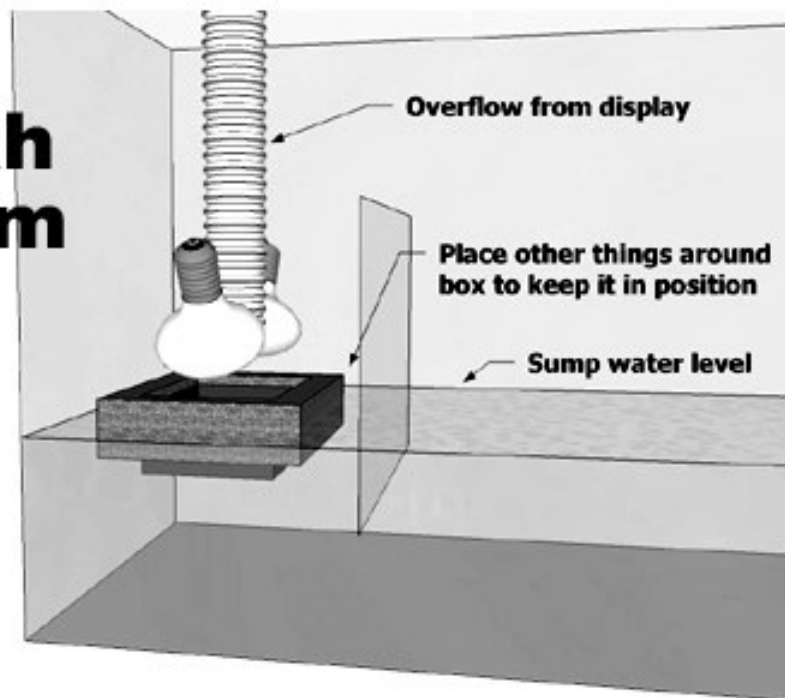
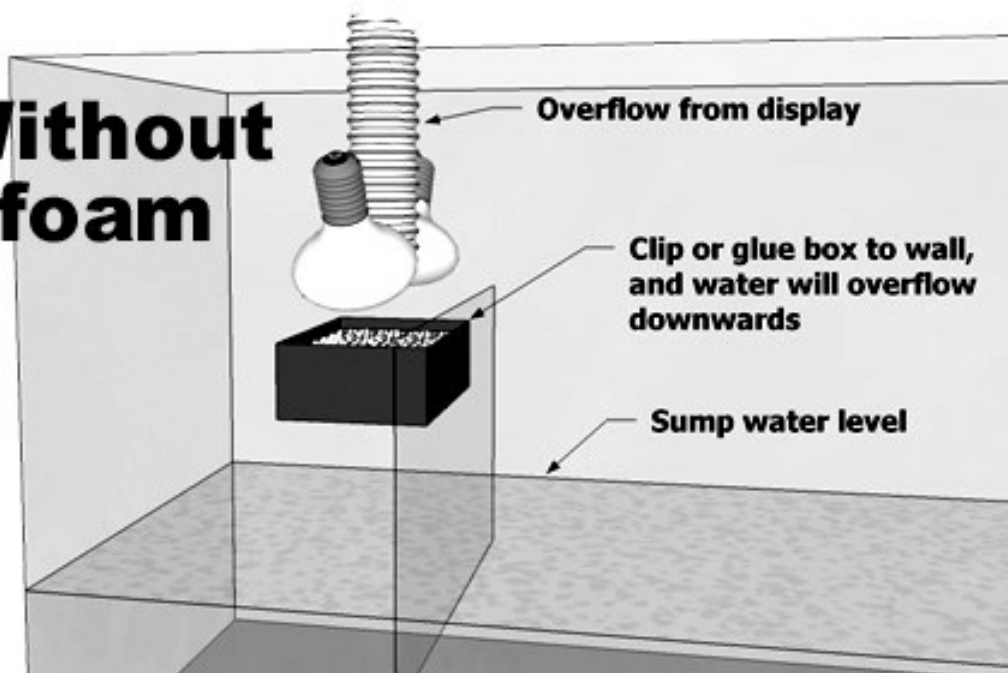


Mixer™ UAS® Installation

**With
foam**



**Without
foam**





Mix2™

Mixer Scrubber™

(with or without foam)

overflow fed scrubber

**For aquarium sumps which are below the display.
Overflow hose, lights, and mounting hardware not included.**

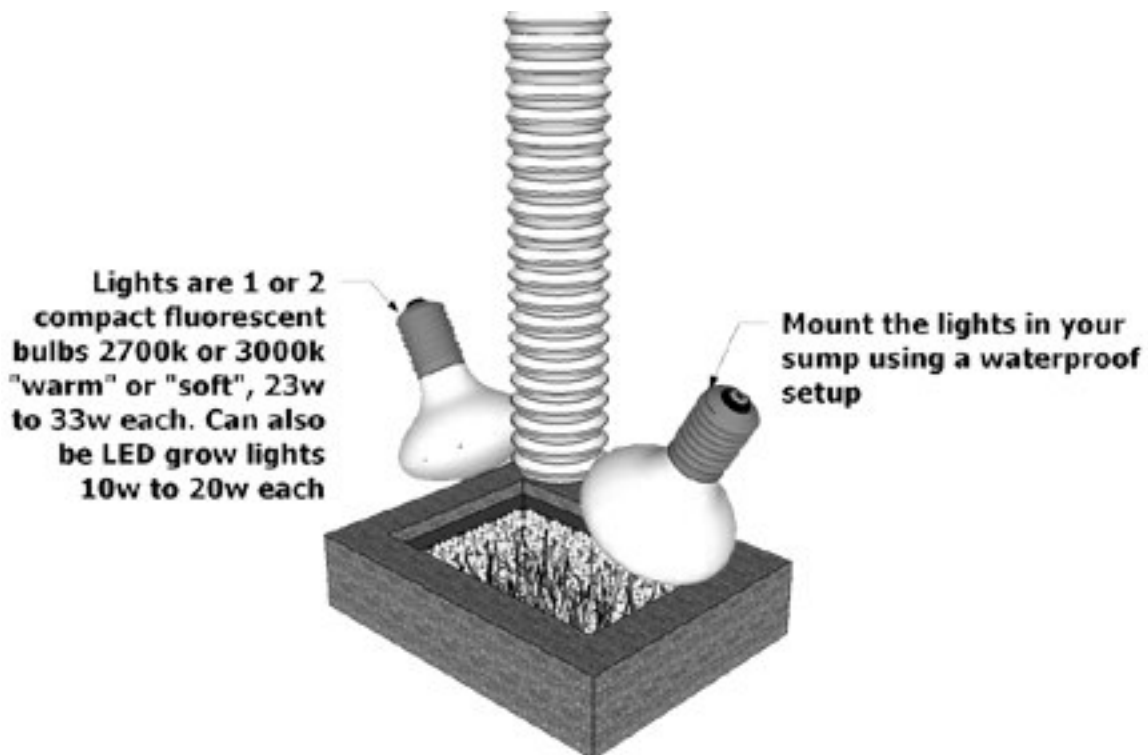
For help, and to post pictures of your installation: www.AlgaeScrubber.net
For additional filters: www.Santa-Monica.cc

Thank you for your purchase of the Santa Monica Filtration® MIX2 overflow fed algae scrubber with ribbons and Green-Grabber™ growth surfaces. Enclosed is either a MIX2 with foam, or a MIX2 without foam (not both). This device will do most of the filtering needed for your fresh or saltwater aquarium, and in most cases it will do all the filtering. Part of this filtering includes helping eliminate two very important things that drive most aquarium owners crazy: Algae and waterchanges. The filter works by growing algae inside the filter, which then consume all the “bad” things out of the water*. This is how all the oceans, and all the lakes, are naturally filtered.

Aquarium size: The MIX2 has 24 square inches (150 square cm) of horizontal growth surface which can grow up to 2 inches (5 cm) thick, and it is designed to be the only filter

on an aquarium that is fed up to 2 frozen cubes per day, or 20 pinches of flake food per day, or 20 square inches (120 sq cm) of nori seaweed per day, or 0.2 dry ounce (5.6 grams) of pellet food per day. The amount of water in the aquarium, or the dimensions of the aquarium, are not important. If you have other filters, or do waterchanges, then a single MIX2 can handle more feeding. If you feed more than the above amounts but have no other filters or waterchanges, you can use additional MIX2 filters to add up to the amount that you are feeding and then clean one filter at a time on a rotating schedule (one per week, etc). This is accomplished by dividing the overflow into separate hoses for each MIX2, or, by placing up to four MIX2 (without-foam) units together so that one overflow hose empties into the meeting point of them. If you feed much less than the above amounts, and the aquarium is very small, then it will still work fine but you just need to find a place where the filter will fit in the sump, or consider getting a smaller HOG Hang-On-Glass scrubber instead. A MIX2 will not work in all-in-one aquariums which have a sump on the back.

Filter Position: A MIX2 unit with foam is to be floated on the surface of your sump water. It does not matter what part of the sump, because it will filter the same. However you will want to make sure it does not drift sideways, by placing other pieces of foam, rock, pvc, etc around it. This will keep the unit under the overflow hose. A MIX2 unit without foam is to be attached (preferably with removable plastic clips) to something to keep it at a constant position underneath the overflow hose. In all cases, the height of the overflow hose should be adjusted to give the most turbulence and bubbles inside the MIX2.



Light Position: The lights that you supply should be one or two bulbs that are mounted on the sides of the overflow hose, such that most of the light goes into the growth area. The bulbs should be 23 or 33 watt compact fluorescent floodlights, of the 2700k or 3000k “soft” or “warm” color, or LED grow lights in the 10 to 20 watts range. More light is better, and will eventually allow you to do more feeding. The lights should be installed and secured using waterproof wiring and connections. If you are unsure how to make a waterproof installation, get the help of an electrician first. GFCI power cords are recommended.

Light Timer: The lights must be put on a timer so that they stay on for part of the day, and off for the rest of the day. The lights cannot stay on for 24 hours or the filter will not function well because it will not grow the algae it needs to grow in the filter. A good starting point is 18 hours per day for your first week. Once the growth surface inside the unit is no longer white, increase the hours to 20 per day the next week. If the growth continues to grow good, you can try up to 22 hours per day for the week after that. However if the growth starts showing bright yellow or white areas beneath the LEDs, then decrease the hours by 2 per day. By adjusting the hours per day you can control the growth: Bright yellow or white growth means you need less hours; black growth means you can add more hours, up to a total of 22 hours per day. Eventually you will find the overall best number of hours for your aquarium. If you need to turn the lights off longer because the aquarium is in a bedroom, you can, but the filtering will be reduced somewhat.

Growth Surface Preparation: Although not required, if you have some algae from your tank or from your glass, you can rub it on the growth surface in the growth compartment to help the filter grow a few days sooner. Use a towel (not your hands; it is rough!) to rub it in really good into the rough material of the growth surface, and the strings, then rinse it off in your sink. You won’t see any algae remaining, but the tiny algae particles will be attached to the textures. If you don’t rub any algae on it, it will just take a few more days to grow thick the first time, but after that it will operate the same every week and no more rubbing will ever be needed.

The First Week: The first few days seem to cause the most surprise for people, because they’ve seen pictures of algae-packed scrubbers before, but their own scrubber seems to be doing nothing and it’s already the second day of operation. So the basic recommendation is this: don’t expect anything until 7 days. If thick growth starts happening sooner, great. But if you are at 10 days and all you have is a brown coating, then that’s fine too. The point is that during the first month of a MIX2, if the lights and bubbles are correct, growth will vary greatly from one aquarium to another, from nothing to a lot. And this is really what you want; the growth occurs only as much as it’s needed. New aquariums, or aquarium with low nutrients in the water, may need as much as one month for the scrubber to fill in the first time; it will be the longest time of looking at a white surface that you can remember. But once growth starts in one of the corners, it takes off quick.

Filter Cleaning: The filter must be cleaned when the algae growth gets thick, which is usually every 7 to 21 days after the first month. If the growth is not thick by 14 days, let it go to 21 days before cleaning. Newer filters usually have to run for more days than older filters do before thick algae grows. Brand new MIX2 filters sometime have to run for one month before thick algae develops. Just check it every few days to make sure the bubbles are still flowing properly, and that the light is on for 12 to 22 hours. Also, if you are using the filter on a brand new tank that you have not started feeding yet (for example, if it is still cycling), then there will be very little growth at all until you start feeding.

For cleaning, the MIX2 offers you the advantage of livestock-feeding, and in-place cleaning. After your filter has grown thick green hair algae, you can feed some of it to your animals at any time by just pulling some algae out (you do not need to turn the water or lights off, or take the unit to the sink). Usually smaller amounts of feeding at a time are better. By feeding your animals from your MIX2 instead of from something outside your aquarium, your animals get very fresh live growth, and no additional nutrients are added to your water. This MIX2 feeding process simply takes nutrients from your aquarium water and converts (grows) them into food, so that they can be put back into your animals. It's very much like growing your own food in a garden. Generally, the more you can feed your animals from your MIX2 instead of from packages, the "cleaner" your aquarium will be because the nitrate, phosphate etc. that were accumulating in your water are now helping your animals to grow instead.

For cleaning, just remove more growth from the compartment than you would for feeding. Try to leave the Green-Grabber textures covered with growth so that you don't see the white color; this will allow them to grow back faster. The removed growth can of course be thrown away, but it also makes great garden fertilizer, pet food, beauty (seaweed) wraps and ocean baths. In saltwater, the bright green growth that looks like Easter basket filler is actually Sea Lettuce (*ulva fasciata*), and sometimes you'll actually get the large-leaf Sea Lettuce variety (*ulva lactuca*) which is the highest filtering of all.

Black Growth: Some aquariums, even if you are not feeding them much each day, have huge accumulations of nutrients (usually phosphate) in the rock and sand/gravel after years or even decades of use without good phosphate removal. These situations can cause a black "oil" or "tar" (instead of the green algae everybody wants) to grow in the scrubber because phosphate is now being removed from your aquarium for the first time. Large concentrations of nutrients, like phosphate, will cause black growth. Not to fear: Since the black growth contains lots of phosphate, you can be assured that the filter is indeed working and is removing these nutrients from your aquarium. However if the white textures or strings are completely covered in black growth, and there is no more white to be seen (only black everywhere), then this would be a case for needing to take the filter to your sink and using a toothbrush to remove most of the black growth from the textures and strings. After another 7 to 21 days you may need to clean it in the sink again. But at some point, enough nutrients will be removed from your aquarium that green growth will indeed start growing in the filter, and you can then start the desired in-place cleaning/harvesting which does not require taking the unit to the sink. How many months this takes depends on how much rock, sand, and water you have, how many MIX2 filters

you are using, and how many other phosphate filters (including water changes) are helping with the phosphate removal. Note: Canisters, sponges, floss, socks, and bio media do not remove phosphate.

Note that if you decide to glue the MIX2 to a wall in your sump (instead of using removable clips), then taking the filter to your sink will not be an option. It still may be possible to turn off your overflow, put a bucket beneath the filter, and brush off the dark growth into the bucket, but this may not be worth the effort.

A special mention for MIX2 units without foam, in freshwater: Freshwater aquariums grow primarily Spirogyra (very long thin green hair) in the scrubber, and this delicate growth can break away sooner than growth in a saltwater setup. So if your unit is without foam (non-floating), and your application is for freshwater, you will want to keep an eye on how long the growth can go before gravity starts pulling down and breaking the algae that is hanging from the unit.

Other Filters: Although a MIX2 scrubber can be the only filter on your aquarium (which is how you would operate it to be the lowest cost and easiest way), it can also be operated with most other aquarium filters and additives. One exception might be additives that kill algae, or medications that contain copper, depending on how much you use. Carbon dosing, such as pellets or Zeo, can also reduce scrubber growth if used heavily. And macroalgae refugiums, while they won't reduce scrubber growth, will usually die when your scrubber gets fully functional because your scrubber will out-compete them. MIX2 scrubbers can, however, be used on planted aquariums that have algae problems; simply reduce the scrubber lighting hours to get the filtering you need without over-competing with the plants.

*** Water Changes:** If you have been doing water changes to reduce nitrate, phosphate, or nuisance algae, then an algae scrubber filter will greatly reduce the need for them and may possibly eliminate them. When algae grow in the filter, they consume nitrate, nitrite, phosphate, ammonia/ammonium, metals, CO₂, and some toxins; so it's just a matter of growing enough algae inside the filter to do the filtering you need, compared to how many nutrients you are putting into the tank with the food you feed (that is why the MIX2 filter is sized for a certain amount of feeding per day). However, this filter (and algae in general) do not supply calcium, alkalinity, magnesium or strontium to the water. So if you wish to reduce or eliminate water changes, you will need to supplement any calcium, alkalinity, magnesium or strontium that you were using water changes for. Freshwater aquariums, which may only need alkalinity (hardness) to be maintained, may get enough alkalinity from just doing evaporation top-offs with tap water.

Dimensions: The MIX2 with foam is 6" wide x 8" long x 3" thick (15 cm wide x 20 cm long x 7.5 cm thick). It requires at least 3" (7.5 cm) of water to operate in. The MIX2 without foam is 4" wide x 6" long x 2" thick (10 cm wide x 15 cm long x 5 cm thick). The shipping box is 7.5" wide x 11" long x 5" thick (18.75 cm x 27.5 cm x 12.5 cm).

Warranty: The MIX2 scrubber comes with a 60 day warranty. Warranty is for replacement or repair only; not a refund. Costs for shipping back to us are covered if you are in the U.S. Costs for shipping back to us are not covered if you are not in the U.S., however we will pay for shipping back to you. In either case, you will need to ship the entire filter back to us before we can ship a replacement.

Warranty is limited to repair or replacement, and does not cover fish loss, personal injury, property loss, or direct, incidental or consequential damage arising from the use of it. The warranty and remedies set forth above are exclusive and in lieu of all others, whether oral or written, express or implied. We specifically disclaim any and all implied warranties, including but not limited to lost profits, downtime, goodwill, damage to or replacement of other equipment and property, and any costs of recovering animals, plants, tanks or other aquarium related items and/or equipment. We are not responsible for special, incidental, or consequential damages resulting from any breach of warranty, or replacement of equipment or property, or any costs of recovering or reproducing any equipment, animals or plants used or grown with this product.