ELGA

Medica EDI 15/30

Operator Manual

VEOLIA WATER
Solutions & Technologies

Copyright Note

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MEDICA EDI 15/30

1. INTRODUCTION

1.1 Use of this Manual

This manual contains full details on installation, commissioning and operation of the ***MEDICA EDI 15/30*** system. If this system is used contrary to the instructions in this document, then the safety of the user may be compromised.

1.2 Customer Support

Service support and consumable items are available from your local supplier or distributor. Refer to customer service contact details shown at the end of this publication.

1.3 Product Range

This Operator Manual has been prepared for the ***MEDICA EDI 15/30*** product models.

MEDICA EDI 15 BP *(with boost pump)*

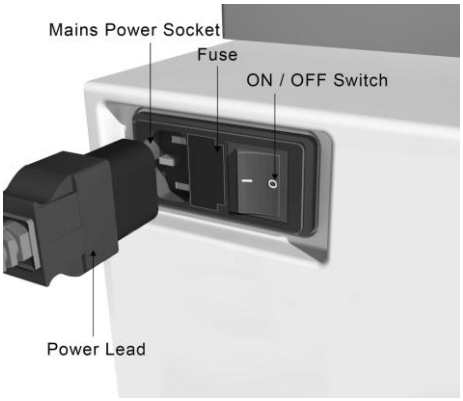
MEDICA EDI 30 BP *(with boost pump)*

2. HEALTH AND SAFETY NOTES

MEDICA EDI 15/30 products are designed to be safe, however, it is important that personnel working on these systems understand any potential dangers. All safety information detailed in this handbook is highlighted as WARNING and CAUTION instructions. These are used as follows:

WARNING! **WARNINGS ARE GIVEN WHERE FAILING TO OBSERVE THE INSTRUCTION COULD RESULT IN INJURY OR DEATH TO PERSONS.**

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



Mains Power Supply

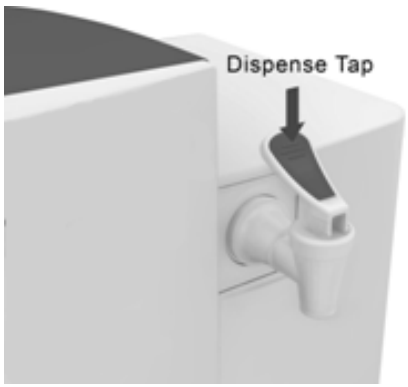
2.1 Electricity

It is essential that the electrical supply to the ***MEDICA EDI 15/30*** is isolated before any items are changed or maintenance work performed. The ON/OFF switch is located on the left hand side of the system. The mains power lead is located just behind the ON/OFF switch.

WARNING! **ONLY USE THE APPLIANCE COUPLER (MAINS LEAD) SUPPLIED. THE USE OF THIS WILL ENSURE ADEQUATE EARTH PROTECTION IS PROVIDED.**

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

WARNING! **ALWAYS ENSURE THAT THE ELECTRICAL POWER SUPPLY IS ISOLATED BEFORE WORKING INSIDE THE PRODUCT.**



2.2 Pressure

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

Switching off the electrical supply will isolate the source of pressure, but pressure trapped within the system should be released by opening the dispense tap until water flow stops.

UV assembly

2.3 Ultra-Violet Light

The ***MEDICA EDI 15/30*** system is fitted with an ultra-violet lamp. The UV lamp is enclosed in a stainless steel chamber ensuring the operator will not be exposed to UV light.

WARNING! **LIGHT FROM THE UV LAMP IS EXTREMELY HARMFUL TO THE EYES AND SKIN! UV LAMPS SHOULD ONLY BE USED IN THE REACTION CHAMBER WITH SUITABLE PROTECTION CAPS FITTED. PERSONS SHOULD NEVER BE EXPOSED TO LIGHT FROM THE LAMP.**

2.4 Sanitization Chemicals

No sanitization chemical is supplied with the ***MEDICA EDI 15/30*** products. The relevant recommended chemical can be sourced through your local supplier or distributor.

2.4.1. Use of *MEDICA EDI 15/30* within United States

During the sanitization cycle EfferSan™ Multi-purpose Disinfecting Tablets is used and relevant safety guidance is included in this document. Please refer to the manufacturer for safety data sheets.

EfferSan™ is EPA registered as a sterilant, high level disinfectant, and sanitizer.

EfferSan™ is acidic and requires normal neutralization as specified by your local state and local regulations.

2.4.2. Use of *MEDICA EDI 15/30* within Rest of the World

During the sanitization cycle a CT3 sanitization tablet is used and relevant safety guidance is included in this document. A safety data sheet conforming to COSHH regulations is available upon request.

2.5 Control of Substances Hazardous to Health (COSHH)

Material safety data sheets covering various aspects of the product are available where applicable upon request. Contact your local supplier or distributor.

2.6 Environment

The ***MEDICA EDI 15/30*** should be installed on a flat, level surface, in a clean, dry environment. The system can also be wall mounted against a vertical wall capable of supporting the weight. For this we recommend the use of the wall mounting kit.

3. CONSUMABLES AND ACCESSORIES

Consumable	Max. Service Life*	Max. Shelf Life
LC281 (Pre-treatment filters pack)	6 months	2 years
LC282 (Low Usage Consumable bundle)	6 months max **	2 years
LC283 (High Usage Consumable bundle)	6 months max **	2 years
LC143 (Reverse Osmosis cartridge module)	Typical life 2-3 years	2 years
LC212*** (Conditioning & DI dual cartridge pack)	6 months max.**	2 years
LC213 (Sanitization Bypass cartridge pack)	1 cycle	2 years
LC105 (UV Lamp)	12 months	5 years
LC219 (EDI module)	4-5 years	2 years
LC125 (0.2μm Capsule Filter)	6 months	2 years
LC145 (POU Filter)	6 months	5 years
LC136**** (Composite Vent Filter)	6 months	2 years

* *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.*

** *Replacement frequency of the LC212 Dual Conditioning & DI Cartridge pack is affected by the feed water quality and water usage.*

*** *LC212 cartridge pack is not sold separately.*

**** *Required for reservoirs (LA611, LA612, LA613) and docking vessel (LA621).*

Accessory	Cat No
Installation kit	LA637
Pressure regulator valve (inlet)	LA652
Degassing Kit	LA801
Wall mounting kit – Small Box Products	LA610
Wall mounting kit – Small Box Products (partitioned walls)	LA622
Docking vessel – DV25	LA621
25 liter reservoir	LA611
40 liter reservoir	LA612
75 liter reservoir	LA613
Wall mounting kit (25 & 40 liter reservoir)	LA591
Wall mounting kit (75 liter reservoir)	LA592
RS232 Printer kit	LA618
Remote dispense valve	LA521

4. PRODUCT AND PROCESS DESCRIPTION

4.1 Product Description

The ***MEDICA EDI 15/30*** water purification system has been specifically designed to provide a supply of highly purified water to clinical analyzers requiring a pressurized feed.

The ***MEDICA EDI 15/30*** can be bench or wall mounted and an optional wall mounting kit is available. A range of accessories are available to complement the system. *(See Section 3 - Consumables and Accessories for details).*

MEDICA EDI 15/30

4.2 Process Description

The ***MEDICA EDI 15/30*** process links five purification technologies; Reverse Osmosis, Electro-Deionization, Ion Exchange, Photo Oxidation, and Sub-micron Filtration. It also incorporates a recirculation/delivery pump and an RO feed water boost pump.

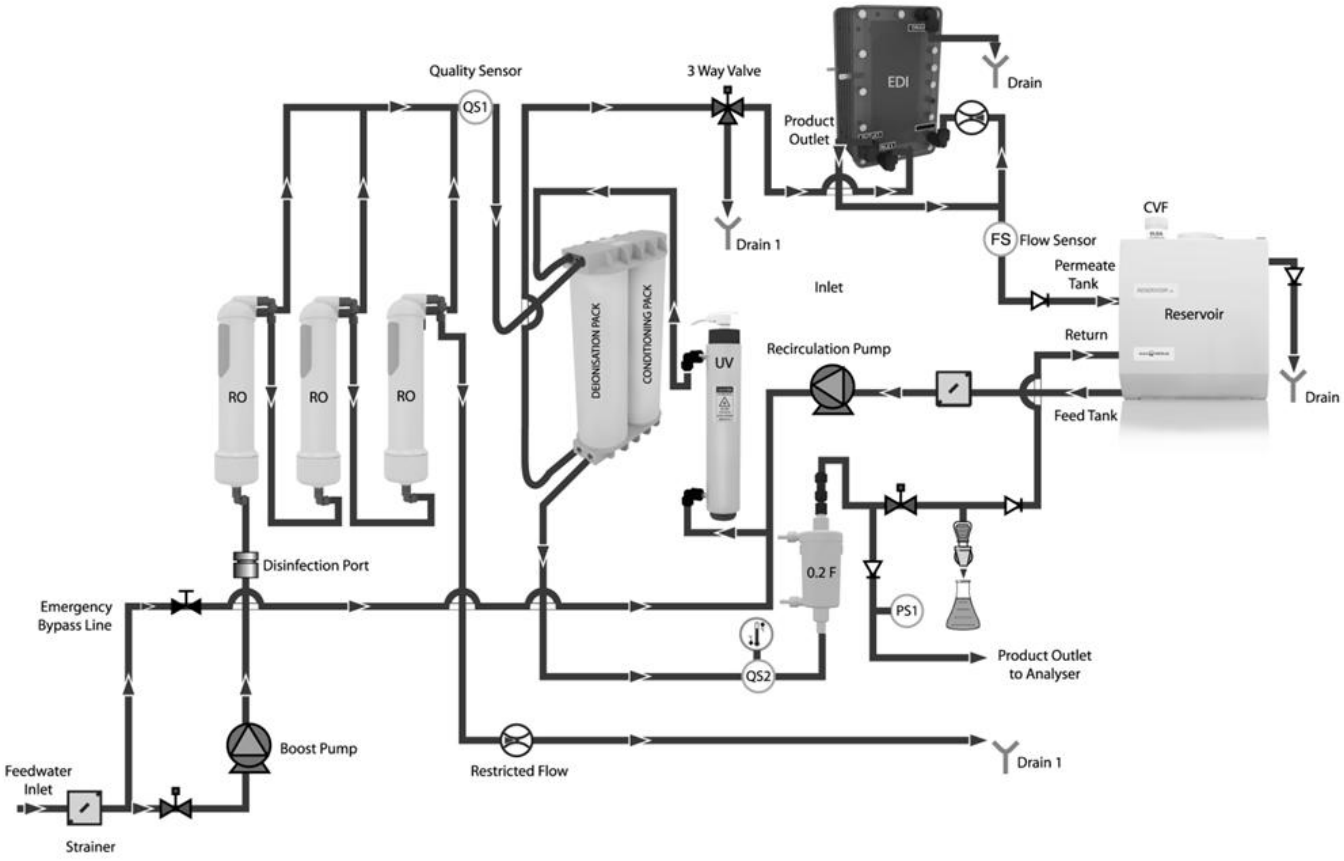
The system is designed to operate from a potable water supply, pre-treated for particle and chlorine removal, and produces up to 15 or 30 liters per hour of reverse osmosis grade water which is further purified and circulated through a treated water reservoir.

An LCD displays the system status and provides control by means of three function buttons.

The water is processed and treated by the ***MEDICA EDI 15/30*** system as follows:

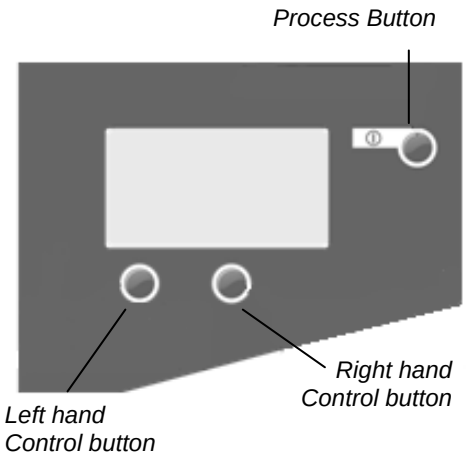
- Pre-treated feed water enters through a strainer and inlet solenoid valve and is pumped by means of an RO boost pump.
- The water then passes the disinfection port and through two or three reverse osmosis cartridges, set up in series, which split the flow into permeate and concentrate streams. The permeate water is further purified with the waste concentrate stream being passed to drain.
- The permeate water then passes though a water quality sensor which measures the conductivity of the water.
- The permeate water passes through the conditioning chamber of the resin cartridge pack which removes traces of hardness remaining in the water.
- The water then passes through the electro-deionization module which removes inorganic and organic impurities.
- Waste water from the EDI module is passed to drain.
- The permeate water is collected within the reservoir.
- Water from the reservoir is drawn into the main re-circulation stream by the re-circulation pump and passes through the re-circulation purification loop.
- This water is pumped directly through the UV chamber where it is exposed to intense UV radiation to provide continuous bacterial control by photo oxidation and to promote the cleavage of organic molecules.
- The water then passes through the deionization chamber of the resin cartridge pack which removes the final dissolved ionic impurities from the water.
- Finally the water is passed through a:
  - Water quality sensor which measures the resistivity of the water.
  - Temperature sensor which provides accurate temperature measurement.
- The purified water passes through a 0.2μm filter to remove any remaining bacteria.
- The purified water is either delivered to the analyzer **or** returns to the reservoir. The delivery of water is controlled by means of a pressure switch which senses when the analyzer demands water.
- When diverted to the reservoir, purified water can be delivered through a dispense tap.

- During periods of non-use the system will automatically operate in intermittent re-circulation mode to maintain water purity with maximum efficiency.
- If the level of water in the reservoir is below 10% (or below 40% on start up) the re-circulation mode will be disabled until a level of 40% is reached. The re-circulation will restart automatically.
- When the make-up starts, there is an initial 15 minute flush period prior to water being passed to the recirculation circuit. After power off or dual cartridge pack exchange this time period is increased to 30 minutes.



Process Flow - ***MEDICA EDI 15/30***

5. CONTROLS



Control Panel

The ***MEDICA EDI 15/30*** operates with a tactile membrane touch pad control panel which has a graphics display window and three program function control buttons.

Details of how to use the controls are provided in the appropriate sections.

The ***MEDICA EDI 15/30*** control panel has a range of control icons as follows:

BUTTON	ICON	Function
PROCESS	⏻	Turns the system on/off
LEFT	☰	Menu
	↻	Scroll
	▶	Shift
RIGHT	31	Replacement dates
	✓	Accept
	▲	Up
	🔕	Mute Alarm

6. INSTALLATION INSTRUCTIONS

6.1 Unpacking the MEDICA EDI 15/30

The following items should be supplied with your ***MEDICA EDI 15/30***

- ***MEDICA EDI 15/30***
- Sanitization by-pass cartridge pack (LC213)
- External Pre-treatment Kit
- Installation kit (LA637)
- Operator manual
- Mains lead

6.2 Positioning the *MEDICA EDI 15/30*

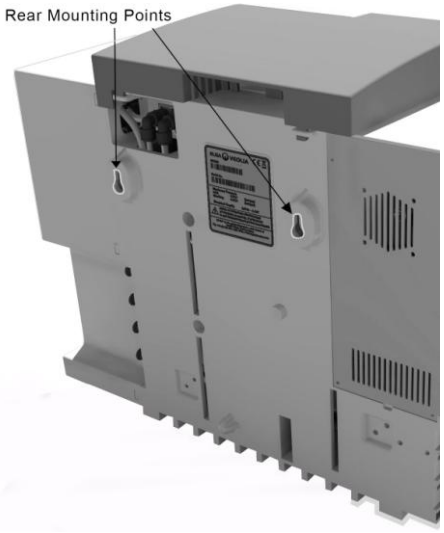
Before commencing with installation and operation of the ***MEDICA EDI 15/30*** system, please read and observe the following points.

Environment

The system should be installed on a flat, level surface, in a clean, dry environment. The system can also be wall mounted against a vertical wall capable of supporting the weight (for this we recommend the use of the wall mounting kit Part No LA 610).

CAUTION! **If system is to be wall mounted, ensure it is mounted on a substantial brick or concrete solid wall capable of supporting the operating weight of the system. If mounting the system on the wall, use the wall mounting kit and follow the instructions included in the kit.**

Note: *Refer to specifications for system weights.*

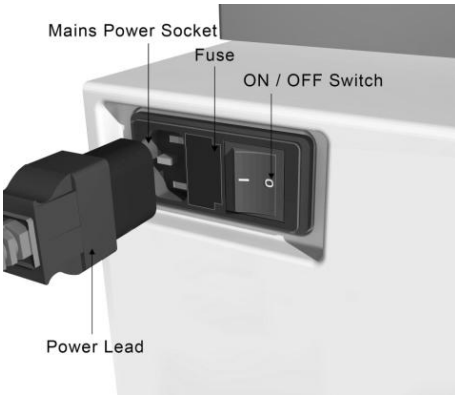


System Rear Mounting Points

The system is designed to operate safely under the following conditions:

- Indoor use
- Altitude up to 2000m
- Temperature Range 5 - 40°C
- Maximum Relative Humidity 80% @ 31°C decreasing linearly to 50% @ 40°C non-condensating

The system is in Installation Category II, Pollution Degree 2, as per IEC1010-1.



Electrical Connections

Electrical

The systems can be connected to any electrical supply in the range of 100 - 240V and 50 - 60Hz. The mains lead is supplied with a molded plug on one end and a molded connector to the system on the other. The system should be connected to an earth.

Drain

A semi-rigid flexible connection to a sink or suitable drain capable of handling at least 2 l/min is required. The drain point should be within 10 meters (33 ft) and have a gravity fall at a maximum of 1 meter (3 ft) above the system. Any connections directly coupled to drain should have an air-break device fitted.

WARNING! **IN COMMON WITH OTHER ELECTRO-DEIONIZATION SYSTEMS THIS SYSTEM PRODUCES SMALL AMOUNTS OF HYDROGEN IN THE DRAIN LINE. IF THIS IS ALLOWED TO BUILD UP IN A RESTRICTED ENVIRONMENT THIS COULD BECOME A HAZARD.**

Feed Water

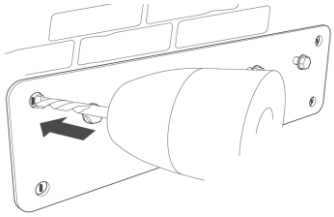
The feed water should comply with specifications provided. This should enter the system via an 8mm (5/16”) O/D semi rigid tube, and should be in the temperature range 1 to 35°C.

CAUTION! **Feedwater temperatures outside the range 1 to 35°C will cause damage to the *MEDICA EDI 15/30* system.**

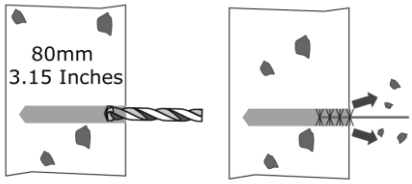
For pressurized feeds, the maximum inlet pressure is 2 bar (30 psi). Higher feedwater pressures must be reduced using a pressure reducing valve (Part No. LA 512).

Reservoir feeds to the ***MEDICA EDI 15/30*** system should be positioned at the same height, or above the system, to provide a positive flooded inlet pressure.

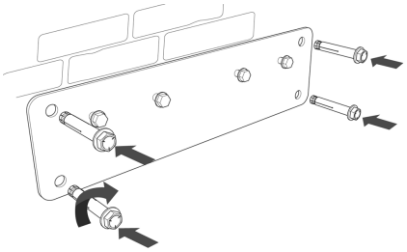
External Pre-Treatment Filter Assembly



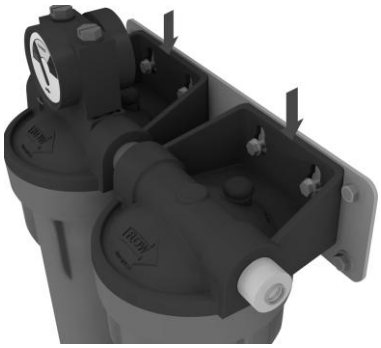
Spot drill mounting holes



Drilling & cleaning mounting holes



Inserting anchor bolts



Aligning assembly to bracket

6.3 Installing the external Pre-treatment Assembly

It is essential for the ***MEDICA EDI 15/30*** system to be fed with pre-treated water. The external pre-treatment filter housing assembly is supplied to enable this.

These instructions must be followed to ensure correct installation of this accessory.

Parts supplied

- 1 off Pre-treatment housing assembly
- 1 off Bowl Removal Spanner
- 1 off Wall-mount bracket
- 4 off Anchor Bolts
- 1 off 3/8” Isolation Valve
- 2 off 3/8” – 5/16” Stem Elbow
- 2 off 3/8” – 5/16” Stem Reducer

Tools required

- Hand Drill
- 8mm diameter Masonry Drill Bit
- 10mm Spanner

Step 1 – Secure mounting plate to the wall

1. Select an appropriate location for the assembly to be mounted.

WARNING! **THIS ACCESSORY IS SUITABLE FOR MOUNTING TO MOST TYPES OF MASONRY OR CONCRETE TYPE WALLS.**

2. Using the wall mount plate as a template, spot drill the four mounting holes into the wall.
3. Remove the plate and drill each hole to the depth as illustrated.
4. ENSURE all holes are clean and free from debris.
5. Re-position bracket and INSERT a sleeved anchor bolt (supplied) within each drilled hole in the wall.
6. TIGHTEN each bolt to secure bracket to wall.

CAUTION! **Anchor bolts to be tightened to a minimum torque of 20Nm.**

Step 2 – Install housing assembly to wall-mount plate

1. ALIGN the four off pegs of the mounting plate with the corresponding keyhole slots of the filter housing assembly integral brackets.

Step 3 – Install pre-treatment filters

1. Refer to Section 8.1 “Replacing the pre-treatment filters”

Remove transit plugs

For 5/16” (8mm) OD Feedwater tube only

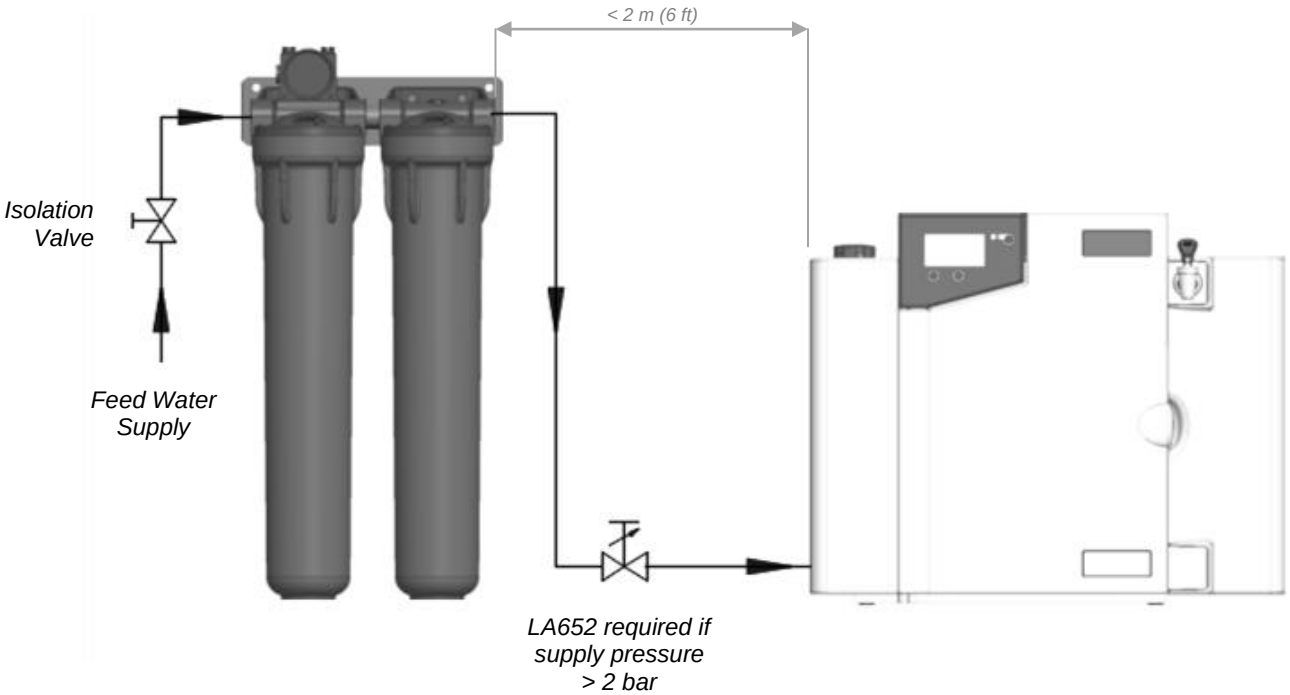
Feed water supply connection

Step 4 – Connection to feed water & system

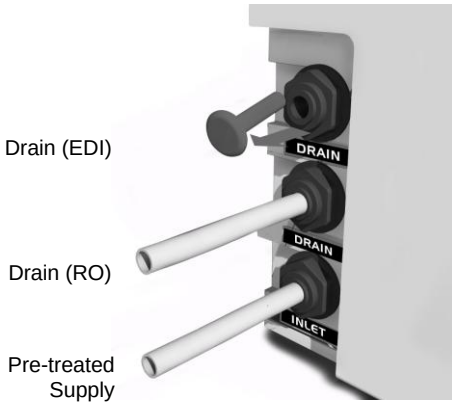
1. REMOVE 3/8” transit plugs from the housing assembly inlet & outlet ports.
2. INSTALL 3/8” – 5/16” Stem Elbows into the housing assembly inlet & outlet ports.
3. CUT a 50mm length of 5/16” (8mm) OD tube, supplied within LA637 installation kit, and INSTALL to **inlet** elbow.
4. INSTALL 1 off 3/8” – 5/16” Stem Reducer to outlet port of Isolation Valve and CONNECT to free end of 5/16” (8mm) tube.

   IMPORTANT! *Ensure Isolation Valve is in the CLOSED position.*
5. If feedwater tube is 3/8” OD, CONNECT directly to inlet port of Isolation Valve.
6. If feedwater tube is 5/16” (8mm) OD, INSTALL 3/8” – 5/16” Stem Reducer before connecting.
7. CUT appropriate length of 5/16” (8mm) OD tube and CONNECT one end to **outlet** elbow.
8. CONNECT free end of tube to MEDICA EDI 15/30 inlet port.

CAUTION! **If the water supply into the system is at a pressure greater than 2 bar (30 psi) fit a pressure regulator (LA652).**



Installation of external pre-treatment assembly to feed water and ***MEDICA 15/30*** *system*



Feed Water Inlet Connections

6.4 Connecting the MEDICA EDI 15/30

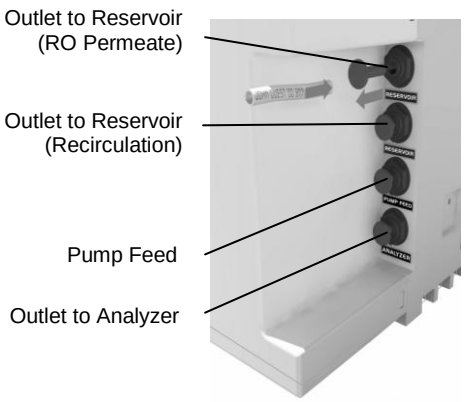
Once the ***MEDICA EDI 15/30*** system has been positioned either on a wall or on a bench, it should be connected as follows:

- Pre-treated water inlet tube
- RO drain
- EDI drain
- Pump feed
- Outlet to analyzer
- Outlet to reservoir (RO Permeate)
- Outlet to reservoir (Recirculation loop)

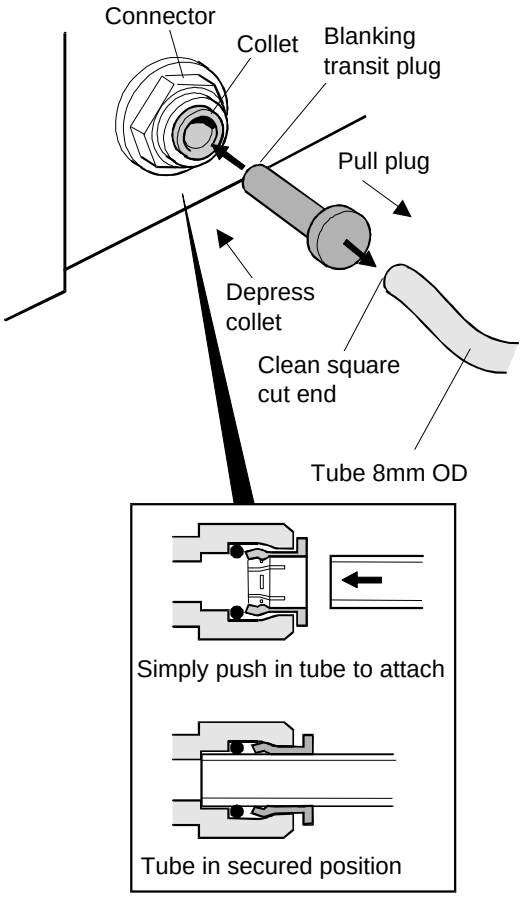
Step 1 - Fitting Tubes

1. PUSH in collet on connector.
2. PULL out transit plug.
3. CUT a clean square end on an 8mm (5/16") OD semi rigid drain tube.
4. PUSH tube into connector.

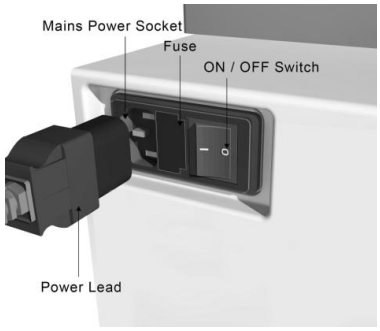
CAUTION! Do not restrict drain line.



Delivery Pump and Drain Connections



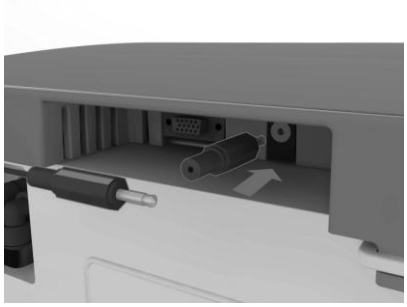
Fitting Tubes



Electrical Connections

Step 2 - Connect Electrical Supply

1. PLUG mains lead into the socket on the left hand side of the ***MEDICA EDI 15/30*** system.
2. PLUG mains lead into mains socket.

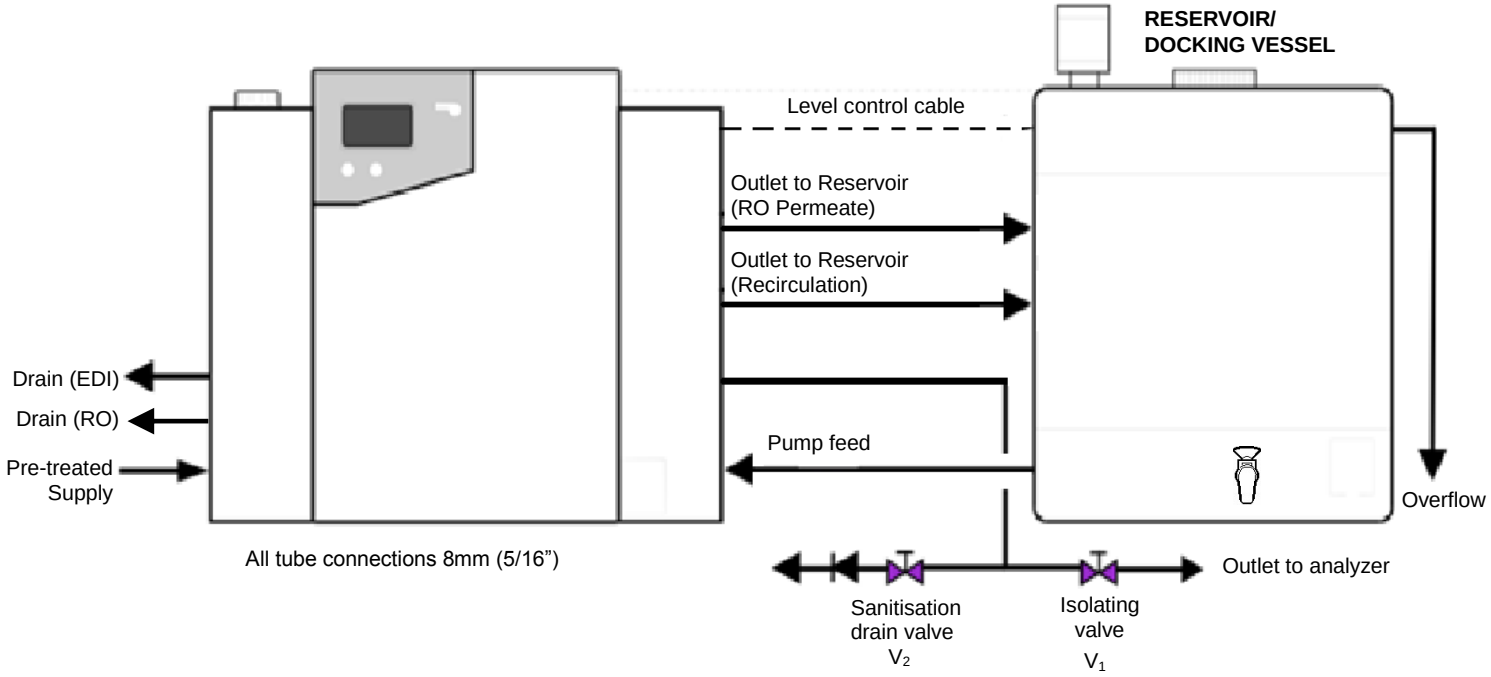


Reservoir Level Connections

Step 3 - Connect Level Switch to Reservoir

1. INSERT jack plugs into the level control socket located at the rear of system and reservoir.

*Note: When installing a **MEDICA EDI 15/30** with the reservoir the general scheme is illustrated below as are the recirculation/delivery pump connections.*



NB. The system must be positioned at a distance no greater than 10 meters (33 ft) from the analyzer to achieve specified outlet flow rates (ref: Purified Water Specification – page 43).

MEDICA EDI 15/30 *system installed with Docking Vessel/Reservoir*

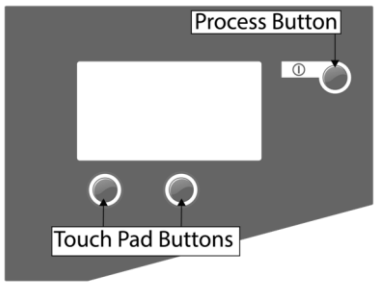
6.5 Pre-Start Up

Installing
LC212 Cartridge Pack

1. The ***MEDICA EDI 15/30*** and external pre-treatment system should be installed correctly as described previously in Section 6.
2. TURN ON the feedwater supply to the external Pre-treatment assembly.
3. OPEN the Pre-treatment inlet isolation valve and adjust the inlet system pressure if necessary. The ***MEDICA EDI 15/30*** will operate on an inlet pressure between 0 bar and 2.0 bar (30 psi) with the water flowing.
4. CHECK all hydraulic connections are water-tight and that there are no leaks.
5. INSTALL the LC212 dual cartridge pack supplied *(See Section 8.2 for details).*

Note: *The **MEDICA EDI 15/30** systems are supplied without the LC212 dual cartridge pack fitted. If the system is powered on without installing this pack an error code and alarm will be encountered indicating "pack not present".*

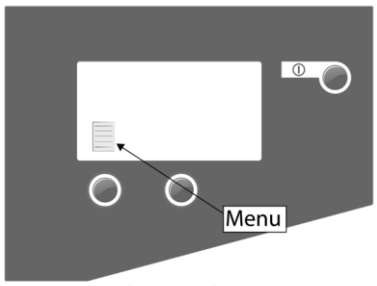
6.6 Initial Controller Set Up



The ***MEDICA EDI 15/30*** control panel is fitted with three control buttons. These are:

1. The PROCESS button, which switches the purification process ON and OFF.
2. Two soft touch pad buttons, which are used to control set-up and process control functions.

When the ***MEDICA EDI 15/30*** system is started for the first time after installation the following steps should be followed to set up system preferences:

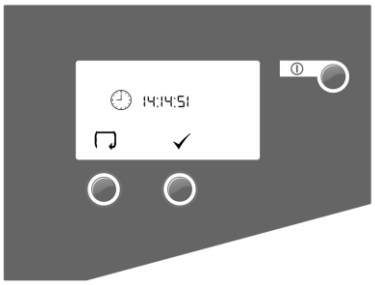


Start Up Screens

Step 1 - Setting Up Menu Options

1. SWITCH the mains power on to initialize the controller hardware set-up sequence.

   Note: Allow up to 5 seconds for the initialization process to complete. This is indicated by the appearance of the MENU icon on the control screen.
2. PRESS the MENU button to go to the next screen to activate the set up menu sequence.
3. A series of set-up screens will now be displayed. Various control icons are used to allow you to step through the set up instruction process. These icons include:
   - A "scroll" icon indicated by an arrow ↻
   - An "accept" icon indicated by a tick ✓
   - A "selection" icon indicated by a ▸

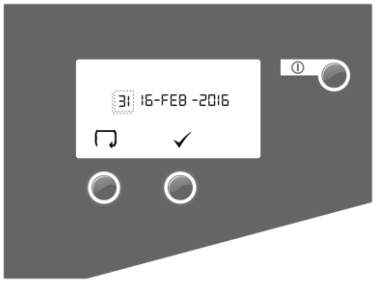


Step 2 – Set Clock

1. PRESS ↻ to edit time

   OR

   PRESS ✓ to proceed to step 3.
2. PRESS and HOLD ▲ to cycle through hour.
3. PRESS ▸ to step cursor through minutes.
4. PRESS ▲ to cycle through minutes.
5. PRESS ▸ to reach confirmation screen
6. PRESS ✓ to confirm selection.



Step 3 – Set Date

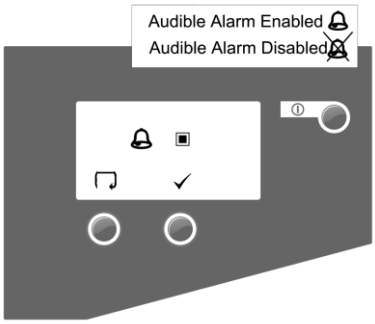
The date is used to initiate change reminders and will appear on printed records.

1. PRESS ↻ to edit date

   OR

   PRESS ✓ to proceed to step 4.
2. PRESS and HOLD ▲ to cycle through day.
3. PRESS ▸ to step cursor onto month.
4. PRESS ▲ to cycle through month.
5. PRESS ▸ to step cursor onto year.

6. PRESS ▲ to cycle through year.
7. PRESS ▶ to reach confirmation screen
8. PRESS ✓ to confirm selection.



Step 4 - Audible Alarm Enabled/Disabled Screen

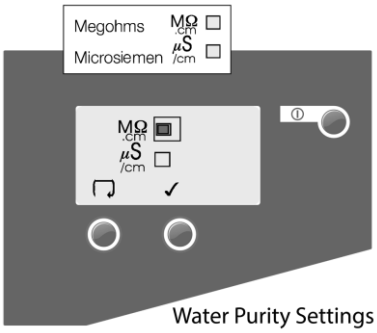
This screen provides the option of either enabling the audible alarm causing it to sound, or disabling the audible alarm causing it to remain muted whilst the alarm icon flashes.

1. PRESS ↻ to change mode (■ = ON)

   OR

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

   Note: The visual alarm cannot be disabled.



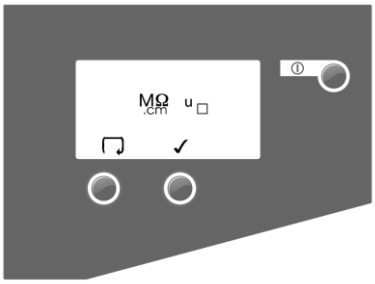
Step 5 – Water purity unit Setting

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

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

   OR

   PRESS ✓ to proceed to step 6.
2. PRESS ✓ to confirm selection.



Step 6 - Uncompensated water quality

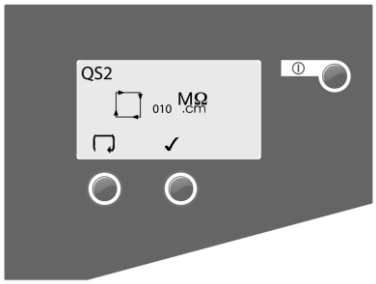
A “U” will indicate uncompensated readings (recirculation loop only) in the normal process screen.

1. PRESS ↻ to change

   (■ = Uncompensated water quality ON)

   OR

   PRESS ✓ to proceed to step 7.
2. PRESS ✓ to confirm selection.



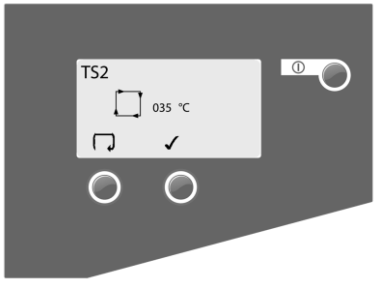
Step 7 - Product water purity alarm settings QS2

This screen is used to select the value at which the product water purity alarm will activate. The alarm does not stop the system 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 8.
2. PRESS ✓ to confirm selection.



Step 8 - Product water temperature alarm settings TS2

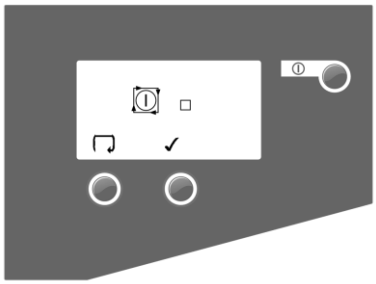
This screen is used to select the value at which the product water temperature alarm will activate. The alarm does not stop the system and will automatically reset if the temperature returns below the set point.

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

   OR

   PRESS ✓ to proceed to step 9.

2. PRESS ✓ to confirm selection.



Step 9 - Auto-restart

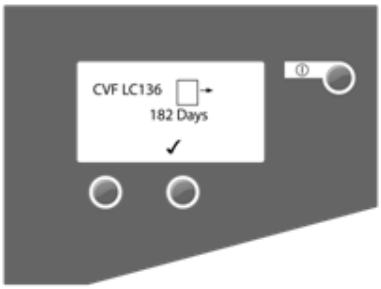
This allows selection of the AUTO restart option. If auto restart is selected the system will automatically restart after a power failure. In manual mode the system will stay in standby after a power failure.

2. PRESS to change mode (■ = ON)

   OR

   PRESS ✓ to proceed to step 18.

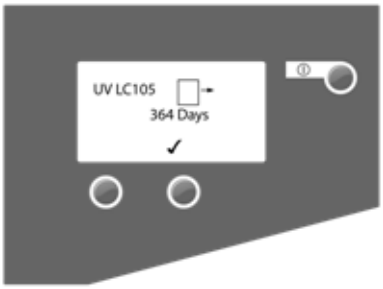
2. PRESS ✓ to confirm selection.



Step 10 – CVF replacement alarm setting

This allows confirmation of when to sound the alarm to indicate recommended replacement of the LC136 CVF. The default setting is 182 days.

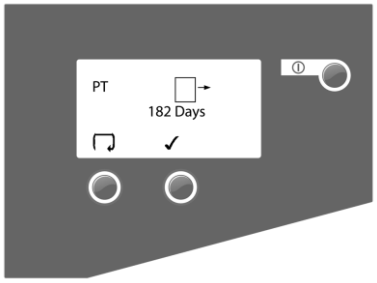
1. PRESS ✓ to confirm selection.



Step 11 – UV replacement alarm setting

This allows confirmation of when to sound the alarm to indicate recommended replacement of the UV lamp. The default setting is 364 days.

1. PRESS ✓ to confirm selection.



Step 12 – Pre-treatment replacement alarm setting

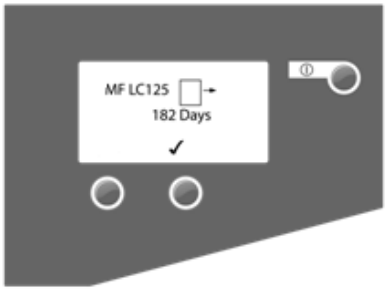
This allows the setting of when to sound the alarm to indicate recommended replacement of the external pre-treatment filters.

1. PRESS to scroll through the available replacement periods.

   OR

   PRESS ✓ to proceed to step 13.

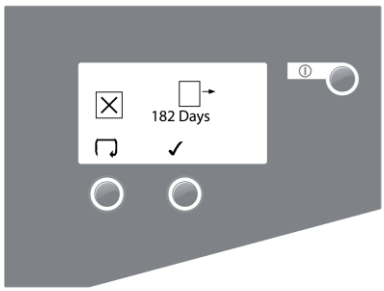
2. PRESS ✓ to confirm selection.



Step 13 – 0.2µm Filter replacement alarm setting

This allows confirmation of when to sound the alarm to indicate recommended replacement of the LC125 filter. The default setting is 182 days.

1. PRESS ✓ to confirm selection.



Step 14 – Sanitization reminder

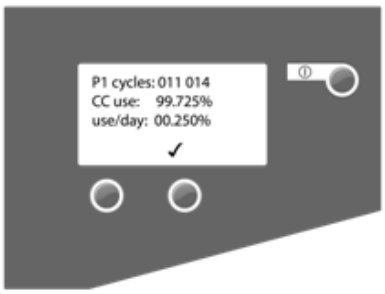
This allows the setting of when to sound the alarm to carry out the routine sanitization procedure.

1. PRESS to scroll through the available replacement periods.

   OR

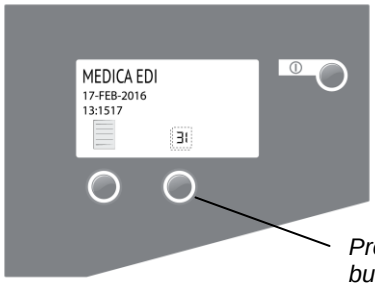
   PRESS ✓ to proceed to step 15.

2. PRESS ✓ to confirm selection.



Step 15 – Cartridge pack exhaustion calculator

This screen provides information on pump usage, conditioning cartridge % remaining, and % system usage per day (only shown after 7 days).

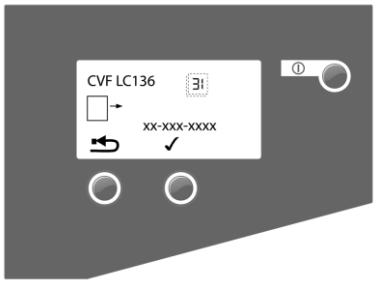


Stand-by screen

6.7 Setting Display and Consumable Replacement Reminders

From the stand-by screen, press the right hand touch pad button to enter the replacement date screen.

CAUTION! **Before re-setting any of the cartridge timers, ensure that the appropriate new cartridges have been installed and secured correctly in the *MEDICA EDI 15/30.***



Step 1 – Composite Vent Filter (CVF) LC136M2 replacement date

Setting this screen will cause the CVF timer to reset to the value preset within section 6.6 step 10.

1. PRESS ⮌ button to reset CVF replacement date *(proceed to operation 2).*

   OR

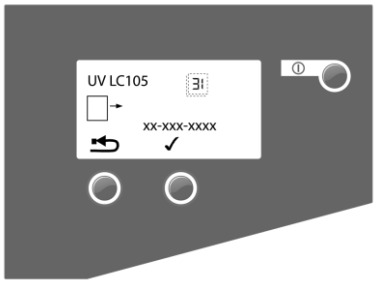
   PRESS ✓ to accept date and proceed to Step 2.

2. PRESS ✓ to confirm that resetting is required

   OR

   PRESS ✗ to abort reset.

3. PRESS ✓.



Step 2 - UV Lamp (LC105) replacement date

Setting this screen will cause the UV Lamp timer to reset to the value preset within section 6.6 step 11.

1. PRESS ⮌ button to reset UV lamp replacement date *(proceed to operation 2)*

   OR

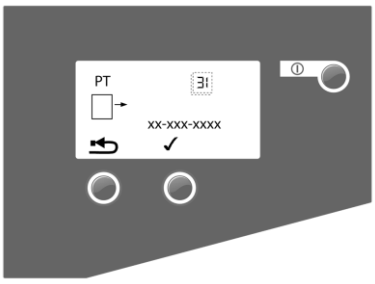
   PRESS ✓ to accept replacement date and proceed to Step 3.

2. PRESS ✓ confirm that resetting is required

   OR

   PRESS ✗ to abort reset.

3. PRESS ✓.



Step 3 - Pre-treatment Filter replacement date

Setting this screen will cause the Pre-treatment filters timer to reset to the value preset within section 6.6 step 12.

1. PRESS ⮌ button to reset PT replacement date *(proceed to operation 2)*

   OR

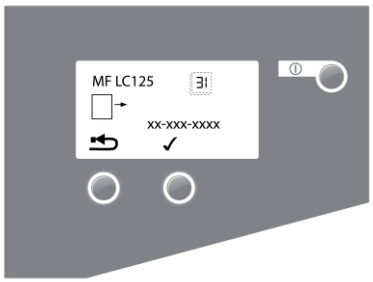
   PRESS ✓ to accept replacement date and proceed to Step 4.

2. PRESS ✓ confirm that resetting is required

   OR

   PRESS ✗ to abort reset.

3. PRESS ✓.



Step 4 – 0.2μm Filter (LC125) replacement date

Setting this screen will cause the 0.2μm filter timer to reset to the value preset within section 6.6 step 13.

1. PRESS ⮌ button to reset 0.2μm filter replacement date *(proceed to operation 2)*

   OR

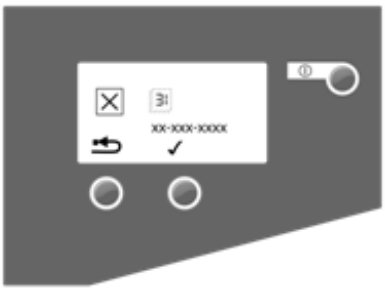
   PRESS ✓ to accept replacement date and proceed to Step 5.

2. PRESS ✓ confirm that resetting is required

   OR

   PRESS ✗ to abort reset.

3. PRESS ✓.



Step 5 – Sanitization reminder

Setting this screen will cause the sanitization timer to reset to the value preset within section 6.6 step 14.

1. PRESS ⮌ button to reset Sanitization reminder date *(proceed to operation 2).*

   OR

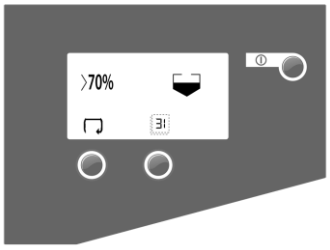
   PRESS ✓ to accept reminder date and complete the settings procedure.

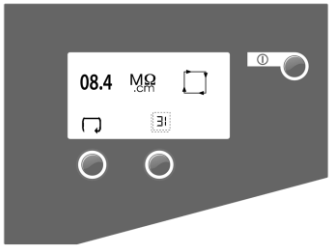
2. PRESS ✓ confirm that resetting is required

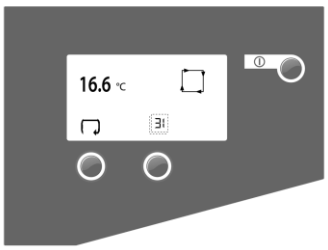
   OR

   PRESS ✗ to abort reset.

3. PRESS ✓.







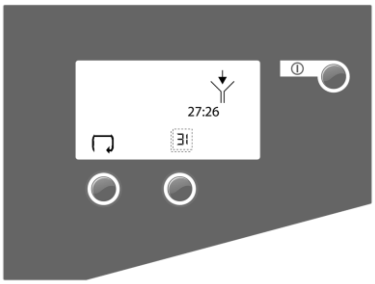
Accessing the Process On Display Screens

The normal process screen will display newly installed SETUP preferences and auto-scroll through the following process information, depending on current operation mode:

- RO Permeate water conductivity
- Product water resistivity
- Water temperature
- Reservoir level
- Scroll ↻ and print 🖶 icons

By pressing the right hand control button you can either manually scroll or allow auto-scroll of the following consumable reminder settings:

- CVF replacement date
- UV lamp replacement date
- Pre-treatment filter replacement date
- 0.2μm filter replacement date
- Sanitization reminder date
- Conditioning cartridge usage data (% remaining).



Flush sequence

6.8 Commissioning

The ***MEDICA EDI 15/30*** systems are supplied containing traces of bacteriostatic solution which must be rinsed from the pipework and fittings.

1. CHECK the water supply is turned on, PRESS the PROCESS button and the system will start a 30 minute flush sequence, where water will be directed to drain through a flush valve.
2. LEAVE the system to complete this process. During this period, the bacteriostatic solution will be rinsed from the system.
3. The system has now been rinsed and will automatically start filling the reservoir.
4. CHECK for leaks.

7. OPERATION

The ***MEDICA EDI 15/30*** will function automatically and signal alarm conditions to ensure efficient system management and corrective action.

Note: To ensure water purity is maintained it is important to leave the system in process mode.

7.1 Dispensing

The system should be in process mode with no alarms activated.
If the system is not processing, press PROCESS to start. Wait until the water reaches the preferred purity level before use. Dispense water from the dispense tap by pulling the tap handle forward.

Note: It will not be possible to dispense from the tap while supplying water to the analyzer.

7.2 Intermittent Mode

During periods of non-use the system will automatically operate in intermittent mode to maintain water quality. This mode will function after the reservoir has been filled and the level maintained for 60 minutes. The system will then recirculate the reservoir contents for 5 minutes every 30 minutes.

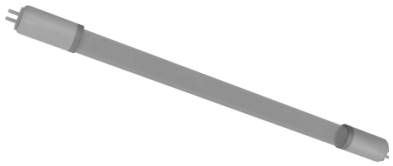
During demand from the Analyzer, re-circulation will be initiated.

7.3 Alarm Conditions

See section 11 – Troubleshooting

8. MAINTENANCE

LC212 Cartridge Pack



LC105 UV Lamp

LC125 0.2μm Capsule Filter

MEDICA EDI 15/30
Replacement Consumables

Any maintenance not detailed in this handbook should be carried out by an approved distributor or supplier. If further information is required on any aspect of maintenance please contact Customer Service.

Identification of Consumables

There are five types of unique replacement consumables designed for use in the ***MEDICA EDI 15/30*** system and these are illustrated with the following part numbers:

LC281 Pre-treatment filters
LC212 Conditioning & DI dual cartridge pack
LC105 UV lamp
LC125 0.2μm capsule filter
LC136 Composite vent filter (Reservoir/DV)

Consumables are accessible after opening the front swing door cover, with the exception of the pre-treatment filters which are installed external to the system.

To protect the inlet solenoid valve, RO boost pump and re-circulation pump from possible debris in the water, the system incorporates two strainers.

WARNING! ALWAYS CHECK THAT THE MAINS ELECTRICAL POWER AND FEED WATER SUPPLIES ARE SWITCHED OFF BEFORE ATTEMPTING TO REPLACE THE *MEDICA EDI 15/30* CONSUMABLES.

Frequency of Consumable Replacement

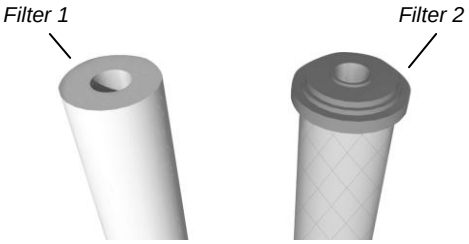
The following frequency of consumable replacement is recommended as a guide assuming typical usage:

Pre-Treatment	-	LC281	max 6 months
Dual cartridge pack	-	LC212	max 6 months
UV lamp	-	LC105	max 12 months
0.2μm capsule filter	-	LC125	max 6 months
Composite vent filter	-	LC136	max 6 months
Reverse Osmosis	-	LC143	every 2-3 years (not an operator replacement Item)

Note: These frequencies are only estimates and replacement will depend on the application and feed water quality.

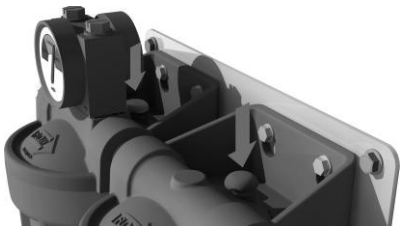
CAUTION! As failure to replace the LC212 conditioning cartridge at the specified intervals will result in serious damage to the EDI module, the system will not operate once the cartridge has exhausted. The system will alarm when the cartridge nears its end of life.

CAUTION! Ensure that the display and replacement timer settings are reset after replacing consumables. *(Refer to Section 6.6)*.



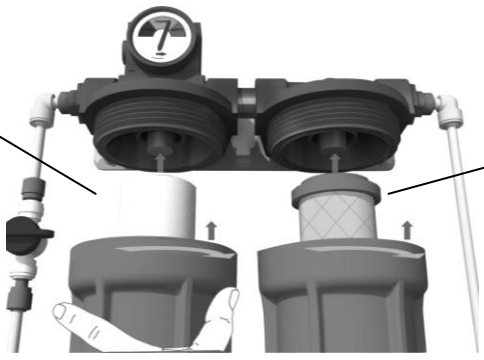
LC281 filter set

Quality Indication Gauge



Relieving residual pressure

Unscrewing filter bowl



Re-fitting filter bowl

8.1 Replacing the LC281 Pre-treatment filters

The pre-treatment filter arrangement consists of two 20" filter housing assemblies aligned in series. Within these housings are two types of filter;

Filter 1 – 20" Spun bonded filter to remove particulates from the feed water.

Filter 2 – 20" Carbon block filter to remove chlorine from the feed water.

Note: These filters are available as a set under part no. LC281.

Replace the pre-treatment filters when indicated by the change reminder or if indicated by the quality gauge on the primary filter housing.

Step 1 - Switch system off and Isolate water supply

1. SWITCH the ***MEDICA EDI 15/30*** off at the power switch at the top left side of the system.
2. CLOSE the isolation valve, installed at the inlet of the pre-treatment housing assembly *(refer to section 6.3 step 4 for process flow diagram).*

Step 2 - Remove Pre-treatment filters

1. PRESS both red pressure relief buttons, located on top of the pre-treatment housings, to relieve residual pressure from the system.
2. UNSCREW each 20" filter bowl, using the bowl removal spanner (supplied with housing assembly).
3. REMOVE both 20" filters and discard.

Note: These consumables are non-hazardous. Dispose of as ordinary waste, observing all local and national regulations.

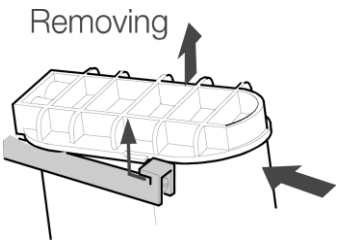
Step 3 - Replace the Pre-treatment filters

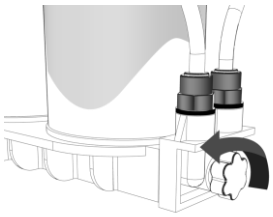
1. UNPACK each new pre-treatment filter.
2. INSERT the filters into the corresponding filter bowls.
3. SCREW the filter bowls to their respective manifolds and tighten **hand-tight**.
4. OPEN the isolation valve and check for leaks.
5. DISCONNECT outlet tube from ***MEDICA EDI 15/30*** system inlet and DIRECT to drain. Flush approximately 10 liters to drain.
6. RE-CONNECT outlet tube to ***MEDICA EDI 15/30*** system inlet.
7. SWITCH the ***MEDICA EDI 15/30*** on at the power inlet module.
8. RESET pre-treatment filter reminder. *(See Section 6.7 Step 3)*.
9. PRESS the PROCESS button to start the system.

8.2 Replacing the LC212 dual cartridge pack

The dual cartridge pack should be replaced in the following circumstances:

- The water purity alarm monitor indicates that water purity has fallen below limits.
- If the system is being re-commissioned or sanitized after an extended period in which it has not been used.
- When indicated by the change reminder.
- Immediately before and after use of the emergency bypass.





Removing Cartridge Pack

Step 1 – Switch System Off

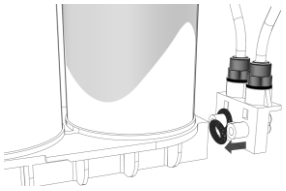
1. SWITCH the ***MEDICA EDI 15/30*** off at the power switch at the top left hand side of the system.
2. RELIEVE any residual pressure from the system by waiting several minutes before proceeding.
3. OPEN the door and IDENTIFY the LC125 0.2µm capsule filter.
4. Slowly OPEN the bleed nipple on the 0.2µm capsule filter until water flow ceases.
5. USE an absorbent cloth to soak up the water and RE-TIGHTEN the bleed nipple.

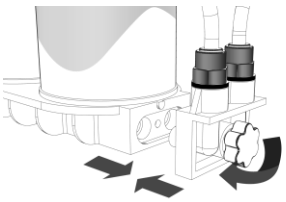
WARNING! **ENSURE THE SYSTEM IS ISOLATED BEFORE REMOVING THE CARTRIDGE PACK.**

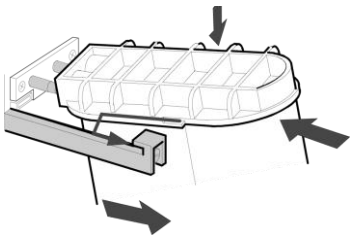
Step 2 - Remove Cartridge Pack

1. OPEN the front door.
2. PUSH on cartridge top cap.
3. LIFT up and SLIDE out cartridge.
4. UNSCREW thumbwheel to remove lower manifold.
5. REMOVE and DISCARD o-rings from lower manifold.
6. DISCARD used cartridge.

Note: The consumable is non-hazardous. Dispose of as ordinary waste, observing all local and national regulations.





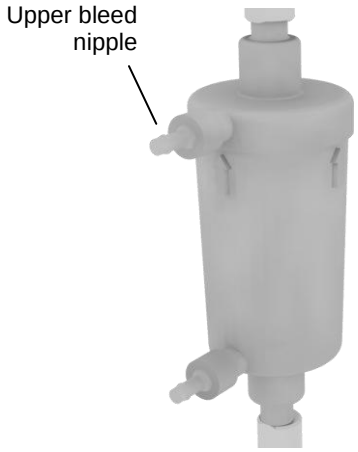


Replacing Cartridge Pack

Step 3 - Replace Cartridge Pack

1. REMOVE the new LC212 cartridge pack from its packaging.
2. REMOVE the sealing plugs from the inlet and outlet ports of both end caps.
3. INSTALL new o-rings supplied to the lower manifold spigots.
4. ATTACH lower manifold to the bottom cap ports and secure using thumbwheel.
5. WET ‘O’ rings and SLIDE new cartridge into system.
6. POSITION cartridge onto upper spigots, PUSH into system.

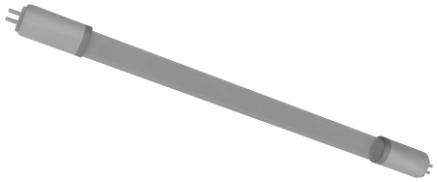
CAUTION! **Ensure neither of the lower manifold tubes are not restricted by installation of the pack.**



LC125 0.2μm Capsule Filter

7. ENSURE guide has dropped past retainer.
8. CLOSE V1 and OPEN V2 to isolate the feed to the analyzer *(see page 14 for details).*
9. SWITCH system on at the power switch.
10. PRESS the PROCESS button to flush the LC212.
11. Slowly OPEN the upper bleed nipple on the 0.2μm capsule filter until water, free of air bubbles, flows out – use an absorbent cloth to prevent splashing of internal components.
12. CLOSE the upper bleed nipple on the 0.2μm capsule filter.
13. After 5 minutes PRESS the PROCESS button to stop flow.
14. OPEN V1 and CLOSE V2 to re-direct flow to analyzer *(see page 14 for details).*
15. PRESS the process button to start the water purification.
16. CHECK system for leaks.
17. CLOSE the front door.

Note: If the reservoir is below 70% full, the system will flush to drain for 30 minutes and then start to fill the reservoir. If the reservoir is above 70%, the 30 minute flush will take place the next time that the level drops below 70%.



LC105 UV Lamp

8.3 Replacing the LC105 Ultraviolet Lamp

The UV lamp should be changed under the following circumstances:

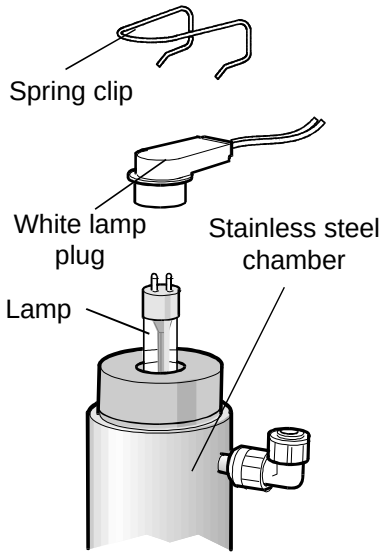
- When indicated by the change reminder.
- If LAMP FAIL alarm occurs.

Step 1 - Switch System Off

1. SWITCH off the electrical supply at the mains.
2. DISCONNECT the mains plug from the system.
3. RELIEVE any residual pressure from the system by waiting several minutes before proceeding.

Step 2 - Remove UV from *MEDICA EDI 15/30*

1. OPEN the front door panel.
2. PULL UV housing out of the top and bottom retaining clips.
3. REMOVE top and bottom spring clips.
4. UNPLUG the white lamp plug fitted to the top of the UV lamp.
5. UNPLUG the white lamp plug fitted to the bottom of the UV lamp.



UV Housing Assembly

CAUTION! Hold on to the lamp pins in case the lamp falls out and breaks.

Step 3 - Remove UV Lamp (LC105)

1. REMOVE the old UV lamp from the center bore of the housing and discard.

Note: The consumable is non-hazardous. Dispose of as ordinary waste, observing all local and national regulations.

Step 4 - Replace UV Lamp (LC105)

1. UNPACK new UV lamp.

CAUTION! Take care not to touch the surface of the glass. Ideally handle with soft cloth and wipe the surface with alcohol wipe supplied before fitting into the housing.

2. SLIDE the new UV lamp into the center bore of the UV housing.
3. PLUG the white lamp plug to the bottom of the UV lamp.
4. REFIT spring clip.
5. PLUG the white lamp plug to the top of the UV lamp.
6. REFIT spring clip.
7. PUSH UV housing into the retaining clips.
8. CLOSE the front door.
9. RESET UV alarm settings. (*See Section 6.7 Step 2).*
10. PRESS the PROCESS button to start the system.

0.2μm capsule filter (LC125)

8.4 Replacing the LC125 0.2μm capsule filter

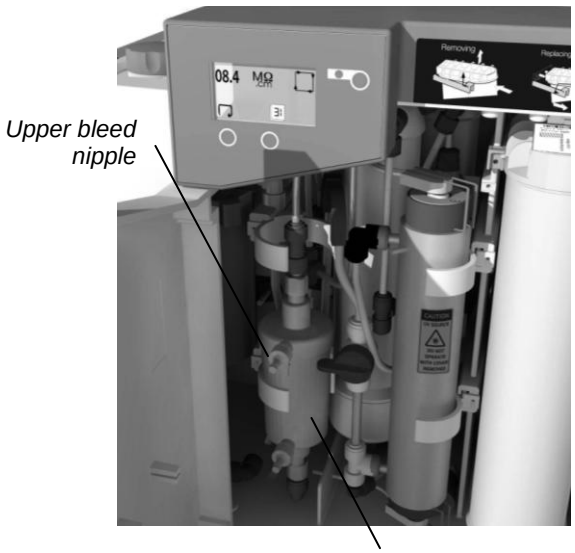
The capsule filter should be changed under the following circumstances:

- The flow to the analyzer is insufficient indicating the capsule filter has fouled.
- If the system is being re-commissioned or sanitized after an extended period in which it has not been used.
- When indicated by the change reminder.
- Immediately after use of the emergency bypass.

Step 1 - Switch System Off

1. SWITCH the ***MEDICA EDI 15/30*** off at the power switch located at the top left hand side of the system.
2. RELIEVE any residual pressure from the system by waiting several minutes before proceeding.
3. Slowly OPEN the bleed nipple on the capsule filter until water flow stops.
4. USE an absorbent cloth to soak up the water and RE-TIGHTEN the bleed nipple.

WARNING! ENSURE THE SYSTEM IS ISOLATED AND THE PRESSURE HAS DISSIPATED BEFORE REMOVING THE 0.2μm CAPSULE FILTER.



Location of installed LC125

Step 2 - Remove 0.2μm capsule filter

1. OPEN the front door panel.
2. IDENTIFY the 0.2μm capsule filter (LC125).
3. REMOVE the filter from its retaining clips and pull forward.
4. REMOVE the 6mm clear tube from the bottom of the filter by pushing back the retaining collet on the push fit connector and withdrawing the tube.
5. REMOVE the 6mm clear tube from the top of the filter.
6. REMOVE the filter and discard.

Note: The consumable is non-hazardous. Dispose of as ordinary waste, observing all local and national regulations.

Step 3 – Replace the 0.2μm capsule filter

1. UNPACK new cartridge and REMOVE the two protective transit plugs sealing the inlet and outlet connections.
2. CONNECT the inlet tube into the bottom of the filter by pushing it into the connectors until locked and held by the retaining collet.
3. CONNECT the outlet tube to the top of the filter.
4. SECURE the new filter into its retaining clips, ensuring the cartridge is orientated correctly.
5. Bleed air from the filter using the upper bleed nipple.
6. RESET the 0.2μm capsule filter replacement timer *(See Section 6.7 Step 4).*

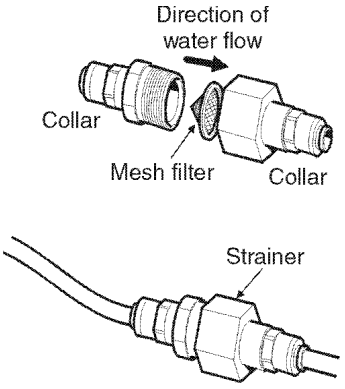
7. PRESS the PROCESS button to start the system.

8.5 Removing and Re-fitting the LC219 EDI Module

CAUTION! The removal and replacement of the EDI module should only be carried out by a certified service engineer.

8.6 Cleaning the Inlet Strainer

The Feedwater Inlet Strainer should be checked and cleaned every six months to ensure that the strainer does not become clogged.



Inlet Strainer

Step 1 - Remove the Inlet Strainer

1. SWITCH OFF electrical supply.
2. OPEN front door.
3. ISOLATE inlet water supply.
4. If necessary, REMOVE the 0.2µm capsule filter from its clip and set aside to gain access to the inlet strainer.
5. DEPRESS collars on both sides of strainer elbows and disconnect tubing.
6. REMOVE the inlet strainer from its position.

Step 2 - Dismantle the Inlet Strainer

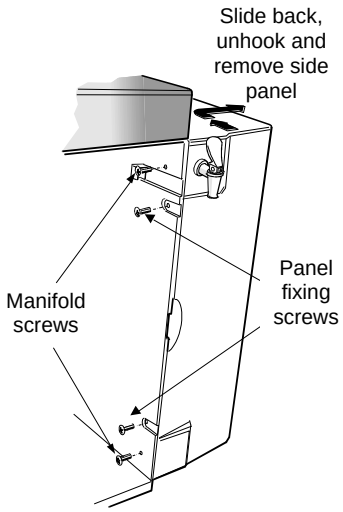
1. HOLD inlet strainer over a sink or receptacle.
2. UNSCREW inlet strainer.
3. REMOVE mesh filter.
4. CHECK mesh filter for signs of wear or damage, replace or clean as necessary.

Step 3 - Reassemble the Inlet Strainer

1. INSERT mesh filter into strainer. ENSURE it is facing the correct direction.
2. TIGHTEN up the inlet strainer.

Step 4 - Replace the Inlet Strainer

1. REPOSITION the inlet strainer.
2. REFIT tubes to inlet strainer. ENSURE it is orientated in the correct flow direction.
3. If necessary, REPOSITION the 0.2µm capsule filter into its support clips.
4. RE-ESTABLISH the inlet water supply.
5. TURN on power.



Removing side panel

8.7 Cleaning the Re-Circulation Strainer

The re-circulation strainer should be checked and cleaned periodically to ensure that the strainer does not become clogged or broken.

Step 1 - Remove Re-circulation Strainer

1. OPEN front door.
2. ISOLATE inlet water from reservoir to the re-circulation strainer.
3. REMOVE the right hand side panel.
4. REMOVE the dual cartridge pack to gain access to the re-circulation strainer.
5. REMOVE the re-circulation strainer by depressing the collars on either side of the strainer and disconnect tubing.

Step 2 - Dismantle the Re-circulation Strainer

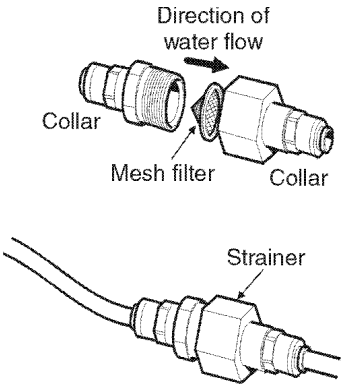
1. HOLD re-circulation strainer over a sink or receptacle.
2. UNSCREW re-circulation strainer.
3. REMOVE mesh filter.
4. CHECK mesh filter for signs of wear or damage, replace or clean as necessary.

Step 3 - Reassemble the Re-circulation Strainer

1. INSERT mesh filter into strainer, ENSURE it is facing the correct direction.
2. TIGHTEN up the re-circulation strainer.

Step 4 - Replace the Re-circulation Strainer

1. REPOSITION the re-circulation strainer.
2. REFIT tubes to re-circulation strainer, ENSURE it is facing the correct direction.
3. REPOSITION the conditioning cartridge.
4. REPOSITION the side panel.
5. RE-ESTABLISH inlet water supply.
6. TURN on power.



Re-circulation Strainer

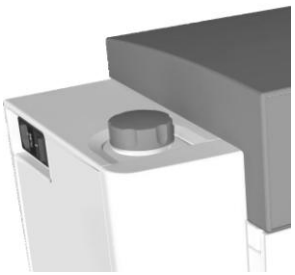
8.8 Replacement of LC143 Reverse Osmosis Cartridge

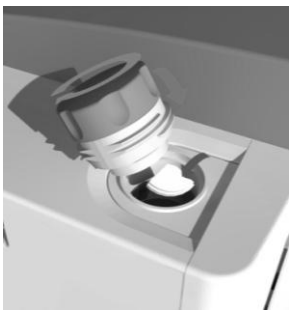
The purity and flow of purified water from the reverse osmosis module(s) will often very gradually reduce over a period of months or years. Extra impurities in the water will be removed by the ion exchange resin. The reverse osmosis cartridge should be replaced if the permeate water purity or flow rate does not meet predicted or previous performance.

Replacement of the LC143 Reverse Osmosis Cartridge(s) must only be performed by a certified service engineer. For information regarding this replacement contact Customer Service.

WARNING! **ALL NEW RO CARTRIDGES ARE FILLED WITH A BACTERIOSTATIC SOLUTION TO PREVENT BACTERIAL CONTAMINATION DURING STORAGE. THE RO CARTRIDGES WILL THEREFORE REQUIRE RINSING PRIOR TO USE.**

9. SANITIZATION PROCEDURES





Sanitization Port

The normal sanitization procedure for the ***MEDICA EDI 15/30*** system is to sanitize the Reverse Osmosis (RO) module and associated pipework. If required, the complete system may also be sanitized.

The RO is sanitized to reduce the growth of microbiological contamination within the RO module. The ***MEDICA EDI 15/30*** has a built-in sanitization port, which allows the sanitization agent 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.

Contact ELGA LabWater technical support or your local representative for further information. They will also advise on procedures before and after extended periods of non-use.

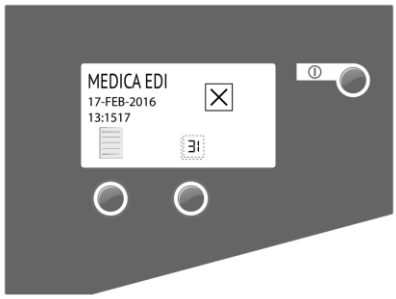
9.1 Sanitization of RO Modules

(for use within the United States)

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)

EfferSan™ multi-purpose disinfecting tablets and respective tablet cutting tool are required to successfully complete this procedure. These are not supplied with the ***MEDICA EDI 15/30*** systems and must be sourced from your local ELGA LabWater distributor.

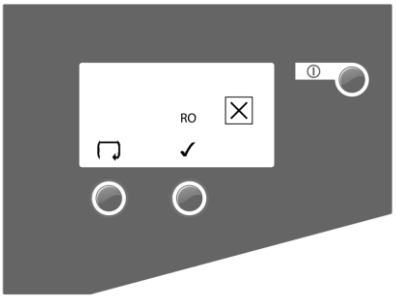


Stand-by screen

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

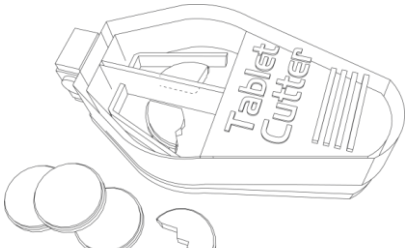
Step 1 - Start sanitization cycle

1. ENSURE that the docking vessel/reservoir level indication on the graphics display is showing <70%.
2. If display shows >70% or 100%, dispense water until display changes to <70%.
3. If display shows <40%, <10%, or 0% wait until for the reservoir to fill and the display shows <70%.
4. PRESS the PROCESS button to stop the process.



RO Sanitization mode

5. TURN OFF the electrical supply.
6. WAIT several minutes for residual pressure to dissipate.
7. APPLY a suitable warning label such as “DO NOT USE / CONTAINS STERILANT”.
8. REMOVE the LC212 dual cartridge pack *(See Section 8.2 for details).*
9. INSTALL the LC213 sanitization bypass cartridge pack *(follow LC212 procedure – See Section 8.2 for details).*
10. TURN ON the electrical supply. The system will display the sanitization stand-by screen.
11. PRESS the PROCESS button.
12. If not already displayed, PRESS button until RO sanitization mode is shown.
13. PRESS ✓ to accept. The screen will prompt for the introduction of sanitant chemical to the system.



Tablet cutter for cutting EfferSan™ tablet.

Step 2 - Insert chemical into sanitization port

1. CUT 1 EfferSan™ tablet into quarters using tablet cutter.
2. UNSCREW cap on sanitization port.
3. ADD ¼ of EfferSan™ tablet.

CAUTION! Ensure the correct dosage of chemical is used.

4. REFIT cap on sanitization port, hand tight.

Step 3 - Start the sanitization process

1. PRESS the PROCESS button. The sanitization cycle will last for 20 minutes.
2. Once complete, the display will revert back to the sanitization stand-by screen.

Note: The sanitization reminder date will be reset automatically.

3. TURN OFF the electrical supply.

Step 4 - Return to normal operation

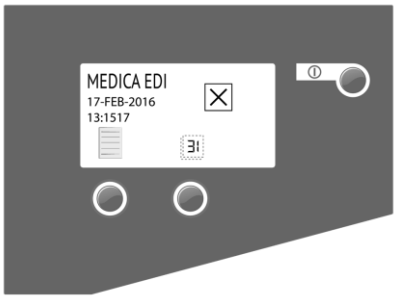
1. REMOVE the LC213 sanitization by-pass cartridge pack.
2. RE-INSTALL the LC212 dual cartridge pack.
3. TURN ON the electrical supply.
4. PRESS the PROCESS button to return to normal operation.
5. CHECK for any leaks.
6. REMOVE the “DO NOT USE/CONTAINS STERILANT” label.
7. STORE or DISPOSE of any remaining chemical as directed on the manufacturer’s label.

9.2 Sanitization of RO Modules

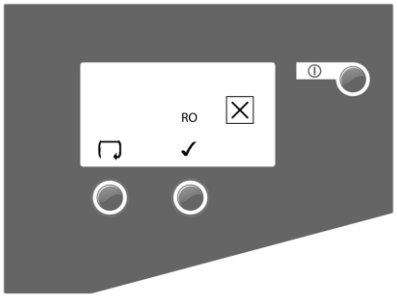
(for use within Rest of the World)

CT3 chlorine tablets are required to successfully complete this procedure. These are not supplied with the ***MEDICA EDI 15/30*** systems and must be sourced from your local ELGA LabWater distributor.

Note: A Safety Data Sheet is available on request.



Stand-by screen



RO Sanitization mode

Step 1 - Start sanitization cycle

1. ENSURE that the docking vessel/reservoir level indication on the graphics display is showing <70%.
2. If display shows >70% or 100%, dispense water until display changes to <70%.
3. If display shows <40%, <10%, or 0% wait until for the reservoir to fill and the display shows <70%.
4. PRESS the PROCESS button to stop the process.
5. TURN OFF the electrical supply.
6. WAIT several minutes for residual pressure to dissipate.
7. REMOVE the LC212 dual cartridge pack *(See Section 8.2 for details).*
8. INSTALL the LC213 sanitization bypass cartridge pack *(follow LC212 procedure - See Section 8.2 for details).*
9. TURN ON the electrical supply. The system will display the sanitization stand-by screen.
10. PRESS the PROCESS button.
11. If not already displayed, PRESS button until RO sanitization mode is shown.
12. PRESS ✓ to accept. The screen will prompt for the introduction of sanitant chemical to the system.

Step 2 - Insert chemical into sanitization port

13. UNSCREW cap on sanitization port.
14. INSERT 1 off CT3 tablet.
15. REFIT cap on sanitization port, hand tight.

Step 3 - Start the sanitization process

16. PRESS the PROCESS button. The sanitization cycle will last for 20 minutes.
17. Once complete, the display will revert back to the sanitization stand-by screen.

Note: The sanitization reminder date will be reset automatically.

18. TURN OFF the electrical supply.

Step 4 - Return to normal operation

19. REMOVE the LC213 sanitization by-pass cartridge pack.
20. RE-INSTALL the LC212 dual cartridge pack.
21. TURN ON the electrical supply.

22. PRESS the PROCESS button to return to normal operation.
23. CHECK for any leaks.

9.3 Sanitization Procedure for the recirculation loop and docking vessel/reservoir

The recirculation loop and docking vessel/reservoir may be sanitized to destroy bacteria within the pipework and filters of the system. The sanitization of the recirculation loop and docking vessel/reservoir is recommended to be performed if high levels of bacterial contamination are found in the product water feeding the analyser. Should bacterial contamination of the product water be suspected, samples should be taken by trained staff and analyzed for bacterial counts. If the counts are abnormally high, ELGA LabWater technical support or your local representative should be contacted for advice and assistance.

It is recommended that only ELGA LabWater service personnel or other fully trained staff should perform the sanitization procedure for the recirculation loop and docking vessel/reservoir.

10. EMERGENCY BY-PASS

Emergency by-pass valve

The ***MEDICA EDI 15/30*** has a built in emergency by-pass. Operation of the emergency by-pass is only recommended under extreme circumstances (e.g. electrical failure). The life of consumables will be significantly reduced and it is recommended that the LC212 dual cartridge pack be replaced before and after use of the emergency by-pass.

It is also recommended that the 0.2µm filter be replaced after the emergency by-pass has been used.

Step 1 - Repair

1. CONTACT your local distributor or service department to arrange repair of your ***MEDICA EDI 15/30***.
2. CHECK that you have sufficient stock of consumables to continue the production of purified water *(see Step 4 for Ion-exchange cartridge life calculation).*

Step 2 - Commission the emergency by-pass

1. ISOLATE power to ***MEDICA EDI 15/30*** system.
2. REPLACE ion-exchange cartridge pack (LC212) *(See Section 8.2).*
3. OPEN the sanitization isolating valve (V_2) *(see page 12 for details).*
4. CLOSE the analyser isolating valve (V_1) *(see page 12 for details)*.

Step 3 - Re-establish supply

1. RE-ESTABLISH water supply and ADJUST the feed pressure to 3 bar (45psi).

CAUTION! Failure to adjust the water supply pressure to the system will result in damage to the consumables and possible failure.

2. OPEN the emergency by-pass valve, located in the centre compartment between the 0.2µm capsule filter and the UV Housing.
3. ALLOW water to flow to drain for 2 minutes.
4. CLOSE the emergency by-pass valve.
5. CLOSE the sanitisation isolating valve (V_2).
6. OPEN the analyser isolating valve (V_1).
7. OPEN the emergency by-pass valve.
8. Slowly OPEN the upper bleed nipple on the 0.2µm capsule filter until water, free of bubbles, flows out. USE an absorbent cloth to prevent splashing of internal components.
9. The emergency by-pass is now operational. When the analyzer does not require water it is necessary to manually isolate the mains water supply to prevent overflow from the reservoir/DV.

Step 4 - Calculate ion-exchange cartridge life

1. Calculate the maximum ion-exchange cartridge pack life under emergency by-pass processing and with your mains water conditions, to maintain a supply purity of 1 MΩ.cm to the analyzer.

$$\text{Time between pack changes} = \frac{29{,}400}{(\text{Conductivity of mains water}) \times (\text{Water consumption of analyzer l/hr})}$$

Example

Mains water conductivity = 605 µS/cm

Water consumption of analyzer = 20 l/hr

$$\text{Time between pack changes} = \frac{29{,}400}{605 \times 20}$$

Time between Pack changes = 2.4 hrs

In the absence of information on mains water conductivity assume a pack life of 1 hour if the analyzer consumes 20 l/hr.

If flow starts to decline this may be overcome by changing the 0.2µm filter.

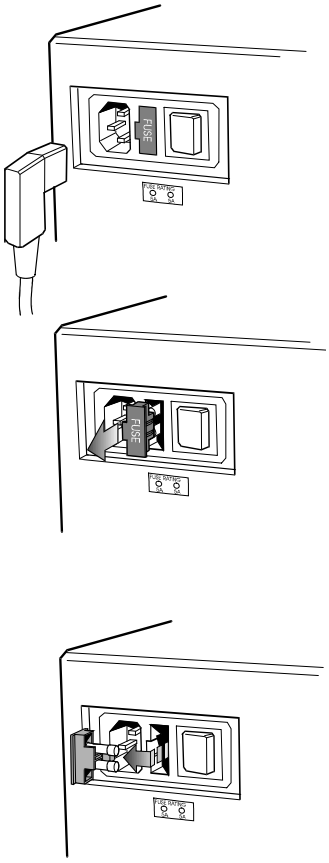
Step 5 - Return to normal operation

Once the system has been repaired it must be returned to normal operation.

1. RE-ADJUST the water supply pressure.
2. ENSURE the emergency by-pass valve is closed inside the ***MEDICA EDI 15/30***.
3. CHANGE the dual cartridge pack and 0.2µm filter. *(See Section 8.2 and Section 8.4)*

11. TROUBLE SHOOTING

This section highlights the problems that can occur with the ***MEDICA EDI 15/30*** system and how to rectify them. The system will normally sound an alarm and the respective icons will flash. The alarm sound can be silenced by pressing the mute button. If the system cannot be repaired using this manual please call either your supplier or local distributor. *(See Section 15 - Useful Contact Details).*



Fuse Removal

Problems	Action
No display message	Check mains supply and lead. Check that the mains power is switched on. Check fuse in power inlet module and replace if blown.
Reservoir low level audible alarm sounds	Press the crossed bell button to mute alarm. The reservoir will automatically refill. Check the display icon is showing reservoir filling. Check feedwater supply. Check connections to reservoir.
UV lamp failure audible alarm sounds	Press the crossed bell button to mute alarm Check that all electrical connections have been secured. Follow UV lamp replacement procedure when applicable. Optionally you can temporarily continue without the UV lamp.
Ion-exchange cartridge replacement alarm	Replace ion-exchange cartridge pack, *(see Section 8.2 - Replacing the LC212 cartridge.)*
Pre-treatment cartridge replacement alarm	Replace pre-treatment filters *(see Section 8.1 - Replacing the pre-treatment filters.)*
0.2µm capsule filter replacement alarm	Replace 0.2µm capsule filter *(see Section 8.4 - Replacing the LC125 0.2µm capsule filter.)*
Water purity alarm	Check alarm set value is correct *(see Section 6.6, Step 7 - Purity Alarm Setting).* Allow system to recirculate. If alarm persists replace ion-exchange cartridge - *(see Section 8.2 - Replacing the LC212 cartridge pack).* If problem persists beyond that expected from normal operating conditions, contact your local distributor.
Reservoir level disconnect fault alarm	Check that the level controls are correctly connected *(see Section 6.4 -- Step 3 – Connect Level Controls).* If problem persists contact your local distributor.
Output flow below specification	Check supply pressure *(see Section 6.2 - Positioning the **MEDICA EDI 15/30**).* Low water temperature will reduce flow. Check the inlet strainer / recirculation strainer are clean *(see Section 8.6/8.7 - Cleaning Inlet Strainer/Cleaning recirculation Strainer.)* Contact service technician to fit or replace booster pump. 0.2µm filter fouled, replace filter. *(see Section 8.4 - Replacing the LC125 0.2 µm capsule filter.)*
UV replacement alarm	Replace UV lamp, *(see Section 8.3 - Replacing the ultraviolet lamp.)*
System noisy	Open front door and secure pipework to stop vibration.

12. KEY TO CONTROL PANEL

12.1 Icons

ICON	DESCRIPTION	ICON	DESCRIPTION
	Accept		Menu
	Auto restart		Mute alarm
	Scroll back		Option OFF
	Step back		Option ON
	Bell		Output
	Standby		Recirculation
	Calibration point		Reset
	Cancel		Right
	Clock		Sanitization reminder
	Consumable Reminder		Scroll
	Drain		UP
	Save data		Viewing angle
	Hazard		Recirculation
	Feed		Reservoir partially filled
	Fill		Add chemical

12.2 User Alarm Codes

Code	Alarm Conditions
56	LC212 Dual Cartridge Pack Reminder
57	Replace Cartridge Pack (LC212)
58	Low outlet flow from EDI
59	Cartridge Pack not in place
60	Cartridge pack invalid / not recognized
66	LC213 Bypass Cartridge Pack is in place
67	LC213 Bypass Cartridge pack has expired
69	Replace Pre-treatment Filters
70	Replace UV Lamp
71	Replace 0.2μm Capsule Filter
72	Replace Composite Vent Filter
74	Sanitization Reminder
78	Consumable date expired
79	Invalid Consumable Type
82	Fault with Clock Function
83	I2C Error
85	UV Fail (Cross Flashes)
88	Low RO Permeate Water Quality (QS1)
89	Outlet Water Temperature (TS2) Out of Range
90	Low Product Water Quality (QS2)
91	Low Reservoir Level
97	Reservoir Level – Disconnect Fault
99	Low Voltage – Electrical Supply Fault

13. TECHNICAL SPECIFICATIONS

The Technical Specifications for the ***MEDICA EDI 15/30*** are as follows:

Feed Water Specification (using LC281 pre-treatment filters)	
	MEDICA EDI 15/30
Feed water Quality	
Source quality	Potable mains water supply
Fouling index-maximum	10
Total conductivity-maximum	1400µS/cm
Free chlorine-maximum	2.0ppm
CO_2 - maximum	30ppm
CO_2 - recommended	<20ppm
Heavy metals – maximum	0.05ppm
Silica-maximum	30ppm
Temperature	1 - 35°C
Flowrate (Maximum requirement)	100 l/hr
Drain Requirements (gravity fall with air gap). Maximum during Service	70 l/hr
Feedwater Pressure	
Maximum	8.0 bar (120 psi)
Minimum	Flooded Suction
Pre-Treated Water Specification	
	MEDICA EDI 15/30
Pre-treated Water Quality	
Fouling index-maximum	10
Total conductivity-maximum	1400µS/cm
Free chlorine-maximum	0.05ppm
CO_2 - maximum	30ppm
CO_2 - recommended	<20ppm
Heavy metals – maximum	0.05ppm
Silica-maximum	30ppm
Pre-treated Water Pressure	
Maximum	2.0 bar (30 psi)
Minimum	Flooded Suction

Dimensions	
Height	460mm (18.1")
Width	550mm (21.7")
Depth	270mm (10.6")
System Weight - Dry (15l variant c/w LC212 installed exc. Pre-treatment assembly)	28 kg (62 lbs)
System Weight - Dry (30l variant c/w LC212 installed exc. Pre-treatment assembly)	29 kg (64 lbs)

Connections	
Inlet-quick connect	8mm (5/16") OD
Outlet-quick connect	8mm (5/16") OD
Drain RO-quick connect	8mm (5/16") OD
Drain EDI Module-quick connect	8mm (5/16") OD
Reservoir feed/return-quick connect	8mm (5/16") OD
Positioning	Wall, bench or under bench mounted.
Environment	Clean dry indoor. Temp 5 - 40°C. Humidity max 80% non condensing.

Electrical Requirements	
Mains input	100-240V ac, 50-60Hz all models
System voltage	24V dc
Power consumption	110VA
Fuses	2 x T6.3 Amp
Reservoir level connection	Jack plug 3.5mm
Noise level	<45dBA

User Interface		
Display	Continuous graphical and numerical reservoir level display. Intuitive icons	
Adjustable settings	Auto restart after power failure Audible alarm Water purity units Water purity	Selectable Selectable Micro Siemens /cm or Megaohm.cm Alarm set points
Indicators	Reverse osmosis permeate water De-ionized water Temperature Reservoir Pre-treatment filters UV lamp Conditioning & DI dual cartridge 0.2μm capsule filter	Conductivity Temperature compensated resistivity Degrees centigrade % Full Maximum remaining life indicator Remaining life indicator Maximum remaining life indicator Maximum remaining life indicator
Alarms-Audiovisual	Purified water quality Reservoir Reservoir UV failure alarm Pre-treatment filters UV lamp Conditioning& DI dual cartridge 0.2μm capsule filter	Outside set point alarm Low level Level control disconnect alarm Non start or current outside limits Change reminder Change reminder Exhaustion alarm Change reminder
Outputs	RS232 Printer connection RS232 Remote display connection Volt free contact-internal	

Safety Features
Power fail safe
Boost pump protection from particulates
Re-circulation pump protection from particulates
Low operating voltage 24V
Audio visual alarms
Adjustable alarm settings
Emergency by-pass

Special Features
Low noise levels - minimum intrusion
Optional printer kit for record of operating parameters
Optional remote display
Intermittent re-circulation "sleep" mode
Optional point of use filter

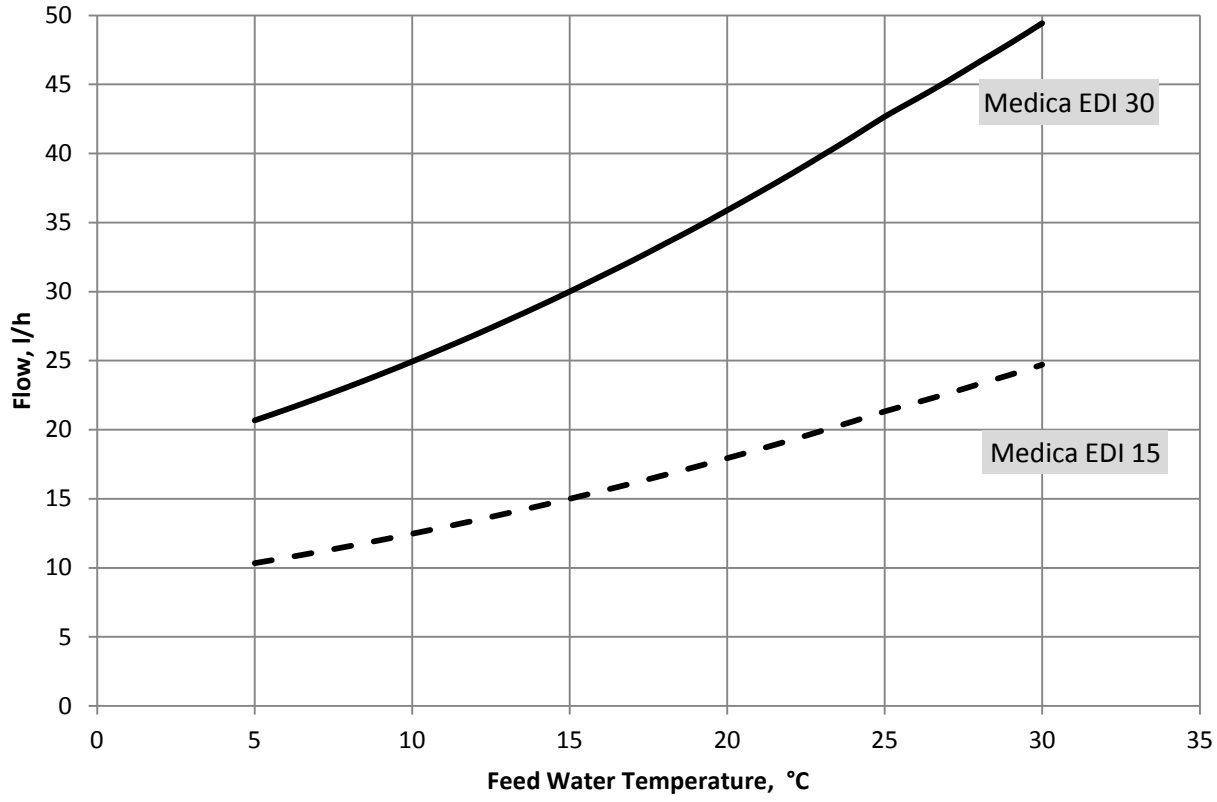
Technologies	
Purification Methods	Adsorption Reverse Osmosis Conditioning Ion Exchange Ultra Violet Radiation-short wavelength Electro-deionization In-line 0.2µm Filtration

Purified Water Specification		
	MEDICA EDI 15	***MEDICA EDI 30***
*Make up rate	15l /hr	30 l/hr
*Daily output(nominal max)	Up to 300 Litres / 24 hour day	
Dispense rate from tap	1.3 l/min (nominal)	
**Output back pressure to tap (max)	0.1 bar (1 psi)	
* Minimum flow rate to analyzer	1.5 l/min	
Purity: (delivered to analyzer)		
Inorganic-Typical	1 to 18 MΩ.cm @25°C	
Total organic carbon(TOC)	<30ppb	
**Bacteria	<1 CFU/ml	
pH	Effectively neutral	
Particles	0.2µm filtration	

* Standard conditions are 2 bar inlet pressure, 0.5 bar back pressure at 15 degrees centigrade, fed with potable water and a clean pre-treatment cartridge. Refer to flow tables outside these conditions.

** Subject to correct operating and maintenance procedures.

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



Graph 1- RO Production Rate vs. Feed Water Temperature for ***MEDICA EDI 15/30***

MEDICA EDI 15/30 - Reverse Osmosis (RO) Capacity Charts

14. 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's 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) 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 products.

Water System Limited 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 of 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 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.

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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.

15. USEFUL CONTACT DETAILS

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Or contact ELGA LabWater at the number above.