Operating Instructions

Original Operating Instructions

Arium® Mini Plus | Arium® Mini | Arium® Mini Essential

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

1000025355

SARTORIUS

Contents

1 About this Document

1.1 Validity

These instructions are part of the device. These instructions apply to the device in the following versions:

Device	Model name
Arium® Mini Plus	H2O-MA-UV-T | H2O-MA-T | H2O-MA-UV-T-US | H2O-MA-T-US
Arium® Mini	H2O-MM-UV-T | H2O-MM-T | H2O-MM-UV-T-US | H2O-MM-T-US
Arium® Mini Essential	H2O-MU-UV-T | H2O-MU-T | H2O-MU-UV-T-US | H2O-MU-T-US

1.2 Symbols Used

1.2.1 Warnings in Action Descriptions

⚠ WARNING
Denotes a hazard that may result in death or serious injury if it is **not** avoided.

⚠ CAUTION
Denotes a hazard that may result in moderate or minor injury if not avoided.

NOTICE
Denotes a hazard that may result in property damage if it is not avoided.

1.2.2 Other Symbols

▶ Required action: Describes activities that must be performed.

▷ Result: Describes the result of the activities carried out.

[ ] Text inside brackets refers to control and display elements.

Figures on the Operating Display

Depending on the device configuration, the figures depicting the device and operating display may differ slightly from the supplied device. The variants shown in these instructions are examples.

2 Safety Notes

2.1 Intended Use

The device is a water purification system that produces “ASTM Type 1” ultrapure water for daily requirements of up to 10 liters.

The device is intended exclusively for use in accordance with these instructions. Any further use beyond this is considered **improper**.

If the device is **not** used properly: The protective systems of the device may be impaired. This can lead to unforeseeable personal injury or property damage.

Operating Conditions for the Device

Do **not** use this device in potentially explosive environments. The device may only be used indoors.

The device may only be used with the equipment and under the operating conditions described in the Technical Data of these instructions.

Modifications of the Equipment

You may **not** modify the device or make any technical changes on your own. Any retrofitting or technical changes to the device are only permitted with prior written permission by Sartorius.

Foreseeable Misuse

Using the device is only safe when it is operated in accordance with its intended use. The following applications, for example, are **not** permitted:

- Operation outside the permissible ambient conditions (see Chapter “14.2 Ambient Conditions,” page 76) 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

These instructions are addressed to the target groups mentioned below. All persons working on the device must possess the stated knowledge and authorizations.

If **no** qualifications are indicated for the actions described in these instructions: The actions described are addressed to the “user” target group.

If individual actions must be carried out by other target groups or by Sartorius Service personnel: The qualification required will be indicated in the description of the action.

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 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. The operating engineer / laboratory manager is trained in the operation of the device. The training is performed by Sartorius Service or the operator.
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.

2.3 Significance of These Instructions

Failure to follow these instructions can have serious consequences, e.g. exposure of individuals to electrical, mechanical or chemical hazards.

- ▶ Before working with the device: Read the instructions carefully and completely.
- ▶ If the instructions are lost: Request a replacement or download the latest instructions from the Sartorius website (www.sartorius.com).
- ▶ The information contained in these instructions must be made available to all individuals working with the device.

2.4 Functionality of the Device

A damaged device or worn parts may lead to malfunctions or cause hazards which are difficult to recognize.

- ▶ Only operate the device when it is in proper working order.
- ▶ Comply with the maintenance intervals (for intervals and maintenance tasks, see Chapter “8.2 Maintenance Schedule,” page 54).
- ▶ Have any damage repaired immediately by Sartorius Service.

2.5 Electrical Equipment

2.5.1 Damage to the Electrical Equipment of the Device

Damage to the electrical equipment of the device, e.g. damage to the insulation, can be life-threatening. Contact with parts under voltage represents a direct danger to life.

- ▶ If the electrical equipment of the device is defective, immediately switch off the power supply and contact Sartorius Service.
- ▶ Keep live parts away from moisture. Moisture can cause short circuits.
- ▶ Make sure that the power connection is equipped with a ground lead.

2.5.2 Working on the Electrical Equipment of the Device

Any work on or 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.

2.5.3 Power Supply and Power Cord

Serious injury can result, e.g. from electric shocks, if an unsuitable power supply or an unsuitable / inadequately dimensioned power cords is used.

- ▶ Use only original power supplies and original power cords.
- ▶ **Do not** use inadequately dimensioned power cords.
- ▶ If the power supply or the power cord must be replaced: Contact Sartorius Service. Do **not** repair or modify the power supply or power cord.

2.6 Accessories, Consumables and Spare Parts

The use of unsuitable accessories, consumables and spare parts can affect the functionality of the device, be hazardous and have the following consequences:

- — Risk of injury to persons
- — Damage to the device
- — Malfunctions 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, consumables and spare parts that are in technically perfect condition.

3 Device Description

3.1 Device Overview

Fig. 1: Arium® Mini Plus (example)

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

3.2 Electrical Connections

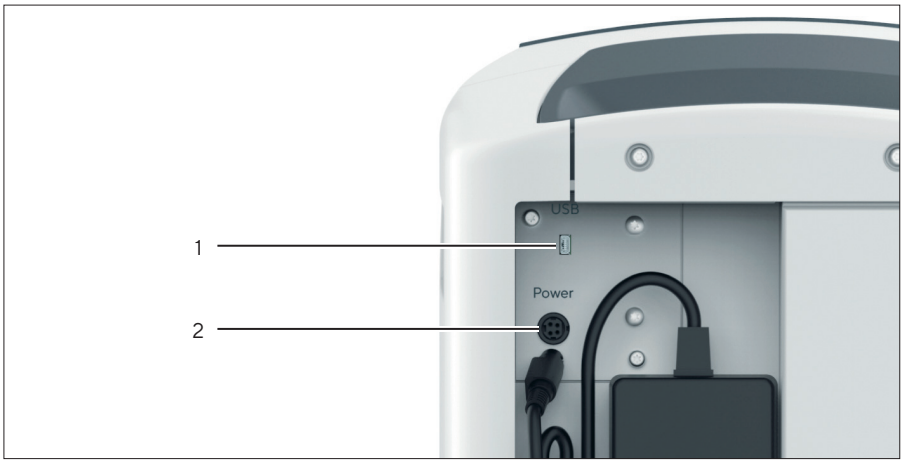


Fig. 2: Electrical connections on the Arium® Mini Plus (example)

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

3.3 Water Connections

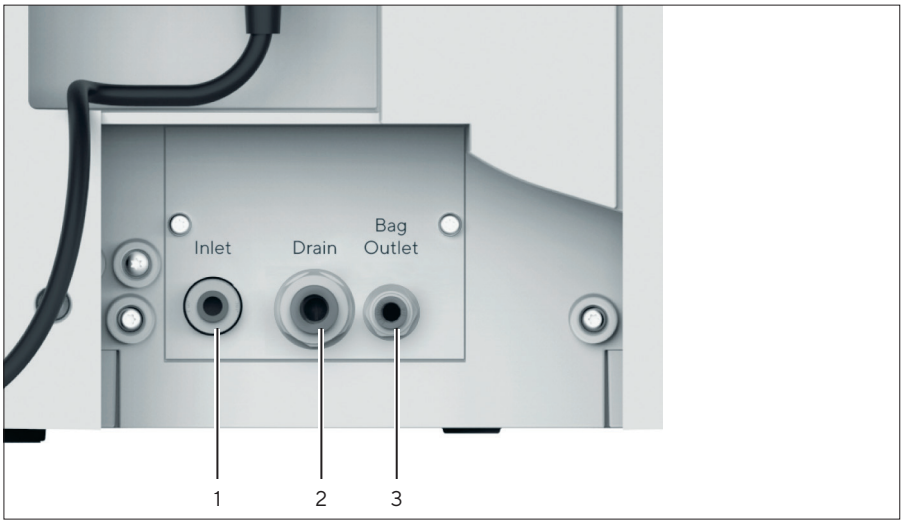


Fig. 3: Water connections on the Arium® Mini Plus (example)

No.	Description	Explanation
1	“Inlet” connection	For connecting the tank filling tubing or feed water tubing
2	“Drain” connection	For connecting the waste water tubing (only Arium® Mini Plus and Arium® Mini)
3	“Bag Outlet” connection	For connecting the tank outlet tubing (only Arium® Mini Plus and Arium® Mini)

3.4 Tubing

3.4.1 Feed Water Tubing

The feed water tubing is used to supply feed water to the device:

- Arium® Mini Plus: Supply of tap water
- Arium® Mini Essential: Supply of pretreated water

The feed water tubing is marked “Inlet”.

3.4.2 Tank Filling Tubing

The tank filling tubing serves to feed pretreated water from an external tank to the device (only Arium® Mini).

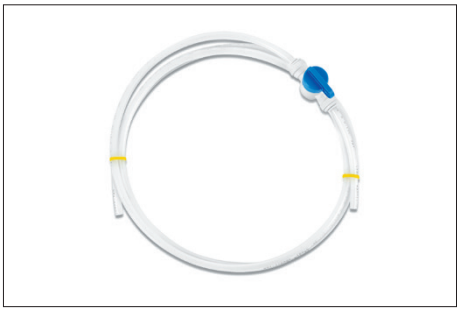
The tank filling tubing is marked “Inlet”.

3.4.3 Drain Water Tubing

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

The drain water tubing is marked “Drain”.

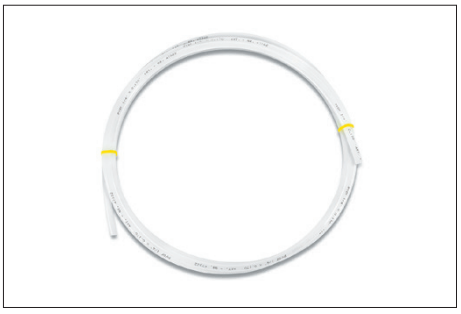
3.4.4 Tank Outlet Tubing with Ball Cock



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.

The tank outlet tubing is marked “Bag Outlet”.

3.4.5 Dispense Tube



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

3.5 Ultrapure Water Treatment

3.5.1 System Setup

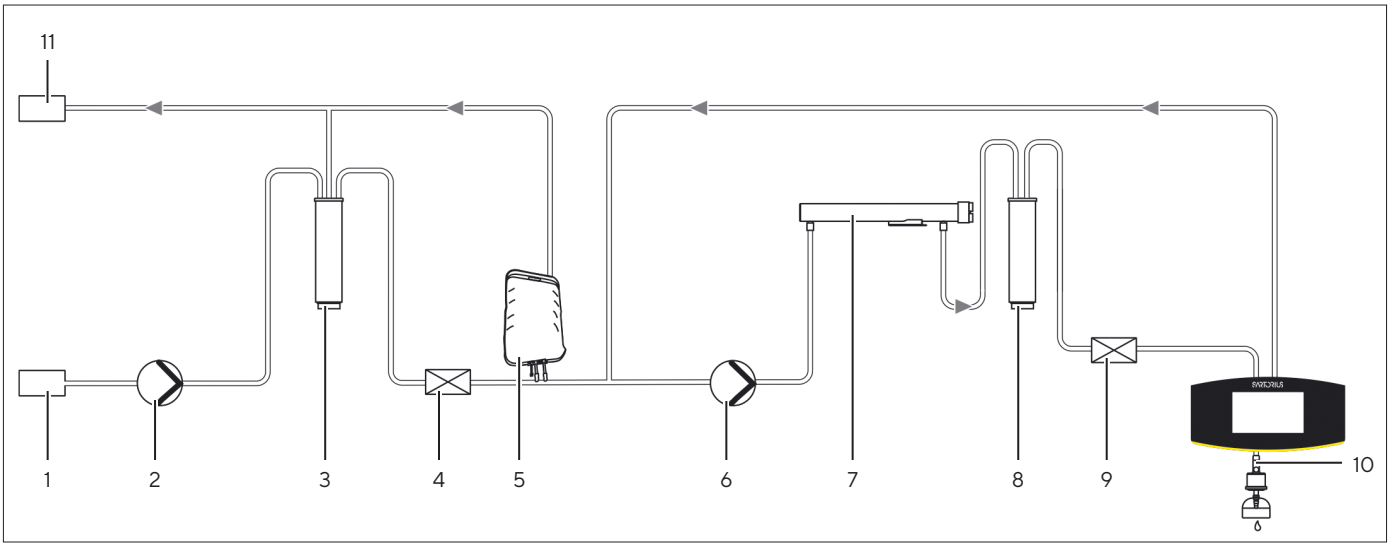


Fig. 4: Arium® Mini Plus system setup

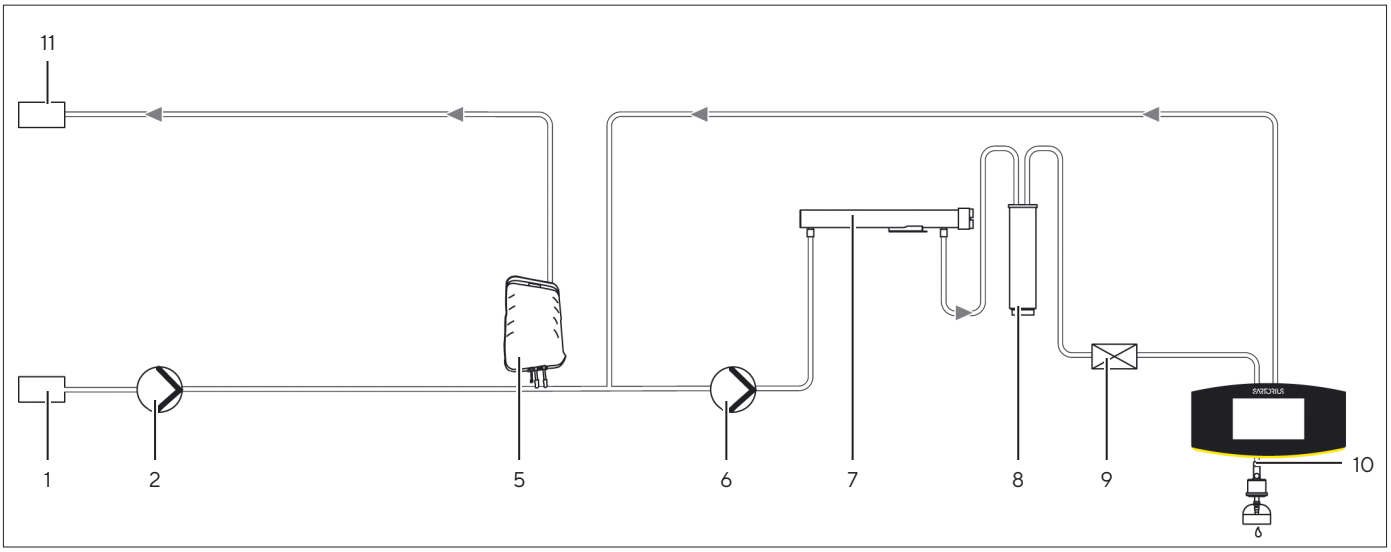


Fig. 5: Arium® Mini system setup

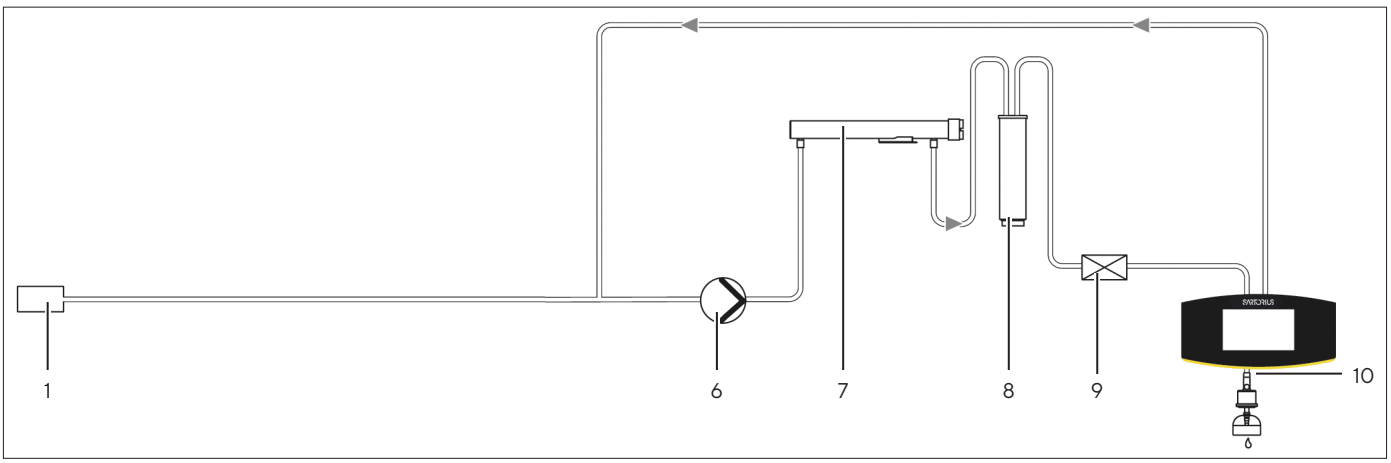


Fig. 6: Arium® Mini Essential system setup

No.	Description	No.	Description
1	Inlet (feed water)	7	UV lamp (185/254 nm)
2	Pump	8	Ultrapure water cartridge (Scientific Pack)
3	Pretreatment cartridge	9	Conductivity measurement
4	Conductivity measurement	10	Product water outlet
5	Bag	11	Outlet (drain water)
6	Pump		

3.5.2 Feed Water Intake

The feed water intake differs according to the device type:

Device type	Feed water intake
Arium® Mini Plus	Direct connection to tap water connection possible, automatic filling of the bag
Arium® Mini	Manual filling of the bag with pretreated water
Arium® Mini Essential	Direct connection to pretreated water

3.5.3 Treatment Stages

Device type	Required treatment stages
Arium® Mini Plus	Pretreatment stage, ultrapure water stage
Arium® Mini	Ultrapure water stage
Arium® Mini Essential	Ultrapure water stage

Pretreatment level (first treatment stage)

In the first treatment stage, the tap water is treated with pretreated water: The feed water is passed through the pretreatment cartridge by means of a membrane pump. The pretreatment cartridge contains a combination of activated carbon, catalyst and downstream reverse osmosis.
The pretreatment cartridge removes particles, salts and impurities, e.g. chlorine, from the tap water.

A large proportion of the impurities are discarded by means of a concentrate outlet (drainage water outlet).

The treated water is stored in the bag for further use. The quality of the treated water is monitored via a conductivity measuring cell (LFR).

Ultrapure water stage (second treatment stage)

In the second treatment stage, the pretreated water is purified to ultrapure water (ASTM type 1): The pretreated water stored in the bag (Arium® Mini Plus and Arium® Mini) or directly fed pretreated water (Arium® Mini Essential) is fed into the ultrapure water circuit.

The water fed in can be freed from organic residues using an optional UV lamp (185/254 nm). The pretreated water is then treated using the ultrapure water cartridge (Scientific Pack).

The quality of the ultrapure water is monitored via a conductivity measuring cell (LFP).

3.5.4 Final Purification Stage

The ultrapure water passes through a final filter as it is dispensed. A sterile filter or an ultrafilter can be used as a final filter.

3.5.5 Circulation of the Ultrapure Water

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 ultrapure water cartridge.
- If there is **no** interaction with the device, the device automatically switches to ECO mode.

4 Operating Design

4.1 Menu

All system settings and work steps for the maintenance of the device can be carried out in the menu.

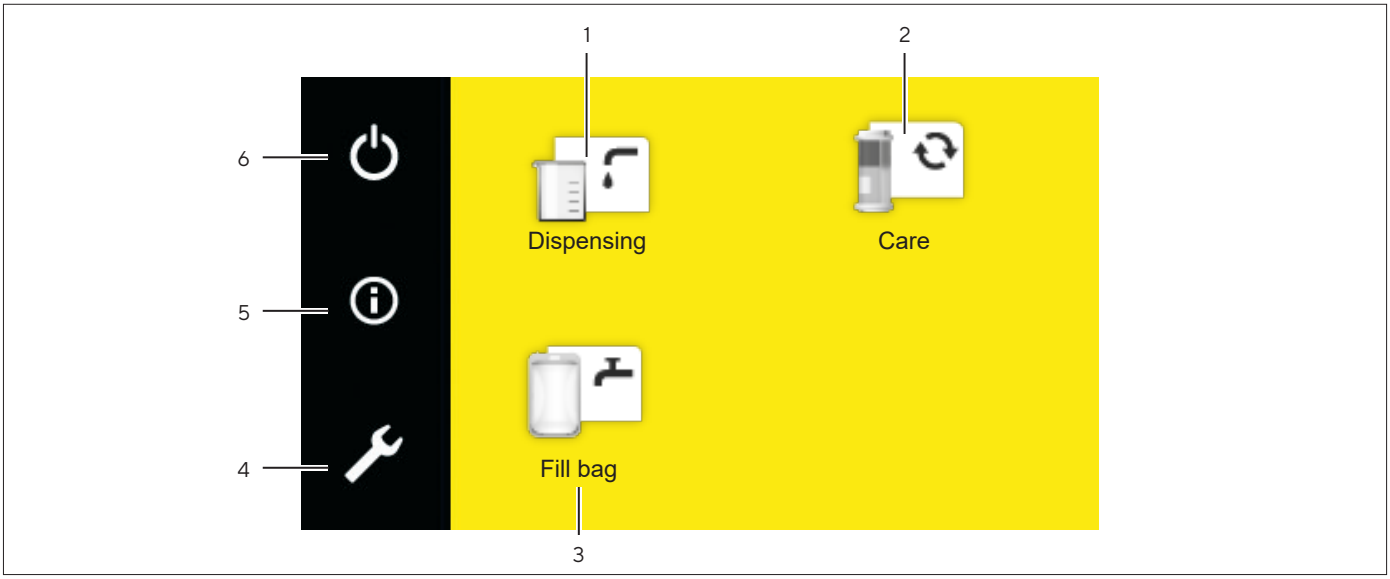


Fig. 7: Menu in Arium® Mini (Example)

Pos.	Symbol	Name	Description
1		Dispensing	Opens the dispensing screen.
2		Care	Opens the “Care” menu.
3		Fill bag	Opens the wizard for bag filling (only with Arium® Mini).
4		Settings	Opens the “Settings” menu.
5		Information	Opens the “Information” menu.
6		Standby	Switches to standby mode.

4.2 Dispensing Mode

In dispensing mode, the display shows information about the water quality and the fill level of the bag, as well as the buttons relevant for dispensing.

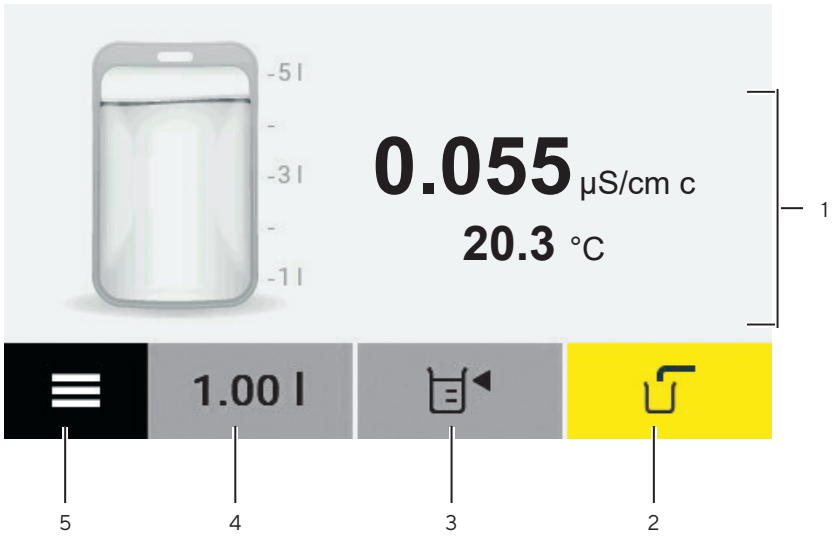


Fig. 8: Dispensing mode Arium® Mini Plus (Example)

Pos.	Symbol	Name	Description
1		Operating area	Can display the following information: – Current ultrapure water conductivity – Current ultrapure water temperature – Fill level of the bag (only for Arium® Mini Plus and Arium® Mini) – Messages, warnings, errors
2		Manual dispense	Starts dispensing without preset dispense volumes.
3		Volume input	Opens a display for entering the dispense volume and starts the dispensing.
4		Volume-controlled dispensing	Starts dispensing with the most recently set dispensing volumes.
5		Menu	Opens the menu.

4.3 Message Display

The device displays three types of messages:

- Error messages (error):
  - Dispense is **not** possible.
  - The user only has limited options for troubleshooting errors.
- Warning messages (warning):
  - Dispense is possible.
  - The user can perform troubleshooting of warning messages.
- Status messages (info):
  - Dispense is possible.
  - There is information which the user should be aware of. Urgent action is **not** necessary.

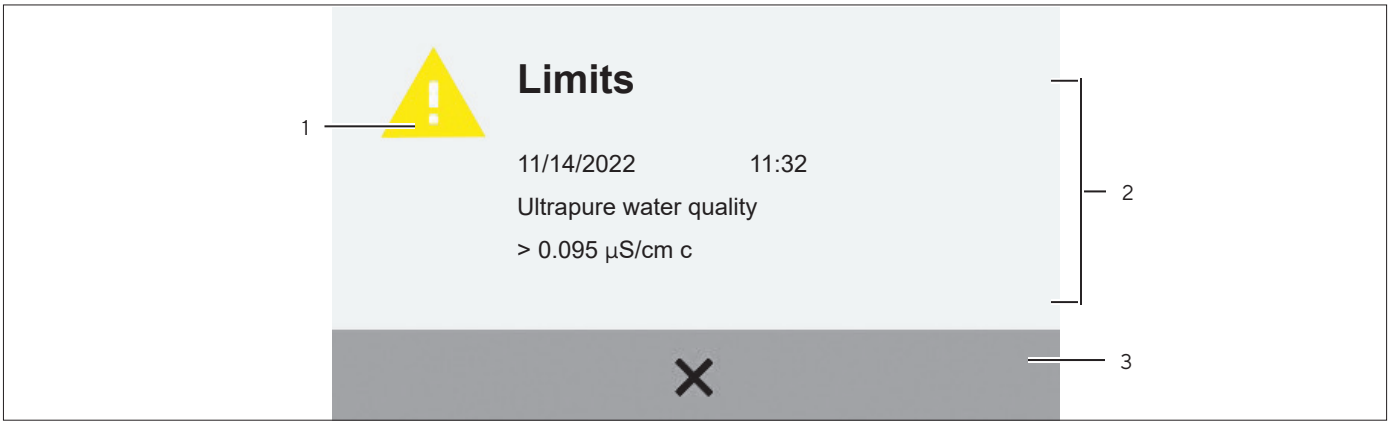


Fig. 9: Warning message (Example)

Pos.	Symbol	Name	Description
1		Message symbol	Indicates which type of message is present: – Red symbol: Error message – Yellow symbol: Warning message – Gray symbol: Status message (info)
2		Message	Provides information about the message: – Error number or short description of a warning or status message – Date and time of the occurrence – Message details
3		Acknowledge	Acknowledges the message.

4.4 Messages in Dispensing Mode

If several messages are active, the message list can be called up in the dispensing mode (see Chapter "4.5 Message List," page 19). The message list only appears when several messages are active and at least one message **cannot** be displayed in the display for the conductivity or temperature of the water. If only one message is active, the message is opened directly instead of the message list.

If an error message is active, **no** dispensing is possible. The three dispense buttons can be pressed, but when the user tries to dispense, the error message appears again.

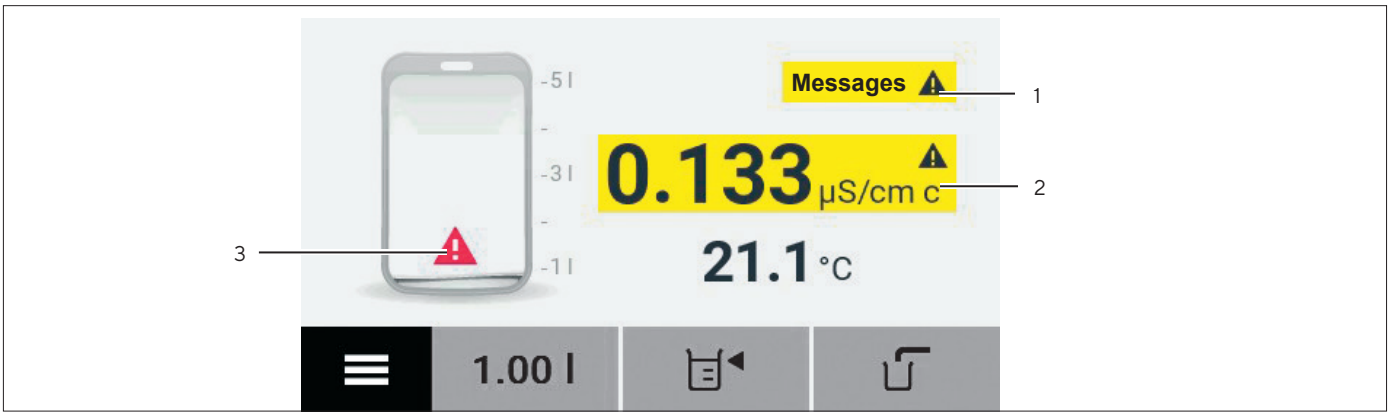


Fig. 10: Message display in the dispensing mode (example)

Pos.	Symbol	Name	Description
1	Messages ⚠	Message list	Indicates that there is a message and opens the message list: – Red symbol: Error message – Yellow symbol: Warning message – Gray symbol: Status message
2	⚠	Value message	Indicates that there is a message about a value and opens the message list: – Red symbol: Error message – Yellow symbol: Warning message
3	⚠	Bag fill level message	Only for Arium® Mini Plus and Arium® Mini: – Indicates the fill level of the bag: – Red symbol: The bag is empty. Water dispense is **not** possible. – Yellow symbol: Only a little water can be dispensed.

4.5 Message List

All active messages can be viewed in the message list.

The messages in the message list are sorted according to priority. Error messages appear at the top. Within the same priority level, the messages are sorted according to date and time.

Messages **cannot** be deleted manually. They remain in the message list and will be shown on the display until their cause has been corrected. The device detects if the cause of a message has been corrected and automatically deletes the message from the message list and the display.

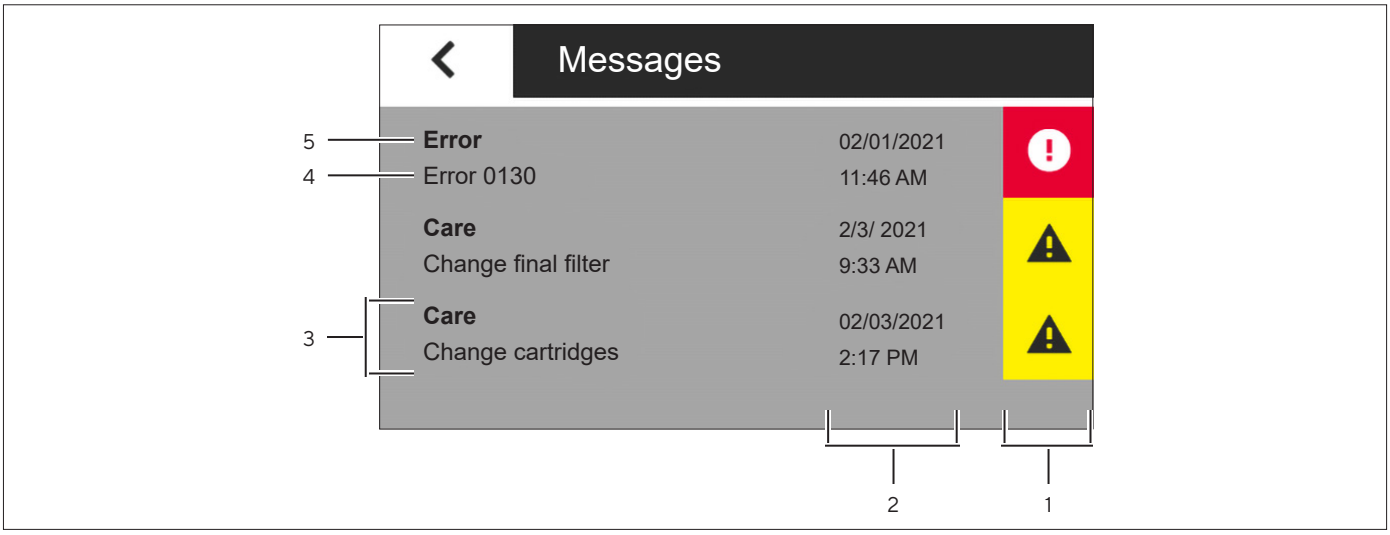


Fig. 11: Message list (example)

Pos.	Symbol	Name	Description
1		Message symbol	Indicates which type of message is present: – Red symbol: Error Message – Yellow symbol: Warning Message – Gray symbol: Status message
2		Occurrence of the message	Displays the date and time when the message occurred.
3		Message	Displays and opens the message.
4		Brief description	Displays the error number or a short description of the message.
5		Message category	Displays the message category: – Error: Contact Sartorius Service. – Care: Replace the consumable. – Service: Contact Sartorius Service.

4.6 Numeric Keypad

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

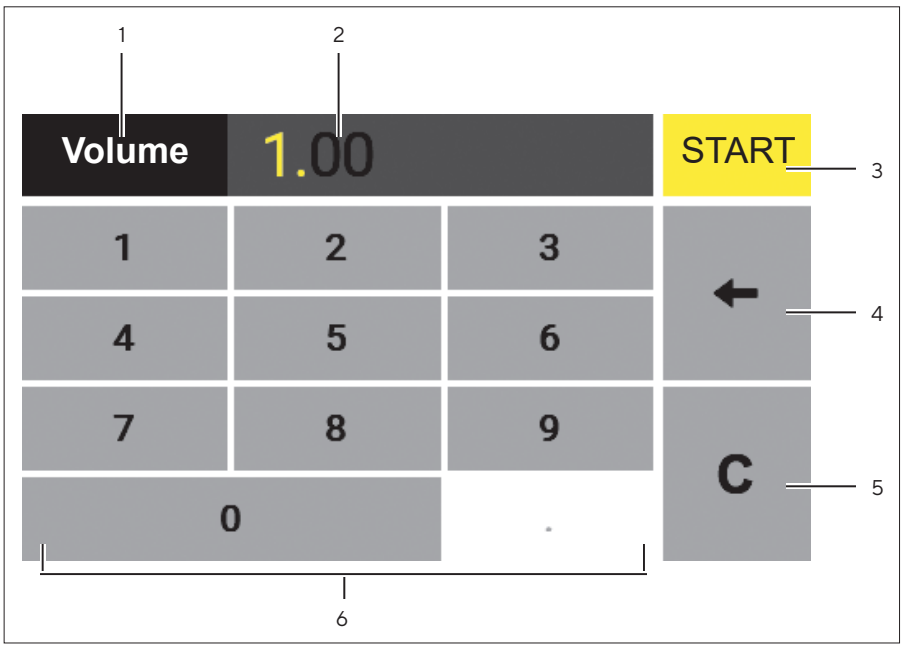


Fig. 12: Numeric keypad (example: Time input)

Pos.	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	START	Confirmation	Adopts the entered digit sequence and returns to the menu or to dispense mode.
4	←	Correction	Deletes the last digit entered.
5	C	Delete	Deletes all digits entered.
6		Numeric Keypad	Transfers numerical values to the dialog box.

Tip

When entering numeric values, it is only ever possible to select figures that are permitted for the value.
Example: Entering a dispensing volume of more than 5 liters is **not** possible. The number fields 6 to 9 are therefore inactive for this entry.

▶ Pay attention to the validity of the numeric values.

4.7 Navigating the Menus

A display with touch function is provided for operating the device.
If multiple menu items are available, you can use the touch screen to scroll up and down in order to select the desired entry.

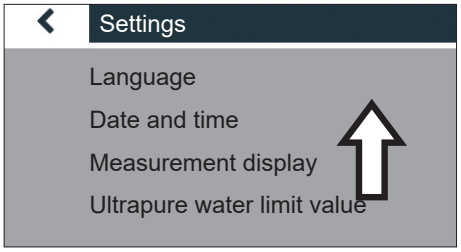
NOTICE

Sharp or pointed instruments such as ballpoint pens can damage the device!

Using unsuitable objects on the touch screen can damage it.

- ▶ The touch screen should only be operated by lightly pressing it using the tips of your fingers.
- ▶ The touch screen can also be operated while wearing laboratory gloves.

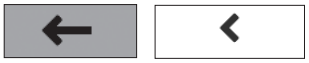
Procedure



- ▶ 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: Press the desired menu item.

- ▶ To confirm a selection: Press the [Confirmation] button.

- ▶ To cancel a process and return to the previous display: Press the [Cancel] button.



- ▶ To switch to the next highest menu level or to go back to the previous dialog box: Press the [Back] button.

- ▶ To go to manual value entry via the numeric keypad: Press the [Enter] button.

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

- ▶ To start a procedure: Press the [START] button.

- ▶ To abort a process: Press the [STOP] button.

4.8 Menu Structure

▶ Navigating the menus (see Chapter 4.7, page 21).

Menu	Menu	Submenu	Description
 Standby			Starts standby mode.
 Information	Device Information		Shows all the features of the device, e.g. the model and the serial number.
	Measured values		Displays the current water quality from the ultrapure water stage and the pre-stage.
	Service information		Displays the Sartorius contact details and the next maintenance date.
	Reminder		Displays the next interval for replacing components, e.g. bag, pretreatment cartridge.
 Settings	Language		Changes the language of the operating interface.
	Date and time		Changes the date and time.
	Measurement display		Changes the units of the display for water quality and water temperature.
	Ultrapure water limit value		Specifies a limit value for ultrapure water quality.
	Final filter reminder		Activates/deactivates the reminder for the next required final filter replacement. Allows for a selection of final filter types.
	Acoustic signals	Key beeps	Activates/deactivates beeps when pressing a button.
		Warning	Activates/deactivates persistent beeps for warnings.
		Error	Activates/deactivates beeps for error messages.
		Confirmation	Activates/deactivates beeps for expired waiting times.
	Display brightness		Changes the brightness of the display.
	Volume adjustment		Readjusts the flow sensor of the device.
	Service mode		Only accessible to the Sartorius Service. Password-protected.
	Reset settings		Resets the device to default settings.

Menu	Menu	Submenu	Description
 Dispense			Opens the dispensing screen.
 Care	Reminder		Shows when consumables next need to be replaced.
	Replace consumables	Bag	Starts a bag replacement (only for Arium® Mini Plus and Arium® Mini).
		Pretreatment cartridge	Starts a replacement of the pretreatment cartridge (only Arium® Mini Plus).
		Ultrapure water cartridge	Starts a replacement of the ultrapure water cartridge.
		UV lamp	Starts a replacement of the UV lamp.
		Sterile filter / ultrafilter	Starts a replacement of the sterile filter or ultrafilter.
	Depressurization		Starts reducing the pressure in the device.
	Venting		Starts a manual rinsing process.
 Fill bag			Starts a manual filling of the bag (only with Arium® Mini).

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, as per ISO standard
Time format	24 h*	24-hour mode
	12 h (a.m./p.m.)	12-hour mode
Displayed values (water quality)	µS/cm c*	Displays the water quality on the dispense screen in µS/cm and compensates to 25°C.
	µS/cm	Displays the water quality on the dispense screen in µS/cm, as well as the water temperature.
	MΩcm c	Displays the water quality on the dispense screen in MΩcm and compensates to 25°C.
	MΩcm	Displays the water quality on the dispense screen in MΩcm, as well as the water temperature.
Displayed values (temperature)	°C	Displays the water temperature on the dispense screen in degrees Celsius.
	°F	Displays the water temperature on the dispense screen in degrees Fahrenheit.
	Off*	Deactivates the water temperature display (can only be selected if the water quality displayed is compensated to 25 °C).
Ultrapure water limit value (activation)	On*	Activates the limit value for the water quality. If the limit value is exceeded during dispensing, a warning message appears. Dispense is possible.
	Off	Deactivates the limit value for the water quality.
Final filter reminder	Active*	Activates/deactivates the reminder for the final filter replacement (see Chapter 8.6, page 63).
	Inactive	
	Sterile filter*	Is used to select the final filter type.
	Ultrafilter	
	Reminder [weeks]	Defines the time interval for the reminder. Set to 4 weeks by default.

Parameters	Setting values	Explanation
Lock dispense	On	Activates the lock dispense. If the limit value is exceeded during dispensing, an error message appears. Dispense is **not** possible. This setting is recommended for particularly critical applications.
	Off*	Deactivates the lock dispense.
Acoustic signals		
Key beeps	On	Activates/deactivates short beeps when pressing a button.
	Off*	
Warning	On*	Activates/deactivates the persistent beep when a warning message appears, until the message is confirmed.
	Off	
Error	On*	Activates/deactivates the persistent beep when an error message appears, until the message is confirmed. Does **not** deactivate the error signal if there is a leak.
	Off	
Confirmation	On*	Activates/deactivates the longer beep at the end of time sequences, e.g. after a 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 7.7, page 52.
Reset settings	Yes, reset	Resets all system settings to the default setting, e.g. the ultrapure water limit value and the displayed values. Does **not** reset the data for the reminders to replace consumables.
	No	Cancels the resetting of the settings.

* Default settings

5 Installation

5.1 Equipment Supplied

	Quantity		
	Arium® Mini	Arium® Mini Plus	Arium® Mini Essential
Device, bench-top system model	1	1	1
Inlet water tube: ¼" (outer diameter, length 2.40 m) with reducing connector ⅜" to ¼" (transition adapter) and tube (⅜" outer diameter, length 0.05 m)	–	1	1
Waste water tube: ⅜" outer diameter, length 2.40 m	1	1	-
Sampling tube: ¼" outer diameter, length 2.40 m	1	1	1
Tube adapter for inlet water with integrated sieve: ½" internal thread, ⅜" outer diameter	–	1	1
Tube adapter for inlet water with integrated sieve: G ¾" (internal thread, ⅜" outer diameter) with thread adapter G ¾" to ¼"	–	1	1
Bag outlet tube: ¼" outer diameter, length 1.50 m; with shut-off valve and tube (¼" outer diameter, length 0.10 m)	1	1	-
Tank filling tube: ¼" outer diameter, length 2.40 m	1	–	-
Tubing release tool	1	1	1
Power supply unit with country-specific power cable	1	1	1
Operating instructions	1	1	1
QA certificate	1	1	1

Upon delivery, the following parts are located behind the left side cover of the device:

- Tubing
- Tubing adapter
- Hose release tool
- Power cord

Consumables

The consumables are **not** included in the scope of delivery:

- Pretreatment cartridge
- Ultrapure water cartridge (Scientific Pack)
- Bag
- Final filter

5.2 Prerequisites for Installation at the Installation Location

Procedure

▶ Make sure that the following conditions are met at the place of installation:

Requirement	Features
Ambient conditions	– Suitability tested (ambient conditions, see Chapter 14.2, page 76; electromagnetic compatibility, see Chapter 14.4, page 77)
Footprint	– Stable and level surface – Sufficient space for the device (device space requirements, see Chapter "14.7 Device Properties," page 80) – Sufficient load capacity for the device, including when it has been filled (device weight, see Chapter "14.7 Device Properties," page 80)
Access to utilities	– Access to utilities is a maximum of 2 meters: – Feed water supply – Power outlet – Pressureless drain
Feed water quality	– Suitability tested (see Chapter "14.6 Feed Water Quality," page 79)

5.3 Unpacking and Setting up the Device

We recommend that installation of the device be carried out by Sartorius Service. Contact Sartorius Service in this regard.

⚠ CAUTION

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.

⚠ CAUTION

Danger of fire or explosion!

The device contains components that can ignite highly inflammable or combustible materials.

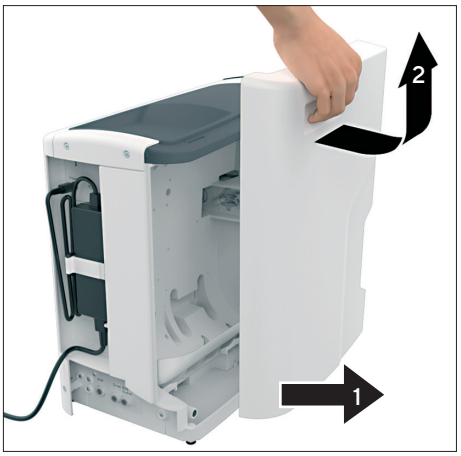
▶ Do **not** operate the device in the vicinity of such substances.

Procedure

- If the device is stored temporarily: Observe the storage information (see Chapter "10.1 Storage," page 72).
- **NOTICE** Risk of device damage due to improper transport! If the device is lifted by loose components, it could fall and suffer significant damage.
  - **Do not** lift the device by the side covers to transport.
  - Hold the device underneath the display on the front side and by the recess for the power supply unit on the back side and lift it carefully.
- Take the device out of the packaging and set it up at the intended installation site.

5.3.1 Removing the Left Side Cover

Procedure



- Reach behind the side cover and pull it to one side (1).
- Pull the side cover upwards and remove (2).

5.3.2 Removing Parts

Procedure

- Remove the following parts from inside the device:
  - Tubing
  - Tube adapter
  - Tubing release tool
  - Power cable

6 Startup

We recommend having the initial startup of the device carried out by Sartorius Service. Please contact Sartorius Service in this regard.

The startup steps required are shown on the device display.

6.1 Connecting the AC Adapter

⚠ CAUTION

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.
- ▶ Do **not** replace the removable power cable with a power cable with insufficient nominal value or of the wrong type.
- ▶ **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.

NOTICE

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 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. To do this, pull the Velcro strip through the eyelet as shown in the figure.
- ▶ Lay the protruding power cord 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.

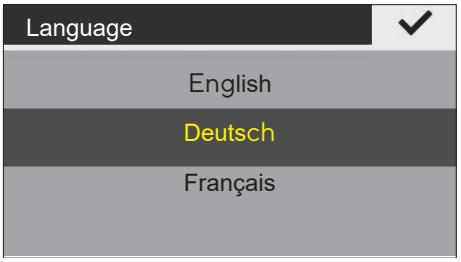
6.2 Configuring Device Settings (Startup)

6.2.1 Setting the Language

Once the system check is complete, the “Language” dialog box appears. The wizard automatically carries out all of the startup steps. Startup of the device takes up to 120 minutes and **cannot** be interrupted.

All the system settings (e.g. date, time, displayed values) configured during startup can be changed later in the “Settings” menu (see Chapter “7.6 Changing System Settings,” page 51).

Procedure



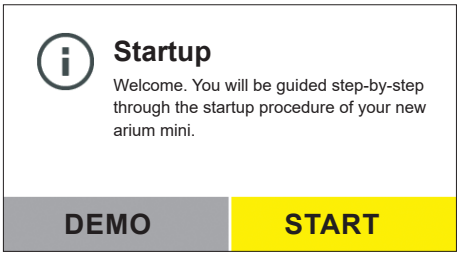
- ▶ Select the language for the display text. The factory setting is English.
- ▶ Confirm the selection with the [Confirmation] button.
- ▷ The “Startup” dialog box is displayed.

6.2.2 Launching Startup Mode

Requirements

The “Startup” dialog box is displayed.

Procedure



- ▶ To launch startup mode: Press the [START] button.
- ▶ To launch demo mode: Press the [DEMO] button. Demo mode is only accessible by Sartorius employees and is password-protected.

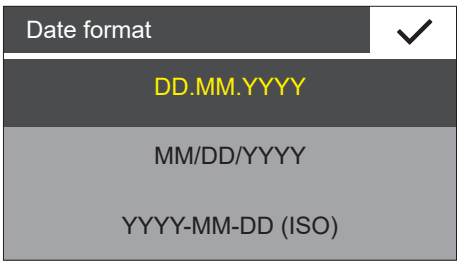
6.2.3 Setting the Date and Time

Requirements

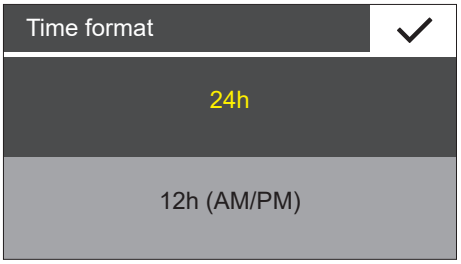
The “Date and time” dialog box is displayed.

Procedure

▶ Press the [Input] button.



▶ Select the desired date format (for setting options see Chapter “4.9 Parameters of the “Settings” Menu,” page 24).
▶ Confirm the selection with the [Confirmation] button.
▶ Type the date into the entry field.
▶ Confirm the input with the [Confirmation] button.



▶ Select the desired time format (for Setting options, see Chapter “4.9 Parameters of the “Settings” Menu,” page 24).
▶ Confirm the selection.
▶ Type the time into the entry field.
▶ Confirm the input with the [Confirmation] button.

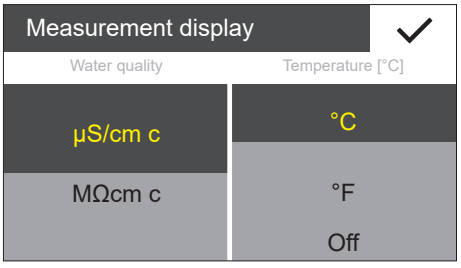
6.2.4 Setting the Displayed Values

Requirements

The “Displayed values” dialog box appears.

Procedure

▶ Press the [Input] button.



▶ Set the desired format for the water quality (for Settings options, see Chapter “4.9 Parameters of the “Settings” Menu,” page 24).
▶ Confirm the selection with the [Confirmation] button.
▶ Set the desired format for the temperature (for Settings options, see Chapter “4.9 Parameters of the “Settings” Menu,” page 24).
▶ Confirm the input with the [Confirmation] button.

6.2.5 Concluding Device Settings (Startup)

Requirements

The “Remove cover” dialog box appears. Depending on the type of device, a pretreatment cartridge and/or cleaning cartridge needs to be inserted.

Procedure

▶ Insert the required cartridge (see Chapter “6.3 Inserting Pretreatment Cartridge (only Arium® Mini Plus),” page 32 or Chapter “6.4 Inserting Ultrapure Water Cartridge,” page 33).

6.3 Inserting Pretreatment Cartridge (only Arium® Mini Plus)

A pretreatment cartridge must be inserted in the device. The cartridge holder for the pretreatment cartridge is marked “R”.

Procedure

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

▶ **NOTICE** Equipment damage due to impurities! If dirt or foreign objects enter the ultrapure water circulation, individual device components can become clogged or wear out faster. Do not **touch** the connections of the pretreatment cartridge. This will prevent impurities from getting into the device.
▶ Remove the plugs from all three connections of the pretreatment cartridge.
▶ Hold the pretreatment cartridge in the upper area and insert it into the holder marked “R”. To do this, push the pretreatment cartridge straight into the guide rails of the cartridge holder.

▶ Press the pretreatment 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 pretreatment cartridge has been installed securely by turning it slightly.
▶ Confirm the insertion of the pretreatment cartridge with the [OK] button.
▷ The “Insert cartridge” dialog box (Step 2) appears. An ultrapure water cartridge must be inserted (see Chapter 6.4, page 33).

6.4 Inserting Ultrapure Water Cartridge

An ultrapure water cartridge must be inserted in the device. The cartridge holder for the ultrapure water cartridge is marked “L”.

Procedure

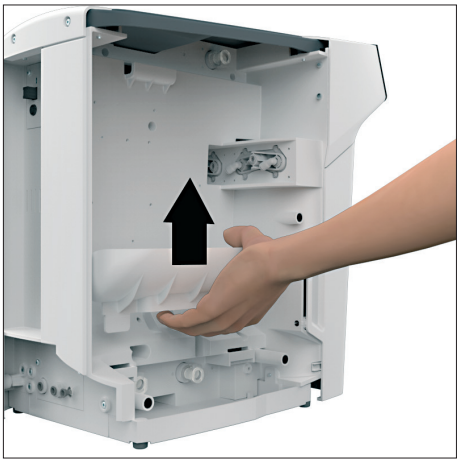
- ▶ Remove the front cover.
- ▶ Confirm removal of the cover with the [OK] button.
- ▷ The dialog box “Insert cartridge” appears.

- ▶ **NOTICE** Equipment damage due to impurities! If dirt or foreign objects enter the ultrapure water circulation, individual device components can become clogged or wear out faster. Do **not** touch the connections of the ultrapure water cartridge. This will prevent impurities from getting into the device.
- ▶ Remove the plugs from the two external ultrapure water cartridge connections.
- ▶ Hold the ultrapure water cartridge in the upper area and insert it into the holder marked “L”. To do this, push the pretreatment cartridge straight into the guide rails of the cartridge holder.

- ▶ Press the ultrapure water 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 ultrapure water cartridge has been installed securely by turning it slightly.
- ▶ Confirm the insertion of the ultrapure water cartridge with the [OK] button.
- ▷ The dialog box “Attaching the cover” appears.
- ▶ Put the front cover on the device.
- ▶ Confirm that the cover has been put on with the [OK] button.
- ▷ If an Arium® Mini Plus or Arium® Mini is used: The dialog box “Insert bag” appears. A bag must be inserted (see Chapter 6.5, page 34).
- ▷ If an Arium® Mini Plus is used: The dialog box “Connect tubing” appears. Feed water tubing must be connected (see Chapter 6.6.1, page 35).

6.5 Inserting Bag (only Arium® Mini Plus or Arium® Mini)

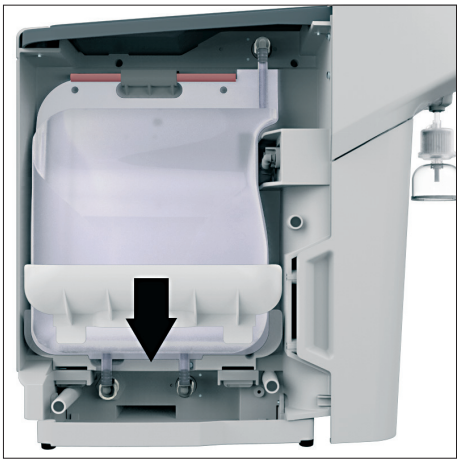
Procedure



- ▶ Remove the left side cover (see Chapter “5.3.1 Removing the Left Side Cover,” page 28).
- ▶ To make it easier to reach the lower connections on the device: Pull the tray up and remove it from the device.

- ▶ **NOTICE** Danger of damage to the device from improper handling! The bag may be damaged if forced into the guide rails: The bag can be damaged. 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 completely engaged in 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.



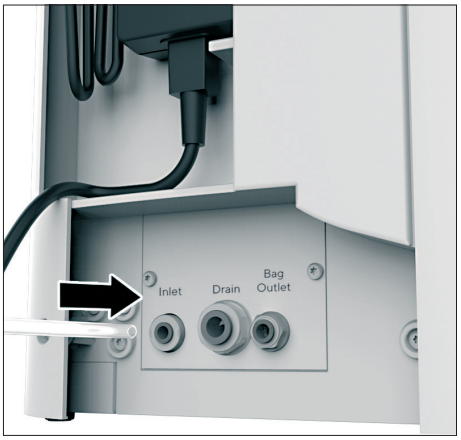
- ▶ Reinsert the tray. Make sure **not** to damage the bag.
- ▶ Reattach the left side cover of the device.
- ▶ Confirm the insertion of the bag with the [OK] button.
- ▷ The dialog box “Connect tubing” appears. Tubing must be connected (see Chapter 6.6, page 35).

6.6 Connecting Tubing

6.6.1 Connecting Feed Water Tubing (only Arium® Mini Plus or Arium® Mini)

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.
- ▶ **NOTICE** Water leakage due to excessive inlet pressure! If the water pressure is too high: Water can leak out of the device. Check the water pressure inlet specification (see Chapter “14.6 Feed Water Quality,” page 79).
  - ▶ If required: Reduce the inlet pressure.
- ▶ **NOTICE** Water leakage can occur if feed water tubing is not watertight! If the feed water tubing is deformed or **not** inserted deep enough: Water can leak out. After startup, make sure that all external water connections are leak proof.
- ▶ Connect the feed water tubing to the feed water supply.

6.6.2 Connecting Tank Filling Tubing (only Arium® Mini)

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

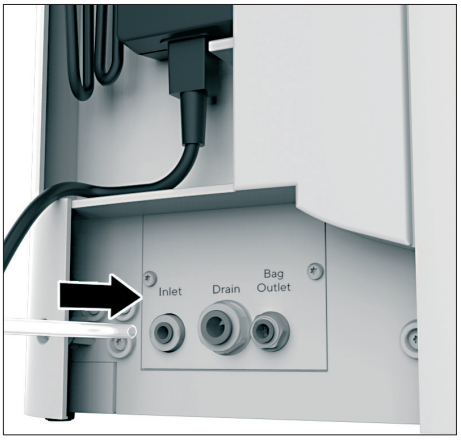
NOTICE

Contamination of tank filling tubing!

If the tank filling tubing is **improperly** stored: The tank filling tubing can be contaminated. Sufficient quality of the pure water that 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 device: Remove the tank filling tubing and keep it in a clean place.
- If the tank filling tubing is contaminated:
  - Replace the bag (see Chapter 8.5.2, page 56).
  - Replace the tank filling tubing.
- Use the tank filling tubing exclusively for filling.

Procedure



- Connect the tank filling tubing to the connection labeled “Inlet” on the rear of the device.
- **NOTICE** Water leakage due to excessive inlet pressure! If the water pressure is too high: Water can leak out of the device. Check the water pressure inlet specification (see Chapter “14.6 Feed Water Quality,” page 79).
- **NOTICE** Water leakage can occur if feed water tubing is not watertight! If the feed water tubing is deformed or **not** inserted deep enough: Water can leak out. After startup, make sure that all external water connections are leak proof.

6.6.3 Connecting Drain Water Tubing (only Arium® Mini Plus or Arium® Mini)

NOTICE

Bag can burst due to excess pressure!

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.

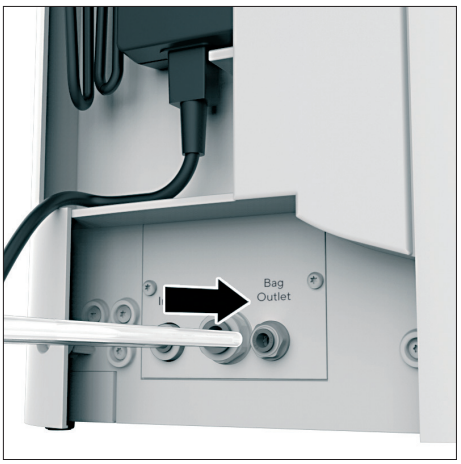
Procedure

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

▶ **NOTICE** Water can leak out if drain water hose detaches! Water can escape from the drain water tubing during operation. Attach the drain water tubing to the outlet.

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

6.6.4 Connecting the Tank Outlet Tubing (only Arium® Mini Plus or Arium® Mini)



Procedure

- ▶ Connect the long tank outlet tubing to the connector labeled "Bag Outlet" on the rear of the device.
- ▶ Close the ball cock.
- ▷ Later on in the process, the wizard will display a prompt for opening and closing the ball valve.

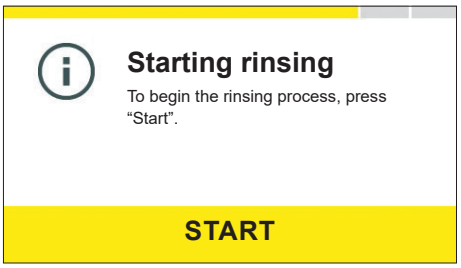
6.7 Rinsing Pretreatment Cartridge (only Arium® Mini Plus)

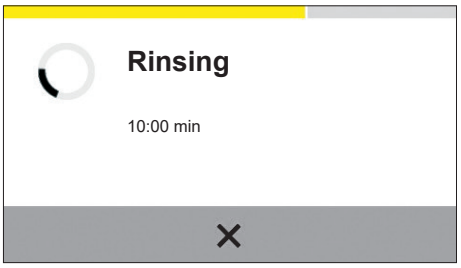
Requirements

The “Prepare rinsing” dialog box is displayed.

Procedure

- ▶ Open the ball valve on the bag outlet tube.
- ▶ Confirm the opening of the ball valve with the [OK] button.
- ▶ Guide the bag outlet tube towards the drain for rinsing. Water may leak out of the tube during rinsing.
- ▷ The “Start rinsing” dialog box is displayed.
- ▶ Start the rinsing process of the pretreatment cartridge. To do this, press the [START] button.





- ▷ During the rinsing process, the remaining rinse time is displayed in minutes.
- ▶ To interrupt the rinsing process:
  - ▶ Press the [Cancel] button.
  - ▷ The “Start rinsing” dialog box is displayed again.
- ▶ To resume the rinsing process after an interruption: Press the [START] button.

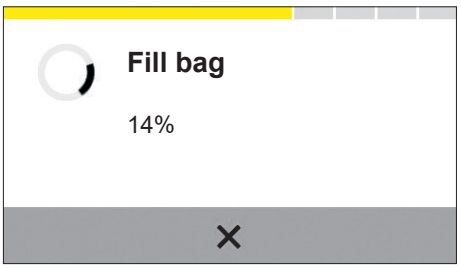
- ▶ When the rinsing process is complete:
  - ▷ The “Close bag outlet” dialog box is displayed.
  - ▶ Close the ball valve on the bag outlet tube.
- ▶ Confirm the closing of the bag outlet. To do this, press the [OK] button.

6.8 Rinsing the Ultrapure Water Cartridge

6.8.1 Filling of the Bag (only Arium® Mini Plus and Arium® Mini)

Automatic Filling (Arium® Mini Plus)

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 (Tank Fill Level) or empties during the rinsing process, the bag is filled automatically.
▷ When filling is complete, the dialog box “Prepare rinsing” appears.

Manually fill the bag (only for Arium® Mini)

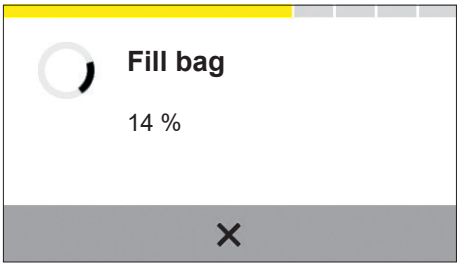
NOTICE

Air ingress may interfere with device functions!

If there is **not** enough water available during the filling process, air may be drawn in. Air in the system can interfere with the functioning of the device.

▶ Prepare a vessel containing a sufficient quantity of pretreated water (at least 5 liters).

Procedure



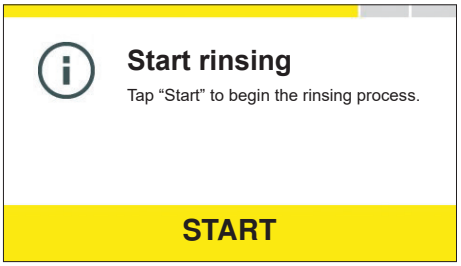
▶ Place the tank filling tube into the container and secure it to ensure that it is fully submerged throughout the filling process.
▶ Press the [START] button.
▷ The bag is filled with pretreated water. The progress is displayed as a percentage.
▶ **NOTICE** Air ingress may interfere with device functions! If there is **not** enough water available, cancel the filling process early and fill the vessel with pretreated water.
▶ To cancel the filling process early:
  ▶ Press the [Cancel] button.
  ▷ The “Fill bag” dialog box appears.
▶ To resume the filling process after an interruption: Press the [START] button.
▷ When the filling process is complete, the “Prepare rinsing” dialog box appears. It is necessary to connect a sampling tube (see Chapter “6.8.2 Performing a Rinse Cycle,” page 41).

6.8.2 Performing a Rinse Cycle

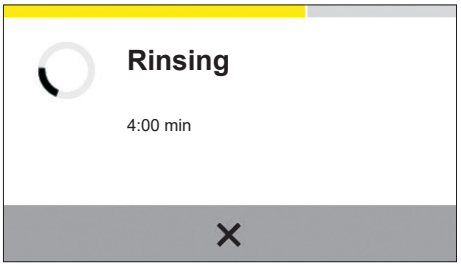
During rinsing, the device fills and rinses the ultrapure water cartridge. Air is removed from the ultrapure water circulation in the process.

Procedure

- ▶ 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).



- ▶ Start the rinse cycle for the ultrapure water cartridge. To do this, tap the [START] button.

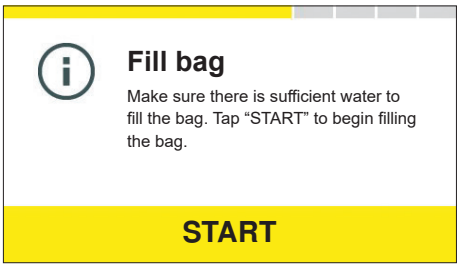


- ▷ During the rinse cycle, the remaining rinse time is displayed in minutes.
- ▶ To interrupt the rinse cycle:
  - ▶ Press the [Cancel] button.
  - ▷ The dialog box “Start rinsing” appears again.
- ▶ To resume the rinse cycle after an interruption: Tap the [START] button.
- ▷ The rinse cycle is performed.

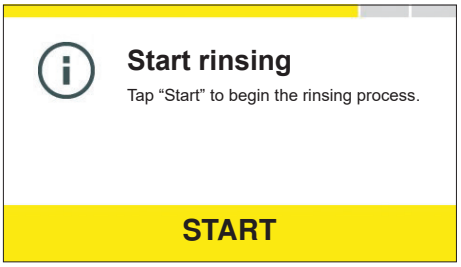
6.8.3 Re-filling the Bag During the Rinse Cycle (only Arium® Mini)

If the bag does **not** contain enough water or empties during the rinse cycle: The bag must be refilled.

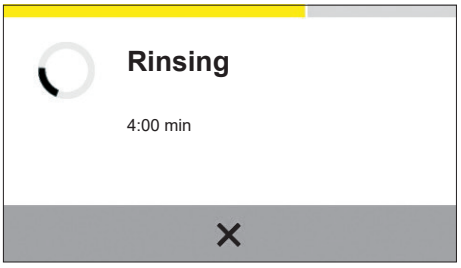
Procedure



▶ The dialog box “Fill bag” appears: Fill the bag (see Chapter 6.8, page 40).



▶ Start the rinse cycle for the ultrapure water cartridge. To do this, tap the [START] button.



▷ During the rinse cycle, the remaining rinse time is displayed in minutes.
▶ To interrupt the rinse cycle:
  ▶ Press the [Cancel] button.
  ▷ The dialog box “Start rinsing” appears again.
▶ To resume the rinse cycle after an interruption: Tap the [START] button.
▷ The rinse cycle is performed.

6.8.4 Completing the Rinsing Process

Procedure

▶ Once the rinsing process is complete and the “End rinsing” dialog box appears:
  ▶ Remove the sampling tubing. To do this, push the dark ring of the quick connector upwards using the tubing release tool and pull out the sampling tube downwards.
  ▶ Confirm the rinsing process via the [OK] button.
▷ The “Connect filter” dialog box appears. A final filter needs to be connected (see Chapter 6.9, page 43).

6.9 Connecting the Final Filter

Requirements

The “Connect filter” dialog box appears on the display.

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.

6.10 Rinsing the Final Filter

Requirements

The device is now in dispensing mode.

Procedure

- ▶ Place a vessel under the final filter.
- ▶ If a sterile filter is used as the final filter: Open the final filter’s vent valve.
- ▶ Remove the protective cap from the bell assembly.
- ▶ If a sterile filter is used as the final filter: Remove at least 5 liters of water. This will rinse the final filter.
- ▶ If an ultrafilter is used as a final filter: Remove at least 20 liters of water. This will rinse the final filter.
- ▶ Only Arium® Mini Plus or Arium® Mini: If the bag does **not** contain enough water or empties during the rinse cycle:
  - ▶ Wait until the bag has filled to a sufficient level.
  - ▶ Complete the rinse cycle.
- ▶ 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 Switching the Device On and Off

Procedure

▶ To switch the device on: Connect the device to the power supply.
▷ The device starts and performs a system check.
▶ To switch the device off: Disconnect the device from the power supply.

Tip

If the device is switched off in normal operation, e.g., in the evening or at weekends, then consistent ultrapure water quality is no longer guaranteed. To ensure a consistent ultrapure water quality, we recommend activating the standby mode (see Chapter "7.5 Activating or Deactivating Standby Mode," page 51).

7.2 Dispensing Ultrapure Water

7.2.1 Preparing to Dispense Ultrapure Water

The ultrapure water can be dispensed as follows:

– Manual dispensing
– Volume input

Large volumes of ultrapure water can be dispensed via the dispense tube. To do this, the final filter must be removed.

Requirements

– The device is ready for operation (see "6 Startup", page 29).
– The device is in dispensing mode.

NOTICE

Water leakage due to vessel overflow!

▶ Do not allow water to be dispensed unattended. The vessel being filled may overflow.
▶ To avoid dispensing volumes that are too large: Dispense the ultrapure water in a volume-controlled manner (see Chapter 7.2.3, page 46).

Procedure

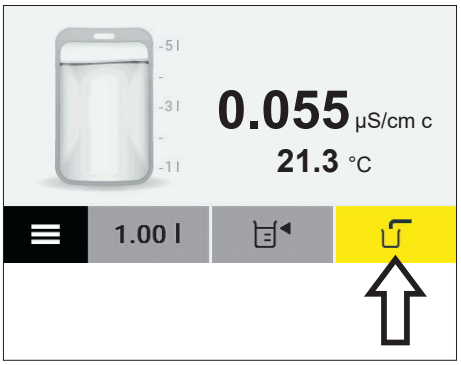
- ▶ If dispensing is going to take place via the final filter: Remove the protective cap on the bell assembly of the final filter.
- ▶ If dispensing is going to take place via the dispense tube:
  - ▶ Remove the final filter (see Chapter "8.5.6 Changing Final Filter," page 62).
  - ▶ Connect the dispensing tube (for connection, see Chapter "6.8.2 Performing a Rinse Cycle," page 41).
- ▶ Place a suitable vessel under the water outlet.
- ▷ The device is ready to dispense ultrapure water.

7.2.2 Dispensing Ultrapure Water Manually

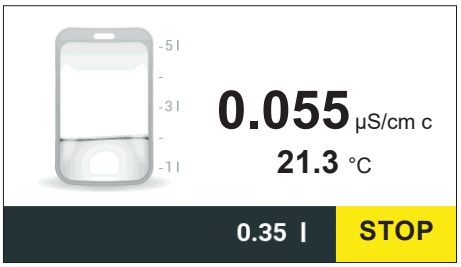
With manual dispensing, the ultrapure water is dispensed until the dispensing is stopped manually.

Only Arium® Mini Plus and Arium® Mini: If the fill level of the bag is depleted: Dispensing will end automatically.

Procedure



- ▶ Press the [Manual dispense] symbol.
- ▷ The dispensing starts. The volumes dispensed will be displayed in increments of 0.05 liters (50 ml).
- ▷ The ultrapure water runs into the container with a maximum flow speed of approx. 1.0 l/min.
- ▷ If an Arium® Mini Plus or Arium® Mini is used: The fill level of the bag will be updated on the display during the dispensing.

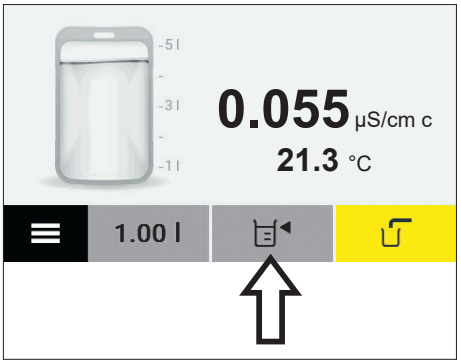


- ▶ To stop the dispensing: Press the [STOP] button.
- ▶ When the dispensing is complete: Attach the protective cap to the bell assembly of the final filter.

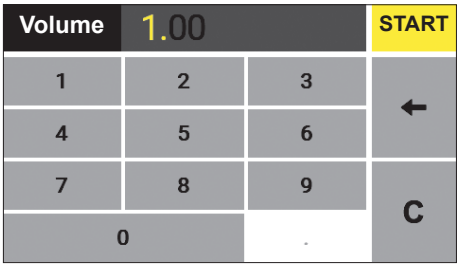
7.2.3 Dispensing Ultrapure Water with Volume-control

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

Procedure

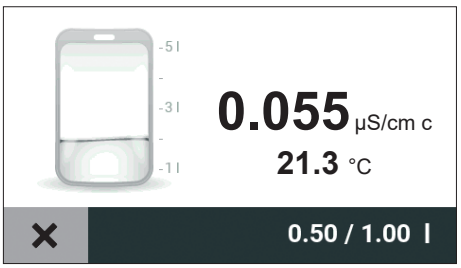


▶ Press the [Volume input] symbol.



▷ The numeric keypad for the volume input appears.
▶ Enter the desired dispensing volume in liters. When doing so, observe the requirements for the volume input:
- The minimum dispense volume is 0.05 liters (50 ml).
- The maximum dispense volume is 5.00 liters.
- Only volumes between 0.05 and 5.00 liters can be entered. Invalid numeric fields become inactive (white background).
- Only Arium® Mini Plus or Arium® Mini: If a higher dispense volume is entered than is available in the bag, the dispensing **cannot** be started. A message to this effect will be sent.

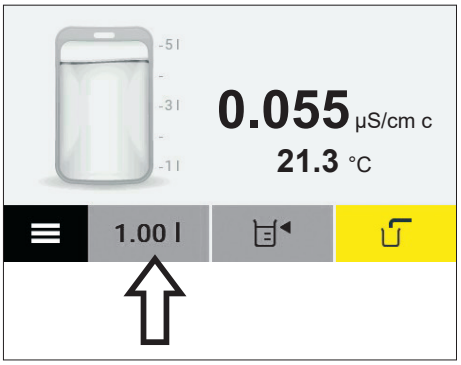
▷ The entered volume appears.
▶ Press the [START] button.
▷ The dispensing starts:
- The volumes dispensed will be displayed in increments of 0.05 liters (50 ml).
- The ultrapure water runs into the container with a maximum flow speed of approx. 1.0 l/min.
- If an Arium® Mini Plus or Arium® Mini is used: The fill level of the bag will be updated on the display during the dispensing.
- The dispensing stops automatically as soon as the selected dispensing volume has been reached.



▶ To cancel the dispensing prematurely: Press the [Cancel] button.

Using Volume-Controlled Dispensing

The last dispensing volumes selected will be saved automatically and displayed on the [Volume-controlled dispense] button on the dispense screen.



Procedure

- ▶ To start another dispensing process with the last dispensing volume selected: Press the [Volume-controlled dispense] button.
- ▷ The dispensing starts.
- ▶ When the dispensing is complete: Attach the protective cap to the bell assembly of the final filter.

7.2.4 Confirming Dispensing Cancellation

During each dispensing process, it is only possible to dispense as much water as is available in the bag.

Arium® Mini Plus

If the bag **no longer** contains sufficient water, the dispensing stops and the "Dispense canceled" dialog box appears.

Procedure

- ▶ Confirm the message with the [Confirmation] button.
- ▶ Wait until the bag has reached a sufficient filling level.
- ▶ Restart the dispensing process.

Arium® Mini

Procedure

- ▶ If bag does **not** contain sufficient water:
  - ▶ Fill the bag manually (see Chapter "7.4 Manually Fill the Bag (Only for Arium® Mini)," page 49).
  - ▶ The dispensing continues.

7.2.5 Ending the Dispensing via the Dispense Tube

Procedure

- ▶ If dispensing is being performed via the dispense tube:
  - ▶ Remove the dispense tube from the device (for removing the dispense tube, see Chapter "6.8.2 Performing a Rinse Cycle," page 41).
  - ▶ Connect the final filter (see Chapter "6.9 Connecting the Final Filter," page 43).

7.2.6 Dispensing Ultrapure Water From the Bag (Only With Arium® Mini Plus or Arium® Mini)

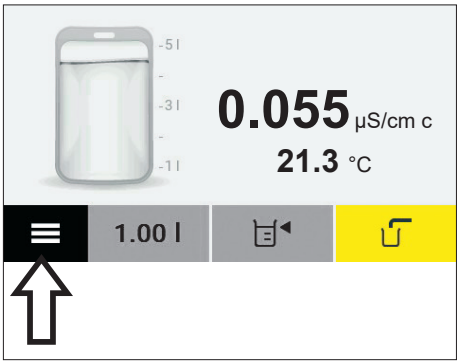
If the bag outlet tube is connected to the Bag outlet, ultrapure water can be manually dispensed directly from the bag. Dispensing is carried out exclusively in a depressurized state.

Procedure

- ▶ Place the bag outlet tube into a suitable container.
- ▶ Open the ball valve on the bag outlet tube.
- ▷ The ultrapure water runs out of the bag.
- ▶ When the dispensing is complete: Close the ball valve.

7.3 Opening the Menu

Procedure



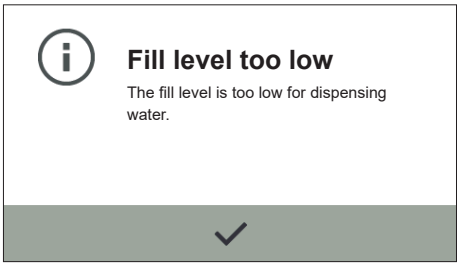
- ▶ To open the menu: In dispensing mode, press the [Menu] button. The following tasks can be carried out, e.g. manual bag filling (only Arium® Mini) or opening the “Care” menu.

7.4 Manually Fill the Bag (Only for Arium® Mini)

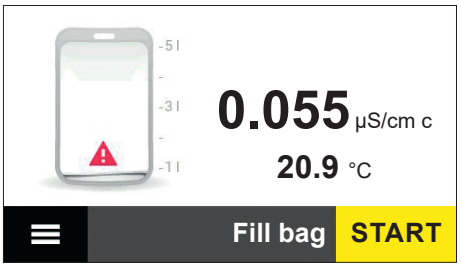
If the bag fill level of the device is depleted or is **no longer** sufficient for the desired dispense volume, the bag can be filled manually. There are various ways in which to begin manual filling of the bag.

7.4.1 Starting Manual Filling via the Wizard

Procedure



- ▶ If the fill level is too low:
  - ▷ The message “Fill level too low” appears.
  - ▶ Confirm the message with the [Confirmation] button.
  - ▷ The [Fill bag] display appears on the dispense screen.
  - ▶ Press the [START] button.



- ▶ If the bag is already empty prior to dispensing, e.g. due to manual dispensing of ultrapure water:
  - ▷ The [Fill bag] display appears on the dispense screen.
  - ▶ Press the [START] button.

7.4.2 Starting Manual Filling in Menu

If the bag contains water: Bag filling must be launched via the menu. To do so, proceed as follows:

NOTICE

Air ingress may interfere with device functions!

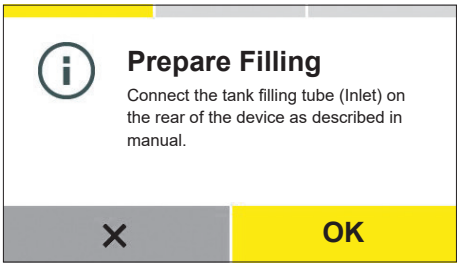
If there is **not** enough water available during the filling process: Air may be drawn in. Air in the system can interfere with the functioning of the device.

- ▶ Prepare a vessel containing a sufficient quantity of pretreated water (at least 5 liters).

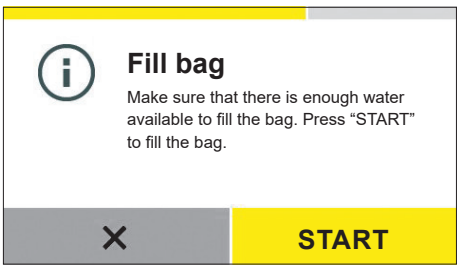
Procedure

- ▶ Press the [Menu] button.

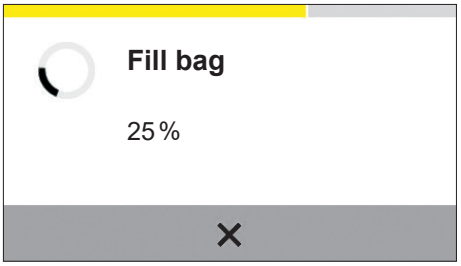
- ▶ Press the [Fill bag] button.



▷ The “Prepare filling” (step 1) dialog box appears.
▶ Check whether the tank filling tube is connected to the “Inlet” connection.
  ▶ If required: Connect the tank filling tube.
▶ **NOTICE** Contaminated tank filling tube may cause insufficient water quality! Check the tank filling tube for contamination.
  ▶ If required: Replace the tank filling tube and the bag.
▶ Press the [OK] button.



▷ The “Fill bag” (step 2) dialog box appears.
▶ Place the tank filling tube into the container and secure it to ensure that it is fully submerged throughout the filling process.
▶ Press the [START] button.



▷ The bag is filled with water. The progress is displayed as a percentage.
▶ **NOTICE** Air ingress may interfere with device functions! If there is **not** enough water available, cancel the filling process early and fill the vessel with pretreated water.
▶ To cancel the filling process early:
  ▶ Press the [Cancel] button.
  ▷ The “Fill bag” (step 2) dialog box appears.
▶ Carry out the filling procedure again as described above.
▷ When the filling procedure is complete, the “Filling finished” dialog box appears.
▶ Check whether the free end of the tank filling tube is stored securely.
  ▶ If required: Disconnect the tank filling tube from the “Inlet” connection on the rear of the device and store in a safe place.
▶ Confirm the filling process by pressing the [OK] button.
▷ The display changes to the dispensing screen.

7.5 Activating or Deactivating Standby Mode

If **no** water has been dispensed for an extended period, the device automatically switches to standby mode. This ensures economical and eco-friendly operation. In standby mode, the pre-stage is **no longer** active and the water in the ultrapure water stage circulates in intervals. Standby mode can also be activated manually.

If the device is manually switched to standby mode while the bag is being filled automatically, the user will be asked if they wish to proceed. The bag filling can be canceled directly, putting the device into standby mode. If the filling is continued, the device automatically switches to standby mode afterwards.

7.5.1 Automatic ECO Mode

As well as standby mode, the device also has an automatic ECO mode. One minute after the final procedure, recirculation of the ultrapure water stops and the display darkens. After a further 15 minutes without anyone touching the display, the device automatically switches to standby mode.

Procedure

- ▶ To activate standby mode: Press the [Standby] button.
- ▷ The display goes dark. The backlight on the [Standby] button stays visible.
- ▶ To deactivate standby mode: Press the [Standby] button.
- ▷ The start screen appears. Once the system start is complete, the display changes to the dispensing screen.

7.6 Changing System Settings

The system settings for the device, e.g., date, time, displayed values, can be changed in the “Settings” menu.

Procedure

- ▶ Press the [Menu] button.

- ▶ Press the [Settings] button.
- ▷ The “Settings” menu appears.
- ▶ Configure the desired settings (for possible settings, see the parameter list (see Chapter “4.9 Parameters of the “Settings” Menu,” page 24).

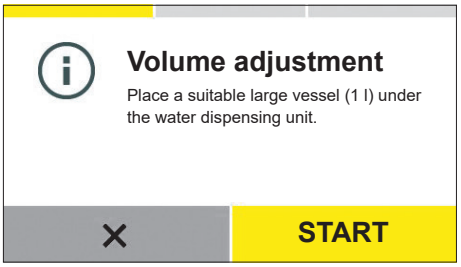
7.7 Performing a Volume Adjustment

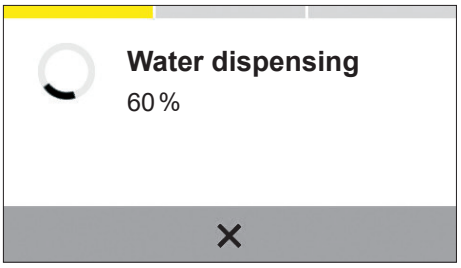
The flow sensor of the device can be readjusted to be able to dispense the most precise possible volume of ultrapure water.

A sample volume of around half a liter is dispensed for this purpose. The actual volume of the dispensed sample volume is measured and transmitted to the device. This sample volume is used as a reference for the volume dispensing.

Procedure

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





- ▷ The "Water dispensing" dialog box appears. The output progress is displayed as a percentage.
- ▷ Once 100 % has been reached, the dispensing process stops automatically.
- ▷ The "Water volume" dialog box appears. The liter value of the sample volume (output water volume) must be entered.

Using the Weight of the Sample Volume to Determine the Volume

If a graduated measuring beaker or cylinder is **not** available, the weight of the sample volume can be used as an alternative to determine the actual volume.

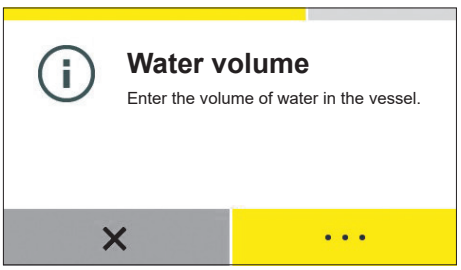
Procedure

- ▶ Determine the weight of the sample volume.
- ▶ Convert the weight of the sample volume into its value in liters (1 g ultrapure water is equivalent to 1 ml ultrapure water).

Enter the Sample Volume in Liters

Procedure

- ▶ Press the [Input] button.
- ▶ Enter the liter value of the sample volume.
- ▷ The "Adjustment finished" dialog box appears.
- ▶ Confirm the procedure with the [Confirmation] button.



8 Cleaning and Maintenance

8.1 Cleaning

8.1.1 Cleaning the Display

Procedure

- ▶ To **avoid** uncontrolled changes to the settings of the device: Activate standby mode (see Chapter 7.5, page 51).
- ▶ Wipe the display gently with a soft, dry cloth.
- ▶ Deactivate standby mode (see Chapter 7.5, page 51).

8.1.2 Cleaning the Device Housing

⚠ CAUTION

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 before cleaning.

NOTICE

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.

NOTICE

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 the power supply.
- ▶ Wipe the housing of the device with a damp cloth.
- ▶ If installed components must be cleaned: Remove the front cover and the left side cover and wipe down the installed components with a damp cloth.
- ▶ Dry the device with a soft cloth.

8.2 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.

It is advisable to replace different consumables in the same maintenance step. This saves time and water. We recommend that you make a sensible plan for replacing consumables.

Interval	Component	Task	Chapter, page
12 months	UV lamp (optional)	Changing the UV Bulb	8.5.5, page 59
Max. 6 months (depending on the volume of water dispensed)	Ultrapure water cartridge (Scientific Pack)	Replace ultrapure water cartridge	8.5.4, page 58
6 months (only Arium® Mini Plus or Arium® Mini)	Bag	Replacing the Bag	8.5.2, page 56
6 months (only Arium® Mini Plus)	Pretreatment cartridge	Replace the pretreatment cartridge	8.5.3, page 57
1 – 24 weeks (depending on the application)	Sterile filter (finalfilter)	Change final filter	8.5.6, page 62
1 – 13 weeks (depending on the application)	Ultrafilter (final filter)	Change final filter	8.5.6, page 62

8.3 Opening the “Care” Menu

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

Procedure

▶ Press the [Care] symbol in the menu.
▷ The “Care” menu appears, and tasks such as the following can be carried out: Display reminders, replace consumables.

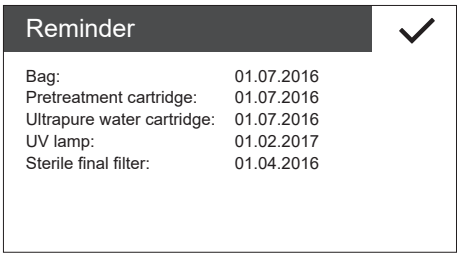
8.4 Displaying Reminders

Reminders to replace certain consumables are automatically displayed as warning messages (see Chapter 9.2, page 69). 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 of the next required replacement is displayed, e.g. for the bag, the cleaning cartridge or the UV lamp.



8.5 Replacing Consumables

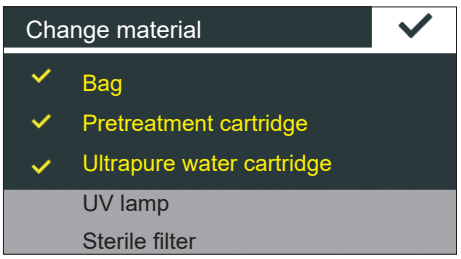
8.5.1 Selecting Consumables for Replacement

Consumable replacement must be set using the display. To do this, you must define which consumables are to be replaced in the menu “Replace consumable”. 1 or more consumables can be selected.

If several consumables are selected: The wizard guides you through the replacement of the individual consumables. The individual steps are shown on the display.

Procedure

▶ Tap the menu item [Change material] in the “Care” menu.
▷ The “Change material” menu appears. The consumables that can be changed are indicated, e.g. bag, pretreatment cartridge.
▶ Select the desired consumables. To do this, tap on the menu items for the consumables, e.g. [Bag], [Pretreatment cartridge] and [Ultrapure water cartridge].
▷ The selected menu items are highlighted and marked with a checkmark.
▶ Confirm the selection of the consumables with the [Confirmation] button.
▷ If several consumables are selected: The wizard guides you through all consumable replacement and work steps.



8.5.2 Replacing Bag (only Arium® Mini Plus or Arium® Mini)

Draining the Bag

Requirements

– In the “Change material” menu, the menu item [Bag] is activated.
– The “Empty bag” dialog box appears.

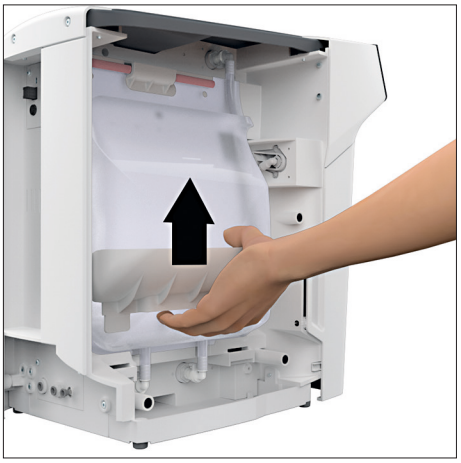
Procedure

▶ 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.

Removing Empty Bag

Procedure

▶ Remove the left side cover (see Chapter “5.3.1 Removing the Left Side Cover,” page 28).
▶ To make it easier to reach the lower connections on the device: Pull the tray up and remove it from the device.
▶ Disconnect the gray quick connector on the three device connections successively.
▶ Slide the empty bag out of the guide rail and remove it from the device.



Inserting New Bag

▶ Insert a new bag (see Chapter “6.5 Inserting Bag (only Arium® Mini Plus or Arium® Mini),” page 34).
▷ The dialog box “Close tank outlet” appears.
▶ Close the ball cock of the tank outlet tubing.
▶ Confirm that the tank outlet has been closed with the [OK] button.

▷ If an Arium® Mini Plus is used: The device automatically begins filling the bag.
▶ If an Arium® Mini is used: The filling process must be started.
  ▷ The dialog box “Fill bag?” appears on the device display.
  ▶ To fill the bag: Tap the [YES] button. Manually fill the bag (see Chapter 7.4.2, page 49).
  ▶ To fill the bag at a later point in time: Tap the [NO] button.

8.5.3 Replacing Pretreatment Cartridge (only Arium® Mini Plus)

To replace pretreatment cartridges, the final filter must be removed and the device depressurized. The pretreatment cartridge is marked with an “R”.

Requirements

– In the “Change material” menu, the menu item [Pretreatment cartridge] is activated.
– The dialog box “Remove filter” appears.

Procedure

▶ Remove the final filter (removal, see Chapter “8.5.6 Changing Final Filter,” page 62).
▷ The dialog box “Prepare depress. / Start depressurization” appears.
▶ Start depressurization (see Chapter 8.7, page 63).
▷ 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. The pretreatment cartridge (R) can be changed.
▶ Press the two protruding clamps of the pretreatment cartridge together and pull the pretreatment cartridge forward and out.

▶ Confirm removal of the pretreatment cartridge with the [OK] button.
▶ Insert a new pretreatment cartridge in the device (see Chapter 6.3, page 32).
▶ Rinse the pretreatment cartridge (see Chapter 6.7, page 39).
▷ Once the pretreatment cartridge has been rinsed: The dialog box "Connect filter" appears.
▶ Connect the final filter (see Chapter 6.9, page 43).
▷ Replacing the pretreatment cartridge is complete.

8.5.4 Replacing Ultrapure Water Cartridge

To replace the ultrapure water cartridge, the final filter must be removed and the device depressurized. The ultrapure water cartridge is marked with an "L".

Requirements

– In the "Change consumable" menu, the menu item [Ultrapure water cartridge] is activated.
– The dialog box "Remove filter" appears.

Procedure

▶ Remove the final filter (removal, see Chapter "8.5.6 Changing Final Filter," page 62).
▷ The dialog box "Prepare depress. / Start depressurization" appears.
▶ Start depressurization (see Chapter 8.7, page 63).
▷ 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. The ultrapure water cartridge (L) can be changed.
▶ Press the two protruding terminals of the ultrapure water cartridge together and pull the ultrapure water cartridge forward and out.

▶ Confirm removal of the ultrapure water cartridge with the [OK] button.
▶ Insert a new ultrapure water cartridge in the device (see Chapter 6.4, page 33).
▶ Rinse the ultrapure water cartridge (see Chapter 6.8, page 40).
▷ Once the ultrapure water cartridge has been rinsed: The dialog box "Connect filter" appears.
▶ Connect the final filter (see Chapter 6.9, page 43).
▷ Replacing the ultrapure water cartridge is complete.

8.5.5 Replacing the UV Lamp

The device can be equipped with a UV lamp. When replacing the UV lamp: A suitable UV lamp must be used (suitability, see Chapter "15 Consumables," page 81).

The UV lamp is installed under the right-side cartridge holder (pretreatment cartridge). The pretreatment cartridge is marked with an "R".

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

If an Arium® Mini Plus is used: The pretreatment cartridge must be removed to reach the UV lamp behind it.

Requirements

— In the "Change material" menu, the menu item [UV lamp] is activated.
— The dialog box "Remove filter" appears.

Procedure

▶ Remove the final filter (removal, see Chapter "8.5.6 Changing Final Filter," page 62).
▷ The dialog box "Prepare depress. / Start depressurization" appears.
▶ Start depressurization (see Chapter 8.7, page 63).
▷ When depressurization is complete, the dialog box "Remove cover" appears.
▶ Remove the front cover.
▶ Confirm removal of the cover with the [OK] button.
▶ If an Arium® Mini Plus is used:
  ▷ The "Remove the pretreatment cartridge (R) as described in the manual" dialog box appears.
  ▶ Remove the pretreatment cartridge (see Chapter 8.5.3, page 57).
▷ The dialog box "Change UV lamp" appears.

Removing the UV Lamp

⚠ CAUTION

Risk of injury from electrical current and UV radiation!

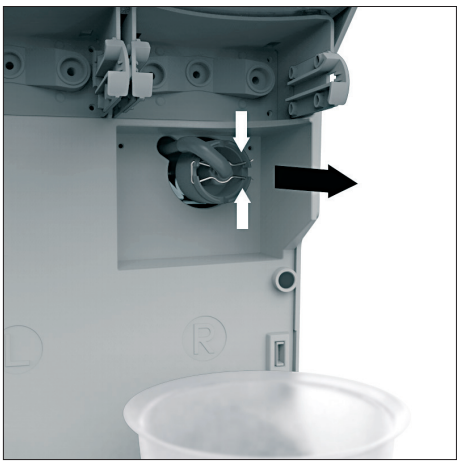
The UV lamp emits UV radiation and may be live.

▶ Disconnect the device from the power supply before the old UV lamp is removed.

Procedure

▶ Disconnect the device from the power supply.

▷ The display goes out. After the power has been restored, the wizard will continue automatically.

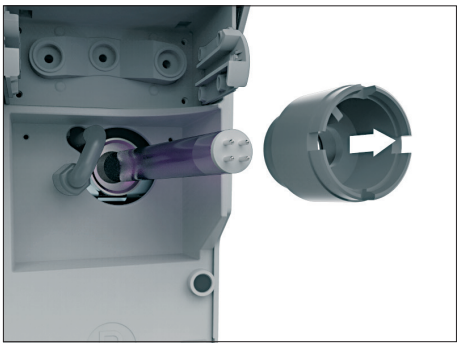


▶ Squeeze the metal retaining clip on the old UV lamp and pull it forward to remove it.

▶ 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 unit and dispose of it properly (see Chapter “13 Disposal,” page 74).

Inserting the UV Lamp

NOTICE

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 without exerting pressure on it.
- ▶ 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. Both orientations allow the UV lamp to function.
- ▶ 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.
- ▶ Connect the device to the power supply.
- ▷ The wizard continues.
- ▶ Follow the instructions on the display, e.g. “Insert the new pretreatment cartridge (R) as described in the manual”.

8.5.6 Changing Final Filter

Remove final filter

Requirements

– If the [Sterile filter] or [Ultrafilter] menu item is activated in the “Replace consumables” menu: The “Remove filter” dialog box appears.
– If the menu items [pretreatment cartridge], [ultrapure water cartridge] or [UV lamp] are activated in the “Replace consumable” menu: 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.

Connect new final filter

Requirements

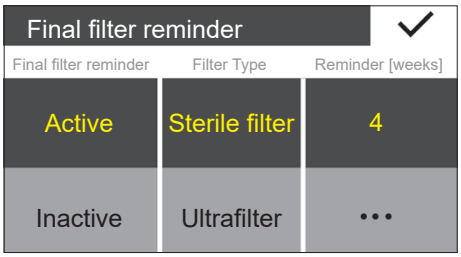
– The final filter has been removed.
– The dialog box “Connect filter” appears.

Procedure

▶ Connect and rinse a new final filter (see Chapter 6.9, page 43 and Chapter 6.10, page 43).

8.6 Enabling, Disabling or Configuring Reminders for Replacing Final Filters

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



Procedure

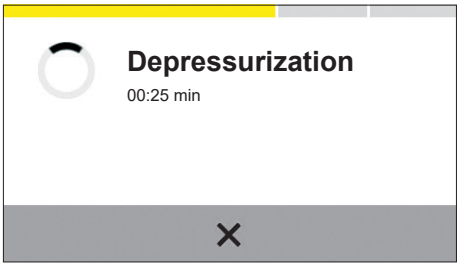
- ▶ Tap the menu item [Final filter reminder] in the "Care" menu.
- ▷ The dialog box "Final filter reminder" appears.
- ▶ Tap the [Active] button.
- ▷ Select the installed final filter, e.g. [sterile filter] or [ultrafilter].
- ▷ The currently configured replacement interval appears in the column "Reminder [weeks]".
- ▶ To change the replacement interval: Press the [Enter] button.
- ▷ The numeric keypad appears.
- ▶ Type in the desired replacement interval (in weeks) (for required maintenance intervals, see Chapter "8.2 Maintenance Schedule," page 54)
- ▶ Confirm the input with the [Confirm] button.
- ▶ To activate the reminder: In the "Final filter reminder" dialog box, press the [Confirmation] button.
- ▶ If **no** sterile or endotoxin-free water is required:
  - ▶ Remove the final filter (see Chapter 8.5.3, page 57).
  - ▶ To deactivate reminders about replacing the final filter: In the dialog box "Final filter reminder", press the [Inactive] button.

8.7 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 [Depressurize] in the "Care" menu.
- ▷ The dialog box "Remove filter" appears.
- ▶ Remove final filter (see Chapter 8.5.3, page 57).
- ▶ Confirm removal of the final filter with the [OK] button.
- ▷ he 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 there is **not** a sufficiently large vessel available: Press the [Cancel] button.
▷ That 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 the power supply.
▶ Pressurization is carried out when the device is switched on again.
▶ Perform the rinsing process (see Chapter “8.9 Performing the Final Rinsing Procedure,” page 65)

8.8 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.

Given the following conditions: The ultrapure water circuit must be purged:
– The displayed water quality is fluctuating continuously during operation.
– The device was taken out of service for an extended period.

Procedure

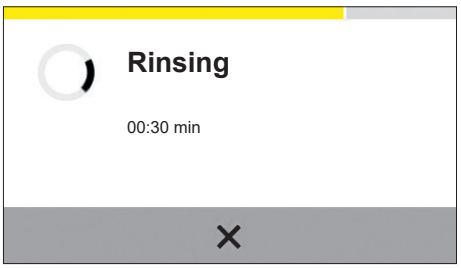
▶ Tap the menu item [Venting] in the “Care” menu.
▷ The dialog box “Remove filter” appears.
▶ Remove the final filter (see Chapter 8.5.3, page 57).
▶ Confirm removal of the final filter with the [OK] button.
▷ The dialog box “Prepare rinsing” appears.
▶ Place a vessel (at least 1 liter) under the water outlet. Alternatively, connect the dispense tube and run the free end to the drain.
▶ Tap the [OK] button.

▶ Arium® Mini Plus product water quality:
  ▷ 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 “Preparing to rinse” appears: Start the rinsing process again.
▶ Only Arium® Mini:
  ▷ 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.
  ▶ The dialog box “Fill bag” appears: Manually fill the bag (see Chapter 7.4.2, page 49).

▶ Perform the rinsing process (see Chapter “8.9 Performing the Final Rinsing Procedure,” page 65).

8.9 Performing the Final Rinsing Procedure

After depressurizing or venting, the device needs to be rinsed.



Procedure

▷ The “Prepare rinsing” dialog box appears.
▶ Press the [OK] button.
▷ The “Start rinsing” dialog box appears.
▶ Press the [START] button.
▷ During the rinsing process, the remaining rinse time is displayed in minutes.
▶ To interrupt the rinsing process:
  ▶ Press the [Cancel] button.
  ▷ The “Start rinsing” dialog box is displayed again.
▶ To resume the rinsing process after an interruption: Press the [START] button.

▷ When rinsing is complete, the “Connect filter” dialog box appears.
▶ Connect the final filter (see Chapter 6.9, page 43).

9 Malfunctions

9.1 Error Messages

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

Error message	Fault	Cause	Correction	Chapter, page
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.	7.1, page 44
			Reconnect the device to the AC power.	
			If the error persists: Contact 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.	8.5.5, page 59
			Remove the UV lamp and check for damage. If required: Change the UV lamp.	8.5.5, page 59
			If the error persists: Contact 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.	5.3.1, page 28
			Drain the tray at the bottom of the device and check that the connections are tight during operation.	
			If the error persists: Contact 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 the error persists: Contact Sartorius Service.	

Error message	Fault	Cause	Correction	Chapter, page
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 the error persists: — Remove the pretreatment cartridge. — Insert the pretreatment cartridge.	8.5.3, page 57
			If the error persists: Contact 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 the error persists: — Remove the ultrapure water cartridge. — Insert the ultrapure water cartridge..	8.5.4, page 58
			If the error persists: Contact 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.	5.3.1, page 28
			Check that the three bag hoses are properly connected to the device connectors. If required: Remove the bag and reconnect it.	8.5.2, page 56
		The sensor is defective.	Using the tank outlet tubing connected to “Bag Outlet”, let about ¼ liters of pure water out of the bag and check the level change.	7.2.6, page 48
			If the error persists: Contact Sartorius Service.	
Error The conductivity of the ultrapure water is outside of the measuring range.	The conductivity of the ultrapure water is outside of the measuring range.	There is air in the ultrapure water circulation.	Initiate venting.	8.8, page 64
		The ultrapure water cartridge has been used up.	Replace the ultrapure water cartridge.	8.5.4, page 58
			To dispense water for testing purposes: Disable the dispensing lock.	
			If the error persists: Contact Sartorius Service.	

Error message	Fault	Cause	Correction	Chapter, page
Error The temperature of the ultrapure water is outside of measuring range.	The temperature of the ultrapure water is outside of measuring range.	The temperature of the ultrapure water is outside of measuring range.	Check whether the ambient temperature complies with the device specifications in the technical data.	14.2, page 76
			Dispense about 1 liter: — To dispense water for testing purposes: Disable the dispensing lock. — Dispense and discard about 1 liter of water.	
			If the error persists: Contact 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.	Perform venting.	8.8, page 64
			Replace the ultrapure water cartridge.	8.5.4, page 58
			To dispense water for testing purposes: Disable the dispensing lock.	
			If the error persists: Contact 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, page
The 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.	14.6, page 79
		The pretreatment cartridge has been used up.	Replace the pretreatment cartridge.	8.5.3, page 57
			If the error persists: Contact Sartorius Service.	
The conductivity of the ultrapure water is outside of the measuring range.	The conductivity of the ultrapure water **cannot** be determined.	There is air in the ultrapure water circulation.	Perform venting.	8.8, page 64
		The ultrapure water cartridge has been used up.	Replace the ultrapure water cartridge.	8.5.4, page 58
			If the error persists: Contact 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.	14.6, page 79
			Check whether the ambient temperature complies with the device specifications in the technical data.	14.2, page 76
			If the error persists: Contact Sartorius Service.	
The temperature of the ultrapure water is outside of measuring range.	The temperature of the ultrapure water **cannot** be determined.	The temperature of the ultrapure water is outside of measuring range.	Check whether the ambient temperature complies with the device specifications in the technical data.	14.2, page 76
			Dispense and discard about 1 liter of water.	
			If the error persists: Contact 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.	14.6, page 79
		The pretreatment cartridge has been used up.	Replace the pretreatment cartridge.	8.5.3, page 57

Warning message	Fault	Cause	Correction	Chapter, page
Ultrapure water quality > XX µS/cm	The limit has been exceeded.	There is air in the ultrapure water circulation.	Perform venting.	8.8, page 64
			Replace the ultrapure water cartridge.	8.5.4, page 58
		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.	14.6, page 79
Ultrapure water temperature > XX °C	The limit has been exceeded.	The ambient temperature of the device is too high or too low.	Check whether the ambient temperature complies with the device specifications in the technical data.	14.2, page 76
			Dispense and discard about 1 liter of water.	
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.	8.5.3, page 57
Replacement of the ultrapure water cartridge (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.	8.5.4, page 58
Replacement of the bag is required.	The bag needs to be replaced.	The replacement interval of the bag has expired.	Replace the bag.	8.5.2, page 56
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.	8.5.5, page 59
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.	8.5.3, page 57
Sartorius maintenance is required.	Maintenance service must be performed.	The maintenance service interval has expired.	Contact Sartorius Service.	

9.3 Additional Faults

Fault	Cause	Correction	Chapter, page
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, page 48
		Check that the feed water tubing has been correctly connected.	6.6.1, page 35
	There is **no** feed water is connected.	Connect the feed water tubing or tank filling tubing.	6.6, page 35
	The final filter is clogged or contains air.	If the final filter is attached and **no** water can be dispensed: — Rinse the final filter. — Vent the final filter. — If the error persists: Replace the final filter.	6.10, page 43 8.8, page 64 8.5.6, page 62
		If the final filter has been removed and **no** water can be dispensed: Contact Sartorius Service.	

10 Storage and Shipping

10.1 Storage

Procedure

- If the device is in operation:
  - Decommission the device.
  - Clean the device.
- Store the device according to the ambient conditions (see Chapter "14.2 Ambient Conditions," page 76).

10.2 Returning Device and Parts

You can send defective devices or parts back to Sartorius. Returned devices must be clean, decontaminated and properly packed.

Transport damage as well as measures for subsequent cleaning and disinfection of the device or parts by Sartorius shall be charged to sender.

⚠ WARNING

Risk of injury due to contaminated equipment!

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

- Observe the information on decontamination (see Chapter 13.1, page 74).

Procedure

- Decommission the device.
- Contact Sartorius Service for instructions on how to return equipment or parts (please refer to our website at www.sartorius.com for return instructions).
- Pack the device and its parts properly for return.

11 Decommissioning

Requirement

Operation has been ended correctly.

Procedure

- ▶ Start depressurization (see Chapter 8.7, page 63)
- ▶ Disconnect the device from power.
- ▶ Disconnect the device from the supply lines. Remove the consumables being used.
- ▶ Disconnect any attached components from the device.
- ▶ Clean the device (see Chapter 8.1, page 53).

12 Transport

12.1 Transporting the Device

Requirements

The device has been taken out of operation.

Procedure

- ▶ **NOTICE** 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.
  - ▶ 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.
- ▶ 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.

13 Disposal

13.1 Information on Decontamination

The device does **not** contain any hazardous materials that would necessitate special disposal measures.

If the device has come into contact with hazardous substances: Measures must be carried out to properly decontaminate and declare such devices. The operator is responsible for adhering to local legislation on the proper declaration of transport and disposal and the proper disposal of the device.

⚠ WARNING

Risk of injury due to contaminated equipment!

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

13.2 Disposing of Device and Parts

13.2.1 Information on Disposal

The device and its accessories do **not** belong in regular household waste, since they are made of high-grade materials that can be recycled and reused. All parts must be disposed of properly by disposal facilities.

Batteries are installed in the device. Batteries do **not** belong in regular household waste, since they are made of high-grade materials that can be recycled and reused. Batteries must be disposed of properly by disposal facilities.

The packaging is made of environmentally friendly materials that can be used as secondary raw materials.

The consumables are designed and intended for single-use.

Hazardous Substances

The UV lamp contains mercury. The UV lamp must be delivered to an approved disposal center for hazardous substances.

13.2.2 Disposal

Requirements

If the device has come into contact with hazardous substances: The device and consumables have been decontaminated.

Procedure

- ▶ Remove the UV lamp from the device (see Chapter “8.5.5 Replacing the UV Lamp,” page 59).
- ▶ Deliver the UV lamp to an approved disposal center for hazardous substances.
- ▶ Dispose of the device. Follow the disposal instructions on our website (www.sartorius.com). Inform the disposal facility that batteries are installed in the device.
- ▶ Dispose of the packaging in accordance with local government regulations.
- ▶ Dispose of the consumables in accordance with local government regulations.

14 Technical Specifications

14.1 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		I
Height above sea level, maximum	m	3000
Pollution level of the power supply unit according to IEC 61010-1		2
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

14.2 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

14.3 Safety of Electrical Equipment

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

14.4 Electromagnetic Compatibility

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 B: Suitable for use in residential areas and areas that are connected to a low voltage network that (also) supplies residential buildings.

14.5 Product Water Quality

14.5.1 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
Flow output water dispense[2]	l/min	≤ 1.0	Depressurized via ball valve
Volume input[2]	l	Between 0.05 and 5 (in 50 ml increments)	–
Typical conductivity	µS/cm	0.055 (compensated at 25 °C[5])	< 20[6]
Typical resistivity	MΩ + cm	18.2 (compensated at 25 °C[5])	< 0.05
TOC content[3] (system with UV lamp)	ppb	≤ 5	–
Content of microorganisms[4]	CFU/ml	< 0.001	< 0.001
Particle content[4]	µm	No particles > 0.2 µm	No particles > 0.2 µm
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 approx. 1000 ppb
[4] When using an Arium® Sterile Plus final filter (Sartopore® 2 150)
[5] Measured value display at 25 °C compensated or not compensated
[6] Depending on inlet water

14.5.2 Arium® Mini and Arium® Mini Essential

	Unit	Value
Water type		Ultrapure water ASTM Type 1
Flow output water dispense[2]	l/min	≤ 1.0
Volume input[2]	l	Between 0.05 and 5 (in 50 ml increments)
Typical conductivity	µS/cm	0.055 (compensated at 25 °C[5])
Typical resistivity	MΩ + cm	18.2 (compensated at 25 °C[5])
TOC content[3] (system with UV lamp)	ppb	≤ 5
Content of microorganisms[4]	CFU/ml	< 0.001
Particle content[4]	µm	No particles > 0.2 µm

[2] Depending on the hydrostatic pressure, and connected accessories and final filter
[3] Determined with municipal water (Goettingen), TOC approx. 1000 ppb
[4] When using an Arium® Sterile Plus sterile filter (Sartopore® 2 150)
[5] Measured value display at 25 °C compensated or not compensated

14.6 Feed Water Quality

14.6.1 Arium® Mini Plus

	Unit	Value
Suitability / type		Exclusively potable tap water pursuant to the drinking water standards of the USA, the European Union or Japan.
Inlet pressure	bar	0.5 to 6 (recommended: > 2)
Temperature	°C	2 to 30
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

14.6.2 Arium® Mini

	Unit	Value
Suitability / type		Purified water using reverse osmosis, distillation or deionization
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

14.6.3 Arium® Mini Essential

	Unit	Value
Suitability / type		Purified water using reverse osmosis, distillation or deionization
Inlet pressure		0 to 6 (recommended: >2)
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

14.7 Device Properties

	Unit	Value
Dimensions (width x height x depth)	mm	280 x 509.4 x 530.7
Empty weight, approx.	kg	13
Operating weight, approx.	kg	23
Water treatment method		Adsorption using spherical activated charcoal, catalyst, reverse osmosis, ion exchange, optional UV radiation, and end position particle/sterile filtration or removal of endotoxins, RNases, and DNases.

15 Consumables

This table contains an excerpt of accessories that can be ordered.
For information on other products, contact Sartorius.

Description	Order number
Final filter	
Arium® sterile filter Sterile Plus (Sartopore® 2 150 capsule)	5441307H4--CE
Arium® Cell Plus ultrafilter	H2O-CUF
Arium® pretreatment cartridge[1]	H2O-CPR
Arium® Scientific Pack (ultrapure water cartridge)	H2O-S-PACK
Arium® 5-liter bag[2]	H2O-CBS-5-S
Arium® UV lamp	H2O-CEL1

[1] Only required for Arium® Mini Plus
[2] Only required for Arium® Mini Plus or Arium® Mini

16 Sartorius Service

The Sartorius Service is at your disposal for queries regarding the device. For information about the service addresses, services provided or to contact a local representative, please visit the Sartorius website (www.sartorius.com).

When contacting Sartorius Service with questions about the system or in the event of malfunctions, be sure to keep the device information—e.g. serial number, hardware, firmware, configuration—close at hand. This information can be found on the manufacturer's ID label and in the "Device Information" menu.

17 Conformity

17.1 EC / EU Declaration of Conformity

The attached Declaration of Conformity hereby confirms compliance of the device with the directives cited.

17.2 FCC Supplier's Declaration of Conformity

The attached Declaration of Conformity hereby confirms compliance of the device with the directives cited.

17.3 UK Declaration of Conformity

The attached Declaration of Conformity hereby confirms compliance of the device with the directives cited.

17.4 CSA Declaration of Conformity

The attached Declaration of Conformity hereby confirms compliance of the device with the directives cited.

SARTORIUS

Original

CE

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, Arium® Mini Essential
Ultrapure water treatment system Arium® Mini Plus, Arium® Mini, Arium® Mini Essential

Baureihe
Type series

H2O-MA-T, H2O-MA-T-US, H2O-MA-UV-T, H2O-MA-UV-T-US *(Arium® Mini Plus)*
H2O-MM-T, H2O-MM-T-US, H2O-MM-UV-T, H2O-MM-UV-T-US *(Arium® Mini)*
H2O-MU-T, H2O-MU-T-US, H2O-MU-UV-T, H2O-MU-UV-T-US *(Arium® Mini essential)*

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

	EMV / EMC	RoHS	Maschinen / Machines
Richtlinie *Directive*	*2014/30/EU*	*2011/65/EU*	*2006/42/EG* *2006/42/EC*
Norm(en) *Standard(s)*	*EN 61326-1:2013*	*EN IEC 63000:2018*	*EN ISO 12100:2010* *EN 61010-1:2010+A1:2019*)*

Die Person, die bevollmächtigt ist, die technischen Unterlagen zusammenzustellen:
The person authorized to compile the technical file:

Sartorius Lab Instruments GmbH & Co. KG
Electronics & Product Compliance
37070 Goettingen, Germany

Sartorius Lab Instruments GmbH & Co. KG
Goettingen, 2022-05-06

i.V. P. Baumfalk

Dr. Reinhard Baumfalk
Head of Product Development (LPS Division)

i.V. H. Yildirim

Halil Yildirim
Product Compliance Manager (LPS)

**: angewandte, jedoch für Maschinen nicht harmonisierte Norm / applied standard, which however is not harmonized for machines*

Doc: 2036499-07 *SLI15CE018-07.de,en* *1 / 1* *PMF:* 2036498 *OP-113_fo1_2020.07.07*

FCC Supplier's Declaration of Conformity

SARTORIUS

Device type	Ultrapure water treatment system
Type series	arium® mini plus / arium® mini / arium® mini essential
Models	H2O-MA-T, H2O-MA-T-US, H2O-MA-UV-T, H2O-MA-UV-T-US / H2O-MM-T, H2O-MM-T-US, H2O-MM-UV-T, H2O-MM-UV-T-US / H2O-MU-T, H2O-MU-T-US, H2O-MU-UV-T, H2O-MU-UV-T-US

Party issuing Supplier's Declaration of Conformity / Responsible Party – U.S. Contact Information

Sartorius Corporation
5 Orville Dr Suite 200
11716 Bohemia, NY, USA
Telephone: +1.631.254.4249

FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

Information to the user

Note: This equipment has been tested and found to comply with the limits for a **class B** digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Connections between the device and peripherals must be made using shielded cables in order to maintain compliance with FCC radio frequency emission limits.

Any modifications made to this device that are not approved by Sartorius may void the authority granted to the user by the FCC to operate this equipment.

UK CA

Original

UK Declaration of Conformity

SARTORIUS

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

declares under sole responsibility that the equipment

Device type Ultrapure water treatment system

Type series **Arium® Mini Plus, Arium® Mini, Arium® Mini Essential**

Model **H2O-MA-T, H2O-MA-T-US, H2O-MA-UV-T, H2O-MA-UV-T-US** (Arium® Mini Plus)
H2O-MM-T, H2O-MM-T-US, H2O-MM-UV-T, H2O-MM-UV-T-US (Arium® Mini)
H2O-MU-T, H2O-MU-T-US, H2O-MU-UV-T, H2O-MU-UV-T-US (Arium® Mini essential)

in the form as delivered fulfils all the relevant provisions of the following British Regulations and meets the applicable requirements of the British Designated Standards including any amendments valid at the time this declaration was signed listed below:

The Electromagnetic Compatibility Regulations 2016
UK Statutory Instruments 2016 No. 1091

BS EN 61326-1:2013

The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012
UK Statutory Instruments 2012 No. 3032

BS EN IEC 63000:2018

The Supply of Machinery (Safety) Regulations 2008
UK Statutory Instruments 2008 No. 1597

BS EN ISO 12100:2010, BS EN 61010-1:2010+A1:2019*)

The person authorised to compile the technical file:

Sartorius UK Ltd.
Longmead Business Centre, Blenheim Road
KT19 9 QQ Epsom, Surrey, UK

Sartorius Lab Instruments GmbH & Co. KG
Goettingen, 2022-05-06

Dr. Reinhard Baumfalk
Head of Product Development (LPS)

Halil Yildirim
Product Compliance Manager (LPS)

*: applied standard, which however is not harmonized for machines

Doc: 2726148-01 SLI21UKCA004-01.en 1/1 PMF: 2036498 OP-113_fo18_2021.01.01

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.

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

Phone: +49 551 308 0
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 all genders.

Last updated:

11 | 2022

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