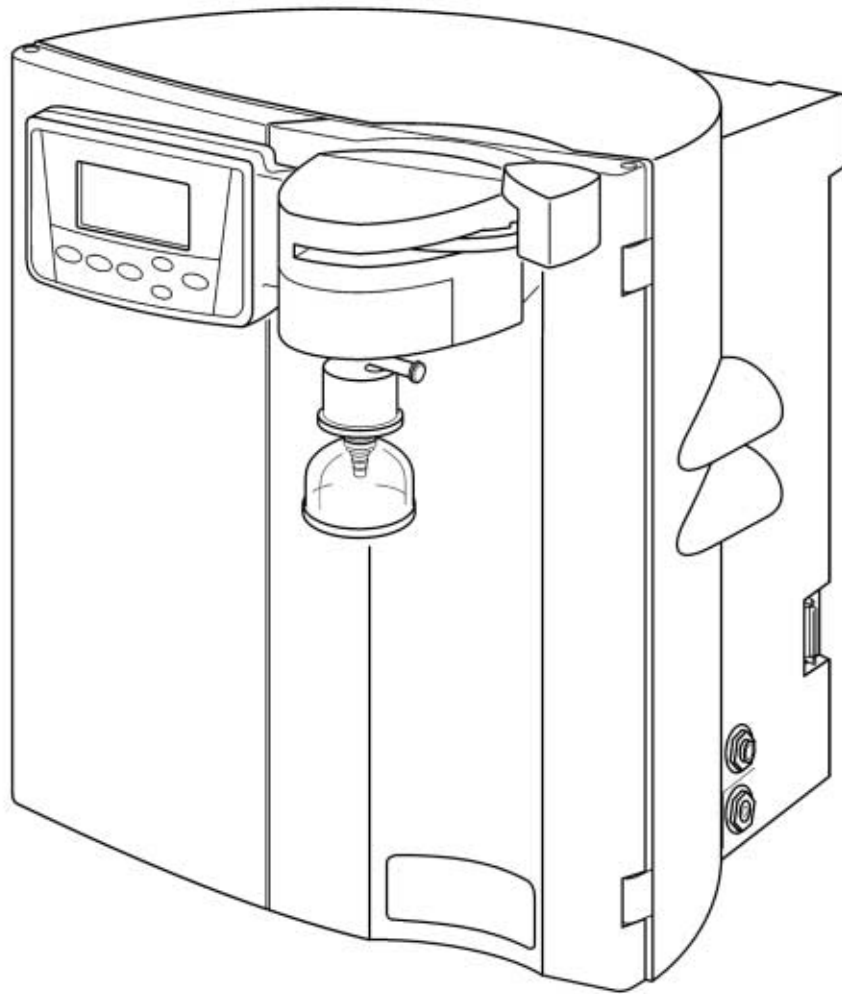


**Installation and Operation Manual**

**arium 611VF**  
Water Purification System



## About This Manual

This manual instructs you on how to prepare and operate the arium 611VF water purification system.

Sartorius has designed the arium 611 water purification system for reliability, economy and safe operation. To ensure this, you must read this instruction manual carefully before attempting to operate the system. The manual will give you important instructions that will help you avoid potential hazards and ensure the reliability of the arium 611VF.

Please read the Safety Information on page 3.

If you have any questions about the correct use of arium 611VF, please contact us at the address below or your local Sartorius office:

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## Safety Information

Please read the following safety information thoroughly and follow the instructions exactly. This information is designed to ensure your own safety and will prevent damaging the arium 611VF unit.

The following symbols are used in this manual:



### Warning!

Warnings alert you to a possibility of personal injury or property damage.



### Caution!

Caution signs alert you to a possibility of damage to the equipment.



### Note

Notes alert you to pertinent facts and conditions that are important for economic operation of the equipment.



### Warning!

Danger of personal injury!  
Servicing and repairs may only be performed by trained and qualified personnel.



### Warning!

Severe electrical shock hazard or danger of electrocution!

- Use a properly grounded electrical outlet of correct voltage and current handling capacity (100 to 240 V ~, 50/60 Hz) to plug in the arium 611VF unit.
- Do not locate arium 611VF on top of electrical equipment. Routine maintenance of this unit may involve water spillage and subsequent electrical shock hazard if improperly located.
- Remove the plug from the electrical outlet prior to maintenance and servicing of arium 611VF.



### Warning!

Danger of fire or explosion!

- Do not use in the presence of flammable or combustible materials; fire or explosion may result. This device contains components which may ignite such materials.
- The arium 611VF is to be used with water feeds only. Sanitizing | cleaning agents should only be used according to the instructions in this manual.



### Warning!

Danger of injury to eyes and skin!

- Avoid splashing sanitants or disinfecting solutions on clothing or skin.
- Ensure all tubing connections are tight to avoid chemical leakage.
- Turn off feed water and push the draw-off lever to the right to depressurize system prior to changing cartridge packs, sanitizing or performing any service on the 611 system.
- Allow a defective UV bulb to cool off before removing it.
- Carefully follow the manufacturer's safety instructions on labels of chemical containers and filter cartridges.



### Caution!

Danger of irreversibly damaging arium 611VF components!

Be sure to replace defective fuses with those of the same type and rating.

When installing a new UV bulb, do not touch the bulb with your bare hands.

Finger prints may damage the bulb.

## Intended Usage

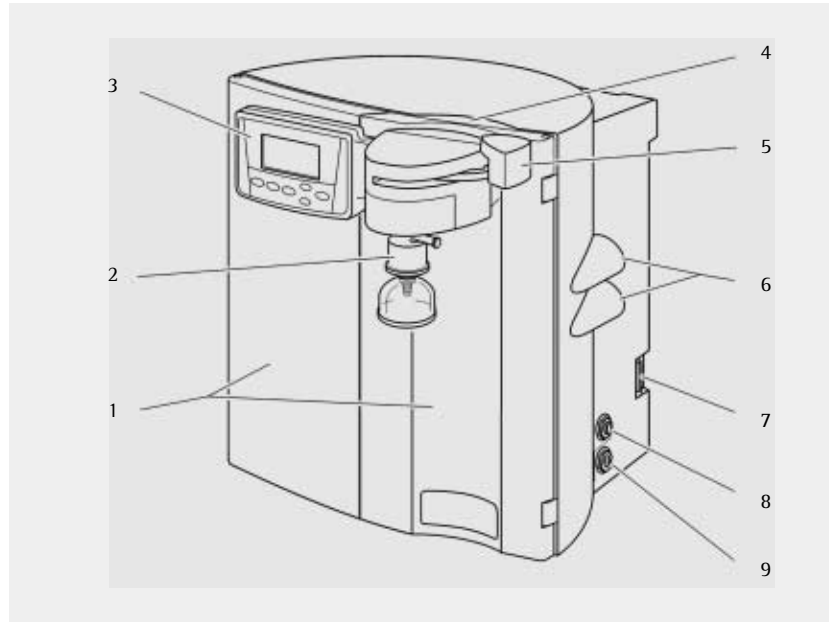
The arium 611VF water purification system is designed exclusively to provide reagent-grade water for the laboratory from water pretreated by distillation, deionization or reverse osmosis. To ensure that this unit works properly, use only the filter media and other auxiliary media that are listed in this manual. Using this system for any other purpose shall be considered improper usage.

- arium 611VF may only be operated by trained personnel.
- Operate arium 611VF only using original accessories or replacement parts. If you modify this water purification system on your own without consulting Sartorius, the performance and operating safety of the system are no longer guaranteed, thus constituting a safety hazard for the operator.
- Please take all pertinent precautions to prevent accidents and observe the generally valid technical and occupational safety rules and regulations of your country.
- Use only Sartorius-listed materials (such cartridges, connectors, gaskets, tools and sanitizing and disinfecting agents).

## Product Description

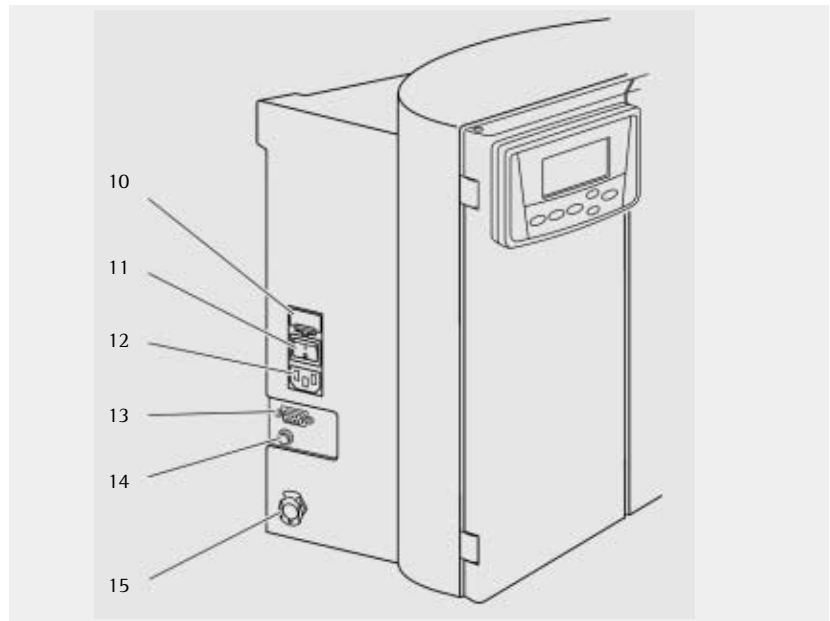
### arium Systems

The Sartorius arium 611VF is a water purification system designed to provide pyrogen-free, low TOC reagent grade water that exceeds ASTM Type 1 and NCCLS Type 1 standards. The system uses a deionization process with mixed bed resins and activated carbon combined with UV oxidation, ultra-filtration and a 0.2-micron final filter to produce laboratory reagent grade water. The 611VF system is capable of producing pyrogen-free ( $< 0.001$  EU/ml), low TOC ( $< 1$  ppb) water with a resistivity of up to 18.2 MegOhms  $\times$  cm. Water resistivity is continuously sensed by a resistivity cell and displayed on a digital display.



Front view

Item No.	Description
1	Left and right door of arium 611VF
2	Product water outlet with 0.2-micron filter and bell assembly
3	Display and control panel
4	Recessed grip for opening the right door
5	Draw-off lever for opening and closing the outlet valve (shown in open position)
6	Outlet for a remote display   dispenser unit, TOC instrument or a dispenser
7	15-pin D-sub port for connecting a remote display   dispenser unit
8	Outlet for time   volume dispense
9	Reject water outlet
10	Fuse drawer
11	Main power switch
12	Power cord receptacle
13	9-pin D-sub port for connecting a printer
14	Connector for pump interlock that prevents the pump from running dry
15	Feed water inlet



Side view, left

### Control Panel and Display

Operate arium 611VF using the control panel that incorporates four function keys and two control keys for the cursor.

### STANDBY Key

Press the Standby key to place the unit into Standby Mode. In this mode the water in the system is recirculated for 15 minutes per hour.



### OPERATE | STOP Key

Press the OPERATE | STOP key to activate or deactivate the unit. During Normal Operation the system will recirculate. When the system is stopped the pump turns off and water will not recirculate.

### MENU Key

This key provides access to system options and menus.

### Cursor keys

These two cursor control keys are used to select individual menu items of the different menus. The  key moves the cursor one line up, the  key one line down.

### ENTER Key

Use this key to select a menu item you have highlighted with the cursor.

### Display

- During Normal Operation the display will show the water quality reading – according to the pre-selected measurement unit options: (MΩ × cm or μS/cm) The letter “C” indicates that the water quality measurement is automatically compensated to 25 °C.

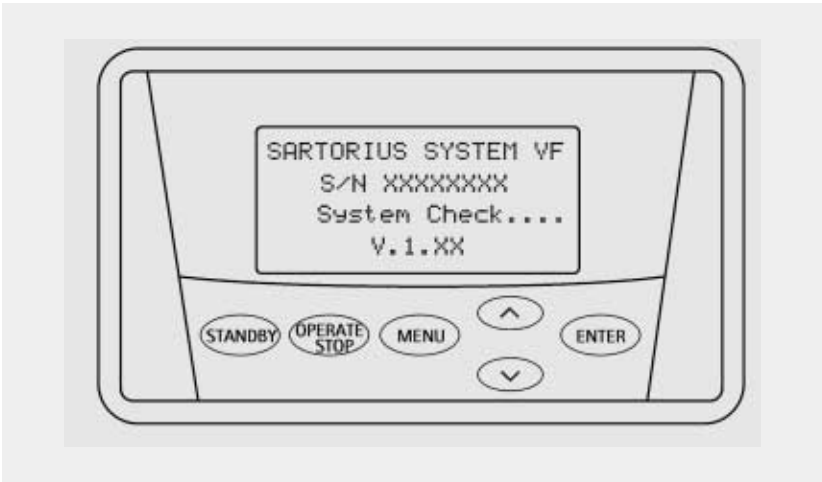
18.2 MΩ * cm	C
14.32	20.02.01

- When the system is in Standby Mode the display will show “Standby”. The UV bulb will turn on periodically to make certain the TOC is kept at an acceptable level. An automatic flush will take place every 24 hours. When the system is flushing the display shows the following:

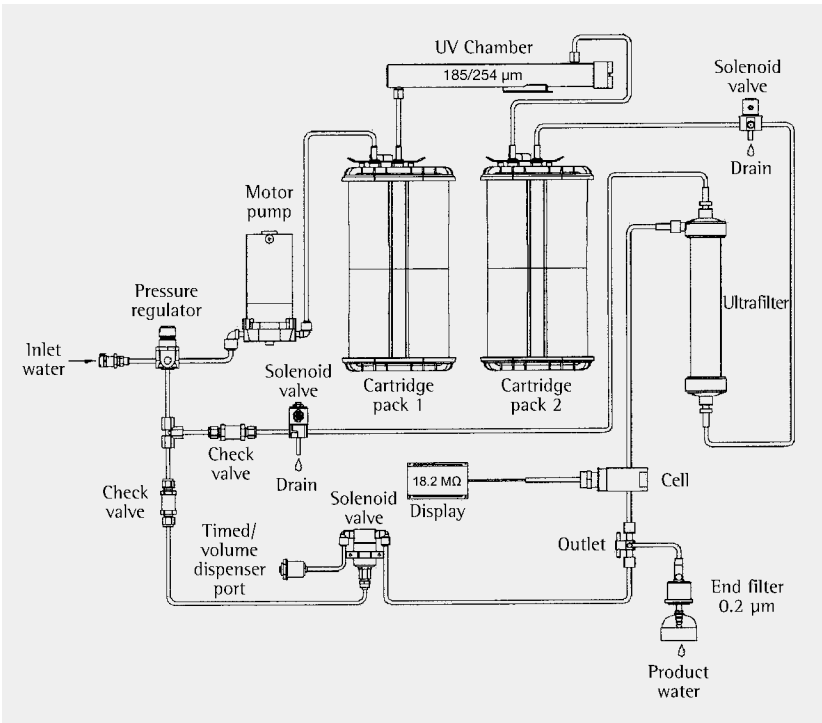
Standby Auto UF Flush
--------------------------

- The display will show the following when the system is stopped:

System Inactive
-----------------



Control panel and display of arium 611VF



Flow chart of arium 611VF

## Unpacking and Installation

### Unpacking

Remove arium 611VF from its packaging. You will find the accessories inside the arium housing and in the top cover of the packing. The equipment supplied includes the following parts:

Part Description	Number
arium 611VF	1
Dispenser unit with display	1
Screws and washers for the Display   Dispenser unit	4
Blue cover with manufacturer's label (VF)	1
Blue cover with model name of arium (for dispenser unit)	1
Ultrafilter cartridge	1
Reject water tubing	1
Tubing adapter for inlet water (1/2", English and 1/4", NPT)	2
Tube for inlet water with quick disconnect insert	1
Adapter with O-ring for cartridge pack	1
End cap for the sanitization syringe adapter	1
Sanitization syringe	1
Wall mounting bracket	1
Power cord	1
Installation and operation manual	1
Timed Dispense Tube, PE 1/4 inch OD X 8 feet	1
Tubing adapter, 1/4 inch OD tube to 1/4 NPT	1



### Note

The cartridge packs are supplied separately. They are not included in the arium system packaging.

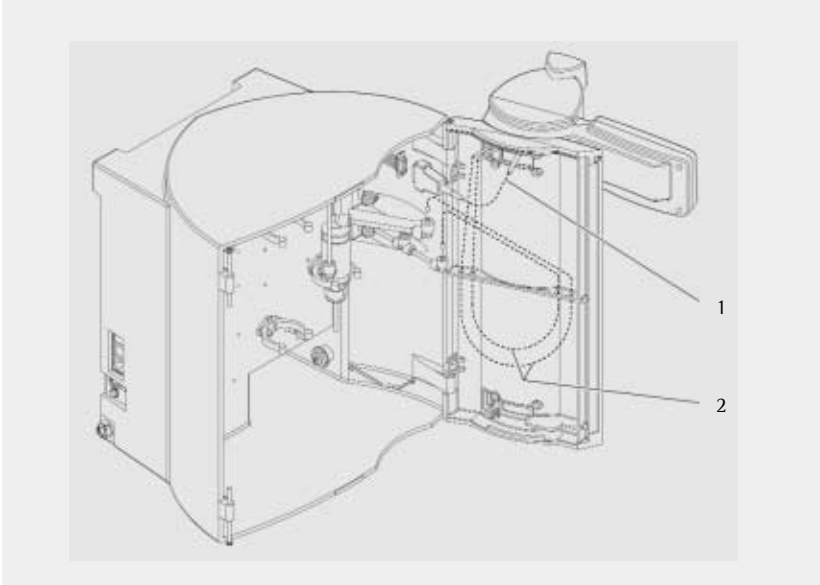
### Display | Dispenser Unit Installation

The Display | Dispenser unit has been designed to mount in 3 ways: At the top of the right door for bench systems, at the bottom of the right door for wall mount systems or in a remote location from the system (additional kit required).

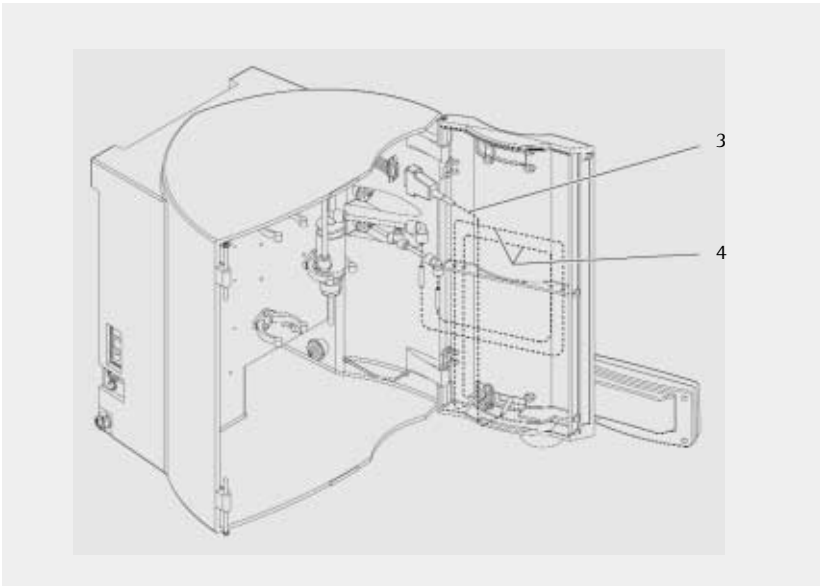
To install:

- If necessary, remove the rubber cover mounted at the bottom of the right door (for wall mounting).
- Route the supply cables through the large opening of the right door (top or bottom) and the two water tubes from the outside through the small opening.
- Use the 4 screws and washers provided to mount the Display | Dispenser Unit to the door by routing the screws from inside the door through the holes in the door to the outside and screw to the assembly.
- Route the water tubing through the 4 holes inside the door and connect to the color coded connectors. Follow the course of dotted lines in the figure:  
Positions (1) and (3): data and power cables  
Positions (2) and (4): water tubes
- Put rubber cover into the remaining hole (top or bottom) in the door.





Mounting the upper display | dispenser unit



Mounting the lower display | dispenser unit

## Ultrafilter Installation

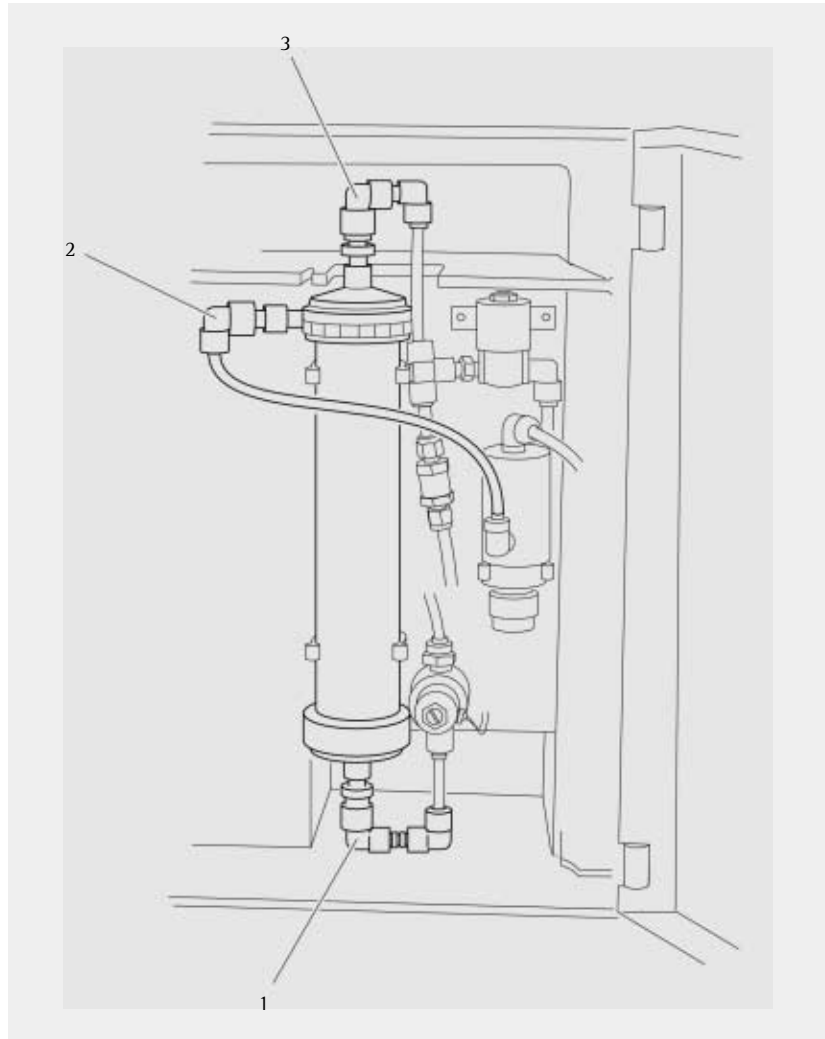


### Caution!

Danger of irreversibly damaging arium 611VF components and the filter cartridges! Tighten all union nuts made of plastic by hand. Do not use a wrench or pliers.

Before starting up arium 611VF, you need to install the ultrafilter module in the housing cover. Proceed as follows:

- Make sure to unplug the power cord from the electrical outlet ("0").
- Open both doors of the unit.
- Remove ultrafilter from packaging and remove protective covers from fittings.
- Connect the tubing connectors to the ultrafilter module as shown in the Figure:  
(1): green connector for feed water - Bottom  
(2): blue connector for product water - Upper left  
(3): red connector for reject water - Top
- Push in the ultrafilter module all the way into the holders so that the connector fitting on the side is facing left.
- Close both doors.



Attach the three tubing connectors to the ultrafilter module

### Bench Mounting



#### Warning!

Severe electrical shock hazard or danger of electrocution! Do not place arium 611VF on top of electrical equipment. Water may spill when using the system.



#### Warning!

Danger of fire or explosion! Do not use in the presence of flammable or combustible materials; fire or explosion may result. The device contains components which may ignite such materials.

- Place the arium 611VF on a flat surface.
- Ensure that feed water and a 100-240 V electric socket are accessible.



#### Note

The outlet of a gravity feed storage reservoir must be at least 10 cm higher than the inlet of the arium 611VF.

### Wall Mounting

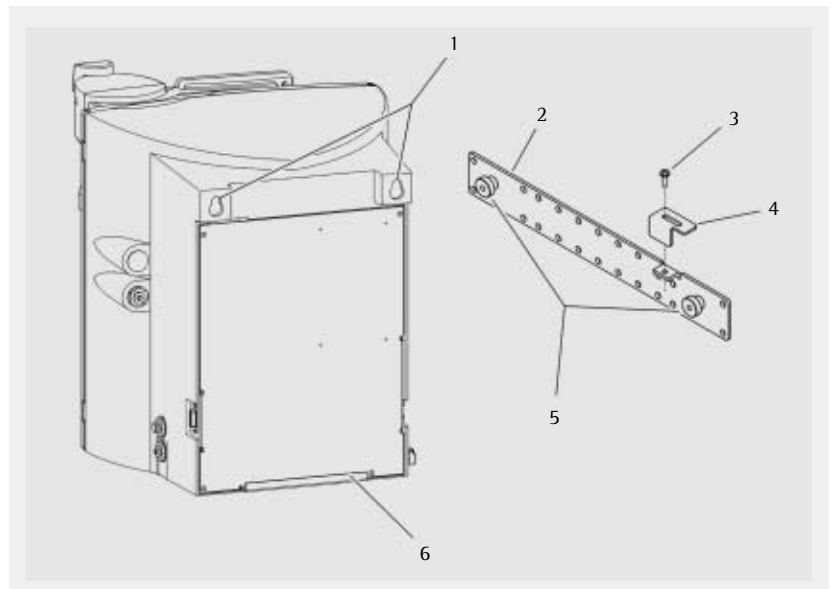


#### Caution!

Wall composition, condition and construction, as well as fastener type must be considered when mounting this unit. The mounting surface and fasteners selected must be capable of supporting a minimum of 25 kg. Inadequate support and/or fasteners may result in injury to the operator and/or damage to the equipment.

A wall bracket (2) is included in the shipment to enable you to attach the system securely to the wall so that it occupies a minimum amount of space. A clear wall area of 63 × 63 cm is required to mount the arium system. Two sturdy keyhole drill holes (1) are located at the top of the back of the housing enabling you to hang the unit on the two pins (5) on the wall bracket. Use the predrilled holes in the bracket to fasten the bracket to the wall. The lower metal profile (6) on the arium housing functions as a spacer.

- Ensure that water, a 100 - 240 V electric socket and an atmospherically vented drain are accessible.
- Fasten the bracket to the wall with suitable screws and dowels.
- Lower the keyhole drill holes of the arium 611VF onto the two pins on the wall bracket.
- Tighten the screw (3) of the metal support (4) on the right side of the bracket with a screwdriver until the metal support rests against the arium housing.



Lower the arium housing onto the wall-mounting bracket

### Water Inlet Connection

Feed water is supplied to the system through this inlet (1). The arium system is supplied with two water supply adapters – one with ½” British thread and one with ¼”-NPT.



#### Caution!

Do not draw water from the top of an open container or carboy to supply water to the 611 system. Damage to the system may result.



#### Note

We recommend that a customer supplied shutoff valve be installed in your feed water line. If a gravity tank is used to supply feed water to the 611 system, the feed water tube must be connected to the bottom of the tank with a ridged or hard plumbed connection. The connection at the bottom of the gravity must be level with, or preferably, slightly above the inlet water connection of the 611 system.

- Connect the free end of the tube to the appropriate water supply adapter. Push the tube all the way into the adapter to seat it properly (approx. 20 mm).
- Install the tubing adapter onto your feed water source.
- Cartridges must be installed prior to supplying feed water to the system. See cartridge installation instructions.
- Insert the other end with a quick disconnect insert into the system's counter coupling (1) until it audibly clicks into place.

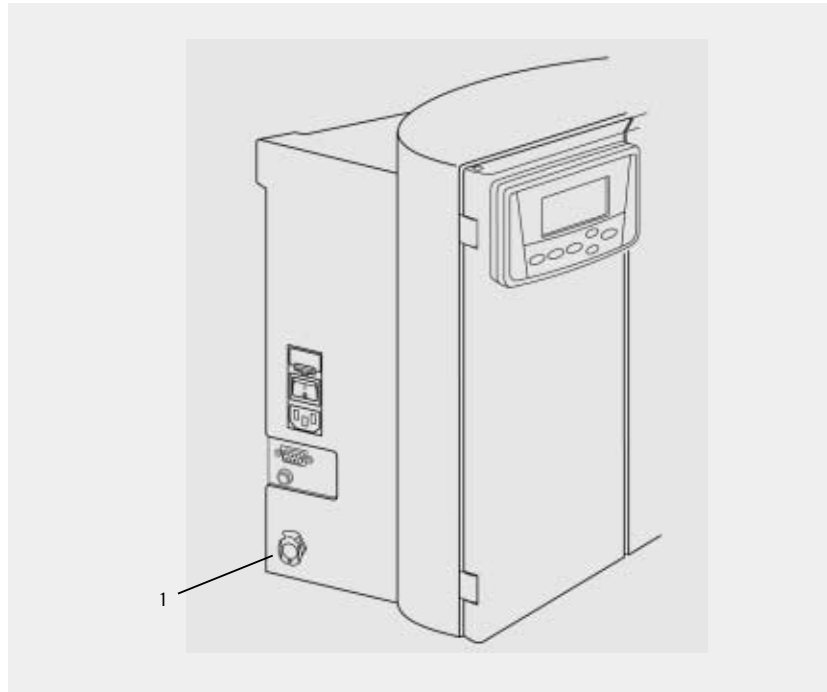
### Reject Water Connection

The reject water is discarded through this connection (2). The reject water tubing has a ¼-inch O.D. Push the tube all the way (approx. 20 mm) into the reject water connector (2)) to seat it properly. Direct the other end of the reject tubing to an atmospheric drain.

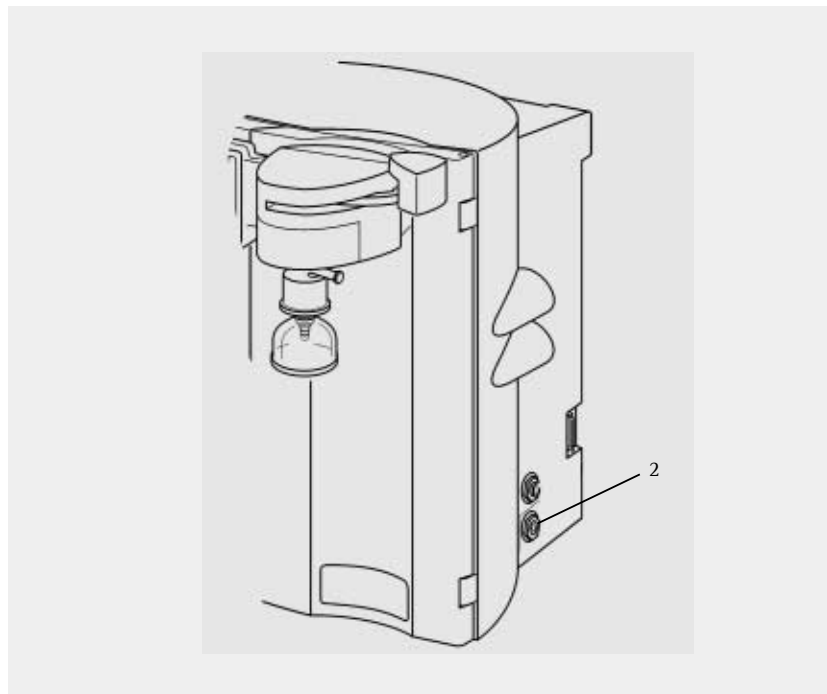


#### Note

Ensure there are no kinks in the tubing and that it proceeds in a downward plane.



Connector for feed water tubing



Connector for reject water tubing

## Initial Operation

### Cartridge Installation

- Open both doors of the system.
- Remove both cartridge packs from their packaging.

One cartridge pack has a label with a blue dot and the number 1, the other cartridge has a red dot and the number 2. In the housing to the lower left side you will find a blue labeled cartridge adaptor, on the lower right side a red cartridge adaptor.

- Remove the red plugs from the top of the cartridge pack and push the blue adapter onto the cartridge pack with the blue dot. Press vigorously. Be sure the label with the blue dot faces you. The adapter displays "front".

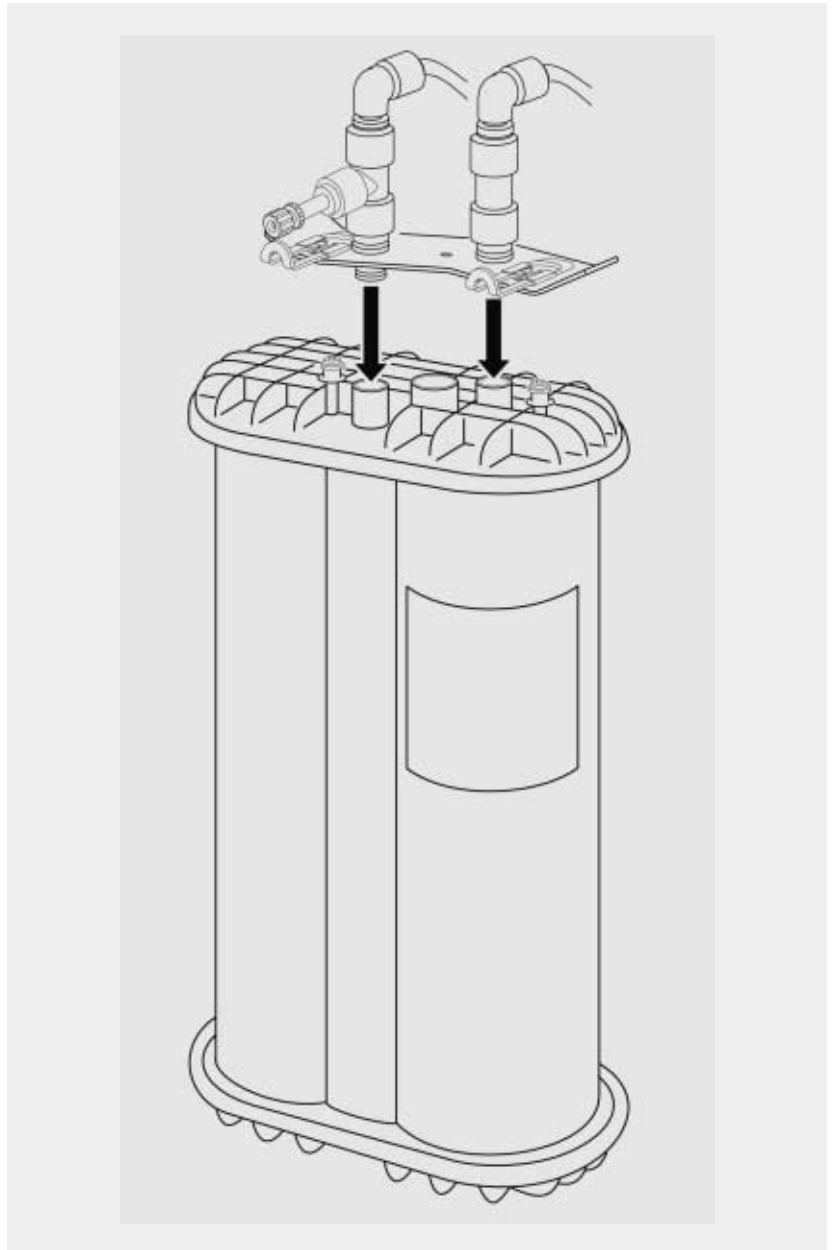
Two screws each are seated in the cartridge cover. The two screw heads must rise from the drillings of the safe guard slides with the upper ring of the spacers.

- Push both safe guard slides all the way under the upper ring of the spacers, as shown in the figure opposite.
- Place the cartridge pack with the blue dot left into the housing and push until properly seated. Be sure the label faces you.
- Proceed with the cartridge pack with the red dot in the same manner on the right side of the unit and connect the red coupler.
- Close both doors.

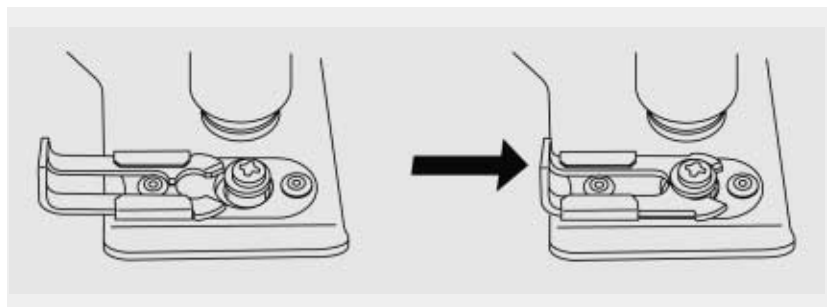


### Note

- Moisten the O-rings of the cartridge pack adapter with water to facilitate connection.
- Before initial operation the cartridge packs have to be flushed, see Cartridge Flush section.
- Screw the final filter onto the NPT fitting of the dispensing valve only after flush cycle and sanitization of cartridge packs and ultrafilter.



Press the adapter onto the cartridge (e.g. red cartridge pack)



Secure the adapter by pushing the two safe guard slides forward over the security screws

### System Settings

Prior to initial operation of the arium 611VF, set date and time, the language for the display text and the desired measurement units. To set these functions:

#### Setting the Date and Time

- The main power switch on the left hand side of the housing must be on ("I").

The arium 611VF will then perform the system check. The display will show the following information:

```
Sartorius System UF
S/N XXXXXXXX
System Check OK
U1.XX
```

The display will show the following when the system check is complete

```
MENU>Main Menu
OPER>Operation
ENTR>New Cart. Flush
```

- Press Menu to get in to the Main Menu

```
MENU      Utilities
           Maintenance
           Setup
```

- Select "Setup". Press ENTER to confirm.

```
SETUP      Time & Date
           Set Point
           Meas. Units
```

- Select "Time & Date". Press ENTER to confirm.

Display will show the following:

```
TIME/DATE Standard
           U.S.
```

- When "Standard" is selected, the date will be displayed in the DD.MM.YY format and time in the 24-hour format.
- When "U.S." is selected, the date will be displayed in the MM.DD.YY format and the time in the 12-hour format.

- Choose a format and press ENTER to confirm.

- Select Time & Date and use the arrow keys  $\uparrow$  or  $\downarrow$  to change current Time & Date settings. Press ENTER after each digit is set to move to the next digit.

- Press ENTER to confirm the Time & Date setting.

The system will then switch to the previous Operation Mode.

### Measurement Units

This feature allows the user to select how measurement units are displayed. The user can choose between  $M\Omega \times cm$ ,  $\mu S/cm$ , with the option to display readings compensated to 25°C or uncompensated, or temperature. To set the measurement units:

- Press MENU to get into the Main Menu:

```
MENU      Utilities
           Maintenance
           Setup
```

- Select "Setup". Press ENTER to confirm.

```
SETUP      Time & Date
           Set Point
           Meas. Units
```

- Select "Measurement Units". Press ENTER to confirm. The display will show the following:

```
MEAS.      MΩ * cm comp.
           μS/cm comp.
           MΩ * cm uncomp.
```

Use the arrow keys  $\uparrow$  or  $\downarrow$  to select the desired option and press ENTER to confirm.



#### Note

In some menus not all menu items are visible on the display. Repeatedly press the arrow key  $\downarrow$  to display menu items listed further below.

The system will then switch to the previous Operation Mode.

### Set Point

The option “Set Point” allows the user to select a defined quality level for the product water in  $\text{M}\Omega \times \text{cm}$  or  $\mu\text{S}/\text{cm}$ . When the water quality falls below this Set Point, cartridge packs should be replaced. The factory setting for the Set Point is  $10.5 \text{ M}\Omega \times \text{cm}$ . To select the Set point:

- Press MENU to get into the Main Menu:

```
MENU>Main Menu
OPER>Operation
ENTR>New Cart. Flush
```

- Select “Setup” and press ENTER to confirm.

```
SETUP      Time & Date
           Set Point
           Meas. Units
```

- Select “Set Point” and press ENTER to confirm.  
The display will show the following:

```
Set Point
10.5 MΩ * cm
```

- Select current Set Point or use the arrow keys  $\uparrow$  or  $\downarrow$  to change to the desired Set Point. Press ENTER after each digit is set to move to the next digit.
- Press ENTER to confirm the Set Point.

The system will switch to the previous Operation Mode.

When the water quality drops below the defined Set Point, in the Normal Operation Mode the following display is shown blinking with the current measurement unit:

```
Check Set Point
14:32           20.03.01
```

### Language

This feature allows the user to select one of six languages for the display texts for convenient operation. The options are German, English, French, Spanish, Italian and Japanese. To select a language:

- Press MENU to get into the Main Menu:

```
MENU      Utilities
           Maintenance
           Setup
```

- Select “Setup” and press ENTER to confirm.

```
SETUP     Time & Date
           Set Point
           Meas. Units
```

- Use the arrow key  $\downarrow$  to scroll down, select “Language” and press ENTER to confirm.  
The display will show the following:

```
LANG.     English
           French
           German
```

- Use the arrow keys  $\uparrow$  or  $\downarrow$  to select “Language” and press ENTER to confirm.

The system will return to the previous Operation Mode.

### Initial Flush and Sanitization

Prior to initial operation, cartridge packs and the ultrafilter must be flushed to remove air and rinse wetted parts.

### Flushing and Purging Air from the Cartridge Packs



#### Note

The final filter must not be fitted onto the dispenser fittings at this time.

Proceed as follows:

- Press MENU to get into the Main Menu:

```
MENU      Utilities
           Maintenance
           Setup
```

- Select "Maintenance" and press ENTER to confirm.

```
MAINTENANCE
           UU Life Timer
           Sanitization
```

- Select "New Cartr. Flush" and press ENTER to confirm. The display will show the following:

```
AIRPURGE/FLUSH CYCLE
Press ENTER to Start
```

- Press ENTER.

The New Cartridge Flush will begin and the display will indicate the remaining flush time:

```
AIRPURGE/FLUSH CYCLE
          19 min
```

When this time has elapsed the following display is shown with the word "Finished" blinking:

```
AIRPURGE/FLUSH CYCLE
Finished
Push OPER> Operation
```

- Open the dispensing valve and discard water for approx. 3 minutes.

The New Cartridge Flush is complete, and the final filter can now be installed. Refer to filter installation instructions on page 17.

### System Sanitization

To sanitize the system:

- Press MENU to get into the Main Menu:

```
MENU      Utilities
           Maintenance
           Setup
```

- Select "Maintenance" and press ENTER to confirm.

```
MAINTENANCE
           UU Life Timer
           Sanitization
```

- Select "Sanitization" and press ENTER to confirm.
- Follow the instructions on the next few screens and press ENTER after each is complete.

```
Disconnect Feed Line
Remove End Filter
Push ENTER
```

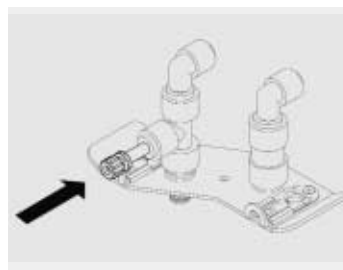
```
Open Product Outlet
Collect Outlet Water
Inject Sanit. Liquid
Push ENTER
```



#### Note

Make sure system is depressurized before attempting to inject sanitization liquid.

Inject the sanitization liquid with the syringe as follows (see the figure below):



Inject the sanitization liquid at the red adapter fitting

- Unscrew the luer cap from the connection of the red cartridge adapter.
- Inject the sanitization liquid through the connection into the system and then slowly remove the syringe. Some solution may exit.
- Reattach luer end cap.

After pressing ENTER the pump will run for some seconds. When the pump stops, the display will show the following:

```
Close Product Outlet
Reconnect Feed Line
Push ENTER
```

After pressing ENTER, the 30-minute active sanitization time will begin. Time will start to count down on the display. When the 30 minutes expires, the system will flush for 6 minutes automatically. When the time expires, the Sanitization Purity Circulation will begin automatically and time will count (60 minutes). The system will enter Standby Mode automatically when time expires.

- To complete the Sanitization Procedure, press the OPERATE | STOP button and flush 0.5 liters of water to drain through the dispensing valve.

The final filter can now be installed.



### Ultrafilter Flush

Prior to initial operation, the Ultrafilter module has to be flushed. The system offers a short (1 min) and a long UF flush (5 min).

Proceed as follows:

- Press MENU to get into the Main Menu:

```
MENU      Utilities
           Maintenance
           Setup
```

- Select "Maintenance" and press ENTER to confirm.

```
MAINTENANCE
           UV Life Timer
           Sanitization
```

- Select "UF Flush" and press ENTER to confirm.

```
UF-FLUSH
           Short
           Long
```

Two flush options are shown. The Short Flush runs 1 minute, the Long Flush runs 5 minutes.

- Select "Long" and press ENTER to confirm. Display will show the type of flush selected:

```
LONG FLUSH
5 min
Push ENTER to Start
```

- The flush cycle begins – on the display, time will begin to count down. When the time has elapsed, the system will return to its previous Operation Mode. If necessary press OPERATE | STOP to get into the Operation Mode.
- Then open the dispensing valve and flush 5 liters of water to drain.
- Close the dispensing valve.

### Reset UV Timer Prior to Initial Operation

Prior to initial operation the UV Timer must be reset. See the Activate the UV Bulb Timer section on page 28.

### Final Filter Installation

- Unpack a new final filter.
- Make sure the dispensing valve is closed.
- Apply two to three wraps of Teflon tape to threaded NPT fitting of filter.
- Screw filter clockwise into valve NPT fitting until snug.
- Remove the protective cap from the bell assembly and flush 6 liters of water to drain through final filter.

After this step, the system is now ready for operation.



### Note

Flush an additional 50 ml water to drain prior to collecting water for analysis.

## Further Options

### Print Data

If you have connected an appropriate printer to the printer port (1) on your arium system, you have two print options:

- Print Interval Option  
With the Print Interval Option, the system can be set up to print data at regular intervals when in Normal Operation.
- Print Screen Option  
The Print Screen Option will only print the last data recorded.



### Note

The arium system has a 9-pin connection for a serial printer. The printer must use a separate power supply and be configured as follows: 19,200 baud, 8-bit, no parity.

To select a print option:

- Press MENU to get into the Main Menu:

```
MENU      Utilities
           Maintenance
           Setup
```

- Select "Utilities" and press ENTER to confirm.

```
UTILITIES
           Print
           Timer Contr.
```

- Select "Print" and press ENTER to confirm.

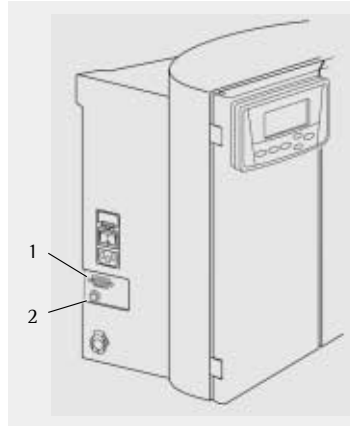
```
PRINT
           Print Interval
           Print Screen
```

- Select the desired option and press ENTER to confirm.

- With the Print Interval Option, the system can be set up to print data at regular intervals. If you have selected "Print Interval", you can use the control keys for the cursor to set the desired length of interval in minutes when prompted by the display.
- "Print Screen"  
The Print Screen Option will only print the last data recorded. You can generate a printout of the screen by pressing ENTER once. After printing, the system returns to the previously activated Operate Mode.

### Pump Protection

If you are using a separate tank for the feed water supply, you can connect the water tank and the arium unit via port (2) with a pump protection for tank feed systems. When the tank is empty, the pump is turned off and water will not recirculate (only with arium tank).



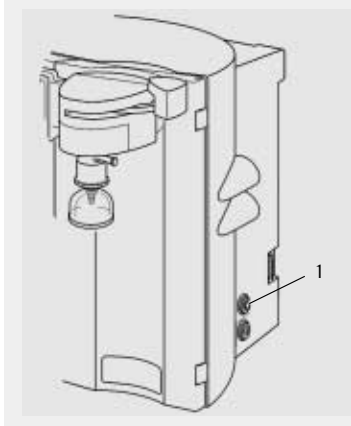
Printer Port (1) and pump interlock (2)

## Time | Volume Dispense



### Note

The arium 611 System must be equipped with a Time | Volume Dispense port to function. The Time | Volume Dispense port is located on the right side of the system (1).



### Warning!

Be sure a 1/4" outlet tube is connected to the Time | Volume Dispense port located on the right side of the system. When time dispense is activated, water will exit the system via this port. The end of the outlet tube should be placed in a filling device.



### Note

In order to use the Time | Volume Dispense feature, you must first measure the flow rate of the water from the timed dispense outlet. Install the supplied 1/4" tube to the dispense outlet port. Follow the menu instructions below to operate the timed dispense control. When asked to enter a time, use the up | down arrows and enter a 1-minute. Place the open end of the tubing in a graduated container of at least 2-liter volume. Activate the timer and allow water to collect in the container. When the 1-minute timed dispense has stopped, measure the volume of water collected. Use the volume collected in 1-minute (flow rate) to calculate your dispense time requirement. For example, you have measured a 1-liter volume in 1-minute. Your measured flow rate is 1l/min. If you need 10 liters to fill a container, 10 l/1l per minute = 10 minutes dispense time.



### Note

If you are using a filter with the Timed Dispense feature, attach the filter and rinse the filter for 5 minutes to drain before measuring the flow rate. Measure the flow rate each time you change filters or cartridges.

- Press MENU.

```
MENU      Utilities
           Maintenance
           Setup
```

- Use  or  to select "Utilities". Press ENTER to confirm.

```
UTILITIES
           Print
           Timer Contr.
```

- Use  or  to select "Timer Contr.". Press ENTER to confirm.

```
TIMER CONTROL
           10.0 min
```

- Use  or  to change the time. Press ENTER after each digit is set to move to the next digit. When the time has been entered the following screen is displayed.

```
TIMER CONTROL
To Start Filling
Push ENTER
```

- Be sure an outlet tube is connected to the time dispense port on the right side of the system. To begin time dispense press ENTER.

- The system will begin to dispense water through the time dispense port. Time will count down as shown on the screen below.

```
10 min
18.2 MΩ * cm   c
11.15          10.01.02
```

- When time expires, the time dispense port will close and water will continue to recirculate through the system. Filling is now finished. The screen below will show on the display.

```
Filling Finished
18.2 MΩ * cm   c
11.25          10.01.02
```

### Set Cell Constant

The resistivity and temperature cell constants are factory set! If you have to replace the cell, you will find the resistivity and temperature cell constants listed on the cell cable (1) located inside the arium system. To provide a more accurate reading, the cell constants should be entered in the system memory by the user. Follow the steps below to enter the cell constants:

- Power off the arium system (“0”) and disconnect it from the AC power outlet.
- Open the front doors and place the red cartridge pack on the side.
- Locate the white label on the gray cell cable (1) underneath the resistivity cell. Record the resistivity and temperature cell constants.
- Place the red cartridge back in the system, close the doors, connect the system to the AC outlet and power on the arium water system (“1”).
- Press MENU to get into the Main Menu:

```
MENU      Utilities
           Maintenance
           Setup
```

- Use  or  to select “Utilities”. Press ENTER to confirm.

```
UTILITIES      Print
               Timer Contr.
```

- Use  or  to select “Set Cell Constant”. Press ENTER to confirm.

```
Cell Constants
Res    0.1000
Temp  +1.0000
```

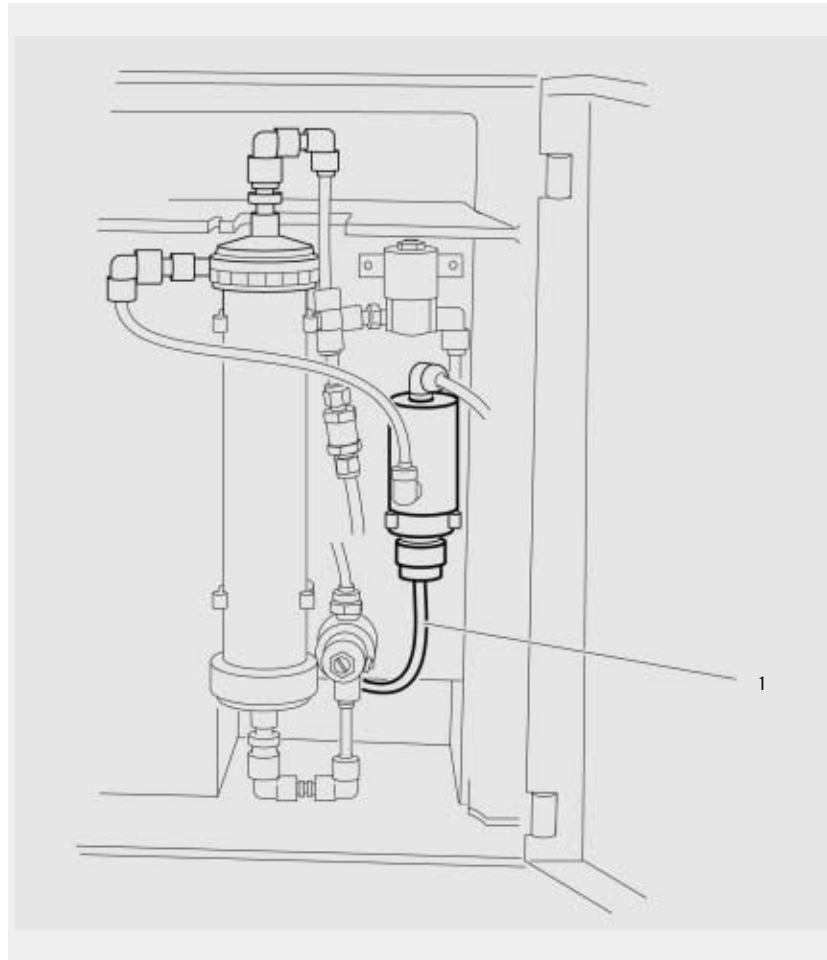
- Use  or  to enter the resistivity (Res) and temperature (Temp) cell constants previously recorded. Press ENTER after each digit is set to move to the next digit.

When the last digit is entered and you have pressed ENTER to confirm, the values will be recorded in the system memory and the system will enter Operate Mode last activated.



### Note

If a digit is entered in error, press the MENU button to return to the Main Menu and begin the process again.



Cell constants listed on the cell cable (1)

### Calibration of the System

The system can be calibrated using an optional N.I.S.T. calibration module available from Sartorius.

Proceed as follows:

- Turn the power switch on the arium System to off ("0") and disconnect power cord from the unit.
- Disconnect the inlet water line from the arium system. Open outlet valve to depressurize the system.
- Open the front doors and move the red cartridge pack #2 to the side by rotating the pack to the right.
- Pull up the yellow sealing hood from the gray resistivity cell cable.
- Disconnect the cell from the gray cable. Attach the calibration module where the cell cable was connected.
- Close the front doors, reattach the power cord and turn the power switch on ("1") – wait for the unit to complete the system check.



#### Caution!

Danger of water spillage.

- Press MENU to get into the Main Menu.

```
MENU      Utilities
           Maintenance
           Setup
```

- Use the cursor to select "Maintenance". Press ENTER to confirm.

```
MAINTENANCE
           UV Life Timer
           Sanitization
```

- Use the DOWN arrow (▼) to select "Calibration". Press ENTER to confirm.

```
See Owners Manual
for Details.

Push ENTER to Start
```

- After pressing ENTER, the calibration will begin.

This will take a few minutes to complete:

```
Calibration
In Process
```

When calibration is successful, the display will show the following:

```
Calibration
Finished
```

- Turn the power switch on the arium System to off ("0") and remove the power cord.
- Open the front doors and unplug the calibration module from the cell.
- Reattach the gray cable to the cell.
- The yellow sealing hood should form a tight seal around the connection.
- Close the doors and reattach the power cord.
- Connect the inlet water line and power on the system ("1").

The calibration is now complete. The unit is ready for normal operation.

## Start Up | Operation



### Note

If your laboratory uses several liters of water or more per hour, it is recommended that the system be left in the Operate Mode to maintain the highest quality water. During times of low water consumption it is recommended that the system be put in the Standby Mode to conserve energy. To dispense water from the standby mode, press the operate button and allow the system to circulate for several minutes prior to drawing water. After drawing water the system may be put back in the Standby Mode. The system should be put in the Standby Mode overnight and for weekends and other off duty hours.

### Normal Operation Mode

Once the new cartridge flush procedure and the sanitization procedure are completed, you can start Normal Operation with your arium 611VF. Turn on the power switch ("1"), connect the feed water source. When the internal system check is complete, the display will show the following options:

```
MENU>Main Menu
OPER>Operation
ENTR>New Cart. Flush
```

- At this point the system Main Menu can be accessed and Normal Operation started by pressing the OPERATE | STOP button.

### Dispensing Product Water

In Normal Operation Mode the display will show the quality of the treated water according to the preselected measurement units:

```
18.2 MΩ * cm    c
14.32           20.02.01
```

When the required quality of the product water is displayed, you can dispense the water at the outlet by operating the draw-off lever:

- Place a water container under the outlet.
- Wait until the display shows the desired resistivity reading of the water.
- Remove the protective cap on the bell assembly of the final filter and
- Push the draw-off lever to the right to dispense the product water.
- After dispensing the water, pull the draw-off lever forward to close the valve.
- Place the protective cap back on the bell assembly.



### Note

For all low detection level work, i.e. with a low content of TOC or endotoxins, flush an additional 50 to 100 ml water to drain prior to collecting water for analysis. (This corresponds to the volume of the supply to the final filter and the final filter capsule).

### Standby Mode

The "Standby Mode" is designed to conserve energy while maintaining water purity during periods of little or no purified water demand. At the end of the working day or before the weekend press the Standby button to engage the "Standby Mode".

The display shows "Standby" when in Standby Mode.

```
Standby
```

When the system is in the Standby Mode, water will recirculate for 15 minutes per hour with the UV lamp on. The next morning or working day set the unit back into service by pressing the Operate | Stop button.

While in the "Standby Mode" an "Automatic UF-Flush Cycle" will occur once in every 24 hours. During the "Automatic UF-Flush Cycle", UF concentrate water is rapidly flushed to drain for 30 seconds. The first Automatic UF Flush Cycle will occur approximately 3 hours after the system is placed in the "Standby Mode".

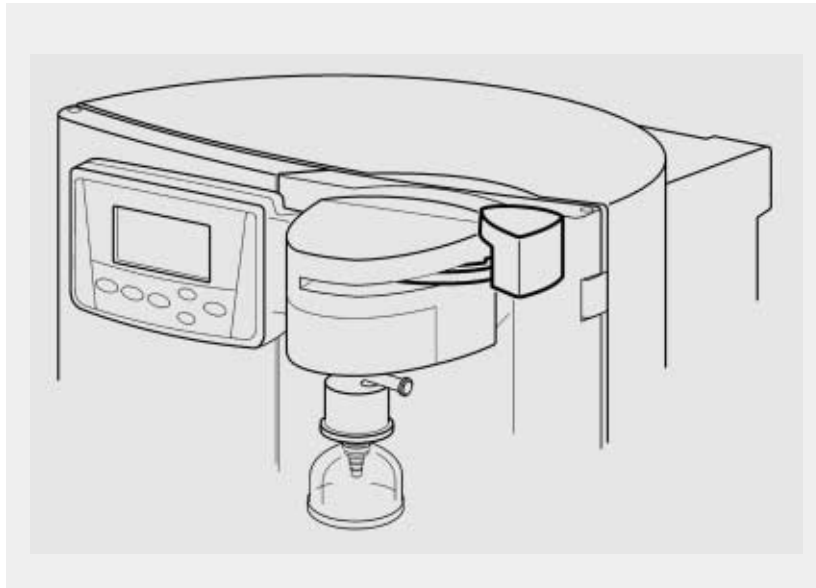
The display shows "Standby Auto UF-Flush Cycle" during the UF flush cycle.

```
Standby
Auto UF-Flush Cycle
```

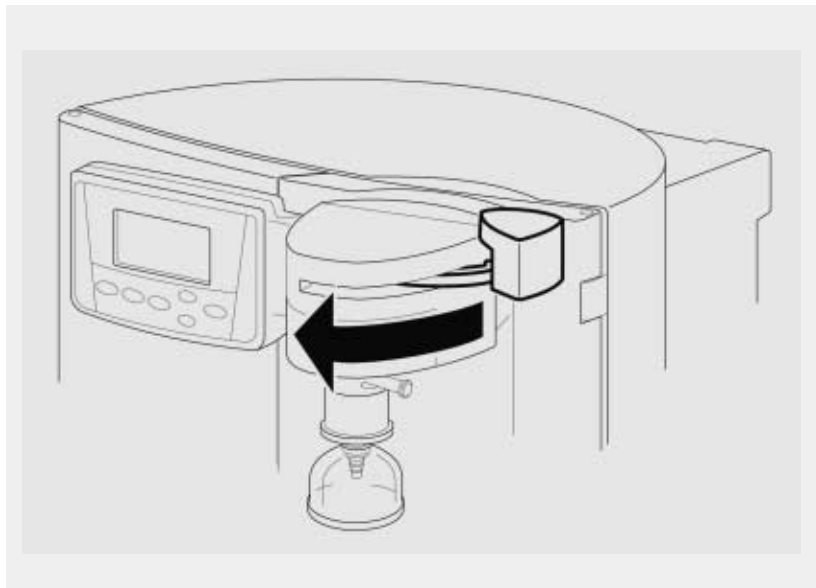


### Note

To conserve energy, the Standby Mode is recommended during non-working hours or when water consumption is less than 2 liters per hour. If water consumption is greater than 2 liters per hour, the system should be placed in the Normal Operation Mode.



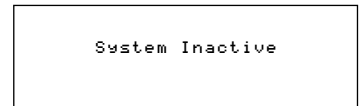
Open product outlet valve



Push the draw-off lever forwards to close the product outlet valve.

### System Inactive Mode

If the Operate | Stop button is pressed while the system is on Normal Operation the arium 611VF is deactivated. This mode is intended purely for troubleshooting and should not be used for prolonged periods of time. Otherwise the entire system will have to be flushed and sanitized or cartridge packs replaced. When the system is inactive, the display shows:



If you need to shut down arium 611VF for an extended period of time, you should completely drain it, and remove all cartridge packs and the ultrafilter to prevent the growth of bacteria. If the system has remained inactive and full of water for more than 96 hours, you must drain the unit, install new cartridges and sanitize the unit prior to use.

## Maintenance and Servicing



### Warning!

Severe electrical shock hazard or danger of electrocution!

- Only qualified personnel may service and repair arium 611VF.
- Disconnect arium 611VF from power supply outlet before maintenance and servicing.
- Avoid splashing disinfecting solutions on clothing or skin.
- Ensure all tubing connections are tight to avoid chemical leakage.
- Turn off feed water and depressurize the unit by pushing the draw-off lever to the right. Only then should the housing doors be opened.
- Allow the UV bulb to cool off before removing it. Be sure to wear protective gloves to remove the lamp to avoid leaving finger prints on bulb or sleeve.
- Carefully follow manufacturer's safety instructions on labels of chemical containers and material safety data sheets.

### Sanitization

Sanitization is necessary to control bacteria growth and minimize or prevent the build-up of a bio-film within the cartridges or piping. Without Sanitization, the TOC level in the water can increase significantly.

The frequency with which you will need to clean your unit and replace the cartridges packs depends on your feed water's characteristics, your purity requirements and your usage. Sanitize your arium 611VF and replace the cartridges when the product water purity drops below acceptable purity levels.

To sanitize the arium 611VF:

- Press MENU to get into the Main Menu:

```
MENU      Utilities
           Maintenance
           Setup
```

- Select "Maintenance" and press ENTER to confirm.

```
MAINTENANCE
           UV Life Timer
           Sanitization
```

- Select "Sanitization" and press ENTER to confirm.
- Follow the instructions on the next few screens and press ENTER after each is complete.

```
Disconnect Feed Line
Remove End Filter

Push ENTER
```

```
Open Product Outlet
Collect Outlet Water
Inject Sanit. Liquid
Push ENTER
```

The Sanitization Liquid is injected using the syringe into the connector ports of the adapter on the red cartridge adapter (see figure on page 16):

- Unscrew luer end cap from the injection port of the red adapter
- Inject the sanitization liquid through the port and then slowly remove the syringe.
- Screw luer end cap back on and close doors.

```
Close Product Outlet
Reconnect Feed Line

Push ENTER
```

The 30-minute active sanitization time will begin. Time will start to count down on the display. When the 30 minutes expires, the system will flush for 6 minutes automatically. When the time expires, the Sanitization Purity Circulation will begin automatically and time will count (60 minutes). The system will enter Standby Mode automatically when time expires.

- To complete the Sanitization Procedure, press the OPERATE | STOP button and flush 0.5 liters of water to drain through the dispensing valve.
- Close the dispensing valve and install a new final filter on the dispensing valve.



### Cartridge Replacement

Cartridge pack life is directly related to feed water quality and water consumption. Cartridge packs need to be replaced when product water quality drops below the requirements established by the user.

To replace the cartridges:

- Turn unit off using the operate | stop button and the main power switch on the rear panel ("O") and remove the power plug.
- Make sure the inlet water is disconnected from the feed water supply or from the arium unit disconnect valve.
- Push the draw-off lever to the right to release the system pressure.
- When water flow stops, pull draw-off lever forwards again and open the front doors of the housing.
- Pull the safe guard slides on the blue adapter towards you.
- Lift the adapter up out of the cartridge pack.
- Remove the cartridge pack.
- Place a 500-ml container under the adapter; lower the adapter until water flow stops.
- Repeat these steps with the second cartridge adapter.
- Unpack the new cartridge packs.

One cartridge pack is marked with a blue label, the other with a red label, (#2). In the housing to the lower left side you will find a blue-labeled connector, on the right a red connector.

- To facilitate connection of the adapter, moisten O-rings on the adapter for the cartridge pack.
- Place the blue adapter on to the blue-labeled cartridge pack (#1) and push firmly into place (see figure on page 13).

Two screws are seated in the cover of each cartridge pack. The two screw heads must rise from the drillings of the safe guard slides with the upper ring of the spacers.

- Push both safe guard slides all the way under the upper ring of the spacers (see figure on page 13).
- Place the blue-labeled cartridge pack in the housing on the left, push all the way home. The label must be facing you.
- Connect the red adapter to the red-labeled cartridge pack (#2) in the same manner on the right side of the unit.
- Close both doors.
- Open the feed water line or connect the line to the arium unit.
- Connect arium power cable and switch on the main switch on the left side of the housing ("I").

The new cartridge packs have to be flushed prior to initial use (see Flushing the Cartridge Packs section on page 16).



#### Note

Do not attach the final filter to the NPT fitting of the dispensing valve until after the new cartridge flush has been completed.

### Ultrafilter Replacement

The length of your ultrafilter's life will depend to some extent on conditions and use in your lab. When you are unable to completely sanitize your system (i.e. you can no longer obtain pyrogen-free water even after sanitizing your system), replace the ultrafilter cartridge as follows:

- Turn off arium 611VF and disconnect it from the AC power outlet.
- Disconnect the water inlet tube from the arium System.
- Push the draw-off lever to the right to release the pressure from the system.
- When water stops draining, push the draw-off lever back to the front. Open the front doors of the system.
- Remove the two cartridge packs. Refer to the Section Cartridge Replacement on page 25) or push to one side.
- Unscrew the three screw fittings from the old ultrafilter (see figure on page 10) and remove the ultrafilter from the holder. To do so, hold your index finger under the lower fitting of the ultrafilter to keep any water left in the filter from running out. Empty the ultrafilter to drain.
- Unpack the new ultrafilter module.
- Connect the tubes that were unscrewed earlier to the new ultrafilter module:
  - (1): Inlet is green - bottom
  - (2): Product water adapter is blue-Upper left
  - (3): Reject adapters are red -Top



### Caution!

Danger of leaks.

Make sure that the O-ring on the blue adapter is seated in a vertical position before connecting the ultrafilter.

- Push the ultrafilter module back into the holder so that it engages. The connection fitting on the side should be on the upper left.
- Re-install the two cartridge packs or push them back in place (see Cartridge Replacement, page 25).
- Close the two doors.
- Open the inlet water or reconnect the arium System to the feed water supply.
- Connect arium power cable and switch on the main switch on the left side of the housing ("1").
- Perform a "long" UF Flush (5 minutes) (for details see UF Flush Section on page 17).



### Note

1 or 2 additional short flush cycles may be required to remove air from the UF module.

### Replacing the Final Filter

Replace the final filter whenever the following conditions occur:

- Every 30 days
- The product water flow rate is reduced, or
- Bacteria break through is detected.

The final filter is shipped assembled with a bell. To replace the final filter assembly:

- Remove the old final filter assembly by turning it counterclockwise.
- Remove the new final filter assembly from its bag.
- Apply two to three wraps of Teflon tape to the threaded end of the filter.
- Screw the filter clockwise into the outlet until snug.
- Rinse approx. 6 liters of water through the filter to drain prior to using the product water.



### Note

If a newly installed final filter clogs rapidly after installation, arium 611VF may need to be sanitized to remove bacterial contaminants.

## Cell Cleaning



### Warning!

Severe electrical shock hazard or danger of electrocution!

- Only qualified personnel may service and repair arium 611VF.
- Disconnect arium 611VF from the AC power outlet before maintenance and servicing.
- Depressurize the unit by turning off feed water and pushing the draw-off lever to the right before opening the front doors to replace the cartridges.



### Caution!

Malfunction of the resistivity cell!

- The cell electrodes (4) are etched to improve wetting characteristics. Do not mechanically abrade or damage the surface (i.e. do not clean with a wire brush, sandpaper, etc.).
- Do not immerse the entire cell assembly in cleaning solution, only the electrode portion.

- Turn off arium 611VF ("O") and disconnect it from the AC power outlet.
- Disconnect the feed water supply or the line to the arium unit.
- Push the draw-off lever to the right in order to depressurize the system.
- When water flow stops, pull the draw-off lever back forwards and open the front doors.
- Remove the red-labeled cartridge pack from the housing.
- Remove the gray cell cable (2) under the yellow hood covering.
- Remove the cell (1) from the black socket and unscrew it.
- Carefully remove the O-ring (3) before cleaning the cell.
- Clean the cell in a mild detergent solution using a soft brush or immerse for 10 min in a 1% hydrochloric or sulfuric acid solution.

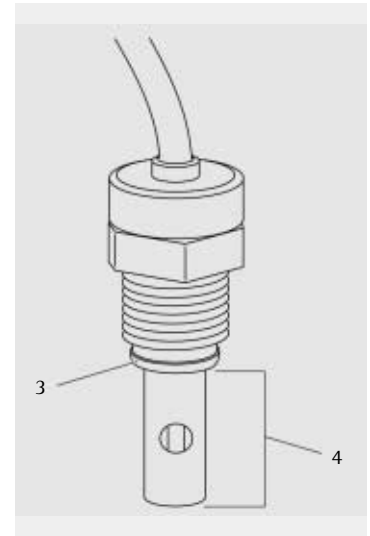


### Warning!

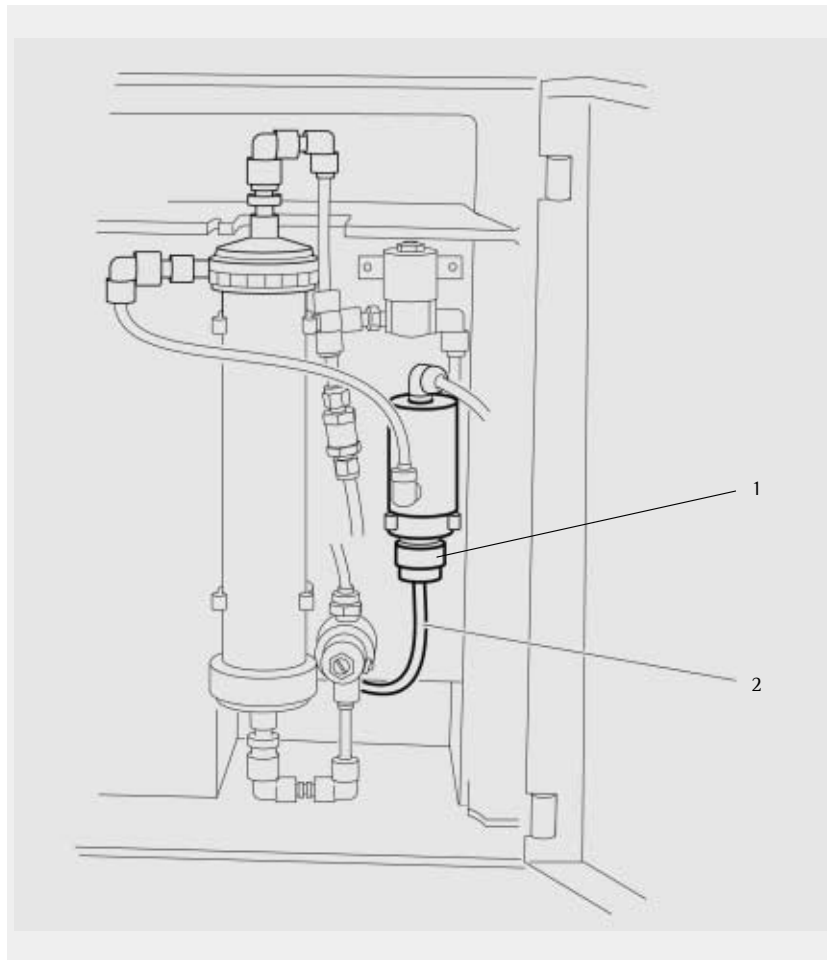
Danger of acid burns!

Carefully follow the acid manufacturer's warnings and recommended handling procedures found on pack labels and material safety data sheets. Wear protective gloves and glasses.

- Thoroughly rinse the cell in deionized or distilled water following the detergent or acid cleaning.
- Apply two wraps of Teflon tape to threaded end of cell.
- Reinstall the cell well and hand-tighten.
- Reconnect the gray cable.
- Reinstall the right cartridge pack into the housing.
- Close the front doors.
- Open the feed water line or reconnect it to the arium system.
- Reconnect the unit to the AC power outlet and turn the unit back on using the main power switch on the left side of the housing ("I"). Press the Operate|stop button to start system.
- Open draw off valve and flush water to drain for 2 minutes.
- Close valve.
- The unit is now ready to operate again.



Clean the metal portion (4) of the resistivity cell



Remove the gray cable from the resistivity cell

### UV Bulb Replacement

The UV bulb consists of a quartz glass tube with integrated mercury bulb. The quartz glass tube and the mercury bulb glass deteriorate during exposure to UV radiation and will eventually absorb the most desirable wavelengths. If only the mercury bulb is replaced, there is no guarantee that the desired UV radiation will pass the quartz sleeve in the reaction chamber.



#### Warning!

Danger of personal injury!

- Depressurize the system prior to opening front doors.
- Allow a defective UV bulb to cool off before removing it. Do not leave finger prints on a new bulb.
- Ultraviolet radiation is harmful to the eyes and skin. Do not attempt to observe the lamp directly when energized.



#### Caution

Danger of irreversibly damaging UV bulb!

Do not touch the glass portion of the lamp. It is recommended that lint free gloves be worn when handling the lamp.

The glass portion must be free of fingerprints, perspiration, etc. A single fingerprint will reduce the effectiveness of the lamp. Clean the lamp with isopropyl alcohol and a lint free cloth.

To replace the ultraviolet bulb:

- Turn off arium 611VF using the main power switch ("O") and disconnect it from the AC power outlet.
- Shut-off or disconnect the feed water supply.
- Push the draw-off lever back in order to depressurize the system.
- When water stops draining from the system, pull the draw-off lever back towards you and open the front doors.
- Take the left cartridge pack with connected adapter out of the housing or slide it to the right towards the center.
- Remove the screw from the metal shield or plastic cap.
- Remove the power plug (1) from the black plastic cap (2).
- Unscrew the top plastic cover from the stainless steel chamber of the UV bulb (see top figure on the next page).
- Hold a beaker (300 ... 500 ml size) under the black plastic cap (2) and slowly unscrew the cap from the stainless steel chamber (by turning it counterclockwise); collect any draining water in the beaker.

If the plastic cap is seated too tightly (2), insert a screwdriver into both grooves and carefully lift up the cap.

- Then remove the old lamp (4) from the stainless steel chamber.
- Insert new lamp with new O-Ring (3) into the stainless steel chamber.



#### Note

Make sure that the O-Ring on the new lamp is not dislocated.

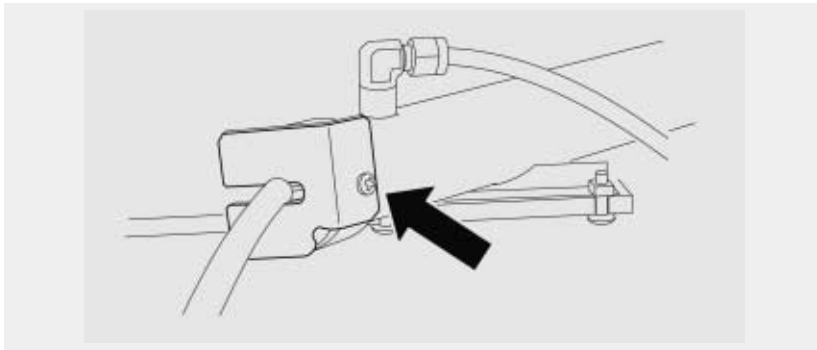
- Replace the black plastic cover over the bulb holder and carefully screw into stainless steel chamber. After O-ring begins to seat tighten only a further 1/4 turn!
- Reconnect the power plug (1) to the bulb holder in the black plastic cap (2).
- Push the recessed shield over the power cord and screw on to the stainless steel chamber.
- Put the cartridge pack back into the unit.
- Close the doors.
- Open the inlet water line or reconnect it to the arium system.
- Reconnect the AC power cable and turn the unit back on using the main power switch on the left side of the housing ("I").
- Perform a 5 minute UF flush cycle to purge air from the system.



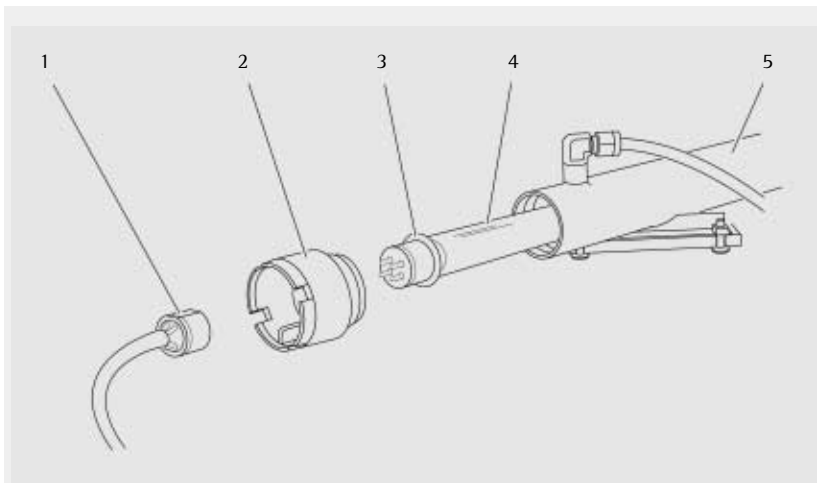
#### Note

After installing a new UV bulb reset the timer, which reminds you to replace the UV bulb. Refer to the following section.

- Press the OPERATE | STOP key to put the system into OPERATE Mode.



Remove screw from metal shield



Remove UV bulb (4) from stainless steel chamber

### Activate the UV Timer

The UV bulb should be replaced approximately every six months. A timer can be activated to display a message every 6 months to remind you that the UV bulb is ready to be replaced.

To activate the timer after installing a new UV bulb:

- Press MENU to get into the Main Menu:

```

MENU      Utilities
          Maintenance
          Setup
  
```

- Select "Maintenance" and press ENTER to confirm.

```

MAINTENANCE
          UV Life Timer
          Sanitization
  
```

- Select "UV Timer" by using  and press ENTER to confirm.

```

UV LIFE TIMER
          Timer Reset
          Escape
  
```

- Press ENTER to reset the timer.

The internal timer is reset and will remind you to replace the UV bulb after 6 months.

- Alternatively press the MENU key to return to the Main Menu without resetting the timer.

After 6 months the display will show the following:

```

18.2 MΩ * cm      c
Change UV Bulb
09.48              23.04.01
  
```

### Fuse Replacement

arium 611VF has two fuses for the unit.



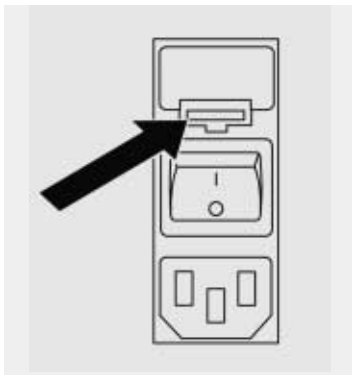
### Warning!

Severe electrical shock hazard or danger of electrocution!

- Only qualified personnel may service and repair arium 611VF.
- Disconnect arium 611VF from the AC power outlet before maintenance and servicing.
- Ensure all tubing connections are tight to avoid leakage.
- Depressurize the unit by pushing back the draw-off lever to the right before opening the front doors to exchange the cartridges.
- Turn off arium 611VF using the main power switch ("0") and disconnect it from the AC power outlet.

The fuse drawer with two safety fuses is located on the left side of the housing above the main power switch.

- Gently press the locking device of the fuse drawer upwards and pull out the fuse drawer (see figure).



### Caution!

Danger of damage to components! First determine why the fuse blew and eliminate the cause. Then replace any defective fuses with new ones.

- Remove the old fuses and replace with fuses of the same type and rating.
- Place fuse drawer back into the housing until it clicks into place.
- Reconnect the unit to the AC power outlet and turn the unit back on using the main power switch ("1").

The unit is now ready to operate again.

## Appendix

### Troubleshooting Guide

Immediately after you discover any malfunction, use the main power switch to turn off arium 611VF. Then use the troubleshooting chart below to try to find out what the problem is and take the suggested action.

Problem	Possible Causes	Solutions
Pump not operating, control panel not lit	No electrical power to arium 611VF.  The power entry plug fuse is defective.  The internal AC adapter fuse is defective.	Ensure that the arium 611VF power cord is connected to a live power source and completely plugged into electrical outlet. Identify and eliminate problem, replace the fuse (see section on Fuse Replacement on page 29). Contact Sartorius Customer Service.
Pump runs, but no display	Connector from main PCB to display PCB not plugged in.	Disconnect unit from AC power. Check and reconnect.
Pump does not run. Display lit.	Pump worn out or defective.	Replace pump.
System leakage	Fitting is not tight or broken.	Change or tighten fitting.
High TOC UV	bulb is not working. Exhausted cartridge packs The system is contaminated.	Replace UV bulb (see page 27). Replace the cartridge packs (see page 25). Perform sanitization (see section on System Sanitization on page 16). Check feed water quality.
Resistivity too low.	Exhausted cartridge packs  The system is contaminated.	Replace the cartridge packs (see Cartridge Pack Replacement section on page 25). Replace the cartridge packs (see section on Cartridge Pack Replacement on page 25) and perform sanitization (see section on System Sanitization on page 16)
Low resistivity.	Resistivity cell dirty.  The system is not calibrated.	Clean cell (see section on Cell Cleaning on page 30). Perform calibration (see section on System Calibration on page 21).
High endotoxin level.	The system is contaminated.  The ultrafilter is contaminated or defective.	Replace the cartridge packs (see section on Cartridge Pack Replacement on page 25), perform sanitization (see section on System Sanitization on page 16) and replace the ultrafilter (see section on Ultrafilter Replacement on page 26). Sanitize or replace the ultrafilter (see section on Ultrafilter Replacement on page 26).
Reduced or no product water flow from the final filter.	The final filter is clogged.  The system is contaminated.  Pump defective	Replace the final filter (see section on Final filter Replacement on page 26). Replace the cartridge packs (see section on Cartridge Pack Replacement on page 25) and perform sanitization (see section on System Sanitization on page 16). Replace pump.
Short cartridge life.	Feed water quality is low. Increased water consumption.	Check the feed water source. Replace cartridge packs with fresh ones.
Display shows "Replace UV bulb".	UV bulb burnt out.	Replace UV bulb (see section on UV bulb Replacement on page 27).
No Display	Display cable not connected	Connect display cable.

## Specifications

Dimensions W × D × H	43.2 × 48.3 × 34.3 [cm]	
Empty weight	15.9 kg	
Operating weight	23.6 kg	
Clearance requirements	Sides: 10 cm minimum for cable and tubing connections Front: 40 cm minimum for opening the doors	
Inlet water requirements	arium 611VF requires water pretreated by: - distillation - deionization or - reverse osmosis Distilled water: > 250 KΩ · cm (< 4 μS/cm) RO water: TDS < 25 ppm CaCO <sub>3</sub> > 20 KΩ · cm (< 50 μS/cm) Deionized water: TDS < 10 ppm CaCO <sub>3</sub> > 50 KΩ · cm (<20 μS/cm), All: Turbidity < 1 N.T.U. Silica < 1000 ppb TOC < 1000 ppb Pressure: From atmospheric tank inlet to a maximum inlet pressure of 7 bar	
Product water capabilities	Quality of the purified water:	18.2 MΩ × cm at 25 °C RNase-/DNase-/DNA-free
	Bacteria:	< 1 CFU/100 ml
	TOC:	< 1 ppb
	Endotoxin:	< 0,001 EU/ml
Flow rate	Up to 1.5 l/min maximum at minimum inlet feed water pressure of 2.0 bar at 50 HZ and with a new final filter.	
Environmental conditions	Operating:	5 °C - 28 °C; 80% relative humidity, non-condensing
	Storage:	5 °C - 45 °C; 80% relative humidity, non condensing
Electrical requirements	100-240 V~, 50/60 Hz, 1 phase	
Fuses power entry	2 fuses 5 × 20 mm, time lag, 250 V, 1 A Installation Category II (over-voltage) in accordance with IEC 664, Pollution Degree 2 in accordance with IEC 664. Altitude limit: 5,000 meters.	
Complies with the following standards	EMV:	EN 50081-1, EN 50082-1
	Safety:	IEC 1010-1-92



## Accessories and Replacement Parts

### Ordering Replacement Parts

When requesting any customer service or replacement parts or in any correspondence about arium 611VF, be sure to state the complete model number and the serial number that are on the Specification Plate label on the rear panel of the unit.

You can obtain any replacement parts listed in this manual from Sartorius or from your local Sartorius dealer.

Order No.	Description
611VF	Complete Unit arium 611VF
611CKRU	Consumable kit with <ul style="list-style-type: none"><li>– 611CPR for RO or Distilled inlet water if application requires low TOC. Will be used on the left (blue) side of the system.</li><li>– 611CPU for low TOC level application in systems with an UV lamp chamber. Will be used on the right (red) side of the system.</li><li>– 5441307H4—NO Sartopore 2 150 Final Filter (2×).</li></ul>
611CKDU	Consumable kit with <ul style="list-style-type: none"><li>– 611CPD for DI water if application requires low TOC levels. Will be used on the left (blue) side of the system and Pack.</li><li>– 611CPU for low TOC level application in systems with an UV lamp chamber. Will be used on the right (red) side of the system.</li><li>– 5441307H4—NO Sartopore 2 150 Final Filter (2×).</li></ul>
611CDU5	Replacement Ultrafilter Cartridge arium 611
5441307H4—NO—B	Sartopore 2 150 Final Filter (Pack of 5)
611CEL1	Replacement UV lamp arium 611
611CEF1	Replacement fuses power inlet 2 fuses
611CDS2	Sanitization Kit 2 syringes
611CDS6	Sanitization Kit 6 syringes
611AMA1	Inlet feed water adapter ¼” NPTF ½”
611AEC1	Calibration module
611AMB1	Wall Bracket





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