

NOMAD

USER MANUAL & SETUP GUIDE



Thank you for your purchase of the PNW Custom x Roaming Reef Nomad!

Please read this guide thoroughly. The Nomad is more than a piece of acrylic. It's a piece of technology. We're confident you'll be successful if you follow the recommendations, and obey the warnings, within this guide.

You can use the Nomad to:

- Transport corals to and from a bigger tank in the best possible environment,
- Run the world's smallest frag system,
- Relax without a bigger tank shadowing your vacations in anxiety, or
- Keep an aquarium at work and at home without maintaining two systems.

One thing is for sure, no matter your use case - you're a part of a special slice of the saltwater aquarium hobby. We are the reef keepers who appreciate the little details in our tanks and creative innovations that solve real problems.

Harley, Jenna, and I have poured our best effort into the world's first commercially available portable reef aquarium. Our common goal is to make an ethical, helpful, and well-refined piece of technology, strive for constant improvement, and let our early adopters enjoy a piece of history.

Welcome aboard, and happy reefing!

Mike & Toby





Before we dive into the guide, please read the following warnings. PNW Custom and RoamingReef will not be able to support damage resulting from failure to obey the warnings.



PNW Custom, RoamingReef, Oceanic Gardens, and all other affiliated parties are not liable for the health of livestock, nor to warrant parts. We will give our best effort to support customers, but proper care and water testing are critical, and must be executed by the end user.



DO NOT run the heater without water in the aquarium, or with the temperature probe disconnected from the controller. This can result in melted components, or the glass portion of the heater shattering.



DO NOT run the heater by direct USB power. The controller and associated temp probe are the only things that control the temperature. The heater has no in-line controller to keep it from overheating.



DO NOT use paper towels to clean the aquarium. They are remarkably abrasive, and will result in premature hazing and scratching of the tank.



DO NOT drop the aquarium. While we have designed it to be durable, we do not guarantee that the aquarium will be drop proof, or safe to drop from any height. PNW Custom x RoamingReef will not warrant tanks against fall damage.



DO NOT attempt to remove, turn, loosen, or tighten the cable glands at the rear of the tank. The cables are sealed in silicone during construction to prevent leaks and cannot be moved back and forth within the glands.



DO NOT run the pump without water in the aquarium. This can result in shearing the impeller shaft or overheating the pump motor. It is not easily user serviceable to replace the pump.

We're excited for you, and want to get you up and running, but we need to answer a question together, before we can get going:

“Do I want to use this as a transport aquarium, a frag tank, or do I want to set this up as an independent aquarium?”

All answers are valid – but our setup will vary. Sections **Two** through **Four** are unique set up instructions depending on your use case.

Pick one of those to follow. Then, no matter the desired use, the rest of this guide applies.



Table of Contents

1. **Get to know your Nomad** - *Components & layout.*

1.1 Tank

1.1.1 Components

1.2 Stand

1.2.1 Battery

1.2.2 Controller

1.3 Shroud

1.4 Light

2. **Nomad as a Frag System** - *Use this method if you only want to run the tank when you're actively transporting the aquarium.*

2.1 Materials

2.2 **Frag Transport** - *Use this method if you only want to run the tank when you're actively transporting the aquarium.*

2.2.1 Instructions

2.3 **Full-Time Frag Tank** - *Use this method if you will leave the tank up and running, but as a frag system and not a display.*

2.3.1 Instructions

3. **Nomad as a Portable Reef Tank** - *Use this method if you want to use the nomad as a display tank, like the RoamingReef.*

3.1 Materials

3.2 Instructions

4. **Controller Set-Up** - *Micro Reef Controller User Manual*

5. **Best Practices for Power Management** - *Steps to prolong the life of your battery and prevent issues.*

6. **Ongoing Maintenance** - *Don't be the person who never changes their oil.*

6.1 Daily-ish

6.2 Weekly

6.3 Quarterly

1. Getting to Know Your Nomad

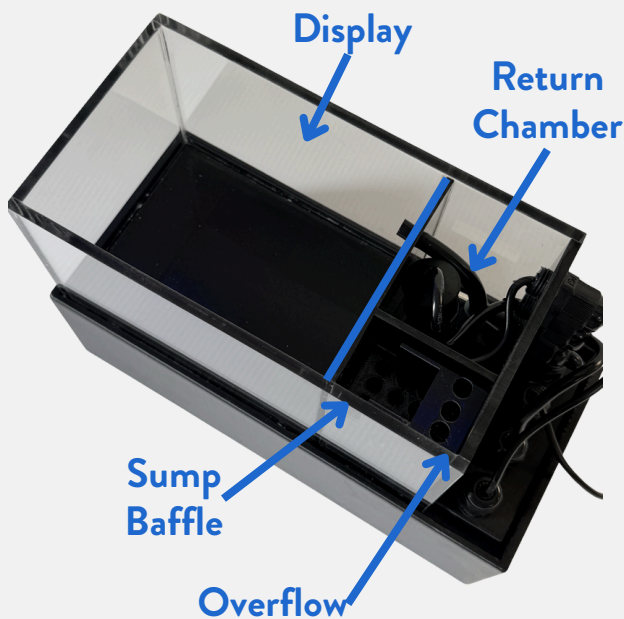
The Nomad is made up of four main components:

1. Tank
2. Stand
3. Shroud
4. Light



1.1 The Tank

The Nomad is an All-in-One style aquarium. All filtration and hardware is contained within the sump to the rear.



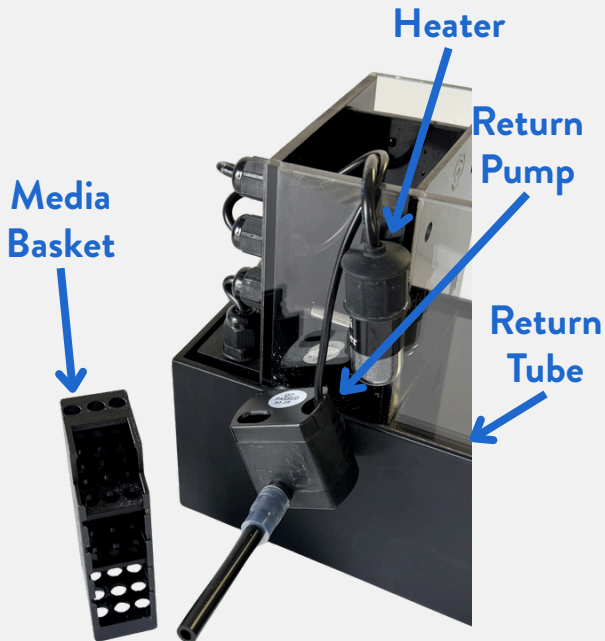
The Display Chamber is the main attraction, but the other chambers are important to understand. They are separated by the sump baffle.

The Overflow is where the media basket is contained. The sections are adjustable, but we want to make sure we fit i) mechanical filtration media, ii) biological filtration media, and iii) chemical filtration media.

The return is the home of our temperature probe, heater, return pump, and cable glands (the bits where the cables enter the tank). Do not attempt to adjust the lengths of cable, as moving them within the glands will cause failure of the silicone seal.

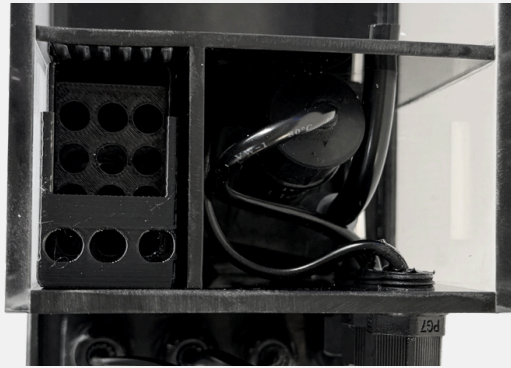
1.1.1 Sump Contents

The return chamber houses the heater and return pump. The return tube is a soft tube for easy cleaning and installation.



Best practice is to place the return pump, then the heater atop it, then insert the return tube into the baffle.

Once finished, the extra length of cable can be fed toward the overflow side. Watch out for the temperature probe.



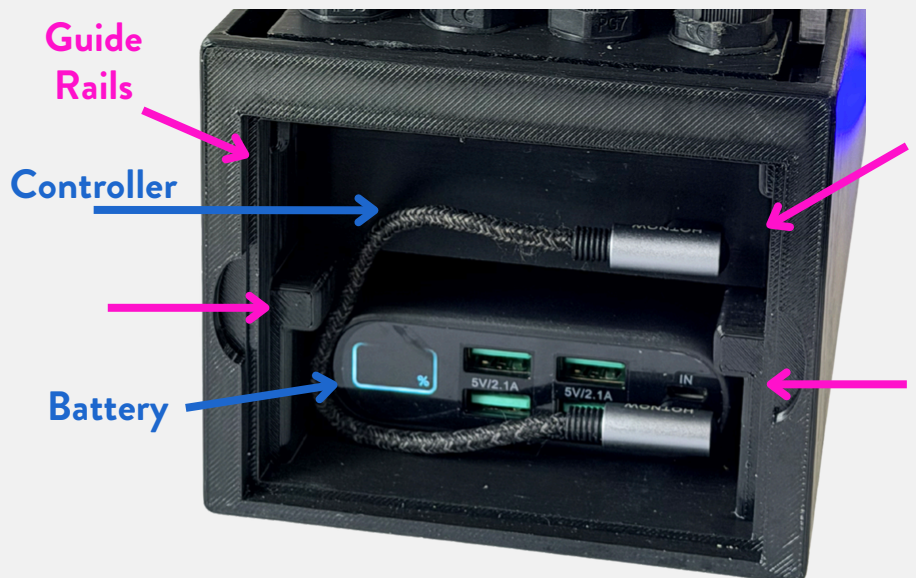
1.2 Stand

The stand contains the dry components that make the system functional.

Guide rails ensure that the battery and controller fit nicely with space above and below for cables.

Inserting and removing the controller is easiest with the battery removed.

The battery will slide out, and we recommend storing it away from the tank when using another power source for the controller.



1.2.1 Battery



The battery is a lithium ion USB power bank, capable of charging via Micro USB or USB Type C.

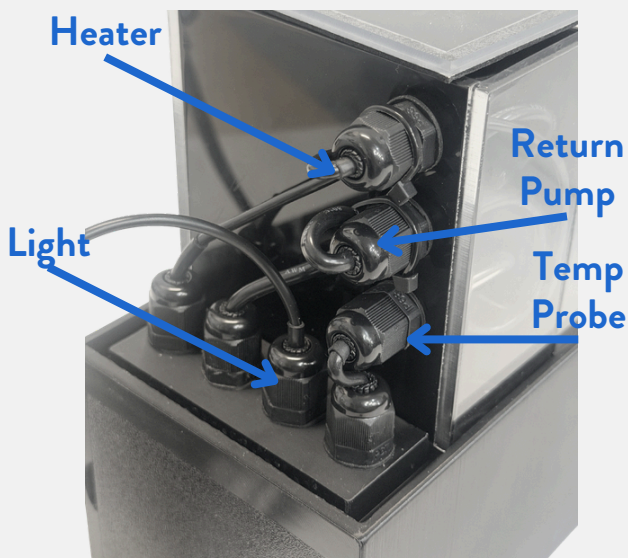
The battery and controller both run on USB Type C, so in order to recharge the tank while on the go, one USB C must be used to run the aquarium while another is used to charge the battery bank.

Best practice is to have two outlets with separate wall plugs to prevent power cycling once the battery reaches full charge.

1.2.2 Controller

The controller is the 3-port version of the PNW Custom Micro Reef Controller.

The Controller and Battery are linked via short USB Type C cable with 90 degree ends. The 90 degree cable end is critical for fitment of the cap.



1.3 Shroud

The shroud is pressure fit. To remove, press down on the tank and pull the shroud straight up. Do not lever or wiggle the shroud loose, as it could damage the plastic.

The shroud serves three functions:

- Conceal and protect the cables as they pass from tank to stand.
- Provide a mounting location for the LED light.
- Contain the manual push button for the LED light.

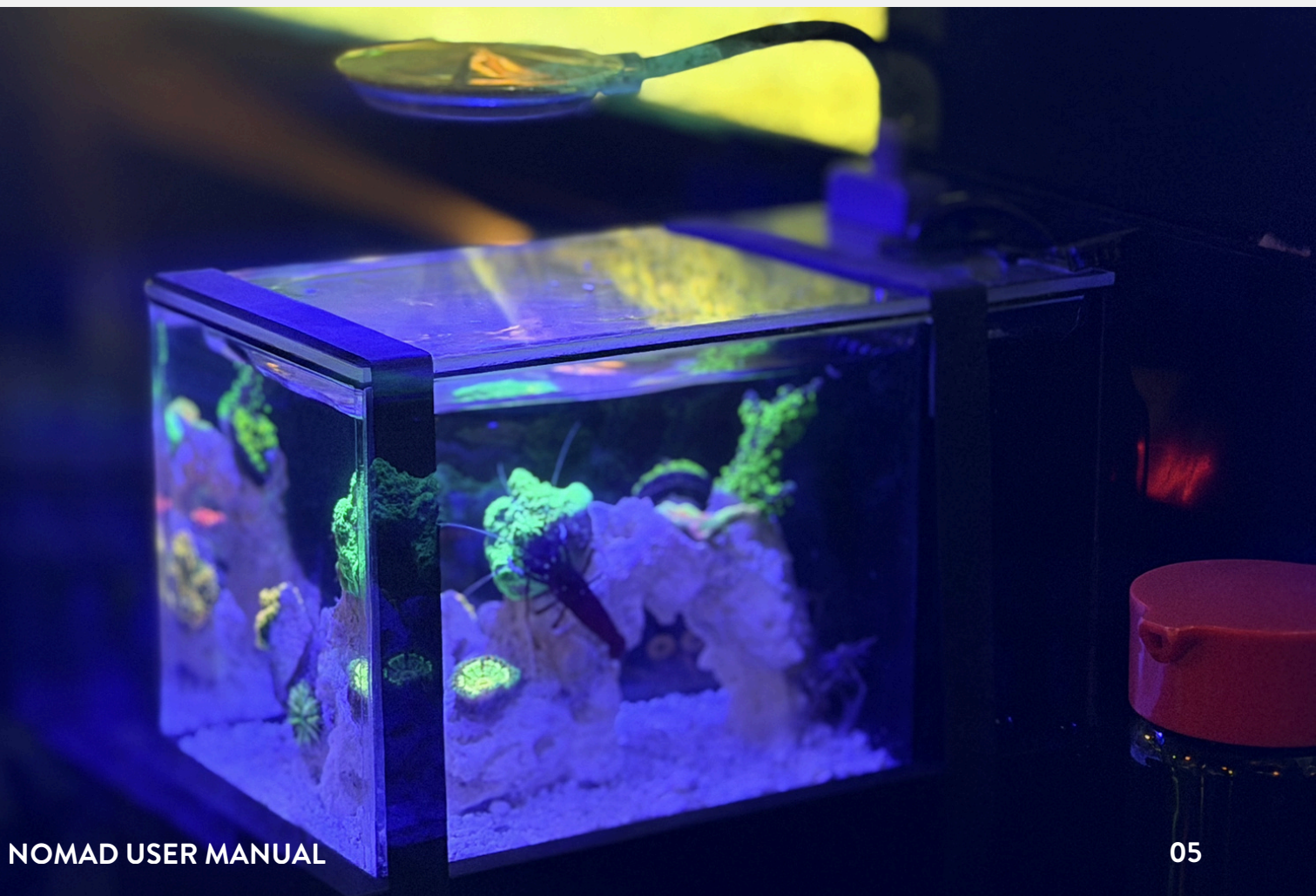
The cable glands are sealed with silicone and should NOT be tampered with.

1.4 Light



The LED Light for the Nomad is the same light as used for the Micro Reef and Small-In-One 1 gallon aquarium.

The light is primarily run by the controller, but should you need to turn off the light and a device is not available, use the small button located inside the Shroud.



2. Nomad as a Frag System

Whether you want to stick around in the big city for a few days after a reef show, need to drive four hours to your nearest LFS, or just don't want that beautiful new torch coral banging around in a bag on the way home, the PNW Custom x Roaming Reef Nomad is perfect for you.

Go coral shopping and don't feel like you need to rush home! Keep the tank out of the heat, run your air conditioning in the car if needed, and let your new life support system keep your corals safe!



2.1 Materials



Nomad Frag Rack



2.2 Frag Transport

This option is best suited to reef keepers who want to:

- Use the Nomad to attend trade shows
- Tour local fish stores while on vacation, or
- For those who have to commute a long distance to shop for coral.



If this is how you plan to use the aquarium, we recommend you operate as follows:

- **Do not store the battery in the aquarium when you're not on the move.**
 - Keep it far from salty air. Only recharge it before you take the tank on the move.
- **Do not keep the bands on the tank when not in transport.**
 - They are wear-and-tear items, and saving them for when the tank is in motion will reduce your need to replace them.
- **Do keep your biomedica for the nomad in the sump of your primary reef system. A couple of marine pure gems is plenty.**
 - We want the Nomad to save you from the worry of, "How long is my stuff okay in here before I get home?" The best way to do that is to ensure that we've got a proper biological filter.
- **Don't run the tank all the time.**
 - There's no need to keep cleaning, changing water, and running an entire system for this use case.
- **Charge the battery before you intend to carry the tank.**
 - Starting with a full charge guarantees the most run-time in case you wish to delay your return.

2.2.1 Instructions

When the time comes to go to the LFS or transport a coral, you can rapidly prepare the system as follows:

- 1 Place the Nomad Frag Rack as the base of the Nomad display
- 2 Fill the aquarium with water from your display tank
- 3 Add your pre-seeded biomedica to the Nomad media basket from your sump
- 4 Secure the lid with the included bands, and tip the tank slightly to ensure the lid is aligned and well sealed
- 5 Connect the controller to the battery
- 6 Place the cap into the rear of the stand
- 7 Connect your phone, test the components, and ensure that the temperature is set.



2.3 Full Time Frag Tank

This application is best suited for people who relate to the above use case, and also want to:

- Observe and quarantine corals after shopping, before adding them to their display tank
- Frag a colony and let them heal without cluttering or polluting the main display tank
- Keep expensive corals separate from hungry inverts or stinging neighbors

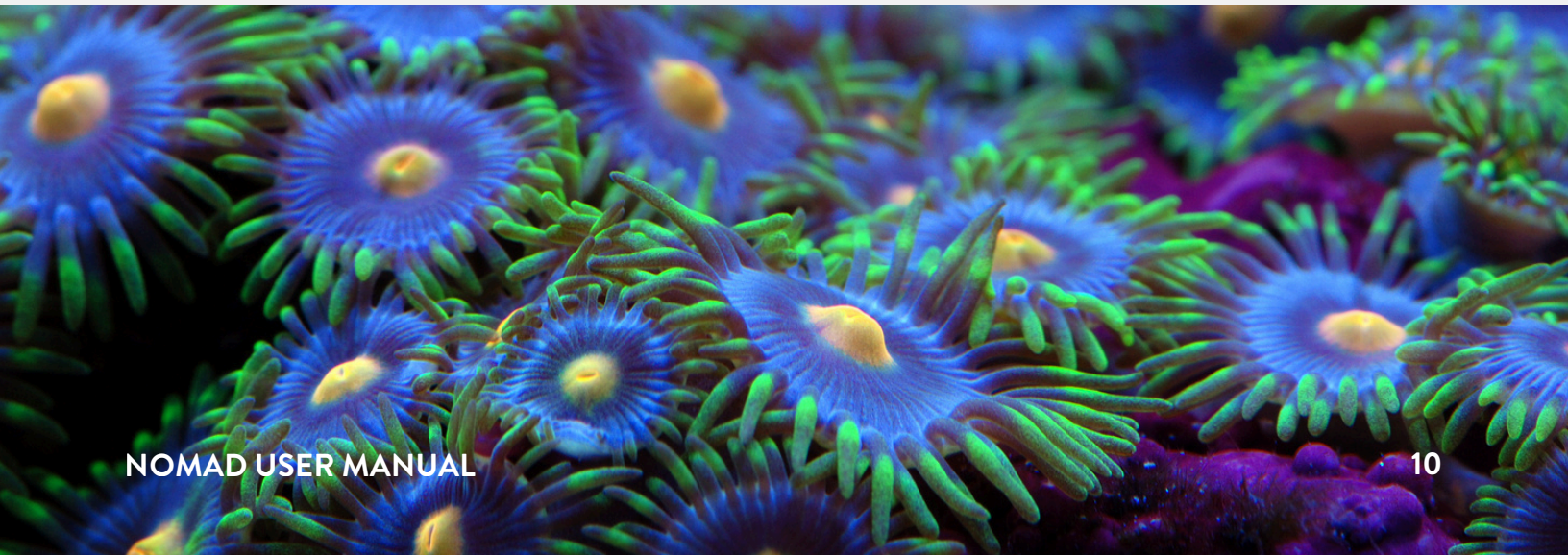


If this is how you intend to use the aquarium, the following guidelines apply:

- **Do not store the battery in the aquarium when you're not on the move.**
 - Keep it far from salty air. Only recharge it before you take the tank on the move.
- **Do not keep the bands on the tank when not in transport.**
 - They are wear-and-tear items, and saving them for when the tank is in motion will reduce your need to replace them.
- **Run the tank from wall power whenever possible.**
 - The battery bank, like any other device, will lose some lifespan with each additional charge cycle.
- **Use biomed from your existing tank in the media basket.**
 - The more established, the better.
- **Some cleanup crew is good, but don't overdo it.**
 - We like lightning dove snails, baby trochus snails, and stomatella snails the best. Start with one or two, and add more if you notice a need.

2.3.1 Instructions

- 1 Place the Nomad Frag Rack as the base of the Nomad display
- 2 Fill the aquarium with water from your display tank
- 3 Add your pre-seeded biomedica to the Nomad media basket from your sump
- 4 Power the controller using a USB Type C to Type C cable and wall power supply rated for at least 30w
- 5 Connect your phone, test the components, and ensure that the temperature is set
- 6 Set a light schedule in the controller similar to your primary display tank
- 7 Before you take the tank on the move, each time:
 - a. Insert the battery into the stand
 - b. Connect the controller to the battery
 - c. Place the cap into the rear of the stand
 - d. Secure the lid with the included bands, and tip the tank slightly to ensure the lid is aligned and well sealed



3. Nomad as a Portable Reef Tank

The PNW Custom Nomad is more than a frag transport system. It is capable of operating as a standalone aquarium, complete with rock scape.

We love our portable reef tanks here at PNW Custom. We want to see people share their passion for their hobby with more than just their house guests. While our desire is for everyone to have a portable reef, we must emphasize above all else that doing so requires very deliberate planning, care, and execution. Your first reef tank should not be designed around portability.

We want to give you the tools to make this an ethical and healthy ecosystem. Don't forget that these are living organisms, not decorations or status symbols. Their care and wellbeing must remain the top priority.



3.1 Materials



Nomad Tank

Rockscape (Dry or Live Rock)



Sand (Dry or Live Sand)



Superglue or Epoxy Putty



Biological Filter Media

3.2 Instructions

Before you begin, take a deep breath. Do not be afraid to step away and come back as many times as you need to do this right the first time. This is not a process that you should aim to complete in a hurry.



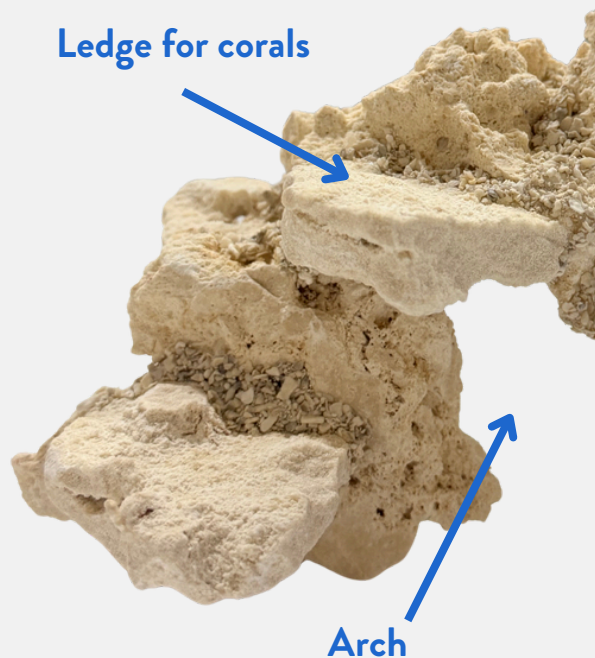
Aquascaping and Rock Attachment

This is the foundation of how your reef will look years from now. Don't rush it. PNW Custom sells pre-made rockscapes, and we love to see innovative home-made rocks as well. No matter your choice of rockscape, make sure you leave plenty of room to clean the side panels of the display - even once the rock has coral growing off of it. When in doubt, opt for smaller.

The biggest risk to the inhabitants of a portable tank is the rock breaking loose. Your scape must be attached firmly to the tank floor, back wall, or both. This should be done before adding sand to your tank.

The best practice is as follows:

1. Design a rock scape that fits your tank. There are a lot of opinions about this, so read around and watch some videos if you're new.
 - a. An arch from the back wall to the bottom of the aquarium is always a winner
 - b. Little gobies like places to hide and things to swim through, so little caves and arches are good!
 - c. Coral needs a place to live without stinging its neighbor - pointy mountain ranges have more surface area than flat hills do.
 - d. If you need more inspiration, join the Micro Tank Takeover group on Facebook.
 - e. Reading a little bit about photo composition can help, too. Rule of Thirds, Golden Ratio, etc.



2. Flatten the portions of your finished scape that make contact with the aquarium.
 - a. The key here is surface area. The more of your rock meets the tank as a flat surface, the stronger the bond will be.
 - b. The best way to flatten the scape where it meets the tank is with a belt sander.
 - c. Epoxy putty can also be used to make a flat surface on the rock, with caution.'

Epoxy putty does not bond well to flat acrylic, or flat rock. It relies on having rough shapes to grab onto. For best results, use epoxy only to create a shape. Use superglue gel for the actual adhesive that joins two surfaces.

3. Attach the scape to the tank with superglue gel, while both are clean and dry, and allow ample time for the glue to cure.



Sand or no sand?

There are a few ideas here to consider.

No Sand:

The Nomad can be run bare-bottom, with no sand, for a sleek, modern look. This means you'll have less surface area for bacteria to grow on, which means your tank might grow algae a bit faster or you may need to feed a bit less.

Sand:

The Nomad can also be run with a sandy bottom like a normal aquarium. The RoamingReef and the PNW Custom Portable Micro Reef both run a loose sand bed - which means that our biological filter is huge compared to the size of our tanks.

4. Micro Reef Controller Set Up

The PNW Custom x RoamingReef Nomad comes equipped with our biggest innovation to date, the Micro Reef Controller.

Setup is easy, and the controller serves several purposes for the Nomad:

- We used it to eliminate clutter. No mess of buttons and controls at the rear, just a sleek back that's nice to look at.
- No accidental inputs. We've learned from our time on the road that exposed buttons are just a bump away from your heater temperature changing, lights dimming, or things coming unplugged. The Nomad solves this problem.
- Big reef features, in a small reef package. Things that are typically only unlocked with expensive, big equipment are now a part of the Small Tank Takeover. Lights can be programmed and dimmed, return pump flow can be fine tuned, and digital temperature control has been unlocked!



Once your Nomad is wet, it's time to get to know your controller. The unit broadcasts its own WiFi signal everywhere it goes, and the local interface is just a secret number away from your fingertips.

The app doesn't get installed on your phone, because we don't want your entire ecosystem to be dependent on the health or charge of one device. The app runs on the controller itself, and you can access it from any device with WiFi.

The guide is included with your tank at a separate QR code, but it's also located below:



5. Best Practices for Power Management

This is important. Most of it has been stated above, but it cannot be said enough:

Do not run the tank from the battery more than necessary. If you can run it from the wall, that's what we recommend.

There is no such thing as a perfect battery. What we've chosen is the one most optimized for our use case. It still has a limited number of cycles it will handle well.

If you're at home or a hotel:

- Pop the cap off of the back.
- Plug the Controller into a wall supply.
- Remove the battery and charge it outside of the stand.

It's that easy, you're going to do great.

