ELGA

CENTRA-R 60/120 -US

Operator Manual

VEOLIA WATER
Solutions & Technologies

Publication ref: MANU40596

Version 2 – 01/16

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1. INTRODUCTION

1.1 Use of this Manual

ELGA LabWater strives to produce manuals that are as simple and accurate as possible. However, should you feel they can be improved in any way please email us at info@elgalabwater.com.

This manual guides you through the installation, commissioning and basic operation of the CENTRA-R 60/120 US allowing you to obtain a guaranteed supply of purified water to meet your requirements.

1.2 Customer Support

Service support and consumable items are available from your local supplier or distributor. Please contact info@elgalabwater.com for further information.

1.3 Health and Safety Notes

WARNING! WARNINGS ARE GIVEN WHERE FAILING TO OBSERVE THE INSTRUCTIONS COULD RESULT IN INJURY OR FATALITY.

CAUTION! Cautions are given where failure to observe the instructions could result in damage to the equipment, associated equipment and processes.

1.4 Electricity

WARNING! THIS APPLIANCE MUST BE EARTHED.

It is essential that the electrical supply to the CENTRA-R 60/120 US is isolated before any items are changed or maintenance work performed.

The external isolator providing power to the unit should be positioned so that it is easily accessible.

1.5 Pressure

The water supply should be isolated and residual pressure released prior to removal of any components or carrying out work on the unit.

1.6 Sanitization Chemicals

During the automatic sanitization cycles, EfferSan™ multi-purpose disinfecting tablets and Minncare cold sterilant are used and relevant safety guidance is included in this Manual. Please refer to the manufacturer for material safety data sheets.

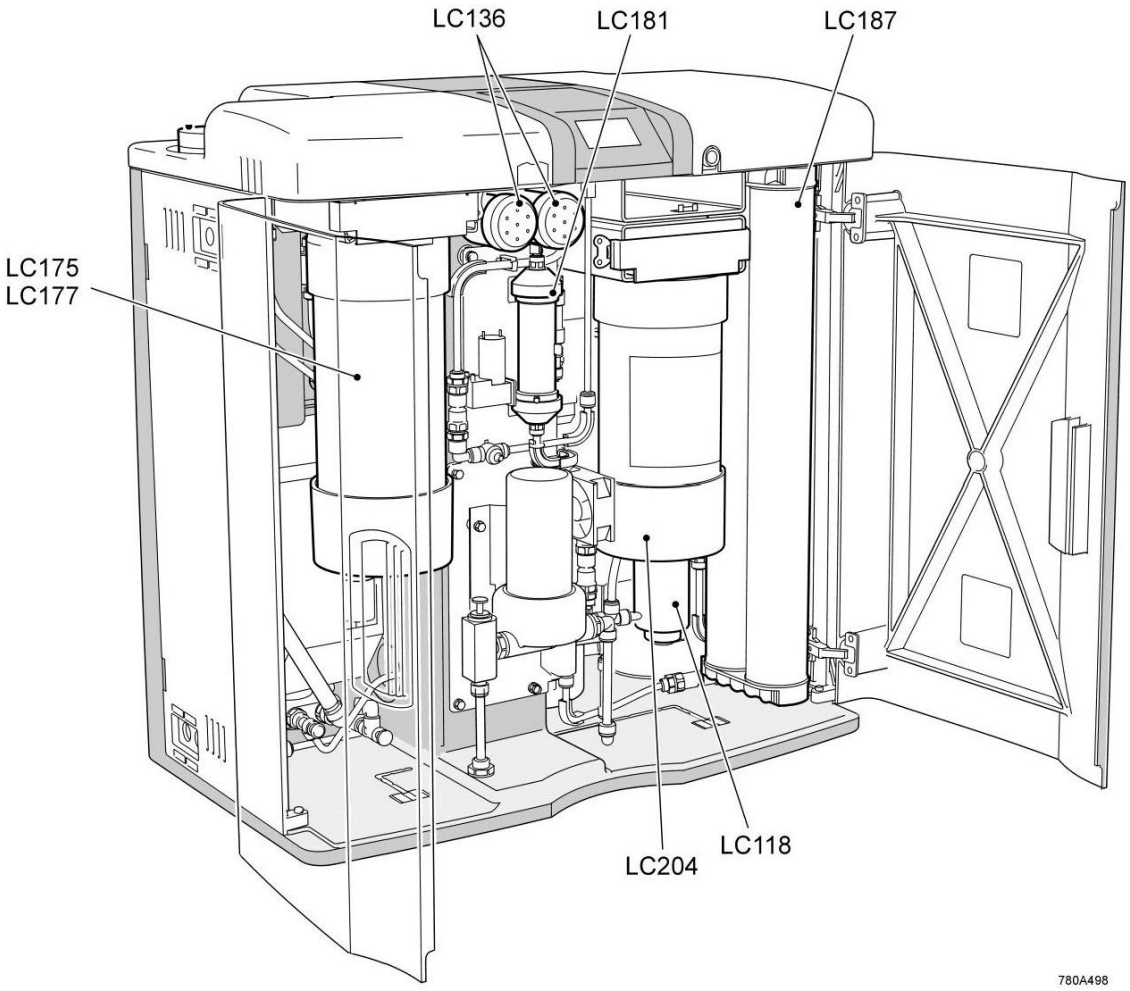
EfferSan™ and Minncare cold sterilant are EPA registered as a sterilant, high level disinfectant, and sanitizer.

EfferSan™ and Spent Minncare cold sterilant acidic and requires normal neutralization as specified by your local state and local regulations.

1% of Minncare cold sterilant has a pH of 3.5..

1.7 Control of Substances Hazardous to Health (COSHH)

Material safety data sheets covering the various replaceable components are available upon request. Contact your local ELGA LabWater distributor.



1.8 Consumables

Part No.	Description	Typical Service Life*	Max. Shelf Life
LC118	UV lamp	12 months	5 years
LC136	Composite vent filter (2 off)	6 months	2 years
LC175	Protek L1 cartridge	6 months	2 years
LC177	Protek L2 cartridge	12 months	2 years
LC181	E-cartridge**	36 months	2 years
LC187	Labpure L1 cartridge**	3 to 12 months	2 years
LC204	Micro filter cartridge**	12 months	2 years

* Service Life is an estimate only, and will depend on the application and feed water quality. Care should be taken to order the correct consumable items.

** Optional - Consumables not fitted as standard. Fit only after consultation with ELGA Technical Support.

2. INSTALLATION AND COMMISSIONING

2.1 Installation

The unit is supplied with a quick start manual that allows the unit to be quickly installed and commissioned.

It is recommended that a trained ELGA representative carry out the installation of the product.

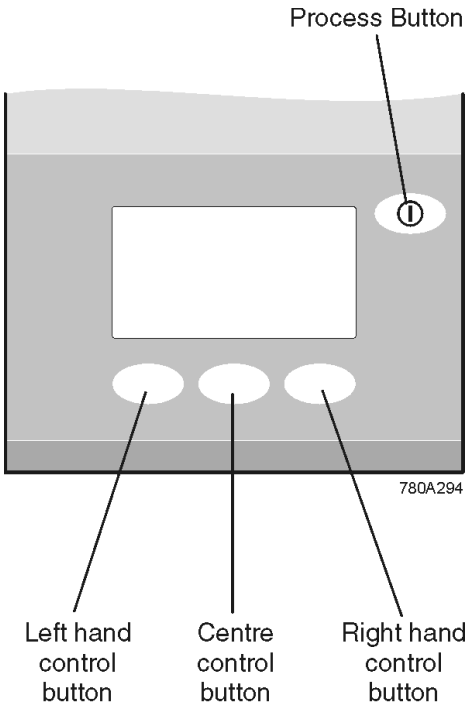
2.2 Commissioning

The unit is supplied with the software set in a commissioning mode that must be completed before being used to supply the application.

It is recommended that a trained ELGA representative complete the commissioning of the product.

3. CONTROLS

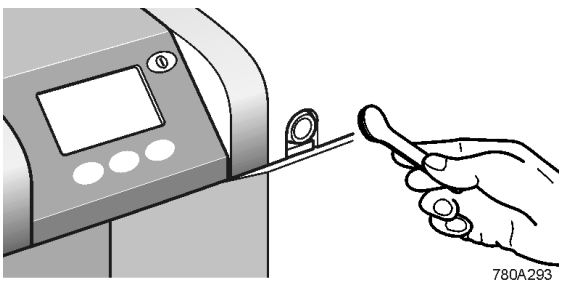
The *CENTRA-R 60/120 US* control panel has a range of control icons. General icons are as follows. Further icons are described in the appropriate sections. A complete listing is included in Section 8.



Control Panel

BUTTON	ICON	FUNCTION
PROCESS		Turns the Unit on/off
LEFT		Menu
		Scroll
		Shift
		Up
CENTRE	✓	Accept
		Replacement Date
RIGHT		Mute Alarm
		Down

CAUTION! If the Master Key is lost a new Key can only be programmed by an ELGA Service Engineer.



Present the Master or User Key

3.1 User Recognition Keys

Your unit is supplied with the following User keys:

Master Key	(Black)	1off
User Key	(Blue)	4off
Sanitization Key	(Green)	2off

The Master Key should be stored in a safe place. The Master Key controls the access level of the other User Keys.

User Keys only have access to customer preference screens.

Sanitization Keys start the sanitization process and are intended to stop the general user from accidentally starting sanitization.

3.2 System Preferences

When the *CENTRA-R 60/120 US* unit is started for the first time after completing the commissioning routine the following steps should be carried out to set up your choices:

Note: *Your choices can be changed and implemented during normal operation. It is not necessary to stop the unit.*

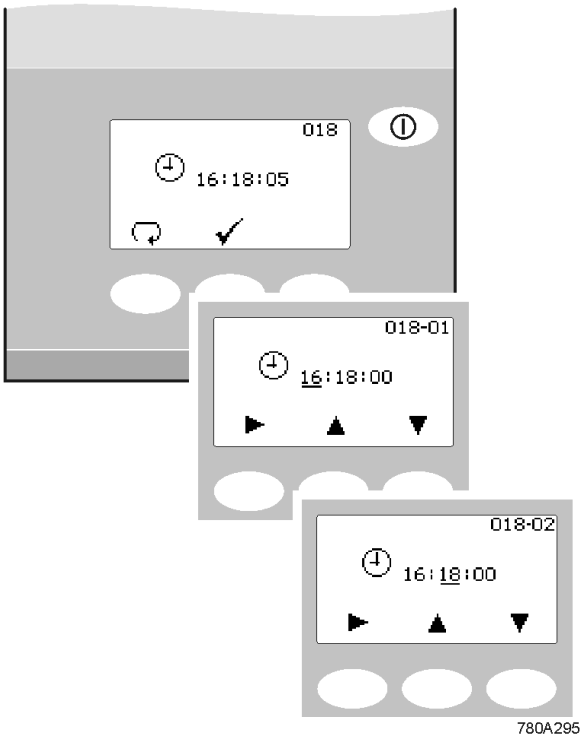
Step 1 - System Access (User Key)

The User Key prevents unauthorized access to specific settings. This ensures consistent system performance and operation.

Note: *The User Key does not prevent access to the PROCESS function in case of emergency.*

1. SWITCH on the main electrical supply to start the controller set-up sequence. This takes several seconds.
2. PRESENT the Master Key (black) or the User Key (blue) to the reader ensuring clean contact of both metallic components.
3. The display will show a padlock.
4. REMOVE Key from the reader.
5. The display will show a key.
6. PRESS button.

Note: *If no buttons are pressed the system will relock after 5 seconds.*



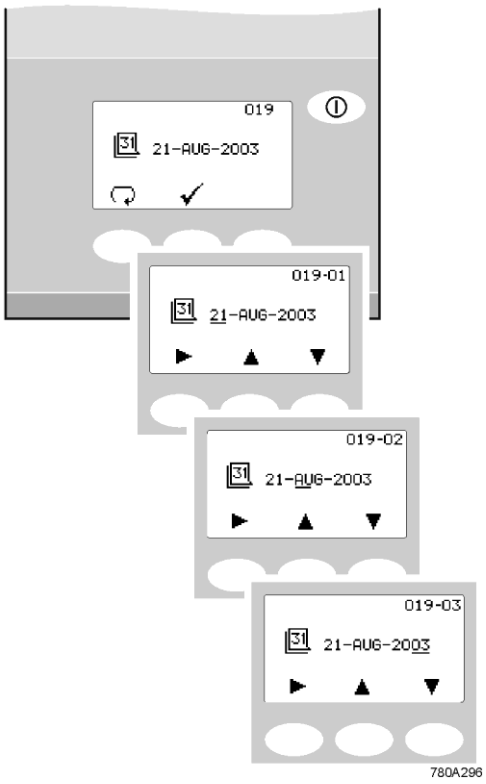
Setting clock time

Step 2 - Clock (screen 018)

1. PRESS to edit time

   OR

   PRESS ✓ to proceed to Step 3.
2. PRESS and HOLD ▲ to increase or ▼ to decrease hour.
3. PRESS ▶ to shift cursor onto minute.
4. PRESS ▲ to increase or ▼ to decrease minutes.
5. PRESS ▶.
6. PRESS ✓.



Set date screens

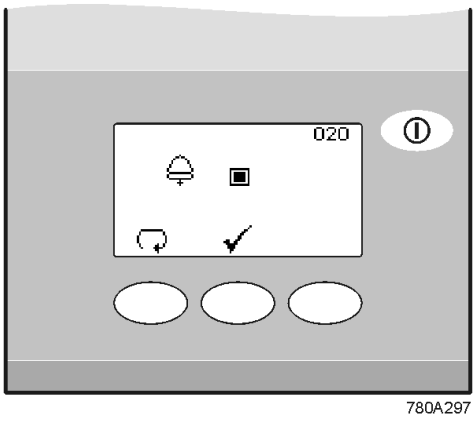
Step 3 - Date (screen 019)

The date is used to initiate change reminders, the date will appear on printed records.

1. PRESS ↻ to edit date

   OR

   PRESS ✓ to proceed to Step 4.
2. PRESS and HOLD ▲ to increase or ▼ to decrease day.
3. PRESS ▶ to shift cursor onto month.
4. PRESS ▲ to increase or ▼ to decrease month.
5. PRESS ▶ to shift cursor onto year.
6. PRESS ▲ to increase or ▼ to decrease year.
7. PRESS ▶ .
8. PRESS ✓ .



Audible alarm enable screen

Step 4 - Audible alarm enabled/disabled (screen 020)

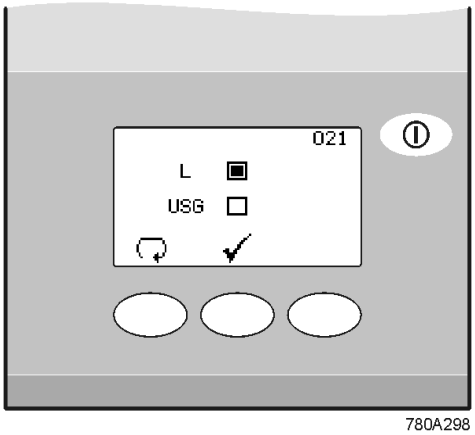
This screen provides the option of either turning on the audible alarm, causing it to sound while the alarm icon flashes or turning off the audible alarm so that it will remain quiet.

1. PRESS ↻ to change mode (■ = ON)

   OR

   PRESS ✓ to proceed to Step 5.
2. PRESS ✓ .

Note: *The visual alarm can not be disabled.*



Set units of measure - volume

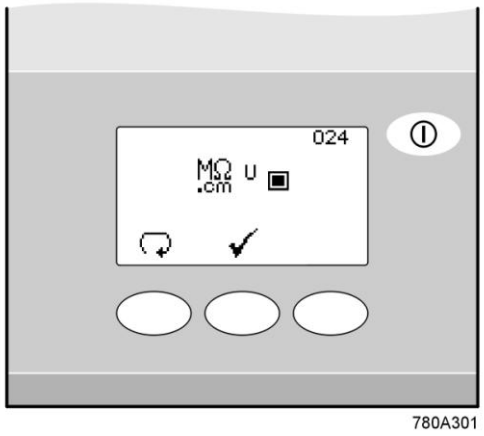
Step 5 - Set units of measure - Volume (screen 021)

This screen allows units of water volume to be set to either L (Litres) or USG (US Gallons). This only indicates the volume in the reservoir.

1. PRESS ↻ to change L or USG

   OR

   PRESS ✓ to proceed to Step 6.
2. PRESS ✓ .



Uncompensated water quality screen

Step 6 - Uncompensated water quality (screen 024)

A U will indicate an uncompensated resistivity or conductivity reading (recirculation loop only) in the normal process screen.

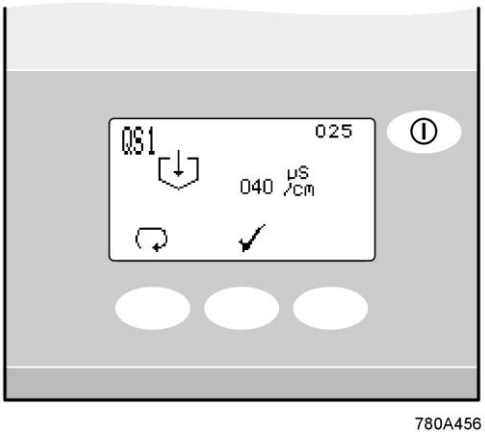
Note: *This screen is only applicable when a Labpure L1 Cartridge (LC187) is installed.*

1. PRESS ↻ to change (■ = Uncompensated water quality ON)

   OR

   PRESS ✓ to proceed to Step 7.

2. PRESS ✓.

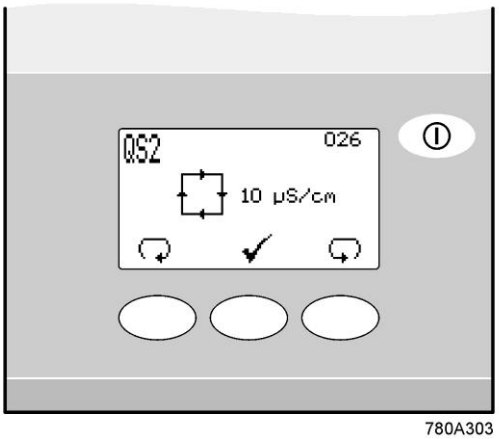


Alarm settings QS1 screen

Step 7 - RO water quality alarm QS1 (screen 025)

This screen is used to set the value at which the RO water quality alarm will sound. This alarm does not stop RO production but can extend or start flush routines.

1. PRESS ↻ to select alarm point 0, 20, 30, 40, 50 or 100µS/cm.
2. PRESS ✓ to proceed to Step 8.
3. If 0 is selected the alarm will be turned OFF.
4. PRESS ✓.



Alarm settings QS2 screen

Step 8 - Product water purity alarm QS2 (screen 026)

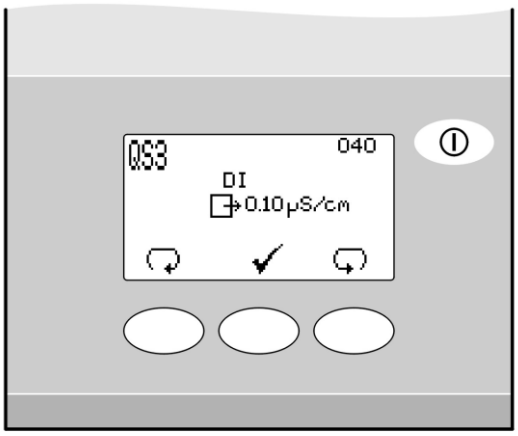
This screen is used to select the value at which the product water purity alarm will activate. The alarm does not stop the unit and will automatically reset if the purity level recovers.

1. PRESS ↻ to select alarm point 0, 40, 50 or 100 µS/cm without purification pack fitted. Range from 1, 2, 5 or 10 MΩ.cm if pack fitted.

   OR

   PRESS ✓ to proceed to Step 9.

2. PRESS ✓.



Alarm settings QS3 screen

Step 9 - Purification cartridge purity alarm settings QS3 (screen 040)

This screen is used to select the value at which the product water purity alarm will activate. The alarm does not stop the unit and will automatically reset if the purity level recovers.

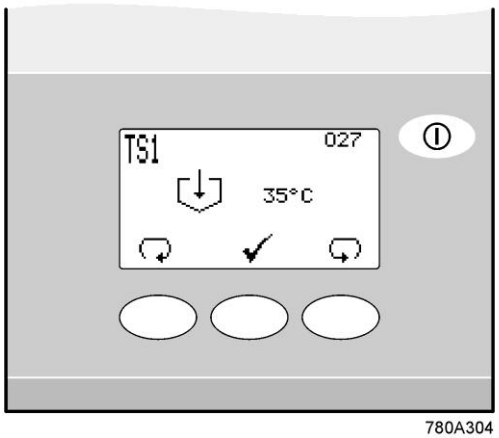
Note: *Only active when a purification pack is installed.*

1. PRESS ↻ to select alarm point, in increments of 1, ranging from 10 to 50µS/cm.

   OR

   PRESS ✓ to proceed to Step 10.

2. PRESS ✓.



Alarm settings TS1 screen

Step 10 - RO water temperature alarm TS1 (screen 027)

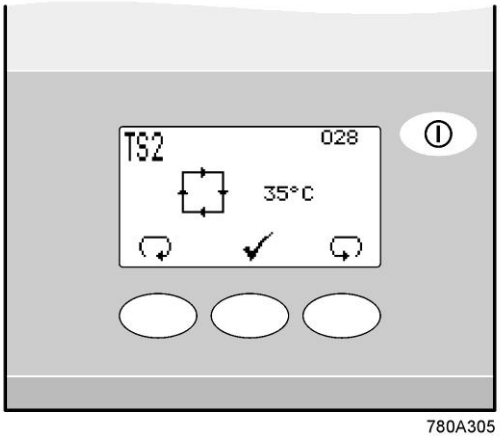
This screen is used to select the value at which the RO water temperature alarm will activate. The alarm does not stop the unit and will automatically reset if the temperature returns below the set point.

1. PRESS ↻ to select alarm point, in increments of 1, ranging from 20°C to 50°C

   OR

   PRESS ✓ to proceed to Step 11.

2. PRESS ✓.



Alarm settings TS2 screen

Step 11 - Product water temperature alarm TS2 (screen 028)

This screen is used to select the value at which the product water temperature alarm will activate. The alarm does not stop the unit and will automatically reset if the temperature falls below the set point.

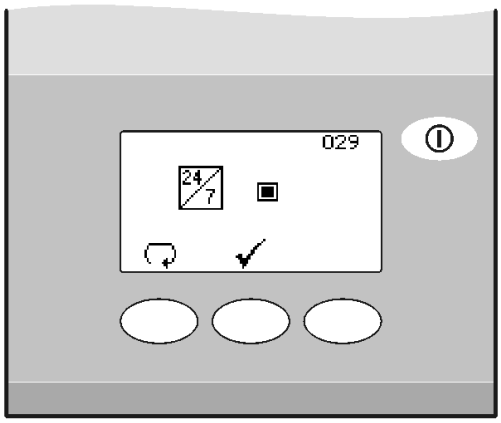
1. PRESS ↻ to select alarm point, in increments of 1, ranging from 20°C to 50°C

   OR

   PRESS ✓ to proceed to Step 12.

2. PRESS ✓.

Note: *If the water temperature rises above 55°C in the system it will alarm, stop and await operator intervention - alarm will be reset once power is removed for 5 seconds and then reinstated.*



Continuous operation screen

Step 12 - Continuous operation (screen 029)

Continuous operation may be required in particular circumstances or when demand for water fluctuates.

CAUTION! During long periods of continuous operation and low usage the water temperature will rise.

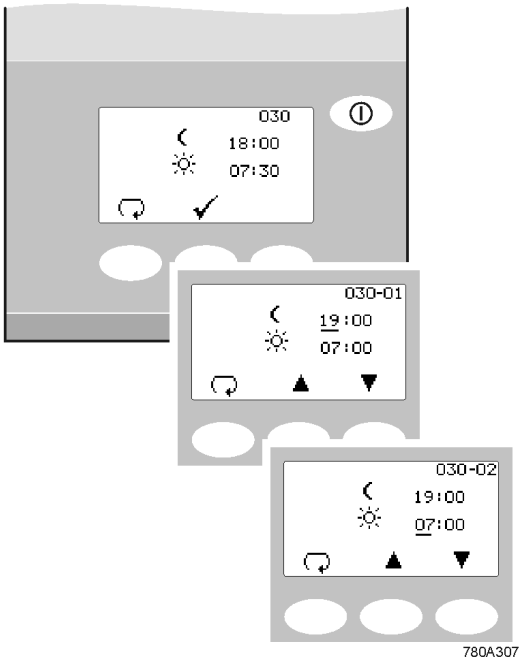
It is recommended that this function is only used when water usage is on average >50 l/hr and water is used every day.

1. PRESS ↻ to change (■ = ON)

   OR

   PRESS ✓ to proceed to Step 13.

Note: *Proceed to Step 14 if continuous operation is selected (■ = ON).*



Setting period of operation

Step 13 - Periods of operation (screen 030)

For efficiency and to reduce the likelihood of heat build up the normal operational hours can be selected.

During OFF periods the unit will automatically re-circulate water for a period of 10 minutes every two hours to maintain water purity within the distribution loop.

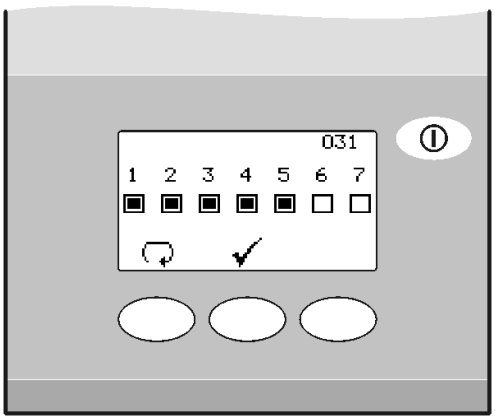
1. PRESS ↻ to edit night service start

   OR

   PRESS ✓ to proceed to Step 14.

2. PRESS ▲ to increase or ▼ to decrease time in increments of 30 minutes.
3. PRESS ↻ to step to night service end.
4. PRESS ▲ to increase or ▼ to decrease time in increments of 30 minutes.
5. PRESS ↻ to enter times.
6. PRESS ✓.

Note: *Night service will only be operational if Continuous Operation is not enabled.*



Day selection screen

Step 14 - Operational days selection (screen 031)

Select the days that the PURELAB 7000 is required to operate by highlighting the relevant box.

Monday = 1, Sunday = 7

1. PRESS ↻ to enter selection screen

   OR

   PRESS ✓ to proceed to Step 15.

2. PRESS ↻ to highlight box 1 (■ = Monday enabled)

   OR

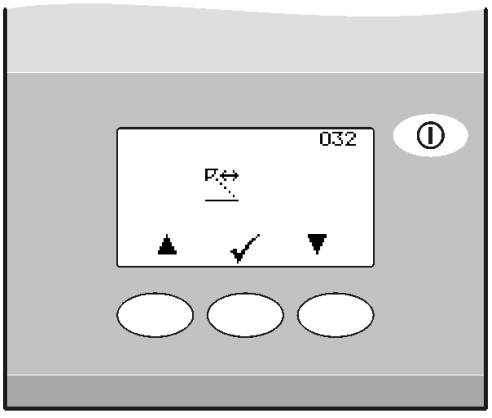
   PRESS ▶ to box (2).

Note: *A highlighted box indicates that the unit will be operational on that day between the times set in Step 13.*

3. REPEAT, Step 14 - 2, to select further operating days or PRESS ▶ until the ✓ appears.

4. PRESS ✓.

Note: *During the selected off periods the unit can be restarted by pressing PROCESS. A few minutes operation should be allowed before use to allow optimum water purity to be reached.*



Viewing angle adjustment screen

Step 15 - Display viewing angle adjustment (screen 032)

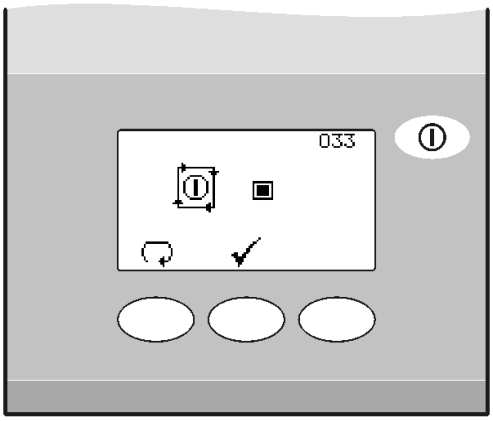
The angle of the display can be adjusted up and down for better viewing of the screen.

1. PRESS and HOLD ▲ or ▼ to adjust the viewing angle

   OR

   PRESS ✓ to proceed to Step 16.

2. PRESS ✓.



Auto-restart screen

Step 16 - Auto-restart (screen 033)

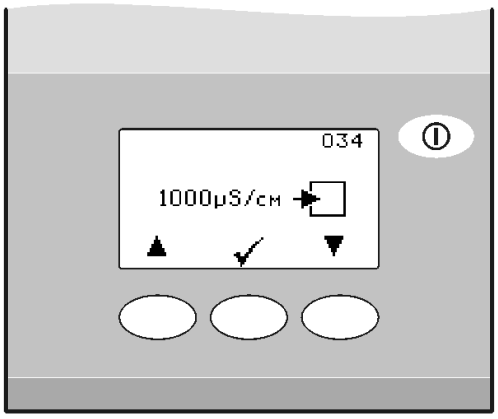
This allows selection of the AUTO restart option. If AUTO restart is selected the unit will automatically restart after a power failure. If AUTO restart is not selected the unit will stay in standby after a power failure.

1. PRESS ↻ to change mode (■ = ON)

   OR

   PRESS ✓ to proceed to Step 17.

2. PRESS ✓.



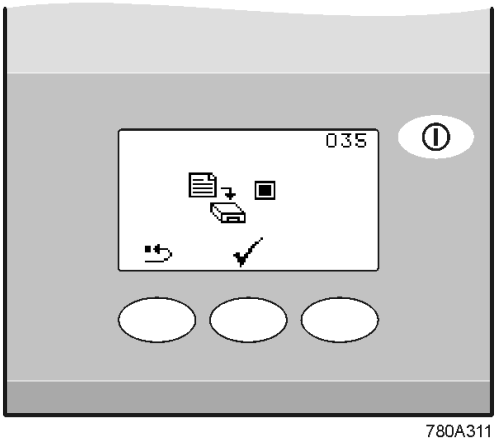
Feed Water Quality Screen

Step 17 - Feed Water Quality (screen 034)

An indication of the RO performance can be obtained using a calculation of ionic rejection in which the conductivity of the permeate is compared to that of the feedwater.

Enter the feedwater conductivity to obtain an accurate measurement.

1. PRESS ▼ to reduce the value to the correct reading.
2. PRESS ✓ to accept.



Data output screen

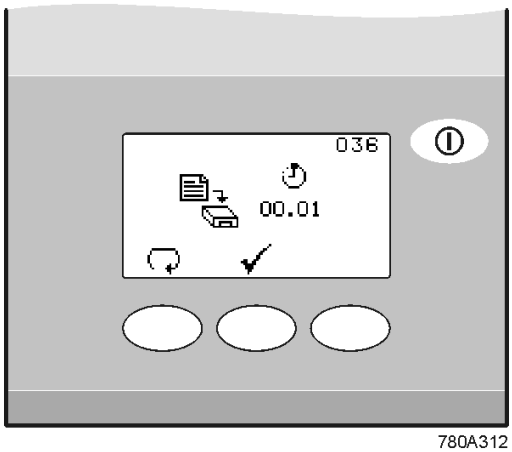
Step 18 - Data output (screen 035)

The *CENTRA-R 60/120 US* can transmit operational data to an Xport storage device.

1. PRESS ⮌ to change (■ = ON)

   OR

   PRESS ✓ to proceed to Step 19.
2. PRESS ✓.



Data transmit screen

Step 19 - Data transmit (screen 036)

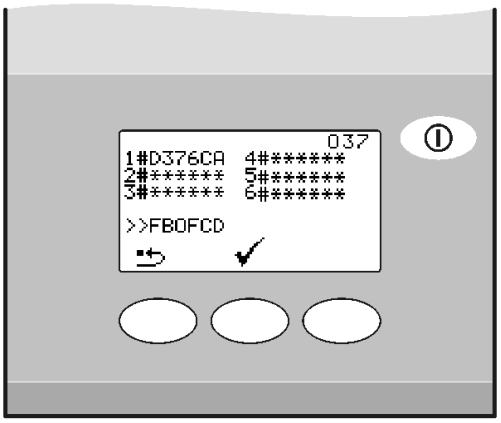
Setting the frequency of data transmittals to Xport.

1. PRESS ⟲ to change transmit intervals 1, 5, 15, 30 minutes, 1 hour or 6 hours

   OR

   PRESS ✓ to proceed to Step 20.
2. PRESS ✓.

Note: *PRESS PRINT during normal operation and current data will be transmitted if data output (screen 035) is selected.*



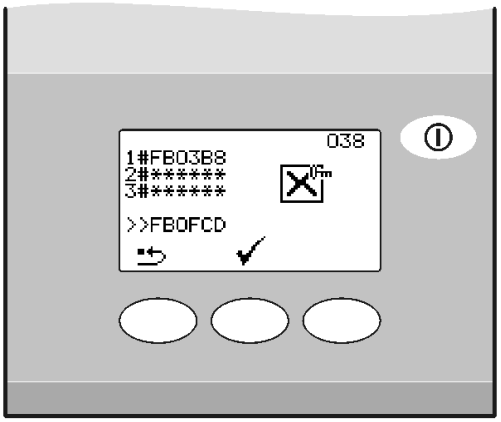
Programming of user keys screen

Step 20 - Programming of User Keys (screen 037)

During the life of the *CENTRA-R 60/120 US* you may need to delete or add User keys to prevent or allow access to user choices. This feature is only available to the Master key holder.

CAUTION! Do not press reset unless all User Keys are present.

1. PRESS ⮌ to delete all User keys.
2. PRESENT the new User key to the reader.
3. PRESS →▪← to load new User key identification.
4. REPEAT 2 and 3 until all User keys are registered (maximum of 6 users).
5. PRESS ✓ to complete settings.



Programming of Sanitization Keys screen

Step 21 - Programming of Sanitization Keys (screen 038)

Sanitization Keys are required to start a Sanitization. These keys can be deleted or added.

1. PRESENT Master key to the reader.
2. PRESS ☰.
3. PRESS ✓ until the Sanitization Key programming screen appears.
4. PRESS ⮌ to delete all Sanitization keys.
5. PRESENT the new Sanitization Key to the reader.
6. PRESS →▪← to load new Sanitization key identification.
7. REPEAT 4 and 5 until all Sanitization keys are registered (maximum of 2 users).
8. PRESS ✓ to complete settings.

Note: *After pressing* ✓ the following screen shows:

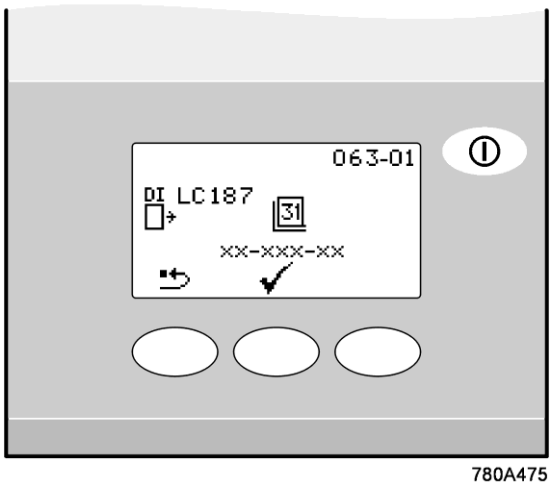
P1 cycles
RO volume

PRESS ✓ to go to STANDBY.

3.3 Setting Consumable Replacement Reminders

Step 1 - Enter consumable replacement timer set-up

1. ENSURE process is OFF.
2. PRESENT Master Key and PRESS 31 button to enter the Consumable Timer set-up.



Labpure L1 screen

Step 2 - Labpure L1 replacement date (Optional)

Note: *This screen is only applicable when a Labpure L1 Cartridge (LC187) is installed.*

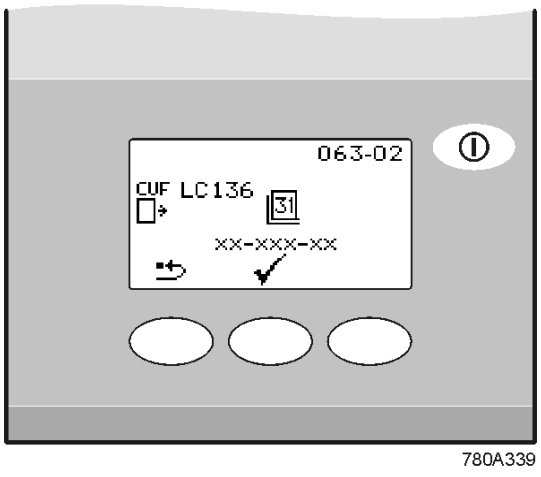
1. PRESS ⮌ button to reset cartridge replacement date

   OR

   PRESS ✓ to accept replacement date and proceed to vent filter replacement.
2. PRESS ✓ to confirm that resetting is required

   OR

   PRESS ✗ to abort reset.
3. PRESS ✓.



CVF screen

Step 3 – Composite vent filter replacement date

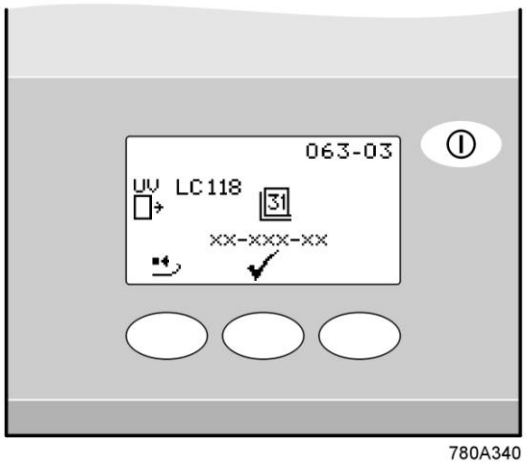
1. PRESS ⮌ button to reset filter replacement date

   OR

   PRESS ✓ to accept date and proceed to UV lamp replacement.
2. PRESS ✓ to confirm that resetting is required

   OR

   PRESS ✗ to abort reset.
3. PRESS ✓.



UV lamp screen

Step 4 – UV lamp replacement date

1. PRESS ⮌ button to reset UV lamp replacement date

   OR

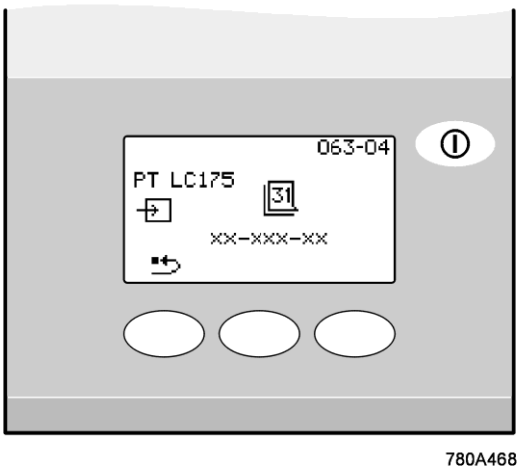
   PRESS ✓ to accept replacement date and proceed to Protek L1 / L2 replacement.

2. PRESS ✓ confirm that resetting is required

   OR

   PRESS ✗ to abort reset.

3. PRESS ✓.



Protek screen

Step 5 - Protek L1 / L2 replacement date

1. PRESS ⮌ button to reset Protek L1 / L2 replacement date

   OR

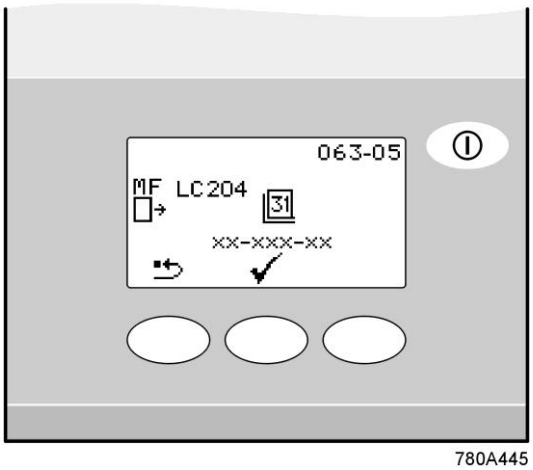
   PRESS ✓ to accept replacement date and proceed to Ultra filter replacement.

2. PRESS ✓ confirm that resetting is required

   OR

   PRESS ✗ to abort reset.

3. PRESS ✓.



Micro filter screen

Step 6 - Micro filter replacement date (Optional)

Note: *If the Micro filter is not installed do not reset the replacement screen.*

1. PRESS ⮌ button to reset filter replacement date

   OR

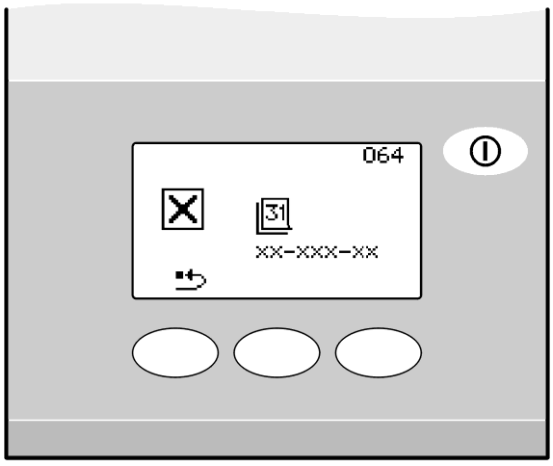
   PRESS ✓ to accept replacement date and proceed to Sanitization reminder.

2. PRESS ✓ confirm that resetting is required

   OR

   PRESS ✗ to abort reset.

3. PRESS ✓.



Sanitization screen

Step 7 - Sanitization reminder

1. PRESS ⮌ button to reset Sanitization reminder date

   OR

   PRESS ✓ to accept reminder date and complete settings.

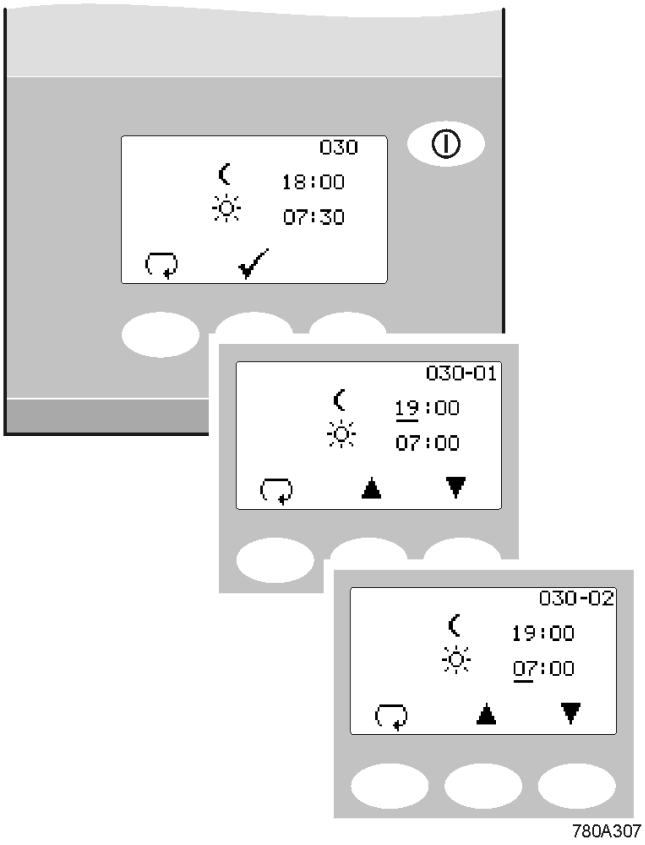
2. PRESS ✓ confirm that resetting is required

   OR

   PRESS ✗ to abort reset.

3. PRESS ✓.

4. OPERATION



Night service/Operational day screen

4.1 Night service/Operational day (screen 030)

Refer to Section 3.2 - Steps 13 and 14.

Your *CENTRA-R* can be programmed to operate on specific days between selected times. This is to optimize the efficiency of the unit and to minimize any rise in water temperature.

During the sleep period the unit will display ⏻.

It is possible to override this mode by PRESSING ⏻.

4.2 Continuous Recirculation 24/7 (screen 029)

Refer to Section 3.2 - Step 12.

If the unit is set to continuous recirculation, it will constantly re-circulate the water and fill the reservoir as required.

It is recommended that the system only runs in continuous mode when the demand for water is high (greater than 50% of the make up flow).

During recirculation the water temperature will increase slowly.

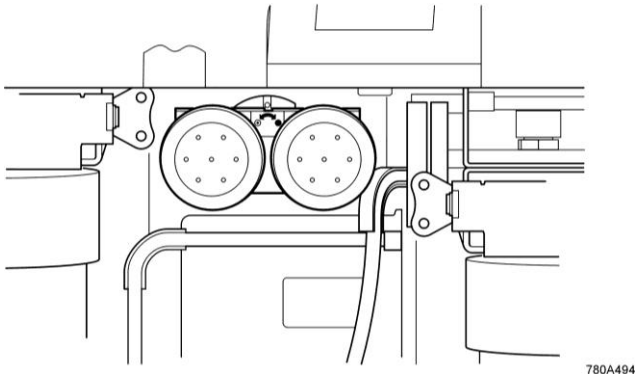
5. MAINTENANCE

An approved supplier or distributor should carry out any maintenance work not included in this manual.

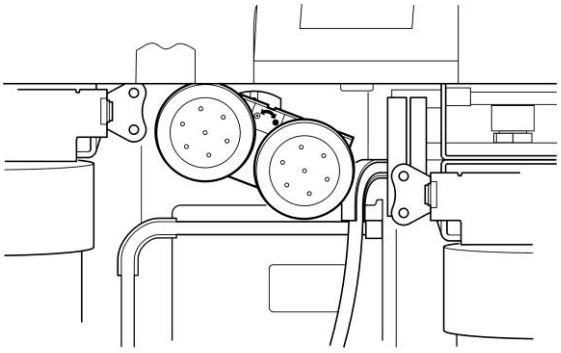
Note: *Disposal of all end of life consumable items should be in accordance with local statutory regulations.*

WARNING! ALWAYS CHECK THAT THE MAINS ELECTRICAL POWER AND FEED WATER ARE SWITCHED OFF BEFORE ATTEMPTING ANY MAINTENANCE PROCEDURE.

5.1 Replacing composite vent filters (LC136)



CVFs Removal / Replacement

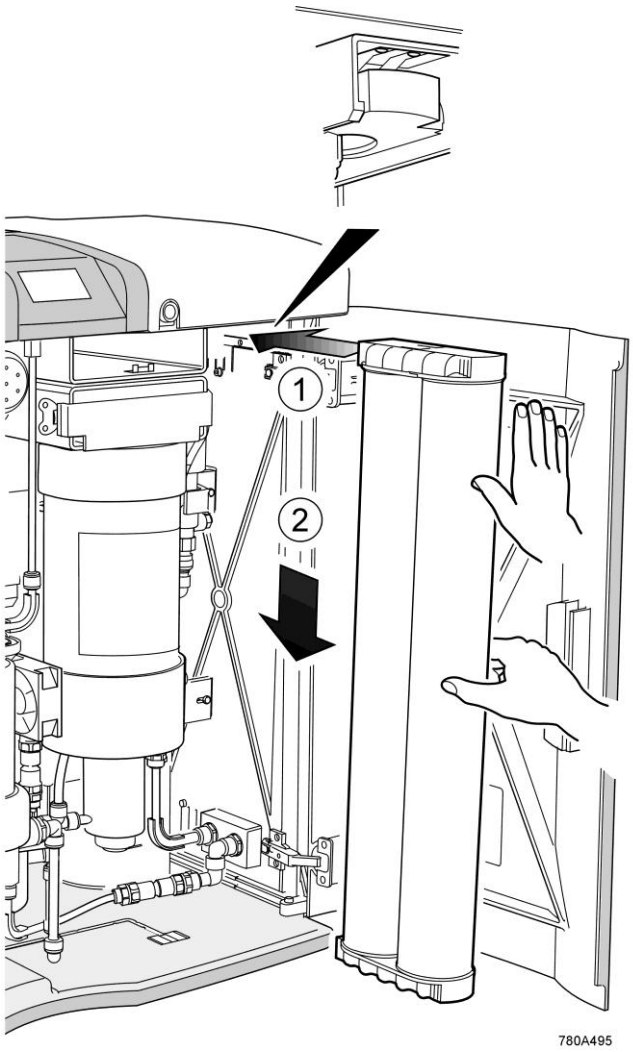


CVFs Installed

The Composite Vent Filters (CVFs) should be replaced in the following circumstance:

- When indicated by the alarm (screen prompt) or after a maximum of six months.

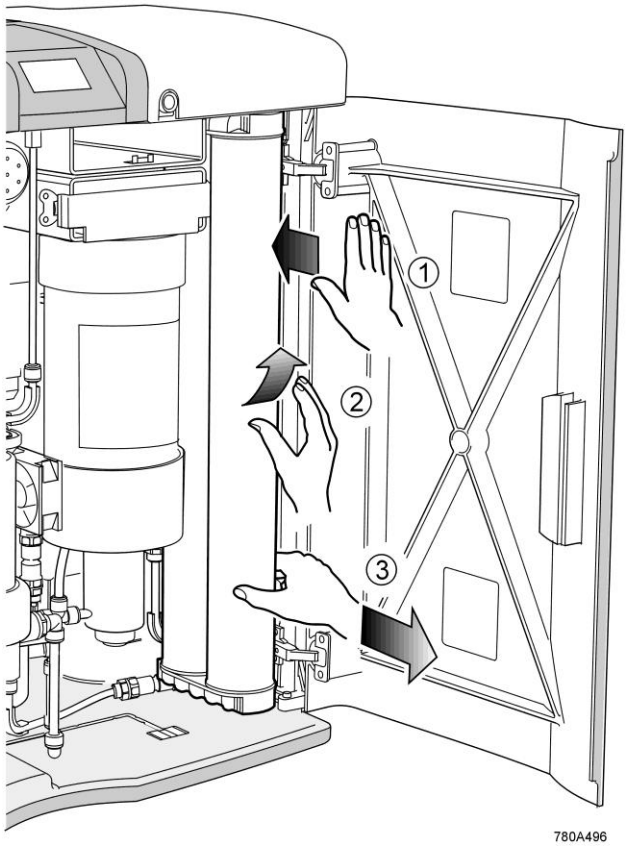
1. ENSURE process is OFF and ISOLATE power.
2. OPEN front doors and LOCATE CVFs as shown.
3. ROTATE CVFs anti-clockwise to a horizontal position and PULL to remove.
4. UNSCREW CVFs from the block and discard.
5. REMOVE new CVFs from packaging.
6. WRITE the installation date on the filter label for future reference and SCREW CVFs into the block.
7. ALIGN CVFs horizontally and ROTATE clockwise to SECURE.
8. SWITCH on power.
9. RESET consumable reminder as described in Section 3.3.



5.2 Installing an optional Labpure L1 purification cartridge (LC187)

- The system is designed so that it can be upgraded to include further water purification technology that will improve the purity of water produced.

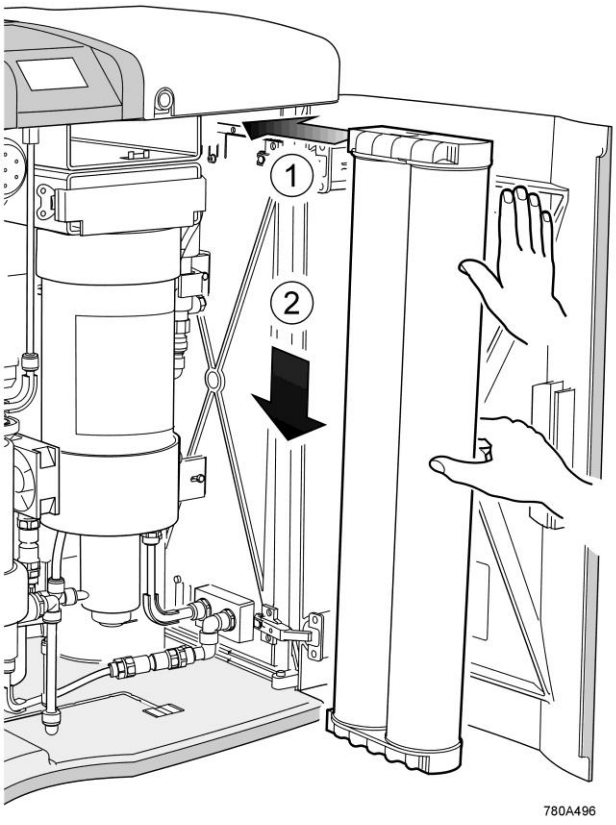
1. ENSURE process is OFF and ISOLATE power.
2. OPEN front doors and LOCATE bypass block (LA698) as shown.
3. PUSH bypass block FORWARD, then LIFT, and finally PULL to remove. Store safely within unit for future use.
4. REMOVE Labpure L1 from packaging.
5. REMOVE sealing plugs from inlet / outlet ports and WET O rings.
6. SLIDE cartridge into position (1) pushing upwards against the contacts.
7. EASE back and ENSURE that the cartridge is fully engaged (down) (2) in the retainers.
8. SWITCH on power. FOLLOW screen prompts to accept new cartridge replacement date.
9. START unit and allow to circulate until water quality is achieved.



5.3 Replacing Labpure L1 purification cartridge (LC187)

- When the purity of water from the unit starts to deteriorate.
- When indicated by the consumable alarm or after a maximum of six months.

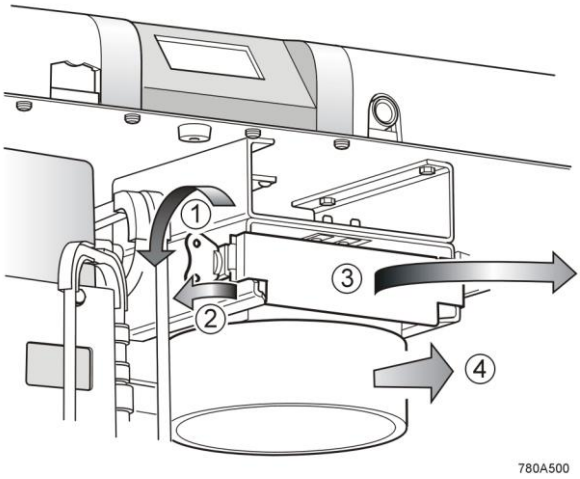
1. ENSURE process is OFF and ISOLATE power.
2. OPEN front doors and LOCATE Labpure L1 cartridge.
3. PUSH Labpure L1 FORWARD (1), then LIFT (2), finally PULL (3) to remove and discard the cartridge.



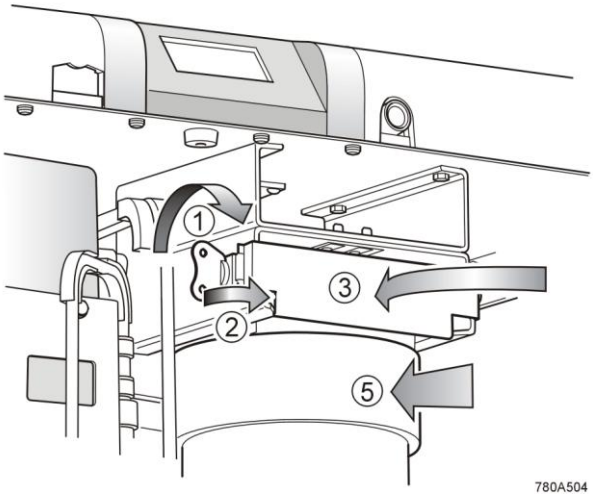
4. REMOVE new Labpure L1 from packaging.
5. REMOVE sealing plugs from inlet / outlet ports and WET O rings.
6. SLIDE cartridge into position (1) pushing upwards against the contacts.
7. EASE back and ENSURE that the cartridge is fully engaged (down) (2) in the retainers.
8. SWITCH on power. FOLLOW screen prompts to accept new cartridge replacement date.
9. START unit and allow to circulate until water quality is achieved.

5.4 Installing an optional Micro filter (LC204)

- The system is designed to be upgraded to include further water purification technology.



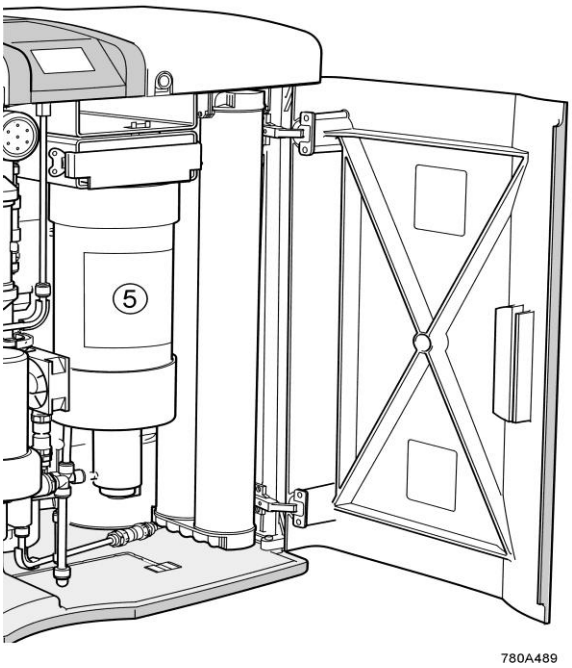
1. OPEN front doors and LOCATE by-pass block (4).
2. LIFT wing (1) and rotate anti-clockwise.
3. PIVOT latch (2) to release retaining arm (3)
4. SWING retaining arm (3) fully open.
5. SLIDE by-pass block (4) forward to remove. Store safely within unit for future use.



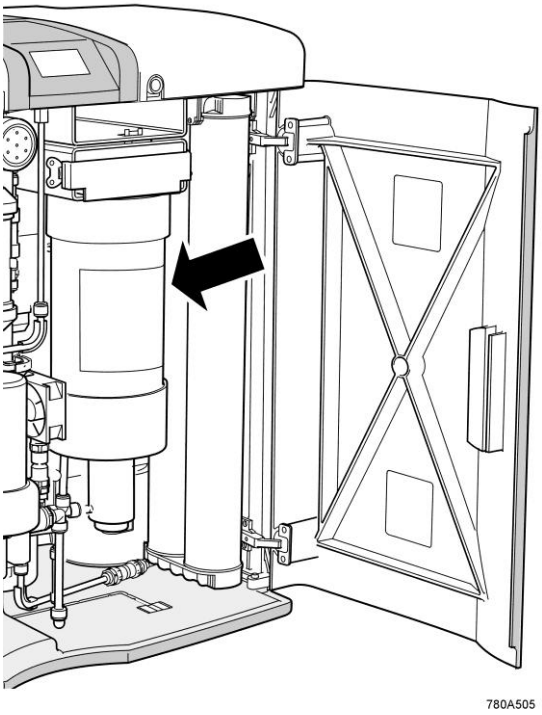
6. REMOVE Micro Filter from packaging.
7. REMOVE sealing plugs from inlet and outlet ports.
8. ALIGN filter (5) on guide rails and SLIDE into place until it is fully engaged.
9. CLOSE retaining arm (3).
10. PIVOT latch (2) back and ROTATE wing (1) clockwise to secure.

WARNING! ENSURE CLAMP IS SECURED BEFORE STARTING THE UNIT.

11. SWITCH on power. FOLLOW screen prompts to accept new cartridge replacement date.



5.5 Replacing Micro filter (LC204)



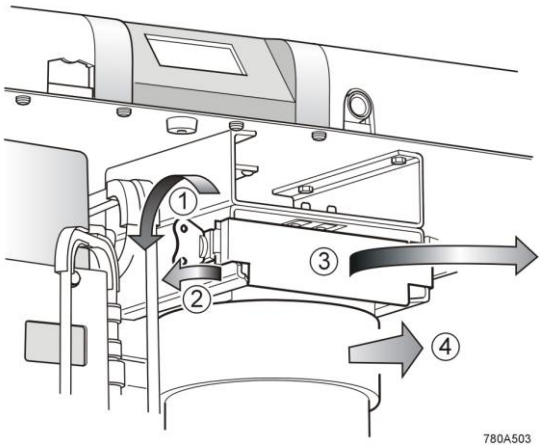
The Micro Filter (MF) should be replaced in the following circumstances:

- When indicated by the consumable alarm.
- After a maximum of 6 months use.
- Product water bacterial or content is too high.

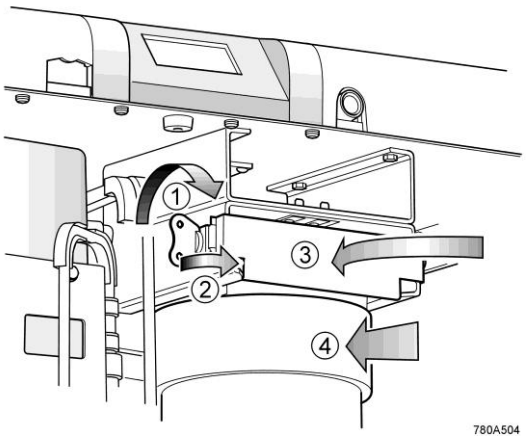
1. ENSURE process is OFF and ISOLATE power.
2. OPEN front doors and LOCATE filter as shown.
3. LIFT wing (1) and rotate anti-clockwise.
4. PIVOT latch (2) to release retaining arm (3).
5. SWING retaining arm (3) fully open.
6. SLIDE filter (4) forward and discard.
7. REMOVE new filter from packaging.
8. REMOVE sealing plugs from inlet and outlet ports.
9. ALIGN filter (4) on guide rails and SLIDE into place until it is fully engaged.
10. CLOSE retaining arm (3).
11. PIVOT latch (2) back and ROTATE wing (1) clockwise to secure.

WARNING! ENSURE CLAMP IS SECURED BEFORE STARTING THE UNIT.

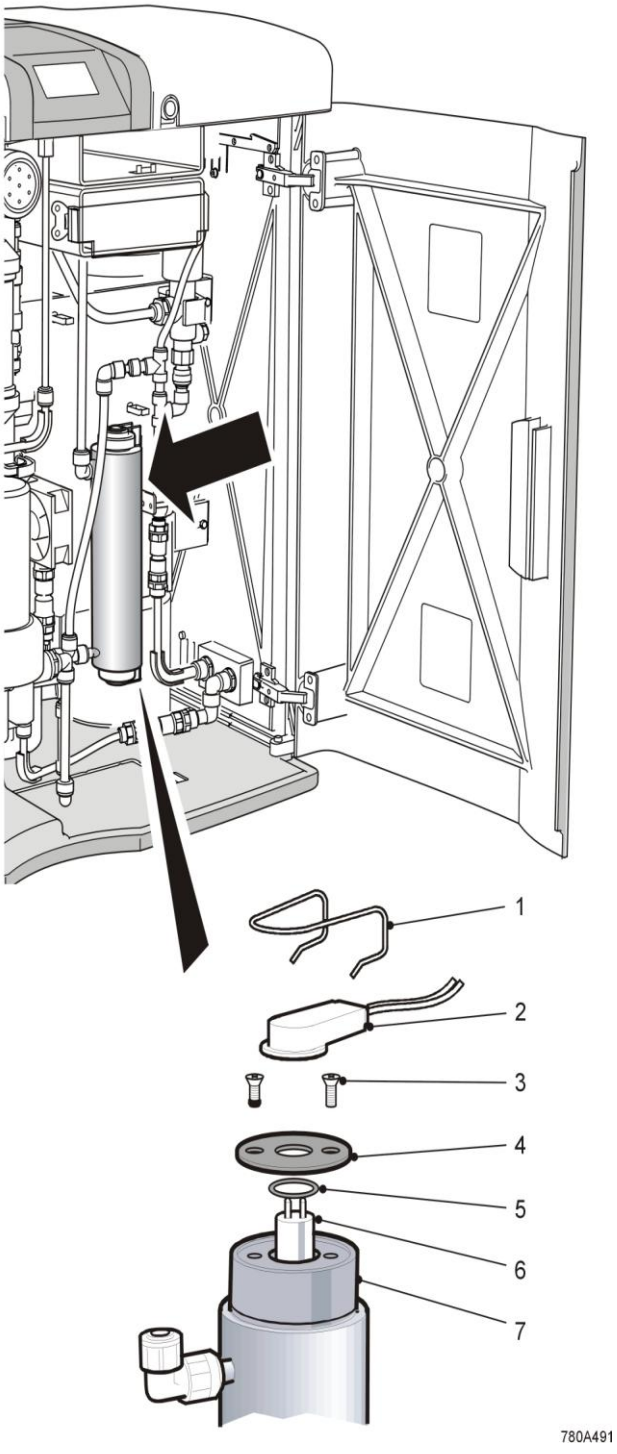
12. SWITCH on power. FOLLOW screen prompts to accept new filter replacement date.



Removal



Replacement



5.6 Replacing Ultraviolet lamp (LC118)

The Ultraviolet (UV) lamp should be replaced in the following circumstances:

- When indicated by the consumable alarm.
- After a maximum of 12 months use.

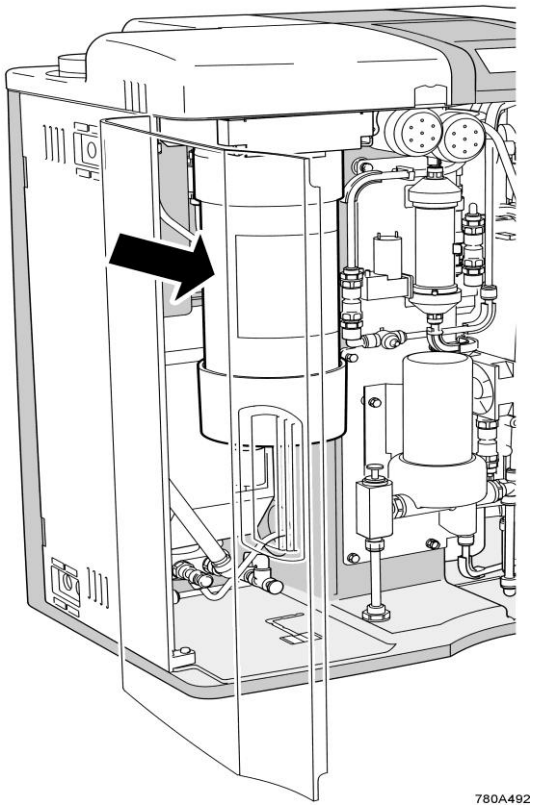
WARNING! UV-C RADIATION HARMFUL TO THE EYES AND SKIN. UV LAMP SHOULD ONLY BE OPERATED IN THE IRRADIATION CHAMBER.

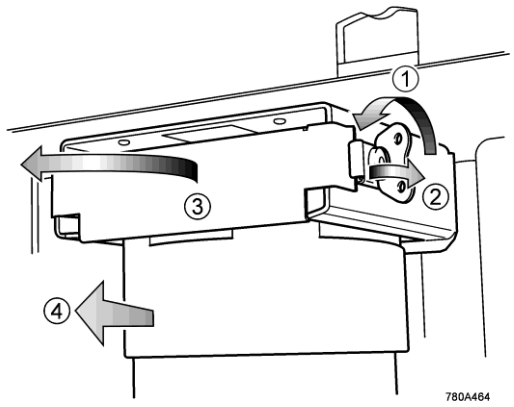
1. ENSURE process is OFF and ISOLATE power.
2. OPEN front doors and LOCATE UV lamp as shown.
3. REMOVE Labpure L1 cartridge and Micro Filter if fitted to access the chamber (7).
4. LOOSEN two screws securing chamber (7) to the unit.
5. LIFT and REMOVE chamber (7) away from the unit.
6. REMOVE spring clips (1) and DISCONNECT connectors (2) from the UV lamp (6).

WARNING! IT IS STRONGLY RECOMMENDED THAT DURING THE HANDLING OF THE UV LAMP WEAR CUT-RESISTANT GLOVES.

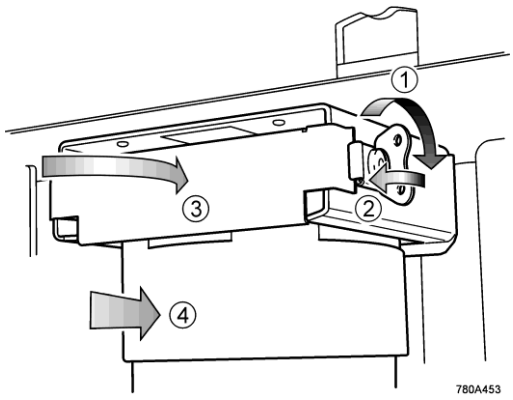
MERCURY HAZARD, DO NOT BREAK. THE UV LAMP CONTAINS A SMALL AMOUNT OF MERCURY. MAY CAUSE REDNESS OR IRRITATION AS A RESULT OF CONTACT WITH SKIN AND/OR EYES.

7. NOTE orientation of UV lamp pins before REMOVING screws (3) and plates (4) from both ends of the chamber (7).
8. REMOVE seals (5) from the UV lamp (6) and retain.
9. REMOVE UV lamp (6) from the chamber (7).
10. DISCARD used UV lamp in accordance with local authority regulations.
11. REMOVE new UV lamp from packaging and follow instructions included for cleaning.
12. FIT UV lamp (6) into the chamber (7).
13. REFIT seals (5) onto the UV lamp (6) and PUSH them into the chamber (7) recesses.
14. ALIGN orientation of UV lamp pins noted in step 5.6.7 and REFIT plates (4) using screws (3).
15. RE-CONNECT connectors (2) to the UV lamp (6) and REFIT spring clips (1).
16. REFIT chamber (7) into the unit and TIGHTEN the two screws.
17. REFIT Labpure L1 cartridge and Micro Filter if removed.
18. RESET consumable reminder as described in Section 3.3.





Removal



Replacement

5.7 Replacing Protek L1 or L2 pre-treatment cartridge (LC175 / LC177)

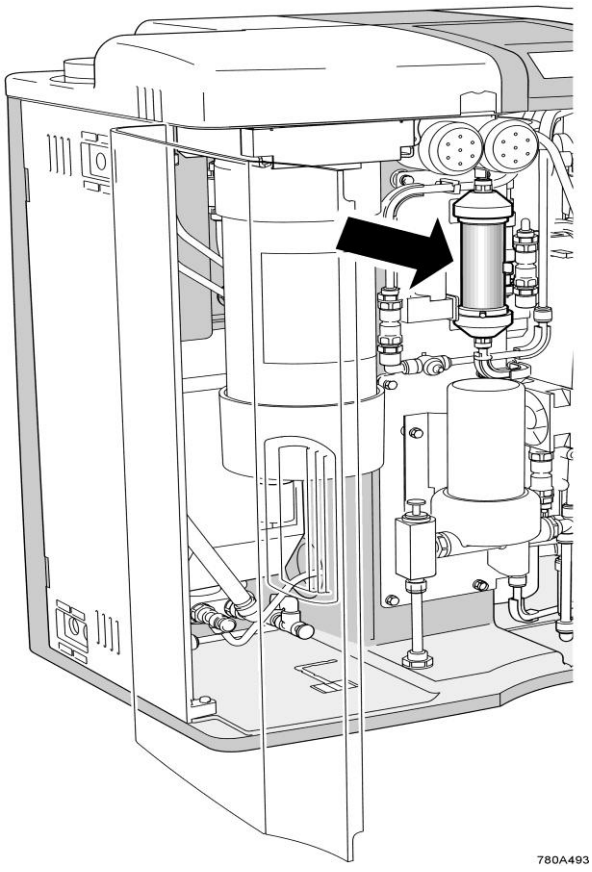
The replacement frequency of the pre-treatment cartridge is dictated by the purity of the feed water. It should be replaced in the following circumstances:

- When indicated by the consumable alarm.
- When indicated by alarm 75.
- After replacement of RO modules.

1. ENSURE process is OFF and ISOLATE power.
2. OPEN front doors and LOCATE Protek cartridge as shown.
3. Remove lid from break tank and RELEASE any residual system pressure by PRESSING down the float valve.
4. LIFT wing (1) and rotate anti-clockwise.
5. PIVOT latch (2) to release retaining arm (3).
6. SWING retaining arm (3) fully open.
7. SLIDE cartridge (4) forward and discard.
8. REMOVE new Protek cartridge from packaging.
9. REMOVE sealing plugs from inlet and outlet ports.
10. WET O rings located inside the ports.
11. ALIGN Protek cartridge (4) on guide rails and SLIDE into place until it is fully engaged.
12. CLOSE retaining arm (3).
13. PIVOT latch (2) back and ROTATE wing (1) clockwise to secure.

WARNING! ENSURE CLAMP IS SECURED BEFORE STARTING THE UNIT.

14. The unit will automatically recognize the new cartridge and date.



5.8 Replacing E - cartridge (LC181)

The E - cartridge should be replaced:

- When indicated by the alarm.

1. ENSURE process is OFF and ISOLATE power.
2. OPEN front doors and LOCATE E - cartridge as shown.
3. DISCONNECT tubing to air pump and inlet and outlet tubing from the cartridge.
4. REMOVE cartridge from clip and discard.
5. REMOVE new E - cartridge from packaging.
6. REMOVE sealing plugs from inlet and outlet ports.
7. REMOVE caps from cartridge side adaptors.
8. LOCATE cartridge in clip.
9. RE-CONNECT tubing.

5.9 RO modules

The Reverse Osmosis modules should be replaced if permeate water purity or flow rate is not adequate and *does not meet predicted or previous performance.* For information regarding the replacement of the Reverse Osmosis module contact Customer Services.

6. SANITIZATION

6.1 Liquid sanitization

6.1.1 RO Sanitization

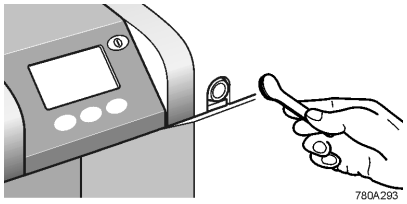
RO sanitization should be completed on a regular basis or if water quality deteriorates.

WARNING! ALWAYS WEAR RUBBER GLOVES, APRON AND FACEMASK. DO NOT BREATHE FUMES OR ALLOW TO COME IN CONTACT WITH SKIN OR EYES. ALWAYS FOLLOW RECOMMENDATIONS FOUND IN THE MANUFACTURERS MATERIAL SAFETY DATA SHEET AND ANY APPLICABLE OSHA STANDARDS FOR THE CHEMICAL BEING USED.

WARNING! LABEL THE MACHINE WITH APPROPRIATE WARNING SIGNS SUCH AS "DO NOT USE/ CONTAINS STERILANT" (NOT PROVIDED)

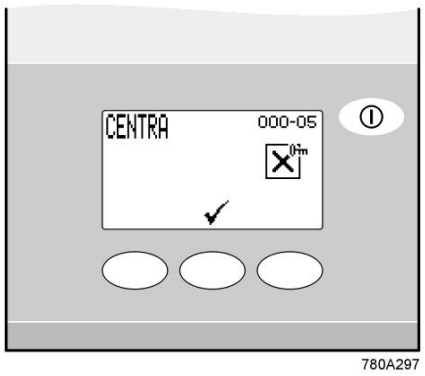
Minncare Cold Sterilant is a Peracetic and Hydrogen Peroxide based solution.

Refer to the Minncare label for additional information and follow all applicable directions for use on the manufacturer's label in conjunction with the following instructions.



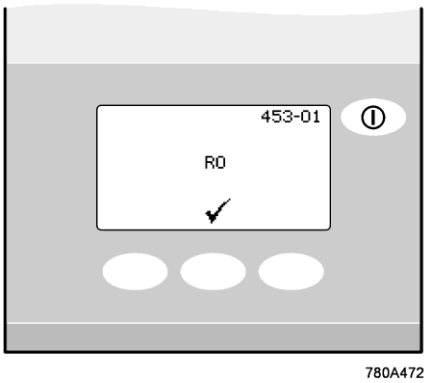
Present the sanitization key

1. ISOLATE application and ensure the process is OFF.
2. PRESENT GREEN sanitization key to reader.



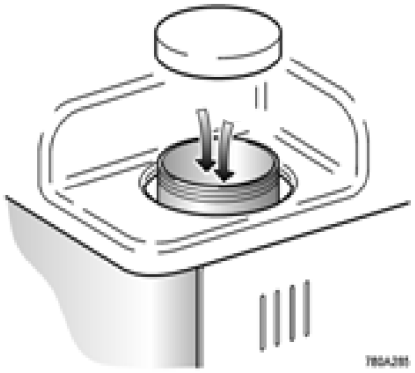
Sanitization selection screen

3. PRESS ✓ to enter sanitization process.



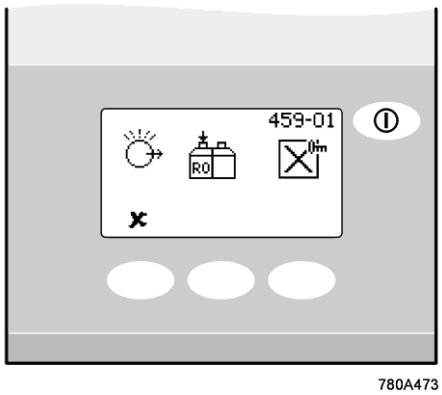
Enter RO sanitization

4. PRESS ✓ to enter RO sanitization.



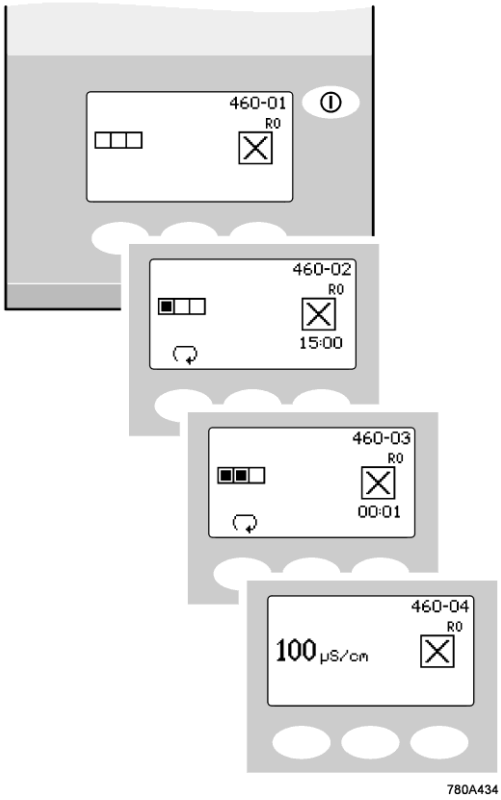
Large white lid removal

5. UNSCREW lid on the left of the unit.
6. MEASURE out 50ml of Minncare Cold Sterilant and SLOWLY POUR into the break tank.
7. REPLACE lid.



Confirmation sterilant is added

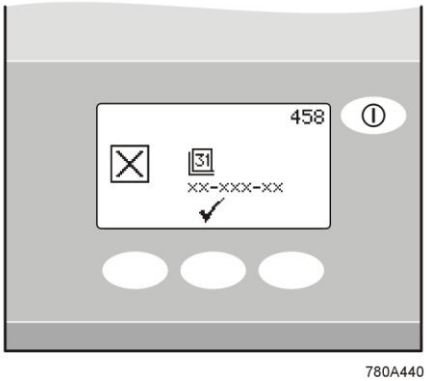
8. PRESENT GREEN sanitization key to confirm that the chemical has been added.



RO sanitization process steps

9. The system now enters a period of automatic sanitization lasting approximately 1 hour.

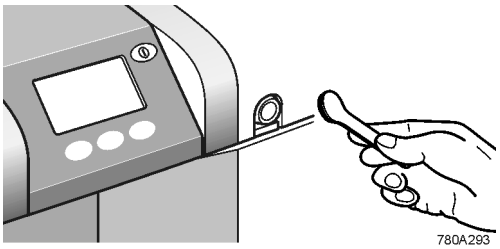
   Once the step within the sanitization is complete the unit will stop and show date re-set.



Set sanitization reminder

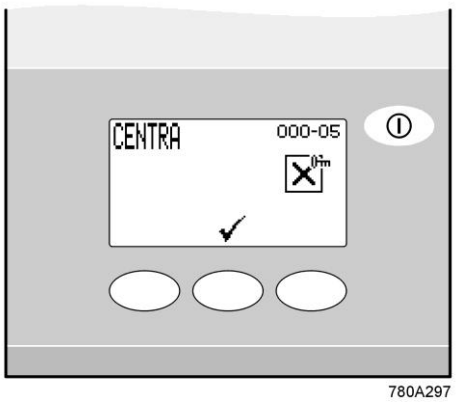
10. PRESS ✓ to accept the sanitization reminder the unit will go into process and continue to fill the recirculation reservoir.

6.1.2 Recirculation Sanitization



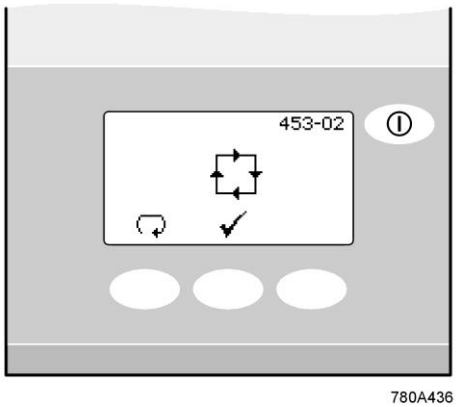
Present the sanitization key

1. ISOLATE application and ensure the process is OFF.
2. PRESENT GREEN sanitization key to reader.



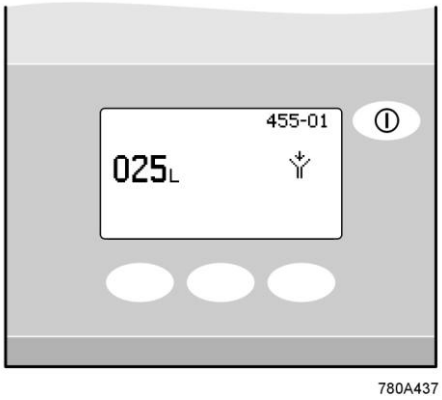
Sanitization selection screen

3. PRESS ✓ to enter sanitization process.



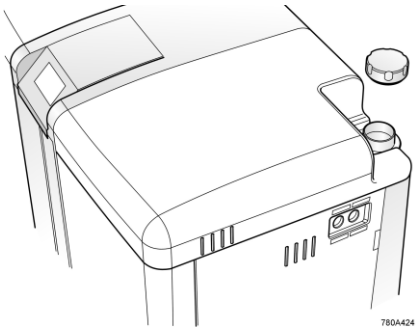
Enter RO sanitization

4. PRESS to show recirculation sanitization icon.
5. PRESS sanitization ✓ to select recirculation.



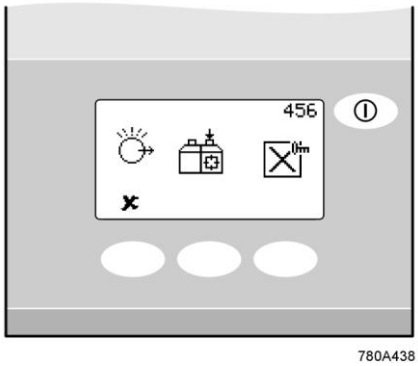
Reservoir level adjustment

6. REMOVE Labpure L1 (LC187) if installed and fit by-pass block (LA698).
7. PRESS ⏻ to allow the system to empty/fill the reservoir. The system will stop when the level reaches approximately 10 liters.



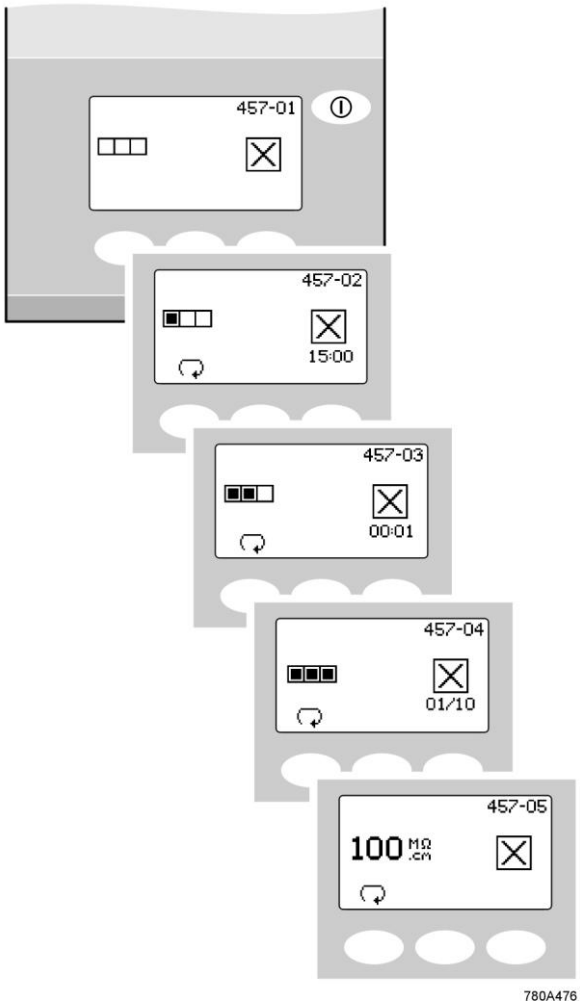
Small white lid removal

8. UNSCREW lid on the right of the unit.
9. MEASURE out 250ml of Minncare Cold Sterilant and SLOWLY POUR into the main reservoir.
10. REPLACE lid.



Confirmation the chemical is added

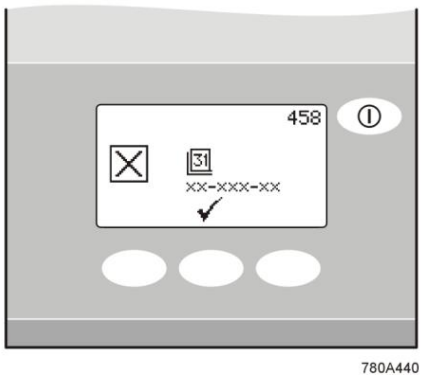
11. PRESENT GREEN sanitization key to confirm that the chemical has been added.



RO sanitization process steps

12. The system now enters a period of automatic sanitization lasting approximately 2 hours.

    Once this stage is complete the unit will go straight into process and continue to fill the recirculation reservoir.



Set sanitization reminder

13. REFIT Labpure L1 (LC187).

14. PRESS ✓ to accept the sanitization reminder. The system is now commissioned and ready for operation.

Note: *The automated rinse cycles are designed to remove the chemical sanitant from the system but for critical applications a water test is advised prior to use to ensure user specific requirements are met.*

6.2 Tablet sanitization

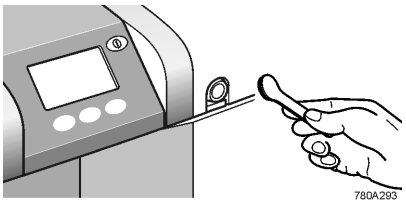
6.2.1 RO Sanitization

RO sanitization should be completed on a regular basis or if water quality deteriorates.

WARNING! ALWAYS WEAR RUBBER GLOVES, APRON AND FACEMASK. DO NOT BREATHE FUMES OR ALLOW TO COME IN CONTACT WITH SKIN OR EYES. ALWAYS FOLLOW RECOMMENDATIONS FOUND IN THE MANUFACTURERS MATERIAL SAFETY DATA SHEET AND ANY APPLICABLE OSHA STANDARDS FOR THE CHEMICAL BEING USED.

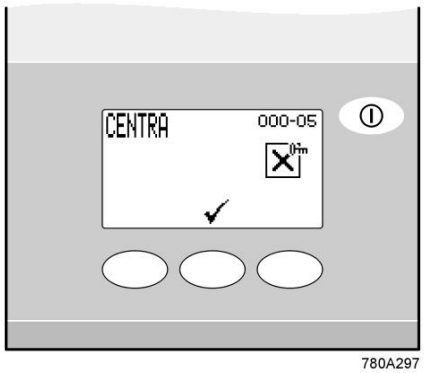
WARNING! LABEL THE MACHINE WITH APPROPRIATE WARNING SIGNS SUCH AS "DO NOT USE/ CONTAINS STERILANT" (NOT PROVIDED)

Refer to the EfferSan™ label for additional information and follow all applicable directions for use on the manufacturer's label in conjunction with the following instructions.



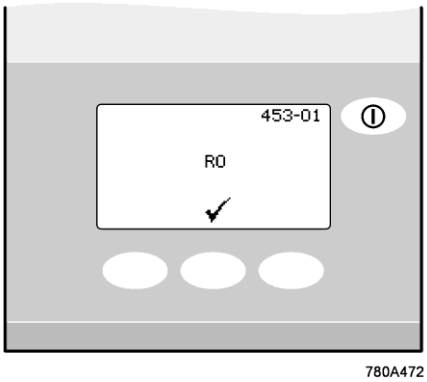
Present the sanitization key

1. ISOLATE application and ensure the process is OFF.
2. PRESENT GREEN sanitization key to reader.



Sanitization selection screen

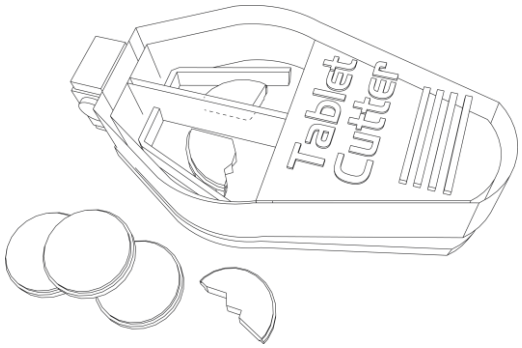
3. PRESS ✓ to enter sanitization process.



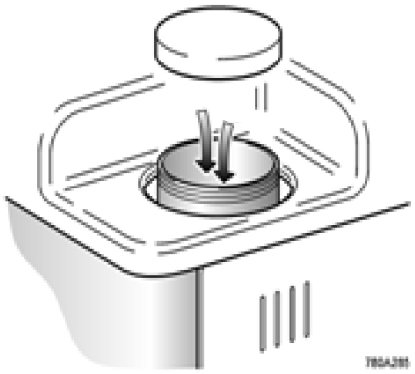
Enter RO sanitization

4. PRESS ✓ to enter RO sanitization.

CAUTION! ENSURE THE CORRECT DOSAGE OF CHEMICAL IS USED

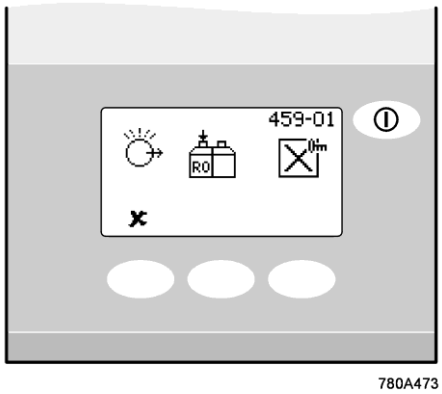


Tablet cutter for cutting EfferSan ™ tablets



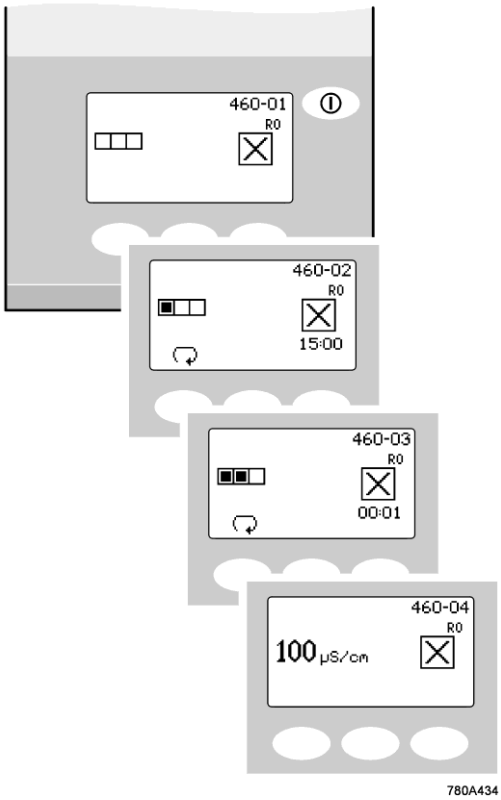
Large white lid removal

5. UNSCREW the **large** white lid on the left of the unit.
6. CUT one EfferSan™ tablet into four quarters using tablet cutter.
7. INSERT ¼ of EffenSan™ tablet into the break tank.
8. REPLACE lid.



Confirmation sterilant is added

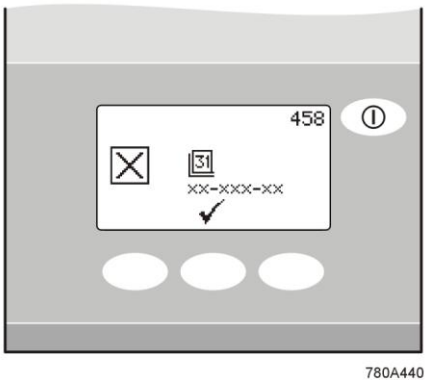
9. PRESENT GREEN sanitization key to confirm that the chemical has been added.



RO sanitization process steps

10. The system now enters a period of automatic sanitization lasting approximately 1 hour.

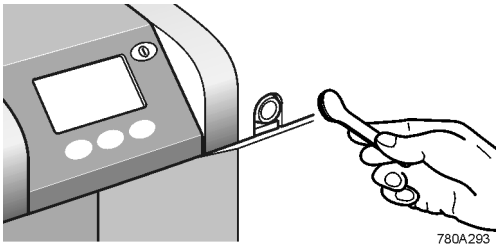
    Once the step within the sanitization is complete the unit will stop and show date re-set.



Set sanitization reminder

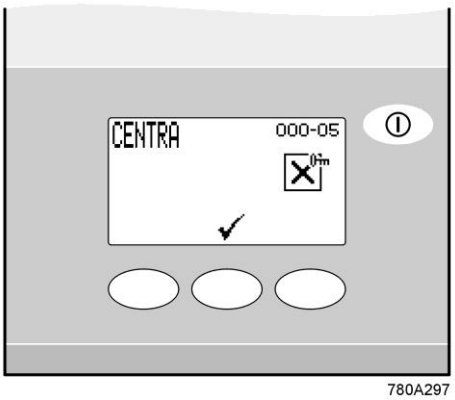
11. PRESS ✓ to accept the sanitization reminder the unit will go into process and continue to fill the recirculation reservoir.

6.2.2 Recirculation Sanitization



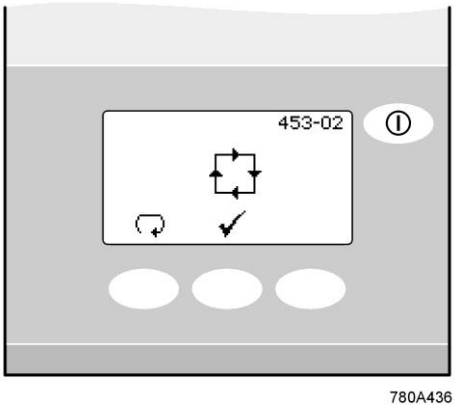
Present the sanitization key

1. ISOLATE application and ensure the process is OFF.
2. PRESENT GREEN sanitization key to reader.



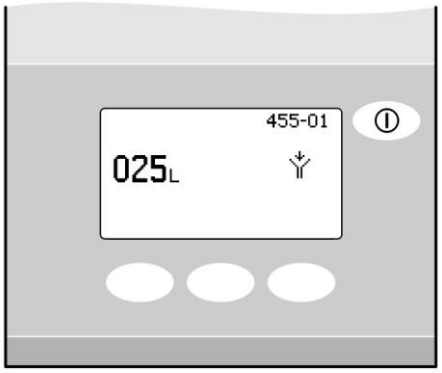
Sanitization selection screen

3. PRESS ✓ to enter sanitization process.



Enter RO sanitization

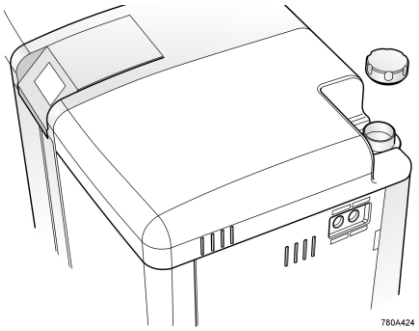
4. PRESS to show recirculation sanitization icon.
5. PRESS sanitization ✓ to select recirculation.



Reservoir level adjustment

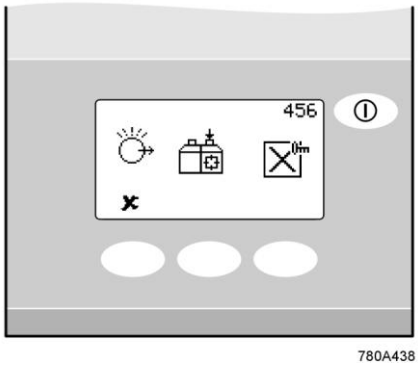
6. REMOVE Labpure L1 (LC187) if installed and fit by-pass block (LA698).
7. PRESS ⏻ to allow the system to empty/fill the reservoir. The system will stop when the level reaches approximately 10 liters.

CAUTION! ENSURE THE CORRECT DOSAGE OF CHEMICAL IS USED



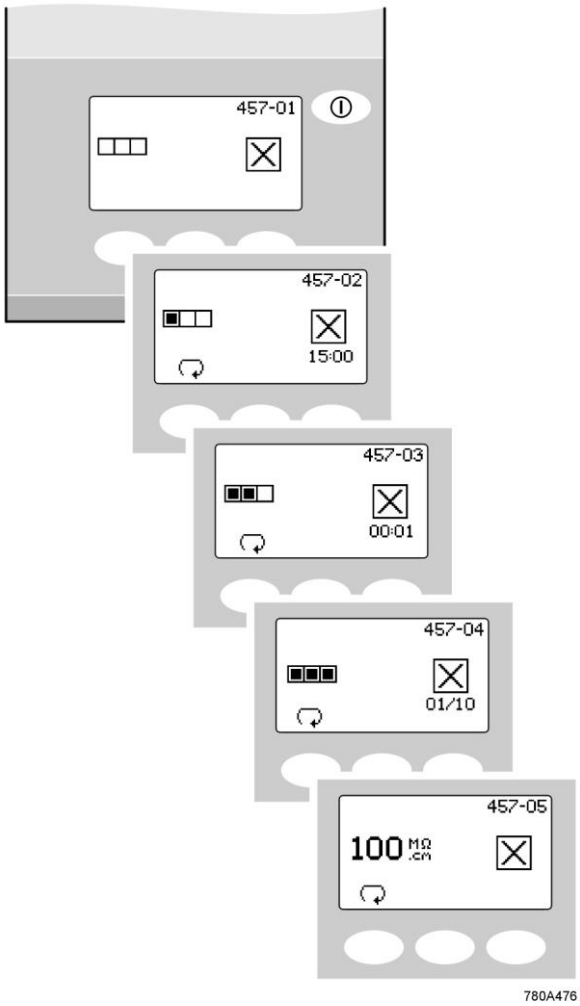
Small white lid removal

8. UNSCREW **small** lid on the right of the unit.
9. CUT one EfferSan™ tablet into two halves using tablet cutter.
10. INSERT **½ (Half)** of an EffenSan™ tablet into the break tank.
11. REPLACE lid.



Confirmation the chemical is added

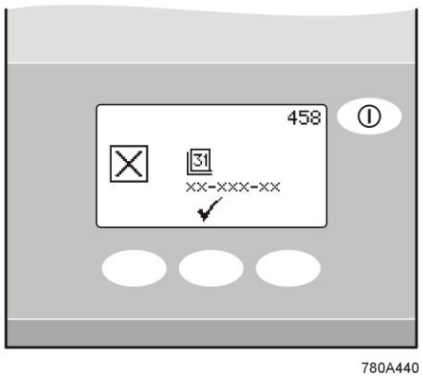
12. PRESENT GREEN sanitization key to confirm that the chemical has been added.



RO sanitization process steps

13. The system now enters a period of automatic sanitization lasting approximately 2 hours.

    Once this stage is complete the unit will go straight into process and continue to fill the recirculation reservoir.



Set sanitization reminder

14. REFIT Labpure L1 (LC187).
15. PRESS ✓ to accept the sanitization reminder. The system is now commissioned and ready for operation.

Note: *The automated rinse cycles are designed to remove the chemical sanitant from the system but for critical applications a water test is advised prior to use to ensure user specific requirements are met.*

7.TROUBLE SHOOTING

If a problem occurs the unit will normally sound an alarm and the respective icon will flash. The audible alarm can be silenced by pressing the mute button.

The appropriate action to then take (for the more common alarm displays) is shown on the Quick Reference Guide (fitted to the inside of the door of the CENTRA-R). If the unit cannot be repaired using the information shown, please call your local ELGA LabWater representative *(See Section 11 - Useful Contact Details).*

WARNING! ALWAYS ENSURE THAT THE MAINS POWER SUPPLY IS ISOLATED BEFORE WORKING INSIDE THE UNIT.

DISPLAY ID	ICON	ALARM	RECOMMENDED ACTION
672-98	⚠	Leak detection	• PRESS mute to silence alarm • ISOLATE power rectify leak and dry sensors • Dry the contacts • POWER on to reset
672-97	⚠	Reservoir level controls	• PRESS mute to silence alarm • ISOLATE power • Contact Technical Support
672-96	⚠	High loop pressure	• PRESS mute to silence alarm • ISOLATE power • Contact Technical Support
672-95	⚠	Permeate over temperature	• PRESS mute to silence alarm • Potable feed temperature is unacceptably high (>50°C) • Locate source of high temperature and rectify
672-94	⚠	Recirculation loop over temperature	• PRESS mute to silence alarm • Water temperature is unacceptably high >50°C • Contact Technical support
672-93	⚠	Protek incorrectly installed	• PRESS mute to silence alarm • CONFIRM Protek L1 / L2 is correctly installed • POWER OFF/ ON to reset
672-92	⚠	Labpure L1 incorrectly installed	• PRESS mute to silence alarm • CONFIRM Labpure L1 is correctly installed • POWER OFF/ ON to reset
-90	30µS/cm	Water purity alarm	• PRESS mute to silence alarm • CONFIRM purity displayed is suitable for application • CHANGE Labpure L1 if water purity is insufficient
-89	35°C	Water temperature alarm	• PRESS mute to silence alarm • CONFIRM temperature is suitable for application. • ADJUST alarm setpoint or DIRECT water to drain to introduce cool water
-88	30µS/cm	Permeate purity alarm	• PRESS mute to silence alarm • CONFIRM purity displayed is suitable for application. • ADJUST alarm setpoint or contact local service provider
-87	35°C	Permeate temperature alarm	• PRESS mute to silence alarm • CONFIRM temperature is suitable for application • ADJUST alarm setpoint or confirm potable supply temperature is suitable
-86	⚠	Break tank low	• PRESS mute to silence alarm • CONFIRM pressure and flow of potable supply • If problem persists contact local service provider
-85	⚠	UV lamp fail	• PRESS mute to silence alarm • CHANGE lamp at the next opportunity
-63	⚠	UF / MF incorrectly installed	• PRESS mute to silence alarm • CONFIRM UF / MF is correctly installed • POWER OFF/ ON to reset

8.KEY TO CONTROL PANEL

ICON	DESCRIPTION
	Accept
	Add chemical to break tank
	Add chemical to reservoir
	Auto restart
	Bell
	Calibration point
	Cancel
	Clock
	Data
	Date
	Day
	Down
	Drain
	Feed
	Fill
	Hazard
	Locked
	Menu
	Mute alarm

ICON	DESCRIPTION
	Night
	Option OFF
	Option ON
	Output
	Recirculate
	Reset
	Sanitization key
	Sanitization reminder
	Save data
	Scroll
	Scroll back
	Standby
	Shift
	Transport mode
	Up
	User Recognition Key
	Viewing angle
	24hr/7 day

9. TECHNICAL SPECIFICATION

FEEDWATER	
SOURCE	Potable tap water as detailed below. *Failure to comply with the feedwater pre-treatment recommendations will affect the life and performance of key components within the CENTRA-R 60/120 US and may invalidate the warranty. Feedwater requirements are specified for units fitted with a Protek L2 pre-treatment cartridge.*
CONTAMINANT	
Conductivity	< 1000µS/cm
Hardness	< 250 ppm as $CaCO_3$
Free Chlorine	< 4 ppm CL_2
Cloramine	< 1 ppm CL_2
Silica	< 30 ppm SiO_2
Fouling Index	< 10 FI
Iron/Manganese	< 0.1 ppm Fe/Mn
Organics	< 3 ppm TOC
TEMPERATURE	4 - 40ºC (Recommended 15 - 25ºC)
FLOWRATE (maximum requirement at 15ºC)	9 l/min
Drain Requirements (gravity fall with air gap)	20 l/min
FEEDWATER PRESSURE	6 bar (90 psi) maximum, 2 bar (30 psi) minimum

Note: *If feedwater purity is variable or values are outside any of the above ranges, additional pre-treatment is recommended to be installed in the feedwater supply to the unit. If in doubt seek advice from Technical Support at ELGA LabWater.*

DIMENSIONS and WEIGHTS		
Height	820 mm (32.8”) 834 mm (33.4”) including castors	
Width	794 mm (31.8”)	
Depth	470 mm (18.8”)	
Model	**CENTRA-R 60**	**CENTRA-R 120**
Supply weight	52 kg	60 kg
Operational weight	109 kg	117 kg
Installation	Floor/ bench	

CONNECTIONS	
Inlet	15 mm OD tube
Drain (Concentrate)	15 mm OD tube
Drain (Recirculation loop)	15 mm OD tube
Reservoir drain	10 mm OD tube
Recirculation loop outlet	15 mm OD tube
Recirculation loop inlet	15 mm OD tube

ELECTRICAL REQUIREMENTS	
Mains input	230 V 50 Hz ac 115 V 60 Hz ac
System control voltage (not including pumps and UV)	24 V dc
Power consumption (peak demand)	650 VA
Electrical protection rating	10 amp

SAFETY FEATURES
Power fail safe
Water temperature alarm*
Water purity alarm*
Leak detection alarm
Access restricted by User Recognition key
Low voltage control circuit - 24 V dc
Visual alarms
Audible alarms

* Output to operate 24 V dc relay.

PRODUCT WATER SPECIFICATION		
Flowrate	**CENTRA-R 60**	**CENTRA-R 120**
Make-up rate (l/hr at 15°C)	60	120
Delivery flowrate	Up to 10 l/min	
Inorganic	> 95% rejection > 5 MΩ.cm at 25ºC with Labpure L1 installed	
TOC ppb – typically (Site dependant)	<30*	
Bacteria	<1 CFU/ml**	
Particles	0.2 µm filtration*	

* Fitted with UV and optional deionization cartridge and micro filter.

** System to be regularly sanitized and installed following ELGA LabWater installation design guidelines.

As part of our policy of continual improvement we reserve the right to alter the specifications given in this document.

10. WARRANTY / CONDITIONS OF SALE

ELGA LabWater is a trading name of VWS (UK) Ltd.

General Limited Warranty

VWS (UK) Ltd. warrants the products manufactured by it against defects in materials and workmanship when used in accordance with applicable instructions for a period of one year from the date of shipment for the products. VWS (UK) Ltd. MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED. THERE IS NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The warranty provided herein and the data, specifications and descriptions of the VWS (UK) Ltd. products appearing in VWS (UK) Ltd. published catalogues and product literature may not be altered except by express written agreement signed by an officer of VWS (UK) Ltd. Representations, oral or written, which are inconsistent with this warranty or such publications are not authorized and, if given, should not be relied upon.

In the event of a breach of the foregoing warranty, VWS (UK) Ltd. sole obligation shall be to repair or replace, at its option, any product or part thereof that proves to be defective in materials or workmanship within the warranty period, provided the customer notifies VWS (UK) Ltd. promptly of any such defect. The exclusive remedy provided herein shall not be deemed to have failed of its essential purpose so long as VWS (UK) Ltd. is willing and able to repair or replace any nonconforming VWS (UK) Ltd. product or part. VWS (UK) shall not be liable for consequential, incidental, special or any other indirect damages resulting from economic loss or property damage sustained by any customer from the use of its products.

VWS (UK) Ltd. Warranty

VWS (UK) Ltd. warrants the water systems manufactured by it, BUT EXCLUDING MEMBRANES AND PURIFICATION PACKS, against defects in materials and workmanship when used in accordance with the applicable instructions and within the operating conditions specified for the systems for a period of one year from the earlier of:

a) the date of installation, or

b) the 120th day following the date of shipment.

VWS (UK) LTD. MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED. THERE IS NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The warranty provided herein and the data, specifications and descriptions of the VWS (UK) Ltd. systems appearing in VWS (UK) Ltd. published catalogues and product literature may not be altered except by express written agreement signed by an officer VWS (UK) Ltd. Representations, oral or written, which are inconsistent with this warranty or such publications are not authorised and, if given, should not be relied upon.

In the event of a breach of the foregoing warranty, VWS (UK) Ltd. sole obligation shall be to repair or replace, at its option, any product or part thereof that proves to be defective in materials or workmanship within the warranty period, provided the customer notifies VWS (UK) Ltd. promptly of any such defect. The cost of labor for the first ninety (90) days of the above warranty period is included in the warranty; thereafter, labor cost shall be at the customer's expense. The exclusive remedy provided herein shall not be deemed to have failed of its essential purpose so long as VWS (UK) Ltd. is willing and able to repair or replace any nonconforming VWS (UK) Ltd. system or component part. VWS (UK) Ltd. Ltd. shall not be liable for consequential, incidental, special or any other indirect damages resulting from economic loss or property damage sustained by any customer from the use of its process systems.

Products or components manufactured by companies other than VWS (UK) Ltd. or its affiliates ("Non - VWS (UK) Ltd. products") are covered by the warranty, if any, extended by the Product manufacturer. VWS (UK) Ltd. hereby assigns to the purchaser any such warranty; however VWS (UK) LTD. EXPRESSLY DISCLAIMS ANY WARRANTY WHETHER EXPRESSED OR IMPLIED, THAT THE NON - VWS (UK) Ltd. PRODUCTS ARE MERCHANTABLE OR FIT FOR A PARTICULAR PURPOSE.

NOTICE

VWS (UK) Ltd. is constantly striving to improve its products and services. Consequently, the information in this document is subject to change without notice and should not be construed as a commitment by VWS (UK) Ltd. Also VWS (UK) Ltd. assumes no responsibility for any errors that may appear in this document. This manual is believed to be complete and accurate at the time of publication. In no event shall VWS (UK) Ltd. be liable for incidental or consequential damages in connection with or arising from the use of this manual.

VWS (UK) Ltd. warrants its products against defects in materials and workmanship as described in the Warranty statement on the preceding pages.

11. USEFUL CONTACT DETAILS

ELGA LabWater

Lane End Industrial Park
High Wycombe
Bucks
HP14 3BY
UK

Tel: +44 (0) 203 567 7300
Fax: +44 (0) 203 567 7205

E-mail: techsupport@elgalabwater.com

For the address of your nearest ELGA LabWater Sales and Service office visit the country list on our website

http://www.elgalabwater.com

or contact ELGA at the number above.