

OPERATING MANUAL

BIO-WHEEL® LIVE SEAFOOD DISPLAY AND HOLDING SYSTEMS

ML-24BW(1)



IMPORTANT SAFEGUARDS

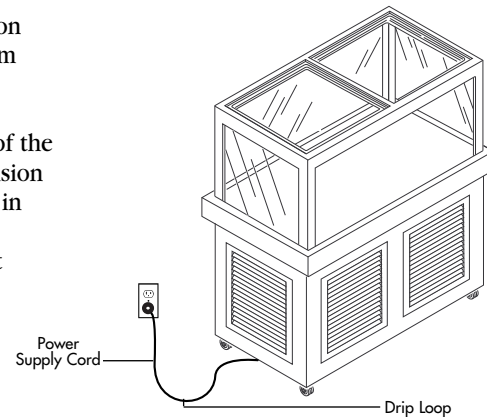
WARNING – To guard against injury, basic safety precautions should be observed, including the following:

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.

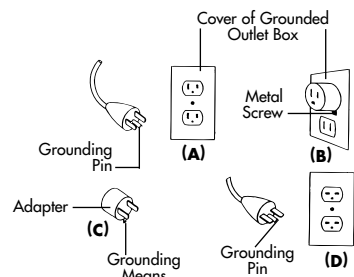
E. To avoid the possibility of the plug or receptacle getting wet, position tank to one side of a wall mounted receptacle to prevent water from dripping onto the receptacle or plug. A "drip loop", shown in the Illustration at right should be arranged by the user for each cord connecting equipment to 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.

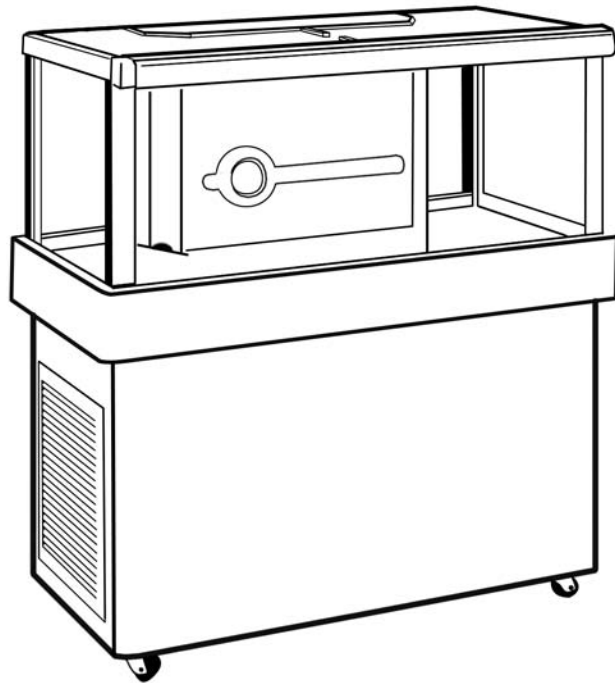
10. This equipment should be grounded to minimize the possibility of electric shock. This unit is equipped with an electric cord that has an equipment grounding conductor and a grounding type plug. The plug must be plugged into an outlet that is installed and grounded in accordance with all appropriate 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 MARINELAND ML-24BW(1)



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

The Marineland ML-24BW(1) System is an easy-to-maintain, refrigerated and ideal for displaying and holding live seafood. Dual mechanical/chemical filtration and powerful commercial BIO-Wheel wet/dry biological filter ensure optimum water quality at all times. And the compact plumbing design allows for convenient self-contained installation.

Your ML-24BW(1) system comes complete with everything you need to become fully operational:

- Consumables:
- Carbon Filtration Pack (#CS1826)
 - Prefilter Pad (#CS1859)
 - 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 ML-24BW(1) System...

In this closed system, prefiltered water exits the enclosed Sump beneath the BIO-Wheel Filtration Module and flows to the Water Pump. From there, water is pumped through both the Protein Skimmer and the UltraViolet (UV) Disinfection Unit, then to the display tank via spray bar and filter bed.

Water entering through the spray bar provides surface agitation, while water passing up through the filter bed is chilled to proper temperature by the refrigeration coils and pH-conditioned by the Biological Filter Material #2 (dolomite). Water is then drawn from the display tank through surface and bottom skimmers and routed directly to the BIO-Wheel Filtration Module.

As water passes through the Filtration Module, mechanical and chemical filtration is provided by a Polyfiber Prefilter Pad and Carbon Filter Pack. Containing a pound of Black Diamond Activated Carbon, the Pack adsorbs dissolved organic compounds which cause odor and discoloration.

Passing through the Filter Media Trays, filtered water spills onto the BIO-Wheel 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.

From the BIO-Wheel, prefiltered water re-enters the enclosed Sump for recirculation.

Special Features

- **Reverse Flow Filtration** prevents compacting of the filter bed, ensuring cleaner water and eliminating the need for periodic filter bed maintenance.
- 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 **Protein Skimmer** employs heavy aeration to remove dissolved organic matter from the tank in the form of foam. The foam is flushed from the system and deposited into a floor drain or waste container.
- The **Sump Level Indicator Light** is located inside the display tank and to one side. It will glow red if water in the Sump drops below desired level.

THE SYSTEM

ML-24BW(1) SPECIFICATIONS

Dimensions:

50" L x 27 1/2" W x 53" H*

System Capacity:

110 gal*

Weight

625 lbs.*

Recommended Load:

Lobster: 75 - 100 Lbs.

*approximate

Power Requirements:

110 volts, 15 Amps

Filtration:

Mechanical Filtration:

One 7 1/2" x 14" Polyfiber Pad

Chemical Filtration:

One Filter Pack containing

1 lb. Magnum Activated

Carbon

Wet/Dry Biological

Filter:

One CBW-1 Commercial

BIO-Wheel

UV Treatment:

Angstrom 2537® Ultraviolet

Sterilizer

Installation

Connections:

Electric Supply:

115 VAC., 60 Hz, 15 AMP

Recommendation:

20 AMP Dedicated Circuit

Sump Drain:

3/4" Flexible Tubing

Protein Skimmer

Discharge:

Dedicated or Container

Refrigeration:

1/2 HP, Compressor with
Helical Heat Exchanger

ML-24BW(1) EXPLODED VIEW

1 - Display Tank Cover (Large) (#CP1881)

1A - Filtration Module Cover (#CP1882)

2 - Upper False Bottom (#CP1867)

3 - Dolomite (#CS402)

4 - Lower False Bottom (#CP1561)

5 - Refrigeration Coil (#CP2003)

6 - Fluorescent Lamp - optional
(#CP1766)

7 - Protein Skimmer (#CP1850)

8 - Foam Drain Tube (N/A)

9 - Froth Cup (#CP1876)

10 - Foam Separator (#CP1985)

11 - Contact Chamber (N/A)

12 - Water Level Indicator (#CP2010)

13 - Protein Skimmer Drain Hose
(#50151)

14 - Prefilter Pad (#CP1859)

15 - Upper Filter Media Tray
(#CP1825)

16 - Carbon Filter Pack (#CS1826)

17 - Lower Filter Media Tray
(#CP1825)

18 - Upper BIO-Wheel Housing
(#CP1823)

19 - BIO-Wheel (#CP1807M)

20 - Lower BIO-Wheel Housing
(#CP1822)

21 - Side Vented Panel - Aluminum
(16"x16")

22 - Vented Panel - Louvered White
(#CP1546W)

- Vented Panel - Louvered Black
(#CP1546B)

- Vented Panel - Flat White (#CP1545W)

- Vented Panel - Flat Black (#CP1545B)

23 - System Drain Valves (#50124)

24 - System Return Valves (#73274)

25 - UV Disinfection Unit (#CP1991)

26 - Water Pump (#CP1898)

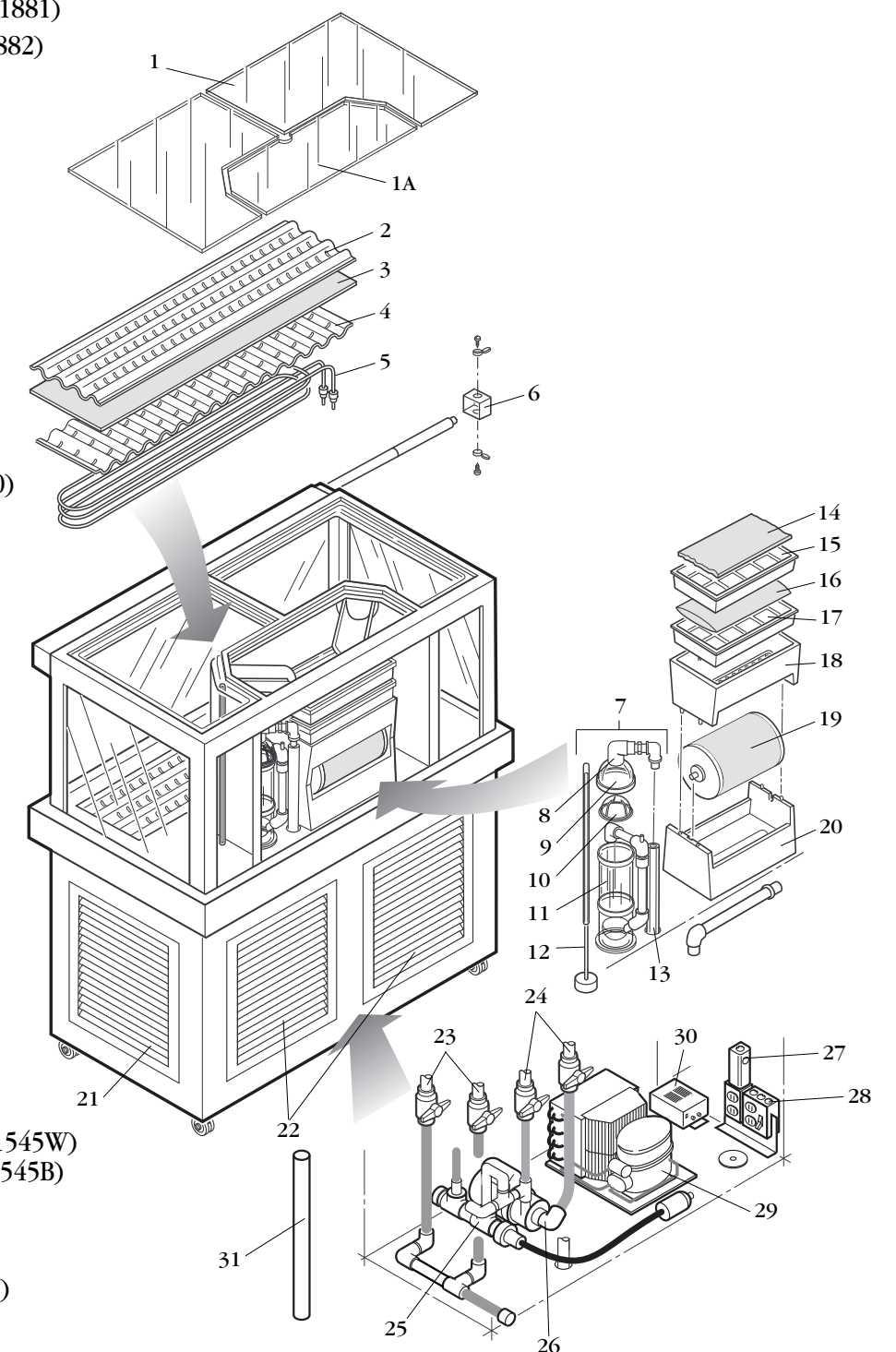
27 - Thermostat (#CP1558)

28 - Junction Box (Master Switch) (#54550)

29 - Refrigeration Unit (#CP1833)

30 - Transformer - optional (#CP1772)

31 - Replacement UV Lamp (#CP1903)



INSTALLATION

The following simple steps are required to get your system up and operational. Consult exploded view (Pg. 5) for any necessary clarification.

Tank Preparation

1. Locate unit near a 110-120 volt grounded outlet with a 20 amp dedicated circuit.

WARNING: Do not attempt to operate unit on extension cord or non-grounded circuit.

Do not handle or connect plug with wet hands.

2. Make sure Vented Panel is not obstructed. (To avoid overheating, we recommend keeping an adequate distance between the vent and any barriers for ventilation.) These panels allow cooling air to reach compressor. They also provide access to filters, thermostat, on/off switch, drains and other components.
3. Unpack all accessories, supplies and upper false bottom from tank. Remove plywood used for shipping support.
4. Remove Vented Panels. Make sure system components are plugged into junction box.



5. Connect Foam Drain Tube (see exploded view Pg. 5) to Drain Outlet or Skimmer Cup. Because the Foam Drain Tube is designed to drain off excess liquids and foam from display tank, you will need to locate tube over a container or floor drain.

6. Set thermostat (see exploded for location) 50° F. See page 17 for loading temperatures.



FILTRATION PREPARATION

IMPORTANT: Your system contains five types of filters:

1. *Mechanical* - Filter pads to screen out solid waste particles.
2. *Chemical* - Premium Activated Carbon to adsorb dissolved contaminants, discoloration, odors, toxic gases.
3. *Biological* - BIO-Wheels and dolomite to remove toxic ammonia and nitrites and help maintain pH balance.
4. *Protein Skimmer* to drive dissolved organic matter from water as foam.
5. *UV Disinfection Unit* to eliminate waterborne bacteria, viruses and algae spores.

NOTE: Ammonia (produced from animal waste and respiration) is the biggest killer of aquatic animals. For this reason, biological filtration is critical.

A biological filter is a *living* filter...aerobic beneficial bacteria that consume animal waste products and convert toxic ammonia to non-toxic nitrate. When properly maintained, it keeps your product alive and healthy, your water clear. When a biological filter is overtaxed or abused, water clarity and product longevity will be affected.

Use of precultured BIO-Wheels (optional) means no need for a lengthy (6-8 week) break in period. Your bacteria culture is in place, ready to go to work. Product can be immediately loaded and displayed.

We recommend that you make an effort to keep your lobster population relatively constant. Beneficial bacteria breathe oxygen, but consume ammonia. No animals, no ammonia. No ammonia, no bacteria.

NEVER use soap or cleansers in or around tank.

NEVER leave tank turned off for long periods of time.

NEVER let a BIO-Wheel or gravel bed dry out.

Prior to system startup, follow the few easy steps outlined below to get your system ready for operation. Refer to the Exploded View (pg. 5) for additional clarification.

PLEASE NOTE: BIO-Wheel Filtration Module for the ML-24BW(1) is located in the display tank in the Filtration Module and accessible from the top back side of the display (see Exploded View, pg. 5).

Filtration Module

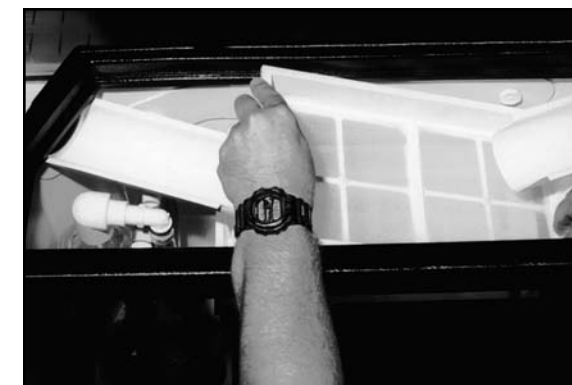
1. Remove Filtration Module Cover.



2. Remove Prefilter Pad and packaged Carbon Filter Pack. Set aside.



3. Lift out Upper Filter Media Tray and set aside.



4. Unwrap Carbon Filter Pack and place inside Lower Filter Media Tray.

NOTE: Before installing, gently shake cartridge to distribute carbon. Be sure to rinse Carbon Filter Pack thoroughly in cold, clean water until water runs clear.



5. Install Upper Filter Media Tray and place blue polyfiber Prefilter Pad inside. Replace BIO-Wheel Assembly Cover.



Filtration Bed

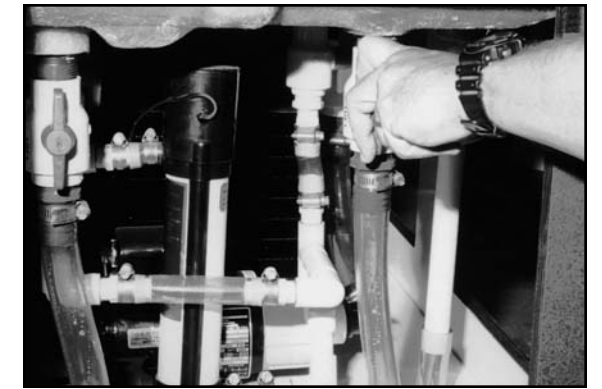
1. Remove Upper False Bottom (A). Pour one inch of Biological Filter Material #2 (Dolomite) onto Lower False Bottom (B) and spread evenly over entire surface.



2. Open drain valves (A) and run cold, clean water through the BIO-Mix to flush out all Dolomite dust.

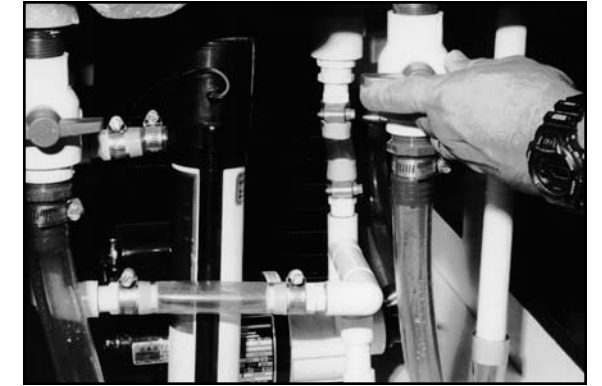
NOTE: To avoid spillage, position system drain tube over a floor drain. Close drain valves (B) when finished.

A



Side View

B



Side View

3. Place upper false bottom over layer of Dolomite. Make sure that bottom rests solidly on ridge and fits securely into corner slots.

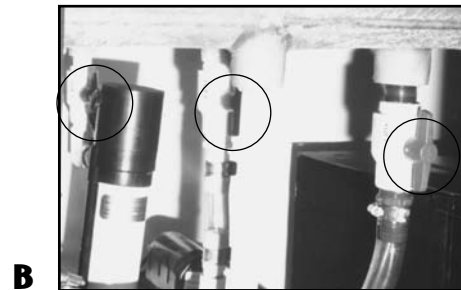
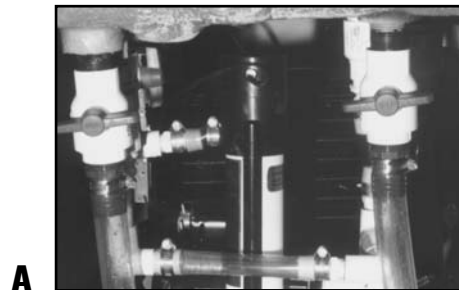


SYSTEM STARTUP

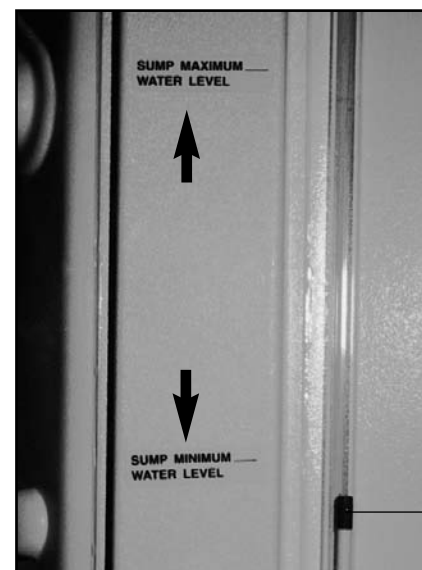
For Saltwater Systems Only: Add approximately 30 pounds of Marineland's Instant Ocean® Lobster Salt to tank. Save the remainder to adjust salinity at a later time.

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

1. Make sure both drain valves are closed (perpendicular to flow tube) (A). Make sure return valves are open (parallel to flow tube) (B).



2. Fill display tank until Sump Water Level Indicator at side of Filtration Module rises to Sump Maximum Water Level (indicated). Never allow water level to go below indicated Sump Minimum Water Level.



Water Level Indicator

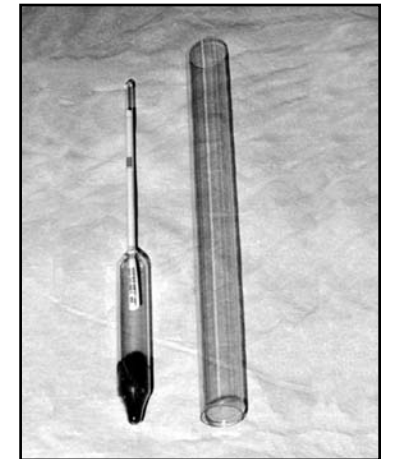
3. Start system. Plug power cord into 110-120v dedicated outlet and turn switch on. ***Never attempt to plug in unit unless hands and plug are absolutely dry.***

NOTE: After startup, additional water will be needed to achieve proper water level.

MEASURING SALINITY

After your 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 Hydrometer. 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).

AFTER 24 HOURS ...

BIO-Wheels are the newest innovation in live seafood holding system filtration. A BIO-Wheel is the ideal culture site for beneficial bacteria...bacteria that eliminate toxic ammonia on contact.

If you have ordered a precultured BIO-Wheel, it will be delivered in a separate container on a prearranged date. At that time, you should first install the BIO-Wheel Module and then add product.

Remember...the ML-24BW(1) BIO-Wheel Filtration module is located in the display tank.

1. Shut down system.

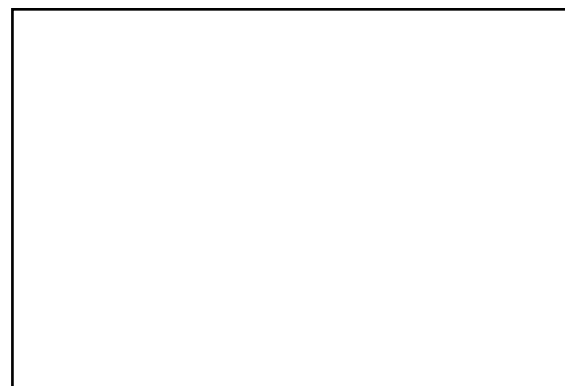
2. Remove Filtration Module Cover.



3. Remove Prefilter Pad. Set aside.



4. Remove Prefilter Media Tray (slides out).



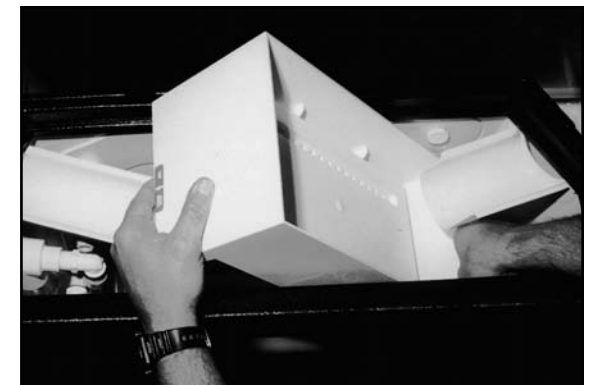
5. Remove Carbon Filter Pack. Set aside.



6. Lift out Lower Filter Media Tray and set aside.



7. Remove Upper BIO-Wheel Housing. Set aside.



8. Place precultured BIO-Wheel in Lower Housing. Tray guides and BIO-Wheel Axle will ensure correct positioning.



9. Place Upper BIO-Wheel Housing over BIO-Wheel and on top of Bottom BIO-Wheel Housing.

NOTE: Housings are not interchangeable. Holes in Upper Housing allow water flow to BIO-Wheel.



10. Install Lower Filter Media Tray and replace rinsed Carbon Filter Pack inside.

11. Install Upper Filter Media Tray and replace blue polyfiber Prefilter Pad inside. Replace Filtration Module Cover.



12. Restart system.

ADDING ANIMALS

Lobsters

Set salinity (1.020-1.025). 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.

NOTE: Do not leave lobsters unattended in purging container for any length of time without oxygenating water. They may suffocate.



Never use fresh water for lobster dips... it will kill the lobsters.

For best results, rinse water should be taken from the established display tank, discarded after use and replenished according to guidelines on pg. 13.

Fin Fish

Because fin fish are susceptible to temperature shock, it is important to avoid placing new fish in water with a temperature much different than that in which they were shipped.

One day prior to the arrival of new fin fish, water in the display tank should be set to the expected temperature of the water in the delivery vehicle. After fish are added, reset the thermostat and bring the water down to a proper setting of 50°F.

NOTE: Due to water conditions in some areas, it may be necessary to perform weekly water changes for fresh water tanks.

Recommended temperature setting is for North American Lobster (*Homarus Americanus*) and some fin fish. When using tanks for other species, adjust temperature as necessary for that particular species.

MAINTENANCE

Routine maintenance must be performed. The procedures listed below are neither difficult nor time consuming. They will keep your system clean, your stock healthy. Failure to follow these simple maintenance steps will adversely affect system performance. This could lead to premature failure of some components and loss of product. We recommend setting up a maintenance log to track procedure.

Daily

Check Tank for Fatalities and Weak or Damaged Stock. Remove immediately.

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 not blocked or restricted in any way. 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.

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, 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 inadvertantly exposed to a contaminant, the bioculture may be destroyed. A precultured replacement can be purchased directly from Marineland Customer Service (see back cover).

If water level is low and/or flow interruption is evident, turn off system, make sure all Inlet Valves are open and check Pump Intake (in Sump) for obstructions. If no obstructions are found, consult Troubleshooting Guidelines section in this manual.

Never Run Pump Dry!

This will cause it to fail and results in costly replacement.

Every Two Weeks (or as needed)

Clean or Replace BIO-Wheel Prefilter Pads and Replace Carbon Filter Packs.

Clogged filters cannot collect waste. Uncollected waste is returned to the tank and will 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-Wheel. It must receive clean, prefiltered water to keep its aerobic bacteria healthy and thriving.

To change Prefilter Pads and Carbon Filter Pack, follow the instructions in the preceding "Installing BIO-Wheel" section. Rinse or discard used pads. Replace Carbon Filter Pack and rinse out Filter Trays before replacing.

NOTE: Remember to thoroughly rinse Carbon Filter Pack until water runs clear.

Wipe Down All Exterior Surfaces.

A vinegar/water solution (3 tablespoons vinegar to a pint of water) may be used with a clean rag or paper towel. *Never* use chemicals, soaps, detergents or harsh abrasives on any part of the system. ***Do not use cleaners inside or near the system at any time.***

Warning: Never spray insecticides within 20 feet of your system. The resulting contamination could kill your product and destroy your biological filter. If you must use insecticides, be careful to turn off and cover the system with plastic tarp until the odor has cleared from the area completely. Then don't forget to turn the system back on.

Inspect Display Tank and Sump for Algae Growth.

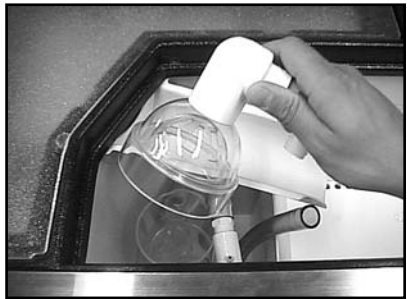
Algae spores enter the system naturally via tank inhabitants and light allows them to grow. Although your system's UV Disinfection Unit works to eliminate algae spores, the more light you have, the greater the potential for algae growth. To remove algae, simply wipe inside tank surface with a cloth, algae scraper or acrylic cleaning pad. *NEVER* use soap or metal scouring pads. Keep a dedicated cloth for cleaning the inside viewing area surfaces. It should be kept clean and isolated from other departments so that it does not get contaminated by multiple task use.

Clean Protein Skimmer Froth Cup/Foam Separator.

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. Turn off system.
2. Remove Filtration Module Cover.
3. Remove Upper Media Tray. Set aside.
4. Remove Protein Skimmer Drain Hose from Drain Port.
5. Remove (lift up) Froth Cup from Contact Chamber.
6. Clean Froth Cup and Foam Separator.
7. Return Cup and Separator to position atop Contact Chamber.
NOTE: Make sure that good seal forms around Cup and Chamber.
8. Reconnect Protein Skimmer Drain Hose.
9. Turn system on. Inspect Skimmer for leaks.
10. Replace Filtration Module.
11. Restart system.



Every three to six months

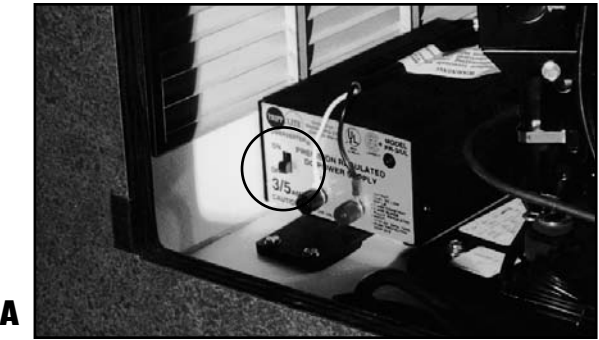
Clean Refrigeration Unit Condenser Intake Screen.

To guard against overheating and system failure, the Refrigeration Condenser Intake Screen should be brushed or vacuumed clean. This eliminates accumulated dust and prevents clogging.

As needed

Replace the Fluorescent Display Lamp (optional).

1. Dry hands thoroughly.
2. Turn power switch off on step-down transformer (A). Disconnect color-coded leads with ring terminals (B).



3. To remove endcap, remove upper and lower endcap screws.



4. Slide lamp out from outer housing.



5. Remove Lamp Shield “Boot”.



6. Using an “Allen” wrench, unscrew end bolt and carefully slide fluorescent lamp from Lamp Shield.



7. Carefully grasp lamp at one end. Press out and lift up to remove from Inner Housing Mounts. Discard used lamp.

8. Install new lamp by gently pressing ends into Inner Housing Mounts. Reverse process to restore lamp to operation.



As needed...

Clean Spray Bar.

When water flow through Spray Bar is reduced...

1. Shut down system.
2. Using adjustable wrench, unscrew (A) and remove Spray Bar Access Plug (B).
3. Turn on system and wait for water to flush through.
4. Shut down system, replace Access Plug.
5. Restart system.

SPECIAL SERVICING-U.V. DISINFECTION UNIT

Every six months...

Clean UV Disinfection Unit Quartz Sleeve.

The Quartz Sleeve will develop a layer of film on its surface which can reduce UV Lamp effectiveness. Film should be removed on a regular basis. Consult the enclosed UV Lamp Operations Manual for specific instructions.

NOTE: We strongly recommend that all servicing of the UV Disinfection Unit for the Marineland ML-24BW be performed by a qualified technician or trained associate. If you or your staff are not familiar with aquatic UV Disinfection Unit 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 9 months. After this time- whether it continues to appear functional or not - it must be replaced. Consult the enclosed Operations Manual for instructions.

NOTE: Replacement Lamp 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 servicing equipment.

TROUBLESHOOTING GUIDELINES

CAUTION: *Some of the corrective procedures recommended below may require professional attention. For a service referral, call Marineland Customer Service 1-800-322-1266.*

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.

If water turns yellow or odors develop...

- Replace Carbon Filter Pack.
- Make sure UV Disinfection Unit is operating properly.
- Check Protein Skimmer for clogged Discharge Tube.

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. Check for impeded rotation and reinstall.
- Ensure that Filter Module Sump is not overfilled. Check Return Tube for obstruction.

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.
- Make sure Pump is plugged into proper outlet, water pump fan blade is turning and all valves are open (parallel to direction of flow pipe).
- Check Filter Pads and replace if impacted.
- Call Customer Service if problem persists.

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

- Check Thermostat setting.

NOTE: Thermostat reading may differ from measured Tank temperature... adjust Thermostat as required and monitor 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.
- See that Thermostat is at desired temperature setting and is not damaged.
- Inspect Intake Vents and Condensing Screen. Clean if necessary.
- Call Customer Service if Thermostat or Refrigeration Unit is malfunctioning.

If UV Lamp goes out...

- Confirm that UV power cord is plugged into appropriate outlet.
- Replace UV Lamp (according to guidelines in UV Lamp Operations Manual).
If problem persists after UV 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 guidelines in UV Lamp Operations Manual.

If you experience product loss shortly after arrival...

- *Don't panic.* Remove product from tank.
- Check water salinity. Adjust if necessary.
- Monitor water temperature. Adjust if necessary

If a large amount of product is lost and water is clear...

Change water and replace Carbon Filter Pack immediately.

If fish roll, spin, swim belly up, behave erratically...

- Adjust water temperature to match that in which they were shipped. Then adjust to 50°.

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.



© 2003 Marineland • Moorpark, CA 93021

All Fluorescent Lamps
and Ultra Violet Lamps
contain mercury.
Dispose of Properly.

