ELGA

MEDICA EDI - US

Operator Manual

VEOLIA WATER
Solutions & Technologies

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Version 2 – 10/15

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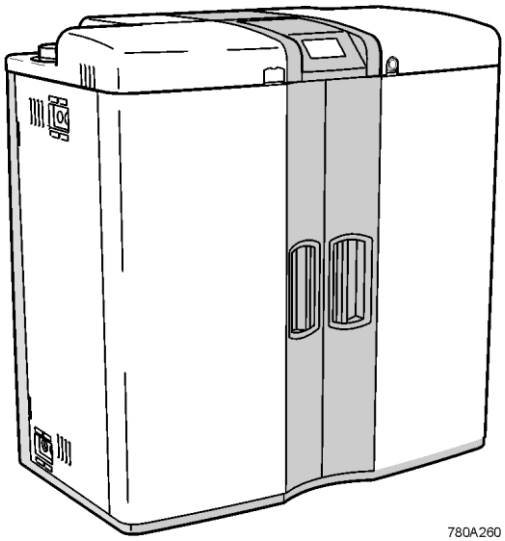
1. INTRODUCTION



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 **MEDICA EDI - US** allowing you to obtain a guaranteed supply of purified water to meet your requirements. For more detailed information refer to the Operator Manual supplied on CD.

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

It is essential that the electrical supply to the **MEDICA EDI - US** is isolated before any items are changed or maintenance work performed.

The appliance coupler (mains lead) connected to the rear of the unit can be removed to isolate the power supply. If access to this is restricted then it is recommended that access to the supply socket is easily available to disconnect the electrical supply.

The unit must be earthed. Use of the recommended appliance coupler will ensure adequate earth protection.

WARNING! **IF THE EQUIPMENT IS USED IN A MANNER NOT SPECIFIED BY ELGA, THE PROTECTION PROVIDED BY THE EQUIPMENT MAY BE IMPAIRED.**

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.

Switch off the process and relieve pressure in the distribution loop by opening a point of use or dispense tap.

1.6 Hydrogen

Small quantities of Hydrogen gas are present in the drain line. Drain must be in a ventilated area.

1.7 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.

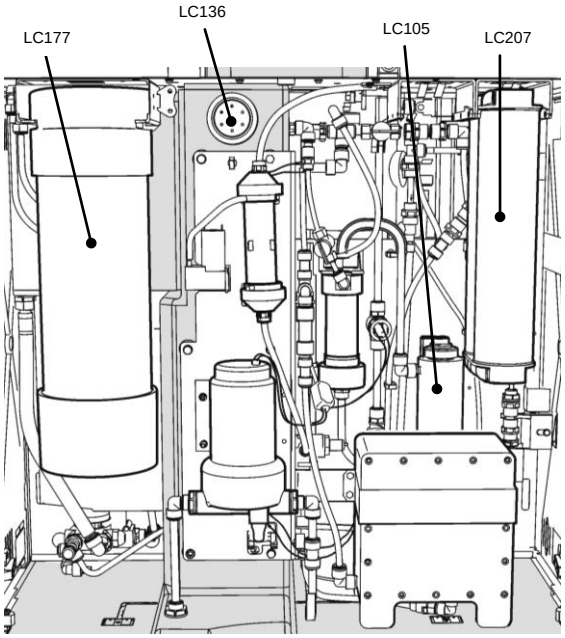
EfferSan™ and Minncare cold sterilant are EPA registered as a sterilant, high level disinfectant, and sanitizer.

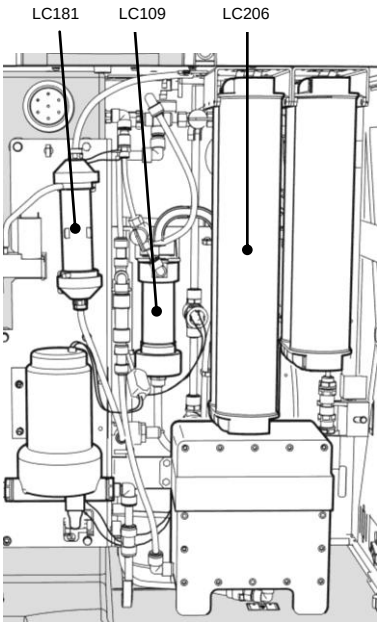
EfferSan™ and Spent Minncare cold sterilant acidic and requires normal neutralization as specified by your local state and local regulations.

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

1.8 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.





1.9 Consumables.

Consumables	Typical Service Life*	Max. Shelf Life
LC105 (UV lamp)	12 months	5 years
LC109 (UMF)	6 months	2 years
LC136 M2 (Vent filter)	6 months	2 years
LC207 (DI Cartridge)	3-12 months	2 years
LC206 (Conditioning Cartridge)	2-6 months	2 years
LC 177 (Protek L2)*	12 months	2 years
LC193 (RO cartridge 120 L/hr)	3 years	2 years
LC181 (E-Cartridge)	3 years	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.

* Restricted use based on feed water conditions. Refer to technical specification on page 31.

2. INSTALLATION AND COMMISSIONING

2.1 Installation

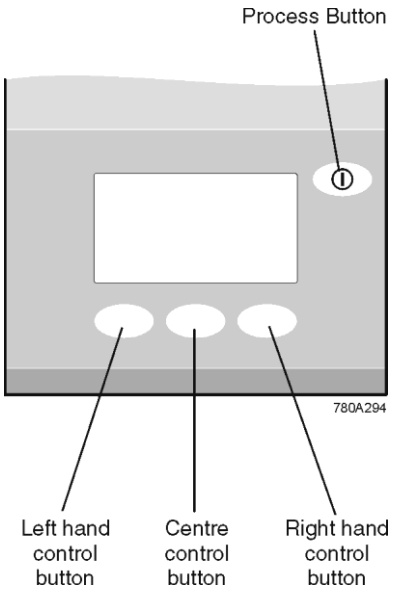
The unit is supplied with a quick start manual that allows the unit to be quickly installed and commissioned.

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 installation of the product.

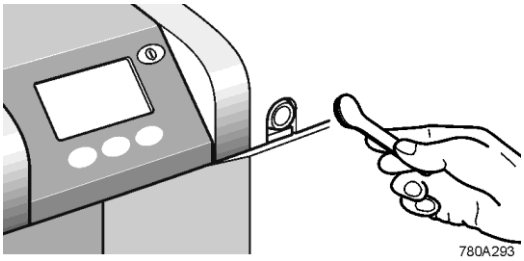


Control panel

3. CONTROLS

The ***MEDICA EDI - 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 9.

BUTTON	ICON	Function
PROCESS	⏻	Turns the unit on/off
LEFT	☰	Menu
	↻	Scroll
	▶	Shift
	▲	Up
CENTRE	✓	Accept
	31	Replacement dates
RIGHT	☠	Mute Alarm
	▼	Down



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 stop the general user from accidentally starting sanitization.

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

3.2 System Preferences

When the ***MEDICA EDI - 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.

PRESENT the ‘Master Key’ (black) or the ‘User key’ (blue) to the reader ensuring clean contact of both metallic components.

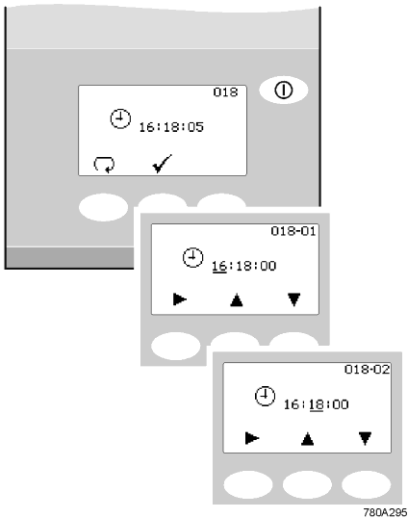
The display will show a padlock

REMOVE ‘Key’ from the reader.

The display will show a key

PRESS button.

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



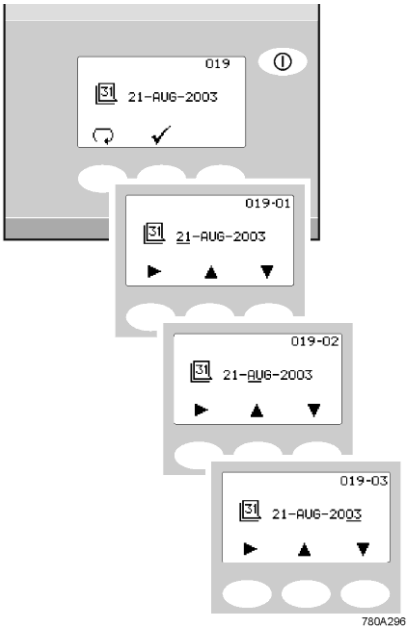
Setting clock time

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 step cursor onto minute.
4. PRESS ▲ to increase or ▼ to decrease minutes.
5. PRESS ✓.



Set date screens

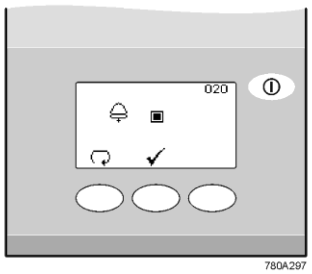
Step 3 - Date (screen 019)

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 step cursor onto month.
4. PRESS ▲ to increase or ▼ to decrease month.
5. PRESS ▶ to step cursor onto year.
6. PRESS ▲ to increase or ▼ to decrease year.
7. PRESS ✓



Audible alarm enable screen

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

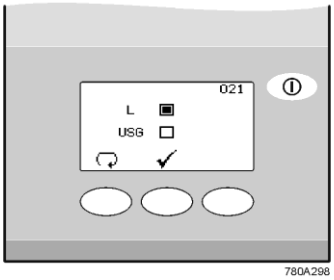
This screen provides the option of either turning on the audible alarm, causing it to sound (while the alarm icon flashes) or turning off the audible alarm meaning it will remain quiet

1. PRESS ↻ to change mode (■ = ON)

   OR

   PRESS ✓ to proceed to step 5.
2. PRESS ✓.

   Note: The visual alarm cannot be disabled.



Set units of measure - volume

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

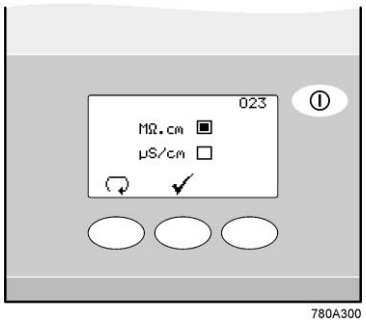
This screen allows units of water volume to be set, to either **Litres** or **US Gallons**. This only indicates the volume in the reservoir.

1. PRESS ↻ to change (L or USG)

   OR

   PRESS ✓ to proceed to step 6.

2. PRESS ✓.



Water purity unit setting

Step 7 - Water purity unit setting (screen 023)

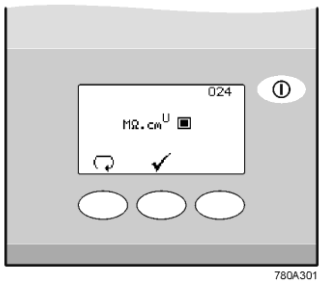
This screen allows preferred displayed units of water purity to be set, to either, **MΩ.cm** or **µS/cm**. This only affects the quality measurement in the recirculation loop.

1. PRESS SCROLL ↻ to change mode (MΩ.cm or µS/cm)

   OR

   PRESS ✓ to proceed to step 8.

2. PRESS ✓.



Uncompensated water quality screen

Step 8 - Uncompensated water quality (screen 024)

A U will indicate uncompensated readings (recirculation loop only) in the normal process screen.

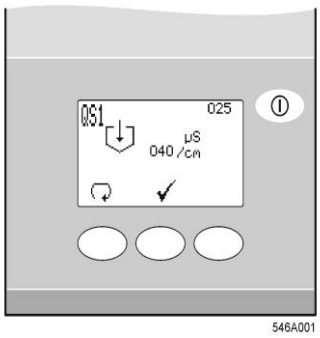
1. PRESS ↻ to change (■ = Uncompensated water quality ON)

   OR

   PRESS ✓ to proceed to step 9.

2. PRESS ✓.

Note: This mode is for validation purposes only and should not be selected as standard.

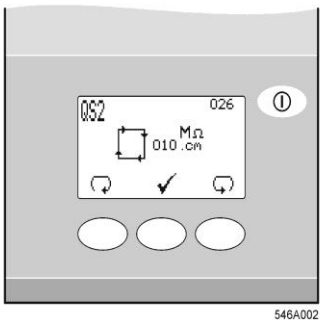


Alarm settings QS1 screen

Step 9 - RO water quality alarm settings 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 (Increments of 10, ranging from 20 to 100µS/cm). If '0' is selected the alarm will be turned 'OFF'.
   OR
   PRESS ✓ to proceed to step 10.
2. PRESS ✓.

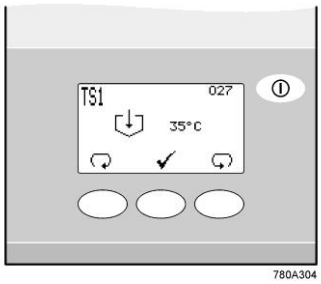


Alarm settings QS2 screen

Step 10 - Product water purity alarm settings 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 (increments of 1, ranging from 1 to 10 MΩ.cm).
   OR
   PRESS ✓to proceed to step 11.
2. PRESS ✓.

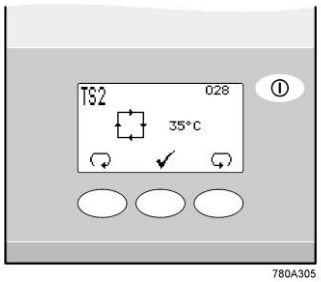


Alarm settings TS1 screen

Step 11 - RO water temperature alarm settings 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 (increments of 1, ranging from 20 to 50°C)
   OR
   PRESS ✓ to proceed to step 12.
2. PRESS ✓.



Alarm settings TS2 screen

Step 12 - Product water temperature alarm settings 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 returns below the set point.

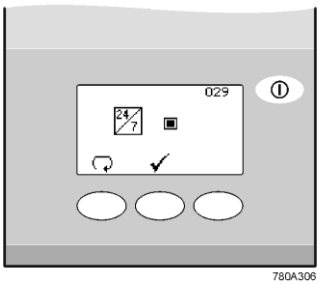
1. PRESS to select alarm point (increments of 1, ranging from 20 to 50°C)

   OR

   PRESS ✓ to proceed to step 13.

2. PRESS ✓.

Note: If the water temperature rises above 55℃ 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 13 - Continuous operation (screen 029)

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

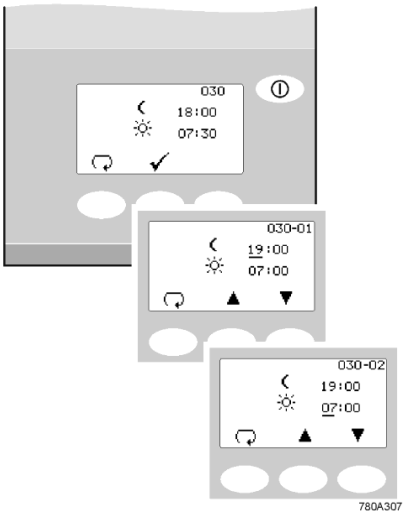
CAUTION! During long periods of continuous operation and low usage the water temperature will rise. It is recommended that this function is only used when water usage is on average >50 litres/hr and water is used every day.

1. PRESS to change (■ = ON)

   OR

   PRESS ✓ to proceed to step 14.

Note: Proceed to step 16 if continuous operation is selected (■ = ON).



Setting period of operation

Step 14 - 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 this will maintain water purity within the distribution loop.

1. PRESS to edit night service start

   OR

   PRESS ✓ to proceed to step 15.

2. PRESS ▲ to increase or ▼ to decrease time in increments of 30 minutes.

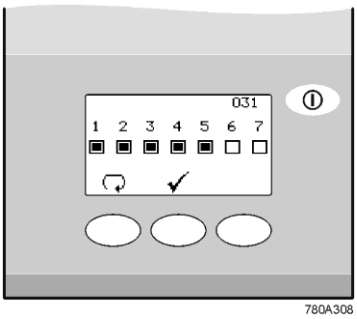
3. PRESS to step to night service end.

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 15 - Operational days selection (screen 031)

Select the days that the ***MEDICA EDI - US*** 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 14.

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

   OR

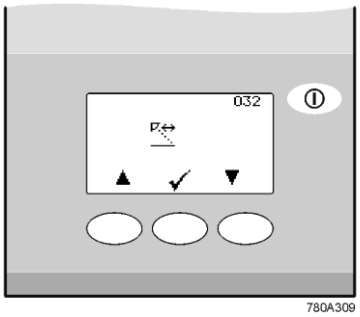
   PRESS ▶ to step to box (2).

Note: A highlighted box indicates that the unit will be operational on that day between the times set in step 14.

3. REPEAT, step 15 - item 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 water purity to reach a high.



Viewing angle adjustment screen

Step 16 - Display viewing angle adjustment (screen 032)

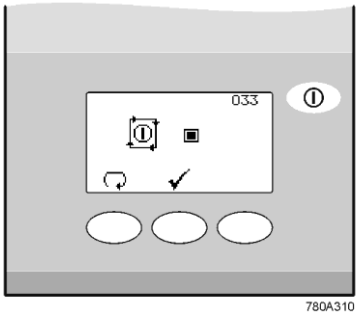
The angle of the display can be adjusted up and down for better viewing of the screen.

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

   OR

   PRESS ✓ to proceed to step 17.

2. PRESS ✓.



Auto-restart screen

Step 17 - Auto-restart (screen 033)

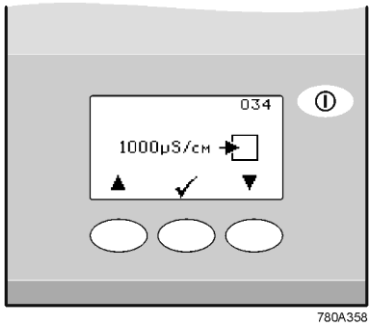
This allows selection of the AUTO restart option. If auto restart is selected the unit will automatically restart after a power failure. In manual mode the unit will stay in standby after a power failure.

1. PRESS ↻ to change mode (■ = ON)

   OR

   PRESS ✓ to proceed to step 18.

2. PRESS ✓.



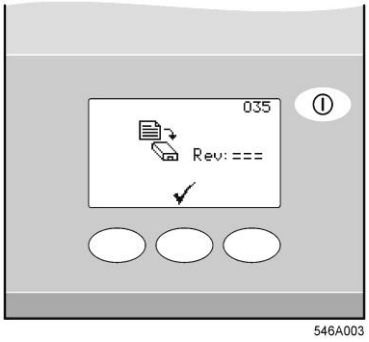
Feed Water Quality Screen

Step 18 - 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 19 - Data output (screen 035)

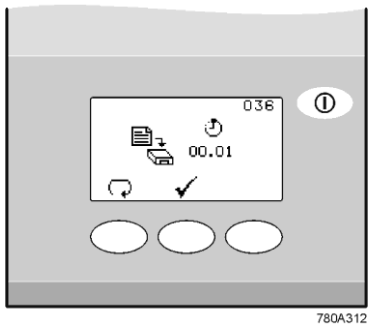
The ***MEDICA EDI - US*** can transmit operational data to an Xport storage device.

1. PRESS ⮌ to format the storage device.

   OR

   PRESS ✓ to proceed to step 20.

2. PRESS ✓.



Data transmit screen

Step 20 - Data transmit (screen 036)

Setting the frequency of data transmittals to Xport.

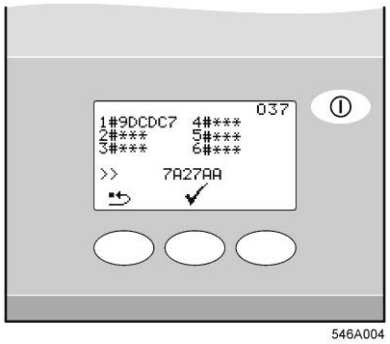
1. PRESS ↻ to change transmit intervals (1, 5, 15, 30min / 1,6 hour)

   OR

   PRESS ✓ to proceed to step 21.

2. PRESS ✓.

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



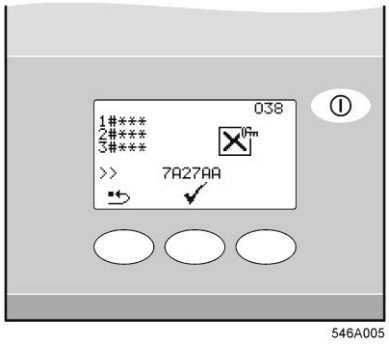
Programming of user keys screen

Step 21 - Programming of User Keys (screen 037)

During the life of the ***MEDICA EDI - 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 instruction 2 and 3 until all User keys are registered (maximum of 6 users).
5. PRESS ✓ to complete settings.



Programming of Sanitization Keys screen

Step 22 - 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 ✓ until the Sanitization Key programming screen appears.
3. PRESS ⮌ to delete all Sanitization keys
4. PRESENT the new Sanitization Key to the reader.
5. PRESS ⇢▪⇠ to load new Sanitization key identification.
6. REPEAT instruction 4 and 5 until all Sanitization keys are registered (maximum of 2 users).
7. PRESS ✓ to complete settings.

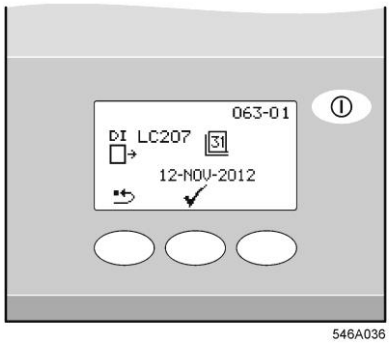
3.3 Setting Consumable Replacement Reminders

Step 1 - Enter consumable replacement timer set-up

1. TURN unit off at electrical supply.

Note: Allow time for the display to go blank after the power is removed.

2. SWITCH electrical supply on.
3. PRESENT Master Key and PRESS 31 button to enter the Consumable Timer set up.



DI LC207 replacement date screen

Step 2 – Purification Pack (LC207) replacement date

1. PRESS ⮌ button to reset cartridge replacement date

OR

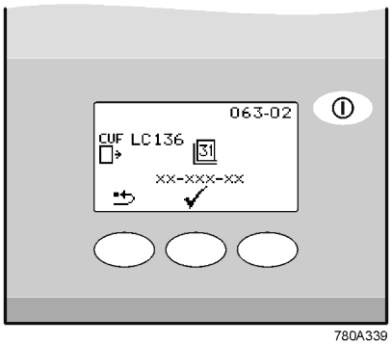
PRESS ✓ to accept replacement date and proceed to CVF Reminder.

2. PRESS ✓ to confirm that resetting is required

OR

PRESS ✗ to abort reset.

3. PRESS ✓.



CVF replacement date screen

Step 3 – Composite Vent filter (CVF) LC136M2 replacement date

1. PRESS ⮌ button to reset CVF replacement date

OR

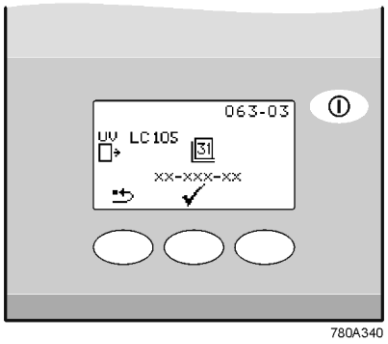
PRESS ✓ to accept date and proceed to UV lamp Reminder.

2. PRESS ✓ to confirm that resetting is required

OR

PRESS ✗ to abort reset.

3. PRESS ✓.



UV replacement date screen

Step 4 - UV lamp (LC105) replacement date

1. PRESS ⮌ button to reset UV lamp replacement date

OR

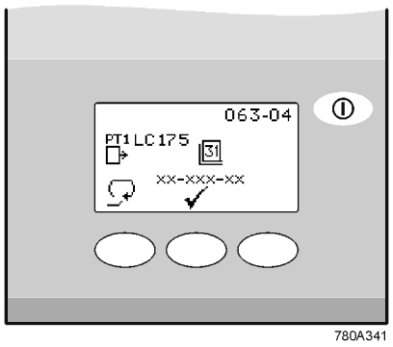
PRESS ✓ to accept replacement date and proceed to Protek Filter Replacement.

2. PRESS ✓ confirm that resetting is required

OR

PRESS ✗ to abort reset.

3. PRESS ✓.



Pre-treatment cartridge replacement screen

Step 5 – Protek L2 (LC177).

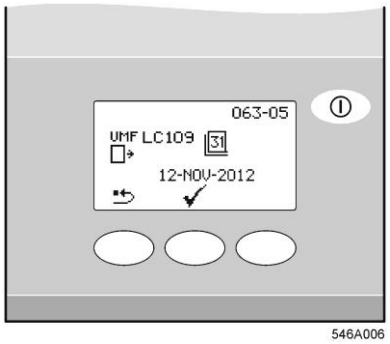
1. PRESS ⮌ button to reset Protek L2 (LC177) replacement date

   OR

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

   OR

   PRESS ✗ to abort reset.
3. PRESS ✓.



UMF replacement date screen

Step 6 – UMF (LC109) replacement date

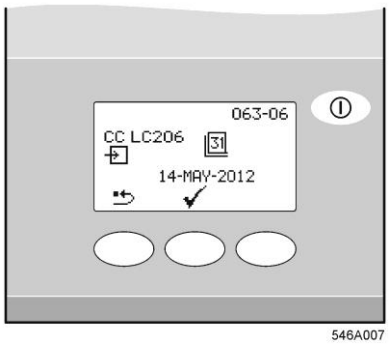
1. PRESS ⮌ button to reset UMF replacement date

   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 ✓.



Conditioning Cartridge reminder screen

Step 8 – Conditioning Cartridge (LC206) reminder

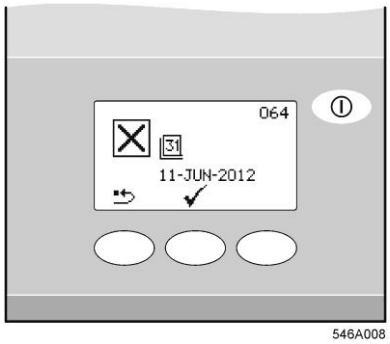
1. Press ⮌ button to reset cartridge replacement date

   OR

   Press ✓ to accept replacement date and complete settings.
2. PRESS ✓confirm that resetting is required

   OR

   PRESS ✗ to abort reset
3. PRESS ✓.



Sanitization reminder screen

Step 7 - Sanitization reminder

1. PRESS ⮌ button to reset Sanitization replacement date

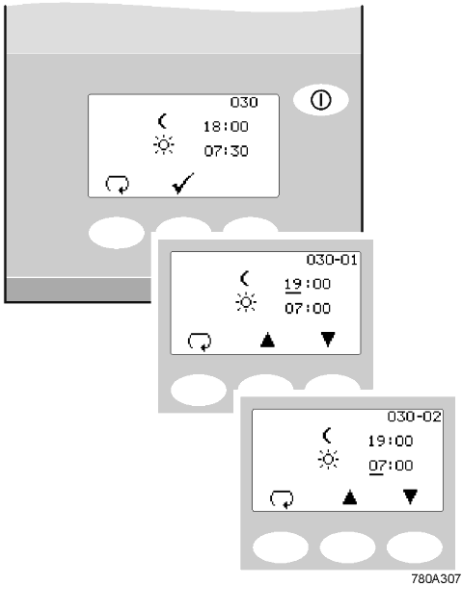
   OR

   PRESS ✓ to accept replacement 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 - Step 14 and 15.

Your ***MEDICA EDI - US*** can be programmed to operate on specific days between selected times. This is to optimize the efficiency of the unit and to minimize rises in water temperature.

During the 'sleep' period the unit will display ⏻.

It is possible to override this mode by PRESSING ⏻.

During the 'sleep' period the unit will run in intermittent recirculation (10 minutes every two hours) to maintain water purity around the distribution loop.

4.2 Continuous Recirculation (24/7) (screen 029)

Refer to Section 3.2 - Step 13.

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)

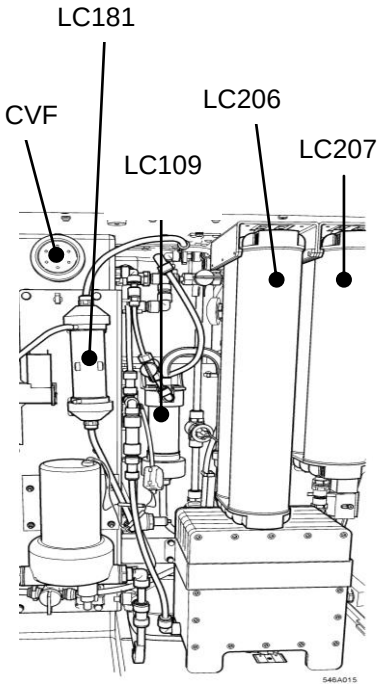
During recirculation the water temperature will tend to increase slowly.

5. MAINTENANCE

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

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.



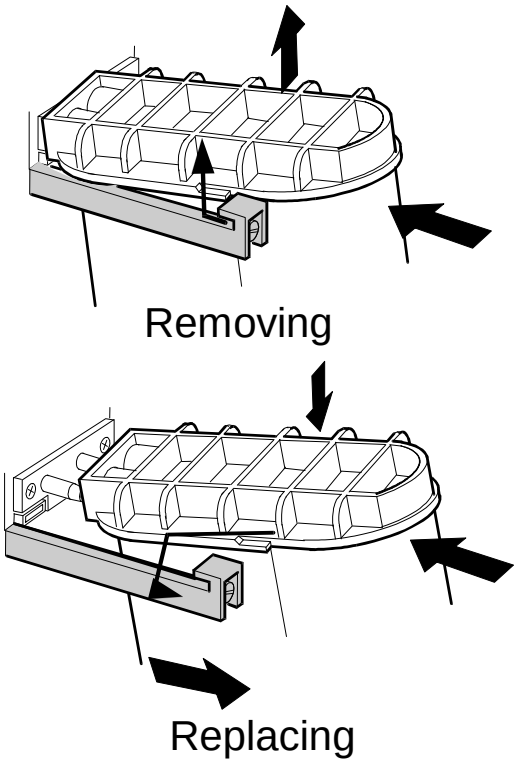
General View

5.1 Replacing Composite Vent Filter (L136)

The Composite Vent Filter (CVF) should be replaced in the following circumstances:

- 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 CVF.
3. UNSCREW old CVF and discard
4. UNPACK new CVF.
5. WRITE the installation date on the label of the filter for future reference.
6. INSTALL filter.
7. SWITCH on power.
8. RESET consumable reminder as described in Section 3.3, Step 3.



Purification Cartridge (LC207) and Conditioning Cartridge (LC206) removal and replacement.

5.2 Replacing Purification Cartridge LC207 or Conditioning Cartridge LC206.

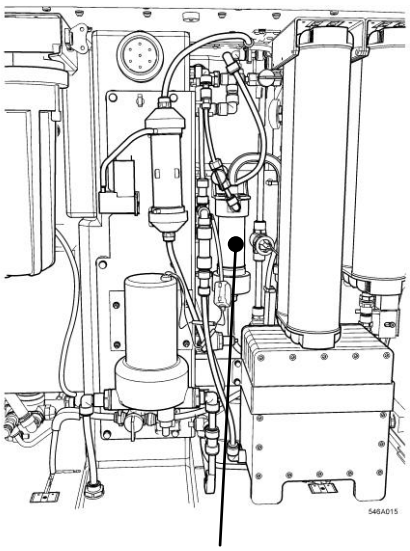
- **LC206:**
  - When the purity of water from the unit starts to deteriorate.

  When indicated by the consumable alarm or after a maximum of six months.

1. ENSURE process is OFF and isolate power.
2. OPEN right hand door and LOCATE LC207 cartridge, the shorter pack on the right (above the EDI pulse module)
3. PUSH Purification cartridge FORWARD, then LIFT, finally PULL to remove the used cartridge. Discard.
4. UNPACK new LC207.
5. REMOVE sealing plugs from inlet and outlet ports.
6. Wet ‘O’ rings and SLIDE new cartridge into position pushing upwards against pack reader contacts.
7. EASE back and ENSURE that the pack is fully engaged (down) 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.
10. RESET reminder as described in section 3.3, Step 2.

- **LC207:**
  - The replacement of the LC206 pack is dictated by water usage and RO water quality.
  - Pack needs replacing when indicated by alarm 57.
  - Alarm 56 will come up before, when 10% of pack life remains, and will indicate approximate remaining life in days, based on recent usage patterns

1. ENSURE process is OFF and isolate power.
2. OPEN right hand door and LOCATE LC206 cartridge, the longer pack on the left (above the EDI module).
3. PUSH purification cartridge FORWARD, then LIFT, finally PULL to remove the used cartridge. Discard.
4. UNPACK new LC206.
5. REMOVE sealing plugs from inlet and outlet ports.
6. Wet ‘O’ rings and SLIDE new cartridge into position pushing upwards against pack reader contacts.
7. EASE back and ENSURE that the pack is fully engaged (down) in the retainers.
8. SWITCH on power. FOLLOW screen prompts to accept new cartridge replacement date.
9. RESET reminder as described in section 3.3, Step 2.



Ultra-Microfilter

Ultra-Microfilter position

5.3 Replacing Ultra-Microfilter (LC109)

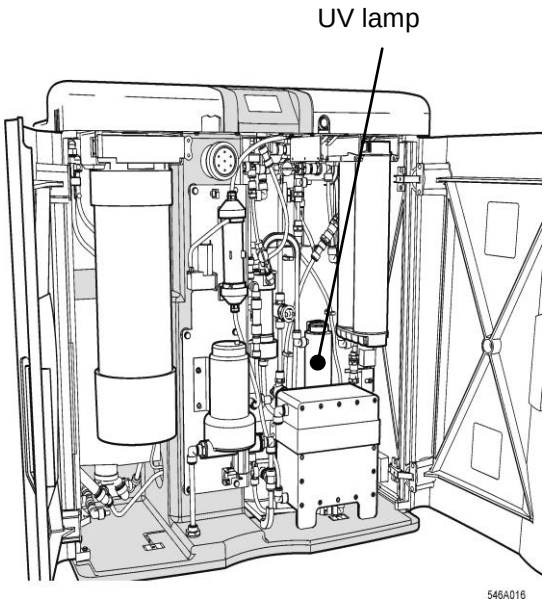
The Ultra-Microfilter (UMF) should be replaced in the following circumstances:

- When indicated by the consumable alarm
- After a maximum of 6 months use
- Product flow is no longer adequate
- Product water bacterial content is too high.

1. ISOLATE power
2. OPEN front doors and LOCATE UMF
3. UNSCREW lower connection

Note: At this stage a small quantity of water may spill.

4. UNSCREW UMF from top connection
5. INSTALL new UMF
6. RECONNECT
7. RINSE water to drain to recommission the system.
8. RESET reminder as described in section 3.3, Step 6.



UV lamp position

5.4 Replacing UV lamp (LC105)

The UV lamp should be replaced in the following circumstances:

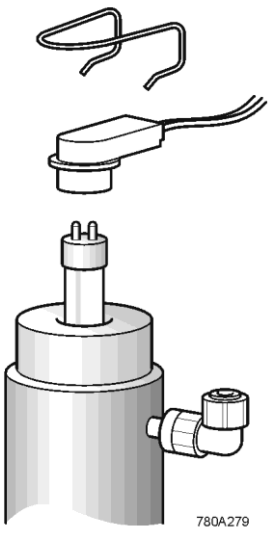
- When indicated by the consumable alarm.
- After a maximum of twelve months use.

1. ENSURE process is OFF and ISOLATE power.
2. OPEN the front doors.
3. REMOVE pack to improve access to the UV lamp assembly
4. LOCATE UV assembly on right-hand side of unit.
5. REMOVE retaining spring clips from top and bottom of the lamp assembly
6. REMOVE electrical connectors from top and bottom and take lamp from housing.

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

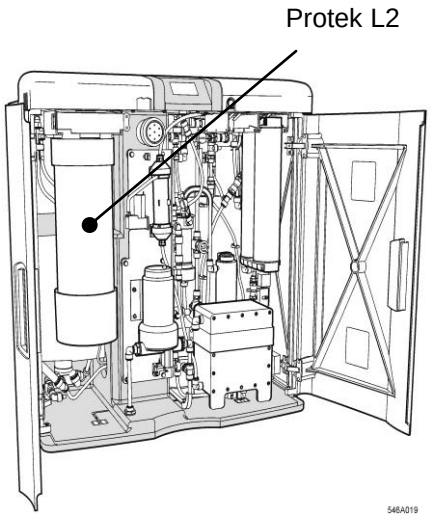
7. DISCARD lamp.

Caution! Dispose of lamp in accordance with local authority regulations.

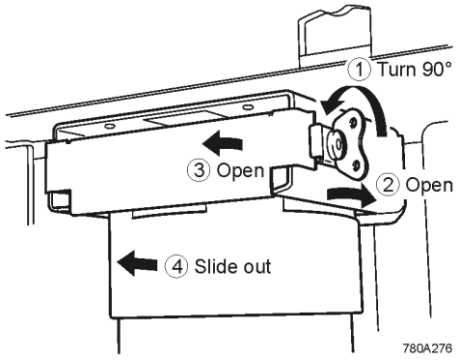


UV Lamp connection

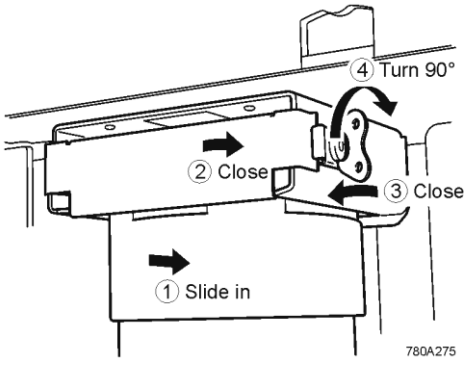
8. REMOVE new lamp from packaging and follow instructions included for cleaning.
9. REFIT into UV assembly.
10. RECONNECT to electrical connectors top and bottom.
11. REFIT retaining spring clips top and bottom
12. REPLACE Medpure pack (if fitted).
13. RESET consumable reminder as described in Section 3.3, Step 4.



Protek position



Protek L2 (LC177)



Protek L2 (LC177)

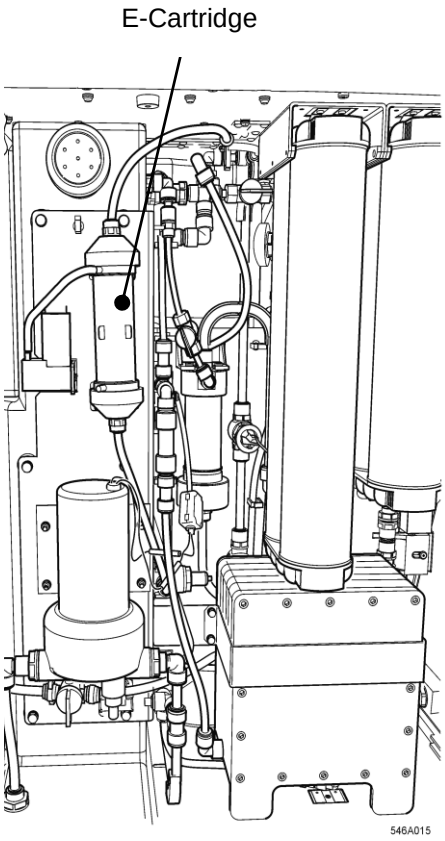
5.5 Replacing Protek L2 (LC177) or Carbon Filter (LC123) Pre-treatment.

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 the alarm 75
- After replacement of RO modules

5.5.1 Protek L2 (LC177)

1. ENSURE process is OFF and ISOLATE power.
2. OPEN front doors
3. LOCATE Protek
4. Remove lid from break tank and RELEASE any residual system pressure by OPERATING float valve.
5. TWIST to RELEASE clip and OPEN retaining clamp at top of cartridge Protek L2 (LC177).
6. PULL Protek L2 (LC177) forward
7. If replacing a Protek, discard the used cartridge in accordance with local regulations.
8. REMOVE new cartridge from packaging.
9. REMOVE sealing plugs from inlet and outlet ports.
10. Wet ‘O’ rings and SLID Protek until it is fully engaged
11. CLOSE retaining clamp and fasten CLIP
12. The unit will automatically recognize the new cartridge and date.
13. RESET reminder as described in section 3.3, Step 5.



5.6 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
3. LOCATE E – cartridge
4. DISCONNECT tubing to air pump and inlet and outlet tubing from the E cartridge.
5. REMOVE used cartridge from clip and discard in accordance with local regulations.
6. TAKE new cartridge
7. REMOVE sealing plugs from inlet and outlet ports
8. LOCATE new cartridge in clip
9. RE-CONNECT tubing

5.7 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

The RO is sanitized to reduce the growth of microbiological contamination within the RO module. The ***MEDICA*** has a built-in reservoir which allows the sterilant to be introduced into the water feeding the RO. Please read this entire section to become familiar with the procedure before you start.

The sanitization frequency required is dependent on the feedwater, local environment, usage patterns and application. As a general rule, ELGA LabWater recommends sanitization of the RO at 6 monthly intervals. However, the period between sanitizations could be extended in particular circumstances. For example, microbial growth will usually be lower with clean feed water, well-maintained pre-treatment, low temperatures and heavy usage.

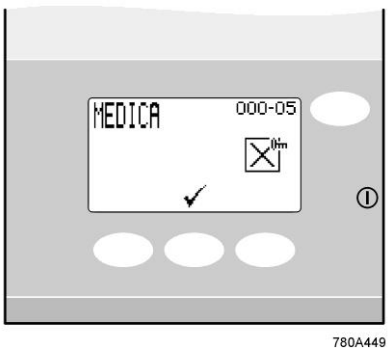
WARNING! ALWAYS WEAR RUBBER GLOVES, APRON AND FACEMASK. DO NOT BREATHE FUMES OR ALLOW TO COME IN CONTACT WITH SKIN OR EYES. ALWAYS FOLLOW RECOMMENDATIONS FOUND IN THE MANUFACTURERS MATERIAL SAFETY DATA SHEET AND ANY APPLICABLE OSHA STANDARDS FOR THE CHEMICAL BEING USED.

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

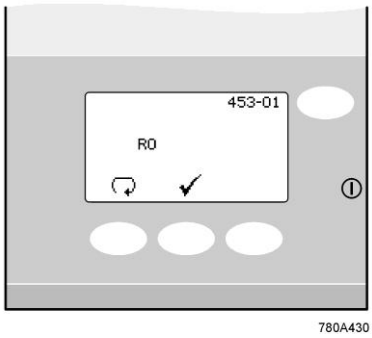
6.1.1 RO sanitization (Step 1) RO sanitization.

Sanitization of the finished installation is essential to ensure that the system is properly commissioned and capable of achieving the bacteriological control required for a typical application.

1. PRESENT GREEN sanitization key to reader.
2. PRESS ✓ to enter sanitization.

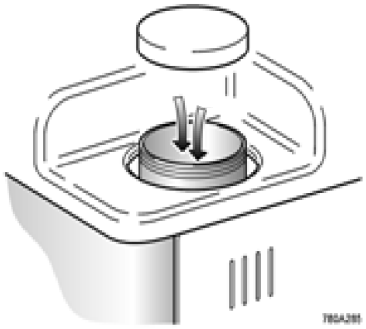


Sanitization selection screen



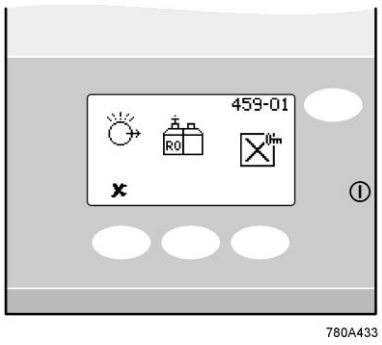
Enter RO sanitization

3. PRESS ✓ to enter RO sanitization.



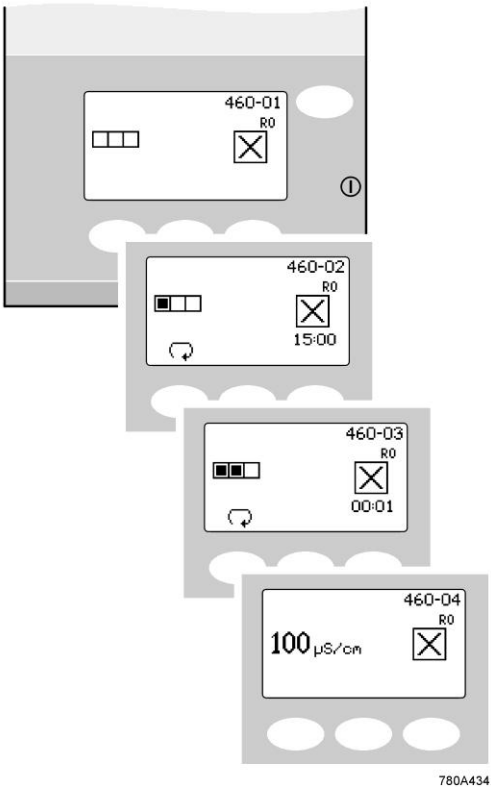
Large white cap removal to insert sanitiant

4. UNSCREW the **large** white lid on the left of the unit.
5. Measure 50ml of Minncare cold sterilant and slowly pour into the break tank.
6. REPLACE lid.



Confirmation chemical is added

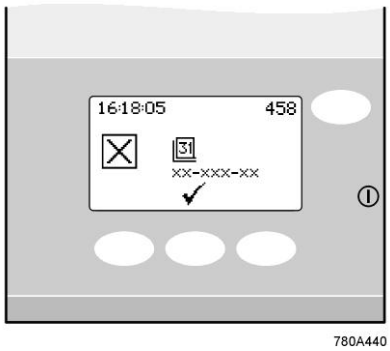
7. PRESENT GREEN sanitization to reader to confirm that the chemical has been added.



RO sanitization process steps

8. The system now enters a period of automatic sanitization lasting approximately 45 minutes

Once the step within the sanitization is complete the unit will go straight into process and continue to fill the recirculation reservoir



Set Sanitization reminder

9. PRESS ✓ to accept the sanitization reminder

6.2 Tablet sanitization

The RO is sanitized to reduce the growth of microbiological contamination within the RO module. The ***MEDICA*** has a built-in reservoir which allows the sterilant to be introduced into the water feeding the RO. Please read this entire section to become familiar with the procedure before you start.

The sanitization frequency required is dependent on the feedwater, local environment, usage patterns and application. As a general rule, ELGA LabWater recommends sanitization of the RO at 6 monthly intervals. However, the period between sanitizations could be extended in particular circumstances. For example, microbial growth will usually be lower with clean feed water, well-maintained pre-treatment, low temperatures and heavy usage.

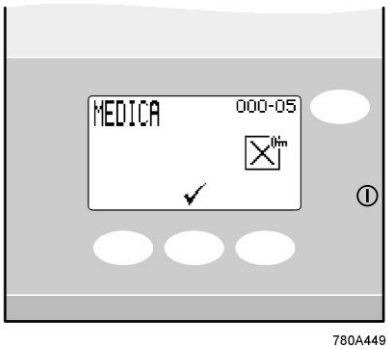
WARNING! ALWAYS WEAR RUBBER GLOVES, APRON AND FACEMASK. DO NOT BREATHE FUMES OR ALLOW TO COME IN CONTACT WITH SKIN OR EYES. ALWAYS FOLLOW RECOMMENDATIONS FOUND IN THE MANUFACTURERS MATERIAL SAFETY DATA SHEET AND ANY APPLICABLE OSHA STANDARDS FOR THE CHEMICAL BEING USED.

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

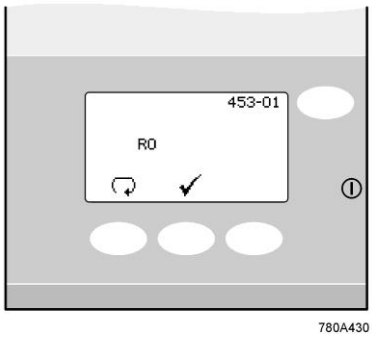
6.2.1 RO sanitization (Step 1).

Sanitization of the finished installation is essential to ensure that the system is properly commissioned and capable of achieving the bacteriological control required for a typical application.

1. PRESENT GREEN sanitization key to reader.
2. PRESS ✓ to enter sanitization.



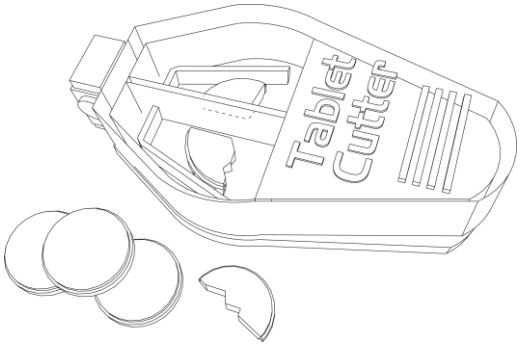
Sanitization selection screen



Enter RO sanitization

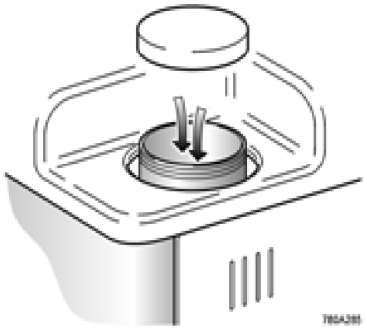
3. PRESS ✓ to enter RO sanitization.

CAUTION! ENSURE THE CORRECT DOSAGE OF CHEMICAL IS USED.



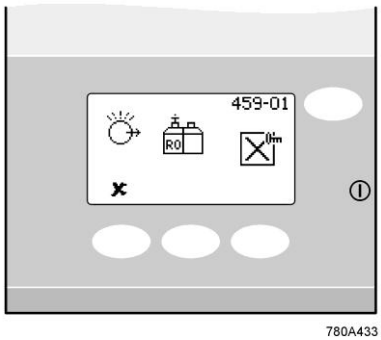
Tablet cutter for cutting EfferSan™ tablets.

4. UNSCREW the **large** white lid on the left of the unit.
5. CUT one EfferSan™ tablet into four quarters using tablet cutter.



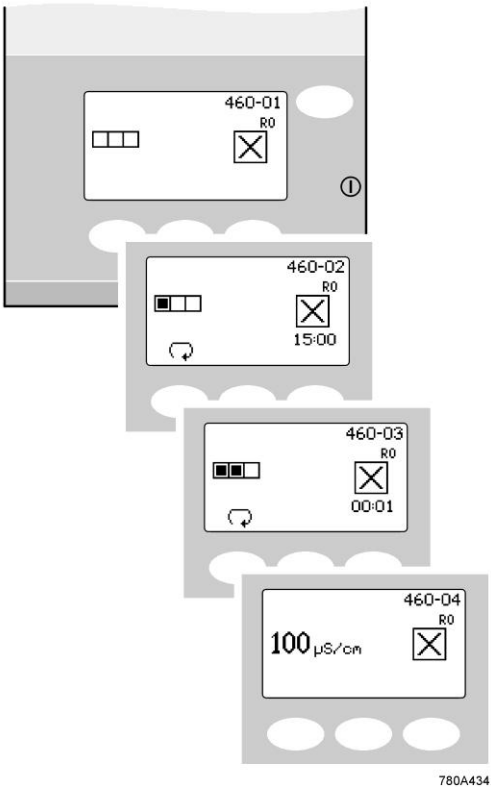
Large white lid removal to insert sanitiant.

6. INSERT ¼ of EfferSan™ tablet into the break tank.
7. REPLACE lid.



Confirmation chemical is added

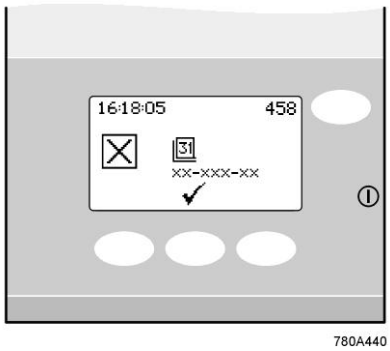
8. PRESENT GREEN sanitization to reader to confirm that the chemical has been added.



RO sanitization process steps

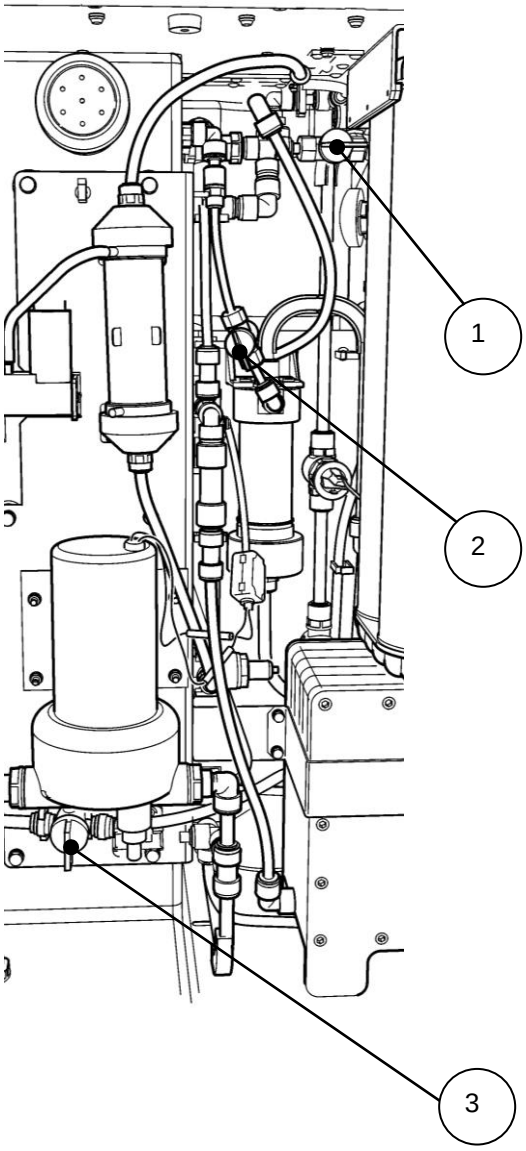
9. The system now enters a period of automatic sanitization lasting approximately 45 minutes

   Once the step within the sanitization is complete the unit will go straight into process and continue to fill the recirculation reservoir



Set Sanitization reminder

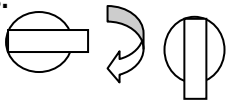
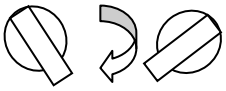
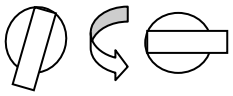
10. PRESS ✓ to accept the sanitization reminder



7. EMERGENCY BYPASS

Contact your local service provider before putting the unit into emergency bypass.

7.1 Emergency bypass

1. Ensure the process is OFF
2. Disconnect the electrical supply
3. **Open the doors.**
4. Close valve 1 
5. Close valve 2 
6. **Remove yellow plastic cover 3**
7. Open valve 3 
8. Close valve 3 when there is no requirement for purified water.
9. **Monitor water purity independently or install new** LC207 cartridges to guarantee water purity.

.

7.2 Calculation for DI Cartridge (LC207) Cartridge life

Calculate the maximum life of LC207 under emergency bypass processing and with your mains water conditions to maintain a supply purity of 1MΩ.cm to the analyzer

The maximum life expectancy of the LC207 cartridge in emergency bypass mode while maintaining a supply purity of 1MΩ at the analyzer, may be calculated as follows:

Single Pack

$$\text{Time between pack changes} = \frac{60{,}000}{\text{Conductivity of mains water} \times \text{Water consumption of analyzer (l/hr)}}$$

Example

Mains water conductivity = 605 μS/cm

Water consumption of analyzer = 20 l/hr

$$\text{Time between pack changes} = \frac{120{,}000}{605 \times 20}$$

Time between pack changes =4.9 hr

In the absence of information on mains water conductivity, assume a pack life of 2 hr if the analyzer consumes 20 l/hr. If flows start to decline this may be improved by changing the UMF.

The capacity will be less (typically 80% less) if a water purity of 10 MΩ.cm is needed.

8. 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 **MEDICA EDI - US.**) If the unit cannot be repaired using the information shown, please call your local ELGA LabWater representative *(See Section 12.0 - Useful Contact Details).*

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

Alarm Summary

Display id	icon	Alarm	Recommended Action
672-98		Leak Detection	• PRESS mute to silence alarm • REMOVE power rectify leak and dry sensors • Dry the contacts • POWER on to reset.
672-97		Reservoir level controls	• PRESS mute to silence alarm • REMOVE power • Contact Technical Support
672-96		High loop pressure	• PRESS mute to silence alarm • REMOVE power • Contact Technical Support
672-95		Permeate over temperature	• PRESS mute to silence alarm • Potable feed temperature is unacceptably high >50°C • Contact Technical support
672-94		Recirc. loop over temperature	• PRESS mute to silence alarm • Water temperature is unacceptably high >50°C • Contact Technical support
-93	 LC177	Protek L2 incorrectly installed	• PRESS mute to silence alarm • CONFIRM Protek is correctly installed • POWER OFF/ ON to reset
-92	 LC207	LC207 incorrectly installed	• PRESS mute to silence alarm • CONFIRM Medpure L1is correctly installed • POWER OFF/ ON to reset
-90	 1MΩ.cm	Water purity alarm	• PRESS mute to silence alarm • CONFIRM purity displayed is suitable for application. • CHANGE LC207 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	 100µS/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
60		Invalid C.C.	• Check if you have re-installed old LC206 • Put in new LC206
57		Replace LC206	• LC206 is expired. Replace with new one.
56		LC206 reminder	• Make sure you have a new LC206 ready in stock for replacement 10% of life left.

9. KEY TO CONTROL PANEL

ICON	DESCRIPTION	ICON	DESCRIPTION
	Accept		User Recognition Key
	Auto restart		Locked
	Scroll back		Menu
	Step back		Mute alarm
	Bell		Night
	Standby		Option OFF
	Calibration point		Option ON
	Cancel		Output
	Clock		Recirculate
	Date		Reset
	Day		Right
	Down		Sanitization PASSkey
	Drain		Sanitization reminder
	Save data		Scroll
	Hazard		Transport mode
	Feed		UP
	Fill		Viewing angle
	Add chemical		Recirc

10. TECHNICAL SPECIFICATION

Feedwater			
Source	Potable tap water as detailed below. *Failure to comply with the minimum feedwater pretreatment recommendations will affect the life and performance of key components within the **MEDICA EDI - US**, and may invalidate the warranty.*		
Contaminant	**Measure**	**Range**	**Pretreatment**
Calcium	Ca ppm as $CaCO_3$	< 250	None
		> 250	Softener or use very low RO recovery
Free chlorine <0.5 ppm LC123	Cl ppm	< 0.1	Protek L2
		0.1 to 0.5	Protek L2
		> 0.5	Protek L2
Chloramine	Chloramine ppm	<0.05	LC123
		0.5 to 1.0	Protek L2 if water usage is about 5000 litres per week.
		>1.0	Cylinder of carbon sized correctly.
Silica	SiO_2 ppm	< 30	Protek L2
		> 30	20 inch cartridge depth filter*
		<30	LC123
Fouling Index	FI	<10	Protek L2
		>10 <3	Backwashable media filter with a minimum flow rate of 20l/min LC123
Iron/manganese	Fe/Mn ppm	< 0.05 to 0.1	Protek L2, LC123
		> 0.1	Back-washable pre- filter *
Organics	TOC ppm C	<3	Protek L2
		> 3	Cylinder of carbon sized correctly
TEMPERATURE	4 - 40ºC (Recommended 15 - 25ºC)		
FLOWRATE (maximum requirement @15^{O}C)	9l/min		
Drain requirements (gravity fall with air gap).	20l/min		
Feedwater Pressure	6 bar (90 psi) maximum, 2 bar (30 psi) minimum.		

* Installed in feed water supply.

Note: If feedwater purity is variable or values are close to the top of one of the ranges, provide pre-treatment for the higher range or seek advice from Technical Support at ELGA LabWater.

Pre-treatment LC177 and LA727 (LC123) included in starter kits LC238 and LC237 respectively.

Dimensions		
Height	820 mm (32.8”) 834 mm (33.4”) including castors	
Width	794 mm (31.8”)	
Depth	470 mm (18.8”)	
Unit Type	MEDICA EDI 50	MEDICA EDI 100
Supply weight	58 Kg	65 Kg
Operational weight	115 Kg	122 Kg
Installation	Floor/ bench	

Connections	
Inlet	10 mm OD tube
Drain	10 mm OD tube
EDI drain	10 mm OD tube
Recirculation loop outlet*	12 mm OD tube
Recirculation loop inlet*	12 mm OD tube

Electrical Requirements	
Mains input	230 V ac, 50 Hz 115 V ac, 60 Hz
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	**MEDICA EDI**
Daily usage - typical	960
Daily usage - maximum	2880
Inorganic	>10 MΩ. cm @ 25^{O}C
TOC ppb	<30
Bacteria	<1 CFU/ml**
Particles	0.05 µm

** 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.

11. 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.

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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.

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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

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

12. 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 the 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.

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