Premier Water Systems RO5PPDI100

Premier Water Systems RODI 5 Stage 100 GPD Reverse Osmosis Aquarium Water Filtration System with Permeate Pump User Manual

Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your Premier Water Systems RODI 5 Stage 100 GPD Reverse Osmosis Aquarium Water Filtration System with Permeate Pump. This system is designed to produce ultra-pure water for aquariums, laboratory testing, and other applications requiring high-purity water. Please read all instructions carefully before proceeding with installation or operation.

Product Components and Filtration Stages

The Premier Water Systems RODI unit features a 5-stage filtration process combined with a permeate pump to ensure efficient and effective water purification.



Image: Overview of the 5-stage RODI system, showing the individual filter cartridges and their respective positions within the unit. Each stage is numbered and includes a brief description of its filtration function.

Filtration Stages:

1. **Stage 1: 5 Micron Sediment Filter (2.75" x 9.75")**
   This polypropylene sediment filter removes dirt, rust, sand, scale particles, and other large suspended solids from the incoming water, protecting subsequent filters.
2. **Stage 2: 5 Micron Carbon Block Filter (2.75" x 9.75")**
   This carbon block filter effectively removes chlorine, chloramines, organic chemicals, tastes, odors, and Volatile Organic Compounds (VOCs) from tap water.
3. **Stage 3: Granular Activated Carbon (GAC) Water Filter (2.75" x 9.75")**
   The GAC filter further reduces chlorine, taste, odor, and other organic chemicals, ensuring the water is free from impurities that could damage the RO membrane.
4. **Stage 4: 100 GPD Reverse Osmosis (RO) Membrane**
   The RO membrane is the core of the system, removing up to 99% of total dissolved solids (TDS) and contaminants such as arsenic, lead, fluoride, chromium, radium, bacteria, and viruses.
5. **Stage 5: Deionization (DI) Filter (Nuclear Grade)**
   This final stage deionization filter removes nearly all remaining mineral ions, including cations like sodium, calcium, iron, and copper, and anions such as chloride and sulfate, producing ultra-pure water.

Permeate Pump (ERP-1000) Benefits:

The included permeate pump significantly enhances the system's performance and efficiency:

- Requires no electricity; powered by the hydraulic energy of brine water.
- Improves water recovery rates by as much as 400%.

- Reduces wastewater by up to 80%.
- Enhances contaminant rejection.
- Ideal for membranes rated from 10-100 GPD.
- Effective for inlet water pressure as low as 30 psi.
- Increases membrane life and lowers TDS creep.
- Fills product tank up to 4 times more rapidly.
- NSF approved (Standard 58).

Specifications

Brand	Premier Water Systems
Model Name	RO5PPDI100
Purification Method	Reverse Osmosis, Deionization
Capacity	100 Gallons Per Day (GPD)
Installation Type	Under Sink
Power Source	Water-powered (Permeate Pump)
Special Feature	NSF Certified
UPC	818368014764

Setup Instructions

Follow these steps for proper installation of your RODI system. It is recommended to have basic plumbing knowledge or consult a professional.

1. **Unpack Components:** Carefully remove all items from the packaging and ensure all parts are present.
2. **Choose Location:** Select a suitable under-sink location that allows easy access for maintenance and connection to a water source and drain.
3. **Connect Feed Water:** Use the provided Garden Hose feed water adapter to connect the system to your cold water supply. Ensure a secure, leak-free connection.
4. **Install Drain Saddle:** Attach the drain saddle to the drain pipe under your sink, ensuring it is above the trap. Connect the drain line from the RO system to this saddle.
5. **Connect Tubing:** The system includes color-coded tubing for easy identification and connection. Follow the provided diagram (if applicable) or the general flow:
    - Inlet water to Stage 1.
    - Connections between stages 1-5.
    - RO membrane product water to permeate pump inlet.
    - Permeate pump outlet to DI filter.
    - DI filter outlet to product water faucet or storage tank (tank not included).
    - RO membrane reject water to permeate pump reject inlet.
    - Permeate pump reject outlet to drain saddle.
6. **Flush System:** Before first use, slowly turn on the cold water supply. Allow the system to flush for several hours

(e.g., 2-4 hours) to rinse new filters and remove any carbon fines.

7. **Check for Leaks:** Thoroughly inspect all connections for leaks during and after flushing. Tighten any loose connections.

Operating Instructions

Once installed and flushed, your RODI system operates automatically when connected to a pressurized water source. The permeate pump optimizes efficiency without requiring electrical power.

- **Water Production:** The system will produce purified water as long as the feed water supply is open.
- **Storage (Optional):** If a storage tank is connected (not included), the system will fill the tank and automatically shut off when the tank reaches capacity, thanks to the permeate pump and check valve.
- **Water Quality Monitoring:** For critical applications like aquariums, regularly monitor the TDS (Total Dissolved Solids) of the product water using a TDS meter to ensure optimal performance and determine when DI resin replacement is needed.

Maintenance

Regular maintenance is crucial for the longevity and optimal performance of your RODI system. Filter life can vary based on water quality and usage.

- **Pre-filters (Stages 1, 2, 3):** Replace the sediment filter (Stage 1) and carbon filters (Stages 2 & 3) every 6-12 months, or sooner if water pressure drops significantly or taste/odor returns.
- **RO Membrane (Stage 4):** Replace the RO membrane every 2-5 years, depending on feed water quality and usage. A significant drop in water production or an increase in product water TDS indicates it's time for replacement.
- **DI Filter (Stage 5):** Replace the DI resin when the TDS of the product water starts to rise above 0 ppm (parts per million). The color of the DI resin may also change, indicating exhaustion.
- **System Inspection:** Periodically check all tubing and connections for any signs of leaks, cracks, or wear.
- **Cleaning:** Keep the exterior of the system clean. Do not use harsh chemicals.

Troubleshooting

Refer to the table below for common issues and their potential solutions.

Problem	Possible Cause	Solution
No water production or very slow flow	• Low feed water pressure • Clogged pre-filters • Clogged RO membrane • Air lock in system	• Check feed water pressure • Replace pre-filters • Replace RO membrane • Bleed air from system by briefly disconnecting product line

High TDS in product water	• Exhausted DI resin • Damaged RO membrane • Bypass in system	• Replace DI resin • Replace RO membrane • Check all connections and ensure no bypasses
Water leaking from connections	• Loose fittings • Damaged O-rings • Cracked housing	• Tighten fittings • Inspect and replace O-rings • Inspect housing for damage; replace if necessary
Permeate pump not working	• Insufficient feed water pressure • Blockage in brine line	• Ensure adequate feed water pressure • Check brine line for kinks or blockages

Warranty and Support

For warranty information and technical support, please contact Premier Water Systems directly. Keep your purchase receipt as proof of purchase. Do not attempt to repair the system yourself if it is under warranty, as this may void the warranty.

Contact information for Premier Water Systems can typically be found on their official website or on the product packaging.

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