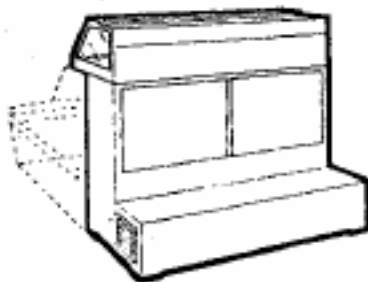
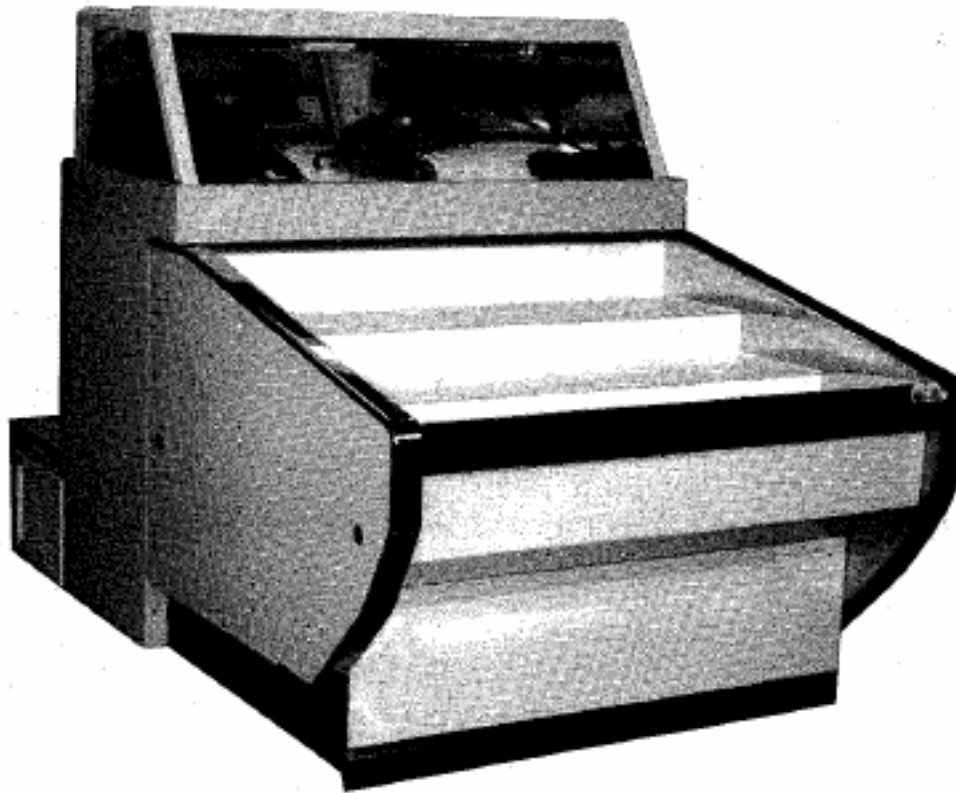


OPERATING MANUAL

REFRIGERATED LIFE SUPPORT SYSTEM



Shown from Rear View

ML-FV 6 (Forward View)

Dimensions: 49"L x 35"W x 50-70"H
Ship Weight: Approx 650 lbs.
Capacity: 70 gallons
Recommended Load: Lobster 50 lbs.
Power Required: 10.8 Amps, 115V, 60Hz

1. Introduction

Congratulations! You have purchased the finest refrigerated life support system available. Your new Live Merchandiser utilizes an effective biological filter along with many innovative features designed for maximum cost-effectiveness and ease of use.

Your Marineland System will keep your live seafood fresher and for longer periods of time than any other method of retail display.

IT IS IMPERATIVE THAT YOU READ THIS MANUAL TO ENSURE PROPER SET-UP AND MAINTENANCE PROCEDURES SO YOUR SYSTEM WILL OPERATE AT ITS PEAK EFFICIENCY FOR MANY YEARS TO COME.

Operating Manual

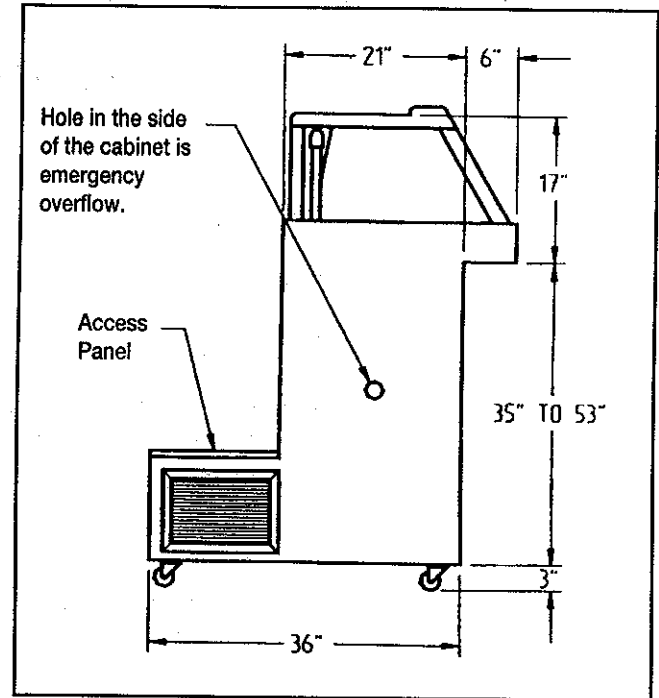
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2. Checklist

Your MARINELAND LIFE SUPPORT SYSTEM comes complete with everything you need to set up and get started. In addition to those items required for set-up, our system also comes with additional supplies of consumable items such as carbon and filter pads. Please check your system to find the components listed below.

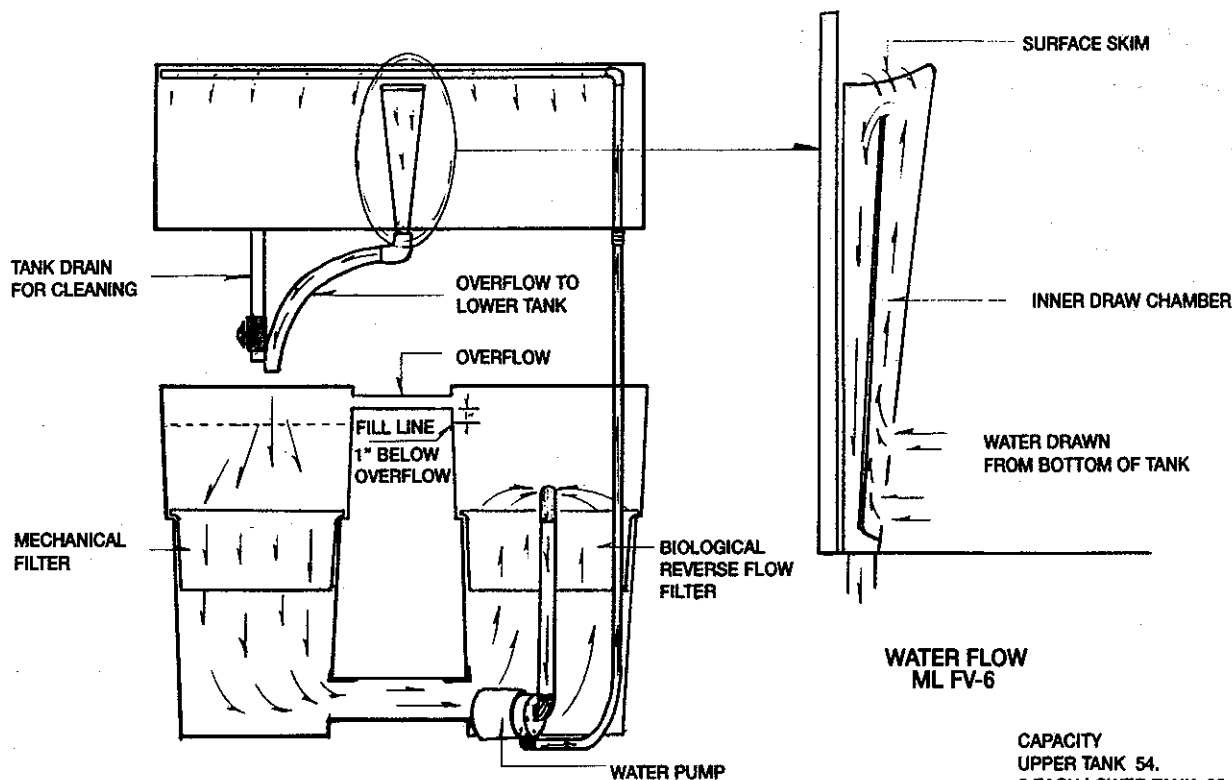
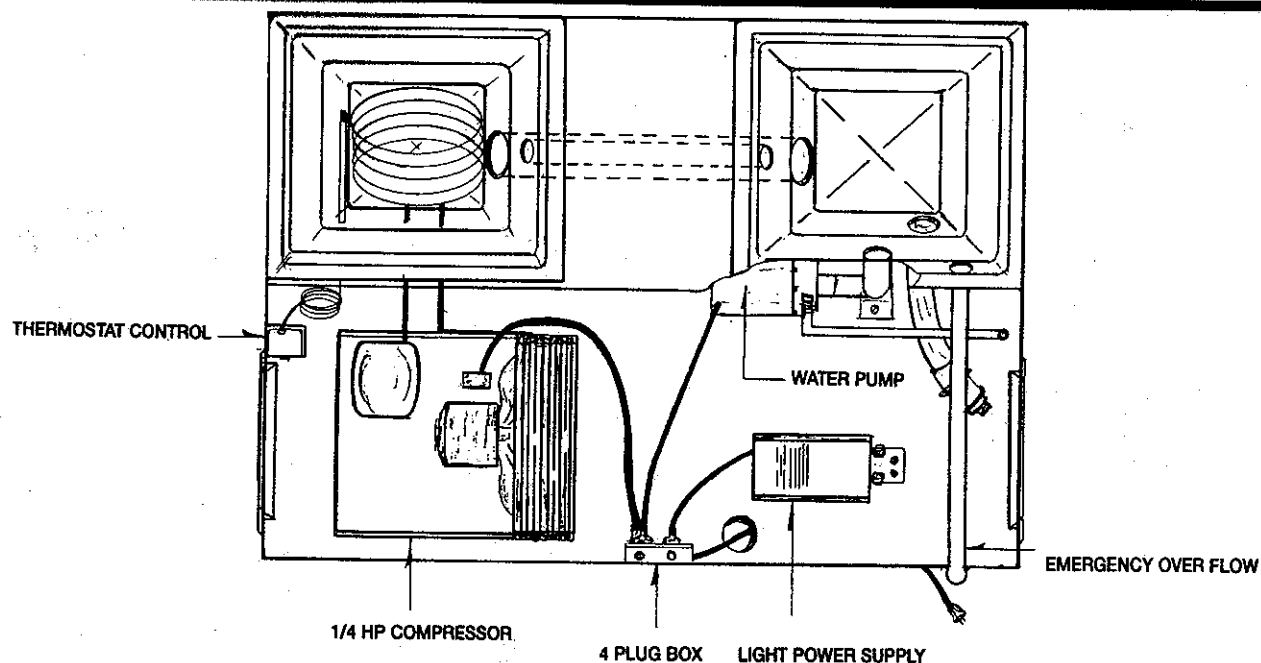
Note: We recommend that you purchase enough additional MARINELAND SEA MIX for two water changes immediately upon set-up. This is so you will have extra salt on hand in case a water change becomes necessary during the critical break-in period.



Quantities Furnished:

Component	Quantity
False Bottom	1
Filter Box with Carbon	1
Biological Media (dolomite) 40 lb. bag	3
Marineland Sea Mix (salt) 50 lb. Box	1
Filter Pads	3
Bottle of Liquid Bacteria	1
Hydrometer	1
Thermometer	1
Lobster Rake	1

3. Know Your System

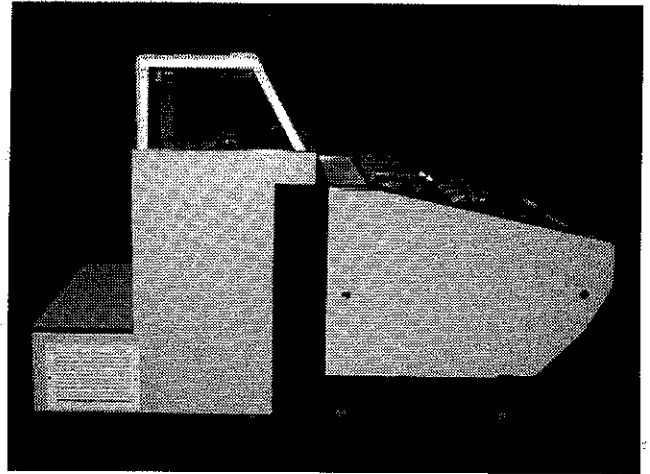


CAPACITY
UPPER TANK 54.
2 EACH LOWER TANK 32.
SYSTEM TOTAL 87.2

4. Installation and Setup

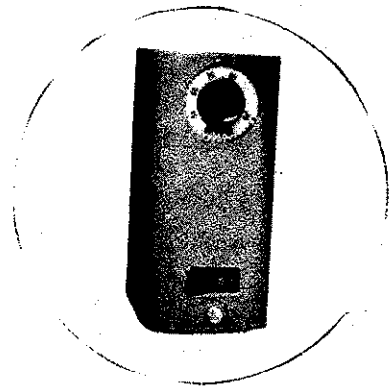
A. Location of System

1. Locate the unit near a 110-120 volt grounded outlet. Power is supplied to the unit by one plug drawing 10.8 amps (3 amps when refrigeration is shut off). The cord should be plugged into a 15 amp dedicated circuit
2. Be sure to allow enough room to access the rear step cover and the ventilated side panels. Your system is serviced and maintained through this panel and the vent allows a free flow of cooling air to the compressor under the tank. Do not remove casters or otherwise block vent slots in tank bottom.
DO NOT OBSTRUCT.



B. Preparation of System

1. Unpack all accessories from inside of tank.
2. Lift rear step cover and check to make sure that all components are plugged into the unit's junction box.
3. Locate the thermostat on the side of the system under the rear step cover. Set to 55°F for six weeks, then lower to 50°F.



C. About Your Filter

IMPORTANT! – ABOUT YOUR FILTER – IMPORTANT!

Your Marineland Lobster Tank contains three filters:

1. Filter pads to remove solid waste particles.
2. Carbon to remove dissolved contaminants like toxic organics.
3. Special bio-mix in the reservoir for growing a biological filter and pH maintenance.

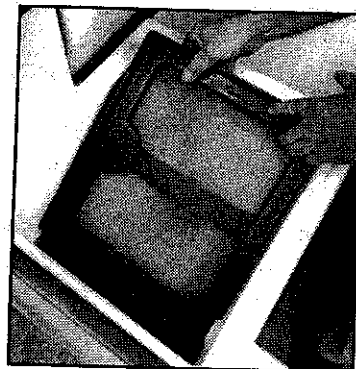
The biological filter is most important. This filter has to be grown to accommodate your product load. It is this filter that removes the biggest killer of aquatic animals – ammonia. Ammonia is produced in a lobster tank from animal waste and respiration. When the biological filter is handled properly, your product will stay alive and healthy, and your water will be clear. If this filter is overloaded or abused, the results will be detrimental to the health and longevity of your livestock.

In order to properly take care of your biological filter, you need to understand that it is a **LIVING FILTER**, consisting of aerobic (oxygen consuming) bacteria. These bacteria, which are always present in nature, consume the waste products of the animals in your tank, the most important of which is ammonia. They eat ammonia. So your lobsters, fish, and other live seafood stay healthy. However, like any living thing, your filter has certain requirements and limitations. It can be overloaded, particularly in the beginning, before the bacteria have had a chance to multiply. For this reason we will ask you not to overload the tank at first – the filter needs a break-in period.

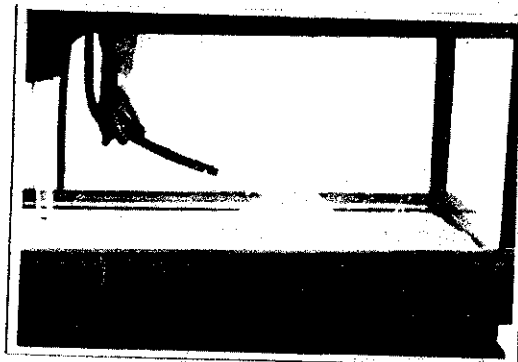
The bacteria can also be killed. For this reason we will ask you to never use soap or cleansers in the tank; to never leave the tank turned off for long; to never let the gravel dry out; to only use cold water for brief time periods when cleaning the gravel; and to refill immediately with salt water (lobster tanks) after cleaning.

D. Placing Filters and Filling Tank

1. Remove Bio-Box from right reservoir, pour bio-mix part 2 (dolomite) into box filling it up. Make certain that the dolomite is level.
2. Remove carbon box from reservoir and remove plastic bag. Rinse carbon box in sink until water flows clear. Return to reservoir making sure that the box is situated correctly so that the water-dispersing flange is positioned directly under draining tube.
3. It is a good idea at this point to run water through the bio-mix with the drain open so that all dolomite dust is flushed out. Attach a hose to the drain or roll the tank over a floor drain for flushing purposes.
CLOSE THE DRAIN WHEN FINISHED.
4. Check to see that the false bottom is properly seated inside the tank.
NOTE: Do not place any filter medium inside the tank.
5. For SALTWATER SYSTEM, pour approximately 23 lbs. salt into tank.
ALWAYS CONFIRM CORRECT SALINITY WITH YOUR HYDROMETER.



-
6. Making sure that the main drain is closed, use a hose to fill tank with water. For saltwater systems, run the water through the salt to dissolve it more quickly. Fill tank to the top of the surface skimmer. Fill reservoir to the top of the filter box.
 7. Keep the primary drain (from the surface skimmer) completely open. The skimmer is designed to remove water and waste from both the surface and the bottom of the tank. Keep the secondary drain closed. This is used for draining the tank completely when it is time to do a water change.

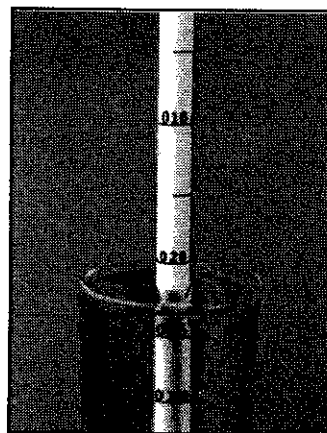
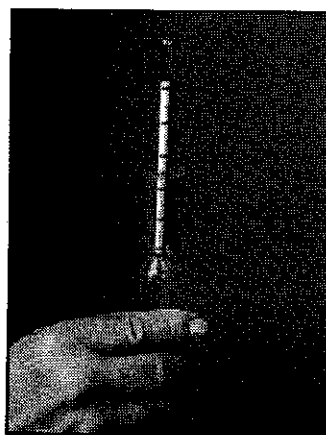
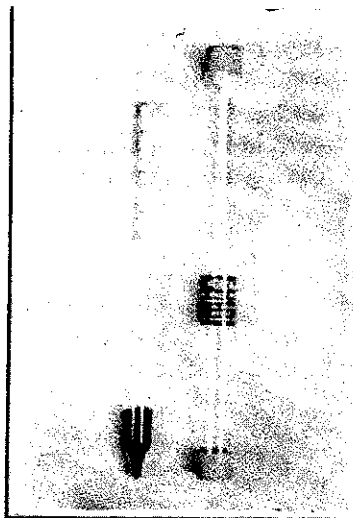


IMPORTANT: If the secondary drain is left open, you run the risk of overflowing the reservoir in the event of a power failure, or by unplugging the system. If this happens, the entire tank will drain into the reservoir and out the emergency overflow port. If possible, connect a tube from the overflow port into a floor drain. The tube should remain permanently in case a power failure occurs.

8. Start the system by plugging the main power cord into a 110-120 volt dedicated outlet.

E. Measuring Salinity (Not applicable to trout/catfish tanks)

1. After system has been running for two hours, and all cloudiness has cleared, it is time to measure the tank's salt level with your hydrometer. Remove hydrometer from plastic tube.
2. Rinse out plastic tube and fill it with water from the tank. Place hydrometer in tube and tap tube lightly so that hydrometer floats. (Alternate method is to float hydrometer in tank).
3. Read scale on tube. Your hydrometer should read between 1.020 and 1.025. The saltier the water, the higher the reading. If the reading is below 1.020, add salt; above 1.025, drain some water and add fresh water. We recommend an initial reading of 1.022 to allow for evaporation.
4. If you replace water lost due to evaporation, simply add tap water. If salt water is removed to dip lobsters or clean tank, etc., then new salt will be needed. Never pour salt directly into the tank when lobsters are present. Use a clean container to dissolve it first. Approximately $1\frac{1}{2}$ pounds of salt are needed for each 5 gallons of water. Always wait for the salt to thoroughly dissolved before taking a hydrometer reading.



F. Starting Your Biological Filter

1. Locate the bottle of liquid bacteria. The bottle contains bacteria to "seed" your biological filter.
2. Just prior to adding first batch of animals, (15 minutes) open bottle and pour 4 ounces (1/2 bottle) of bacteria into water.
3. Let the tank run for an hour or two before introducing animals. **NOTE:** The bacteria require a food source in order to grow. Lobster waste is their food source, so lobsters should be added as soon as possible. The break-in period begins when lobsters are placed into the system. See page 10 for specific instructions before adding animals to your lobster tank.
4. Add an additional ounce of liquid bacteria every third day during your break-in period until the bottle is empty.
5. **FOR BEST RESULTS:** We recommend that you take an old filter pad from an established tank and wring 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. If no established tanks are handy, then try to get a filter pad or some gravel from an established tank of a local pet store (saltwater tank for lobster/crabs, freshwater tank for trout/catfish).

Occasionally, you will need to add an extra tablespoon or so, of liquid bacteria to the system. This is necessary after a complete water change or during extreme fluctuations in loading (e.g. when adding a heavy load after a sellout). Contact Marineland or your service representative for an additional supply.



IMPORTANT

During 6 week break-in period
(see page 10), set temperature at 55°F.
After 6 weeks, lower to 50°F.

G. Adding Product

PLEASE NOTE! Your living biological filter is brand new, and not capable of handling large loads of product in the beginning. It needs a **break-in period** of 6 weeks at 55° for the bacteria to develop and cover the available surface area in the filter bed.

THIS PROCESS CANNOT BE RUSHED. For this reason we recommend very light loads for the first few weeks.

The recommended loading schedule is as follows:

Week	Lobsters
1	12 lbs.
2	12 lbs.
3	15 lbs.
4	25 lbs.
5	37 lbs.
6	50 lbs.

If you must load beyond the initial recommended capacity, then you run a serious risk of high ammonia levels within 7 to 14 days. You must be prepared to make a 100% water change if this happens. The procedure to do this is in the Filter Bed Maintenance section. Under normal conditions, water changes should not have to be made more than every 6 months.

IMPORTANT NOTICE: In case of ammonia overload, change the water only. Do not change pads or carbon! Do not wash the gravel! Otherwise, you will adversely affect any bacteria that have already started to grow. Remember, changing the water is necessary in a new tank only **IF YOUR OVERLOAD.**

Once you have set the salinity (N/A for trout tanks), added the bacteria, adjusted the temperature to 55°, and let the tank run for one (1) hour, it is time to add a **light load** of animals.

1. **LOBSTER** – All new lobster should be dipped and agitated in a bucket of **SALTWATER** before putting them into the system. **NEVER USE FRESH WATER FOR THIS PROCEDURE – IT WILL KILL THE ANIMALS.** Dipping removes accumulated shipping debris and allows the animals to “flush” themselves out into the bucket, rather than foul the tank. For best results, the water for the rinse should be taken from the aquarium, and discarded after use. The saltwater should be replenished following the directions in Section E.

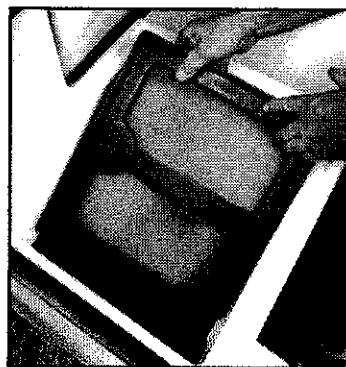
5. Maintenance

A. Changing Carbon and Filter Pad

Carbon plays an important role in filtering out dissolved pollutants like odor, chlorine, toxic gas, and proteins. As with any filtering media, it is eventually exhausted and must be changed. We recommend that you do this every week for the first 2 weeks of your tank's operation and every other week thereafter.

- A. Shut off system and wait until flow stops.
- B. Remove carbon box from reservoir.
- C. Discard used filter pad and exhausted carbon. Rinse out filter box.
- D. Gently separate a new filter box pad into two half-thickness pads. Place either half in bottom of box. Save remaining half for a future filter box change.
- E. Fill to within $\frac{3}{4}$ " from the top lip of the box with carbon.
- F. Place a standard full-thickness pad on top of carbon and tuck under lip of box as shown. Rinse box in sink to flush out carbon dust.
- G. Return to reservoir making sure that box is situated correctly so that water-dispersing-flange is positioned directly under draining tube.

NOTE: Black plastic cross strap should remain in place to hold down filter pad and prevent it from "inflating".



B. Maintaining the Bio-Box

As mentioned in the Set-Up section of this manual, the bio-filter is the most important filtration feature of your Marineland tank. You must be certain that it is maintained regularly and with care.

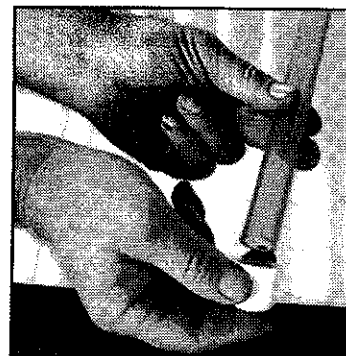
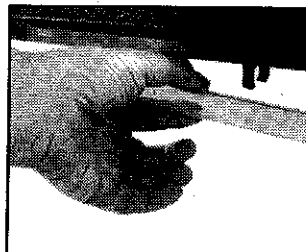
- A. First remove the Bio-Box from the reservoir and bring to a source of fresh, cold water. NOTE: Warm water or cleaners will kill the bio-culture.
- B. Rinse the white dolomite gravel to remove any debris.
- C. Replace the Bio-Box in the reservoir and restart the system as soon as possible.

DOS AND DON'TS TO MAINTAIN A HEALTHY BIO-FILTER

DO	DON'T
1. Check for and remove any dead or damaged animals each morning. 2. Keep filter bed and filter pad clean. 3. Keep refrigeration unit clean.	1. Overload system. 2. Wash gravel with hot water. 3. Wash gravel with soap or cleaners. 4. Permanently remove gravel from tank. 5. Let gravel dry out. 6. Leave lobster tank gravel exposed to fresh water for more than 5 minutes. 7. Turn off system even when you are temporarily out of animals. 8. Feed animals. 9. Use insecticides near system.

C. Cleaning Spray Bar

The spray bar may be cleaned by gently removing it from the brackets while pump is running and removing the end caps so that water flushes out all debris. For hard to remove particles, ream out plugged or blocked spray holes with toothpick.



D. Cleaning Cabinet & Glass

Standard window cleaners may be used with a clean rag or paper towel to wipe down all glass and cabinet surfaces. Remember not to use any cleaners inside the tanks or allow any cleaners to get into the water.

E. Algae Removal

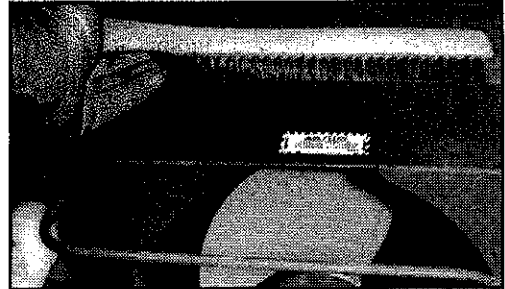
Algae is a natural phenomenon in any aquarium. The algae spores come in with the lobsters or fish and light allows them to grow. The more light you give your tank, the greater the potential for algae growth. To remove the algae, simply wipe with a cloth, towel, or a clean filter pad. NEVER use soap or metal scouring pads.

You should maintain a separate cloth just for the tank. This should be kept clean and isolated from other departments so that it does not get used to clean sinks, floors, etc. A safety razor may be used in difficult cases.

F. Refrigeration Screen Maintenance

(Time required: 30 seconds every 3 to 6 months)

The refrigeration unit needs to be kept clean to prevent overheating and failure. Every six months (sooner in dusty conditions) the condenser screen should be brushed or vacuumed to eliminate accumulated dirt.



G. Notice Regarding Insecticides

IMPORTANT: Never spray insecticides within 20 feet of the tank. This would be detrimental to your system. The resulting contamination could kill your animals and destroy the biological filter bed. If you must use insecticides, be sure to turn off the system until the odor has completely cleared. You must then remember to turn the system back on.

6. Trouble Shooting Guide

PROBLEM	CAUSE	REMEDY
Yellow Water	Activated carbon is clogged or exhausted, and not removing color.	Replace activated carbon. Use procedure on page 11.
Animals appear healthy in hazy water, usually in conjunction with large amounts of foam in tank.	Buildup of organic proteins in the water, which can occur during a faulty break-in period or when the system becomes temporarily overloaded. The most common cause is lobster blood from dead or injured animals. System should be checked daily and all dead or injured animals removed.	Check to see if bio-filter is clogged, using the procedure described on page 12. If it is, clean the filter and change the water following the procedure on page 12. If the filter is clogged – Saltwater: Change water in 1/2 the system. Drain down 1/2 the water. Add 1/3 Marineland Sea Mix shown on page 7, add tap water to refill system. Check with hydrometer, and make final adjustments as described on page 8. Remove foam twice a day, if animals become distressed, clean filter according to procedure on page 11.
Reduced water flow,	Bio-filter restricted. (Check by using procedure on page 16.	No action required unless water is hazy and/or the animals distressed. If this is so, change water and clean bio-filter according to the procedure on page 12.
Mortality: A. One or two lobster die shortly after arrival. B. Large number of deaths – clear water. C. Large number of deaths – hazy water.	Lobster damaged or weakened during shipment. Some toxic substance has been introduced. Overloaded system – from four possible causes. 1. More lbs. of product than recommended. 2. Not rinsing lobster before putting them back into tank. 3. Taking shortcuts during break-in. • More than the recommended load. • Less than for six weeks. • Operating at a temperature lower than 55F°.	Remove any metal objects that may have been introduced, i.e. pennies, brass, etc. Be sure there are no insecticides, including hanging insect strips, or other industrial poisons being used in the vicinity of the aquarium. Change water and filter, and follow set-up procedure on page 7-11. Change water and clean bio-filter. Follow set-up procedure outlines on page 7-11.
High water temperature	Refrigeration unit not working properly.	Check that it is still connected. Check thermostat setting.

CUSTOMER SERVICE

**Should you experience problems with your system, call
Marineland at (800) 576-6277.**

To order any of the items listed below, call **(800) 576-6277**.

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) 576-6277 or fax us at (805) 517-7198. 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.

All Fluorescent Lamps and
Ultra Violet Lamps contain
mercury.



Dispose of Properly.



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