Reef Octopus CR140

Reef Octopus VarioS CR140 5.5 inch Calcium Reactor User Manual

Model: CR140

1. Product Overview

The Reef Octopus VarioS CR140 is a high-performance 5.5-inch DC Calcium Reactor designed for marine aquarium systems. It features a VarioS 2 pump, offering variable speed control and Apex readiness for advanced integration. Its innovative design incorporates reverse flow and CO2 recirculating mechanisms to maximize efficiency in maintaining stable calcium and alkalinity levels essential for coral growth.
This reactor is engineered for precise control and reliable operation, making it an ideal solution for hobbyists seeking to optimize their reef tank's water chemistry.

Figure 1: The complete Reef Octopus VarioS CR140 Calcium Reactor. This image displays the main reactor chamber, the external VarioS pump, and the associated plumbing. The clear reactor body allows visibility of internal components, while the red and white pump is connected at the base.

2. Safety Information

Please read and understand all safety instructions before operating the Reef Octopus VarioS CR140 Calcium Reactor. Failure to follow these instructions may result in injury or damage to the product or your aquarium system.

- **Electrical Safety:** Always disconnect power to all aquarium equipment before performing maintenance or handling the reactor. Ensure all electrical connections are dry and away from water. Use a GFCI (Ground Fault Circuit Interrupter) outlet.
- **CO2 Safety:** Carbon dioxide (CO2) gas is under high pressure. Handle CO2 cylinders and regulators with extreme care. Ensure proper ventilation in the area where the reactor and CO2 system are installed. Never expose CO2 cylinders to direct heat or sunlight.
- **Water Leaks:** Periodically check all plumbing connections for leaks. Place the reactor in an area where potential leaks will not cause damage to property.
- **Children and Pets:** Keep the reactor and all associated components out of reach of children and pets.
- **Intended Use:** This product is designed for use in marine aquarium systems only. Do not use for any other purpose.

3. Package Contents

Upon unpacking, please verify that all components are present and undamaged. If any parts are missing or damaged, contact your retailer immediately.

- Reef Octopus VarioS CR140 Reactor Body
- VarioS 2 DC Recirculating Pump
- Reactor Lid with CO2 and Water Inlets/Outlets
- Effluent Line and Fittings
- CO2 Input Line and Check Valve
- Media Plates and Sponges
- Instruction Manual (this document)

4. Setup and Installation

Follow these steps to properly set up your calcium reactor:

1. **Placement:** Select a stable, level location for the reactor, preferably in a sump or dedicated equipment area. Ensure there is sufficient space for maintenance and access to connections.
2. **Assembly:**
   - Insert the media plates and sponges into the reactor body.
   - Fill the reactor with appropriate calcium reactor media (e.g., crushed coral, aragonite). Do not overfill; leave space for water circulation.
   - Secure the reactor lid, ensuring the O-ring is properly seated to prevent leaks.
3. **Pump Connection:** Attach the VarioS 2 DC pump to the reactor's inlet port. Ensure all unions and fittings are hand-tightened securely.
4. **Water Connections:**
   - Connect a feed line from your aquarium's return pump or a dedicated feed pump to the reactor's water inlet. A ball valve on the feed line is recommended for flow control.
   - Connect the effluent line from the reactor's outlet to a suitable drain point in your sump or aquarium.
5. **CO2 Connection:**

- Connect a CO2 line from your CO2 regulator (not included) to the reactor's CO2 inlet port.
- Install the provided check valve on the CO2 line to prevent water back-siphoning into your regulator.

6. **Power Connection:** Connect the VarioS 2 DC pump to its controller, and then plug the controller into a GFCI-protected electrical outlet. Do not power on yet.

5. Operation

Operating the VarioS CR140 involves adjusting water flow, CO2 injection, and monitoring effluent parameters.

1. **Initial Startup:**
   - Open the feed line ball valve to allow water to fill the reactor. Ensure the reactor is completely filled and purged of air.
   - Once filled, power on the VarioS 2 DC pump. The pump will begin recirculating water within the reactor.
2. **CO2 Injection:**
   - Slowly open the needle valve on your CO2 regulator to introduce CO2 gas into the reactor.
   - Adjust the CO2 bubble count (bubbles per minute, BPM) according to your system's needs and the reactor's size. A common starting point is 10-20 BPM, but this will vary.
3. **Effluent Drip Rate:**
   - Adjust the feed line ball valve to control the effluent drip rate. A slow, consistent drip (e.g., 1-4 drips per second) is typically desired.
   - The effluent pH should be monitored. Aim for a pH between 6.5 and 6.8 within the reactor chamber to effectively dissolve the media.
4. **Monitoring:** Regularly test your aquarium's alkalinity (dKH), calcium (Ca), and magnesium (Mg) levels. Adjust CO2 injection and effluent drip rate as needed to maintain stable parameters.
5. **VarioS Pump Control:** The VarioS 2 pump controller allows for speed adjustment. Higher speeds increase water flow within the reactor, which can affect media dissolution. Refer to the VarioS pump manual for detailed control instructions, especially for Apex integration.

6. Maintenance

Regular maintenance ensures optimal performance and longevity of your calcium reactor.

- **Media Replacement:** Calcium reactor media will slowly dissolve over time. Monitor the media level and replenish or replace it as needed, typically every 6-12 months depending on consumption.
- **Reactor Cleaning:** Periodically (e.g., every 3-6 months) disassemble the reactor and clean all components, including the reactor body, lid, media plates, and sponges, to remove any detritus or algae buildup. Use a soft brush and warm water.
- **Pump Maintenance:** Clean the VarioS 2 pump regularly (e.g., every 3-6 months) to prevent calcium deposits or debris from affecting its performance. Disassemble the pump and clean the impeller and volute with a mild acid solution (e.g., vinegar) if necessary. Rinse thoroughly with fresh water.
- **O-Ring Inspection:** Inspect all O-rings for wear or damage during cleaning. Replace any worn O-rings to prevent leaks. Apply a thin layer of silicone grease to O-rings before reassembly.
- **CO2 System Check:** Regularly check your CO2 cylinder pressure and regulator for proper function. Ensure there are no leaks in the CO2 lines.

7. Troubleshooting

This section addresses common issues you might encounter with your calcium reactor.

Problem	Possible Cause	Solution
Low Calcium/Alkalinity Output	Insufficient CO2 injection; low reactor pH; media depletion; insufficient water flow.	Increase CO2 bubble rate; check CO2 regulator and cylinder; replenish media; increase effluent drip rate; clean pump.
Leaks from Reactor	Loose fittings; damaged O-rings; improper lid seating.	Tighten all connections; inspect and replace O-rings; ensure lid is seated correctly.
Pump Not Running	No power; clogged impeller; faulty pump/controller.	Check power connection and GFCI; clean pump impeller; contact support if pump is faulty.
Excessive CO2 Bubbles in Sump	Too much CO2 injection; insufficient media dissolution; effluent pH too high.	Reduce CO2 bubble rate; ensure reactor pH is optimal (6.5-6.8); check media level.

8. Specifications

Model	CR140
Reactor Diameter	5.5 inches
Dimensions (L x W x H)	12.2" x 9.1" x 22.9" (Product Description) / 25.3" x 15.7" x 12.6" (Package Dimensions)
Pump Type	VarioS 2 DC Recirculating Pump (Variable Speed, Apex Ready)
Item Weight	12.62 pounds
Manufacturer	Reef Octopus
Features	Reverse flow and CO2 Recirculating Design

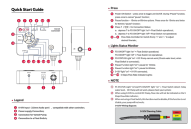
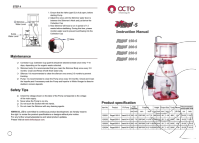
9. Warranty and Support

For specific warranty information regarding your Reef Octopus VarioS CR140 Calcium Reactor, please refer to the warranty card included with your product or visit the official Reef Octopus website. Warranty terms and conditions may vary by region and retailer.

For technical support, troubleshooting assistance beyond this manual, or to inquire about replacement parts, please contact Reef Octopus customer service or your authorized dealer. Contact information can typically be found on the manufacturer's website or on your purchase receipt.

Manufacturer: Reef Octopus

Related Documents - CR140

	[VarioS Controller Quick Start Guide - Reef Octopus] A concise quick start guide for the Reef Octopus VarioS Controller, explaining its features, connections, status indicators, and operational notes for aquarium pump control.
	[Reef Octopus Regal-S Protein Skimmer Instruction Manual] Instruction manual for Reef Octopus Regal-S series protein skimmers (150-S, 200-S, 250-S, 300-S), detailing maintenance, safety, assembly, and product specifications for optimal aquarium use.
	[Reef Octopus eSsence 130 Protein Skimmer Instruction Manual] Detailed instruction manual for the Reef Octopus eSsence 130 protein skimmer, covering features, specifications, assembly, maintenance, and safety tips for aquarium enthusiasts.
	[Reef Octopus Classic 2000-HOB Hang-On Back Skimmer Instruction Manual] Detailed instruction manual for the Reef Octopus Classic 2000-HOB Hang-On Back Protein Skimmer, covering installation, maintenance, and safety tips.
	[Reef Octopus Classic 1000-HOB Instruction Manual] Instruction manual for the Reef Octopus Classic 1000-HOB hang-on-back protein skimmer, detailing installation, maintenance, and safety tips.
	[Reef Octopus BH-50INT Nano Protein Skimmer - Installation and Overview] Comprehensive guide to the Reef Octopus BH-50INT Nano protein skimmer, detailing its features, installation steps, safety precautions, and warranty information for aquarium hobbyists.