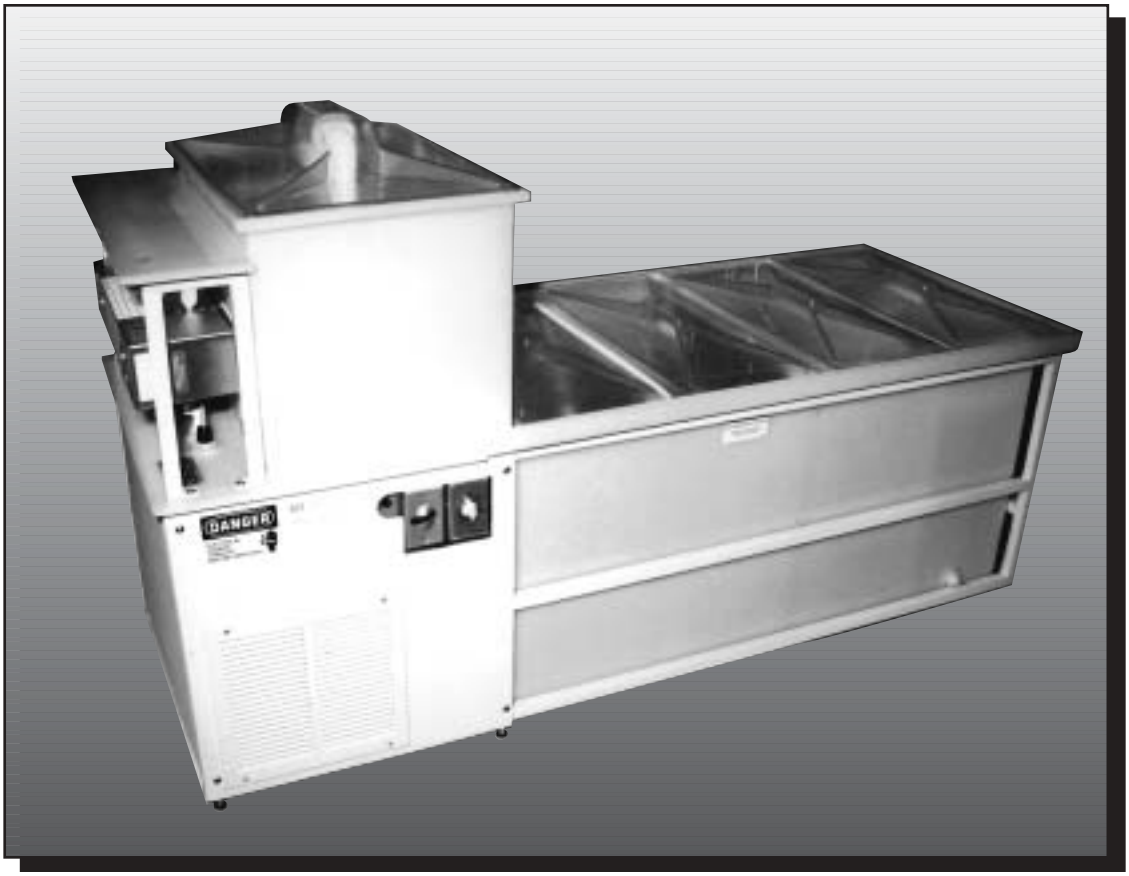
OPERATING MANUAL

FEEDER GOLDFISH WAREHOUSING SYSTEM



MaRS™

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.

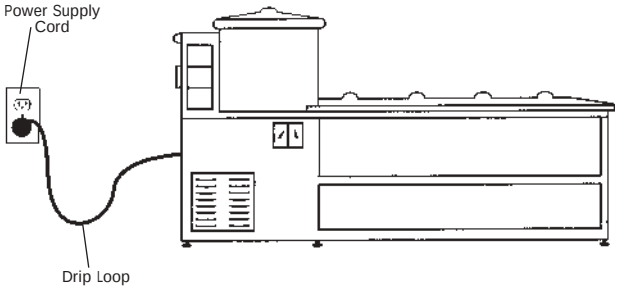
1. **A. If an appliance falls into the water, DON'T reach for it! First unplug it and then retrieve it. If electrical components of the appliance get wet, unplug the appliance immediately.**

   B. If an appliance shows any sign of abnormal water leakage, immediately unplug from the power source.

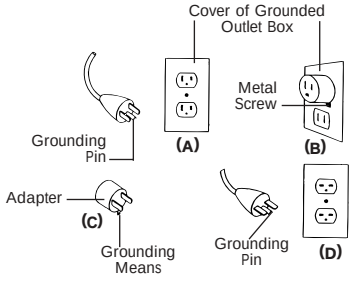
   C. Carefully examine the appliance after installation. It should not be plugged in if there is water on parts not intended to be wet.

   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

The Marineland
GOLDFISH WAREHOUSING SYSTEM

The High Capacity Backroom Holding System for Healthier Fish, Easier Maintenance, Increased Sales!

This manual will provide you with the information you need to successfully operate and maintain your Goldfish Warehousing System. Please read it carefully and keep it for future reference.

FEEDER GOLDFISH WAREHOUSING SYSTEM

The Marineland Feeder Goldfish Warehousing System...

is an easy-to-maintain holding tank for large numbers of feeder goldfish. Its dual mechanical/chemical filtration and powerful commercial BIO-Wheel wet/dry biological filter ensures optimum water quality at all times. And the system's compact plumbing design allows for convenient self-contained installation.

Inside the SYSTEM

Water is automatically introduced to the Sump at a preset rate of 2 GPH. As "new" water enters the system, "old" water is simultaneously removed. This continuous water cycle ensures efficient nitrate removal and constant pH. Combined with a 2-per day feeding cycle, it achieves the equivalent of a 30% water change each day.

The Pump receives prefiltered water from the Sump and pumps it to the Holding Tank. On the way to the Holding Tank, water is routed through the Refrigeration Unit and UltraViolet (UV) Disinfection Unit, the Holding Tank Spray Nozzles and the BIO-Wheel Filtration Modules.

As water passes through the BIO-Wheel Filtration Modules, additional mechanical and chemical filtration is provided by two polyfiber Prefilter Pads and two Carbon Filter Packs. Containing a total of two lbs. of Magnum Premium Activated Carbon, the packs adsorb dissolved organic compounds such as phenol and tannins.

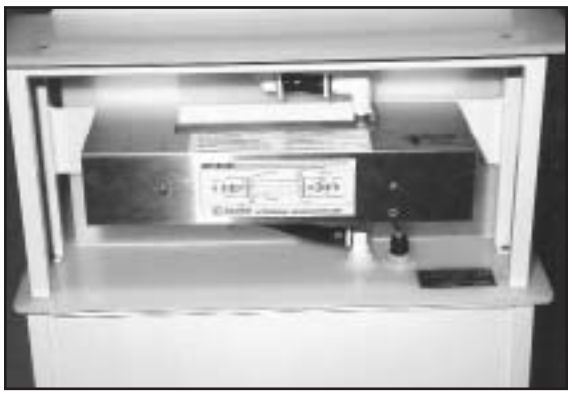
Passing through the Filter Media Trays, water spills onto the BIO-Wheel Wet/Dry Biological Filter mounted below. Because system flow causes it to rotate, the BIO-Wheel is constantly exposed to both water and air, thus developing a thriving culture of aerobic nitrifying bacteria. This bioculture efficiently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

From the BIO-Wheels, water returns to the Holding Tank through the BIO-Wheel Return Port. From the Holding Tank, it passes through the Spillway Screen back into the Sump, where the Sump Prefilter Pad mechanically screens out waste particles and debris.

SPECIAL FEATURES

The Goldfish Warehousing 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.

The UV Disinfection Unit (complete with convenient "Lamp Out Indicator") helps stop the spread of bacteria and disease throughout the system. Water enters the UV Housing and surrounds 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.

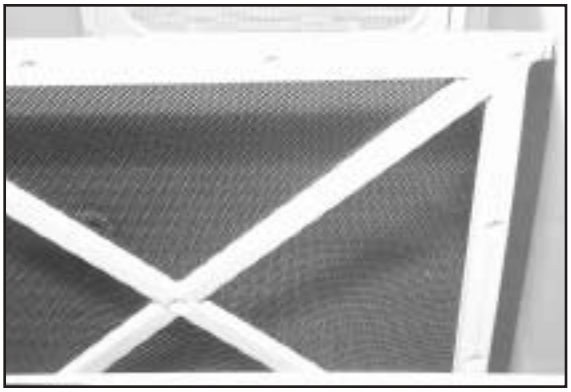


The convenient, adjustable Fish Feeding Timer allows you to shut down the Circulation Pump for feeding (recommended: 5 minutes) and then automatically restores the system to full operation after a preselected time has elapsed (maximum 15 minutes).

SPECIAL FEATURES

Six Hi/Lo Holding Tank Spray Nozzles introduce water to the system providing necessary surface and bottom agitation.

Removable Partition Screens provide the option of keeping three types and/or sizes of feeder fish simultaneously.



Specially designed Spillway Screen protects fish from becoming drawn into Sump Chamber.

Specifications

BIO-Wheel Feeder Goldfish Warehousing System
MW6FR

SIZE: 29˝D x 74˝L x 46˝H
WEIGHT: 450 LB. (EST.)

Electric:

VOLTAGE: 115 VAC, 60 HZ
CURRENT: 12 AMP (EST.)

Filtration:

MECHANICAL FILTRATION: TWO 7½" X 14" POLYFIBER PADS.
CHEMICAL FILTRATION: TWO FILTER PACKS - EACH CONTAINING 1 LB. MAGNUM ACTIVATED CARBON
WET/DRY BIOLOGICAL FILTER: TWO CBW-1 COMMERCIAL BIO-WHEELS
UV TREATMENT: AQUAFINE DW-300 ULTRAVIOLET DISINFECTION UNIT, 100,000 $\mu Ws/cm^2$ @ 4,000 hrs.

Circulation:

PUMP: LITTLE GIANT TE-5MD-SC
SUMP HOUSED MECHANICAL FILTER: POLYFIBER PREFILTER PAD, 7½˝ x 14˝

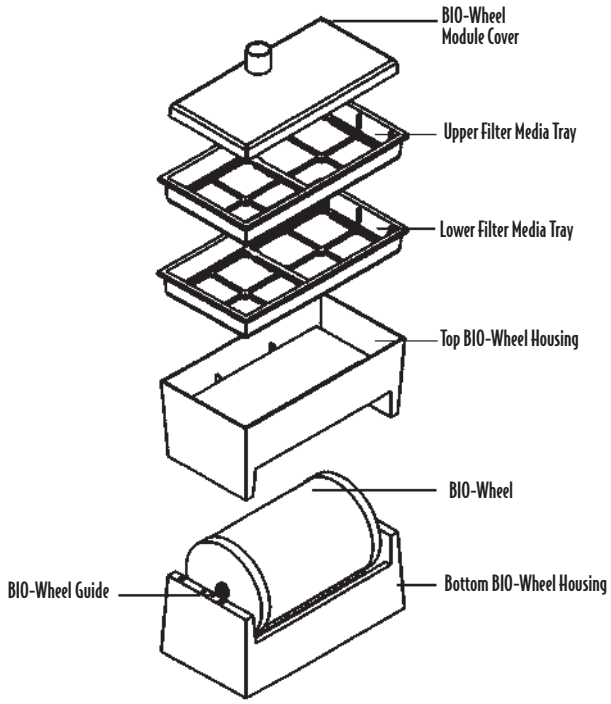
Refrigeration:

¼ HP, COMPRESSOR WITH HELICAL HEAT EXCHANGER (R134A)

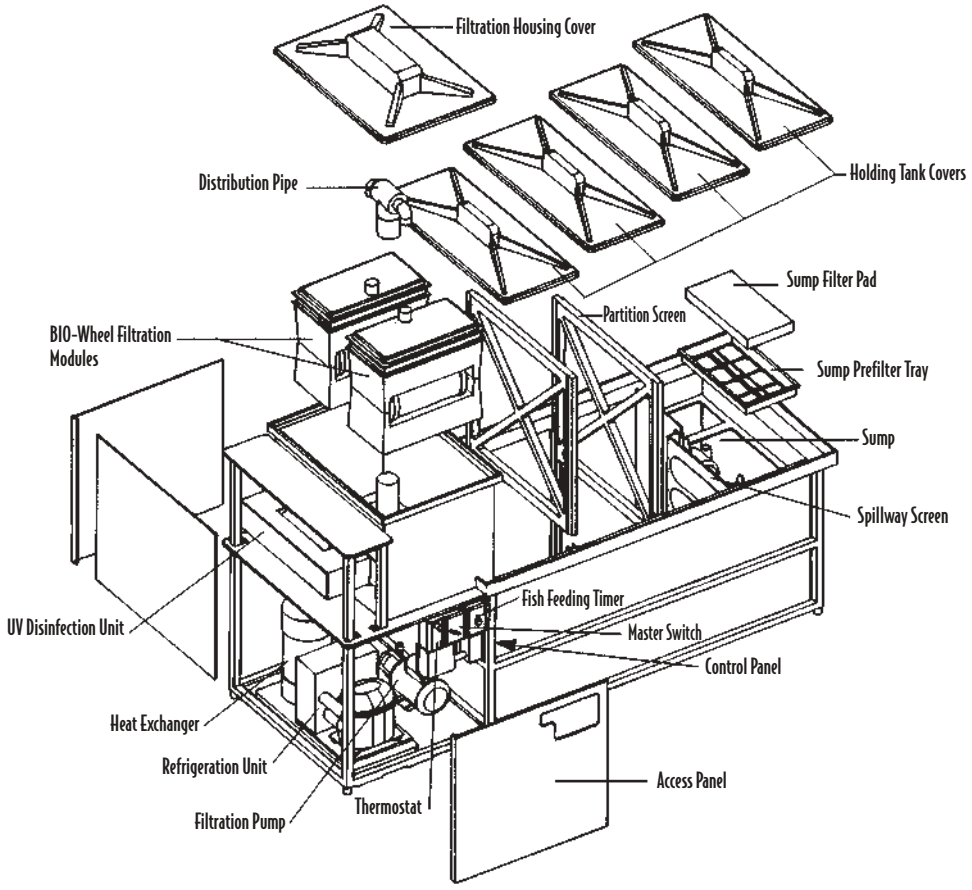
Installation Connections:

ELECTRIC SUPPLY: 115 VAC., 60 HZ, 15 AMP
WATER: FLEXIBLE HOSE TO TREATED WATER SUPPLY @ 25 PSIG
SUMP DRAIN: 1" BULKHEAD

BIO-Wheel Filtration Module Exploded View



Exploded View w/ BIO-Wheel Goldfish Warehousing System



FILTRATION PREPARATION

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. Refer to the exploded view (pg. 7) for additional clarification.

1. **Remove clear Sump Module Cover and place Sump Prefilter Pad in Sump Prefilter Tray. Replace Sump Module Cover.**

2. **Remove clear Filtration Housing Cover. Lift up and remove Distribution Pipe.**

3. **Remove one clear BIO-Wheel Assembly Cover. Lift out Upper Filter Media Tray and set aside.**

4. **Lift out Lower Filter Media Tray and set aside.**

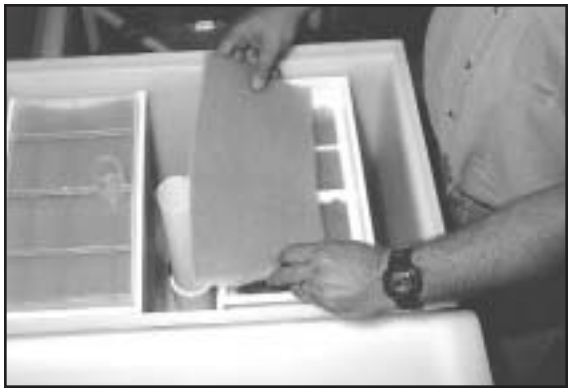
5. **Remove Upper BIO-Wheel Housing (A) and place BIO-Wheel in Lower BIO-Wheel Housing (B). Tray guides will ensure correct positioning. Replace Upper Housing.**

A

B

6. **Replace lower Filter Media Tray and place Carbon Filter Pack inside. NOTE:** Before installing, be sure to rinse Carbon Filter Pack thoroughly in cold water (at sink) until water runs clear.

7. Replace Upper Filter Media Tray and place polyfiber Prefilter Pad inside (A). Replace clear BIO-Wheel Assembly Cover (B).



A

B

8. Repeat media installation procedure (steps 3-7) for second BIO-Wheel Module.

9. Replace Distribution Pipe (making sure to line up ports with pipe ends) and all covers.

STARTUP

When all media is in place, four simple steps are required to get your system up and running. Again, consult exploded view (pg. 7) for any necessary clarification.

1. Manually fill Holding Tank to level indicated on side of tank.

2. Open "New" Water Supply Valve.

3. Activate Master Switch.

4. Adjust Thermostat to desired temperature (60-70° F). Check temperature after approximately 8 hours and make any necessary adjustments.

NOTE: Once the system has been activated, Sump water level will momentarily drop. After a short period of time, the Float Valve will compensate for a lowered Sump Water level by refilling the Sump to operating level.

(Pictured at Right)

Sump interior as seen from above. Parts referred to in previous and subsequent sections are identified for clarity. Sump Prefilter Tray and Pad have been removed to allow clear viewing.

MAINTENANCE

Routine maintenance must be performed. The procedures listed below are neither difficult nor time consuming. They will keep your system clean, your fish healthy. 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

Clean or Replace Sump Prefilter Pad.

Used pad may be rinsed, exchanged with a new or previously cleaned pad and reused later. If pad is damaged, discard and replace.

Remove All Dead Fish.

WEEKLY

Clean or Replace BIO-Wheel Prefilter Pads and Replace Carbon Filter Packs On The Same Day Each Week .

Clogged filters overflow and will not collect waste. Uncollected waste is returned to the holding tank and can severely reduce system efficiency. In addition, keeping the Prefilter Pad and Carbon Filter Pack clean and unrestricted is critical to the successful operation of the BIO-Wheels. They must receive clean, prefiltered water to keep the bacteria healthy and thriving.

To change Prefilter Pad and Carbon Filter Packs, follow the instructions in the preceding "Filtration Preparation" section. Rinse or discard used pads. Replace Carbon Filter Packs and rinse out Filter Trays before replacing.

Check Water Pump And BIO-Wheel Performance .

Inspect Sump and Pump Inlet Strainer for flow obstruction.

Observe flow of water to the BIO-Wheel Assemblies. Make sure that water flow to the BIO-Wheels is unhindered and that they are rotating freely. Speed of rotation is not important. If a BIO-Wheel is turning - regardless of the rate - it is working.

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 (as during medication), 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 contaminate, the bioculture may be destroyed.** A precultured replacement can be purchased by calling the MaRS 24 Hour Hotline: 1-800-576-MaRS (6277).

Check UV "Lamp Out" Indicator Light.

The "Lamp Out" Indicator Light is located on the UV Cover. When lit, it indicates that the UV Lamp is not operating. See Service section for replacement instructions.

Wipe Down All Exterior Casing Surfaces.

A vinegar water solution (3 tablespoons vinegar to a pint of water) may be used with a clean rag or paper towel. Do not use cleaners. Never use chemicals, soap, detergent or harsh abrasives on any part of the Goldfish Warehousing System.

NOTE: Check outside refrigerator Intake Vents for accumulated dirt and dust.
Brush or vacuum away any deposits.

WARNING:
Never spray insecticides (or floor cleaners containing ammonia) 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 the open sump until the odor has cleared from the area completely. And don't forget to turn the system back on.

Inspect Holding Tank, Partition Screens and Sump for Algae Growth.

Algae spores enter the system naturally via tank inhabitants and light allows them to grow. Although your 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 or acrylic scrubber pad. Never use soap or metal scouring pads. Maintain a separate cloth only for the tanks. It should be kept clean and isolated from other departments so that it does not get contaminated by multiple task use.

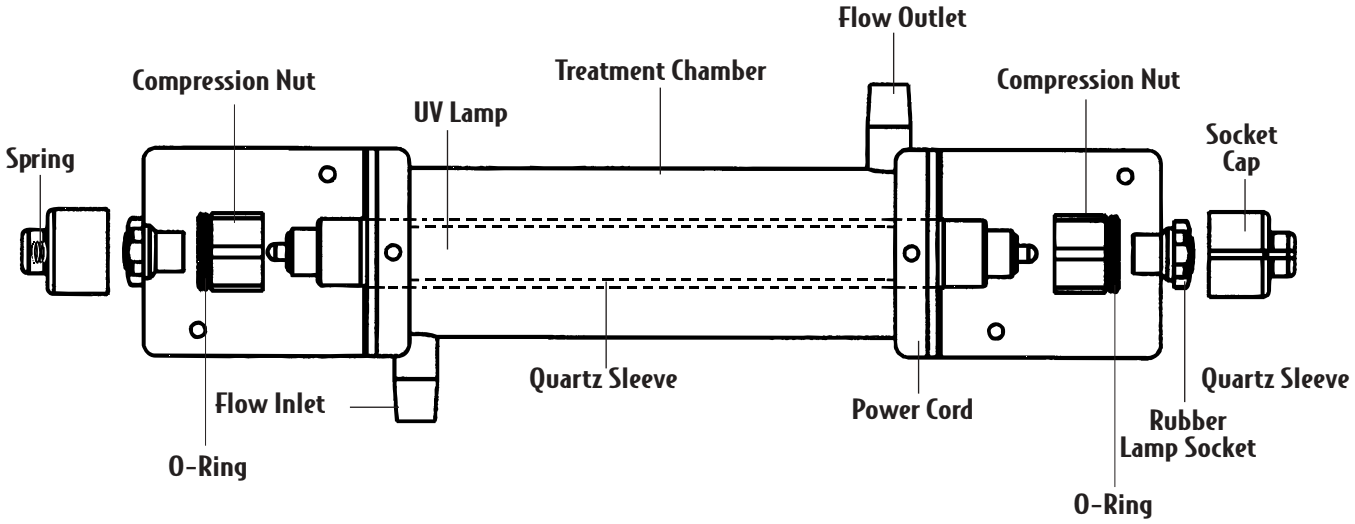
SERVICE

We strongly recommend that all servicing for your system be performed by a qualified technician or trained associate. For a service referral, call ***1-800-322-1266.***

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 Sterilizer Unit.*

For convenient Quartz Sleeve servicing, we recommend the MaRS UV Sterilizer Servicing Kit (MZ0017). Specifically assembled for this purpose, each kit contains a pair of cotton gloves, silicon lubricant and detailed instructions. UV Lamps are also available (MZ0190). To order call 1-800-322-1266.



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.

UV Disinfection Unit Quartz Sleeve

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 a month. Exercise care when cleaning.

To clean Quartz Sleeve:

1. **Turn off Master Switch. Allow UV Unit to drain (2-3 minutes). Remove Unit Cover.**

2. **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 through from one end to the other. Carefully set aside.**

3. **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.**

If Quartz Sleeve breaks during service and a replacement is not readily available...
Remove Front and Side Access Panels, unplug UV Unit (cord and receptacle are labeled). Bypass UV by turning UV Inlet Valve from normal position to bypass position. Do not replace UV Lamp until new Sleeve is acquired. Replace Side and Front Access Panels and turn on Master Switch (system will operate without UV Lamp). When new Quartz Sleeve is acquired, follow installation procedure.

IMPORTANT: After replacing broken Quartz Sleeve and before turning on Master Switch, remove Front and Side Access Panels, turn UV Valve to normal operating position and plug in UV power cord . Replace access panels and turn on Master Switch.

4. Wash Quartz Sleeve with mild soap and hot water. Rinse thoroughly with hot water.

NOTE: For heavier deposits, we recommend cleaning with CLR™. Gently wipe sleeve with clean cloth before reinstalling.

5. 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.

6. Install Compression Nut at one end. Finger tighten while holding opposite end of Quartz Sleeve.

7. 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.

8. Carefully reinsert UV Lamp into open Quartz Sleeve and push it about 2-3 inches out beyond the opposite Compression Nut.

9. 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.

10. Connect opposite lamp base to remaining Rubber Lamp Socket.

11. 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.

12. Replace Cover. Turn on Master Switch. Inspect unit for leaks.

Refrigeration Unit Condenser Intake Screen

To guard against system failure, Refrigeration Condenser Intake Screen should be brushed or vacuumed clean approximately every six months. This eliminates accumulated dust and prevents clogging. To reach Screen, first remove Front Access Panel, then slide Side Access Panel out (pictured).

EVERY SIX MONTHS (or as dictated by "Lamp Out" Indicator Light on Unit Cover):

UV Disinfection Unit Lamp (exploded diagram, pg. 14)

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. When changing UV Lamp, always clean Quartz Sleeve.

To replace UV Lamp:

1. **Turn off Master Switch. Allow UV Unit to drain (2-3) minutes. Remove Unit Cover (unscrew outer nuts).**

2. 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 through from one end to the other. Discard.

3. Remove Quartz Sleeve. Clean and reinstall (as directed in previous instructions).

4. Carefully insert new UV Lamp into open Quartz Sleeve and push it about 2-3 inches out beyond the opposite Compression Nut.

5. Insert lamp base into spring-equipped Rubber Lamp Socket (see diagram), sliding "boot" portion over end of UV Lamp. Push until you feel a firm, "bottomed out" connection. NOTE: Make sure "boot" does not fold under.

6. Connect opposite lamp base to remaining Rubber Lamp Socket.

7. 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.

8. Replace Cover. Turn on Master Switch. Inspect unit for leaks.

YEARLY

UV Disinfection Unit O-Ring (exploded diagram, pg. 14)

The O-Ring should be replaced each year. Always clean and lubricate O-Ring with a very thin coating of silicone lubricant before inserting into section of Threaded Compression Nut.

TROUBLESHOOTING GUIDELINES

CAUTION: Many of the corrective procedures recommended below require removal of the outer Service Panel. Only those familiar with basic filtration unit design should attempt to do so.
For a service referral, call the **24 hour MaRS Hotline at 1-800-576-MaRS (6277).**

If entire system abruptly shuts down...

- Reset circuit breaker in main electrical panel.
- Check to make sure unit is plugged in.
- Make sure Master Switch is turned on.
- Check to make sure Feed Timer is not activated.

If water turns yellow or odors develop...

- Replace Carbon Filter Pack(s).

If a BIO-Wheel fails to rotate...

- Inspect Prefilter Pad and Carbon Filter Pack for clogging. Clean or change as needed.
- Check water level in BIO-Wheel Tank. If water level is above the BIO-Wheel axles, remove BIO-Wheel Return Port Strainer (figure A) and Holding Tank Strainer (figure B). Clean both thoroughly and reinstall.
- See if BIO-Wheel is obstructed. Check for unimpeded rotation and reinstall.
- Ensure that Filter Module Sump is not overfilled. Check Return Tube for obstruction.

A

B

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

- **Inspect Pump Inlet Strainer in Sump. Clean and/or remove any debris or obstruction.**
- **Remove Access Panel and make sure System Pump is plugged into proper outlet, motor fan is turning and all valves are open (parallel to direction of Flow Pipe).**
- **Call the MaRS Hotline for service if problem persists.**

If Sump will not fill to top of the Overflow Standpipe...

- **Make sure Water Supply Valve is open.**
  NOTE: Placement of Water Supply Valve will vary according to tank setup.
- **Inspect Drip Orifice for clogging.**
- **Inspect Pump Inlet Strainer in Sump. Clean and/or remove any debris or obstruction.**
- **Check Float Valve for proper operation. Push down on Float. Float Valve should open and water should rush into Sump. Valve should close when Float is released.**
- **Call the MaRS Hotline for service if problem persists.**

If Water Temperature is too Low or Too High...

- **Check Thermostat setting. NOTE:** Thermostat reading may differ from measured Holding Tank temperature... adjust thermostat as required and monitor Holding Tank temperature with thermometer, allowing 3-4 hours for temperature to stabilize before checking again.
- **Make sure that power cord to Refrigeration Unit is plugged into proper outlet.**
- **Make sure that Thermostat Probe is not damaged.**
- **Inspect Intake Vents and clean if necessary.**
- **Call the MaRS Hotline for service if Thermostat or Refrigeration Unit is malfunctioning.**
- **Make sure air vents are not obstructed Leave at least 12" between vent and walls or other objects.**

If UV Lamp goes out (Lamp Out Indicator is Lit)...

- **Remove Access Panel and confirm that UV power cord is plugged into appropriate outlet.**
- **Replace UV Lamp (see instructions, pg 18). 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...

- **Reinstall Quartz Sleeve according to directions (pg. 11).**

CUSTOMER SERVICE

Should you experience problems with your system,
call the 24-Hour MaRS Hotline at 1-800-576-MaRS (6277).

To order any of the items listed below, call:
1-800-322-1266

WEEKLY USE ITEMS:	
1. Prefilter Pads – Blue	MZ0180
2. Prefilter Pads - Coarse White	MZ0181
3. Carbon Filter Packs	MZ0175
SERVIC ING ITEMS:	
1. Maintenance Kit	MZ0012
2. Tank Isolation Kit	MZ0020
3. KX Carbon/Micron Repl. Kit	MZ0040
4. UV Sterilizer Servicing Kit	MZ0017
5. UV Lamp	MZ0190
6. Replacement O-Rings	MZ0041

MaRS™

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