



## 12 MONTH LIMITED WARRANTY

### WHAT THE WARRANTY COVERS:

Central Aquatics (Company) warrants this KENT Marine product (see Exclusions below) to the original purchaser against defective material and workmanship that occurs during normal in-home use for 12 months from date of purchase. Company will, at Company's option, either repair or replace same without charge (but no cash refunds will be made). This warranty is limited to replacement or repair of product only and does not cover loss of aquarium life, personal injury, property loss, or damage arising from the use of the product. You must retain original proof of purchase to validate this warranty.

### EXCLUSIONS:

1. Damage resulting from accident, misuse, abuse, lack of reasonable care, subjecting the product to any but the specified electrical service, other than the normal and ordinary use of the product, subjecting the product to abnormal working conditions or any other failure not resulting from defects in materials or workmanship.
2. Damage resulting from modification, tampering with or attempted repair by anyone other than the Company.
3. Transfer of product to someone other than the original consumer or purchaser.

### WHAT YOU MUST DO TO ENFORCE WARRANTY:

Contact the Company by telephone: **888-255-4527**

Or contact the Company by writing:

**Central Aquatics, 5401 West Oakwood Park Drive, Franklin, WI 53132, Attn.: Warranty**

You must pay any postage, shipping charges, insurance costs and other expenses to return the product along with the original cash register receipt to Central Aquatics. However, if the necessary repairs are covered by the warranty, Company will pay the return shipping charges to any destination within the United States or Canada.

LIMITATION OF IMPLIED WARRANTIES AND EXCLUSION OF CERTAIN DAMAGES: THE COMPANY DISCLAIMS LIABILITY FOR INCIDENTAL AND CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, WITH RESPECT TO THIS PRODUCT. THIS WRITING CONSTITUTES THE ENTIRE AGREEMENT OF THE PARTIES WITH RESPECT TO THE SUBJECT MATTER HEREOF; NO WAIVER OR AMENDMENT SHALL BE VALID UNLESS IN WRITING SIGNED BY THE COMPANY.

Some states do not allow the exclusion or limitation of consequential damages, so the above limitation or exclusion may not apply to you.

# KENT MARINE®

advanced solutions for aquatic life™

## Phos•Reactor™

### Phosphate-removal filtration system

## Instruction Manual

### Phos•Reactor Package Inventory

- 1 - KENT Marine Phos•Reactor
- 1' x 1/2"-ID Flexible Tubing
- 1 - Instruction Manual

### Phos•Reactor Specifications

Overall Height 15.00" or 38.1cm

Reaction Column 12.5" or 31.75cm



## Introduction

Congratulations on purchasing the KENT Marine Phos•Reactor. This unit is primarily intended to be used with phosphate-removal media such as KENT Marine Power-Phos and Phosphate Sponge. However, it may be used with numerous filtration media to best suit your aquarium needs. This unit is versatile and can be used for both hang on aquarium and in-sump applications.

## Additional Items Needed to Operate the Phos•Reactor

- Submersible pump or powerhead with mechanical pre-filter (i.e. sponge) capable of up to 100 gph net water flow through the unit when media is present.
- Silicone Grease

## Installation and Operation of the Phos•Reactor

1. Location. Determine the best location for both the Phos•Reactor and pump. Keep in mind that it should be located in an area that is easily accessible allowing for regular maintenance.
2. Remove lid and all contents from inside of reactor; place them down next to the unit.
3. Slide one of the fiber discs down over the center pipe of the lower (longer) pipe assembly so that it sits directly in contact with the black perforated disc. Slide the lower assembly down to the bottom of the reaction column. The fiber disc may slide up and will need to be pushed back down to the black perforated disc.
4. Add desired amount of media to the reaction chamber.

**Tip** Cover the center pipe with a short piece of clear tape. This will prevent media from falling into the pipe when filling the unit. Remove tape after filling media.

5. Slide second fiber disc over center pipe above media. Place the upper pipe assembly atop the lower pipe assembly by lining the lower tube up with the upper perforated disc and sliding them together.
6. Place O-ring into the groove on the top of reactor. Slide lid into slotted holes lining up the water input and exhaust tubes toward the side of the hang-on bracket. Twist lid closed ensuring upper tube seats into the hole on the underside of lid.

**Tip** Applying a very thin coat of silicone grease to the O-ring will provide a better seal, prolong the life of the o-ring and ease twisting the lid on securely. **Do not grasp or twist the lid by the clear acrylic pipes as they may break.**

7. For hang-on applications, a spacer foot is included and should be inserted into the tabs on the unit's bottom. The spacer has a range of positions to ensure the reactor is positioned as nearly perpendicular as possible.
8. Connect the unit to the pump using the tubing provided. Tubing may need to be cut to desired length depending upon application.

**Tip** Some pumps come with a flow valve to regulate the amount of water flowing through the unit. This increases or decreases the water's dwell time in the reaction chamber. The Fluidized Media section below outlines the significance of a flow valve when using that media type.

9. Plug in the pump or powerhead and check for leaks.

## Media Options

The KENT Marine Phos•Reactor can be used with three different media options:

**Fluidized Media** - When using the Phos•Reactor as a fluidized bed filter with media such as KENT Marine Power-Phos, you are attempting to expose the maximum amount of the media's surface area to aquarium water, increasing the filtration efficiency. A water control valve is more critical with this option. The goal is to cause the media to suspend in the upwelling water approximately 3/4 the total height of the reaction column. The flow valve will allow the adjustment of how the media is churning in the chamber and to what height it reaches. Do not allow media to be flushed out of the filter and into the aquarium. The height to which fluidized media will be suspended will gradually decrease as the fiber disc is clogged with material from the aquarium. Regular cleaning or replacement of the fiber disc will keep the water flowing through the Phos•Reactor at the desired rate.

**Micron Bag or Nylon Sock** - Smaller media particles such as resins can be used by placing the media in either a micron bag or nylon sock. This contains the media and allows for water to pass through but prevents media from entering the aquarium system. The unit can be used for a multitude of media applications such as carbon, resins, ceramics etc. or any combination. Instead of placing media loosely

in the unit as in step 4, place media in a micron bag or nylon sock and then place in reaction chamber. When assembling, the filled media bag will need to be folded around the center pipe and slid into the reaction chamber. Many times water flow from the pump can remain full flow to allow for maximum water turn over.

**Loose Media** - Larger particles typically found with carbon, ceramics and granular media, can be placed directly in the reaction chamber. Placing the media loosely in the unit will cause water to pass through but will not cause the media to churn in the water column as in the fluidized media option.

## Replacing Media & Cleaning

Depending upon the media used, it is nearly impossible to determine when the filtration media should be discarded or regenerated. To ensure proper water quality, regular testing of aquarium water is part of a successful hobbyist's routine. Refer to the instructions provided with the various types of media for detailed information on their use.

To clean the unit, disassemble and rinse with warm water and wipe or scrub with a soft towel or old toothbrush as needed. Do not use any type of chemical cleaning agents to clean the Phos•Reactor! These chemicals may include, but are not limited to, soap, alcohol, ammonia or other glass cleaners, polishers, etc. In particular, alcohol and ammonia have a tendency to cause acrylic to craze or warp which is very damaging and may cause the unit to leak. In the event that calcium carbonate builds up inside the filter, the unit may be disassembled and soaked overnight in a weak solution of 1 cup white vinegar in 1 gallon of fresh water; rinse the unit in fresh water when finished. The use of chemical cleaning agents on the Phos•Reactor will void the Limited Warranty.

## Troubleshooting

Symptom	Cause	Solution
Water is leaking around tubing.	Tubing is not secured properly onto fitting.	Push tubing further onto fitting. If needed add a hose clamp from a local hardware store.
Water is leaking around lid.	O-ring is not properly sealed in groove.	Remove lid, apply a thin coat of silicone grease to the o-ring with your finger, then re-seat the lid and twist it to secure.
Height of fluidized media inside reaction column falls steadily with time.	Fiber disc is becoming clogged with particulate material, decreasing the flow of water into the Phos•Reactor.	Clean the fiber discs in the Reactor by rinsing them in water, then place them back in the Reactor and resume operation.

## Media Dosage Table

KENT Filtration Media	Phos•Reactor Capacity	Applications
Power•Phos	150 grams	Granular phosphate-removal media
Phosphate Sponge	1 qt.	Porous ceramic media; removes phosphate and silicate
Reef Carbon	1 qt.	Activated carbon; removes organic material and water-discoloring substances.
Nitrate Sponge	1 qt.	Porous zeolitic media; removes nitrate via adsorption and fosters de-nitrification
Organic Adsorption Resin	16 oz.	Macroporous resin that removes organic materials but not trace elements
Toxic Metal Sponge	16 oz.	Cation-exchange resin that removes copper and other heavy metals from water
Mixed-Bed Resin	16 oz.	A blend of resins that remove organic material and heavy metals from water