

OPERATING MANUAL

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

LB-12BW HEXAROUND



IMPORTANT SAFEGUARDS

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

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

DANGER – To avoid possible electric shock, special care should be taken in the use of aquarium equipment. For each of the following situations, do not attempt repairs yourself; contact an authorized service facility for service.

1. A. If an appliance falls into the water, DON'T reach for it! First turn off power at main disconnect and then retrieve it. If electrical components of the appliance get wet, turn off the appliance immediately.
B. If the appliance shows any sign of abnormal water leakage, immediately turn off power at main disconnect.
C. Carefully examine the appliance after installation. It should not be plugged in if there is water on parts not intended to be wet.
D. Do not operate any appliance if it has a damaged cord or plug, or if it is malfunctioning or if it is dropped or damaged in any manner.
2. Close supervision is necessary when any appliance is used by or near children.
3. To avoid injury, do not contact moving parts or hot parts such as heaters, reflectors, lamp bulbs, etc.
4. Always turn off power at main disconnect when not in use, before putting on or taking off parts and before cleaning. Never yank a cord to pull a plug. Grasp the plug and pull to disconnect.
5. Do not use an appliance for other than intended use. The use of attachments not recommended or sold by the appliance manufacturer may cause an unsafe condition.
6. Do not install or store the appliance where it will be exposed to the weather or to temperatures below freezing.
7. Make sure appliance is securely installed before operating it.
8. Read and observe all the important notices on the appliance.
9. This appliance should be connected to a grounded, metallic, permanent wiring system, or an equipment-grounding conductor should be run with the circuit conductors and connected to the equipment-grounding terminal or lead on the appliance.
10. This appliance is to be installed by a qualified electrician in accordance with all appropriate codes and ordinances.

SAVE THESE INSTRUCTIONS

THE MARINELAND LB-12BW



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 BIO-Wheel Series is a line of easy-to-maintain systems for displaying and holding large loads of live seafood. 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 LB-12BW system comes complete with everything you need to become fully operational...including a supply of necessary consumable filtration items (Marineland Carbon Filtration Pack and Prefilter Pad, three 40 lb. bags of biological media, 50 lb. box of Marineland Sea Mix), a thermometer, hydrometer and Lobster Rake.

NOTE: To prepare for the possibility of extra water changes we recommend the purchase of additional Marineland Sea Mix (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.
- Unless otherwise requested, all BIO-Wheel Systems feature a thermostatically controlled **refrigeration unit**. It 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 free-swimming bacteria, and disease throughout the system. Water enters the UV Housing, surrounding the lamp where it is exposed to UV light. This exposure destroys the DNA of 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 container.
- The **Sump Level Indicator Light** is located at the center of the display base. This light will glow red if water in the Sump drops below desired level.

Inside the LB-12BW System...

In this closed system, water is automatically introduced to the system from above and beneath the filter bed. Prefiltered water exits the enclosed Sump beneath the BIO-Wheel Filtration Module and flows to the Water Pump. From here the water is pumped either through the Protein Skimmer, through the UltraViolet (UV) Disinfection Unit, or into the display tank via the discharge tube or filter bed.

Water entering through the discharge tube 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 the Hi/Lo Skimmer and routed directly to the BIO-Wheel Filtration Module.

As water passes through each BIO-Wheel Filtration Module, mechanical and chemical filtration is provided by a polyfiber Prefilter Pad and Carbon Filter Pack. Containing a pound of Black Diamond™ Premium 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 Wet/Dry Biological Filters 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

LB-12BW SPECIFICATIONS

Dimensions:

56"W (point to point)
47 ³/₄" H

Capacity:

135 Gallons

Shipping Weight

800 Lbs.

Recommended Load:

Lobster: 100 - 125 Lbs.

Crab: 100 Lbs.

Trout: 50-70 Lbs.

Catfish: 60-75 Lbs.

Power Requirements:

Voltage: 115 vac, 60 hz

Current: 15 Amps

Filtration:

Mechanical Filtration:

One 13" x 16 ¹/₂" Polyfiber Pad

Chemical Filtration:

One Filter Pack containing
3 lb. Black Diamond Activated Carbon

Wet/Dry Biological

Filter:

Two CBW-1 Commercial BIO-Wheels

UV Treatment:

Angstrom 2537[®] Ultraviolet
Disinfection Unit

Refrigeration:

1/3 HP, Compressor with
Helical Heat Exchanger

Recommendation:

20 AMP Dedicated Circuit

Installation Connections:

Electric Supply:

115 VAC., 60 Hz, 15 AMP

Recommendation:

20 AMP Dedicated Circuit

Sump Drain:

³/₄" Flexible Tubing

Protein Skimmer

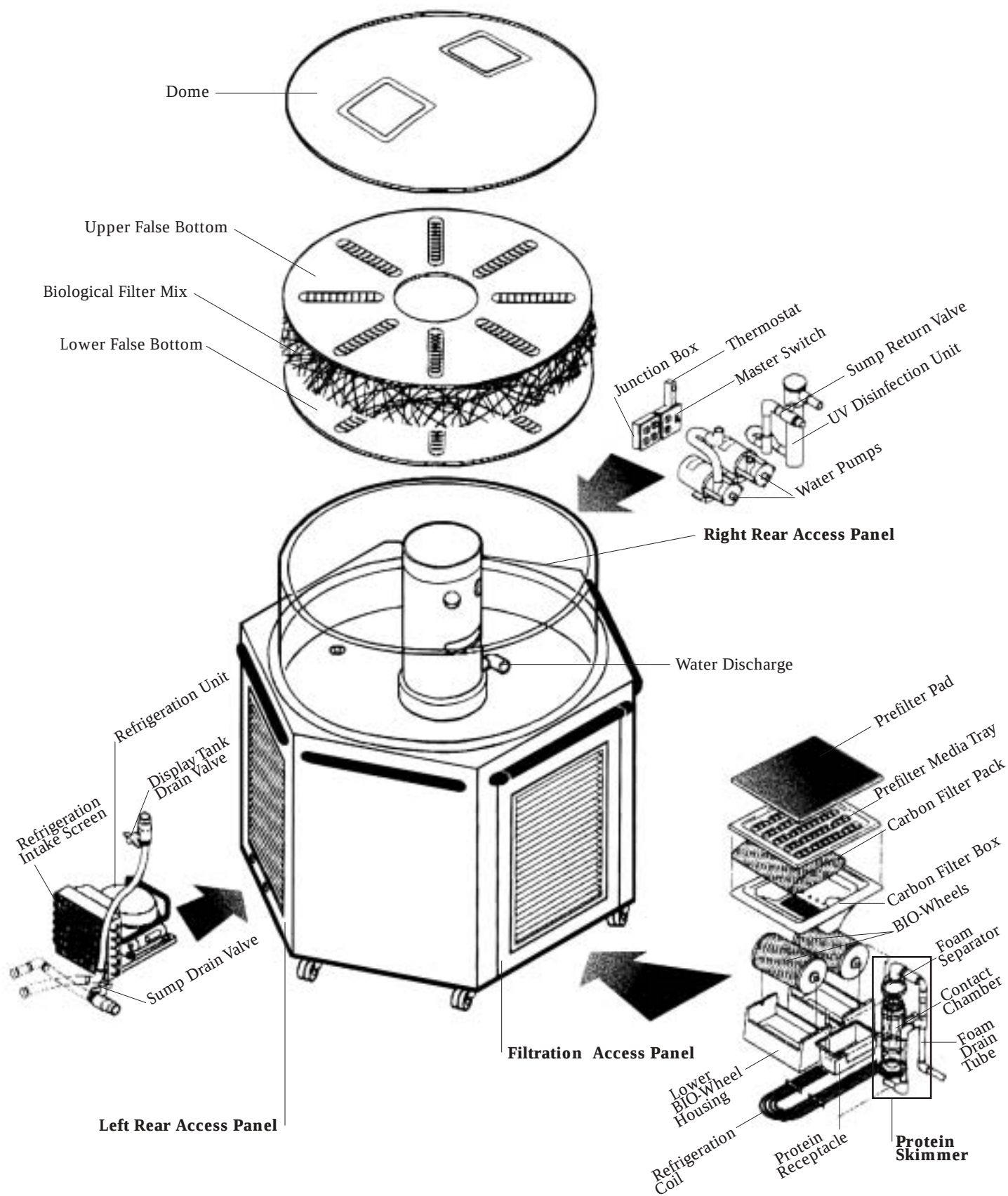
Discharge:

Dedicated Floor Drain
or Container

Part Number Listing

Dome w/Doors	CALBDOD	Prefilter Media Tray	CP1893
Filtration Access Panel	CP1895	Carbon Filter Pack	CS1810
Casters	CP1505	Carbon Filter Box	CP1892
Refrigeration Unit	CP1828	BIO-Wheel (uncultured)	CP1807
Junction Box	CP1897	Lower BIO-Wheel Housing	CP1822
Power Supply Unit	CP1772	Refrigeration Coil	CP1864
Thermostat	CP1558	Protein Skimmer	CP1850
Water Pump	CP1574	Protein Receptacle	CP1896
UV Disinfection Unit	CP1845	Sump Water Level Indicator	CP1856
Prefilter Pad	CSFP22		

LB-12BW EXPLODED VIEW



INSTALLATION

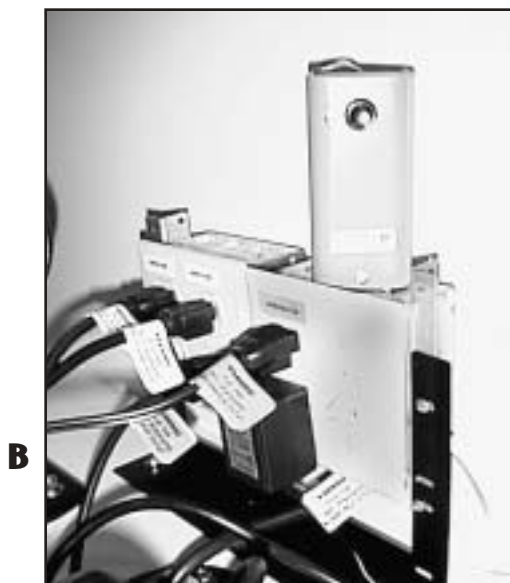
The following simple steps are required to get your system up and operational. Consult exploded views for any necessary clarification.

Tank Preparation

1. Locate unit near a 110–120 volt grounded outlet with a 20 amp dedicated circuit.
2. Make sure Vented Access Panels are not obstructed. The Access Panels allow cooling air to reach compressor. They also provide access to thermostat, on/off switch, drains and other components. The Filtration Access Panel provides access to the Sump, Filter Trays, BIO-Wheels and Protein Skimmer.
3. Unpack all accessories, supplies and Upper False Bottom from tank.
4. Open Right Rear Access Panel (A).
Make sure system components are plugged into Junction Box (B).

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

Do not handle or connect plug with wet hands.



- Set thermostat for 50° F



- Open Filtration Access Panel. Connect Foam Drain Tube to drain outlet (A) or position it so that it empties into Protein Receptacle (B).

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

A



B



- Close Filtration Access Panel and Right Rear Access Panel.

FILTRATION PREPARATION

IMPORTANT: Your system contains five types of filters.

1. *Mechanical* – Filter pads to screen out solid waste particles.
2. *Chemical* – Black Diamond Premium Activated Carbon to adsorb dissolved contaminants, discoloration, odors, toxic gases.
3. *Biological* – BIO-Wheels and dolomite filter bed 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.

NOTE: BIO-Wheel Filtration Module for the LB-12BW is located underneath the display tank in the Sump Chamber and accessible through the Filtration Access Panel (see exploded, pg.5)

Filtration Module

1. Remove Filtration Access Panel Section by lifting entire section up and away as shown (A). Remove Protein Receptacle and set aside (B).



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 and blue polyfiber Prefilter Pad (slides out).



4. Remove Carbon Filter Box.



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

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



6. Replace Carbon Filter Box.



7. Slide Prefilter Media Tray (with Prefilter Pad) into place above Carbon Filter Box.



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



9. Replace Protein Receptacle. Replace Filtration Access Panel Section.



Filtration Bed

1. Remove Dome.



2. 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



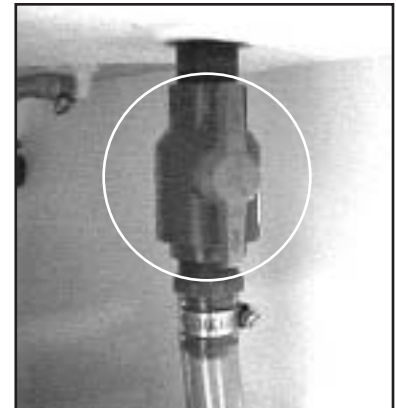
B



C

3. Open Left Rear Access Panel. Open Display Tank Drain Valve (pictured at right) and run water through the Dolomite (with drain open) to flush out all dust.

NOTE: To avoid spillage, be sure to position System Drain over a floor drain or a recovery source. Close Display Tank Drain Valve when finished.



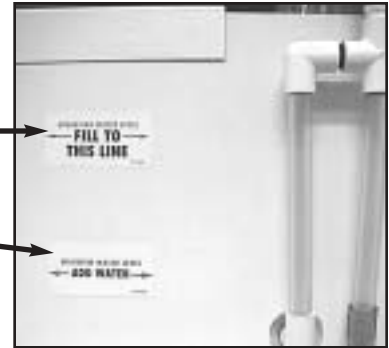
4. Place Upper False Bottom over layer of Dolomite.



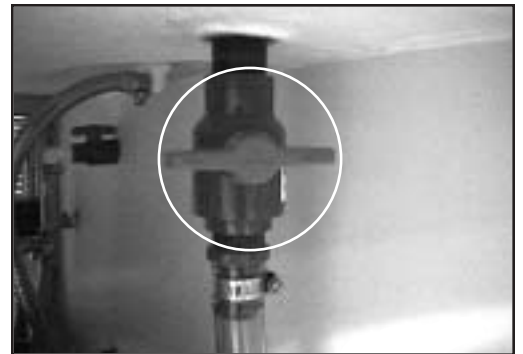
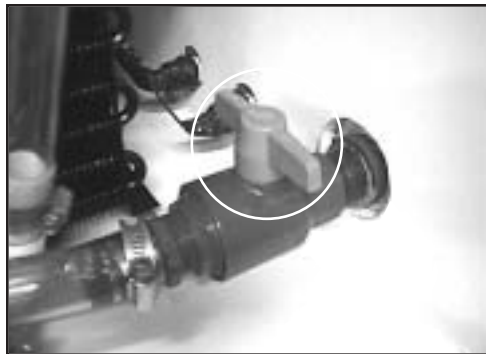
SYSTEM STARTUP

For Saltwater Systems Only: Add entire 32 lb. bag of powdered sea salt mix to tank. **Never** pour powdered sea salt directly into the tank when lobster are present.
NOTE: When filling tank, run water through salt to dissolve it faster.

1. Open Filtration Access Panel. Fill display tank until water level in Sump Indicator is within *Operating Water Level* (on side of Sump). **Never** allow water level to go below indicated *Sump Minimum Water Level*.



2. Open Left Rear Access Panel. Make sure Drain Valves are closed (perpendicular to flow tube). Close panel.



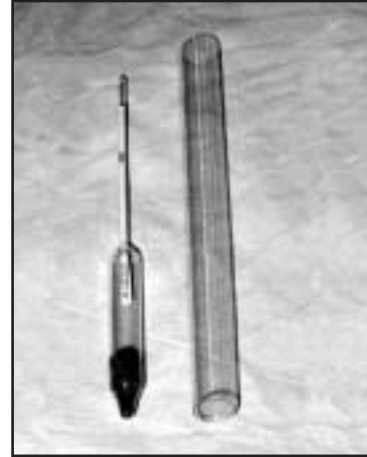
3. Open Right Rear Access Panel. Make sure Return Valve is open (parallel to flow tube as shown). Close panel.
4. Start System. Plug power cord into 110-120v dedicated outlet and turn switch on. **Never attempt to plug in unit unless hands and plug are absolutely dry.**
5. Fill remainder of display tank 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.

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).

Always wait for salt to dissolve before taking hydrometer reading.

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.

NOTE: If you have ordered a precultured BIO-Wheel, it will be delivered in a separate container on a prearranged date. Assemble and install the BIO-Wheels, then add product.

Remember...the LB-12BW BIO-Wheels are located in the chamber underneath the display tank.

1. Turn off system.
2. Remove Filtration Access Panel Section (lift up and out).
3. Remove Protein Receptacle. 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 and Prefilter Pad (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. Replace Carbon Filter Box.



8. Slide Prefilter Media Tray (and Prefilter Pad) 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 Protein Receptacle and 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 them.



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

Trout

Because trout 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 trout, water in the display tank should be set to the expected temperature of the water in the delivery vehicle. After trout are added, reset the thermostat and bring water temperature 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 trout. When using tanks for crab, other species of lobster or fin fish (bass, catfish, etc.) 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 completion.

Daily

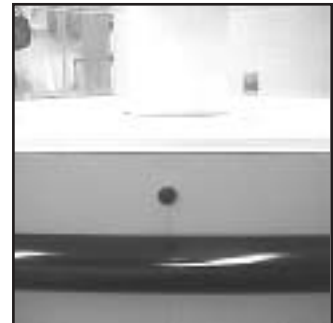
Check tank for fatalities and weak or damaged stock. Remove immediately. Check Water Pump and BIO-Wheel Operation.

Observe flow of water to the BIO-Wheels. Make sure that flow 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 cover).

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

The LB-12BW features a Sump Water Level Indicator Light (pictured) located on the display base directly above the Right Rear Access Panel. This light will glow red when Sump water level is below the desired level. If water level is low and/or flow interruption is evident, make sure all Inlet Valves are open. Also check Pump Inlet (in Sump) for obstructions. If found, consult Troubleshooting Guidelines section in this manual.



Never Run Pumps Dry!

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

Every Two Weeks

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.

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 kill your fish and destroy your biological filter. If you must use insecticides, be careful to turn off the system and cover the open Sump until the odor has cleared from the area completely. And don't forget to turn the system back on.

Inspect 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 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. Shut down system.
2. Remove Protein Skimmer Drain Hose from Drain Port.



3. Remove (lift up) Froth Cup from Contact Chamber.



4. Clean Froth Cup and Foam Separator.



5. Return Cup and Separator to position atop Contact Chamber.

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

6. Reconnect Protein Skimmer Drain Hose.

7. Turn on system. Inspect Skimmer for leaks.

8. Replace Filtration Access Panel.

9. Restart system.

Every three to six months

Clean Refrigeration Unit Condenser Intake Screen.

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



SPECIAL SERVICING-U.V. DISINFECTION UNIT

Every month to three 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. Consult the unit manufacturer's Operations Manual (enclosed) for instructions.

NOTE: We strongly recommend that all servicing of the UV Disinfection Unit for the Marineland LB-12BW 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 nine months...

Replace UV Disinfection Unit Lamp.

The UV Lamp has a useful service life of about 9 months. During this time you can make sure it is operational by looking into the clear-view top section. After 9 months - whether the lamp continues to appear functional or not - it must be replaced. A replacement UV Lamp is provided with your new system (as shown). Consult the enclosed Operations Manual for instructions.

NOTE: When changing UV Lamp, always clean Quartz Sleeve.



SPECIAL SERVICING: FILTRATION BED

Over time (at least 18 months) your LB-12BW filtration bed could accumulate enough debris to cause a reduction in water flow through the system. Actual length of time before this occurs depends on system bioload and on how well you have followed regular maintenance procedures. To properly rinse your system gravel, follow these instructions carefully. The rinsing procedure should take no more than 10-15 minutes. After 15 minutes, salt water bacteria begin to die from exposure to fresh water.

1. Remove product.
2. Drain display tank.
3. Remove Upper False Bottom.
4. Wash gravel bed with strong stream of cold fresh water (via garden hose, as pictured), stirring to dislodge any accumulated debris.



Do not use soap, cleansers or hot water.

Do not remove gravel from tank.

5. Following startup instructions on page 13, refill display tank, check salinity and temperature. Allow system to operate for one hour at recommended conditions before reintroducing animals.

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 Drain Hose.

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 Inlet 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 Display 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 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 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 one or two lobster die shortly after arrival...

- *Don't panic.* This may be normal. Remove from tank.
- Check water salinity.
- Monitor temperature carefully.

IF a large number of animals die 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 to which they are already accustomed (shipped in). Keep at this temperature for 24 hrs., then adjust to appropriate holding temperature.

CUSTOMER SERVICE

Should you experience problems with your system or wish to order supplies, call the 24-hour Marineland hotline at 1-800-322-1266.



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