

# ZO-200

## Installation & Operations Manual



  
DEL ozone™  
advanced sanitation solutions

# IMPORTANT SAFETY INSTRUCTIONS

When using the **DEL Ozone ZO-200**, basic safety precautions must always be followed, including the following:

1. **READ AND FOLLOW ALL INSTRUCTIONS**
2. Install in a sheltered area protected from the weather and exposure to water.
3. Unplug the ZO-200 before attempting any service. Never attempt any servicing while wet.
4. Do not bury cord.
5. **WARNING:** To reduce the risk of electrical shock, replace damaged cord immediately.
6. Leave rooms and areas unoccupied during period of treatment.
7. Avoid inhaling high concentrations of ozone.
8. When used for water purification, make sure that:
  - a) If the electrical connection of the ZO-200 is made directly to a spa's electrical system, be sure the spa or water vessel is protected by a ground fault circuit interrupter (G.F.C.I.). If the ZO-200 is connected to an independent electrical supply, a G.F.C.I. should be installed between the ZO-200 and the electrical supply.
  - b) When mounting to a spa, fountain, holding tank, livestock/ water tank or wading pool for permanent application: connect only to a grounded grounding-type receptacle.
  - c) Mount the ZO-200 at least twelve (12) inches above the maximum water level and at least five (5) feet away from the spa or water vessel.
  - d) As with any electrical appliance, to reduce the risk of injury, the ZO-200 should be placed where it is inaccessible to children or anyone in the water.
9. **SAVE THESE INSTRUCTIONS.**

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## THE HISTORY OF OZONE

Ozone, sometimes called active oxygen, is comprised of three atoms of oxygen. Ozone is a natural purifier and one of nature's basic elements. Ozone is produced in nature when the ultraviolet rays of the sun strike oxygen molecules. When this occurs high in the atmosphere it creates what we know as the "ozone layer". Because the oxygen molecules absorb the sun's energy, living things on earth are protected from the damaging and potentially cancer-causing rays of the sun. Nature also produces ozone near the earth's surface, especially during a thunderstorm, when lightning flashes. The sweet, fresh smell after a thunderstorm is ozone.

Ozone will destroy viruses, bacteria, and virtually all other forms of microbes, as well as break down chemical contaminants. It does this in both air and water and does it without the use of chemicals or additives of any kind!

Ozone's use as a water purifier was discovered in the late 1800's in the Netherlands. Its first large-scale use was in Nice, France where it was used to purify drinking water. Today, more than thirty countries use ozone systems to purify drinking water. In fact, Los Angeles has one of the largest ozone water treatment plants in the world, processing more than 580 million gallons of city drinking water per day. This system was chosen over a chlorine system due to ozone's extraordinary ability to effectively purify water without negative side effects. In addition, most of the world's bottled water plants use ozone as part of their water purification process.

Ozone is also gaining tremendous popularity as an air purifier throughout the world. Our homes and offices can be a source of environmental pollution. The EPA estimates that indoor pollution causes tens of thousands of illnesses each year, and many more from contaminated water. Ozone is the most effective way to purify your air and water.

## THE DEL OZONE™ ZO-200

Ozone is clearly superior to virtually all other forms of purification. When you use the **ZO-200**, you won't have to purchase or store any chemical or purification materials or change any filters. Everything you need is generated within the small, lightweight, and portable unit. All this for just pennies a day.

The **DEL Ozone ZO-200** is easy to use. It is light weight so you can take it anywhere and feel good about the quality of water you drink. The ZO-200 can be used indoors or out, uses only 12 watts of power and is virtually maintenance free. Simply plug it in and you have natural purification at your finger tips!

## OZONE IS AN EFFECTIVE PURIFIER

**Ozone kills:** Bacteria, viruses, molds, mildew, spores, and cysts.

**Ozone destroys:** Chemical contaminants such as aldehydes which can be emitted from paneling, carpets, insulation, paints, stains, and plastics.

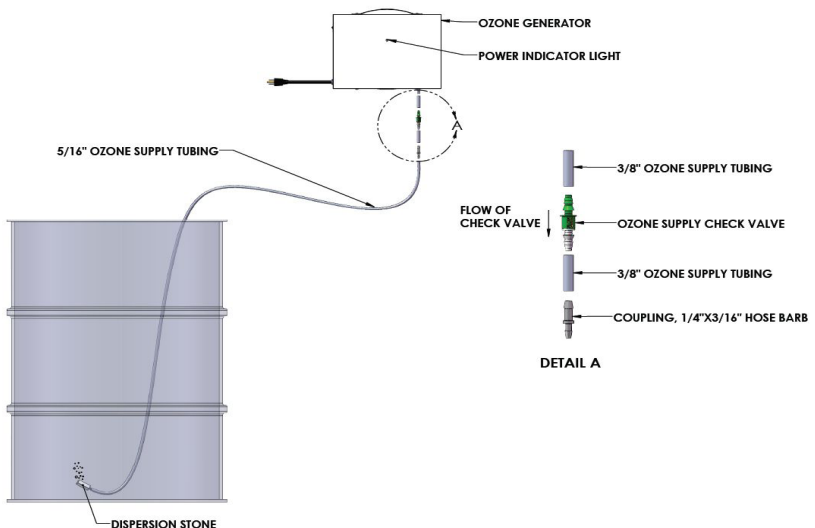
## OPERATION

Unpack the ZO-200 and familiarize yourself with the unit and its components. The unit should include:

- **ZO-200 UNIT**
- **OZONE SUPPLY TUBING (15 FEET)**
- **OZONE DISPERSION STONE**
- **SUCTION CUP**
- **4" BALL CHAIN**
- **4 ADHESIVE RUBBER FEET**

Connect ozone supply tubing to the ozone supply check valve. Hint: Soften the tubing if necessary by dipping it in warm water. To use the suction cup, feed the ball chain through the hole in the suction cup, then through the loop in the steel clamp (attached to the dispersion stone). Snap the ball chain closed. Attach the rubber feet to the enclosure as desired.

Plug in the ZO-200 as described in the **SAFETY INSTRUCTIONS**. Turn on the ZO-200 with the toggle switch located on the left side of the unit. The *green* indicator light will come on and remain on while power is being supplied to the unit to show that the unit is operating.



**Figure 1.** Example Installation Diagram

# PORTABLE APPLICATIONS

## TREATMENT OF FRUITS & VEGETABLES

The shelf life of fruits and vegetables can be extended by ozone treatment. Not only will they keep a more attractive appearance, but they will also taste fresher! To help keep your produce fresh, fill your sink with water and place the ZO-200 dispersion stone in the bottom of the sink. Place the vegetables and/or fruit to be treated in the water and operate the ZO-200 for 10 minutes. (Average sized sink half-full of pre-washed produce). Increase treatment time for larger sinks and greater quantities of produce.

## TREATMENT OF FOOD & COOKING UTENSILS

Since ozone kills bacteria and viruses, it can aid in the destruction of bacteria found on raw foods and cooking utensils. Soaking uncooked chicken parts, for example, in ozone treated water will help retard the growth of salmonella. For best results, follow the same procedure described above for produce. For utensils, rinse off food debris and treat in clean water with ozone for fifteen minutes.

## PORTABLE WATER TREATMENT

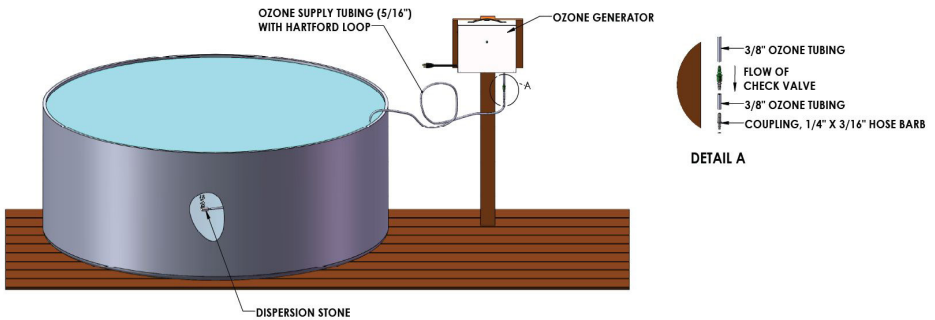
The ZO-200 is specifically designed to purify water in emergency storage, spas, bathtubs, fountains, and wading pools. It can also be used to purify drinking water from well sources or city water supplies, removing undesirable tastes, odors and colors caused by iron, copper, manganese, chlorine and organics. Do not use water from a source that is questionable such as stagnant pool water or the like.

To treat water, place the dispersion stone into the water container and leave the unit on the approximate amount of time shown in the table below. If bacteria is suspected, allow a *minimum* of one hour per gallon. When completed, turn off the purifier and allow a few moments for excess ozone to dissipate from the water. Higher output ozone generators are available for wells and holding tanks

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.

NUMBER OF GALLONS	SUGGESTED TREATMENT TIME
1	15 mins
5	30 mins
10	45 mins
50	1.5 hrs
100	3 hrs

# PERMANENT APPLICATIONS



**Figure 2.** Standard Installation Diagram

## SPAS AND POOLS

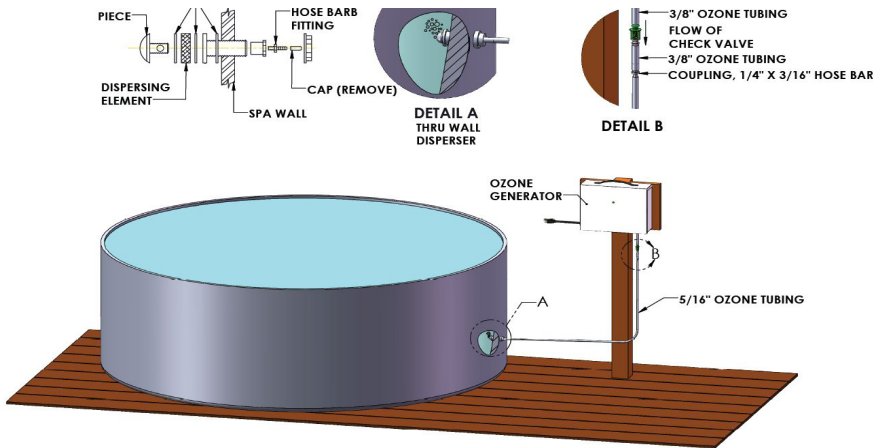
The ZO-200 can be used on spas, hot tubs, and wading pools to 1,000 gallons, allowing you to reduce your chemical usage up to 90%. You will never need to put up with dry skin, red eyes, faded suits, or green hair again! Ozone is pH neutral, so it will not adversely affect the acid/alkaline balance of your water. It is more cost effective than traditional chemicals and leaves no undesirable smell or taste. Continuous operation is proven to be the most economical treatment method for spa water, fountains and larger bodies of water to 1,000 gallons.

1. The ZO-200 must be securely mounted to a clean surface and sheltered from direct exposure to the elements (rain and water). Mount at least five feet from the spa or water enclosure and at twelve inches above the maximum water level. Ensure that the location is out of the reach of children or anyone in the water.
2. To mount the ZO-200 remove the two screws on the unit cover and gently lift off the cover.
3. Using the four mounting holes in the corners, secure the ZO-200 to the wall with screws. Spacer blocks may be necessary for your particular installation. After mounting your ZO-200 reinstall the cover.
4. Connect the ozone supply tubing to the barb fitting on the bottom right side of the purifier. Review the unit and supporting Figure 2. If the ozone supply tubing is too long, trim it with household scissors or a razor knife. If the tubing is too short, additional ozone supply tubing is available.
5. Place the dispersion stone into the body of water near the bottom center for maximum ozone saturation in the water.
6. Plug the ZO-200 into a Ground fault circuit interrupter (G.F.C.I.) protected outlet.

## THRU-WALL DISPENSER INSTALLATION

For permanent spa installations, **DEL Ozone** can supply a dispersion fitting that is permanently installed in the spa wall. The thru-wall dispenser is designed to provide excellent ozone saturation in the water while being rugged enough for heavy spa use. Both sides of the spa wall must be accessible for installation. The Thru-wall dispenser should be located as low in the spa as is conveniently possible.

1. **Drain the spa**, determine the location for the Thru-wall Dispenser and drill a 1-1/8 diameter hole in the spa wall. Remove any rough edges in the hole and remove any drilling debris from the bottom of the spa.



**Figure 3.** Thru-Wall Dispenser Installation Diagram

2. Place the supplied gasket on the threaded side of the thru-wall dispenser fitting. From the inside of the spa, place the fitting through the 1-1/8 diameter hole in the spa wall. From the outside of the spa, install the plastic nut and tighten to make a water-tight assembly.
3. Attach the ozone supply tubing to the hose barb on the thru-wall dispenser fitting using the supplied hose clamp to secure in place.
4. Place the dispersion disc on the nose piece with the smooth side toward the nose piece and the textured side toward the thru-wall dispenser fitting. Screw the nose piece into the front of the thru-wall dispenser and hand-tighten.
5. Ozone generator should be mounted above water level whenever possible.
6. A Hartford Loop must be installed if ozone generator cannot be mounted above water level.



## TROUBLE SHOOTING

There are three areas to check to determine the location of any problem:

1. The green indicator light should remain ON during operation
2. Presence of ozone bubbles in the water
3. The condition of the water

### **SYMPTOM: Green indicator light OFF - air pump not working**

#### **PROBABLE CAUSE**

1. No power to unit
2. Tripped circuit breaker
3. G.F.C.I. tripped
4. Defective electrical system

#### **CORRECTIVE ACTION**

- 1A. Check power source and cord
- 2A. Reset circuit breaker
- 3A. Reset G.F.C.I.
- 4A. Return for service/repair

### **SYMPTOM: Everything works correctly, but water is dirty**

#### **PROBABLE CAUSE**

1. Excessive bather load
2. pH not balanced
3. Total alkalinity incorrect
4. Dirty, loose, or cracked filter

#### **CORRECTIVE ACTION**

- 1A. If the extra high bather load is not unusual, continue 24 hr. operation and begin program of adding a small amount of chlorine, bromine shock treatment.
- 2A. Adjust pH to 7.2 to 7.8
- 3A. Adjust total alkalinity to 80 -150 PPM
- 4A. Service filter.

## MAINTENANCE

### **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. **Disconnect Power** and 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.

**⚠ Nitric Acid Warning.** Do NOT touch the ends of the ozone tube assembly when replacing. Trace amounts of nitric acid may be present.

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

## CHANGING THE PUMP FILTER

The ZO-200 Pump filter may require cleaning or replacing up to every six months depending on the purifier's exposure. **Disconnect Power before servicing the unit.** The filter can be removed and replaced by accessing it through the hole in the back of the purifier with a pair of tweezers or pliers. If there is no filter access hole on the back of your purifier, remove the pump by removing the two mounting screws on the back of the unit. Be careful not to over-tighten the screws when re-mounting the pump.

## UNIT SPECIFICATIONS

<i>Electrical Specs:</i>	120 vac, .1 amps, 12 watts
<i>Cabinet:</i>	Aluminum, powder coated finish
<i>Unit Dimensions:</i>	9H X 12.3W X 3.9D
<i>Unit Weight:</i>	4 lbs
<i>Shipping Weight:</i>	5 lbs
<i>Operating Temperature:</i>	35° F to 100° F
<i>Compressor Provides:</i>	5 scfh @ 2 psi

## PARTS LIST

Ozone Cell & P.S.	9-1056-01
Ozone Supply Tubing	7-0723
Dispersion Stone	7-0785
Suction Cup	7-0839
Pump	5-0782
Pump Filter	7-0877
Ball Chain	8-0304
Ozone Supply Check Valve	7-1140-01
Thru-Wall Dispenser Assembly	9-0152
Thru-Wall Dispenser Element	7-0422

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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 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		
Customer Service Number:	(800) 676-1335	
Fax Number:	(805) 541-8459	
E mail	<a href="mailto:warrantysupport@delozone.com">warrantysupport@delozone.com</a>	(residential)
	<a href="mailto:service@delozone.com">service@delozone.com</a>	(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.

  
DEL ozone™  
advanced sanitation solutions

EPA Estab. No. 071472-CA-001

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