



REEF OCTOPUS[®]

Thank you for purchasing our REEF OCTOPUS Calcium Reactor. For optimum performance and safety, please read this instruction manual carefully and keep it handy for future reference. Fragile items included - *please be careful.*

OCT-CR100 / OCT-CR140 / OCT-CR140D

Introduction

Corals, fish, invertebrates and even coralline algae are constantly using up calcium and alkalinity. A calcium reactor is a piece of equipment that helps maintain alkalinity and calcium in a reef tank throughout the day, stability is attained and overall growth is improved. The Octopus calcium reactors operate by injecting carbon dioxide into the reaction chamber lowering the pH of the water, making it acidic, and dissolving the calcium carbonate to provide the aquarium with calcium and alkalinity. The effluent (the water exiting the reactor) is high in calcium and alkalinity with a PH level between 6.6 pH and 7.0 pH. A quality PH test or PH monitor is recommended to getting an accurate PH reading.

DO NOT LIFT A FULL REACTOR BY THE EXTENDED FLANGE AREAS OR PLUMBING.

The reactor comes disassembled for shipping. (See the calcium reactor diagram) Failure to follow the assembly instructions could cause your reactor to leak. Place the reactor as close to your sump as possible, the shorter the hoses the better.

How to Hook Up the Reactor

The preferred method to hook up any reactor is the pressure feed setup.

- Using a small power head placed in your sump and connect the hose to the outlet port.
- Connect the other end to the John Guest fitting. (See the calcium reactor diagram)

Dual setup only - The effluent hose runs from the outlet on chamber 2 back to the sump. Make sure the effluent hose is above the water line so you can see the drop rate.

We do not recommend the siphon feed to the reactor because it is not reliable feed source to maintain constant pressure.

Hose Installation

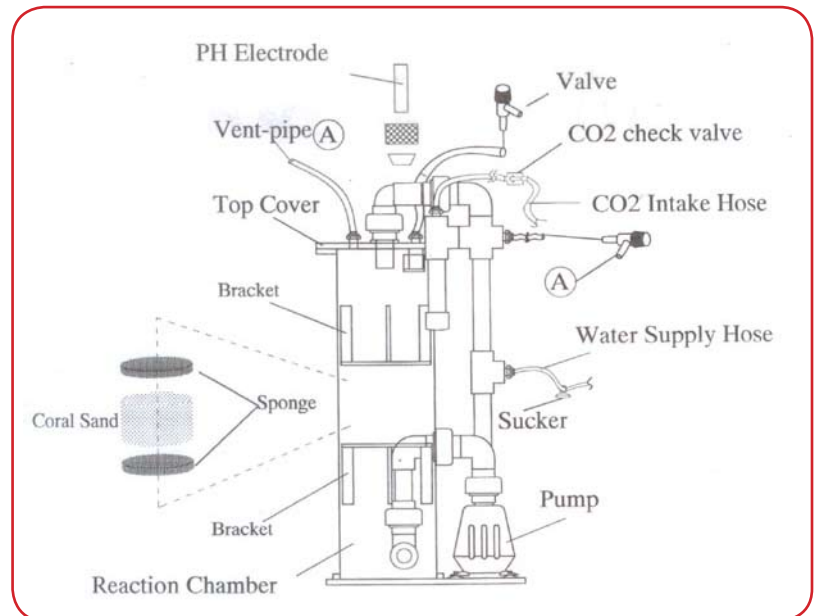
- Connect the female threaded fitting to the top of the pump.
- Slide the hose onto the John Guest fitting. It should fit snugly.
- Slide the other end to the hose on the end of the flange overhang. (See the reactor diagram)

Dual setup only – Connect the other hose to the top of the flange fitting. The other end connects to the lower John Guest fitting on chamber 2. (Refer to the dual calcium reactor diagram)

- Measure the length from your feeder power head to the needle valve and cut the hose to length using scissors.
- Cut the tube about 5-6" longer than needed and do not forget about the rise from the bottom of the sump to the top and back down to the needle valve.
- Cut to length the remainder of the hose from the top of chamber 2 to the sump. If the hose is not long enough, more can be purchased from a hardware store, such as Home Depot.
- The hose is 3/8" inner diameter for the effluent/drip line and 1/2" for the feed line.
- Hoses for the bubble counter are the 1/8" tubing. Most bubble counters are hung using the tube from the CO2 tank. If you prefer, you can sit the bubble counter on the base plate.
- Measure and cut the hose to connect to the fitting on your CO2 tank and the other end to the top of the counter, labeled CO2 in.
- Measure and cut the tube from the 1/8" barb fitting on the manifold to the top of the bubble counter, labeled CO2 out.

If you purchased the regulator gauge, the bubble counter is attached to the regulator.

CALCIUM REACTOR DIAGRAM



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Filling the Reactor

- Remove the top flange of the chamber by unscrewing the nylon screws.
- Place one of the foam pads in the bottom of the chamber on top of the acrylic plate.
- Gently pour the reactor media into the chamber, covering roughly $\frac{3}{4}$ of the chamber height.

LARGE GRADE MEDIA MUST BE USED IN ALL OF OUR CALCIUM REACTORS.

- Pour tank water in chamber 1 up to the flange. Make sure you have the pump connected, as well as the bubble counter hoses. If not, water will leak onto the floor.
- Place the rubber o-ring on to the lower flange.
- * *If Dual reactor, repeat for chamber 2.*
- Using the thumbscrews install the top flange, tighten tightly to prevent water leakage, but not so much that it strips the threads. When in use, if water leaks at the top of the screws, tighten more. Use only hand pressure and tighten in a star pattern. We also recommend using silicone grease to keep the o-ring from binding and to retain life.

NOTE: BECAUSE THIS IS A REVERSE FLOW CALCIUM REACTOR WITH A HIGH FLOW PUMP, YOU MUST PUT THE SPONGE SCREEN ON TOP OF THE MEDIA. FAILURE TO DO SO WILL CAUSE THE MEDIA TO RISE INTO THE INTAKE AND THEN INTO THE PUMP, WHICH WILL CAUSE THE PUMP TO SEIZE AND BURN UP.

Filling the Bubble Counter

With the John Guest fittings off, fill the bubble counter with fresh water. Thread the fitting back on and attach the CO2 tubing.

CO2 Installation

After getting your CO2 cylinder filled, keep the main valve located at the top of the aluminum cylinder OFF (turned clockwise).

- Attach the dual gauge regulator, and tighten securely, using a teflon gasket.
- The gauge on the left reads CO2 in the cylinder (psi, pounds per square inch).
- The gauge to the right reads the pressure of the gas leaving the regulator.
- Attach the tubing supplied to the regulator.
- The other end goes to the John Guest fitting going into the bubble counter.
- Close the needle valve (completely turn clockwise).
- Slowly open the main cylinder valve.
- Dial in the adjustment knob on the regulator until the outlet pressure gauge reads 10 psi.
- Slowly open the needle valve to desired setting.
- When the cylinder pressure gauge drops below 500 psi, it is time to consider getting the cylinder refilled.



Starting the Power Head and Setting the Effluent Flow

Start the feeder power head. Plug in the reactor pump to start water flow within the reactor. Let the system run for about 20 minutes with full flow out of the effluent line. This will push out any air from the system. After the time has passed, you can adjust the flow rate of the effluent to a slow drip, about 50-60ml per minute drip rate. Each tank will vary, as all tanks are different.

Allow at least 2 hours after tweaking reactor settings, for things to stabilize. It's best to make one setting adjustment, and then test the tank 24 hours later. This takes more time, but less trouble overall.

Setting the CO2 Flow

Start with a bubble count of about one bubble every 3 seconds. There is a lag time when you adjust the bubble count since the hose has to accept any change in pressure. The bubble count will not happen immediately. Slowly increase the CO2 flow until the effluent water is within the 6.6-7.0 pH range. It will take a few hours before a drop in pH is noticed. Any adjustments made will have a lag period of a few hours. Remember the effluent water is coming out slowly and it takes a while to get the circulating water within the reactor to the output. As a guideline it should have between 25-35 bubbles per minute. Monitor the CO2 injection by measuring the effluent PH. Use the bubble count as a visual reference only.

❗ **DO NOT drop the pH below 6.5.** This low pH could turn your reactor media into mush or mud.

Monitor the pH closely for the first few days. If the system pH drops, then slow down the flow of CO2. Monitor your alkalinity as well. It may take a few weeks before you see any increase in alkalinity.

❗ **DO NOT let it rise above 14 DKH.** Remember each system is different and settings will vary or have to be adjusted from what is recommended here. When adjusting your reactor, do it in small increments. Adjust the effluent first then adjust the CO2 flow. Measure the effluent pH and maintain the 6.6-7.0 pH.

For dual setup only – The effluent of a dual chamber reactor should be measured from chamber 1 before it goes into chamber 2. If you cannot, do this, then the effluent pH of chamber 2 should be about .3-.5 higher than chamber 1.

Routine Maintenance

- ▶ Check the effluent flow rate and CO2 rate periodically.
- ▶ The bubble count will become erratic when it is time to refill the CO2 cylinder.
- ▶ Every so often the media containment sponges should be rinsed out well to remove any buildup that has occurred while in operation.
- ▶ Refilling the media should have to be done every 3-4 months or when the level has dropped about half way. If the media becomes mushy or muddy, replace as well.

📌 NOTE:

Increasing the CO2 feed will cause the effluent pH to drop, and raise effluent alkalinity.

Decreasing the CO2 feed will cause the effluent pH to rise, and lower effluent alkalinity.

Increasing the effluent flow rate will cause the effluent pH to rise, and lower the effluent alkalinity. Decreasing the effluent flow rate will cause the effluent pH to drop, and raise the effluent alkalinity.

Get the tank alkalinity set to your target level, and your calcium level will fall into place.

Patience and persistence is the key to getting your calcium reactor to work properly.

If you have any questions, please visit our website, email us at support@coralvue.com or call 1-866-277-9078.