

OPERATING MANUAL

BIO-WHEEL® VERTICAL MODULAR DISPLAY SYSTEMS



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 turn off power at main disconnect and then retrieve it. If electrical components of the appliance get wet, turn off the appliance immediately.
B. If the appliance shows any sign of abnormal water leakage, immediately turn off power at main disconnect.
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 dropped or damaged in any manner.
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 turn off power at main disconnect when not in use, before putting on or taking off parts and before cleaning. Never yank a cord to pull a plug. 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. This appliance should be connected to a grounded, metallic, permanent wiring system, or an equipment-grounding conductor should be run with the circuit conductors and connected to the equipment-grounding terminal or lead on the appliance.
10. This appliance is to be installed by a qualified electrician in accordance with all appropriate codes and ordinances.

SAVE THESE INSTRUCTIONS

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



This manual will provide you with the information you need to successfully operate and maintain your BIO-Wheel Vertical Modular Display System. Please read it carefully and keep it for future reference.

Your fully integrated MaRS System provides easy-to-maintain filtration for multiple tanks. Its high performance mechanical, chemical and commercial BIO-Wheel wet/dry biological filtration ensure optimum water quality at all times.

The system's compact design allows for convenient self-contained installation. It also provides the option of maintaining isolated filtration "zones", each showcasing a different aquatic environment. Every modular unit is equipped to provide ideal system conditions warm or cold, freshwater or marine. Front access panels ensure fast, trouble free maintenance and service.

While all units function in essentially the same manner, the marine systems come equipped with a Protein Skimmer to remove organic matter from the water and a second BIO-Wheel Module to provide additional 3-stage filtration.

Inside the System...

Water is automatically introduced to the Sump at a preset rate. As “new” water enters the system, “old” water is simultaneously removed. This continuous water cycle ensures constant water level, efficient nitrate removal and constant pH.

The system pump directs filtered water to the display tanks, the UltraViolet (UV) Disinfection Unit, the Protein Skimmer (Marine only) and the Heating or Refrigeration Unit.

The **UV Disinfection Unit** 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.

The thermostatically controlled **Heating or Refrigeration Unit** can be preset to the temperature (within a range of 70°- 80°F) required by your individual system. A thermometer strip is provided for every section module.

The **Protein Skimmer** (Marine System only) employs heavy aeration to remove organic matter from the tank in the form of foam. The foam is flushed from the system and deposited into the drain. Foam level can be easily and effectively regulated by means of the Air Adjustment Valve attached to the Venturi Air Inlet.

Water uniformly flows into each display tank, exiting via the Bi-Level Skimmer. The skimmer draws water and floating debris from both the bottom and surface levels to ensure uniform water circulation. It's easily removable for cleaning.

Water is directed from the tanks to the BIO-Wheel Filtration Module. Solid waste is mechanically trapped by the polyfiber Prefilter Pad and filter sleeve of the heavy duty Carbon Filter Pack contained in two “stacked” Filter Media Trays. The Carbon Filter Pack also contains a full pound of Black Diamond Premium Activated Carbon for chemical filtration...efficiently adsorbing dissolved organic compounds such as phenols and tannin.

Passing through the Filter Media Trays, water flows 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 shipped to you ready to go. They provide full load biological filtration capacity immediately upon installation.

SPECIAL FEATURES

Service Panels

Latched panels provide easy access to filtration media, heating or refrigeration unit and electrical system components. All are equipped with locks for maximum safety.



Tilt Door Access System

Polyurethane doors allow easy tank access.



Fish Feeding Timer

Allows you to shut down the system pump for feeding (preset for 5 minutes) and then automatically restores the system to full operation after a preselected time has elapsed.



Fish Jumper Guards

Each two-tank “zone” is equipped with a Fish Jumper Guard on each side and one in back. The bottom-notched side guards slot into the top side edge of each tank and press into place beneath the lamp cover. The back guard removes easily for cleaning.



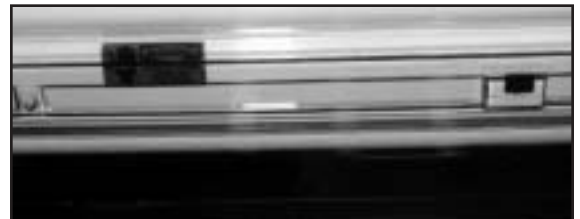
Sump Replenishment Valve

This valve adds water to the Sump when Sump water level drops below ideal operational levels. During heavy sales, the Sump can be easily refilled using this simple spring-loaded manual attachment.



Lighting

The 5000K daylight fluorescent lamps are protected by a molded plastic lamp cover. To ensure maximum safety, the power cord is routed inside the system framework to connect to a central junction box. A single power cord exits the junction box for direct plug-in to any standard GFCI wall socket.



Backup Thermostat (refrigerated units only)

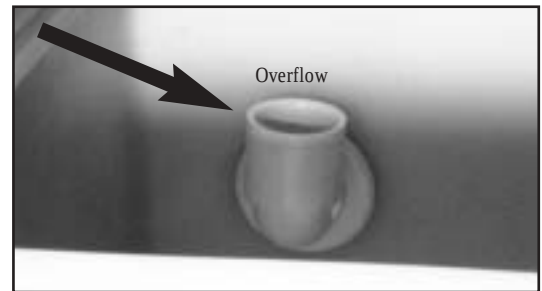
If water temperature drops below 40°, a second thermostat activates, stopping refrigeration unit output and preventing freezing of the heat exchanger.

OPERATION

Startup

Five simple steps are required to get your system up and running prior to the addition of filtration media. Consult Exploded Views (pgs. 24-37) for clarification.

1. Remove Sump Service Panel (lift panel up and off) and manually fill Sump to level of Overflow.



2. Open Display Tank Access Doors and fill display tanks to desired levels with sediment-free dechlorinated water.

3. **FOR FRESHWATER SYSTEMS ONLY:** Open New Water Supply Valve (A). Check Drip Emitter (B) for slow trickle of new water into Sump.



4. Unlock and remove Electrical Service Panel. Activate Master Switch. After system has operated for five minutes, fill Sump to level of Overflow.

NOTE: Never activate Master Switch without water in tanks and Sump. Heater must be fully submerged or system damage may occur.



A Refrigerated System



B Heated System

5. Allow system to operate with mechanical and chemical filtration media (blue polyfiber Prefilter Pad and Carbon Filter Pack) for a period of 24 hours.

NOTE: See Adding Filtration Media, steps 4-5 (pg. 8) for installation. Be sure to remove BIO-Wheel for first 24 hours of operation.

Inspect areas near pump, UV and other components for leaks.

6. Adjust “IN” Water Nozzles in display tanks to ensure optimum circulation.

NOTE: Water flow should just break the surface.



Adding Filtration Media

Follow the few easy steps outlined below to install filtration media. Refer to the Exploded Views for additional clarification.

1. Remove Service Panel.



2. Fit Bottom BIO-Wheel Housing securely over raised Housing Locator (left) in bottom of Sump.



3. Place cultured BIO-Wheel in Bottom Housing (A). Tray guides will ensure correct positioning. Place Top BIO-Wheel Housing over BIO-Wheel (B) and on top of Bottom BIO-Wheel Housing (notches on Bottom Housing match up with holes in Top Housing).



A



B

4. Install Lower Filter Media Tray (A) and place Carbon Filter Pack inside (B).

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



A



B



C

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



A



B



C

NOTE: In Marine systems, follow steps 1-5 for additional installation of second BIO-Wheel Filtration Module over raised Housing Locator on right side of Sump.

MAINTENANCE

To ensure optimum operational efficiency, 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. *NOTE: For easier system maintenance, we recommend the MaRS Maintenance Kit. To order call 800-322-1266.*

Daily

Clean or replace Prefilter Pad

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

To replace Prefilter Pad:

1. Remove clear BIO-Wheel Filtration Module Cover.
2. Remove used pad.
3. Rinse or replace with new pad.

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

4. Replace Cover.

Check Bi-Level Skimmers

Remove any debris or blockage.

Clean Gravel

Gently stir gravel in each tank and allow debris to be pulled through the Bi-Level Skimmer. This will eliminate the need to vacuum gravel on a regular basis. For more intensive spot cleaning or excessively dirty tanks, use the H.O.T. Magnum Canister Filter and Power Kleen Gravel Washer included in your MaRS Maintenance Kit.

Check Sump Water Level

Correct water level is designated by the "FILL TO THIS LINE" label located on the side of the BIO-Wheel Module. If necessary, add water to the sumps via the Sump Replenishment Valve (located at top rim of Sump) or other treated water supply.

Check Temperature

Refrigerated Systems: 68-70°F Heated Systems: 78-80°F

Replace Carbon Filter Packs

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, filtered water to keep bacteria healthy and thriving.

1. Remove clear BIO-Wheel Filtration Module Cover.
2. Lift out Upper Filter Media Tray with Prefilter Pad.

NOTE: Have bucket or large plastic pan ready to catch water spillage from Upper and Lower Tray.

3. Set Upper Filter Media Tray aside. Lift out Lower Filter Media Tray.
4. Replace Carbon Filter Pack (#MZ0175) and rinse out Filter Tray before replacing.
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 Intake Strainer (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, it should be 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 back page).

Check Drip Emitter

It's the job of the Drip Emitter (see pg. 6 and below) to regulate the amount of new water introduced to your MaRS system. Because the Drip Emitters are vital to optimum operation, it is necessary to check them each week to ensure their proper function. Emitter water flow should be slow and steady. Reduced flow indicates that the Drip Emitter should be cleaned or replaced.



CAUTION: NEVER operate the system with the Drip Emitter removed. This results in too much water passing through the system, which can cause water temperature fluctuations. It can also diminish chlorine removal effectiveness of the Carbon Pack.

Inspect Tanks For Algae Growth

Algae spores enter the system naturally via tank inhabitants and light allows them to grow. Although your system's UV Sterilizer 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 tanks. It should be kept clean and isolated from other departments so that it does not get contaminated by multiple task use.

Clean Bi-Level Skimmer and Area Behind

1. Remove Bi-Level Skimmer.

Grasp Skimmer Cover on either side. Gently pull up and away from tank back and bottom slot.

2. Wipe Areas Clean with designated tank cloth.

3. Replace Bi-Level Skimmer.

Insert bottom of Back Plate into lower slot on tank and push Skimmer gently into place.



Check UV “Lamp Out” Indicator Light

The “Lamp Out” Indicator Light is located on the UV Cover. When lit, it indicates the UV Lamp is operating. See Service section for replacement instructions.



A. REFRIGERATED SYSTEM



B. HEATED SYSTEM

Wipe Down All Exterior Casing Surfaces

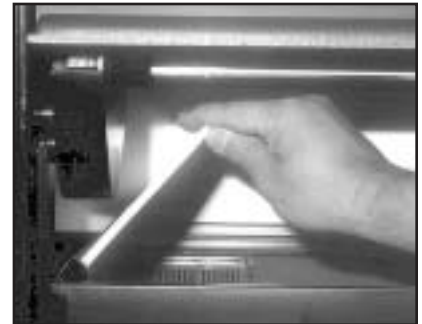
Never use chemicals, soaps, detergents or harsh abrasives on any part of the system. Do not use cleaners inside or near the tanks at any time.

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.*

Clean Fish Jumper Guards

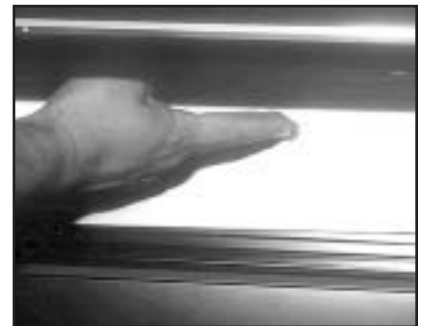
1. Remove Side Jumper Guards:

Grasp top and gently pull toward you to free Guard from frame. Lift bottom of Guard up and away from tank rim.



2. Remove Back Jumper Guard:

Using brackets, lift top up and out from system frame.



3. Wipe down with a damp cloth.

If necessary, use tank scrubber pad for any calcium buildup.



4. Remount Back Jumper Guard:

Slot bottom notch onto top rim of tank. Press into position.

5. Replace Side Jumper Guards:

Slot bottom notch onto top rim of tank. Press into position beneath Locator Bumps in Lamp Cover.

*NOTE: Center Jumper guards may be wiped clean without having to be removed. Be sure to use **only** a clean, damp cloth.*

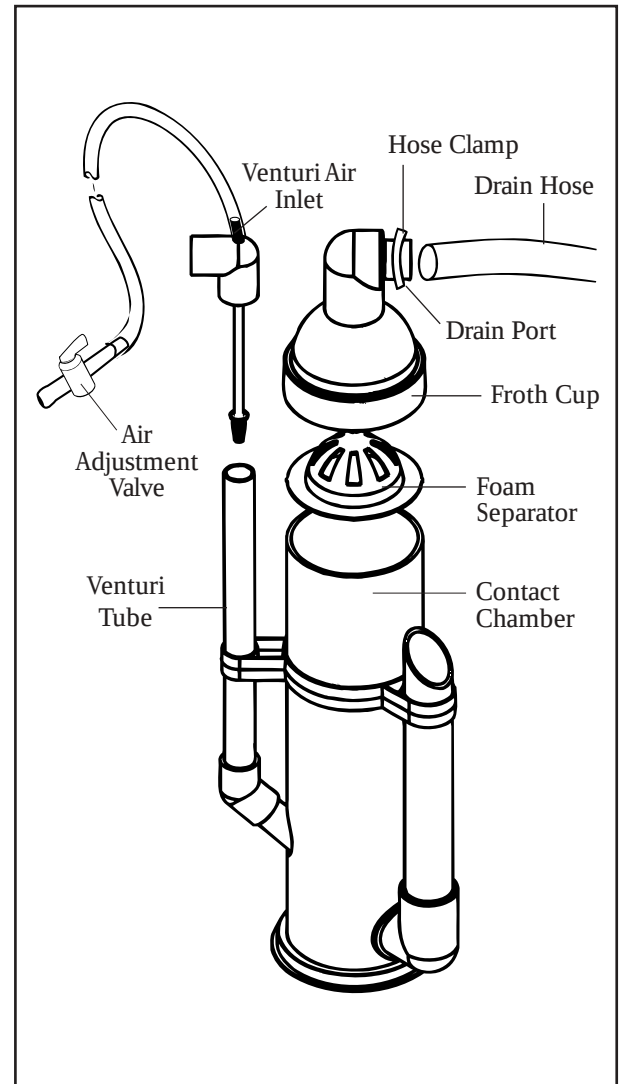
Clean Protein Skimmer Froth Cup/Foam Separator

(Marine System Only)

To ensure proper operation, Froth Cup and Foam Separator should be cleaned every week with warm water.

To remove Froth Cup and Foam Separator:

1. Shut down system.
2. Remove Sump Access Panel.
3. Remove Hose Clamp from Drain Hose.
4. Remove Drain Hose from Drain Port.
5. Remove (lift up) Froth Cup from Contact Chamber.
6. Clean Cup and Separator.
7. Return Cup and Separator to position atop Contact Chamber.
NOTE: Make sure that good seal forms around Cup and Chamber.
8. Reconnect Drain Hose and Clamp.
NOTE: Make sure Clamp is fastened securely around base of Hose.
9. Turn on system. Inspect Skimmer for leaks.
10. Replace Sump Access Panel



Protein Skimmer - Exploded View

Clean Protein Skimmer Venturi Air Inlet

Using pipe cleaner or squirt bottle, make sure Inlet orifice is clear and drawing air into Venturi Tube.

Monthly

Clean Heat Exchanger Screen *(refrigerated units only)*

1. Remove Service Panel and shut down system.
2. With handled brush (provided) reach through rack and brush accumulated dust and debris from rear screen.
3. Restart system. Replace Service Panel.



Clean Water Pump

Keep exterior surfaces clean and dust free. Wipe the dust from the electrical service area. All pumps require a clean environment in which to operate. It is important to see that no debris is “ingested” into the pump impeller. It is equally important to keep dust and debris away from the built-in cooling fans that keep the motor from overheating during operation.

Yearly

Clean Titanium Heater Housing *(heated unit only)*

1. Shut down system.
2. Clean outer housing with handled brush or non-abrasive scrubber pad.
NOTE: Allow Heating Unit to cool (5-10 minutes) prior to cleaning. It is not necessary to remove Heating Unit. Reach through access port adjacent to housing when cleaning.
3. Turn on system.

As Needed

Change Fluorescent Lamps

To ensure maximum illumination and color reflection, the unit comes equipped with 5000K fluorescent lamps. We recommend that they be replaced with the same lamp type. To replace them with “Cool White” or other lamps of lesser quality will greatly lessen lighting intensity and overall effect.

1. Remove Side Fish Jumper Guards.
2. Using a dime or screwdriver, unscrew placement bolts (3) in Lamp Cover.
NOTE: Placement Bolts are attached to Lamp Cover and will not fall out.



3. Carefully remove Lamp Cover.



4. Switch “Off.” **NEVER** change fixtures while switch is “On.”



5. Remove front fluorescent lamp. Gently twist 90° and pull forward and out from mounted station slots. Discard (according to established environmental procedure).



6. Remove rear fluorescent lamp. Gently twist 90° and push backward and out from mounted station slots. Discard.

WARNING: DO NOT attempt to remove white Access Housing from mounting. To do so may cause electric shock and severe injury.

7. Replace discarded lamps with new 5000K lamps. Gently insert ends into slots and push up and forward or up and back until lamp fits securely in place.

8. Switch “On”.

9. Replace Lamp Cover. Line up cord notch (to the rear of Cover on one side) with power cord and screw in Placement Bolts.

NOTE: Lamp Cover is specifically formed on one side to fit over the On/Off Switch. Be sure to match switch with molded protrusion before replacing Placement Bolts.



10. Replace Fish Jumper Guards.

Weekly Maintenance Procedures for Marine Modules

Water Change

Change 25% per week. Water should be mixed in a container used only for that purpose (recommended: 30 gallon refuse container on a dolly) with appropriate amount of salt (recommended: use a standard measuring cup for exact amount). Water should be added and a new batch mixed on the same day to ensure that supply is always available.

MODEL	SYSTEM CAPACITY	25% CHANGE
MV4	98 GALLONS	25 GALLONS
MV8	192 GALLONS	48 GALLONS

Gravel Cleaning

Siphon Kleen gravel thoroughly.

Brown Algae Removal

Scrub inside of glass lightly with blue filter pad or algae scrubber.

Salt “Creep” Removal

Wipe outer aquarium surface with a clean, damp cloth.

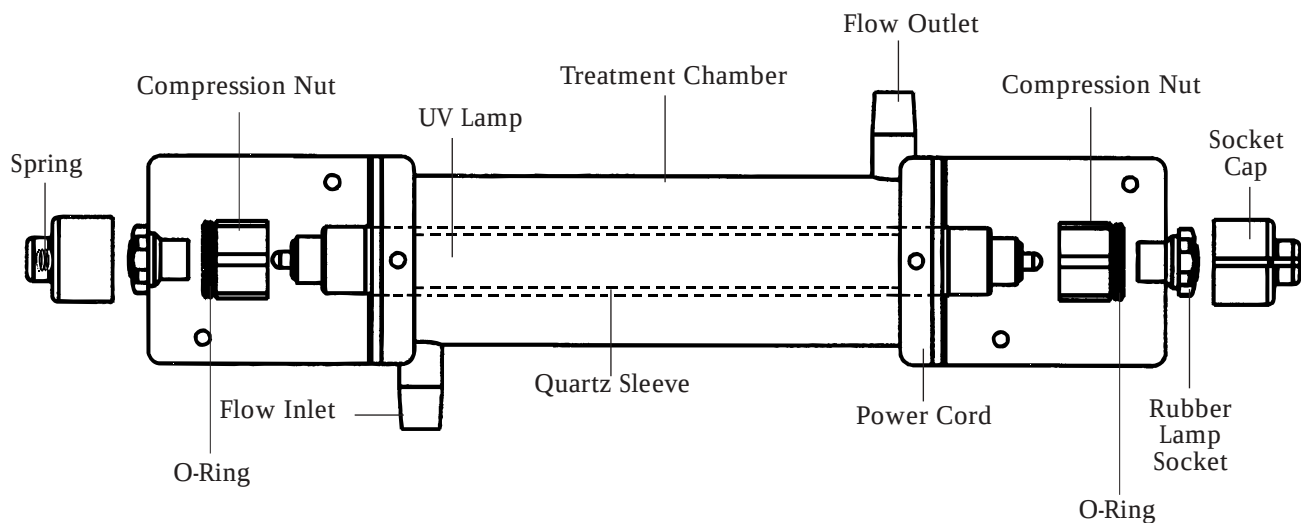
SERVICE

*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 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 (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

UV Disinfection Unit Quartz Sleeve

The Quartz Sleeve will develop a layer of scum on its surface. This can reduce UV Lamp effectiveness. Scum should be cleaned off at least once every six months. Exercise care when cleaning.

To clean Quartz Sleeve:

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

IMPORTANT: With the 4' Refrigerated Systems (MV4FR & MV4MR), it is necessary to remove the entire UV Disinfection Unit from the system before servicing.

To remove UV Unit:

A. Unclip UV Discharge Hose from back of Sump.



B. Carefully slide UV Housing out and away from the Hanger Bracket.



C. Gently remove the UV from the rack assembly and set aside.

2. Remove Cover.
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 through from one end to the other. 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.

If Quartz Sleeve breaks during service and a replacement is not readily available, close the UV Inlet Valve (Marine System: Close Inlet and Outlet Valve). Unplug UV. Do not replace UV Lamp until new Sleeve is acquired. Turn on Master Switch (system will operate without UV Lamp). When new Quartz Sleeve is acquired, follow installation procedure. Be sure to open UV Inlet and Outlet Valves...and plug UV Power Cord into proper receptacle.

5. 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.
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. 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 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.

For refrigerated models (MV4FR & MV4MR), carefully replace UV on Hanger Bracket, making sure Service Panel will not touch end of UV housing. Reclip UV Discharge Hose into position at back of Sump.



14. Replace Cover.
15. Turn on Master Switch. Inspect Discharge Hose for leaks. Replace Service Panel.

Every Six Months (or as dictated by “Lamp Out” Indicator Light)

UV Disinfection Unit Lamp (Exploded diagram, pg.17)

The UV Lamp has a useful service life of about 6 months. After this time - whether it continues to appear functional or not - it loses intensity and 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 (3-5) minutes.

With the MV4FR and MV4MR systems, it is necessary to remove the entire UV Disinfection Unit from the system before servicing (consult page 18).

2. Remove Cover (unscrew outer nuts).
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 through from one end to the other. Discard.
4. Remove Quartz Sleeve. Clean and reinstall (as directed in previous instructions).
5. Carefully insert new UV Lamp into open Quartz Sleeve and push it about 2-3 inches out beyond the opposite Compression Nut.
6. 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.
7. Connect opposite lamp base to remaining Rubber Lamp Socket.
8. 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.
9. Replace Cover.

WITH MV4FR and MF4MR systems, carefully replace UV on Hanger Bracket, making sure Service Panel will not touch end of UV Housing. Reclip UV Discharge Hose into position at back of Sump (see photo, pg.19)

10. Turn on Master Switch. Inspect unit for leaks. Replace Service Panel.

Yearly

UV Disinfection Unit O-Ring

The O-Rings 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 MaRS 24-Hour Hotline:
(800) 576-MaRS (6277).

If entire system abruptly shuts down...

- *Make sure* Feeding Timer Switch has not been activated.
- *Reset* circuit breaker in main electrical panel.
- *Make sure* Master Switch is turned on.
- *Check* Pump Intake Strainer in Sump for obstructions.

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.
- *See* if BIO-Wheel is obstructed. Clean bearings, check for unimpeded rotation and reinstall.
- *Ensure* that Sump is not overfilled. Check Return Tube for obstruction.
- *Check* Pump Intake Strainer in Sump for obstructions.

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 obstructions.
- *Remove* Electrical Service Panel and make sure System Pump is plugged in, motor fan is turning and all valves are open (parallel to direction of flow pipe).
- *Call* for service if problem persists.

If water level in a single tank is low or significantly lower than that in adjacent tanks...

- *Check* "IN" Water Nozzles for obstructions. Clean inside of nozzle with small brush or pipe cleaner. If necessary, remove nozzle from bulkhead (using open end wrench), clean and replace.
- *Call* for service if problem persists.

If UV "Lamp Out" Indicator Light goes out...

- *Replace* UV Lamp (see instructions, pg. 20). If problem persists after lamp is replaced, call for Service.

If water temperature is too low or too high...

- 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 or Heating Unit is plugged into proper outlet.
- Call for service if Thermostat, Refrigeration Unit or Heating Unit is malfunctioning.

If large amounts of air bubbles are evident in display tanks...

- Check water level in Sump. If below standpipe, add water via Replenishment Valve and check frequently.
- Inspect “new” water entry into Sump. If water is not trickling into Sump, make sure Hose Bibs are open, and Drip Emitters are functioning properly.
- Make sure Pump Intake Strainer is fitted firmly in place.
- Call for service if problem persists.

If Drip Emitter or Replacement Valve flow is greatly reduced or stopped...

- Clean Drip Emitter (twist top 90° and pull out to remove for cleaning).
- Check water level in Sump. If below standpipe, add water via Replenishment Valve until water level is at or near normal operating level.

If fluorescent lamps will not light...

- Make sure lights are plugged into wall receptacle.
- Check wall mounted GFCI's. Reset if necessary. If GFCI's trip repeatedly, call for service.
- Make sure lamps are inserted into the fixture properly.
- Call for service if problem persists.

If water leaks from rear of rack...

- Remove Sump Service Panel and Electrical Service Panels and check all hose connections. Tighten if necessary.
- Remove Back Jumper Guards and check all hose connections. Tighten if necessary.
- Call for service if problem persists.

If Protein Skimmer does not operate (no air bubbles)...

- Use Fish Feeding Timer to shut down and restart system. After restart, check Protein Skimmer operation.
- Shut down system and check aeration tube for blockage.
- Call for service if problem persists.

If water level in Protein Skimmer Drops...

- Close Venturi Air Adjustment Valve (partially or completely) to decrease oxygen intake.
- Call for service if problem persists.

SYSTEM Specifications

Integrated Rack System MV4FH 4 Foot Heated, Fresh Water System

MECHANICAL:

Size: 20"D x 51½"L x 94"H (shipping height: 85")

Tilt: 20½" D x 51½" L x 86½"H

Weight: 490 Lb. (Est.)

Floor-attached for seismic loads

System Gallon Capacity: 98 gallons

ELECTRIC:

ETI listed for permanent installation

Voltage: 115 vac, 60 Hz

Current: Filtration/Circulation: 10.5 AMP

Lighting: 2.2 AMP

FILTRATION:

Mechanical Filter: 1 ea. Polyester Pad, 7½" x 14"

Chemical Filter: 1 lb. Black Diamond Activated Carbon in Carbon Filter Pack

Biological Filter: 1 ea. CBW-1

UV Treatment: Aquafine DW-300; 50,000
uWs/cm², @ 4,000 hrs.

"NEW" WATER FROM TREATED WATER SUPPLY:

Flow Rate: 1 gallon per hour

CIRCULATION/FILTRATION PUMP:

Pump: IWAKI MD-40RLT-115; 750 GPH; UL recognized

Display tank turns per hour (TPH): 5 TPH minimum

HEATER:

1,000 w. titanium heater; UL Listed

Thermostat Controller: UL listed; Temperature
Range: 50°-130° F; GFCI Protected

LIGHTING:

UL listed light fixtures with polycarbonate
lamp covers

Lamps: 6 each 40 W., 48", T12, rapid start,
fluorescent; 5,000K, 85 CRI, 20,000
hr. life; 2820 lumens (mean); GE
SPX50 or Philips Ultralume 50

MATERIALS OF CONSTRUCTION:

Frame: Mild steel tubular welded construction,
epoxy powder coated

Doors: Polyurethane

Misc. Panels & Covers: Expanded PVC, ABS, Formica

BUYER SUPPLIED CONNECTIONS FOR INSTALLATION:

Electric Supply:

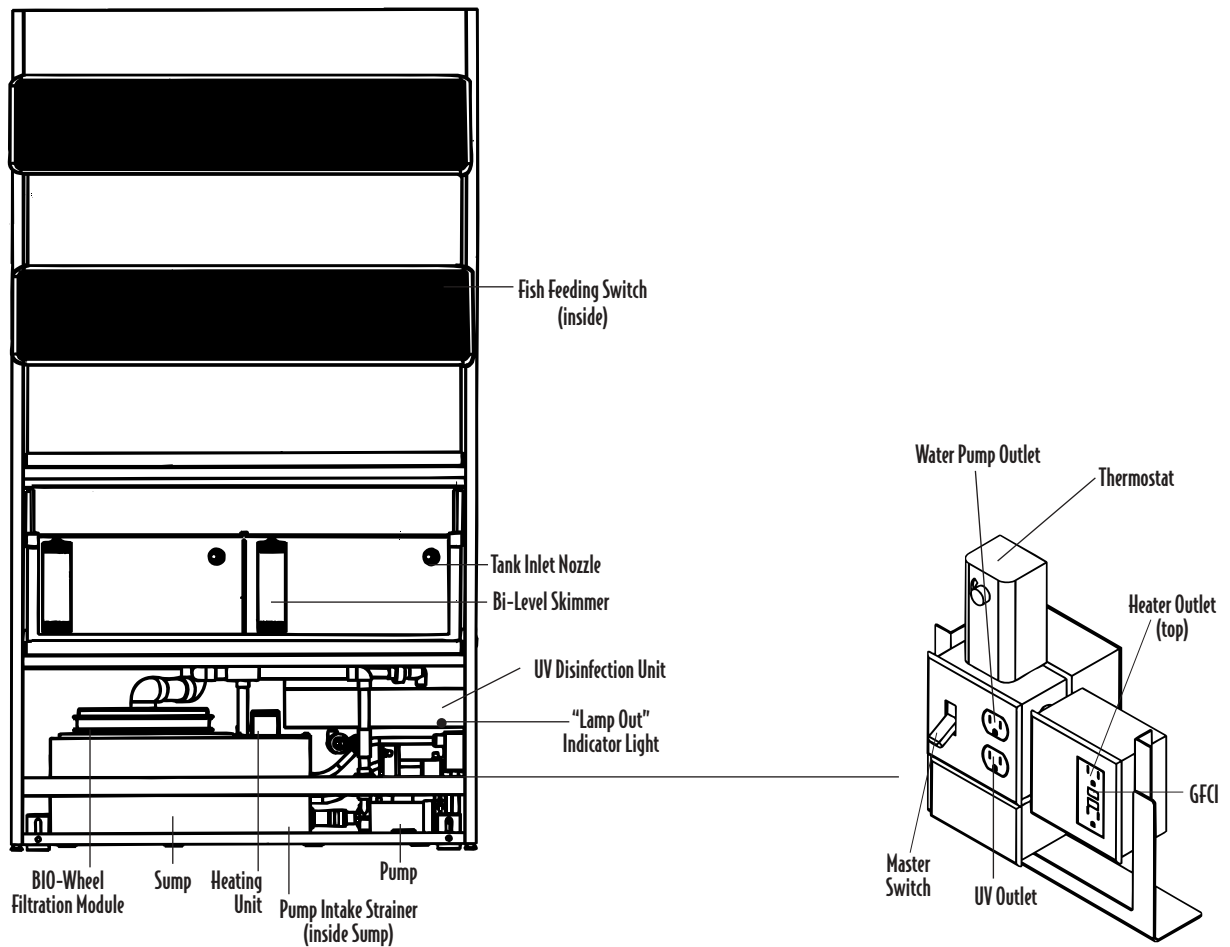
Main circuit: Hard wired JBox, 115 VAC, 60 Hz, 15 AMP

Lighting: Plug connected, 2 places; 115 VAC, 60 Hz,
2.2 AMPs each, GFCI protected

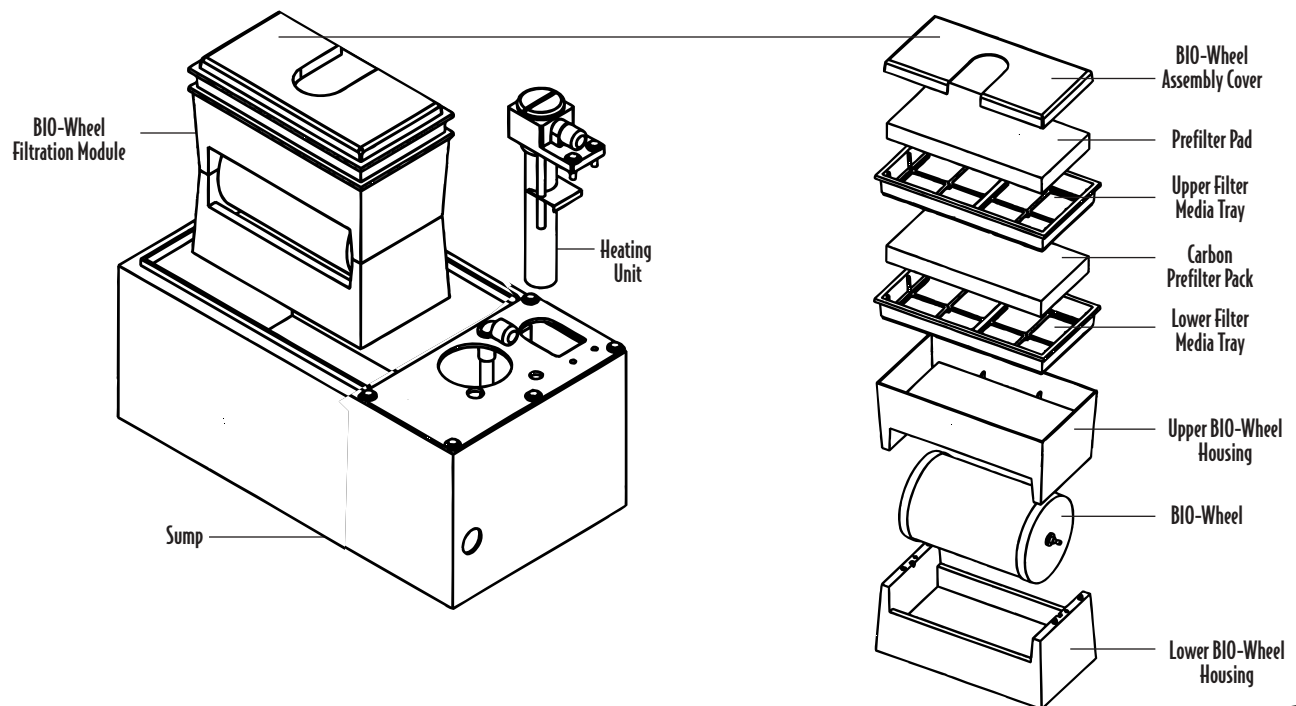
Treated Water Supply: 1 GPH, regulated to 25 PSIG

Drain: At or below grade, 30' Run

Exploded View w/ Electrical Assembly Pullout



Sump w/ BIO-Wheel Filtration Module Exploded View



SYSTEM Specifications

Integrated Rack System MV8FH 8 Foot Heated, Fresh Water System

MECHANICAL:

Size: 20"D x 103"L x 94"H (shipping height: 85")

Tilt: 20¹/₂" D x 103" x 86¹/₂"

Weight: 860 Lb. (Est.)

Floor-attached for seismic loads

System Gallon Capacity: 192 gallons

ELECTRIC:

ETI listed for permanent installation

Voltage: 115 vac, 60 Hz

Current: Filtration/Circulation/Heater: 12.5 AMP

Lighting: 2.2 AMP for each 4 foot section,
4.4 AMP total

FILTRATION:

Mechanical Filter: 1 ea. Polyester Pad, 7¹/₂" x 14"

Chemical Filter: 1 lb. Black Diamond Activated
Carbon in Carbon Filter Pack

Biological Filter: 1 ea. CBW-1

UV treatment: Aquafine DW-300; 50,000
uWs/cm², @ 4,000 hrs.

"NEW" WATER FROM TREATED WATER SUPPLY:

Flow Rate: 1 gallon per hour

CIRCULATION/FILTRATION PUMP:

Pump: IWAKI MD-70RLT-115; 1200 GPH; UL
recognized

Display tank turns per hour (TPH): 5 TPH minimum

HEATER:

1,000 w. titanium heater; UL listed Thermostat
Controller, UL Listed; Temperature Range: 50-130° F
GFCI Protected

LIGHTING:

UL listed light fixtures with polycarbonate
lamp covers

Lamps: 12 each 40 W., 48", T12, rapid start,
fluorescent; 5,000K, 85 CRI, 20,000
hr. life; 2820 lumens (mean);
GE SPX50 or Philips Ultralume 50

MATERIALS OF CONSTRUCTION:

Frame: Mild steel tubular welded construction,
epoxy powder coated

Doors: Polyurethane

Misc. Panels & Covers: Expanded PVC, ABS,
Polycarbonate, Formica

BUYER SUPPLIED CONNECTIONS FOR INSTALLATION:

Electric Supply:

Main Circuit: Hard wired J-Box, 115 VAC, 60 Hz, 20 AMP

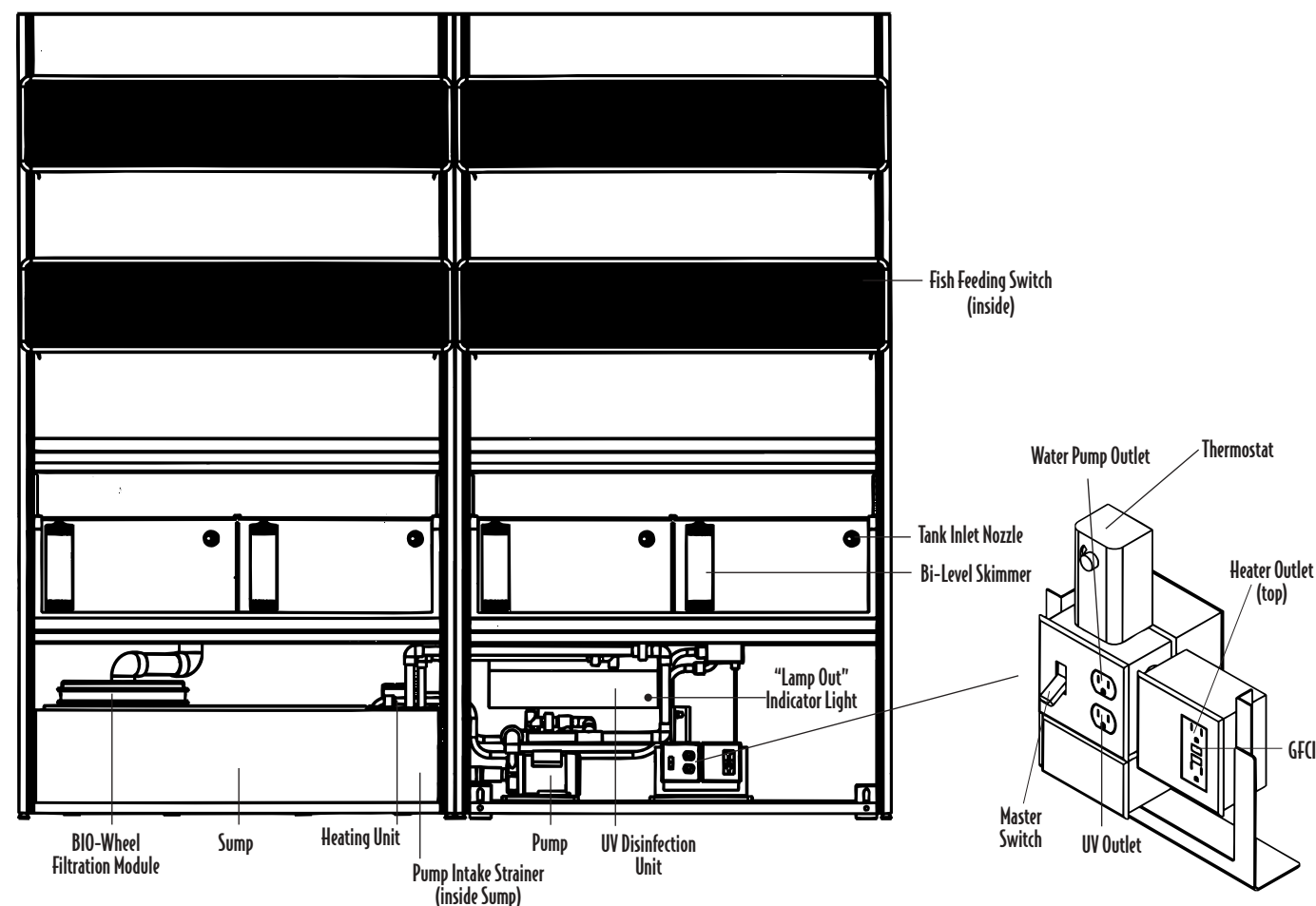
Lighting: Plug connected, 2 places; 115 VAC,

60 Hz, 2.2 AMPs each, GFCI Protected

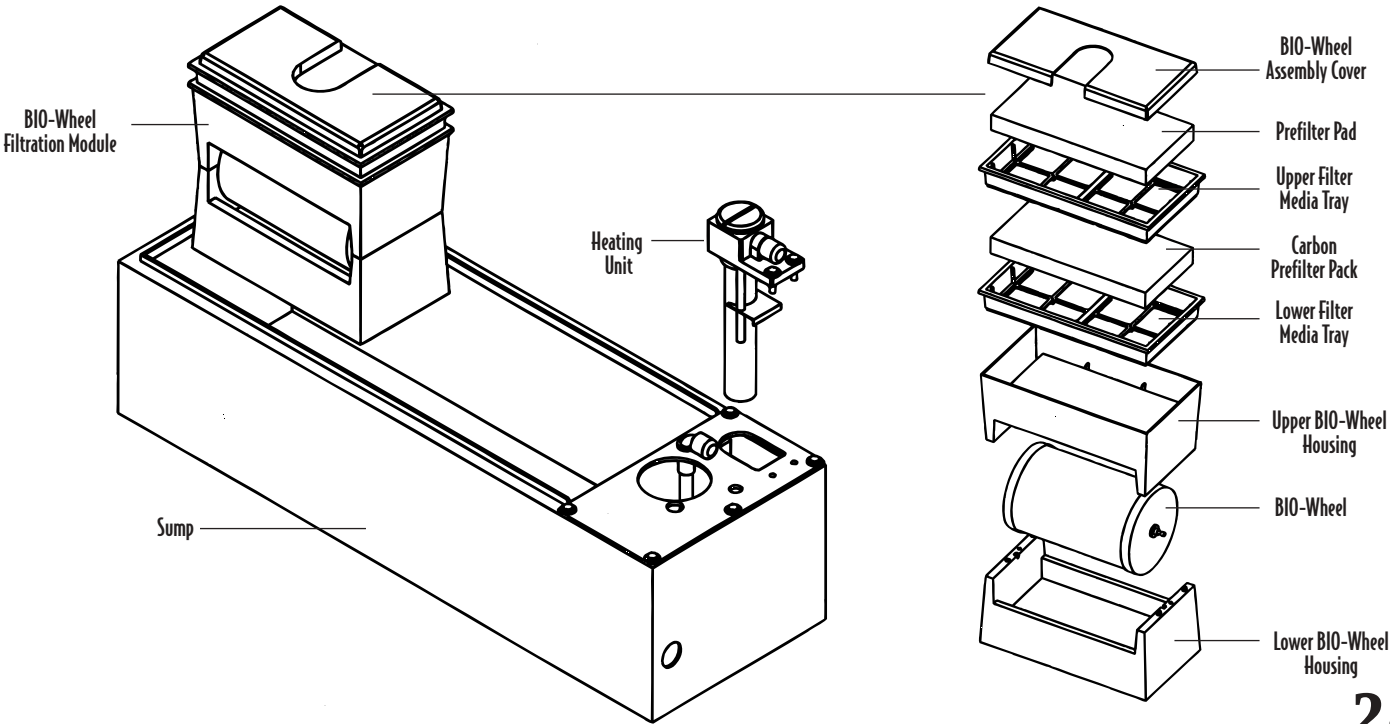
Treated Water Supply: 1 GPH, regulated to 25 PSIG

Drain: At or below grade, 30' run

Exploded View w/Electrical Assembly Pullout



Sump w/BIO-Wheel Filtration Module Exploded View



SYSTEM Specifications

Integrated Rack System MVI2FH 12 Foot Heated, Fresh Water System

Mechanical:

Size: 20"D x 154½"L x 94"H (shipping height: 85")

Tilt: 20½" D x 154½" x 86½"

Weight: 1260 Lb. (Est.)

Floor-attached for seismic loads

System Gallon Capacity: 292 gallons

Electric:

ETL listed for permanent installation

Voltage: 115 VAC, 60 Hz

Current: Filtration/Circulation/Heater: 12.9 AMP

Lighting: 2.2 AMP for each 4 foot section, 6.6 AMP total

Filtration:

Mechanical Filter: 2 ea. Polyester Pad, 7½" x 14"

Chemical Filter: 2 lb. Black Diamond Activated
Carbon in Carbon Filter Packs

Biological Filter: 2 ea. CBW-1

UV Treatment: Aquafine DW-300; 50,000
uWs/cm², @ 4,000 hrs.

"NEW" WATER FROM TREATED WATER SUPPLY:

Flow Rate: 2 gallons per hour

CIRCULATION/FILTRATION PUMP:

Pump: IWAKI MD-100RLT-115; UL recognized

Display tank turns per hour (TPH): 5 TPH minimum

HEATER:

1,000 W. Titanium Heater; UL Listed

Thermostat Controller, UL listed;

Temperature Range: 50-130° F

GFCI Protected

Lighting:

UL listed light fixtures with polycarbonate
lamp covers

Lamps: 18 each 40 W., 48", T12, rapid start,
fluorescent; 5,000K, 85 CRI, 20,000 hr.
life; 2820 lumens (mean); GE SPX50
or Philips Ultralume 50

MATERIALS OF CONSTRUCTION:

Frame: Mild steel tubular welded construction,
epoxy powder coated

Doors: Polyurethane

Misc. Panels & Covers: Expanded PVC, ABS,
Polycarbonate, Formica

BUYER SUPPLIED CONNECTIONS FOR INSTALLATION:

Electric supply:

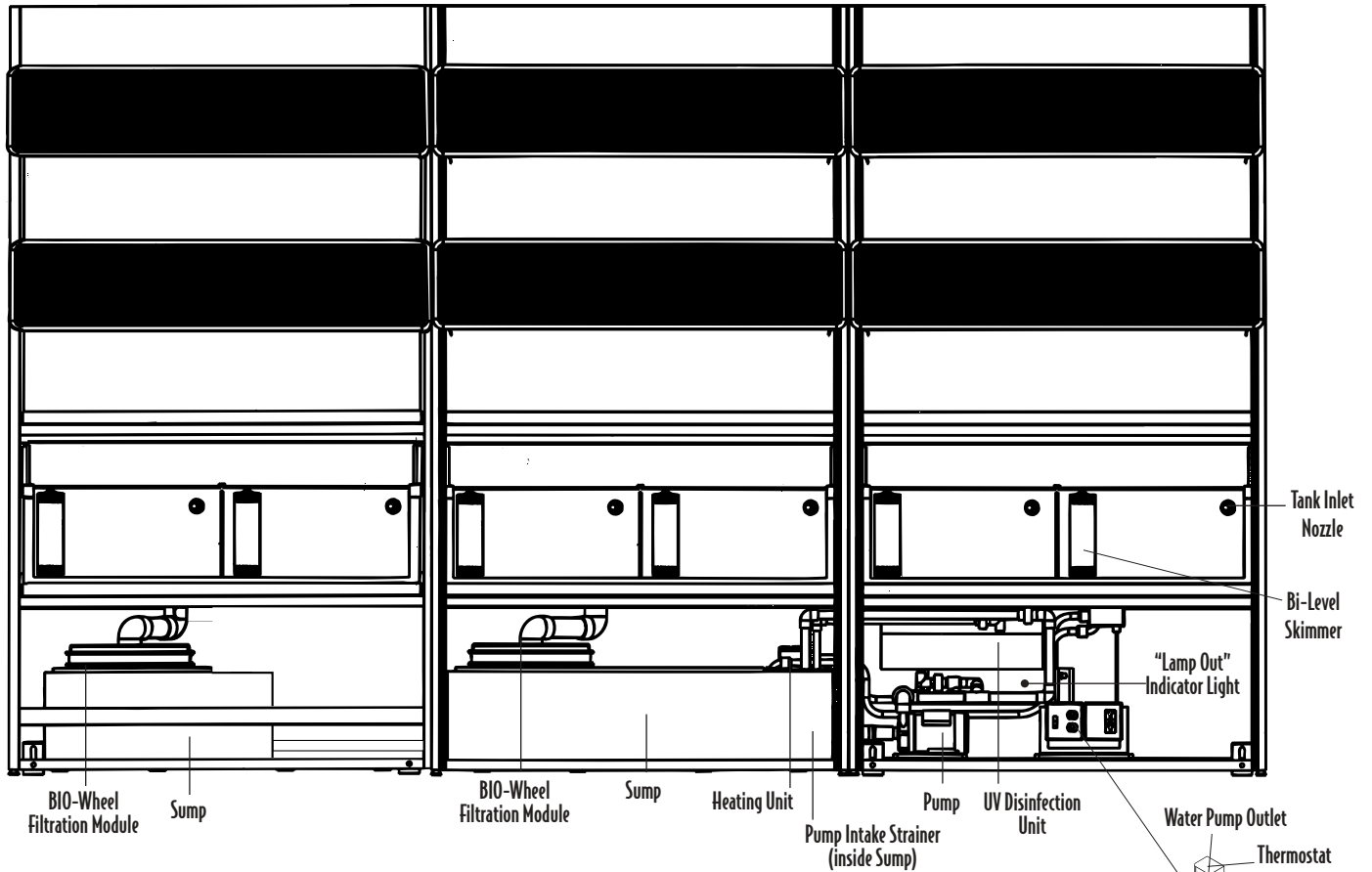
Main Circuit: Hard wired J-Box, 115 VAC, 60 Hz, 20 AMP

Lighting: Plug connected, 3 places; 115 VAC, 60 Hz,
2.2 AMPs each, GFCI protected

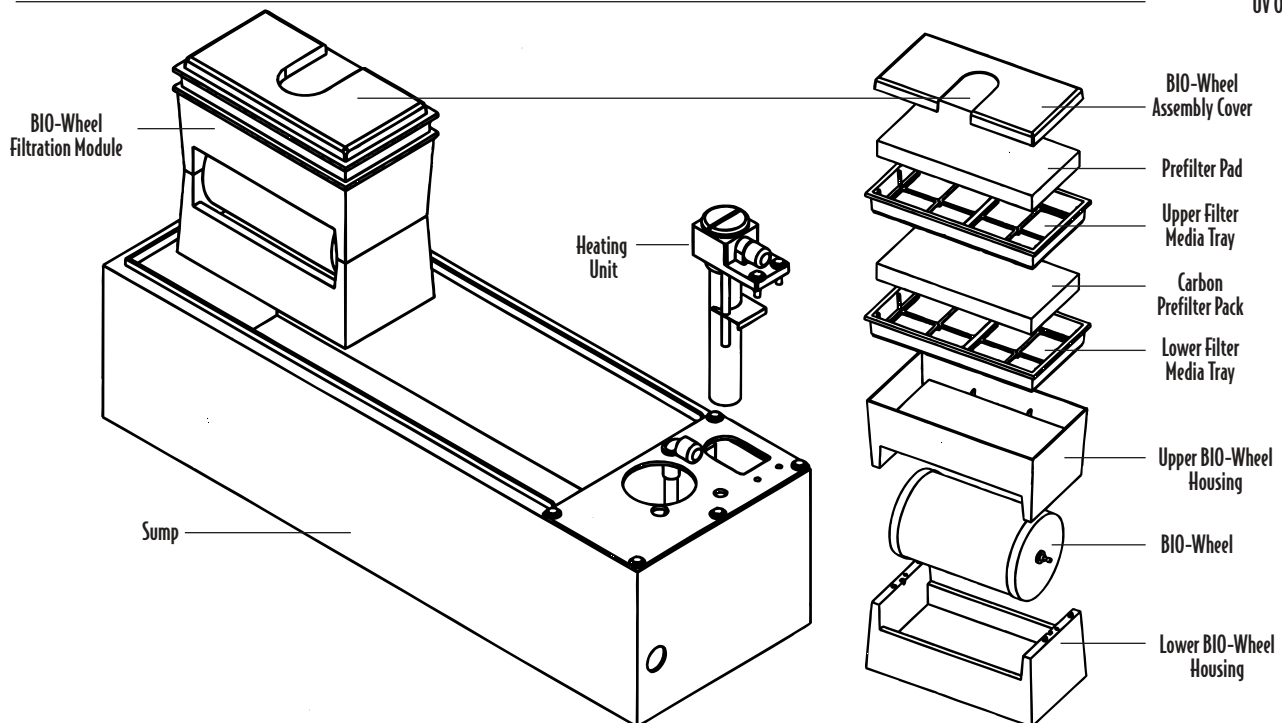
Treated Water Supply: 2 GPH, regulated to 25 PSIG

Drain: At or below grade, 30' run

Exploded View w/Electrical Assembly Pullout



Sump w/BIO-Wheel Filtration Module Exploded View



SYSTEM Specifications

Integrated Rack System MV4FR 4 Foot Refrigerated, Fresh Water System

MECHANICAL:

Size: 20" D x 51½" L x 94" H (shipping height: 85")

Tilt: 20" D x 51½" L x 86½" H

Weight: 490 Lb. (Est.)

Floor-attached for seismic loads

System Gallon Capacity: 98 gallons

ELECTRIC:

ETL listed for permanent installation

Voltage: 115 VAC, 60 Hz

Current: Filtration/Circulation: 10.5 AMP

Lighting: 2.2 AMP

FILTRATION:

Mechanical Filter: 1 ea. Polyester Pad, 7½" x 14"

Chemical Filter: 1 lb. Black Diamond Activated
Carbon in Carbon Filter Pack

Biological Filter: 1 ea. CBW-1

UV Treatment: Aquafine DW-300; 50,000
uWs/cm², @ 4,000 hrs.

"NEW" WATER FROM TREATED WATER SUPPLY:

Flow Rate: 1 gallon per hour

CIRCULATION/FILTRATION PUMP:

Pump: IWAKI MD-40RLT-115; 750 GPH; UL recognized

Displacement tank turns per hour (TPH): 5 TPH minimum

REFRIGERATION:

⅓ HP, R134A with Helical Heat Exchanger

Thermostat Controller, UL Listed; temperature

range: 50-130° F. GFCI Protected

LIGHTING:

UL Listed light fixtures with polycarbonate
lamp covers

Lamps: 6 each 40 W., 48", T12, Rapid Start,
Fluorescent; 5,000K, 85 CRI, 20,000 Hr.
Life; 2820 Lumens (mean); GE SPX50
or Philips Ultralume 50

MATERIALS OF CONSTRUCTION:

Frame: Mild steel tubular welded construction,
epoxy powder coated

Doors: Polyurethane

Misc. Panels & Covers: Expanded PVC, ABS, Formica

BUYER SUPPLIED CONNECTIONS FOR INSTALLATION:

Electric Supply:

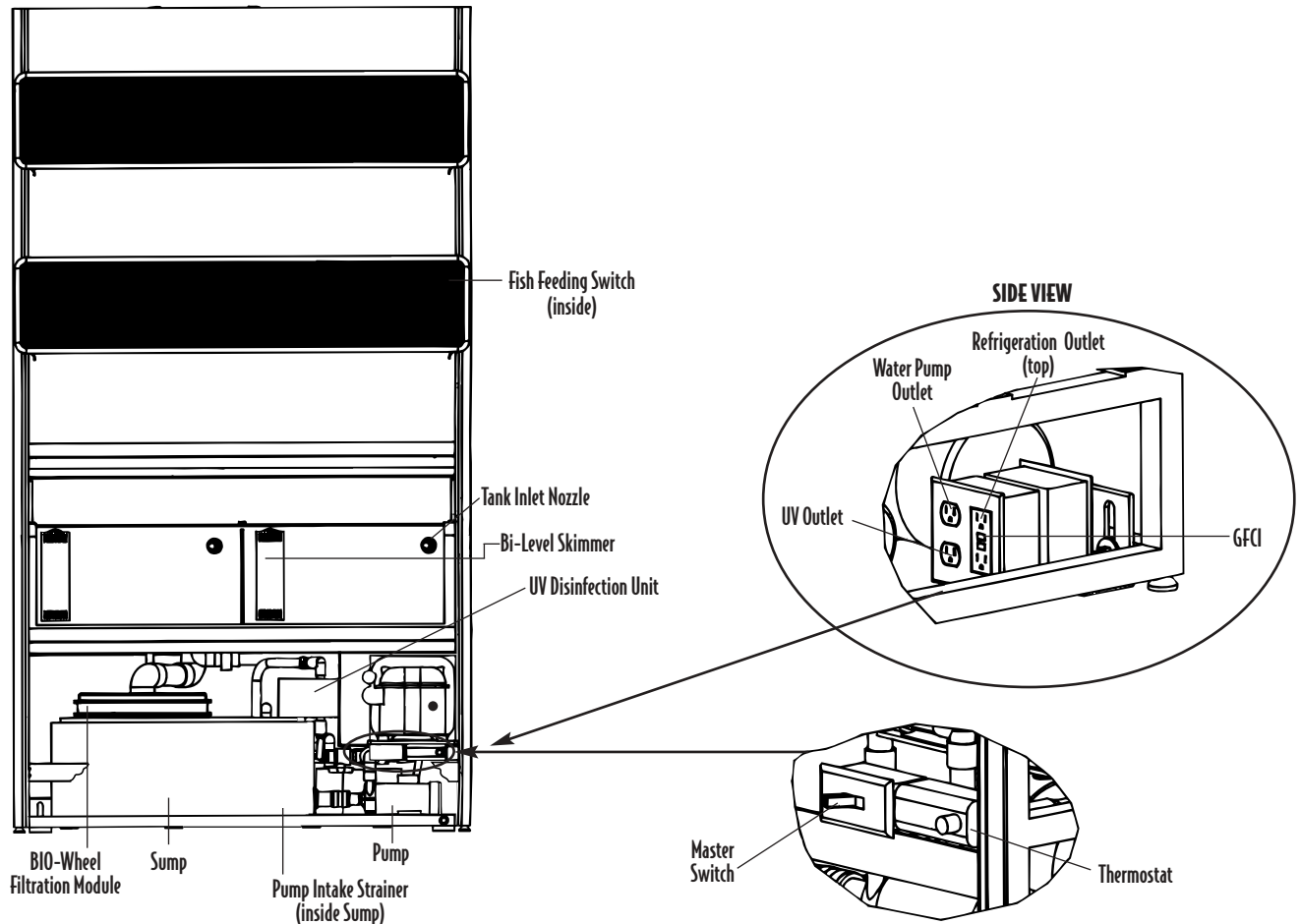
Main Circuit: Hard wired J-Box, 115 VAC, 60 Hz, 15 AMP

Lighting: Plug connected, 2 places; 115 VAC, 60 Hz,
2.2 AMPs each, GFCI protected

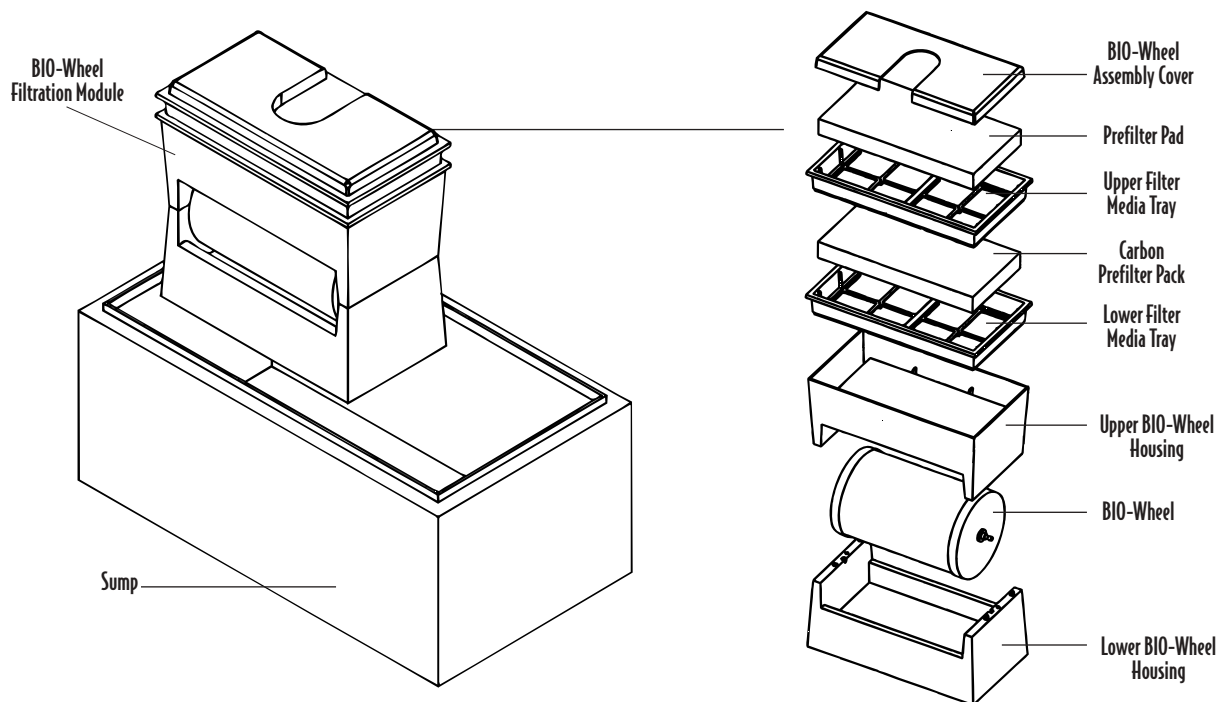
Treated Water Supply: 1 GPH, Regulated to 25 PSIG

DRAIN: At or Below Grade, 30' Run

Exploded View w/Electrical Assembly Pullout



Sump w/BIO-Wheel Filtration Module Exploded View



SYSTEM Specifications

Integrated Rack System MV8FR 8 Foot Refrigerated, Fresh Water System

MECHANICAL:

Size: 20"D x 103"L x 94" H (shipping height: 85")

Tilt: 20¹/₂" D x 103" L x 85¹/₂" H

Weight: 875 Lb. (Est.)

Floor-attached for seismic loads

System Gallon Capacity: 192 gallons

ELECTRIC:

ETL listed for permanent installation

Voltage: 115 VAC, 60 Hz

Current: Filtration/Circulation: 12.5 AMP

Lighting: 2.2 AMP for each 4 foot section, 4.4 AMP total

FILTRATION:

Mechanical Filter: 1 ea. Polyester Pad, 7¹/₂" x 14"

Chemical Filter: 1 lb. Black Diamond Activated Carbon in Carbon Filter Pack

Biological Filter: 1 ea. CBW-1 (2 ea. CBW-1 w/Feeder System)

UV Treatment: Aquafine DW-300; 50,000 uWs/cm², @ 4,000 hrs.

"NEW" WATER FROM TREATED WATER SUPPLY:

Flow Rate: 2 gallons per hour

CIRCULATION/FILTRATION PUMP:

Pump: IWAKI MD-70RLT115; 1200 GPH; UL recognized

Display tank turns per hour (TPH): 5 TPH minimum

REFRIGERATION:

¹/₂ HP, R134A with Helical Heat Exchanger

Thermostat Controller, UL listed; Temperature

Range: 50-130° F GFCI protected

LIGHTING:

UL Listed light fixtures with polycarbonate lamp covers

Lamps: 12 each 40 W., 48", T12, rapid start, fluorescent; 5,000K, 85 CRI, 20,000 hr. life; 2820 lumens (mean); GE SPX50 or Philips Ultralume 50

MATERIALS OF CONSTRUCTION:

Frame: Mild steel tubular welded construction, epoxy powder coated

Doors: Polyurethane

Misc. Panels & Covers: Expanded PVC, ABS, Formica

BUYER SUPPLIED CONNECTIONS FOR INSTALLATION:

Electric Supply:

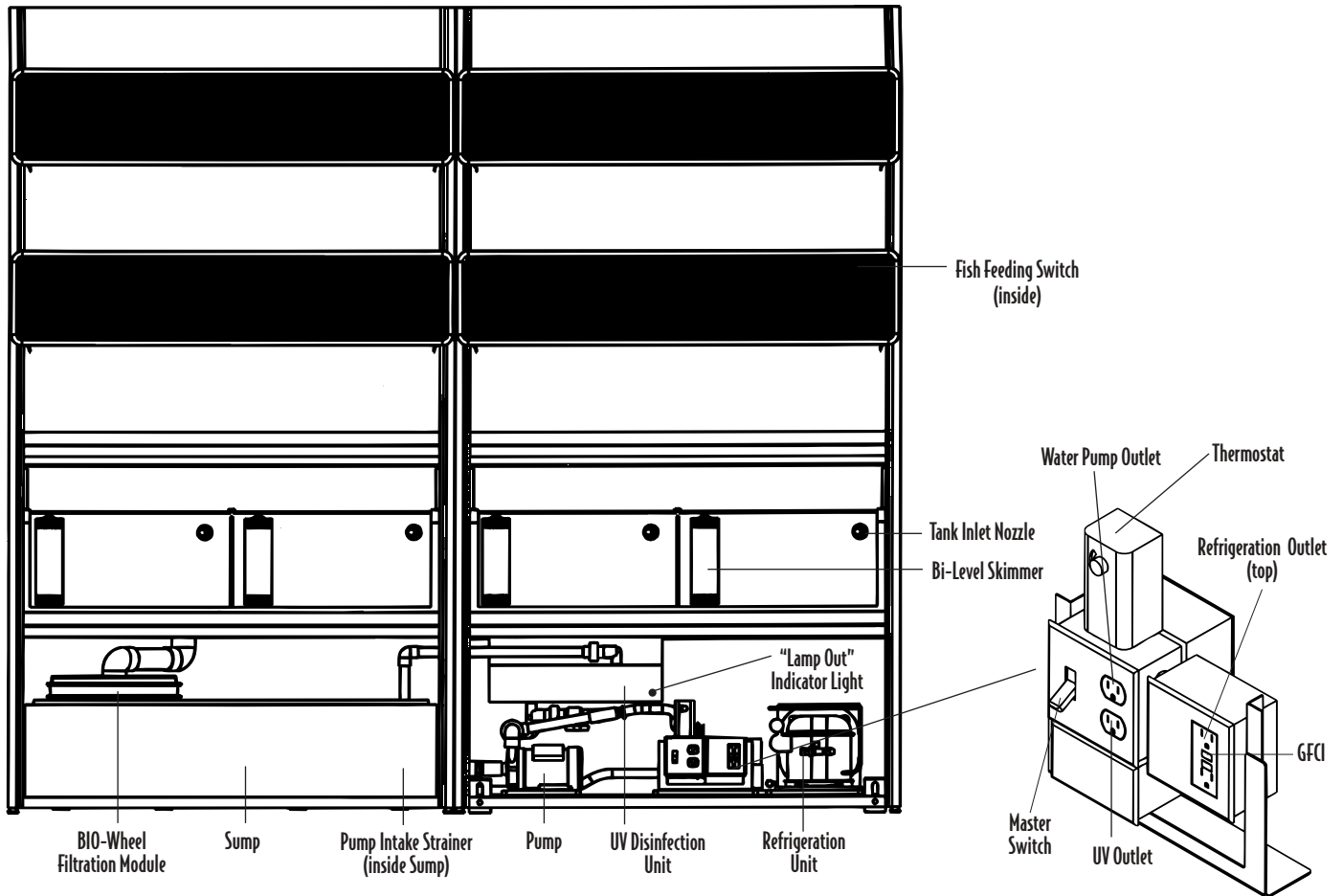
Main Circuit: Hard wired J-Box, 115 VAC, 60 Hz, 20 AMP

Lighting: Plug connected, 2 places; 115 VAC, 60 Hz, 2.2 AMPs each, GFCI protected

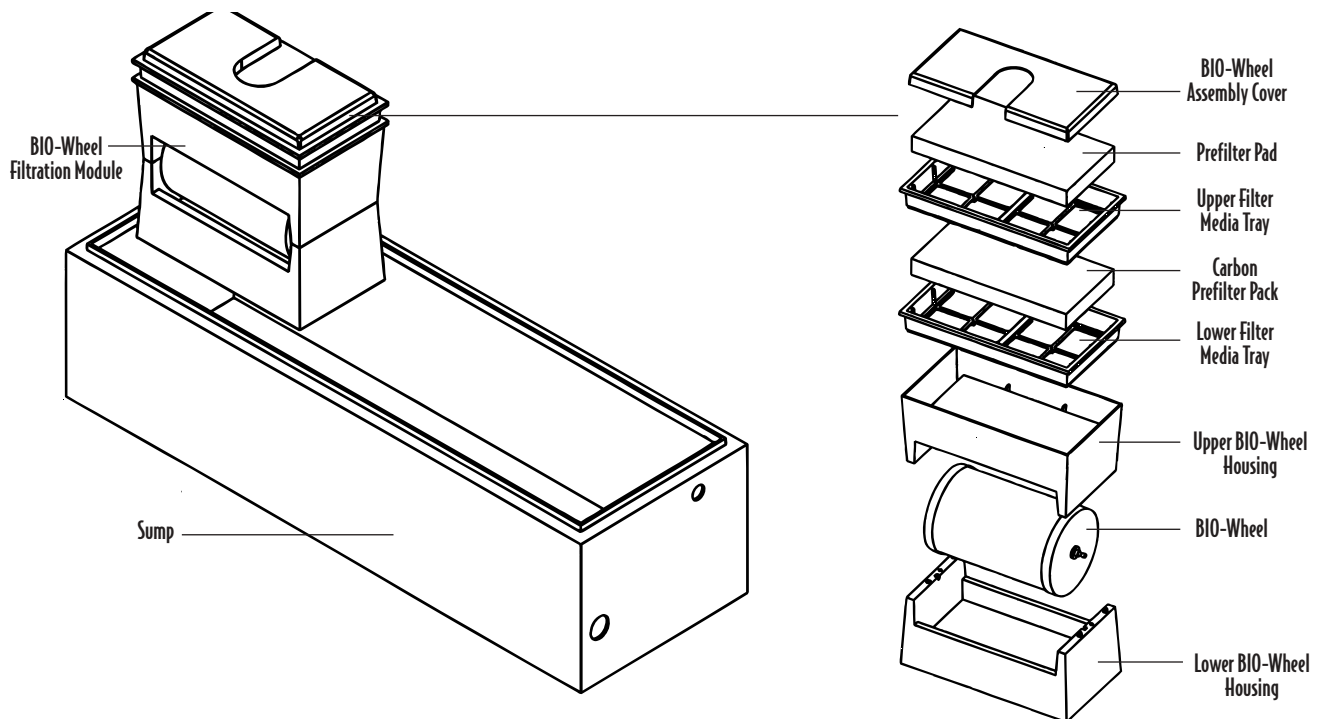
Treated Water Supply: 2 GPH, regulated to 25 PSIG

Drain: At or below grade, 30' run

Exploded View w/Electrical Assembly Pullout



Sump w/BIO-Wheel Filtration Module Exploded View



SYSTEM Specifications

Integrated Rack System MV4MH 4 Foot Heated, Marine Water System

MECHANICAL:

Size: 20"D x 51½"L x 94"H (shipping height: 85")

Tilt: 20½" D x 103" L x 86½" H

Weight: 490 Lb. (Est.)

Floor-attached for seismic loads

System Gallon Capacity: 98 gallons

ELECTRIC:

ETL listed for permanent installation

Voltage: 115 VAC, 60 Hz

Current: Filtration/Circulation: 12.5 AMP

Lighting: 2.2 AMP

FILTRATION:

Mechanical Filter: 1 ea. Polyester Pad, 7½" x 14"

Chemical Filter: 1 lb. Black Diamond Activated
Carbon in Carbon Filter Packs

Biological Filter: 1 ea. CBW-1

UV Treatment: Aquafine DW-300; 50,000
uWs/cm², @ 4,000 hrs.

Protein Skimmer: Marineland Commercial Foam
Fractionator

"NEW" WATER FROM TREATED WATER SUPPLY:

None: Buyer supplies salt water as needed.

CIRCULATION/FILTRATION PUMP:

Pump: IWAKI MD-70RLT-115; 1200 GPH; UL recognized

Display tank turns per hour (TPH): 8 TPH normal

HEATER:

1,000 W. heater; UL listed, Thermostat Controller,

UL Listed; Temperature Range: 50-130° F

GFCI protected

LIGHTING:

UL Listed light fixtures with polycarbonate
lamp covers

Lamps: 6 each 40 W., 48", T12, rapid start,
fluorescent; 5,000K, 85 CRI, 20,000 Hr.
life; 2820 lumens (mean); GE SPX50 or
Philips Ultralume 50

MATERIALS OF CONSTRUCTION:

Frame: Mild steel tubular welded construction,
epoxy powder coated

Doors: Polyurethane

Misc. Panels & Covers: Expanded PVC, ABS, Formica

BUYER SUPPLIED CONNECTIONS FOR INSTALLATION:

Electric Supply:

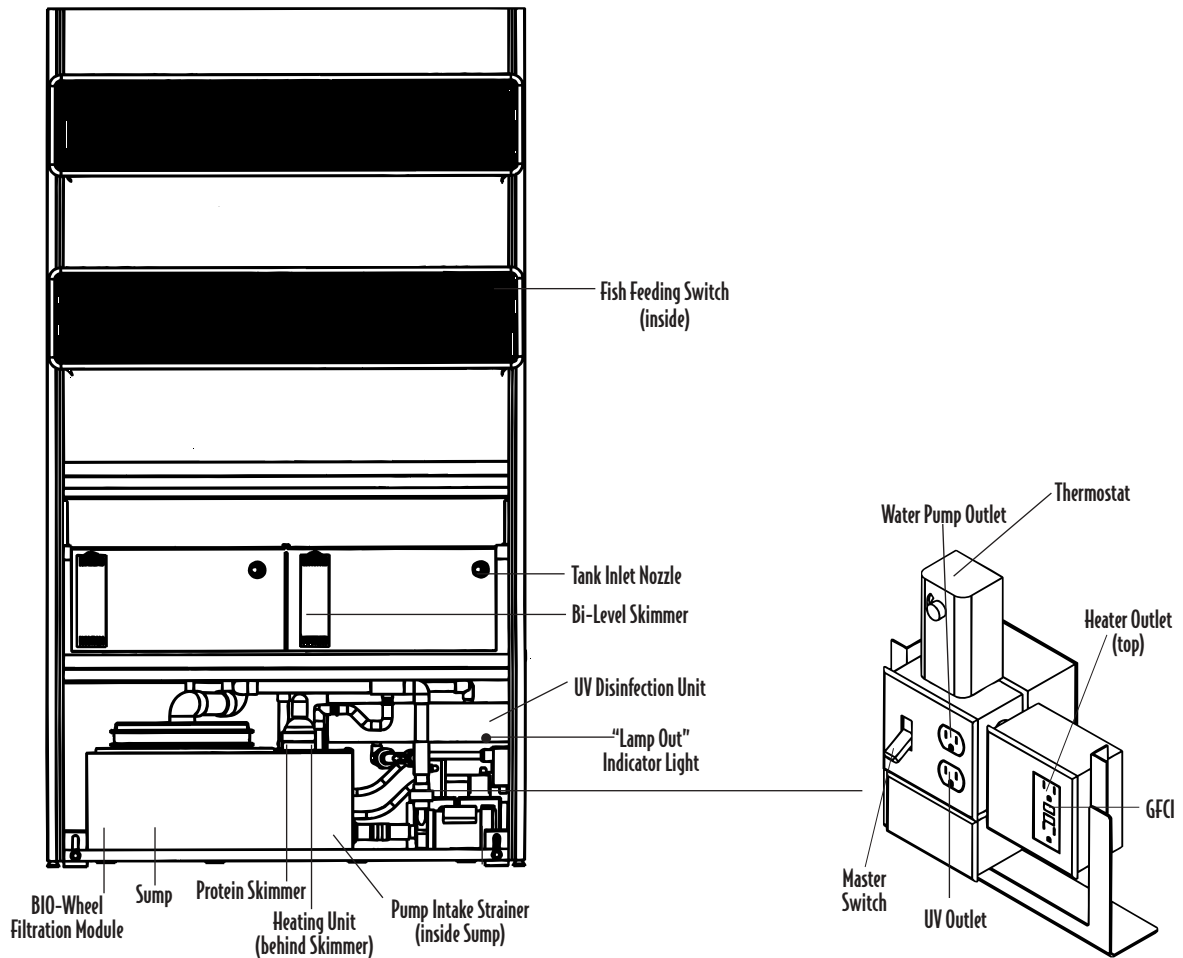
Main Circuit: Hard wired J-Box, 115 VAC, 60 Hz, 15 AMP

Lighting: Plug connected, 1 place; 115 VAC, 60 Hz,
2.2 AMPs, GFCI protected

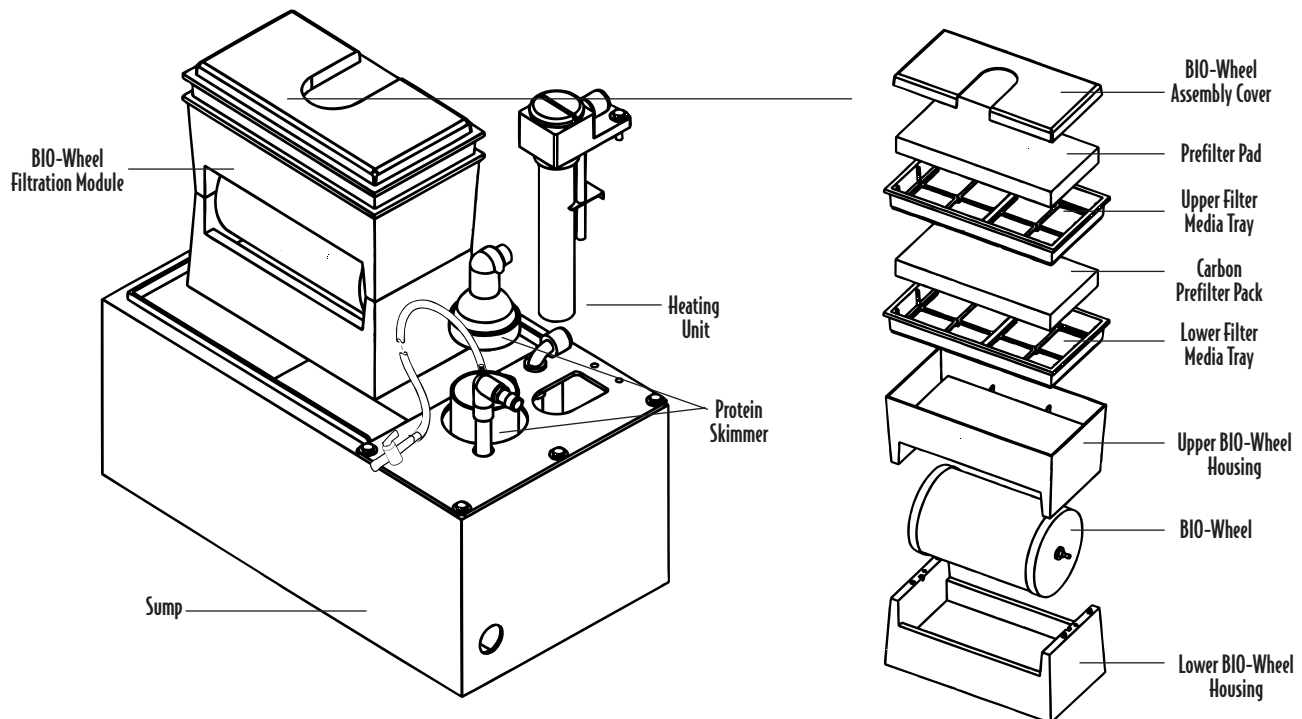
Treated Water Supply: None

Drain: At or below grade, 30' run

Exploded View w/Electrical Assembly Pullout



Sump w/BIO-Wheel Filtration Module Exploded View



SYSTEM Specifications

Integrated Rack System MV8MH 8 Foot Heated, Marine Water System

MECHANICAL:

Size: 20"D x 103"L x 94"H (shipping height: 85")

Tilt: 20 1/2" D x 103" L x 86 1/2" H

Weight: 860 Lb. (Est.)

Floor-attached for seismic loads

System Gallon Capacity: 192 gallons

ELECTRIC:

ETL listed for permanent installation

Voltage: 115 VAC, 60 Hz

Current: Filtration/Circulation: 12.9 AMP

Lighting: 2.2 AMP for each 4 foot section, 4.4 AMP total

FILTRATION:

Mechanical Filter: 2 ea. Polyester Pad, 7 1/2" x 14"

Chemical Filter: 2-1 lb. Black Diamond Activated Carbon in Carbon Filter Pack

Biological Filter: 2 ea. CBW-1

UV Treatment: Aquafine DW-300; 50,000
uWs/cm², @ 4,000 hrs.

Protein skimmer: Marineland Commercial Aquarium
Foam Fractionator

"NEW" WATER FROM TREATED WATER SUPPLY:

None: Buyer supplies salt water as needed

CIRCULATION/FILTRATION PUMP:

Pump: IWAKI MD-100RLT-115; 1700 GPH; UL recognized

Display tank turns per hour (TPH): 8 TPH nominal

HEATER:

1,000 W. Titanium Heater, UL listed Thermostat
Controller, UL listed; Temperature range: 50-130° F
GFCI Protected

LIGHTING:

UL listed light fixtures with polycarbonate lamp covers

LAMPS: 12 each 40 W., 48", T12, rapid start,
fluorescent; 5,000K, 85 CRI, 20,000 hr.
life; 2820 Lumens (mean); GE SPX50 or
Philips Ultralume 50

MATERIALS OF CONSTRUCTION:

Frame: Mild steel tubular welded construction,
epoxy powder coated

Doors: Polyurethane

Misc. Panels & Covers: Expanded PVC, ABS, Formica

BUYER SUPPLIED CONNECTIONS FOR INSTALLATION:

Electric Supply:

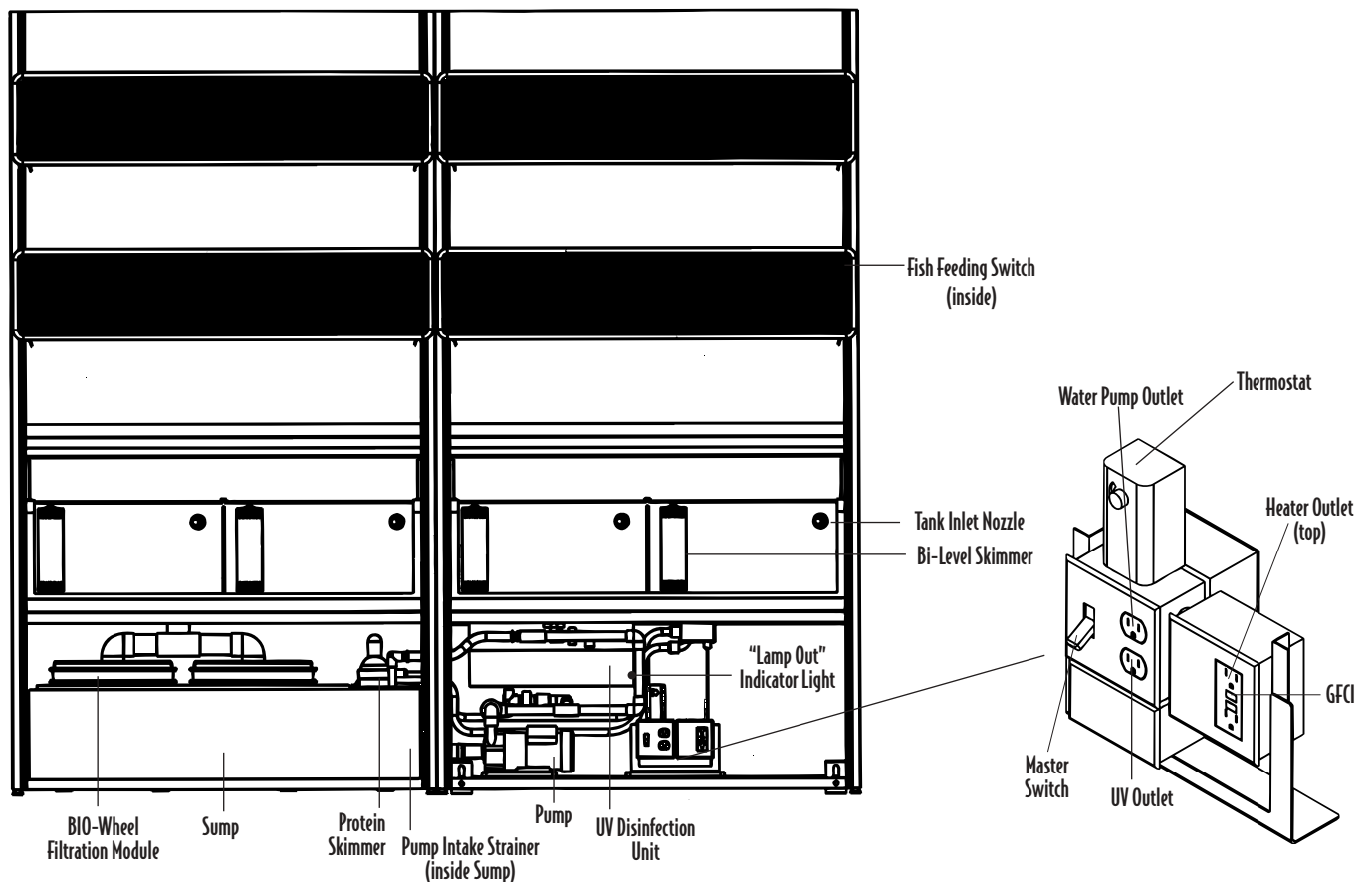
Main Circuit: Hard wired J-Box, 115 VAC, 60 Hz, 20 AMP

Lighting: Plug connected, 2 places; 115 VAC, 60 Hz,
2.2 AMPs Each, GFCI protected

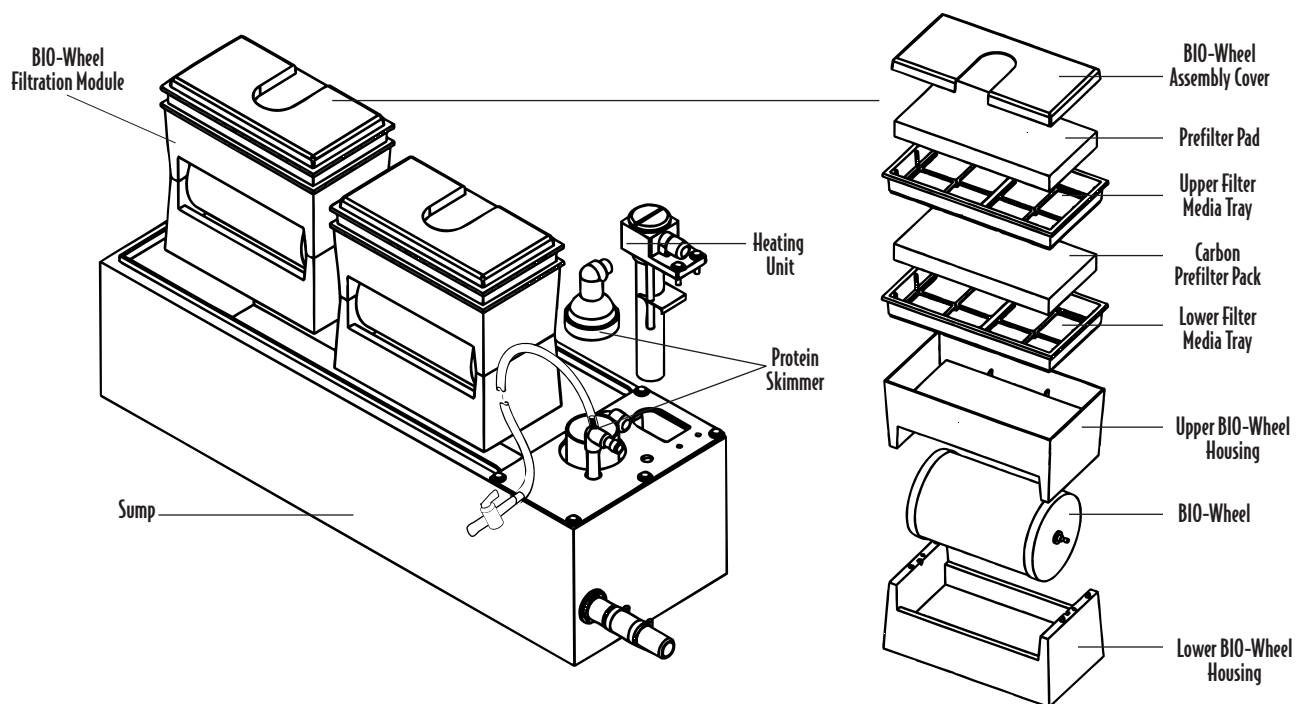
Treated Water Supply: None

Drain: At or below grade, 30' run

Exploded View w/Electrical Assembly Pullout



Sump w/BIO-Wheel Filtration Module Exploded View



SYSTEM Specifications

Integrated Rack System MV4MR 4 Foot Refrigerated, Marine Water System

MECHANICAL:

Size: 20"D x 51½"L x 94"H (shipping height: 85")

Tilt: 20½" D x 51½" L x 86½" H

Weight: 490 Lb. (Est.)

Floor-attached for seismic loads

System Gallon Capacity: 98 gallons

ELECTRIC:

ETL listed for permanent installation

Voltage: 115 VAC, 60 Hz

Current: Filtration/Circulation: 12.5 AMP

Lighting: 2.2 AMP

FILTRATION:

Mechanical Filter: 1 ea. Polyester Pad, 7½" x 14"

Chemical Filter: 1 lb. Black Diamond Activated
Carbon in Carbon Filter Pack

Biological Filter: 1 ea. CBW-1

UV Treatment: Aquafine DW-300; 50,000
uWs/cm², @ 4,000 hrs.

"NEW" WATER FROM TREATED WATER SUPPLY:

NoNE: Buyer supplies salt water as needed.

CIRCULATION/FILTRATION PUMP:

Pump: IWAKI MD-70RLT-115; 1200 GPH; UL recognized

Display tank turns per hour (TPH): 8 TPH minimum

REFRIGERATION:

⅓ HP, R134A with Helical Heat Exchanger

Thermostat Controller, UL Listed. Temperature

Range 50-130°F GFCI Protected

LIGHTING:

UL Listed light fixtures with polycarbonate lamp covers.

Lamps: 6 each 40 W., 48", T12, Rapid Start,
Fluorescent; 5,000K, 85 CRI, 20,000 Hr.
Life; 2820 Lumens (mean); GE SPX50 or
Philips Ultralume 50

MATERIALS OF CONSTRUCTION:

Frame: Mild steel tubular welded construction,
epoxy powder coated

Doors: Polyurethane

Misc. Panels & Covers: Expanded PVC, ABS, Formica

BUYER SUPPLIED CONNECTIONS FOR INSTALLATION:

Electric Supply:

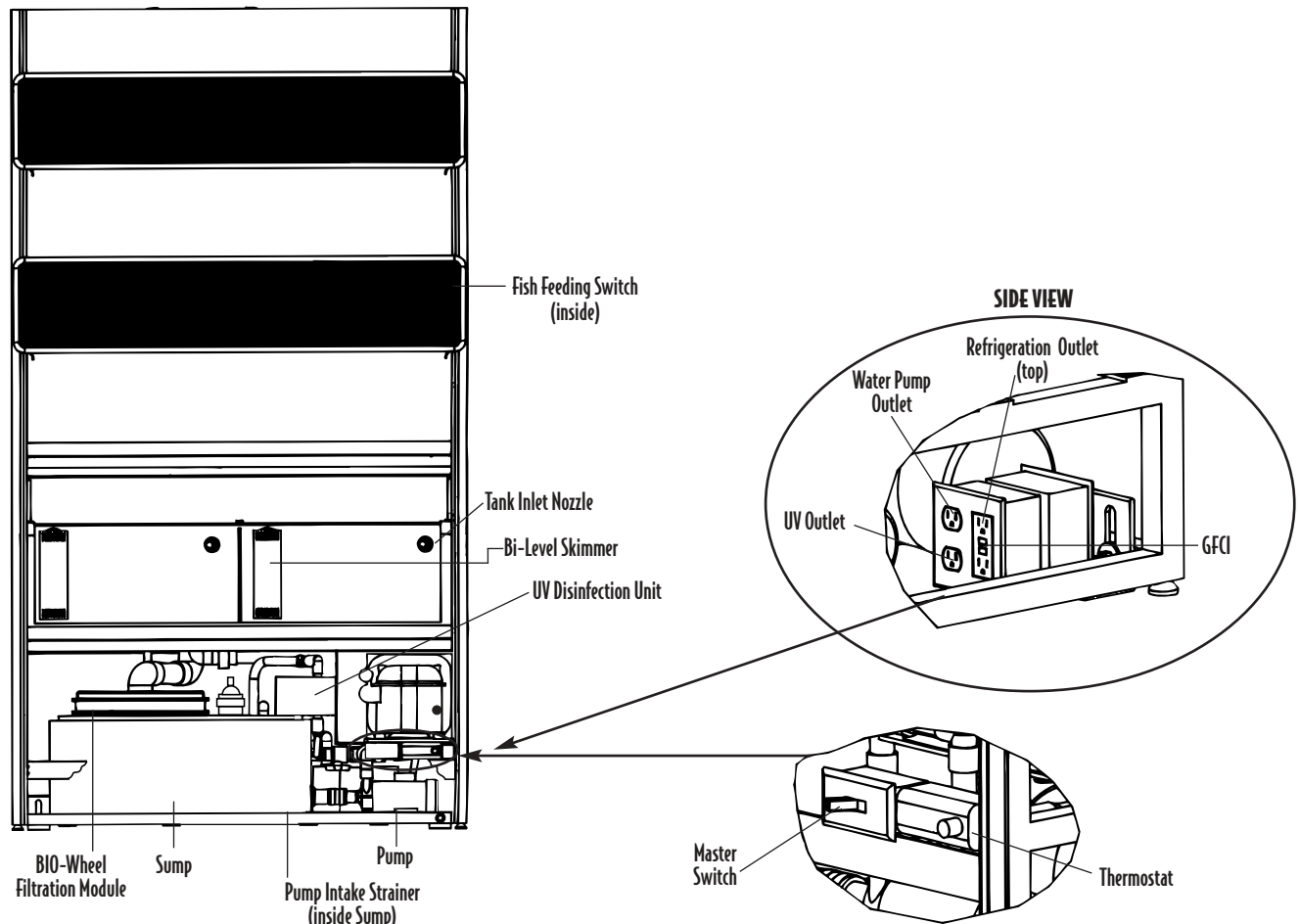
Main circuit: Hard wired J-Box, 115 VAC, 60 Hz, 15 AMP

Lighting: Plug connected, 2 places; 115 VAC, 60 Hz,
2.2 AMPs each, GFCI protected

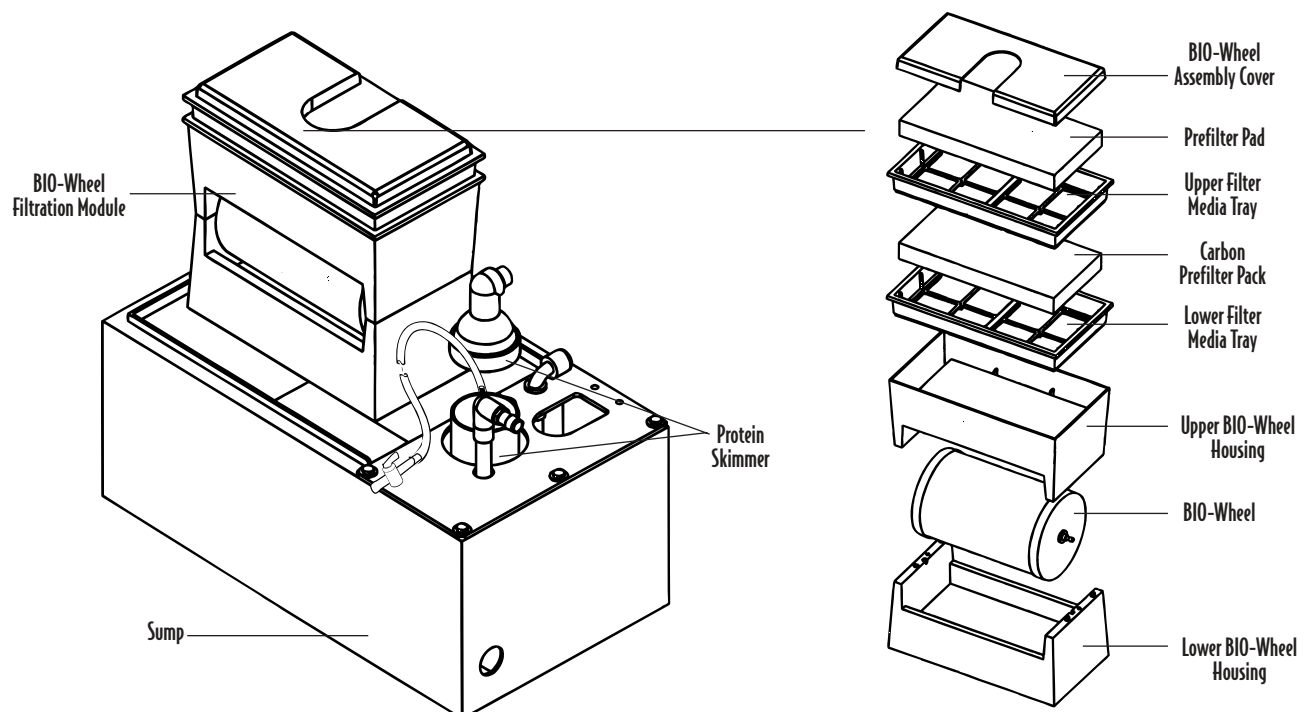
Treated Water Supply: None

Drain: At or Below Grade, 30' Run

Exploded View w/Electrical Assembly Pullout



Sump w/BIO-Wheel Filtration Module Exploded View



SYSTEM Specifications

Integrated Rack System MV8MR 8 Foot Refrigerated, Marine Water System

Mechanical:

Size: 20"D x 103" L x 94" H (shipping height: 85")

Tilt: 20 1/2" D x 103" L x 85 1/2" H

Weight: 875 Lb. (Est.)

Floor-attached for seismic loads

System Gallon Capacity: 192 gallons

ELECTRIC:

ETL listed for permanent installation

Voltage: 115 VAC, 60 Hz

Current: Filtration/Circulation: 12.9 AMP

Lighting: 2.2 AMP for each 4 foot section, 4.4 AMP total

FILTRATION:

Mechanical Filter: 1 ea. Polyester Pad, 7 1/2" x 14"

Chemical Filter: 1 lb. Black Diamond Activated
Carbon in Carbon Filter Pack

Biological Filter: 2 ea. CBW-1

UV Treatment: Aquafine DW-300; 50,000
uWs/cm², @ 4,000 hrs.

"NEW" WATER FROM TREATED WATER SUPPLY:

None: Buyer supplies salt water as needed

CIRCULATION/FILTRATION PUMP:

Pump: IWAKI MD-100RLT-115; UL recognized

Display tank turns per hour (TPH): 8 TPH normal

REFRIGERATION:

1/2 HP, R134A with Helical Heat Exchanger

Thermostat Controller, UL Listed; Temperature

Range: 50-130° F GFCI protected

LIGHTING:

UL listed light fixtures with polycarbonate lamp covers

Lamps: 12 each 40 W., 48", T12, rapid start,
fluorescent; 5,000K, 85 CRI, 20,000 hr.
life; 2820 lumens (mean); GE SPX50 or
Philips Ultralume 50

MATERIALS OF CONSTRUCTION:

Frame: Mild steel tubular welded construction,
epoxy powder coated

Doors: Polyurethane

Misc. Panels & Covers: Expanded PVC, ABS, Formica

BUYER SUPPLIED CONNECTIONS FOR INSTALLATION:

Electric Supply:

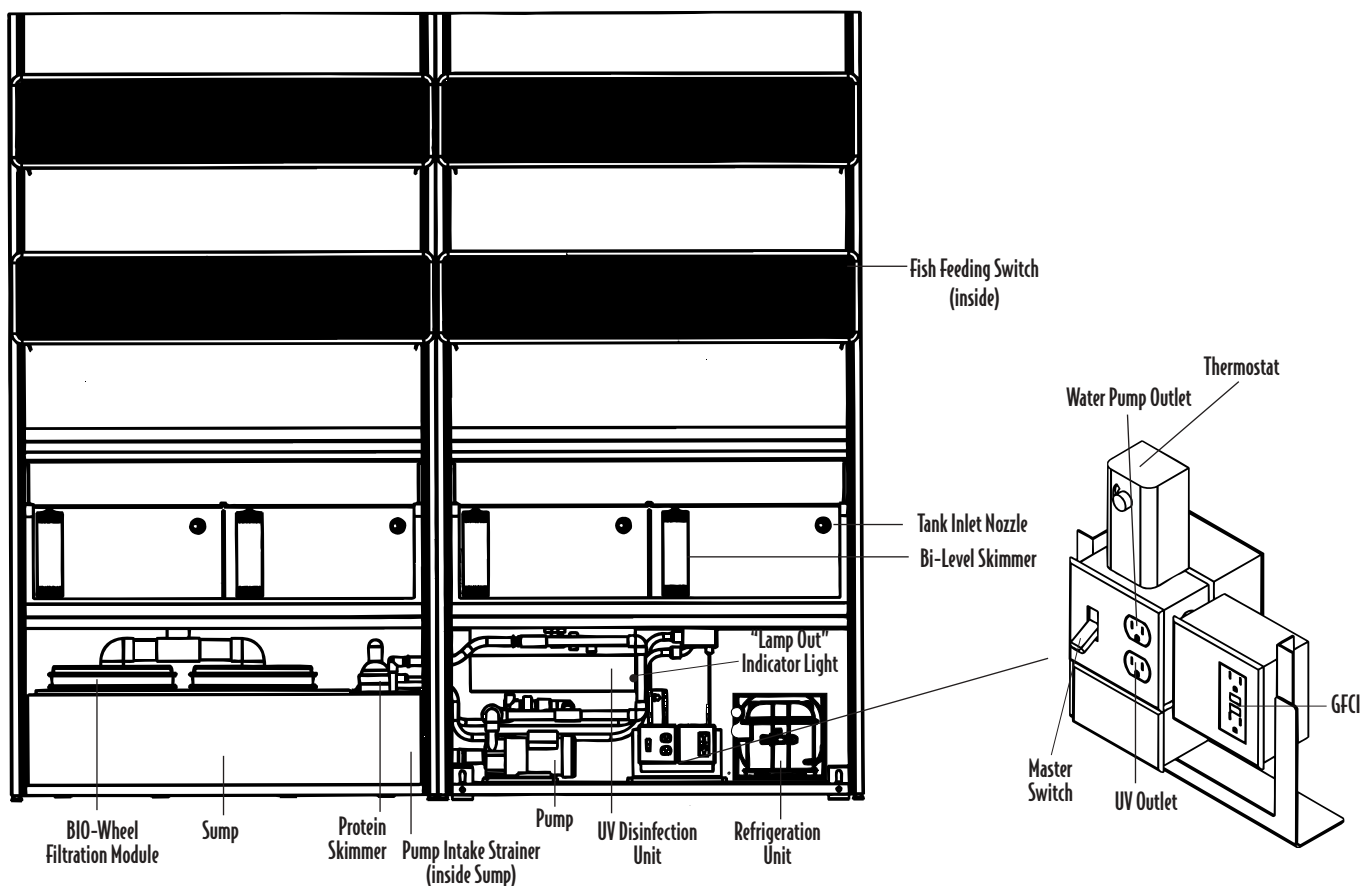
Main circuit: Hard wired J-Box, 115 VAC, 60 Hz, 20 AMP

Lighting: Plug connected, 2 places; 115 VAC, 60 Hz,
2.2 AMPs each, GFCI protected

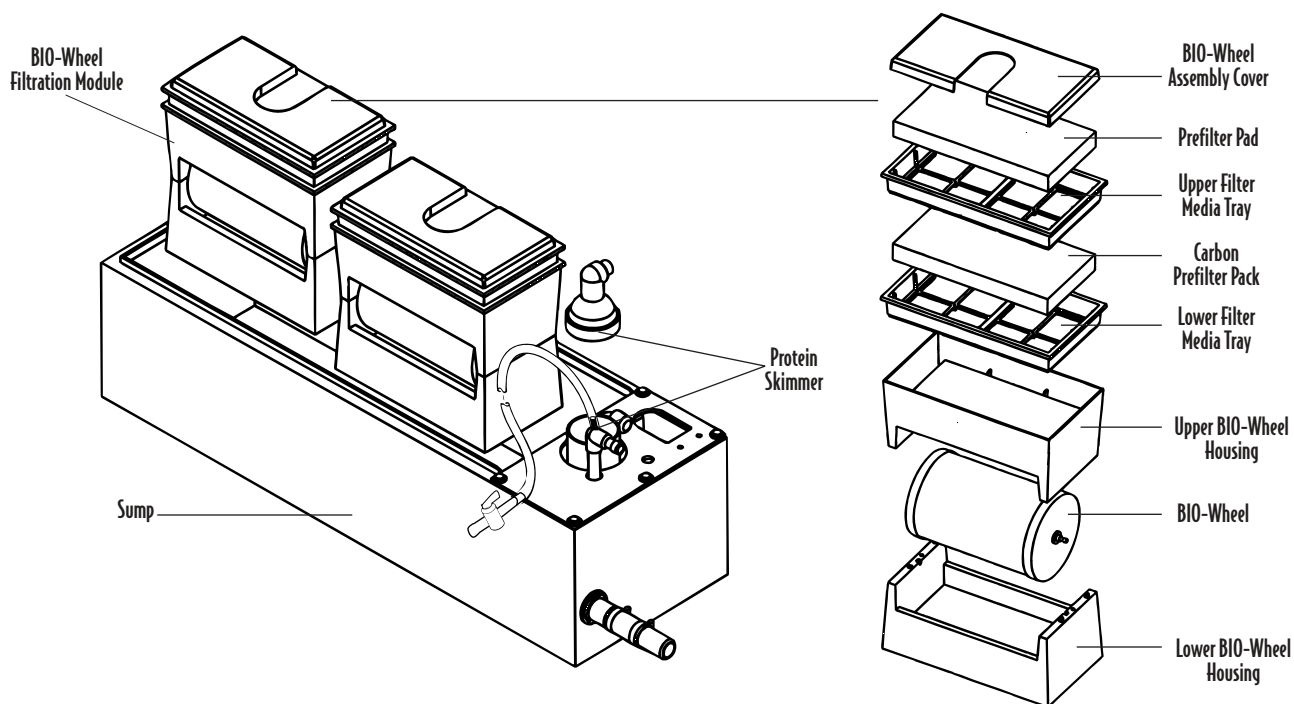
Treated Water Supply: None

Drain: At or below grade, 30' run

Exploded View w/Electrical Assembly Pullout



Sump w/BIO-Wheel Filtration Module Exploded View



CUSTOMER SERVICE

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

To order any of the items listed below, call (800) 322-1266.

WEEKLY USE ITEMS:

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

SERVICING ITEMS:

- | | |
|-------------------------------------|--------|
| 1. Maintenance Kit | MZ0012 |
| 2. KX Carbon/Micron Repl. Kit | MZ0040 |
| 3. UV Sterilizer Servicing Kit | MZ0017 |
| 4. UV Lamp | MZ0061 |
| 5. Replacement O-Rings | MZ0041 |
| 6. Maintenance Log (25-week supply) | 074258 |



Marineland Retailer Systems

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