

# OPERATING MANUAL

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## TRI-CHANNEL FEEDER DISPLAY SYSTEM



Marineland Retailer Systems

# IMPORTANT SAFEGUARDS

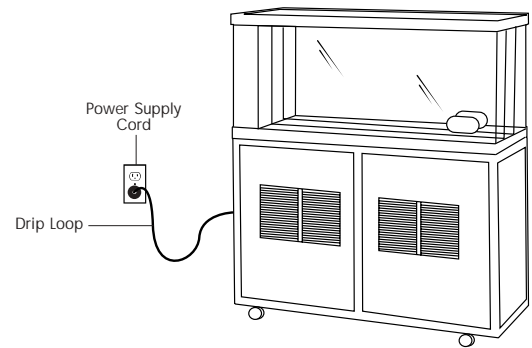
**WARNING** – To guard against injury, basic safety precautions should be observed, including the following:

## READ AND FOLLOW ALL SAFETY INSTRUCTIONS

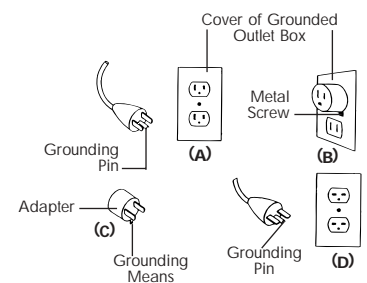
**DANGER** – To avoid possible electric shock, special care should be taken in the use of aquarium equipment. For each of the following situations, do not attempt repairs yourself; contact an authorized service facility for service.

1. A. If an appliance falls into the water, **DON'T** reach for it! First unplug it and then retrieve it. If electrical components of the appliance get wet, unplug the appliance immediately.
- B. If an appliance shows any sign of abnormal water leakage, immediately unplug from the power source.
- C. Carefully examine the appliance after installation. It should not be plugged in if there is water on parts not intended to be wet.
- D. Do not operate any appliance if it has a damaged cord or plug, or if it is malfunctioning or if it is damaged in any manner.

E. To avoid the possibility of the appliance plug or receptacle getting wet, position unit to one side of a wall mounted receptacle to prevent water from dripping onto the receptacle or plug. A "drip loop", shown in the Illustration at right should be arranged for each cord connecting appliance to a receptacle. The "drip loop" is that part of the cord below the level of the receptacle or the connector, if an extension cord is used, to prevent water traveling along the cord and coming in contact with the receptacle. If the plug or receptacle does get wet, **DON'T** unplug the cord. Disconnect the fuse or circuit breaker that supplies power to the appliance. Then unplug and examine for presence of water in the receptacle.



2. Close supervision is necessary when any appliance is used by or near children.
3. To avoid injury, do not contact moving parts or hot parts such as heaters, reflectors, lamp bulbs, etc.
4. Always unplug an appliance from an outlet when not in use, before putting on or taking off parts, and before cleaning. Never yank cord to pull plug from outlet. Grasp the plug and pull to disconnect.
5. Do not use an appliance for other than intended use. The use of attachments not recommended or sold by the appliance manufacturer may cause an unsafe condition.
6. Do not install or store the appliance where it will be exposed to the weather or to temperatures below freezing.
7. Make sure appliance is securely installed before operating it.
8. Read and observe all the important notices on the appliance.
9. If an extension cord is necessary, a cord with a proper rating should be used. A cord rated for less ampere or watts than the appliance rating may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled.
10. This appliance should be grounded to minimize the possibility of electric shock. This appliance is equipped with an electric cord that has an equipment grounding conductor and a grounding type plug. The plug must be plugged into an outlet that is installed and grounded in accordance with all appropriate codes and ordinances.
11. This appliance is for use on a nominal 120 volts circuit, and has a grounding plug that looks like the plug illustrated in (A). A temporary adapter which looks like the adapter illustrated in (B) and (C) may be used to connect this plug to a two pin receptacle as shown in (B) if a grounded outlet is not available. The temporary adapter should be used only until a grounded outlet can be installed by a qualified electrician. The green colored rigid ear (lug and the like) extending from the adapter must be fastened to a permanent ground such as a grounded outlet box.



## SAVE THESE INSTRUCTIONS

# TRI-CHANNEL FEEDER DISPLAY SYSTEM

## Model MLW4FR

**Ideal for Showroom or Backroom...it's the Economical Feeder System  
for Healthier Fish, Easier Maintenance, Increased Sales!**



*This manual will provide you with the information you need to successfully operate and maintain your Tri-Channel Display System. Please read it carefully and keep it for future reference.*

The MaRS Tri-Channel is a compact, economically priced, self-contained holding system for dense populations of feeder or bait fish. Suitable for the showroom floor, the system features a 100 gallon tank to maintain as many as 4,000 feeders under ideal water conditions. Its mechanical/chemical filtration and powerful commercial BIO-Wheel wet/dry biological filter ensure optimum water quality at all times. The divided, 3-chambered design makes it possible to hold feeder fish of different sizes and types at a single location.

## *Inside the System...*

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Water is automatically introduced to the Sump at a preset rate of 1 GPH. The Pump receives prefiltered water from the Sump and pumps it to the display tank. Water is also routed through the Refrigeration Unit and UltraViolet (UV) Disinfection Unit and the Display Tank Spray Nozzles.

**UV Disinfection Unit** (complete with convenient "Operation Display Light") helps stop the spread of bacteria and disease throughout the system. Water enters the UV Housing, surrounding the lamp where it is exposed to UV light. This exposure destroys the DNA of free swimming bacteria, viruses and algae, preventing them from reproducing. After exposure, water exits and is returned to the system.



The Tri-Channel System features a thermostatically controlled **Refrigeration Unit**. It is capable of maintaining tank temperatures of 60 - 70° F and can be preset to the exact temperature required by the system.



Water enters the display tank via Bi-Level Spray Bars, passes through the channel system and exits through the Channel Skimmer Trays on the way to the BIO-Wheel Filtration Module.

As water flows through the BIO-Wheel Filtration Module, additional mechanical and chemical filtration is provided by a polyfiber Prefilter pad and Carbon Filter Pack. Containing 1 lb. of Black Diamond Premium Activated Carbon, the Pack adsorbs dissolved organic compounds such as phenols and tannins.

Passing through the Filter Media Trays, water spills onto the BIO-Wheel Wet/Dry Biological Filter mounted below. Because system flow causes it to rotate, the BIO-Wheel is constantly exposed to both water *and* air, thus developing a thriving culture of aerobic nitrifying bacteria. This bioculture efficiently oxidizes all ammonia and nitrite on contact.

*NOTE: Precultured BIO-Wheels are available from Marineland. Shipped to you ready to go, they provide full load biological filtration capacity immediately upon installation. Call (800) 322-1266 to order.*

# SPECIAL FEATURES

## **Front, Rear and Side Access Panels**

Provide easy access to Filtration Module, UV Disinfection Unit, Master Switch and all system outlets.



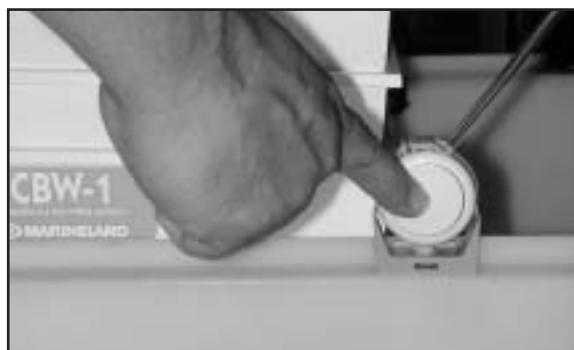
## **Sump Replenishment Valve**

If water level in Sump drops below ideal operational levels, Sump can be easily refilled using this simple spring-loaded manual attachment.



## **Fish Feeding Timer**

Allows you to shut down the Circulation Pump for five minute feeding intervals and then automatically restores the system to full operation after the preselected time has elapsed.



### **Bi-Level Spray Bars**

Distribute prefiltered water at top and bottom levels to ensure necessary agitation and uniform flow.



### **Clear-view Section Dividers**

Allow unhindered view of entire display tank. Custom Flow Screens (see above) ensure water circulation throughout entire system.



### **Channel Skimmer Trays**

Mechanically filter returning water and trap floating debris (including feeder mortalities). Easily removed for cleaning. Specially designed secondary screens protect live fish from being drawn into Sump Chamber when Skimmer Trays are being cleaned.



# MODEL MLW4FR

## SYSTEM SPECIFICATIONS

### ***Mechanical:***

**Size:** 48<sup>7</sup>/<sub>8</sub>" L X 24<sup>1</sup>/<sub>2</sub>" W X 56" H

**Weight:** 400 lbs. (Est.)

**System Volume:** 130 Gallons

### ***Electric:***

ETL-Listed for cord-connected installation

**Voltage:** 115 VAC, 60 Hz

**Current:** 9.5 AMPS (Est.)

### ***Filtration:***

#### **Mechanical Filtration:**

One 7<sup>1</sup>/<sub>2</sub>" X 14" Polyfiber Pad

One 7<sup>1</sup>/<sub>2</sub>" X 14" Coarse Pad

#### **Chemical Filtration:**

One Carbon Filter Pack containing 1 lb.  
Black Diamond Premium Activated Carbon

**Wet/Dry Biological Filter:** One CBW-1

**UV Treatment:** Aquafine DW-300; 50,000  
uWs/cm<sup>2</sup> @ 4,000 hrs.

### ***"New" Water From Treated Water Supply:***

**FLOW RATE:** 2 gallons per hour

Spring-loaded manual Sump  
Replenishment Valve

### ***Circulation/Filtration:***

**PUMP:** Little Giant 4-MDQX-SC

Turns Per Hour (TPH): 8 TPH nominal

### ***Refrigeration:***

<sup>1</sup>/<sub>3</sub> HP Compressor with Helical Heat  
Exchanger (R134a, UR)

UL-listed Thermostat Controller:

Temperature range: 65-80°F GFCI Protected

### ***Materials Of Construction:***

**Frame:** Mild steel tubular welded  
construction, epoxy powder-coated

**Tank:** Polyethylene, rotation-molded

#### **Misc. Panels & Covers:**

Expanded PVC, ABS, Polypropylene

### ***Buyer Supplied Connections:***

#### **Electric Supply:**

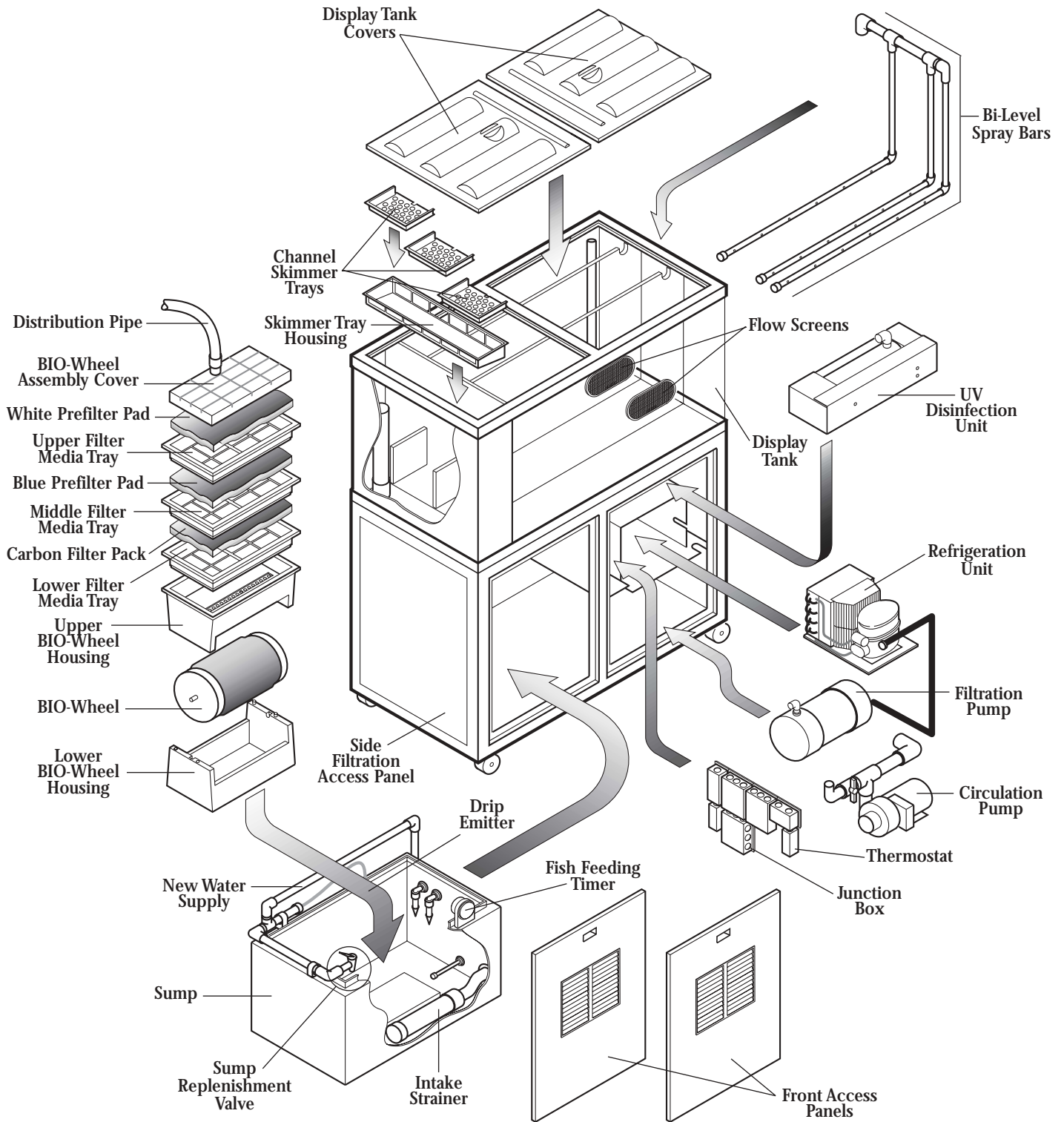
Cord-connected; 115 VAC., 60 Hz, 15 AMP  
GFCI-protected outlet recommended

#### **Treated Water Supply:**

2 GPH, regulated to 25 PSIG

**Drain:** 1" pipe, at or below grade, 30' run

# TRI-CHANNEL FEEDER DISPLAY SYSTEM Exploded View





# Adding Filtration Media

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*Prior to system startup, it is necessary to install filtration media. Follow the few easy steps outlined below to get your system ready for operation. System should be allowed to operate with only mechanical and chemical filtration media (White Prefilter Pad, Blue Prefilter Pad and Carbon Filter Pack) - no BIO-Wheel - for a period of 24 hours.*

**1. Remove Front Filtration Access Panel**



**2. Disconnect Distribution Pipe.**



**3. Remove clear BIO-Wheel Assembly Cover.**



**4. Lift out Upper Filter Media Tray (with White Prefilter Pad inside) and set aside.**



**5. Lift out Middle Filter Media Tray (with Blue Prefilter Pad inside) and set aside.**



6. Unwrap Carbon Filter Pack (A) and place inside Lower Filter Media Tray (B).



A



B

*NOTE: Before installing, be sure to rinse Carbon Filter Pack thoroughly in cold water (at sink) until water runs clear (C).*



C

7. Replace Middle Filter Media Tray (with Blue Prefilter Pad inside).



8. Replace Upper Filter Media Tray (with White Prefilter Pad inside).

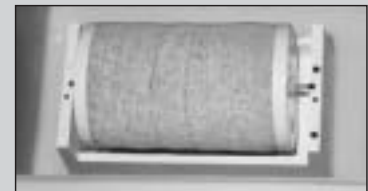


9. Replace clear BIO-Wheel Assembly Cover. Reconnect Distribution Pipe. Replace Front Filtration Access Panel.



### After 24 hours of system operation:

- A. Follow steps 1-5 above.
- B. Remove Lower Filter Media Tray.
- C. Remove Upper BIO-Wheel Housing and install BIO-Wheel in Lower BIO-Wheel Housing (A). Tray guides will ensure correct positioning.
- D. Replace Upper BIO-Wheel Housing (B).
- E. Follow steps 6-9 above.



A



B

# STARTUP

When media is in place, follow the steps below to get your system up and running. Consult exploded view (pg. 7) for additional clarification.

1. Fill Sump to operating water level indicated by “Fill to This Line” Label.



2. Manually fill Display Tank to level of Skimmer Trays.

3. Open New Water Supply valve. Check Drip Emitter (shown) for slow trickle of water into Sump.



4. Remove Front Electrical Access Panel. Activate Master Switch (shown). After system has operated for five minutes, use Sump Replenishment Valve to refill Sump to “Fill to This Line” label.



5. Adjust Thermostat to desired temperature.  
Check temperature after approximately  
8 hours and make any necessary adjustments.
  
6. Allow system to operate with mechanical and  
chemical filtration media (White Prefilter Pad, Blue  
Prefilter Pad and Carbon Filter Pack) for a period  
of 24 hours. Be sure to inspect areas near pump,  
UV and other components for leaks.

*NOTE: Remember not to install BIO-Wheel for  
first 24 hours of operation. See “Adding Filtration  
Media,” steps A-C (pg. 9).*

# MAINTENANCE

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*To ensure optimum operational efficiency, routine maintenance must be performed. The procedures listed below are neither difficult nor time consuming. Failure to follow these simple maintenance steps will adversely affect system performance and could lead to premature failure of some components. We recommend setting up a maintenance log to track procedure completion.*

## Daily

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### ***Clean Skimmer Trays***

Remove any debris and/or dead fish.

### ***Clean or replace Prefilter Pads***

Clogged filter pads overflow and will not collect waste. Uncollected waste is returned to the display tank and can severely reduce system efficiency.

To replace a Prefilter Pad:

1. Remove clear BIO-Wheel Filtration Module Cover.

*NOTE: Have a bucket or large plastic pan ready to catch spills from removed pad(s).*

2. Lift out used pads.

3. Rinse or replace with new pads (“blue” - #MZ0180, “white” - #MZ0181).

*NOTE: Pads may be rinsed more than once. Replace when they become damaged or misshapen from repeated use.*

4. Replace Cover.

# Weekly

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## ***Replace Carbon Filter Pack***

Keeping the Prefilter Pad and Carbon Filter Pack clean and unrestricted is critical to the successful operation of the BIO-Wheel. It must receive clean, filtered water to keep nitrifying bacteria healthy and thriving.

1. Remove clear BIO-Wheel Filtration Module Cover.
2. Lift out Upper and Middle Filter Media Trays with Prefilter Pads.  
*NOTE: Have bucket or large plastic pan ready to catch water spillage from trays.*
3. Set Upper and Middle Filter Trays aside. Lift out Lower Filter Media Tray.
4. Rinse out Filter Tray. Replace Carbon Filter Pack (#MZ0175).  
*NOTE: Before installing, be sure to rinse Carbon Filter Pack thoroughly in cold water until water runs clear.*

## ***Check Water Pump and BIO-Wheel Operation***

Observe flow of water to the BIO-Wheel Assembly. Make sure that water flow to the BIO-Wheel is unhindered. The BIO-Wheel should rotate freely and remain wet at all times. Speed of rotation is not important. If a BIO-Wheel is turning - regardless of the rate - it is working.

If flow interruption is evident, check Pump Inlet (in Sump) for obstructions. If clogged, shut off system, remove Strainer and clean. If flow interruption is still evident and no obstructions are found, consult “Troubleshooting Guidelines” section in this manual.

*NOTE: A properly cultured BIO-Wheel is brown or discolored. There is no reason to clean a BIO-Wheel or replace it - unless it is damaged. If removed from the system for any reason, make sure that it is kept moist and exposed to air until you reinstall it. If a BIO-Wheel is allowed to dry out or is inadvertently exposed to a contaminant, the bioculture may be destroyed. A precultured replacement can be purchased directly from Marineland (see page 3).*

## ***Check UV Operation Display Light***

The UV Operation Display Light is located on the UV Disinfection Unit Cover. **When lit**, it indicates that the UV Lamp is operating. See Service section for UV Lamp replacement instructions.



### ***Clean Intake Strainer***

Remove all debris.



### ***Wipe Down All Exterior Surfaces***

**Never** use chemicals, soaps, detergents or harsh abrasives on any part of the system. **Do not** use cleaners inside or near the tank at any time.

**WARNING:** *Never spray insecticides within 20 feet of your tank system. The resulting contamination could kill your fish and destroy your biological filter. If you must use insecticides, be careful to turn off the system and cover all open water until the odor has cleared from the area completely. And don't forget to turn the system back on.*

## **At Least Every Two Weeks**

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### ***Inspect Bi-Level Spray Bars***

Remove or wipe away any obstructions or algae growth to ensure unhindered flow.

### ***Clean Skimmer Trays***

Wipe Skimmer Tray surfaces clean with designated tank cloth or scrubber.

### ***Inspect Display Tank For Algae Growth***

Algae spores enter the system naturally via tank inhabitants and light allows them to grow. Although your system's UV Disinfection Unit eliminates the majority of algae spores, the more light you have, the greater the potential for some algae growth. To remove algae, simply wipe inside tank surface with a cloth, algae scraper or blue filter pad. **NEVER** use soap or metal scouring pads. Maintain a separate cloth *only* for the tank. It should be kept clean and isolated from other departments so that it does not get contaminated by multiple task use.

# Monthly

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## *Clean Refrigeration Unit Condenser Intake Screen*

To guard against system failure, Refrigeration Condenser Intake Screen should be brushed or vacuumed clean every month (shown). This eliminates accumulated dust and prevents clogging. To reach Screen, remove Rear or Side Electrical Access Panel.



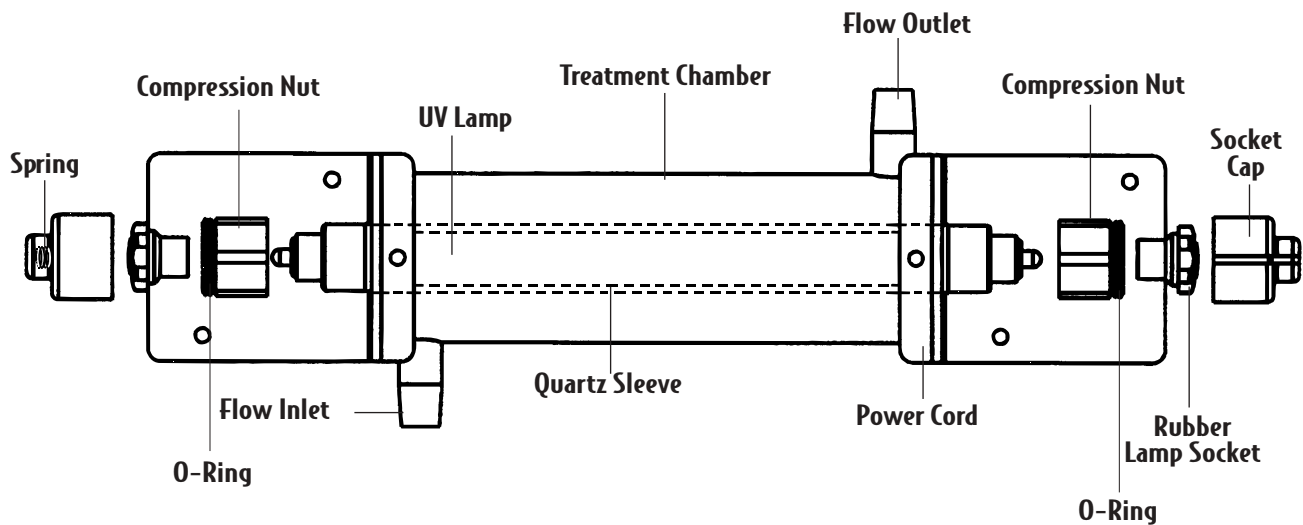


# SERVICE

*We strongly recommend that all servicing for your system be performed by a qualified technician or trained associate. For a service referral, call (800) 322-1266.*

## **AQUAFINE UV DISINFECTION UNIT**

*IMPORTANT NOTE: To prolong the life of the AQUAFINE UV Disinfection Unit and avoid leaving fingerprints on the UV Lamp, we strongly recommend that you wear cotton gloves at all times during servicing of UV Disinfection Unit.*



Specifically assembled to help ensure convenient servicing of the AQUAFINE UV Disinfection Unit, the MaRS UV Service Kit contains a pair of cotton gloves, silicon lubricant and detailed instructions on UV Lamp replacement. **To order kits or replacement lamps call (800) 322-1266.**

### **WARNING:**

**Never** look directly into UV Lamp while in operation...eye injury may occur.

**Never** restore power while UV Lamp is separated from Treatment Chamber. Skin damage and/or injury may result.

**Always** make sure hands are absolutely dry before servicing equipment.

# Every Six Months

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## ***UV Disinfection Unit Lamp and Quartz Sleeve (exploded diagram, pg. 16)***

The UV Lamp has a useful service life of about 6 months. After this time – whether it continues to appear functional or not – it must be replaced. If the UV Operation Display Light goes off before this time, change lamp immediately.

The Quartz Sleeve will develop a layer of scum on its surface which can reduce UV Lamp effectiveness. Scum should be cleaned off *at least* once every six months. When changing UV Lamp, always clean Quartz Sleeve. *Always* exercise care when cleaning.

1. Turn off Master Switch. Allow UV unit to drain (3-5 minutes).

2. Open Front and Side Electrical Access Panels.  
Remove UV Cover by unscrewing outer nuts and lifting away from unit.



3. Unscrew both threaded Socket Caps from Treatment Chamber ends. Gently disconnect UV Lamp from Rubber Lamp Sockets and carefully remove UV Lamp from Treatment Chamber, sliding it out through Side Electrical Access Port (as shown). Carefully set aside.



4. Unscrew and remove both threaded Compression Nuts. Grasp one end of Quartz Sleeve and gently draw it from Treatment Chamber.

***Caution: Quartz Sleeves are very fragile. Handle with care to prevent breaking or chipping.***

5. Wash Quartz Sleeve with mild soap and hot water. Rinse thoroughly with hot water. Dry Completely.

***NOTE: For heavier deposits, we recommend cleaning with calcium/lime remover or alcohol. Gently wipe sleeve with clean cloth before reinstalling.***

6. Working from one end of Treatment Chamber, carefully insert clean Quartz Sleeve through stainless steel nipple and into Treatment Chamber. Sleeve should protrude an equal distance from each end.

7. Before installing Compression Nuts, remove and clean O-Rings. Then lubricate each with a very thin coating of silicon lubricant (provided). Reinstall O-Rings.

***NOTE: O-Rings should be replaced each year.***

8. Install Compression Nut at one end. Finger tighten while holding opposite end of Quartz Sleeve.
9. Install remaining Compression Nut. Hand tighten (firmly) both Compression Nuts. ***CAUTION: Do not over tighten Compression Nuts. This can fracture ends of Quartz Sleeve. After hand tightening Compression Nut, release it one half turn to avoid fracture.***
10. Carefully reinsert UV Lamp into open Quartz Sleeve and gently push it about 2-3 inches out beyond the opposite Compression Nut.
11. Insert lamp base into spring equipped Rubber Lamp Socket (see diagram), sliding “boot” portion over end of lamp. Push until you feel a firm, “bottomed out” connection. ***NOTE: Make sure “boot” does not fold under.***
12. Connect opposite lamp base to remaining Rubber Lamp Socket.
13. Once Rubber Lamp Sockets are attached to UV Lamp at both ends, position Rubber Lamp Sockets inside Socket Caps. Making sure that Rubber Lamp Sockets are seated securely, join Socket Caps to threaded ends of Compression Nuts and finger tighten.
14. Replace UV Cover.
15. Turn on Master Switch. Inspect unit for leaks. Check to make sure UV Operation Display Light is on. Replace Electrical Access Panel(s).

# TROUBLESHOOTING GUIDELINES

For a service referral, call the 24-Hour MaRS Hotline at:

(800) 576-MaRS (6277)

## If entire system abruptly shuts down...

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- *Reset* circuit breaker.
- *Make sure* Master Switch is turned on.
- *Check* Pump Inlet Strainer in Sump for obstructions.

## If water turns yellow or odors develop...

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- *Replace* Carbon Filter Pack.

## If BIO-Wheel fails to rotate...

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- *Inspect* Prefilter Pad and Carbon Filter Pack for clogging. Clean or change as needed.
- *See* if BIO-Wheel is obstructed. Clean bearings, check for unimpeded rotation and reinstall.
- *Make sure* that Sump is not overfilled. Check Return Tube for obstruction.
- *Check* Pump Inlet Strainer in Sump for obstructions.

## If water flow to BIO-Wheels or display tank stops or flow is sluggish...

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- *Inspect* Pump Inlet Strainer in Sump. Clean and/or remove any debris or obstructions.
- *Remove* Front Electrical Access Panel and make sure System Pump is plugged in, motor fan is turning.
- *Call* for service if problem persists.

## If water temperature in Display Tank is too low or too high...

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- *Check* Thermostat setting.  
*NOTE: Thermostat reading may differ from measured Display Tank temperature... adjust thermostat as required and monitor Display Tank temperature with thermometer; allowing 3-4 hours for temperature to stabilize before checking again.*
- *Make sure* power cord to Refrigeration Unit is plugged into proper outlet.
- *Call* for service if Thermostat or Refrigeration Unit is malfunctioning.

## **If large amounts of air bubbles are evident in Display Tank...**

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- *Check* water level in Sump. If below desired level, add water via Replenishment Valve and check frequently.
- *Make sure* Pump Inlet Strainer is fitted firmly in place.
- *Call* for service if problem persists.

## **If Drip Emitter or Replenishment Valve flow is greatly reduced or stopped...**

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- *Check* for plugged carbon/sediment water treatment cartridges.
- *Call* for service if problem persists.

## **IF UV Lamp goes out (UV Operation Display Light goes off)...**

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- *Remove* Access Panel and confirm that and UV power cord is plugged into appropriate outlet.
- *Replace* UV Lamp (see instructions, pg 16). If problem persists after Lamp is replaced, call the MaRS 24 Hour Hotline for replacement part and/or further assistance.

## **IF water is leaking from UV Lamp Housing...**

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- *Reinstall* Quartz Sleeve according to directions.

# CUSTOMER SERVICE

Should you experience problems with your system,  
call the 24-Hour MaRS Hotline at (800) 576-MaRS (6277).

To order any  
(800) 322-1266

## WEEKLY USE ITEMS:

- |                                  |        |
|----------------------------------|--------|
| 1. Prefilter Pads – Blue         | MZ0180 |
| 2. Prefilter Pads – Coarse White | MZ0181 |
| 3. Carbon Filter Packs           | MZ0175 |



Marineland Retailer Systems

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