

**COMPACT
LIGHTWEIGHT
DC POWERED
PORTABLE**

OZONE GENERATOR

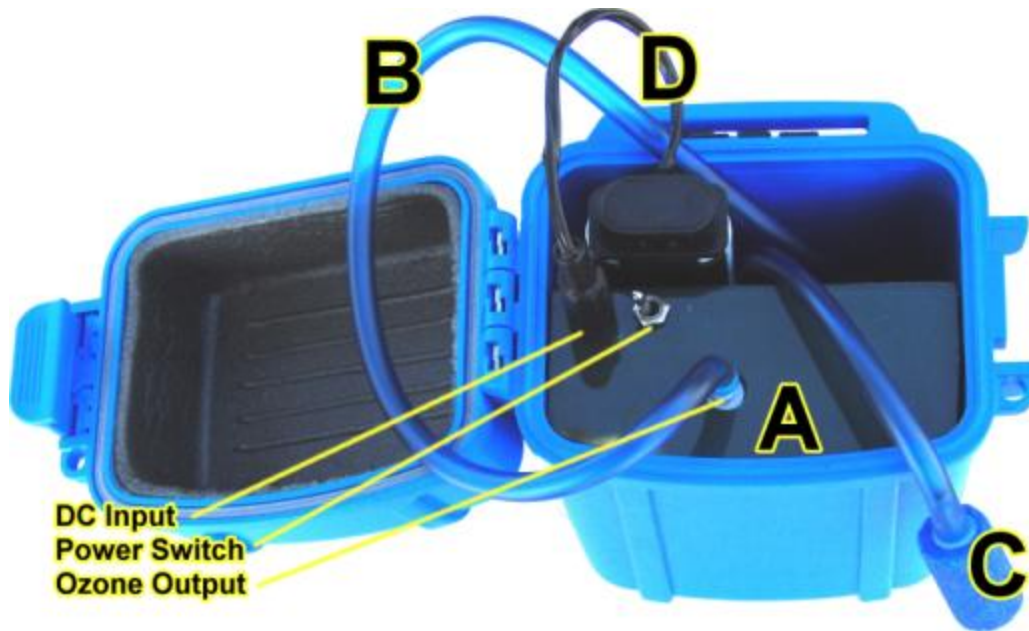
EMERGENCY WATER DISINFECTION SYSTEM

**OPERATORS
MANUAL**

www.ACMEzombieSUPPLIES.com

SYSTEM INVENTORY:

- A: Ozone Generator Unit
 - B: Air Tubing
 - C: Diffuser Stone
 - D: Battery Holder/Cable
 - Operation Guide (you are reading it!)
-



TO OPERATE UNIT:

Simply connect any source of “low voltage” power to the DC INPUT JACK, located under the lid. The unit will only operate with center tip positive power source. The voltage can be from 6volts to 30volts. Designed for direct use with solar panels, or from any DC source such as batteries or adapter(s).

Once power is connected, the power switch can be switched to turn on the generator and begin ozone production. The output port should be connected to a tubing terminated with a diffuser stone and submerged in water in such a manner to PREVENT SIPHONING back into generator, if water is kept lower than generator it will prevent siphoning.

READ WARNINGS BEFORE ATTEMPTING OPERATION:

Water should never be allowed to enter the unit, either thru the tubing (from siphoning) or ingress into the inner compartment. It is only waterproof with the lid latched! When using, ensure that water is kept below the level of the ozone generator. If this is done, then gravity will prevent water from ever siphoning into generator and destroying it.

This unit employs high voltage (corona discharge), do not open or allow water to enter the compartment or tubing.

Treatment times vary with bubble column and amount of water to be treated. It is suggested to read the included information concerning ozone, and if in doubt, treat longer than expected when the water is highly contaminated. It is always suggested to filter water before drinking to remove particles, if you use ozone before filtration it will prevent bio-film from forming inside filter system. Carbon filtration will remove ozone, although after a few minutes the ozone will be released from water under normal conditions.

You should NEVER allow the unit to be operated with the lid closed- this will create unsafe ozone levels inside the compartment, such ozone will destroy many rubber components such as case waterproofing gasket, pump components, and seals!

Do not concentrate and inhale ozone, it is harmful to the respiratory system. Some people believe ozone has health benefits, etc. For the health benefits of ozone therapy, consult the Internet or a source you trust. We cannot give advice... We only supply the equipment.

Do not connect AC power source to unit, it can operate from 6-30vDC, do not exceed this rating or operate with voltages lower than 6 volts for any extended period of time.

ABOUT OZONE:

Ozone is an allotropic form of oxygen with three atoms per molecule and is, after fluorine, the strongest oxidant and disinfectant. The standard oxidation potential of ozone is 2.07 eV compared with a potential of 1.36 eV for chlorine, or 0.95 eV for chlorine dioxide. It is up to 20 times more powerful than chlorine. Ozone has been used for almost 100 years for the treatment of drinking water.

The effects of ozone result from its strong oxidation capacity with respect to chemicals and microorganisms in the water. The dwell time needed for reduction of microorganisms depends on the type of organism, other reactants in the water and the ozone concentration.

Ozone directly attacks the outer surfaces of the microorganisms and destroys their cell walls and membranes. The cells burst and lose their cytoplasm when exposed to ozone.

For the disinfection of demineralized water, experience has shown that a low ozone concentration of <0.020ppm is sufficient. Ozone is metastable, which means it can maintain a non-equilibrium state for an extended period of time; it has a half-life in pure water of about 20 minutes.

The ACME system uses corona discharge method to generate ozone, and produces up to 300mg/hr, with minimum production greater than 120mg/hr under any operating condition. Factors such as altitude, ambient oxygen (usually 19-21%), and size and shape of bubble column all have an effect on treatment times.

Suggested water treatment times with this system are minimum of 5 minutes per liter, with 15 minutes suggested per liter. (Using .5micron micro bubbler diffuser). Stirring or agitating occasionally to cleanse the container walls and ensure bubbles traverse the water at all angles. Let the water sit for a few minutes if the ozone residual is undesirable, it will disperse rapidly. Many sources insist ozone is beneficial to health when consumed. (Not to be inhaled).

Cloudy water should be filtered if possible (at least in a primitive manner such as thru a coffee filter); ozone will quickly disinfect surfaces of particles, however if the particle is a large contaminant it will not be as effective. This is also true with UV sterilization, and for this reason it is suggested to pre-filter.