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sartorius

Operating Instructions

arium® mini plus | arium® mini

H2O-MA-... | H2O-MM-...
Ultrapure Water System



1000025355

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1 About this Document

1.1 Introduction

These instructions provide all the information necessary for operation of the arium® mini (hereinafter referred to as the device).

These instructions must be read, understood and used by all personnel using the device.

- ▶ Before working with the device: Read the instructions carefully and completely.
- ▶ Keep them in a safe and easily accessible place near the device's site of installation. These instructions are part of the device.
- ▶ If the instructions are lost: Request a replacement or download the latest instructions from our website.

Masculine or feminine forms are used to facilitate legibility in these instructions and always simultaneously denote the other gender as well.

1.2 Validity

These instructions apply to the arium® mini plus and arium® mini in the following versions:

Device	Model name
arium® mini plus	H2O-MA-UV-T, H2O-MA-UV-T-US, H2O-MA-T, H2O-MA-T-US
arium® mini	H2O-MM-UV-T, H2O-MM-UV-T-US, H2O-MM-T, H2O-MM-T-US

1.3 Target Groups

These instructions are designed for the following target groups. The target groups must possess the knowledge listed.

Target group	Knowledge | responsibilities
User	The user is familiar with the operation of the device and the associated work processes. He knows the dangers that can occur when working with the device and can avoid these dangers. The user has been trained in the operation of the device. The training takes place within the scope of startup and is carried out by the operating engineer | laboratory manager or the operator of the device.
Operating engineer | laboratory manager	The operating engineer | laboratory manager makes decisions about the use and parameterization of the device.
Operator	The operator of the device is responsible for compliance with safety requirements and workplace safety regulations. The operator must ensure that all persons who work with the device have access to the relevant information and have been instructed in work with the device.

1.4 Symbols Used

As instruction and direct warning of danger, all text statements in these operating instructions to be particularly noted will be marked as follows:



This symbol denotes a possible danger with medium risk that death or severe injury may result if it is not avoided.



This symbol denotes a possible danger with a low risk that moderate or minor injury may result if it is not avoided.



This symbol denotes a danger with low risk that could result in property damage if it is not avoided.

The following symbols will also be used:

- ▶ Required action: Describes activities that must be performed in the given order.
- ▷ Describes the result of the activities carried out.
- – Item in a list.
- [ ] Text inside brackets refers to control and display elements.

Figures on the Operating Display

Depending on your device configuration, the figures on the operating display of your device may deviate from those in these instructions.

2 Safety Notes

2.1 Intended Use

The device is a water purification system that produces ultrapure water for daily requirements of up to 10 liters.

The device is **not** suitable for use in hazardous environments.

The device may only be used indoors.

These instructions are part of the device. The device is intended exclusively for use in accordance with these instructions.

Foreseeable Misuse

Any use beyond the intended use of the device can cause severe unforeseeable hazards and is the sole responsibility of the operator.

The following uses, for example, are deemed to be improper:

- Operation outside the permissible ambient conditions (see Chapter "11 Technical Specifications", page 88) e.g. extreme temperatures, chemical vapors, moisture, shock, vibration or strong electromagnetic fields
- Carrying out unauthorized modifications or other technical changes on the device
- Connecting unsuitable devices
- Installation of unauthorized items on or in the device

2.2 Personnel Qualification

All persons working on the device must possess the necessary knowledge (see Chapter "1.3 Target Groups", page 6).

The activities described in these instructions are aimed at the target group of operators. If individual actions must be carried out by other target groups, this will be indicated.

2.3 General Safety Instructions

Failure to follow the safety instructions in this manual can have serious consequences, e.g. exposure of individuals to electrical, mechanical or chemical hazards.

- ▶ Before starting up the device: Carefully read the chapter entitled "Safety Instructions".
- ▶ Only operate the device when it is safe and in perfect working order.
- ▶ Observe the maintenance intervals (see Chapter "8.3 Maintenance Schedule", page 64).
- ▶ Have any damage repaired immediately by the Sartorius Service.

2.3.1 Electrical Power

Electrical switching elements are installed in the device. Damage to the insulation or individual components can be life-threatening. Contact with parts under voltage represents a direct danger of death.

Work on and modifications to the electrical equipment of the device may only be carried out by Sartorius Service personnel. The device may only be opened by Sartorius Service personnel.

- ▶ Check the device regularly for defects, such as loose connections or damage to the insulation. The device's housing, power cord and all connections must be undamaged.
- ▶ Make sure that the power connection is equipped with a ground lead.
- ▶ Use only original power supplies and power cords.
- ▶ Do not use inadequately sized power cords.
- ▶ Keep live parts away from moisture. Moisture can cause short circuits.
- ▶ If the electrical equipment is defective, immediately turn off the power supply and contact the Sartorius Service.

2.3.2 Electromagnetic Compatibility

This is a Class A device that can cause radio interference in residential areas. Under such circumstances, the operator may be required to take adequate measures.

2.3.3 Consumables

The use of unsuitable consumables can be hazardous:

- Damage to the device
- Malfunction of the device
- Total failure of the device

- ▶ Only use accessories, consumables and spare parts from Sartorius. Sartorius can provide information on operational quality upon request.
- ▶ Only use accessories and consumables that are in technically perfect condition.

The use of accessories and consumables **not** approved by Sartorius is the sole responsibility of the operator.

3 Device Description

3.1 Device Overview

3.1.1 Front View of the arium® mini plus and arium® mini



Fig. 3-1: Front view

No.	Description
1	Display with touch function
2	Water outlet
3	Final filter
4	Front cover
5	Side cover

3.1.2 Electrical Connections of the arium® mini plus and arium® mini

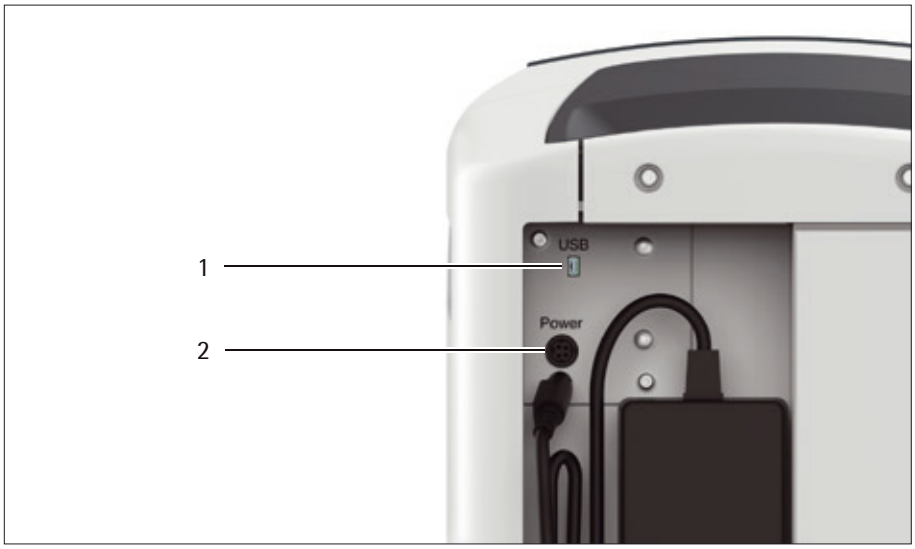


Fig. 3-2: Electrical connections

No.	Description	Explanation
1	"USB" connection	For Sartorius Service
2	"Power" connection	For connection of the AC adapter (power supply)

3.1.3 Water Connections on the arium® mini plus and arium® mini

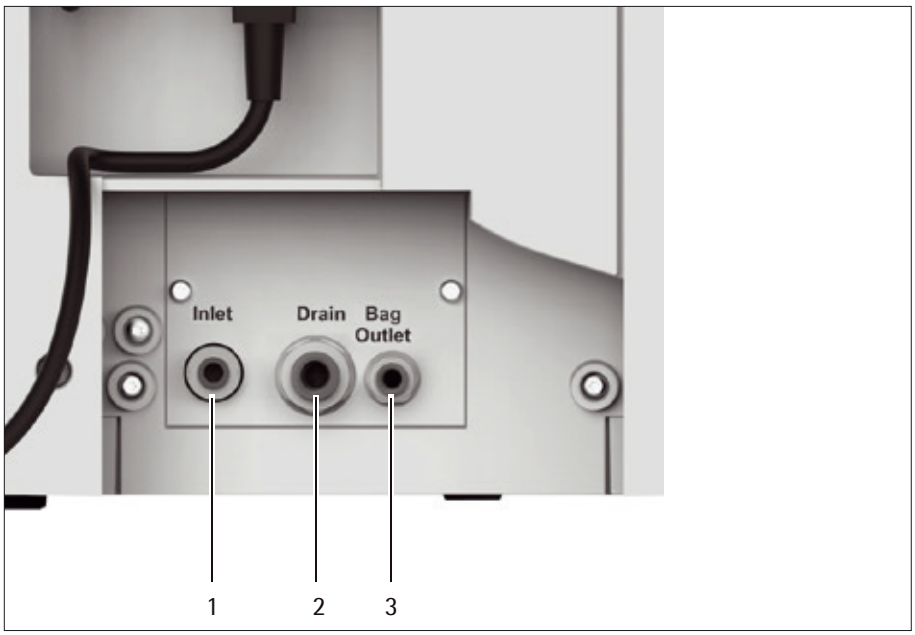


Fig. 3-3: Water connections

No.	Description	Explanation
1	"Inlet" connection	For connecting the tank filling tubing or feed water tubing
2	"Drain" connection	For connecting the drain water tubing
3	"Bag Outlet" connection	For connecting the tank outlet tubing

3.2 Operating Principle

3.2.1 Water Purification Principle

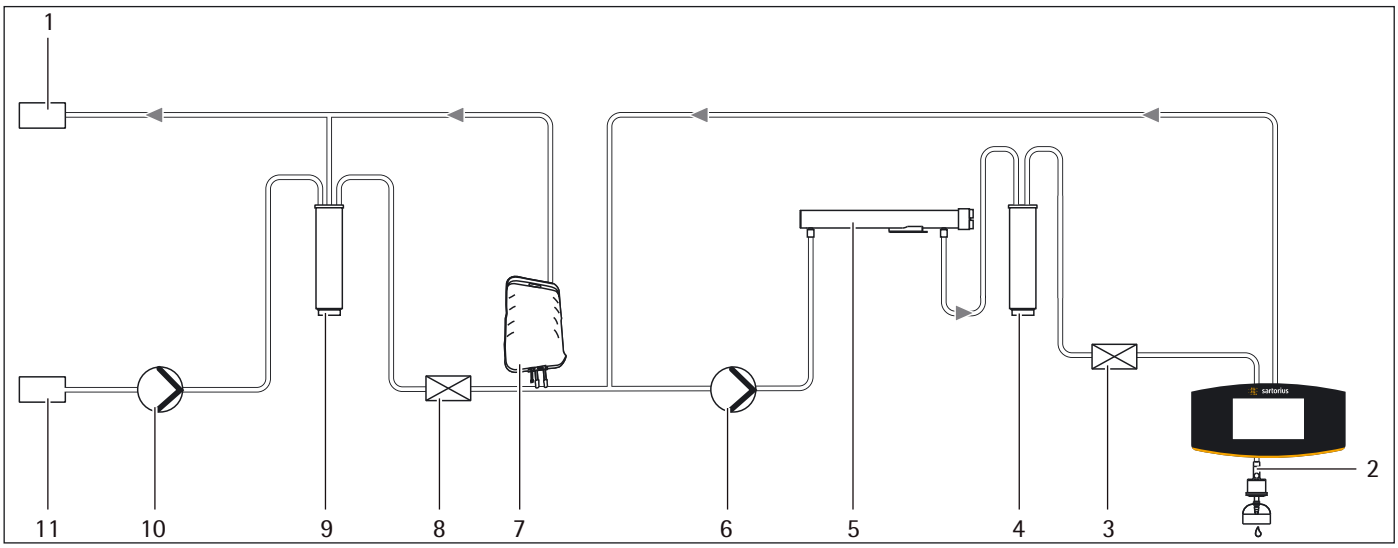


Fig. 3-4: arium® mini plus system setup

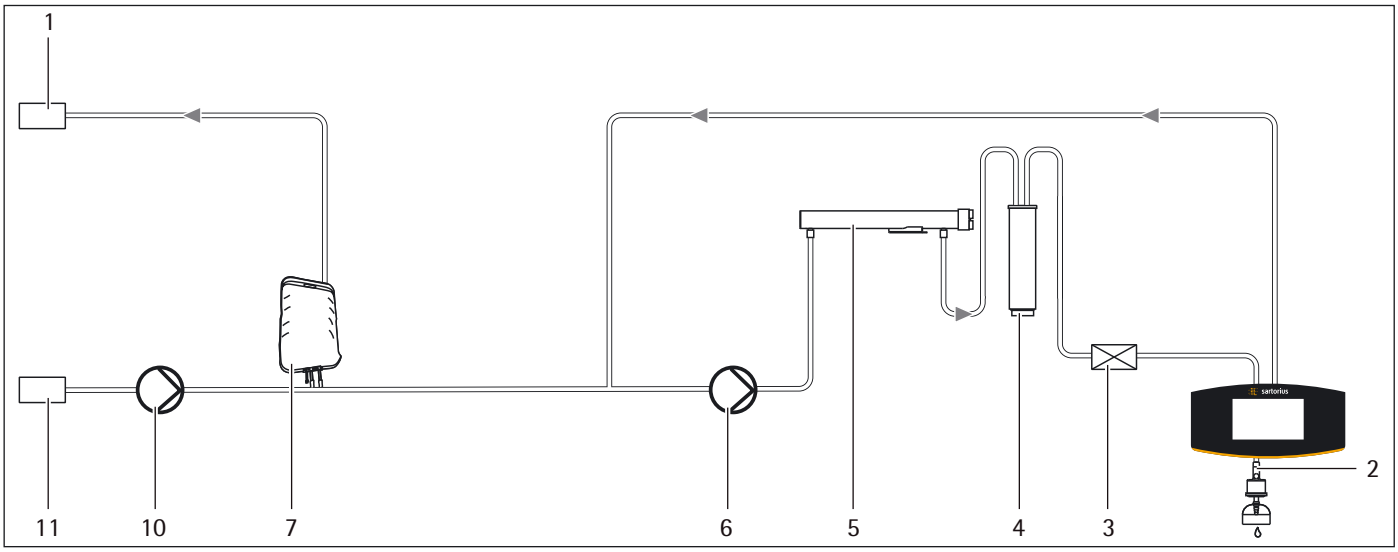


Fig. 3-5: arium® mini system setup

No.	Description
1	Outlet (drain water)
2	Product water outlet
3	Conductivity measurement
4	RO module
5	UV lamp (185/254 nm)
6	Pump

No.	Description
7	Bag
8	Conductivity measurement
9	RO module
10	Pump
11	Inlet (feed water)

Sartorius arium® mini systems were designed to produce ultrapure water.
The arium® mini plus is directly connected to the potable water supply and purifies the water in two stages. In the first stage, the arium® mini plus produces Type 3 pure water (reverse osmosis water), and in the second stage, ASTM Type 1 ultrapure water.

The arium® mini does not have a pre-stage. The device must be manually fed with pretreated water and is not suitable for direct connection to the potable water supply or a pretreated water line. In the second stage, the system is identical to an arium® mini plus and produces ASTM Type 1 ultrapure water.

Because the ultrapure water production reaches higher flow rates than the pure water production in the arium® mini, an arium® bag is connected as buffer storage between the two stages. On the arium® mini, the bag is used for storing the manually prepared, pretreated water. The water conducted into the bag can be taken directly out of the bag. The extraction is carried out without pressure, e.g. using a ball cock.

Fig. 3-4 and Fig. 3-5, page 12 show the flowchart of the arium® mini plus and the arium® mini. In the arium® mini plus, a membrane pump behind the system inlet transfers the water through the pretreatment cartridge. The pretreatment cartridge has two outputs, one for permeate and one for concentrate flow. The concentrate flow is connected to the outlet (drain) of the system. While the first stage fills the bag, water drains out at the outlet. The permeate flow contains the purified RO water (pure water). A conductivity-measuring cell (LFP) monitors the quality of the RO water.

On the arium® mini, the membrane pump is used at the system inlet to fill the bag. In the second step, another pump pumps the pretreated water (pure water) from the bag into the ultrapure water purification system. Here, the pure water is further purified to ultrapure water by an optional UV lamp and a cartridge filled with activated carbon and ion exchangers. A conductivity-measuring cell (LFP) measures the conductivity of the ultrapure water. The last purification step after dispensing is to run the water through a sterile final filter.

To guarantee ultrapure water of consistent and high quality, the ultrapure water purification system is constructed like a circulation ring. If no water is dispensed, the water circulates through the UV lamp and the cartridge. If there is no more interaction for a certain time, the device automatically switches to ECO mode.
In ECO mode, the arium® mini plus continues filling the bag. Once the bag is completely filled, the system automatically switches to standby mode after 15 minutes.

3.2.2 Feed Water Tubing

The feed water tubing is used to supply tap water to the arium® mini plus.



Fig. 3-6: Feed water tubing

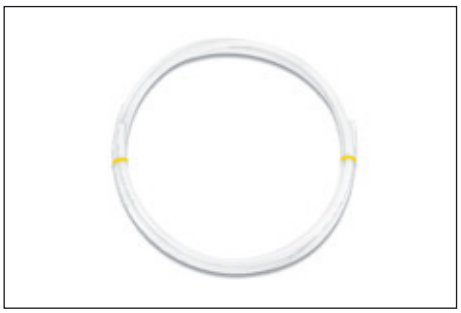


Fig. 3-7: Tank filling tubing

3.2.3 Tank Filling Tubing

The tank filling tubing serves to feed pretreated water from an external tank to the arium® mini.



Fig. 3-8: Drain water tubing

3.2.4 Drain Water Tubing

The drain water tubing is used to drain unpurified water and rinse water out of the device.

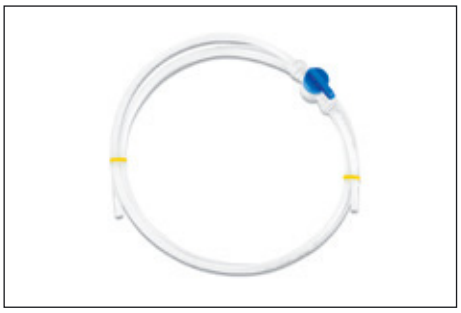


Fig. 3-9: Tank outlet tubing

3.2.5 Tank Outlet Tubing with Ball Cock

Pure water can be dispensed without pressure directly from the bag via the tank outlet tubing with ball cock. This option can be used to empty the bag when performing maintenance or to dispense pretreated water directly from the bag for further use.



Fig. 3-10: Dispense tube

3.2.6 Dispense Tube

The dispense tube is used for rinsing functions during startup and maintenance as well as when dispensing larger volumes of water.

3.2.7 Final Filter

The final filter is designed as a final particulate filter and ensures sterile filtration of the ultrapure water.

4 Operating Design

4.1 Dispensing Mode

In dispensing mode, the display shows information on water quality and the level of the bag as well as buttons relevant to dispensing.

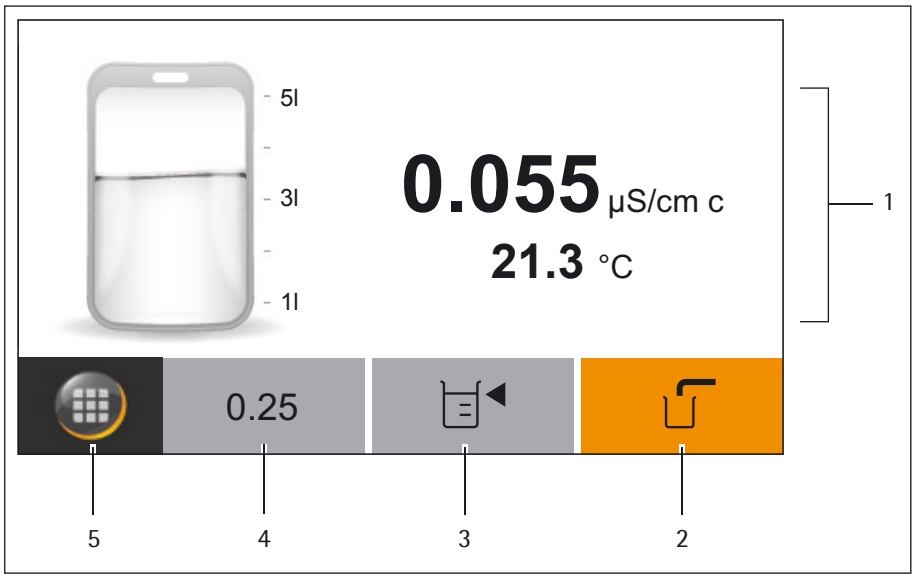


Fig. 4-1: Dispensing mode

No.	Symbol	Name	Description
1		Working environment	The following information can be displayed: – Current conductivity of the ultrapure water – Current temperature of the ultrapure water – Fill level of the bag – Messages, warnings, errors
2		Manual dispensing	Starts dispensing without a preset dispensing volume.
3		Volume-controlled dispensing	Starts dispensing after a dispensing volume has been specified.
4		Favorite	Starts dispensing the most recently specified dispensing volume.
5		Menu	Opens the menu.

4.2 Message Display

The device displays three types of messages:

- Error messages (errors):
  - Dispensing is not possible.
  - Details on the cause of error messages and how to troubleshoot them can be found in Chapter 9.1, page 82.
  - The user's ability to troubleshoot error messages is limited.
- Warning messages (warnings):
  - Dispensing is possible.
  - Details on the cause of warning messages and how to troubleshoot them can be found in Chapter 9.2, page 84.
  - The user can troubleshoot warning messages.
- Status messages (info):
  - Dispensing is possible.
  - Specific information requires the user's attention. Action is not absolutely necessary.

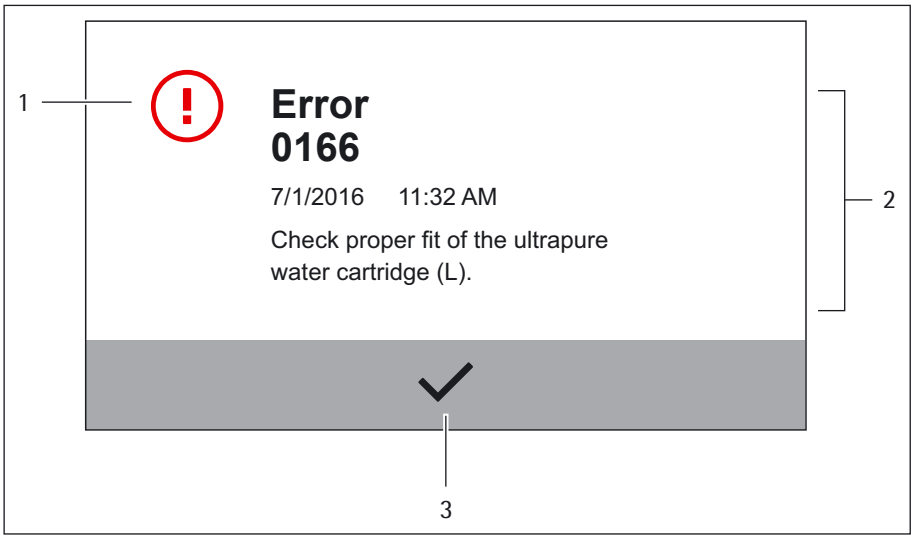


Fig. 4-2: Error message (example)

No.	Symbol	Name	Description
1	ⓘ ⚠ ⓘ	Message symbol	ⓘ: Displays an error message. ⚠: Displays a warning message. ⓘ: Displays a status message (info).
2		Message	Shows the information to be displayed: – Message type (error, warning, info) – Error number or brief description of a warning or status message (see Chapter 9, page 82) – Date and time of occurrence – Details on the message
3	✓	Confirmation	Confirms the message.

4.3 Messages in Dispensing Mode

If several messages are active in dispensing mode, the message list can be called up (see Chapter 4.4, page 18). The message list only appears if several messages are active and at least one message cannot be displayed for conductivity or temperature of the water. If only one message is active, the message is opened directly instead of the message list.

Dispensing is not possible when there is an error message. The three buttons for dispensing can be used, but when you try dispensing, the error message reappears.

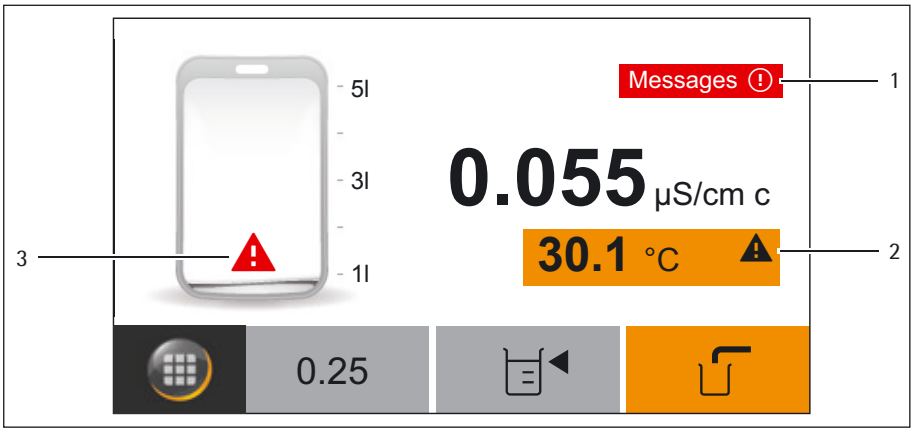


Fig. 4-3: Message display in dispensing mode (example)

No.	Symbol	Name	Description
1	Messages Messages Messages	Message list	Messages: Indicates that error messages are stored and opens the message list. Messages: Indicates that warning messages are stored and opens the message list. Messages: Indicates that status messages are stored and opens the message list.
2		Conductivity or temperature message	Displays an error or warning about the water conductivity or the water temperature.
3		Message pertaining to the filling level of the bag	: Indicates that the bag is empty. Water dispensing is not possible. : Indicates that very little water can be dispensed.

4.4 Message List

All active messages can be viewed in the message list.

The messages in the message list are sorted by priority. Error messages are on top. Within the same priority level, the messages are sorted by date and time.

Messages cannot be deleted manually. They remain in the message list and continue to be displayed on the display until their cause has been corrected. The device will detect if the cause of the message has been corrected and automatically clear the message from the message list and the display.

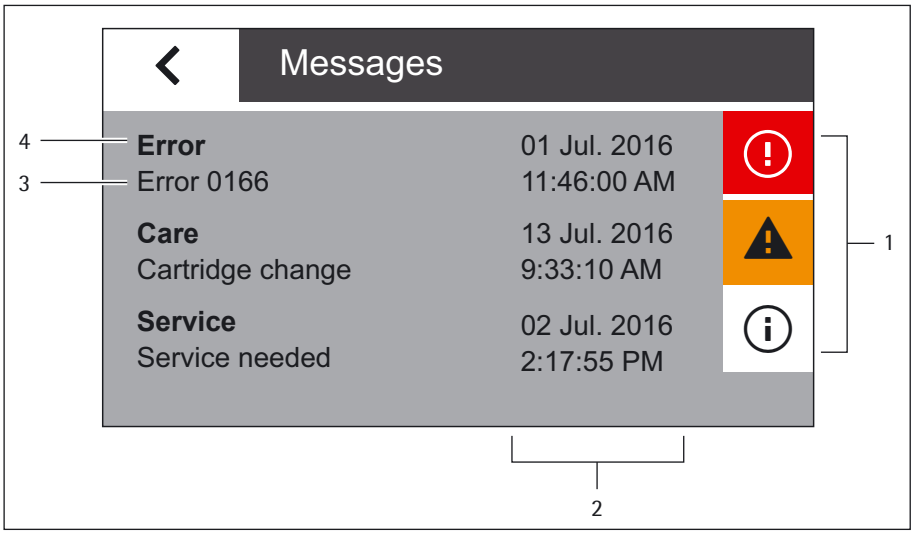


Fig. 4-4: Message list (example)

No.	Symbol	Name	Description
1		Message symbol	 : Displays an error message.  : Displays a warning message.  : Displays a status message (info).
2		Occurrence of the message	Displays the date and time of occurrence of the message.
3		Brief description	Displays the error number or a short description of the message (see Chapter 9, page 82).
4		Message type	**Error**: Displays and opens an error message. **Care**: Displays and opens a warning message. **Service**: Displays and opens a status message.

4.5 Menu

All system settings and operation steps for the care of the device can be carried out in the menu. On the arium® mini, bag filling can be started via the menu.

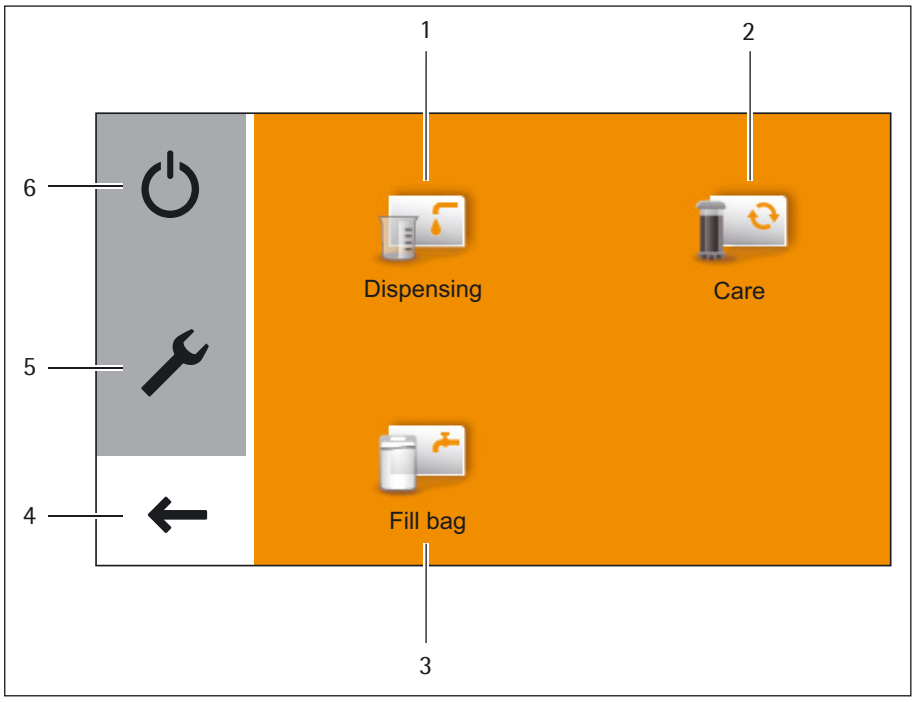


Fig. 4-5: Menu

No.	Symbol	Name	Description
1		Dispensing	Opens the dispensing screen
2		Care	Opens the "Care" menu.
3		Fill bag (only on arium® mini)	Opens the bag filling wizard.
4		Back	Closes the menu.
5		Settings	Opens the "Settings" menu.
6		Standby	Switches to standby mode.

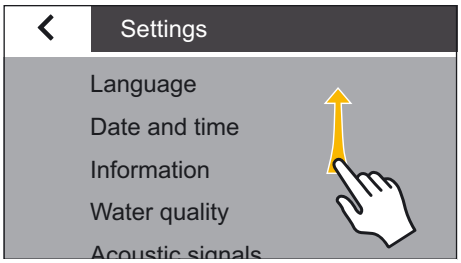
4.6 Navigating Menus

A display with touch function is used to operate the arium® mini and the arium® mini plus.
If multiple menu items are available, you can scroll up and down using the touch screen to select the desired entry.

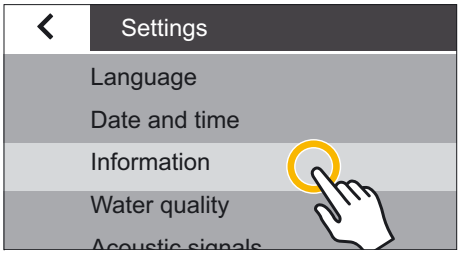
IMPORTANT

Sharp or pointed instruments (such as ballpoint pens) can damage the device!
When using the touch screen with the aid of objects, the touch screen can be easily damaged.
- ▶ The touch screen should only be operated by lightly tapping it using the tips of your fingers.
- ▶ The touch screen can also be operated with lab gloves.

Procedure



- ▶ To scroll: Slowly swipe the touch screen up or down.
- ▷ The menu entries move in the corresponding direction.
- ▷ During scrolling, a gray scrollbar is displayed on the right for orientation.



- ▶ To select a menu item: Tap the desired item.



- ▶ To confirm a selection: Tap the [✓] button.



- ▶ To cancel an operation and return to the previous screen: Tap the [**×**] button.



- ▶ To switch to the next higher menu level or to the previous dialog box: Tap the [**‹**] button.



- ▶ To enter a manual value via the numeric keypad: Tap the [···] button.



- ▶ To confirm a message: Tap the [**OK**] button.



- ▶ To start a process: Tap the [**START**] button.



- ▶ To cancel a process: Tap the [**STOP**] button.

4.7 Numeric Keypad

The numeric keypad is used to enter a dispensing volume or to configure various system settings.

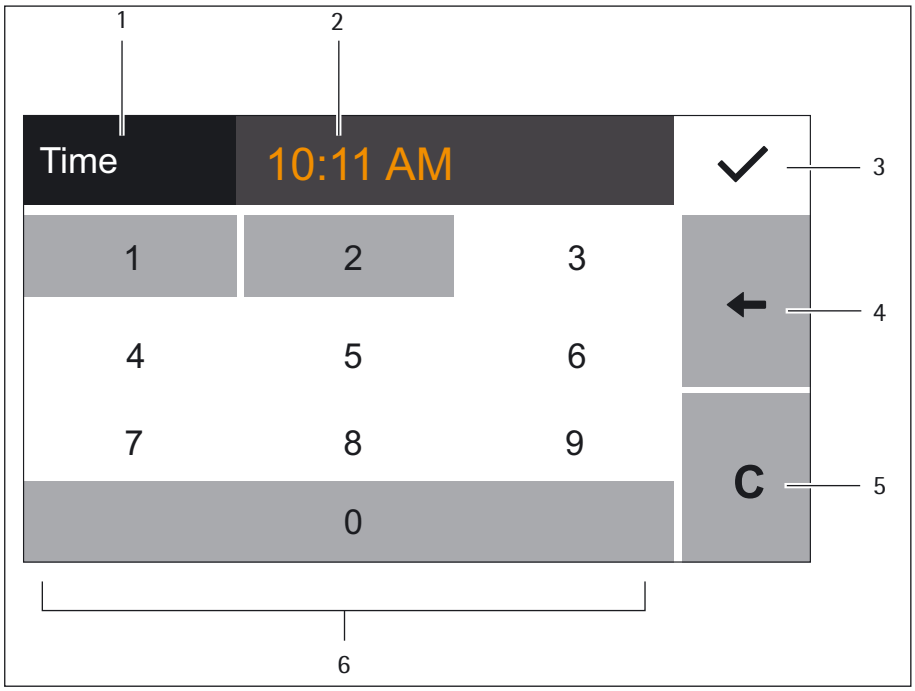


Fig. 4-6: Numeric keypad (example: Entering the time)

No.	Symbol	Name	Description
1		Name of the dialog box	Displays the name of the current dialog box.
2		Numerical value	Displays the currently entered numeric value.
3	✓	Confirmation	Accepts the numeric string entered and returns to the menu or dispensing mode.
4	←	Correction	Deletes the last digit entered.
5	C	Delete	Clears all digits entered.
6		Numeric Keypad	Transfers numerical values to the dialog box.

Tip

When entering numerical values, only the numbers allowed for the value can be selected.
Example: Inputting a dispensing volume of more than 5 liters is not possible. The numeric fields 6 to 9 are therefore inactive when entering the dispensing volume.

▶ Only enter valid numerical values.

4.8 Menu Structure

▶ Navigating menus (see Chapter 4.6, page 20).

Menu	Menu	Submenu	Description
Standby			Starts standby mode.
Settings	Language		Changes the language of the user interface.
	Date and time		Changes the date and time.
	Information	Device information	Shows all the features of the device, e.g. the model and serial number.
		Measured values	Displays the current water quality of the ultrapure water stage and pre-stage.
		Service information	Shows Sartorius contact information and the next maintenance date.
	Displayed values		Changes the display units for water quality and water temperature.
	Ultrapure water limit value		Sets a limit for the ultrapure water quality.
	Acoustic signals	Key beeps	Enables | disables beeps when tapping buttons.
		Alarm beep	Enables | disables persistent beeps for warnings.
		Error beep	Enables | disables beeps for error messages.
		Confirmation beep	Enables | disables beeps for expired waiting times.
	Display brightness		Changes the brightness of the display.
	Volume adjustment		Readjusts the flow rate sensor of the device.
	Restoring all settings		Resets the device to default settings.
Dispensing			Opens the dispensing screen.

Menu	Menu	Submenu	Description
 Care	Reminder		Displays the times for the next required consumables changes.
	Change consumable	Bag	Starts a bag change.
		Pretreatment cartridge	Starts a pretreatment cartridge change.
		Ultrapure water cartridge	Starts an ultrapure water cartridge change.
		UV lamp	Starts a UV lamp change.
		Sterile final filter	Starts a final filter change.
	Final filter reminder		Enables | disables the reminder for the next required final filter change.
	Depressurization		Starts a reduction of pressure in the device.
	Ventilation		Starts manual flushing.
 Fill bag (only on arium® mini)			Starts manually filling the bag.

4.9 Parameters of the "Settings" Menu

Parameters	Setting values	Explanation
Language	English	
	German	
	French	
	Italian	
	Spanish	
	Portuguese	
	Polish	
	Russian	
	Japanese	
	Chinese	
Date format	DD.MM.YYYY	day.month.year
	MM/DD/YYYY	Month/Day/Year
	YYYY-MM-DD (ISO)*	Year-month-day, according to ISO standard
Time format	12 h (AM/PM)	12-hour clock notation
	24 h*	24-hour clock notation
Displayed values (water quality)	µS/cm c*	Shows the water quality on the dispensing screen in µS/cm and compensated to 25 °C.
	µS/cm	Shows the water quality on the dispensing screen in µS/cm as well as the water temperature.
	MΩcm c	Shows the water quality on the dispensing screen in MΩcm and compensated to 25 °C.
	MΩcm	Shows the water quality on the dispensing screen in MΩcm as well as the water temperature.
Displayed values (temperature)	°C	Shows the water temperature on the dispensing screen in degrees Celsius.
	°F	Shows the water temperature on the dispensing screen in degrees Fahrenheit.
	Off*	Disables the display of the water temperature (only selectable when the water quality is compensated to 25 °C is displayed).
Ultrapure water limit value (activation)	On*	Enables the limit value for water quality. If the limit value is exceeded during dispensing, a warning message with a yellow warning triangle ⚠ appears. Dispensing is possible.
	Off	Disables the limit value for water quality.
Dispensing lock	On	Enables the dispensing lock. If the limit value is exceeded during dispensing, an error message with a red warning triangle ⚠ appears. Dispensing is not possible. This setting is recommended for particularly critical applications.
	Off*	Disables the dispensing lock.

* Basic settings

Parameters	Setting values	Explanation
Key beeps	On	Enables | disables short beeps when you touch a button.
	Off*	
Alarm beep	On*	Enables | disables the sustained beep when a warning message occurs until the warning message has been confirmed.
	Off	
Error beep	On*	Enables | disables the sustained beep when an error message occurs until the error message has been confirmed. Does **not** disable the error tone in the case of a leak.
	Off	
Confirmation beep	On*	Enables | disables the beep at the end of longer time sequences, e.g. after volume-controlled dispensing or after filling the bag.
	Off	
Display brightness	Bright*	Sets the display brightness to 100%.
	Dark	Sets the display brightness to 60%.
Volume adjustment		See Chapter 7.3.4, page 47.
Settings Reset	Yes, reset	Restores all system settings to default, e.g. the ultrapure water limit value and the displayed values. Does not reset the dates for the reminders to change consumables.
	No	Cancels the settings reset.

* Basic settings

4.10 Parameters of the "Care" Menu

Parameters	Setting values	Explanation
Reminder	Active*	Enables | disables the reminder to change the final filter (see Chapter 8.7, page 58).
	Inactive	
Depressurization		See Chapter 8.8, page 79.
Ventilation		See Chapter 8.9, page 80.

* Basic settings

5 Transport

5.1 Transporting the Device

IMPORTANT

Equipment damage due to improper transport!
If the device is lifted where there are loose components, it may fall and be seriously damaged.
▶ **Never** lift the device by the two side covers for transport.



Procedure

▶ Grip the front of the device under the display and the recess for the power supply at the back of the device and lift carefully.



6 Startup

6.1 Equipment Supplied

The equipment supplied includes the following components:

	Qty. (arium® mini)	Qty. (arium® mini plus)
arium® mini plus as a bench system	–	1
arium® mini as a bench system	1	–
Feed water tubing (PE, 1/4" outer diameter, 2.40 m in length) with reduction connector 3/8" to 1/4" (conversion adapter) and hose (PE, 3/8" outer diameter, 0.05 m in length)	–	1
Drain water tubing (PE, 3/8" outer diameter, 2.40 m in length)	1	1
Dispense tube (PVDF, 1/4" outer diameter, 2.40 m in length)	1	1
Tubing adapter for feed water with built-in screen (1/2" internal thread, 3/8" outer diameter)	–	1
Tubing adapter for feed water with built-in screen (G 3/4" internal thread, a" outer diameter) with thread adapter G 3/4" to 1/4"	–	1
Tank outlet tubing (PE, 1/4" outer diameter, 1.50 m in length) with shut-off valve and hose (PE, 1/4" outer diameter, 0.10 m in length)	1	1
Tank filling tubing (PE, 1/4" outer diameter, 2.40 m in length)	1	–
Hose release tool	1	1
AC adapter with country-specific power cord	1	1
Operating instructions	1	1
QA certificate	1	1

Note:
The following parts are located behind the left cover of the device:

- Tubing
- Tubing adapter
- Hose release tube
- Power cord

The pretreatment cartridge, ultrapure water cartridge, bag and final filter are not included and must be ordered separately.

6.2 Unpacking and Setting up the Device



Risk of electric shock due to leaking water!
Water may spill when using the device. Electric shocks can occur if water comes into contact with electrical appliances.
▶ Do **not** place the device close to electrically powered devices.



Danger of fire or explosion!
The arium® mini and the arium® mini plus contain components that can ignite flammable or combustible materials.
▶ Do **not** operate the device in the vicinity of such substances.

Tip

It is recommended to have the installation and setting up of the device carried out by a qualified Sartorius service technician.
▶ Call the Sartorius Service.

Requirements

A feed water supply, a power outlet and an unpressurized outlet are located a maximum of 2 meters away.

Procedure

▶ Remove the device from its packaging and place it on a flat, stable surface.

6.3 Connecting the AC Adapter



Risk of electric shock due to incorrect handling of power cables!
The use of damaged or non-standard power cables as well as the mishandling of power cords can cause fatal electric shock or equipment damage.
▶ Only connect the device (protection class 1) to properly installed power sockets with protective grounding conductors (PE) with a fuse of a maximum of 16 A.
▶ Use only standard cables that have protective grounding conductors for operation.
▶ **Never** disconnect the device from the protective grounding conductor.
▶ Connect to the power supply according to the regulations of your specific country.
▶ **Never** plug the power cable into the mains wall outlet when it is disconnected from the device.
▶ Make sure that the power plug or another suitable disconnecting device for the power can be easily reached in case of danger.



Equipment damage due to operation with third-party equipment!
The use of third-party power supplies not authorized by Sartorius may cause damage to the device.
▶ Use only the original Sartorius power supply.

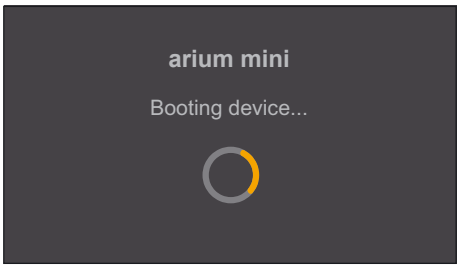
Procedure



- ▶ Check whether the plug design of the power cord is equivalent to your country's standard. If required: Call the Sartorius Service or your dealer.
- ▶ Connect the power supply to the connection labeled "Power" on the rear of the device.



- ▶ Fix the power supply to the housing using the supplied Velcro strip. Pull the Velcro strip through the eyelet as shown in the figure.
- ▶ Lay the protruding power supply cable so that it cannot be damaged or obstruct subsequent connection of hoses.
- ▶ Connect the device to the AC power using the power cord.



- ▷ The device starts up and performs a system scan.

6.4 arium® mini plus: Starting up the Device

When the system check is complete, the dialog box "Language" appears. The wizard automatically performs all the startup steps. Startup takes approx. 120 minutes and cannot be canceled.

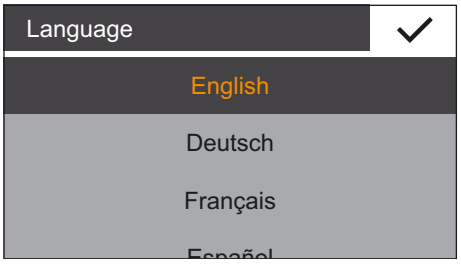
All system settings (e.g. date, time, displayed values) that are made during the startup can be changed afterwards in the "Settings" menu (see Chapter 7.3.3, page 61).

Procedure

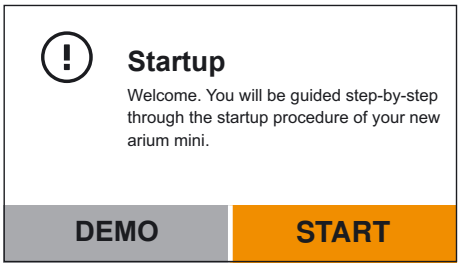
- ▶ Set the language (see Chapter 6.4.1, page 30).
- ▶ Start startup mode (see Chapter 6.4.2, page 30).
- ▶ Set date and time (see Chapter 6.4.3, page 31).
- ▶ Set the displayed values (see Chapter 6.4.4, page 32).
- ▶ Insert cartridges (see Chapter 6.4.5, page 32).
- ▶ Insert bag (see Chapter 6.4.6, page 34).
- ▶ Connect tubing to the rear of the device (see Chapter 6.4.7, page 37).
- ▶ Rinse ultrapure water cartridge (see Chapter 6.4.8, page 40).
- ▶ Connect final filter (see Chapter 6.4.9, page 42).
- ▶ Rinse final filter (see Chapter 6.4.10, page 42).

6.4.1 Setting the Language

Procedure



- ▶ Select the language for the display. The factory setting is English.
- ▶ Confirm the selection with the [✓] button.



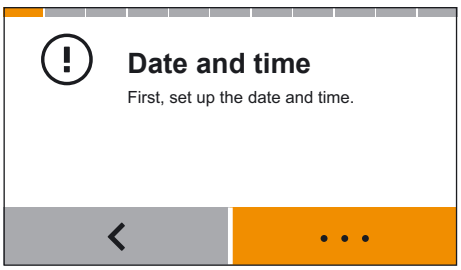
▷ The dialog box "Startup" appears.

Tip

The demo mode of the device can be started by tapping the [**DEMO**] button. Access to demo mode is password-protected and only accessible to Sartorius employees.

6.4.2 Starting Startup Mode

Procedure



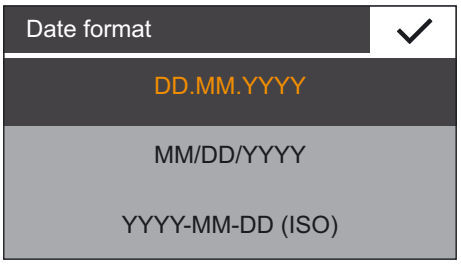
- ▶ Tap the [**START**] button.

▷ The dialog box "Date and time" appears.

6.4.3 Setting the Date and Time

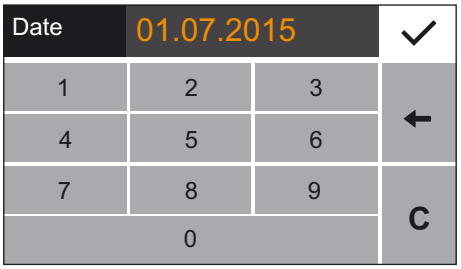
Procedure

▶ 01.07. the [···] button.



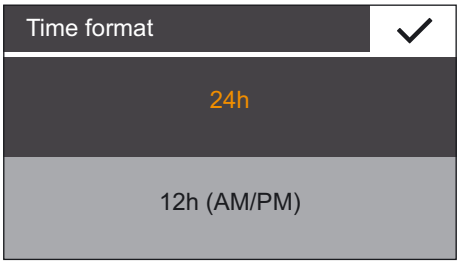
▶ Select the desired date format:
- DD.MM.YYYY
- MM/DD/YYYY
- YYYY-MM-DD (ISO)

▶ Confirm the selection with the [✓] button.



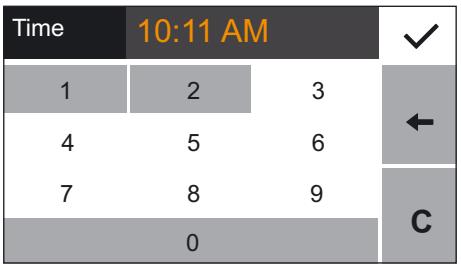
▶ Enter the date.

▶ Confirm the selection with the [✓] button.



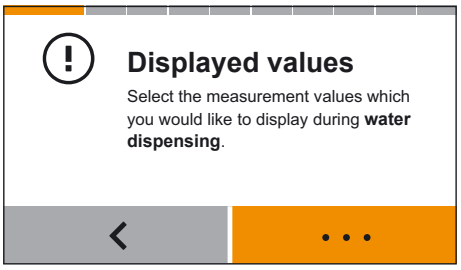
▶ Select the desired time format:
- 24h
- 12h (AM/PM)

▶ Confirm the selection with the [✓] button.



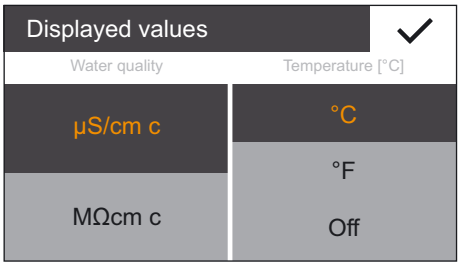
▶ Enter the time.

▶ Confirm the selection with the [✓] button.



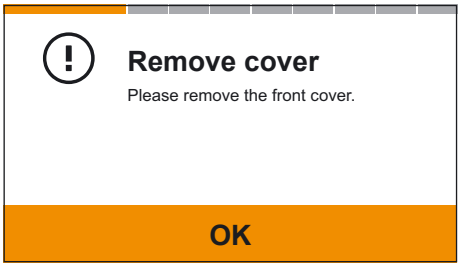
▷ The dialog box "Displayed values" appears.

6.4.4 Setting Displayed Values



Procedure

- ▶ Tap the [···] button.
- ▶ Set the desired format for the water quality:
  - µS/cm c (compensated to 25°C)
  - MΩcm c (compensated to 25°C)
- ▶ Set the desired format for the temperature:
  - °C
  - °F
  - Off (no temperature display)
- ▶ Confirm the selection with the [✓] button.



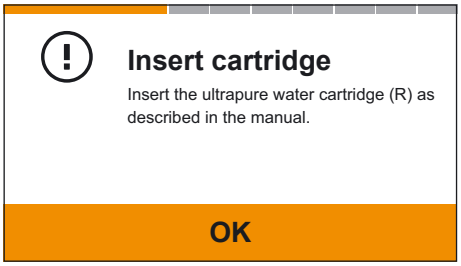
▷ "Remove cover" appears on the screen.

6.4.5 Inserting Cartridges

The arium® does not have a pre-stage and thus contains only the ultrapure water cartridge. On the arium® mini plus, a cartridge for the pre-stage and a cartridge for the ultrapure water stage must be used.

Procedure

- ▶ Remove the front cover.
- ▶ Confirm removal of the cover with the [**OK**] button.



▷ The dialog box "Insert cartridge" appears.

IMPORTANT

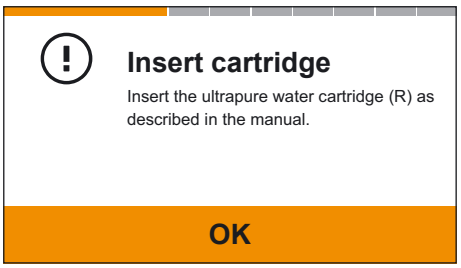
Equipment damage due to impurities!
If dirt or foreign objects enter the ultrapure water circulation, individual device components can potentially become clogged or wear out faster.
▶ If possible, do not touch the cartridge connections. This will prevent impurities from getting into the device.



▶ Remove the plugs from the two external cartridge connections.
▶ Slide the cartridge straight into the guide rails of the cartridge holder on the front side of the device with the corresponding marking ("L" for ultrapure water cartridge and "R" for pretreatment cartridge). Make sure to hold the cartridge at the top when doing this.



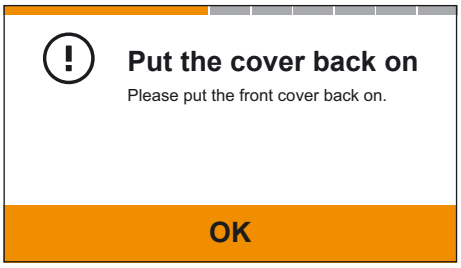
▶ Press the cartridge firmly into the cartridge holder until it locks into the guide rails with a distinct clicking sound on both the left and right sides. Check that the cartridge has been installed securely by turning it slightly.
▶ Confirm the insertion of the cartridge with the [**OK**] button.



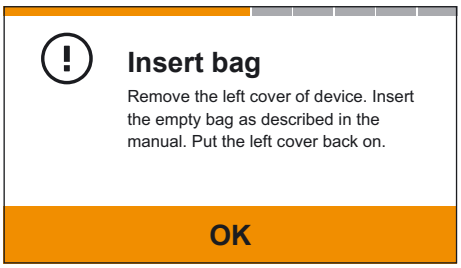
▷ The "Insert cartridge" dialog box (Step 2) appears.



▶ If required: Repeat the process with the second cartridge.
▶ Confirm the insertion of the second cartridge with the [**OK**] button.



▷ The dialog box “Put the cover back on” appears.
▶ Put the front cover on the device.
▶ Confirm that the cover has been put on with the [**OK**] button.



▷ The dialog box “Insert bag” appears.

6.4.6 Inserting Bags

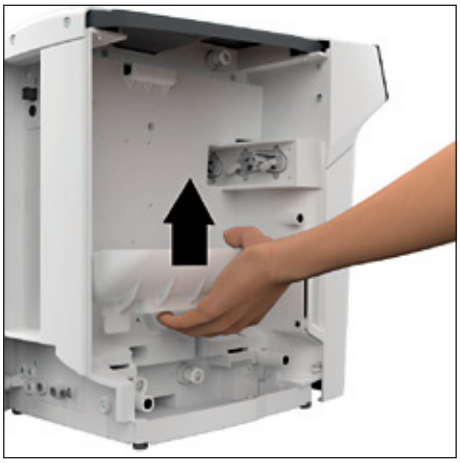
Procedure



▶ Remove the left cover of the device by pulling up on it.

IMPORTANT

Damage to the bag!
The bag may be damaged if forced into the guide rails.
▶ Use only slight pressure when inserting the bag into the guide rail.



▶ To make it easier to reach the lower connections on the device: Pull the tray up and remove it from the device.



▶ Using the handle, slide the bag into the guide rail in the upper portion of the device housing. The bag is secure when the reinforcing piece on the carrying handle is locked into the guide rail.

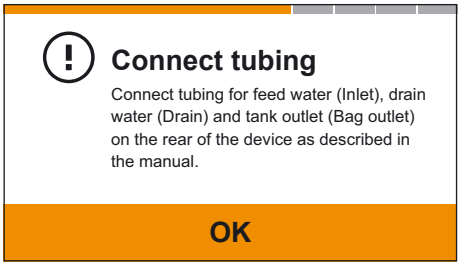


▶ Using the quick connector, fasten the upper hose of the bag to the device's upper connection.
▷ The quick connector locks into place with an audible click.
▶ Fasten the two lower bag hoses to the lower device connections using the quick connectors.
▷ The quick connectors lock into place with an audible click.



▶ Reinsert the tray. Make sure that the bag does not get caught between the tray and the housing.

▶ Reattach the left cover of the device.
▶ Confirm the insertion of the bag with the [**OK**] button.
▷ The dialog box “Connect tubing” appears.



6.4.7 Connecting Tubing on Device Rear

IMPORTANT

Contamination of tank filling tubing!
If the tank filling tubing of the arium® mini is not stored properly, it may become contaminated. Sufficient quality of the pure water the bag is filled with is no longer guaranteed in this case.

- ▶ Do not leave the tank filling tubing on the floor or near sources of contamination (e.g. in the vicinity of an outlet).
- ▶ If the tank filling tubing cannot be kept secure while connected to the arium® mini: Remove the tank filling tubing and keep it in a safe place.
- ▶ If the tank filling tubing is contaminated:
  - Change the bag (see Chapter 8.6.1, page 66).
  - Change the tank filling tubing.
- ▶ Only use the tank filling tubing to fill the arium® mini bag.

IMPORTANT

Danger of the bag bursting!
If the drain water tubing of the device is sealed off, clogged or exposed to counter-pressure, the bag may burst.

- ▶ Do not seal off, clog or expose the drain water tubing to counter-pressure.

Procedure

- ▶ To ensure the tubing securely connected: Use the pre-assembled tubing from the accessories supplied.
- ▶ Connect the tank filling tubing or feed water tubing (see Chapter 6.4.7.1, page 37).
- ▶ Connect the drain water tubing (see Chapter 6.4.7.2, page 38).
- ▶ Connect the tank outlet tubing (see Chapter 6.4.7.3, page 39).

6.4.7.1 Connecting the Tank Filling Tubing or Feed Water Tubing (Inlet)

Tip

To prevent the entry of particles into the device, it is recommended to use the supplied screens.



Procedure

- ▶ Connect the feed water tubing to the connection labeled “Inlet” on the rear of the device.
- ▶ Connect the feed water tubing to the tap water supply.

IMPORTANT

Water leakage!

- ▶ If the tubing is deformed or is not inserted deep enough:
- ▶ After startup, make sure that all external water connections are leak proof!

IMPORTANT

Water damage!

- ▶ If the water pressure is too high or non-existent:
- ▶ Check the feed water specifications for water pressure (see Chapter 11.6, page 90).

6.4.7.2 Connecting Drain Water Tubing (Drain)

Procedure



▶ Connect the drain water tubing to the connector labeled "Drain" on the rear of the device.

IMPORTANT

Water leakage!
Water can escape from the drain water tubing during operation.
▶ Attach the drain water tubing to the outlet.





▶ Guide the free end of the drain water tubing to the drain and attach it.

6.4.7.3 Connecting the Tank Outlet Tubing (Bag Outlet)

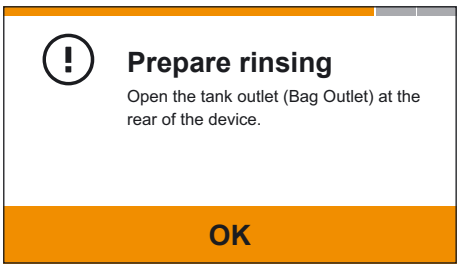
Procedure



- ▶ Connect the long tank outlet tubing to the connector labeled "Bag Outlet" on the rear of the device.
- ▶ Close the ball cock.
- ▶ Confirm that the tubing has been connected with the [**OK**] button.

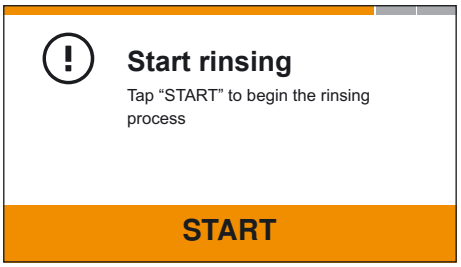
Tip

The prompt to open and close the ball cock is shown later in the wizard.

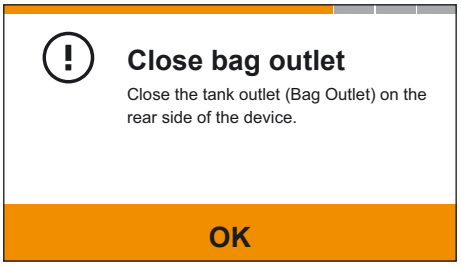


- ▶ Open the ball cock.
- ▶ Start the rinsing process for the pretreatment cartridge.
- ▶ When the rinsing process is complete.

arium® mini



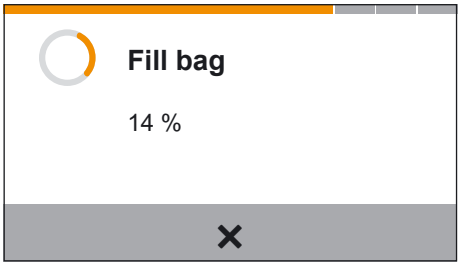
- ▷ When filling is complete, the dialog box "Start rinsing" appears.
- ▶ Rinse ultrapure water cartridge (see Chapter 6.4.8, page 40).



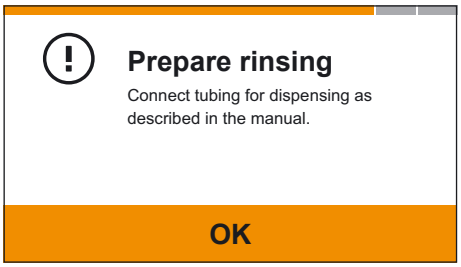
- ▶ Confirm that the tubing has been connected with the [OK] button.

6.4.8 Rinsing the Ultrapure Water Cartridge

During rinsing, the device fills and rinses the ultrapure water cartridge. Air is removed from the ultrapure water circulation in the process.



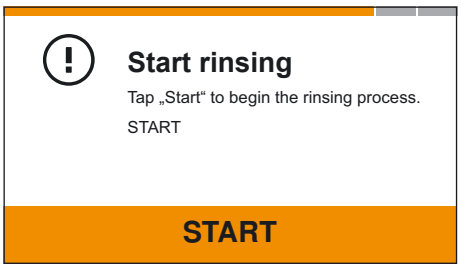
▷ If the bag no longer contains a sufficient amount of water or empties during the rinsing process, the bag is filled automatically.



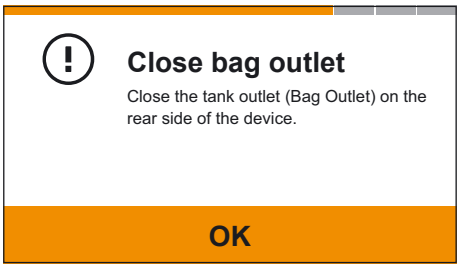
▷ When filling is complete, the dialog box “Start rinsing” appears.
▶ Start the rinsing process again.
▷ The device continues the previous rinsing process.



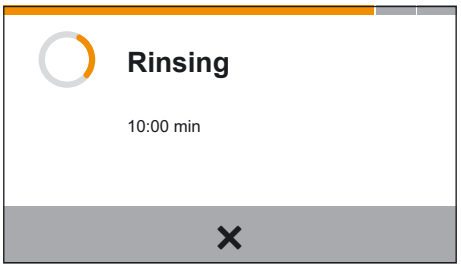
▶ Press the dispense tube into the quick connector of the water outlet.
▶ Direct the free end of the dispense tube to the drain or into a vessel (at least 6 liters).



▷ When filling is complete, the dialog box “Prepare rinsing” appears.
▶ Tap the [**START**] button.



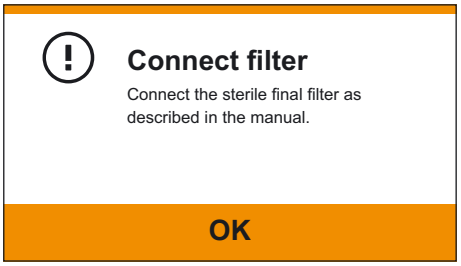
▶ Close the tank outlet (Bag Outlet) on the rear side of the device.



▷ After the rinsing process starts, the remaining rinse time is displayed in minutes.
▶ In order to cancel the rinsing process, e.g. if a sufficiently large vessel is unavailable: Tap the [✓] button.
▷ The dialog box "Start rinsing" appears again.
▶ Continue the rinsing process as described above.



▶ Remove the dispense tube. To do this, use the tubing removal tool to push the dark ring of the quick connector up and pull the dispense tube down and out.
▶ Confirm the rinsing process with the [**OK**] button.



▷ The dialog box "Connect filter" appears.

6.4.9 Connecting the Final Filter



Procedure

- ▶ Attach the bell assembly to the final filter.
- ▶ Press the final filter into the quick connector of the water outlet.
- ▶ Confirm that the final filter has been connected with the [**OK**] button.
- ▷ The display changes to the dispensing screen.

6.4.10 Rinsing the Final Filter

Requirements

The device is now in dispensing mode.

Procedure

- ▶ Place a vessel (at least 6 liters) under the final filter.
- ▶ Open the final filter's vent valve.
- ▶ Remove the protective cap from the bell assembly.
- ▶ Dispense at least 5 liters of water (the equivalent of a full bag). This will rinse the final filter.

- ▶ If the bag in the arium® mini plus no longer contains a sufficient amount of water or empties during the rinsing process:
  - – Wait until the bag has filled to a sufficient level.
  - – Complete the rinsing process.

- ▶ When the rinsing process is complete: Close the vent valve.
- ▶ Attach the protective cap to the bell assembly.
- ▷ Startup is complete.

6.5 arium® mini: Starting up the Device

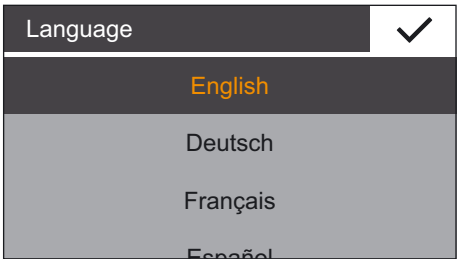
When the system check is complete, the dialog box "Language" appears. The wizard automatically performs all the startup steps. Startup takes approx. 120 minutes and cannot be canceled.

All system settings (e.g. date, time, displayed values) that are made during the startup can be changed afterwards in the "Settings" menu (see Chapter 7.3.3, page 61).

Procedure

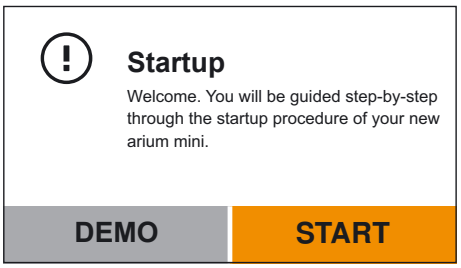
- ▶ Set the language (see Chapter 6.5.1, page 43).
- ▶ Start startup mode (see Chapter 6.5.2, page 43).
- ▶ Set date and time (see Chapter 6.5.5, page 45).
- ▶ Set the displayed values (see Chapter 6.5.5, page 45).
- ▶ Insert cartridges (see Chapter 6.5.5, page 45).
- ▶ Insert bag (see Chapter 6.5.6, page 47).
- ▶ Connect tubing to the rear of the device (see Chapter 6.5.7, page 50).
- ▶ Fill bag (see Chapter 6.4.8, page 40).
- ▶ Rinse ultrapure water cartridge (see Chapter 6.5.8, page 52).
- ▶ Connect final filter (see Chapter 6.5.10, page 54).
- ▶ Rinse final filter (see Chapter 6.5.11, page 55).

6.5.1 Setting the Language



Procedure

- ▶ Select the language for the display. The factory setting is English.
- ▶ Confirm the selection with the [✓] button.

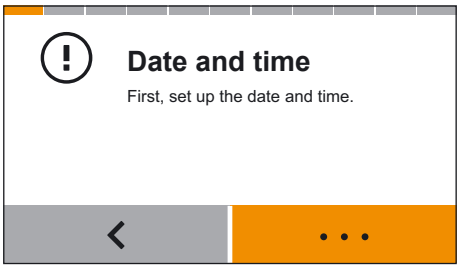


▷ The dialog box "Startup" appears.

Tip

The demo mode of the device can be started by pressing the [**DEMO**] button. Access to demo mode is password-protected and only accessible to Sartorius employees.

6.5.2 Starting Startup Mode

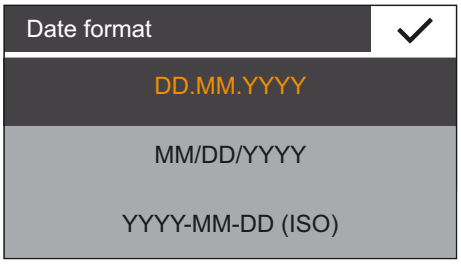


Procedure

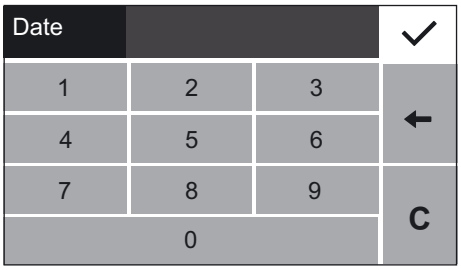
- ▶ Tap the [**START**] button.
- ▷ The dialog box "Date and time" appears.

6.5.3 Setting the Date and Time

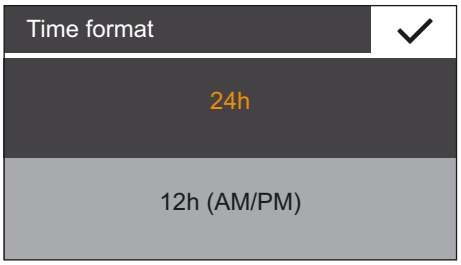
Procedure



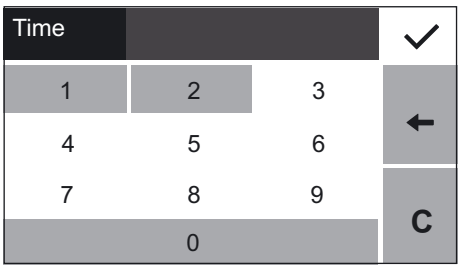
- ▶ Tap the [···] button.
- ▶ Select the desired date format:
  - – DD.MM.YYYY
  - – MM/DD/YYYY
  - – YYYY-MM-DD (ISO)
- ▶ Confirm the selection with the [✓] button.



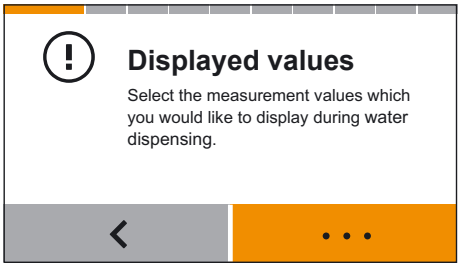
- ▶ Enter the date.
- ▶ Confirm the selection with the [✓] button.



- ▶ Select the desired time format:
  - – 24h
  - – 12h (AM/PM)
- ▶ Confirm the selection with the [✓] button.

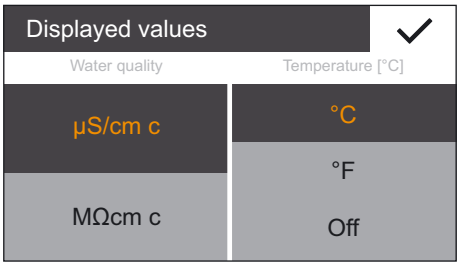


- ▶ Enter the time.
- ▶ Confirm the selection with the [✓] button.



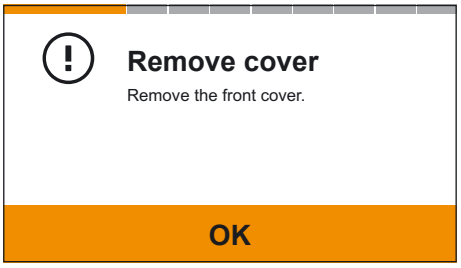
- ▷ The dialog box “Displayed values” appears.

6.5.4 Setting Displayed Values



Procedure

- ▶ Tap the [···] button.
- ▶ Set the desired format for the water quality:
  - µS/cm c (compensated to 25°C)
  - MΩcm c (compensated to 25°C)
- ▶ Set the desired format for the temperature:
  - °C
  - °F
  - Off (no temperature display)
- ▶ Confirm the selection with the [✓] button.



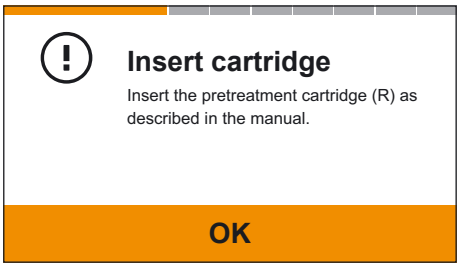
- ▷ "Remove cover" appears on the screen.

6.5.5 Inserting Cartridges

The arium® mini does not have a pre-stage and thus contains only the ultrapure water cartridge.

Procedure

- ▶ Remove the front cover.
- ▶ Confirm removal of the cover with the [**OK**] button.
- ▷ The dialog box "Insert cartridge" appears.



IMPORTANT

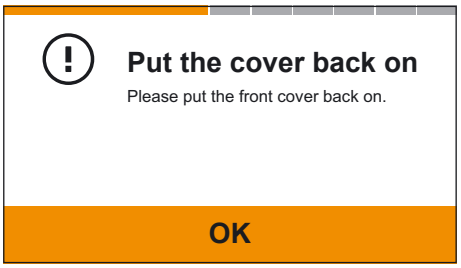
Equipment damage due to impurities!
If dirt or foreign objects enter the ultrapure water circulation, individual device components can potentially become clogged or wear out faster.
▶ If possible, do not touch the cartridge connections. This will prevent impurities from getting into the device.



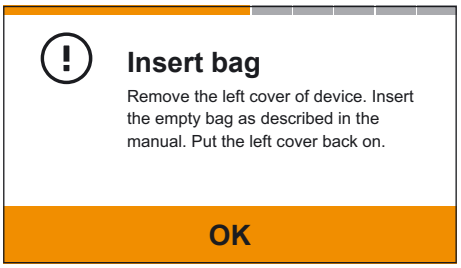
▶ Remove the plugs from the two external cartridge connections.
▶ Slide the cartridge straight into the guide rails of the cartridge holder on the front side of the device with the corresponding marking ("L" for ultrapure water cartridge and "R" for pretreatment cartridge). Make sure to hold the cartridge at the top when doing this.



▶ Press the cartridge firmly into the cartridge holder until it locks into the guide rails with a distinct clicking sound. Check that the cartridge has been installed securely by turning it slightly.
▶ Confirm the insertion of the cartridge with the [**OK**] button.



▷ The dialog box “Put the cover back on” appears.
▶ Put the front cover on the device.
▶ Confirm that the cover has been put on with the [**OK**] button.



▷ The dialog box “Insert bag” appears.

6.5.6 Inserting Bags

Procedure



▶ Remove the left cover of the device by pulling it up.

IMPORTANT

Damage to the bag!
The bag may be damaged if forced into the guide rails.
▶ Use only slight pressure when inserting the bag into the guide rail.



▶ To make it easier to reach the lower connections on the device: Pull the tray up and remove it from the device.



▶ Using the handle, slide the bag into the guide rail in the upper portion of the device housing. The bag is secure when the reinforcing piece on the carrying handle is locked into the guide rail.

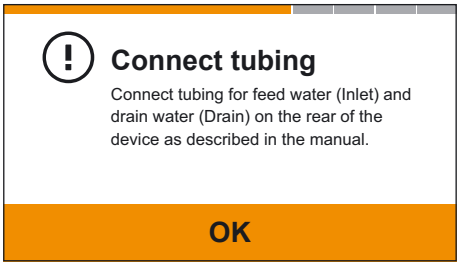


▶ Using the quick connector, fasten the upper hose of the bag to the device's upper connection.
▷ The quick connector locks into place with an audible click.
▶ Fasten the two lower bag hoses to the lower device connections using the quick connectors.
▷ The quick connectors lock into place with an audible click.



▶ Reinsert the tray. Make sure that the bag does not get caught between the tray and the housing.

▶ Reattach the left cover of the device.
▶ Confirm the insertion of the bag with the [**OK**] button.
▷ The dialog box “Connect tubing” appears.



6.5.7 Connecting Tubing on Device Rear

IMPORTANT

Contamination of tank filling tubing!
If the tank filling tubing of the arium® mini is not stored properly, it may become contaminated. Sufficient quality of the pure water the bag is filled with is no longer guaranteed in this case.

- ▶ Do not leave the tank filling tubing on the floor or near sources of contamination (e.g. in the vicinity of an outlet).
- ▶ If the tank filling tubing cannot be kept secure while connected to the arium® mini: Remove the tank filling tubing and keep it in a safe place.
- ▶ If the tank filling tubing is contaminated:
  - Change the bag (see Chapter 8.6.1, page 66).
  - Change the tank filling tubing.
- ▶ Only use the tank filling tubing to fill the arium® mini bag.

IMPORTANT

Danger of the bag bursting!
If the drain water tubing of the device is sealed off, clogged or exposed to counter-pressure, the bag may burst.

- ▶ Do not seal off, clog or expose the drain water tubing to counter-pressure.

Procedure

- ▶ To ensure the tubing securely connected: Use the pre-assembled tubing from the accessories supplied.
- ▶ Connect the tank filling tubing or feed water tubing (see Chapter 6.5.7.1, page 50).
- ▶ Connect the drain water tubing (see Chapter 6.5.7.2, page 51).
- ▶ Connect the tank outlet tubing (see Chapter 6.4.7.3, page 39).

6.5.7.1 Connecting the Tank Filling Tubing or Feed Water Tubing (Inlet)

Tip

To prevent the entry of particles into the device, it is recommended to use the supplied screens.

Procedure



- ▶ Connect the tank filling tubing to the connection labeled "Inlet" on the rear of the device.
- ▶ Store the free end of the tank filling tubing in a clean place.

IMPORTANT

Water leakage!

- ▶ If the tubing is deformed or is not inserted deep enough:
  After startup, make sure that all external water connections are leak proof!

6.5.7.2 Connecting Drain Water Tubing (Drain)

Procedure



▶ Connect the drain water tubing to the connector labeled "Drain" on the rear of the device.

IMPORTANT

Water leakage!

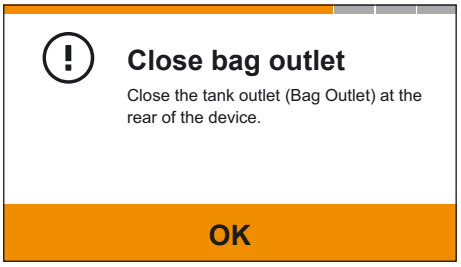
Water can escape from the drain water tubing during operation.

▶ Connect the drain water tubing to the outlet.

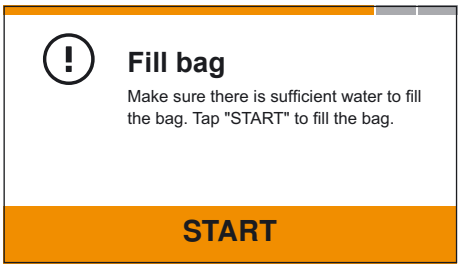




▶ Guide the free end of the drain water tubing to the drain and attach it.



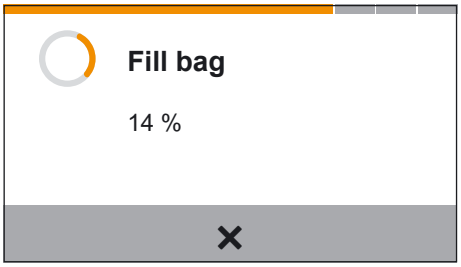
▶ Close the tank outlet (Bag Outlet) at the rear of the device.



▷ The dialog box “Fill bag” appears.
▶ Change the bag (see Chapter 6.5.8, page 52).
▶ Rinse ultrapure water cartridge (see Chapter 6.5.8, page 52).

6.5.8 Fill bag

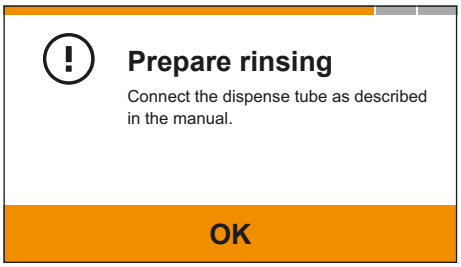
Procedure



▶ Prepare a container with a sufficient amount of pretreated water (at least 5 liters).
▶ Place the tank filling tubing into the container and secure it so that its opening is completely submerged during filling.
▶ Tap the [**START**] button.
▷ The bag is filled with water. Progress is displayed as a percentage.
▶ To stop the filling process prematurely, for example, if not enough water is available for filling: Tap the [×] button.
▷ The dialog box “Fill bag” appears.
▶ Carry out filling as described above again.

6.5.9 Rinsing the Ultrapure Water Cartridge

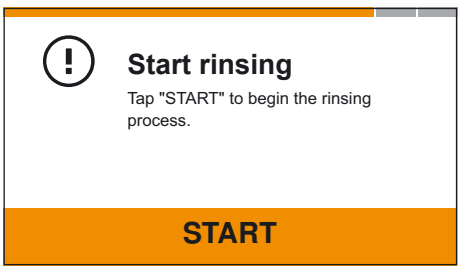
During rinsing, the device fills and rinses the ultrapure water cartridge. Air is removed from the ultrapure water circulation in the process.



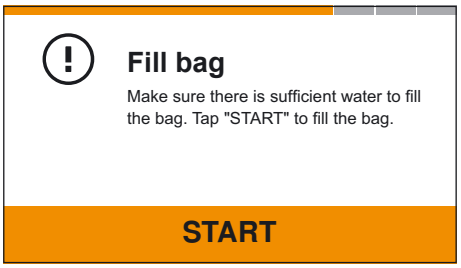
▷ When filling is complete, the dialog box “Preparing to rinse” appears.
▶ Start the rinsing process again.



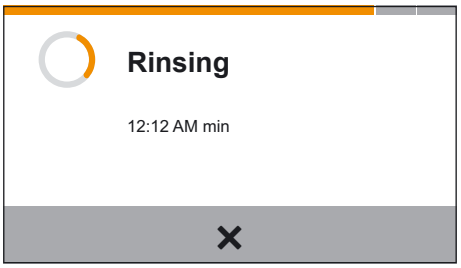
▶ Press the dispense tube into the quick connector of the water outlet.
▶ Direct the free end of the dispense tube to the drain or into a vessel (at least 6 liters).



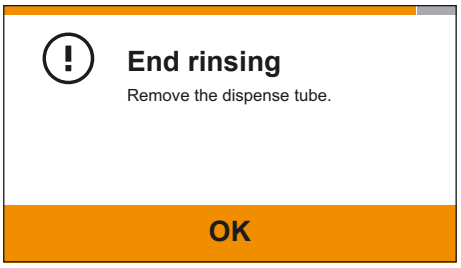
▷ When filling is complete, the dialog box “Start rinsing” appears.
▶ Tap the [**START**] button.



▷ If the bag in the arium® mini no longer contains a sufficient amount of water or empties during the rinsing process, the dialog box "Fill bag" appears.
▶ Change the bag (see Chapter 6.5.8, page 52).
▶ Start the rinsing process again.
▷ The device continues the previous rinsing process.



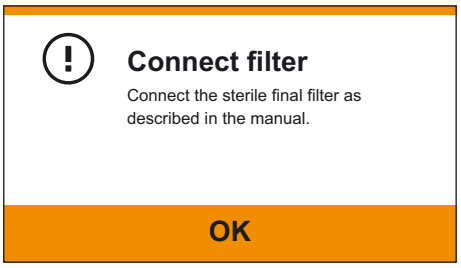
▷ After the rinsing process starts, the remaining rinse time is displayed in minutes.
▶ In order to cancel the rinsing process, e.g. if a sufficiently large vessel is unavailable: Tap the [×] button.
▷ The dialog box "Start rinsing" appears again.
▶ Continue the rinsing process as described above.



▷ When rinsing is complete, the dialog box "End rinsing" appears.



▶ Remove the dispense tube. To do this, use the tubing removal tool to push the dark ring of the quick connector up and pull the dispense tube down and out.
▶ Confirm the rinsing process with the [**OK**] button.

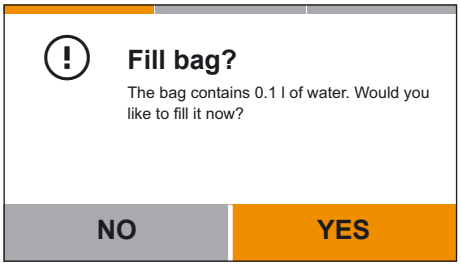


▷ The dialog box "Connect filter" appears.

Requirements

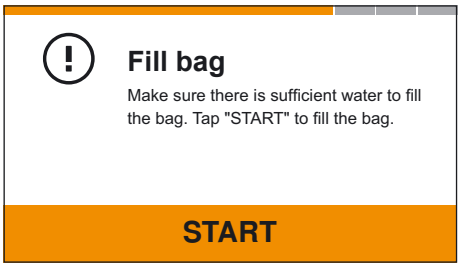
The filling level is too low for the dispensing volume entered during volume-controlled dispensing.

▷ The dialog box “Fill bag?” appears.



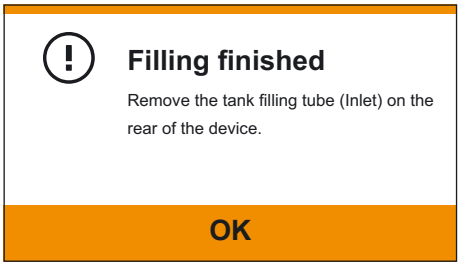
Procedure

▶ Tap the [**YES**] button.



▷ If the bag in the no longer contains a sufficient amount of water or empties during the rinsing process, the dialog box “Fill bag” appears.

▶ Change the bag (see Chapter 6.5.8, page 52).



▷ When filling is complete, the dialog box “Filling finished” appears.

▶ Verify that the free end of the tank filling tubing is secure. If required: Remove the tank filling tubing from the “Inlet” connection at the rear of the device and keep it in a safe place.

▶ Confirm the bag filling process with the [**OK**] button.

▷ The display changes to the dispensing screen.

6.5.10 Connecting the Final Filter

Procedure



▶ Attach the bell assembly to the final filter.

▶ Press the final filter into the quick connector of the water outlet.

▶ Confirm that the final filter has been connected with the [**OK**] button.

▷ The display changes to the dispensing screen.

6.5.11 Rinsing the Final Filter

Requirements

The device is now in dispensing mode.

Procedure

- ▶ Place a vessel (at least 6 liters) under the final filter.
- ▶ Open the final filter's vent valve.
- ▶ Remove the protective cap from the bell assembly.
- ▶ Dispense at least 5 liters of water (the equivalent of a full bag).
  This will rinse the final filter.

- ▶ If the bag in the arium® mini no longer contains a sufficient amount of water or empties during the rinsing process:
  - Wait until the bag has filled to a sufficient level.
  - Complete the rinsing process.

- ▶ When the rinsing process is complete: Close the vent valve.
- ▶ Attach the protective cap to the bell assembly.
- ▷ Startup is complete.

7 Operation

7.1 Turning the Device On and Off

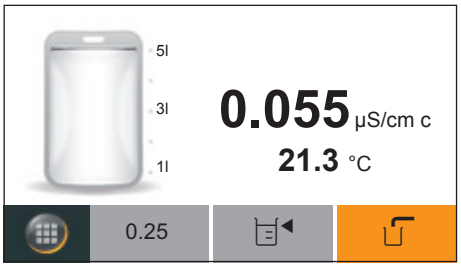
When the device is turned off during normal operation, e.g. in the evening or on weekends, consistent ultrapure water quality is no longer guaranteed.

▶ Activating or deactivating standby mode (see Chapter 7.3.2, page 60).

Procedure

▶ To turn the device on: Reconnect the device to the AC power.
▷ The device starts up and performs a system scan.
▶ To turn the device off: Disconnect the device from the AC power.

7.2 Dispensing Water



Requirements

The device is now in dispensing mode.

Procedure

▶ Remove the protective cap from the final filter bell assembly.
▶ Place a suitable vessel under the water outlet.
▶ Start dispensing:
  – Manually Dispensing Ultrapure Water (see Chapter 7.2.1, page 56).
  – Volume-controlled Dispensing of Ultrapure Water (see Chapter 7.2.2, page 57).

Tip

The removal of large volumes may also be carried out via the dispense tube.

▶ Remove final filter (see Chapter 8.6.2, page 68).
▶ Connect the dispense tube.

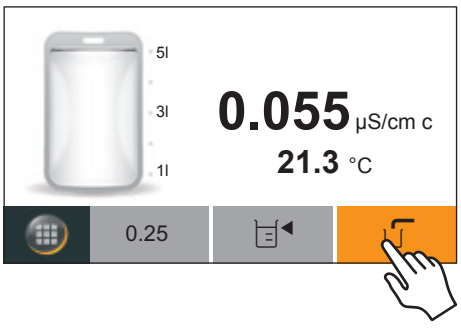
IMPORTANT

Water damage!

▶ If the container to be filled overflows: Do not dispense any water unattended!
▶ Dispense the ultrapure water volume-controlled (see Chapter 7.2.2, page 57).

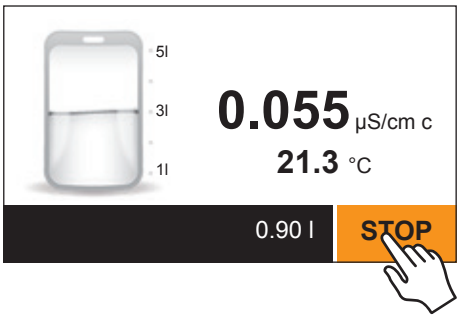
7.2.1 Manually Dispensing Ultrapure Water

During manual dispensing, ultrapure water is dispensed until stopped manually or until the maximum filling level of the bag has been reached.



Procedure

▶ Tap the [⌐] symbol.
▷ Dispensing begins. The volume dispensed thus far is displayed in increments of 0.05 liters (50 ml).
▷ The ultrapure water flows into the vessel at a maximum throughput rate of about 1.0 L/min.
▷ The filling level of the bag will be updated on the display during dispensing.



▶ To stop dispensing: Tap the [**STOP**] button.

▶ When dispensing is finished: Attach the protective cap to the final filter bell assembly.

7.2.2 Volume-controlled Dispensing of Ultrapure Water

During volume-controlled water dispensing, a previously specified amount of water is dispensed.

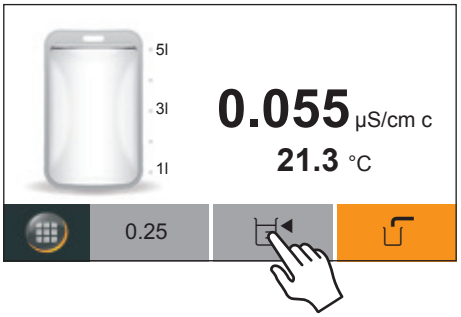
Tip

The volume to be dispensed must be entered with the following specifications:

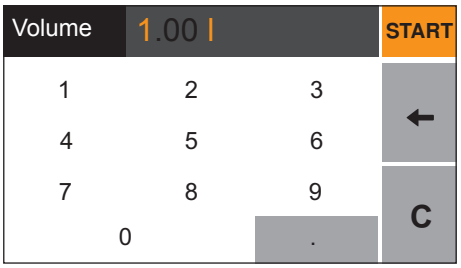
- The minimum dispensing volume is 0.05 liters (50 ml).
- The maximum dispensing volume is 5.00 liters.
- Only volumes between 0.05 and 5.00 liters can be entered. Invalid numeric fields become inactive (white background).
- When a higher dispensing volume is entered than that in the bag, dispensing cannot be started. An appropriate message will be displayed.

▶ Observe the specifications during dispensing.

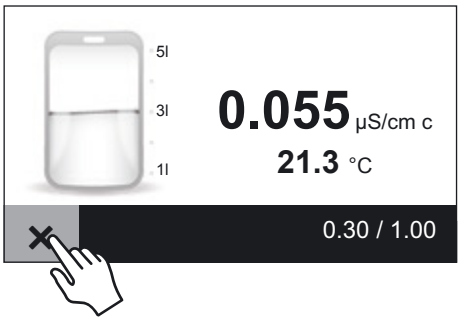
Procedure



▶ Tap the [⌸] symbol.
▷ The numeric keypad for inputting volumes appears.



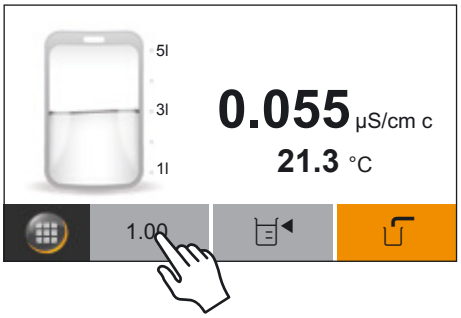
▶ Enter the desired dispensing volume in liters. Note the requirements for inputting volumes (see Tip).
▷ The volume entered appears.
▶ Tap the [**START**] button.
▷ Dispensing begins. The volume dispensed thus far is displayed in increments of 0.05 liters (50 ml).
▷ The ultrapure water flows into the vessel at a maximum throughput rate of about 1.0 L/min.
▷ The filling level of the bag will be updated on the display during dispensing.
▷ Dispensing will stop automatically when the selected dispensing volume has been reached.



▶ To cancel dispensing before it is finished: Tap the [✕] button.

Using Favorites

The last selected dispensing volume is automatically stored and displayed on the Favorites button on the dispensing screen.



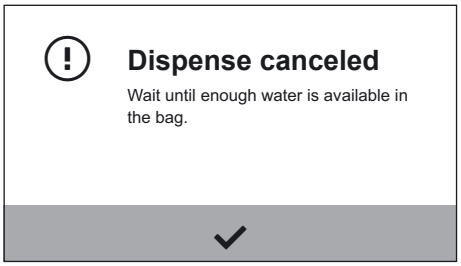
▶ To start another dispensing process with the previously selected dispensing volume: Tap the Favorites button.
▷ Dispensing begins.
▶ When dispensing is finished: Attach the protective cap to the final filter bell assembly.

7.2.3 Confirming Dispensing Cancelation

Only as much water can be dispensed as is present in the bag.

Procedure

arium® mini plus



If the bag contains an insufficient amount of water, dispensing stops and the dialog box “Dispense canceled” appears.
▶ Confirm the message with the [✓] button.
▶ Wait until the bag has filled to a sufficient level.
▶ Restart dispensing.

arium® mini

▶ If the bag no longer contains sufficient water:
  – Manually fill the bag (only arium® mini) (see Chapter 7.3.1, page 59).
  – Continue dispensing.

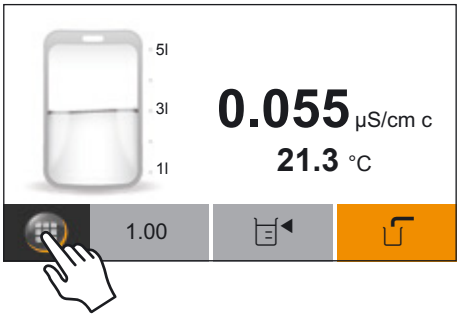
7.2.4 Dispensing Pure Water from the Bag

Using the tank outlet tubing connected to “Bag Outlet”, pure water can be manually dispensed from the bag. Dispensing takes place entirely without pressure.

Procedure

▶ Guide the tank outlet tubing into a suitable container.
▶ Open the ball cock of the tank outlet tubing.
▷ Pure water flows out of the bag.
▶ When dispensing is finished: Close the ball cock.

7.3 Operating the Menu



Procedure

▶ To open the menu: Tap the button in dispensing mode.

▶ Manually fill the bag (only arium® mini) (see Chapter 7.3.1, page 59).
▶ Activate or deactivate standby mode (see Chapter 7.3.2, page 60).
▶ Open "Settings" menu (see Chapter 7.3.3, page 61).
▶ Open "Care" menu (see Chapter 8.4, page 64).

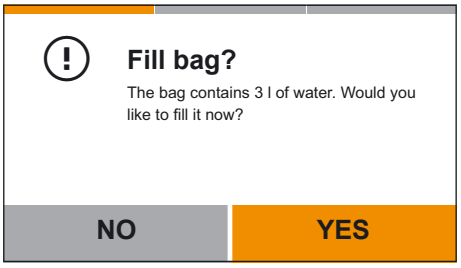
7.3.1 Manually Filling the Bag (Only arium® mini)

If the bag filling level of the arium® mini has been reached or is no longer sufficient for the desired dispensing volume, the bag can be filled manually.

Manual filling of the bag can be carried out in several ways.

Requirements

The filling level is too low for the dispensing volume entered during volume-controlled dispensing.
▷ The dialog box "Fill bag?" appears.

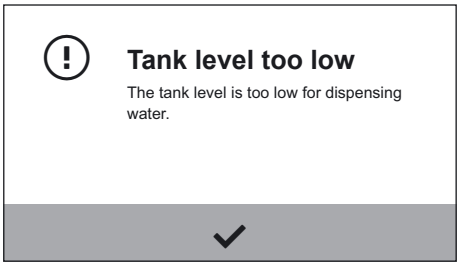


Procedure

▶ Tap the [**YES**] button.

Requirements

The bag empties during manual dispensing.
▷ The message "Tank level too low" appears.

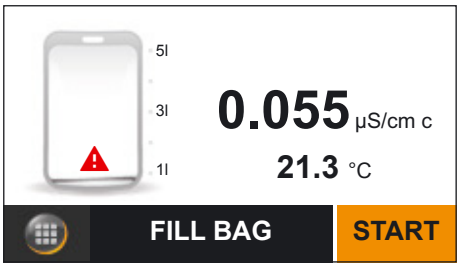


Procedure

▶ Confirm the message with the [✓] button.
▷ **FILL BAG** appears on the dispensing screen.
▶ Tap the [**START**] button.

Requirements

The bag is already empty before dispensing.
▷ The message **FILL BAG** appears on the dispensing screen.



Procedure

▶ Tap the [**START**] button.

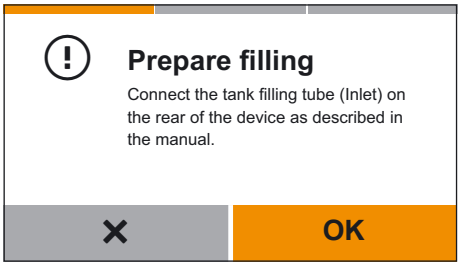
Requirements

The bag contains water.
Bag filling must be initiated using the menu.

Procedure



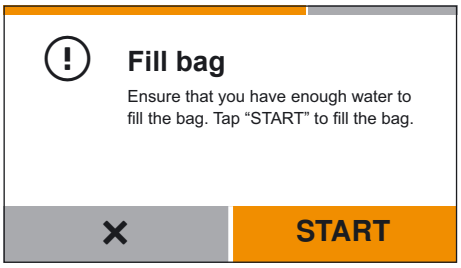
▶ Tap the symbol [Fill bag].

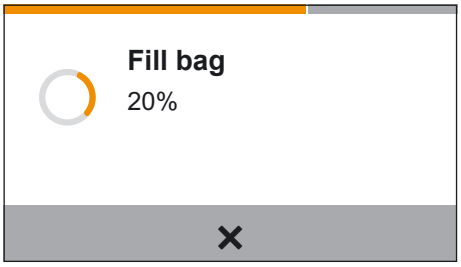


▷ The dialog box "Fill bag" (Step 1) appears.
▶ Check whether the tank filling tubing is connected to the "Inlet" connection. If required: Connect the tank filling tubing.

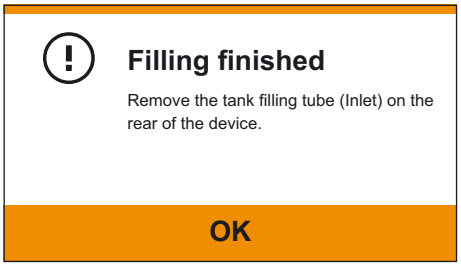
ATTENTION! Insufficient water quality possible due to contaminated tank filling tubing!

▶ Check the tank filling tubing for contamination. If required:
  – Change the tank filling tubing.
  – Change the bag (see Chapter 8.6.1, page 66).
▶ Tap the [**OK**] button.
▷ The dialog box "Fill bag" (Step 2) appears.
▶ Prepare a vessel with pretreated water (at least 5 liters).
▶ Place the tank filling tubing into the container and secure it so that its opening is completely submerged during filling.
▶ Tap the [**START**] button.





▷ The bag is filled with water. Progress is displayed as a percentage.
▶ To stop the filling process prematurely, for example, if not enough water is available for filling: Tap the [✓] button.
▷ The dialog box "Fill bag" (Step 2) appears.
▶ Carry out filling as described above again.



▷ When filling is complete, the dialog box "Filling finished" appears.
▶ Verify that the free end of the tank filling tubing is secure. If required: Remove the tank filling tubing from the "Inlet" connection at the rear of the device and keep it in a safe place.
▶ Confirm the bag filling process with the [**OK**] button.
▷ The display changes to the dispensing screen.

7.3.2 Activating or Deactivating Standby Mode

If no water is dispensed for a long time, the device automatically switches to standby mode. This ensures more economical and ecological operation. In standby mode, the pre-stage is no longer active and ultrapure water is no longer in circulation. Standby mode can also be activated manually.

If the arium® mini plus is manually switched into standby mode while the bag is being automatically filled, a prompt for further action appears. The filling of the bag can be canceled immediately, which puts the devices in standby mode. If filling is continued, the device will automatically switch to standby mode.

Automatic ECO Mode

In addition to standby mode, the device also features an ECO function. One minute after the last operation, recirculation of ultrapure water is stopped and the display darkens. After another 15 minutes without touching the display, the device automatically switches to standby mode.

Procedure



▶ To activate standby mode: Tap the [⏻] button.
▷ The display darkens. The [⏻] button remains visibly backlit.



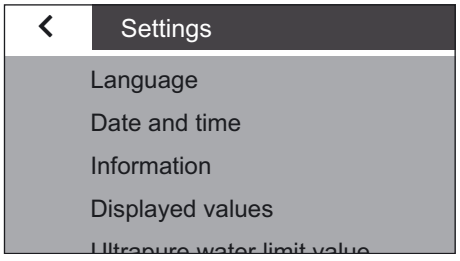
▶ To deactivate standby mode: Tap the [⏻] button.
▷ The start screen appears. When system startup is complete, the display returns to the dispensing screen.

7.3.3 Opening the "Settings" Menu

Procedure



▶ Tap the [🔧] button.



▷ The "Settings" menu appears.
▶ Configure settings according to the parameter list (see Chapter 4.9, page 24).

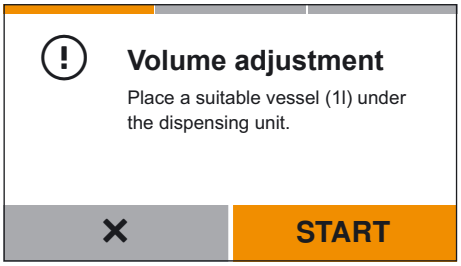
7.3.4 Performing Volume Adjustment

To dispense the most accurate amount of ultrapure water, the flow rate sensor of the device can be readjusted.

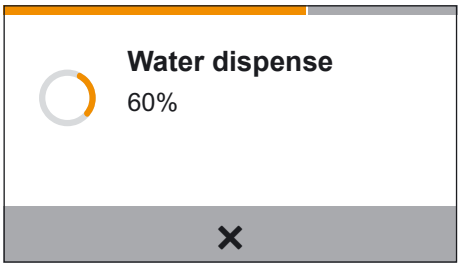
For this purpose, a sample volume of approximately one half liter is dispensed. The actual volume of the extracted sample volume is measured and transmitted to the device. Using the determined difference, the flow rate sensor is set to the actual volume of one half liter.

Procedure

▶ Tap the menu item [**Volume adjustment**].
▷ The dialog box "Volume adjustment" appears.
▶ Place a graduated measuring cup or graduated cylinder with a capacity of at least 1 liter under the water outlet.
▶ Tap the [**START**] button.



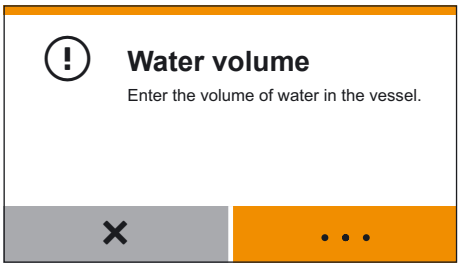
▷ The dialog box "Water dispense" appears. Dispensing progress is displayed as a percentage.
▷ When 100% is reached, dispensing will stop automatically.



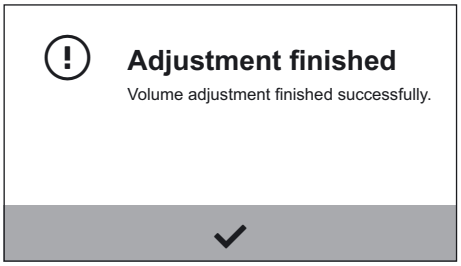
▷ The dialog box "Water volume" appears.

Tip

If no graduated measuring cup or graduated cylinder is available, the weight of the sample volume can be used as an alternative for determination of the actual volume.
▶ Determine the weight of the sample volume.
▶ Determine the value of the sample volume in liters using the weight.
▶ Enter the value into the device in liters.



▶ To enter the actual volume dispensed:
  – Tap the [···] button.
  – Read and enter the value for the sample volume in liters.
▷ The dialog box "Adjustment finished" appears.
▶ Confirm the procedure with the [✓] button.



8 Cleaning and Maintenance

8.1 Cleaning the Display

Procedure

- ▶ To avoid uncontrolled changes to the settings of the device: Activate standby mode (see Chapter 7.3.2, page 60).
- ▶ Wipe the display gently with a soft, dry cloth.
- ▶ Deactivate standby mode (see Chapter 7.3.2, page 60).

8.2 Cleaning the Device Housing



Danger of injury caused by electric current!
When cleaning the device and its components while they are connected to the power supply, there is a risk of electric shock.
- ▶ Always disconnect the device from the AC power.



The electronic equipment could be damaged by improper cleaning!
Liquids or dust can damage the device or the power supply.
- ▶ **Never** open the power supply or the right side of the device housing.
- ▶ Make sure that no liquids or dust get into the device or the AC adapter.



Damage to the device surfaces!
Aggressive cleaning agents may damage device surfaces.
- ▶ Never use cleaning agents that contain solvents, acetone or abrasive ingredients.

Procedure

- ▶ Disconnect the device from power.
- ▶ Wipe the housing of the device with a damp cloth.
- ▶ If required: Remove the front and left covers and clean the internal components.
- ▶ Dry the device with a soft cloth afterwards.

8.3 Maintenance Schedule

Depending on the volume of water dispensed, it may be necessary to change the consumables more often than specified in the maintenance schedule. If, for example, sterile water is required, the final filter must be replaced regularly.

Tip

It is advisable to replace different consumables in the same maintenance step. This saves time and water.

▶ Sensibly plan consumables replacement.

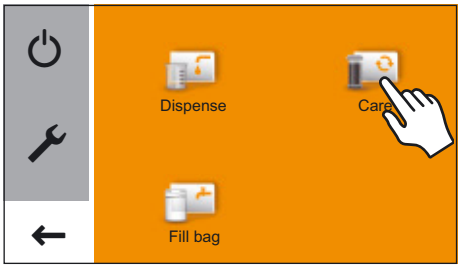
Interval	Consumables	Item
6 months	Bag	Replacing the bag (see Chapter 8.6.1, page 66)
1 - 24 weeks (depending on the application)	Final filter	Replacing the final filter (see Chapter 8.6.2, page 68)
6 months	Pretreatment cartridge (only arium® mini plus)	Replacing the pretreatment cartridge (see Chapter 8.6.3, page 69)
Max. 6 months (depending on the volume of water dispensed)	Ultrapure water cartridge	Replacing the ultrapure water cartridge (see Chapter 8.6.3, page 69)
12 months	UV lamp (optional)	Replacing the UV lamp (see Chapter 8.6.5, page 76)

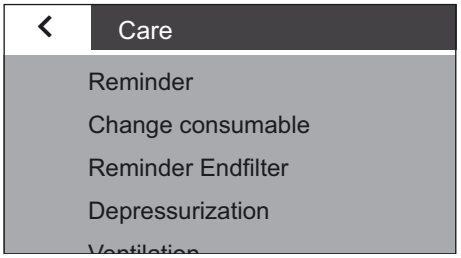
8.4 Opening the "Care" Menu

The "Care" menu contains all the steps for the care and maintenance work.

Procedure

▶ Tap the symbol [Care].





▷ The "Care" menu appears.

▶ Displaying reminders (see Chapter 8.5, page 65).

▶ Replacing consumables (see Chapter 8.6, page 65).

▶ Enabling, disabling or configuring reminders for replacing final filters (see Chapter 8.7, page 78).

▶ Manually carrying out depressurization (see Chapter 8.8, page 79).

▶ Carrying out venting (see Chapter 8.9, page 80).

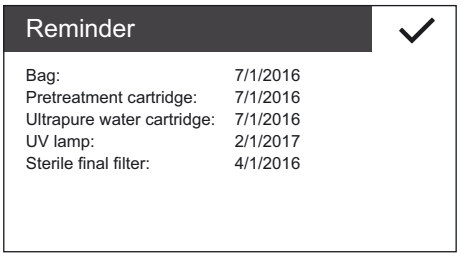
8.5 Displaying Reminders

Reminders to replace certain consumables are automatically displayed as warning messages (see Chapter 9.2, page 84). Pending consumables replacements can be viewed at a glance.

All reminders are automatically updated after the consumable has been replaced.

Procedure

▶ Tap the menu item [**Reminder**] in the "Care" menu.
▷ The date for the next required replacement is displayed for the bag, the pretreatment and ultrapure water cartridge, the UV lamp and the final filter.



8.6 Changing Consumables

Procedure

▶ To compile the consumables to be replaced: Tap the menu item [**Change consumable**] in the "Care" menu.
▷ The "Change consumable" menu appears.

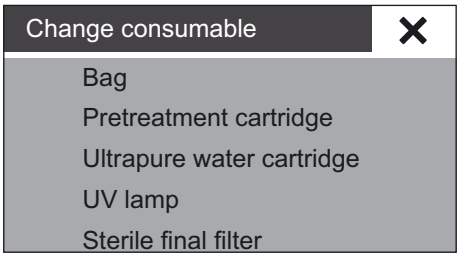


Fig. 10-1: Dialog box "Change consumable" of the arium® mini plus

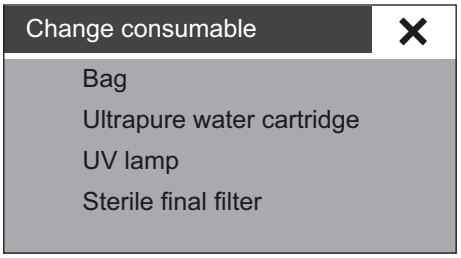
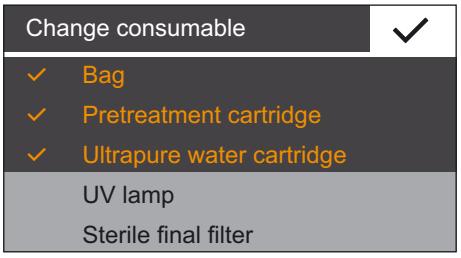


Fig. 10-2: Dialog box "Change consumable" of the arium® mini



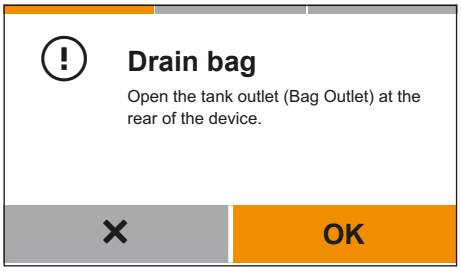
▶ Tap the menu items for all consumables that are pending replacement:
  – Replacing the bag (see Chapter 8.6.1, page 66)
  – Replacing the final filter (see Chapter 8.6.2, page 68)
  – Replacing the pretreatment cartridge (R) or ultrapure water cartridge (L) (see Chapter 8.6.3, page 69)
  – Replacing the UV lamp (see Chapter 8.6.5, page 76)
▷ Selected menu items are highlighted and activated by ticking them. The [✕] button is replaced with the [✓] button.
▶ Confirm the selection with the [✓] button.
▷ The wizard automatically performs all the steps of the activated consumables.

8.6.1 Changing the Bag

Requirements

In the "Change consumable" menu, the menu item [**Bag**] is activated.

▷ The dialog box "Drain bag" appears.



Procedure

▶ Check whether the tank outlet tubing is connected to the "Bag Outlet" connection. If required: Connect the tank outlet tubing.

▶ Guide the tank outlet tubing into a suitable container.

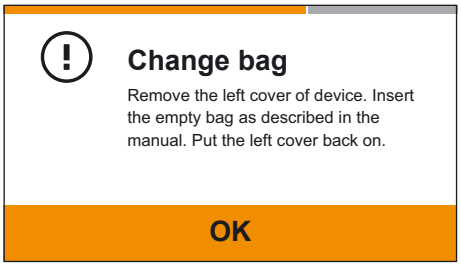
▶ In order to empty the bag completely: Place the container underneath the device.

▶ Open the ball cock of the tank outlet tubing.

▷ Pure water flows out of the bag.

▶ When the bag is empty: Confirm the emptying of the bag with the [**OK**] button.

▷ The dialog box "Change bag" appears.





▶ Remove the left cover of the device by pulling it up.



▶ To make it easier to reach the lower connections on the device: Pull the tray up and remove it from the device.

▶ Tap the gray quick connector button on the three device connections successively and pull the bag hoses out of the connections.

▶ Slide the old bag out off the guide rail and remove it from the device.

IMPORTANT

Damage to the bag!
The bag may be damaged if forced into the guide rails.
▶ Use only slight pressure when inserting the bag into the guide rail.



▶ Using the handle, slide the bag into the guide rail in the upper portion of the device housing. The bag is secure when the reinforcing piece on the carrying handle is locked into the guide rail.

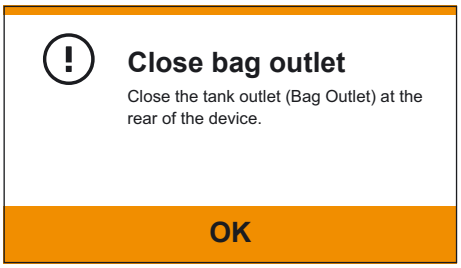


▶ Using the quick connector, fasten the upper hose of the bag to the device's upper connection.
▷ The quick connector locks into place with an audible click.
▶ Fasten the two lower bag hoses to the lower device connections using the quick connectors.
▷ The quick connectors lock into place with an audible click.



▶ Reinsert the tray. Make sure that the bag does not get caught between the tray and the housing.

▶ Reattach the left cover of the device.
▶ Confirm the insertion of the bag with the [**OK**] button.

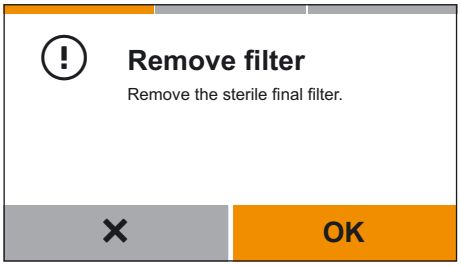


▷ The dialog box "Close bag outlet" appears.
▶ Close the ball cock of the tank outlet tubing.
▶ Confirm that the tank outlet has been closed with the [**OK**] button.
▷ The arium® mini plus automatically begins filling the bag.
The dialog box "Fill bag?" appears on the display of the arium® mini.
▶ To fill the bag of the arium® mini:
– Tap [**YES**] button.
– Manually filling the bag (only arium® mini) (see Chapter 7.3.1, page 59).
▶ To fill the bag of the arium® mini later: Tap the [**NO**] button.

8.6.2 Removing or Replacing the Final Filter

Requirements

In the "Change consumable" menu, the menu item [**Sterile final filter**] is activated.



▷ The dialog box "Remove filter" appears.

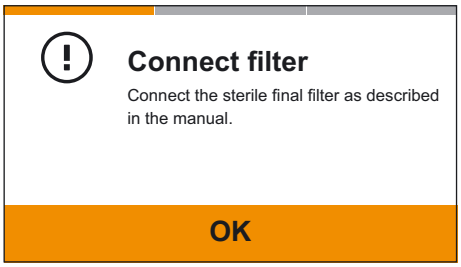
Procedure



▶ Use the tubing removal tool to push and hold the water outlet quick connector up.
▷ The quick connector is unlocked.
▶ Pull the final filter out of the quick connector.
▶ Confirm removal of the final filter with the [**OK**] button.

Requirements

In the "Change consumable" menu, the menu item [**Sterile final filter**] is activated.
The final filter has been removed.



▷ The dialog box "Connect filter" appears.

Procedure

▶ To complete the final filter replacement:
– Connect final filter (see Chapter 6.4.9, page 42).
– Rinse final filter (see Chapter 6.4.10, page 42).

8.6.3 Changing Cartridges

To replace cartridges, the final filter must be removed and the device depressurized.

Requirements

In the "Change consumable" menu, the menu item [**Pretreatment cartridge**], or [**Ultrapure water cartridge**] is activated.

▷ The dialog box "Remove filter" appears.

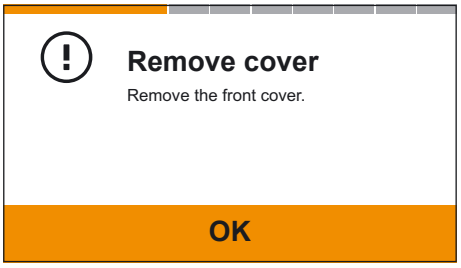
Procedure

▶ Remove final filter (see Chapter 8.6.2, page 68).

▷ The dialog box "Prepare depress." appears.

▶ Start depressurization (see Chapter 8.8, page 79)

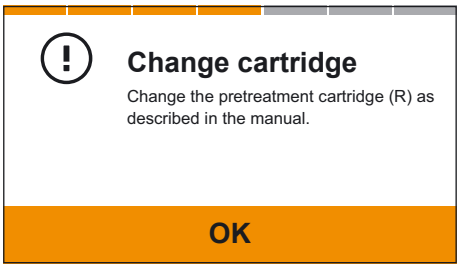
▷ When depressurization is complete, the dialog box "Remove cover" appears.



▶ Remove the front cover.

▶ Confirm removal of the cover with the [**OK**] button.

▷ The dialog box "Change cartridge" appears.



8.6.3.1 Removing Cartridges

Procedure



▶ Tap the two protruding terminals of the cartridge together and pull the cartridge forward and out.

▶ Confirm removal of the cartridge with the [**OK**] button.

▷ If the menu item [**UV lamp**] is enabled in the "Change consumable" menu, the dialog box "Replace the UV lamp" appears.

▶ If required: Replace the UV lamp (see Chapter 8.6.5, page 76).

8.6.3.2 Inserting Cartridges

The arium® mini plus has a pretreatment cartridge and an ultrapure water cartridge.

Procedure

IMPORTANT

Equipment damage due to impurities!
If dirt or foreign objects enter the ultrapure water circulation, individual device components can potentially become clogged or wear out faster.

- If possible, do not touch the cartridge connections. This will prevent impurities from getting into the device.



- Remove the plugs from the two external cartridge connections.
- Slide the cartridge straight into the guide rails of the cartridge holder on the front side of the device with the corresponding marking ("L" for ultrapure water cartridge and "R" for pretreatment cartridge). Make sure to hold the cartridge at the top when doing this.



- Press the cartridge firmly into the cartridge holder until it locks into the guide rails with a distinct clicking sound on both the left and right sides. Check that the cartridge has been installed securely by turning it slightly.
- Confirm the insertion of the cartridge with the [**OK**] button.

Requirements

In the "Change consumable" menu of the arium® mini, the menu item [**Ultrapure water cartridge**] is enabled.

▷ The dialog box "Change cartridge" appears and asks you to replace the second cartridge.

Requirements

Cartridge replacement is complete.
In the "Change consumable" menu, the menu item [**UV lamp**] is activated.

▷ The dialog box "Replace UV lamp" appears.

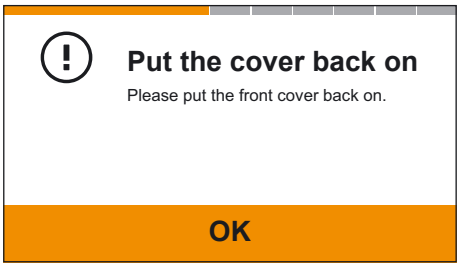
Procedure

▶ If required: Replace the UV lamp (see Chapter 8.6.5, page 76).

Requirements

Cartridge replacement is complete.
In the "Change consumable" menu, the menu item [**UV lamp**] is **not** activated.

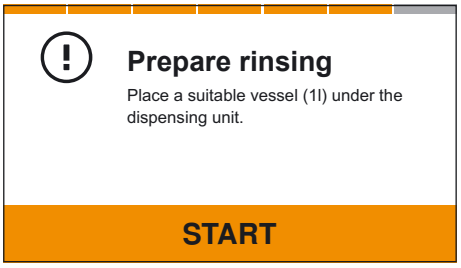
▷ The dialog box "Put the cover back on" appears.



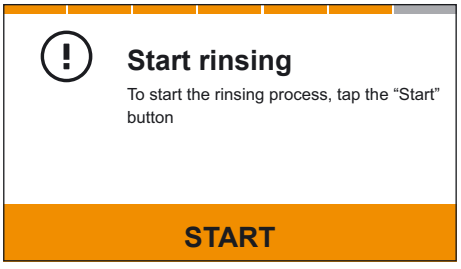
Procedure

▶ Attach the front cover to the device.
▶ Confirm that the cover has been attached with the [**OK**] button.

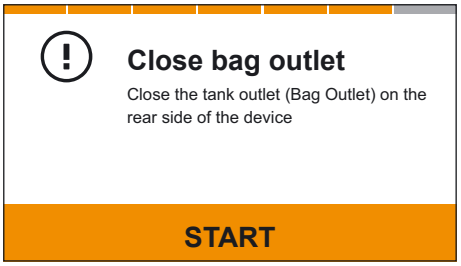
▷ The dialog box "Prepare rinsing" appears.
▷ Prepare rinsing: Connect sampling tubing (see Chapter 6.4.9, page 42)



▶ Open the ball cock.
▶ Start the pre-filter cartridge rinsing process.
▶ When the rinsing process is complete:
– Close the ball cock.
– Start automatic filling of the bag.
▷ When the filling process is complete, the dialog box „Start rinsing" appears.
▶ Rinse ultrapure water cartridge (see Chapter 6.4.9, page 42).



▶ Close the tank outlet (Bag Outlet) on the rear side of the device



8.6.3.3 Rinsing the Device

Requirements

The new cartridges have been inserted.

Procedure

- ▶ If required: Rinse the pretreatment cartridge of the arium® mini plus (see arium® mini plus in Chapter 6.4.7.3, page 39).
- ▶ Prepare rinsing: Attach the sampling tubing (see Chapter 6.4.9, page 42)
- ▶ Rinse ultrapure water cartridge (see Chapter 6.4.9, page 42).
- ▷ The dialog box "Connect filter" appears.
- ▶ Connect final filter (see Chapter 6.4.9, page 42).
- ▶ Confirm that the final filter has been connected with the [**OK**] button.
- ▷ Cartridge replacement is complete.

8.6.4 arium® mini: Changing the Ultrapure Water Cartridge (L)

To change the cartridge, the final filter must be removed and the device depressurized.

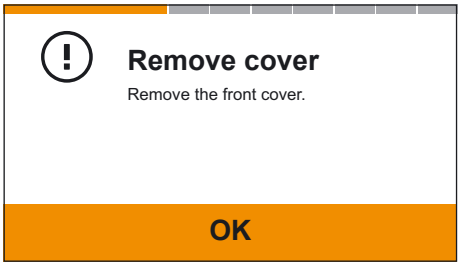
Requirements

In the "Change consumable" menu, the menu item **Ultrapure water cartridge** is activated.

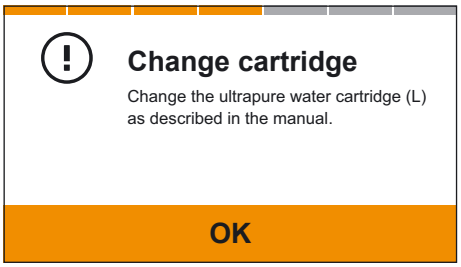
- ▷ The dialog box "Remove filter" appears.

Procedure

- ▶ Remove final filter (see Chapter 8.6.3, page 69).
- ▷ First the "Prepare depress." dialog field and then "Start depressurization".
- ▶ Start depressurization (see Chapter 8.8, page 79)
- ▷ When depressurization is complete, the dialog box "Remove cover" appears.
- ▶ Remove the front cover.
- ▶ Confirm removal of the cover with the [**OK**] button.



- ▷ The dialog box "Change cartridge" appears.



8.6.4.1 Removing Cartridges



Procedure

- ▶ Press the two protruding terminals of the cartridge together and pull the cartridge forward and out.
- ▶ Confirm removal of the cartridge with the [**OK**] button.
- ▷ If the menu item [**UV lamp**] is activated in the "Change consumable" menu, the dialog box "Change UV lamp" appears.
- ▶ If required: Change UV lamp (see 8.6.5.2, page 78).

8.6.4.2 Inserting Cartridges

The arium® mini has a pretreatment cartridge and an ultrapure water cartridge.

Procedure

IMPORTANT

Equipment damage due to impurities!
If dirt or foreign objects enter the ultrapure water circulation, individual device components can potentially become clogged or wear out faster.

- ▶ If possible, do not touch the cartridge connections. This will prevent impurities from getting into the device.



- ▶ Remove the plugs from the two external cartridge connections.
- ▶ Slide the cartridge straight into the guide rails of the cartridge holder on the front side of the device with the corresponding marking ("L" for ultrapure water cartridge and "R" for pretreatment cartridge). Make sure to hold the cartridge at the top when doing this.



▶ Press the cartridge firmly into the cartridge holder until it locks into the guide rails with a distinct clicking sound. Check that the cartridge has been installed securely by turning it slightly.
▶ Confirm the insertion of the cartridge with the [**OK**] button.

Requirements

In the "Change consumable" menu on the arium® mini, the menu item [**Ultrapure water cartridge**] is activated.
▷ The dialog box "Change cartridge" appears and asks you to replace the second cartridge.

Requirements

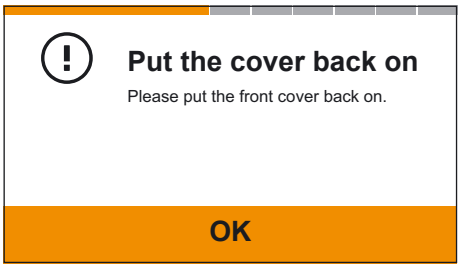
Cartridge replacement is complete.
In the "Change consumable" menu, the menu item [**UV lamp**] is activated.
▷ The dialog box "Change UV lamp" appears.

Procedure

▶ If required: Change UV lamp
(see Chapter 8.6.4, page 72).

Requirements

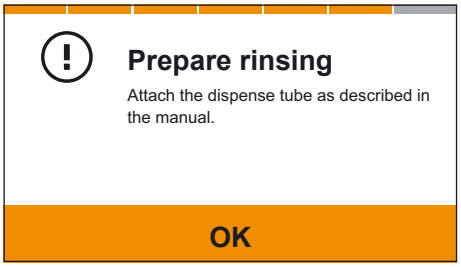
Cartridge replacement is complete.
In the "Change consumable" menu, the menu item [**UV lamp**] is **not** activated.
▷ The dialog box "Put the cover back on" appears.



Procedure

▶ Put the front cover on the device.
▶ Confirm that the cover has been put on with the [**OK**] button.

▷ The dialog box "Prepare rinsing" appears.
▶ Prepare rinsing: Connect the dispense tube (see Chapter 6.4.9, page 42)



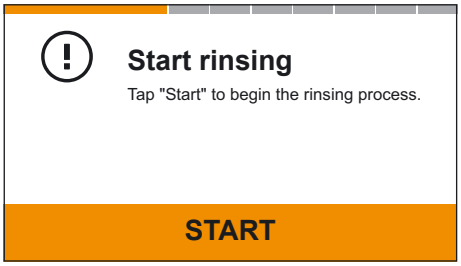
8.6.4.3 Rinsing the Device

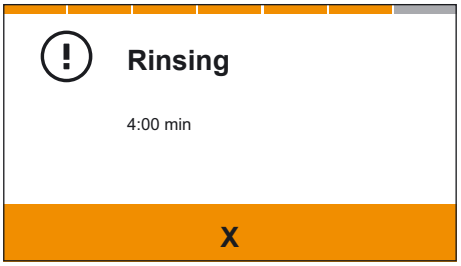
Requirements

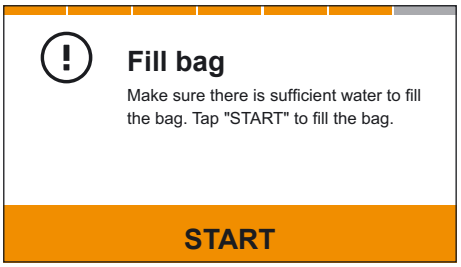
The new cartridges have been inserted.

Procedure

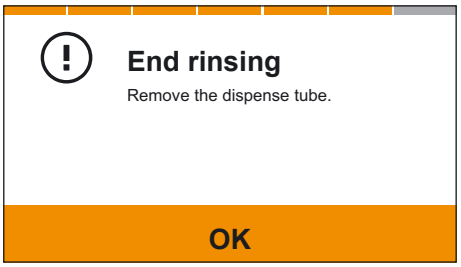
- ▶ If required: Rinse the pretreatment cartridge of the arium® mini plus (see Chapter 6.4.7.3, page 39).
- ▶ Prepare rinsing: Connect the dispense tube (see Chapter 6.4.9, page 42)
- ▶ Rinsing the Ultrapure Water Cartridge: Start rinsing (see Chapter 6.4.9, page 42).



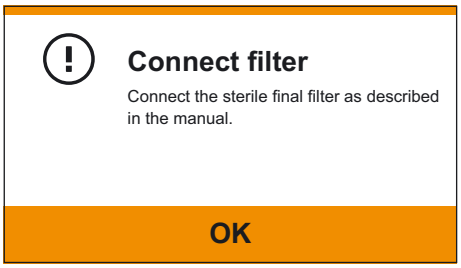




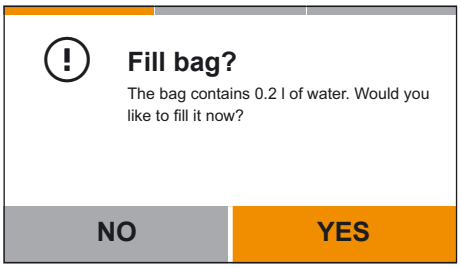
- ▷ If the bag no longer contains a sufficient amount of water (Tank Fill Level) or empties during the rinsing process, the bag is filled automatically.



- ▷ When rinsing is complete, the dialog box “End rinsing” appears.



- ▷ The dialog box “Connect filter” appears..
- ▶ Connect final filter (see Chapter 6.4.10, page 42).
- ▶ Confirm that the final filter has been connected with the [**OK**] button.
- ▷ Cartridge replacement is complete.



Requirements

The filling level is too low for the dispensing volume entered during volume-controlled dispensing.

▷ The dialog box “Fill bag?” appears.

Procedure

▶ Tap the [YES] button.

8.6.5 Replacing the UV Lamp

If a UV lamp is installed in the device, the UV lamp is located behind the pretreatment cartridge (arium® mini plus) or is freely accessible (arium® mini).

Requirements

In the “Change consumable” menu, the menu item [**UV lamp**] is activated.

▷ The dialog box “Remove filter” appears.

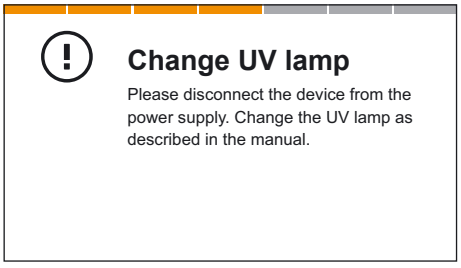
Procedure

▶ Remove final filter (see Chapter 8.6.2, page 68).
▷ The dialog box “Prepare depress.” appears.
▶ Carry out depressurization (see Chapter 8.8, page 79).
▷ The dialog box “Remove cover” appears.
▶ Remove the front cover.

arium® mini plus

▷ The dialog box “Remove pretreatment cartridge” appears.
▶ Remove cartridge (see Chapter 8.6.3.1, page 69).
▷ The dialog box “Change UV lamp” appears.
▶ Remove UV lamp (see Chapter 8.6.5.1, page 77).
▶ Insert UV lamp (see Chapter 8.6.5.2, page 78).

arium® mini



▷ The dialog box “Change UV lamp” appears.
▶ Remove UV lamp (see Chapter 8.6.5.1, page 77).
▶ Insert UV lamp (see Chapter 8.6.5.2, page 78).

8.6.5.1 Removing the UV Lamp

Procedure

▶ Disconnect the device from the AC power.
▷ The display goes out. After the power has been restored, the wizard will continue automatically.

CAUTION

Risk of injury from electrical current and UV radiation!
The UV lamp emits UV radiation and may be live.
▶ Disconnect the device from the power supply before the old UV lamp is removed.



▶ Squeeze the metal retaining clip on the old UV lamp and pull it forward to remove it.
▶ Remove the metal retaining clip from the cable and store it in a safe place, e.g. on the magnet securing the cover.



▶ Disconnect the black connector from the old UV lamp.
▶ Unscrew the black plastic cover of the UV lamp housing. If required: Use a suitable tool to help you do this.



▶ Remove the black plastic cover of the UV lamp housing.
▶ Carefully pull the old UV lamp out of the lamp housing, package it and safely dispose of it (see Chapter 10, page 86).

8.6.5.2 Inserting the UV Lamp

IMPORTANT

Touching UV lamps with your bare fingers will cause them to become defective!
Touching the UV lamp with your bare fingers will leave fingerprints. The fingerprints can become so hot during operation that the UV lamp is destroyed.
- ▶ **Never** touch the glass of the UV lamp with your bare fingers.
- ▶ Only hold the UV lamp where it connects to the device or when wearing gloves.

Procedure

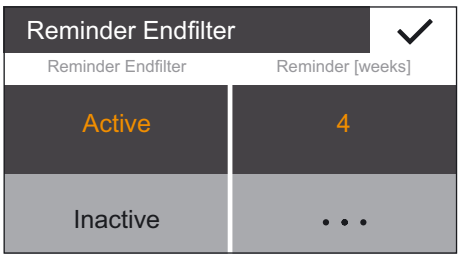
- ▶ Carefully unpack the new UV lamp without touching the glass with your fingers.
- ▶ Insert the new UV lamp all the way into the lamp housing.
- ▶ Unscrew the black plastic cover of the UV lamp housing by hand.
- ▶ Attach the black connector to the UV lamp. The connector only fits in two orientations.
- ▶ Slide any protruding cable back into the housing.
- ▶ Slide the metal retaining clip over the cable and onto the black plastic cover of the UV lamp housing.
- ▶ Insert the closed side of the metal retaining clip into the recess of the black plastic cover provided.
- ▶ Squeeze the open side of the metal retaining clip and insert it into the recesses provided in the black plastic cover.
- ▷ Release the metal retaining clip secures it to the black plastic cover.
- ▶ Reconnect the device to the AC power.
- ▷ The wizard continues.

- ▶ When the dialog box "Insert pretreatment cartridge" appears: Insert cartridge (see Chapter 8.6.3.2, page 70).
- ▶ When the dialog box "Put the cover back on" appears: Put the front cover on the device.
- ▶ When the dialog box "Prepare rinsing" appears: Rinse ultrapure water cartridge (see Chapter 6.4.9, page 40).
- ▶ When the dialog box "Connect filter" appears: Connect final filter (see Chapter 6.4.9, page 42).

8.7 Enabling, Disabling or Configuring Reminders for Replacing Final Filters

If sterile water is constantly required, the final filter must be replaced regularly. The device can provide a reminder about a pending final filter replacement.

Procedure



- ▶ Tap the menu item [**Reminder Endfilter**] in the "Care" menu.
- ▷ The dialog box "Reminder Endfilter" appears.
- ▶ Tap the [**Active**] button.
- ▷ The currently configured replacement interval appears in the column "Reminder [weeks]".
- ▶ To change the replacement interval: Tap the [···] button.
- ▷ The numeric keypad appears.
- ▶ Enter replacement interval desired (in weeks). Observe the maximum value of 24 weeks (6 months).
- ▶ Confirm the entry with the [✓] button.
- ▶ To activate the reminder: In the dialog box "Reminder Endfilter", tap the [✓] button.

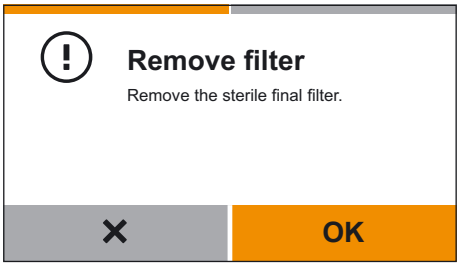
▶ If no sterile water is needed:
  – Remove final filter (see Chapter 8.6.2, page 68).
  – To deactivate reminders about replacing the final filter: In the dialog box "Reminder Endfilter", tap the [**Inactive**] button.

8.8 Carrying Out Depressurization

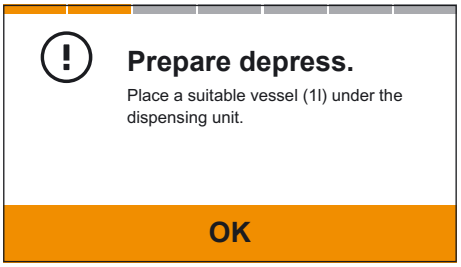
The device is under pressure during operation. If the device is taken out of service for an extended period of time or permanently, the pressure in the device must be let out manually.

Procedure

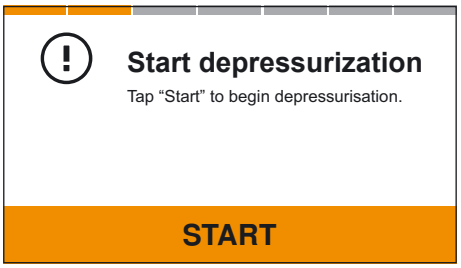
▶ Tap the menu item [**Depressuriz ation**] in the "Care" menu.
▷ The dialog box "Remove filter" appears.
▶ Remove final filter (see Chapter 8.6.2, page 68).
▶ Confirm removal of the final filter with the [**OK**] button.



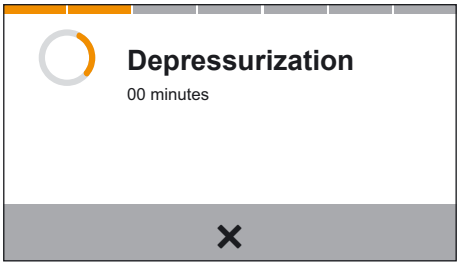
▷ The dialog box "Prepare depress." appears.
▶ Place a vessel (at least 1 liter) under the water outlet. Alternatively, connect the dispense tube and run the free end to the drain.
▶ Confirm this preparatory step with the [**OK**] button.



▷ That dialog box "Start depressurization" appears.
▶ Tap the [**START**] button.



▷ The dialog box "Depressurization" appears.
▷ The device depressurizes. The process takes about half a minute.
▶ To cancel the depressurization process before it is finished, e.g. if a sufficiently large vessel is unavailable: Tap the [×] button.
▷ The dialog box "Start depressurization" appears again.
▶ Carry out depressurization as described above again.



▷ When depressurization is complete, the dialog box "Turn off device" appears.
▶ Disconnect the device from power.
▶ Pressurization is carried out when the device is switched back on.

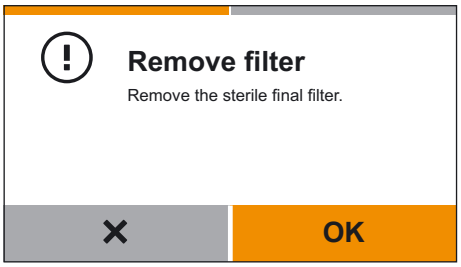


8.9 Carrying Out Venting

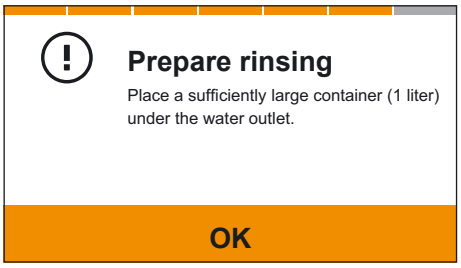
During venting, the device fills and rinses the ultrapure water cartridge.
Air is removed from the ultrapure water circulation in the process.
The ultrapure water circulation must be rinsed under the following conditions:
– when the water quality displayed during operation fluctuates constantly
– if the device was taken out of service for an extended period

Procedure

▶ Tap the menu item [**Venting**] in the "Care" menu.
▷ The dialog box "Remove filter" appears.
▶ Remove final filter (see Chapter 8.6.2, page 68).
▶ Confirm removal of the final filter with the [**OK**] button.



▷ The dialog box "Prepare rinsing" appears.
▶ Place a vessel (at least 1 liter) under the water outlet. Alternatively, connect the dispense tube and run the free end to the drain.
▶ Tap the [**OK**] button.



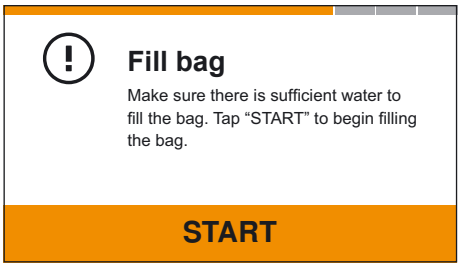
arium® mini plus

▷ If the bag in the arium® mini plus no longer contains a sufficient amount of water or empties during the rinsing process, the bag is filled automatically.
▷ When filling is complete, the dialog box "Prepare rinsing" appears.
▶ Start the rinsing process again.

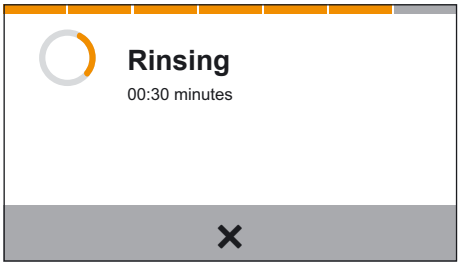


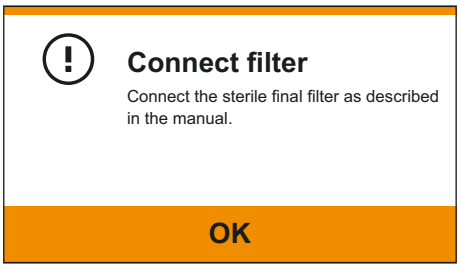
arium® mini

▷ If the bag in the arium® mini no longer contains a sufficient amount of water or empties during the rinsing process, the dialog box "Fill bag" appears.
▶ Manually filling the bag (only arium® mini) (see Chapter 7.3.1, page 59).



▷ After the rinsing process starts, the remaining rinse time is displayed in minutes.
▶ In order to cancel the rinsing process, e.g. if a sufficiently large vessel is unavailable: Tap the [×] button.
▷ The dialog box "Prepare rinsing" appears again.
▶ Start the rinsing process as described above again.





▷ When rinsing is complete, the dialog box “Connect filter” appears.
▶ Connect final filter (see Chapter 6.4.9, page 42).
▶ Confirm that the final filter has been connected with the [**OK**] button.
▷ The display changes to the dispensing screen.

8.10 Repairs



Danger of injury to personnel and damage to property!
Improper repairs to the device pose risks to the user and affect the proper operation of the device.
▶ Disconnect the device from power.
▶ Ensure that all repairs are performed only by authorized and specialized personnel.

▶ If required: Call Sartorius Service or a Sartorius dealer.

9 Malfunctions

9.1 Error Messages

If an error message is active, dispensing is canceled and locked automatically.

Error message	Fault	Cause	Correction	Chapter
`Error 0105`	Measured values are not being displayed.	There is an internal communications error.	▶ Disconnect the device from the AC power and wait a minute. ▶ Reconnect the device to the AC power.	7.1, page 56
			▶ If required: Call the Sartorius Service.	

`Error 0140`
 	
`Check UV lamp, replacement may be needed.`
	The UV lamp is not recognized.	The UV lamp is not connected properly or defective.	▶ Check whether the black plug of the UV lamp is connected correctly.	8.6.5, page 76

			▶ Remove the UV lamp and check for damage. If required: Change the UV lamp.	8.6.5, page 76
			▶ If required: Call the Sartorius Service.	

`Error 0150`
 	
`Check device for leakage. Please contact your service technician.`
	The device has a leak.	Water has leaked inside the device.	▶ Remove the left side cover and check that the three bag hoses are properly connected to the device connectors. If required: Remove the bag and reconnect it.	8.6.1, page 66

			▶ Drain the tray at the bottom of the device and check that the connections are tight during operation.	
			▶ If required: Call the Sartorius Service.	

`Error 0160`
 	
`Front cover is open. Please put the front cover back on.`
	Operation of the device is not possible.	The front cover is not properly attached.	▶ Correctly attach the front cover to the device.
			▶ If required: Call the Sartorius Service.	

`Error 0163`
 	
`Check proper fit of the pretreatment cartridge (R).`
	The pretreatment cartridge is not recognized.	The pretreatment cartridge has not been properly inserted.	▶ Press the pretreatment cartridge in firmly until you hear a distinct clicking sound.	

			▶ If required: – Remove the cartridge. – Insert cartridge.	8.6.3.1, page 69 8.6.3.2, page 70
			▶ If required: Call the Sartorius Service.	

`Error 0166`
 	
`Check proper fit of the ultrapure water cartridge (L).`
	The ultrapure water cartridge is not detected.	The ultrapure water cartridge has not been properly inserted.	▶ Press the ultrapure water cartridge in firmly until you hear a distinct clicking sound.	

			▶ If required: – Remove the cartridge. – Insert cartridge.	8.6.3.1, page 69 8.6.3.2, page 70
			▶ If required: Call the Sartorius Service.	

Error 0180 Please contact your service technician.	The fill level of the bag is not being properly detected.	The bag is damaged or improperly connected.	▶ Remove the left side cover and check the bag for damage. If required: Change bag.	8.6.1, page 66
			▶ Check that the three bag hoses are properly connected to the device connectors. If required: Remove the bag and reconnect it.	8.6.1, page 66
		The sensor is defective.	▶ Using the tank outlet tubing connected to "Bag Outlet", let about 1/4 of the pure water out of the bag and check the level change.	7.2.4, page 58
			▶ If required: Call the Sartorius Service.	
Error Conductivity measurement of the ultrapure water is out of range.	The conductivity of the ultrapure water is outside of measuring range.	There is air in the ultrapure water circulation.	▶ Initiate venting.	8.9, page 80
		The ultrapure water cartridge has been used up.	▶ Replace the ultrapure water cartridge.	8.6.3, page 63
			▶ To dispense water for testing purposes: Disable the dispensing lock.	
			▶ If required: Call the Sartorius Service.	
Error Temperature measurement of the ultrapure water is out of range.	The temperature of the ultrapure water is outside of measuring range.	The temperature of the ultrapure water is outside of measuring range.	▶ Check if the ambient temperature complies with the device specifications in the technical data.	11.2, page 88
			▶ Dispense about 1 liter: – To dispense water for testing purposes: Disable the dispensing lock. – Dispense and discard about 1 liter of water.	
			▶ If required: Call the Sartorius Service.	
Error Ultrapure water quality > XX µS/cm	The limit has been exceeded and the dispensing lock is preventing further dispensing.	There is air in the ultrapure water circulation.	▶ Initiate venting.	8.9, page 80
			▶ Replace the ultrapure water cartridge.	8.6.3, page 63
			▶ To dispense water for testing purposes: Disable the dispensing lock.	
			▶ If required: Call the Sartorius Service.	
		The limit has been configured incorrectly.	▶ Check the limit. If required: Configure the limit.	

9.2 Warning Messages

If a warning message is active, water can still be dispensed. The water quality is impaired under certain circumstances.

Warning message	Fault	Cause	Correction	Chapter
Conductivity measurement of the RO water is out of range.	The conductivity of the pure water cannot be determined.	The quality of the feed water is insufficient.	▶ Check whether the quality of the feed water complies with the device specifications in the technical data.	11.6, page 90
		The pretreatment cartridge has been used up.	▶ Replace the pretreatment cartridge.	8.6.3, page 63
			▶ If required: Call the Sartorius Service.	
Conductivity measurement of the ultrapure water is out of range.	The conductivity of the ultrapure water cannot be determined.	There is air in the ultrapure water circulation.	▶ Initiate venting.	8.9, page 80
		The ultrapure water cartridge has been used up.	▶ Replace the ultrapure water cartridge.	8.6.3, page 63
			▶ If required: Call the Sartorius Service.	
Temperature measurement of the RO water is out of range.	The temperature of the pure water cannot be determined.	The temperature of the pure water is outside of measuring range.	▶ Check whether the temperature of the feed water complies with the device specifications in the technical data.	11.6, page 90
			▶ Check if the ambient temperature complies with the device specifications in the technical data.	11.2, page 88
			▶ If required: Call the Sartorius Service.	
Temperature measurement of the ultrapure water is out of range.	The temperature of the ultrapure water cannot be determined.	The temperature of the ultrapure water is outside of measuring range.	▶ Check if the ambient temperature complies with the device specifications in the technical data.	11.2, page 88
			▶ Dispense and discard about 1 liter of water.	
			▶ If required: Call the Sartorius Service.	
RO water quality > XX µS/cm	The limit has been exceeded.	The quality of the pure water is insufficient.	▶ Check whether the quality of the feed water complies with the device specifications in the technical data.	11.6, page 90
		The pretreatment cartridge has been used up.	▶ Replace the pretreatment cartridge.	8.6.3, page 63
Ultrapure water quality > XX µS/cm	The limit has been exceeded.	There is air in the ultrapure water circulation.	▶ Initiate venting.	8.9, page 80
			▶ Replace the ultrapure water cartridge.	8.6.3, page 63
		The limit has been configured incorrectly.	▶ Check the limit. If required: Configure the limit.	
RO water temperature > XX °C	The limit has been exceeded.	The temperature of the feed water is too high or too low.	▶ Check whether the temperature of the feed water complies with the device specifications in the technical data.	11.6, page 90
Ultrapure water temperature > XX °C	The limit has been exceeded.	The ambient temperature of the device is too high or too low.	▶ Check if the ambient temperature complies with the device specifications in the technical data.	11.2, page 88
			▶ Dispense and discard about 1 liter of water.	

Warning message	Fault	Cause	Correction	Chapter
`Replacement of the pretreatment cartridge (R) is required.`	The pretreatment cartridge needs to be replaced.	The replacement interval of the pretreatment cartridge has expired.	▶ Replace the pretreatment cartridge.	8.6.3, page 63
`Replacement of the ultrapure water cartrige (L) is required.`	The ultrapure water cartridge needs to be replaced.	The replacement interval of the ultrapure water cartridge has expired.	▶ Replace the ultrapure water cartridge.	8.6.3, page 63
`Replacement of the bag is required.`	The bag needs to be replaced.	The replacement interval of the bag has expired.	▶ Replace the bag.	8.6.1, page 66
`Replacement of the UV lamp is required.`	The UV lamp needs to be replaced.	The replacement interval of the UV lamp has expired.	▶ Change UV lamp.	8.6.5, page 76
`Replacement of the sterile final filter is required.`	The sterile final filter needs to be replaced.	The replacement interval of the sterile final filter has expired.	▶ Replace the final filter.	8.6.2, page 68
`Sartorius maintenance is required.`	Maintenance service must be performed.	The maintenance service interval has expired.	▶ Call the Sartorius Service.	

9.3 Additional Faults

Fault	Cause	Correction	Chapter
The device unexpectedly stops dispensing.	The bag is empty.	▶ Check the level of the bag on the display.	
		▶ Remove the left cover and check the fill level of the bag. If required: Manually fill the bag (only arium® mini).	7.3.1, page 59
		▶ Check that the feed water tubing has been correctly connected (arium® mini plus).	6.4.7.1, page 37
	The final filter is clogged or contains air.	▶ If the final filter is attached and no water can be dispensed: – Rinse the final filter. – Initiate venting of the final filter. – If required: Replace the final filter.	6.4.10, page 42 8.9, page 80 8.6.2, page 68
		▶ If the final filter has been removed and no water can be dispensed: Call the Sartorius Service.	

10 Disposal

10.1 Disposing of Packaging

The packaging is made from environmental-friendly materials that can be used as secondary raw materials.

Procedure

▶ Dispose of the packaging in accordance with local government regulations.

10.2 Information on Decontamination

The device does not contain any hazardous materials that would necessitate special disposal measures. The cultures and media (e.g. acids, bases) used during the fermentation processes are potentially hazardous materials that could cause biological or chemical hazards.

According to the EU directives [European directive on hazardous substances], the owners of devices that come into contact with hazardous substances are responsible for properly disposing of these devices and to declare such devices when transporting them.

Devices contaminated with hazardous materials (NBC contamination) will **not** be accepted for repair or disposal.

10.3 Decommissioning the Unit

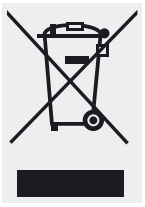
Requirement

Operation has been ended correctly.

Procedure

▶ If required: Start depressurization (see Chapter 8.5, page 65)
▶ Disconnect the device from power.
▶ Disconnect the device from the supply lines. Remove any consumables being used.
▶ If required: Disconnect any attached components from the device.
▶ Clean the device (see Chapter 8, page 63).

10.4 Disposing of the Device



The equipment, including consumables and empty non-rechargeable and rechargeable batteries, does not belong in your regular household waste; this equipment is manufactured from high-grade materials which can be recycled and reused. European Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE) requires that electrical and electronic equipment be collected and disposed of separately from other unsorted municipal waste, with the aim of recycling it. The crossed-out waste bin symbol indicates that separate collection is required.

In Germany and several other countries, Sartorius itself assumes responsibility for the return and legally compliant disposal of its electronic and electrical products. These products may not be placed with household waste or brought to collection centers run by local public disposal operations – not even by small commercial operators. Please contact Sartorius Service for this purpose.

Procedure

- ▶ Prior to disposal and scrapping of the device: Remove the batteries and dispose of them at a local collection point.
- ▶ Detailed information with service addresses for the disposal of your device can be found on our website: www.sartorius.com.
- ▶ In countries that are not members of the European Economic Area or in which there are no Sartorius subsidiaries: Contact the local authorities or the local waste management company.

10.4.1 Disposing of the UV Lamp

- ▶ In Europe, collect and ship the UV lamps. Detailed information about the disposal of end-of-life lamps can be found on the following websites: www.lightcycle.de or www.lightcycle.de/hersteller/ihre-loesung-in-europa.html

10.4.2 Disposal of Non-rechargeable and Rechargeable Batteries

- ▶ In Europe, old non-rechargeable and rechargeable batteries can be disposed of for free at special collection points.
- ▶ In Germany, dispose of old non-rechargeable and rechargeable batteries for free using the GRS system: www.grs-batterien.de/start.html

11 Technical Specifications

11.1 Power Supply

	Unit	Value
Sartorius power supply, Model 1000018304		
Primary		
Voltage	V~	100 - 240 (±10%)
Frequency	Hz	50 to 60
Current, max.	A	2.0
Secondary		
Voltage	V=	+24 (±5 %)
Current, max.	A	6.25
Short circuit protection		Electronic
Protection class according to DIN EN/IEC 60950-1		I
Operating height according to DIN EN/IEC 60529	m above sea level	Up to 3000
Power supply connection cable		
Connection plug according to DIN EN/IEC 60320-1/C14		Country-specific, 3-pin, two-sided plug
Connector according to DIN EN/IEC 60320-1/C14		3-pin
Other data		See power supply label
Device		
Power supply		Only via Sartorius power supply 1000018304
Input supply voltage	V_{DC}	+24 (±10%)
Current consumption, max.	A	3.0

11.2 Ambient Conditions

	Unit	Value
Environment		For indoor use only
Storage and shipping temperature	°C	+5 to +45
Operating temperature	°C	+2 to +35
Operating height	m above sea level	Up to 3000
Relative humidity	%	40 to 80

11.3 Safety of Electrical Equipment

	Unit	Value
Safety requirements according to DIN EN/IEC 61010-1		Safety requirements for electrical equipment for measurement, control and laboratory use – Part 1: General requirements

11.4 Electromagnetic Compatibility

	Unit	Value
EMC requirements according to DIN EN 61326-1		Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements (IEC 61326-1:2012)
Interference resistance		Suitable for use in industrial areas (Table 2 of the standard)
Interference emission		Class A devices are suitable for use in all other areas except residential areas and those areas directly connected to a low voltage power supply network that also supplies residential buildings (CISPR 11).

11.5 Product Water Quality

arium® mini plus

	Unit	Value (ultrapure water stage)	Value (pre-stage)
Water type		Ultrapure water ASTM Type 1	Pure water Type 3
Production output[1]	L/h	–	8
Water dispensing flow rate[2]	L/min	≤ 1,0	without pressure via ball cock
Volume-controlled dispensing[2]	l	Between 0.05 and 5 (in 50-ml increments)	–
Typical conductivity	µS/cm	0.055 (compensated to 25 °C[5])	< 20
Typical resistance	MΩ × cm	18.2 (compensated to 25 °C[5])	< 0.05
TOC content[3] (system with UV lamp)	ppb	≤ 5	–
Microorganism content[4]	CFU/1.000 ml	< 1	< 1
Particle content > 0.2 µm[4]	ml^{-1}	< 1	< 1
Typical ion retention	%	–	≤ 98
Retention of dissolved organic substances (MW > 300 Dalton)	%	–	> 99
Particle and microorganism retention	%	–	> 99

[1] Depending on the feed water pressure, temperature and condition of the RO modules

[2] Depending on the hydrostatic pressure and connected accessories and final filter

[3] Determined with municipal water (Goettingen), TOC < 1000 ppb

[4] When using an arium® sterile filter (Sartopore® 2 150)

[5] Measurement output adjustable compensated to 25 °C or uncompensated

arium® mini

	Unit	Value
Water type		Ultrapure water ASTM Type 1
Production output[1]	L/h	–
Water dispensing flow rate[2]	L/min	≤ 1,0
Volume-controlled dispensing[2]	l	Between 0.05 and 5 (in 50-ml increments)
Typical conductivity	µS/cm	0.055 (compensated to 25 °C[5])
Typical resistance	MΩ × cm	18.2 (compensated to 25 °C[5])
TOC content[3] (system with UV lamp)	ppb	≤ 5
Microorganism content[4]	CFU/1.000 ml	< 1
Particle content > 0.2 µm[4]	ml^{-1}	< 1
Typical ion retention	%	–
Retention of dissolved organic substances (MW > 300 Dalton)	%	–
Particle and microorganism retention	%	–

[1] depending on the feed water pressure, temperature and condition of the RO modules
[2] depending on the hydrostatic pressure and connected accessories and final filter
[3] Determined with municipal water (Goettingen), TOC < 1000 ppb
[4] When using an arium® sterile filter (Sartopore® 2 150)
[5] Measurement output adjustable compensated to 25 °C or uncompensated

11.6 Feed Water Quality

arium® mini plus

Exclusively potable tap water pursuant to the drinking water standards of the USA, the European Union or Japan.

	Unit	Value
Inlet pressure	bar	0.5 to 6 (recommended: > 2)
Temperature	°C	2 to 30
Specific conductivity	µS/cm	< 1,500 (compensated to 25 °C)
TOC	ppb	< 2,000
Max. total hardness (max. $CaCO_3$)	ppm	360
Free chlorine	ppm	< 4
Iron (total Fe content)	ppm	< 0.1
Fouling Index (SDI)		< 10
Turbidity	NTU	< 1
pH value		4 to 10

arium® mini

Purified water using reverse osmosis, distillation or deionization

	Unit	Value
Inlet pressure		Depressurized
Temperature	°C	2 to 30
Specific conductivity	µS/cm	< 100 (compensated to 25 °C)
TOC	ppb	< 50
Turbidity	NTU	< 1
pH value		4 to 10

11.7 Device Properties

	Unit	Value
Dimensions (width × height × depth)	mm	280 × 509.4 × 530.7
Empty weight, approx.	kg	13
Operating weight, approx.	kg	23
Water treatment method		Adsorption by means of spherical activated carbon, catalyst, reverse osmosis, ion exchange, optional UV irradiation and end position particle | sterile filtration

12 Consumables

12.1 arium® mini plus

Description	Order number
arium® sterile filter (Sartopore® 2 150 capsule)	5441307H4--CE--B
arium® pretreatment cartridge	H2O-CPR
arium® UV lamp	H2O-CEL1
arium® 5-liter bag	H2O-CBS-5-S
arium® Scientific Pack, ultrapure water cartridge	H2O-S-PACK

12.2 arium® mini

Description	Order number
arium® sterile filter (Sartopore® 2 150 capsule)	5441307H4--CE--B
arium® UV lamp	H2O-CEL1
arium® 5-liter bag	H2O-CBS-5-S
arium® Scientific Pack, ultrapure water cartridge	H2O-S-PACK

13 EC Declaration of Conformity

Original

EG-/EU-Konformitätserklärung
EC / EU Declaration of Conformity

Hersteller *Manufacturer*	Sartorius Lab Instruments GmbH & Co. KG 37070 Goettingen, Germany

erklärt in alleiniger Verantwortung, dass das Betriebsmittel
declares under sole responsibility that the equipment

Geräteart *Device type*	Reinstwassersystem arium® mini plus, arium® mini *Ultrapure water treatment system arium® mini plus, arium® mini*
Modell *Model*	H2O-MA-UV-T, H2O-MA-T (arium® mini plus) H2O-MM-UV-T, H2O-MM-T (arium® mini)

in der von uns in Verkehr gebrachten Ausführung allen einschlägigen Bestimmungen der folgenden Europäischen Richtlinien - einschließlich deren zum Zeitpunkt der Erklärung geltenden Änderungen - entspricht und die anwendbaren Anforderungen folgender harmonisierter Europäischer Normen erfüllt:
in the form as delivered fulfils all the relevant provisions of the following European Directives – including any amendments valid at the time this declaration was signed - and meets the applicable requirements of the harmonized European Standards listed below:

2014/30/EU	Elektromagnetische Verträglichkeit *Electromagnetic compatibility* EN 61326-1:2013
2006/42/EG *2006/42/EC*	Maschinen *Machines* EN ISO 12100:2010, EN 61010-1:2010
2011/65/EU	Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten (RoHS) *Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)* EN 50581:2012

Die Person, die bevollmächtigt ist, die technischen Unterlagen zusammenzustellen:
The person authorised to compile the technical file: Sartorius Lab Instruments GmbH & Co. KG
International Certification Management
37070 Goettingen, Germany

Jahreszahl der CE-Kennzeichenvergabe / *Year of the CE mark assignment:* 16

Sartorius Lab Instruments GmbH & Co. KG
Goettingen, 2016-04-20

i.V. P. Baumfalk

Dr. Reinhard Baumfalk
Vice President R&D

i.V. Klausgrete

Dr. Dieter Klausgrete
Head of International Certification Management

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten EG- und EU-Richtlinien, ist jedoch keine Zusicherung von Eigenschaften. Bei einer mit uns nicht abgestimmten Änderung des Produktes verliert diese Erklärung ihre Gültigkeit. Die Sicherheitshinweise der zugehörigen Produktdokumentation sind zu beachten.
This declaration certifies conformity with the above mentioned EC and EU Directives, but does not guarantee product attributes. Unauthorised product modifications make this declaration invalid. The safety information in the associated product documentation must be observed.

Doc: 2036499-01 15CE018-01.de,en 1 / 1 PMF: 2036498 OP-113_fo1_2015.10.12

14 Certificate of Compliance

Certificate of Compliance

Certificate: 70055155 **Master Contract:** 167555

Project: 70055155 **Date Issued:** 2016-01-15

Issued to: **Sartorius Lab Instruments GmbH & Co. KG**
94-108 Weender Landstrasse
Goettingen, 37075
GERMANY

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.

Issued by: Marilyn Laroche
Marilyn Laroche

PRODUCTS
CLASS - C872106 - LABORATORY EQUIPMENT-Electrical
CLASS - C872186 - ELECTRICAL EQUIPMENT FOR LABORATORY USE-Certified to US Standards

For details related to rating, size, configuration, etc. reference should be made to the CSA Certification Record or the descriptive report.

Water Treatment System models:

- Arium® mini :
  - Models : H2O-Mx-UV-T and H2O-Mx-T (x = M or U)
- Arium® mini plus :
  - Models : H2O-MA-UV-T and H2O-MA-T.

Nomenclature :

- U: unit is equipped with a ultrapure water treatment loop (including a ultrapure water cartridge, a flow meter, conductivity cell and a dispense valve);
- M: unit is additionally (related to variant U) equipped with a bag and a pump for filling is the same;
- A: unit is additionally (related to variant M) equipped with a prefilter-RO-module-cartridge combination, a pressure regulator and a flushing valve;
- UV: Unit with suffix UV is additionally (related to H20-Mx-T) equipped with an UV light system
- T: Desktop version

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Certificate: 70055155 **Master Contract:** 167555
Project: 70055155 **Date Issued:** 2016-01-15

Rating: 24 Vdc; 3,0 A (max.). For use with the power supply: FSP, Model FSP150-AAAN2 (Sartorius model 1000018304): Input: 100-240Vac, 50-60Hz, 2A, Output: 24Vdc, 6.25A.

Notes:

1. The above model has been evaluated for use in a Pollution Degree 2, Installation Category II.
2. Mode of operation: Continuous
3. Environmental Conditions: Normal: +2 to +35 C, 3000m max, 40 to 80% rH non-condensing.
4. The unit has been evaluated for use in ordinary dry locations only and indoors only.

APPLICABLE REQUIREMENTS

CSA Standards:

CAN/CSA-C22.2 No. 61010-1-12 - Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements

UL Standards:

UL Std. No. 61010-1 (3rd Edition) - Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements

CONDITIONS OF ACCEPTABILITY

(1) The main supply cord set provided with the equipment must be an approved type acceptable to the authorities in the country where the equipment is sold.

(2) Units provided with other than North American Certified power supply cord sets are certified as a component. Cord length should be not more than 3 m.

(3) Unit is intended to be used with the power supply: FSP, Model FSP150-AAAN2 (Sartorius model 1000018304).

(4) Plug of detachable power supply cord was considered as a disconnect device.

(5) The equipment has been evaluated for use in a Pollution Degree 2 and overvoltage category II environment and a maximum altitude of 3000 m.

(6) The product was evaluated for maximum ambient temperature 40°C, although maximum operation ambient temperature for the unit is 35°C.

(7) The user replaceable mains (line) fuse must be an approved type acceptable to the authorities where the equipment is sold.

(8) Equipment is not to be used with flammable liquids.

(9) Equipment has only been tested for electrical safety. No evaluation of functional safety and performance characteristics has been conducted.

Sartorius Lab Instruments GmbH & Co. KG
Otto-Brenner-Strasse 20
37079 Goettingen, Germany

Phone: +49.551.308.0
Fax: +49.551.308.3289
www.sartorius.com

The information and figures contained in these instructions correspond to the version date specified below.
Sartorius reserves the right to make changes to the technology, features, specifications and design of the equipment without notice.
Masculine or feminine forms are used to facilitate legibility in these instructions and always simultaneously denote the other gender as well.

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