Aquatic Life 540706

Aquatic Life 4-Stage Reverse Osmosis Deionization Water Filter System

Model: 540706 | Brand: Aquatic Life

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your Aquatic Life 4-Stage Reverse Osmosis Deionization (RO/DI) Water Filter System. This system is designed to produce up to 100 Gallons Per Day (GPD) of highly purified water for specialized applications such as aquariums, hydroponics, and other uses requiring low Total Dissolved Solids (TDS) water.

The 4-stage filtration process ensures the removal of various impurities, including sediment, chlorine, chloramines, and dissolved solids, providing water suitable for sensitive aquatic environments.

Image 1.1: The Aquatic Life 4-Stage RO/DI system is capable of producing up to 100 gallons of purified water per day.

2. Safety Information

Please read all safety instructions carefully before installing or operating the system. Failure to follow these instructions may result in property damage or injury.

- **Important:** This filter system is **NOT INTENDED FOR FILTERING WATER FOR DRINKING**. The purified water is suitable for aquariums, hydroponics, and other non-potable applications.
- Ensure all connections are secure to prevent leaks.
- Do not expose the unit to freezing temperatures, as this can damage the filters and housing.

- Operate the system within the specified pressure and temperature ranges (refer to Specifications section).
- Always turn off the water supply before performing any maintenance or filter changes.

Image 2.1: The RO/DI system is designed for specialized water needs, such as aquariums, and is not intended for potable water.

3. Package Contents

Carefully unpack the system and verify that all components are present and undamaged. If any parts are missing or damaged, contact Aquatic Life customer support immediately.

- Aquatic Life 4-Stage RO/DI Unit with Mounting Bracket
- 100 GPD RO Membrane (pre-installed or separate)
- Sediment Cartridge
- Carbon Plus Cartridge
- Refillable Color-Changing DI Resin Cartridge
- Clear Canisters (3)

- 10 ft. x 1/4 inch of each Blue, Yellow, and Red Polyethylene Tubing
- 1/4 inch Buddy-Fit Press Fit Connectors
- Membrane Wrench
- Canister Wrench
- Mounting Screws
- Plumber's Tape
- 90-degree Press-fit Elbows
- Manual Shut-off Valve
- 2-piece Sink Adapter
- Hose Bib Adapter

Image 3.1: Overview of all included components in the Aquatic Life 4-Stage RO/DI system package.

4. Product Overview and Components

The Aquatic Life 4-Stage RO/DI system is engineered for efficient water purification. Understanding each component's function is crucial for optimal performance.

Image 4.1: The complete Aquatic Life 4-Stage RO/DI unit, showcasing the main housing, pressure gauge, and filter canisters.

4.1 Filtration Stages

The system employs a sequential 4-stage filtration process:

1. **Stage 1: 5-Micron Sediment Cartridge**
   This cartridge removes larger particles such as rust, silt, and sand, protecting subsequent filters from premature clogging.
2. **Stage 2: Carbon Plus Cartridge**
   Designed to remove up to 98% of chloramines and 99% of chlorine, along with other organic compounds that can damage the RO membrane.
3. **Stage 3: 100 GPD Reverse Osmosis (RO) Membrane**
   The RO membrane is the core of the system, removing up to 98% of Total Dissolved Solids (TDS), heavy metals, and other microscopic impurities.

4. **Stage 4: Refillable Color-Changing Deionization (DI) Resin Cartridge**
   This final stage polishes the water, removing any remaining trace amounts of TDS, ensuring ultra-pure water. The resin changes color to indicate exhaustion.

Image 4.2: The three primary filter cartridges: DI resin, Carbon Plus, and Sediment, shown ready for installation.

Image 4.3: Detail of the 5-Micron Sediment Cartridge.

Image 4.4: Detail of the Carbon Plus Cartridge.

Image 4.5: Representation of the DI Resin Cartridge's effectiveness in removing TDS.

4.2 Key Features

- **Built-in Pressure Gauge:** Allows for easy monitoring of incoming water pressure, which is crucial for optimal RO membrane performance.
- **Automatic Shutoff Solenoid (ASO):** This pre-plumbed feature automatically shuts off the incoming water supply when the filtered water reservoir is full, preventing waste.
- **Flush Valve:** Allows for manual flushing of the RO membrane, extending its lifespan by rinsing away accumulated impurities.

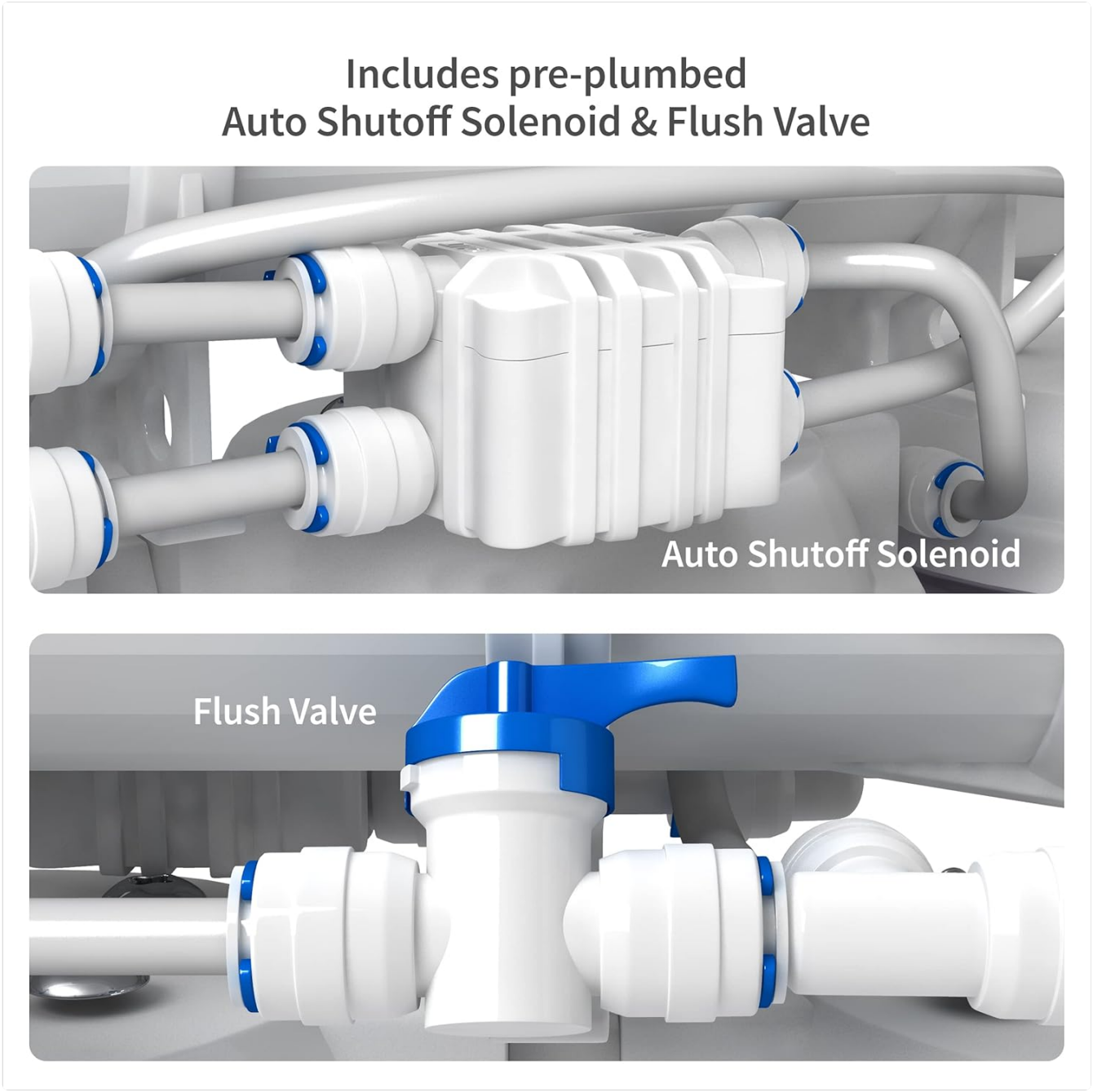

Image 4.6: The pre-plumbed Auto Shutoff Solenoid and Flush Valve for efficient operation.

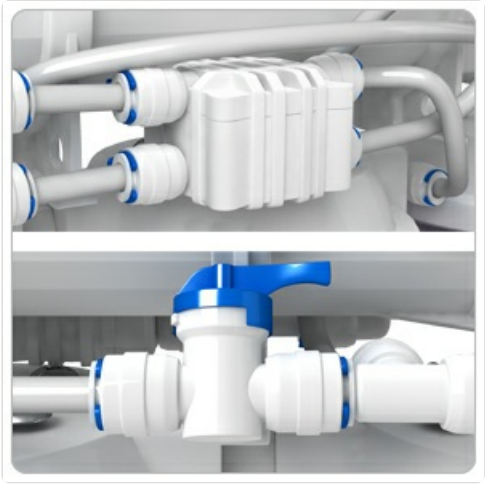

Image 4.7: A closer look at the Auto Shutoff Solenoid and Flush Valve mechanisms.

5. Setup and Installation

Follow these steps carefully to install your RO/DI system. It is recommended to install the unit in an easily accessible location, such as under a sink or mounted on a wall.

1. **Mounting the Unit:** Use the provided mounting screws to secure the RO/DI unit to a sturdy vertical surface. Ensure there is enough space below for filter changes.
2. **Install Cartridges:** If not pre-installed, insert the Sediment, Carbon Plus, and DI resin cartridges into their respective clear canisters. Ensure the RO membrane is securely seated in its housing. Use the canister wrench to tighten the canisters, but do not overtighten.
3. **Connect Water Supply:**
    - Identify your cold water supply line.
    - Use the provided 2-piece sink adapter or hose bib adapter to connect the yellow input tubing to your water source. Apply plumber's tape to threaded connections.
    - Connect the other end of the yellow tubing to the inlet port of the RO/DI unit (typically marked 'IN' or indicated by the pressure gauge).
4. **Connect Waste Line:**
    - Connect the red tubing to the waste water outlet on the RO/DI unit (often near the RO membrane housing).
    - Route the red tubing to a drain or waste receptacle. Ensure the end of the tubing is above the waterline to prevent back-siphonage.
5. **Connect Purified Water Line:**
    - Connect the blue tubing to the purified water outlet on the RO/DI unit (after the DI stage).
    - Route the blue tubing to your collection reservoir (e.g., a clean bucket or storage tank).
6. **Check for Leaks:** Slowly turn on the water supply and carefully inspect all connections for leaks. Tighten any leaking connections as needed.

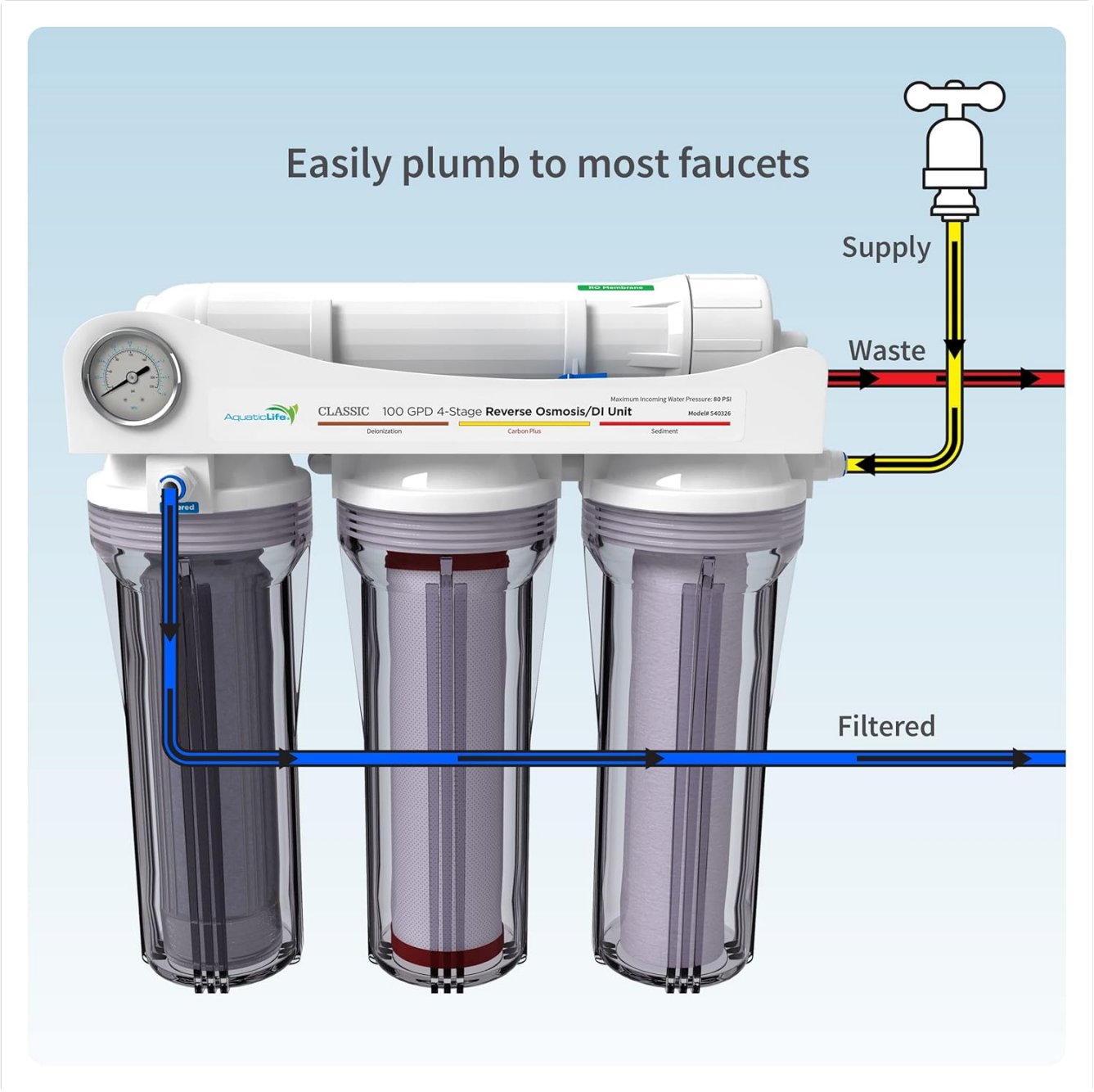

Image 5.1: Plumbing diagram showing the connections for water supply, waste, and purified water output.

6. Operating Instructions

6.1 Initial Startup and Flushing

Before using the purified water, the system must be flushed to remove any manufacturing residues and air from the filters.

1. Ensure all connections are secure and the water supply is on.
2. Open the manual flush valve (if present) or allow the system to run for 30-60 minutes, directing the purified water to a drain. This flushes the carbon filters and RO membrane.
3. After flushing, close the flush valve (if applicable) and begin collecting purified water.
4. Discard the first few gallons of purified water to ensure optimal purity.

6.2 Normal Operation

- The system will produce purified water as long as the water supply is on and the collection reservoir is not full (if

ASO is connected).

- Monitor the pressure gauge regularly. A significant drop in pressure may indicate a clogged sediment or carbon filter.
- Periodically check the color-changing DI resin. When it changes color (typically from blue/green to amber/brown), it indicates exhaustion and requires replacement.

7. Maintenance

Regular maintenance is essential to ensure the longevity and optimal performance of your RO/DI system.

7.1 Filter Replacement Schedule

The lifespan of filters can vary based on incoming water quality and usage. The following is a general guideline:

Filter Type	Recommended Replacement
Sediment Cartridge	Every 3-6 months
Carbon Plus Cartridge	Every 6-12 months
RO Membrane	Every 1-2 years (or when TDS rejection drops significantly)
DI Resin	When resin changes color (indicating exhaustion)

7.2 Replacing Cartridges

1. **Turn off Water Supply:** Close the main water supply valve to the RO/DI unit.
2. **Depressurize System:** Open the purified water faucet or disconnect the purified water line to release pressure.
3. **Remove Canisters:** Place a towel or bucket underneath the unit to catch any drips. Use the provided canister wrench to unscrew the filter canisters counter-clockwise.
4. **Replace Filters:** Remove the old cartridges and discard them. Clean the inside of the canisters if necessary. Insert new cartridges, ensuring they are properly seated. For DI resin, refill the cartridge with fresh resin.
5. **Reassemble:** Hand-tighten the canisters clockwise, then use the canister wrench for a final snug turn. Do not overtighten.
6. **Restore Water Supply:** Slowly turn on the water supply and check for leaks.
7. **Flush System:** Flush the system as described in the Initial Startup section before collecting purified water.

Image 7.1: Using the provided canister wrench to securely tighten filter housings during maintenance.

8. Troubleshooting

This section addresses common issues you might encounter with your RO/DI system.

Problem	Possible Cause	Solution
Low purified water production	Low incoming water pressure Clogged pre-filters (Sediment/Carbon) Clogged RO membrane Low water temperature	Check water supply pressure Replace sediment/carbon filters Flush RO membrane or replace if necessary Ensure water temperature is within operating range
High TDS in purified water	Exhausted DI resin Damaged RO membrane Bypass in system	Replace DI resin Replace RO membrane Check all connections and ensure no water is bypassing filters
Water leaks	Loose connections Damaged O-rings Cracked housing	Tighten connections Inspect and replace O-rings Contact customer support for replacement parts
Excessive waste water	Clogged RO membrane Incorrect flow restrictor	Flush or replace RO membrane Verify correct flow restrictor is installed (if applicable)

9. Specifications

Feature	Detail
Product Dimensions	18.5"L x 7"W x 19"H
Item Model Number	540706
Manufacturer	Aquatic Life
Brand	Aquatic Life
Special Feature	Chlorine Reduction, Chloramine Reduction, TDS Reduction
Installation Type	Under Sink / Wall Mount
Power Source	Manual (no electrical power required)
Item Weight	7.21 Kilograms (15.9 Pounds)
Model Name	Classic 100 GPD 4-Stage Reverse Osmosis/Deionization System
Lower Temperature Rating	25 Degrees Celsius (77 Degrees Fahrenheit)
Upper Temperature Rating	86 Degrees Fahrenheit (30 Degrees Celsius)
Maximum Operating Pressure	80 PSI (pounds per square inch)
Production Rate	Up to 100 Gallons Per Day (GPD)

10. Warranty and Support

Aquatic Life products are manufactured to high-quality standards and are backed by a manufacturer's warranty. For specific warranty details, claims, or technical support, please refer to the warranty card included with your product or visit the official Aquatic Life website.

When contacting support, please have your model number (540706) and purchase date available.

Contact Information:
Please visit the Aquatic Life website for the most current contact information and support resources.