

INSTALLATION & MAINTENANCE



MODELS:

GT7-12G

304 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.

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 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.

2.1.1 Installing the Reactor

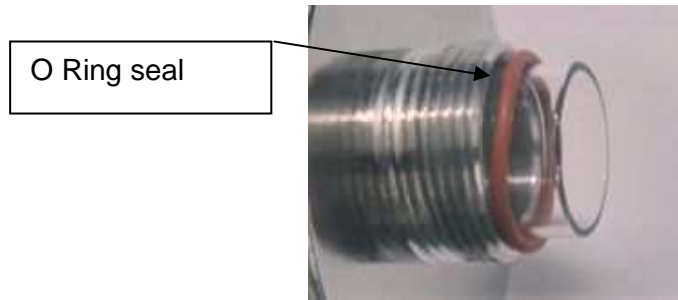
- The disinfection chamber comes complete with it's own wall mounting brackets
- The preferred orientation for the reactor is horizontal, however vertical orientation is acceptable. The in-outlet ports should be pointing up for horizontal installations, or the outlet should be the top port in vertical installations, to prevent airlocks.

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.

- Place an O ring over the quartz so the O ring is positioned against the chamfer on the sealing nipple. Be careful not to roll the O ring as it is not round and shouldn't be rolled.
- If the O ring rolls be sure to turn the O ring back into its natural oval shape before tightening the nut



- At this point the chamber should be plumbed into the water line. Once the water is opened into the chamber you should leave it in this position for at least 3-4 minutes while you inspect for leaks before inserting the tube and turning the power on.
- If a leak is detected you should tighten the knurled nut some more until there are no leaks.
- Insert the tube and plug the power supply onto the 4 pin on the tube. Then turn power on.
- Push the rubber boot over the knurled nut. 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 rubber boot that covers the cap. 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 the 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. Wash 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.