



# MAX<sup>®</sup> NANO

[Installation and Operation Manual](#) ➔

[Cabinet Installation Guide](#) ➔

[Podium Installation Guide](#) ➔

[AI Prime HD LED Manual](#) ➔





## PRINTING INSTRUCTIONS

To print **only** the Installation and Operation Manual, print pages 2-25.

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# Red Sea MAX<sup>®</sup> NANO

Complete Plug & Play<sup>®</sup> Open Top Reef System

Installation and Operation Manual



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Installation and Operation Manual



**MAX® NANO Installation & Operation Manual**

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## **Congratulations on your purchase of the Red Sea MAX® NANO complete reef system.**

The Red Sea MAX® approach to the coral reef experience is to create an environment that is specifically attuned to the needs of coral and all inhabitants on an artificial reef. In the ocean coral reefs flourish only where specific physical conditions prevail, such as sufficient light, adequate current, stable temperature and water quality.

The Red Sea MAX® system provides the conditions that enable you to keep a thriving, healthy reef in your own home.

We hope that you enjoy your MAX® and wish you happy reefing.

To benefit from product update information and special offers exclusive to registered MAX® owners, please register your MAX® on-line at [redseafish.com](http://redseafish.com)

# 1 Safety

Please read and follow all safety instructions.

**DANGER:** To avoid possible electric shock, special care should be taken when handling a wet aquarium. For each of the following situations, do not attempt repairs yourself; return the appliance to an authorized service facility for service or discard the appliance.

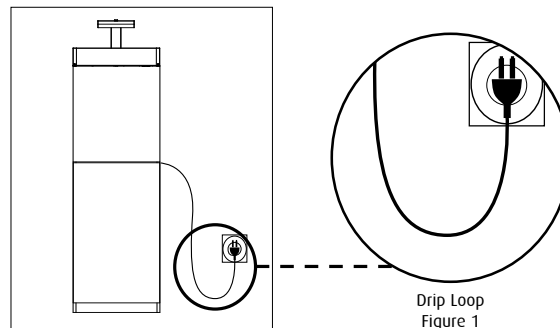
**WARNING:** To guard against injury, basic safety precautions should be observed, including the following:

- Do not operate any appliance if it has a damaged cord or plug, if it is malfunctioning, or if it is dropped or damaged in any manner. If the external cable is damaged, it shall only be replaced by the manufacturer.
- To avoid the possibility of the appliance plug or receptacle getting wet, position the aquarium stand and tank to one side of a wall mounted receptacle to prevent water from dripping onto the receptacle or plug. You should create a "drip loop" (Figure 1) for each cord connecting an aquarium appliance to a receptacle. The "drip loop" is that part of the cord below the level of the receptacle, or the connector. Use an extension cord, if necessary, to prevent water traveling along the cord and coming into contact with the receptacle. If the plug or receptacle does get wet, DO NOT unplug the cord. Disconnect the fuse or circuit breaker that supplies power to the appliance. Then unplug the device and examine for presence of water in the receptacle.
- To avoid injury, do not contact moving parts.

- Always unplug an appliance from an outlet when not in use, before putting on or taking off parts, and before cleaning. Never pull the cord itself to remove the plug from the outlet. Grasp the plug and pull to disconnect.
- Do not use an appliance for anything other than its intended use. The use of attachments not recommended or sold by the appliance manufacturer may cause an unsafe condition.
- Do not install or store the appliance where it will be exposed to the weather or to temperatures below freezing point.
- Make sure an appliance mounted on a tank is securely installed before operating it.

Read and observe all the important notices on the appliance.

**NOTE:** A cord rated for less amperes or watts than the appliance rating may overheat. Care should be taken to arrange the cord so that it cannot be tripped over or pulled accidentally.



## 2 Location

The first step in setting up the MAX® NANO is to choose a suitable location.

### Electric Supply

Ensure that the electric power supply outlet used for the MAX® NANO is correctly rated for the system (75W), plus whatever additional equipment (such as a heater) you plan on adding. The power supply outlet must be grounded and connected to a circuit protected by a RCD/RCCB (residual current device or residual current circuit breaker) also known as a GFI/GFCI (ground fault circuit interrupter).

### Floor

The floor directly below the legs must be level and rated for a static loading of at least 14kg/cm<sup>2</sup> (200 lbs/square inch).

### Room temperature

Site selection is important for correct temperature maintenance. We recommend that you keep the ambient room temperature a comfortable and stable 22°C / 72°F. Avoid placing the tank in front of an air conditioner, heating vents or direct sunlight. A well ventilated room with moderate light is the best place to position the aquarium.

### Accessibility

- **Back:** Ensure that there is at least 10cm (4") of clearance behind the MAX® to allow for sufficient air circulation for a chiller and general ease of operation.
- **Sides (Rear):** Ensure that there is sufficient room (approximately 60cm/24") between both sides of the aquarium and any adjacent walls or furniture for access to the rear of the tank. This is required for the regular maintenance of the surface skimmer, protein skimmer, flow pump and filter media as well as installing/removing cables to the Pump Switch-box.

### General considerations

Ensure that the area surrounding the aquarium is waterproof and consider moving away anything that water might damage or which may be corroded by salt.

### 3 Unpacking the MAX® NANO System

Please read this section carefully before proceeding.

1. Remove the EVA mat and the protective packaging from around the top of the tank.
2. Remove the components and any packaging materials that are packed inside the aquarium.
3. Open the accessory box and remove all of the parts for later assembly.

#### Removing the aquarium

With one person positioned at either side of the box, grasp the upper rim of the aquarium and gently lift it out and place on the designated surface.

**CAUTION:** The aquarium has a bare glass bottom. Before removing the aquarium from the box prepare a smooth, soft, clean flat surface that can hold its weight and place the EVA mat on it.

Approximate weights of Aquarium (empty)		
Model	Metric (kg)	Imperial (lb)
NANO	23	51

**NOTE:** Every precaution has been taken to ensure the safe arrival of the MAX® NANO aquarium system, however before installing a new glass aquarium it is advisable to inspect it for damage or leaks.

Place the aquarium in a suitable location and fill the tank and rear sump to approximately 2.5cm (1") below the top of the glass. Leave the water standing for 15 minutes and inspect for leaks.

Syphon all of the water out before moving.

## 4 Components

<b>MAX® NANO system main components</b>	
MAX® NANO type glass aquarium with integral rear sump	75L (20 gal)
MAX® NANO Cabinet (optional)	Self-assembly
Pump Switch-box	✓
LED – Prime HD™ light units	55W
Rear Sump Protein Skimmer	NANO
Circulation pumps	1 x 950lph (240 gph)
Filter sponges	2
Carbon media with drawstring bag	100g
Rear Sump Screen	✓
Automatic Top-Off	✓



## 5 Assembly

Perform the assembly and installation of all of the components in the order described below before adding the water to the system.

**NOTE:** Left and Right designations in this manual are when looking from the front of the Aquarium.

### 5.1 Cabinet assembly

**WARNING:** If you are not experienced in the construction of self assembly furniture, seek suitably qualified assistance.

Detailed instructions for the assembly of the MAX® NANO cabinet can be found in the accompanying graphic manual.

The assembly of the cabinet requires the use of a regular crosshead screwdriver. Do not use an electric screwdriver.

#### Adjustment of the Push-To-Open (PTO) door opening unit.

Pressing the end of the PTO unit by 1.5mm (1/16") will spring the shaft forward by 5cm (2") to the open position.

Pushing the PTO shaft back inside the cabinet will lock it in the closed position.

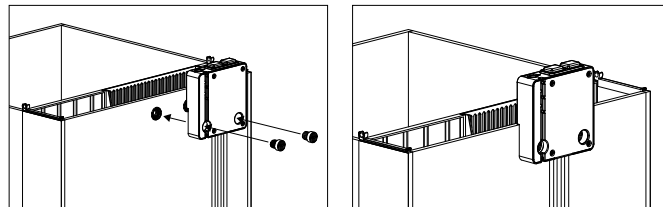
After assembling the cabinet door, make sure that the PTO is in the closed position and allow the soft close hinges to fully close the door. With the door in the closed position press the door in the region of the PTO. The door should spring open. If the door does not spring open adjust the position of the PTO by rotating the front end of the shaft anticlockwise half a turn. Repeat this adjustment until pressing the door causes the PTO to operate.

After assembly, place the cabinet in the desired location.

### 5.2 Pump Switch-box

Align the Pump Switch-box with the holes provided in the rear wall of the aquarium and fix into position with the screws provided. Do not attach the LED mounting arm or module at this time.

**NOTE:** Do not plug the Switch-box power cable to your power outlet until instructed to do so.



### 5.3 Placing Aquarium

Lifting the glass aquarium onto the cabinet will require 2 people. The top of the cabinet is approximately 86cm (34") from the floor. Ensure that anyone lifting the aquarium is physically suitable for such an operation and has been instructed in the correct methods of lifting heavy objects. Aquarium must be lifted from the bottom.

Place the EVA mat on the top of the cabinet or other surface that will be supporting the aquarium. The EVA mat is smaller than the aquarium. Place the glass flush with the back of the mat and 3mm (1/8") from each of the sides.

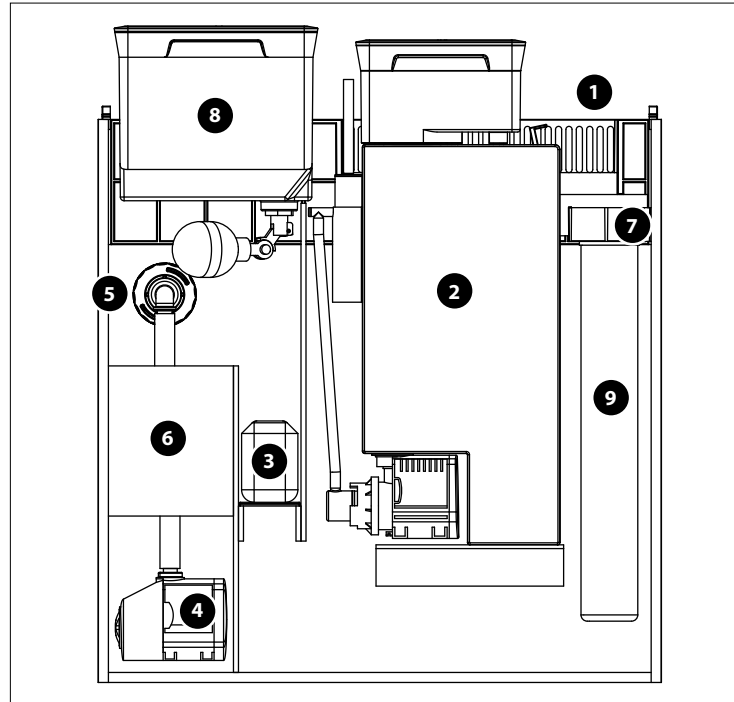
Before lifting aquarium, place the assembled cabinet in the final operating position (see location above) and set the glass aquarium in position on top.

The back and sides of the glass should be flush with the rear and side edges of the top of the cabinet.

Once the aquarium is correctly aligned with the cabinet, check that the cabinet has not moved. If necessary readjust the position of the cabinet.

## 6 Installation of Rear Sump Components

1. Detachable Surface Skimmer
2. Protein Skimmer
3. Carbon
4. Circulation Pump
5. Pump Outlet Nozzle
6. Bubble trap sponge
7. Skimmer Outlet Sponge
8. Automatic Top Up
9. Micron Filter Bag



MAX® NANO rear sump component assembly diagram

## Overview of the MAX® NANO filtration and circulation system

The MAX® NANO rear sump has a complete multistage filtration system consisting of a REEF-SPEC® protein skimmer, activated carbon and mechanical filtration materials.

Water circulation in the aquarium and sump is approximately 12 times the entire water volume per hour with forced flow through the mechanical and chemical filter media while the protein skimmer treats the water at the SPS spec of approximately 3 times per hour.

The water flows from the aquarium to the rear sump via a detachable surface skimmer that directs the organics laden water from the upper surface of the main tank into the rear sump.

From the surface skimmer the water is immediately channeled through a micron filter bag before entering the skimmer chamber. If the filter bag is not cleaned frequently enough and becomes blocked, the water will bypass the micron filter without affecting the overall operation of the rear sump.

After the skimmer chamber the water is positively drawn through the REEF-SPEC® carbon and the bubble stripping sponge filter by the circulation pump located at the bottom of the sump, that returns the filtered water back to the aquarium through a multidirectional outlet nozzle. When the pumps are running, the water in the aquarium will be maintained at approximately 2.5cm (1") below the rim.

To maintain a constant water height in the system the MAX® NANO includes an automatic Top-Off system with a 1.5 liter freshwater reservoir which should be enough to compensate for about 2 days of evaporation. The rear sump will continue to run efficiently even after evaporation of approximately 1 liter (with an insignificant rise in salinity) and therefore the MAX® NANO should run for at least 3 days without adding water to the system.

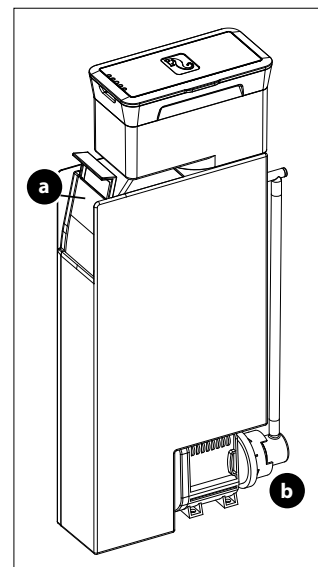
## 6.1 Protein Skimmer:

The MAX® NANO protein skimmer consists of three parts: skimmer body, collection cup and skimmer pump.

Familiarize yourself with the skimmer pump by disassembling and reassembling all of the component parts. Ensure that the impeller chamber cover is correctly positioned and properly secured by the bayonet ring. Before use check that the pump and power cable are not damaged.

Diagram key :

- a. Skim adjuster
- b. Venturi inlet
- c. Air pipe
- d. Small air pipe

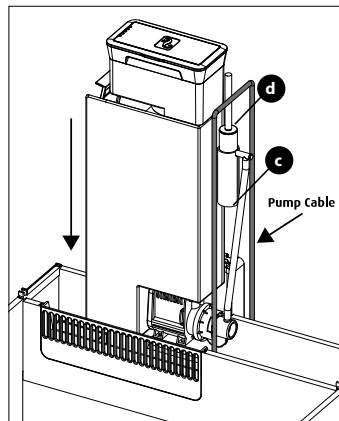


NANO skimmer

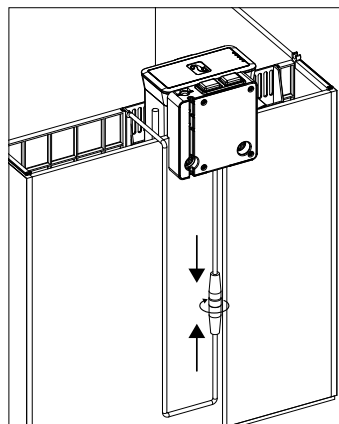
Assemble the skimmer as shown in the diagram.

1. Set the skim adjuster to its lowest position.
2. Connect the air pipe from the venturi inlet of the skimmer pump to the outlet of the silencer.
3. Connect the small air pipe on the inlet of the silencer.
4. An optional air valve is provided for use with the skimmer. Initially do not attach the air valve; it is only to be used if required as described in the operation instructions.

5. Hold the pump cable at the side of the skimmer, as shown in the diagram and slide the skimmer into the skimmer compartment so that the silencer just touches the glass partition.
6. Feed the cable over the back wall and connect to the left hand cable of the Pump Switch Box by tightening the connector nut.



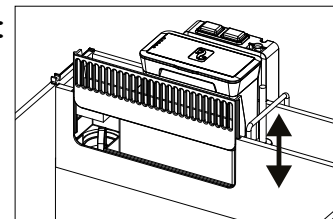
NANO skimmer



skimmer cable

## 6.2 Surface Skimmer:

The removable surface skimmer is supplied assembled in the correct position in the dividing wall between the tank and the rear sump. To remove the surface skimmer simply raise in the upward direction. Note the surface skimmer incorporates a channel that directs the water to the micron filter.

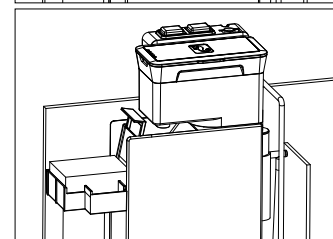
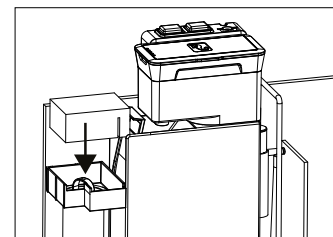


Surface Skimmer/comb

## 6.3 Micron Filter:

Check that the micron filter bag is installed in the Filter Bag Holder at the left of the rear sump.

Place the small black sponge onto the filter bag holder as shown in the diagram so that the sponge is also touching the side of the skimmer.



filter bag and sponge

**NOTE:** The MAX® NANO is supplied with a 225 Micron thin mesh filter bag (#40580). 100 micron fine polishing filter bags (#40581) are available from Red Sea dealers.

## 6.4 Carbon:

Wash the carbon filter material under running water several times to remove residual dust. It is recommended to soak it in water for 24-72 hrs. before usage otherwise during the first 3 days after set-up the carbon may float and release micro air bubbles from inside its pores.

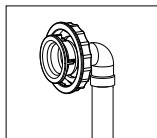
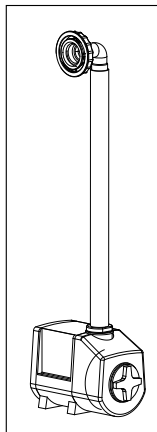
Lower the washed carbon into the chamber to the right of the skimmer so that it rests on the grid located approximately 30cm (12") below the top surface of the glass. To enable easy replacement of the carbon, place the drawstring of the carbon bag over the silencer of the skimmer.

## 6.5 Circulation Pumps:

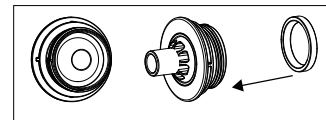
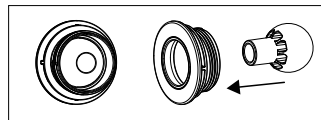
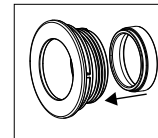
Familiarize yourself with the multidirectional outlet as shown in the drawing.

Familiarize yourself with the circulation pump by disassembling and reassembling all of the component parts. Ensure that the impeller chamber cover is correctly positioned and properly secured by the bayonet ring and that the flow valve is in the fully open position. Screw the hose barb provided into the outlet of the pump.

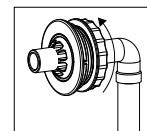
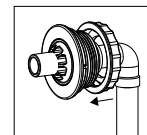
1. Before use, check that the pump and power cable are not damaged.
2. Thread the outlet bayonet connector onto the flexible pipe and assemble the flexible pipe to the pump so that the outlet elbow is perpendicular to the pump as shown in the drawing.



3. Insert the Eyeball Seat into the Outlet Holder that is fixed into the glass. This part is a tight fit so that it will not float out during any pump maintenance but can be removed if necessary for cleaning.
4. Insert the Eyeball outlet followed by the seal into the Outlet Holder.



5. Lower the pump into the pump chamber until the Outlet Elbow with the Bayonet connector is opposite the Outlet Holder.
6. Screw the Bayonet to the Holder until firmly in position. Check that the Eyeball is free to rotate but held securely in the desired position. Initially adjust the nozzle to the downward position to prevent splashing when the pump is first switched on.
7. Feed the cable over the back wall and connect to the right hand cable of the Pump Switch Box by tightening the connector nut.
8. With the circulation pump secured in position, hold the pump cable against the back wall, close to the Switch Box and push the black filter sponge into the pump chamber so that the slit in the sponge is in line with the flexible pipe.

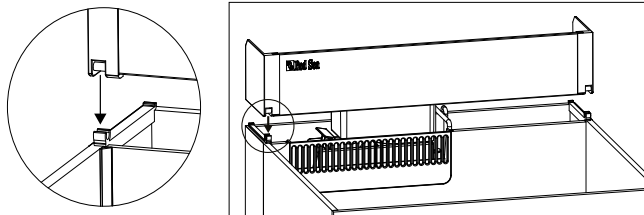




## 6.6 Sump Screen:

Position the sump screen above the front wall of the rear sump. Align the hinges above the clips on the top of the side walls and push firmly into position. Push the rear of the sump screen until it clicks into position.

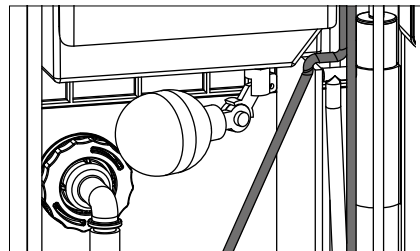
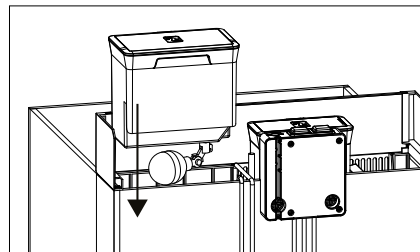
To rotate, pull the top of the screen forward until the screen lays flat on the top of the tank.



## 7 Automatic Top-Off (ATO):

The MAX® NANO ATO unit is supplied fully assembled and should not need any adjustment before installing on the system however make sure that the float valve is at the correct angle as shown in the diagram. Hold the circulation and skimmer pump cables to the side of the Pump Switch Box and slide the ATO into position on the rear wall of the sump. Make sure that the cable of the circulation pump is located in the recess at the bottom of the reservoir.

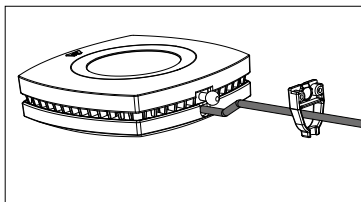
**NOTE:** Do not add RO water to the ATO until you have the correct amount of seawater in the system.



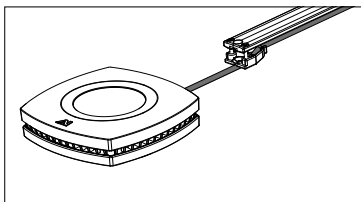
## 8 Installation of LED Modules

The LED unit for the MAX® NANO is attached to the mounting arm by a ball joint, allowing tilt and swivel. The mounting arm is attached to the aquarium by the hole provided for it in the top of the Pump Switch-box. The complete LED assembly can be rotated from side to side for ease of aquascaping and maintenance of the rear sump, specifically when removing the skimmer.

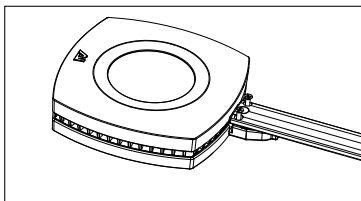
1. Thread the LED cable through the ball-seat as shown in the diagram until the ball-seat is about 10cm (4") from the LED unit.



2. Using a cross head screwdriver, partially attach the ball-seat to the mounting arm with the 2 screws provided, one full rotation of the screwdriver should be enough to hold the ball-seat in position.

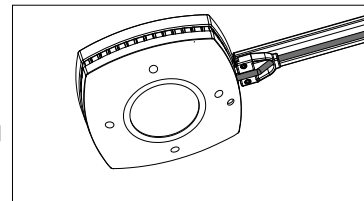


3. Carefully move the LED unit into position so that ball sits correctly in the ball-seat while threading the cable through the recess provided for it.

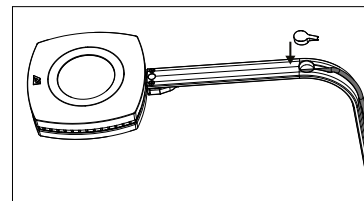


4. Press the ball-seat to the mounting arm, trapping the ball in between the parts and tighten the 2 screws until the ball is held firmly.

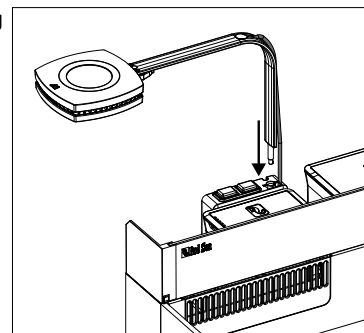
Tip – place the LED unit on a work surface with the ball protruding over the edge, hold the mounting arm with one hand at the connector end and press on the ball-seat from underneath so that you have easy access to the screws from above.



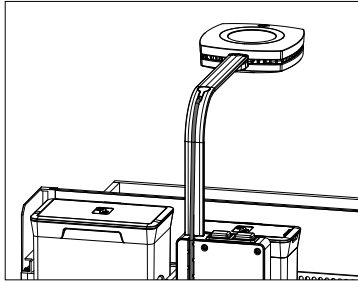
5. Thread the cable through the hole in the bend of the mounting arm and push the cable-hole plug into position.



6. To attach the LED mounting arm to the switchbox hold it so that the pin at the bottom of the arm is over the hole in the switchbox and the LED unit is facing sideways as shown in the diagram. Place the cable over the back of the aquarium.



7. Lower the pin into the hole and when the flat part on the arm is in resting on the Pump Switch Box, rotate the arm to the forward position. Thread the cable through the recess provided in the back of the Pump Switch Box.



Find a suitable safe place to locate the power supply, such as in the cabinet.

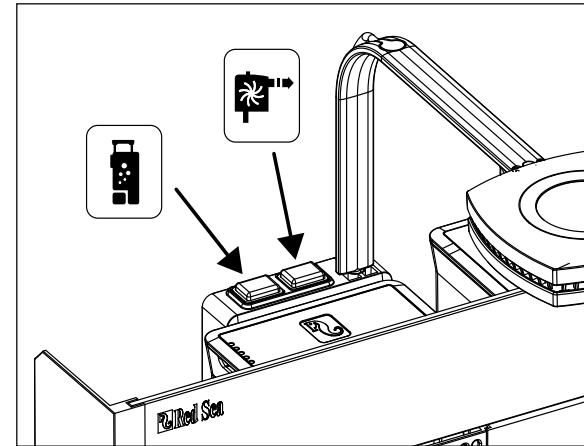
Connect the DC connector from the LED unit to the power supply but do not plug the power supply into the wall outlet until you are ready to set up the LED unit.

## 9 Operation of Pump Switch-box

The Pump Switch-box is designed to provide easy on/off control of the circulation and skimmer pumps during routine activities such as feeding or maintenance.

Ensure that the 2 switches are in the off position and plug the power cable to the wall outlet. Do not switch the pumps on until both pumps are fully submerged in water.

The cable connectors are designed to prevent any ingress of water when used in the designed manner. The connectors are not waterproof and must not be immersed in water.



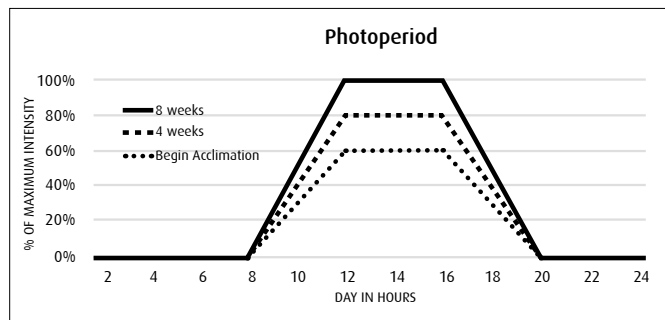
## 10 LED Set up and programming

The LED modules have a built-in Wi-Fi network and must be connected to a smartphone or Wi-Fi enabled computer to get the benefits of all of the features. To set up and program the LED's follow the instructions provided with the LED modules.

### Programming guidelines:

#### Photoperiod: Day/moonlight

The day photoperiod should be between 8 – 12 hours with no more than 4 hours at maximum intensity and at ramp up/down rate of approximately 25% (of maximum intensity) per hour. Corals and fish must have daily periods of darkness. LED moonlight should be limited to 1% of the maximum light intensity for a maximum period of 6 hours.



#### Acclimation

To prevent photo-inhibition due to the high intensity of LED lights, an acclimation period is recommended for new systems or when introducing new corals.

Acclimation will vary for different kinds of corals however it is recommended to allow a period of 8 weeks for new set-ups as follows:

Set the day photoperiod as described above however the 4 hour peak intensity should not exceed 60% of maximum. Increase the peak intensity by 10% every 2 weeks.

During the acclimation period look for signs of photo stress and photo-inhibition such as:

- Whitening/Bleaching of the upper section of the tissue (the lower section will continue to show pigments and zooxanthellae).
- Polyps retraction.
- Gas bubbles inside the soft tissue.

In the event of any of the above symptoms immediately reduce the peak intensity by 20% for about 4 weeks and thereafter increase by 5% per week until maximum intensity is reached.

When introducing new corals to already acclimated systems, start by positioning them at the lower levels of the aquarium and gradually raising them to their desired position over a period of several weeks. Keep watching for signs of photo inhibition/stress and if necessary return an affected coral to lower levels for recuperation.

**NOTE:** Red and Green wavelengths are not recommended for use in Reef systems as they may promote the outbreak of unwanted Algae or Cyanobacteria.

## 11 Initial Fill

Follow the mixing instructions for mixing your artificial sea water. It is advisable to place any substrate or live rocks in the tank before adding the water as this will significantly affect the overall volume of water required.

Add the seawater to the main tank, rear sump and directly into the skimmer (to prevent it floating instead of filling with water) until the water is at the level of the circulation pump outlet nozzles. Turn on the skimmer pump and circulation pump and add more water to the system until the water level in the rear sump is approximately 10cm (4") below the rim of the aquarium.

**NOTE:** If you have mixed your saltwater for the initial fill inside the aquarium wait until the salt is fully dissolved and that the water has reached the desired salinity and temperature before trying to set the final water level.

## 12 Operation of the Protein Skimmer

Adjustment of the skimmer will be necessary from time to time due to the constant changes in density and organic material in the water.

The consistency of the foam produced by the protein skimmer is controlled by raising and lowering the Skim Adjuster.

The foam will be formed in the upper part of the skimmer body and will build and climb up the neck of the collection cup. Set the position of the Skim Adjuster so that the water level in the skimmer body is approximately at the base of the neck.

If the foam is too dry or it starts to accumulate lower in the neck, gradually raise the Skim Adjuster until the desired foam consistency is achieved. If the foam is too wet, lower the Skim Adjuster.

### Over-Skimming

An uncontrollable flow of aerated water into the collection cup. In the event of over-skimming the excess water will flow back into the sump from the overflow slot located at the top of the collection cup.

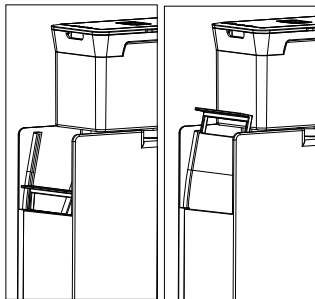
To control the over-skimming make sure that the Skim Adjuster is set in its lowest position, add the air valve to the top of the air inlet pipe and reduce the air intake until the foam stabilizes. Continue controlling the skimmer by adjusting the air intake. When the skimmer is stable with the air valve fully open, remove the valve and control the skimmer with the Skim Adjuster.



## New Skimmers or Set-ups

Skimmers only produce foam if the water contains the proteins that bind to the surface of the air bubbles and give the bubbles the structural rigidity they need to ascend the neck of the skimmer and settle in the collection cup. In a new aquarium set-up the bio-load is low and the amount of proteins is negligible.

New skimmers sometimes need a short break-in period of a few days before they begin to function efficiently. Over-skimming is common while harmless chemical residues that affect the surface tension of the water are neutralized.



## Feeding and Supplementing

Skimmers are very susceptible to the effect of surface active compounds such as foods and supplements that are added regularly to the aquarium. Such materials can significantly affect the foam production and in some cases cause over-skimming. Immediately before adding such materials switch the skimmer off and leave off for 30 minutes or however long it takes until the skimmer will return to its normal foaming action without repositioning the Skim Adjuster.

## Collection Cup

Monitor the amount of skimmed material that accumulates in the collection cup and empty the cup on a regular basis. When emptying the cup, clean the inside of the neck by rinsing it with water, as the build-up of skimmed material in the neck will adversely affect the skimmer performance. If you wash the cup with detergent make sure to rinse it thoroughly before returning it to the skimmer.

# 13 General Aquarium Maintenance

The long-term success and health of the inhabitants of your MAX® aquarium depends on you. Proper planning makes reef care easier to manage and quicker to perform. This will leave you more time for the real goal: enjoying your aquarium. Care of the tank should follow a regular, logical pattern. Divide the tasks into daily, weekly and monthly procedures, including equipment checks, feeding, water parameter testing and adjustments.

You may find it helpful to make a systematic checklist of care activities and keep a log of the activities performed. Your log does not need to be complicated; you will need to track the following:

- The tank's parameters – pH, salinity, temperature, etc.
- The general appearance of the tank and individual species.
- Equipment changes – when you changed light tubes or replaced heaters, etc.
- Replacement of carbon or other filter media.
- Information specific to each animal – when they were added, moved or removed, their approximate size, any signs of stress or ill health etc.

## Water levels

Check the water level in the AT0 on a daily basis and add fresh water as required to compensate for any evaporation. If the water in the aquarium is too high check that the surface skimmer is not blocked.

## Surface Skimmer

Remove and clean the surface skimmer at least once a week to allow proper water flow and stable water level differentiation between the aquarium and the rear sump. Periodically soak in a weak acidic solution (vinegar, citric acid) until any calcium carbonate deposits have dissolved. Wash thoroughly before returning to the aquarium.

## Protein skimmer

Check the foam production in the collection cup and reposition the Skim Adjuster or air flow as required to maintain a stable dry foam. Empty and clean the neck of the collection cup as required.

## Pumps

Check that the circulation pump is working well and pointed in the right direction. If you notice any regression in currents, check the pump and the outlet nozzle for any obstructions (snails, crabs, carbon chips, etc.).

To ensure proper function of skimmer and circulation pump they should be cleaned on a regular basis.

**NOTE:** Aquariums with higher levels of Calcium and Alkalinity will require more frequent maintenance.

## To clean the pumps:

- Switch the pump off at the Switch Box and disconnect the cable. and remove it from the aquarium.
- Remove the impeller housing and take out the impeller.
- Clean all of the parts, impeller housing, impeller and the impeller chamber of the motor by wiping with a soft cloth or brush. To remove calcium carbonate deposits soak the parts in a weak acidic solution (vinegar, citric acid) until deposits have dissolved.
- Rinse all parts thoroughly, reassemble the pump, ensuring that all pipes are connected securely and return to the aquarium before reconnecting the power cable to the electric supply.

**NOTE:** If the pump makes mechanical noise after cleaning, replace the impeller. The impeller is a wear item and may need to be replaced periodically.

## Water temperature control

For optimum conditions a reef aquarium should be maintained at a stable water temperature in the range of 24-28°C / 76-82°F (the stability of the temperature being more important than the exact value). Slightly higher temperatures can be tolerated for short periods of time as long as the change in temperature is steady and not sudden. Monitor the temperature at least twice a day, looking for dramatic fluctuations.

Avoid temperature differences of more than 2°C / 7°F during the day. During season changes and when heating or cooling the house, monitor the tank temperature more frequently.

## Change the carbon filter

Replace the active carbon filter every two months.

## 14 Trouble shooting

**Q. My set up is new and the skimmer doesn't seem to be skimming.**

A. Check that the salinity of the water is within the correct range for reef aquariums. If the setup is new or if you have just cleaned your skimmer, rinse thoroughly with water and return to the sump. The skimmer should start foaming within a few days. Skimmers react to changes in water density and other harmless chemical residue from the production process. While this is safe for your aquarium, it will impede the skimmer's efficiency for a couple of days. Remember that your skimmer will work only if the water contains proteins, as these proteins bind to the surface of the air bubbles and give the bubbles the structural rigidity they need to ascend the neck of the skimmer and settle in the collection cup.

**Q. My skimmer is new and is producing a lot of weak, watery foam (over-skimming).**

A. Production of an excessive amount of weak, watery foam – also referred to as over-skimming indicates the presence of chemical substances that need to be removed by the skimmer. Lower the position of the Skim Adjuster as necessary to reduce the water level in the skimmer neck and if necessary reduce the air flow by adding the air valve to the air inlet and restrict the air flow until you get a stable foam production. It may take a few days for the skimmer to remove all of the chemicals.

**Q. My set up is not new and skimmer isn't producing foam or it is too dry and builds on the neck.**

A. During a new set-up the bio-load is low and the amount of organics is negligible. If your MAX® is fully stocked, increase the height of the skimmer shutter as necessary and open the air valve. Check the water level in the rear filtration chamber and raise it to the optimal line. If you still get light foam production inspect for blockage in the airline or skimmer inlet.

**Q. My skimmer is not new and is over-skimming after feeding and/or supplementing.**

A. See Feeding and Supplementing in chapter 12 (page 18).

**Q. The water level in the aquarium is too high.**

A. Check the surface skimmer comb for restrictions such as algae or snails and clean the comb as instructed above.

**Q. A pumps has stopped working or is making mechanical noise.**

A. Disassemble and clean the pump as instructed above.

**Q. The circulation pump is injecting micro-bubbles into the aquarium.**

A. Make sure that you have added freshwater to compensate for evaporation and that the water level in all compartments of the rear sump is correct and that there are no blockages in the surface skimmer or in filter media preventing the pumps from being fully submerged. A low level of micro-bubbles in marine aquariums is normal and should be expected. Intense skimming is the secret of great water quality, as it both removes organic waste before it can break down AND maintains a high redox level. This is achieved by super-saturating the water with air, i.e. dissolving more gas into the water than is normal for the given temperature and pressure. Once the super-saturated water leaves the skimmer, it “relaxes” and releases the extra gas in the form of micro-bubbles. In the MAX® NANO the pumps are located near the bottom of the rear sump and are pre-filtered by a sponge that should prevent any air bubbles from reaching the pump inlet. There may be a buildup of air trapped inside the sponge. Remove the sponge, rinse and return it to the sump. You might be getting micro-bubbles if you are using tap water with water conditioners or natural seawater. Many conditioners, some synthetic salt formulae and impurities found in natural seawater increase the surface tension of the water and cause a small proportion of the bubbles to escape out of the

skimmer chamber and flow out through the pumps. We strongly recommend NOT using tap water. If you are using tap water DO NOT add conditioners or de-chlorinators.

Allow the water to settle for 24 hours to let the chlorine evaporate naturally before introducing to the aquarium.

## 15 Warranty

### Red Sea Aquarium Products Limited Warranty.

The limited warranty sets forth all Red Sea Aquatics (HK) Ltd (Red Sea) responsibilities regarding this product. There are no other express or implied warranties from Red Sea.

Red Sea warrants your product against defects in materials and workmanship for a period of 12 months, valid from the date of original purchase and will repair this product free of charge (not including shipping costs) with new/rebuilt parts. Damage to the aquarium glass is not included. The precondition for the warranty is that the stipulated set-up routine is observed. In the event that a problem develops with this product during or after the warranty period, contact your local dealer or Red Sea (at the company address indicated) for details of your nearest authorized service center.

The warranty is extended only to the original purchaser. Proof of date of purchase will be required before warranty performance is rendered. This warranty only covers failures due to defects in materials or workmanship which occur during normal use. It does not cover damage which occurs in shipment or failures which result from misuse, abuse, neglect, improper installation, operation, mishandling, misapplication, alteration, modification or service by anyone other than an authorized Red Sea service center. Red Sea shall not be liable for incidental or consequential damages resulting from the use of this product, or arising out of any breach of this warranty. All express and implied warranties, including the warranties of saleability and fitness for particular purpose, are limited to the applicable warranty period set forth above.

These statements do not affect the statutory rights of the consumer.

### USA

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusion or limitations may not apply.

To benefit from product update information and exclusive special offers to registered MAX® owners, please register your MAX® on-line at [redseafish.com](http://redseafish.com)



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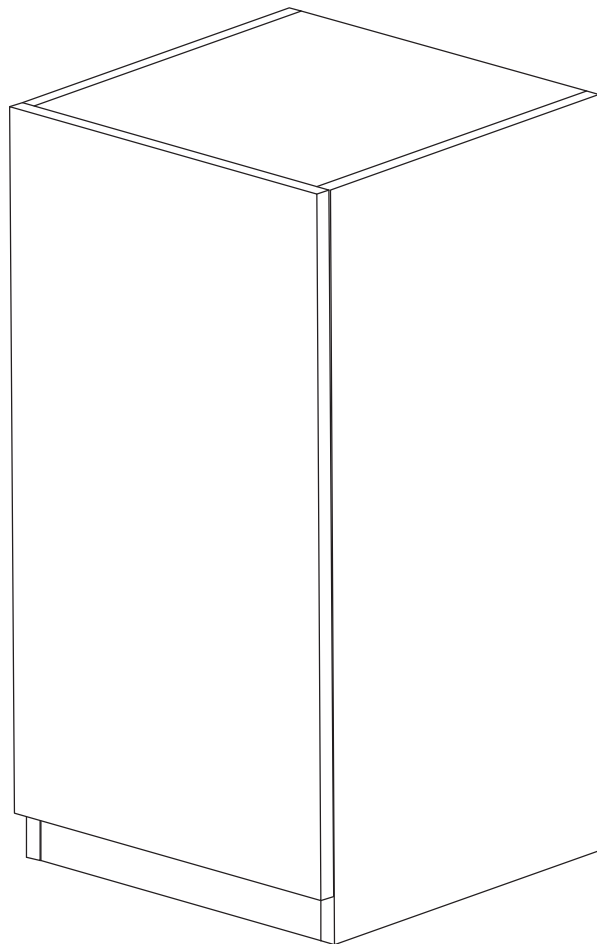


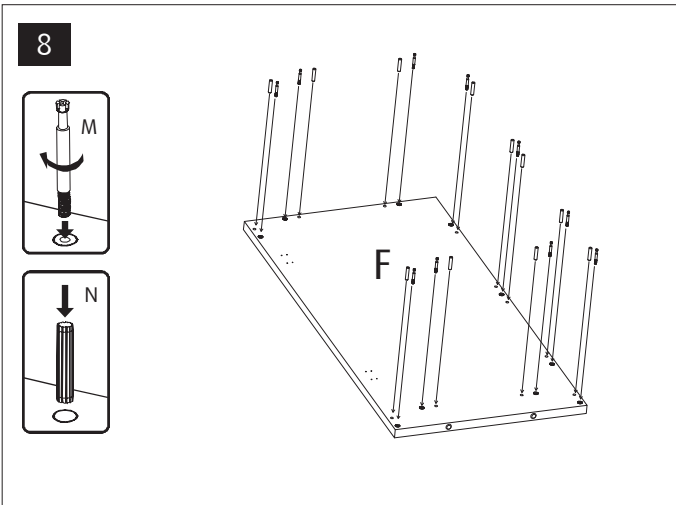
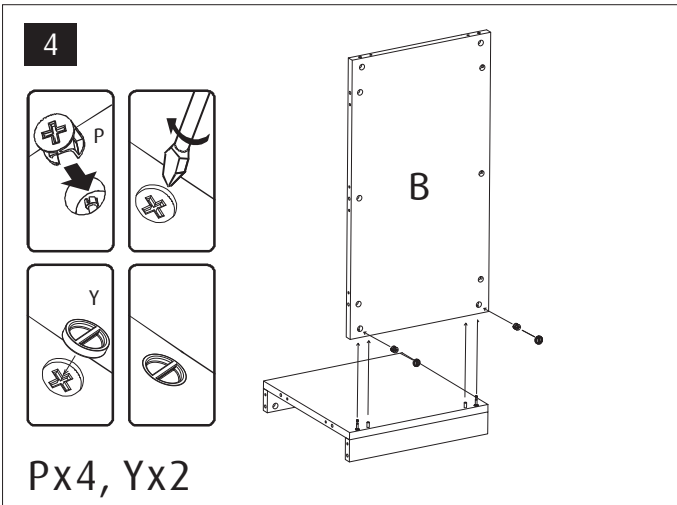
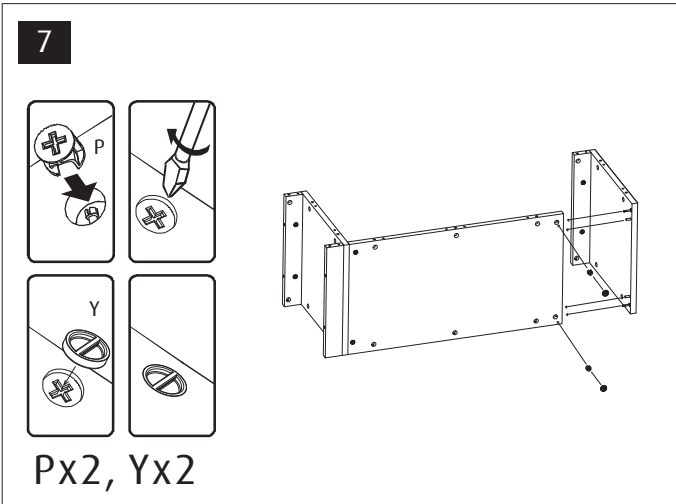
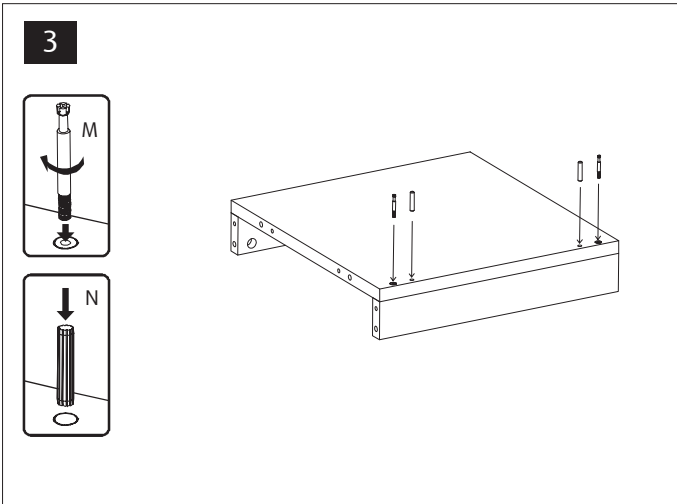
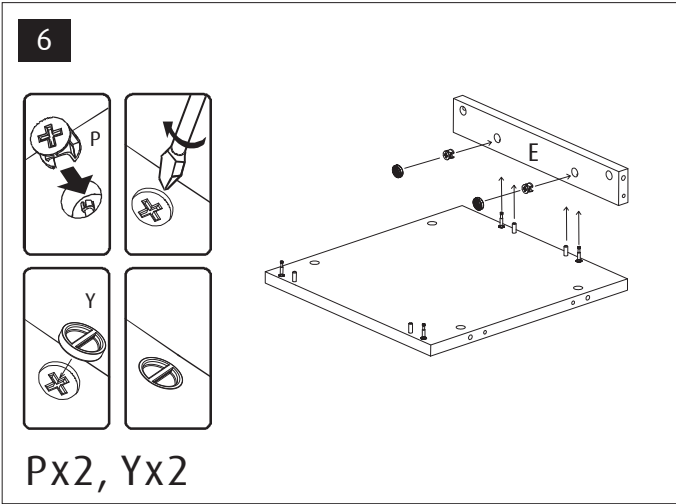
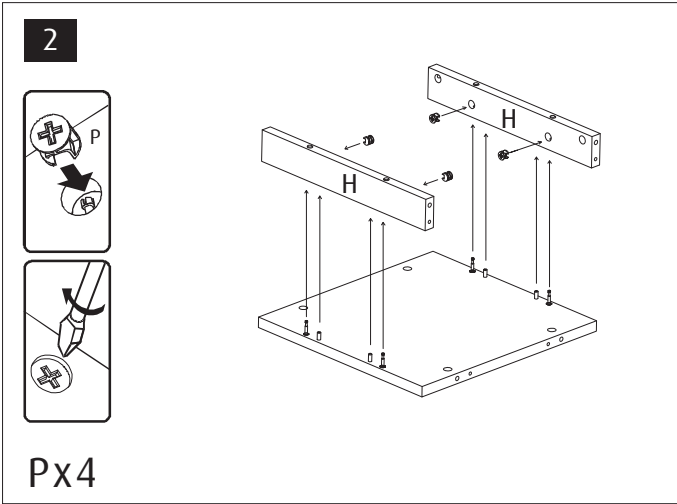
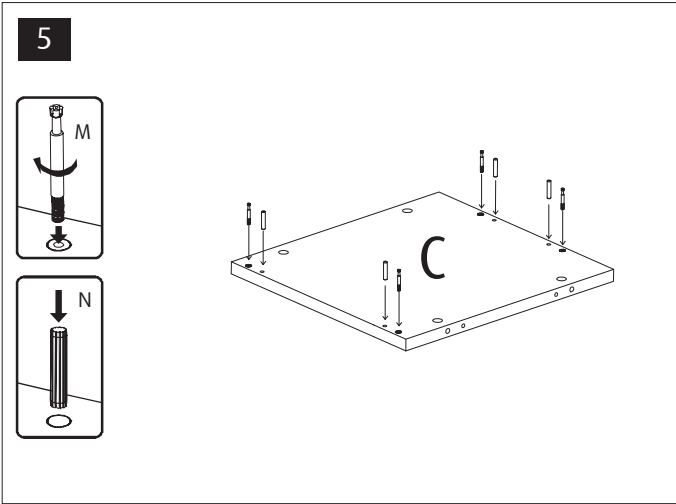
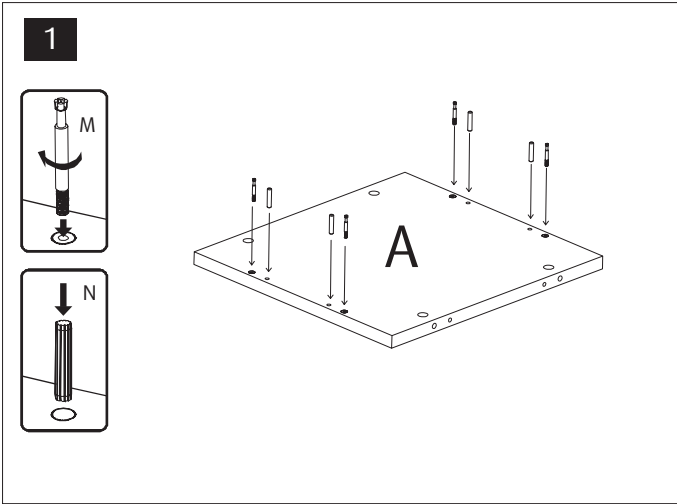
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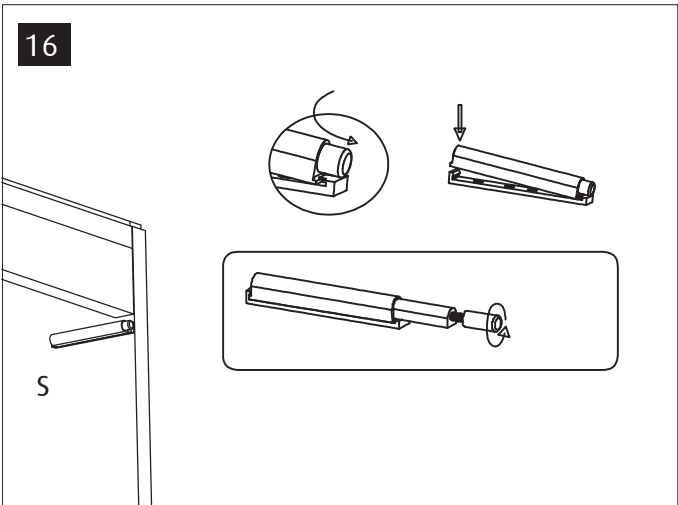
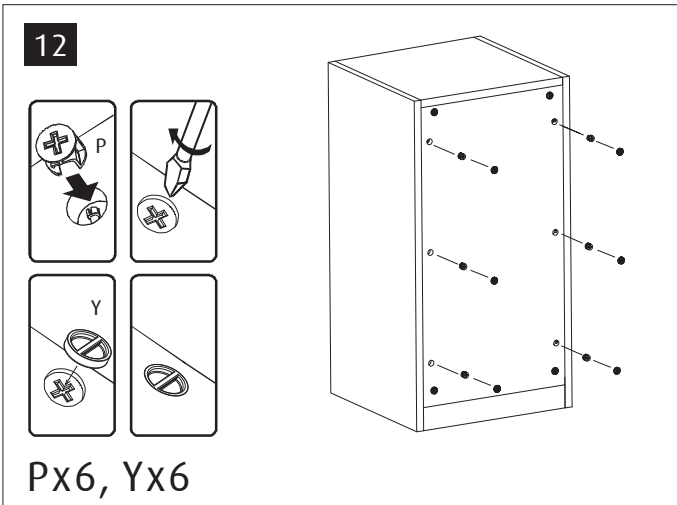
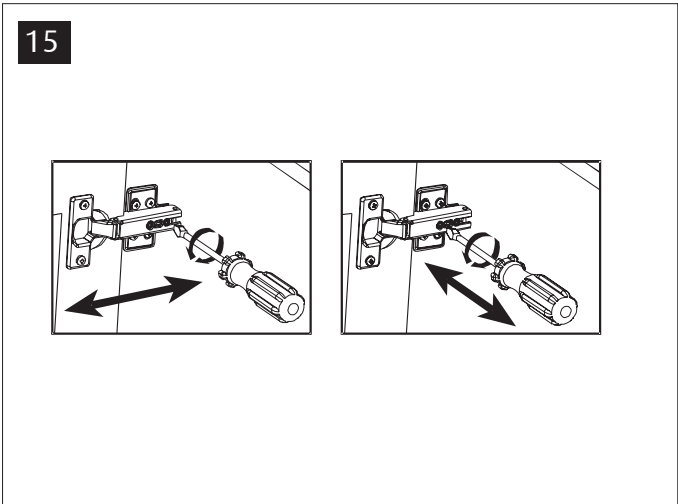
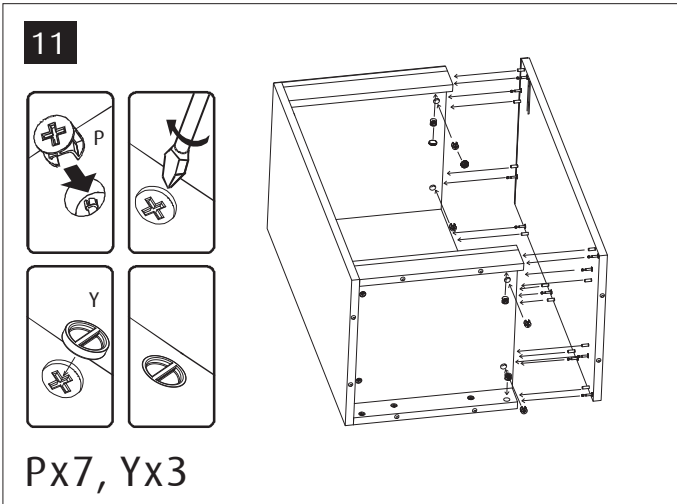
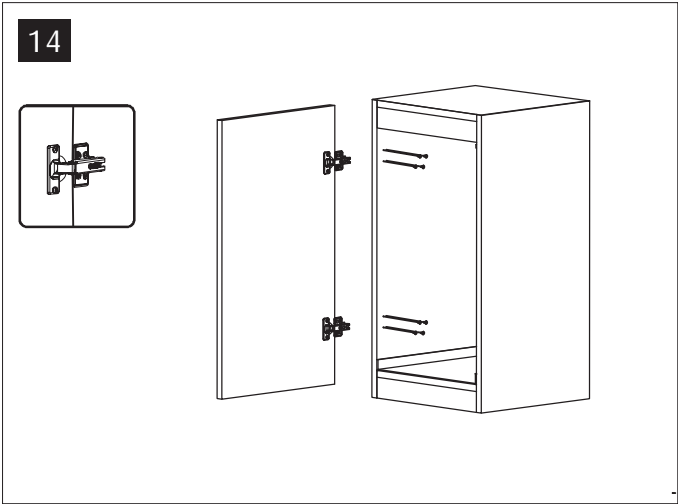
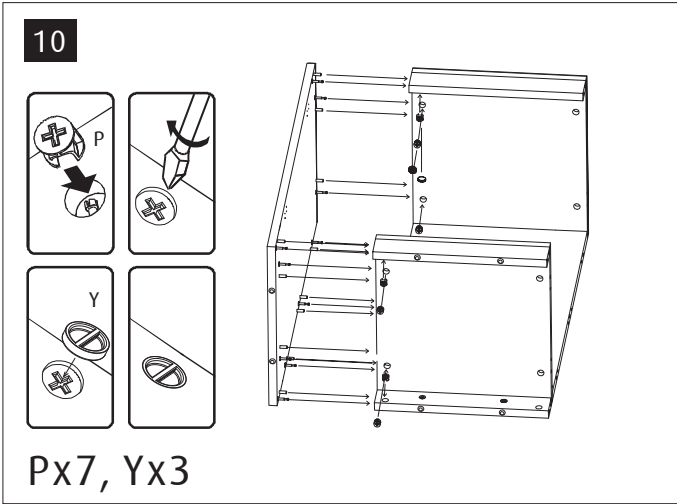
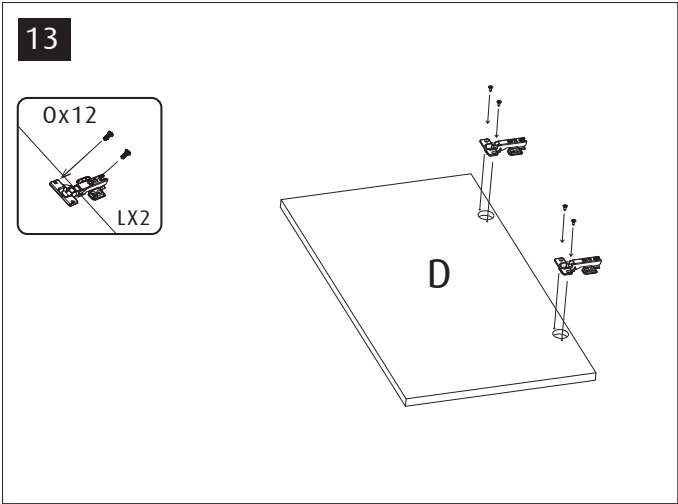
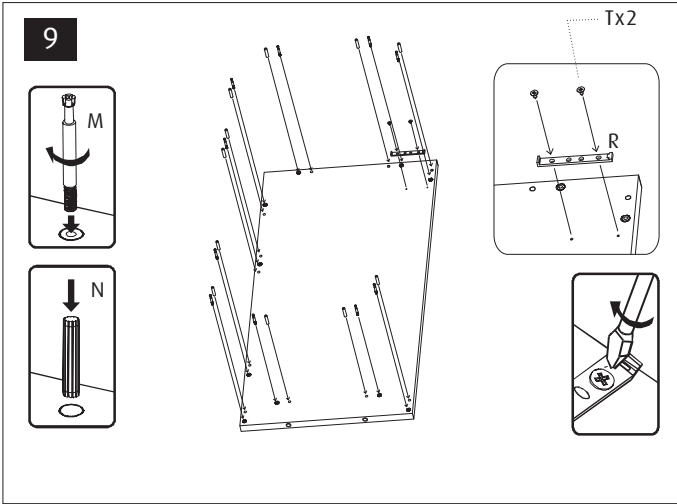
To print **only** the Cabinet Installation Guide, print pages 26-29.

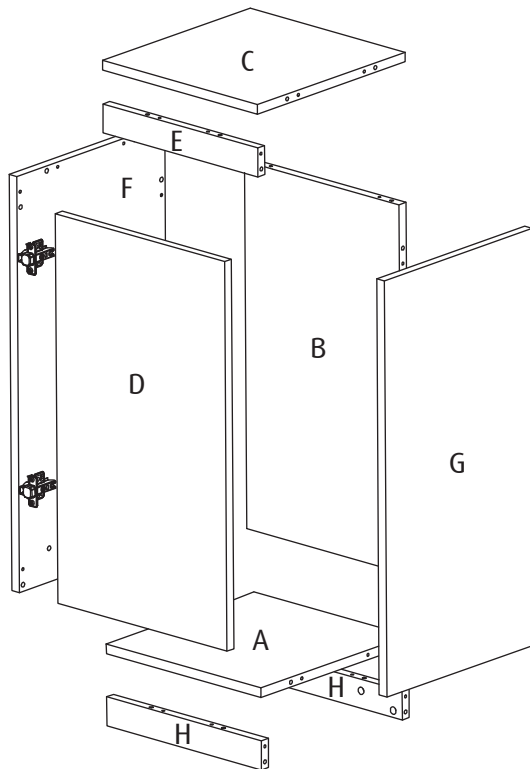
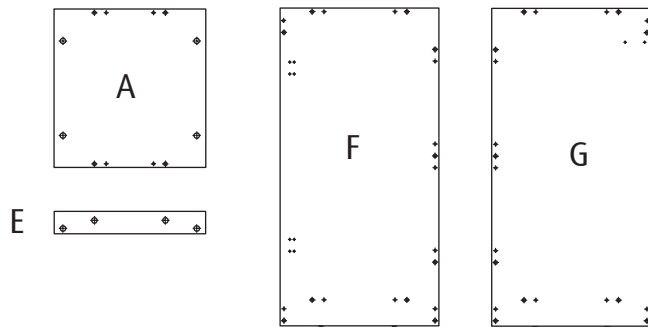
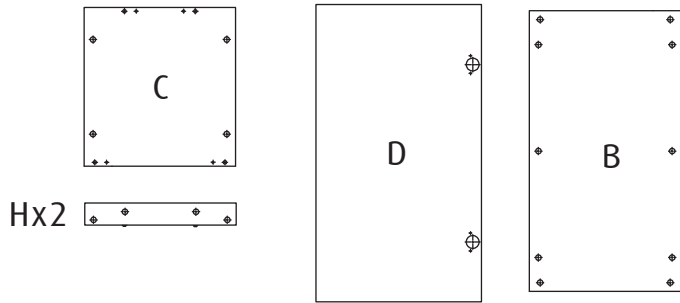
# Red Sea MAX<sup>®</sup> NANO

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L		x2
M		x30
N		x32
O	ST3.9 x16	x12
P		x30
R		x1
S		x1
T	ST3.5 x14	x2
Y		x18

#5940 MAX NANO\_v16A

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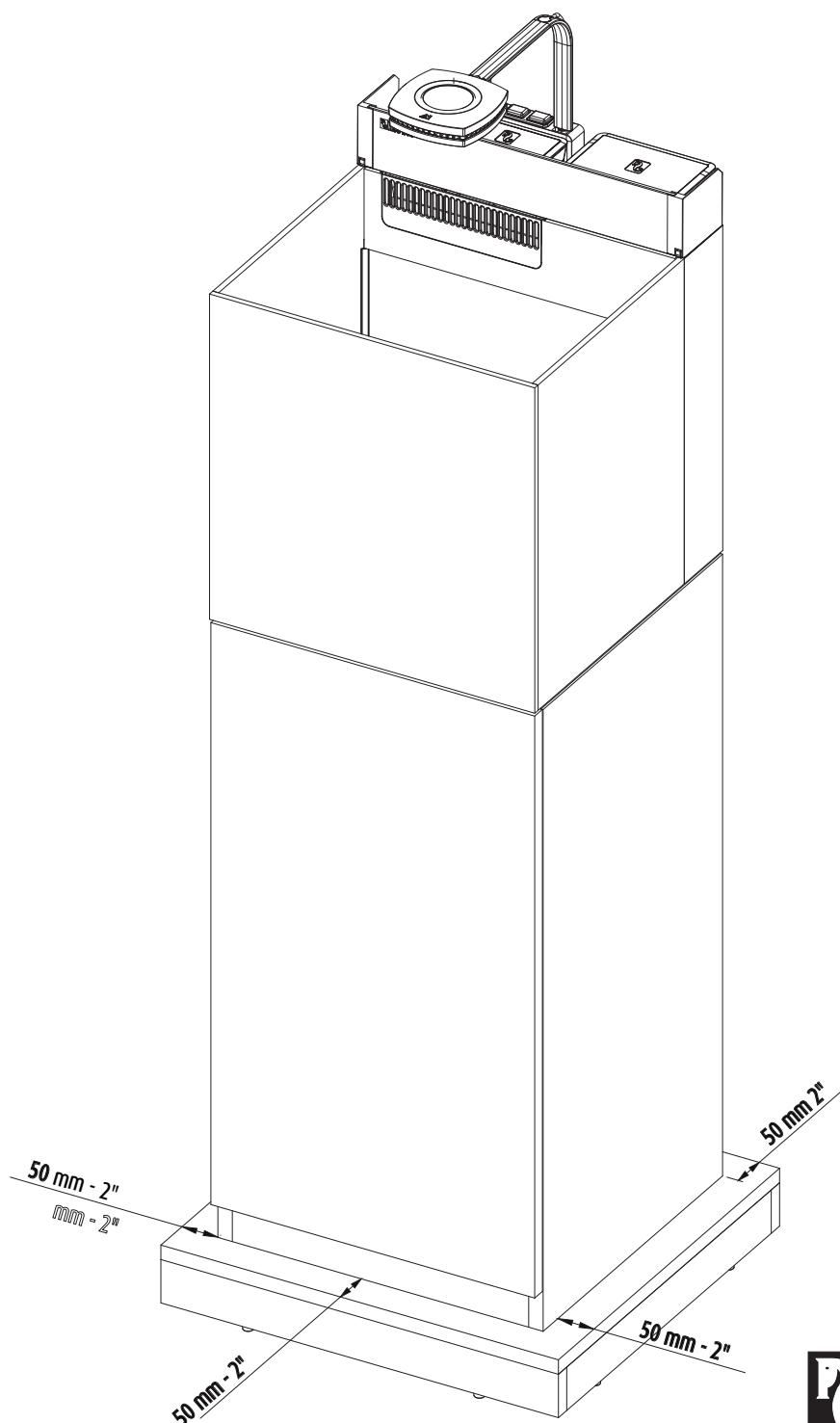


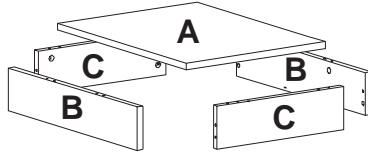
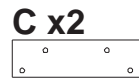
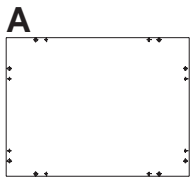
## PRINTING INSTRUCTIONS

To print **only** the Podium Installation Guide, print pages 30-31.

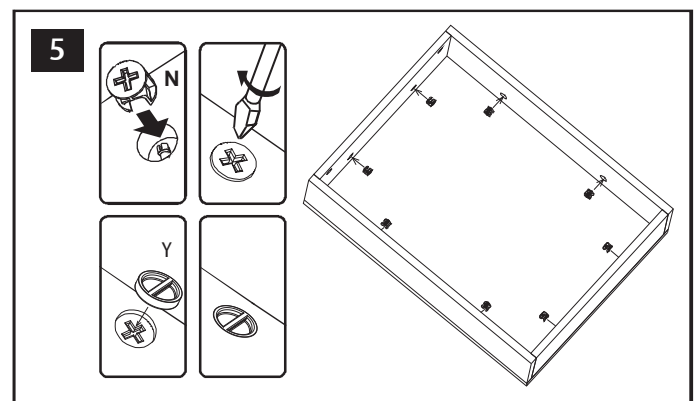
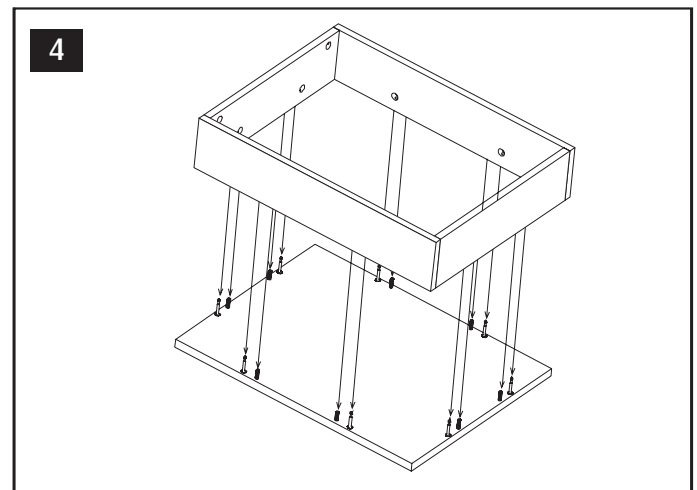
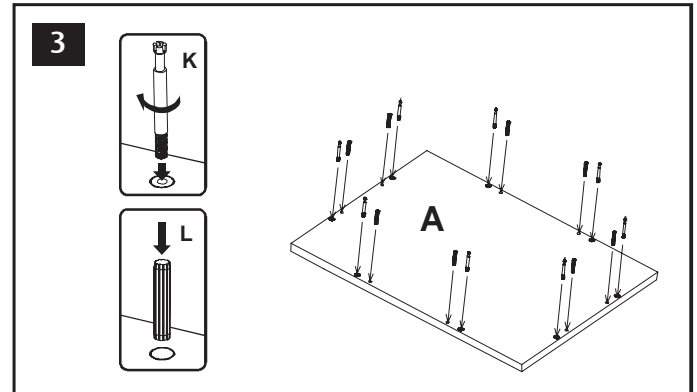
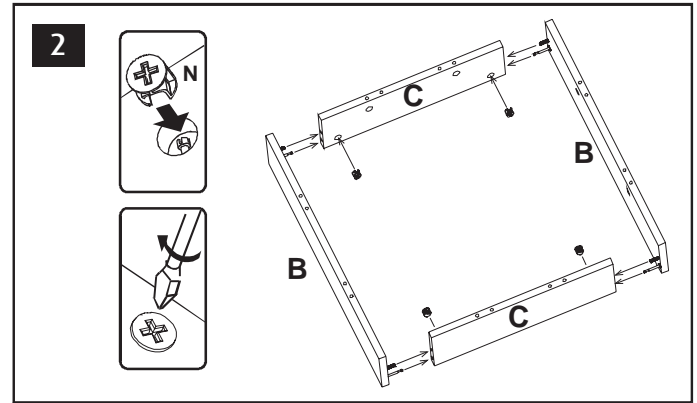
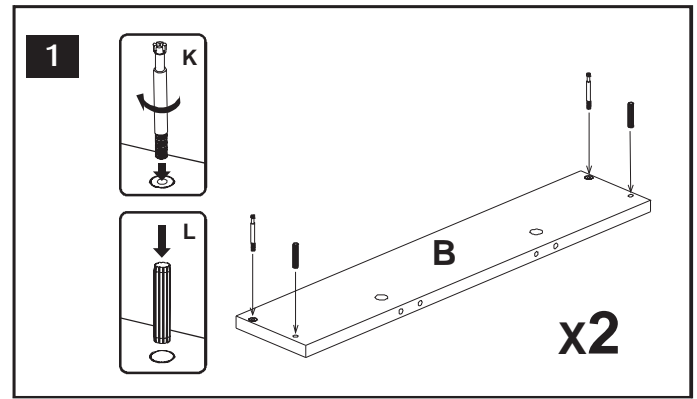
# Red Sea MAX<sup>®</sup> NANO

## Podium Installation Guide





K		x12
L		x12
N		x12
Y		x12



## Connection and set-up of Wi-Fi controller

### Safety warnings

Incorrect use of this device could cause bodily injury or death. Read and follow all of the safety guidelines in the Red Sea MAX® manual before assembling and/or using this LED module.

Do not attempt any repairs to the modules. Any unauthorized repairs will void your warranty.

### Important Notes:

Install the LED modules above the aquarium as instructed in the MAX® Installation and operation manual.

Note down the unique serial number (RSMAX26-D89760XXXXXX) for each LED module as shown on the label located above the DC power socket.

When appropriate, switch the light switch on the power center to the **ON** position and follow the instructions to connect the LED modules to your smartphone, tablet or Wi-Fi enabled computer. On initial power-up, all LEDs will switch on in an un-configured mode.

For MAX® systems with multiple LED modules, designate the first LED module you connect to the Wi-Fi as the “parent” and thereafter add the other modules as “children”.



## PRINTING INSTRUCTIONS

To print **only** the AI Prime HD LED Manual, print pages 32-38.

### Initial Connection:

#### Smartphones and tablets:

1. Download the iOS or Android “myAI” apps at: [http://www.redseafish.com/my\\_ai/](http://www.redseafish.com/my_ai/) or Scan the QR:
2. From your device, go to Wi-Fi settings and select one of the networks labeled with the serial number of the LED module. It may take a few moments to appear.
3. Open the “myAI” app and follow the on-screen instructions to finish connecting the LED modules to your network.



#### Wi-Fi enabled computers

1. Register your product at: [www.redseafish.com/max-register](http://www.redseafish.com/max-register)
2. From your computer, connect to one of the networks labeled with the serial number of the LED module. It may take a few moments to appear.
3. In your browser connect to <http://RSMAX26-D89760XXXXXX.local> (XXXXXX from the serial number) and follow the on-screen instructions to finish connecting the LED modules to your network.



## Controller settings

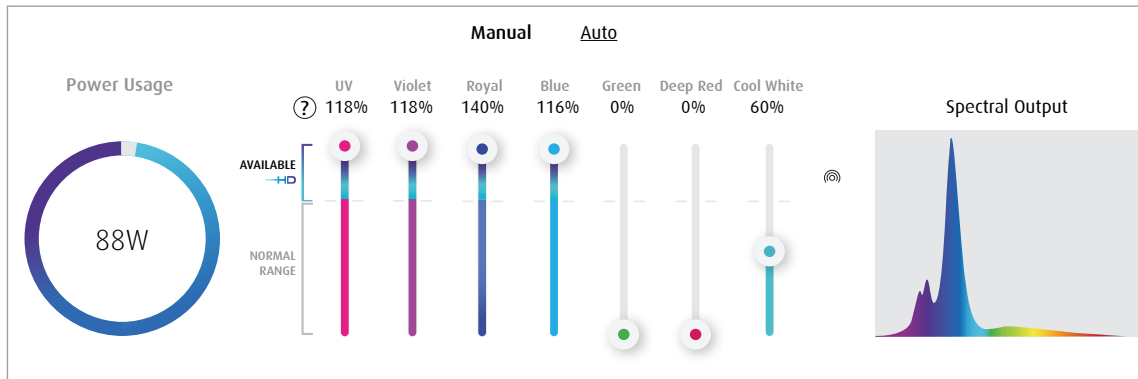
The controller provides automatic and manual modes for the lights.

When the “Auto” mode is selected the LED module will vary spectrum and intensity according to the 24 hour cycle that you program.

When the “Manual” mode is selected the LED module will operate continuously at the fixed spectrum and intensity as set on the manual setup screen. Moving to “Manual” from “Auto” will show the current setting of all color channels. Any changes made during “Manual” mode will be deleted when returning to “Auto” mode.

## Spectrum and Intensity

Select the “Manual” control option and see the effect of raising/lowering the intensity of individual color channels and the effect of various combinations. (Note: For systems with multiple LED modules, “child” units should change together with the “parent”) The HD function automatically reallocates the “unused” power from one color channel to others up to the maximum allowable power for the other channels. The reallocation depends on the prior relative intensity of the channels and therefore the sequence in which color intensity changes are made will affect the final result.

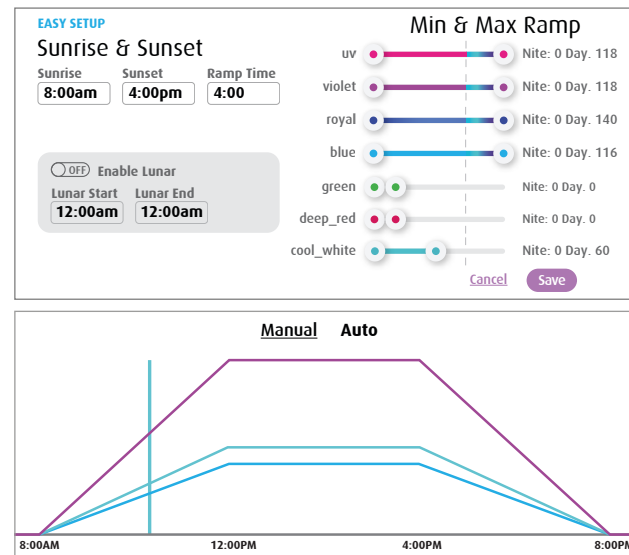


Recommended  
REEF-SPEC® setting for  
maximum power for  
Reef aquariums.

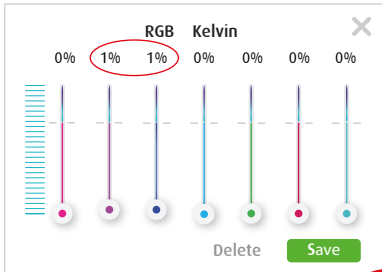
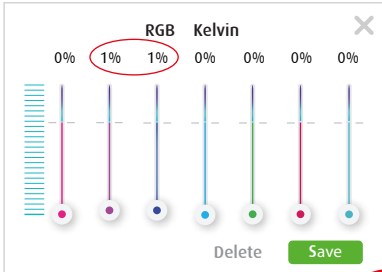
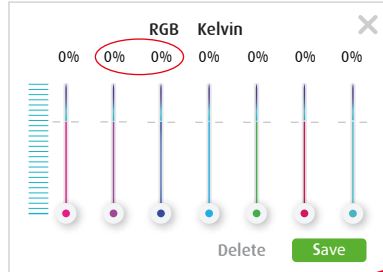
## Day / Night Programming

Before setting up your 24 hour program refer to the general programming guidelines given in the MAX<sup>®</sup> instruction manual.

1. Set the Date, Time and Time zone.
2. Select the “Easy Setup” option to program the basic daily cycle. Use the right slider button to set the desired maximum “Day” intensity for each color channel. Set the “Nite” intensity for each color channel to by sliding the left slider button to the left.  
Set the maximum intensity suitable for your tank and then use the acclimation option as described below to gradually acclimate your corals to the LED lighting.
3. Set the “Lunar” option to “OFF”. If you wish to have moonlight at night manually add the desired light to the program graph.



To manually add program points to the graph, drag the green bar to the desired time, Right-click to open the color intensity set window for that point, then click on save or close window to exit.

Manually adding the moonlight setting to the 24 hour program		
Moonlight – Maximum Intensity	Moonlight – Begin ramp-down	Begin Night (dark period)
 <p>0% 1% 1% 0% 0% 0% 0%</p> <p>RGB Kelvin</p> <p>Delete Save</p> <p>◀ 8:30 PM ▶</p>	 <p>0% 1% 1% 0% 0% 0% 0%</p> <p>RGB Kelvin</p> <p>Delete Save</p> <p>◀ 11:00 PM ▶</p>	 <p>0% 0% 0% 0% 0% 0% 0%</p> <p>RGB Kelvin</p> <p>Delete Save</p> <p>◀ 11:30 PM ▶</p>

## Acclimation

To set and activate the acclimation option, click on “EDIT” and then click on the ON/OFF button.

Set the Start and End date for the acclimation period.

Move the cursor to the right hand slider to set the starting percentage reduction equally for all color channels. i.e. if you want to start at 60% intensity set the “Starting Percentage Reduction” to 40%.

Click on “Save” to exit the window. The dates of the active acclimation period will now be shown on the control screen. The acclimation function will automatically switch off at the end of the set acclimation period.

The acclimation settings can be adjusted or switched off at any time.

## Button Function

To reset the LED Module’s network setting, press and hold the button until the LED indicator blinks green.

To reset the LED Module to its factory default settings, press and hold the button until the LED indicator blinks red

Note: When the LED Module is in an un-configured state, all of the LEDs will be permanently on. Pressing the button will increase all color channel intensities by 20%.

The diagram illustrates the three states of the Acclimation control screen:

- OFF State:** The screen shows "Acclimation" with a question mark icon, "Disabled", and an "EDIT" button at the bottom right.
- EDIT State:** The screen shows "Acclimation" with a toggle switch set to "ON" and a "Save" button at the top right. Below this, there are date fields for "Start" (Jan 1, '15) and "End" (Feb 26, '15). At the bottom, there are eight sliders for "Starting Percent Reduction" (labeled "ALL" on the right), each with a colored dot and a "40" value below it. The colors from left to right are pink, purple, blue, light blue, green, red, cyan, and black.
- ON State:** The screen shows "Acclimation" with a question mark icon, "Start: Jan 1, '15", "End: Feb 26, '16", and an "EDIT" button at the bottom right.

Arrows indicate the flow between states: from OFF to EDIT, and from EDIT to ON.

## LED Indicator States

Pulsing	Blinking	Solid
<p>● Blue + ● Green booting</p>	<p>● Green Parent with schedule hosting access point. Not connected to home network</p>	<p>● Blue + ● Green Configuring children</p>
<p>● Green Parent attempting to connect to home network</p>	<p>● Blue Slave fails to connect to network. Hosting an access point</p>	<p>● Green Potential parent successfully connected to a home network</p>
<p>● Blue Child attempting to connect to home network</p>	<p>● Red Contact Tech support</p>	<p>● Blue Child successfully connected to home network</p>
	<p>● Red + ● Green + ● Blue Firmware update</p>	<p>● Red Thermal cooldown</p>
	<p>● Blue + ● Green Un-configured state</p>	

## Maintenance

- Do not lay objects on top of the LED Module or power supply
- Do not lay the LED Module on objects while powered on
- Inspect the LED Module regularly
- Unplug the LED Module from the outlet when cleaning to prevent any shock hazards
- Wipe the LED Module with a damp cloth once a week.  
DO NOT use Ammonia based cleaners. Avoid the power plug area.  
A can of compressed air may be used to blow dust out of the heat sink fins. Wiping and blowing unwanted buildup will help prevent salt creep and hard water spots from accumulating.
- Do not allow any liquids to pool on top of or inside the LED Module.

For instruction videos, FAQs and support, visit:

[support.aquillumination.com](https://support.aquillumination.com)



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