

TOTAL ECLIPSE™

Installation & Operation Manual For Models ECT-2 and ECT-4

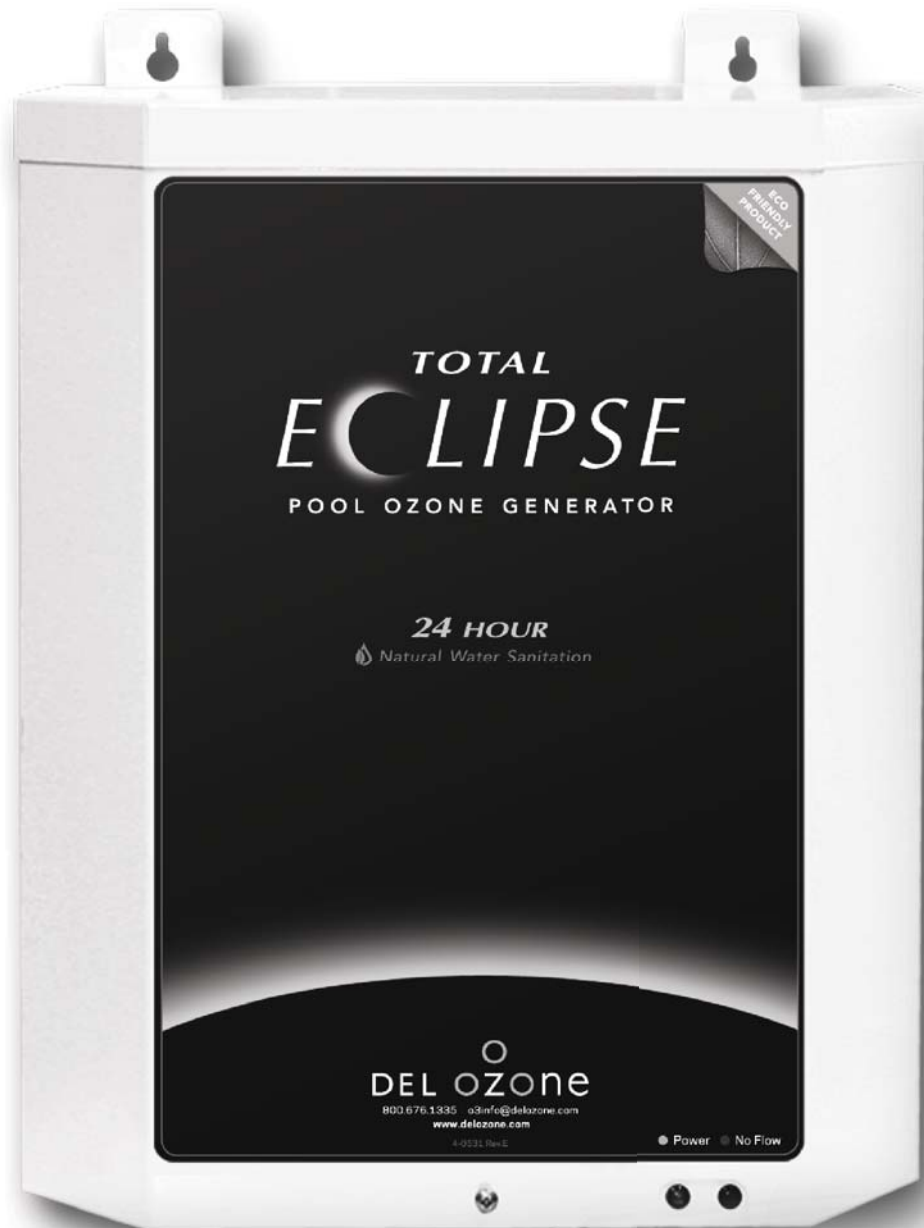


Table of Contents

SECTION 1

General Information

1A Description	1
1B Specifications	1

SECTION 2

Installation & Operation

2A Installation	1
2B Operation.....	4
2C Maintenance.....	5
2C-1 Ozone Module Replacement.....	5
2C-2 Ozone Air Filter Replacement.....	5
2C-3 Winterizing the Total Eclipse.....	5

SECTION 3

Troubleshooting	5-6
-----------------------	-----

SECTION 4

Replacement Parts and Ordering Information

5A Ordering Information.....	6
5B Standard Replacement Parts List	6

Warranty.....	6
---------------	---

IMPORTANT SAFETY INSTRUCTIONS

Read and Follow All Instructions

- Read this manual completely before attempting installation.
- All permanent electrical connections should be made by a qualified electrician.
- For cord and plug-connected units, connect to a grounded, grounding type receptacle only. If the Total Eclipse™ electrical connection is to be attached to the pool controls, be sure the pool controls are protected by a Ground Fault Circuit Interrupter (G.F.C.I.). If the Total Eclipse™ is connected to an independent electrical supply, then a G.F.C.I. must be installed between the Total Eclipse™ and the electrical supply.
- Do not bury cord.
- Warning - To reduce the risk of electrical shock, replace damaged cord immediately.
- A pressure wire connector is provided on the outside of the unit to permit connection to a minimum No. 8 AWG (8.4 mm²) solid bonding conductor between this point and any grounded metal equipment, grounded metal enclosures of electrical equipment, metal water pipes, or conduit within five (5) feet (1.5m) of the unit as needed to comply with local requirements.
- Install at least 5 feet (1.5 meters) from wall of pool water using nonmetallic tubing. It is highly recommended that the ozone generator be installed at least one (1) foot above the water level to prevent water from contacting electrical equipment. Install in accordance with the installation instructions.
- Follow all applicable electrical codes.
- Electric shock hazard. Be sure to turn power OFF and disconnect from power source before any service work is performed. Failure to do so could result in serious injury or death.
- The Total Eclipse™ must be installed in an outdoor location, or indoors in a forced air ventilated room, and installed so that the orientation is exactly as shown in Figure 1. Install to provide water drainage of generator to protect electrical components.
- Mount the Total Eclipse™ so that it is inaccessible to anyone in the pool. Never attempt any servicing if the unit is wet.
- Plastic ozone supply tubing is inside the Total Eclipse™. Never replace this tubing with metal tubing.
- Warning - Short-term inhalation of high concentrations of ozone and long term inhalation of low concentrations of ozone can cause serious harmful physiological effects. DO NOT inhale ozone gas produced by this device.
- For your safety, do not store or use gasoline, chemicals or other flammable liquids or vapors near this or any other appliance.

SAVE THESE INSTRUCTIONS!

SECTION 1 General Information

1A Description

The Total Eclipse is designed to recirculate pool water while injecting ozone 24 hours a day. With the Total Eclipse you will maximize your ozone effectiveness while minimizing your operating costs.

The Total Eclipse provides efficient, cost effective, continuous ozone production.

1B Specifications

- Wall Mount - 17" tall x 14" wide x 7" deep
- Corona Discharge (CD) Technology
- 0.5 gr/hr (ECT-2) / 1.0 gr/hr (ECT-4) ozone output applied to 5 gpm nominal
- 24 hour operation independent of pool equipment
- **120V · 50/60Hz · 192W**
- **240V · 50/60Hz · 192W**
- Built-in 1/20 hp recirculation pump, 5 gpm, 20 psi max
- Complete with internal injector
- Inline flow switch and check valve for protection of pump and CD modules

SECTION 2 Installation & Operation

2A Installation

The most common pool and pool/spa configurations are discussed in this manual. For additional installation options or questions on your specific installation, please contact DEL Ozone at 805-541-1601, extension 249.

1. The Total Eclipse **must** be connected to a G.F.C.I. protected 120V/240V outlet providing continuous power.
2. Mount the Total Eclipse in a clean, protected area.
 - a. Install the Total Eclipse at least one (1) foot above water level, and no higher than eight feet above the pool's main pump.
 - b. In some installations, the top of the Total Eclipse cabinet can be mounted up to 36 inches below the surface of the water. If installed below the surface of the water, isolation valves must be provided as a safeguard in case of prolonged loss of power where water seepage past check valves can occur.

NOTE: Exceeding the recommended elevations may affect the water circulation rate (i.e. Total GPM/ozone delivery).

- c. Even though the Total Eclipse is designed for outdoor use, care should be taken when choosing a mounting

location. To protect your investment, mount the Total Eclipse where it is protected from the elements (direct sun, rain, dirt), completely sheltered if possible while providing adequate ventilation.

3. Install 3/4" PVC piping for circulation of pool water, as shown in Figure 1.
 - a. Smaller diameter pipe will increase dynamic pressure loss, possibly causing inefficient or faulty operation of the unit.
 - b. Pipe larger than 3/4" may be used if necessary. However, in a larger diameter pipe larger air bubbles will collect, causing gurgling at the pool. Avoid long pipe runs. Elbows, tees, and sharp bends in the piping should be avoided when possible.
 - c. Plumbing an independent return line from the Total Eclipse is highly recommended. Bubble formation and gurgling may occur otherwise.

NOTE: Air bubbles in the system can be removed by installing a DEL MDV-20. Contact your local dealer or visit DEL's website at www.delozone.com for details.

4. For optimum ozone distribution, the ozonated water should be returned back to the pool through a dedicated pipe in the bottom of the pool. If it is not possible to install with the dedicated return to the bottom of the pool, then install the Total Eclipse as shown in Figures 2, 3, or 4 based on the specific configuration of your system. These installation figures cover the following installation types: Figure 2—existing pools with in-floor cleaning system (ICS); Figure 3—existing pool/spa combination without in-floor cleaning system; Figure 4—existing pool/spa combination with in-floor cleaning system.

In case you are building a new pool with an ICS or a new pool/spa combination with or without an ICS follow these general guidelines:

- a. Plumb the Water Inlet to the Total Eclipse as shown in Figures 2, 3, and 4,
- b. Plumb the Water Return out of the Total Eclipse as a dedicated line to the bottom of the pool as shown in Figure 1.
- c. The recommended location to plumb the Total Eclipse inlet "T" is after the filter and before the heater.

NOTE: If returned directly to the skimmer, the ozonated water will be drawn back into the filtration system and will not mix with the pool water as effectively. If returned to the main return line, the line pressure (back-pressure) could cause a loss of suction and stop ozone from being mixed with the water, causing large bubbles to be trapped and released into the pool

5. Ensure that the provided 5lb. check valve is installed at the location and in the direction shown in the relevant figure.

NOTE: An installed check valve will not affect the Total Eclipse if the check valve's opening pressure is 1lb. or less.

continued on page 4

Common Installation Diagrams

NOTE: The following two-dimensional diagrams are for illustration purposes only, indicating the required key components. Plumbing orientation (i.e. depth below ground) may vary from pool to pool.

Note:

1. To help break up the bubbles at floor entry, we suggest using a "Salt & Pepper" style fitting (not included).

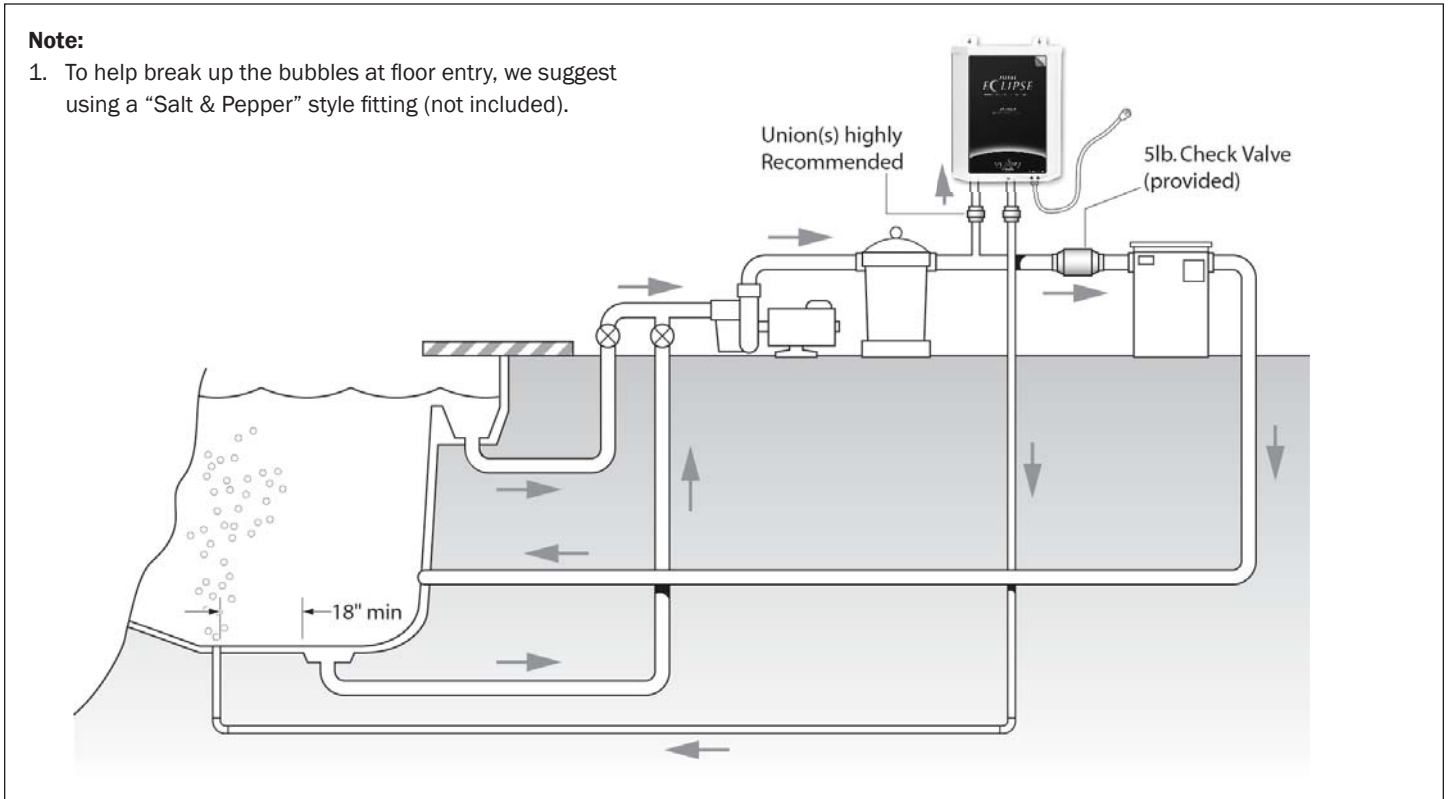


Figure 1: **New Pool**

Notes:

1. "ICS" stands for Infloor Cleaning System.
2. Even when the ICS is not operating, bubbles from the ozone generator will escape through the ICS head.

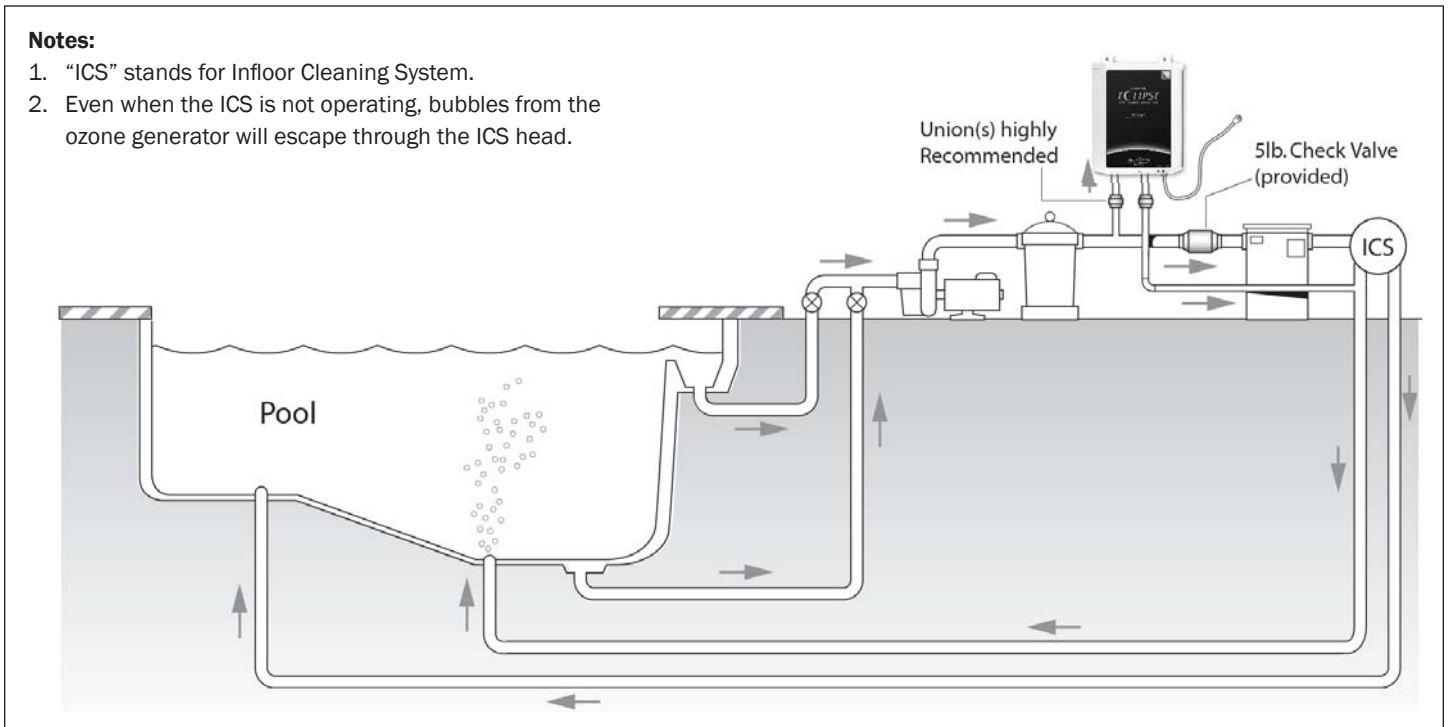


Figure 2: **Existing Pool** with Infloor Cleaning System

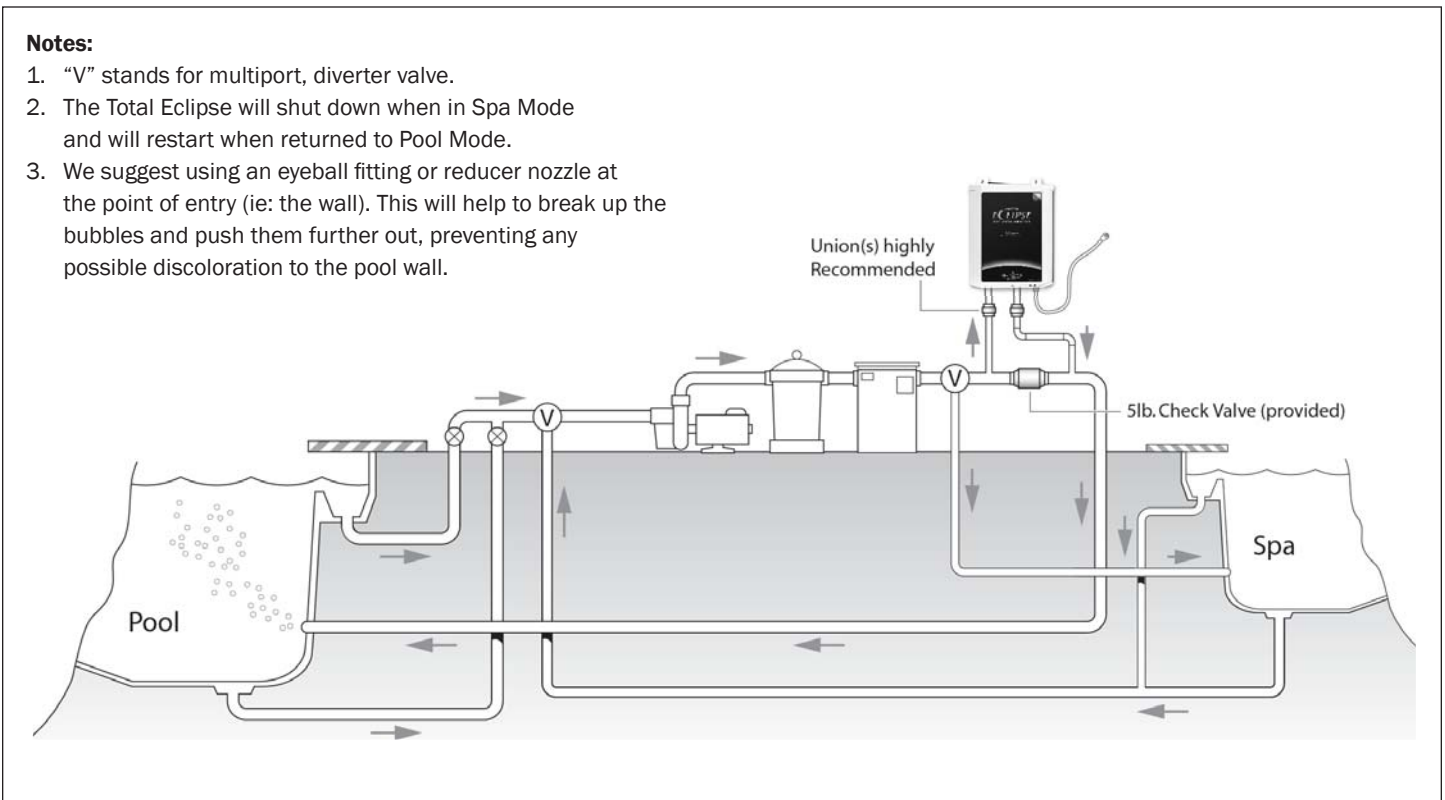


Figure 3: Existing Pool/Spa Combination without In floor Cleaning System

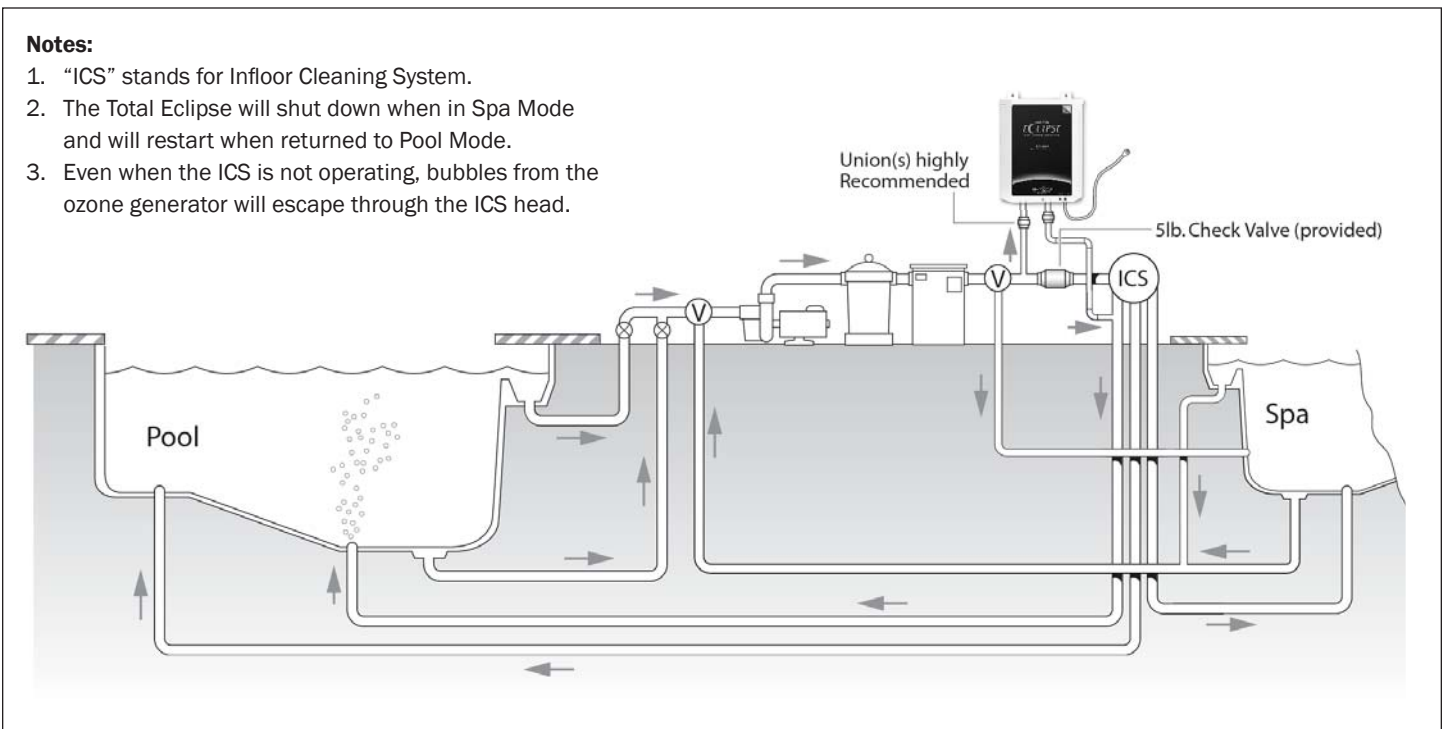


Figure 4: Existing Pool/Spa Combination with In floor Cleaning System

Total Eclipse Corona Discharge Ozone Generator

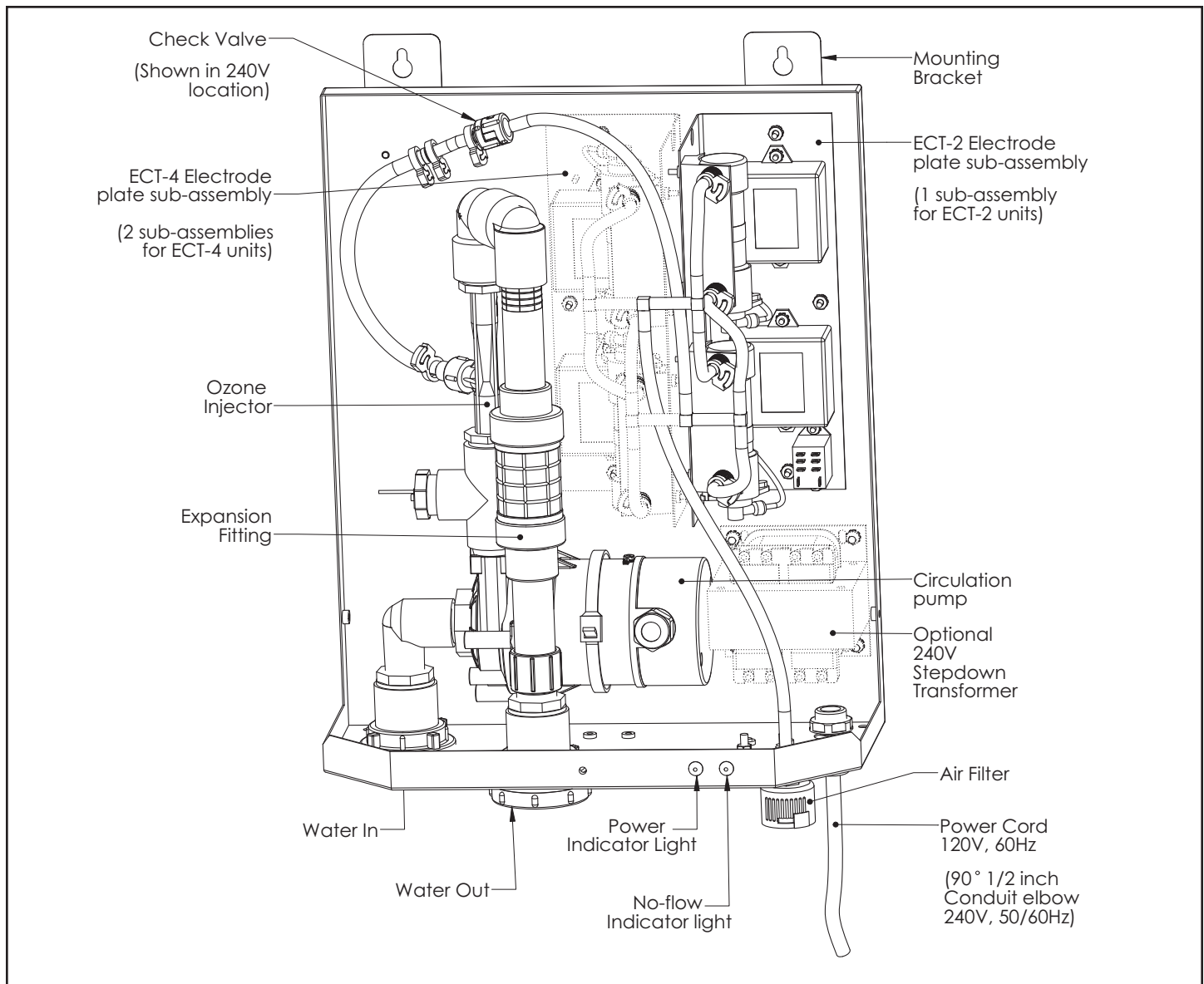


Figure 5: **TOTAL ECLIPSE Component Locations**

6. In all cases the return should be in the pool bottom or as low as possible on the pool wall.
7. When winterizing takes place, installation of the unions as shown in Figures 1-4 is necessary. If no winterizing will take place, unions are still included to facilitate unit removal if necessary.

2B Operation

Once the Total Eclipse has been properly installed, simply plug the unit into a 120V / 240V G.F.C.I. protected outlet. Turn the main pump on to its normal timed cycle. The Total Eclipse will detect flow from the main pump and start automatically. The Total Eclipse will continue running when the main pump cycles off. If water flow is lost to the unit for any reason, the unit will

shut down to protect the internal pump. If power is lost, the unit will shut down until power is restored to the main pump and the Total Eclipse. Once the main pump cycles on, flow will be restored to the Total Eclipse and it will begin running.

Indicator Lights: There are two lights, green and red, on the front of the unit. The green light indicates when there is power to the unit (when the unit's power cord is plugged in to an electrical outlet). The red light indicates when there is no water or ozone flow within the unit.

NOTE: When you initially plug in the Total Eclipse the red light will be on. As soon as flow is initiated through the unit, via the main circulation pump, the red light will go out, indicating that the unit is operating properly.

2C Maintenance - Refer to Figure 5

2C-1. Ozone Module Replacement: The CD Module consists of a high voltage, high frequency power supply & ozone electrode. The ozone-producing CD Modules have a life expectancy of 15,000 hours (approximately two years for continuous use and five years for seasonal use).

1. Turn off the electrical power and unplug the Total Eclipse.
2. Remove the ozone generator from its support if access is limited.
3. Remove the cover from the ozone generator enclosure (it is held by three (3) Phillips head screws on the cover).
4. Disconnect, then remove the tubing from the electrode plate sub-assembly.
5. Remove the relay from the right side of the electrode plate sub-assembly.
6. Remove the electrode plate sub-assembly from the back of the enclosure by loosening the three (3) nuts that secure it.

7. Disconnect the wires coming out of the CD Module power supplies (black box) by pulling the wire connectors apart.
8. Reverse this procedure to install the new electrode plate sub-assembly. Be sure the electrical & hose connections are tight and mountings secure.

2C2. Air Filter and Check Valve Replacement: The air filter and check valve attached to the ozone electrodes should be replaced when replacing the ozone modules. To replace the air filter, unscrew it from its fitting and screw in the new air filter. To replace the check valve, remove the hose clamp and tubing, then replace the check valve and discard the old one.

2C3. Winterizing the Total Eclipse: To winterize the Total Eclipse, unscrew the unions connecting it to the inlet and outlet plumbing. The water will drain out of the Total Eclipse and make it ready for winter. Once the water has drained, tighten the unions. When restarting your pool and/or spa equipment, the Total Eclipse will restart itself once water starts flowing through it.

SECTION 3 Troubleshooting

1. The green light is on, indicating power to the unit; but the red light is also on, and the Total Eclipse won't run.

(1) Ensure that the 5lb. check valve is plumbed in the main plumbing line after the tee to the water inlet of the Total Eclipse. This creates the pressure in the plumbing to divert the water into the Total Eclipse and prime the pump.

(2) There could be an air lock trapped in the Total Eclipse. With the pool's main circulation pump running, carefully open the union in the water out line from the Total Eclipse. As water starts to flow out of the union, quickly re-connect it. This will drain the air lock.

2. The Total Eclipse runs with the main circulation pump, but when the main circulation pump is turned off, the Total Eclipse shuts down immediately or shortly after.

(1) Ensure that you still have power to the Total Eclipse (green light is on).

(2) Ensure that your filtration equipment is working properly. The addition of a new sanitation device, like the Total Eclipse, will destroy a great deal of contaminants in the water and leave them to be filtered out. Therefore, you may find it necessary to clean your filter to un-restrict flow to your Total Eclipse.

(3) Air is seeping into the Total Eclipse, prime is lost at the flow switch, thus shutting down the system.

a. Inspect the pool's plumbing for signs of leaks. Water seeping out of a fitting, when the pump is running, means air can seep in when the pump is not running.

b. Inspect the design of the plumbing for traps where air pockets can collect. If an air pocket makes its way to the Total Eclipse, it will disengage the system's flow switch, shutting down the unit.

(4) Ensure that the Total Eclipse is plumbed as described, using a 5lb. check valve at the juncture where the plumbing tees into the Total Eclipse, and returns from the Total Eclipse back into the main plumbing to the pool.

3. The Total Eclipse has become clogged.

When installed as recommended, the Total Eclipse draws in filtered water free of debris. If it does however get clogged, unscrew the base of the expansion fitting and carefully remove the injector. It can be cleaned with vinegar or a mild acid solution.

4. The Total Eclipse lost power during a power outage.

Once power returns to the main pool pump and the Total Eclipse, it will restart and continue running as soon as flow is detected from the main pool pump.

6. The Total Eclipse continues to run when the main filtration system is turned off.

The Total Eclipse is designed to run independent of the main filtration system. When the main pump to the filter system shuts down, the Total Eclipse will continue to run, continuously ozonating the pool water.

7. Bubbles appear in the pool when the unit is running.

Some fine bubbles into the pool are normal. To avoid any large bubbles being trapped and released, plumb with a single 3/4" line independently returned to the bottom of the pool. In addition, keep all pipe runs to the pool straight and level using a minimum number of elbows and fittings.

NOTE: The collection of air bubbles in the system can be minimized by installing a DEL MDV-20.

SECTION 4 Replacement Parts and Ordering Information

4A. Ordering information:

To locate a dealer nearest you visit www.delozone.com or call DEL at **1-805-541-1601, ext 249**.

Be prepared with the following information:

- Name
- Address
- DEL Model #
- Date Purchased

4B. Standard replacement parts list:

1. Ozone Module sub-assembly 9-0595*
2. Ozone Check Valve, 1/4" x 1/4" 7-1411-01*
3. Tubing, Norprene, 3/16" ID x 3/8" OD 7-0079*
4. Filter, Air Intake, Foam Element 7-0084*
5. DELcheck, 5lb. check valve CO-0103
6. Unions 7-1042

* Items 1 through 4 should be replaced concurrently, every two to three years.

DEL OZONE COMMERCIAL PRODUCT LIMITED ONE YEAR WARRANTY

The limited warranty set forth below applies to products manufactured by DEL OZONE – 3580 Sueldo Street, San Luis Obispo, California 93401, and sold by DEL OZONE or its authorized dealers. This limited warranty is given only to the first retail purchaser of such products and is not transferable to any subsequent owners or purchasers of such products. Systems sized 65 grams or greater require factory commissioning and startup to maintain warranty as set forth below.

DEL OZONE warrants that DEL or DEL authorized dealers will repair or replace, at DEL's option, any part of such products proven to be defective in materials or workmanship within one (1) year of the date of receipt. Parts are covered under the one (1) year warranty when and only when the stated maintenance requirements are met. See owner's manual for complete maintenance details. This Warranty specifically excludes any components not manufactured by DEL OZONE that are external to the products covered, such as pumps, air compressors, monitors, tanks, or related components. DEL OZONE will assist with warranty claims for such components purchased through DEL OZONE; limited to the extent of the manufacturer's standard warranty. ANY REPAIR OR REPLACEMENT WILL BE WARRANTED ONLY FOR THE BALANCE OF THE ORIGINAL ONE (1) YEAR WARRANTY PERIOD

NOTE: USE ONLY DEL AUTHORIZED DEL REPLACEMENT PARTS. USE OF ANY OTHER PART(S) WILL VOID THIS WARRANTY.

Any replaced parts must be returned to DEL OZONE for warranty evaluation.

THIS LIMITED WARRANTY DOES NOT INCLUDE ANY OF THE FOLLOWING:

- (a) Any labor charges for troubleshooting, removal, or installation of such parts.
- (b) Any repair or replacement of such parts necessitated by faulty installation, improper maintenance, improper operation, misuse, abuse, negligence, accident, fire, flood, repair materials, and/or unauthorized accessories.
- (c) Any such products installed without regard to required local codes and accepted trade practices.
- (d) Damage to unit caused by water backflow;
- (e) Any implied warranty of merchantability or implied warranty of fitness for particular purpose, and such warranties are hereby disclaimed.
- (f) DEL Ozone shall not be liable under any circumstances for loss of use of such product, loss of profits, direct damages, indirect damages, consequential damages, and / or incidental damages.

This warranty gives you specific legal rights. You may have other rights which vary from state to state.

Extended Warranties and Service Agreements are available. Contact DEL for additional details.

TO OBTAIN WARRANTY SERVICE:

DEL OZONE
 3580 Sueldo, San Luis Obispo, CA 93401
 Customer Service Number: (800) 676-1335
 Fax Number: (805) 541-8459
 E mail: service@delozone.com

PROVIDE:

1. Project, contact name, mailing address and telephone.
2. Installer/Mechanical Contractor.
3. Unit Part Number, Serial Number, and date of purchase.
4. The date of failure.
5. A description of the failure.

After this information is provided, DEL Ozone may release a RETURN GOODS AUTHORIZATION (RGA) NUMBER. After receiving the RGA number the part in question must be returned to DEL Ozone, freight prepaid, with the RGA number clearly marked on the outside of the package. All preauthorized defective parts must be returned to DEL Ozone within thirty (30) days. Under no circumstances may any product be returned to DEL Ozone without prior authorization. Returns without the assigned RGA number on the outside of the package will be refused and shipped back to the sender at their expense. Upon receipt of preauthorized returned goods, DEL Ozone will repair or replace, at DEL Ozone's option, the defective product(s) and return them (freight prepaid for products under warranty). Buyer's acceptance of the product and use thereof constitutes acceptance of these terms.