ELGA

MEDICA 7/15 - US

Operator Manual

VEOLIA WATER
Solutions & Technologies

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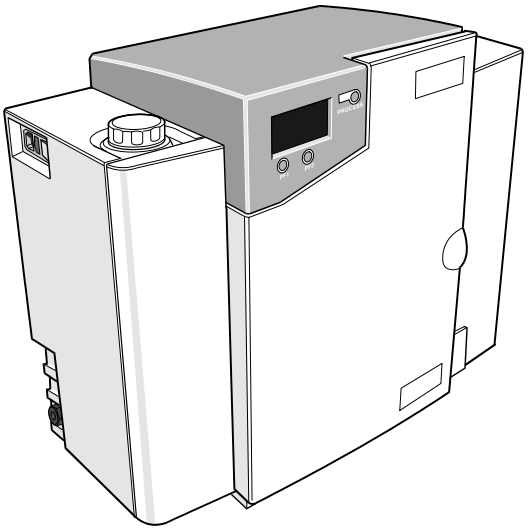
1. INTRODUCTION



MEDICA

1.1 Product Range

This Operator Manual has been prepared for the ***MEDICA*** product models.

MEDICA 7-US

MEDICA 7 BP-US *(with boost pump)*

MEDICA 15-US

MEDICA 15 BP-US *(with boost pump)*

1.2 Use of this Manual

This manual contains full details on installation, commissioning and operation of the ***MEDICA*** unit. If this unit is used contrary to the instructions in this handbook, then the safety of the user may be compromised.

1.3 Customer Support

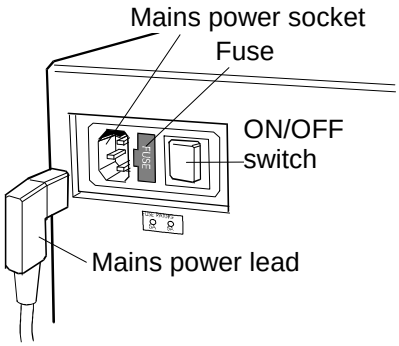
Service support and consumable items are available from your local supplier or distributor. Refer to customer service contact details shown at the end of this publication.

2. HEALTH AND SAFETY NOTES

MEDICA products have been designed to be safe, however, it is important that personnel working on these units 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

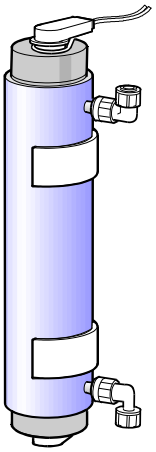
It is essential that the electrical supply to the ***MEDICA*** is isolated before any items are changed or maintenance work performed.

The ON/OFF switch is located at the left-hand side of the unit. The mains power lead is located just behind the ON /OFF switch.

WARNING! **THIS APPLIANCE MUST BE EARTHED.**

2.2 Pressure

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



UV Lamp

2.3 Ultra-violet Light

The ***MEDICA*** unit is fitted with an ultra-violet (UV) lamp. The UV lamp is enclosed in a stainless steel chamber ensuring the operator will not be exposed to UV light.

2.4 Sanitization Chemicals

2.4.1 Liquid sanitization

During the sanitization cycle Minncare Cold Sterilant is used and relevant safety guidance is included in this handbook. Please refer to the manufacturer for material safety data sheets.

Minncare Cold Sterilant is EPA registered as a sterilant, high level disinfectant, and sanitizer.

Spent Minncare Cold Sterilant is 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.

2.4.2 Tablet sanitization

During the sanitization cycle **ONE** of EfferSan™ multi-purpose disinfecting tablet is used and relevant safety information is included in this handbook. Please refer to the manufacturer for material safety data sheets.

EfferSan™ is EPA registered as Multi-purpose disinfecting tablets.

2.5 Material Safety Data Sheets

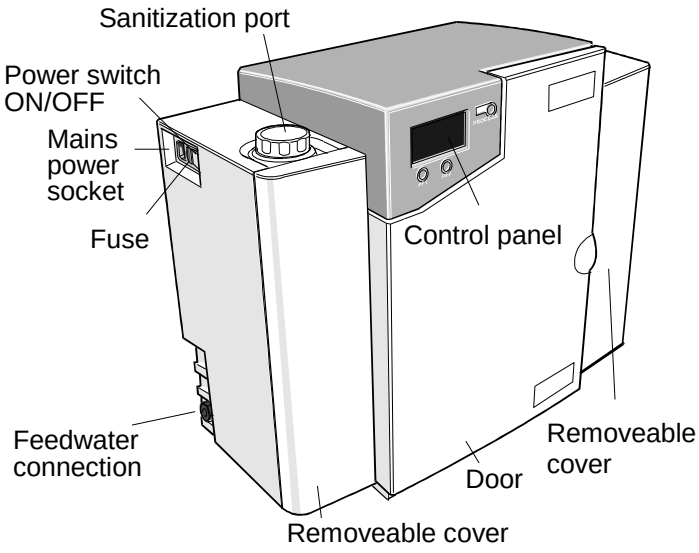
Material safety data sheets covering the various replaceable cartridges are available upon request. Contact your local supplier or distributor.

3. PRODUCT AND PROCESS DESCRIPTION

3.1 Product Description

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

The ***MEDICA*** can be bench or wall mounted with an optional wall mounting kit. A range of accessories are available to complement the unit. *(See Section 11.1 – Consumables and Accessories, for detail)*.



MEDICA

3.2 Process Description

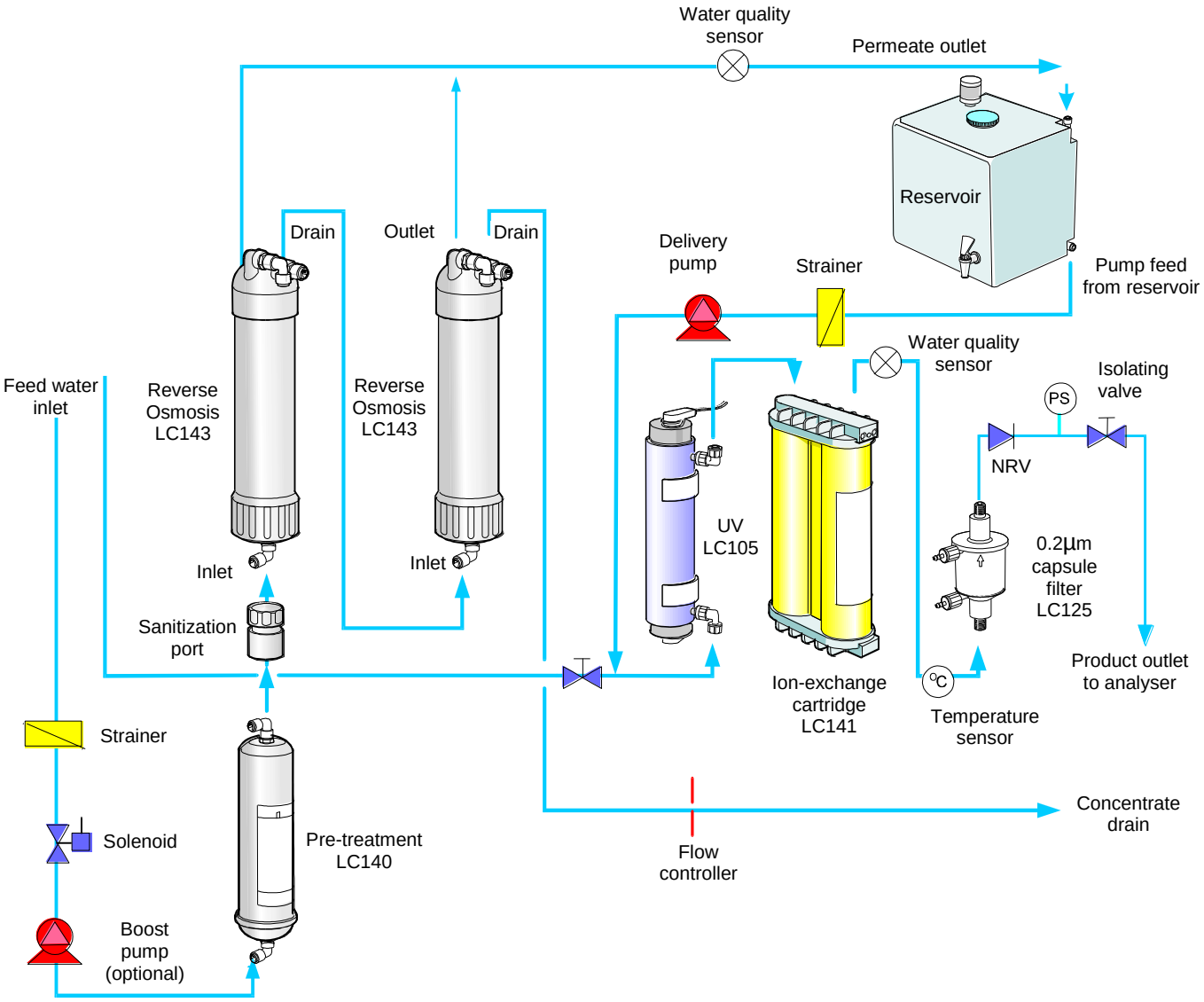
The ***MEDICA*** process links four purification technologies, reverse osmosis, adsorption, ion-exchange and photo oxidation and also incorporates a delivery pump and an optional RO feed water boost pump.

The unit is designed to operate from a good quality potable water supply, and produces either 7 or 15 liters per hour of purified reverse osmosis grade water which is delivered to a treated water reservoir. This water is then further purified when demanded by the analyzer.

A graphics screen displays the system status and provides control by means of three function buttons.

The water is processed and treated by the ***MEDICA*** unit as follows:

- Potable water enters through a strainer and inlet solenoid valve at either regulated mains water pressure, or is pumped by means of a feed water pump (optional), and passes through the pre-treatment cartridge. The pre-treatment cartridge has been designed to protect the reverse osmosis cartridges from particulate/colloidal matter and excessive free chlorine, which may be present in the incoming feed water.
- The water then passes through one or two reverse osmosis cartridges, set up in series, which split the flow into permeate and concentrate streams. The permeate water is further purified whilst the waste concentrate stream is passed to drain.
- The permeate water passes through a water quality sensor which measures the conductivity of the water and is delivered to the treated water reservoir.
- The ***MEDICA*** is designed to operate with a treated water reservoir, and to ensure the quality of the water is at its highest level, the water from the tank is drawn back into the unit by an in-built delivery pump.
- The delivery pump is controlled by means of a pressure switch which senses when the analyzer demands water.
- Permeate water is pumped through the UV chamber where it is exposed to intense UV radiation.
- The partially purified water then passes through the ion-exchange cartridge which removes dissolved ionic impurities from the permeate water.
- 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 then passes through a 0.2µm filter which provides the final filtration.



*Process Flow - **MEDICA***

3.3 Technical Specifications

The Technical Specifications for the ***MEDICA*** are as follows:

Feedwater		
	MEDICA 7	***MEDICA 15***
Feedwater		
Source Quality	Potable mains water supply	Potable mains water supply
Fouling Index-maximum	10	10
Total Dissolved Solids-maximum	1400μS/cm	1400μS/cm
Free Chlorine - maximum	0.5ppm	0.5ppm
Heavy Metals - maximum	0.05ppm	0.05ppm
Silica- maximum	30ppm	30ppm
Temperature	1 - 35°C	1 - 35°C
Flowrate (Maximum requirement)	78 l/hr	85 l/hr
Feedwater Pressure		
Maximum - without internal boost pump	6.0 bar (90 psi)	6.0 bar (90 psi)
Minimum - without internal boost pump	4.0 bar (60 psi)	4.0 bar (60 psi)
Maximum - with internal boost pump	2.0 bar (30 psi)	2.0 bar (30 psi)
Minimum - with internal boost pump	Flooded Suction	Flooded Suction
Drain Requirements (gravity fall with air gap). Maximum during Service	70 l/hr	70 l/hr

Dimensions		
Height	460mm (18.1")	460mm (18.1")
Width	550mm (21.7")	550mm (21.7")
Depth	270mm (10.6")	270mm (10.6")
Weight		
With internal boost pump	20.5kg (45lbs)	21kg (46lbs)
Without internal boost pump	18.5kg (41lbs)	19kg (42lbs)

Connections		
Inlet - quick connect	8mm (5/16") OD	8mm (5/16") OD
Outlet - quick connect	8mm (5/16") OD	8mm (5/16") OD
Drain RO - quick connect	8mm (5/16") OD	8mm (5/16") OD
Analyzer feed	8mm (5/16") OD	8mm (5/16") OD
Delivery pump feed - quick connect	8mm (5/16") OD	8mm (5/16") OD
Positioning	Wall, bench or under bench mounted.	Wall, bench or under bench mounted.
Environment	Clean dry indoor. Temp 5 - 40°C. Humidity max 80% non-condensing.	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 with boost pump	83VA
Power Consumption without boost pump	60VA
Fuses	2 x T6.3 Amp
Reservoir level connection	Jack Plug 3.5mm
Noise Level	<45 dBA

User Interface		
Display	Continuous graphical and numerical reservoir level display. Graphical flow schematic on screen with mimic display. Intuitive Icons.	
Adjustable settings	Auto restart after power failure Audible Alarm Water purity units Water purity Pump speed	Selectable Selectable MicroSiemens/cm or Megaohms.cm Alarm Setpoints Selectable
Indicators	Reverse osmosis permeate water De-ionized water Temperature Reservoir Pre-treatment cartridge UV lamp Ion-exchange cartridge 0.2µm filter	Conductivity Temp compensated resistivity/conductivity Degrees centigrade % Full Maximum remaining life indicator Maximum remaining life indicator Maximum remaining life indicator Maximum remaining life indicator
Alarms-Audiovisual	Purified water purity Reservoir Reservoir UV failure alarm Pre-treatment cartridge UV lamp Ion-exchange cartridge 0.2µm filter	Outside set point alarm Low level Level control disconnect alarm Non start or current outside limits Change reminder Change reminder Change reminder Change reminder
Outputs	RS232 Printer connection RS232 Remote display connection Volt free contact-internal	

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

Special Features
Low noise levels – minimum intrusion
Flow rate upgradable
Optional internal boost pump for low pressure feed waters
Optional printer kit for record of operating parameters
Optional remote display

Technologies	
Purification Methods	Adsorption
	Reverse osmosis
	Ultra violet radiation-short wavelength
	Ion-exchange
	In-line 0.2µm Filtration

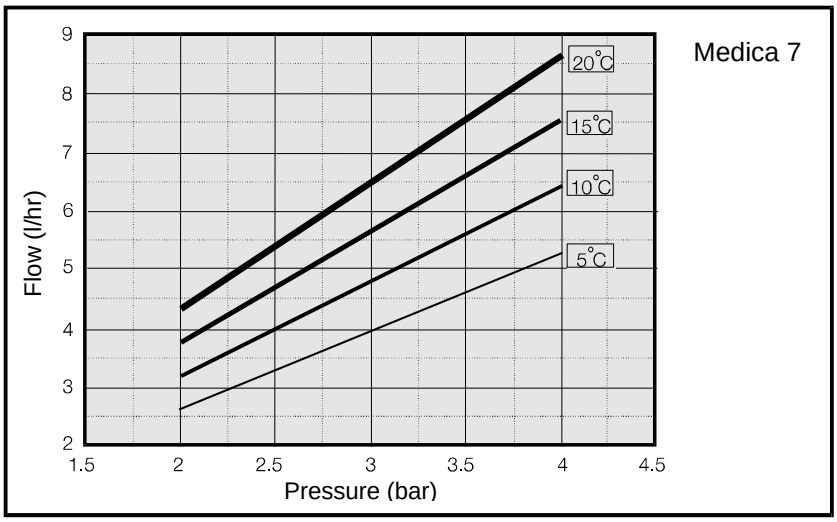
Purified Water Specification		
	MEDICA 7	***MEDICA 15***
*Make Up Rate	7.5 l/hr	15 l/hr
*Daily Output (nominal max)	180 l/24 hour day	360 l/24 hour day
Output reverse pressure (max)	0.1 bar (1 psi)	0.1 bar (1 psi)
Purity (delivered to analyzer):		
Inorganic-Typical	1 to >15 MΩ.cm @25°C	
Total Organic Carbon (TOC)	<30ppb	
**Bacteria	<1CFU/ml	
pH	Effectively neutral	
Particles	0.2µm filter	

* Standard conditions are 4 bar inlet pressure, 0 bar back pressure at 15 degrees centigrade, fed with potable water and a clean pre-treatment cartridge. Refer to flow tables outside these conditions.

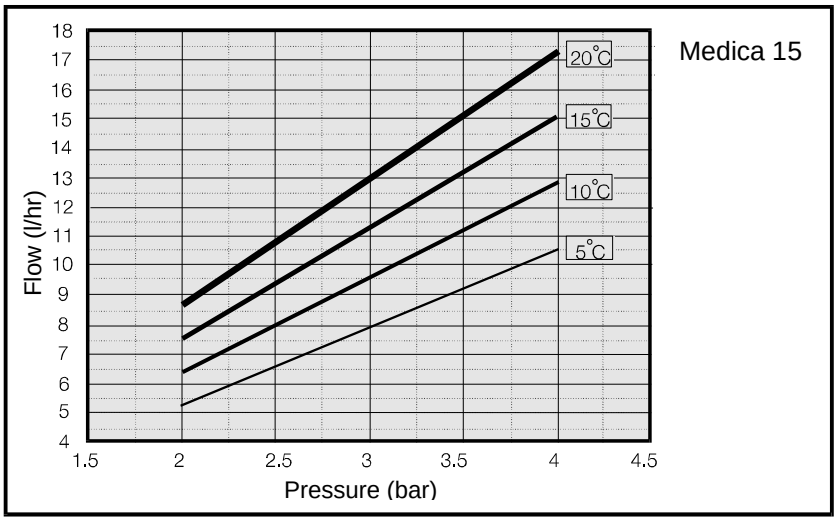
** Subject to correct operating and maintenance procedures.

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

MEDICA Reverse Osmosis Capacity Charts

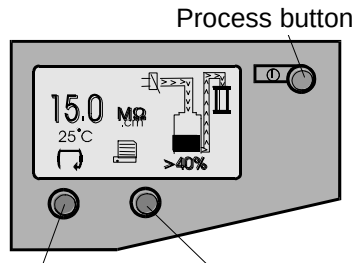


Graph 1 - Nominal Flowrate vs Inlet Pressure for ***MEDICA 7***



Graph 2 - Nominal Flowrate vs Inlet Pressure for ***MEDICA 15***

4. CONTROLS



Control Panel

The ***MEDICA*** 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 will be given in the appropriate sections.

Control Button	Function
PROCESS	Turns the process ON/OFF

The ***MEDICA*** control panel has a range of control icons as follows:

Button	Icon	Description
LEFT		Menu
		Scroll
RIGHT		Reset
		Mute Alarm
		Accept
		Printer

5. INSTALLATION INSTRUCTIONS

5.1 Unpacking the *MEDICA*

The following items should be supplied with your ***MEDICA***:

1. ***MEDICA*** unit
2. Cartridge pack LC141
3. By-pass block fitted in the unit
4. Installation kit (LA637-US)
5. Operator manual
6. Mains lead
7. Black 'clip on' bend former x 4

5.2 Positioning the *MEDICA*

Before commencing with installation and operation of the ***MEDICA*** unit, please read and observe the following points.

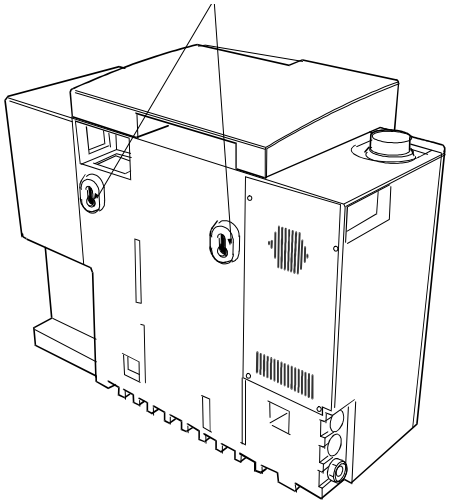
Environment

The unit should be installed on a flat, level surface, in a clean, dry environment. The unit 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 LA610).

CAUTION! **If unit 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 unit on the wall, use the wall mounting kit and follow the instructions included in the kit.**

Note: *Refer to specifications for unit weights.*

Rear mounting locations points

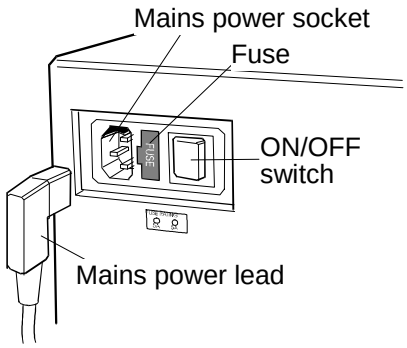


Unit Rear Mounting Points

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



Electrical Connections

Electrical

The units can be connected universally 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 unit on the other. The unit should be connected to an earth.

Drain

A semi rigid flexible connection to a sink or suitable drain capable of handling at least 1.5 l/min is required. The drain point should have a gravity fall below the level of the unit and any connections direct to drain should have an air-break device fitted.

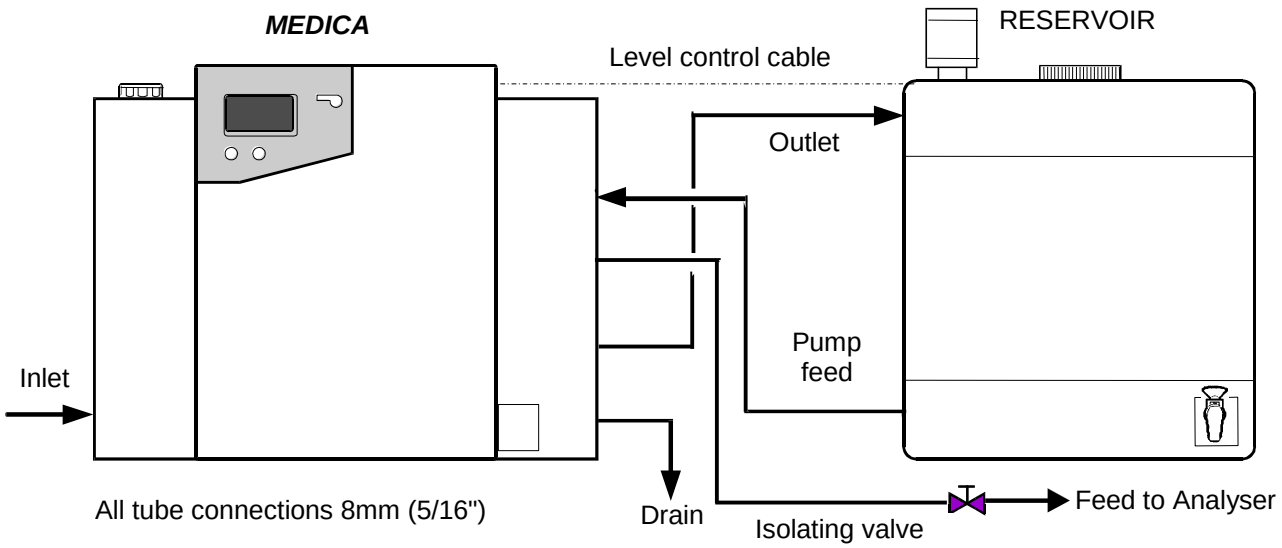
Feed Water

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

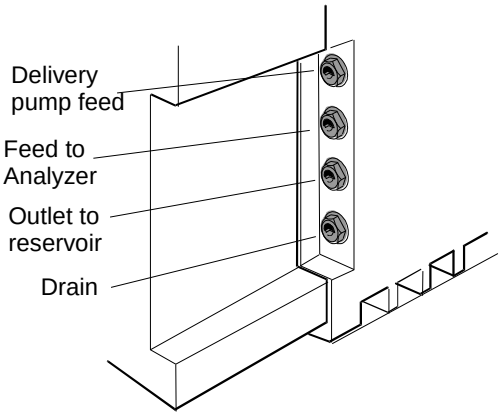
CAUTION! **Operating temperatures outside the range 1 to 35°C will cause damage to the *MEDICA* unit.**

For pressurized feeds, the minimum direct inlet pressure is 4.0 bar (60 psi) and maximum inlet pressure is 6 bar (90 psi). Higher feed water pressures must be reduced using a pressure regulator valve (Part No LA512).

Reservoir feeds to the ***MEDICA*** unit should be positioned at the same height, or above the unit, to provide a positive flooded inlet pressure.



MEDICA *Unit Installed with Storage Reservoir*



Delivery Pump and Drain Connections

5.3 Connecting up the *MEDICA*

Once the ***MEDICA*** unit has been positioned either on a wall or on a bench, it should be connected as follows:

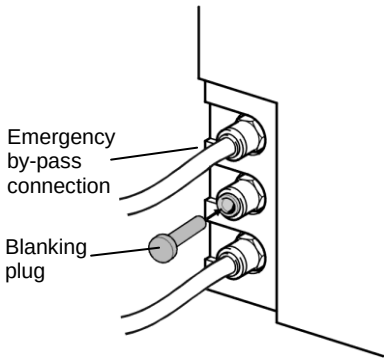
- Mains water inlet tube
- Drain
- Feed to analyzer
- Outlet to reservoir
- Delivery Pump Feed

Step 1 - Fitting Tubes

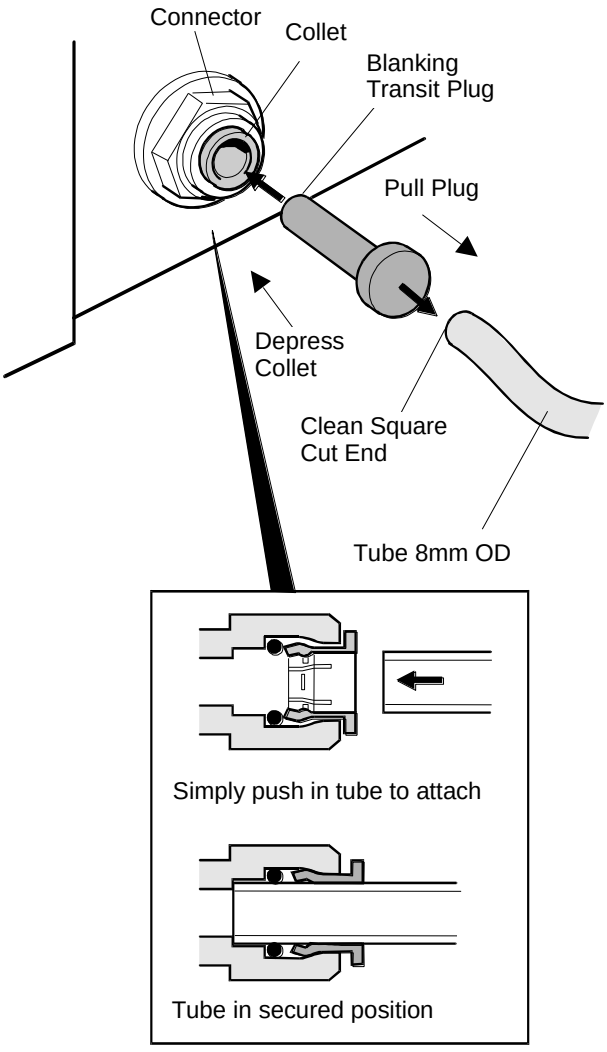
1. PUSH in collet on connector.
2. PULL out transit plug.
3. CUT a clean square end on an 8mm (5/16") O/D semi rigid tube.
4. PUSH tube into connector.

CAUTION! **Do not restrict drain line.**

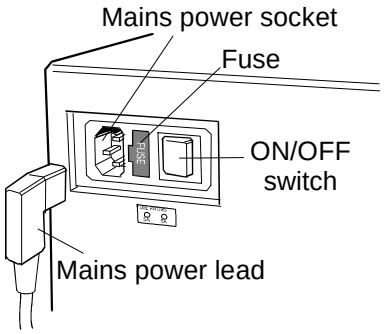
CAUTION! **If the water supply is at a pressure greater than 6 bar (90 psi) fit a pressure regulator (LA512).**



Feed Water Inlet Connections



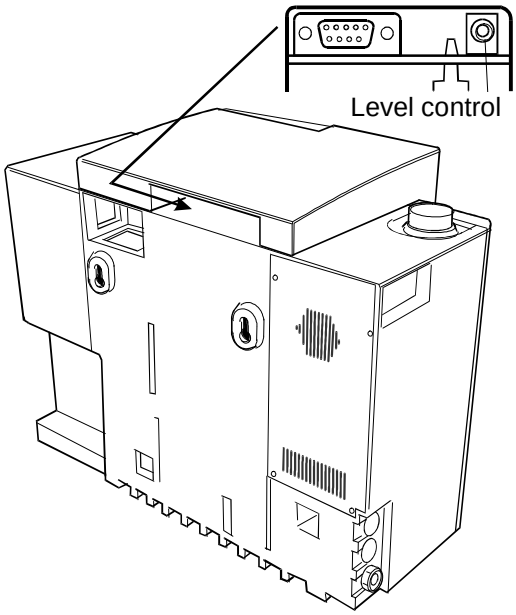
Fitting Tubes



Electrical Connections

Step 2 - Connect Electrical Supply

1. PLUG mains lead into the socket on the left hand side of the ***MEDICA*** unit.
2. PLUG mains lead into mains socket.



Reservoir Level Connections

Step 3 - Connect High/Low Level Switch to Reservoir

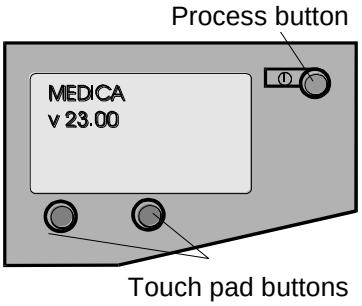
1. INSERT jack plug into the level control socket located at rear of unit & reservoir.

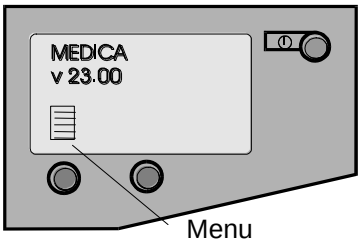
5.4 Initial Controller Set Up

The ***MEDICA*** control panel is fitted with three control buttons. These are:

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

When the ***MEDICA*** unit 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

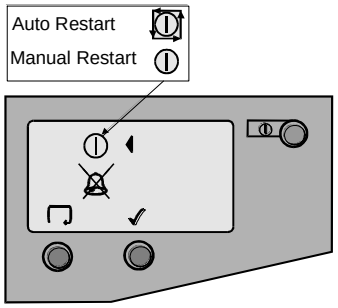
SWITCH the mains power on to initialize the controller hardware set-up sequence.

Note: Always allow the initialization process to complete. This is indicated by the appearance of the MENU icon on the control screen.

PRESS the MENU button to go to the next screen to activate the set-up menu sequence.

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:

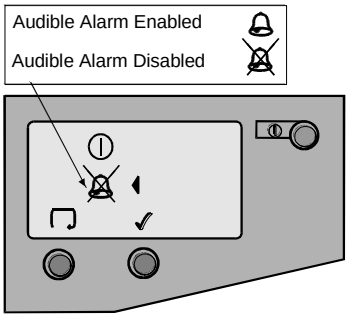
- A "scroll" icon indicated by an arrow ↻
- An "accept" button indicated by a tick ✓
- A "selection" icon indicated by a ◂



Auto/Manual Restart

Step 2 - Auto/Manual Restart

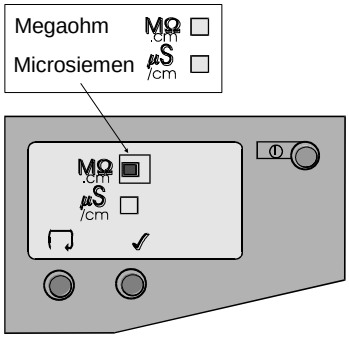
This allows the selection of the AUTO/MANUAL restart option. If auto restart is selected the unit will automatically restart after a power failure. In manual mode the unit will remain in standby. Select the option required using the ↻ button and accept with the ✓ button.



Audible Alarm Enable/Disable

Step 3 - Audible Alarm Enabled / Disabled

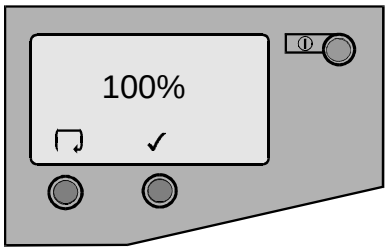
This display provides the option of either enabling the audible alarm causing it to sound or disabling the audible alarm causing it to remain muted whilst it flashes the alarm. Select the option required using the ↻ button and accept with the ✓ button.



Water Purity Settings

Step 4 - Water Purity Unit Setting

This screen allows preferred water purity unit of measure to be set, to either, **MΩ.cm** or **µS/cm**. Once selected, all future water purity measurements will be displayed with your unit of choice. Select the option required using the ↻ button and accept with the ✓ button.



Analyzer Delivery Flow Adjustment

Step 5 - Analyzer Delivery Flow Adjustment

The ***MEDICA 7/15*** includes the ability to adjust the delivery flow rate to match the needs of specific analyzers.

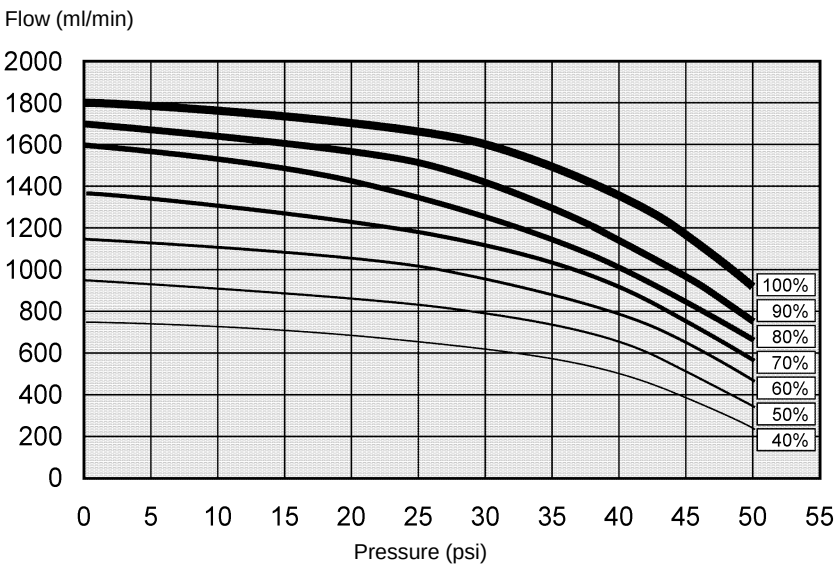
Select the flow-curve from Graph A, Delivery Flows. Please contact your analyzer supplier if you are unsure of your analyzer requirements or alternatively contact ELGA Technical Support.

Select the flow required along the 'Y' axis, Flow (ml/min) and draw a line parallel with the 'X' axis. The line will converge with a flow curve. Draw a line parallel with the 'Y' axis. Confirm that the pressure indicated is suitable for the analyzer.

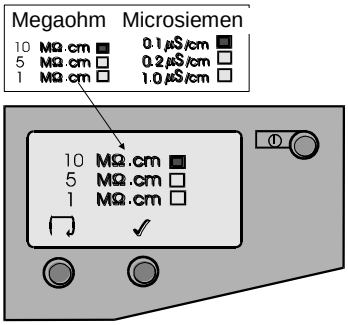
The flow curve is identified as a percentage i.e. 80%.

Select the percentage (flow curve) using the ↻ button and accept with the ✓ button.

MEDICA



Graph A - Delivery Flows



Purity Alarm Setting

Step 6 - Purity Alarm Setting

This screen is used for setting the value at which the water purity alarm will activate.

If the **MΩ.cm** water purity unit setting was chosen, then the following water purity alarm choices will be displayed.

10 MΩ.cm ☐

5 MΩ.cm ☐

1 MΩ.cm ☐

If the **µS/cm** water purity unit setting was chosen, then the following water purity alarm choices will be displayed.

0.1 µS/cm ☐

0.2 µS/cm ☐

1.0 µS/cm ☐

Select the alarm setting required using the ↻ button and accept with the ✓ button.

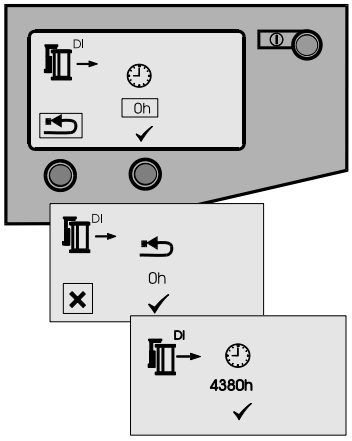
Note: To reset any of the set-up parameters, restart from the set up menu and follow instructions from Step 1.

5.5 Setting Up Display and Replacement Timers

Turn the unit off at the power inlet module. To enter the replacement timer set-up, press the left hand touch pad button and at the same time turn the power on.

A graphic of the Ion-exchange cartridge, UV lamp, pre-treatment cartridge and 0.2µm capsule filter are displayed with hourly timer status.

CAUTION! **Before re-setting any of the cartridge timers, ensure that the appropriate new cartridges have been installed and securely located correctly in the *MEDICA.***



Ion-exchange Cartridge Timer

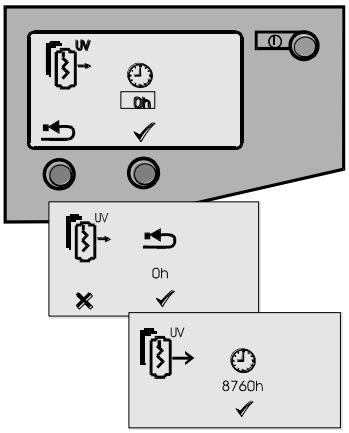
Step 1 - Ion-exchange Cartridge Replacement Timer

Setting this screen will cause the Ion-exchange cartridge timer to reset to the preset value of 4380 hours (6 months).

Press ✓ to jump to the next consumable or ↩ to initiate reset.

Press ✓ to reset timer or press ✘ to abort reset.

Press ✓ to jump to the next consumable.



UV Lamp Replacement Timer

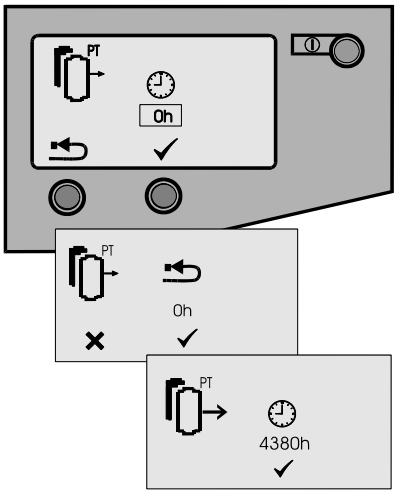
Step 2 - UV Lamp Replacement Timer

Setting this screen will cause the UV Lamp timer to reset to the preset value of 8760 hours (1 year).

Press ✓ to jump to the next consumable or ↩ to initiate reset.

Press ✓ to reset timer or press ✘ to abort reset.

Press ✓ to jump to the next consumable.



Pre-treatment Cartridge Timer

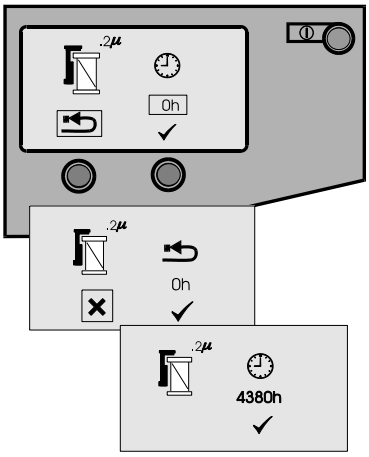
Step 3 - Pre-treatment Cartridge Replacement Timer

Setting this screen will cause the pre-treatment cartridge timer to reset to the preset value of 4380 hours (6 months).

Press ✓ to jump to the next consumable or ⮌ to initiate reset.

Press ✓ to reset timer or press ✘ to abort reset.

Press ✓ to jump to the next consumable.



0.2µm filter replacement timer

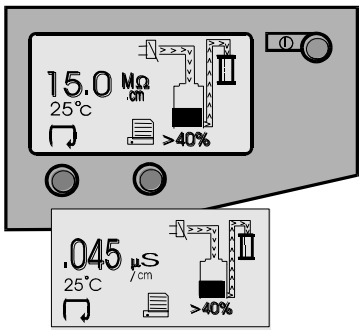
Step 4 - 0.2µm Filter Replacement Timer

Setting this screen will cause the 0.2µm filter replacement timer to reset to the reset value of 4380 hours (6 months).

Press ✓ to jump to the next consumable or ⮌ to initiate reset.

Press ✓ to reset timer or press ✘ to abort reset.

Press ✓ to jump to the next consumable.



Process On and Alternate Screen

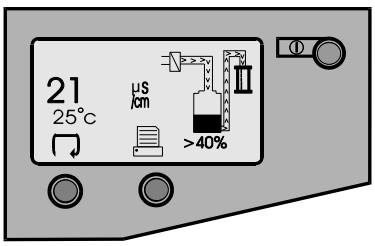
Step 5 - Accessing the Process On Display Screens

The normal process screen will display newly installed SET-UP preferences showing the following process information:

- Output water purity
- Water temperature
- Process mimic
- Reservoir level
- Scroll ↻ and Print 🖶 icons

You can scroll through the following display screens:

- RO water conductivity
- Ion-exchange cartridge replacement timer (hours remaining)
- UV tube replacement timer (hours remaining)
- Pre-treatment cartridge replacement timer (hours remaining)
- 0.2µm filter replacement timer



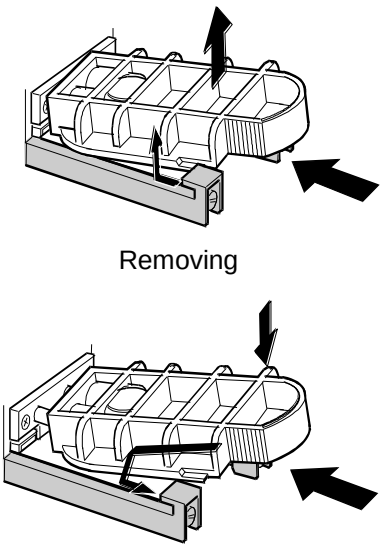
Water Conductivity

Step 6 - Report Printing *(Only if connected to LA618)*

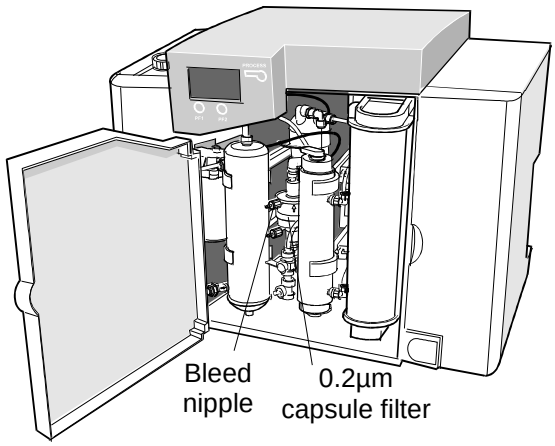
To print a report press the 🖶 button.

5.6 Initial Start Up

1. The ***MEDICA*** should be installed correctly as described in Section 5.
2. TURN ON the feedwater supply to the unit and adjust the inlet pressure. The ***MEDICA*** will operate on a feedwater pressure between 4.0 bar (60 psi) and 6.0 bar (90 psi). Where feedwater pressures are inadequate an internal optional boost pump should be fitted.
3. CHECK all hose connections are watertight and that there are no leaks.
4. The ***MEDICA*** unit may contain trace amounts of preservative used during the manufacturing process. To ensure the optimum performance the unit should be rinsed to drain. Both the 'DRAIN' and 'OUTLET' tubes should initially both be directed to a drain or sink.
5. DISCONNECT the outlet tube to reservoir at the reservoir inlet and direct to a drain or sink.
6. The unit is supplied without the LC141 Ion-exchange cartridge pack fitted but has the by-pass block in place as shown in Section 8.
7. ENSURE the cartridge by-pass block is left in place until the unit has been rinsed.
8. TURN ON the electrical supply to the unit and switch the mains switch at the power inlet module on the left-hand side of the unit to the ON position.
9. Having checked that the water supply has been turned on, PRESS the PROCESS button and the unit will start.
10. Leave the unit running for a minimum of 2 hours to drain. For critical applications the unit should be left to rinse overnight.
11. After 2 hours, PRESS the PROCESS button to stop the unit. The outlet tube can now be reconnected to the reservoir.
12. The unit has now been rinsed.
13. REMOVE the by-pass block. (Store in the front door).
14. INSERT Ion-exchange cartridge LC141. *(See Section 7.2)*.
15. RELIEVE pressure in pipework feeding the analyzer by opening the inlet valve on the downstream equipment and disconnect the tube which supplies the feed to the analyzer and direct to a drain or sink.
16. PRESS the PROCESS button. The reservoir will now start to fill. When the display shows a level >40% the delivery pump and UV will operate.

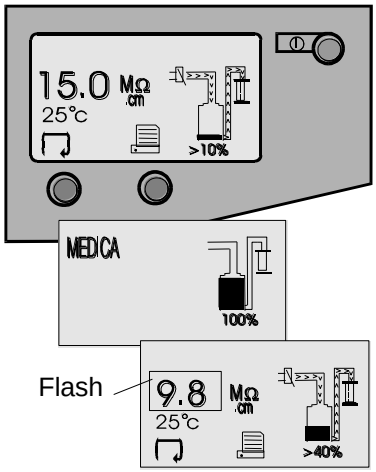


Removing & Inserting
By-pass block

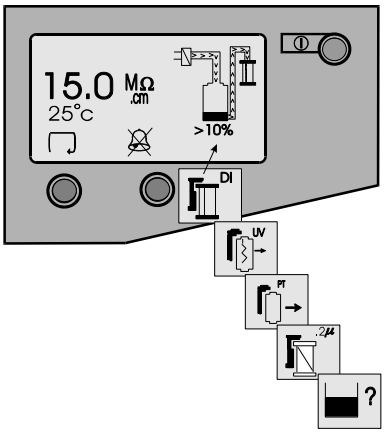


Bleed Nipple

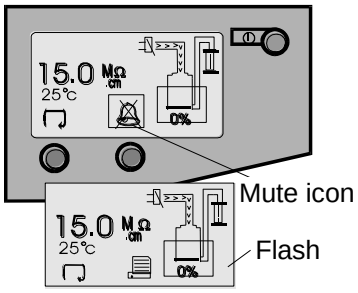
17. SLOWLY OPEN the upper bleed nipple on the 0.2µm capsule filter until water, free of air bubbles, flows out - use an absorbent cloth to prevent splashing of internal components.
18. Allow the system to operate until the water purity indicator displays a value within acceptable operating values.
19. PRESS the process button to stop the unit.
20. RE-CONNECT the feed to the analyzer.
21. PRESS the process button. The unit will now run automatically and fill the treated water reservoir.
22. When the analyzer calls for water (i.e. its inlet valve is open) the delivery pump and UV will operate.
23. CHECK the unit for leaks.
24. The unit is now ready for operation.



Normal Process Screens



Alarm Conditions



Low Level Alarms / muted

6. OPERATION

The ***MEDICA*** will run automatically and will signal alarm conditions to ensure prompt efficient system management and corrective action.

6.1 Alarm Conditions

Alarms will signal at the following conditions:

Replace Ion-exchange cartridge

The Ion-exchange replacement alarm is signalled by an audible alarm and flashing icon at the default settings of 4380 hrs (6 months) of use. Press the ⊠ button to mute the audible alarm. Follow the instructions to replace the Ion-exchange cartridge. *(See Section 7.2)*.

Replace UV Lamp

The UV lamp replacement alarm is signalled by an audible alarm and flashing icon at the default settings of 8760 hrs (1 year) of use. Press the ⊠ button to mute the audible alarm. Follow the instructions to replace the UV lamp. *(See Section 7.3)*.

Replace Pre-treatment Cartridge

The pre-treatment cartridge replacement alarm is signalled by an audible alarm and flashing icon at the default settings of 4380 hrs (6 months) of use. Press the ⊠ button to mute the audible alarm. Follow the instructions to replace the pre-treatment cartridge. *(See Section 7.1)*.

Replace 0.2 µm Capsule filter

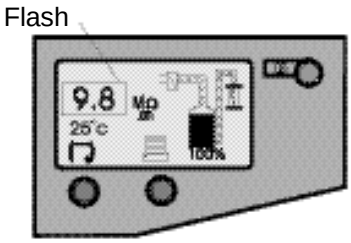
The 0.2µm capsule filter alarm is signalled by an audible alarm and flashing icon at the default setting of 4380 hrs (6 months) of use. Press the ⊠ button to mute the audible alarm. Follow the instructions to replace the 0.2µm capsule filter. *(See Section 7.4).*

UV failure

The UV failure alarm is signalled by an audible alarm and flashing cross over the replace UV icon. Press the ⊠ button to mute the audible alarm. Follow the instructions to replace the UV lamp. *(See Section 7.3)*.

Low Level Alarm

When the low level alarm sounds, the mimic reservoir on the display will flash and a crossed bell icon mute symbol will appear. To mute the low level alarm sound Press the ⊠ button. The ***MEDICA*** will automatically refill the reservoir.



Water Purity Alarm

Water Purity Alarm

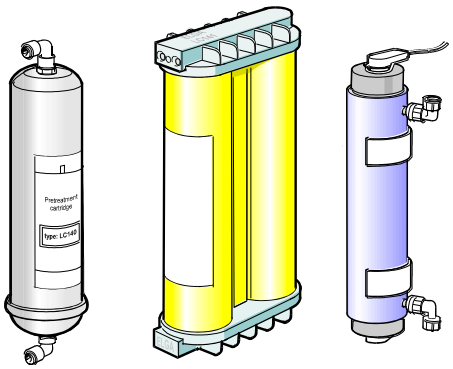
This alarm will signal if the water purity deviates from the preset parameters and will cause the water purity value to flash and an alarm to sound, until water purity improves to within acceptable purity limits. Press the ⊠ button to mute the alarm. If water purity stays outside acceptable purity limits replace the Ion-exchange pack following the instructions in *Section 7.2.*

Reservoir Level Disconnect Alarm

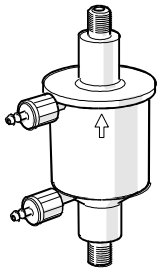
Reservoir Disconnect Fault Alarm

The reservoir level disconnect fault alarm condition will signal with an audible alarm and flashing icon. PRESS the ⊠ button to mute the alarm. This alarm condition will cause the process to turn off. Connect the reservoir level lead and power the unit off and on to clear the alarm.

7. MAINTENANCE



LC140 Pre-treatment cartridge | LC141 Ion-exchange cartridge | LC105 UV lamp



LC125
0.2µm capsule filter

MEDICA
Replacement Consumables

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

Identification of Consumables

There are four types of unique replacement consumables designed for use in the ***MEDICA*** units and these are illustrated with the following part numbers:

LC140 Pre-treatment cartridge

LC141 Ion-exchange cartridge

LC105 UV lamp

LC125 0.2µm capsule filter

All consumables are accessible after opening the front door cover.

To protect the inlet solenoid valve, RO boost pump (when fitted) and Delivery pump from possible debris in the water, the unit incorporates two strainers.

WARNING! **ALWAYS CHECK THAT THE MAINS ELECTRICAL POWER AND FEED WATER SUPPLIES ARE SWITCHED OFF BEFORE ATTEMPTING TO CHANGE THE *MEDICA* CONSUMABLES.**

Frequency of Consumable Replacement

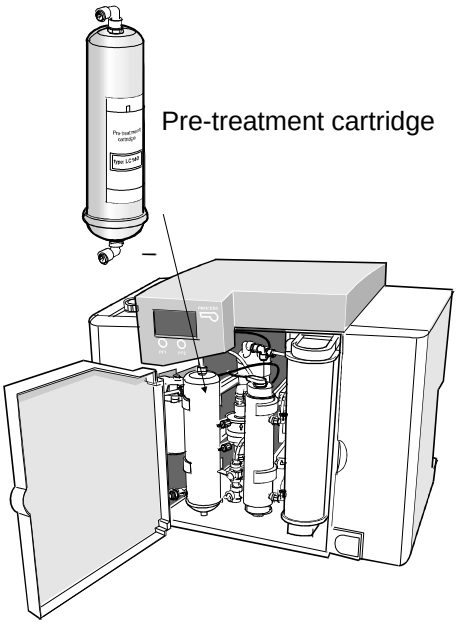
The following frequency of consumable replacement is recommended as a guide assuming typical usage.*

Pre-treatment	-	LC140	maximum 6 months
Ion exchange	-	LC141	maximum 6 months**
UV lamp	-	LC105	maximum 12 months
0.2µm capsule filter	-	LC125	maximum 6 months
Reverse Osmosis	-	LC143	every 2 - 3 years (not an operator replacement item)

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

** Standard conditions are 4 bar (60 psi) inlet pressure at 15°C, potable water with clean pre-filter.

CAUTION! **Ensure that the display and replacement timer settings are reset after replacing consumables. (Refer to Section 5.4).**



Location of Pre-treatment Cartridge

7.1 Replacing the LC140 Pre-treatment Cartridge

The pre-treatment cartridge should be replaced when indicated by the change reminder.

Step 1 - Switch Unit Off

1. SWITCH the ***MEDICA*** off at the power switch at the top left hand side of the unit.
2. ENSURE pressure has dissipated from the unit by waiting several minutes before proceeding.

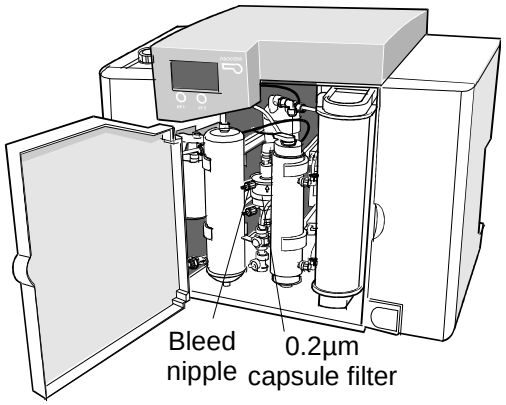
Step 2 - Remove Pre-treatment Cartridge

1. OPEN front door.
2. Identify the pre-treatment cartridge (LC140).
3. REMOVE the reducing fitting at the elbow at the bottom of the cartridge, by pushing back the retaining collet on the push fit connector and withdrawing the reducer.
4. REMOVE the reducing fitting from the elbow at the top of the cartridge.
5. REMOVE exhausted cartridge from retaining clips and discard.

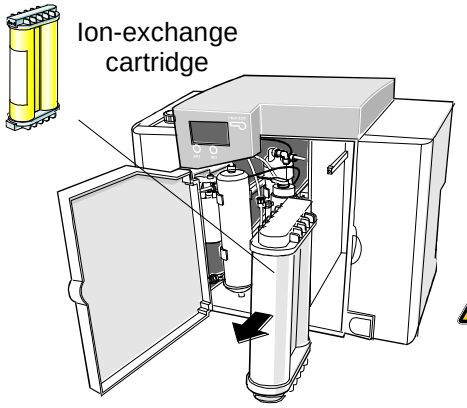
   Note: The consumable is non-hazardous. Dispose of as ordinary waste, observing all local and national regulations.

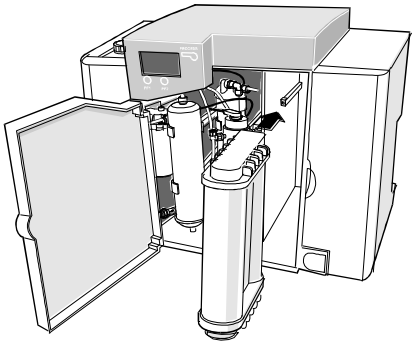
Step 3 - Replacing the Pre-treatment Cartridge

1. UNPACK new cartridge and remove the two protective transit plugs sealing the inlet and outlet connection.
2. SECURE the new cartridge into its retaining clips ensuring the cartridge is the correct way up.
3. REFIT the inlet tubing into the bottom of the cartridge by pushing the reducer into the elbow connector until locked and held by the retaining collet.
4. REFIT the outlet tubing to the top of the cartridge.
5. RESET pre-treatment cartridge timer. *(See Section 5.4 - Setting up Display and Replacement Timer).*
6. PRESS the PROCESS button to start the unit.
7. CHECK the unit for leaks and close front door.

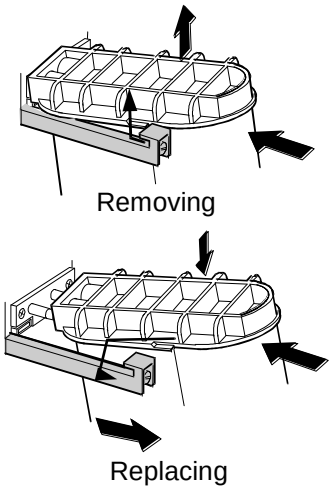


0.2µm Capsule filter & Bleed Nipple





Removal and Fitting of Ion-exchange Cartridge



Ion-exchange Cartridge

7.2 Replacing LC141 Ion-exchange Cartridge Pack

The Ion-exchange cartridge pack should be replaced in the following circumstances:

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

Step 1 - Switch Unit Off

1. SWITCH the ***MEDICA*** off at the power switch at the top left hand side of the unit.
2. RELIEVE any residual pressure from the system, by waiting several minutes before proceeding. Then slowly opening the bleed nipple on the 0.2µm capsule filter until water ceases, use an absorbent cloth to soak up the water and re-tighten the bleed nipple.

WARNING! **ENSURE THE UNIT IS ISOLATED BEFORE REMOVING THE ION-EXCHANGE CARTRIDGE.**

Step 2 - Remove Ion-exchange Cartridge

1. OPEN the front door.
2. PUSH on cartridge top cap.
3. LIFT up cartridge.
4. SLIDE out cartridge.
5. DISCARD used Ion-exchange cartridge.

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

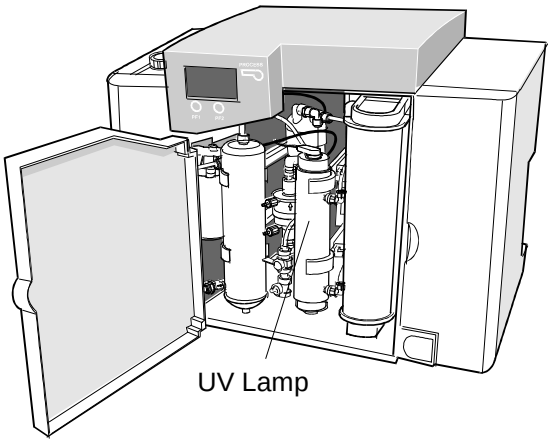
Step 3 - Replace Ion-exchange Cartridge

1. REMOVE a new cartridge pack from its packaging.
2. REMOVE the sealing plugs from the inlet and outlet ports.
3. WET ‘O’ rings and SLIDE new cartridge into position.
4. POSITION cartridge onto spigots at rear, PUSH into unit.
5. ENSURE guide has dropped down past retainer.
6. CLOSE front door.
7. RESET Ion-exchange pack replacement timer. *(See Section 5.4 - Setting up Display and Replacement Timer)*.
8. Follow steps 14 - 23 of *Section 5.6 Initial Start up.*

7.3 Replacing the Ultraviolet Lamp (LC105)

The UV lamp should be changed under the following circumstances:

- When indicated by the change reminder, due to the decline in the short wave radiation.
- If Lamp fail alarm occurs.



Location of UV Lamp Housing

Step 1 - Switch Unit Off

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

Step 2 - Remove UV unit from *MEDICA*

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

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

Step 3 - Remove UV Lamp (LC105)

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

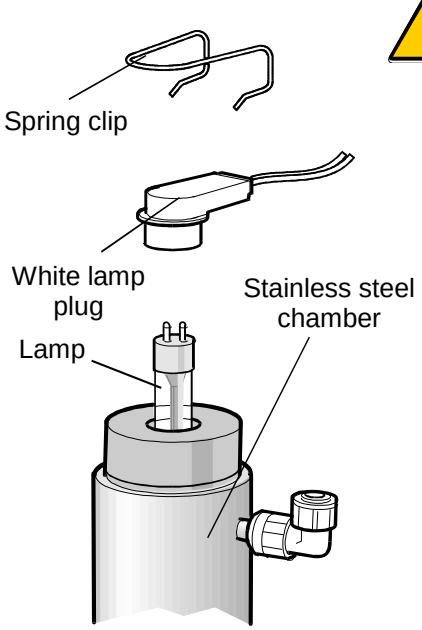
   Note: The consumable is non-hazardous. Dispose of as ordinary waste, observing all local and national regulations.

Step 4 - Replace UV Lamp (LC105)

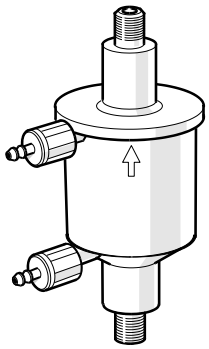
1. UNPACK new UV lamp.

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

2. SLIDE the new UV lamp into the center bore of the UV housing.
3. PLUG the white lamp clip to the bottom of the UV unit.
4. REFIT retaining clip.
5. PLUG in the white lamp clip to the top of the UV unit.
6. REFIT spring clip.
7. PUSH UV unit into the retaining clips.
8. CLOSE the front door.
9. RESET UV alarm settings. *(See Section 5.4 - Setting up Display and Replacement Timer)*.
10. PRESS the PROCESS button to start the unit.



LC105 LAMP



0.2µm capsule filter (LC125)

7.4 Replacing the LC125 0.2µm Capsule Filter

The capsule filter should be changed under the following circumstances:

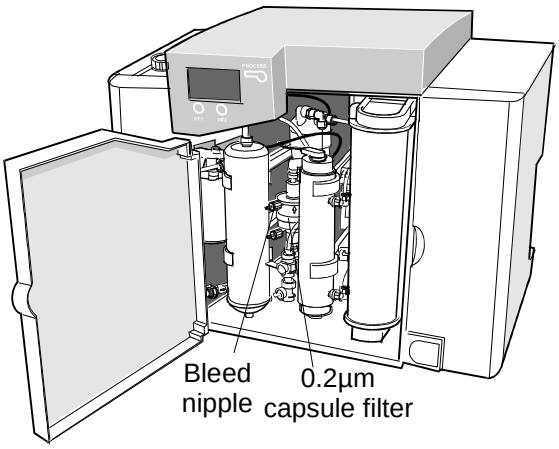
- The flow to the analyzer is insufficient indicating the 0.2µm capsule filter is fouled.
- If the system is being re-commissioned after an extended period in which it was not used.
- When indicated by the change reminder.
- Immediately before and after use of the emergency by-pass.

Step 1 - Switch Unit Off

1. SWITCH the ***MEDICA*** off at the power switch at the top left hand side of the unit.
2. RELIEVE any residual pressure from the system by waiting several minutes before proceeding and then slowly opening the bleed nipple on the capsule filter until water flow ceases, use an absorbent cloth to soak up the water and re-tighten the bleed nipple.

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

Step 2 - Remove 0.2µm Capsule Filter



Location of bleed nipple and capsule filter (LC125)

1. OPEN front door.
2. IDENTIFY the pre-treatment cartridge (LC140). This needs to be removed from its retaining clips to gain access to the 0.2µm capsule filter. It is not necessary to disconnect the tubing connected to the pre-treatment cartridge (LC140).
3. IDENTIFY the 0.2µm capsule filter (LC125).
4. REMOVE the filter from its retaining clips and pull forward.
5. REMOVE the clear inlet tubing from the bottom of the filter by pushing back the retaining collet on the push fit connector and withdrawing the tubing.
6. REMOVE the clear outlet tubing from the top of the filter.
7. REMOVE the filter and discard.

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

Step 3 - Replacing the 0.2µm Capsule Filter

1. UNPACK new cartridge and remove the two protective transit plugs sealing the inlet and outlet connections.
2. REFIT the inlet tubing into the bottom of the filter by pushing the tubing into the connectors until locked and held by the retaining collet.
3. REFIT the outlet tubing.
4. SECURE the new filter into its retaining clips ensuring the cartridge is the correct way up.
5. REFIT the pre-treatment cartridge into its retaining clips ensuring the cartridge is the correct way up.
6. RESET 0.2µm capsule filter replacement timer. *(See Section 5.4 – Setting up Display and Replacement Timer).*
7. Follow steps 14 - 23 of *Section 5.6 Initial Start up*.

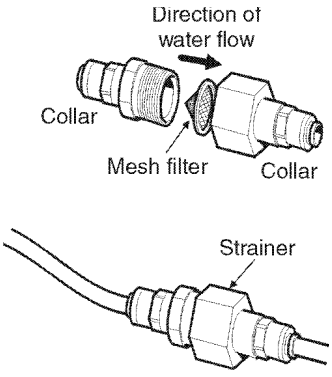
7.5 Cleaning the Inlet Strainer

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

Step 1 - Remove the Inlet Strainer

1. SWITCH OFF electrical supply.
2. OPEN front door.
3. ISOLATE inlet water supply.
4. REMOVE the pre-treatment cartridge from its clips and set aside to gain access to the inlet strainer.
5. DEPRESS collars on both sides of strainer and disconnect tubing.
6. REMOVE the inlet strainer from its position.

Step 2 - Dismantle the Inlet Strainer



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 facing the correct direction.
3. REPOSITION the pre-treatment cartridge into its support clips.
4. RE-ESTABLISH inlet water supply.
5. TURN on power.

7.6 Cleaning the Delivery Strainer

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

Step 1 - Remove Delivery Strainer

1. OPEN front door.
2. ISOLATE inlet water to the delivery strainer.
3. REMOVE the ion-exchange cartridge to gain access to the delivery strainer.
4. REMOVE the delivery strainer by depressing the collars on either side of the strainer and disconnect tubing.

Step 2 - Dismantle the Delivery Strainer

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

Step 3 - Reassemble the Delivery Strainer

1. INSERT mesh filter into strainer, ENSURE it is facing the correct direction.
2. SCREW up the delivery strainer.

Step 4 - Replace the Delivery Strainer

1. REPOSITION the delivery strainer.
2. REFIT tubes to delivery strainer, ENSURE it is facing the correct direction.
3. REPOSITION the ion-exchange cartridge into its support clips.
4. RE-ESTABLISH inlet water supply.
5. TURN on power.

7.7 Replacement of LC143 Reverse Osmosis Cartridge(s)

The reverse osmosis cartridge should be replaced if the permeate water purity or flowrate does not meet predicted or previous performance.

For information regarding the replacement of the LC143 reverse osmosis cartridge contact Customer Service.

8. SANITIZATION PROCEDURES

8.1 Liquid sanitization

The normal sanitization procedure for the ***MEDICA*** unit is to sanitize the Reverse Osmosis (RO) module and associated pipework (**8.1.1**). If required, the unit and docking vessel/reservoir may also be sanitized (**8.1.2**).

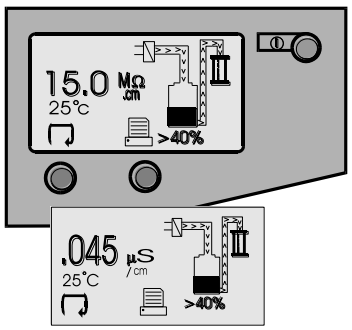
8.1.1 RO sanitization procedure

The RO is sanitized to reduce the growth of microbiological contamination within the RO module. The ***MEDICA*** has a built-in sanitization port, 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)



Process On and Alternate Screen

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

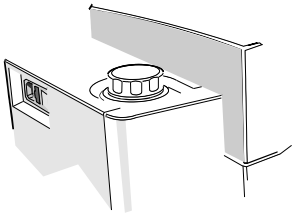
Refer to the Minncare label for additional information and follow all applicable directions for use on the manufacturer's label in conjunction with the following instructions.

Step 1 - Start RO Sanitization Cycle

1. ENSURE that the reservoir level indication on the graphics display is showing >40%. If display shows >70% or 100% dispense water until display changes to >40%.
2. PRESS the PROCESS button to stop the process.
3. TURN OFF the electrical power supply.
4. APPLY a suitable warning label such as "DO NOT USE / CONTAINS STERILANT".
5. RELIEVE residual pressure in the system by waiting several minutes before proceeding.

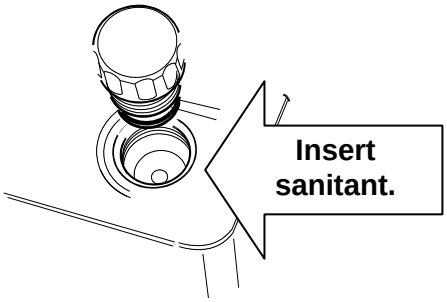
6. DISCONNECT permeate outlet tube from the ***MEDICA*** at reservoir inlet and re-direct to a large container (>5litres) – refer to Process flow diagram on p5.
7. RE-DIRECT the drain pipe to the same large container.

Step 2 – Pour sterilant into Sanitization Port



1. UNSCREW cap on sanitization port.
2. MEASURE out 20ml of Minncare Cold Sterilant and SLOWLY POUR into the sanitization port.

   Note: It is recommended that you add the chemical in 10ml steps. If the chemical level rises too high in the sanitization port, refit the cap and then remove it. This will allow room for the remaining 10ml.
3. REFIT cap on sanitization port.



Sanitization Port

Step 3 - To Start the Sanitization Process

1. RESTORE the power.
2. PRESS the PROCESS button to start the sanitization process.
3. ALLOW the unit to operate for 20 secs and collect the combined flows into the large container.
4. PRESS the PROCESS button to stop the sanitization process.
5. TURN electrical supply off.

Step 4 – Contact Time

1. ALLOW the unit to stand for a minimum of 36minutes, a maximum of 60 minutes.

Step 5 – Post Sanitization Rinse

1. RECONNECT the drain tube to a suitable drain.
2. DIRECT the permeate outlet tube to drain.
3. RESTORE the power.
4. PRESS the PROCESS button and leave the system to rinse for 20 minutes.
5. CHECK the permeate outlet flow for residual Minncare to ensure that it has been rinsed to less than 1ppm concentration. If the test is positive continue to rinse until a negative result is obtained.
6. PRESS the PROCESS button to stop the rinse.
7. TURN electrical supply off

Step 6 - Return to Normal Operation

1. RECONNECT the permeate outlet tube to the reservoir inlet.
2. RESTORE the power
3. REMOVE the “DO NOT USE / CONTAINS STERILANT” label.

4. PRESS the process button. The unit is now in normal operation.

8.1.2 Sanitization Procedure for the delivery system, docking vessel/reservoir

The delivery system and docking vessel/reservoir may be sanitized to destroy bacteria within the pipework and filters of the unit. This sanitization of the system 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.

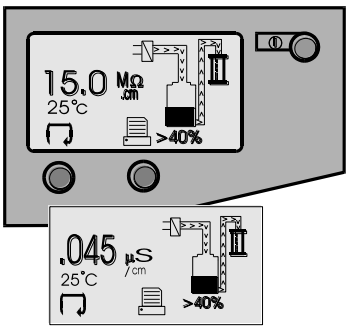
It is recommended that only ELGA LabWater service personnel or other fully trained staff should perform the sanitization procedure for the docking vessel/reservoir.

8.2 Tablet sanitization.

The normal sanitization procedure for the ***MEDICA*** unit is to sanitize the Reverse Osmosis (RO) module and associated pipework (**8.2.1**). If required, the unit and docking vessel/reservoir may also be sanitized (**8.2.2**).

8.2.1 RO sanitization procedure

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



Process On and Alternate Screen

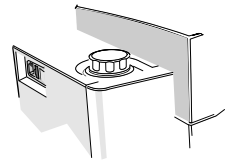
The sanitization frequency required is dependent on the feedwater, local environment, usage patterns and application. As a general rule, ELGA LabWater recommends sanitization at monthly intervals. However, the period between sanitizations could be extended in particular circumstances. For example, microbial 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.

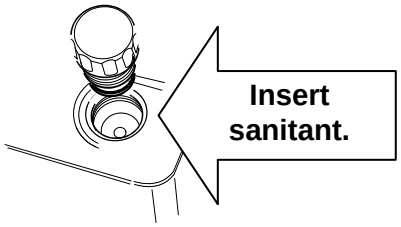
Step 1 - Start RO Sanitization Cycle

1. ENSURE that the reservoir level indication on the graphics display is showing >40%. If display shows >70% or 100% dispense water until display changes to >40%.
2. PRESS the PROCESS button to stop the process.
3. TURN OFF the electrical power supply.
4. RELIEVE residual pressure in the system by waiting several minutes before proceeding and then slowly opening the bleed nipple on the capsule filter until water flow ceases. Use an absorbent cloth to soak up the water and re-tighten the bleed nipple.
5. DISCONNECT outlet tube from ***MEDICA*** at reservoir inlet and re-direct to a suitable drain.

Step 2 - Insert a EfferSan™ tablet into Sanitization Port

1. UNSCREW cap on sanitization port.
2. INSERT an EfferSan™ tablet.
3. REFIT cap on sanitization port, hand tight





Sanitization Port

Step 3 - To Start the Sanitization Process

1. RESTORE the power.
2. PRESS the PROCESS button to start the sanitization process.
3. ALLOW the sanitization cycle to continue for 20 minutes.
4. PRESS the PROCESS button to stop the sanitization process.
5. TURN electrical supply off.

Step 4 - Return to Normal Operation

1. RECONNECT the outlet tube to the reservoir inlet.
2. Follow steps 15 - 23 of Section 5.6 'Initial Start up'.

8.2.2 Sanitization Procedure for the unit and docking vessel/reservoir

The unit and docking vessel/reservoir may be sanitized to destroy bacteria within the pipework and filters of the unit. This sanitization of the system 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 unit and docking vessel/reservoir.

9. EMERGENCY BY-PASS LOOP

The ***MEDICA*** 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 reduced and it is recommended that the ion-exchange pack be replaced before and after use of the emergency by-pass.

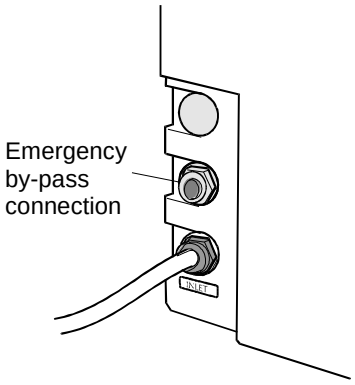
It is also recommended that the 0.2µm filter be replaced after the emergency by-pass has been used.

Step 1 - Repair

1. CONTACT your local distributor or service department to arrange repair of your ***MEDICA.***
2. CHECK that you have sufficient stock of consumables to continue the production of purified water. *(See step 4 for cartridge life calculation).*

Step 2 - Commissioning the Emergency By-pass

1. ENSURE the electrical power supply is switched off.
2. ENSURE the inlet water supply is isolated.
3. WAIT several minutes to allow the residual pressure in the inlet water supply to fall.
4. DISCONNECT the inlet tube and connect to the emergency by-pass connection.
5. RELIEVE any residual pressure in the rest of the system by slowly opening the bleed nipple on the capsule filter until water flow ceases. Use an absorbent cloth to soak up the water and re-tighten the bleed nipple.
6. REPLACE ion-exchange cartridge pack (LC141). *(See Section 7.2).*
7. DISCONNECT the analyzer feed tube from the analyzer and re-direct to a suitable drain.



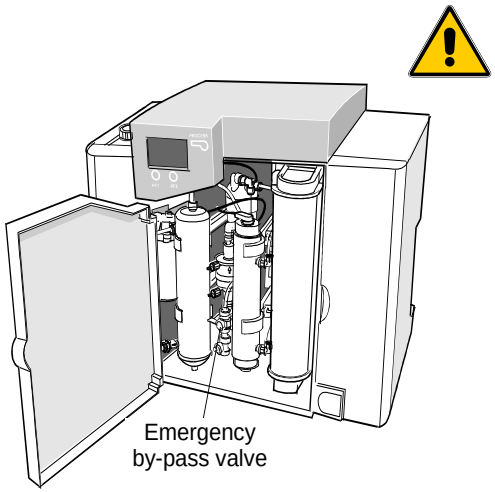
Emergency by-pass location

Step 3 - Re-establishing Supply

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

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

2. OPEN the front door and locate the emergency by-pass valve installed on the feed to the UV housing.
3. OPEN the valve.
4. ALLOW water to flow to drain for 2 minutes.
5. CLOSE the emergency by-pass valve.
6. RE-CONNECT the feed to the analyzer.
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.



Emergency by-pass valve

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.

$$\text{Time between pack changes} = \frac{55{,}000}{(\text{Conductivity of mains water}) \times (\text{Water consumption of analyzer l/hr})}$$

Example

Mains water conductivity = 605µS/cm

Water consumption of analyzer = 20 l/hr

$$\text{Time between pack changes} = \frac{55{,}000}{605 \times 20}$$

$$\text{Time between pack changes} = 4.5 \text{ hrs}$$

In the absence of information on mains water conductivity assume a pack life of 2 hrs if the analyzer consumes 20 l/hr.

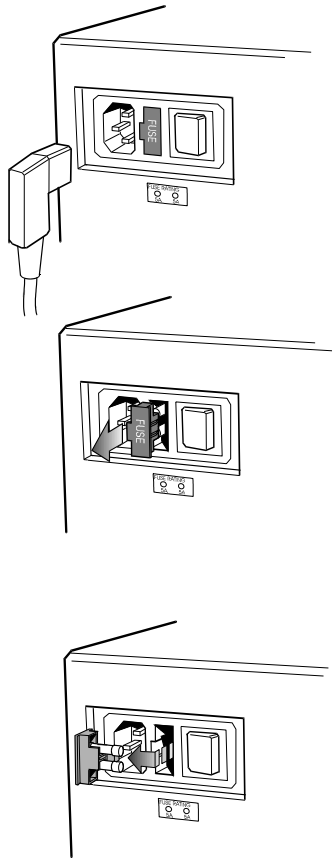
If flow starts to decline this may be solved by changing the 0.2µm filter.

Step 5 - Return to Normal Operation

1. ONCE the unit has been repaired the unit must be returned to normal operation.
2. RE-CONNECT the mains supply to the inlet of the ***MEDICA*** and re-adjust supply pressure.
3. ENSURE the emergency by-pass valve is closed inside the ***MEDICA***.
4. CHANGE Ion-exchange cartridge pack and 0.2µm filter. *(See Section 7.2 and Section 7.4).*
5. PERFORM 'Initial Start up' routine. *(See Section 5.6).*

10. TROUBLE SHOOTING

This section highlights the problems that could occur with the ***MEDICA*** unit and how to rectify them. The unit will normally sound an alarm and the respective icons will flash. The alarm sound can be silenced by pressing the mute button. If the unit cannot be repaired using this manual please call either your supplier or the local distributor. *(See Section 14 - 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 that process mimic 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 7.2 - Replacing the LC141 Ion-exchange cartridge).*
Pre-treatment cartridge replacement alarm	Replace pre-treatment cartridge. *(See Section 7.1 - Replacing the LC140 pre-treatment cartridge).*
0.2µm capsule filter replacement alarm	Replace 0.2µm capsule filter. *(See Section 7.4 - Replacing the LC125 0.2µm capsule filter).*
Water purity alarm	Check alarm set value is correct. *(See Section 5.4, Step 5 - Purity Alarm Setting).* Allow unit to recirculate. If alarm persists replace Ion-exchange cartridge. *(See Section 7.2 - Replacing the LC141 Ion-exchange cartridge pack).* If problem persists beyond that expected from normal operating conditions, then contact your local distributor.
Reservoir level disconnect fault alarm	Check that the level controls are correct. *(See Section 5.3 - Step 3 - Connect High/Low Level Switch to Reservoir).* If problem persists then contact your local distributor.
Output flow below specification	Check supply pressure. *(See Section 5.2 - Positioning the **MEDICA**).* Check RO flow-rate for the unit against the graphs shown in Section 3.3, which details treated water output vs temperature and feedwater pressure. Check the inlet strainer / delivery strainer are clean *(See Section 7.5/7.6 - Cleaning Inlet Strainer/Cleaning delivery Strainer).* Contact service technician to fit or replace optional booster pump. 0.2µm filter fouled, replace filter. *(See Section 7.4 - Replacing the LC125 0.2µm capsule filter).*
UV replacement alarm	Replace UV Lamp. *(See Section 7.3 - Replacing the Ultraviolet Lamp).*
Unit noisy	Open front door and secure pipework to stop vibration.

11. CONSUMABLES AND ACCESSORIES

Consumable	Max. Service Life*	Max. Shelf Life
LC140 (Pre-treatment cartridge)	6 months	2 years
LC143 (Reverse Osmosis cartridge module)	Typical life 2-3 years	2 years
LC141 (Ion-exchange cartridge Pack)	6 months maximum	2 years
LC125 (0.2 µm capsule filter)	6 months	2 years
LC105 (UV lamp)	12 months	5 years
LC136MKII** (Composite Vent Filter)	6-months	2 years
LC123*** (Pre-treatment Filter)	6-months	2 years

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

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

*** *Required for optional pre-treatment filter housing (LA518).*

Accessory	Cat No
Installation kit	LA637
Installation kit (with saddle valve)	LA506
Pressure regulator valve (inlet)	LA512
Pre-treatment filter housing	LA518
Wall mounting kit (***MEDICA*** Unit)	LA610
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
Flow upgrade kit (7-15 liter per hour)	LA606
RS232 Printer kit	LA618
RS 232 Remote display kit	LA627
Docking Vessel - DV25	LA621
Pre-filter (if boost pump fitted)	LA582

12. KEY TO CONTROL PANEL

12.1 Icons

Icon	Description
	Mute Alarm
	Accept
	Scroll
	Auto Restart
	Manual Restart
	Set Up Menu
	Cursor Option Choice
	Cursor Selection Choice
	Cancel
	Reset
	Printer

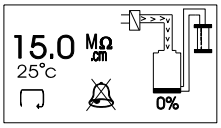
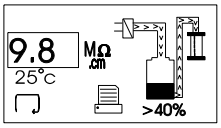
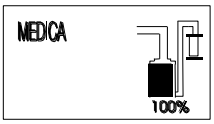
12.2 Alarm Conditions

Icon	Alarm Conditions
	Replace Ion-exchange Cartridge
	Replace UV Lamp
	Replace Pre-treatment Cartridge
	Replace 0.2µm capsule filter
	UV Fail (Cross Flashes)
	Reservoir Level – Disconnect Fault

12.3 Replacement Timers

Replacement Timer	Icon	Preset
Ion-exchange Cartridge		4380 hours (= 6 months)
UV Lamp		8760 hours (= 12 months)
Pre-treatment Cartridge		4380 hours (= 6 months)
Replace 0.2µm capsule filter		4380 hours (= 6 months)

12.4 Low Level, Quality and Standby Alarms

Screen	Description
	Low level alarm
	Process on and water purity alarm
	Standby position

13. 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.

NOTICE

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

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

14. USEFUL CONTACT DETAILS

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http://www.elgalabwater.com

or contact ELGA at the number above.