

OPERATING MANUAL

BIO-WHEEL® LIVE SEAFOOD DISPLAY AND HOLDING SYSTEMS

ML-25/26BW(2)



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.

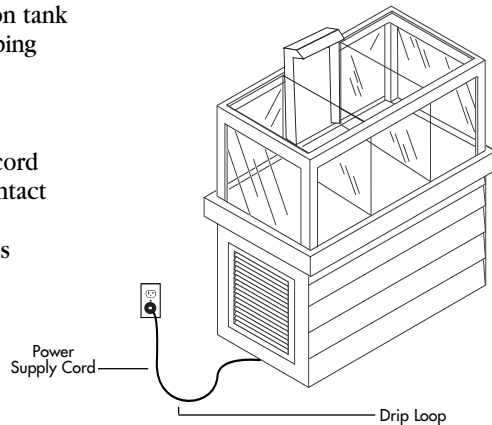
1. A. If an appliance falls into the water, DON'T reach for it! First unplug it and then retrieve it. If electrical components of the unit get wet, unplug this equipment immediately.

B. If the equipment shows any sign of abnormal water leakage, immediately turn off power at main disconnect.

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

D. Do not operate any equipment 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 plug or receptacle getting wet, position tank 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 by the user for each cord connecting equipment 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 equipment 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 this equipment 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 this equipment 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 equipment where it will be exposed to the weather or to temperatures below freezing.

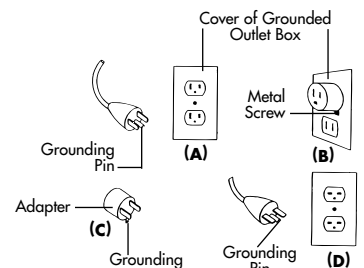
7. Make sure any appliance mounted on a tank is securely installed before operating it.

8. Read and observe all the important notices on the equipment.

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 equipment rating may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled.

10. This equipment should be grounded to minimize the possibility of electric shock. This unit 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 equipment 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 ML-25/26

Live Seafood Display System

The Ideal Commercial Display System for Easier Maintenance and Healthier Stock.



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

The ML Live Seafood Display System is a self-contained system for holding large loads of lobster under ideal water conditions. It's dual mechanical/chemical filtration and powerful commercial BIO-Wheel wet/dry biological filter ensure optimum water quality at all times. And the system's compact plumbing design allows for convenient self-contained installation. Your ML system comes complete with everything you need to become fully operational:

- Consumables:
- Prefilter Pads (#CS1859)
 - Carbon Filtration Packs (#CS1826)
 - Biological Filter Material #2 (Dolomite: #C0402)
 - Instant Ocean® Lobster Salt (#CS0309)
- Accessories:
- Hydrometer (#CA1501)
 - Thermometer (#CA1502)
 - Lobster Rake (CA1503)

NOTE: To prepare for the possibility of extra water changes, we recommend the purchase of additional Instant Ocean Lobster Salt (enough for two water changes).

Inside the System...

In this closed system, the Pump receives prefiltered water from the Sump and pumps it to the display tank. On the way to the display tank, water is routed through the Refrigeration Unit and Ultra Violet (UV) Disinfection Unit.

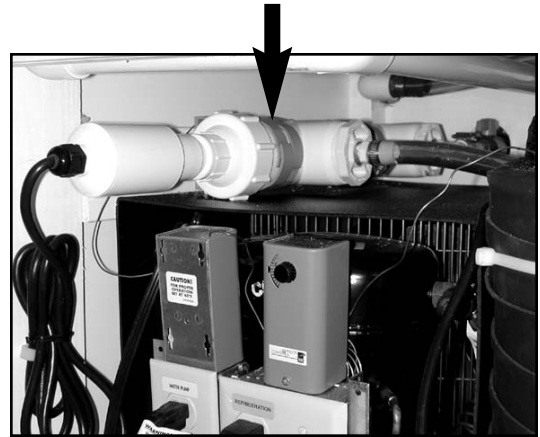
From the display tank, water exits via standpipe and is directed to the BIO-Wheel Filtration Modules. As the water flows through the modules, additional mechanical and chemical filtration is provided by a polyfiber Prefilter Pad (Tray 1) and Carbon Filter Pack (Tray 2). Filled with one pound of Black Diamond Premium Activated Carbon, the Pack adsorbs dissolved organic compounds such as phenols and tannins. An added layer of Dolomite in the sump serves as a buffering agent.

After 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.

SPECIAL FEATURES

The **UV Disinfection Unit** helps stop the spread of bacteria and disease throughout the system. Water enters the UV Housing, 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.



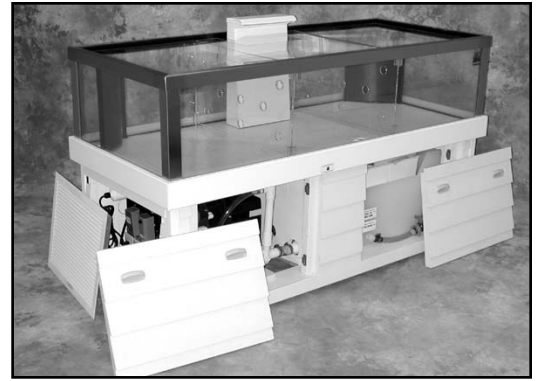
The thermostatically controlled **Refrigeration Unit** is capable of maintaining tank temperatures of 45-70°F and can be preset to the exact temperature required by the system.



The **Sump Level Indicator Light** is located at the side of the display base. This light will glow red if water in the Sump drops below desired level.



Rear and Side Service Doors provide easy access to Filtration Module, UV, Master Switch and all system outlets.



The **Waterfall Cascade** introduces water to the system, providing necessary surface and bottom agitation.



The **Tri-Sectioned Display Area** allows for separation of stock according to size variation. Sectional polycarbonate lids ensure easy access to each section.



THE SYSTEM

ML-25/26 BW(2) SPECIFICATIONS

Mechanical:

ML25:

60" L x 31½" W x 40" H
Water Capacity: 120 gallons
Weight: 500 lbs.

ML26:

71" L x 31½" W x 40" H
Water Capacity: 140 gallons
Weight: 650 lbs.

Electrical:

ETL listed for cord-connected installation

Voltage:

115 VAC, 60 HZ

Current:

9.5 AMP

Filtration:

Mechanical Filter:

Two Polyester Pads, 7½" x 14"

Chemical Filter:

Two Carbon Filter Packs, each
containing 1 lb. Black Diamond
Carbon

Wet/Dry Biological Filter:

Two CBW-1 Modules

UV Treatment:

Aqua Ultraviolet 25 watts

Circulation/Filtration Pump

Pump:

Little Giant 4-MD-SC

Display tank turns per hour (TPH):

8 TPH nominal

Refrigeration:

½ HP Compressor with Helical Heat
Exchanger (R134a, UR)

UL-listed Thermostat Controller:

Temperature range: 45-70° F

Materials of Construction

Glass, Fiberglass, ABS Plastic, Stainless
Steel, PVC Piping, Wooden Base

Sump:

Insulated Fiberglass

Buyer-Supplied Connections

Electrical Supply:

Cord-connected 115 VAC, 60 Hz.
15 AMP

ML-25/26 LIVE SEAFOOD DISPLAY EXPLODED VIEW

1 - Polycarbonate Display Lids - Optional
(#CP1991)

2 - Cascade Cover (#CP1988)

3 - Cascade Spraybar (#CP1989)

4 - Waterfall Cascade (#CP1990)

5 - BIO-Wheel Assembly Cover (#CP1994)

6 - Prefilter Pad (#CP1859)

7 - Upper Filter Media Tray
(#CP1880)

8 - Carbon Filter Pack (#CS1826

9 - Lower Filter Media Tray
(#CP1880)

10 - Upper BIO-Wheel Housing
(#CP1823)

11 - BIO-Wheel (#CP1807M)

12 - Lower BIO-Wheel Housing
(#CP1822)

13 - Tank Drain Valve (#CP1995)

14 - Sump

15 - Sump Drain Valve (#CP1996)

16 - Sump Intake Strainer

17 - Divider Wall

18 - Water Pump (#CP1574)

19 - UV Disinfection Unit
(#CP1997)

20 - Refrigeration Unit
(#CP1833)

21 - Junction Box

22 - Chiller Thermostat (CP1558)

23 - Thermostat (#CP1558)

24 - Side Service Grill (#CP1992)

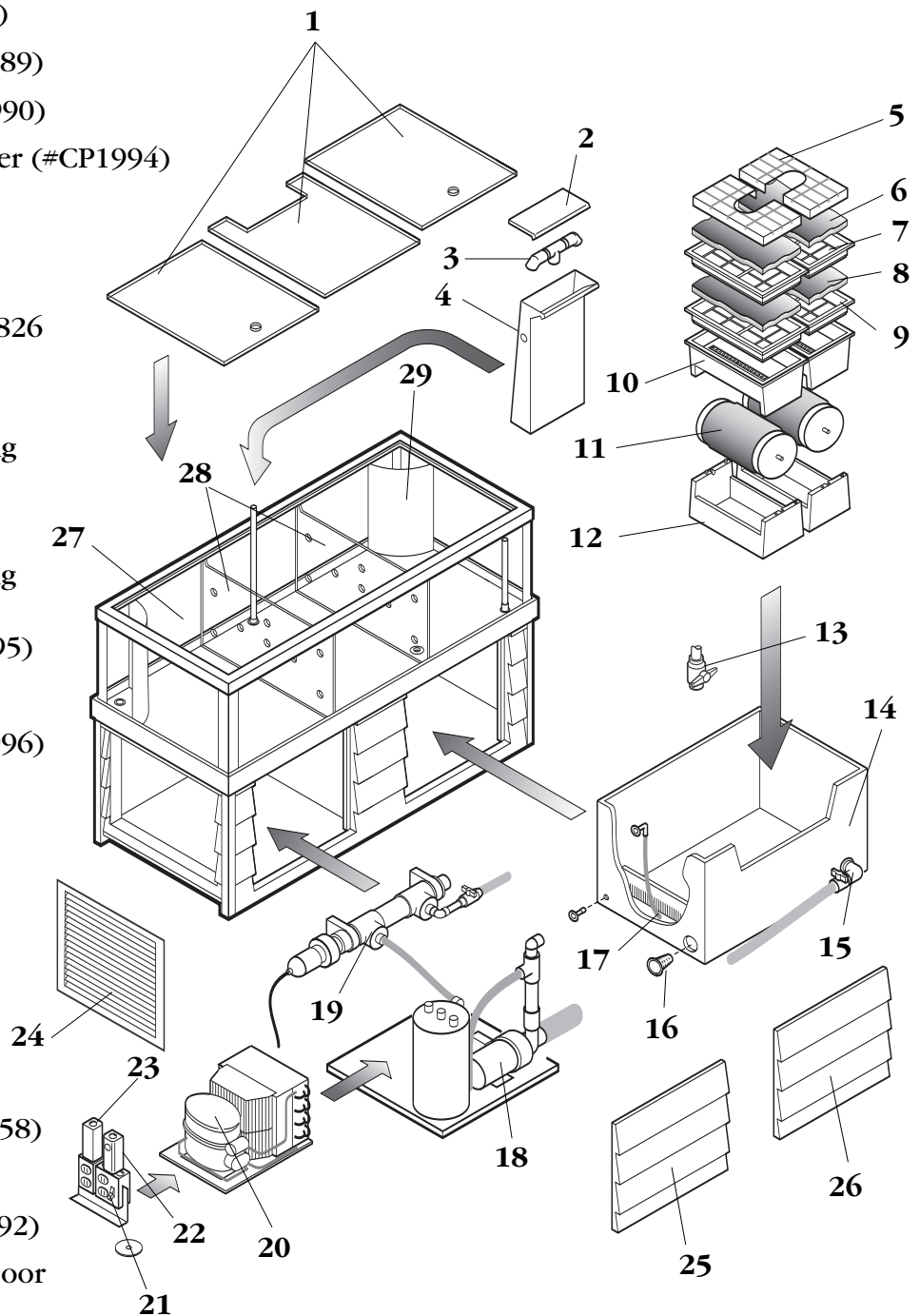
25 - Front Electrical Service Door

26 - Front Filtration Service Door

27 - Display Tank

28 - Section Dividers (#CP1993)

29 - Bi-Level Skimmer



ADDING FILTRATION MEDIA

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 (blue polyfiber Prefilter Pad, Carbon Filter Pack) - no BIO-Wheel - for a period of 24 hours.

1. Remove Rear Filtration Service Door.



2. Remove clear BIO-Wheel Assembly Covers.



3. Remove Upper Filter Media Trays and Prefilter Pads.



4. Remove Lower Filter Media Trays (with Carbon Filter Packs) and set aside.



5. Unwrap Carbon Filter Packs and rinse thoroughly in cold water (at sink) until water runs clear (A). Place Carbon Filters Pack inside Lower Filter Media Trays (B).



6. Replace Upper Filter Media Trays and place polyfiber Prefilter Pads inside.



7. Replace clear BIO-Wheel Assembly Covers.



8. Replace Rear Filtration Service Door.

SYSTEM 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.

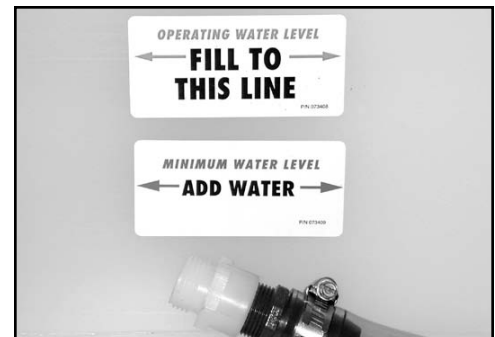
To Begin: Add approximately 28 pounds of Marineland's Instant Ocean® Lobster Salt to tank. Save the remainder to adjust salinity at a later time.

NOTE: When filling tank, run cold water through salt to dissolve it faster.

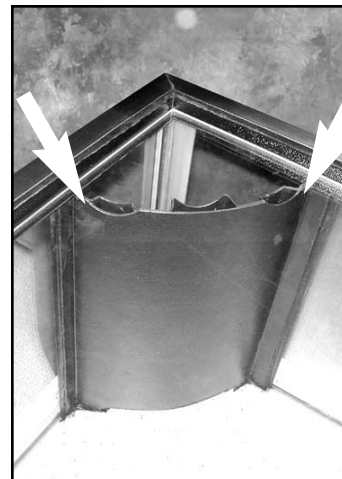
1. Remove Rear Filtration Service Door.
2. Make sure both Tank Drain Valve (A) and Sump Drain Valve (B) are closed.



3. Fill Sump to operating water level indicated by "FILL TO THIS LINE" Label.



4. Manually fill Display Tank to level of Weir.



5. Remove Side Service Panel.
Activate Master Switch (shown).
NOTE: After system has operated for five minutes, Sump water level will momentarily drop. Refill Sump to "FILL TO THIS LINE" Label.



6. Adjust Thermostat to desired temperature.
Check temperature after approximately 8 hours and make any necessary adjustments.



7. Replace Side Service Panel
8. Allow system to operate with mechanical and chemical filtration media (blue polyfiber Prefilter Pads and Carbon Filter Packs) 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.

AFTER 24 HOURS ...

1. Shut down system.

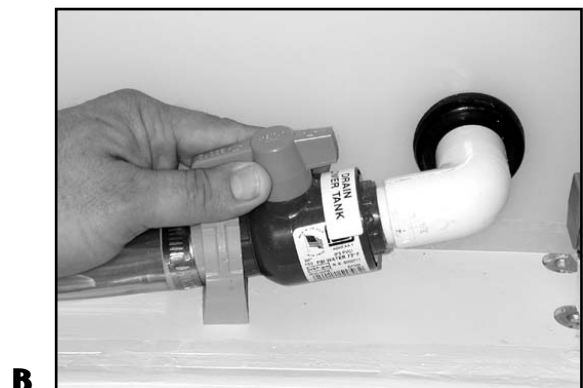


2. Remove Rear Filtration Service Door.

3. Close Tank Drain Valve (perpendicular to pipe).



4. Drain Sump. Position system over floor drain/recovery source or attach hose (A) and route to nearest floor drain/recovery source. Open Sump Drain Valve (B).



5. Remove clear BIO-Wheel Assembly Covers.



6. Lift out Upper Filter Media Trays and set aside.

7. Remove Lower Media Trays and set aside.

8. Remove Upper BIO-Wheel Housings.



9. Remove Lower BIO-Wheel Housings.

10. Scoop a layer of Dolomite into area between BIO-Wheel Housings and Divider Wall (A). Layer should reach a level one inch below top of Divider Wall (B).



11. Re-install Lower BIO-Wheel Housings.

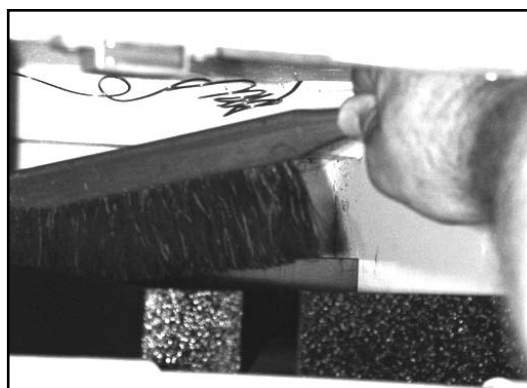


12. Install BIO-Wheels in Lower BIO-Wheel Housings.
Tray guides will ensure correct positioning.



13. Replace Upper BIO-Wheel Housings.

14. Replace Lower and Upper Media Trays.



15. Replace clear BIO-Wheel Assembly Covers.



16. Close Sump Drain Valve.

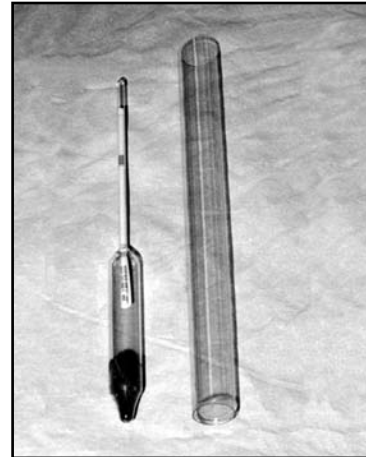


17. Refill Sump to operating water level indicated by "FILL TO THIS LINE" Label.

18. Replace Rear Filtration Service Door and restart system.

MEASURING SALINITY

After your saltwater system has been running for about two hours and water is clear, it is time to measure the tank's salt level.



1. Remove Hydrometer from plastic tube.

2. Rinse plastic tube and fill it with water from tank.

3. Place Hydrometer in tube and tap tube lightly so that hydrometer floats.

NOTE: You may also float Hydrometer in tank.

4. Read scale on tube. Reading should be between 1.020 and 1.025. If the reading is below 1.020, add salt; above 1.025, drain some water and replace with fresh water. 1.022 is ideal.

When replacing water lost due to evaporation, simply add cold, clean tap water.

If water is removed for a specific purpose, e.g. to dip lobsters or clean tank, new salt and water will be needed.

Always wait for salt to dissolve before taking Hydrometer reading.

Never pour new salt into tank if lobsters are present. Use a clean container to dissolve salt (approximately 1.5 lbs of salt to every 5 gallons of water).

ADDING ANIMALS

Lobsters

Set salinity. Adjust water temperature (50°F). Before introducing new lobsters into the system, dip each lobster thoroughly in a bucket of saltwater. Dipping removes accumulated shipping debris and prevents lobsters from fouling tank.



Never use fresh water for lobster dips...it will kill them.

For best results, rinse water should be taken from the established display tank, discarded after use and replenished according to guidelines on pg. 16.

Recommended temperature setting is for North American Lobster (*Homarus Americanus*). When using tanks for other species of lobster adjust temperature as necessary for that particular species.

MAINTENANCE

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

Clean or replace Prefilter Pads

A clogged filter pad overflows and will not collect waste. Uncollected waste is returned to the tank and will 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 pad.
3. Rinse or replace with new pad ("blue" - #CS1859).

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

4. Replace Cover.

Replace Carbon Filter Packs.

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 its aerobic bacteria healthy and thriving.

To replace a Carbon Filter Pack:

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

3. Set Upper Filter Tray aside. Lift out Lower Filter Media Tray.
4. Replace Carbon Filter Pack (#CS1826) 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

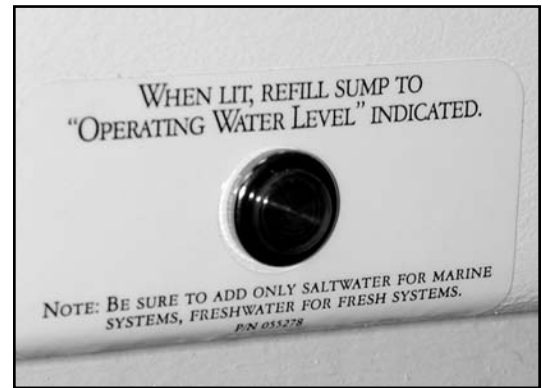
Observe flow of water to the BIO-Wheel Assembly. Make sure that water flow to the BIO-Wheel is unhindered. The BIO-Wheel should rotate freely and remain wet at all times. Speed of rotation is not important. If a BIO-Wheel is turning - regardless of the rate - it is working.

If flow interruption is evident, check Pump Intake (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.

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.



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 stock 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.

At Least Every Two Weeks

Inspect Standpipe Inlets

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

Inspect Display Tank for Algae Growth

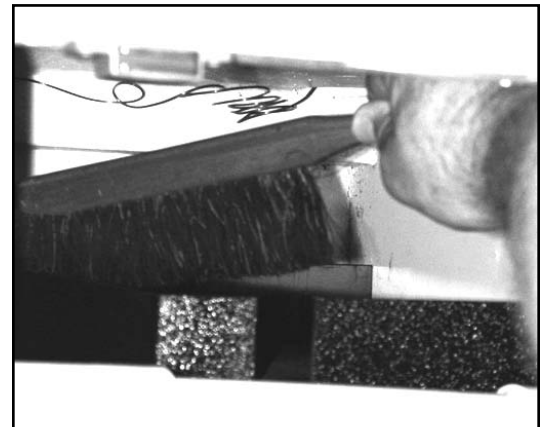
Algae spores enter the system naturally via tank inhabitants and light allows them to grow. Although your system's UV Disinfection Unit eliminates the majority of algae spores, the more light you have, the greater the potential for some algae growth. To remove algae, simply wipe inside tank surface with 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:

Refrigeration Unit Condenser Intake Screen

To guard against system failure, the Refrigeration Condenser Intake Screen should be brushed (shown) or vacuumed clean every month.

This eliminates accumulated dust and prevents clogging. To reach Screen, remove Rear or Side Service Grill.



SPECIAL SERVICING-U.V. DISINFECTION UNIT

Every six months...

Clean 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 on a regular basis.

NOTE: We strongly recommend that all servicing of the UV Disinfection Unit be performed by a qualified technician or trained associate. If you or your staff are not familiar with aquatic filtration systems design and installation, call MARINELAND CUSTOMER SERVICE for a service referral.

Replace UV Disinfection Unit Lamp

The UV Lamp has a useful service life of about six months. After this time - whether it continues to appear functional or not - it must be replaced.

NOTE: IF THE UV OPERATION DISPLAY LIGHT GOES OFF BEFORE THIS TIME, change immediately. A replacement lamp is provided with your new system. When changing UV Lamp, always clean Quartz Sleeve.

IMPORTANT: To prolong the life of the 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.

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.

To replace UV Lamp:

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

2. Unscrew threaded Socket Cap at one end.



3. Gently disconnect UV Lamp from Rubber Lamp Socket.



4. Carefully slide UV Lamp from UV Housing.



5. Carefully insert new UV Lamp into UV Housing and connect to Rubber Lamp Socket.



6. Replace End Cap and screw into place.

7. Turn on Master Switch. Inspect unit for leaks. Check to make sure UV Operation Display Light is on.

TROUBLESHOOTING GUIDELINES

For a service referral, call Marineland at: (800) 322-1266.

If entire system abruptly shuts down...

- Reset circuit breaker in main electrical panel.
- Make sure Master Switch is turned on.
- Check Pump Intake 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 Pads and Carbon Filter Packs for clogging. Clean or change as needed.
- See if BIO-Wheels are obstructed. Check for impeded rotation and reinstall.
- Make sure that Sump is not overfilled. Check Return Tube for obstruction.
- Check Pump Intake Strainer in Sump for obstructions.

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

- Inspect Pump Intake Strainer in Sump. Clean and/or remove any debris or obstruction.
- Remove Rear Service Door and make sure System Pump is plugged in and motor fan is turning.
- Call for service if problem persists.

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 that power cord to Refrigeration Unit is plugged into proper outlet.
- Inspect Refrigeration Intake Vents and clean if necessary.
- Call Customer Service if Thermostat or Refrigeration Unit is malfunctioning.

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

- Check water level in Sump. If below desired level, add water and check frequently.
- Make sure Pump Intake Strainer is fitted firmly in place (slots *down*).
- Call for service if problem persists.

If UV Lamp goes out...

- Remove Rear Service Door and confirm that UV power cord is plugged into appropriate outlet.
- Replace UV Lamp (see instructions, pg. 22). If problem persists after Lamp is replaced, call Customer Service for replacement part and/or further assistance.

If water is leaking from UV Lamp Housing...

- Reinstall Quartz Sleeve according to directions.

CUSTOMER SERVICE

**Should you experience problems with your system,
call Marineland at (800) 322-1266.**

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

WEEKLY USE ITEMS:

- | | |
|---------------------------------|---------------|
| 1. Prefilter Pads – Blue | CS1859 |
| 2. Carbon Filter Packs | CS1826 |

SERVICING ITEMS:

- | | |
|---------------------------------------|---------------|
| 1. UV Lamp | CP1976 |
| 2. Replacement O-Rings | CP1977 |
| 3. Hydrometer | CA1501 |
| 4. Tank Thermometer | CA1502 |
| 5. Lobster Rake | CA1503 |
| 6. Instant Ocean® Lobster Salt | CS0309 |

LIMITED WARRANTY

Marineland warrants their systems for one year against defects in materials or workmanship. This warranty applies only to the system and does not cover water quality, live product, replacement parts or maintenance supplies.

If your system is found to be defective - and has not been modified, damaged or misused - call Marineland Commercial Aquariums (toll free) at (800) 322-1266 or fax us at (805) 529-3030. All calls received during regular business hours (8am - 5pm, Pacific Time) will be responded to within 24 hours. Please have your manual and the system serial number ready.

In most cases, the problem will be resolved by a simple maintenance procedure, recommendation or repair authorization. Upon authorization, and in instances where outside repair or replacement of parts is necessary, Marineland will absorb all appropriate costs.

Damage or injuries resulting from negligence, misuse or user modification are not covered by this warranty. Incidental or consequential damages are specifically excluded.* This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

* Because some states do not allow the exclusion of incidental or consequential damages, this exclusion may not apply to you.



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