



Sander Ozone Generators (Ozonizers)
Professional Series
Manufactured in Germany
Australian Master Distribution by Akline Equipment

Benefits of an Ozonizer

- augments the performance of protein skimmers and biological filters
- produces transparent and healthy water
- diminishes the load of nitrite and ammonia evident
- augments the redoxpotential and the content of oxygen
- diminishes the load of disinfectants in the water
- decomposes yellow substances and other pollutants for the degradation inside the biological filter

Sterilization and purification of water by the use of ozone has been used for many years in drinking water and waste water treatment plants throughout the world. Ozone is a very reactive form of oxygen that can destroy an enormous variety of liquid waste materials and toxins. In the aquarium, it offers a simple, highly effective method of maintaining a clean and stable environment for the algae and animals.

Ozone is a safe and remarkably effective agent capable of killing a wide variety of microorganisms. Viruses, bacteria, spores, some chemical impurities, etc., are all attacked and destroyed by ozone. Additionally, toxic materials treated with ozone are nearly always converted into less toxic compounds, enhancing their adsorption by bacteria, algae, and/or activated carbon. As an example, in the marine aquarium, ozone will steadily convert ammonia to nitrite and rapidly (on contact) convert nitrite to nitrate.

Ozone promotes the formation of stable foaming compounds from otherwise non-foaming components, noticeably increasing the efficiency of protein skimmers in marine aquariums. When ozone is used with a protein skimmer, complex waste materials not removed as foam are further broken down to simpler component parts and passed off to the atmosphere or broken down into materials readily consumed by the bacteria and algae in the aquarium.

We recommend that protein skimmers always be used with ozone. After 24-48 hours of protein skimming with ozone, the water in the aquarium will seem to "disappear" as the small particles and colored materials are removed from the water. The clarity of the water is quite simply unequaled by any other system.

Some early literature expresses concern about the hazards of excessive ozonization. Sander's Aquarium Model Ozonizers are not capable of producing enough ozone to harm aquarium inhabitants. The solubility of ozone is very limited and excess ozone does not remain in the water but is released to the air as a gas. The distinct odor of ozone in the air (similar to chlorine bleach) tells you that more ozone is being produced than is required by your aquarium. Simply reduce the ozone output of your unit by turning the adjustment dial to a lower setting. Sander Ozonizers produce ozone by the Corona Discharge method. This is the most effective method for ozone production but this process generates very high voltage .

CAUTION! Only factory fuses should be used in Sander Ozonizers. The use of other fuses is very hazardous and voids the manufacturer's warranty.

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USING OZONE

Ozone should be applied to the aquarium water via a dedicated reaction chamber such as a protein skimmer.

A protein skimmer:

- 1, Concentrates the working area for ozone in a chamber isolated from the aquarium;
- 2, Provides the necessary contact time between ozone and water (often by using counter current flow between ozone and water in the contact chamber).

Ozone should not be arbitrarily introduced to the aquarium or a reservoir because sufficient contact time is essential to its effectiveness. The use of ozone is a highly effective method of water purification but it must be applied properly.

Sander Aquarium Model Ozonizers are offered in 4 different output ranges (adjustable from 0 to 25, 50, 100 and 200 mg. of ozone output per hour). The amount of ozone required is directly related to the amount of organic matter in the water to be treated. (e.g. A heavily stocked 50 gallon aquarium will require more ozone than a sparsely stocked 50 gallon aquarium.)

Generally, the amount of ozone required in the "average aquarium" can be calculated as approximately 3.5 mg. of ozone per hour per 10 gallons of water to be treated. The ozonizer should be connected between your air pump and the airstone(s) of your protein skimmer or connected to the venturi port in venturi operated models. Air that enters the ozonizer exits as a mixture of ozone and air.

USAGE RECOMMENDATIONS:

- The source of air should be as dry as possible. Ozone production is greatly reduced without predried air.
- We recommend the use of a Redox Potential Controller Meter with all Ozonizers.
- Ozone is best applied as extremely fine bubbles via a protein skimmer.
- Two or more ozonizers can be connected in a parallel ("Y" or "T") circuit to provide additional ozone to a system. Do not connect the output of one ozonizer to the input of another ozonizer in an attempt to boost the level of ozone output.
- Precautions should be taken to prevent back-siphoning of water into the ozonizer. Should the air supply to the ozonizer be interrupted, the loss of pressure can initiate back-siphoning to the ozonizer. To minimize the chance of back-siphoning, we recommend that:(1) The ozonizer be mounted above the water level of the vessel it is plumbed to; (2) Several loops of ozone-resistant tubing be installed between the ozonizer and the airstone(s) or venturi port; and (3) That a check valve be placed between the ozonizer and the air pump. (Do not position a check valve between the ozonizer and the airstone(s) or venturi port.)
- Do not inhale ozone directly from the ozonizer output port. Ozone that is not dissolved in water is noxious and should be avoided.
- If your air source is not filtered, an air filter should be placed before the ozonizer to help keep the ozone electrode dust free. (Sander Air Driers filter dust as well as moisture.)
- Sander Ozonizers should have their electrode inspected and cleaned by the user every 6 months. If the air supply is very humid and is not predried before passing through the ozonizer, more frequent cleanings will be required. Instructions for the simple cleaning of the ozone electrodes accompanies each unit.
- Keep your ozonizer in a dry area. Water in the ozonizer will void the manufacturer's warranty

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