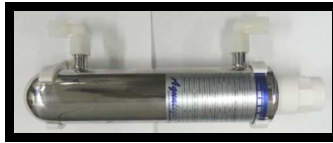


INSTALLATION & MAINTENANCE



MODELS:

UVG SLT 75 (GT7-13UVG) UVG SLT80
UVG SLT125 (GT7-15UVG) and UVG SLT 172

Stainless Steel Water Disinfection Units

NOTE:

Please read this manual carefully and follow the instructions. Installation shall be carried out only by authorised technicians. Power Supply should always be plugged into a surge protector.

CONTENTS

1. INTRODUCTION

- 1.1 General Safety Instructions

2. ASSEMBLY AND INSTALLATION

- 2.1 Reactor
 - 2.1.1 Installing the Reactor
- 2.2 Installing the Power Box
- 2.3 Installing the Quartz Thimble and UV Lamp

3. SERVICING

- 3.1 Servicing the Quartz Thimble
- 3.2 Servicing the UV Lamp

4. WARRANTY

INTRODUCTION

UV disinfection is an efficient, low cost and environmentally friendly process. UV light kills pathogenic micro-organisms quickly without leaving any residues, harmful by-products or affecting the smell or taste of the water.

These units use UV lamps which emit UVC radiation at 254nm which disrupts the DNA in the micro-organisms, so they are either killed or their ability to replicate is destroyed.

The kill rate depends on the UV dose received by the micro-organisms, i.e. the time that a micro-organism is exposed to a certain intensity of UV radiation (Wm^2). A UV dose of 400 J/m^2 is recognized internationally as a suitable dose to ensure safe disinfection of drinking water.

The disinfection performance of a UV system is determined by the intensity of the UV light, water flow rate, the optical transmission of the water at 254nm and the geometry of the reactor. The sizing of the UV system should be based on these parameters. Please contact your UV-Guard representative if you have any queries regarding correct sizing.

As there are no disinfection substances added to water by UV radiation, there are no residual effects once the water has passed through the UV Reactor.

Only genuine spare parts should be used to ensure proper operation and performance.

1.1 General Safety Instructions

ELECTRIC SHOCK!

Attention: Dangerous electric voltage is present inside the power supply box and chamber. These instructions must be followed closely to prevent serious personal injuries.

ENSURE EYE PROTECTION IS WORN WHEN SERVICING AND INSTALLING THIS UNIT!

UV-C radiation is harmful to the eyes and skin! UV lamps should be used only when properly installed in the irradiation chamber. The UV lamp must never be operated outside the disinfection chamber.

- Make sure this disinfection unit is only used for the intended purpose as described in the operating instructions.
- This disinfection unit is to be installed properly, according to these operating instructions, before use.
- Do not use a unit with a damaged electrical lead or plug, a unit with any faulty functions, or a unit which has been dropped or has been damaged in some way.
- Make sure that the unit is unplugged when it is not being used, before fitting, or removing any parts, or before cleaning the unit.
- Ensure the disinfection unit is electrically isolated before:
 - A. Carrying out repairs.
 - B. Cleaning.
 - C. Replacement of the UV lamp

- The unit must be depressurized before maintenance.
- Do not use the UV lamp outside of the UV disinfection reactor.

UV lamps are designed for permanent operation to reach their best disinfection capacity. Frequent switching on and off reduces the life of the UV lamp!

1. ASSEMBLY AND INSTALLATION

Installation should be carried out only by qualified technicians.

The Following **MUST** be checked Prior to Installation:

- A maximum operating pressure of 800KPa (8 bar or 125 psi) must not be exceeded.
- The maximum ambient temperature is 45°C
- The maximum water temperature should be 40°C
- The maximum flow rate should not exceed specified rate
- The Reactor must be plumbed so it remains full of water at all times while the lamp is operating.
- The SLT series units should not be installed so there are long periods with no flow. Recommended maximum period with no flow is 60 minutes. Longer periods for the UVG SLT 125, may damage the UV lamp due to overheating. If there are going to be long periods with no flow for these units, it is recommended a thermostat controlled valve is installed downstream of the UV unit so that if the temperature of the UV reactor gets too hot, the valve will open to return a small amount of water to the source, or dump to waste. The water flow from this action will cool the reactor.

2.1 Reactor

1. The following reactor types are available in the SLT series.

Series	Length	No. Lamps in unit	Diameter mm
SLT 2	400mm	1	62
SLT 30	505mm	1	62
SLT 40	895mm	1	62
SLT 75	895mm	1	62
SLT 80	895mm	1	88
SLT 125	895mm	1	88
SLT 172	895mm	1	88

Table 1.

Series	Inlet/outlet Ø	Min. space to service reactor at power end of chamber mm *	Max. flow rate l/h - Drinking water	Max. flow rate l/h - Treated effluent
SLT 2	¼" BSP Nipples	300	500	250
SLT 30	¾" BSP Nipples	600	2000	500
SLT 40	1" BSP Nipples	1000	2,700	2000
SLT 75	1" BSP Nipples	1000	5,400	4000
SLT 80	2" BSP Nipples	1000 *	8,200	NA
SLT 125	2" BSP Nipples	1000 *	13,000	NA
SLT 172	2" BSP Nipples	1000 *	16,900	NA

Table 2.

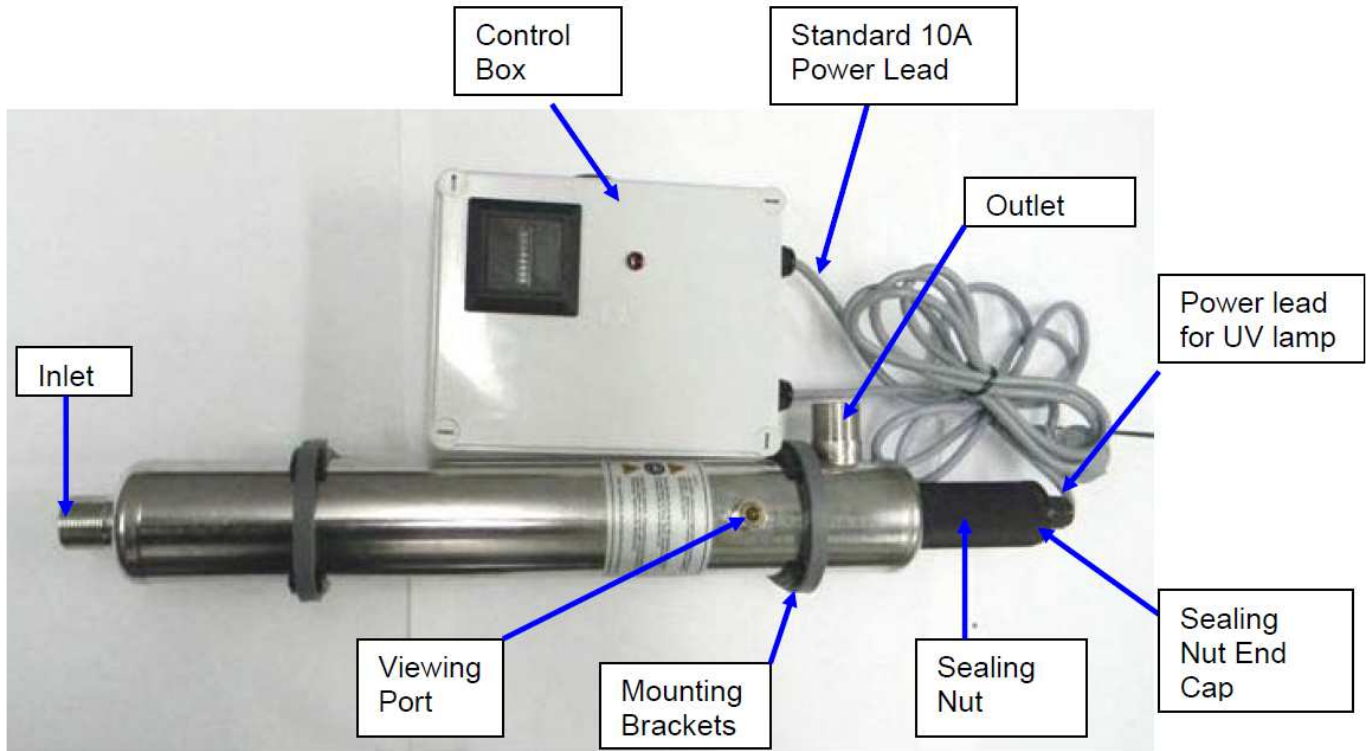
* Space is also required at the blank end of the chamber for servicing the quartz thimble for the SLT80, SLT 125 and SLT 172 units. A 100 mm space will be sufficient.

2.1.1 Installing the Reactor

- Before installation ensure you know which reactor type you are using.
- Make sure that there is enough free space to service the glassware with the reactor (see Table 2.). Otherwise it will not be possible to install the UV lamp and maintain the UV system.
- The reactor is to be fixed by means of the mounting legs, either on the wall or on a mounting frame.



- The disinfection chamber comes complete with it's own wall mounting brackets
- The preferred orientation for the reactor is horizontal, however vertical orientation is acceptable. The in-outlet ports should be pointing up for horizontal installations, or the outlet should be the top port in vertical installations, to prevent airlocks.
- Refer to Table 1 for the distance from the sealing nut, required for servicing the unit.
- When mounting the chamber, consideration must be made for the weight of the system due to the stresses associated with pipe work etc.
- The stainless steel chamber and surrounding pipe-work must be properly earthed to prevent electrolysis/corrosion.



2.2 Installing the Power Box

- The power supply box must be mounted clear of the floor as a precaution against the ingress of water.
- The power supply box is not designed for remote mounting. Recommended maximum distance of chamber to power supply box is two (2) metres.
- Depending on which version of the power supply box is ordered, there may be an audible lamp fail alarm included. This will sound in the event of a lamp failure to notify the operator to replace the UV lamp.
- The power supply box should be mounted so it is not exposed to rain or direct sunlight.



Power supply 40048 (40088)
For UVG SLT30, 40 (75 and 80)
Must be installed under cover



Power supply 50162
For UVG SLT125
Can be installed in
weather away from
direct sunlight



Power supply 50044 (50081)
For UVG SLT30, 40 (75 &
80). Can be installed in
weather away from
direct sunlight



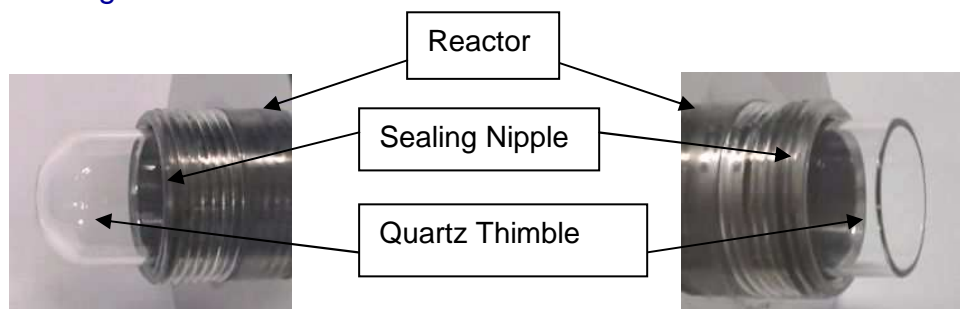
Power supply 40044
For UVG SLT30 and 40
Must be installed under cover

2.3 Installing the Quartz Thimble and UV Lamp

DUE TO THE FRAGILE NATURE OF THE QUARTZ, CARE MUST BE TAKEN WHEN HANDLING AND INSTALLING THE QUARTZ THIMBLE and UV LAMP.

- Remove the sealing nut(s) from the reactor and ensure the O ring seal is removed as well. For the UVG SLT 80 and 125 units remove the blind sealing nut from the blind end of the chamber as well

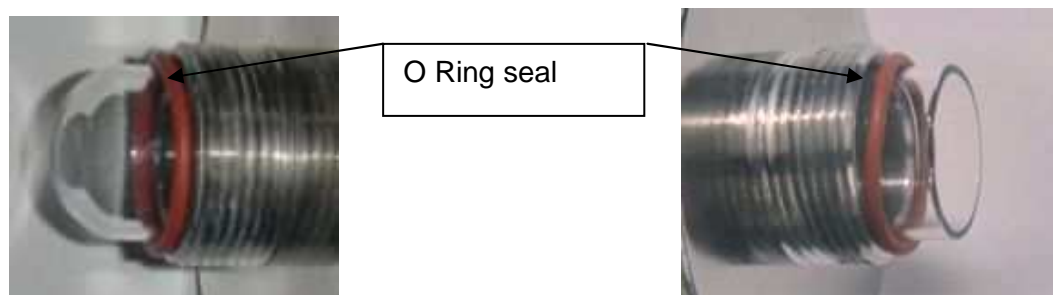
- Take the quartz thimble and wipe it down with a soft cloth soaked in methylated spirits to remove any grease and finger marks, then dry it. Insert the domed end of the quartz thimble into the chamber and locate the thimble in its support at the far end of the chamber. For the double ended SLT80 and SLT125 position the quartz thimble so there is equal amounts of quartz sticking out of each end of the chamber.



For SLT 80 and SLT 125 double ended chambers, the quartz needs to be centred so there is an equal amount at each end

For single ended chambers the quartz needs to be located so there is a maximum of 14mm protruding from the end of the chamber when the support spring is fully compressed.

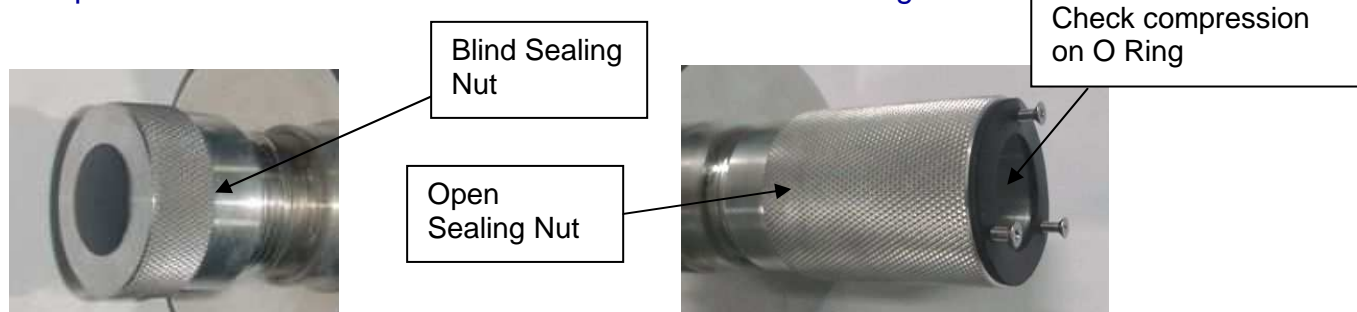
- Place an O ring over the quartz so the O ring is positioned against the chamfer on the sealing nipple. For the double ended SLT80 and SLT125 there is an O ring at each end of the chamber.



For SLT 80 and SLT 125 double ended chambers, an O ring needs to be placed over each end of the quartz

For single/double ended chambers an O ring needs to be placed around the quartz so it is against the chamfer on the sealing nipple.

- For double ended chambers the blind sealing nut needs to be screwed on the chamber over the domed end of the thimble. The open sealing nut needs to be screwed on to the chamber over the open end of the quartz thimble. The sealing nuts should be tightened to firm hand tightness. They should not be tightened with a mechanical aid such as multi-grips. Look through the sealing nut to check the O ring is compressed on to the quartz thimble. At this stage the quartz is sealed and the unit should be checked for leaks against the operating pressure.



For SLT 80 and SLT 125 double ended chambers, blind sealing nut needs to be screwed on over the domed end of the quartz

For single/double ended chambers the open sealing nut needs to be screwed on over the open end of the quartz thimble.



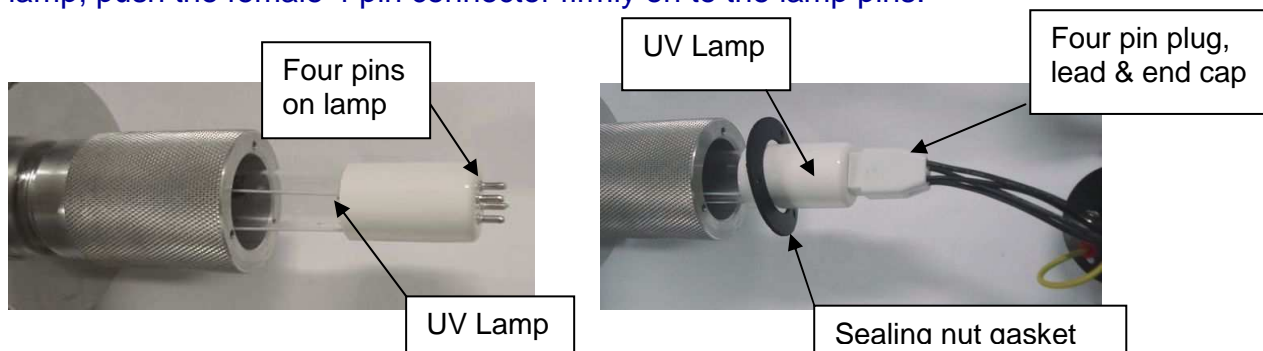
Double ended chamber with quartz installed



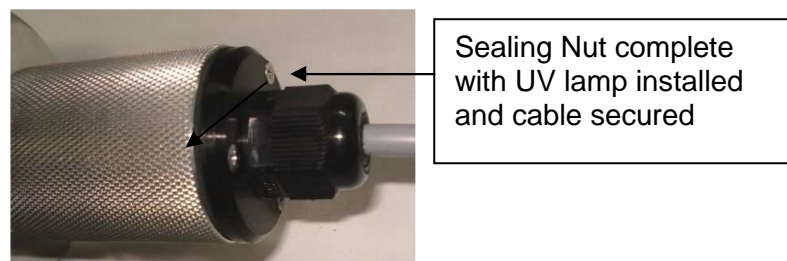
Single ended chamber with quartz installed

- Remove the UV lamp from its protective wrapping and wipe down with a soft cloth/tissue soaked in methylated spirits. Do not touch it without protective gloves, care should be taken not to leave markings of any nature on the UV lamp, as this could have a detrimental effect on the performance of the UV lamp.
- Insert the UV lamp into the quartz thimble through the hole through the centre of the sealing nut. If the chamber is installed vertically, NEVER drop the lamp into the quartz thimble, as this may break the quartz thimble.

Place the sealing nut gasket over the UV lamp while always keep a firm hold of the UV lamp until it is secured to its four pin connector. Using a soft cloth, or wearing gloves to hold the UV lamp, push the female 4 pin connector firmly on to the lamp pins.



- Locate the three holes in the end cap with the three holes on the end of the sealing nut. Screw all three screws (M3) through the holes in the end cap, into the sealing nut.



- Return full water pressure to the UV reactor. Insert the power lead into the outlet then turn power on. The UV lamp will ignite and come on, however it will take between 2 and 5 minutes for the lamp to reach full output.

3 SERVICING

Servicing should only be carried out by a qualified service technician. The mains power to the UV unit must be switched off and the reactor must be hydraulically isolated and de-pressurised before carrying out any service work.

3.1 Servicing the Quartz Thimble

- Switch off main power supply to the UV disinfection reactor.
- Isolate the water supply to the UV reactor. Release pressure and drain water within the reactor.
- Remove the three screws that secure the electrical cap to the sealing nut. Slide the lamp out enough to be able to remove the four pin plug.
- Disconnect the four pin plug from the end of the UV lamp. Remove the UV lamp from the reactor and place in a safe place.
- Unscrew the sealing nut in an anti-clockwise direction and carefully remove it from reactor. Take care with single ended chambers with spring quartz support, as the spring will

suddenly push the quartz out of the chamber when the sealing nut becomes disengaged from the thread on the chamber. Take care to hold on to the quartz thimble as it may come out of the reactor at the same time. Remove the sealing nut from the quartz thimble and store in a safe place. You can then remove the quartz thimble from the reactor.

- If the thimble is due for a clean, wipe it down with a cleansing cream or similar and then wash down with water. It may be necessary to scrape off the remnants of the old O ring with a sharp knife. Repeat this step until the quartz thimble is clean, then wipe down the quartz thimble with a soft cloth/ tissue that has been soaked in methylated spirits, then dry it. (Take care not to leave any marks on the quartz).
- Re-assemble the chamber as described in the 'assembly' section.

3.2 Servicing the UV Lamp

- Switch off the mains power to the UV disinfection unit. The lamp may be hot so allow 10 minutes for the lamp to cool down before handling it.
- Remove the three screws that hold the end cap in place on the end of the sealing nut. The UV lamp will be attached to the lead that goes through the end cap.
- Slide the UV lamp out just enough so that you are able to get a firm hold on it, you will then be able to remove the four pin plug that is connected to the end of the UV lamp.
- After the four pin plug has been removed, you can then remove the UV lamp from the reactor.
- Reinstall UV lamp as described in the 'assembly' section.

4 GUARANTEE

ONE YEAR GUARANTEE FOR THE REACTOR

A one (1) year guarantee is issued from the date of purchase for this Stainless Steel Reactor, provided that it is installed and maintained in accordance with our instructions. Faults regarding the material and workmanship of this reactor will be rectified free of charge within the warranty period. This warranty does not cover installations where salt water passes through the reactor.

ONE YEAR GUARANTEE FOR POWER SUPPLY

A one (1) year guarantee from the date of purchase for the Power Supply, provided that it is installed and maintained in accordance with our instructions. A surge protector should always be used in conjunction with the power supply and to protect device against surges, and validate warranty.

ONE YEAR PRO-RATA GUARANTEE FOR ULTRA-VIOLET LAMP

The UV lamps are warranted for 12 months of continuous operation. In the case of a technical failure the following replacement/discount applies.

- * up to one month: full replacement
- * Over one month, pro rata discount to 12 months

This guarantee is based on a maximum of 4 ON/OFF switches per 24 hour period