

OPERATING MANUAL

BIO-WHEEL[®] LIVE SEAFOOD DISPLAY AND HOLDING SYSTEMS

ML-24BW(2)



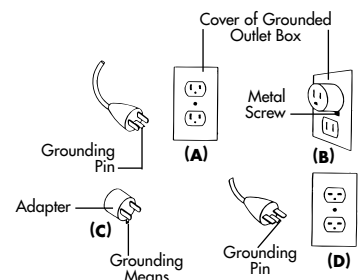
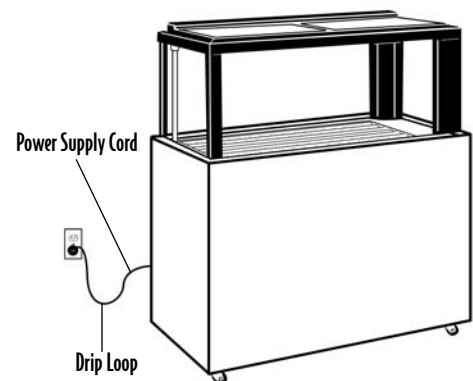
IMPORTANT SAFEGUARDS

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 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(2)



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

The Marineland ML-24BW(2) is an easy-to-maintain refrigerated system for displaying and holding large loads of live seafood under ideal water conditions. Its 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(2) system comes complete with everything you need to become fully operational:

- Consumables:
- Prefilter Pads (#CS1859)
 - Carbon Filtration Pack (#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).

Special Features...

- **Reverse Flow Filtration** prevents compacting of 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 **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 the organisms, preventing them from reproducing. After exposure, water exits and is returned to 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 receptacle.
- **Low Voltage Light Switch** (located under display unit) allows you to turn fluorescent display light off during non-business hours to reduce algae growth.
- The **Sump Level Indicator Light** glows red if water in the Sump drops below desired level.

Inside the ML-24BW(2) System...

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

Water entering through the spray bars provides surface agitation while water passing up through the filter bed is pH-conditioned and chilled to proper temperature by the refrigeration coils. Water is drawn from the system through surface and bottom skimmers and is routed directly to the BIO-Wheel Filtration Modules.

As water passes through each module, mechanical and chemical filtration is provided by a polyfiber Prefilter Pad and Carbon Filter Pack. Filled with three lbs. of Black Diamond Premium Activated Carbon, the Pack adsorbs dissolved organic compounds which cause odor and discoloration.

After passing through the Filter Media Trays, filtered water spills onto the BIO-Wheels mounted below. Because system flow causes them to rotate, the BIO-Wheels are 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-Wheels, prefiltered water re-enters the enclosed Sump for recirculation.

THE SYSTEM

ML-24BW(2) SPECIFICATIONS

Dimensions:

50" L x 27½" W x 53" H*

Capacity:

120 Gallons*

Shipping Weight

650 Lbs.*

Recommended Load:

Lobster: 100 - 125 Lbs.

* approximate

Power Requirements:

15 Amps

Filtration:**Mechanical Filtration:**

One 13" x 16½" Polyfiber Pad

Chemical Filtration:

One Filter Pack containing
3 lbs. (each) Black Diamond
Premium Activated Carbon

**Wet/Dry Biological
Filter:**

Two CBW-1 Commercial
BIO-Wheels

UV Treatment:

Angstrom 2537® Ultraviolet
Sterilizer

Refrigeration:

½ HP, Compressor with
Helical Heat Exchanger

**Installation
Connections:****Electric Supply:**

115 VAC., 60 Hz, 15 AMP

Recommendation:

20 AMP Dedicated Circuit

Sump Drain:

¾" Flexible Tubing

Protein Skimmer**Discharge:**

Dedicated or Container

**Fluorescent
Light Fixture
Specifications:****Power Supply:**

12 Volt Thermally
Protected, UL listed

Light Fixture

Electronic 12 Volt
Fluorescent Lamp Fixtures

Lamp Type

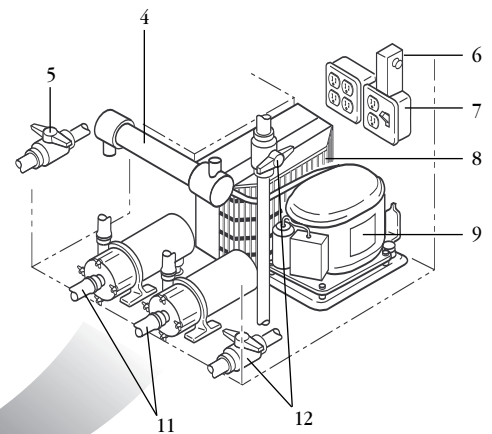
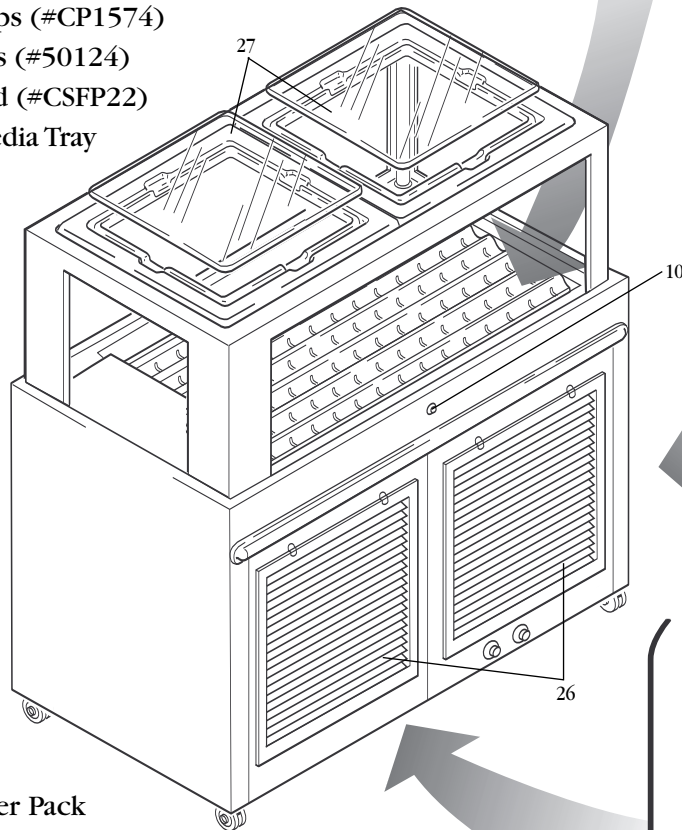
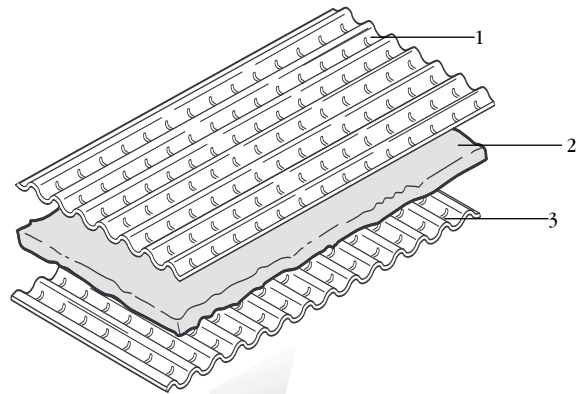
T8 - 36" Long

Wattage

25 Watts

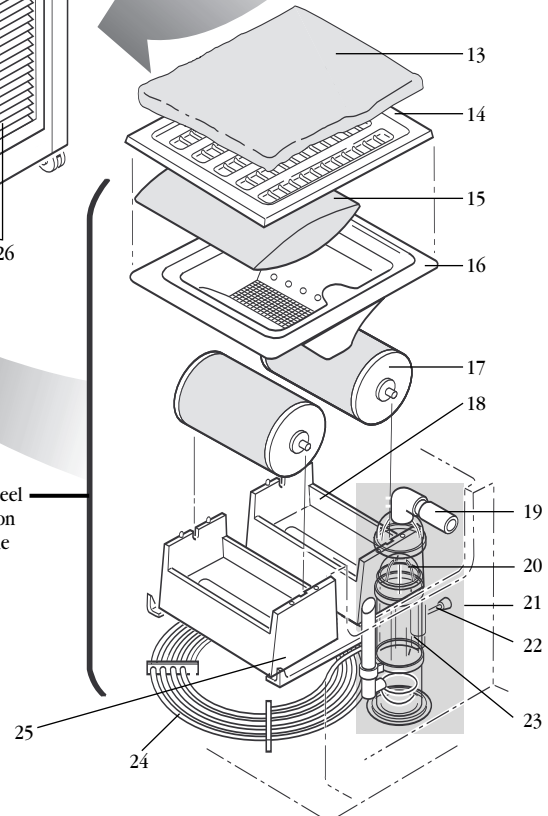
ML-24BW(2) EXPLODED VIEW

- 1 - Upper False Bottom (#CP1527)
- 2 - Dolomite (#CS0402)
- 3 - Lower False Bottom (#CP1562)
- 4 - UV Disinfection Unit (#CP1991)
- 5 - Return Valve (#73769)
- 6 - Thermostat (#CP1558)
- 7 - Master Switch (#54701)
- 8 - Refrigeration Intake Screen
- 9 - Refrigeration Unit (#CP1833)
- 10 - Sump Level Indicator Light (#CP1868)
- 11 - Water Pumps (#CP1574)
- 12 - Drain Valves (#50124)
- 13 - Prefilter Pad (#CSFP22)
- 14 - Prefilter Media Tray (#CP1893)



- 15 - Carbon Filter Pack (#CS1810)
- 16 - Carbon Filter Box (#CP1892)
- 17 - BIO-Wheel (#CP1807M)
- 18 - Lower BIO-Wheel Housing (#CP1822)
- 19 - Drain Tube
- 20 - Foam Separator (#CP1985)
- 21 - Protein Skimmer (#CP1850)
- 22 - Float Level (#CP1987)
- 23 - Contact Chamber
- 24 - Refrigeration Coils (#CP1983)
- 25 - Protein Receptacle (#CP1896)
- 26 - Vented Panels (#CP1895)
- 27 - Lids, Clear (#CP1536)

BIO-Wheel
Filtration
Module



INSTALLATION

The following simple steps are required to get your system up and operational. Consult exploded views 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.

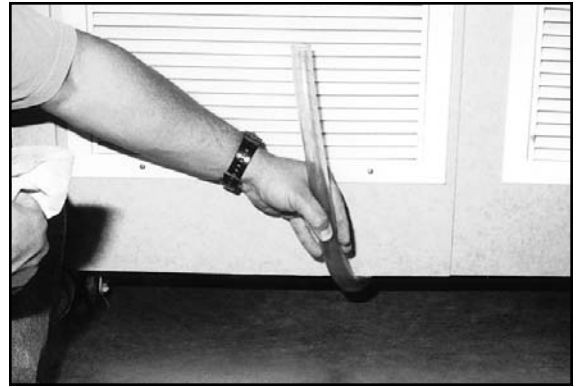
2. Make sure Vented Panels are not obstructed. (to avoid overheating, we recommend keeping an adequate distance between the vent and any barriers to ventilation.) These panels allow cooling air to reach the compressor. They provide access to filters, thermostat, on/off switch, drains and other components.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

NOTE: Cord receptacle outlets are labeled for clarity. If the cord becomes disconnected, be sure to reconnect to the designated outlet.



5. Attach Foam Drain Tube to drain outlet (shown) or skimmer cup.

NOTE: Because the Foam Drain Tube is designed to drain off excess liquids and foam from the Protein Skimmer, you will need to locate the tube over a bucket, container or floor drain.



6. Set Thermostat at 50° F. See pg. 17 for details.



7. Replace Vented Panels.

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.
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(2) is located underneath the display tank in the Sump Chamber and accessible through the access panel (see Exploded View, pg. 5).

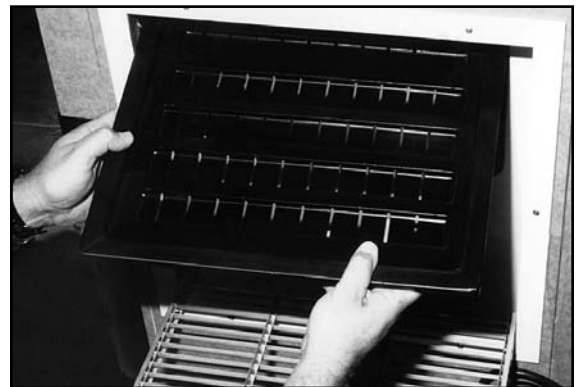
1. Remove Sump Access Panel. Remove Skimmer Cup and set aside.



2. Remove top section of Protein Skimmer by separating Froth Cup from Contact Chamber and disconnecting Drain Hose from Drain Port. Set aside.



3. Remove Prefilter Media Tray (slides out).



4. Remove Carbon Filter Box.



5. Unwrap Carbon Filter Pack and place in Carbon Filter Box.

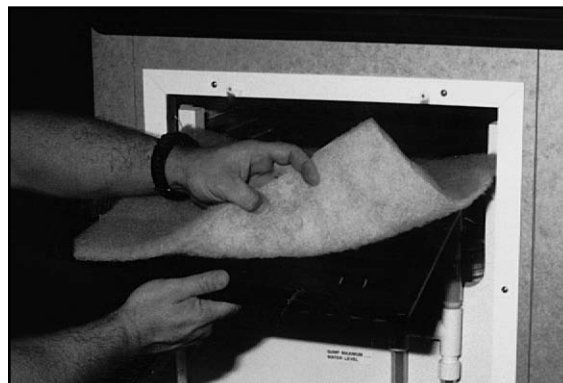
NOTE: Before installing, gently shake cartridge to distribute carbon. Be sure to rinse Carbon Filter Pack thoroughly in cold, clean water until water runs clear.



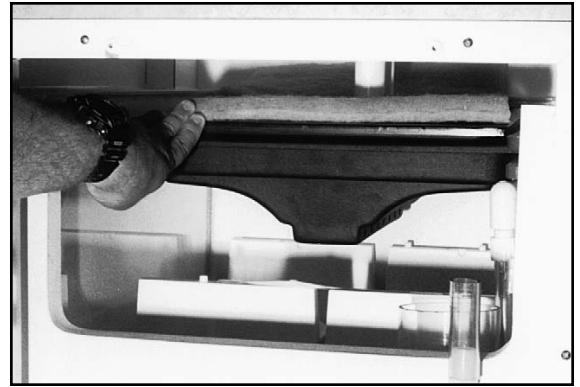
6. Replace Carbon Filter Box.



7. Place blue polyfiber Prefilter Pad inside Prefilter Tray.



8. Slide Prefilter Media Tray into place above Carbon Filter Box.



9. Replace top section of Protein Skimmer and reconnect Drain Hose to Drain Port with Hose Clamp.



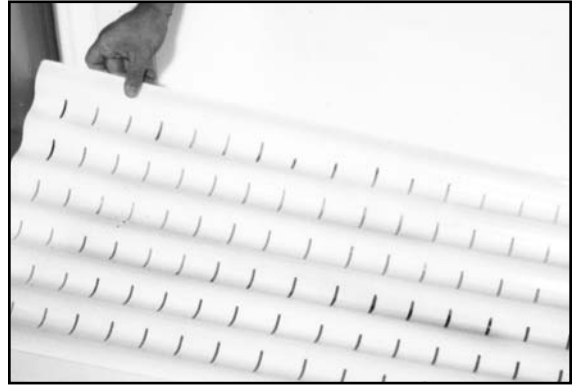
10. Replace Skimmer Cup. Replace Vented Panels.



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 (C).

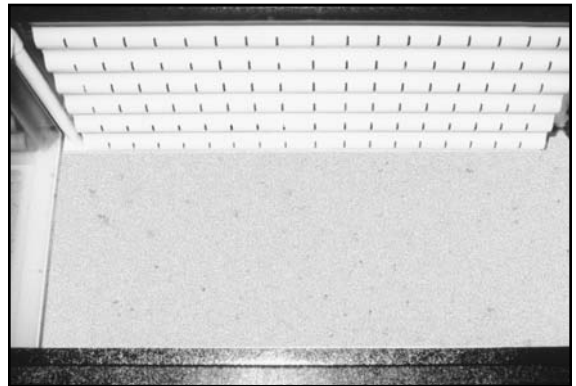
A



B

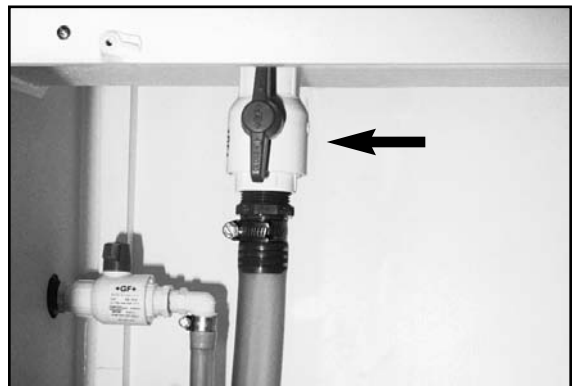


C



2. Open Upper Tank Drain Valve (parallel to Flow Tube - see arrow) and run water through the Dolomite (with drain open) to flush out all the dust.

NOTE: To avoid spillage, position System Drain over a floor drain. Close Upper Tank Drain Valve when finished.



3. Place Upper False Bottom over layer of Dolomite.

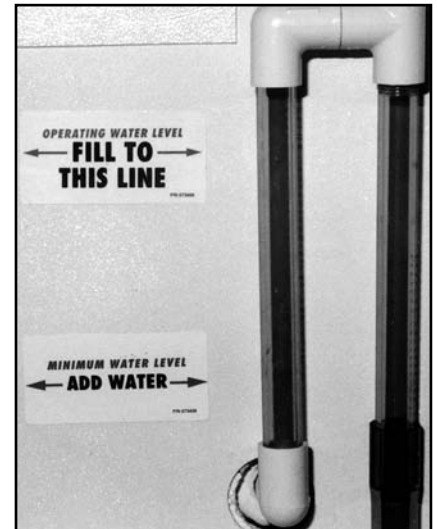


SYSTEM STARTUP

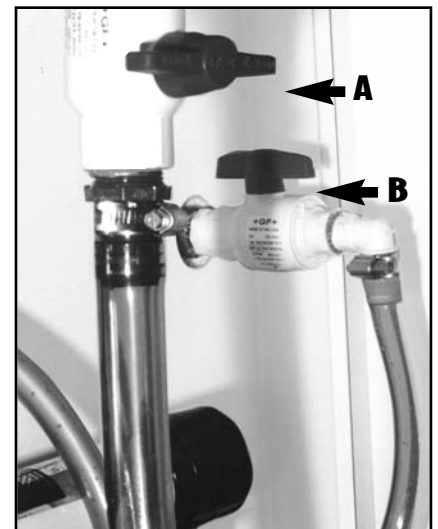
For Saltwater Systems Only: Add approximately 28 lbs. of Instant Ocean Lobster Salt to tank. Save the remainder to adjust salinity at a later time.

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

1. Remove Sump Access Panel. Fill display tank until water level in Sump Indicator Tube is within Sump Maximum Water Level (on side of Sump). NEVER allow water level to go below indicated Sump Minimum Water Level (indicated).



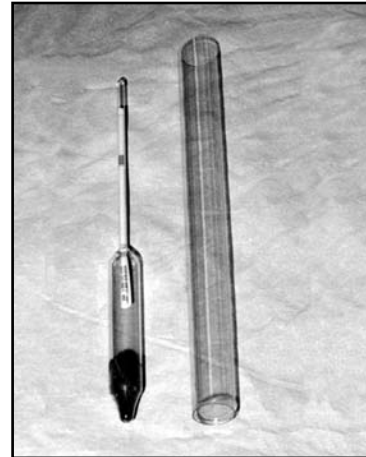
2. Make sure Upper Tank Valve (A) and Sump Drain Valve (not pictured) are closed (perpendicular to flow tube). Make sure Return Valve (B) is open (parallel to flow tube).



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.***
4. Fill remainder of display tank with water until overflow into Sump is initiated.

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 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).

INSTALLING BIO-WHEEL

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 this time, you should first assemble and install the BIO-Wheel Module and then add product.

Remember...the ML-24BW(2) BIO-Wheels are located in the Sump Chamber below the display tank.

1. Shut Down System.
2. Open Sump Access Panel.
3. Remove top section of Protein Skimmer by separating Froth Cup from Contact Chamber and disconnecting Drain Hose from Drain Port. Set aside.



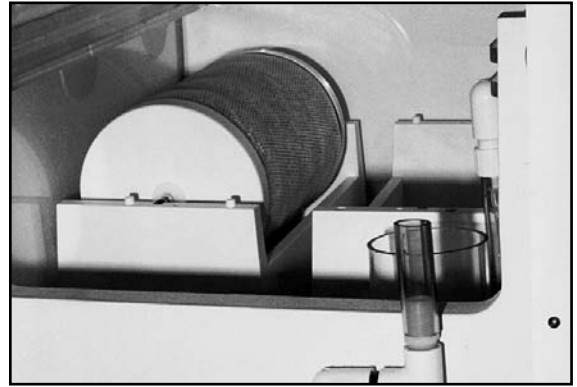
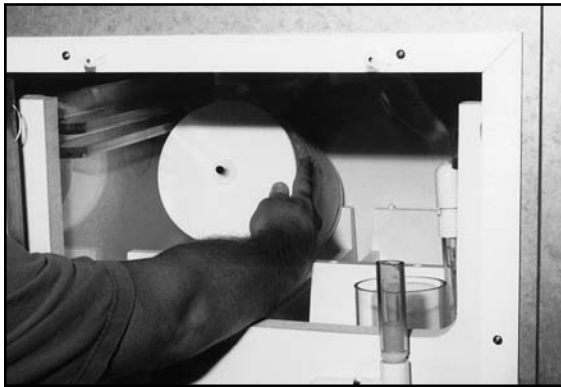
4. Remove Prefilter Media Tray (slides out).



5. Remove Carbon Filter Box. Set aside.



6. Place precultured BIO-Wheels in Lower BIO-Wheel Housings. Tray guides will ensure correct positioning.



7. Place Carbon Filter Box over BIO-Wheel and on top of Lower BIO-Wheel Housing.

8. Replace blue polyfiber Prefilter Pad inside Prefilter Media Tray.



9. Slide Prefilter Media Tray into place above Carbon Filter Box.

10. Replace top section of Protein Skimmer and reconnect Drain Hose to Drain Port with Hose Clamp.



11. Restart system.

ADDING ANIMALS

Lobsters

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

Never use freshwater for lobster dips...it will kill the lobsters.

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

For best results, rinse water should be taken from the established display tank, discarded after use and replenished according to guidelines on pg. 14.



Fin Fish

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

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

NOTE: Due to water conditions in some areas, it may be necessary to perform weekly water changes for freshwater 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 stock. 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 inadvertently exposed to a contaminant, the bioculture may be destroyed. A precultured replacement can be purchased directly from Marineland Customer Service (see back page).

The ML-24BW(2) features a Water Level Indicator Light at the back center of the display base. This light will glow red when water level is below desired level. If water level is low and/or flow interruption is evident, make sure all Intake 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 Pumps Dry!

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

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

Clogged filters do not collect waste. Uncollected waste is returned to the aquarium 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-Wheels. They must receive clean, prefiltered water to keep their bacteria healthy and thriving.

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

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

Wipe Down All Exterior Casing Surfaces

A vinegar/water solution (3 tablespoons vinegar to a pint of water) may be used with a clean rag or paper towel. *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 destroy your product and your biological filter as well. If you must use insecticides, be careful to turn off the system and cover the open sump until the odor has cleared from the area completely. And don't forget to turn the system back on.

Inspect 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. Maintain a separate cloth only for the tanks. It should be kept clean and isolated from other departments so that it does not become 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. Shut down system.
2. Remove Protein Skimmer Discharge Tube from Drain Port (A).
3. Remove (lift up) Froth Cup from Contact Chamber (B).
4. Clean Froth Cup and Foam Separator (C).
5. Return Cup and Separator to position atop Contact Chamber.

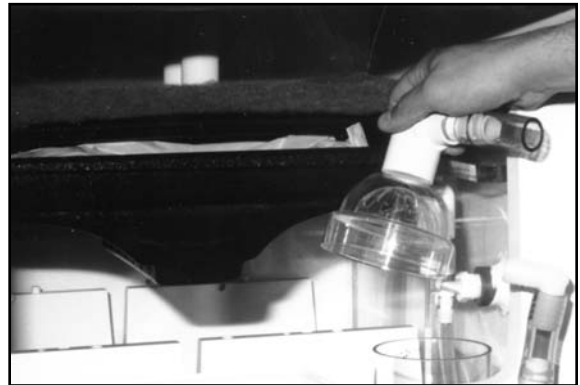
NOTE: Make sure that good seal forms around Cup and Chamber.

6. Reconnect Protein Skimmer Discharge Tube to Drain Port.
7. Restart system. Inspect Skimmer for leaks.
8. Replace Sump Access Panel.

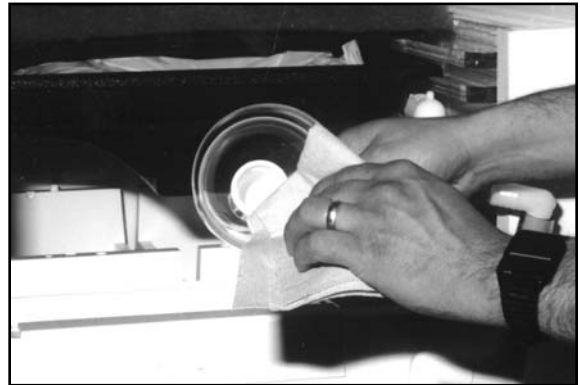
A



B



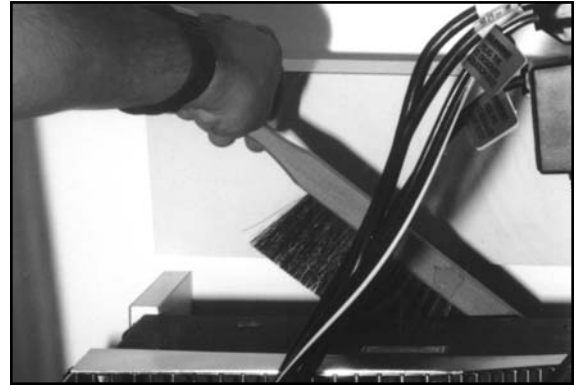
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Monthly

Clean Refrigeration Unit Condenser Intake Screen

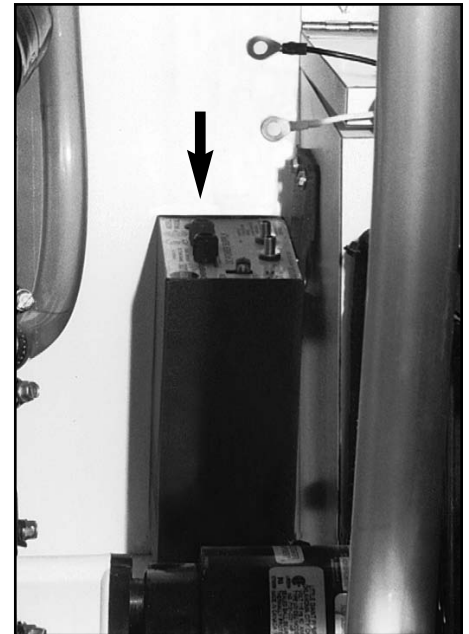
To guard against overheating and system failure, Refrigeration Condenser Intake Screen should be brushed (shown) or blown clean. This eliminates accumulated dust and prevents clogging.



As needed

Replace Fluorescent Display Lamp

1. Dry hands thoroughly.
2. Turn light switch off and disconnect light terminals (arrow).



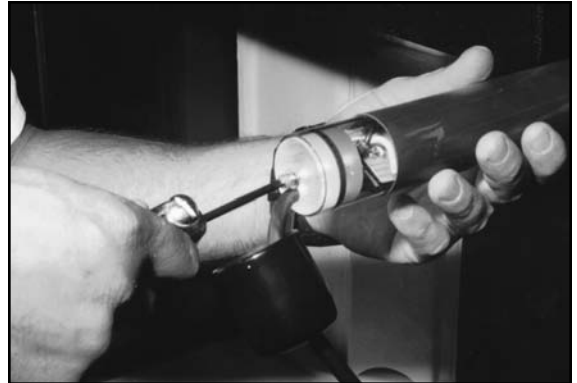
3. Lift Double Lid Holder (A). Grasping lamp firmly in center, pull forward and away from Outer Housing Clamps (B).



4. Remove Lamp Shield "Boot."



5. Using an Allen Wrench, unscrew End Bolt and carefully slide fluorescent lamp from Lamp Shield.



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

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



SPECIAL SERVICING-U.V. DISINFECTION UNIT

NOTE: We strongly recommend that all servicing of the U.V. 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 filtration systems design and installation, call Marineland Customer Service for a service referral.

Every six months...

Replace UV Disinfection Unit Lamp and Clean Quartz Sleeve

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. Consult the enclosed Operations Manual for instructions.

NOTE: A replacement lamp is provided with your new system. When changing the UV Lamp, always clean the 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. Consult the enclosed Operations Manual for instructions.

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.

TROUBLESHOOTING GUIDELINES

CAUTION: *Some of the corrective procedures recommended below may require professional attention. For a service referral, call Marineland Customer Service (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 unimpeded 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, motor fan 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 Holding Tank temperature... adjust thermostat as required and monitor Holding Tank temperature with thermometer, allowing 3-4 hours for temperature to stabilize before checking again.

- Make sure that power cord to Refrigeration Unit is plugged into proper outlet.
- See that Thermostat is at desired temperature level 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 directions.

If one or two lobster die shortly after arrival...

- *Don't panic.* Remove product from tank.
- Check water salinity. Adjust if necessary.
- Monitor water temperature carefully. 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.
Keep at this temperature for 24 hrs, then adjust to appropriate temperature.

If red Sump Level Indicator Light goes on...

- Add water immediately (according to directions in System Startup section, pg. 13).

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 | CS0159 |
| 2. Carbon Filter Pack | CS1826 |

SERVICING ITEMS:

- | | |
|--|---------------|
| 1. Marineland UV Lamp Replacement Kit | CA1975 |
| 2. UV Lamp | CP1976 |
| 3. Replacement O-Rings | CP1977 |
| 4. Hydrometer | CA1501 |
| 5. Tank Thermometer | CA1502 |
| 6. Lobster Rake | CA1503 |
| 7. 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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