted to form at the expiration outlet.
A flow rate of a maximum of 50 l/min must be ensured.
In conjunction with older anaesthetic machines only use connection tubes with a shunt air opening at the patient-side connector.

DANGER!
Risk of suffocation!
If the connection tube with shunt air opening is used in connection with anaesthetic machines according to the current standard, the required vacuum is not reached at the expiration outlet.
There must be sufficient vacuum on the expiration outlet ensuring a flow rate of 50 l/min, at a resistance of 1 kPa in the anaesthetic machine.
In conjunction with current anaesthetic machines, only use connection tubes without shunt air openings.

WARNING!
Tube is not connected!
Ensure correct seat of the connection tube at the anaesthetic machine and connector.

WARNING!
Risk of injury!
Worn or damaged products can cause injuries.
Use only products which are in perfect condition.

DANGER!
Defective device!
Using incorrect spare parts or accessories can cause injuries or equipment failure.
Only use original accessories or spare parts.

WARNING!
Infection hazard!
Contaminated components may endanger the health of the staff and the patients.
Ensure the product is prepared as per hygiene standards before using it for the first time.
3 Operation

3.1 Patient side connection

Connect the connection tube at the patient side

Connect the patient side connection with shunt air opening (1) or the patient side connection without shunt air opening (2) to the expiration outlet according to the type of connection tube.

Fig. 1: Patient side connection

3.2 Wall connection side connection

Connect the connection tube at the wall side

Connect the wall side connection (1) at the connector AGSS-C, AGSS-E, AGSS EN Type 1L or AGSS-EN Type 1H.

Fig. 2: Wall connection side connection
## 4 Cleaning and disinfection

### 4.1 Basic instructions

The product must be cleaned as well as wipe disinfected after every use.

<table>
<thead>
<tr>
<th><strong>DANGER!</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk due to incorrect use of detergents and disinfectants!</td>
</tr>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>WARNING!</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Infection hazard!</td>
</tr>
<tr>
<td>Product may be contaminated.</td>
</tr>
<tr>
<td>Always wear gloves for cleaning and disinfection.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>WARNING!</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Infection hazard!</td>
</tr>
<tr>
<td>Particles of grime may become encapsulated and lead to the product not reaching the desired germ-reduction after disinfection.</td>
</tr>
<tr>
<td>Before disinfection, the product must be cleaned thoroughly of contamination and encapsulated particles of grime.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>CAUTION!</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Improper cleaning and disinfection can cause property damage!</td>
</tr>
<tr>
<td>Use only as much detergent and disinfectant as required.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>CAUTION!</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Improper cleaning and disinfection can cause property damage!</td>
</tr>
<tr>
<td>Perform visual and functional inspections after each cleaning and disinfection process.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>CAUTION!</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Property damage!</td>
</tr>
<tr>
<td>The product is not suitable for live steam sterilisation. Do not sterilise the product using live steam.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>CAUTION!</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Property damage!</td>
</tr>
<tr>
<td>Using non-colour-fast drapes can cause discolouration of surfaces.</td>
</tr>
<tr>
<td>Always use colour-fast drapes.</td>
</tr>
</tbody>
</table>
# Cleaning and disinfection

## 4.2 Cleaning

### 4.2.1 General

**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!

**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.

### 4.2.2 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.

## 4.3 Disinfection

### 4.3.1 General

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

**DANGER!**
Risk of injury!

Disinfectants may contain substances hazardous to health, which may cause injuries on contact with skin and eyes. Protect your skin and eyes, and strictly follow hygiene guidelines when working with disinfectants. Follow the instructions of the disinfectant manufacturer and the hygiene specialist.
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.

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

- Aldehydes
- Quarternary compounds
- Guanidine derivatives.

<table>
<thead>
<tr>
<th>Ingredient group</th>
<th>Active ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aldehydes</td>
<td>2-ethyl-1-hexanal, formaldehyde, glutardialdehyde, glyoxal, o-phthaldialdehyde</td>
</tr>
<tr>
<td>Quarternary compounds</td>
<td>Alkyl-didecyl-polyoxethyl ammonium propionate, alkyl-dimethyl-alkylbenzyl 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</td>
</tr>
<tr>
<td>Guanidine derivatives</td>
<td>Alkyl-biguanide, chlorhexidine-digluconate, cocospropylene-diamine guanidinium diacetate, oligomeric biguanide, polyhexamethylene biguanide hydrochloride (oligo-diimino imido-carbonyl imino-hexamethylene, polyhexanide)</td>
</tr>
</tbody>
</table>

Tab. 4: Active ingredients of disinfectants

4.3.3 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.
5 Maintenance

5.1 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.

5.2 Period tests
Observe the country specific requirements regarding period tests.

5.3 Repairs
The following may require repairs from the manufacturer or an authorized service partner:
- The performance has significantly decreased.
- Abnormal noises occur.

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 14].

5.4 Service hotline:
+49 7653 689-0

5.5 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.
6 Technical specifications and approved accessories

6.1 General

Classification as per Appendix IX of the 93/42/EEC Directive

| Classification as per Appendix IX of the 93/42/EEC Directive | Class I |

6.2 Ambient conditions

| Temperature | -15 °C to +50 °C (shipping) | +10 °C to +40 °C (operation) |
| Relative humidity | 10 % to 95 % (shipping) | 30 % to 75 % (operation) |
| Atmospheric pressure | 700 hPa to 1060 hPa (shipping) | 700 hPa to 1060 hPa (operation) |

6.3 Approved accessories

5750.8097 Connector AGSS-C (MEDAP standard)
5750.8098 Connector AGSS-E (DRÄGER standard)
5752.5084 Connector AGSS-EN, Type 1 / Type 1L (EN- / ISO norm)

Tab. 5: Approved accessories
MEDAP