

# OZONE GENERATORS FOR SPAS

## INSTALLATION & OPERATION MANUAL

For Models: SpaEclipse™, SpaEclipse™ Dual Voltage, & CDS-16



3580 Sueldo Street, San Luis Obispo, CA 93401

800.676.1335

[www.delozone.com](http://www.delozone.com)

4-1223-01 Rev. C

## IMPORTANT SAFETY INSTRUCTIONS

Proper installation and usage of your DEL Spa Ozone Generator is your responsibility. Read and follow this Owner's Manual carefully for important installation, operation and safety information. Basic safety precautions should always be followed, including but not limited to the following:

1. READ AND FOLLOW ALL INSTRUCTIONS.
2. All electrical connections should be made by a qualified electrician.
3. Follow all applicable electrical codes.
4. Be sure the electrical power is shut OFF at the main circuit breaker before installing the Ozone Generator.
5. If the Ozone Generator electrical connection is to be attached to the spa controls, be sure the spa controls are protected by a Ground Fault Circuit Interrupter (G.F.C.I.). If the DEL Spa 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.
6. Do not bury cord.
7. WARNING - To reduce the risk of electrical shock, replace damaged cord immediately.
8. Per UL requirements, the Ozone Generator must be mounted indoors or under a cover, sheltered from natural elements (rain, sun, sprinklers).
9. Mount the Ozone Generator so that it is inaccessible to anyone in the spa. Never attempt servicing when wet.
10. To reduce the risk of injury, the unit should be mounted where it is inaccessible to children.
11. Plastic ozone supply tubing is available with the Ozone Generator. Never replace this tubing with metal tubing.
12. Do not operate the Ozone Generator unless sufficient air flow is being drawn through the unit (see Section 9c).
13. WARNING: Short term inhalation of high concentrations of ozone and long-term inhalations of low concentrations of ozone can cause harmful physiological effects. Do not inhale ozone gas produced by the device.

## SAVE THESE INSTRUCTIONS.

**DEL Ozone WARRANTY REGISTRATION CARD** Product Serial Date:  
 Fill out completely and return to DEL Ozone within ten (10) days of purchase.

### Customer Info:

Name \_\_\_\_\_ Phone ( ) \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

### Dealer Info:

Dealer Name \_\_\_\_\_ Phone ( ) \_\_\_\_\_

Dealer Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

### Purchase/Product Info:

Purchase Date \_\_\_\_\_ Date Installed \_\_\_\_\_

### Product Purchased:

SpaEclipse™  CDS-16  SpaEclipse™ Dual Voltage

Comments / Questions:

**DO NOT FORGET TO CUT OUT, PLACE IN ENVELOPE AND MAIL TO THE FOLLOWING ADDRESS FOR INSTANT WARRANTY COVERAGE!**

### DEL Ozone

ATTN: Warranty Dept.

3580 Sueldo St.

San Luis Obispo, CA 93401

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**DEL OZONE  
LIMITED ONE YEAR WARRANTY**

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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.

DEL Ozone warrants that it or its authorized dealers will repair or replace, at its option, any part of such products proven to be defective in materials or workmanship within ONE (1) year from the date of retail purchase of such products. (All parts) ANY REPAIR OR REPLACEMENT WILL BE WARRANTED ONLY FOR THE BALANCE OF THE ORIGINAL WARRANTY PERIOD OR NINETY (90) DAYS, Whichever is greater.

**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.

**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: [warrantysupport@delozone.com](mailto:warrantysupport@delozone.com) (residential)  
[service@delozone.com](mailto:service@delozone.com) (commercial)

**PROVIDE:**

1. Customer name, mailing address, and telephone.
2. Installer/Mechanical Contractor or Dealer name.
3. Unit Part Number, Serial Number or Manufacture Date, 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.

# Table of Contents

## Installation Instructions

1.	How the DEL Spa Ozone Generator Works	4
2.	Installation Parts	4
3.	Installation Tools and Materials	4
4.	Unit Assembly	4
5.	Mounting	6
6.	Plumbing - Vacuum System	6
7.	Plumbing - Ozone Generator	6
8.	Electrical	7
9.	Operation	7
10.	Installation Complete	8
11.	Maintenance	8

## Troubleshooting

9

## Warranty

10

# Installation Instructions

## 1. How the DEL Spa Ozone Generator Works

a. DEL Ozone Generators produce ozone gas which is introduced to the spa water through suction created by the spa. Tubing is used to connect the Ozone Generator to an injector or a vacuum port provided by the spa manufacturer. The injector or port are vacuum sources used to pull the ozone gas out of the Ozone Generator and into the water. **At no time should water come in contact with the Ozone Generator.** To protect the Ozone Generator from water traveling backwards through the tubing connection, the unit must be mounted and plumbed as described in this manual.

## 2. Installation Parts

### a. Common Installation Parts for ALL DEL Spa Ozone Generators

ONE Installation Manual – Ozone Generators for Spas (4-1223-01)

ONE check valve (7-1140-01)

FIVE feet of tubing (7-0075)

FOUR hose clamps (2-0078)

TWO screws (2-0078) for mounting

### b. Installation Parts specific to SpaEclipse™ Dual Voltage

ONE Voltage Selector Switch Cover Label (4-1224-01)

## 3. Installation Tools and Materials

a. Phillips Screwdriver

b. Pliers

c. Scissors

## 4. Unit Assembly

All models are pre-assembled and ready to install.

# Troubleshooting

**SYMPTOM:** *Cloudy water condition even though the unit appears to be operating properly*

### PROBABLE CAUSE:

1. Unit and pump not operating long enough
2. Total alkalinity not correct
3. pH not correctly balanced
4. Not enough suction
5. Dirty, loose or cracked filter
6. Metals or minerals in the water

### CORRECTIVE ACTION:

- 1A. Increase operating time (min. 6 hours is recommended)
- 2A. Adjust total alkalinity between 80 and 150 ppm
- 3A. Check for proper pH between 7.2 and 7.6
- 4A. Clear any obstruction in the water lines or return fitting. Straighten any kinks in the water or ozone plumbing. Clean spa filter.
- 5A. Check/replace spa filter as needed.
- 6A. Ozone may react with metals/minerals in the water (this is common when new water is added) causing cloudy water. Check alkalinity, pH, and clean filter. Run filtration system and ozone 24 hours and clean filter.

**SYMPTOM:** *System on/off - water backing into ozonator*

When your system is in its “on” cycle a suction of air is being pulled through the tubing from the ozonator to the return line.

When the system is in its “off” cycle water tends to flow back in the tubing toward the ozonator. Therefore, mounting your ozone unit as high as possible in relation to the spa water level is important. There is also a one-way check valve provided to prevent the back flow of water from reaching the ozonator. As a secondary precaution, a Hartford Loop in the tubing, also hanging above water level, will help prevent water damage to the ozonator.

### 10. Installation Complete

a. Once properly installed, the Ozone Generator requires no further user operation. It will operate automatically with the spa system.

### 11. Maintenance

a. To ensure the highest degree of sanitation at all times, refer to the chart below. Renew your Spa Ozone Generator as needed with a renewal kit.

- 9-0720-01 Contains:** One replacement chip (5-0561)  
 One check valve (7-1140-01)  
 Five feet tubing (7-0075)  
 Four hose clamps (2-0078)  
 One instruction sheet

Model	Renewal Kit Part Number	Renewal Interval		
		8 hour/day ozone cycle	12 hr/day ozone cycle	24 hr/day ozone cycle
CDS-16	9-0720-01	3 years	2 year	1 year
Spa-Eclipse	9-0720-01	3 years	2 year	1 year

b. In between Renewal Kit replacement years, **change the ozone check valve (7-1140-01) and Ozone Tubing (7-0075) annually.**

c. NOTE: Mildly corrosive condensation may collect in dips or loops in the tubing. DO NOT DRAIN IT. Disconnect power to the Ozone Generator and allow all liquid to be drawn out or dried up before replacing the tubing.

**Figure 1**

Ozone Generator Models



**CDS-16**

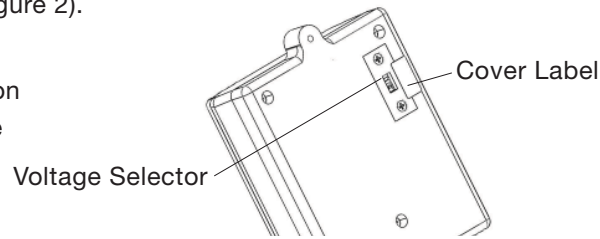


**Spa Eclipse & SpaEclipse™ Dual Voltage**

## 5. Mounting

- a. Note: SpaEclipse™ Dual Voltage models are equipped with a voltage selector switch on the back of the unit. Set this switch to the appropriate voltage (as indicated on the switch) prior to installation. Once the proper voltage has been selected (comes preset at 230V), cover the switch with the label provided to prevent tampering (refer to Figure 2).

**Figure 2**  
Switch Cover Label Application  
for SpaEclipse™ Dual Voltage



- b. Mount the Ozone Generator as high as possible within the spa's protected equipment area.
- c. Screws are provided for mounting but may not be appropriate for all surfaces. Substitute proper mounting hardware as required. Use the mounting features provided on the Ozone Generator.

## 6. Plumbing - Vacuum System (refer to Figure 3)

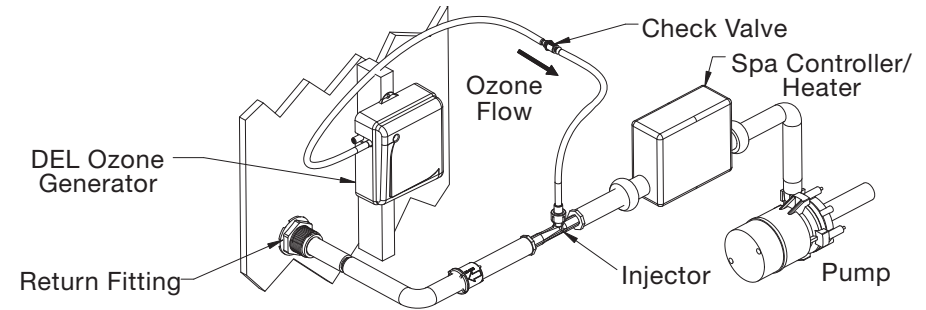
- a. Most spas are factory equipped with an ozone injector or vacuum port, like the one shown in Figure 3. Review your Spa's Installation Manual to identify the correct ozone connection location.
- b. If the spa is not equipped with a vacuum source, DEL Ozone provides a wide range of optional installation kits. Contact DEL Customer Service for assistance at 800.676.1335 x 249.

## 7. Plumbing - Ozone Generator (refer to Figure 3)

- a. Connect the PVC ozone tubing provided to the hose barb on the Ozone Generator.
- b. Slide hose clamps onto the tubing and run the tubing to the vacuum source.
- If the Ozone Generator is mounted above the water line, tubing may be run directly to the vacuum source.
  - If Ozone Generator is mounted below the water line, run tubing to a point above the water line and back down to the vacuum source. Secure Tubing in this position.

**Figure 3**

Typical Injection System



- c. Cut the tubing near the vacuum source, slide hose clamps on each end and install the check valve in the tubing. Observe the flow arrow on the check valve and ensure that the flow direction is into the vacuum source.
- d. Secure all tubing connections with the hose clamps.

## 8. Electrical

- a. Test the GFCI breaker protecting the spa for proper operation.
- b. Disconnect power to the spa.
- c. Connect the Ozone Generator cord to the mating connector(s) on the spa control box as described in the Spa's Installation Manual.
- d. Where possible, route the power cord away from other electrical lines. Do not run the power cord parallel to any low voltage signal wires.
- e. Secure the power cord as required to prevent damage.

## 9. Operation

- a. With the spa filled to the proper level, run the spa controller through several cycles.
- b. Verify that the Ozone Generator turns on and off as required by the controller: A purple glow should be visible from the CD Chip Performance Window when the Ozone Generator is turned on.
- c. Verify that gas is flowing into the injector (there should be no water in the tubing, and very small bubbles entering the spa through the return).
- d. Verify that water does not push past the check valve during any spa cycle.
- e. Check for and correct any leaks.