OPERATING INSTRUCTIONS
MEDAP
CYLINDER TROLLEY

GA 5752.4732 GB 09
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

CE
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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 Symbols

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

1.2.1.2 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.

1.2.2 Definitions

1.2.2.1 Design of safety notes

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>Descriptor</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Danger" /></td>
<td>DANGER!</td>
<td>Indicates a direct and immediate risk to persons, which may be fatal or result in most serious injury.</td>
</tr>
<tr>
<td><img src="image" alt="Warning" /></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><img src="image" alt="Caution" /></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
1.2.2.2 Structure of notes

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

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>Descriptor</th>
<th>Reference to</th>
</tr>
</thead>
<tbody>
<tr>
<td>![note_icon]</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: Structure of notes

1.2.3 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>![ce_icon]</td>
<td>Labelling for Class I products, developed and marketed in compliance with Medical Device Directive 93/42/EEC.</td>
</tr>
<tr>
<td>![ref_icon]</td>
<td>Labelling in compliance with the ISO 15223-1 standard. Symbol for &quot;Product number&quot;.</td>
</tr>
<tr>
<td>![info_icon]</td>
<td>Labelling in compliance with the ISO 15223-1 standard. Symbol for &quot;Follow Operating Instructions&quot;.</td>
</tr>
<tr>
<td>![umbrella_icon]</td>
<td>Packaging label. Symbol for &quot;Keep dry&quot;.</td>
</tr>
<tr>
<td>![glass_icon]</td>
<td>Packaging label. Symbol for &quot;Fragile! Handle with care&quot;.</td>
</tr>
<tr>
<td>![temperature_icon]</td>
<td>Labelling in compliance with the ISO 15223-1 standard. Symbol for &quot;Temperature limitations&quot;.</td>
</tr>
<tr>
<td>![humidity_icon]</td>
<td>Labelling in compliance with the ISO 15223-1 standard. Symbol for &quot;Relative humidity&quot;.</td>
</tr>
<tr>
<td>![atmospheric_icon]</td>
<td>Labelling in compliance with the ISO 15223-1 standard. Symbol for &quot;Atmospheric pressure&quot;.</td>
</tr>
<tr>
<td>![manufacturer_icon]</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>
</tbody>
</table>

Tab. 3: Symbols
1.3 Disposal

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

1.3.2 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.

1.4 Overview of the cylinder trolley

Fig. 1: Overview of the cylinder trolley

1 Valve cap
2 Cylinder cover
3 Strap
4 Cylinder jacket
5 Five-foot trolley
6 Castors: Two castors with brake, Three castors without brake
7 Support pipe
8 Equipment rail
9 Push bar
1.5 Intended purpose

Name: Cylinder trolley
   Cylinder jacket
   Equipment rail for cylinder trolley

Main function: Mounting a 10 / 11 l gas cylinder, covering of the gas cylinder and mounting of accessories

Medical indications / application: The cylinder trolley is used for mounting and transportation of a gas cylinder 10 / 11 l and accessories, to allow a mobile oxygen supply of a patient.

Specification of the main function: The gas cylinder is placed onto the bowl of the cylinder trolley. Cylinder jacket, cylinder cover and valve cap are for covering the gas cylinder. The equipment rail of the carrying board can be used for mounting accessories like a septic fluid jar.

User profile: Doctor, medically trained staff

Patient groups: Patients of all ages

Application organ: Oxygen supply: Lung
   Aspiration: No specific organ

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. The application of the product may only be performed by medically trained and introduced staff.

Contraindications: The cylinder trolley, the cylinder jacket and the equipment rail may not be used for the following purposes:
   • Outside the medical sector
   • For other gas cylinders than 10 / 11 l
   • For gas cylinders with a diameter of more than 14 cm
   • In MR areas

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.

1.6 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.
2 Safety notes

2.1 General safety notes

**DANGER!**
Danger to life!
Danger due to unauthorised modifications.
The product may not be modified.

**DANGER!**
Incorrect use can result in fatalities!
Instructions for using components made by other manufacturers are not part of these operating instructions.
Ensure that the manufacturer's instructions are followed.

**DANGER!**
Risk of injury!
Patient may be endangered as a result of incorrect use.
Follow the operating instructions for all accessories.

**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.

**WARNING!**
Risk of injury!
Products / accessories which are improperly mounted can loosen and cause injuries.
Ensure that products / accessories are mounted correctly and that the securing elements (handle screws, catches, levers, etc.) are closed and firmly tightened, also ensure that moving parts are correctly secured.

**WARNING!**
Risk of injury!
Risk of crushing during the assembly of individual components.
Always ensure that nobody will be crushed.

2.2 Product safety notes

**WARNING!**
Risk of injury!
The cylinder jacket is made of thin sheet metal. Despite thorough grinding of the edges as well as a powder coating, it may cause cuts.
Pay attention to sharp edges when using the cylinder jacket.
DANGER!
Danger to life!
Danger due to improper configuration of the system!
The configuration of the overall system as well as the functional testing are subject to the overall responsibility of the medical staff. The operator must check the proper functionality and suitability of the connected accessories for each intended application prior to every use, in particular, connection parts, sealing properties and suitability with regard to material, work pressure and flow.

WARNING!
Risk of injury due to material failure!
The maximum permitted load for the product is 20 kg.

CAUTION!
Property damage!
Only gas cylinders with a 140 mm diameter may be used.

CAUTION!
Property damage!
The cylinder trolley, cylinder jacket and equipment rail are partially made of magnetic materials.
The cylinder trolley, cylinder jacket and equipment rail may not be put to use in the MRI area.

CAUTION!
Property damage!
Remove any potential hindrances before moving / adjusting the product and avoid collisions.

CAUTION!
Property damage!
Do not drag the cylinder jacket over the ground, as the coating may be scratched.

CAUTION!
Property damage!
Excessive load on the equipment rail may cause the cylinder trolley to tip over.
The maximum permitted load for the equipment rail is 0.2 Nm or 2 kg.
3 Initial operation

3.1 Scope of delivery

The scope of delivery includes these operating instructions and the individual components in accordance with the version ordered.

Remove the product from its packaging and check the shipment for completeness and to ensure the scope of delivery is intact.

Scope of delivery of cylinder trolley (REF 5752 4675)

- Five-foot trolley,
- Support pipe,
- Strap,
- Handle,
- 5 cylindrical screws DIN 912 - M 8x22,
- 2 castors with brake,
- 3 castors without brake,
- Cone,
- Bowl,

Installation material:
- 1 nut, DIN 934 -M 10,
- 1 carriage bolt, DIN 603 - M 10x70,
- 1 dented edge washer SKK10 (galvanised steel).

Scope of delivery of complete cylinder jacket (REF 5752 4676)

- Cylinder jacket,
- Cylinder cover,
- Valve cap.

Scope of delivery of equipment rail (REF 5752 4677)

- Clamp bracket,
- Equipment rail,

Installation material:
- 2 self-locking nuts,
- 2 washers,
- 2 blind plugs.
4 Mounting

4.1 Mounting the castors

CAUTION!
Property damage!
If the castors with brake are mounted next to each other, this will not ensure sufficient tilt stability.
Do not mount castors with brake next to each other.

Fig. 2: Mounting the castors

Two of the castors have a brake. The two castors with brake are marked with a yellow dot. Mount the castors in such a way that the castors with brakes are not next to each other.

Mounting the castors

- Place the five-foot trolley (1) on the ground with the top face down on the ground.
- Insert the cylindrical screw M 8x22 (2) through the hole in the castor and screw into the foot.
- Mount the other castors in the same way.
- Turn the five-foot trolley over.
  ✓ Castors have been attached.

4.2 Mounting the support pipe

Mounting the support pipe

- Insert the cone (1), with the smaller diameter pointing downwards, into the centre section (2) of the five-foot trolley.
- Place the bowl (3) on the centre.

Fig. 3: Mounting the support pipe
4.3 Mounting the handle

- **NOTE**
  - The handle adheres to the support pipe, so that it does not change its position. The adhesion resistance must be overcome during assembly.

**Mounting the handle**

- **xi** Position the support pipe (4) underneath the five-foot trolley.
  - ✓ The slot of the bottom sheet engages into the rib (5) of the five-foot trolley.
- **xi** Insert the carriage bolt (6) from above through the bowl, the cone and the support pipe.
- **xi** Place the dented edge washer (7) on the carriage bolt.
- **xi** Screw the nut (8) onto the carriage bolt and tighten slightly.
- **xi** Raise the cylinder trolley.
  - ✓ Align the support pipe.
- **xi** Tighten the nut with a wrench (SW 17).
  - ✓ The dented edge washer is in full contact with the sheet of the support pipe.
  - ✓ The support pipe is mounted.

![Fig. 4: Mounting the support pipe](image)

**NOTE**

The handle adheres to the support pipe, so that it does not change its position. The adhesion resistance must be overcome during assembly.

**Mounting the handle**

- **xi** Push the handle (1) onto the support pipe (2).
  - ✓ The handle adheres to the support pipe.

![Fig. 5: Mounting the handle](image)

4.4 Mounting the equipment rail

- **NOTE**
  - Mount the equipment rail underneath the handle.
NOTE
Due to the plastic insert, the self-locking nuts can only rotate freely with increased exertion.

Mounting the equipment rail
- Attach the clamp bracket (1) to the support pipe (2) at the desired height.
- Insert the set screws (3) of the equipment rail in the holes (4) in the clamp bracket.
- Put washers (5) onto the set screws.
- Tighten self-locking nuts (6) with a wrench (SW 8).
  - The equipment rail is at a right angle to the support pipe.
- Fit the blind plugs (7).
  - The equipment rail is mounted.

4.5 Mounting the cylinder jacket and gas cylinder

NOTE
The cylinder jacket is fitted together. When moving the cylinder you may hear rattling noises, in particular on uneven floors.
NOTE
Due to covering of the gas cylinder, the standardised identification colour is no longer visible.

Affixing the cylinder jacket and gas cylinder

- Place the gas cylinder (1) onto the bowl of the cylinder trolley and hold it with one hand.
- Put the cylinder jacket (2) over the gas cylinder starting with the foot.
  - The cylinder jacket fits closely to the V-shaped mount (3) of the support pipe.
  - The gas cylinder stands on the bowl and is fixed by bowl and cylinder jacket.

Fig. 8: Affixing the cylinder jacket and gas cylinder

- Put the strap (4) around the cylinder jacket.
- Push the loop (5) of the quick clamp downwards and tighten the strap.
  - The cylinder jacket is fixed.

Fig. 9: Fixing the cylinder jacket
Mounting the cylinder jacket and gas cylinder

1. Put on the cylinder cover (6).

**Fig. 10: Putting on the cylinder cover.**

2. Mounting the pressure regulator and valve cap
   - Connect the pressure regulator (1).
   - Put on the valve cap (2).

**Fig. 11: Mounting the pressure regulator and valve cap**
5 Cleaning and disinfection

5.1 General

The product must be cleaned as well as wipe 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. fluorites, 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!

Perform visual and functional inspections after each cleaning and disinfection process.
5.2 Cleaning

5.2.1 General

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

**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!

5.2.2 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.

5.3 Disinfection

5.3.1 General

**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.
WARNING!
Risk of injury!
Do not use any disinfection agents that would jeopardize patients, personnel or the functionality of the product.
• Do not disinfect with phenoles or agents that split halogen, chlorine or oxygen
• Do not disinfect with solvents (benzene, thinner)
• Do not spray-disinfect

5.3.2 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-phthalaldehyde, succinaldehyde</td>
</tr>
<tr>
<td>Quarternary compounds</td>
<td>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-alkylbenzyl 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 (didecylidemethyl ammonium chloride), didecyl-methyl-oxyleth ammonium propionate, mecteronium-ethyl sulfate, methyl-benzethonium chloride, n-octyl-dimethyl-benzyl ammonium chloride</td>
</tr>
<tr>
<td>Guanidine derivatives</td>
<td>Alkyl-biguanide, chlorhexidine-digluconate, cocsopropylene-diamine guanidium diacetate, oligomeric biguanide, polyhexamethylene biguanide hydrochloride (oligo-dimino imidocarbonyl imino-hexamethylene, polyhexanide)</td>
</tr>
</tbody>
</table>

Tab. 4: Active ingredients of disinfectants

5.3.3 Disinfection procedure
☑️ After each cleaning process, wipe or spray disinfect the product in accordance with the instructions of the disinfectant manufacturer.
☑️ Ensure that the product is free of disinfectant residue.
☑️ Perform visual and functional inspections.
# Maintenance

## 6.1 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.

## 6.2 Visual and functional inspections

To ensure correct operation, it is necessary to have visual and functional inspections performed by a trained person prior to each use of the operating table.

Documentation of the results of the visual and functional inspections is recommend and should include the date and signature of the person who performed the inspections. The following table can be used as a template.

<table>
<thead>
<tr>
<th>No.</th>
<th>Inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Has the product been cleaned and disinfected according to the hygiene guideline?</td>
</tr>
<tr>
<td></td>
<td>☑ Do not use the product any longer.</td>
</tr>
<tr>
<td></td>
<td>☑ Clean and disinfect the product according to the guidelines.</td>
</tr>
<tr>
<td></td>
<td>☑ Maine</td>
</tr>
</tbody>
</table>

**Comment:**

| 2   | Are all screw connections tightened?                                      |
|     | ☑ Tighten screw connections.                                              |

**Comment:**

| 3   | Are gas cylinder, strap and equipment rail mounted tightly and safely?    |
|     | ☑ Insert gas cylinder correctly.                                          |
|     | ☑ Tighten strap.                                                        |

**Comment:**

| 4   | Is the trolley protected against tilting?                                 |
|     | ☑ Mount the trolley with 5 feet correctly.                               |
|     | ☑ Move trolley on a solid and horizontal floor.                          |

**Comment:**

| 5   | (Space for other tests)                                                 |

Tab. 5: Visual and functional inspections
## 6.3 Malfunctions and troubleshooting

<table>
<thead>
<tr>
<th>Defect</th>
<th>Source of malfunction</th>
<th>Troubleshooting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support pipe shakes / swings</td>
<td>Carriage bolt between support pipe and foot is not tightened</td>
<td>Tighten bolt</td>
</tr>
<tr>
<td></td>
<td>Too much load on the cylinder trolley (max. 20 kg)</td>
<td>Take load off the cylinder trolley</td>
</tr>
<tr>
<td></td>
<td>Too much load on the support pipe (max. 10 kg)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cylinder is too heavy (max. 20 kg)</td>
<td>Use a lighter cylinder</td>
</tr>
<tr>
<td>Trolley cannot be moved</td>
<td>Brake of castor is activated</td>
<td>Release brake</td>
</tr>
<tr>
<td></td>
<td>Castors are damaged</td>
<td>Take cylinder trolley out of service and send it to Customer Service</td>
</tr>
<tr>
<td>Gas cylinder is not safely supported</td>
<td>Gas cylinder and trolley are not compatible</td>
<td>Use gas cylinders that go with the trolley</td>
</tr>
<tr>
<td>on the trolley</td>
<td>Gas cylinder cannot be mounted or clamped</td>
<td>Use a gas cylinder with 140 mm diameter</td>
</tr>
<tr>
<td></td>
<td>Diameter of gas cylinder is too small or too big</td>
<td>Use gas cylinder with a sufficient length</td>
</tr>
<tr>
<td></td>
<td>The cylindrical part of the gas cylinder is not long enough (640 mm)</td>
<td></td>
</tr>
<tr>
<td>Cylinder jacket cannot be pushed over</td>
<td>Gas cylinder has a bigger diameter than the cylinder jacket</td>
<td>Use gas cylinder that goes with the cylinder jacket</td>
</tr>
<tr>
<td>the gas cylinder</td>
<td>Cylinder jacket is battered</td>
<td>Take cylinder jacket out of service and send it to Customer Service</td>
</tr>
<tr>
<td>Cylinder cover cannot be pushed onto</td>
<td>Gas cylinder is too long</td>
<td>Use suitable gas cylinder</td>
</tr>
<tr>
<td>the cylinder jacket</td>
<td>Cylinder jacket or cylinder cover is battered</td>
<td>Take cylinder jacket or cylinder cover out of service and send it to Customer Service</td>
</tr>
<tr>
<td>Valve cap cannot be mounted</td>
<td>Valve is bigger than valve cap</td>
<td>Do not use valve cap</td>
</tr>
<tr>
<td></td>
<td>Cut-out of valve cap does not match the valve</td>
<td></td>
</tr>
<tr>
<td>Cylinder jacket is not safely supported on the trolley</td>
<td>Cylinder jacket and trolley are not compatible</td>
<td>Use a suitable trolley</td>
</tr>
<tr>
<td>The valve of the gas cylinder</td>
<td>Gas cylinder is too small</td>
<td>Use gas cylinder with a sufficient length</td>
</tr>
<tr>
<td>does not protrude from the cylinder</td>
<td>Clamp connection between equipment rail and support pipe has been released</td>
<td>Tighten self-locking nuts</td>
</tr>
<tr>
<td>jacket</td>
<td>Too much load on the equipment rail (max. 2 kg)</td>
<td>Remove some of the load from the equipment rail.</td>
</tr>
<tr>
<td>Equipment rail shakes / swings</td>
<td>Thread is damaged</td>
<td>Take equipment rail out of service and send it to Customer Service</td>
</tr>
<tr>
<td>Self-locking nuts cannot be tightened</td>
<td>Thread is damaged</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 6: Troubleshooting
6.4 Repairs
The following may require repairs from the manufacturer or an authorized service partner:
• Abnormal noises occur.
• Functional faults cannot be rectified according to the measures in chapter Malfunctions and troubleshooting [page 21].
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 22].

6.5 Service hotline:
+49 7653 689-0

6.6 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.
# Technical specifications

## 7.1 Ambient conditions

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature: Operation</td>
<td>-20 °C to +60 °C</td>
</tr>
<tr>
<td>Temperature: Shipping / storage</td>
<td>-20 °C to +60 °C</td>
</tr>
<tr>
<td>Relative humidity: Operation</td>
<td>10 % to 90 %</td>
</tr>
<tr>
<td>Relative humidity: Shipping / storage</td>
<td>10 % to 90 %</td>
</tr>
<tr>
<td>Atmospheric pressure: Operation</td>
<td>700 hPa to 1060 hPa</td>
</tr>
</tbody>
</table>

## 7.2 Cylinder trolley

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foot diameter</td>
<td>approximately 610 mm</td>
</tr>
<tr>
<td>Overall height</td>
<td>approximately 930 mm</td>
</tr>
<tr>
<td>Net weight</td>
<td>approximately 5 kg</td>
</tr>
<tr>
<td>Suitable cylinder diameter</td>
<td>approximately 140 mm</td>
</tr>
<tr>
<td>Maximum permissible load of foot</td>
<td>20 kg</td>
</tr>
<tr>
<td>Maximum permissible load of support pipe</td>
<td>10 kg (depending on type of load)</td>
</tr>
</tbody>
</table>

## 7.3 Cylinder jacket

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foot diameter</td>
<td>approximately 198 mm</td>
</tr>
<tr>
<td>Diameter of cylinder</td>
<td>approximately 144 mm</td>
</tr>
<tr>
<td>Overall height (including valve cap and cylinder cover)</td>
<td>Approximately 920 - 1020 mm (variable)</td>
</tr>
<tr>
<td>Net weight (including valve cap and cylinder cover)</td>
<td>Approximately 2.4 kg</td>
</tr>
<tr>
<td>Net weight of valve cap</td>
<td>Approximately 0.1 kg</td>
</tr>
<tr>
<td>Net weight of cylinder cover</td>
<td>Approximately 0.3 kg</td>
</tr>
<tr>
<td>Suitable cylinder diameter</td>
<td>140 mm</td>
</tr>
</tbody>
</table>

## 7.4 Equipment rail

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>200 mm</td>
</tr>
<tr>
<td>Altitude</td>
<td>25 mm</td>
</tr>
<tr>
<td>Width</td>
<td>10 mm</td>
</tr>
<tr>
<td>Net weight</td>
<td>0.3 kg</td>
</tr>
<tr>
<td>Suitable clamp pipe diameter</td>
<td>25 x 25 mm</td>
</tr>
<tr>
<td>Maximum load</td>
<td>2 kg</td>
</tr>
</tbody>
</table>
Manufacturer:
ATMOS
MedizinTechnik GmbH & Co. KG
Ludwig-Kegel-Str. 16
79853 Lenzkirch
GERMANY
Phone: +49 7653 689-0
www.atmosmed.com