

# O<sub>3</sub>zoneMAX™

*Vacuum-ultraviolet Ozone Systems*

## Installation & Operation Manual

Model  
**OZ-50**

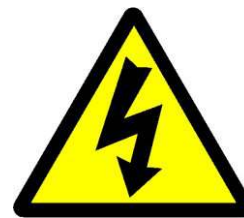


## A. Important Safety Instructions



### IMPORTANT SAFETY INSTRUCTIONS

When using this electrical equipment, basic safety precautions should always be followed, including the following:



### READ AND FOLLOW ALL INSTRUCTIONS

in this manual before attempting installation.

- A wire connector is provided on this unit to connect a minimum 12 AWG solid copper conductor between this unit and any metal equipment, metal enclosures of electrical equipment, metal water pipe, or conduit within five (5) feet (1.5m) of the unit.
- Follow all applicable electric codes.
- All permanent electrical connections should be performed by a qualified electrician.
- For cord and plug connected units:  
**“Risk of electric shock. Connect only to properly grounded, grounding type receptacle.”**
- For cord and plug connected units:  
**“Do not bury cord.”**
- For cord and plug connected units:  
**“Warning – To reduce the risk of electric shock, replace damaged cord immediately.”**
- If electrically connecting this unit directly to pool controls, ensure the controls are protected by a (G.F.C.I.) Ground Fault Circuit Interrupter.
- Install at least five (5) feet from wall of pool water using nonmetallic plumbing. Install ozone generator no less than one (1) foot above the maximum water level to prevent water from contacting electrical equipment.

### Install in accordance with the installation instructions.

- Mount the unit so that it is not accessible by anyone in the pool.
- **Electric Shock Hazard.** Disconnect unit from power source before attempting service.
- **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.
- **WARNING: UV Light is harmful to eyes and exposed skin.** Do not look directly at the Ozone producing bulb used in this device.

## B. Identifying OzoneMAX components

OZ-50  
Power Box



Indicator Light      Output Connector

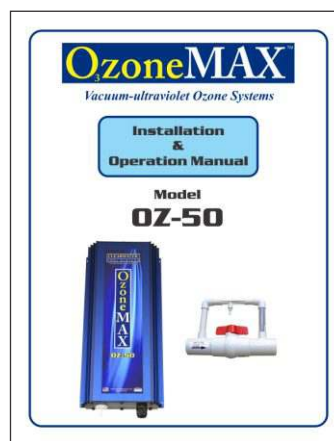
OZ-VIM  
Venturi Injection Kit  
with Manifold



4 Piece Molly Set  
with #10 Screws



Owners  
Manual



Warranty  
Card



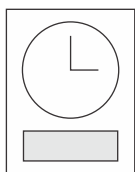
## C. Tools & Materials Required



- Bullet Level
- Hacksaw or Pipe Cutter
- PVC Cleaner/Primer
- Screwdrivers, Flat & Phillips
- Drill & Drill Bits
- PVC Cement
- Utility Knife
- Screws & Anchors

## D. Site Survey

Power Source/  
TimerBox



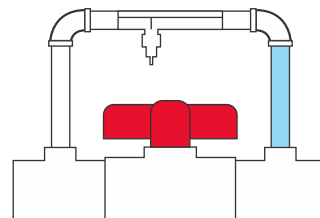
within 6 feet

OzoneMAX Unit



within 8 feet

Venturi Injector



The **OzoneMAX** system is comprised of a power box and a venturi injection kit with manifold, which needs to be installed at the very end of the return line (after the filter, ionizer electrode chamber, heater, etc.).

The ozone unit will need to be installed to a post or wall within six (6) feet of a 115 or 220VAC timer, electrical box or a 115V receptacle. This location will need to be within eight (8) feet of location of the venturi injector. This location should be mounted at least one (1) foot above maximum water level and preferably out of direct sunlight. The ozone unit should be no closer than five (5) feet from a body of water.

## E. Installing the Power Box

Mount the **OzoneMAX** unit to a post or wall using the four mounting screw holes in the enclosure base. The unit may be mounted horizontally or vertically, however it is recommended that the vent holes not face upward and be directly exposed to rainfall. The location of the box must be within eight (8) feet of the location of the venturi, which is plumbed on the return line. The unit should be mounted at least one (1) foot above maximum water level and preferably out of direct sunlight. The power box should also be located no closer than five (5) feet from a body of water.

**It is strongly recommended to add a protective shade cover to keep the unit out of direct sunlight if possible.**

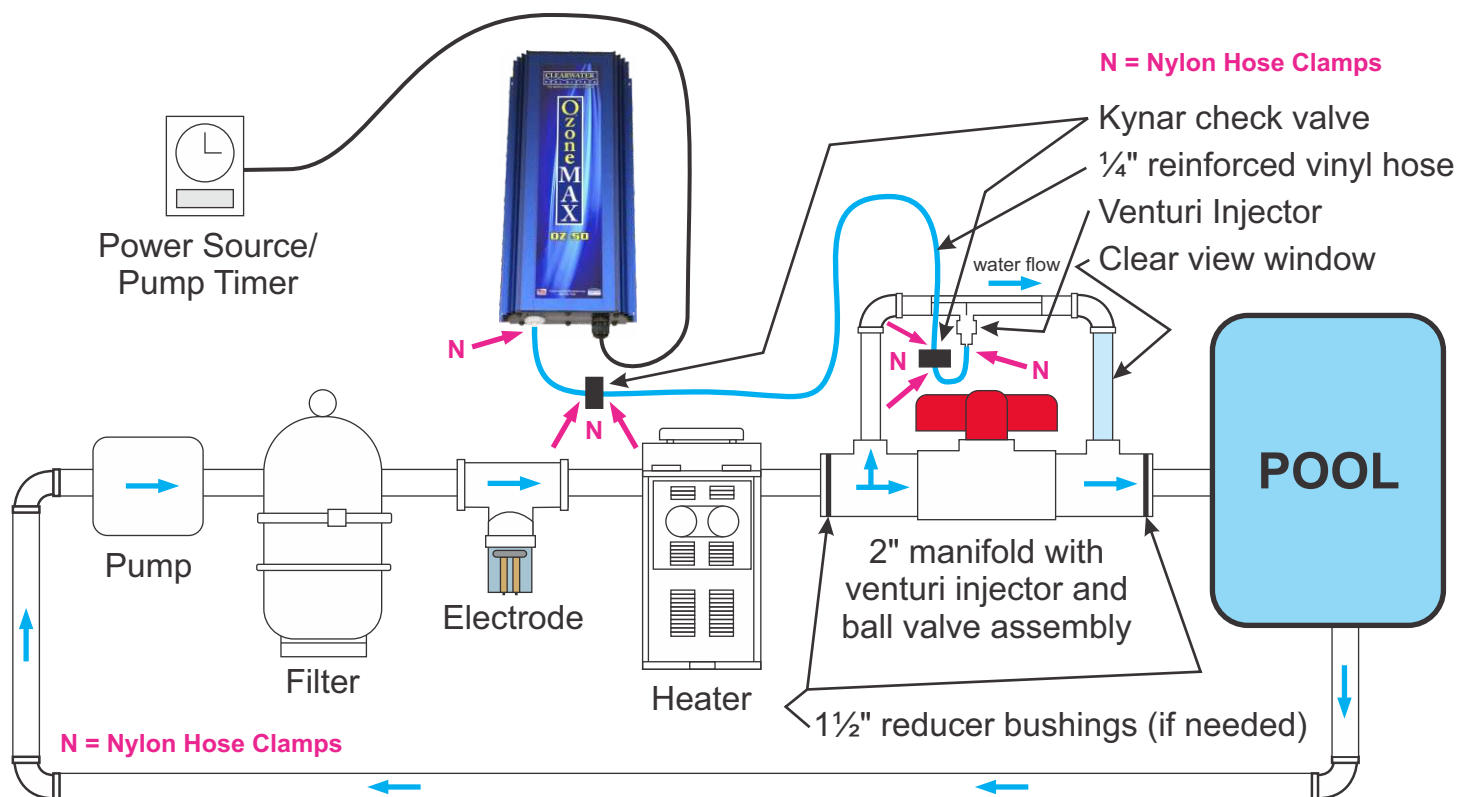
## F. Electrical

Any electrical connections should be performed by a certified electrician in accordance with all electrical codes. **OzoneMAX** systems are universal voltage, meaning the unit will work on 115 or 230VAC without any internal switching. When locating the power source, make sure that when the pump and motor shuts off, the **OzoneMAX** will too. The ideal source is the timer box. If no timer box exists, the unit can use the pump motor as its power source. In other words, the electrical connection should be such that the **OzoneMAX** is supplied power only when the power is supplied to the pool filter/circulation pump.

A permanent ground bonding connector is provided on this unit and should be used to connect a minimum 12 AWG solid copper wire conductor to any metal equipment, metal enclosures of electrical equipment, metal water pipe, or conduit within five (5) feet of the unit.



## G. Installing the Venturi Injector

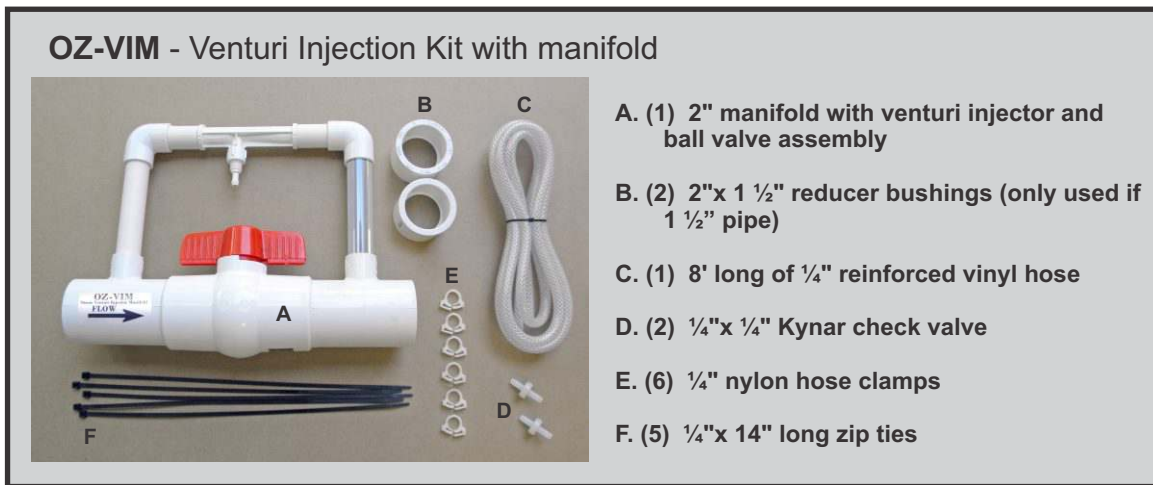


Mount the venturi manifold on the return line (after the filter, pump, electrode chamber, heater, etc.) so it is the last item before entering the pool. This is very important.

**MAKE SURE THE WATER FLOWS IN THE DIRECTION OF THE ARROWS MARKED ON THE VENTURI MANIFOLD.**

The venturi manifold comes in two-inch pipe. If plumbing size is 1 1/2", you will need to add 2" x 1 1/2" reduced bushings on each end of the manifold (included with the venturi manifold package.)

## G. Installing the Venturi Injector (continued)



The next step involves the tubing going from the ozone power box to the venturi manifold.

Take the 8 feet long 1/4" reinforced vinyl hose and size out the amount needed to go from the ozone unit mounted on the wall going to the installed venturi manifold. You will be adding the two Kynar check valves included with the package in-line using the nylon hose clamps to mount. The check valves are precautionary, we strongly recommend using check valves in case of the unlikely failure of the venturi; the main part of the manifold. This will prevent water from entering the Ozone unit with two backup check valves in place.

IT IS IMPORTANT THAT YOU INSTALL THE KYNAR CHECK VALVES WHERE AIR FLOW IS ALLOWED TOWARD THE INJECTOR. AIR DIRECTION CAN BE VISUALLY TESTED BY A SMALL ARROW ON THE CHECK VALVE ITSELF. IF INSTALLED CORRECTLY, YOU WILL SEE AIR BUBBLES ENTER THE 3/4" CLEAR PVC PIPE.

**THESE KYNAR CHECK VALVES AND TUBING WILL WEAR OUT OVER TIME AND YEARLY REPLACEMENT IS STRONGLY RECOMMENDED. SEE SECTION K OF THIS MANUAL FOR DETAILS.**

**DO NOT SUCK ON THE 1/4" ID TUBING WHEN CONNECTED TO THE OZONE SYSTEM.**

**DO NOT LOOK DIRECTLY AT THE OZONE BULB EXPOSED OUT OF THE METAL ENCLOSURE OR RISK SERIOUS INJURY .**

Cut the hose at the areas (depicted to the left) to add the Kynar check valves. This location should be within 6" of the ozone output coming from the **OzoneMAX** connector and 6" of the venturi manifold input connector. Add the Kynar check valves in-line in both locations. Connect one end of the hose to the **OzoneMAX** output connector and the other end to the venturi input connector on the manifold assembly.

## H. Starting the System / Setting the Ball Valve

Once everything has been connected, turn on the power to the ozone unit. Make sure all the connections are complete and tight.

The next step is critical to the performance of the **OzoneMAX**.

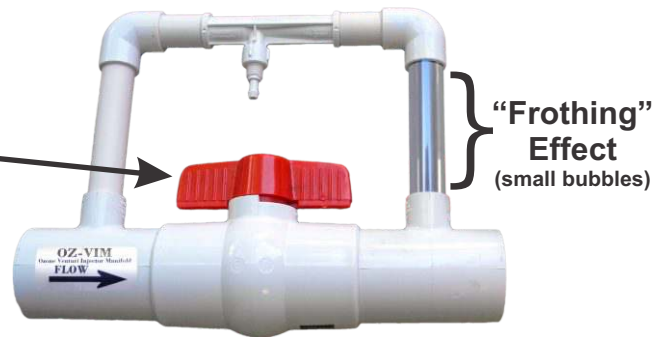
The ball valve will need to be properly adjusted to maximize ozone output into the water. Adjust it with the pool pump set to the lowest pump speed so that you will see a "frothing" effect in the clear view window of the manifold assembly. This will appear to be very tiny milk-like bubbles. You will also be able to hear a noise at the venturi injector and visually see some small bubble action coming out of the closest return line (and possible other) in the pool.

## H. Starting the System / Setting the Ball Valve (continued)

Adjust the ball valve back until no bubbles and readjust until bubbles just appear and leave the ball valve set at this “setting”. This bubble/no bubble adjustment can be as sensitive as 1/16” to 1/4” rotation after rough audible or visual adjustment is made. It is recommended to mark this location with a marker in case the ball valve is accidentally changed.

**NEVER LEAVE THE BALL VALVE CLOSED EXCEPT FOR THIS INITIAL ALIGNMENT STAGE. VERY IMPORTANT.**

Adjust valve to proper setting to obtain the “frothing” effect.



## I. Balancing the Pools Water

### Pool Water Chemistry

To achieve optimal performance from the **OzoneMAX** system, it is recommended the following be performed prior to initial start-up:

- BACKWASH or clean filter
- Test and adjust water chemical balance to recommendations in the chart below

pH .....	7.2 - 7.6
Total Alkalinity (TA) .....	80 - 120 ppm
Calcium Hardness (CH) .....	150 - 350 ppm
Total Dissolved Solids (TDS) .....	300 - 2000 ppm
Copper Ion Levels .....	0.15 - 0.20 ppm

## J. Periodic Inspection

The amazing thing you will notice about the **OzoneMAX** system is the clarity of the water, especially if you are using the **MineralPURE** ionization system in conjunction with it.

You might initially notice the water getting cloudy the first couple of days. **DO NOT BE ALARMED. THIS IS NORMAL!** You will want to clean or backwash your filter after the first week.

### Visual Inspection

You will want to periodically inspect the power box in the evening to ensure the unit is functioning correctly. Turn the system on temporarily, if needed. The indicator light, located next to the output connector will glow a nice blue color. The ozone unit should only be on when the pump is running.

To ensure that the venturi injector and bypass are working correctly, simply observe to see if small bubbles are entering the pool and the “frothing” effect is taking place in the clear window of the venturi manifold window.



## J. Periodic Inspection (continued)

Periodically check the unit intake vent holes for the unlikely event of debris accumulation. It is important these vent holes are open for air to enter the ozone unit. **Do not look directly into the vent holes when the UV bulb is operating.**

### Plumbing Issues

Minor adjustment of the ball valve (when installing the manifold) may be required to divert water through the injector. This may be true with two speed or variable speed pumps. Older versions of these adjustable speed pumps do not adjust well and you will need to adjust the ball valve to accommodate flow through the venturi on low speed.

There is an internal check valve in the venturi injector. In the unlikely event this area becomes clogged, it may be cleaned by removing the nut/barb and a retaining rubber seal. Care should be used not to lose the internal ball and spring while taking the rubber seal off. Clean and reinstall.

## K. Scheduled Maintenance & Replacing the UV Bulb

There is very little maintenance required with the **OzoneMAX** unit, however we do recommend you replace the ozone hoses and check valves **once a year**.

### Replace ozone hose once a year

Order replacement part – **OZ-HOSEKIT** – from your dealer. This complete package includes 8 feet of hose, two check valves, 6 hose clamps, and 5 zip ties.



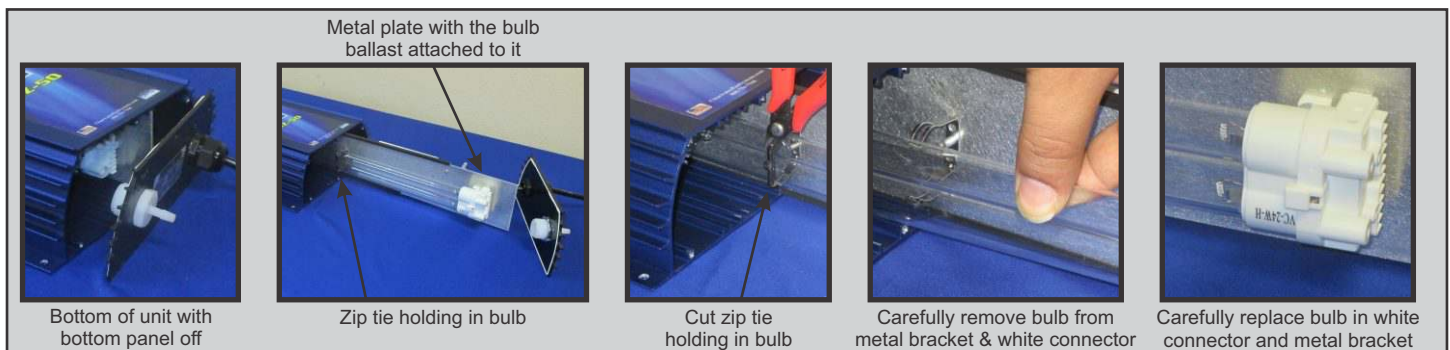
### Replacing the UV Bulb

Order replacement part – **OZ-50/75L** – Replacement OZ-50 bulb – from your dealer.



Replace the UV bulb after approximately 9,000 hours of use. This is approximately 3 years of running the ozone unit 8 hours a day, 365 days a year. We recommend the bulb gets changed at about 70% of its life for optimum performance, or the 9,000 hours. To determine the actual number of hours the ozone system has been running, simply calculate the number of days your pool is open a year by the number of hours per day the equipment is running. When the bulb does lose its power, you will notice the water getting cloudier quicker or having to use more chlorine than usual. You can also check the clear connector on the output tube of the power box. It should be a glowing blue in color if the bulb is on. Note: It is much easier to view this indicator feature in the evening hours when there is no bright sunlight.

**When replacing the UV bulb, we strongly recommend you remove the unit from the wall. This is to ensure you carefully remove the delicate equipment from the metal enclosure properly, and seal back up tightly.**



### Replacing the bulb in the OzoneMAX unit.

1. Disconnect power from the **OzoneMAX** unit. Coming into contact of the exposed ozone bulb can cause serious damage to your health.
2. Remove the six (6) screws on the bottom of the unit.

## K. Scheduled Maintenance & Replacing the UV Bulb (continued)

- Carefully pull off the bottom panel and slide out the metal plate with the UV bulb and ballast attached to it as far as it will go – approximately 11 inches. There is a tether holding it in place so it will not completely disconnect from the ozone box. Be careful NOT to pull out any wires.
- Cut the zip tie holding the bulb in the bulb clamp. Be careful NOT to break the bulb.
- Carefully pull the bulb from the white connectors and the bulb clamp from holding them in place and remove. Be careful NOT to break the bulb. Dispose of bulb properly after removal.
- Snap new bulb in place. Secure with the metal brackets.
- Push metal plate back into its place inside the unit. There is no need to add another zip tie as this was used for shipping purposes.
- Replace the bottom plate, making sure the gasket is seated in the grooves properly.
- Tighten the 6 screws back into place, securing the bottom plate tightly.
- Reconnect power. Make sure the bulb indicator (the clear connector on the output tube of the power box) glows in a blue color. Again, you may want to check this in the evening hours out of direct sunlight.

## L. Warranty Information

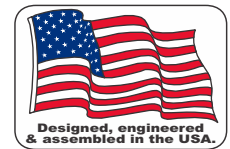
This unit comes with a 1-year warranty to be free from defects in material and workmanship under normal use from the date of purchase. See warranty card (blue card) included.



Manufactured by



*Sustainable solutions for our future*



*The Healthy Alternative to Chlorine*

Phone: 727-562-5186 • Toll Free: 800-756-SWIM (7946)  
ClearwaterPoolSystems.com