

OPERATING MANUAL

REFRIGERATED LIVE SEAFOOD DISPLAY AND HOLDING SYSTEMS

LB SERIES



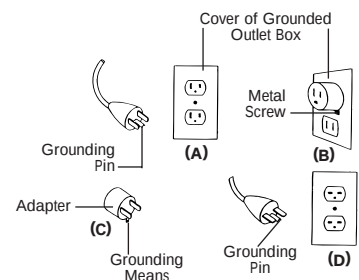
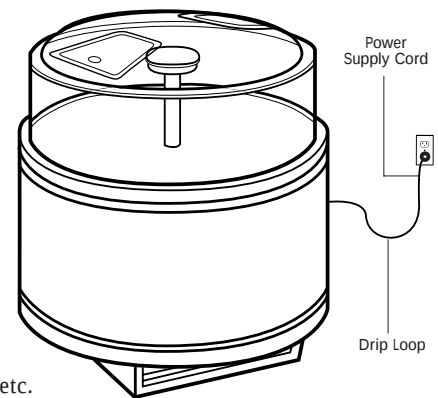
IMPORTANT SAFEGUARDS

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 LB SERIES



This manual will provide you with the information you need to successfully operate and maintain your new LB system. Please read it carefully and keep it for future reference.

The Marineland LB systems are easy-to-maintain refrigerated systems for displaying and holding large loads of live seafood. Your new system comes complete with everything you need to become fully operational.

Consumables:

Marineland Sea Mix

Biological Filter Material #1 (CS0401)

Biological Filter Material #2 (CS0402)

Black Diamond Premium Activated Carbon (CS0370)

Filter pads (for Carbon Tray - CP1890)

Extra airstones (CS1506)

Bottle of Liquid Bacteria (CS1569)

Bottom Prefilter Pads (CSFP36)

Accessories:

Thermometer (CA1502)

Hydrometer (CA1501)

Lobster Rake (CA1503)

Nylon Filter Bag (CA1504)

NOTE: To prepare for the possibility of extra water changes we recommend the purchase of additional Marineland Sea Mix (enough for two water changes).

Inside the LB System...

In this closed system, refrigerated water is drawn from the enclosed Barrel Chamber up through the Air Stack Tube into the Carbon Filter Tray. As water passes through the Carbon Filter Tray, mechanical and chemical filtration is provided by a polyfiber filter pad and eight ounces of Black Diamond™ Premium Activated Carbon.™ The carbon adsorbs dissolved organic compounds which cause odor and discoloration.

Filtered water spills into the display tank and is drawn through the filter bed where it is again filtered mechanically and chemically. This is also where biological filtration occurs. A thriving culture of beneficial nitrifying bacteria efficiently oxidizes all ammonia and nitrite on contact. Filtered water re-enters the enclosed Sump for recirculation.

SYSTEM SPECIFICATIONS

LB SERIES

Dimensions:

<u>LB-0</u>	<u>LB-6</u>	<u>LB-12</u>	<u>LB-20</u>
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49" Dia.	49" Dia.	49" Dia.	49" Dia.
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34 $\frac{1}{4}$ " H	40 $\frac{1}{2}$ " H	46 $\frac{1}{2}$ " H	52 $\frac{1}{2}$ " H
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NOTE: Above height dimensions are for LB unit without dome. For LB-6, LB-12, LB-20 add 3 $\frac{1}{2}$ " with dome. For LB-0, add 12".

Shipping Dimensions:

<u>LB-0</u>	<u>LB-6</u>	<u>LB-12</u>	<u>LB-20</u>
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53"x53"x43"	53"x53"x49"	53"x53"x55"	53"x53"x63"
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34" H	40 $\frac{1}{2}$ " H	46 $\frac{1}{2}$ " H	54 $\frac{1}{2}$ " H
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Shipping Weight:

<u>LB-0</u>	<u>LB-6</u>	<u>LB-12</u>	<u>LB-20</u>
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350 lbs.	350 lbs.*	375 lbs.*	420 lbs.*
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* Plus 200 lbs. Supply pallet.

Capacity:

<u>LB-0</u>	<u>LB-6</u>	<u>LB-12</u>	<u>LB-20</u>
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60 gal.	100 gal.	135 gal.	180 gal.
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*Recommended Load:

<u>LB-0</u>	<u>LB-6</u>	<u>LB-12</u>	<u>LB-20</u>
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75 lbs. of lobster	75 lbs. of lobster	100-125 lbs. of lobster	100-125 lbs. of lobster
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70 lbs. of trout

100 lbs. of catfish

* Unless otherwise noted, all product loads and temperature settings are for North American lobster.

Power Requirements:

Voltage: 110 vac, xx hz

Current: 13.5 Amps

Filtration:

Mechanical Filtration:

One 49" diameter Polyfiber Pad

Chemical Filtration:

Black Diamond Premium Activated Carbon

Biological Filtration:

Biological Filter Material #1

Biological Filter Material #2

Marineland Beneficial Bacteria (Liquid)

Refrigeration:

$\frac{1}{3}$ HP, Compressor with

Helical Heat Exchanger

Installation Connections:

Electric Supply:

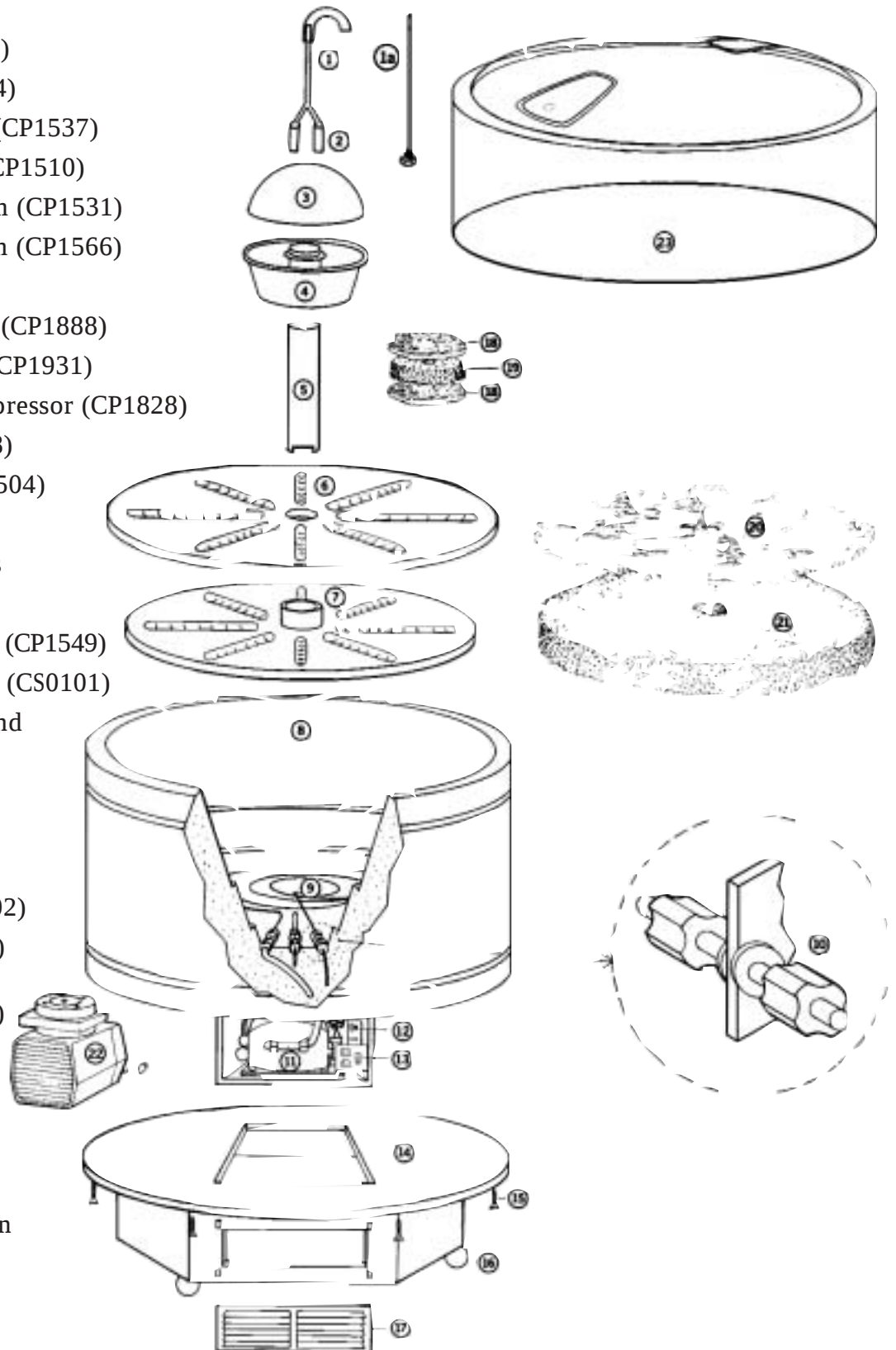
115 VAC., 60 Hz, 15 AMP

Recommendation:

20 AMP Dedicated Circuit

LB-12 EXPLODED VIEW

- 1 - Air Tube Assembly (CP1512)
- 1a - Air Tube with 1/2" Threaded PVC Plug (CP1513)
- 2 - Air Stones (CS1506)
- 3 - Nylon Bag (CA1504)
- 4 - Carbon Filter Box (CP1537)
- 5 - 2" Air Stack Tube (CP1510)
- 6 - Upper False Bottom (CP1531)
- 7 - Lower False Bottom (CP1566)
- 8 - Fiberglass Barrel
- 9 - Refrigeration Coils (CP1888)
- 10 - Bulkhead Fittings (CP1931)
- 11 - Refrigeration Compressor (CP1828)
- 12 - Thermostat (C1558)
- 13 - Junction Box (CP1504)
- 14 - Wood Base
- 15 - Attachment Screws
- 16 - Casters (CP1505)
- 17 - Vented Access Panel (CP1549)
- 18 - Polyester Filter Pad (CS0101)
- 19 - 8 oz. Black Diamond Premium Activated Carbon (CS0370)
- 20 - Polyester Pre-Filter Pad (CSFP36)
- 21 - Bio-Filter Mix (CS0401) & (CS0402)
- 22 - Air Pump (CP1550)
- 23 - Clear Plexi-Glass Dome (CK00DOME) (Sold Separately)



Not Shown

- 6" Plexi-Glass Extension (w/LB-6 Only)
- 19" Plexi-Glass Extension (w/LB-20 Only)
- Crate (CALB00D)

INSTALLATION

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

Tank Preparation

1. Locate unit near a 110–120 volt grounded outlet with a 15 amp dedicated circuit.
NOTE: Place LB Unit on level surface.

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 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.

3. Remove Air Stack Tube. Set aside. Lift Upper False Bottom from tank. Unpack all accessories and supplies.



4. Remove front Vented Access Panel. Make sure system components are plugged into Junction Box.



5. Set thermostat for 55°F. Leave it at that setting for 6 weeks to allow for bacterial growth. Then reset the temperature to 45°. See page 15 for additional recommendations.



FILTRATION PREPARATION

IMPORTANT: Your system contains three 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* – Dolomite filter bed to remove toxic ammonia and nitrites and help maintain pH balance.

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.

DO NOT OVERLOAD YOUR TANK...every biological filter requires a break-in period which allows beneficial bacteria to take hold and grow.

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 LB system ready for operation. Refer to the exploded view (pg. 5) for additional clarification.

Filtration Bed Setup

1. Pour a thin layer (about 1 inch) of Biological Filter Material #2 (dolomite) over Lower False Bottom (A) and spread evenly over entire surface (B).



2. Pour all four bags of Biological Filter Material #1 (carbon) onto Lower False Bottom (A) and spread evenly over entire surface (B).



3. Add another layer of Biological Filter Material #2 (dolomite). Make sure that all carbon is covered and the top layer is level (B).



4. Open Drain Valve (A) and run cold, clean water through the filter bed to flush out all dolomite dust. Be careful not to expose any carbon - it will float until saturated.
NOTE: To avoid spillage, position system drain over a floor drain. Close Drain Valve (B) when finished.



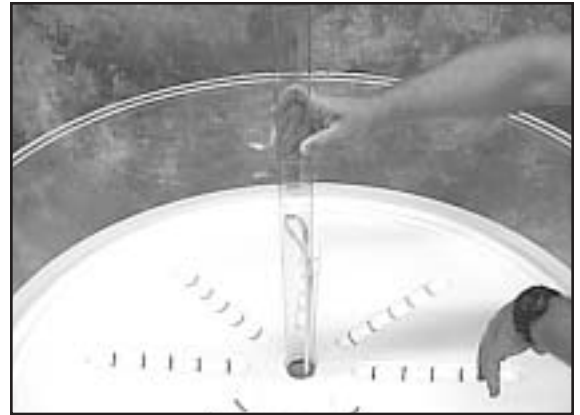
5. Place blue polyfiber Prefilter Pad (blue side up) over top layer.



6. Place Upper False Bottom over Prefilter Pad.



7. Replace Air Stack Tube in hole in Upper False Bottom. Make sure Air Stack Tube rests securely on bottom of tank.



8. Unwrap assembled Carbon Tray (A).

NOTE: Before installing, gently shake Carbon Tray to distribute carbon. Then rinse carbon thoroughly in cold, clean water until water runs clear. Leave Nylon Bag on Carbon Tray. It serves to break up bubbles rising from the Air Stack Tube.



Place Carbon Tray on top of Air Stack Tube. Press down on Tray until it is securely seated atop Air Stack Tube (B).



SYSTEM STARTUP

For Saltwater Systems Only: Add the required amount of powdered sea salt mix to tank (see table). Save the remainder to adjust salinity at a later time.

<u>LB-0</u>	<u>LB-6</u>	<u>LB-12</u>	<u>LB-20</u>
18 lbs.	28 lbs.	40 lbs.	50 lbs.



1. Make sure Drain Valve is closed.



2. Fill tank to within 1½ inches of top ring.

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



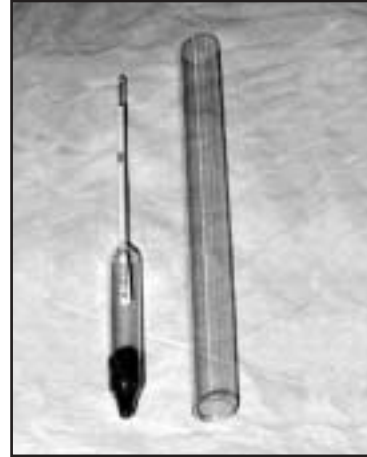
3. Start System. Plug power cord into 110-120v dedicated outlet and turn switch on.

Never attempt to plug in unit unless hands and plug are absolutely dry.

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.

STARTING YOUR BIOLOGICAL FILTER

1. After the tank has been running for an hour or two and your hydrometer reads between 1.020 and 1.025, pour 4 ounces (1/2 bottle) of liquid bacteria (Marineland Beneficial Bacteria) into the filled tank. Wait 15 minutes before introducing animals.

NOTE: Bacteria require a food source to grow. Lobster waste (ammonia) is their food source. The break-in period begins when lobsters are placed into the system.



FOR BEST RESULTS...We recommend that you take an old filter pad from an established tank and ring it out into the new tank. This will add thousands of live, healthy bacteria to your tank and will make your break-in period more successful.

2. Add an additional ounce of liquid bacteria every third day during your break-in period until the bottle is empty.

NOTE: You may occasionally need to add an extra tablespoon of liquid bacteria to your system. This may be necessary after a complete water change or extreme fluctuation in loading, e.g. adding a heavy load after a sellout. Contact Marineland or your service representative for an additional supply.

ADDING ANIMALS

Your living biological filter is not capable of handling large loads in the beginning. It requires a 6 week “break-in” period for the bacteria to develop and cover the available surface area in the filter bed. **This process cannot be rushed.** We recommend very light loads for the first few weeks. Exceeding initial recommended capacity can lead to ammonia overload within 7-14 days.

RECOMMENDED LOADING SCHEDULE

Week 1: no more than 25% capacity

Week 2: no more than 25% capacity

Week 3: no more than 30% capacity

Week 4: no more than 50% capacity

Week 5: no more than 75% capacity

Week 6: 100% capacity

In Case of Ammonia Overload...change 100% of water only.

DO NOT change pads or carbon. DO NOT wash gravel. DO NOT turn system off.

Lobsters

Set salinity. Adjust water temperature (55°F for systems break-in; 45°F following break-in). 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.13.



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 fish 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 American Lobster (*Homarus Americanus*) and trout. When using tanks for 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.

Remove foam.

Check your system for foam every morning. Foam forms on the surface of the water when there is a dead or wounded animal in the tank or when organic contaminants are introduced into the system. These contaminants can enter the system via unrinsed lobsters. They can also come from feeding the lobsters.

NEVER feed lobsters. The food will foul the tank, and lobsters kept at 45°F can go without eating for over a month with no ill effects.

When foam is present, remove it with a piece of clean cardboard or other semi-rigid material. Then determine the cause and remove the source. Never attempt to eliminate the foam with a de-foaming agent. This only puts the contaminants back into the water, which will stress the animals and cause tank water to cloud up.

NOTE: Lobsters with missing claws or feet are a constant source of foam. Always remove these animals immediately to avoid contaminating the system.

Every Two Weeks

Change Carbon Filter Pad and Carbon.

Clogged filters do not collect waste. Uncollected waste is returned to the aquarium and will reduce system efficiency. In addition, carbon filters out dissolved pollutants, odors, chlorine, toxic gas and proteins. As with any filtering media, it is eventually exhausted and must be changed.

To change carbon, follow the steps below.

1. Remove Carbon Filter Tray.



2. Remove Nylon Bag. Set aside. Discard used carbon and Carbon Filter Pads. Rinse out Carbon Tray. Replace bottom Carbon Filter Pad.



3. Pour 8 ounces of Black Diamond Premium Activated Carbon into padded tray.



4. Cover new carbon with second Carbon Filter Pad (A) and tuck pad under lip of Carbon Filter Tray (B). Cover Carbon Filter Tray with Nylon Bag and re-install on top of Air Stack Tube (C).

A



B



C



Warning: Never spray insecticides within 20 feet of your tank system. The resulting contamination could kill your product 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.

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 tank at any time.*

Inspect display tank and Sump for algae growth.

Algae spores enter the system naturally via tank inhabitants and light allows them to grow. The more light you have, the greater the potential for algae growth. To remove algae, simply wipe inside tank surface with a cloth 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.

Every month to six months

Replace airstones.

Airstones are a very important part of your system's filtration and circulation system. Within the system, they dramatically increase water flow and provide added surface area for oxygen exchange. The turbulent bubbling action also helps to neutralize toxic gases like carbon dioxide.

Airstones may become clogged due to algae growth, mineral deposits, and/or organic deposits. The occurrence of these conditions varies depending on the amount of light hitting the tank, the hardness of the local water supply, and general maintenance practices. When airstones become clogged, they must be changed...and all of them must be changed at the same time.

To change airstones, follow the steps below.

1. With the system off, remove the Carbon Tray. Disconnect white rigid tube from flexible connector tubing. Remove white rigid tube with airstones attached.
2. Test for clogs by blowing through each white rigid tube. Air should pass easily through the stones. If you find yourself blowing too hard, the airstones are clogged and need to be replaced.
3. Pull the clogged airstones off the "Y" connector at the end of each rigid white tube.

NOTE: Replacement "Y" Connectors (Part #C1515) can be ordered by calling the 24-Hour Marineland Hotline at (800) 322-1266.



4. Place the new airstones on each open end of each “Y” connector.

NOTE: We recommend you use only Marineland airstones. They last longer and provide more bubbles for aeration.



5. With a rubber band, wrap the pair of airstones together.



6. Re-insert white rigid tube into Air Stack Tube and reattach flexible connector tubing.

NOTE: Do not push airstones all the way to the bottom of the tank.



Every three to six months...

Change Bottom Filter Pad.

Over time, your tank's filter bed accumulates so much debris that the flow through it is reduced. This will have an adverse effect on your animals, since a reduction in flow means less oxygen available to the biological filter, which in turn reduces ammonia consumption.

The length of time required to reach this condition will depend on how well you have followed the preceding maintenance procedures and on the loads kept in the tank. On average, your filter bed should remain unrestricted for at least six months. Time expectation will vary in accordance with how well you have followed the general maintenance and loading procedures which precede this section.

Your filter bed is clogged or restricted when water flow through the Air Stack Tube is noticeably reduced.

NOTE: This condition can also result from clogged airstones and blocked air pump filters, so be sure to check for these conditions first.

If the filter bed is restricted, but the animals appear normal and water is not hazy, you have caught the problem in time. A complete tank breakdown is not necessary. You must, however, change the bottom filter pad to increase the flow through the filter bed.

To Change the Bottom Filter Pad...

1. Remove animals. Place lobsters in box and put box in cooler. Place fin fish in clean container which has been filled with water from the tank. Aerate water with white rigid tube and airstones from tank.
2. Remove Carbon Tray and Air Stack Tube. Slowly remove Upper False Bottom.



3. Gently roll up Bottom Filter Pad. Try to keep as much dirt as possible in the pad as you roll. Remove and discard.



4. Agitate filter bed by hand or with a clean tool. This will open up any blockage.

5. Place new pad in tank and replace Upper False Bottom, Carbon Tray and Air Stack Tube.



Clean External Air Filter

The External Air Filter is the brown muffler-like appendage sticking out from the top of the pump. To clean, first cut off the yellow shipping straps (A) remove pump and unscrew the filter from the pump head (B). Rinse filter in warm water (no soap). Reinstall filter and pump.

A

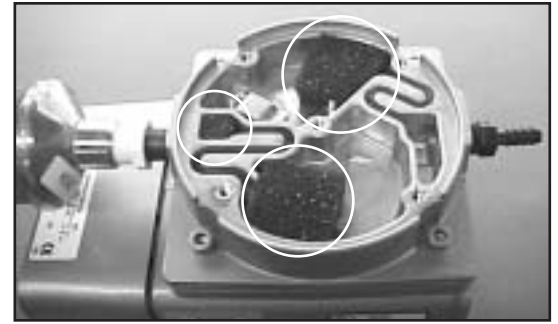


B



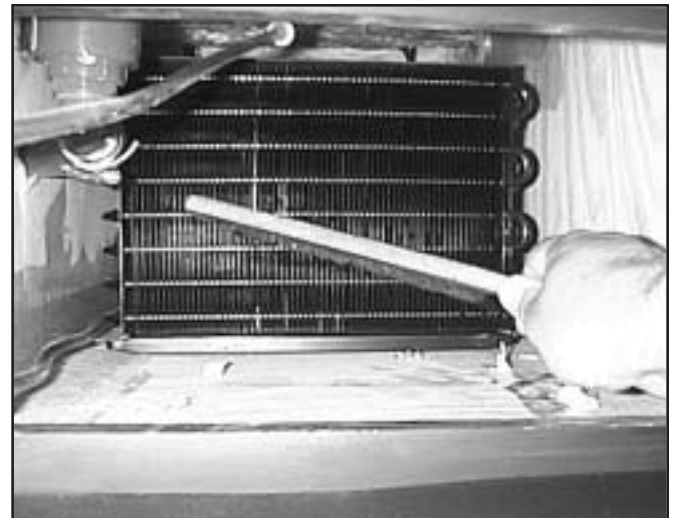
Clean Internal Air Filters

There are three internal foam air filters located under the round plate on top of the pump. To remove the plate and gasket, unscrew the five top screws. The three filters are in the internal air chambers of the pump. To clean, simply lift out the three foam filters and rinse them in warm water (no soap). After cleaning, replace the filters, gaskets and top.



Clean Refrigeration Unit Condenser Intake Screen.

To access the Refrigeration Unit, you may have to remove the Pump. Refrigeration Condenser Intake Screen should be brushed or vacuumed clean. This eliminates accumulated dust and prevents clogging that can lead to overheating and system failure.



Every six months...

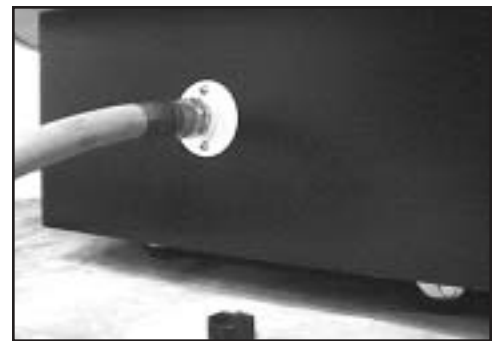
Clean Filter Bed

IMPORTANT: This process, although vital to the health of your filter bed, can be very detrimental to your filter if done incorrectly. Please pay particular attention to the list of “NEVERS” at the end of this section.

1. Remove animals. Place lobsters in box and put box in cooler. Place fin fish in clean container which has been filled with water from the tank. Aerate water with white rigid tube and airstones from tank.

2. Drain tank using drain hose in side of tank.

NOTE: If you wish to stop flow while cap is removed, close Drain Valve.



3. Remove Carbon Tray and Air Stack Tube.
Remove Upper False Bottom and Bottom Filter Pad.

4. Wash gravel bed by agitating with a strong, hard stream of cold water. Try to penetrate the gravel with the stream to dislodge any accumulated debris.

CAUTION: Do not use soap, cleaners or hot water.
Do not permanently remove gravel from tank.
These actions will destroy the bacteria in your filter.



5. After hosing out filter bed, immediately fill tank. For lobster, add salt and water immediately as directed in Preparation Section.

NOTE: It is acceptable for carbon and dolomite to be mixed as a result of this procedure.

IMPORTANT: The entire washout procedure should take **no longer than 10-15 minutes**. In lobster tanks, the saltwater bacteria must not be exposed to freshwater for more than five minutes or they will start to die.

NOTE: In areas where the tap water is over 70°F, it is recommended that ice be used when refilling the tank.

6. Put fresh carbon in the Upper Carbon Tray to eliminate any chlorine in the newly changed water. Check salinity and temperature. Allow tank to operate for one hour before reintroducing animals.

NEVER overload your system.

NEVER wash gravel with hot water.

NEVER wash gravel with soap or cleaners.

NEVER wash gravel with a high pressure hose.

NEVER remove gravel from tank.

NEVER allow gravel to dry out.

NEVER expose lobster tank gravel to fresh water for more than 5 minutes.

NEVER feed animals.

NEVER use insecticides near system.

NEVER move LB unit when it is full of water.

BARREL COMPRESSOR SERVICING

If your refrigeration compressor needs to be removed for service, please contact Marineland Customer Service for assistance: (800) 322-1266. This procedure should be performed only by a Marineland technician.



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...

- Inspect system for damaged product.
- Replace Carbon in Upper Carbon Tray.

IF water flow from Air Stack Tube is reduced...

- Inspect airstones for blockage. Change if necessary.
- Check air line connections.
- Make sure air pump filters are not obstructed. Clean if necessary.
- See that filter bed is not impacted.

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 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 you experience product loss shortly after arrival...

- *Don't panic.* This may be normal. Remove dead product.
- Check water salinity. Adjust if necessary.
- Monitor temperature carefully. Adjust if necessary.

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.

IF a large number of animals perish and water is clear...

- Change water and replace carbon immediately.
- Make sure that insecticides or other industrial poisons are not being used near the aquarium.

IF a large number of animals perish and water is hazy...

- Check for restricted bio-filter. If restricted, take appropriate measures (pgs. 21-22). Change water and clean BIO-Filter.
- Reduce load (if exceeds recommended capacity - pg. 4).
- Make sure water temperature is not too high. Adjust Thermostat as required and monitor tank temperature with thermometer allowing 3-4 hours for temperature to stabilize before checking again.
- Check for fish or other product caught under Upper False Bottom.
- Make sure system is operating in accordance with recommended six-week loading schedule (pg. 15).
- Inspect airstones for blockage. Change if necessary.
- Make sure air pump filter is not obstructed. Clean if necessary.

CUSTOMER SERVICE

Should you experience problems with your system or wish to order supplies, call the 24-Hour Marineland Hotline at (800) 322-1266.

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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