



JASON THRESHER

Age: 35.

Hometown:

Bookham, Surrey, UK.

Occupation:

IT manager; owner of Reef Culture.

Marine experience:

18 years.

Tank size:

24g D-D Nano Cube.

Favourite

fish: gobies and blennies.

coral: zoanthids

and pollythoa.

other: Pistol Shrimp.

Specialist areas:

Coral propagation.

PART 2

# FRAG TANKS

Written by Jason Thresher, Images by Alastair Macleod

## Jason Thresher concludes his two-part series by looking at the various equipment required to succeed in coral culture.

In the last issue I had a look at the first stage of setting up a frag tank. Let's recap the last article: The tank size and location has been chosen; the stand and sump have been added, as well as lighting and substrate. The next step is to add the equipment that will be running the tank. The list will be broken down into essential equipment and non-essential equipment. The non-essential equipment is nice to have, but not critical to your success.

### ESSENTIAL EQUIPMENT

**Heaters:** It is very important to have a decent heater installed. It is also worth getting a heater slightly higher than is required for your tank size. This ensures the heater is able to cope when winter comes. Do not scrimp on the heater! The last thing you need is for problems to occur or the heater not to function when the temperature starts to drop. I consider this piece of equipment to be very important,

and a spare should be kept at all times in case the main unit stops working.

**Return Pumps and Powerheads:** Water circulation is also critical to the success of your corals, which makes the pumps and powerheads essential bits of kit. I really like pumps with variable water output, as it allows greater flexibility to control the flow. If you are running a tank with a separate sump, you will need a return pump to make the system work. As a general rule, if you have a frag tank geared for SPS corals, the flow will be higher than a softie frag tank. People's opinions vary on exact flow rate, but personally I have found a tank volume turnover of 30-50 times per hour to be a good starting point. See how the corals respond and tweak the flow from there. Additional water movement can be added with various powerheads, but avoid buying inexpensive units. I have seen several examples of sub-quality powerheads

sending stray voltage into the water, and water and electricity do not mix well!

**Skimmers:** Skimmers are a little tricky to categorise; on a SPS tank I would say they are essential, and on a softie tank it's nice to have but not critical to success. If you are dedicated to your water changes, a skimmer is less important because the water changes remove organic waste build-up in the tank. If, however, you feed your corals heavily or have a few fish, to keep the tank clean I would recommend a skimmer, regardless of what frags you are propagating.

### NON-ESSENTIAL EQUIPMENT TO MAKE THE JOB EASIER

- UV sterilizer
- Reactors
- Dosing pumps
- Electronic controllers

The list assumes that you already have the following, but if not, they are essential!

- RO unit or good LFS source for RO water
- TDS meter to test the RO water
- Good-quality salt mix
- Testing kits to check the water
- Thermometer
- Hydrometer or refractometer

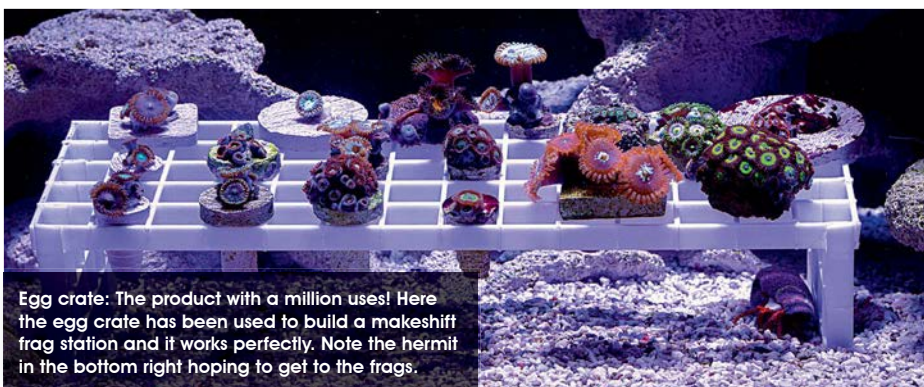


Once the tank is set up, the next thing is to equip the tank to optimise the space you have.

There are four options:

**1 Keep all the frags on the substrate;** while this is the most cost-effective solution, it causes all manner of problems if hermits and other larger critters form part of your CUC. I have seen hermits and urchins walk off with frags, as well as removing them from the plugs altogether! This is especially evident with newer frags that haven't had time to attach to the frag plugs. There are, however, a few products Reef Culture have designed to combat the potential issues of keeping frags on the substrate, should this be how you want to set up your tank; these include frag stations and acrylic grow-out discs.

**2 Egg crate:** Extremely versatile and has many uses in the aquarium trade. It is especially good for fragging and can be used in a number of ways to protect or display your frags. It is relatively inexpensive and widely available. The only real negatives is that it is difficult and time-consuming to clean; often people just buy another sheet and start again to avoid the laborious task of cleaning between all the squares. Also, it isn't the prettiest kit to have in your tank! If you can get your hands on black egg crate, it shows less dirt than the white version and looks better for longer. It is, however, more expensive and



**Egg crate:** The product with a million uses! Here the egg crate has been used to build a makeshift frag station and it works perfectly. Note the hermit in the bottom right hoping to get to the frags.

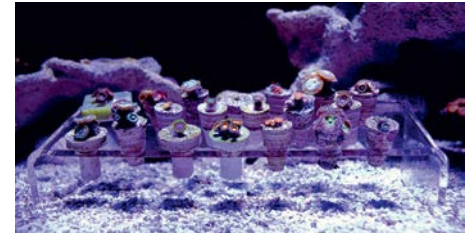
difficult to find. Please note: The koi egg crate, which is widely sold on auction sites, actually floats, so is not ideal for fragging unless you weigh it down with rocks.

**3 Acrylic frag racks:** Easier to clean than the egg crate, aesthetically more pleasing but also more expensive. The racks come in sucker and magnetic versions. If you invest in a magnetic rack, make sure the magnets are strong enough for your tank's glass thickness, and remember, the frags will grow and get heavier! It is worth factoring in that the rack will probably double in weight once the frags have started thriving, so a rack that barely clings on without frags will almost certainly pull away from the glass when weighed down with coral.

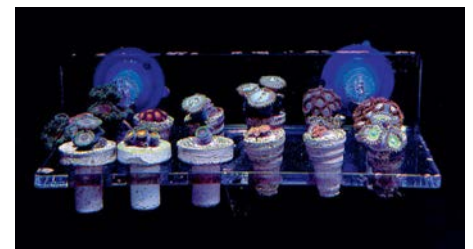
**4 Ceramic frag racks:** These are the Rolls-Royce of the fragging world, but also the most expensive. They are by far the most natural looking rack available in the industry today, and would be ideal for the pretty frag tank, as discussed in the previous article. They also have the added benefit of looking great in the display tank.

Regardless of the rack system you choose, make sure you stay organised by keeping notes of frag name/type, location in the tank, and when it went in. This way you can monitor growth rates and remember whatever exotic name your coral has and where it has been situated in the rack!

**LEFT** Here is a little invention Reef Culture came up with to make fragging zoas easier, and to combat the problems that frags on substrate can have. All you do is place the zoa frag in the middle of the disc and allow it to grow over the plugs. Then you lift it from below and cut through the mat. No glue is needed because the zoas have attached naturally to the plugs. Also, because the disc is raised, most critters can't get to the frags.



**ABOVE** Here you can see a lovely zoa collection, using one of our frag stations to raise them off the substrate and away from critters.



**ABOVE** This is an acrylic frag rack, which is perfect for keeping the frags safe. The rack has the added benefit of being able to be raised or lowered in the tank to accommodate your corals' light preferences.

## DOSING AND FEEDING

Dosing trace elements and a decent feeding regime WILL improve your coral propagation success rate, and there are many excellent products on the market. You can even find dedicated coral food, and I can confirm that many of the ukzoaswap forum members have had great success by feeding oyster eggs to their zoas. A little research goes a long way, so investigate any potential new purchases before committing. Beware of people peddling the latest 'snake juice', as there is no miracle cure that will automatically ensure success and fix any problems you may have. It basically boils down to adhering to the solid basics of reefkeeping:

- Good water quality and flow
- Good lighting
- A quality coral food

Stay on top of these three things and your frag tank will be a success.

## FINAL THOUGHTS

With the reef destruction that is occurring around the world, coral propagation (even on a small scale) is an extremely worthwhile endeavour. As I have said on many occasions, every frag that is grown in our tanks results in at least one less frag being pulled out of the oceans. Sustainable coral propagation is the only way forward to ensure the long-term success of our fantastic, rewarding, and sometimes frustrating hobby.

Get fragging! **JT**