ATMOS MedizinTechnik

Operating Instructions

ATMOS S 351 OT

English



CE 0124

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1 Introduction

1.1 Notes on operating instructions



These operating instructions contain important instructions on how to operate your product safely, correctly and effectively.

These operating instructions are designed for training and instructing new operating personnel in the use of the system, and they are also intended for use as a reference manual. This document may be reprinted, either in part or in whole, only with written permission from ATMOS.

These operating instructions must always be kept available near the product.



Care, periodic tests, regular cleaning and proper application are essential. They ensure the operational safety and usability of the product.

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



Read chapter '2 Notes for your safety' on page 11 before using the product for the first time. This will help you to avoid potentially dangerous situations.

The product bears the CE marking CE 0124 in accordance with EU Council Directive 93/42/EEC concerning medical devices and meets the basic requirements of Annex I to this directive.

The product complies with all the applicable requirements of Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment ('RoHS').

The Declarations of Conformity and our General Terms and Conditions can be viewed on our website at www.atmosmed.com.

The quality management system applied at ATMOS has been certified according to international standard EN ISO 13485.

These operating instructions are valid for the following devices:

ATMOS S 351 OT, 230 V	444.0405.0
ATMOS S 351 OT, 100 V	444.0405.1
ATMOS S 351 OT, 115 V	444.0405.2
ATMOS S 351 OT, 127 V	444.0405.3
ATMOS S 351 OT – basic set, 230 V	444.0460.0
ATMOS S 351 OT – basic set, 100 V	444.0460.1
ATMOS S 351 OT – basic set, 115 V	444.0460.2
ATMOS S 351 OT – basic set, 127 V	444.0460.3
ATMOS S 351 OT (1.5 l canister), 230 V	444.0462.0
ATMOS S 351 OT (1.5 l canister), 100 V	444.0462.1
ATMOS S 351 OT (1.5 l canister), 115 V	444.0462.2

ATMOS S 351 OT (1.5 l canister), 127 V	444.0462.3
ATMOS S 351 OT mobile, 230 V	444.0470.0
ATMOS S 351 OT mobile, 100 V	444.0470.1
ATMOS S 351 OT mobile, 115 V	444.0470.2
ATMOS S 351 OT mobile, 127 V	444.0470.3
ATMOS S 351 OT mobile (2 x 2.5 l canister), 230 V	444.0476.0
ATMOS S 351 OT mobile (2 x 2.5 l canister), 100 V	444.0476.1
ATMOS S 351 OT mobile (2 x 2.5 l canister), 115 V	444.0476.2
ATMOS S 351 OT mobile (2 x 2.5 l canister), 127 V	444.0476.3
ATMOS S 351 OT – basic set, 230 V (Medi-Vac®)	444.0496.0
ATMOS S 351 OT – basic set, 230 V (Serres®)	444.0497.0

1.2 Explanation of pictures and symbols

In the operating instructions

⚠ DANGER	Warning of a danger that will result in immediate fatal or serious injury. Observe the necessary measures.
⚠ WARNING	Warning of a danger that can cause fatal or serious injury. Observe the necessary measures.
⚠ CAUTION	Warning of a danger that can cause minor injury. Observe the necessary measures.
NOTICE	Notice of a danger that can damage the product or other objects. Observe the necessary measures.
⚠	Warning of a danger that can cause fatal or serious injury.
ⓘ	Notice of potential material damage.
☞	Useful information on the handling of the device.
1.	Action. Proceed step by step.
»	Result of an action.
→	Move/plug in this direction.

On device and type plate

	Follow operating instructions (blue)
	Consult operating instructions
	Warning; pay special attention

CE 0124	This product complies with the relevant requirements of EU Directives.
CE	This product complies with the relevant requirements of EU Directives.
CLASSIFIED C UL US E349855	UL Mark MEDICAL — GENERAL MEDICAL EQUIPMENT AS TO ELECTRICAL SHOCK, FIRE AND MECHANICAL HAZARDS ONLY IN ACCORDANCE WITH ANSI/AAMI ES60601-1 (2005) + AMD 1 (2012) CAN/CSA-C22.2 No. 60601-1 (2014) IEC 60601-1-6 (2013)
EAC	Eurasian conformity
	Manufacturer
CC	Date of manufacture Country of manufacture
REF	Reference number
UDI	Unique Device Identifier of a medical device
MD	Medical device
SN	Serial number
	Type B applied part
IPX0	No protection from water
	Professional disposal
	For single use only (symbol located on consumables)
STERILE	Product is sterile (unless packaging is damaged or opened)
AUTOCLAVE	Autoclavable
PATIENT	Connection for suction hose / patient (Serres® canister system)
LATEX	No natural rubber latex
	Potential equalisation
	Fuse

	Standby automatic (AUTO)
–	Reduce vacuum
+	Increase vacuum
MAX	Maximum vacuum
INT	Intermittent mode (INT)
	Switch device on or off
	Connected with trolley
	Foot controller
	This side up
	Fragile, handle with care
	Keep dry
	Keep away from sunlight
	Temperature limit
	Humidity limitation
	Atmospheric pressure limitation

UDI application identifier

(01)	UDI-DI: Identification of the manufacturer and the device
(10)	Batch code
(11)	Date of manufacture
(13)	Packing date
(17)	Expiry date
(21)	Serial number
(30)	Quantity in pieces

1.3 Intended use

Product name:	ATMOS S 351 OT
Main function:	Drainage and temporary collection of body fluids. An electric suction pump controlled by a microprocessor generates negative pressure. An additional secretion canister must be attached to allow for temporary collection of drained body fluids. The microprocessor allows for intermittent suctioning as well as for a controlled shutdown of the pump.
Intended use / intended purpose:	Surgical suction
Intended user / user profile:	Medical staff (among others: doctors, operating theatre/room staff, doctor's assistants)
Intended patient group:	Patients of all ages with and without restrictions
Disease state to be diagnosed, treated or monitored:	Inapplicable
Application organ:	Natural orifices as well as openings resulting from surgical procedures (entire body)
Application time:	Short-term use on the patient (< 30 days)
Area of application:	The areas of application are the clinical, outpatient as well as practice-based settings. The device may only be used by staff who have been medically trained and instructed.
Criteria for patient selection:	Patients who benefit from a surgical procedure.
Indications:	• In surgical procedures, for the aspiration of wound pockets, abscesses, etc. • In endoscopy for the suction of secretion or rinsing fluids • In cardiological procedures • For intermittent suction
Medical contraindications:	Not suitable for: • Continuous operation for drainage procedures in the low vacuum range (e.g. cardiothoracic or wound drainage) • Vacuum extraction • Smoke evacuation • Liposuction • Emergency and rescue operations
Other contraindications:	• No application outside of medical fields • No suction of flammable, corrosive or explosive fluids/ gases

Warning notes:	The following complications may occur during suction: • Bleeding • Injuries to vessels and nerves • Adhesion of the suction instrument
The product is:	Active
Single-use product / reprocessing:	The device and parts of the accessories are reusable. For information on reprocessing, cleaning and disinfection, refer to chapter '5 Reprocessing' on page 29.

1.4 Function

The ATMOS S 351 OT is a mains-operated medical suction device. The device is operated with an electronically controlled, maintenance-free diaphragm pump.

During operation, the pump generates a vacuum in the secretion canister and hoses, by means of which secretion, blood and body fluids are withdrawn by suction. The fluid is collected in the secretion canister. The buttons allow you to set the final vacuum and thus the suction capacity in steps. The set value can be read on the vacuum display. Once the final vacuum is reached, the pump turns off and only continues working if suction capacity falls below the final vacuum value.

Intermittent suction is used for gastric drainage. Suction is divided into four phases that repeat periodically (build-up time, holding time, release time, pause). The user can set the duration of the individual phases as well as the level of vacuum to be built up in the user menu.

1.5 Intended users

The device may be used only by trained and instructed medical professionals.

1.6 Scope of delivery

Legend:

Name	REF	Number
Power cable 5 m	008.0629.0	1
Safety canister 250 ml (without bacterial and viral filter)	444.0646.0	2
Hydrophobic bacterial and viral filter	443.0738.0	3
Vacuum hoses (1 pc. each)	999.0128.0 443.0046.0 999.0127.0	4
Suction hose, silicone, Ø 10 mm, L = 2 m	000.0243.0	5
Suction hose, silicone, Ø 6 mm, L = 2 m	000.0013.0	6
Hose bracket, for attaching to standard rail	444.0450.0	7
Secretion canister 1.5 l (PC)	444.0100.0	8
Double socket nipple with overflow electrode	444.0012.0	9
Secretion canister lid incl. standard rail holder	444.0015.0	10
Trolley	444.0020.0	11
Secretion canister 2.5 l (PC)	444.0099.0	12

Standard rail support Medi-Vac®	444.0451.0	13
Medi-Vac®-external canister 1 l	312.0473.0	14
Stand rail clamp Serres® complete	444.0484.0	15
Serres®-external canister	312.0465.0	16

Scope of delivery:

Device version	REF	Includes number
ATMOS S 351 OT – basic set, 230 V	444.0460.0	1, 2, 3, 4, 5, 6, 7
ATMOS S 351 OT – basic set, 100 V	444.0460.1	1, 2, 3, 4, 5, 6, 7
ATMOS S 351 OT – basic set, 115 V	444.0460.2	1, 2, 3, 4, 5, 6, 7
ATMOS S 351 OT – basic set, 127 V	444.0460.3	1, 2, 3, 4, 5, 6, 7
ATMOS S 351 OT (1.5 l canister), 230 V	444.0462.0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
ATMOS S 351 OT (1.5 l canister), 100 V	444.0462.1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
ATMOS S 351 OT (1.5 l canister), 115 V	444.0462.2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
ATMOS S 351 OT (1.5 l canister), 127 V	444.0462.3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
ATMOS S 351 OT mobile, 230 V	444.0470.0	1, 2, 3, 4, 5, 6, 7, 11
ATMOS S 351 OT mobile, 100 V	444.0470.1	1, 2, 3, 4, 5, 6, 7, 11
ATMOS S 351 OT mobile, 115 V	444.0470.2	1, 2, 3, 4, 5, 6, 7, 11
ATMOS S 351 OT mobile, 127 V	444.0470.3	1, 2, 3, 4, 5, 6, 7, 11
ATMOS S 351 OT mobile (2 x 2.5 l canister), 230 V	444.0476.0	1, 2, 3, 4, 5, 6, 7, 9, 2x10, 11, 2x12
ATMOS S 351 OT mobile (2 x 2.5 l canister), 100 V	444.0476.1	1, 2, 3, 4, 5, 6, 7, 9, 2x10, 11, 2x12
ATMOS S 351 OT mobile (2 x 2.5 l canister), 115 V	444.0476.2	1, 2, 3, 4, 5, 6, 7, 9, 2x10, 11, 2x12
ATMOS S 351 OT mobile (2 x 2.5 l canister), 127 V	444.0476.3	1, 2, 3, 4, 5, 6, 7, 9, 2x10, 11, 2x12
ATMOS S 351 OT – basic set, 230 V (Medi-Vac®)	444.0496.0	1, 3, 4, 5, 6, 7, 13, 14
ATMOS S 351 OT – basic set, 230 V (Serres®)	444.0497.0	1, 3, 4, 5, 6, 7, 15, 16

1.7 Transport and storage

Transport the product only in a shipping box that is padded and offers sufficient protection.

If damage occurs during transport:

1. Document and report damages in transit.
2. Send the device to ATMOS; see chapter ‘6.2 Sending in the device’ on page 36.

Environmental conditions for transport and storage: see chapter ‘10 Technical data’ on page 42.

2 Notes for your safety

Report all serious incidents that have occurred in connection with this device to the manufacturer and your national competent authority.

The safety of the ATMOS S 351 OT complies with the accepted standards of technology and the guidelines of the German Medical Devices Act.

2.1 General safety instructions

Familiarise yourself with the device in good time so that you are capable of operating it at any time.

Only a fully functional product meets the safety requirements of users, patients and third parties. Therefore, please observe the following instructions on your product:

Never operate the device if it shows any obvious safety defects.

2.2 Danger for users, patients and third parties

⚠ WARNING

Electric shock due to unsuitable mains power connection, incorrect handling of the product or damage to product components.

Burns, cardiac arrhythmias and even fatal injury are possible.

- Do not operate the device if it has been dropped. In this case, clean and disinfect the device and send it to ATMOS for repair.
- Prior to each use, check for damage to the device and the power cable. Do not operate the device if you notice any damage. In this case, clean and disinfect the device and send it to ATMOS for repair.
- You can disconnect the device from the mains power supply only by pulling out the power plug.
- Position the device in such a way that you can easily disconnect it from the mains power supply at any time.
- When disconnecting the device from the mains power supply, pull the power plug first and then the device plug.
- Disconnect the device from the mains power supply before cleaning or disinfecting it.
- Never touch the power plug or power cable with wet hands.
- Never immerse the device in water or other liquids.
- The device is not sterilisable.
- Use the power cable only in dry surroundings. The surroundings must be non-conductive.
- Ensure that no liquid enters the device. If liquid has entered the device, stop operating the device immediately; it must no longer be used. In this case, clean and disinfect the device and send it to ATMOS for repair.
- Use only original accessories and original spare parts from ATMOS. This applies to the power cable in particular.
- Follow the instructions on periodic tests in chapter ‘6 Maintenance and service’ on page 36.
- Assembly, new settings, alterations, extensions, and repairs may be carried out only by authorised persons.
- Do not modify the device without the manufacturer’s permission.

⚠ WARNING

Risk of infection due to patient secretion on the device!

Deadly diseases can be transmitted.

- Always wear disposable gloves if you could come into contact with secretion.
- Never use components marked with ② more than once. These components are intended for single use only.
- Sterile-packed parts may only be used if the packaging is undamaged.
- Never operate the device without a bacterial and viral filter.
- Before each use, check that the bacterial and viral filter is dry and clean to ensure that it operates correctly.
- A suction catheter, suction attachment or suction instrument must always be connected to the suction hose. The suction hose must never come into direct contact with the suction area.
- Clean and disinfect the device after every use.
- Clean and disinfect the device according to the operating instructions.
- The device must not be used following oversuction.

⚠ WARNING

Ensure that the device is always functional and ready for use.

Your patient can be severely injured.

- Ensure that the device is always ready for use.
- Place the device where it is easily accessible.
- Perform a function check after each use.
- ATMOS recommends always having another suction device ready at hand. That way you can also perform suctioning if a device should fail.
- Please observe the notes on the electromagnetic compatibility (EMC) of the device.

⚠ WARNING

Avoid improper use.

Your patient can be severely injured.

- Employ the device only according to its intended use.
- The product may only be used by medically trained persons who have been instructed in the handling of the medical suction system.
- Please select the vacuum according to the patient and the application.
- Observe the valid guidelines.
- Observe the notes on hygiene and cleaning.

⚠ WARNING

Explosion and fire hazard.

Burns and injuries are possible.

- Never suction any explosive, flammable or corrosive gases or liquids. Please observe the intended use in chapter ‘1.3 Intended use’ on page 8.
- Never operate the product in potentially explosive areas or in areas that are oxygenated.
- Use only original accessories and original spare parts from ATMOS. This applies to the power cable in particular.

⚠ WARNING

Tripping hazard due to cables.

Injuries and fractures are possible.

- Lay the power cable properly.

⚠ WARNING

Contact may cause allergic reactions!

- The materials used have been tested for their tolerability. In very rare cases, contact with accessible materials on the device and its accessories may cause allergic reactions. This applies in particular to contact injuries in conjunction with prolonged contact. If this occurs, seek medical attention immediately.

Only a fully functional product meets the safety requirements of users, patients and third parties. Therefore, please observe the following instructions on your product:

2.3 Avoiding damage to the device

NOTICE

Storage and operation in an unsuitable environment.

The electronics can become damaged.

- Please observe the environmental conditions for transport, storage and operation.
- Always place the device on firm, level ground. The device must always be in a vertical position when you use it. Otherwise, secretion can enter the device.

NOTICE

Damage to device due to heat build-up!

The device can become damaged.

- Do not cover the device during suction.
- Keep the device and the power cable away from other heat sources.
- Do not place the device directly next to other devices as this can cause excessive heating of the device.

NOTICE

Damage to the device due to improper use!

The device can become damaged.

- Ensure that no liquid enters the device. Once liquid has entered the device, it must no longer be operated. In this case, clean the device and send it to ATMOS for repair.
- Always place the device on firm, level ground. The device must always be in a vertical position when you use it.
- Use only power cables that function properly.

3 Setting up and starting up

3.1 Device overview

Front view



1. on/off switch
2. Display
3. Support for canister system
4. Connection for hose from pump to safety canister
5. Connection for suction hose
6. Secretion canister lid
7. Hydrophobic bacterial and viral filter

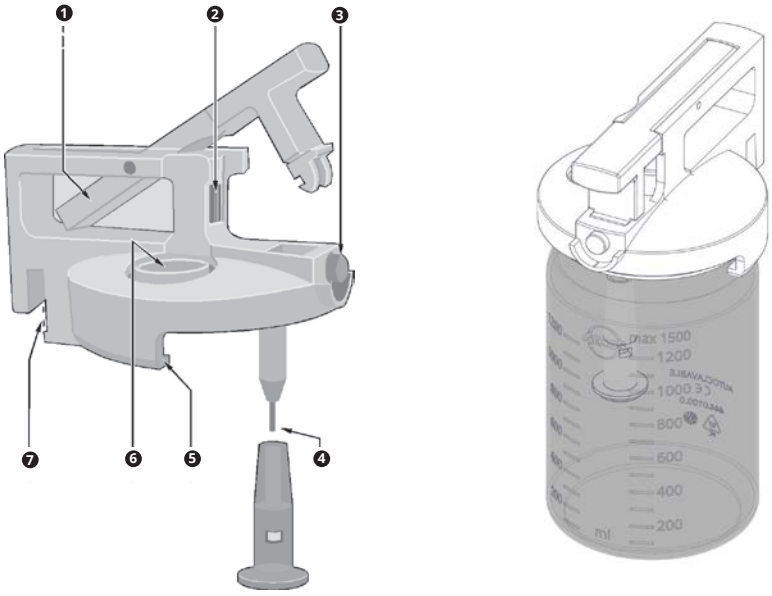
Rear view



1. Pump connection
2. Connection for foot controller
3. Service interface
4. Potential equalisation
5. Mains supply

3.1.1 Secretion canister

3.1.1.1 Reusable canister system



1. Locking handle
2. Knurled screw for locking the lid insert and for adjusting the clamping force
3. Release button
4. Fill-level sensor with anti-foaming device
5. Lid rim
6. Aperture for double hose connector
7. Contacts for fill-level monitoring

3.1.1.2 Disposable canister systems

ATMOS Disposable System (1 l)	
	1. Angle (connection for the disposable suction hose) 2. ATMOS suction bag 3. ATMOS external canister 4. L-connector (connection for vacuum hose)

Serres® canister system (1 l)



❶ Angle (connection for the disposable suction hose)
❷ Serres® suction bag
❸ Serres® external canister
❹ Grey angle on the Serres® external canister (connection for vacuum hose)

Medi-Vac® canister system (1 l)



❶ Angle (connection for the disposable suction hose)
❷ Red hose
❸ Medi-Vac® suction bag
❹ Connection for vacuum hose
❺ Medi-Vac® external canister

Receptal® canister system (3 l)



❶ Angle (connection for the disposable suction hose)
❷ Receptal® suction bag
❸ Receptal® external canister
❹ Connection for vacuum hose

Standard rail holder ATMOS/Serres®



Support Medi-Vac®



3.1.1.2 Safety canister (overflow protection)



1. Safety canister
2. Safety canister lid with connection for the hydrophobic DDS bacterial and viral filter
3. Connection for vacuum hose
4. Connection for suction hose

3.2 Preparing the device

Prior to first operation, peruse the safety information in chapter ‘2 Notes for your safety’ on page 11.

ⓘ Damaged pump diaphragms due to cold temperatures during transport.

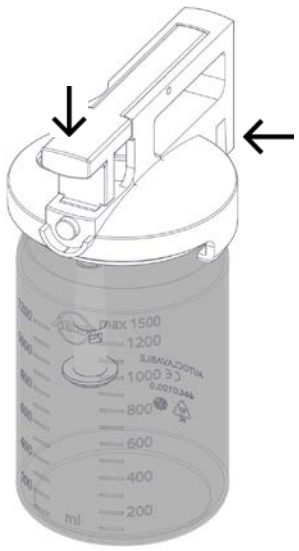
1. In case the device was transported at temperatures below −5 °C: let the device stand at room temperature for at least 6 hours before proceeding with the next steps.
2. Check the device, secretion canisters, power cable, accessories and hoses for possible damage.
3. If the device is damaged: document and report the damages in transit. Send the device to ATMOS (chapter ‘6.2 Sending in the device’ on page 36).
4. If the device is not damaged: place the device on a safe, level surface.

3.3 Connection to the mains power supply

1. Check whether the voltage and frequency data listed on the device correspond to the values of the mains power supply.
2. Connect the device to the mains.
3. Secure the power cable against accidental removal by using the safety clamp.

☞ For surgical procedures, we recommend additionally connecting the device via the connection to the potential equalisation of the examination room.

3.4 Connecting the secretion canister system and hoses

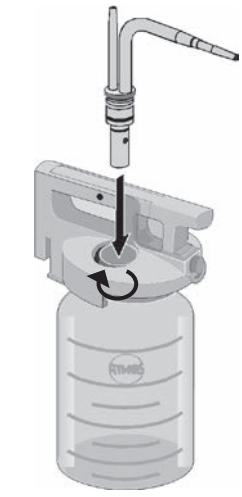


1. The anti-foaming device must be placed on the fill-level sensor for strongly foaming secretion.
2. Slide the secretion canister lid with the release button pointing forward onto the secretion canister.

☞ Make sure that the lid rim is under the bead of the secretion canister. This seals the secretion canister tightly and the desired vacuum can be built up in the secretion canister.

3. Press the locking handle downwards until it clicks into place.
4. Hang the secretion canister in the left or right support for the canister system.

ℹ Using the support for the canister system for purposes other than what it was designed for can cause malfunctions.



1. Push the double hose connector into the canister lid twisting gently.

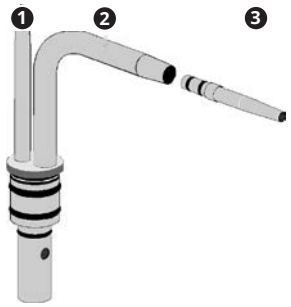
» The double hose connector locks into place.



1. Connect a short hose to the pipe connection on the device and to the bacterial and viral filter.
2. Connect a second short hose to the printed side of the DDS bacterial and viral filter and to the safety canister lid.
3. Connect a longer hose to the inlet on the safety canister and to the vertical fitting of the double hose connector.

☞ When using the optional bacterial and viral filter in the safety canister, the bacterial and viral filter between the pipe connection of the device and the safety canister lid can be omitted.

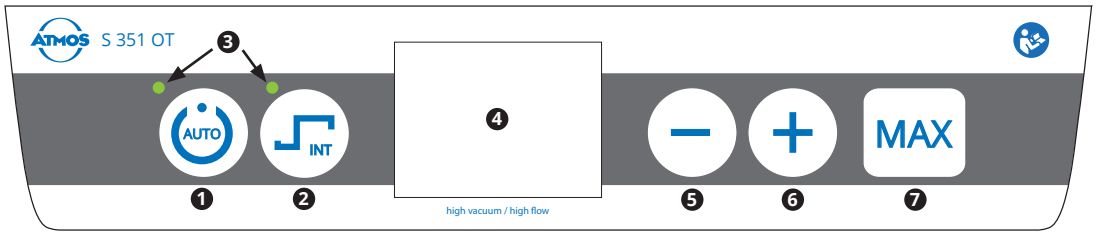
⚠ Never operate the device without a bacterial and viral filter.

	1. Connect the suction hose (Ø 10 mm) to the angled fitting (2) of the double hose connector. ☞ Use a hose reducer (3) for suction hoses with a Ø of 6 mm.

4 Operation

Environmental conditions for operation: see chapter '10 Technical data' on page 42

4.1 Control panel

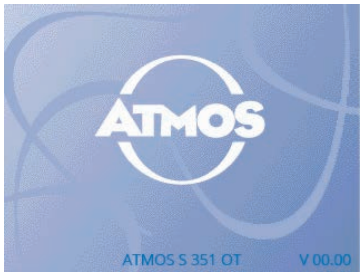


❶ AUTO mode button (auto standby)
❷ INT mode button (intermittent)
❸ LEDs for indicating the active function
❹ Display
❺ Button for reducing the vacuum
❻ Button for increasing the vacuum
❼ Button for selecting the maximum vacuum

4.2 Switching on the device

1. Press the on/off switch.

» The start screen appears.



» The pump starts. The vacuum that was last selected is set.

☞ If the target vacuum is at 0 before switching off, it is started at −100 mbar when switching on.

» The on/off switch remains illuminated as long as the device is switched on.

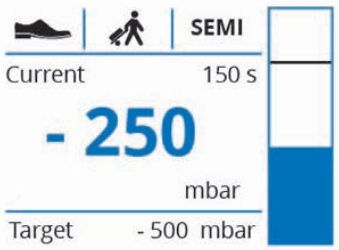
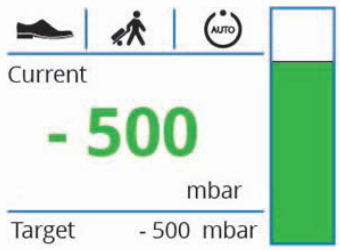
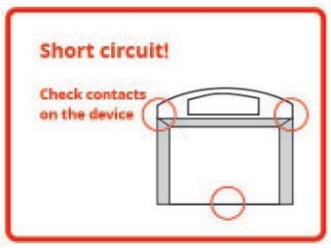
4.3 Switching off the device

1. Switch off the device by pressing the on/off switch. The display takes about 3–4 seconds to turn off.

4.4 Explanation of the display

The display serves to show the current settings of your ATMOS device.

	Foot controller
	Connected with trolley
	Standby automatic

Version 1:	Version 2:	Version 3:
		

In addition, the colours shown indicate the following:

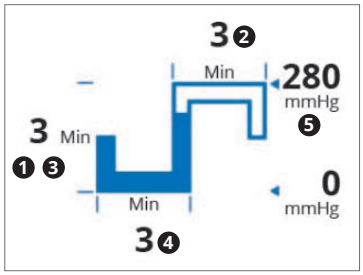
- Blue: Vacuum is being generated or released
  Target vacuum has not yet been reached
- Green: Target vacuum has been reached
- Red: Warning message or target vacuum cannot be generated
  (e.g. due to leakage)

4.5 Intermittent mode

With your device, you have the option of selecting between continuous and intermittent mode. In contrast to the continuous mode, which operates with a negative pressure that remains the same, the intermittent mode allows for therapy with alternating vacuum intervals.

The intermittent mode is divided into 4 phases:

- Increase time
- Vacuum holding period
- Decrease time
- Pause



❶ Increase time
❷ Vacuum holding period
❸ Decrease time
❹ Pause
❺ Target vacuum

1. Set the duration of the individual phases and the level of the vacuum to be generated in the user menu (chapter '4.6 User menu' on page 22).
2. Press the INT button to activate the mode.

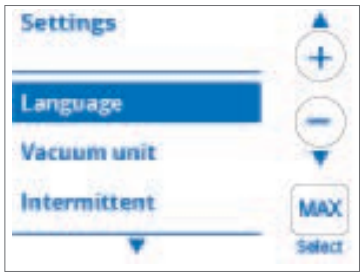
» The display changes to the *Intermittent* screen.
» The LED next to the button lights up green.
» The device begins intermittent operation. The running phases are shown in turn and in blue.

- Increase time: the final vacuum is being generated.
- Vacuum holding period: the final vacuum is being held.
- Decrease time: the final vacuum is being released.
- Pause: there is no vacuum. It starts with the increase time.

3. Leave the *Intermittent* mode by pressing the INT button.

4.6 User menu

Display



Operation

1. Press the on/off switch and immediately afterwards the AUTO button (1).

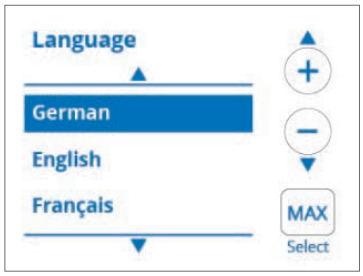
» The user menu appears.

2. Press the − button (5) to scroll down in the user menu or the + (6) button to scroll up.
3. Press the MAX button (7) to select the language, for example.

Options

- Language
- Vacuum unit
- Intermittent
- Brightness
- Date
- Time
- Vacuum steps

4.6.1 Language



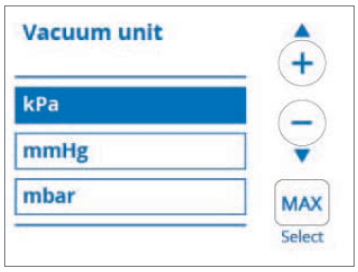
1. Press the + (6) or − (5) button to go to the desired language.
2. Select the language by pressing the MAX button (7).

» The language is set. You are automatically redirected to the main menu.

- To return directly to the main menu, press the INT button (2).

- German
- English
- Français
- Español
- Русский

4.6.2 Vacuum unit



1. Press the + (6) or − (5) button to go to the desired vacuum unit.
2. Select the vacuum unit by pressing the MAX button (7).

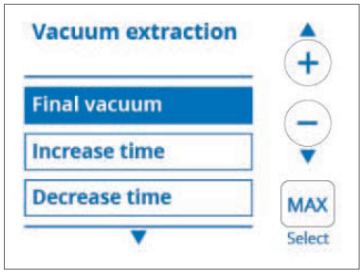
» The vacuum unit is set. You are automatically redirected to the main menu.

- To return directly to the main menu, press the INT button (2).

- kPa
- mmHg
- mbar

Display	Operation	Options

4.6.3 Intermittent



Four parameters can be set in the *Intermittent* menu.

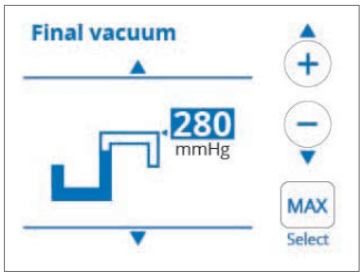
1. Press the + (6) or − (5) button to go to the desired parameter.
2. Select the desired parameter by pressing the MAX button (7).

» The setting can now be made in the next window.

- To return directly to the main menu, press the INT button (2).

- Final vacuum
- Increase/ Decrease time
- Vacuum holding period
- Pause

4.6.3.1 Final vacuum



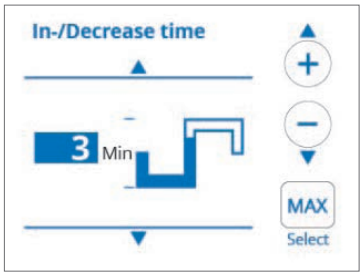
1. Press the + (6) or − (5) button to set the desired value.
2. Confirm the value by pressing the MAX button (7).

» The final vacuum is set. You are automatically redirected to the *Intermittent* menu.

- To return directly to the *Intermittent* menu, press the INT button (2).

- 10 kPa (min) – 90 kPa (max)
- 75 mmHg (min) – 675 mmHg (max)
- 100 mbar (min) – 900 mbar (max)

4.6.3.2 Increase/Decrease time



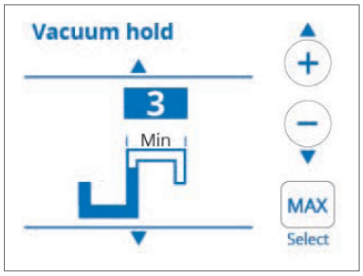
1. Press the + (6) or − (5) button to set the desired value.
2. Confirm the value by pressing the MAX button (7).

» The increase/decrease time is set. You are automatically redirected to the *Intermittent* menu.

- To return directly to the *Intermittent* menu, press the INT button (2).

- 15 sec (min) – 300 sec (max)

4.6.3.3 Vacuum holding time



1. Press the + (6) or − (5) button to set the desired value.
2. Confirm the value by pressing the MAX button (7).

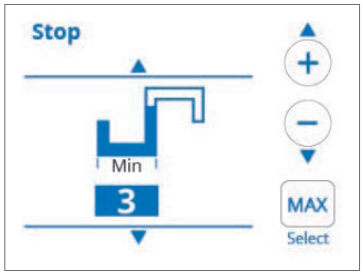
» The vacuum holding time is set. You are automatically redirected to the *Intermittent* menu.

- To return directly to the *Intermittent* menu, press the INT button (2).

- 5 sec (min) – 995 sec (max)

Display	Operation	Options

4.6.3.4 Pause



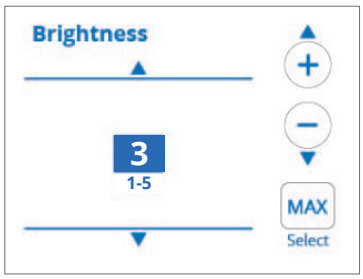
1. Press the + (6) or − (5) button to set the desired value.
2. Confirm the value by pressing the MAX button (7).

» The pause time is set. You are automatically redirected to the *Intermittent* menu.

- To return directly to the *Intermittent* menu, press the INT button (2).

- 5 sec (min) – 995 sec (max)

4.6.4 Brightness



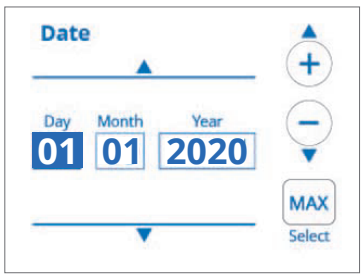
1. Press the + (6) or − (5) button to go to the desired level of brightness.
2. Select the level of brightness by pressing the MAX button (7).

» The level of brightness is set. You are automatically redirected to the main menu.

- To return directly to the main menu, press the INT button (2).

- Levels 1 – 5

4.6.5 Date



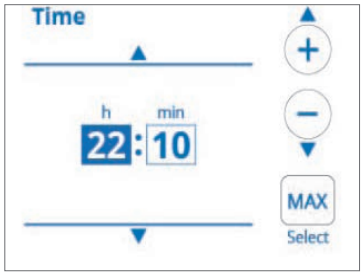
1. Press the + (6) or − (5) button to set the day, month and year.
2. Confirm the day, month and year by pressing the MAX button (7).

» The date is set. You are automatically redirected to the main menu.

- To return directly to the main menu, press the INT button (2).

- Day
- Month
- Year

4.6.6 Time



1. Press the + (6) or – (5) button to set the hour and minutes.
2. Confirm the hour and minutes by pressing the MAX button (7).

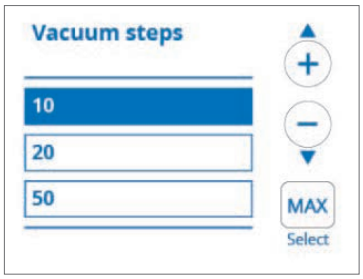
» The level of brightness is set. You are automatically redirected to the main menu.

- To return directly to the main menu, press the INT button (2).

- Hour
- Minute

Display	Operation	Options

4.6.7 Vacuum steps



1. Press the + (6) or − (5) button to go to the desired vacuum steps.
2. Select the vacuum steps by pressing the MAX button (7).

» The vacuum steps are set. You are automatically redirected to the main menu.

- To return directly to the main menu, press the INT button (2).

For vacuum unit in mbar:

- 10
- 20
- 50

For vacuum unit in kPa:

- 1
- 2
- 5

For vacuum unit in mmHg:

- 7
- 15
- 37

4.7 Suction

4.7.1 Adjusting the vacuum

⚠ WARNING

Vacuum is too high.

The patient can be seriously injured.

- Observe the valid guidelines.
- Please select the vacuum according to the patient and the application.

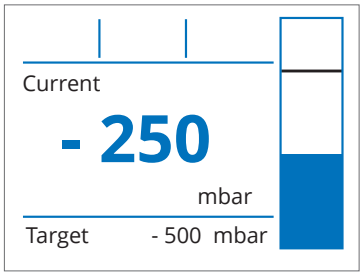
1. Press the on/off switch.

» The start screen appears.

» The pump starts. The vacuum that was last selected is set.

☞ If the target vacuum is at 0 before switching off, it is started at −100 mbar when switching on.

» The on/off switch remains illuminated as long as the device is switched on.



1. Press the + (6),− (5) or MAX (7) button to set the target vacuum.

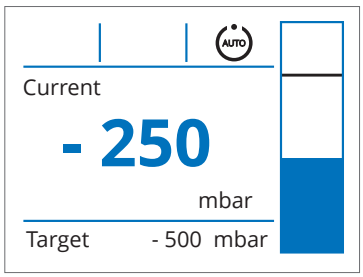
» The target vacuum at the bottom of the display and the black line in the right bar change.

» The current vacuum in the middle of the display and the blue bar change.

When the target vacuum has been reached, the indicator for the current vacuum in the display changes from blue to green.

Keeping the − (5) and + (6) buttons pressed changes the vacuum value faster.

4.7.2 AUTO mode



1. Press the AUTO mode button (1) to turn on the mode.
» The symbol appears on the display.
» The LED next to the button lights up green.

In AUTO mode, the device checks whether suction is possible. If there are no liquids or secretion to be extracted at the suction site after 20 seconds, the pump switches off automatically.

Once you put the suction attachment back into the suction material, the pump turns on again and the full suction capacity with the set vacuum is available. This way you will avoid making unnecessary noise.

For certain applications, such as suctioning using very thin cannulae (suction cannulae with a lumen ≤ 2 mm), for suction pipes with several frontal suction openings (basket suction) or when using disposable suction bags with a bacterial and viral filter, the AUTO mode can only be used to a limited extent. Stop AUTO mode accordingly.

4.8 Electronic fill-level monitoring system

The ATMOS S 351 OT has an electronic fill-level monitoring system that switches off the pump when the maximum fill level is reached. At the same time, the device beeps and then *Secretion canister full* appears in the display. The maximum fill level is reached when the liquid comes into contact with the sensor in the secretion canister lid. If a large amount of foam is generated, you should fit the enclosed anti-foaming device over the sensor so that the pump does not switch off prematurely. As soon as the sensor is no longer in contact with the liquid (e.g. on replacing the double hose connector), the pump switches on again.

4.9 Changing the secretion canister

Change or empty the secretion canister when it is 2/3 full.

⚠ WARNING

Risk of infection.

Death or serious injuries from infection.

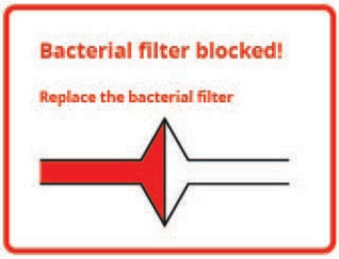
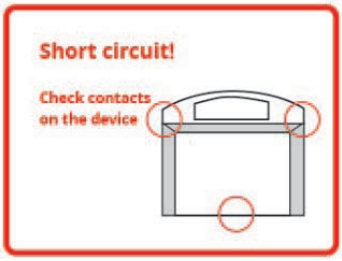
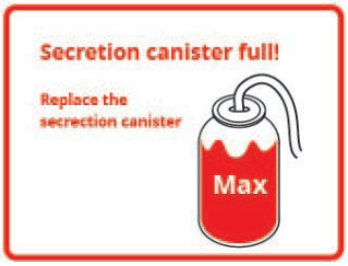
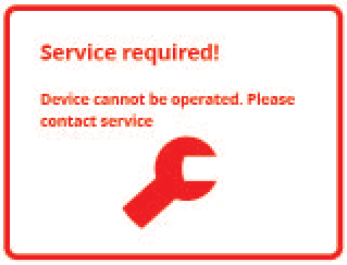
☞ Always wear disposable gloves when changing the secretion canister.

1. Stop the suction process by switching off the pump.
2. Remove the double hose connector from the full secretion canister.
3. If a second secretion canister is attached, insert the double hose connector into it.
4. Lift the full secretion canister with its lid upwards. Press the release button and open the locking handle.
5. Empty the secretion canister or replace it with a new one.

☞ Dispose of the suction material properly.

6. Attach the canister lid to the empty secretion canister and then to the device.
7. Attach the double hose connector to the secretion canister.

4.10 Warning messages

Display	Cause	Troubleshooting
	The hydrophobic bacterial and viral filter is blocked. ☞ This warning message also appears if there is a kink in the hose or if drainage accessories are connected.	Replace the hydrophobic bacterial and viral filter.
	Short circuit between the contact terminals.	Check the terminals on the device.
	The secretion canister is full.	Change the secretion canister. In the event of strong foaming: Fit the anti-foaming device over the sensor. The warning message ‘Secretion canister full’ is deactivated when disposable canister systems are in use.
	The device temperature is too high.	Please provide sufficient cooling.
	Service is required.	Notify ATMOS Service.

4.11 Trolley

	1. Mount the device on the trolley tray using a screw.

4.12 Foot controller

The vacuum can be set by connecting the foot controller:

1. Plug the foot controller into its connection before switching on the device.
2. Connect the suction catheter, suction attachment or suction instrument to the suction hose.
3. Switch on the ATMOS S 351 OT. Make sure that the pilot lamp in the on/off switch is illuminated.
4. Select the final vacuum required using one of the buttons (5), (6) and (7). Keeping the − (5) and + (6) buttons pressed changes the value faster.
5. You can now vary the vacuum between 0 and the preset final vacuum value by using the foot controller.

4.13 Checking the bacterial and viral filter

NOTICE

The bacterial and viral filter is a disposable product and cannot be autoclaved or disinfected.

1. Switch on the device.
2. Press the MAX button.
3. As soon as the current vacuum on the display shows a vacuum greater than −300 mbar (−30 kPa / −225 mmHg) with the suction hose open, you must change the bacterial filter.
4. To do this, remove the hose connections on the bacterial and viral filter and insert a new one. Pay attention to the flow direction (see lettering on the bacterial and viral filter).
5. Dispose of the used bacterial and viral filter immediately so that it is not used again accidentally.
6. Recommendation: Always have some replacement bacterial and viral filters ready at hand.

5 Reprocessing

5.1 Safety instructions for reprocessing

5.1.1 General safety instructions

We recommend that you always document all maintenance work and part replacements in writing.

It is the responsibility of the user to ensure that the required results of cleaning and disinfection are achieved. Generally, validation and routine monitoring of the procedure will be necessary.

Reprocessing may be carried out only by persons who have the necessary expertise. The person must have the necessary equipment to carry out these measures.

5.1.2 Danger for users, patients and third parties

⚠ WARNING

Risk of infection due to unsuitable medical aids.

Deadly diseases can be transmitted.

- Always wear your own personal protective equipment. The protective equipment consists of protective gloves, protective clothing, goggles and mouth and nose protection for all steps in which the product components are still contaminated.
- Use only aids and tools that can be easily reprocessed or ones that are disposable products.

⚠ WARNING

Risk of infection due to unsuitable reprocessing.

Deadly diseases can be transmitted.

- Make sure that all areas of the accessories can be reached easily.
- Use only suitable load carriers for mechanical reprocessing. This especially applies to accessories with hollow spaces and lumens that are hard to reach.
- Make sure that air bubbles do not form in the hollow spaces and lumens of accessories when placing them in processing solutions.

5.1.3 Avoiding damage to the device

NOTICE

Damage to the device due to cleaning with fixatives.

Stains and soiling cannot be removed permanently.

- Do not use aldehydes before and during cleaning.
- Do not expose the product to temperatures above 40 °C before and during cleaning.

NOTICE

Unsuitable aids.

The product can become damaged.

- Use only lint-free, soft cloths.
- Always use demineralised water for the final rinse.
- Follow the corresponding operating instructions of all aids and devices used.

NOTICE

Unsuitable cleaning agents and disinfectants.

The product can become damaged.

- Do not use any process chemicals containing the following ingredients on **plastic parts**:
  - Chloramides or phenol derivatives
- Do not use abrasives.

5.2 Preparing and completing reprocessing

Prior to reprocessing

1. Disassemble the product into the following items for reprocessing:
   - Secretion canister system (secretion canister, secretion canister lid, double hose connector, bacterial and viral filter)
   - Hoses (suction hose, vacuum hose, connecting hose)

After reprocessing

1. Perform a function check.

5.3 Preparing surfaces

5.3.1 Overview

Surface	After each use	After each patient	Daily	Weekly	Every 14 days	Monthly	Pre-cleaning	Wipe cleaning	Wipe disinfection	Spray disinfection	Remarks
Coated surfaces	X							X	X		As per agent manufacturer's instructions
Other surfaces	X							X	X		As per agent manufacturer's instructions

5.3.2 Selecting process chemicals

Follow the manufacturer's instructions for the process chemical.

Cleaning agent (manufacturer)	Active ingredients in 100 g	Type	Coated surfaces	Other surfaces
Disinfection				
Green&Clean SK (Metasys)	<1 g dialkyldimethylammonium chloride, <1 g alkyldimethylethylbenzylammonium chloride, <1 g alkyldimethylbenzylammonium chloride	Liquid	X	

Cleaning agent (manufacturer)	Active ingredients in 100 g	Type	Coated surfaces	Other surfaces
Dismozon® plus (Bode Chemie)	95.8 g magnesium monoperoxyphthalate hexahydrate	Granulate	X	X
Kohrsolin® extra (Bode Chemie)	14.1 g (ethylenedioxy)dimethanol, 5 g glutaral, 8 g didecyldimethylammonium chloride	Liquid concentrate	X	X
perform® (Schülke & Mayr)	45 g pentapotassium-bis(peroxymonosulphate)-bis(sulphate), anionic surfactants, non-ionic surfactants, phosphonates	Powder	X	X
terralin® protect (Schülke & Mayr)	22 g alkyl(C12-16)dimethylbenzylammonium chloride (ADBAC/BKC (C12-16)), 17 g 2-phenoxyethanol, 0.9 g amines, N-C12-14-(even-numbered)-alkyltrimethylenedi-, reaction products with chloroacetic acid	Liquid concentrate		X
FD 312 (Dürr Dental)	6.5 g alkyl-benzyl-dimethyl-ammonium chloride	Liquid concentrate		X
Bacillol® 30 Foam (Bode Chemie)	14 g ethanol, 10 g propan-2-ol, 6 g propan-1-ol, 0.5 g n-alkyl-aminopropyl-glycine	Foam	X	X
SaniCloth® Active (Ecolab)	0.45 g didecyldimethylammonium chloride	Wipes		X
Incidin® Active (Ecolab)	Peracetic acid	Powder		X
mikrozid® sensitive wipes (Schülke & Mayr)	0.26 g alkyl(C12-16)dimethylbenzylammonium chloride, 0.26 g didecyldimethylammonium chloride, 0.26 g alkyl(C12-14)ethylbenzylammonium chloride	Wipes		X
Mikrobac® forte (Bode Chemie)	0.4 g benzyl-C12-18-alkyldimethylammonium chloride, 0.4 g didecyldimethylammonium chloride	Wipes		X
Hexaquart® forte (BBraun)	Quaternary ammonium compounds, 20.0 g benzyl-C12-16-alkyldimethyl chloride, 7.9 g didecyldimethylammonium chloride	Liquid concentrate		X
Melisepol® Wipes sensitive (BBraun)	17 g propan-1-ol, 0.23 g didecyldimethylammonium chloride	Wipes		X
Meliseptol® Foam pure (BBraun)	17 g propan-1-ol, 0.23 g didecyldimethylammonium chloride	Foam		X
Incidin® Plus (Ecolab)	26 g glucoprotamin	Liquid concentrate		X

5.3.3 Wipe cleaning

1. Disconnect the device from the mains power supply.
2. Clean the surface evenly with a suitable cloth and suitable cleaning agent; see chapter '5.3.1 Overview' on page 30. Pay particular attention to hard-to-reach areas.

» No more residue is visible.

5.3.4 Wipe disinfection

1. Disinfect the surface evenly with a suitable cloth and suitable disinfectant. Pay particular attention to hard-to-reach areas.
2. Wait for the contact time to elapse.

5.4 Reprocessing the accessories

5.4.1 Overview

Accessory	Disposable product	Max. reprocessing cycles	After each use	After each patient	Daily	Weekly	Every 14 days	Monthly	Pre-treatment	Pre-cleaning	Manual cleaning and disinfection	Mechanical cleaning and disinfection	Sterilisation
Secretion canister system													
Secretion canister		50	X						X	X		X	X
Secretion canister lid		50	X						X	X		X	X
Double hose connector		50	X						X	X		X	X
Bacterial and viral filter[1]	X												
Hoses													
Suction hose		60	X						X	X		X	X
Vacuum hose		60	X						X	X		X	X
Connecting hose		60	X						X	X		X	X

[1] Immediate filter change in the event of discolouration, contamination, oversuction. The bacterial filter is no longer in optimum condition if the vacuum displayed is above −0.3 bar when the vacuum regulator is in the 'MAX' position and the suction hose is open.

5.4.2 Selecting process chemicals

Follow the manufacturer's instructions for the process chemical.

Cleaning agent (manufacturer)	Active ingredients in 100 g	Type	Secretion canister system	Hoses
Disinfectants – Manual reprocessing				
gigasept® FF new (Schülke & Mayr)	<5% phosphonates, <5% anionic surfactants, <5% non-ionic surfactants, perfumes, methylisothiazolinones	Liquid concentrate	X	
Cleaning agent (manufacturer)	**Active ingredients in 100 g**	**Type**	**Secretion canister system**	**Hoses**
Cleaning agents – Mechanical reprocessing				
neodisher® MediClean forte (Dr. Weigert)	<5% non-ionic and anionic surfactants, enzymes	Liquid concentrate		X

5.4.3 Secretion canister system

Characteristics

The accessories have the following hard-to-reach areas:

- Double hose connector (lumens)
- Sealing system complete (hollow spaces)

Take particular care when reprocessing hard-to-reach areas.

Pre-treating at the site of use Flushing: 60 s Rinsing: 60 s	1. Empty the secretion canister. 2. Clean the accessories under cold, running water. 3. Rinse out the hollow spaces and lumens of the accessories thoroughly under running water. » No more residue is visible.
Collecting and transporting	1. Label any damaged accessories. 2. Place the accessories in a canister. 3. Transport the canister to the reprocessing site.
Disassembly	See chapter '3 Setting up and starting up' on page 14. 1. Discard disposable products.

Pre-cleaning Flushing: 1x / 30 s Rinsing: 60 s Brush: Round brush • Diameter: 7 / 11 / 15 mm • Material: Nylon • Characteristics: With angled head	☞ Pre-cleaning is necessary only for mechanical cleaning and disinfection. 1. Make the following hollow spaces accessible: • Double hose connector • Entire secretion canister lid 2. Make the following lumens accessible: • Double hose connector 3. Clean the accessories evenly with a suitable brush under running water. 4. Rinse out the hollow spaces and lumens of the accessories thoroughly under running water.
Mechanical cleaning and disinfection Pre-rinse: 1 min Clean: 5 min 50 °C / 122 °F Neutralise: 2 min Intermediate rinse: 1 min Disinfect: 5 min 93 °C / 199 °F Drying: 12 min 110 °C / 230 °F	1. Empty the secretion canister. 2. Clean and disinfect using a suitable programme: • Pre-rinse with cold water • Cleaning with cleaning agent • Neutralisation with neutralising agent • Intermediate rinse with softened, cold water • Disinfection with suitable disinfectant and demineralised water • Drying Washer-disinfector: • In accordance with EN ISO 15883-1 Programme: • Miele Vario TD Adapter: • Adapter Miele E329
Checking and maintaining	1. Check whether reprocessing was successful using a suitable light magnifier. • Free of particles and organic material 2. Dispose of damaged accessories or have them repaired.
Assembly	Not necessary.
Function check	Not necessary.
Packaging	1. Label the accessories. 2. Pack the accessories using a packaging system according to DIN EN ISO 11607.
Sterilisation Pre-fractionated vacuum: 3x Temperature: 134 °C / 273 °F Time: 5 min Drying time: 10 min	1. Sterilise the accessories using a suitable procedure: • Steam sterilisation / autoclaving ☞ Ideally, always use the same procedure. Steriliser: • In accordance with EN 285
Storage	1. Observe the environmental conditions; see chapter '10 Technical data' on page 42.

5.4.4 Hoses

Pre-treating at the site of use Flushing: 5x / 30 s	1. Clean the hoses under cold, running water. 2. Rinse out the hoses thoroughly. » No more residue is visible.
Collecting and transporting	1. Label damaged hoses. 2. Place the hoses in a canister. 3. Close the canister. 4. Transport the canister to the reprocessing site.
Pre-cleaning Flushing: 5x / 30 s	☞ Pre-cleaning is necessary only for mechanical cleaning and disinfection. 1. Clean the hoses evenly under running water. 2. Rinse the hoses thoroughly under running water.
Disassembly	Not necessary.
Mechanical cleaning and disinfection Pre-rinse: 1 min Clean: 5 min 55 °C / 131 °F Neutralise: 2 min Disinfect: 5 min 93 °C / 199 °F Drying time: 12 min 110 °C / 230 °F	1. Clean and disinfect the hoses using a suitable programme: • Pre-rinse with cold water • Cleaning with cleaning agent • Neutralise with cold water • Intermediate rinse with softened, cold water • Disinfection with suitable disinfectant and demineralised water • Drying Washer-disinfector: • In accordance with EN ISO 15883-1 Programme: • Miele Vario TD Adapter: • Miele E336/E446
Checking and maintaining	1. Check whether reprocessing was successful using a suitable light magnifier. 2. If reprocessing was not successful, reprocess the hoses again. 3. Dispose of damaged hoses.
Assembly	Not necessary.
Function check	Not necessary.
Packaging	1. Label the hoses. 2. Pack the hoses using a packaging system according to DIN EN ISO 11607.
Sterilisation Pre-fractionated vacuum: 3x Temperature: 134 °C / 273 °F Time: 5 min Drying time: 10 min	1. Sterilise the accessories using a suitable procedure: • Steam sterilisation / autoclaving ☞ Ideally, always use the same procedure. Steriliser: • In accordance with EN 285
Storage	1. Observe the environmental conditions; see chapter '10 Technical data' on page 42.

6 Maintenance and service

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

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

Maintenance, repairs and periodic tests may **not** be carried out while the product is being used on the patient.

6.1 Periodic tests

Perform a repeat test of the electrical safety according to IEC 62353 at least every 12 months.

In this context, ATMOS recommends conducting an inspection in accordance with the manufacturer's specifications.

6.2 Sending in the device

1. Remove all consumables and dispose of them properly.
2. Clean and disinfect the product and accessories according to the operating instructions.
3. Enclose any used accessories with the product.
4. 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.

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

7 Troubleshooting

The product has been subjected to thorough quality control in the factory. However, if a fault should occur, you may be able to resolve it yourself.

Error symptom	Possible cause	Remedy
Device does not switch on (pilot light in the switch does not light up).	Power plug fits poorly.	Check the power plug.
	No power.	Check the power supply on the mains side (building fuse).
Warning message after switching on (filter control appears).	Safety canister is full.	Check safety and secretion canisters and empty if necessary.
	Hydrophobic bacterial and viral filter is blocked or not completely dry.	Replace the hydrophobic bacterial and viral filter.
	Drainage accessories are connected to the device.	Remove drainage accessories (cardiothoracic drainage not possible).
Warning message after switching on (fill-level symbol appears).	Secretion canister is full.	Empty secretion canister.
Warning message during suction (fill-level symbol appears).	Secretion canister is full.	Empty secretion canister.
	Heavy foaming.	Use anti-foaming device.
No warning message when secretion canister is full.	Use of disposable canister system	The warning message 'Secretion canister full' is deactivated when disposable canister systems are in use. Use reusable secretion canisters.
	Contact fault between the secretion canister and the device.	Check whether the secretion canister and its closure system have engaged correctly in the bracket and whether the ATMOS S 351 OT has been screwed correctly to the trolley.
Warning message during suction (fill-level symbol appears).	Hydrophobic bacterial and viral filter is blocked.	Replace the hydrophobic bacterial and viral filter.
	Hose connection to pump is kinked.	Attach hose in such way that it does not kink.
Warning message during suction; device switches off.	Too much foaming; foam bubbles are closing off the contact between the sensor and the double hose connector.	Place anti-foaming device on fill-level sensor (REF 444.0064.0).
No trolley symbol on the display even though the trolley is being used.	The connection to the trolley has been interrupted.	Check the contacts between the trolley and the ATMOS S 351 OT.
	Use of the trolley (REF 320.0070.0)	When the trolley is in use, the message 'Connected with trolley' is not possible.

Error symptom	Possible cause	Remedy
Incorrect vacuum unit is showing (mbar / mmHg / kPa).	The wrong vacuum unit was set.	Set the desired vacuum unit as described in chapter ‘4.6.2 Vacuum unit’ on page 22.
The display is too dark / too hard to read.	The brightness of the display is not correct.	Set the desired brightness of the display as described in chapter ‘4.6.4 Brightness’ on page 24.
Spanner/wrench shows on the display.	An equipment error has occurred.	If the symbol disappears, the device was able to correct the error. Nevertheless, have your suction device checked by ATMOS Service.
		Only emergency operation is possible as long as the symbol shows. Call ATMOS Service.
Thermometer shows in the display (ATMOS S 351 OT has overheated).	Ventilation slits are blocked.	Check the ventilation slits (bottom of the device); they must not be blocked.
	Ambient temperature too high.	Use the ATMOS S 351 OT only in the specified temperature range. Try using auto standby (less heat build-up).
	Fan is defective.	Call ATMOS Service.
Only a low vacuum level can be set with the foot controller.	A low target vacuum level has been set with the buttons.	Set the target vacuum to a higher value (or MAX) using the + button to obtain a larger control range for the foot controller.
The device does not recognise the foot controller.	The foot controller was connected after switching on the device.	Connect the foot controller to the device before starting it.

8 Accessories

Accessories	REF
Foot control for ATMOS S 351	444.0478.0
Trolley with standard rail ATMOS S 351	320.0070.0
Stand rail clamp Serres®, ATMOS S 351	444.0484.0
Graduated secretion jar 5 l	444.0034.0
Secretion canister 1.5 l (PC)	444.0100.0
Secretion canister 2.5 l (PC)	444.0099.0
Secretion canister lid	444.0650.0
Secretion canister lid incl. standard rail holder	444.0015.0
Socket nipple set	444.0640.0
Double socket nipple with overflow electrode	444.0012.0
Standard rail support Medi-Vac®	444.0451.0
ATMOS-External Canister 1 l	401.0100.0
ATMOS-External Canister 2 l	401.0200.0
ATMOS-External Canister 3 l	401.0300.0
Serres®-external canister 1 l	312.0465.0
Serres®-external canister 2 l	310.0402.0
Serres®-external canister 3 l	310.0403.0
Receptal®-external canister 1.5 l	310.0221.0
Receptal®-external canister 2 l	443.0256.0
Receptal®-external canister 3 l	444.0157.0
Receptal®-holder for standard rail, 1 x 2 l	444.0160.0
Receptal®-holder for standard rail, 1 x 3 l	444.0170.0
Receptal®-holder for standard rail, single	444.0150.0
Receptal®-holder for standard rail, double	444.0156.0
Medi-Vac®-external canister 1 l	312.0473.0
Safety canister 250 ml (without hydrophobic bacterial and viral filter)	444.0646.0
Safety canister 250 ml (with hydrophobic bacterial and viral filter)	444.0646.1
Hose bracket, for attaching to standard rail	444.0450.0
Hose reducer for double socket nipple	444.0013.0
Power cable 5 m	008.0629.0

Consumables	REF
Hydrophobic bacterial and viral filter, Ø 11 mm	443.0738.0
Hydrophobic bacterial and viral filter, Ø 8 mm	444.0628.0
Hydrophobic DDS bacterial and viral filter for DDS secretion canister, 10 pcs.	340.0054.0
Silicone hose for safety canister – secretion canister	443.0046.0
Silicone hose for connecting nipple – bacterial and viral filter	320.0044.0
Silicone hose for safety canister – secretion canister (trolley)	444.0118.0
Silicone hose for bacterial and viral filter – safety canister	999.0128.0
Suction hose, PVC, Ø 8 mm, L = 2.10 m, 50 pcs.	006.0059.0

Consumables	REF
Suction hose, silicone, Ø 6 mm, L = 1.30 m, 1 pc.	000.0013.0
Suction hose, silicone, Ø 6 mm, L = 2 m, 1 pc.	000.0361.0
Suction hose, silicone, Ø 6 mm, 1 m (minimum 5 m)	006.0009.0
Suction hose, silicone, Ø 10 mm, L = 1.30 m, 1 pc.	318.1012.0
Suction hose, silicone, Ø 10 mm, L = 2 m, 1 pc.	000.0243.0
Suction hose, silicone, Ø 10 mm, 1 m (minimum 5 m)	006.0026.0
ATMOS-Suction Bag 1 l with Gelling Agent, 100 pcs.	401.0101.0
ATMOS-Suction Bag 1 l, 100 pcs.	401.0102.0
ATMOS-Suction Bag 2 l with Gelling Agent, 100 pcs.	401.0201.0
ATMOS-Suction Bag 2 l, 100 pcs.	401.0202.0
ATMOS-Suction Bag 3 l with Gelling Agent, 70 pcs.	401.0301.0
ATMOS-Suction Bag 3 l, 70 pcs.	401.0302.0
Serres®-suction bag 1 l without gelling agent, 36 pcs.	312.0466.0
Serres®-suction bag 1 l, gelling agent, 32 pcs.	312.0467.0
Serres® disposable suction bag 2 l, without gelling agent, 24 pcs.	310.0410.0
Serres® disposable suction bag 2 l, with gelling agent, 22 pcs.	310.0400.0
Serres® disposable suction bag 3 l, without gelling agent, 24 pcs.	310.0411.0
Serres® disposable suction bag 3 l, with gelling agent, 20 pcs.	310.0401.0
Receptal®-suction bag 1.5 l, w/o filter, 50 pcs.	310.0222.1
Receptal®-suction bag 1.5 l, with filter, 50 pcs.	310.0222.2
Receptal®-suction bag 2 l, w/o filter, 50 pcs.	443.0257.0
Receptal®-suction bag 2 l, with filter, 50 pcs.	443.0257.2
Receptal®-suction bag 3 l, w/o filter, 50 pcs.	444.0153.0
Receptal®-suction bag 3 l, with filter, 50 pcs.	444.0154.0
Medi-Vac®-suction bag 1 l, 50 pcs.	312.0474.0
Tissue collector 300 ml, disposable	340.0061.0

9 Disposal

Packaging

1. Recycle any product packaging you no longer need.

Secretion and blood

1. Please dispose of secretion, blood and contaminated parts in line with country-specific regulations.

In the Federal Republic of Germany, the requirements of the 'Implementation Aid for Disposal of Waste from Healthcare Institutions' apply, a statement issued by the Federal / State Working Group on Waste.

Secretion canister system

Disposable products may not be reprocessed and may not be reused! Discard disposable products properly.

The following notes only apply to reusable products.

1. Clean and disinfect the reusable products of the secretion canister system.
2. Recycle the disinfected reusable products.

ATMOS S 351 OT



Do not dispose of the product together with household waste.

1. Clean and disinfect the product.
2. Dispose of the product properly and in accordance with country-specific laws and regulations.

In principle, the housing is fully recyclable. However, please observe country-specific laws and regulations.

9.1 Expected service life

When used according to the operating instructions, the device (ATMOS S 351 OT) has an expected service life of 8 years. Regular thorough cleaning and disinfection of the suction device and its applied parts as well as operation of the device according to the operating instructions are assumed.

10 Technical data

Input voltage	230 V~ ± 10 %; 50/60 Hz Special voltage: • 100 V~ ± 10 %; 50/60 Hz • 115 V~ ± 10 %; 50/60 Hz • 127 V~ ± 10 %; 50/60 Hz
Current consumption	• max. 0.5 A (230 V~) • max. 1.3 A (100 V~) • max. 1.3 A (115 V~) • max. 1.3 A (127 V~)
Power consumption	• max. 100 VA (230 V~) • max. 130 VA (100 V~) • max. 150 VA (115 V~) • max. 165 VA (127 V~)
Fuses	• T 1.0 A/H (for 230 V~) • T 2.0 A/H (for 100 V~) • T 2.0 A/H (for 115 V~) • T 2.0 A/H (for 127 V~)
Air flow rate	36 l/min +2 l/min
Max. vacuum at NN	−90 kPa** ** 1 bar ≈ 750.06 mm Hg ≈ 1000 hPa / dependent on daily air pressure
Vacuum display	Digital numerical, resolution 10 mbar / 10 mmHg / 1 kPa accuracy ± 2%
Auxiliary air control	Electronically controlled magnetic valve
Secretion canister	1.5 l / 2.5 l Polycarbonate canisters Supports for using disposable bags: • ATMOS (1 l / 2 l / 3 l) • Receptal® (1 l / 1.5 l / 2 l / 3 l) • Serres® (1 l / 2 l / 3 l) • Medi-Vac® (1 l / 1.5 l / 3 l)
Suction tubing	Ø 6 mm, 1.3 m long Ø 10 mm, 2 m long
Power cable	Length: 5 m, with cold-device plug IEC 60320 C14
Interface	• For foot regulator • USB interface (only for service)
Power cycle	Continuous operation
Operation mode	Continuous and Intermittent

Protective conductor resistance	max. 0.1 Ω
Earth leakage current	max. 0.5 mA
Touch current	max. 0.1 mA
Patient leakage current	max. 0.1 mA
Heat output	approx. 135 J/s
Noise level	< 54 dB (A) @ 1 m (according to ISO 7779)
Environmental conditions: Transport/storage	
Temperature range	−10...+60 °C
Air humidity without condensation	30...95 %
Air pressure	700...1060 hPa
Environmental conditions: Operation	
Temperature range	+5...+40 °C
Air humidity without condensation	30...95 %
Air pressure	700...1060 hPa
Maximum operating altitude	3000 m (NN)
Contamination level	class 2
Overvoltage category	III
Dimensions W x H x D	Without trolley: 30 x 33 x 20 cm With trolley: 84 x 49 x 52 cm
Weight	10.2 kg (without secretion canister and without trolley)
Periodic tests	Periodic tests of electrical safety every 12 months. Recommended: inspection according to manufacturer's specifications.
Protection class (EN 60601-1)	I
Degree of protection	Applied parts type B 
Type of protection	IPX0
CE marking	CE 0124
Reference number (REF)	• 444.0405.0 (230 V) • 444.0405.1 (100 V) • 444.0405.2 (115 V) • 444.0405.3 (127 V)

10.1 Hydrophobic DDS bacterial and viral filter

Protection against bacteria (BFE)	Filtration efficiency: 99.89667 %*
Protection against viruses (VFE)	Filtration efficiency: 99.0 %*
Filter class	H13 (High-Efficiency Particulate Air/Arrestance)*

*External test report (test laboratory)

11 Notes on EMC

☞ Medical electrical devices are subject to special precautions with regard to EMC and must be installed according to the following EMC notes.

Guidance and manufacturer's declaration – ambient conditions

The product is suitable for use in the following environments:

- Home care in any building, outdoor areas and means of transport.
- In professional healthcare facilities such as medical practices, clinics, first-aid facilities and operating theatres/rooms.
  It is not suitable for use in the vicinity of HF surgical devices and in settings outside of an HF-shielded room of a magnetic resonance imaging system.
- Special environments such as factory or military facilities and medical areas near HF surgical devices, short-wave therapy equipment or within an HF-shielded room of a magnetic resonance imaging system.

The customer or user must ensure that the device is used in a prescribed environment.

Guidance and manufacturer's declaration – key features

☞ Please note the technical data in this manual. The essential features are fully usable even in the presence of electromagnetic disturbances.

Guidance and manufacturer's declaration – electrical components

The product has the following electrical components:

Type	REF	Max. cable length
Power cable with cold-device plug IEC 60320C14	008.0629.0	5 m

Guidance and manufacturer's declaration – warnings

⚠ WARNING

The use of electrical components and accessories other than those specified or provided by the manufacturer may cause increased electromagnetic interference or reduced immunity to electromagnetic interference and result in faulty operation of the device.

⚠ WARNING

Portable RF communications equipment (e.g. radios, antenna cables) should not be used within 30 cm* of any parts or cables of the product as specified by the manufacturer. Otherwise, this can lead to a reduction in the device's performance.

☞ *The distance may be reduced at higher immunity test levels.

⚠ WARNING

Avoid placing the device on top of or next to another device. This could result in faulty operation. If such placement cannot be avoided, the device must be monitored regularly for proper functioning. If possible, please switch off any nearby devices that are not in use.

12 Notes



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