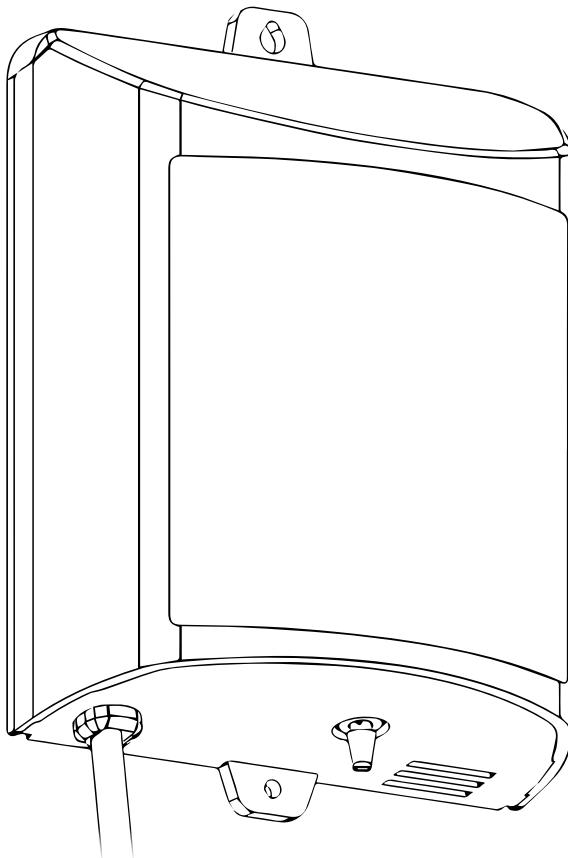




# DEL Ozone ABG 25

## INSTALLATION INSTRUCTIONS & PRODUCT MANUAL



C-M-P.COM/DEL

4-2353-01 Rev.B

# 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.
- Connect to a grounding type receptacle only. If the ozone generator 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 ozone generator is connected to an independent electrical supply, then a G.F.C.I. must be installed between the ozone generator and the electrical supply.
- Do not bury cord.
- **⚠️ WARNING** To reduce the risk of electrical shock, replace damaged cord immediately.
- Install at least 5 feet (1.5 meters) from wall of pool. Install ozone generator no less than one (1) foot above maximum water level to prevent water from contacting electrical equipment. Install in accordance with the installation instructions.
- Follow all applicable electrical codes.
- **⚠️ DANGER 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 ozone generator 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**.
- Mount the ozone generator so that it is inaccessible to anyone in the pool. Never attempt any servicing while unit is wet.
- Plastic ozone supply tubing is supplied with the ozone generator. 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!**

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# **SECTION 1 General Information**

## **1A. Description**

The DEL Ozone ABG 25 (Part numbers EC-AG1U and EC-AG2U) described in this manual is designed to provide the benefits of ozonated water in an environmentally safe and effective manner. The high quality, specially engineered components ensure efficient ozone output and reliable performance. As a result of proper use of the Ozone Generators, unpleasant effects of traditional chemical use are virtually eliminated. The Ozone Generators are safe and harmless to your equipment when installed properly.

## **1B. Specifications**

**Flow rate:** 15 scfh (nominal)

Flow rate and ozone output will vary with installation.

**Power Requirements:**

- EC-AG1U: ..... 120-240V, 50-60 Hz, 1Ø, 0.10 Amp Max
- EC-AG2U: ..... 120-240V, 50-60 Hz, 1Ø, 0.05 Amp Max

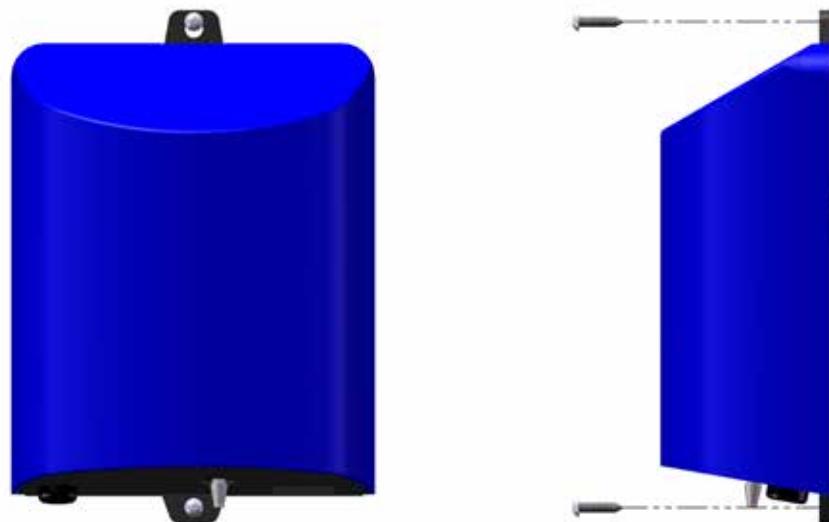
**Shipping Weight:**

- EC-AG1U: ..... Approx. 1.8 pounds / 0.8 kg
- EC-AG2U: ..... Approx. 1.6 pounds / 0.7 kg

**Location Requirements:**

- Mounting: Wall mount in a clean, protected area.
- Ambient Temp: 30°F - 120°F (0°C - 50°C)

## SECTION 2 Installation



**Figure 1: Wall Mount**

### 2A. Location

The Ozone Generator units are designed for wall mounting. See

**Figure 1.** Mount in a clean, protected area, either indoors or outdoors (preferably out of direct sunlight). Locate out of reach of sprinklers or drainage spouts. Allow sufficient access for maintenance and all tubing and electrical wires. Ozone Generator should be installed at least (not less than) one foot above the maximum water level. See **SECTION 2D-2, Ozone Gas Line**, for plumbing instructions based on mounting location.

### 2B. Wall Mounting

1. Refer to **Figure 1** to mark the locations for the two mounting screws.
2. Install screws (or other hardware appropriate for mounting surface) through the two mounting holes built in to the base of the ABG 25.

# SECTION 2 Installation

## 2C. Electrical

### 2C-1. Main Power

Connect the Ozone Generator to the pool timing clock so that the Ozone Generator operates simultaneously with the pool pump. The circuit must be protected by a ground-fault circuit interrupter (GFCI) installed in accordance to electrical code. Refer to the **IMPORTANT SAFETY INSTRUCTIONS** at the beginning of this manual for important wiring information. If the ABG 25 power cord comes with a built-in receptacle and the pump is equipped with a standard plug (NEMA 5-15P), the pump may be plugged in on top of the ABG 25 cord (pump current must not exceed 15A). Plug must be protected from moisture.

## 2D. Plumbing

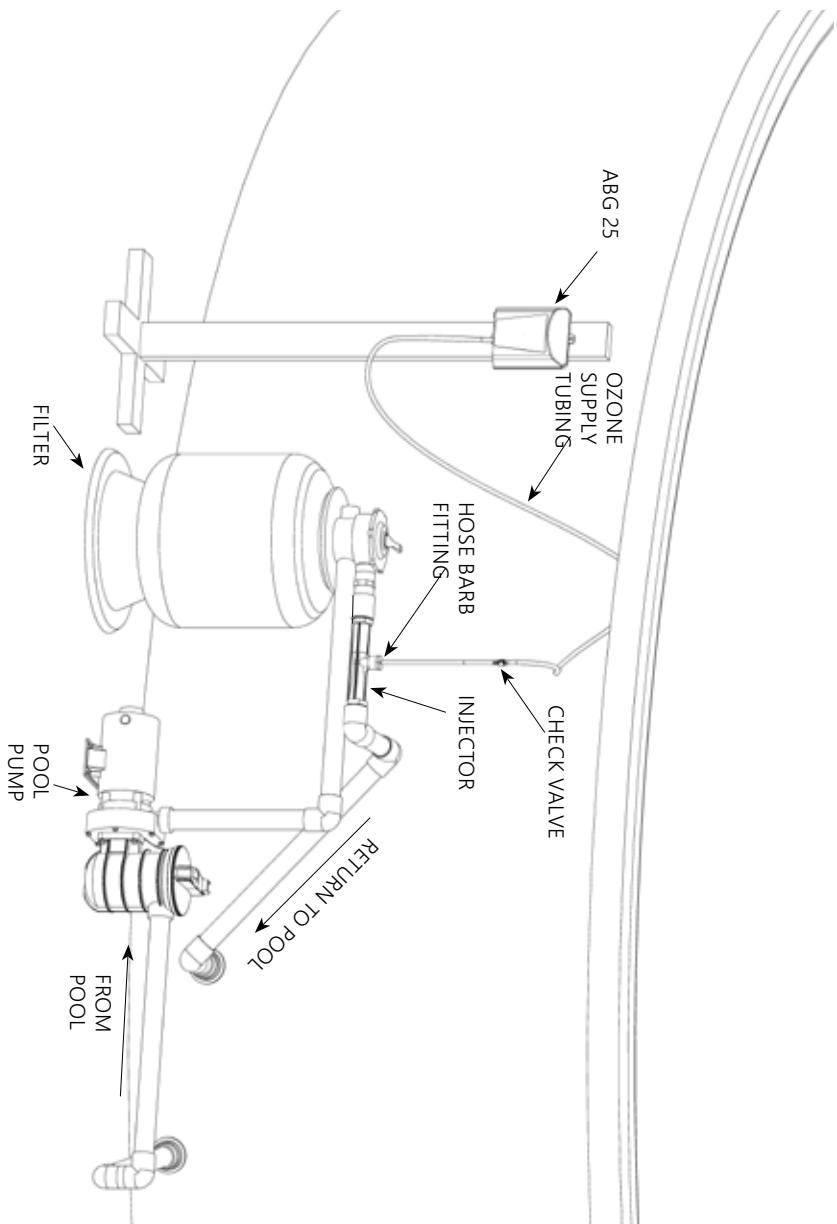
Ozone gas is introduced to the pool circulation line using a venturi Injector. Suction developed by the venturi allows the Ozone Generator to operate safely under vacuum. **NOTE:** The Injector needs to be installed after all other equipment or possible failure may occur.

### 2D-1. Plumbing the Above Ground Injector Assembly

**NOTE:** The instructions below and **Figure 2** describe Injector installation immediately after the Filter. For pools equipped with a heater, the Injector must be installed AFTER the heater. The fittings provided may be used to connect the Injector directly to the wall of the pool or the outlet of the heater.

1. Wrap Teflon tape on all male pipe threads.
2. Disconnect the pool's return hose from the Filter. Keep the hose elevated to avoid draining the pool.
3. Use either the straight or elbow fittings provided to connect the Injector to the discharge port of the Filter. Ensure that the flow arrow on the Injector is pointed in the direction of water flow, and that the Ozone Port is accessible.
4. Reconnect the pool's return hose to the outlet of the injector.
5. Attach Hose Barb Fitting to the Ozone Port on the Injector.

## SECTION 2 Installation



**Figure 2: Typical Injector Installation (Pool without heater)**

# **SECTION 2 & 3 | Installation & Operation**

## **2D-2. Ozone Gas Line**

Connect the end of the Ozone Supply Tubing that is closest to the Check Valve to the Hose Barb Fitting on the Injector. Secure with a supplied hose clamp. If the Ozone Generator is mounted above the water line attach the other end of the Ozone Supply Tubing to the ozone out fitting on the DEL Ozone ABG 25 and secure with the supplied hose clamps. If the Ozone Generator is mounted below the water line, the Ozone Supply Tubing must be run to a point above the water line. Simply coil the tubing into a complete circle about 6" diameter and fasten it above the water line. This will act as a water trap to prevent water from running back to the Ozone Generator.

## **3A. General**

To achieve optimal performance from the Ozone Generator, the pool must be as clean as possible to start with.

1. Backwash or clean filters one day before starting the Ozone Generator.
2. Superchlorinate pool water using a chlorine based shock treatment.
3. Test pool chemistry and adjust pH between 7.4 and 7.6. Adjust total alkalinity between 80 and 120 ppm.
4. Run pool filtration continuously for 24 hours prior to starting Ozone Generator.

## **3B. Initial System Start-Up**

1. Turn on pool circulation system.
2. Check for leaks.
3. Verify that ozone is being pulled into the Injector by checking for bubbles at the return.

If you experience complications, see **SECTION 4D**, call 1 (800) 676-1335 or visit [www.del ozone.com](http://www.del ozone.com) for assistance.

# **SECTION 3 & 4 | Operation & Maintenance**

## **3C. System Shut-Down**

If the system is to be shut down for an extended period disconnect the Ozone Generator power cord and disconnect the Ozone Supply Tubing from the Ozone Generator.

## **4A. System Electromechanical Overview**

### **4A-1. Internal Components:**

Ozone Module: Each Ozone Module consists of a Power Supply connected by two high voltage wires to an Ozone Cell.

## **4B. System Maintenance**

### **4B-1. Ordering Information**

To locate a dealer nearest you call 1 (800) 676-1335 or visit our website [www.del ozone.com](http://www.del ozone.com)

Be prepared with the following information:

- Name
- Address
- Model #
- Date Purchased

### **4B-2. Standard Replacement Parts List**

1. EC-AG1U Ozone Module ..... 9-1292-01
2. EC-AG2U Ozone Module..... 9-1293-01
3. Check Valve and Ozone Supply Tubing Assembly ..... 9-0777-01

Item (3) must be replaced once a year.

**4B-3.** Ozone Module performance will degrade over time. Replace the Ozone Module after 15,000 hours of operation. (15,000 hours equals approximately 5 years for a pool system that operates 8 hours/day, every day.) See **SECTION 4C** for module replacement instructions.

# SECTION 4 Maintenance & Service

**4B-4.** While operating, check regularly to see if bubbles are entering the pool. (If you have installed an MDV, check the MDV for bubbles.)

**4B-5.** Regularly inspect Ozone Supply Tubing for cracks or wear. Also check to make sure no water is present between the Check Valve and the Ozone Generator. This indicates Check Valve failure and the Check Valve and Ozone Supply Tubing Assembly should be replaced. (replacement part number 9-0777-01) immediately.\*\*

**⚠️WARNING** Trace amounts of nitric acid may be present in the check valve or tubing and could be mildly corrosive. If condensation is present, shut off Ozone Generator and allow the moisture to be drawn out or dried up prior to servicing.

## 4C. Ozone Generator Servicing

**4C-1.** The Ozone Generator must be removed from the wall before servicing. To remove the Ozone Generator:

1. Disconnect service to Ozone Generator.
2. Disconnect the power cord from the pool timer circuit.
3. Disconnect the Ozone Supply Tubing from the bottom of the Ozone Generator.
4. Remove the two wall mounting screws.

### 4C-2. Opening the Ozone Generator

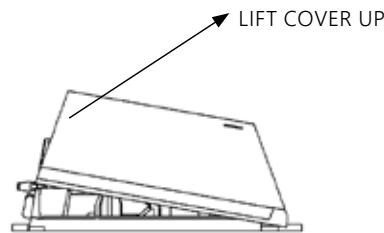
The Ozone Generator enclosure consists of two plastic parts that clip together. They are held in place by one screw. To open the enclosure:

1. Remove the Cover Screw on the back side of the base of the DEL Ozone ABG 25 (**Figure 3**).
2. Using a flat head screwdriver or fingers, pry the two Cover Tabs outward to release the cover from the base.
3. Lift the cover up (**Figure 4**).
4. Slide the cover forward and off.

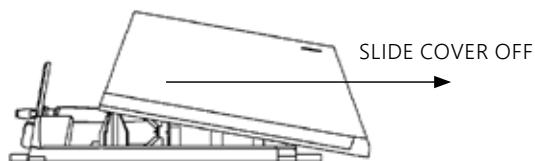
## SECTION 4 Maintenance & Service



**Figure 3: Cover Screw and Tabs**



**Figure 4: Lifting Cover**

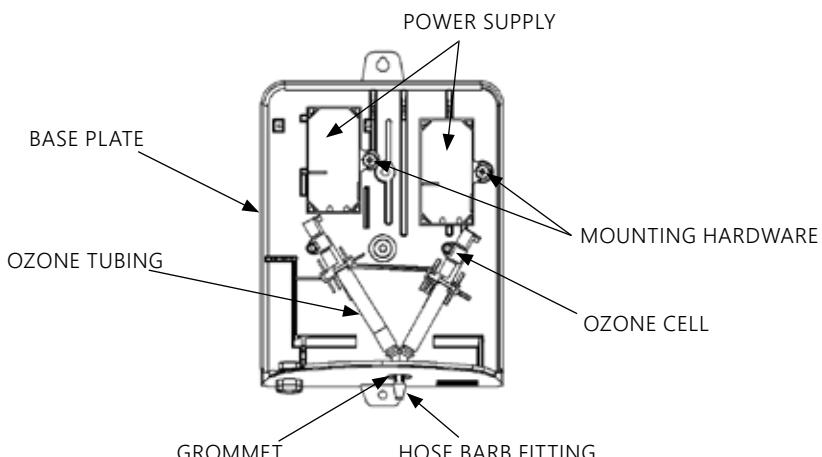


**Figure 5: Sliding Cover Off**

# SECTION 4 Maintenance & Service

## 4C-3. Ozone Module Replacement

1. Open the Ozone Generator as described in **SECTION 4C-2**.
2. Remove the Mounting Hardware.
3. Disconnect power supply connector (red & black wires).
4. Lift Ozone Cells, Grommet, Hose Barb Fitting, and Ozone Tubing up and out from the Base Plate.
5. Remove and discard Ozone Cell, Power Supply, Hose Barb Fitting, and Ozone Tubing.
6. Place new Grommet into enclosure wall.
7. Insert new Hose Barb Fitting making sure to align the Hose Barb Fitting correctly and insert it completely into Grommet.
8. Install Power Supply with Mounting Hardware Route Power Supply wires to the left side of the Base Plate.
9. Connect Power Supply connectors to wire harness.
10. Slide cover into position while lifting the base of the cover up.
11. Lower cover over Ozone Cell and snap Cover Tabs into place.
12. Replace Cover Screw.
13. Reinstall the ABG 25 in to the pool, reconnect Ozone Supply Tubing to Hose Barb Fitting and reconnect the power cord.



**Figure 6: Internal Component Locations**

# SECTION 4 Maintenance & Service

## 4D. Troubleshooting

Knowledge of electrical applications is required for trouble shooting. Contact a certified electrician if you are unsure of your ability to service the equipment. Improper servicing will void the Warranty.

**Symptom:** No Flow.

1. Injector not supplying adequate suction.
  - a. Check pump and ensure water is flowing through Injector.
  - b. Check that pump skimmer and filter are clean.
  - c. Check that Injector is plumbed in the right direction.
  - d. Ensure that there is no debris clogged inside the Injector.
2. Ozone Supply Tubing is impaired.
  - a. Check for kinks or clogs.
  - b. Check for cracks or cuts.
  - c. Check connections.
  - d. Check that the Check Valve is installed with the arrow pointing towards the Injector.
  - e. Be sure that the Check Valve has not become fouled with debris. Disconnect the Ozone Supply Tubing from the Injector. With the pump running, test the end of the Hose Barb Fitting with your thumb, and feel for suction. Wash your hands immediately afterwards to remove any residual nitric acid. If there is sufficient suction without the Check Valve, replace the Check Valve and Ozone Supply Tubing.

**Symptom:** Ozone Supply Tubing becomes yellow/brown and brittle.

1. The high concentration of ozone created by the advanced plasma gap ozone generators, as well as environmental conditions like UV sunlight will tend to deteriorate the supplied ozone tubing. This is normal and acceptable, as long as the tubing doesn't become cracked and leak. Because of this, DEL recommends replacing the Ozone Supply Tubing and your Check Valve every year.

## NOTES

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