

## Mutiny Ozone Reactor Set Up Instructions

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### Introduction

The use of ozone in seawater filtration is a powerful means of achieving the crystal clear, “fish floating in air” effect seen in the world’s most beautiful marine aquaria. An extremely powerful oxidizing agent, ozone will essentially “bleach” your seawater clean when used in a controlled environment in a safe and effective manner. Since the amount of ozone needed to clarify water is significantly less than that needed to kill most pathogens or other organisms, the usefulness of ozone extends even to systems that employ “probiotic” means of nutrient control. Coupled with an efficient protein skimmer, ozone can help improve water quality by breaking down large organic molecules into components more suited to skimming or usable by bacteria. Ozone users frequently report an increase in skimmer productivity and almost always in better water clarity and overall system health. It is important to note that ozone can be a dangerous substance when used improperly. Failure to adequately destroy ozone and remove oxidation byproducts via suitable ozone reactor post-filtration can result in harm to both aquarium inhabitants as well as people. Be sure to follow all safety guidelines according to your ozone generator’s documentation.

### Assembly



Install the impeller into the pump motor block.



Pump motor block with impeller. Note the red bushings in place on both ends. Don't lose these!





Connect the motor block to the pump volute which is pre-installed on the reactor bottom plate.



The volute twist locks onto the pump motor block.



Align the reactor body and connected pump with the stand.



Reactor body on base. Turn the output barb fitting 90 degrees to face upwards.



Install ozone safe tubing. A light coating of silicone grease on the barb makes this much easier.



Secure the reactor to the base with thumbscrews on this side.





These thumbscrews install from the bottom. Note the position of the nuts to align the carbon reactor bracket.



Carbon bracket non-removable side. The nut goes on top.





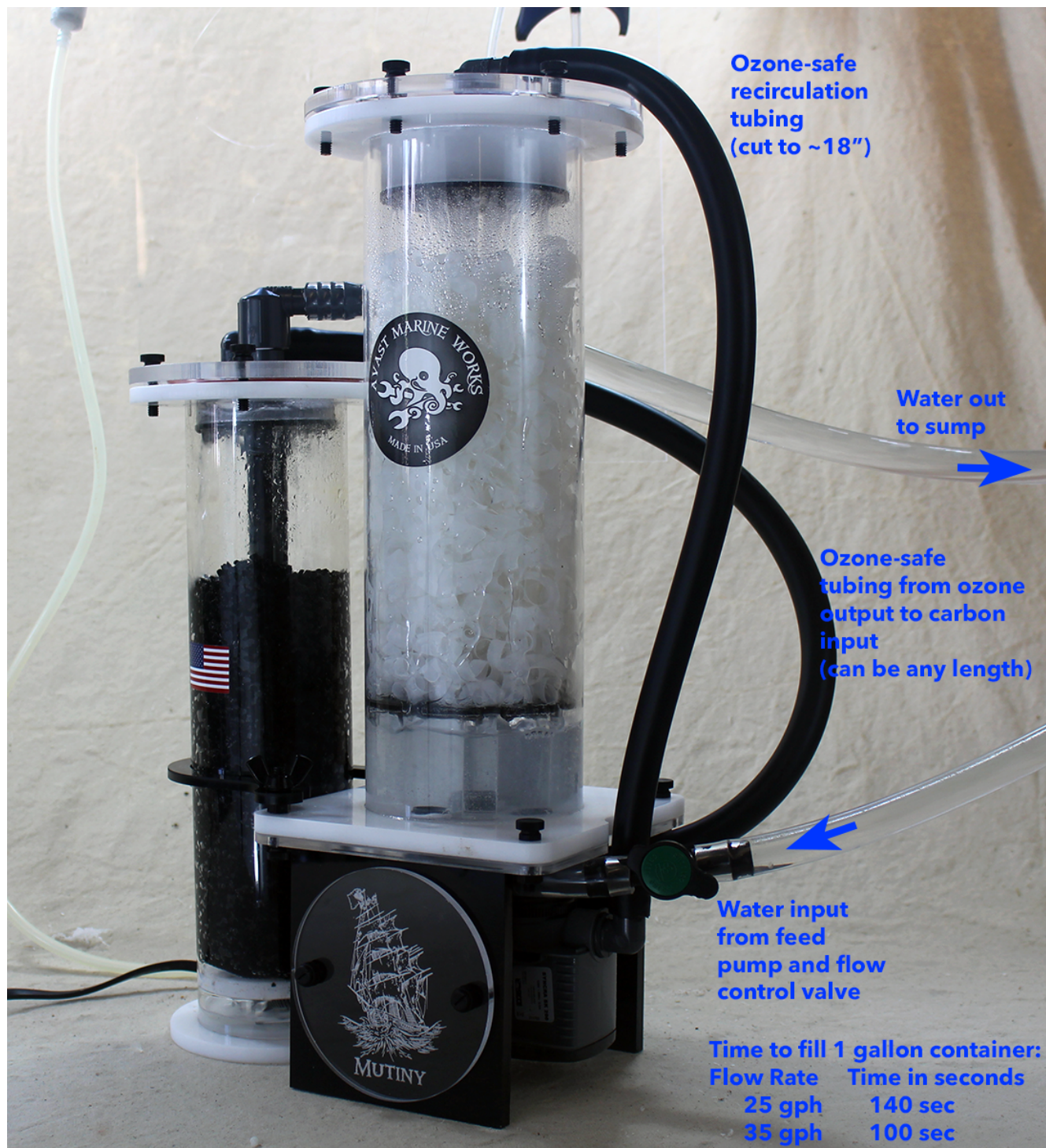
Connect the removable side of the bracket. Note the nut on the bottom and wingnut above.



Carbon chamber bracket in place.

## Setup

Your Mutiny ozone reactor has been tested and supplied with the reactor media, and is ready for installation when you receive it.



Follow the diagram shown to connect the supplied tubing: Make sure the carbon post-filter is filled with quality carbon that will absorb residual ozone and oxidation by-products from both the water and air.

Connect all parts of your ozone generator as per manufacturer's instructions. Generally, you will place the air pump first, then run it to your air dryer (if required), then the generator. For the Ozotech Poseidon 200, refer to this diagram:





The return from the carbon filter to the tank should be placed in the sump. A small amount of carbon scrubbed air will bubble out this output tube along with the water. If microbubbles are a problem in your sump, you can ziptie a small piece of foam to the output of the carbon postfilter tubing to eliminate this effect. We suggest running the output near the input of your skimmer which is an area that is usually baffled to prevent bubbles from escaping, this also will increase the protein skimmer potential.

You can now turn on both the recirculating and reactor feed pumps, as well as the air pump and test for correct operation. Let the system run for 24 hours before turning on your ozone generator. Note that water flow through the ozone reactor system is designed to be slow. This reactor is designed for about 35 gallons per hour of water flow. The recirculating pump creates about 350 gph of turnover inside the reactor. The slow water throughput ensures adequate contact time for the ozone and water, as well as carbon scrubbing of the residual ozone and oxidation byproducts.

## Monitoring/Control

Any ORP monitoring/controlling equipment should be installed per manufacturer's instructions. Please keep in mind that ORP probes may take up to 2 weeks to fully stabilize in your aquarium before providing an accurate reading. GO SLOW. The maximum ORP level should remain below 450mv. Note that a low ORP reading is not an indication that the ozone system is malfunctioning. ORP is a very poorly understood metric in marine aquaria, and many external factors influence a probe's measurement. We recommend judging effectiveness based on visual results, even if that measurement is subjective. One simple qualitative measurement involves holding a piece of white paper on one side of your tank, and looking at it through the water. After running the ozone for a few days, the paper should appear white rather than off-white or yellow, which is common before ozone use.

## Maintenance

The ozone reactor itself should not require any regular maintenance, except for periodic cleaning of undissolvable particles that might accumulate in the media or reactor's bottom. The media may develop a yellow tint. This is not an indication that the media is breaking down, but simply a light coating of oxidation byproduct that can be removed if desired, but in our experience is completely harmless.

Carbon should be changed every 2-3 months in your post filter and the air check valve should be replaced every 6 months regardless of its operation.

We also do not recommend the use of very fine particle carbon, such as ROX 0.8, in the carbon postfilter as it can catch small particles and block water and air flow. Larger granule carbon has proven to work best.

## **Warranty and contact information**

AVAST Marine Works products are warranted for a period of one year from the date of purchase against defects in materials and workmanship. AVAST will provide necessary parts and factory labor to repair or replace any failed component without cost to the Buyer.

### **Service**

Warranty shall be void if any alteration or service is performed without written authorization from AVAST Marine Works or if the equipment has been connected to incorrect power. Buyer will be responsible for requesting warranty service through the AVAST Marine RMA process which requires buyers to return the defective unit for repair. The Buyer is liable for properly packaging the equipment and shipping cost for the initial return for repair. Return shipping cost is covered by AVAST if within the warranty period.

Equipment damaged due to accident, neglect, abuse, misuse, natural or man-made disasters is not covered by this warranty, and the Buyer will be contacted with cost and approval for repair.

### **Liability**

In no event will AVAST Marine Works be liable for any lost livestock, profits or any special, indirect or consequential damages due to loss of use.

The laws of the Commonwealth of Virginia will govern this warranty plan.

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