ELECRO ENGINEERING

H.R.UV-C CLASSIC

Installation & Operating Manual

HR-55 HR-110

CONTENTS

1. IMPORTANT SAFETY INSTRUCTIONS....3
2. PRODUCT OVERVIEW....3
3. GENERAL INSTALLATION INSTRUCTION....5
3.1 Mounting instructions....5
3.2 Pipe work....6
3.3 Flow direction....7
3.4 Connection....8
3.6 Electrical connection....9
4. OPERATING INSTRUCTIONS....9
4.1 Flow requirements....9
4.2 Lamp life indicator....9
4.3 Water quality....10
5. MAINTENANCE....10
5.1 Essential parts to carry out annual maintenance including our reference codes....10
5.2 Lamp replacement and quartz sleeve cleaning....11
6. DISPOSAL OF ELECTRICAL/ELECTRONIC EQUIPMENT....14
7. WARRANTY....14

Introduction

Thank you for purchasing the H.R. UV-C pool sanitising system, manufactured to the highest standards in England.

To ensure years of trouble-free service, please **read and follow** these instructions for proper installation, maintenance and use. **Incorrect installation will affect your warranty.**

Please retain this manual for future reference.

1. IMPORTANT SAFETY INSTRUCTIONS

WARNINGS:

- Ultraviolet light is damaging to your eyes or skin! Never handle or look directly at an illuminated UV lamp(s).
- This unit must be earthed.
- Power must be supplied through a Residual Current Device (RCD) with a rated residual operating current not exceeding 30mA
- Do not run this unit dry
- Do not cover this unit
- The unit must not be submerged in water
- Carefully examine the unit after installation. It should not be powered on if there is water on any parts not intended to be wet
- If the unit shows any sign of water leakage immediately disconnect power supply
- If the quartz sleeve is cracked, replace it immediately
- To avoid injuries young children should never be allowed near UV sanitizer
- Failure to disconnect the power from the UV sterilizer and pump before servicing or maintenance could result in personal injury or property damage.

2. PRODUCT OVERVIEW

The H.R.UV-C is available in 55W single tube and 110W double tube formats, supplied complete with flow switch and either an analogue lamp life indicator and reset switch, or digital lamp life countdown with intelligent dosing pump.

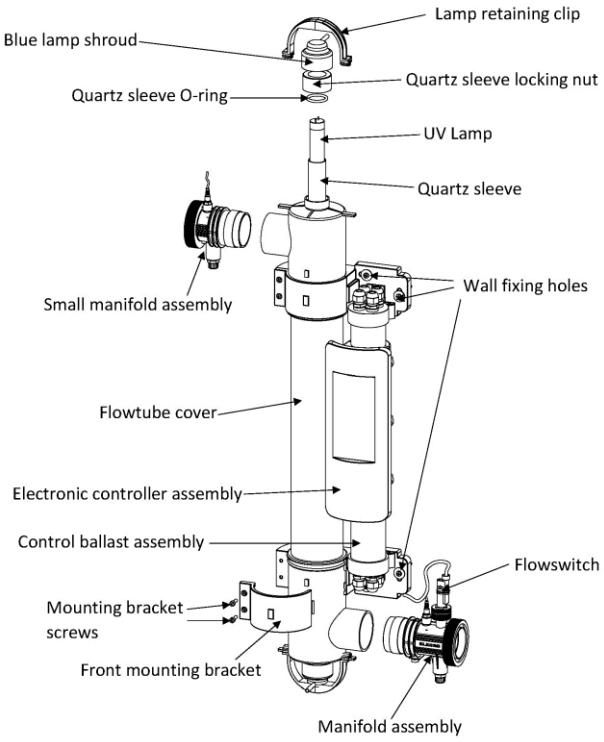


Fig. 1

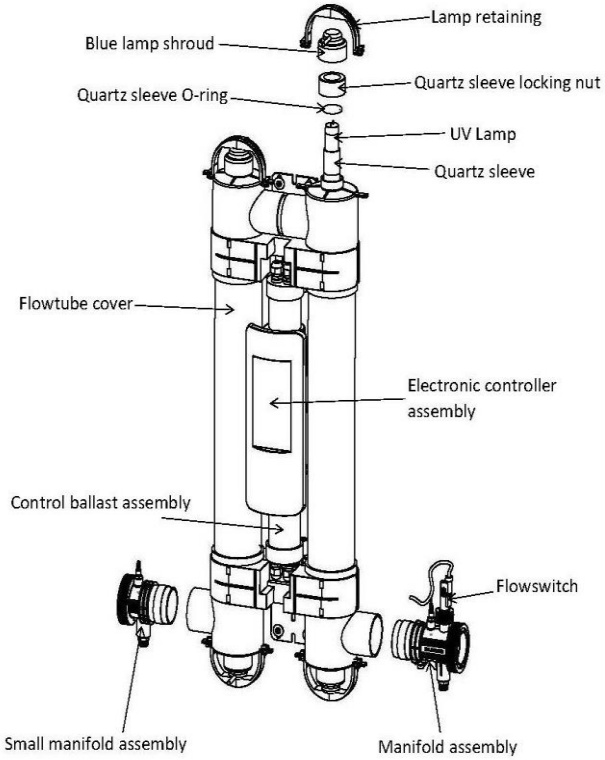
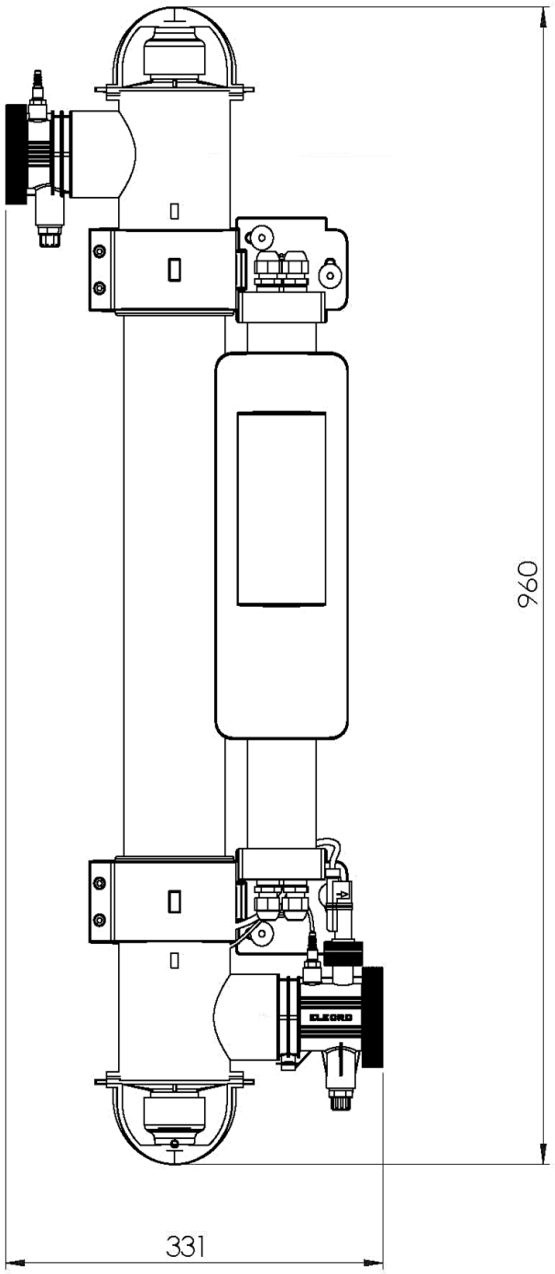
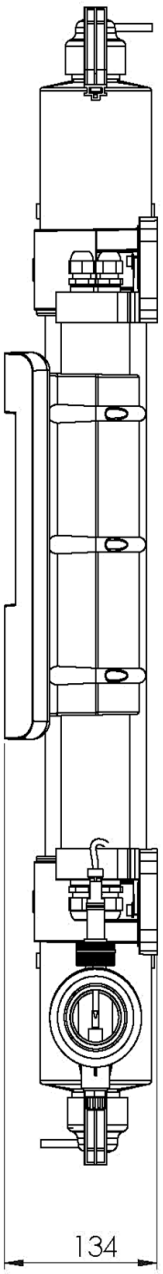
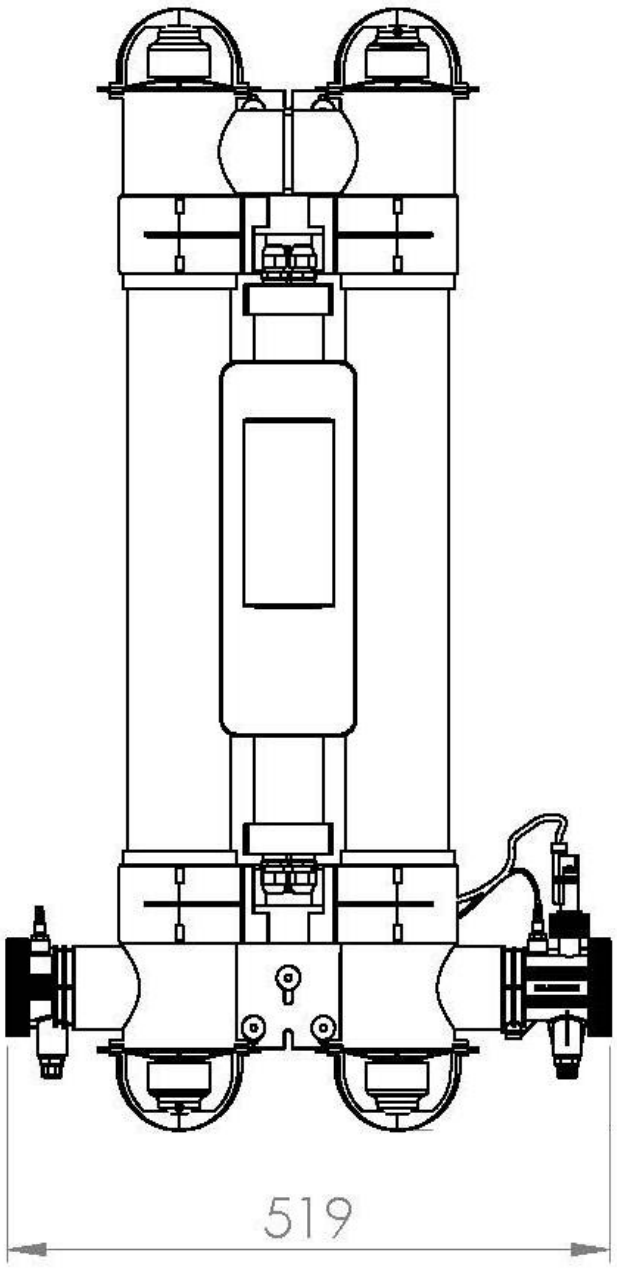


Fig. 2

Dimensions:







3. GENERAL INSTALLATION INSTRUCTION

3.1 Mounting instructions

The H.R.UV-C should be either installed horizontally or vertically allowing enough space for the pipe connections, wiring and maintenance of lamps/quartz sleeve. It should be firmly secured, using the fixing kit provided, to a solid wall.

NOTE: *When mounting the UV, it is essential to leave a clearance space of at least 1 metre from one side of the unit to allow access to replace the lamp(s) and/or quartz sleeve(s) when required. Both the lamps and the quartz sleeve can be replaced from either end of the unit; if installing vertically the 1m clearance space must be above or below the unit, if installing horizontally the 1m clearance space must be to the left or right of the unit.*

WARNING: The H.R.UV-C must be installed within a dry, permanent weather-proof area. In any case where water or moisture enters the enclosure the warranty will be void.

Caution: *If the H.R.UV-C is unused during the winter months; it **must be** drained to prevent frost damage. Water **must not** be allowed to freeze inside the unit as this will cause severe damage.*

See Fig. 3 for mounting instructions when securing to the wall.

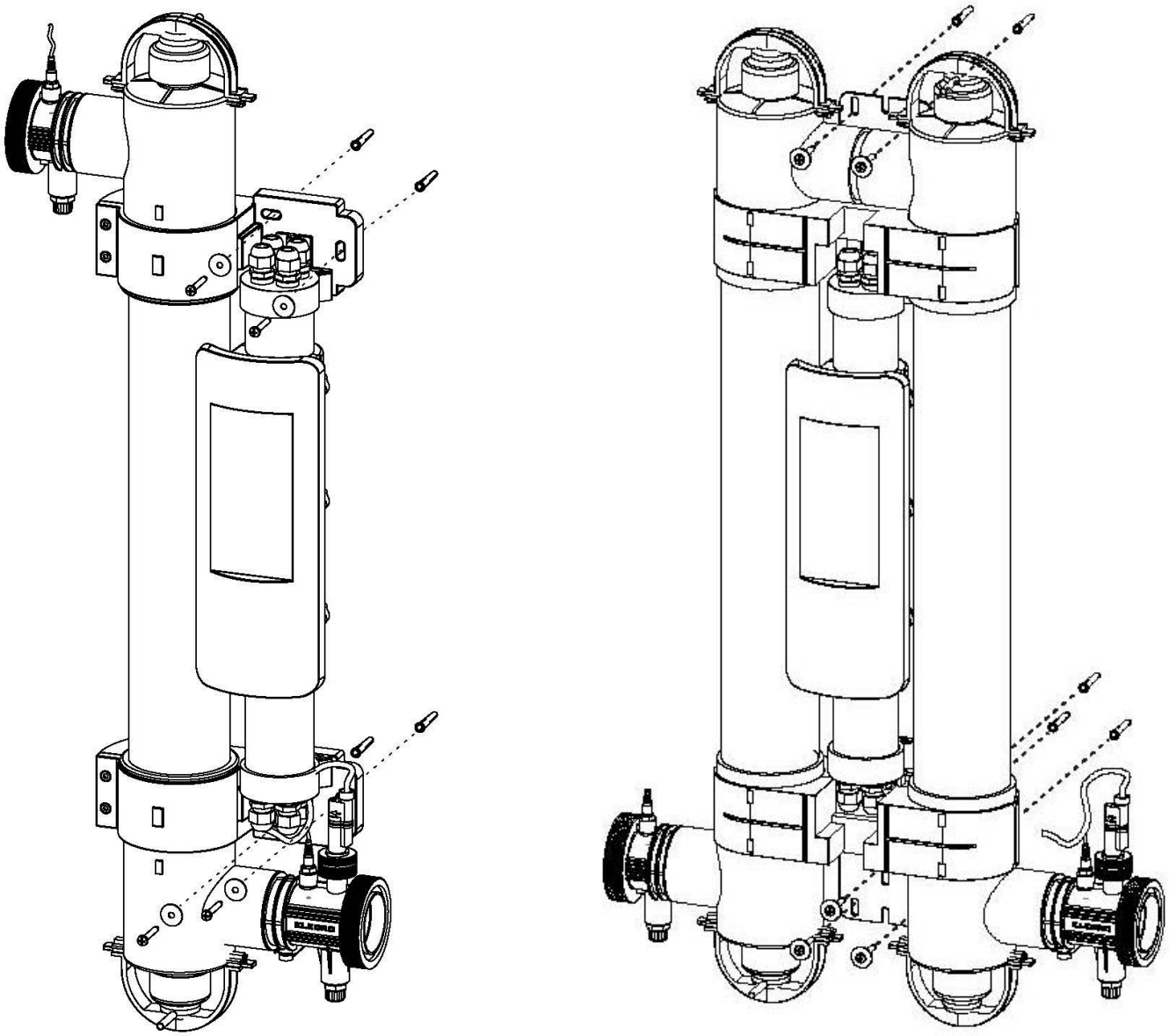


Fig. 3

3.2 Pipe work

The H.R.UV-C should be placed downstream (after) of any pumps, filters and heating devices but upstream (before) of any chemical dosing or similar water treatment (see Figs.4 and 5).

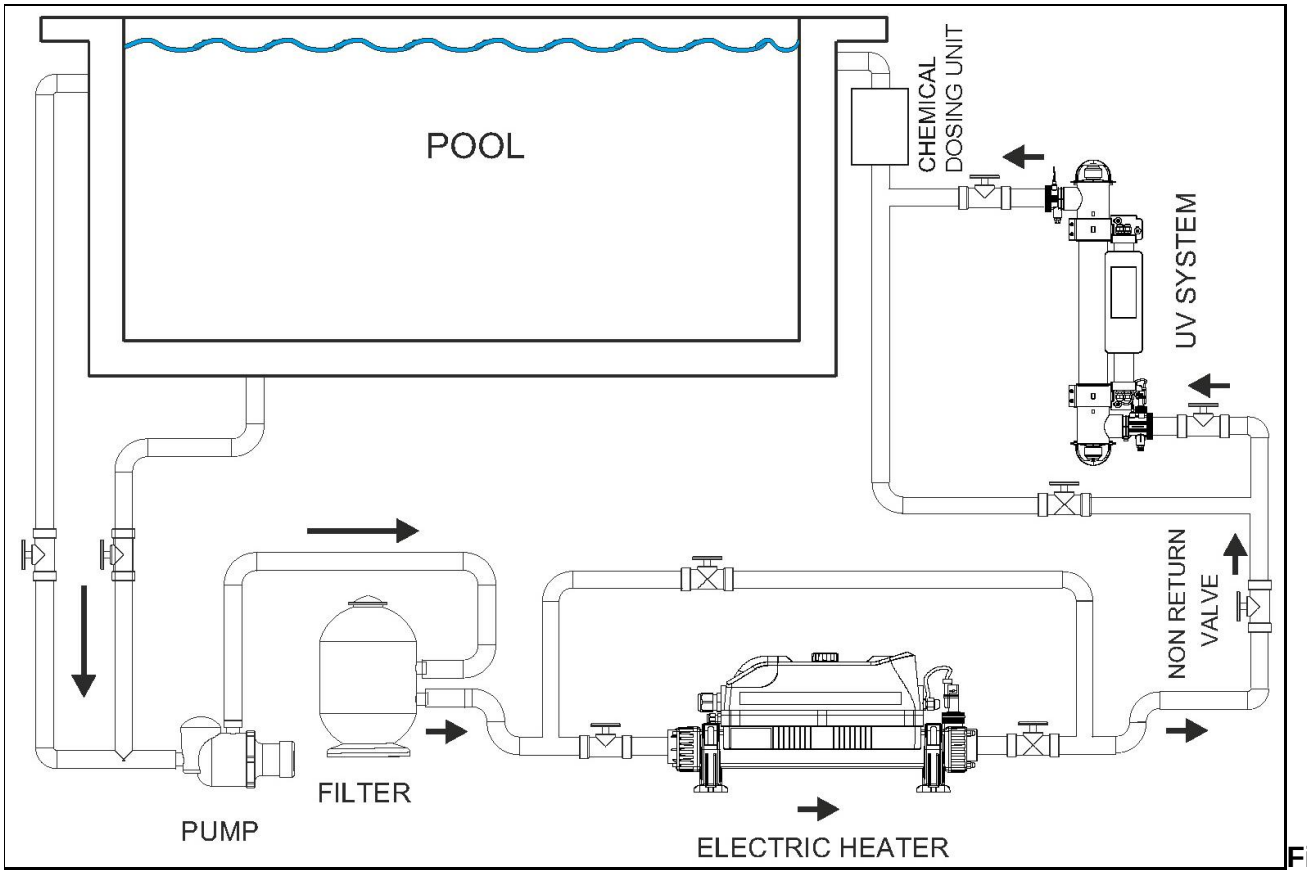


Fig. 4

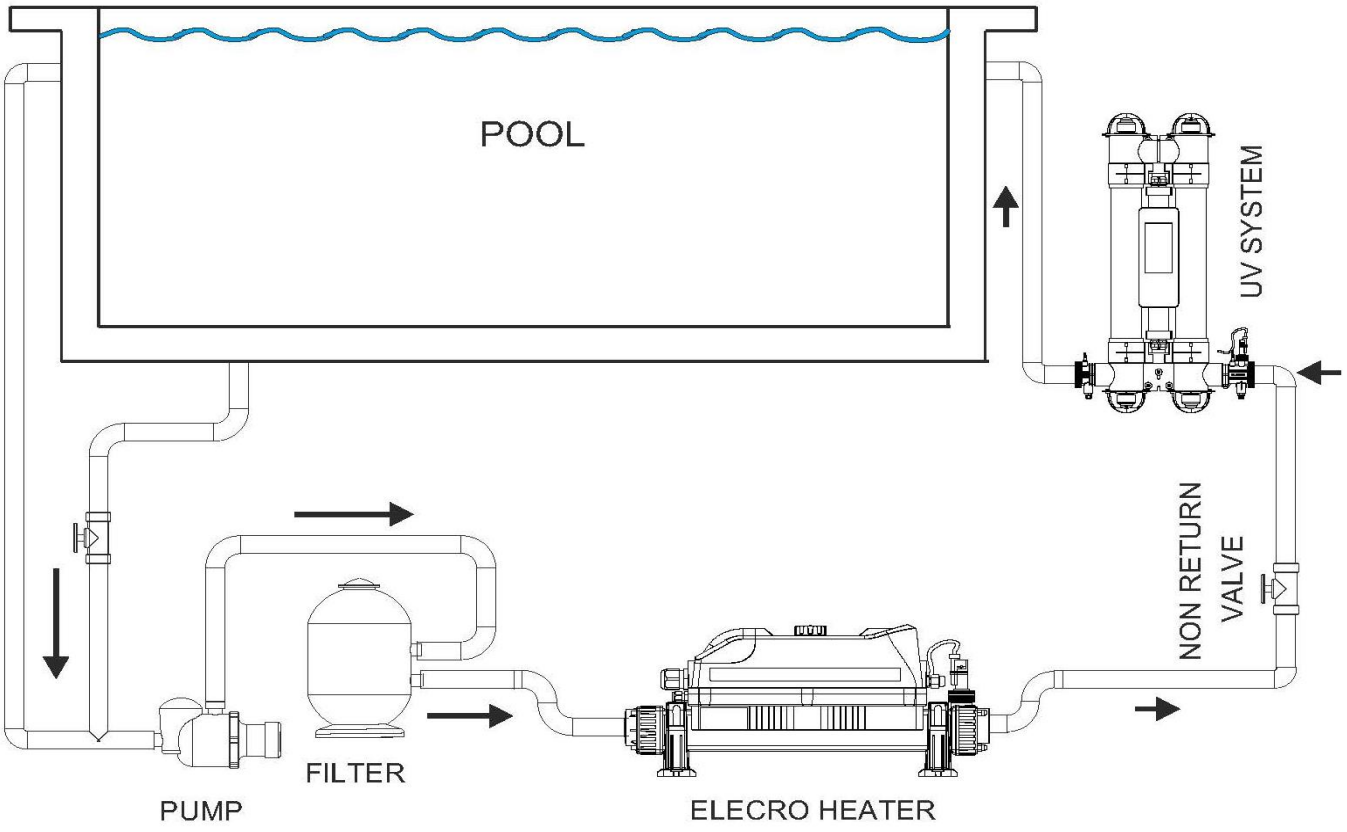


Fig. 5

3.3 Flow direction

The H.R.UV-C is factory set to accept input water flow entering on the left and exiting on the right, this can be reversed by rotating the flow switch 180 degrees (i.e. ½ turn - see Fig. 6).

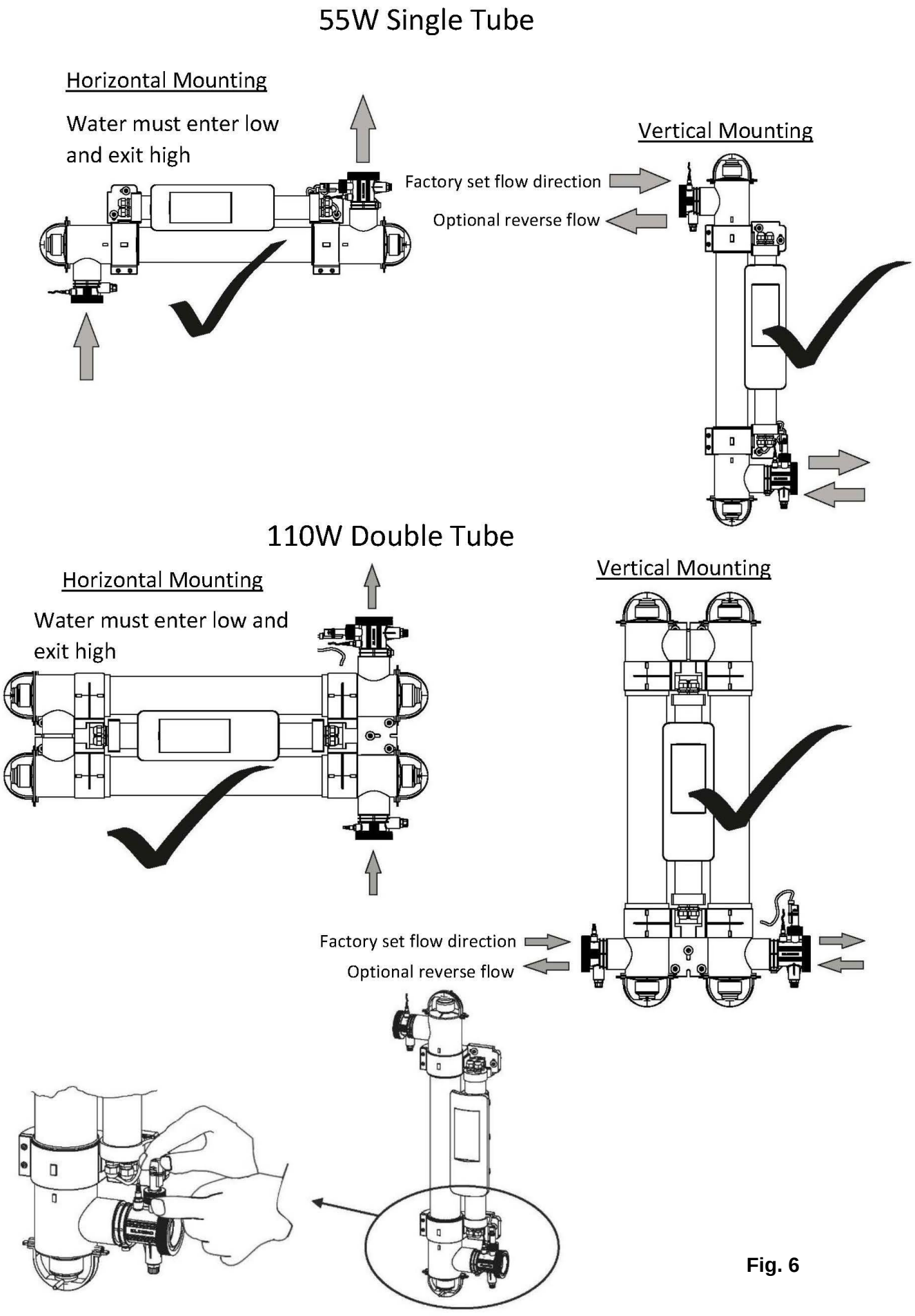


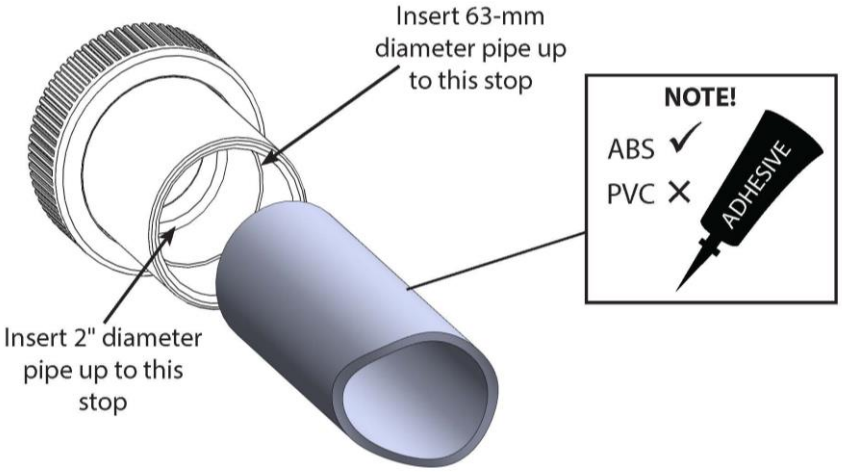
Fig. 6

WARNING: The flow switch paddle can be damaged when reversing the flow direction if it is lifted by more than 5mm from its housing and turned with force. If the flow switch has been rotated it is important to ensure that it is finally locked in the correct orientation perpendicular (at right angles) to the flow of water.

3.4 Connection

The unit is supplied with unions to allow connection to 2" or 63-mm rigid pipe. Reducers are also supplied to allow connection to 50-mm or 1½" rigid pipe - see Fig. 7.

For pipework 63-mm or 2" in diameter.



For pipework 50-mm or 1½" in diameter.

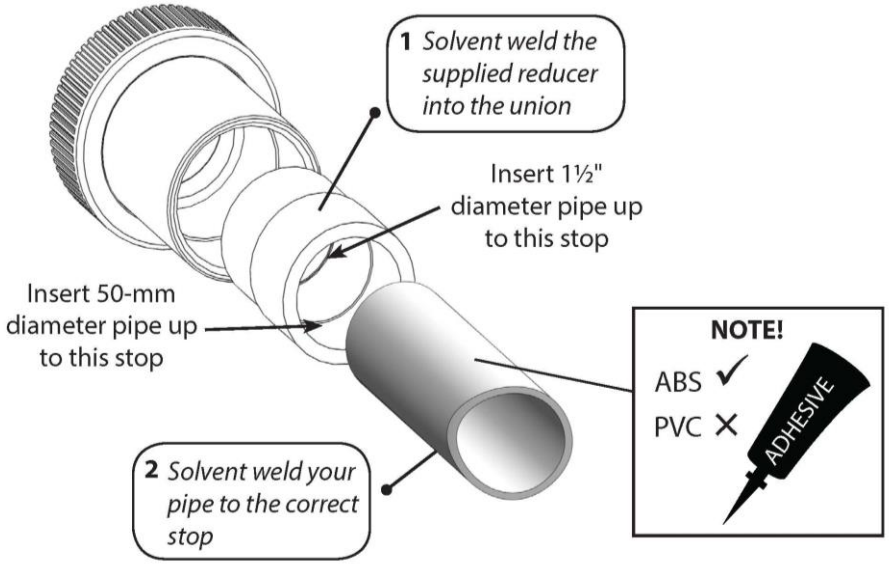


Fig. 7

All factory unions are made from ABS plastic, when gluing connections to ABS pipe an ABS cement must be used or when using PVC pipe, a Transition cement must be used (See Fig. 7).

There is no need to use mastic or PTFE tape to connect unions to the H.R.UV-C, use the O-rings provided to put in the groove on the end of the Manifold Assembly.

NOTE: *Be sure to apply the glue evenly and to all surfaces that will be in contact to reduce the risk of leakage*

3.6 Electrical connection

WARNINGS:

- This device must be installed by a qualified Electrician following the instructions provided in this manual. The manufacturer will not be liable for any issues caused by poor or improper installation.
- Any alterations made to the unit (unless stated) will affect the warranty. This also applies if components are changed for non-standard components acquired anywhere other than direct from the manufacturer.
- Incorrect installation may result in serious damage to property/persons.
- The H.R.UV-C must be installed in accordance with the country/regional requirements and regulations and an Electrical Installation Certificate must be provided on completion of the installation.
- The power supply must be fitted with a 30mA RCD.
- Never look directly at an illuminated UV lamp.

4. OPERATING INSTRUCTIONS

4.1 Flow requirements

Minimum flow rate:

- 4m^3/hour (4,000 litres per hour)

Maximum flow rate:

- 55W (single tube) = 21m^3/hour (21,000 litres per hour)
- 110W (double tube) = 48m^3/hour (48,000 litres per hour)
- A higher flow rate will require the installation of a bypass to prevent damage to the unit.

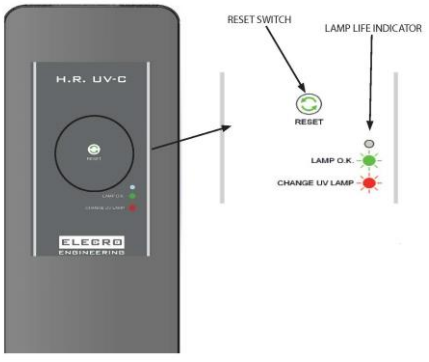
This unit is a plug and play device so as long as the minimum flow rate is achieved the unit will work as soon as the power is switched on.

4.2 Lamp life indicator

Under normal conditions the UV lamp(s) inside the unit has a usable life of 9,000 hours. The unit is fitted with a 'Lamp Life Indicator' LED in order to remind you to change the lamp(s) after this set period of time. At initial 'Power On' of the H.R.UV-C the LED indicator will light in a Red colour for one second to indicate that the time setting is 9,000 hours and immediately change colour to Green to indicate that the timer has started.

When the timer reaches <500 hours the LED indicator will change colour from Green to Amber to indicate that the UV lamp(s) is getting near to its end of life. At this point replacement lamp(s) should be ordered from your distributor. When the timer reaches zero the LED indicator will change colour from Amber to Red, to signal that the UV lamp(s) should be changed.

After changing the UV lamp(s) the timer is reset by pressing and holding the reset button until the LED indicator goes 'Off' and then comes back 'On'. When the reset button is released the LED indicator will come back 'On' (Red colour for one second followed by Green colour), this indicates that the timer has restarted and is reset to count down the subsequent 9,000 hours.



4.3 Water quality

The water quality **MUST** be within the following limits:

- PH: 6.8 – 8.0
- Total Alkalinity (TA): 80 – 140 ppm (parts per million)
- Chloride Content MAX: 150 mg/litre
- Free Chlorine: 2.0 mg/litre
- Total Bromine: Max 4.5 mg/litre
- Total Dissolved Solids (TDS)/Calcium hardness: 200 – 1,000 ppm

WARNING: Failure to meet the water quality limits will void the warranty.

Upon completion of the installation, run the water-circulating pump to purge the system and heater of air (i.e. remove any trapped air in the system).

5. MAINTENANCE

To avoid any water leaks and optimum performance annual maintenance of the UV steriliser is essential. Failure to do so could result in damage to the product and significant drop in efficiency. Annual maintenance includes:

- Changing of lamps(s) if necessary. Fig. 1
- Inspection and cleaning of quartz sleeve. Replace if any cracks are discovered. Fig. 2
- Replacing all O-rings. Fig. 3
- Replacing lamp connectors (white plastic insert inside the blue lamp shroud) if corroded, wet, damaged or overheated. Fig. 4

5.1 Essential parts to carry out annual maintenance including our reference codes

WARNING: Before performing any maintenance isolate from the main power supply, turn off circulation pump and drain the unit.

SP-UV-LAMP-EL

Fig. 1

SP-UV-QS

Fig. 2

SP-UV-ORS

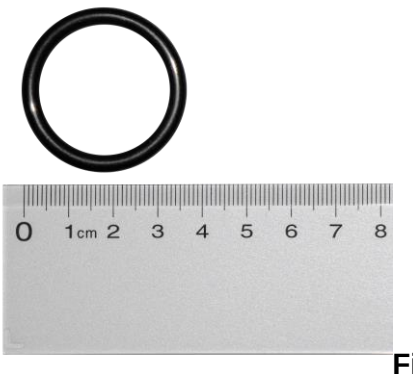


Fig. 3

SP-UV-LLL-LF

Fig. 4

5.2 Lamp replacement and quartz sleeve cleaning

Removing the lamp and quartz sleeve

Firstly, remove the bulb retaining clip by unscrewing the size 6 screw with a cross head screwdriver.

Carefully remove the blue lamp holder shroud and white plastic electrical end caps from the lamp end.

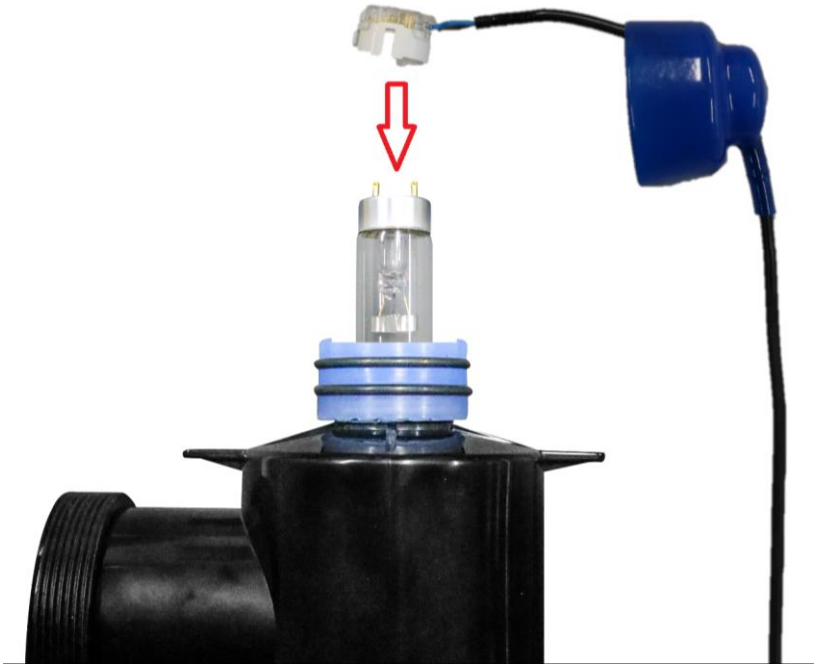
Gently slide the lamp out ensuring that no pressure is applied to the glass quartz sleeve.

Unscrew the blue quartz sleeve locking nut anticlockwise. Both ends must be unscrewed before the quartz sleeve can be removed.

Slide the O-ring off the quartz sleeve.

The quartz sleeve can now be removed.

NOTE: To avoid bending the pins of the lamp during the reassembly pull the plastic fitting out of the shroud. Connect it to the lamp and push the shroud back in to place.



Cleaning the quartz sleeve

Clean the sleeve and polish with a soft cloth or paper towel.

If you live in a hard water area there may be some limescale on the quartz sleeve. This can be easily removed by soaking the sleeve in a proprietary kettle descaling solution (follow the manufacturer's instructions).

NOTE: *Failure to remove the limescale will limit the effectiveness of the UV lamp(s).*

Assembly process

- Firstly, slide the clean dry quartz glass sleeve into the unit.
- Locate the 'O' rings carefully on the ends of the quartz sleeve.
- Make sure the threads are clean, wipe a little silicone grease onto the threads. As these threads are only serviced periodically, this lubrication will help to prevent them binding together.
- Hand tighten the blue quartz sleeve locking nuts onto the unit. Be sure not to overtighten as this can damage the quartz sleeve.
- Refit or replace the UV lamp(s) with a new one.
- Relocate the lamp connectors and blue lamp holder shrouds ensuring that you match the correctly numbered lamp connector.

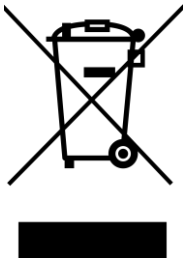
NOTE: *Pinch the blue lamp holder shroud as you reassemble the unit to release any trapped air. Failure to release the trapped air may cause the lamp holder to disconnect from the lamp end. Turn on the water supply to check for leaks* ***before*** *reconnecting the electric supply.*

Important: The plastic body and blue compression fittings have been manufactured from polymers that have been specifically stabilised to protect them from the effects of the UVC emitted from the UV lamps. Despite this UV protection they will be eroded by a combination of the UVC and water flow. As a matter of course they should be inspected whenever a lamp change is carried out, to ensure they are not showing excessive wear and tear. Replacement parts are available.

6. DISPOSAL OF ELECTRICAL/ELECTRONIC EQUIPMENT

DO NOT dispose of this product as an unsorted municipal waste.

This symbol on the product or on the packaging indicates that this product should not be treated as household waste. Instead it should be handed over to the applicable collection point for the recycling of electrical and electronic equipment.



By ensuring this product is disposed of correctly you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources.

For more information please contact your local Civic Office, household waste disposal service or the retailer where the product was purchased.

7. WARRANTY

This product is guaranteed from the date of purchase against faulty workmanship and materials for:

- **two years within Europe**
- **one year outside Europe**

- The manufacturer will replace or repair, at its discretion, any faulty units or components returned to the Company for inspection.
- Proof of purchase may be required.
- The manufacturer will not be liable in cases of incorrect installation of the product, inappropriate use or neglect.
- Any damages occurred due to shipping must be reported within 48 hours of receipt of the product. Any claims after this time will be considered as misuse or abuse of the product and will not be covered by the warranty.
- The guarantee does not include serviceable parts, i.e. lamps, quartz sleeves and O-rings, etc.

Notes:

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Elecro Engineering Ltd
Repairs Department
Unit 11 Gunnels Wood Park
Gunnels Wood Road
Stevenage
Hertfordshire SG1 2BH
United Kingdom

Customer Information: (ATTACH TO HEATER)

Company Name: …….

Contact Name: …….

Daytime Telephone Number: …….

Email Address: ……..

……..

Return Address: ……..

……..

Post/Zip Code: ……..

Country: …….

Suspect Fault / Description of problem:

ELECRO ENGINEERING

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