
6.0 Start-Up - (IMPORTANT)after verification that the unit has no leaks anywhere, including a possible broken quartz tube damaged during transit, you are ready to start up your EA unit.

6.1 Start Up Circulation Pump -

6.2 Check EA Unit for Leaks - Make one final check for leaks in your piping, accessories, and the EA unit unions. If any water leakage appears at the EA unit's power cord exit point, disconnect the EA unit immediately. This is a sign of the glass quartz tube inside the EA unit being broken or cracked during transit or during installation. The glass quartz tube can be visually inspected by removing the stainless steel housing from the plastic electrical end of the EA unit by loosening the plastic end from the stainless steel housing using the union nut present on the housing. If the glass quartz tube is cracked or broken, contact your supplier or Delta UV for a replacement. Do not operate the EA unit until this problem is corrected. See Sec. 7 for instructions on replacing the glass quartz tube assembly.

6.3 Chemical Balance - Check the chemical balance of your swimming pool or spa and adjust the chemical balance as per your pool chemical suppliers instructions. - Remember, the EA unit dramatically reduces the need for pool chemicals, but does not eliminate the need for proper pool or spa chemical balance.

7.0 Quartz Tube Maintenance - The EA unit requires very little maintenance during the year. The UV bulb in the EA unit is placed inside a quartz tube to protect the bulb from the water in the EA unit's wet chamber. The quartz tube is contained as part of the electrical end tee assembly. The quartz tube itself cannot be replaced, but rather the whole quartz tube/electrical tee assembly should be replaced. Contact your Supplier or Delta UV if you need to replace the quartz tube assembly.

This quartz tube can have its ability to transmit the UV rays from the bulb through the quartz tube diminished if the quartz tube becomes dirty or laden with deposits. The quartz tube should be removed from the wet chamber stainless steel housing every six (6) months and inspected to make sure it is clean and that deposits are not attached to the quartz tube. To remove the quartz tube assembly for cleaning or replacement, you should follow the steps shown below.

7.1 Disconnect Power - Unplug the EA unit from its power receptacle.

7.2 Stop Your Circulation Pump - You must shut off the circulation pump so that no water is flowing into the EA unit. If valves are installed which isolate the EA unit from the rest of the equipment, simply close the valves and isolate the EA unit for removal. If any pressure remains inside the EA unit after the pump is turned OFF, it must be relieved by simply unscrewing the bottom union nut on the EA unit. This will relieve any pressure. When you are absolutely sure that no pressure remains inside the EA unit's wet chamber, you can proceed to the next step.

7.3 Remove the Plastic Plumbing/Electrical Tee Fitting - **CAUTION! NEVER REMOVE ANY EA UNIT COMPONENT WITHOUT FIRST UNPLUGGING THE EA UNIT FROM ITS POWER SOURCE AND REMOVING ALL PRESSURE FROM INSIDE THE EA UNIT'S WET CHAMBER.** Before proceeding further, make sure the EA unit has not been operating for at least five minutes before starting the removal of the electrical connector. This will allow the UV bulb inside the quartz and the quartz tube itself to cool down before handling. The plastic plumbing/electrical tee is removed by unscrewing the plumbing union and housing unions attached to the tee fitting. Once all unions are unscrewed, slowly lift the tee fitting (with quartz tube attached) from the stainless steel EA unit body. You now have the quartz tube assembly removed from the EA unit and ready from cleaning.

7.4 Cleaning the Quartz Tube - The quartz tube exterior can normally be cleaned by mixing a mild solution of Muriatic Acid (available at all pool supply stores) with water in a ratio of four parts water to one part acid. **CAUTION:** Follow the directions for use and handling of Muriatic Acid on the acid bottle label, being careful to protect your eyes, wear rubber gloves and avoid breathing fumes. DO NOT USE ABRASIVE CLEANERS as they can scratch the high quality quartz glass. If lime or hard water calcium deposits are encountered, lime removal products that are available in grocery stores can be used. These products will not harm the hard glass surface of the quartz tube. Complete the cleaning of the quartz tube, rinse it off and wipe it dry.

Lastly, carefully inspect the cleaned quartz tube for cracks. If any cracks in the quartz tube are found, the quartz tube assembly must be replaced. Broken quartz tubes will allow water to enter the dry electrical chamber, cause the GFCI to trip and attack the electrical components of the unit, which will cause them to fail and need to be replaced. BROKEN QUARTZ TUBES, OR WATER DAMAGE CAUSED BY BROKEN QUARTZ TUBES, ARE NOT COVERED UNDER YOUR LIMITED WARRANTY.

7.5 Re-installing The Quartz Tube - The process of reinstalling the quartz tube is just the reverse of the removal process.

8.0 UV Bulb Removal and Replacement - The following instructions should be followed every time you remove or replace the UV bulb. While the UV bulb is not required to be removed from inside the quartz tube when cleaning the quartz tube, it is convenient to schedule one of the semi-annual quartz tube cleanings at the same time as the annual UV bulb replacement. NOTE: The UV bulb in your system contains mercury, dispose of it in accordance with the instructions on Page 2.

8.1 Electrical Connector Assembly Removal - In order to replace the UV bulb, it is necessary to unscrew the electrical connector assembly from the electrical tee assembly. The electrical connector is removed from the plastic electrical tee at the top of the EA unit by unscrewing (rotating counter-clockwise) the connector from the upper (electrical end) plastic body. Note that there is an O-Ring between the electrical connector and the plastic body. Locate the O-Ring and put it aside for re-installation later.

8.2 Removing the UV Bulb - When you unscrew the electrical connector, remove it slowly from the electrical body. While you are removing the electrical connector from the body, you will be removing the UV bulb at the same time. Pulling up on the electrical connector too quickly may cause the four pins of the UV bulb to become separated from the electrical connector, causing the bulb not be removed at the same time as the electrical connector. If this occurs, bulb removal can be accomplished after the electrical connector is removed by simply placing the EA unit upside down and the bulb will drop out of the EA unit into your hand. Do not allow the bulb to fall onto the floor as it will most likely break. Make sure the bulb and quartz tube are cool before handling. To avoid burning your skin, do not handle a hot UV bulb or quartz tube.

With the electrical connector and bulb removed from the quartz tube, you can unplug the UV bulb from the electrical connector by grasping the bulb by the white porcelain connector near the top of the bulb and at the same time, pull the electrical connector from the bulb. **DO NOT TOUCH THE UV BULB GLASS WITH YOUR**

BARE HANDS! Use a soft clean cotton cloth or clean cotton gloves to handle the UV bulb. Skin oils on your hands can remain on the bulb and cause hot spots on the bulb which can shorten the bulb life. Carefully place the removed bulb in a safe location while cleaning the quartz tube. Remember, replacement of the UV bulb after 1 year (9000 hours) of use is **MANDATORY**. Even though the bulb may be glowing (when viewed through the clear union piece) the bulb's useful life for sanitizing ends after 9000 hours of use. Annual bulb replacement is a **MUST!** Contact your supplier or Delta UV to obtain a UV bulb replacement.

8.3 Removing the Bulb Cushion and O-Rings - In order to properly position the UV bulb inside the quartz tube, a bulb cushion (Part #44-02019) and two O-Rings (Part #44-02221) are placed on the UV bulb. These new parts are included with all replacement bulbs, but must be reused if the bulb is not going to be replaced. Locate them and set them aside if you plan to use them in the future. They may be found inside the quartz tube (if they become dislodged from the UV bulb during removal from the quartz tube) or on the UV bulb itself.

9.0 Re-installing the UV Bulb - DO NOT TOUCH THE UV BULB GLASS WITH YOUR BARE HANDS. Oils on your hands transfer to the bulb glass and cause hot spots on the bulb surface. If you have touched the bulb with your bare hands, you must wipe the bulb glass off using a clean soft cotton cloth moistened with Denatured Alcohol, before inserting the bulb back into the quartz tube.

9.1 Bulb Cushion Installation - Seat the bulb end cushion on the end of the bulb (the end that goes down into the quartz tube first).

9.2 O-Rings Installation - Place the two O-Rings around the top white porcelain bulb end cap (where the electrical pins are located).

9.3 Connecting the Bulb Pins to the Bulb Connector - By grasping the UV bulb by the white porcelain pin end, insert the four silver pins on the bulb into the white bulb pin connector extending beyond the end of the electrical assembly. Note that the four pins are not symmetrical from one another. Two pins are close together and two are further apart. Make sure when you are installing the pins into the pin connector, that the pins align correctly with the pin connector assembly. Push the bulb firmly into the pin connector, but do not force the pins into the pin connector. If force appears to be required, it is an indication that the pins are not aligned with the pin receptacle. The bulb must be attached to the electrical assembly before inserting the bulb into the quartz tube.

9.4 Inserting the Bulb Into the Quartz Tube -The last step before inserting the bulb into the quartz tube, is to make sure the O-Ring that goes between the electrical connection assembly and the electrical tee fitting is in place and once confirmed, make sure the bulb cushion is in the downward end of the bulb and that the bulb's O-Rings have not become dislodged from the white ceramic on the end of the bulb while the bulb is being inserted down into the quartz tube. Re-position the bulb O-Rings if necessary. Slowly lower the bulb into the quartz tube and once the electrical assembly has been threaded onto the electrical tee, rotate the electrical assembly clockwise **SLOWLY** until the electrical assembly is screwed completely onto the electrical tee and is flush with the top of the electrical tee. You may use a wrench to secure the two pieces however, only a slight tightening should be done. **DO NOT OVERTIGHTEN.** There is no water behind the electrical assembly therefore, the connection need only be tight enough to allow the sealing O-Ring to prevent water from entering the electrical connection during inclement weather.

9.5 Turn the Circulation Pump Back On - Before power is restored to the EA unit, water must be flowing in the EA unit's wet chamber. Verify that all valves are open in the plumbing lines servicing the EA unit and that you have a good water flow through the EA unit and back to the pool, spa or pond, before applying electrical power to the EA unit.

9.6 Plug the EA Unit Power Into the Power Receptacle - Plug the EA unit back into the electrical receptacle servicing the unit. Verify that the bulb is lit by viewing the glow of the bulb through the clear plastic union fitting at the outlet of your EA unit. Once you have verified that the bulb is lit while the pump is operating, your EA unit is ready for service.

10.0 Scheduled UV Bulb Replacement - As mentioned previously, in addition to cleaning of the quartz tube periodically, annual replacement of the UV bulb is required. The High Output UV bulb in your EA unit has a useful life of approximately 9000 hours of operation, which is about one year of continual use. ANNUAL REPLACEMENT IS MANDATORY – Even though the bulb may be glowing after one (1) year of operation, do not operate your EA unit longer without replacing the bulb as the bulb will have reached its useful ability to do its job by then. Bulb replacement is best done at the same time as quartz tube cleaning to minimize your maintenance efforts. This can be accomplished with a little planning ahead. You should schedule one of your quartz tube cleanings to take place at the required annual bulb replacement time occurrence.

As a point of information, it should be noted that if you start and stop your circulation pump frequently, such as by daily time clock operation, you will cause the bulb to be more susceptible to burning out more quickly than if used continually. This is the same phenomenon you see when you turn on a table lamp and it flashes and burns out. The momentary inrush of billions of electrons that occurs when a bulb is first energized has a detrimental effect on the filament of all bulbs, thus the cause for a potentially shorter bulb life.

10.1 Annual Reminder - It is recommended that you mark your calendar for bulb replacement ten or eleven months from the initial date of installation of your Elektra® Aquamatic UV unit. This will give you ample time to obtain a new bulb from your supplier before re-lamping is required. If your application is critical, as in a Koi pond, where you absolutely do not want to have your EA unit out of service for any period of time, it is suggested that a spare bulb be kept on site so you can change out the bulb immediately if replacement is needed. Bulb replacement is accomplished as outlined in Sec. 8 and 9.

11.0 Additional Maintenance - While not required for the function of your EA unit, you can keep your EA unit looking new by periodically applying a light coat of car wax to the exterior of the unit at initial installation, then periodically thereafter as required. Be careful not to damage the silver product identification label, as EA units returned for service with missing or mutilated labels will not be warranted. No other scheduled maintenance of your EA unit is necessary. All other components not mentioned previously do not require any preventive maintenance. Should any component be require replacement, you can identify the component part number in Sec. 16 of this manual and obtain it from your original supplier, or if he does not have it, then from Delta UV directly.

12.0 Normal Operating Results - Ponds, spas, swimming pools, fountains, waterfalls and water features have different disinfection and clarification needs than fishponds. The EA unit provides those needs in the same manner equally effectively, for all types of water environments specified herein.

12.2 Normal Operating Results (Swimming Pools, Spas, Fountains, Water Features) - You will see a significant improvement to your water clarity and the “chlorine odor” should disappear in 2-4 days of continual operation after start-up on properly sized and installed pools, spas, fountains, waterfalls and water features. Remember, as noted before, the EA unit will dramatically reduce the pools reliance on sanitizers and algae control products. Many users of UV units report a 70%-85% reduction in their chemical use. This is not only desirable due to reduced operating costs, but the major reduction of sanitizer levels makes for a more healthier bathing environment. REMEMBER, you must continue to check your water chemistry regularly as required for your water vessel and in pools. Some sanitizing chemicals will still be necessary to supplement the sanitization and control capability of the EA UV unit.

13.0 Winterizing – Your EA unit can be damaged if allowed to freeze. The substantial pressure inside the wet chamber caused by ice forming inside the wet chamber can break the glass quartz tube as well as the wet chamber itself. Therefore, you must protect your EA UV unit from freezing. Damage due to freezing, including breakage of glass components, the wet chamber, or water damage to other components caused by freezing IS NOT COVERED under your Limited Warranty.