

# aquaCLIPSE™

DEL OZONE™ HOME COLLECTION



**Well Water Purifier**

**Owner's Manual and Usage Guide**

**MODEL ZO-400 / ZO-400-25**

  
**DEL ozone™**

P/N: 4-1377\_Rev.A

# **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 grounding type receptacle only.
- Do not bury cord.
- Warning - To reduce the risk of electrical shock, replace damaged cord immediately.
- Follow all applicable electrical codes.
- Electric shock hazard. Be sure to turn power OFF and disconnect from power source before any service is performed. Failure to do so could result in serious injury or death.
- 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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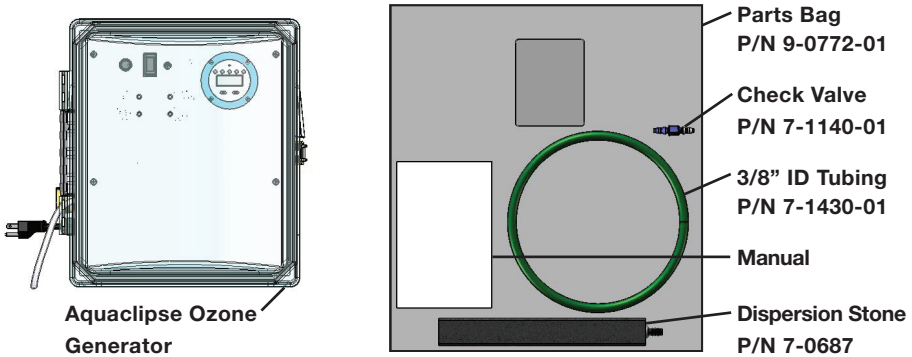
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# SECTION 1 General Information

## 1A Description

The DEL Ozone Aquaclipse Corona Discharge (CD) ozonator is designed to pump ozone gas into liquids for purification on new, existing or multiple well water tanks. Enjoy refreshing, crystal clear water that's free of chlorine, chemical byproducts and chemical residue as the unit eliminates hydrogen sulfide odor along with 99.9-99.999% of the microorganisms found in well water, including *E. coli*, *Giardia* and *Cryptosporidium*.

### 1A-1 What's in the Box



**Figure 1** What's in the Box

## 1B Specifications

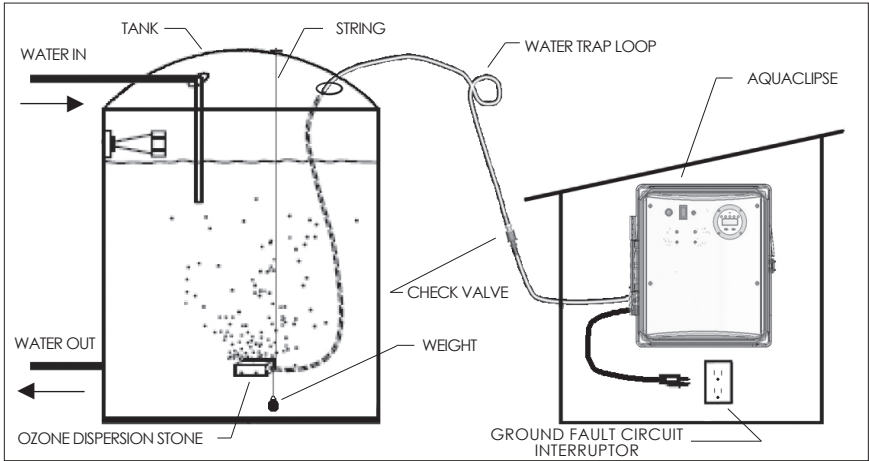
|                     |                                     |
|---------------------|-------------------------------------|
| Compressor Flow     | 15 SCFH @ 10 psi                    |
| Power Requirements  |                                     |
| ZO-400              | 120VAC, 60Hz, 1Ø, 2A                |
| ZO-400-25           | 230VAC, 50/60Hz, 1Ø, 1A             |
| Shipping Weight     |                                     |
| ZO-400              | 25 lbs. (11.6 kg)                   |
| ZO-400-25           | 26 lbs. (11.8 kg)                   |
| Mounting            | Wall mount in clean, protected area |
| Ambient Temperature | 30°F – 100°F (-1°C – 38°C)          |

## SECTION 2 Installation

### **2A Recommended Installation for wells and holding tanks**

Refer to Figure 2 (Next Page)

1. The ZO-400 must be securely mounted to a clean surface sheltered from direct exposure to the elements (rain, sun and dirt). Mount above the maximum water level, if possible.
2. Insert the check valve in the ozone supply tubing coming out from the bottom left side of the ZO-400. Make sure the flow arrow on the check valve points away from the ZO-400 and toward the water tank. Soften the tubing if necessary by dipping it in warm water.
3. Connect one end of the tubing supplied in the parts bag to the check valve, and the other end to the dispersion stone.
4. Place the Dispersion Stone into the center of the water vessel approximately 1 foot from the bottom for maximum ozone saturation in the water. It is best to put a sinker weight on the stone to keep it from floating up and use string to keep it from sinking all the way to the bottom of the tank. Note: The Dispersion Stone is delicate. Be sure to place it where it will not be stepped on or crushed.
5. Plug the ZO-400 into a Ground fault circuit interrupter (G.F.C.I.) protected outlet.
6. If the generator is mounted below the water line, a water trap loop must be used. To make a water trap loop, simply coil the tubing into a 6" circle, (Figure 2), and fasten it above the water line. The plastic check valve provided should be installed in the ozone supply tubing between the generator and the loop, and secured with tubing clamps. Be sure that the flow arrow on the check valve points toward the tank.



**Figure 2** Recommended Installation

## 2B Electrical

For the 120V model (ZO-400), simply plug the unit into a GFCI protected socket that is protected from weather.

For the 230V model (ZO-400-25), either plug the unit into a CEE 7/7 type socket, or have a certified electrician clip off the plug and wire the unit in to power.

# SECTION 3 Controls

## 3A Power

The Del Ozone Aquacclipse has a power switch on the front panel for turning the system on and off. The light next to the switch will illuminate when the system is powered on.

### 3A-1 Indicator lights

1. System Power – The green light in between the timer and the switch will light up when the switch is in the on position and the system has power.
2. Ozone cells functioning – The 4 LED's below the timer will light up green when the ozone cells are functioning. These LED's will turn red if the corresponding ozone cell fails.

### 3B Timer

The DEL Ozone Aquaclipse has a digital timer on the front panel for timed operation control. When the timer is set to power the system, the 4 indicator lights on the front panel below the timer will light green when the ozone cells are functioning properly. If one of the cells goes out, the corresponding light will turn red.

To set the current time and day, slide the “Run” switch to the clock symbol.

To program on and off times, slide the “Run” switch to P.

To run the programmed times, slide the “Run” switch to “Run,” and slide the “Auto” switch to “Auto.”

To bypass the timer and make the system always on, slide the “Auto” switch to “I.”

For more detailed clock programming instructions, see Appendix A.

## SECTION 4 Water Treatment

The ZO-400 Aquaclipse can purify water in atmospheric tanks, emergency storage, spas, bathtubs, fountains, and wading pools up to 20 feet deep. It is specifically designed to purify drinking water from well sources or city water supplies, removing undesirable tastes, odors and colors caused by iron, copper, manganese, chlorine and organics. The Aquaclipse is especially good at removing the sulfur smell from well water.

Do not use water from a source that is questionable such as stagnant pool water, creeks, ponds, streams, urinary tracts or the like.

To treat water, place the dispersion stone into the water container as shown in Figure 2 and set the timer to make the unit run for the amount of time desired (recommended 24 hr/day operation). Running the unit less than 24 hours per day may work for your set-up, but running the unit for longer will not hurt the water or the system.

When used in conjunction with a particulate filter, ozone will also remove excess minerals including iron, manganese, and lead, as well as radon and sulfur gases.

It is recommended you check your filters about 1 month after installation of ozone equipment to gauge rate of clogging.

Ozone will extend the useful life of both water vessels and equipment since it is impossible to over-treat the water. In contrast, a single overdose of chlorine can do serious damage.

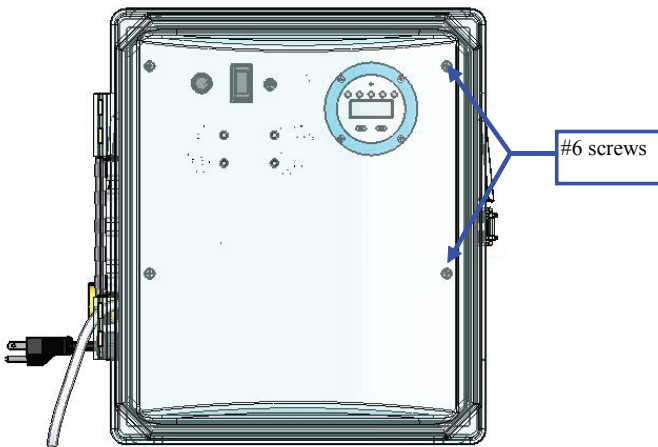
**NOTE:** Although installing ozone on potable water tanks will reduce or eliminate bacteria problems, it is not recommended as a replacement to standard disinfection treatment.

## SECTION 5 Maintenance and Service

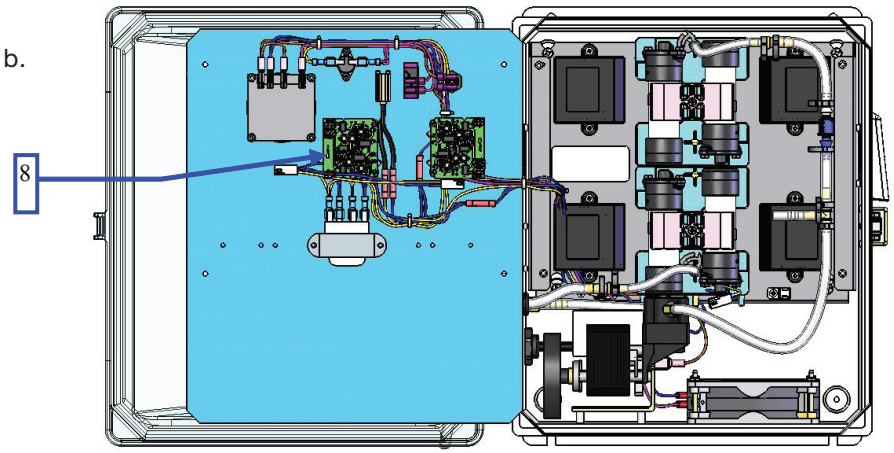
### 5A System electro-mechanical overview

#### 5A-1 Internal Components

1. To access the internal components of the Aquaclipse, follow the steps below.
  - a. Open Cover and remove four (4) #6 screws on face plate.







c. To order replacement parts, refer to Figure 3 for part numbers and descriptions.

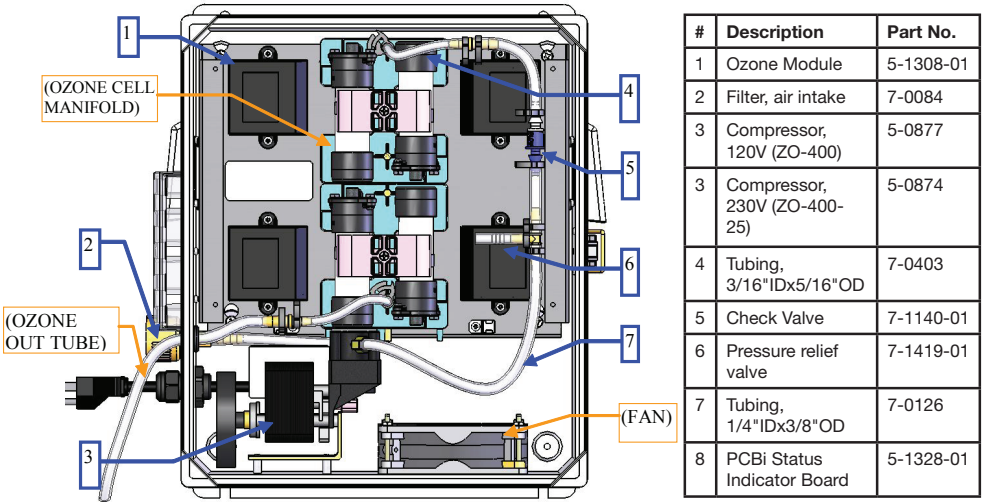


Figure 3 ZO-400 Internal View

## 5B Cleaning the dispersion stone

Periodically, the dispersion stone may clog up with mineral deposits reducing the amount of ozone flow through the stone. The stone will appear a darker color. Remove the dispersion stone. Soak it in lemon juice or vinegar for a few hours to overnight until the discoloration is gone and the dispersion stone is a uniform color. Rinse the dispersion stone thoroughly with fresh water. Reinstall the dispersion stone.

**NOTE:** Sometimes the stain will be permanent; if ozone bubbles still flow from the dispersion stone the stain will not affect operation.

## 5C Troubleshooting

The areas to check on the ZO-400 to determine the nature of a problem are as follows:

1. The green power light on the front panel – should be on if the system is in operation.
2. The 4 Ozone Module indicator lights on the front panel – should be green while the system is in operation.
3. There should be air bubbles in the water.
4. The fan on the bottom of the ZO-400 – should be on when the system is in operation.
5. The condition of the water – should be clear and odor-free.

### 5C.1 SYMPTOM: green power light off – system not functioning

#### Probable cause

- a. No power to unit
- b. Tripped circuit breaker
- c. G.F.C.I. tripped
- d. Defective electrical system

#### Corrective action

- a. Check power source and cord
- b. Reset circuit breaker
- c. Reset G.F.C.I.
- d. Return for service/repair

### 5C.2 SYMPTOM: ozone module light turns red

#### Probable cause

- a. Ozone module dead
- b. Indicator PCB malfunction
- c. Ozone module disconnected

#### Corrective action

- a. Replace ozone module  
(note: system will run fine with a bad ozone module; ozone production will be decreased.)
- b. Replace indicator PCB
- c. Check electrical connection to Ozone module

### 5C.3 SYMPTOM: everything works correctly, but water is dirty

#### Probable cause

- a. Excessive load
- b. pH not balanced
- c. Total alkalinity incorrect
- d. Dirty, loose, or cracked filter
- e. Clogged dispersion stone
- f. Kink, leak, or break in ozone tubing
- g. Run time insufficient

#### Corrective action

- a. If extra high load is normal, continue 24hr. operation and compliment with small amount of chlorine, bromine treatment
- b. Adjust pH to 7.2 to 7.8
- c. Adjust total alkalinity to 80 – 150 PPM
- d. Replace filter
- e. Clean dispersion stone
- f. Replace (or un-kink) tubing
- g. Increase run time

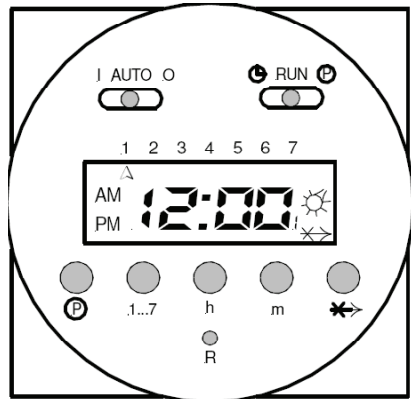
## Appendix A: Timer Control

### Series 884 digital time clock: setting instructions

This time clock provides flexible timing for daily and/or weekly programming. Setting the 884 is simple and fast by means of push buttons and display prompts. This timer combines 24 hour/7 day timing.

Up to 8 on/off operations are allowed for each day for a total of up to 56 switching cycles per week.

Minimum time setting is 1 minute. Lithium battery provides 5 year backup.



- NOTE:** to save time you can set up each on/off cycle;
- A) to be unique for each individual day, or
  - B) for Monday to Friday (days 1 to 5), or
  - C) for weekends only (days 6 & 7), or
  - D) for all days except Sunday (days 1 to 6) , or ...
  - E) the entire week at one time. This can save a lot of time when programming the “on” and “off” cycles.

Directions: slide the “RUN” switch to “P”,

Press the “1...7” seven times and notice a single arrow will move in steps below the 1-7 numbers, indicating the individual days of the week

The next time you press the button you will see days 1 to 5 highlighted with arrows (Monday to Friday).

The next time you press “1...7” you will see arrows highlighting 6 and 7 (weekends).

The next time you press “1...7” you will see arrows highlighting all days except Sunday

The next time you press “1...7” you will see arrows highlighting all days of the week.

### **#1 Setting the current time and current day:**

Slide “RUN” switch to left symbol of clock face.

Press 1...7 button until arrow points to current day (1=Monday, 2=Tuesday, etc.). Press “h” then “m” buttons to set the current time. The “PM” indicator shows noon to 11:59 p.m.

Slide “RUN” switch to “run”. The clock colon will blink between the hours and minutes.

### **#2 Setting each cycle to “switch on”**

Slide the RUN switch to “P”, a “1” indicates this is the first switch cycle and a “bulb” icon indicates a switch on condition (circuit closes). (Hint: odd numbers indicate a “switch-on” cycle.)

Press 1...7 button until arrows point to selected day(s) you want this ON cycle to occur. (see “Note” above instructing how to choose days of the week)

Press “h” and “m” buttons to show switch-on time, noting the “PM” indicator.

### #3 Setting each cycle to “switch off”

Slide RUN switch to “P” press “p” button, note switch cycle number changes to 2 and bulb blinks, indicating

Switch-off (circuit opens). (Hint: even numbers indicate a “switch-off” cycle.)

Press 1...7 button until arrows point to selected day(s) you want this OFF cycle to occur.

Press “h” and “m” button to select-switch-off time.

\* Remember you can repeat the above steps to program up to 8 on/off events for each day of the week. By pressing the lower “P” button you can advance to the desired on/off cycle.

Slide RUN switch to RUN position.

The clock colon will blink.

### #4 Autorun mode

Set time and day and desired switch cycles.

Slide set switch to “RUN” and mode switch to “AUTO”. Switching will begin with the next switch-on set time.

### #5 To switch the override ON

Slide mode switch to “I.” The switch remains on indefinitely (circuit closed).

### #6 To switch the override OFF

Slide mode switch to “0.” The switch remains off indefinitely (circuit open).

### #7 Skip cycle

In automatic run mode, press the “X—>” button, the next program is skipped

### #8 Setting error

If “EEE” appears, a setting error exists. The switch cycle number in error is shown. Slide set switch to p. Press button until cycle is shown. review this and the following setting to correct error slide set switch to “**RUN**”

### #9 Clear any setting

Slide the RUN switch to “P,” press the lower “P” button to show switch cycle you want to clear.

Press 1...7 button until no days are indicated. Repeat for the following switch cycle. This on/off cycle is now inactive.

### #10 Clear all

To erase all settings, press “R.”

## DEL OZONE LIMITED 1 YEAR WARRANTY

The limited warranty set forth below applies to products manufactured by DEL Ozone - 3428 Bullock Lane, 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 90 DAYS WHICH EVER IS LONGER.

**NOTE: USE ONLY DEL Ozone AUTHORIZED REPLACEMENT PARTS. USE OF ANY OTHER PART(S) WILL AUTOMATICALLY 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, repair materials, and/or unauthorized accessories.
- (c) Any such products installed without regard to required local codes and accepted trade practices;
- (d) ANY IMPLIED WARRANTY OF MERCHANTABILITY OR IMPLIED WARRANTY OF FITNESS FOR PARTICULAR PURPOSE, AND SUCH WARRANTIES ARE HEREBY DISCLAIMED.
- (e) DEL Ozone SHALL NOT BE LIABLE UNDER ANY CIRCUMSTANCES FOR LOSS OF USE OF SUCH PRODUCTS, LOST PROFITS, DIRECT DAMAGES, INDIRECT DAMAGES, CONSEQUENTIAL DAMAGES AND/OR INCIDENTAL DAMAGES.

### **TO OBTAIN WARRANTY SERVICE:**

DEL Ozone Warranty Department  
3428 Bullock Lane, San Luis Obispo, CA 93401  
Customer Service Number: (800) 676-1335 x 293  
Fax Number: (805) 541-8459  
E mail to [service@delozone.com](mailto:service@delozone.com)

### **When filing a claim, you must provide:**

1. your name, mailing address and telephone number
2. the selling dealer's name
3. proof of date of purchase
4. the date of failure
5. a description of the failure
6. Part number and serial number / mfg date

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.



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