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## **ONSITE WASTEWATER EFFLUENT UV DISINFECTION UNIT MODEL 3G**

### **INSTALLATION INSTRUCTIONS**

- I. First, unpack the unit and check for any damage in shipping. There are 7 sub-assemblies that comprise the UV system, which are:
1. Disinfection, chamber – 3 inch ABS with 4-inch inlet and outlet hubs.
  2. Disinfection subassembly – anodized aluminum frame, pure fused quartz sleeve, Teflon ® cover, packed inside the disinfection chamber.
  3. PVC handle for disinfection subassembly.
  4. Long Life\_ UV lamp- packed inside the PVC handle.
  5. Riser pipe 4 inch ABS with a ¾ inch PVC nipple at one end. The PVC handle and UV lamp are packed inside.
  6. Electrical subassembly- junction box with pre wired alarm board, electronic ballast, and UV lamp power cable.
  7. Two 4-inch Sch 40 ABS pipe couplings.

Note: Inspect the unit upon receipt and report any damage.

There will be some additional items needed for installation, which are:

1. ABS cement (also multipurpose cement if bonding to PVC pipe)
2. Silicone sealant
3. Teflon tape
4. Isopropyl (rubbing) alcohol
5. Glycerin (available from drug stores)
6. Wires

A schematic drawing of the unit is shown in figure 1.

## **II INSTALLATION ALTERNATIVES**

1. In ground – couple the 4-inch inlet to the exit pipe of the pretreatment unit, and couple the 4-inch outlet to the drain field pipe.
2. Pump tank - couple the UV unit inlet pipe to the pretreatment unit exit pipe at the entrance of the pump tank.
3. Figure 1 shows that the electrical junction box should be above ground level. If this should pose a problem with lawn mowers, the box could be placed below grade in an irrigation or water meter box. Or an artificial rock could cover the junction box.

The Junction box is rated NEMA 4X. However, to be safe it should be protected from flooding.

In pump tank installations care should be taken to prevent flooding of the junction box or the ballast suspended below it.

### **III DETAILED STEPS**

- 1 Cut 4 inch riser pipe and lamp handle to meet job needs. Use the 4-inch connection to the pretreatment unit as a reference point. The lamp handle upper end should be slightly below the  $\frac{3}{4}$  inch nipple and the riser pipe.
- 2 Attach the threaded end of the lamp handle to the 1 inch threaded nipple on the upper end of the disinfection subassembly, which is packed inside the disinfection chamber. Teflon tape should be used to seal the threads. Then remove the disinfection subassembly by pulling the handle upward.
- 3 Bond the riser pipes and couplings and connect the disinfection chamber to the upstream and downstream (if any) pipes. The unit symmetrical and either port can be used as the inlet (or outlet)
- 4 Inspect the disinfection subassembly. Using a clean, soft cloth and isopropyl (rubbing) alcohol, clean the Teflon ® cover and remove any fingerprints. Then lubricate the rubber gaskets with either water or glycerin.  
**Note: Do not use silicone or petroleum based lubricants.**
5. Slide the disinfection subassembly through the riser pipe into the disinfection chamber using the handle. Make sure that the subassembly is at a right angle to the inlet and outlet pipes, and that the holes on the upper hub of the subassembly lock into two pins in the disinfection chamber. The orientation is very important for successful UV unit operation
6. The UV unit operates on 120 VAC single phase (50 or 60 HZ) power and consumes 30 watts. A dedicated 10-15-amp breaker on the main electrical panel should be used for service.
7. An electrical junction wiring diagram is shown in figure 2. Inlet power, ground and alarm wires are fed through conduit to the  $\frac{3}{4}$  inch nipple on the riser pipe. Enough wire should be pulled through the riser pipe to reach about one foot above it.

8. The wires should then be fed through the cord grip on the bottom side of the electrical junction box. The cord grip can accommodate five 12 AWG wires in addition to those pre-wired.
9. Attach the wires to the terminal block as shown in figure 2. The wiring schematic is also shown on the inside of the junction box cover.
10. The alarm contacts are compatible with both normally open (N/O) and normally closed (N/C) external alarm units (furnished by others). They accommodate up to 120 volts and up to 500 milliamps. Select the common and the contact that complies with the receiving alarm panel.
11. Tighten the cord grip, attach the four pin connector to the UV lamp and carefully lower the lamp through the handle. Be careful to not damage the quartz tube during insertation
12. Lower the ballast so that it is loosely attached to the PVC handle by the two tie wraps.
13. Place the electrical junction box on top of the 4 inch riser pipe. tuck excess wire into the riser pipe.
14. Turn the breaker at the main electrical panel on. The LED light on the side of the junction box should now be on, indicating that the unit is operational.
15. Fill the recess in the bottom of the electrical junction box where the wires feed into the cord grip with silicone sealant. Then, replace the electrical junction box lid.

## **MAINTENANCE AND SERVICE**

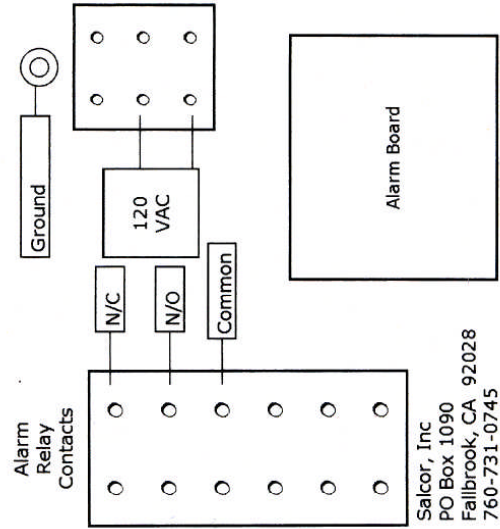
The Salcor UV 3G disinfection unit is designed to provide long service life. It is recommended that the UV lamp be replaced every two years to insure proper disinfection. To replace the lamp:

1. Turn off the dedicated breaker located in the main electrical panel that supplies power to the UV system.
2. Remove the electrical junction box and ballast from the UV disinfection chamber and carefully set it aside.
3. Using the power line connected to the UV lamp, lift the lamp out of the disinfection subassembly.
4. Disconnect the four pin connector attaching the power line to the UV lamp.
5. Connect the new lamp to the four pin connector and completely lower the new lamp into the UV subassembly.
6. Tuck the remaining power line into the riser pipe.
7. Make sure the ballast is still in position on subassembly handle and insert the plastic section on the back side of the control center enclosure into the top of the riser pipe.
8. Turn on the dedicated breaker located in the main electrical panel that supplies power to the UV system.

It is recommended that the disinfection subassembly be removed and serviced a minimum of once per year to insure proper effluent disinfection. To clean the Teflon® sheath and disinfection subassembly:

1. Clean with a soft sponge and detergent.
2. Use isopropyl alcohol on a soft cloth to remove difficult stains like finger prints and other films.

# Electrical Junction Box



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