



***PURELAB Option-S 7/15***

**Operator Manual**



**Copyright Note**

The information contained in this document is the property of VWS (UK) Ltd. and is supplied without liability for errors or omissions.

No part of this document may be reproduced or used except as authorized by contract or other written permission from VWS (UK) Ltd. The copyright and all restrictions on reproduction and use apply to all media in which this information may be placed.

VWS (UK) Ltd. pursue a policy of continual product improvement and reserve the right to alter without notice the specification, design, price or conditions of supply of any product or service.

© VWS (UK) Ltd. 2007

All rights reserved.

Publication ref: MANU36812

Version 4 – 08/07

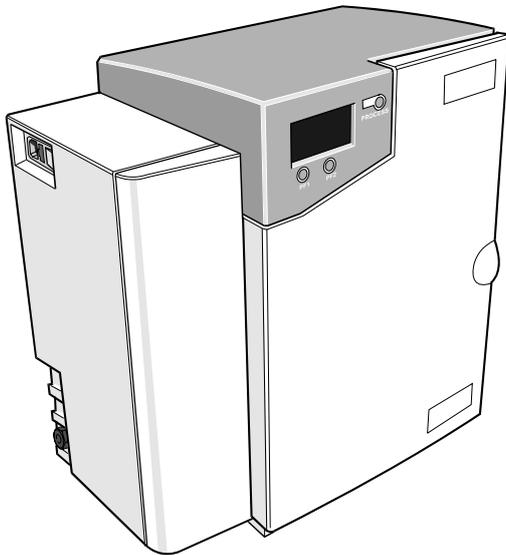
**ELGA LabWater is a trading name of VWS (UK) Ltd.**

**ELGA® and PURELAB® are registered trademarks.**

## TABLE OF CONTENTS

<b>1.</b>	<b>INTRODUCTION.....</b>	<b>1</b>
	1.1 Product Range .....	1
	1.2 Use of this Manual .....	1
	1.3 Customer Support.....	1
<b>2.</b>	<b>HEALTH AND SAFETY NOTES .....</b>	<b>2</b>
	2.1 Electricity.....	2
	2.2 Pressure.....	2
	2.3 Control of Substances Hazardous to Health (COSHH).....	2
<b>3.</b>	<b>PRODUCT AND PROCESS DESCRIPTION.....</b>	<b>3</b>
	3.1 Product Description.....	3
	3.2 Process Description .....	4
	3.3 Technical Specifications .....	6
<b>4.</b>	<b>CONTROLS .....</b>	<b>10</b>
<b>5.</b>	<b>INSTALLATION INSTRUCTIONS .....</b>	<b>11</b>
	5.1 Unpacking the <i>PURELAB Option-S</i> .....	11
	5.2 Positioning the <i>PURELAB Option-S</i> .....	11
	5.3 Connecting up the <i>PURELAB Option-S</i> .....	13
	5.4 Initial Controller Set-Up.....	15
	5.5 Initial Start Up .....	18
<b>6.</b>	<b>OPERATION.....</b>	<b>19</b>
	6.1 Alarm Conditions.....	19
<b>7.</b>	<b>MAINTENANCE.....</b>	<b>20</b>
	7.1 Replacing the LC140 Pre-treatment Cartridge....	21
	7.2 Replacing the LC141 Ion-exchange Cartridge Pack .....	22
	7.3 Cleaning the Inlet Strainer .....	23
	7.4 Replacement of LC143 Reverse Osmosis Cartridge(s).....	23
<b>8.</b>	<b>TROUBLE SHOOTING.....</b>	<b>24</b>
<b>9.</b>	<b>CONSUMABLES AND ACCESSORIES .....</b>	<b>25</b>
<b>10.</b>	<b>KEY TO CONTROL PANEL .....</b>	<b>26</b>
	10.1 Icons .....	26
	10.2 Alarm Conditions.....	26
	10.3 Replacement Timers.....	26
	10.4 Quality and Standby Alarms .....	27
<b>11.</b>	<b>WARRANTY/CONDITIONS OF SALE .....</b>	<b>28</b>
<b>12.</b>	<b>USEFUL CONTACT DETAILS.....</b>	<b>30</b>

# 1. INTRODUCTION



**PURELAB Option-S**

## 1.1 Product Range

This Operator Manual has been prepared for the **PURELAB Option-S** product models:

**PURELAB Option-S7**

**PURELAB Option-S7 BP (with boost pump)**

**PURELAB Option-S15**

**PURELAB Option-S15 BP (with boost pump)**

## 1.2 Use of this Manual

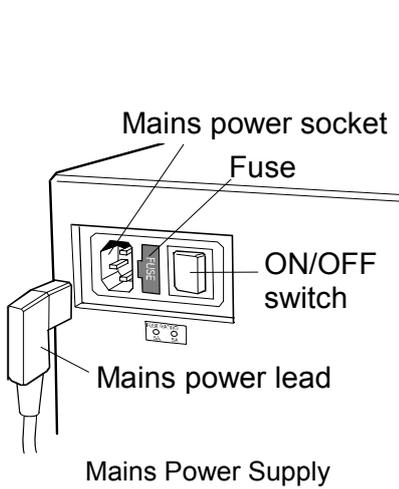
This manual contains full details on installation, commissioning and operation of the **PURELAB Option-S** unit. If this unit is used contrary to the instructions in this handbook, then the safety of the user may be compromised.

## 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

**PURELAB Option-S** 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.**

### 2.1 Electricity

It is essential that the electrical supply to the **PURELAB Option-S** 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.

### 2.3 Control of Substances Hazardous to Health (COSHH)

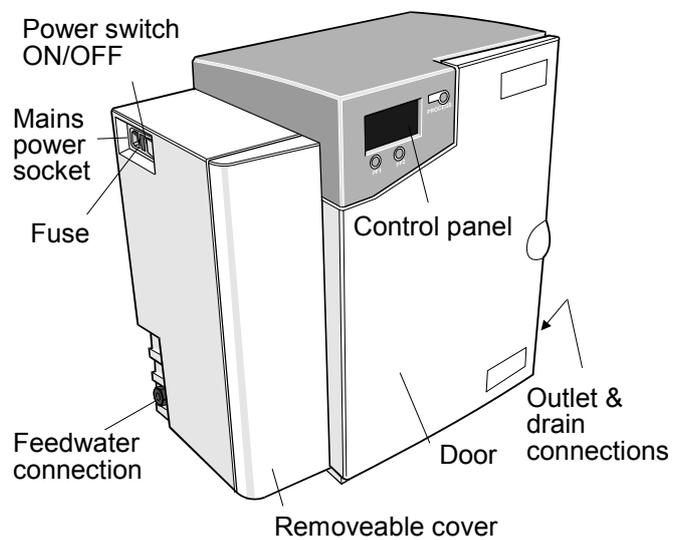
Material safety data sheets covering the various replaceable cartridges are available upon request. Contact your local supplier or distributor.

## 3. PRODUCT AND PROCESS DESCRIPTION

### 3.1 Product Description

The **PURELAB Option-S** water purification unit has been specifically designed to provide a supply of **purified water** equivalent in quality to water prepared by single-distillation, but without the high energy cost associated with distillation.

The **PURELAB Option-S** can be bench or wall mounted with an optional wall mounting kit. A range of accessories is available to complement the unit. (See Section 9 - Consumables and Accessories, for details).



**PURELAB Option-S**

### 3.2 Process Description

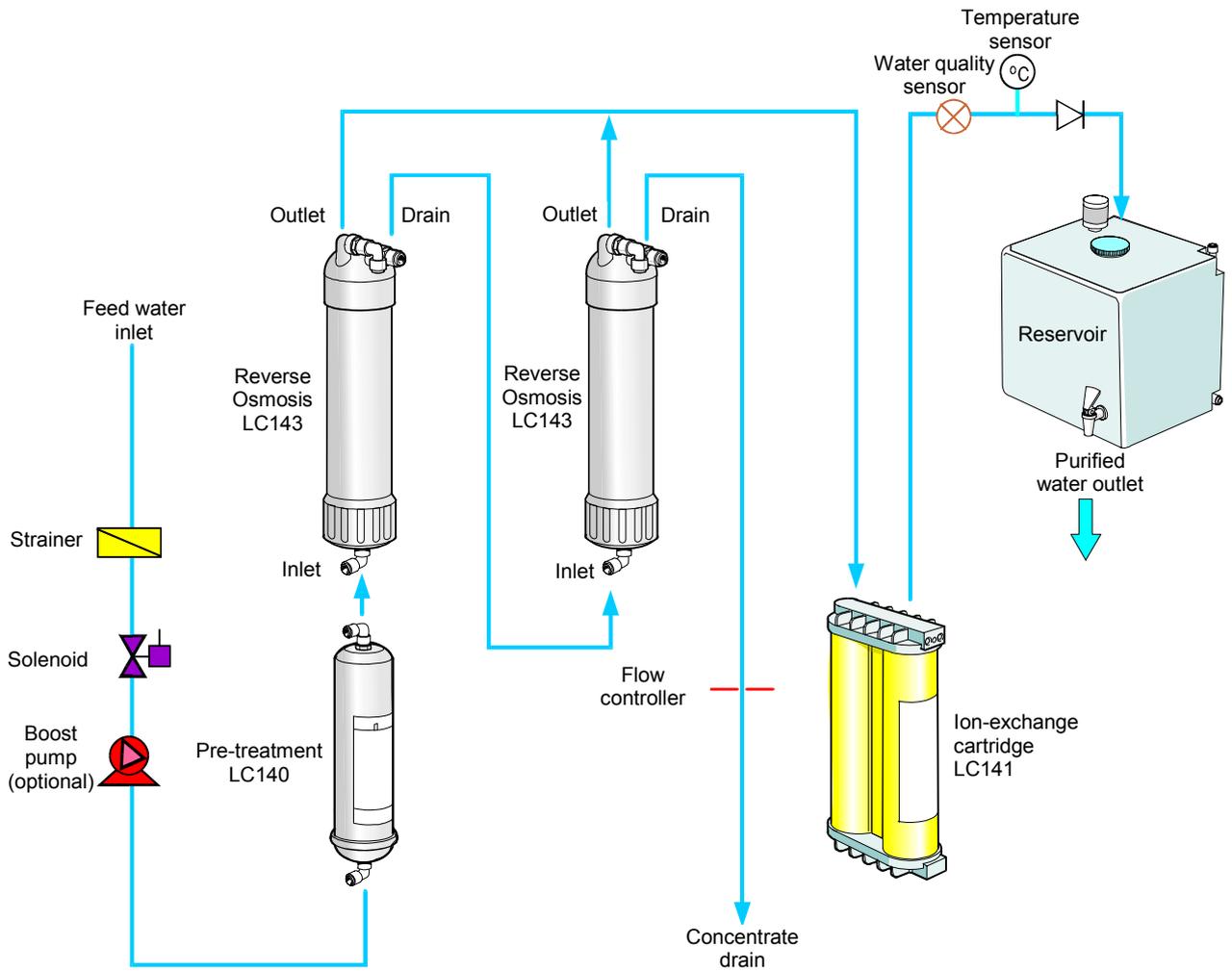
The **PURELAB Option-S** process links three purification technologies, reverse osmosis, adsorption and de-ionization and also incorporates an optional RO feed water boost pump.

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 collected in a treated water reservoir.

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

The water is processed and treated by the **PURELAB Option-S** 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 feedwater.
- The permeate 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 then passes through the ion-exchange cartridge which removes dissolved ionic impurities from the permeate 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.



Process Flow - PURELAB Option-S

### 3.3 Technical Specifications

The Technical Specifications for the **PURELAB Option-S** are as follows:

Feedwater		
	<b>PURELAB Option-S 7</b>	<b>PURELAB Option-S 15</b>
<b>Feedwater</b>		
Source Quality	Potable mains water supply	Potable mains water supply
Fouling Index-maximum	10	10
Total Dissolved Solids-maximum	1400µS/cm 1400	µS/cm
Free Chlorine-maximum	0.5ppm	0.5ppm
Heavy Metals - maximum	0.05ppm	0.05ppm
Silica- maximum	30ppm	30ppm
<b>Temperature</b>	1 - 35°C	1 - 35°C
<b>Flowrate</b> (Maximum requirement)	78 l/hr	85 l/hr
Drain Requirements (gravity fall with air gap). Maximum during Service	70 l/hr	70 l/hr
<b>Feedwater Pressure</b>		
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

Dimensions		
Height	460mm (18.1")	460mm (18.1")
Width	410mm (16.1")	410mm (16.1")
Depth	270mm (10.6")	270mm (10.6")
<b>Weight</b>		
With internal boost pump	16kg (35lb)	16.5kg (36lb)
Without internal boost pump	13.5kg (30lb)	14.5kg (32lb)

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
Reservoir 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	43VA
Power consumption without boost pump	19VA
Fuses	2 x T3.15 Amp
Reservoir level connection	Jack Plug 3.5mm
Noise level	<45 dBA

User Interface 使用者操作介面		
Display	Continuous graphical and numerical reservoir level display Graphical flow schematic on screen with mimic display Intuitive icons	
Adjustable settings	<b>Auto restart after power failure</b>	Selectable
Audible	alarm 停電復電後系統會自動重新啟動。 Water purity units Water purity	Selectable MicroSiemens/cm or MegaOhms.cm Alarm Setpoints
Indicators De-ionized	water quality	Temperature compensated resistivity/ conductivity
Temperature		Degrees centigrade
Reservoir	Pre-treatment cartridge Ion-exchange cartridge	% Full Maximum remaining life indicator Maximum remaining life indicator
<u>Alarms-Audiovisual</u> 聲音警示	Purified water purity Reservoir Pre-treatment cartridge Ion-exchange cartridge	Outside set point alarm <b>Low level</b> 低水位保護裝置 Change reminder Change reminder
Outputs	RS232 Printer connection RS232 Remote display connection Volt free contact-internal	

Safety Features 安全規範	
Power fail safe	
<u>Boost pump protection from low pressure</u>	水壓過低啟動幫浦保護, 以防空轉
Low operating voltage 24V	
Audio visual alarms	
<u>Water leaking detector (optional)</u>	漏水偵測(選配), 偵測到漏水自動停機。

<b>Special Features</b>
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

<b>Technologies</b>	
Purification Methods	Adsorption Reverse osmosis Ion-exchange

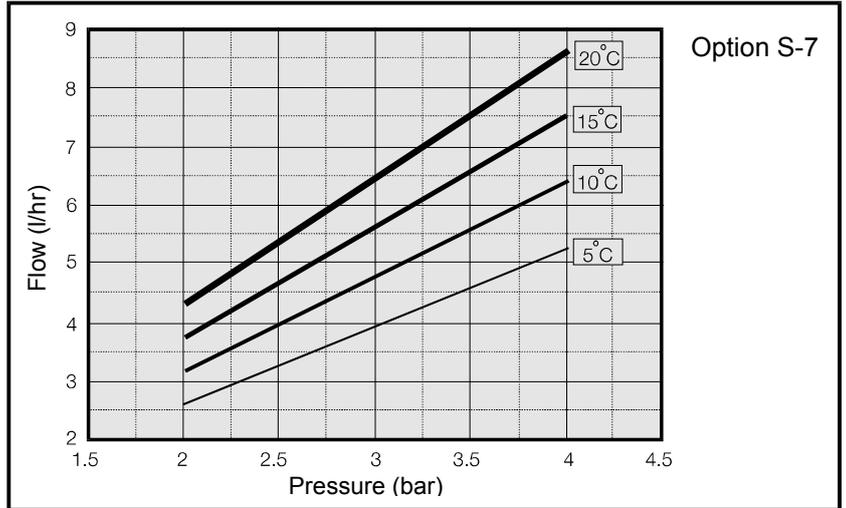
<b>Purified Water Specification</b>		
	<b>PURELAB Option-S7</b>	<b>PURELAB Option-S15</b>
*Make Up Rate	7.5 l/hr	15 l/hr
*Daily Output (nominal max)	180 l/24 hour day	360 l/24 hour day
**Output reverse pressure (max)	0.1 bar (1 psi)	0.1 bar (1 psi)
<b>Purity:</b>		
Inorganic-Typical	1 to >10MΩ.cm @ 25°C	
Total Organic Carbon (TOC)	<30ppb	
pH Effectively	neutral	

\* 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.

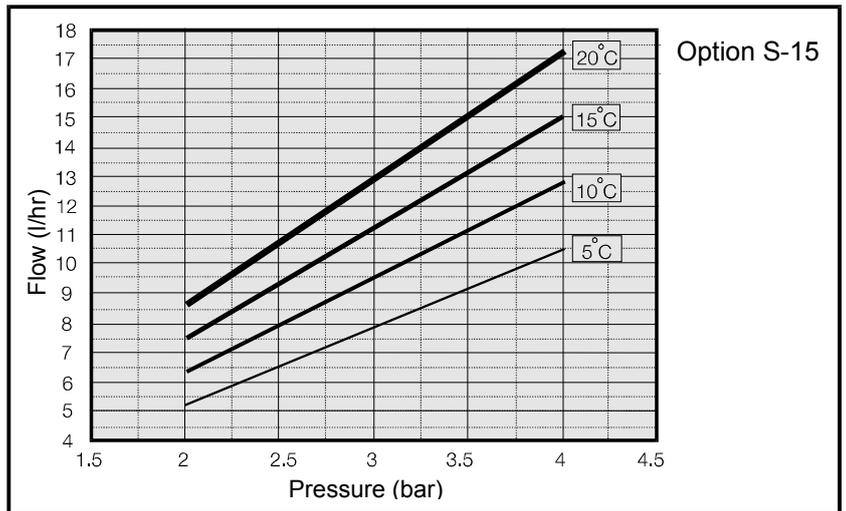
\*\* Purification unit and reservoirs should be at same level.

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

**PURELAB Option-S Reverse Osmosis Capacity Charts**



*Graph 1 - Nominal Flowrate vs Inlet Pressure for  
**PURELAB Option-S7***

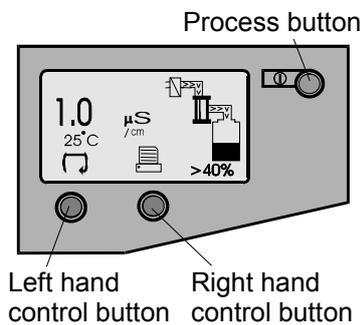


*Graph 2 - Nominal Flowrate vs Inlet Pressure for  
**PURELAB Option-S15***

## 4. CONTROLS

The **PURELAB Option-S** 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 Panel

Control Button	Function
PROCESS	Turns the process ON/OFF.

The **PURELAB Option-S** 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 PURELAB Option-S

The following items should be supplied with your **PURELAB Option-S**:

1. **PURELAB Option-S** unit
2. Cartridge Pack LC141
3. Installation kit (LA513 or LA506)
4. Operator Manual
5. Mains Lead

### 5.2 Positioning the PURELAB Option-S

Before commencing with installation and operation of the **PURELAB Option-S** 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.

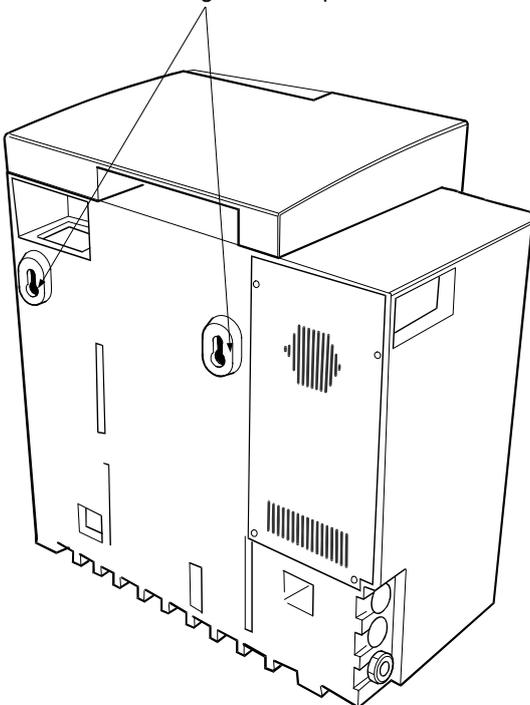
*Note:* Refer to specifications for unit weights.

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.

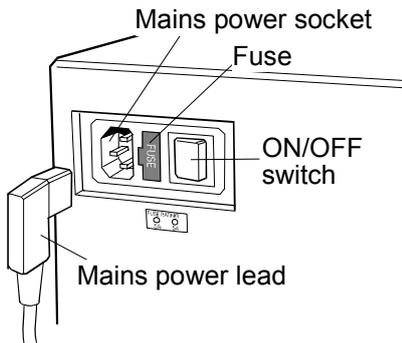
Rear mounting locations points



Unit Rear Mounting Points

**Electrical**

The unit 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.



Electrical Connections

**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.

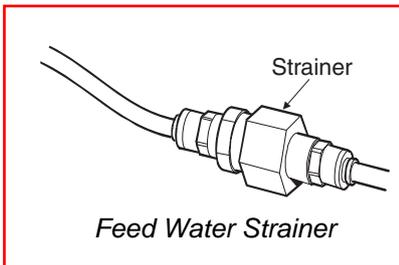
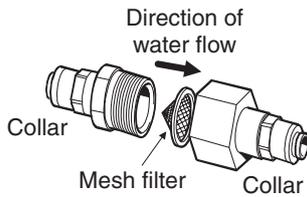
**Feed Water**

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.

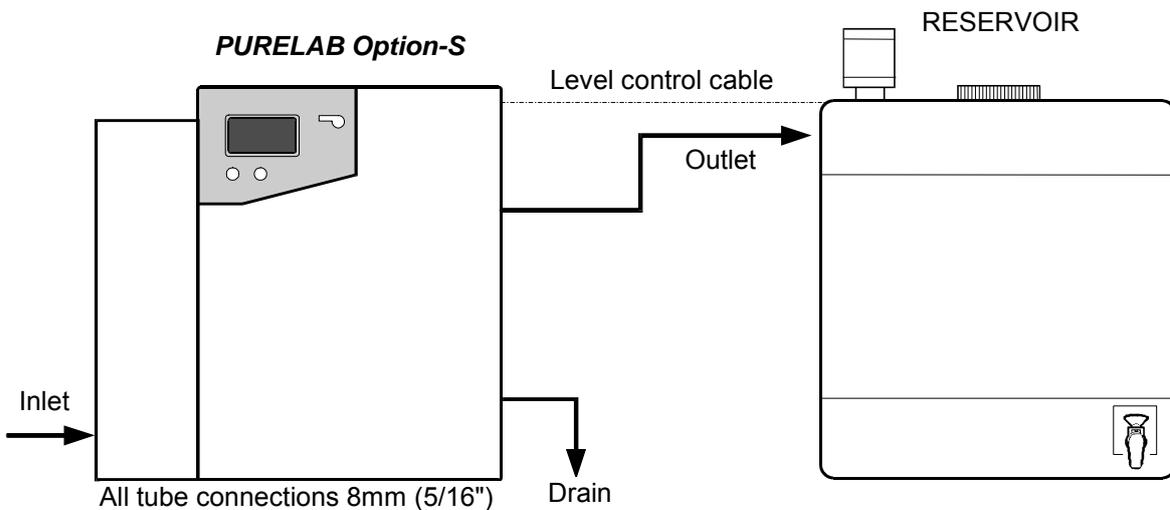
**CAUTION!** Operating with feedwater temperatures outside the range 1 to 35°C will cause damage to the PURELAB Option-S unit.

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

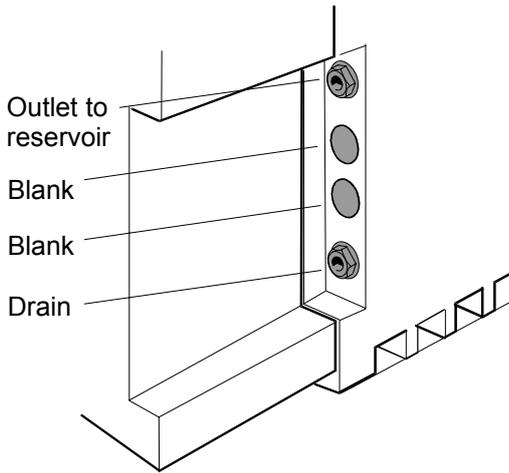
Reservoir feeds to the PURELAB Option-S unit should be positioned at the same height, or above the unit, to provide a positive flooded inlet pressure.



Option-S進水濾網保護，以防細微顆粒膠體堵塞電導度計



PURELAB Option-S unit installed with storage reservoir



Outlet and Drain Connections

### 5.3 Connecting up the PURELAB Option-S

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

- Mains water inlet tube
- Drain
- Outlet to reservoir

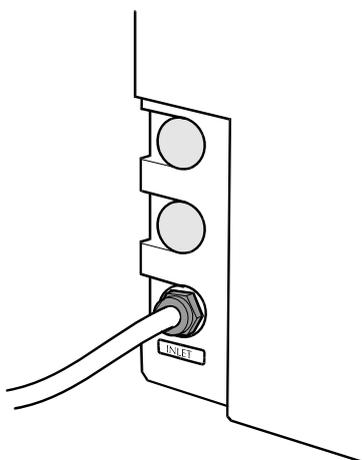
#### Step 1 - Fitting Tubes

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

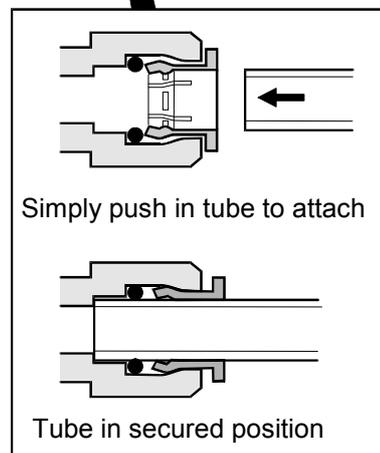
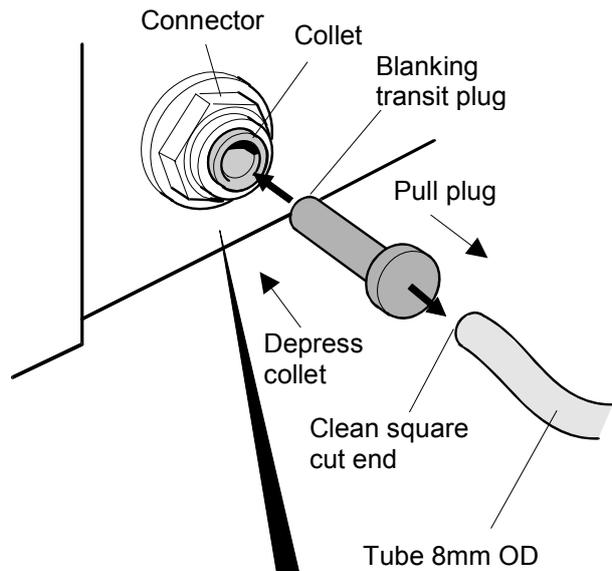
**CAUTION!** Do not restrict drain line.



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



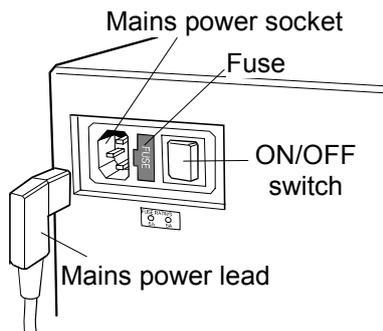
Feed Water Inlet Connection



Fitting Tubes

**Step 2 - Connect Electrical Supply**

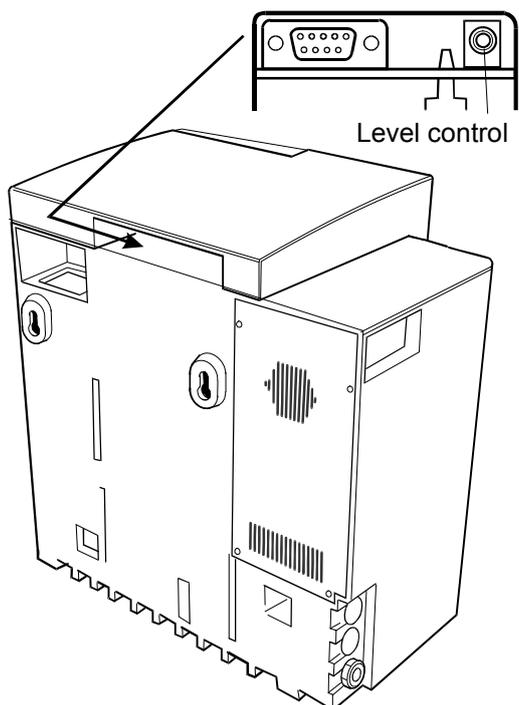
1. PLUG mains lead into the socket on the left hand side of the **PURELAB Option-S** unit.
2. PLUG mains lead into mains socket.



*Electrical Connections*

**Step 3 - Connect High/Low Level Switch to Reservoir**

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



*Reservoir Level Connections*

### 5.4 Initial Controller Set-Up

The **PURELAB Option-S** 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 **PURELAB Option-S** unit is started for the first time after installation the following steps should be carried out to set up system preferences:

#### 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.*

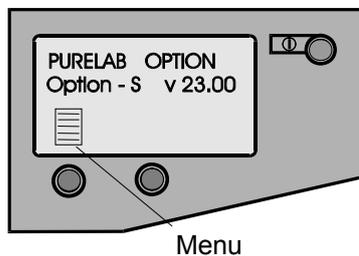
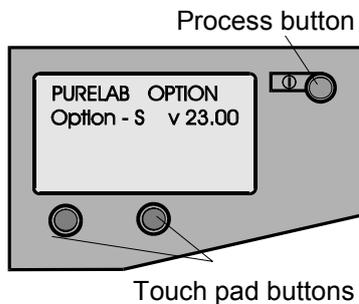
PRESS the MENU button to go to the next screen to activate the set-up menu sequence.

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:

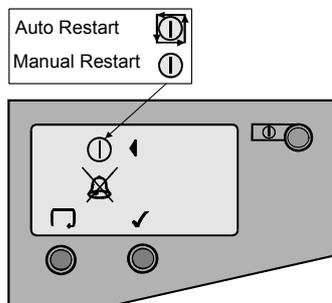
- A “scroll” icon indicated by an arrow ↩
- An “accept” button indicated by a tick ✓
- A “selection” icon indicated by a ◀

#### Step 2 - Auto / Manual Restart

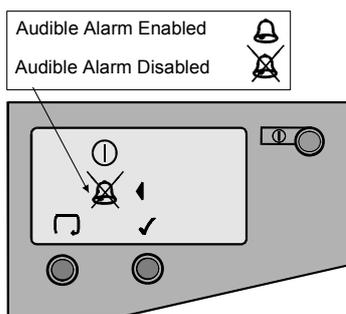
This allows the selection of the AUTO/MANUAL restart option. If auto restart is selected the unit will automatically restart after a power failure. In manual mode the unit will remain in standby. Select the option required using the ↩ button and accept with the ✓ button.



Start Up Screens



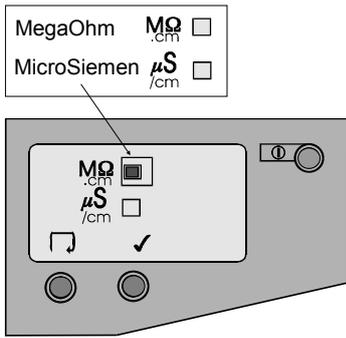
Auto/Manual Restart



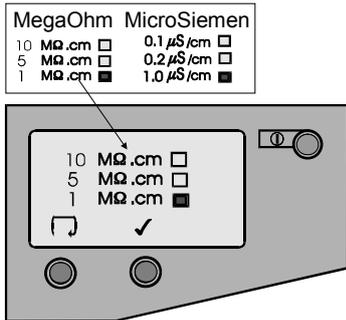
Audible Alarm Enable/Disable

#### 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



Purity Alarm Setting

### Step 4 - Water Purity Unit Setting

This screen enables the 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 .

### Step 5 - 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 alarm 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 alarm 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

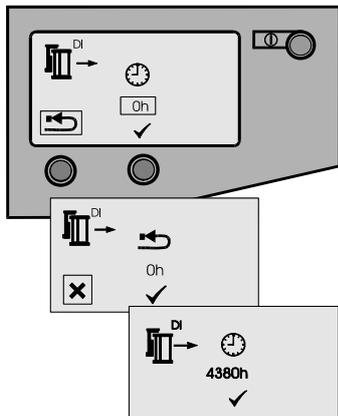
Select the alarm setting required using the button and accept with the .

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

### 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 clock graphics are displayed with hourly timer status.



*Ion-exchange Cartridge Timer*



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

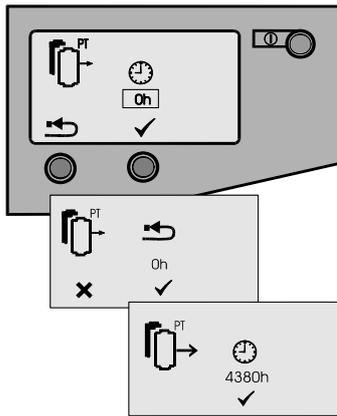
### Step 1 - Ion-exchange Cartridge Replacement Timer

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

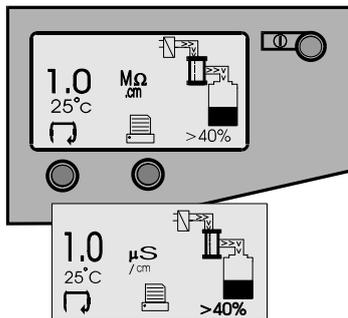
Press to jump to the next consumable or to initiate reset.

Press to reset timer or press to abort reset.

Press to jump to the next consumable.



Pre-treatment Cartridge Timer



Process On and Alternate Screen

**Step 2 - 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.

**Step 3 - Accessing the Process On Display Screens**

The normal process screen will display newly installed SETUP 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:

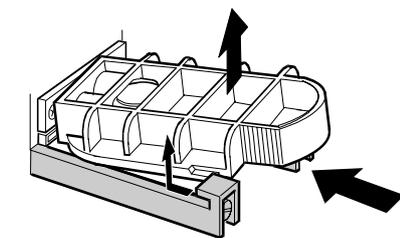
- Ion-exchange cartridge replacement timer (hours remaining).
- Pre-treatment cartridge replacement (hours remaining).

**Step 4 - Report Printing (Only if connected to LA618)**

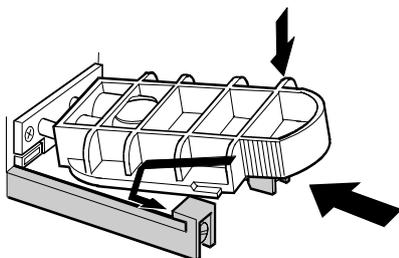
To print a report press the 🖨 icon.

## 5.5 Initial Start Up

1. THE **PURELAB Option-S** should be installed correctly as described in Section 5.
2. TURN on the feedwater supply to the unit and adjust the inlet pressure. The **PURELAB Option-S** 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 water-tight and that there are no leaks.
4. THE **PURELAB Option-S** units are supplied containing traces of bacteriostatic solution which have to be rinsed out from the pipework and fittings. The solution is rinsed through both the 'DRAIN' and 'OUTLET' tubes, which therefore initially both need to be directed to a drain or sink.
5. DISCONNECT the outlet tube 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.
7. ENSURE the cartridge by-pass block is left in place until the unit has been rinsed free of bacteriostatic solution.
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 2 hours to drain. During this period, the bacteriostatic solution will be rinsed from the unit. 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. PRESS the PROCESS button and the water purification process will begin, gradually filling the reservoir with purified water.

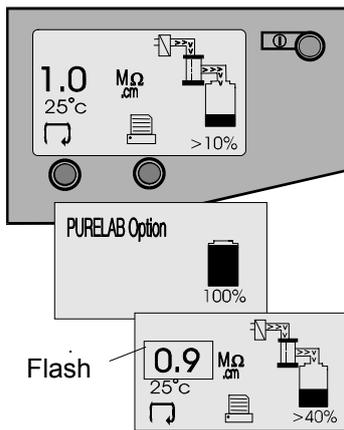


Removing

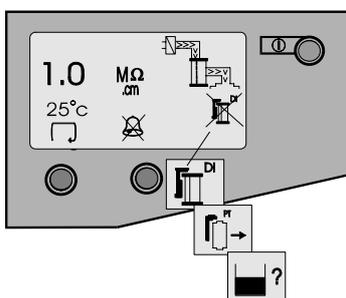


Inserting

Removing & Inserting  
By-pass Block



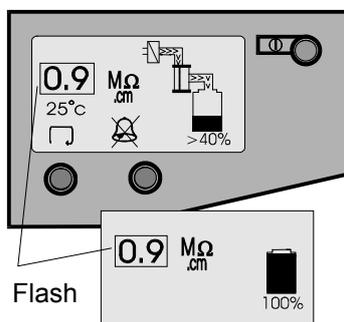
Normal Process Screens



Alarm Conditions



Reservoir Level Disconnect Fault



Water Purity Alarm / Standby

## 6. OPERATION

The **PURELAB Option-S** will run automatically and will signal alarm conditions to ensure prompt efficient system management and corrective action.

*Note: To ensure that water purity remains at a high level it is important to leave the unit in process mode.*

### 6.1 Alarm Conditions

Alarms will signal at the following conditions:

#### Replace Ion-exchange Cartridge

The Ion-exchange cartridge replacement alarm is signalled by an audible alarm and flashing icon at the default setting of 4380 hours (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 Pre-treatment Cartridge

The pre-treatment cartridge replacement alarm is signalled by an audible alarm and flashing icon at the default setting of 4380 hours (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).

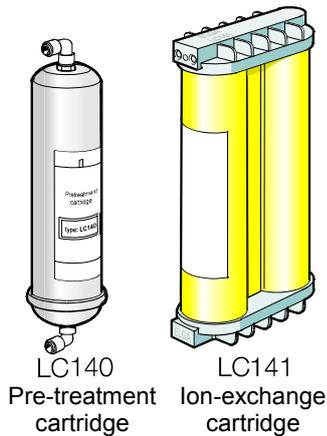
#### Reservoir Level Disconnect Fault Alarm

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 and press the process key to clear the 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.

## 7. MAINTENANCE



LC140 Pre-treatment cartridge  
LC141 Ion-exchange cartridge

### **PURELAB Option-S** 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 two types of unique replacement consumables designed for use in the **PURELAB Option-S** units and these are illustrated with the following part numbers:

- LC140 Pre-treatment cartridge
- LC141 Ion-exchange cartridge

All consumables are accessible after opening the front door cover.

To protect the inlet solenoid valve, RO boost pump (when fitted) and re-circulation pump from 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 **PURELAB OPTION-S** 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\*\*
- 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.

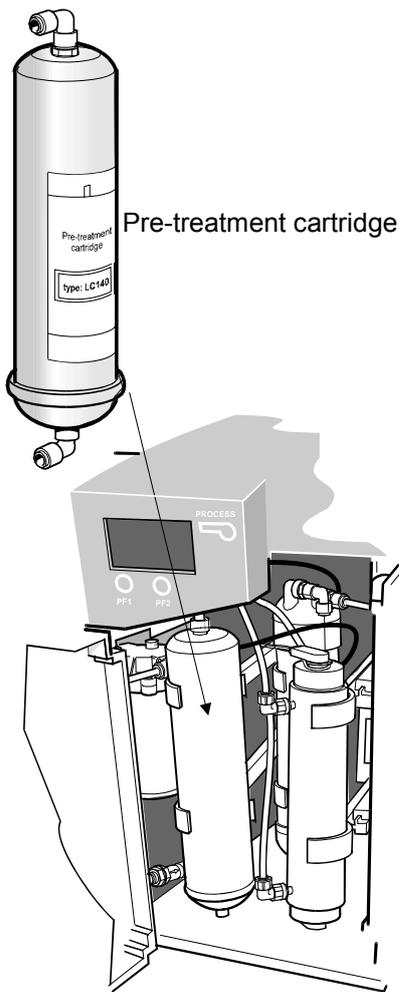
\*\* Standard conditions are 4 bar (60 psi) inlet pressure at 15°C, potable water with clean pre-filter.



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

## 7.1 Replacing the LC140 Pre-treatment Cartridge

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



Location of Pre-treatment Cartridge

### Step 1 - Switch Unit Off

1. SWITCH the **PURELAB Option-S** off at the power switch at the top left hand side of the unit.
2. ENSURE pressure has dissipated from the unit by waiting a few minutes after switching off.

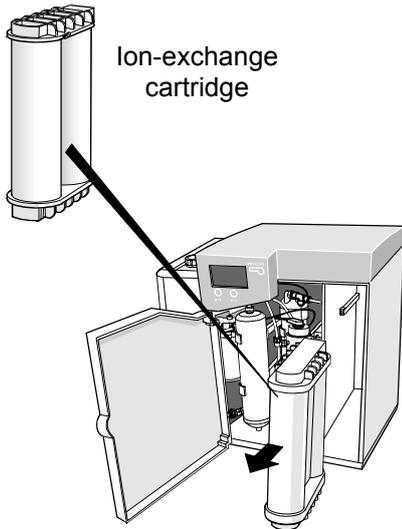
### Step 2 - Remove Pre-treatment Cartridge

1. OPEN front door.
2. IDENTIFY the pre-treatment cartridge (LC140).
3. REMOVE the reducing fitting from 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.

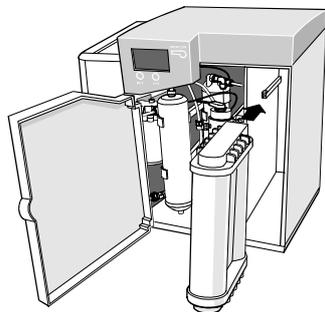
*Note: The consumable is non-hazardous. Dispose of as ordinary waste, observing all local and national regulations.*

### 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 at the top of the cartridge.
5. RESET pre-treatment cartridge timer. (See Section 5.4 - Setting Up Display and Replacement Timers).
6. PRESS the PROCESS button to start the unit.
7. CHECK the unit for leaks and close front door.



Ion-exchange cartridge



Removal and Fitting of Ion-exchange Cartridge



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

## 7.2 Replacing the LC141 Ion-exchange Cartridge Pack

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

- The water purity alarm indicates that the water quality has fallen below the preset value and that the pack probably requires changing.
- If the system is being re-commissioned or rinsed through after an extended period in which it was not used.
- When indicated by the change reminder.

### Step 1 - Switch Unit Off

1. SWITCH the **PURELAB Option-S** off at the power switch at the top left hand side of the unit.
2. WAIT several minutes after turning off the unit to ensure any residual pressure in the system has dissipated.

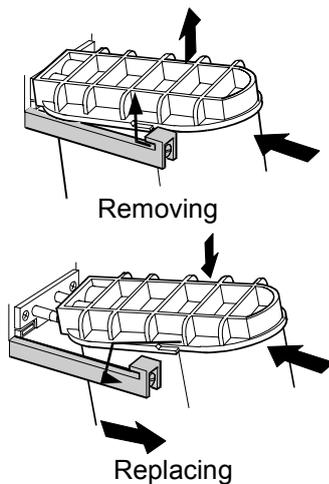
### Step 2 - Remove Ion-exchange Cartridge

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, PUSH into unit.
5. ENSURE guide has dropped down past retainer.
6. CLOSE front door.
7. RESET ion-exchange pack timer. (See section 5.4 - Setting Up Display and Replacement Timers).
8. PRESS the process button to start the unit.
9. Check the unit for leaks.



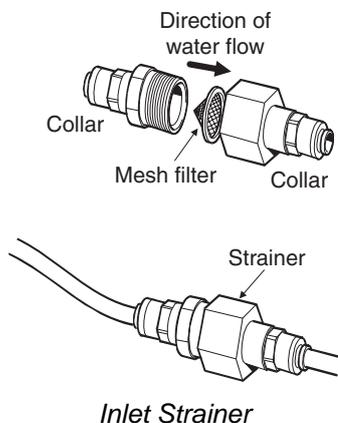
Ion-exchange Cartridge

### 7.3 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

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. SCREW 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.

### 7.4 Replacement of LC143 Reverse Osmosis Cartridge(s)

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

For information regarding the replacement of the LC143 Reverse Osmosis Cartridge contact Customer Service.

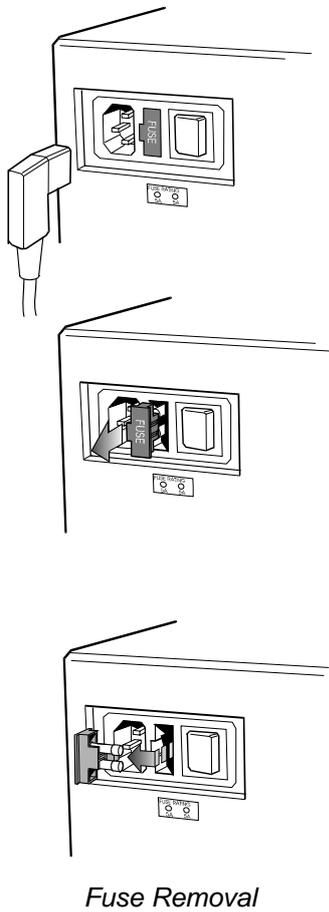


#### WARNING!

**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.**

## 8. TROUBLE SHOOTING

This section highlights the problems that could occur with the **PURELAB Option-S** 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 local distributor. (See Section 12 - Useful Addresses).



Problems	Action
No display message	<p>Check mains supply and lead.</p> <p>Check that the mains power is switched on.</p> <p>Check fuse in power inlet module and replace if blown.</p>
Reservoir low level audible alarm sounds	<p>Press the crossed bell button to mute alarm.</p> <p>The reservoir will automatically refill.</p> <p>Check that process mimic is showing reservoir filling.</p> <p>Check feedwater supply. Check connections to Reservoir.</p>
Ion-exchange cartridge replacement alarm	<p>Replace Ion-exchange cartridge pack. (See Section 7.2 - Replacing the LC141 Ion-exchange cartridge).</p>
Pre-treatment cartridge replacement alarm	<p>Replace pre-treatment cartridge. (See Section 7.1 - Replacing the LC140 pre-treatment cartridge).</p>
Water purity alarm	<p>Check alarm set value is correct. (See Section 5.4, Step 5 - Purity Alarm Setting).</p> <p>Allow unit to rinse. If alarm persists replace Ion-exchange cartridge. (See Section 7.2 - Replacing the LC141 Ion-exchange cartridge).</p> <p>If problem persists beyond that expected from normal operating conditions, contact your local distributor.</p>
Reservoir level disconnect fault alarm	<p>Check that the level controls are correct. (See Section 5.3 Step 3 - Connect High/Low Level Switch to Reservoir).</p> <p>If problem persists contact your local distributor.</p>
Output flow below specification	<p>Check supply pressure. (See Section 5.2 - Positioning the PURELAB Option-S).</p> <p>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.</p> <p>Check the inlet strainer. (See Section 7.3 - Cleaning Inlet Strainer).</p> <p>Contact service technician to fit or replace optional booster pump.</p>
Unit noisy	<p>Open front door and secure pipework to stop vibration.</p>

## 9. CONSUMABLES AND ACCESSORIES

Consumable	Maximum Service Life*	Maximum 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	2 years
LC136** (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).*

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

Accessory	Cat No
Installation kit	LA513
Installation kit (with saddle valve)	LA506
Pressure regulator valve (inlet)	LA512
Pre-treatment filter housing	LA518
Wall mounting kit ( <i>PURELAB Option</i> Unit)	LA610
25 liter reservoir	LA611
40 liter reservoir	LA612
75 liter reservoir	LA613
Wall mounting kit (25 & 40 liter reservoirs)	LA591
Wall mounting kit (75 liter reservoir)	LA592
Flow upgrade kit (7-15 l/hr)	LA604
RS232 Printer kit	LA618
RS232 Remote display kit	LA619
Docking Vessel - DV35	LA620
Pre-filter (if boost pump fitted)	LA582

## 10. KEY TO CONTROL PANEL

### 10.1 Icons

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

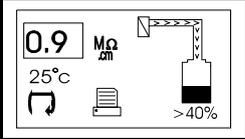
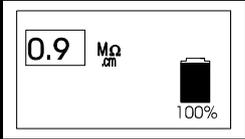
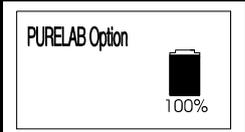
### 10.2 Alarm Conditions

Icon	Alarm Conditions
	Replace Conditioning Cartridge
	Replace Pre-treatment Cartridge
	Reservoir Level – Disconnect Fault

### 10.3 Replacement Timers

Replacement Timer	Icon	Preset
Ion-exchange Cartridge		4380 hours ( = 6 months)
Pre-treatment Cartridge		4380 hours ( = 6 months)

### 10.4 Quality and Standby Alarms

Screen	Description
	<p>Process on and water purity alarm</p>
	<p>Standby and purity alarm</p>
	<p>Standby</p>

## 11. WARRANTY/CONDITIONS OF SALE

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

### **General Limited Warranty**

VWS (UK) Ltd. warrants the products manufactured by it against defects in materials and workmanship when used in accordance with applicable instructions for a period of one year from the date of shipment for the products. VWS (UK) LTD. MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED. THERE IS NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The warranty provided herein and the data, specifications and descriptions of the VWS (UK) Ltd. products appearing in VWS (UK) Ltd.'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 Systems Limited Warranty**

VWS (UK) Ltd. warrants the water systems manufactured by it, BUT EXCLUDING MEMBRANES AND CARTRIDGES, 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 120<sup>th</sup> 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. 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 MERCHANTABILITY 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.

## 12. USEFUL CONTACT DETAILS

### ELGA LabWater - Global Operations Centre

Lane End Industrial Park  
High Wycombe  
Bucks  
HP14 3BY  
UK

Tel: +44 (0) 1494 887 500

Fax: +44 (0) 1494 887 505

E-mail: [techsupport@elgalabwater.com](mailto:techsupport@elgalabwater.com)

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

<http://www.elgalabwater.com>

**or contact ELGA at the number above.**

**ELGA®** is the global laboratory water brand name of Veolia Water. **ELGA®**, **PURELAB®**, **MEDICA®** and **CENTRA®** are trademarks of ELGA LabWater.

© 2006 **ELGA LabWater/VWS(UK) Ltd.** All rights reserved.