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## Innovative Marine 8502

# Innovative Marine Mighty Jet DC Return Pump

Model: 8502 (Midsize: 538 GPH)

## Introduction

The Innovative Marine Mighty Jet DC Return Pump is an advanced, energy-efficient, and quiet solution designed for optimal water circulation in aquariums. This manual provides essential information for the proper installation, operation, and maintenance of your Mighty Jet DC Return Pump to ensure its longevity and performance.

This Midsize 538 GPH model is ideal for nano aquariums ranging from 30 to 50 gallons, offering precise flow control and reliable operation.




The Mighty Jet DC Return Pump and its controller, demonstrating its compact size.

## Safety Information

Please read all safety instructions carefully before operating the pump. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- **Electrical Safety:** Always disconnect power to the pump and any other aquarium equipment before performing maintenance or handling the pump. Ensure your hands are dry when plugging or unplugging the pump.
- **Submersible Use Only:** This pump is designed for submersible use only. **Do not operate the pump externally or out of water.** Operating the pump dry will damage the unit and void the warranty.
- **Proper Placement:** Ensure the pump is fully submerged in water during operation to prevent overheating and activate the run-dry protection feature.
- **Cord Management:** Do not pinch or damage the power cord. Keep the cord away from sharp objects and hot surfaces.
- **Children and Pets:** Keep the pump and its components out of reach of children and pets.

## Package Contents

Verify that all items listed below are included in your package:

- Mighty Jet DC Return Pump (Midsize: 538 GPH)
- DC Controller
- Barbed Adapters: 1/2", 5/8", and 3/4"
- Intake Screen/Strainer
- O-ring



The Mighty Jet DC Return Pump with its various included adapters and intake screen.




The Mighty Jet DC Return Pump controller, featuring a digital display and control buttons.

## Setup and Installation

Follow these steps for proper installation of your Mighty Jet DC Return Pump:

1. **Choose Location:** Place the pump in your aquarium sump or filtration compartment where it will be fully submerged.
2. **Attach Adapters:** Select the appropriate barbed adapter (1/2", 5/8", or 3/4") for your plumbing and securely attach it to the pump's output. Ensure the O-ring is properly seated for a watertight seal.
3. **Connect Plumbing:** Connect your return line tubing to the barbed adapter. Ensure all connections are secure to prevent leaks.
4. **Connect Controller:** Connect the pump's power cable to the DC controller. Then, connect the controller's power adapter to a suitable electrical outlet.
5. **Submerge Pump:** Ensure the pump is fully submerged in water before powering it on.



The Mighty Jet DC Return Pump properly installed within an aquarium sump.

## Operating Instructions

The Mighty Jet DC Return Pump features a user-friendly controller for precise flow management.

### Controller Functions:

- **Power On/Off:** The pump will power on automatically when connected to power. Some models (XL) may have a dedicated power button on the controller. For Midsize models, use the power outlet switch or a smart plug for complete power off.
- **Speed Adjustment:** Use the **Up** and **Down** arrow buttons to adjust the flow rate. The pump offers 9 different speed settings. The digital display will show the current speed level.
- **Feed Mode:** Press the **Fish** button to activate Feed Mode. This will temporarily shut off the pump for a set duration (typically 10 minutes) to allow for feeding without water circulation. Press the button again to resume normal operation.
- **Run-Dry Protection:** The pump is equipped with run-dry protection. If the water level drops too low and the pump is no longer fully submerged, it will automatically shut off to prevent damage. The controller display may show an error code. Refill water to resume operation.
- **Lock Function:** To lock your preferred flow setting, hold down the**Down** arrow button until the controller displays "LC". This prevents accidental changes to the flow rate. To unlock, hold the **Down** arrow button again until "LC" disappears.




A user interacting with the Mighty Jet DC Return Pump controller to adjust settings.

## Maintenance

Regular maintenance is crucial for the optimal performance and longevity of your Mighty Jet DC Return Pump.

1. **Disconnect Power:** Always unplug the pump from the power outlet before performing any maintenance.
2. **Remove from Sump:** Carefully remove the pump from your aquarium sump.
3. **Disassemble:** Disassemble the pump by removing the intake screen and impeller cover. The impeller can then be gently removed.
4. **Clean Components:** Use a soft brush and warm water to clean the impeller, impeller housing, and intake screen. Remove any debris, algae, or calcium buildup. For stubborn buildup, a vinegar or citric acid solution can be used for soaking.
5. **Inspect:** Inspect the impeller for any signs of wear or damage. Ensure the ceramic shaft is clean and intact.
6. **Reassemble:** Reassemble the pump, ensuring all parts are correctly seated.
7. **Test:** Place the pump back into the sump, ensure it is fully submerged, and reconnect power to test its operation.

*Recommended Cleaning Frequency:* Clean the pump every 1-3 months, depending on your aquarium's bioload and water parameters, or if you notice a decrease in flow rate or increased noise.

## Troubleshooting

If you encounter issues with your Mighty Jet DC Return Pump, refer to the following common problems and solutions:

| Problem | Possible Cause | Solution |
|---|---|---|
| Pump not turning on | No power; Controller disconnected; Run-dry protection activated; Impeller jammed. | Check power connection; Ensure controller is securely connected; Check water level and refill if low; Disconnect power, remove pump, and check impeller for obstructions. |
| Reduced flow rate | Clogged intake/impeller; Kinked tubing; Incorrect speed setting. | Clean intake screen and impeller; Check and straighten tubing; Increase speed setting on controller. |
| Excessive noise/vibration | Debris in impeller; Impeller worn or damaged; Pump not seated properly; Air trapped in pump. | Clean impeller and housing; Inspect impeller for damage and replace if necessary; Ensure pump is stable on its base; Gently tilt pump to release trapped air. |
| Pump cycles on/off repeatedly | Run-dry protection activating due to low water level. | Check water level in sump and add water until pump is fully submerged. |

If problems persist after attempting these solutions, please contact Innovative Marine customer support.

## Specifications

| Feature | Specification |
|---|---|
| Model | Mighty Jet DC Return Pump (Midsize) |
| Part Number | 8502 |
| Max Flow Rate | 538 GPH (2036.55 Liters Per Hour) |
| Recommended Tank Size | 30 - 50 gallons |
| Dimensions (L x W x H) | 3.6" x 2.75" x 4.88" |
| Max Watts | 22W |
| Voltage | 24V DC |
| Power Source | Battery Powered (via included DC Controller) |
| Material | Plastic |
| Style | Submersible |
| Included Components | DC Controller, Barbed Adapters (1/2", 5/8", 3/4") |

## Warranty and Support

The Innovative Marine Mighty Jet DC Return Pump typically comes with a one-year manufacturer's warranty covering defects in materials and workmanship. Please retain your proof of purchase for warranty claims.

For technical support, troubleshooting assistance, or warranty inquiries, please visit the official Innovative Marine website or contact their customer service department. You can find more information and contact details by visiting the Innovative Marine Store on Amazon or their dedicated support channels.

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