

OPERATING MANUAL

REFRIGERATED LIVE SEAFOOD DISPLAY AND HOLDING SYSTEMS

ML SERIES



IMPORTANT SAFEGUARDS

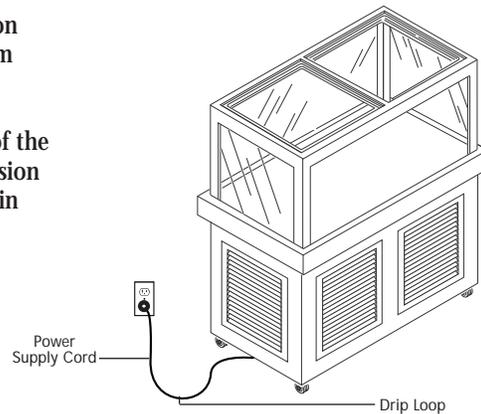
WARNING – To guard against injury, basic safety precautions should be observed, including the following:

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.

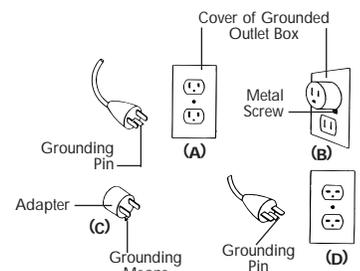
E. To avoid the possibility of the plug or receptacle getting wet, position tank to one side of a wall mounted receptacle to prevent water from dripping onto the receptacle or plug. A "drip loop", shown in the illustration at right should be arranged by the user for each cord connecting equipment to 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 an this equipment for other than intended use. The use of attachments not recommended or sold by the appliance manufacturer may cause an unsafe condition.
6. Do not install or store the equipment where it will be exposed to the weather or to temperatures below freezing.
7. Make sure any appliance mounted on a tank is securely installed before operating it.
8. Read and observe all the important notices on the equipment.
9. If an extension cord is necessary, a cord with a proper rating should be used. A cord rated for less ampere or watts than the equipment rating may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled.

10. This equipment should be grounded to minimize the possibility of electric shock. This unit is equipped with an electric cord that has an equipment grounding conductor and a grounding type plug. The plug must be plugged into an outlet that is installed and grounded in accordance with all appropriate codes and ordinances.

11. This equipment is for use on a nominal 120 volts circuit, and has a grounding plug that looks like the plug illustrated in (A). A temporary adapter which looks like the adapter illustrated in (B) and (C) may be used to connect this plug to a two pin receptacle as shown in (B) if a grounded outlet is not available. The temporary adapter should be used only until a grounded outlet can be installed by a qualified electrician. The green colored rigid ear (lug and the like) extending from the adapter must be fastened to a permanent ground such as a grounded outlet box.



SAVE THESE INSTRUCTIONS

THE MARINELAND ML SERIES



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

The Marineland ML 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 (#C0401)
 - Biological Filter Material #2 (#C0402)
 - Black Diamond Premium Activated Carbon (#370)
 - Filter pad material - for Carbon box (#100)
 - Extra airstones (#C1506)
 - Bottle of Liquid Bacteria (#C1569)
 - Bottom Prefilter Pads (#FP22, #FP24, #FP26, #FP44, #FP46)

- Accessories:
- Thermometer (#C1502)
 - Hydrometer (#C1501)
 - Lobster Rake (#C1503)

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 ML System...

In this closed system, refrigerated water is drawn from the enclosed Sub-Chamber up through the Air Stack Tubes and into the Carbon Filter Tray. As water passes through the Carbon Filter Box, mechanical and chemical filtration are 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 biological filtration occurs. A thriving culture of beneficial nitrifying bacteria efficiently oxidizes all ammonia and nitrite on contact. Filtered water then re-enters the Sub-Chamber for recirculation.

ML SERIES

SYSTEM SPECIFICATIONS

Dimensions:

ML-22
27 $\frac{1}{4}$ " L x 27 $\frac{1}{4}$ " w x 53" H

ML-24
50" L x 27 $\frac{1}{4}$ " w x 53" H

ML-26
72" L x 27 $\frac{1}{4}$ " w x 53" H

ML-44
50" L x 50" w x 53" H

ML-46
72" L x 50" w x 53" H

Shipping Weight

ML-22
400 lbs.

ML-24
650 lbs.

ML-26
800 lbs.

ML-44
1125 lbs.

ML-46
900 lbs. + 500 lbs.

Capacity:

ML-22
50 gallons

ML-24
110 gallons

ML-26
150 gallons

ML-44
230 gallons

ML-46
330 gallons

Recommended Load:

ML-22
30 lbs. of lobster

ML-24
75-100 lbs. of lobster
35 lbs. of trout
50-60 lbs. of catfish

ML-26
100-125 lbs. of lobster
50 lbs. of trout
70-80 lbs. of catfish

ML-44
150-200 lbs. of lobster
70 lbs. of trout
100-110 lbs. of catfish

ML-46
200-250 lbs. of lobster
100 lbs. of trout
150 lbs. of catfish

Power Requirements:

ML-22, ML-24, ML-26
15 AMPS, 115V, 60 Hz

ML-44
20 AMPS, 115V, 60 Hz

ML-46
30 AMPS, 115V, 60 Hz

Filtration:

Mechanical Filtration:

Two (Upper and Lower)
Polyfiber Filter Pads

Chemical Filtration:

Black Diamond Premium
Activated Carbon

Biological Filtration:

Biological Filter Material #1
Biological Filter Material #2
Marineland Beneficial
Bacteria (Liquid)

Refrigeration:

Fractional Horsepower
Compressor with Helical
Heat Exchanger

Installation Connections:

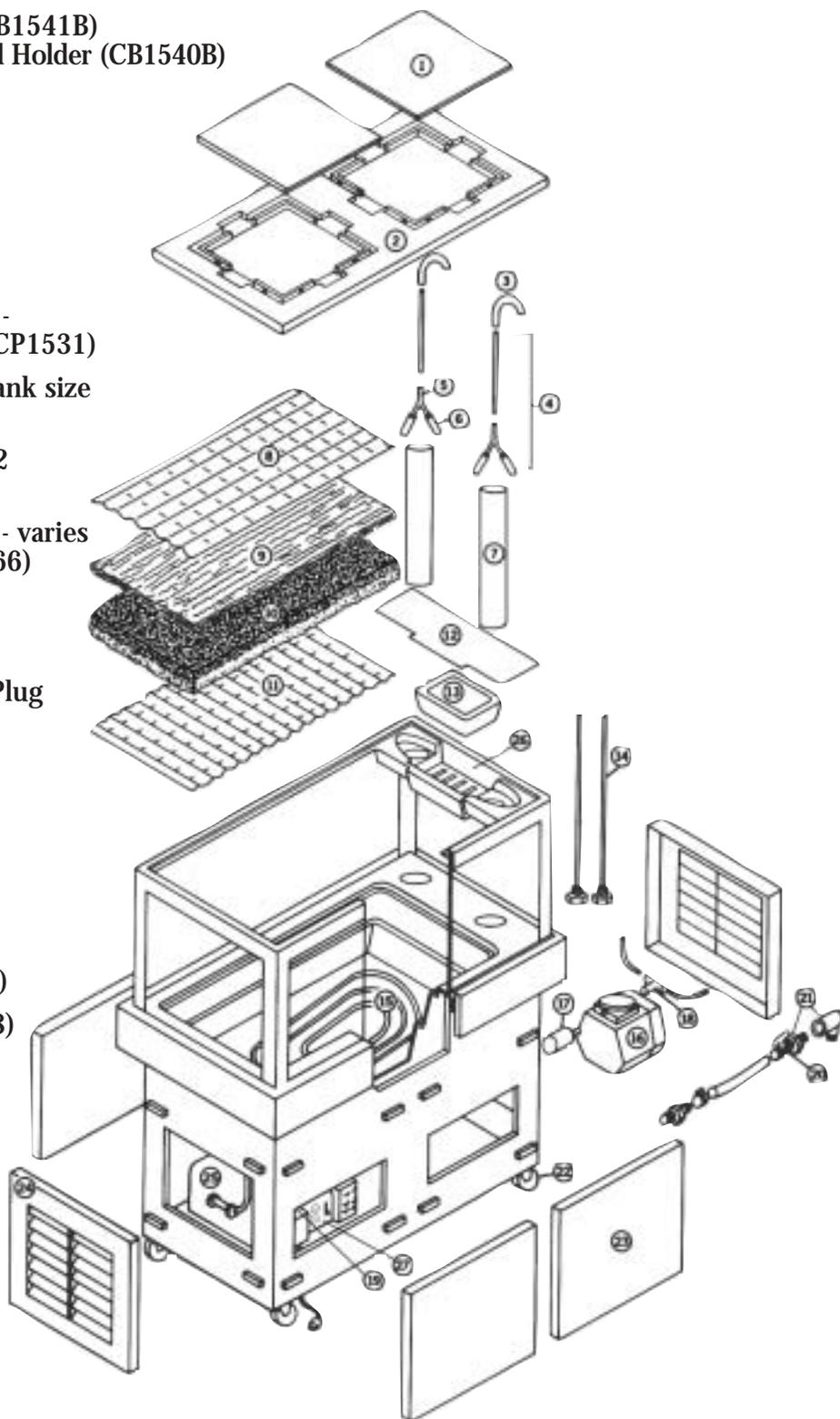
Electric Supply:
115 VAC., 60 Hz, 15 AMP

Recommendation:
20 AMP Dedicated Circuit

Sump Drain:
3/4" Flexible Tubing

ML SERIES EXPLODED VIEW

- 1 - Clear Plastic Lid (CP1536)
- 2 - Black Top Double Lid Holder (CB1541B)
(not pictured) Black Top Single Lid Holder (CB1540B)
- 3 - Air Tube Connector (CP1516)
- 4 - Air Tube Assembly (CP1512)
- 5 - "Y" Connector (CP1515)
- 6 - Airstone (CS1506)
- 7 - 2" Air Stack Tubes (CP1510)
- 8 - Corrugated Upper False Bottom -
varies with tank size (CP1527 - CP1531)
- 9 - Bottom Filter Pad - varies with tank size
(CSFP24 - CSFP46)
- 10 - Biological Filter Material #1 & #2
(CS0401 & CS0402)
- 11 - Corrugated Lower False Bottom - varies
with tank size (CP1562 & CP1566)
- 12 - Carbon Box Lid (CP1538)
- 13 - Carbon Box (CP1535)
- 14 - Air Tube with 1/2" threaded PVC Plug
(CP1513)
- 15 - Refrigeration Coil (CP1818)
- 16 - Air Pump (CP1550)
- 17 - External Air Filter (CP1553)
- 18 - "T" Hose Adapter (CP1552)
- 19 - Thermostat* (CP1558)
- 20 - Drain Valve w/o Fitting (CP1519)
- 21 - Drain Valve with Fitting (CP1518)
- 22 - Casters (CP1505)
- 23 - Black Side Panel (CP1545B)
- 24 - Black Vented End Panel (CP1546B)
- 25 - Refrigeration Compressor
(CP1883)
- 26 - Carbon Filter Box Holder
(CP1778)
- 27 - Junction Box



* Inside Cabinet

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 15 amp dedicated circuit.

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

Do not handle or connect plug with wet hands.

2. Make sure Vented Panel is not obstructed. These panels allow cooling air to reach compressor. They also provide access to filters, thermostat, on/off switch, drains and other components.
3. Unpack all accessories, supplies and Upper False Bottom from tank.

4. Remove front Side Panels. Make sure system components are plugged into junction box.



5. Set thermostat (see exploded for location) 55° F. Leave it at that setting for 6 weeks to allow for bacterial growth. Then reset the temperature to 45°E. See *page 17 for loading temperatures*.



FILTRATION PREPARATION

IMPORTANT: Your system contains three 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* – Special BIO-Mix in the tank bottom to help remove toxic ammonia and nitrites and maintain pH balance.

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.

DO NOT OVERLOAD YOUR TANK...every 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 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.

Filter Bed Setup

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



2. Add Biological Filter Material #1 (A) covering top layer of dolomite completely (B).



3. Add more Biological Filter Material #2 until top layer of dolomite is within one inch from the top of the filtration well. Make certain that all carbon is covered and the top layer is level.



4. Place blue Bottom Filter Pad over top layer.

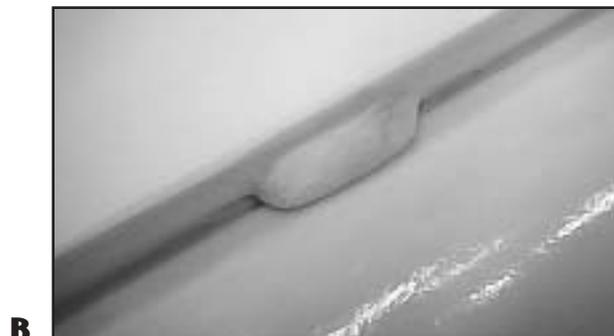


5. Open Drain Valve (A) and run cold, clean water through the filter bed to flush out all dolomite dust. Be careful not to expose any carbon - it will float until saturated.

NOTE: To avoid spillage, position System Drain over a floor drain. Close Drain Valve (B) when finished.



6. Place Upper False Bottom over Prefilter Pad (A). Make sure that the bottom fits securely under locking tabs and that no pad edges protrude (B).



7. Remove Carbon Box Lid (A). Unwrap Carbon Box and place inside Carbon Filter Box Holder (B).

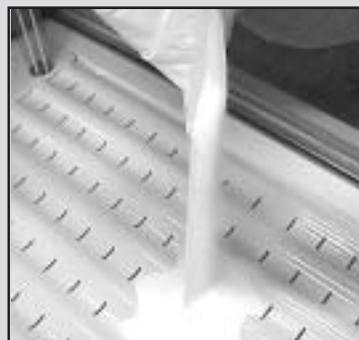
NOTE: Before installing, gently shake cartridge to distribute carbon. Be sure to rinse Carbon thoroughly in cold, clean water until water runs clear (C).



SYSTEM STARTUP

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

<i>Model</i>	<i>Salt Required (approximate)</i>
ML-22	14 lbs.
ML-24	28 lbs.
ML-26	48 lbs.
ML-44	60 lbs.
ML-56	96 lbs.



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

1. Make sure Drain Valve is closed.



2. Fill display tank half full.



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 tank to within one inch of the bottom of the top frame. Carbon and dolomite dust may cause some cloudiness. This will clear in a few hours.

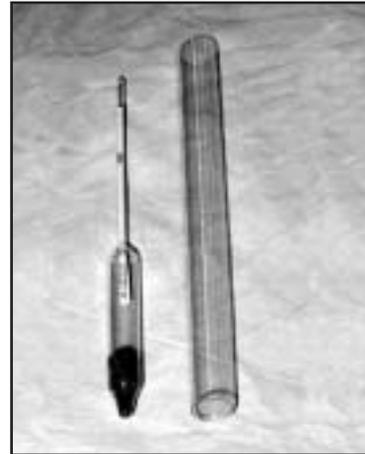
NOTE: Never allow water level to go below Water Level Line on side glass.



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 (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 product. 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 (pictured). 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 cannot 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.

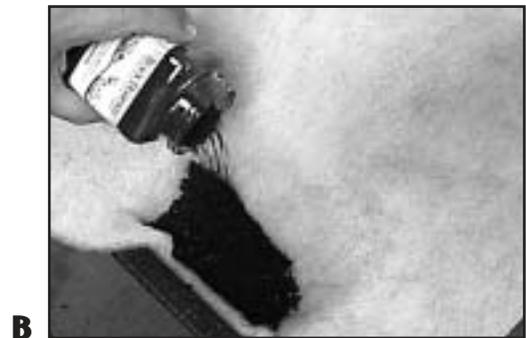
1. Remove Carbon Box.



2. Discard used carbon and Carbon Filter Pad. Rinse out Carbon Box. Tear or cut a new Carbon Filter Pad in half to fit the Carbon Box.



3. Tuck new Carbon Filter Pad into Carbon Box - blue side down (A). Pad should cover bottom, sides and back with enough left on top to fold over the newly added carbon. Pour 8 ounces of Black Diamond Premium Activated Carbon in to padded tray (B).



4. Cover new carbon with top of Carbon Filter Pad and tuck pad under lip of Carbon Box (A). Reinstall Carbon Box (B).



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 system at any time.***

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

Inspect display tank and sump for algae growth.

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

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 factors 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 pump running, remove the Carbon Box Lid. Each Air Stack contains a white rigid tube attached to a length of flexible connector tubing. Disconnect the tubes and tubing in each Air Stack and remove the white rigid tubes 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 1-800-322-1266.



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 each pair of airstones together.



6. Re-insert white rigid tubes into Air Stacks and reattach flexible connector tubes.

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.

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

To determine if your filter bed is restricted, follow these steps (while pump is running):

1. Remove Carbon Box Lid and Carbon Box.



2. In one Air Stack, disconnect flexible tubing from white rigid tube. Bubbles will stop in the disconnected stack and will either stop or be greatly reduced in the other.



3. Noting the water level within the disconnected Air Stack, cover the air outlet in the disconnected Stack with your finger so that all bubbling is limited to the other Stack. Water level in the disconnected Air Stack will drop. The more it drops, the more restricted the filter is.

NOTE: If the water drops more than four inches, the filter bed is completely restricted.

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. 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.

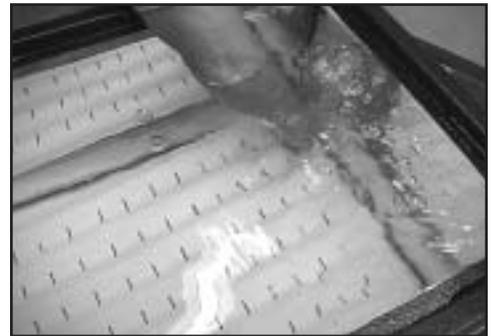


5. Place new pad in tank.

NOTE: To prevent air bubbles from being trapped in pad, "snake" pad over edge of tank...or roll pad up underwater and wring out air bubbles before covering Filter Bed.



6. Replace Upper False Bottom.



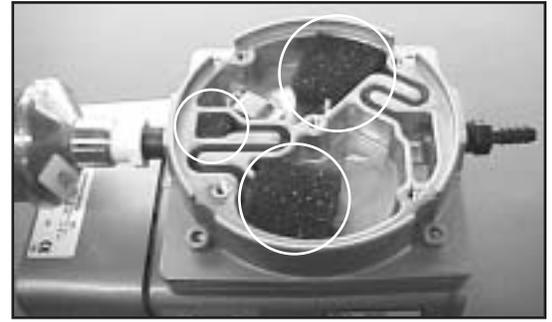
Clean External Air Filter

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 and unscrew the filter from the pump head. Then rinse it in warm water (no soap).



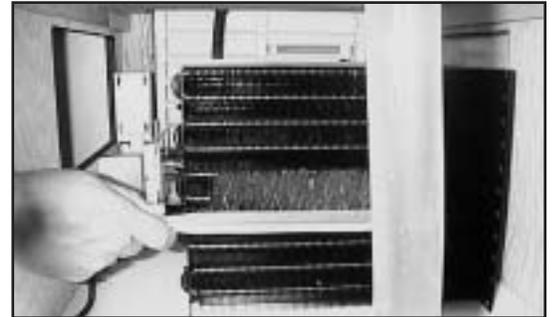
Clean Internal Air Filters

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



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 do's and don'ts 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.



3. Remove Upper False Bottom (A) and Bottom Filter Pad (B).



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.



5. Move gravel to one end of tank, exposing half of the bottom grid. Hose the grid to flush out any particles trapped in the holes. Repeat the process for the other half of the grid. When done, spread gravel back evenly over the entire grid.

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.



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

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 that 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.

7. Put fresh carbon in the Carbon Box 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 remove gravel from tank.

NEVER allow gravel to dry out.

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

NEVER turn off system (even when temporarily out of animals).

NEVER feed animals.

NEVER use insecticides near system.

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 Pad and carbon.

If water flow from Air Stack Tubes is reduced...

- Inspect airstones for blockage. Change if necessary.
- Make sure air pump filter is not obstructed. Clean if necessary.

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 setting and is not damaged.
- Inspect Intake Vents and Condensing Screen. Clean if necessary.
- Call Customer Service if Thermostat or Refrigeration Unit is malfunctioning.

If you experience product loss shortly after arrival...

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

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

- Adjust water temperature to match that in which they are already accustomed (shipped in). Keep at this temperature for 24 hours, then lower to 50°F

If a large number of animals die and water is clear...

- Change water and replace carbon immediately.
- Remove any metal objects that may have been introduced into system, e.g. pennies, brass, etc.
- Make sure that insecticides or other industrial poisons are not being used near the aquarium.

If a large number of animals die and water is hazy...

- Check for restricted bio-filter. If restricted, take appropriate measures (pg. 21). Change water and clean BIO-Filter.
- Reduce load (if exceeds recommended capacity - pg. 15).
- 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 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,
call Marineland at (800) 322-1266.**

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

WEEKLY USE ITEMS:

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

SERVICING ITEMS:

- | | |
|---------------------------------------|---------------|
| 1. Hydrometer | CA1501 |
| 2. Tank Thermometer | CA1502 |
| 3. Lobster Rake | CA1503 |
| 4. 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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