



# MAX<sup>®</sup> E-SERIES



MAX<sup>®</sup> E-170



MAX<sup>®</sup> E-260





# MAX<sup>®</sup> E-170

[Installation and Operation Manual](#) ➔

[Cabinet Installation Guide](#) ➔

[In-Cabinet Sump Upgrade Manual](#) ➔

[Hydra 26 HD LED Manual](#) ➔







# MAX<sup>®</sup> E-260

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[Hydra 26 HD LED Manual](#) ➔





## PRINTING INSTRUCTIONS

To print **only** the Installation and Operational Manual, print pages 4-29.

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# Red Sea MAX<sup>®</sup> E-Series

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

## Installation and Operation Manual





# **Red Sea MAX<sup>®</sup> E-Series**

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

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## **Installation and Operation Manual**



## MAX® E Installation & Operation Manual

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## **Congratulations on your purchase of the Red Sea MAX® E-Series 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 reef 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.

This manual contains the installation and operational instructions for all of the MAX® E-Series aquariums.

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.

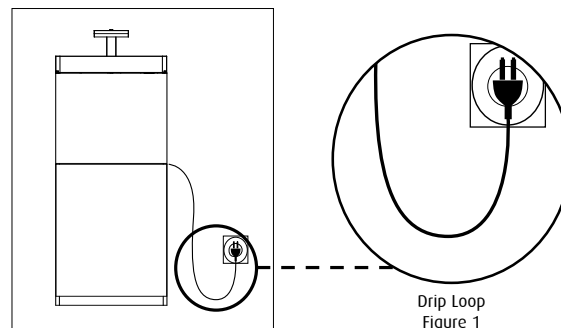
**WARNING:** To guard against injury, basic safety precautions should be observed, including the following:

- 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®E is to choose a suitable location.

### Electric Supply

Ensure that the electric power supply outlet used for the MAX®E is correctly rated for the system (E-170 160W / E-260 290W), plus whatever additional equipment (such as a heater, chiller) 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 30kg/cm<sup>2</sup> (425 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 pumps and filter media as well as installing/removing cables to power center.

### 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® E System

Please read this section carefully before proceeding.

**NOTE:** Part of Cabinet is packed under the aquarium!

1. Remove 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

**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.

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.

Approximate weights of Aquarium (empty)		
Model	Metric (kg)	Imperial (lb)
E-170	25	55
E-260	40	90

**NOTE:** Every precaution has been taken to ensure the safe arrival of the MAX® E 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®E system main components</b>	<b>E-170</b>	<b>E-260</b>
MAX®E type glass aquarium with integral rear sump	170L	260L
MAX®E Cabinet	Self-assembly	Self-assembly
Power Center	Cabinet Unit	Cabinet Unit
LED – Hydra 26HD™ light units	1 x 90W	2 x 90W
MSK 900 Rear Sump Protein Skimmer	MSK900	MSK900
Circulation pumps	1 x 2150lph	2 x 2150lph
Media Rack	4-shelf	4-shelf
Filter sponges	1	2
Carbon media 0.4 Liter	1 bag	2 bags
Rear Sump Screen	E-170	E-260
Accessory/Chiller Kit	Type-E	Type-E

## 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® E 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 Cabinet mounted Power Center

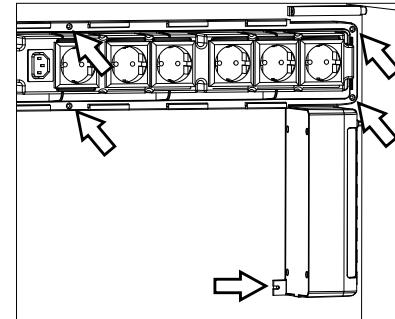
Remove the Splash Cover from the Power Center by sliding it towards the front.

Align the mounting holes on the base of the Power Center with the threaded plastic inserts on the internal wall of the cabinet.

Use the 4 long M4 screws and 1 short M4 screw as indicated to attach the Power Center to the wall. Do not over-tighten the screws.

Pass the main cable through the hole in the rear of the cabinet and check that it is able to reach the electric wall outlet. Do not plug the power center into the wall outlet until instructed at the appropriate time in the assembly process. Check that all of the switches are in the "off" position.

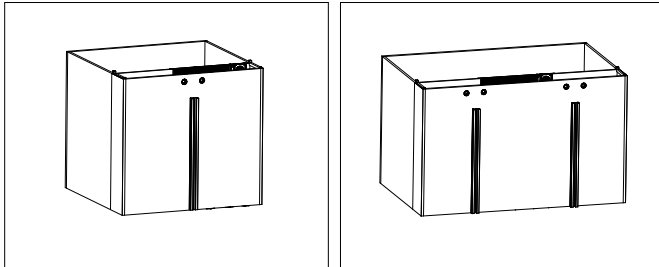
Stick the socket identification label (showing the connection between sockets and switches) inside the cabinet, above the power center.



Cabinet mounted Power Center

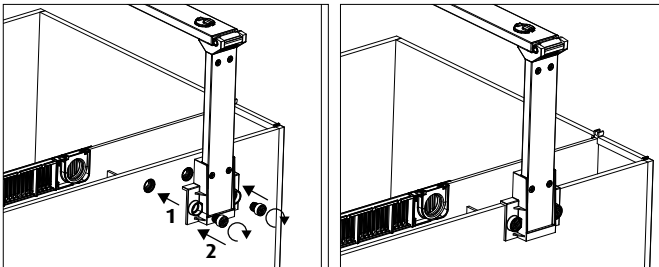
## 5.3 Cable Channels

Attach the cable channels to the rear wall of the aquarium directly underneath the LED mounts and in line with the bottom of the glass.



## 5.4 LED Mounts

Align the LED mounting plate with the holes provided in the rear wall of the aquarium and fix into position with the screws provided. Do not attach the LED modules at this time. Do not insert the cable plugs into the hole in the arm. Make sure that the mounting arm is in the horizontal position.



## 5.5 Placing Aquarium

Lifting the glass aquarium onto the cabinet will require at least 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.

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.

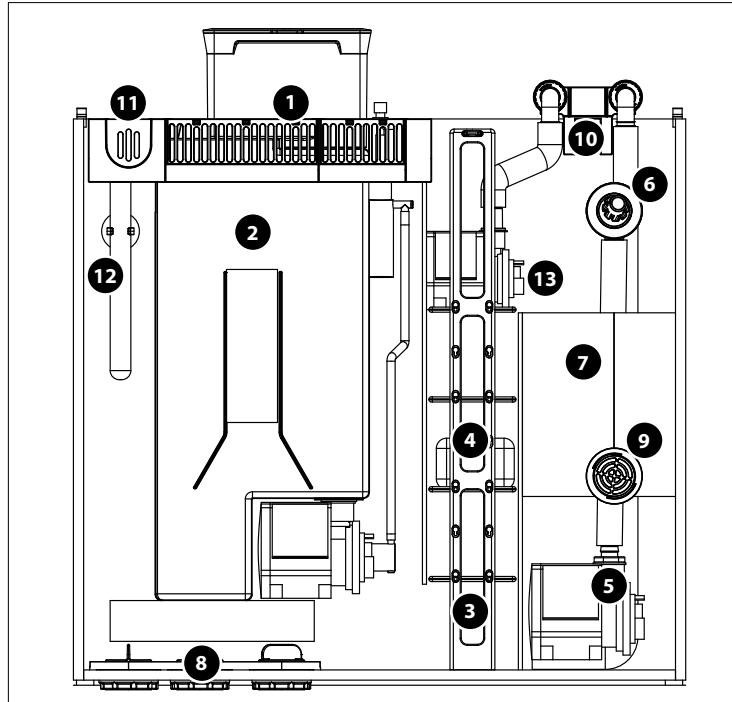
Once the aquarium is correctly aligned with the cabinet, check that the cabinet has not moved. If necessary readjust the position of the cabinet.



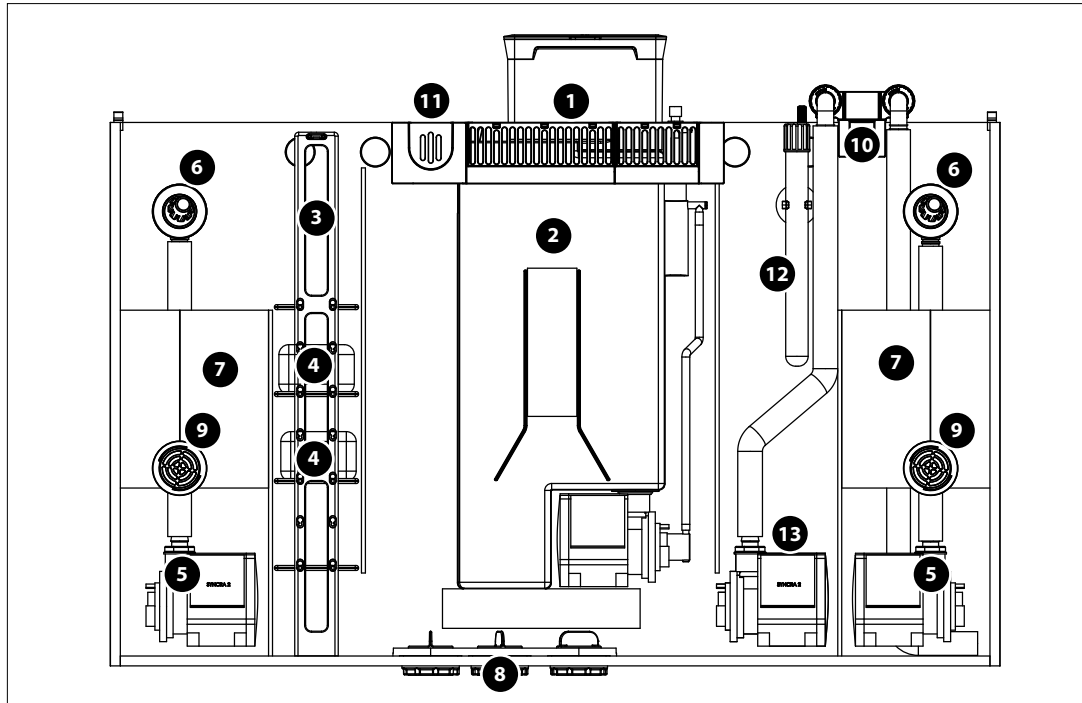
## 6 Installation of Rear Sump Components

The MAX® E-Series aquariums are divided into 2 parts, Aquarium and the Rear Sump that houses all of the filtration and circulation systems.

1. Detachable Surface Skimmer
2. Protein Skimmer
3. Media Rack
4. Carbon
5. Circulation Pump
6. Pump Outlet Nozzle
7. Filter Sponge
8. Multiport Bulkhead
9. Flow Grill / Plug
10. Accessory kit
11. Return pump outlet port (for upgrade)
12. Heater (not supplied)
13. Chiller Pump (not supplied)



E-170 rear sump component assembly diagram shows position of optional heater, chiller pump and piping



E-260 rear sump component assembly diagram shows position of optional heater, chiller pump and piping

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

The water flows from the aquarium to the rear sump via a detachable surface skimmer located across the top of the dividing glass wall that directs the organics laden water from the upper surface of the tank into the sump. The circulation pumps located at the bottom of the sump return the filtered water back to the tank through multidirectional outlet nozzles. The MAX® E-series is designed to operate with either a rear sump or an in-cabinet sump. The E-series is supplied as standard with the rear sump. Upgrade kits to convert the rear sump to an in-cabinet sump are supplied separately.

### Rear Sump – Standard configuration

The MAX® E-Series sumps contain multistage filtration consisting of a reef-spec protein skimmer, activated carbon and mechanical filtration materials. The sump has dedicated space available for additional chemical filter media as well as the addition of an optional chiller pump.

Water circulation is 12 or 16 times the entire water volume per hour (according to model) with forced flow through the mechanical and chemical filter media while the protein skimmer treats the water at the SPS spec of at least 3 times per hour.

The performance of the filtration system is directly related to the water level inside the aquarium and the rear sump however the MAX® E-Series sump and skimmer design allows for the fluctuations in water height due to the daily evaporation of water from the system.

When all pumps are running, the water in the aquarium will be maintained at approximately 3cm (1.25") below the rim.

The water level in the rear should be maintained just below the lowest position of the adjustable skimmer outlet which is approximately 9cm

(3½") below the rim. This level ensures positive surface skimming action at all times and full adjustment of the protein skimmer.

Water loss due to evaporation will cause a drop in the water level of the rear sump. In order to achieve consistent filtration performances, the water level inside the filtration chamber should be kept at the optimum levels. The sponges above the circulation pumps act both as mechanical filtration as well as trapping bubbles that are released from the skimmer.

The MAX® E-Series preparations for upgrading the rear sump to an in-cabinet sump include the following:

- Plugged multiport bulkhead set in the base of the skimmer chamber in the rear sump.
- Return pump outlet port in the surface skimmer.
- Flow grills in the front wall of the rear sump. Note, these grills are blocked when the system is used with the rear sump and are will be replaced with open grills when the upgrade is performed.

### Upgrade Options

- **Piping kit:** Includes flow-regulated main downpipe, a secondary overflow bypass pipe and return pipes for assembly in the multiport bulkhead.
- **Glass Sump (optional):** Including Bubble trap sponge, 225 micron filter bags and automatic top-up Reservoir with Float valve.
- **Rear Cover (optional):** An optional rear cover is available to replace the sump screen. This cover reduces noise from the water flowing through the surface skimmer and will help in reducing evaporation.

Full instructions for installing the upgrade are provided with the Pipe kit.

**NOTE:** Before connecting any components to the Power Center ensure that all of the power switches are in the "off" position.

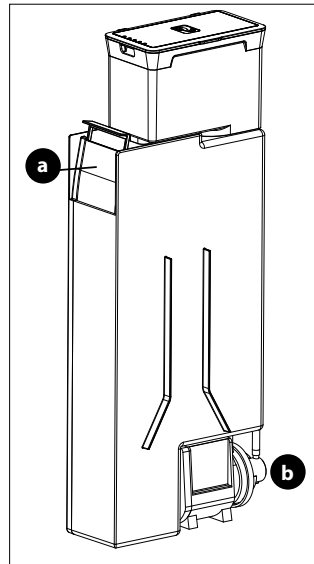
## 6.1 Protein Skimmer:

The MSK 900 protein skimmers 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

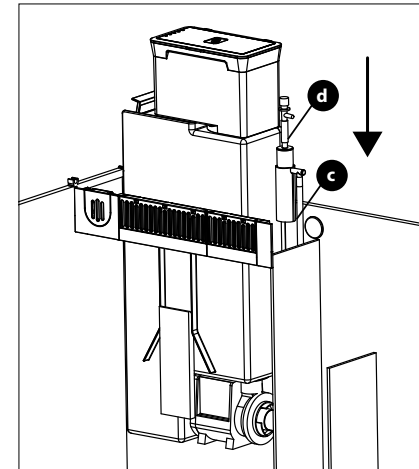


MSK 900 skimmer

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 (chapter 12; page 19).

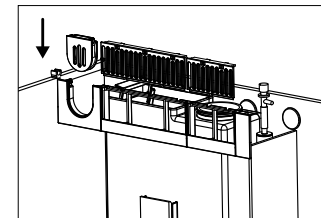
5. Slide the skimmer into the skimmer compartment. Note the position of the skimmer guides located on the inner wall of the rear sump.
6. Thread the cable through the cable channel and plug the power cable into the designated socket on the power center.



MSK 900 skimmer

## 6.2 Surface Skimmer:

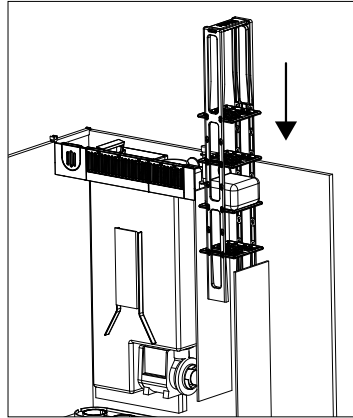
The comb sections of the surface skimmer are easily removed for regular cleaning. Put your hand over the surface skimmer. Hold the comb (not the frame) between thumb and fingers and pull upwards.



Surface Skimmer/comb

### 6.3 Media Rack:

The media rack is supplied pre-assembled and placed in its normal operating position within the media compartment of the rear sump. Familiarize yourself with the media rack by removing and reinserting it to the media compartment.



Media Rack

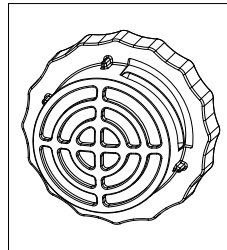
### 6.4 Carbon:

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.

Place the washed carbon onto the designated shelves on the media rack. Ensure that the bag does not protrude outside the frame of the rack.

### 6.5 Flow Grills:

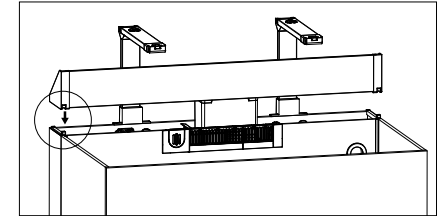
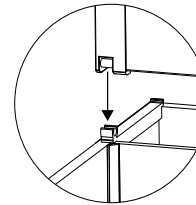
The circulation pump chambers are prepared for flow grills to be added when the system is upgraded to the in-cabinet sump. For the surface skimmer to operate effectively in the standard rear sump configuration the flow grills are closed. These will be replaced with open grills when the upgrade is performed.



### 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.

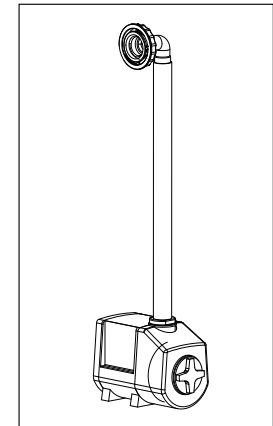


### 6.7 Circulation Pumps:

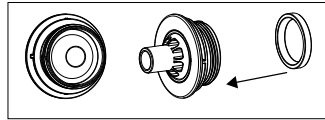
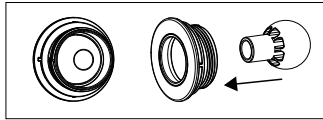
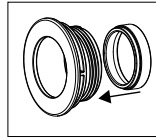
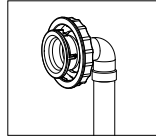
Familiarize yourself with the multidirectional outlet as shown in the drawing.

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.

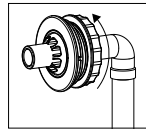
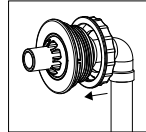
1. Before use, check that the pump and power cable are not damaged.



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 power cable over the rear wall, thread it through the cable channel and plug it into the designated socket on the power center.
8. With the circulation pump secured in position, push the black filter sponge into the pump chamber so that the slit in the sponge is in line with the flexible pipe, as shown in the complete sump assembly diagram.



## 7 Installation of optional Chiller (not provided):

For the long-term safety and vitality of reef inhabitants Red Sea recommends the use of chillers with all reef aquariums. Both the aquarium and cabinet of the MAX® E systems are provided "Chiller Ready".

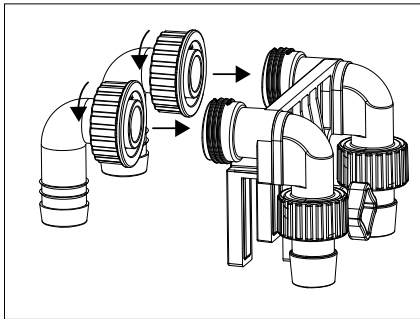
The MAX® E cabinet has air ventilation openings both at the front and rear to providing the free convection cooling necessary for the efficient operation of aquarium chillers.

Use the Accessory/chiller kit to connect a pump and return pipes to a chiller.

1. Attach 17mm (3/4") flexible pipe to the outlet of a submersible pump and attach one of the hose barbs to the free end of the pipe such that the hose barb is perpendicular to the pump.
2. Lower the pump and tube assembly into the sump so that the hose barb is facing the rear of the sump. Feed the power cable above the rear wall, thread the cable through the cable channel and plug the power cable into the designated socket on the power center.
3. Connect the required length of 17mm (3/4") flexible tubing to connect the inlet and outlet ports of the chiller to the hose barbs on the back of the accessory pipe unit. Lock the tubes to the hose barbs with the lock nuts.
4. Slide the accessory pipe unit onto the back wall and fix in position with the screw.
5. Push the hose barb of the pump into one of the connectors and screw the lock nut to hold it in position.
6. Connect the required length of 17mm (3/4") flexible pipe to the other hose barb. Insert the free end of this pipe into the sump and connect the bayonet to the other connector on the pipe unit.

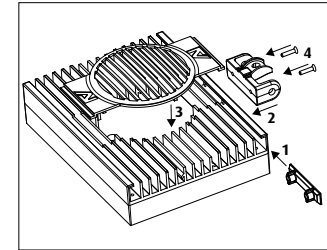
Red Sea MAX® E-Series

7. When first operating the chiller pump, check that the water is circulating through the chiller without leaks at any of the connections in the piping.
8. If connecting the chiller to an operating system pay attention to the drop in water level and refill the tank with freshly mixed salt water at the same salinity, pH and temp.

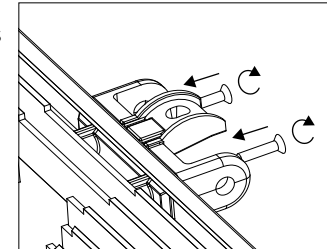


## 8 Installation of LED Modules

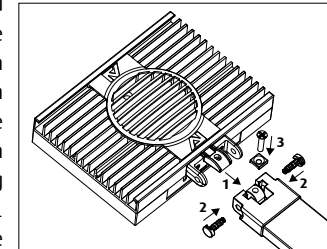
Remove the fan cover. Slide the connector plate into the module so that the threaded bushings in the plate are aligned with the holes in the aluminum.



Using the M3 screws provided, lightly attach the swivel connector as shown in the diagram. Replace the fan cover and ensure that the swivel connector is parallel to the top of the aluminum before tightening the screws.



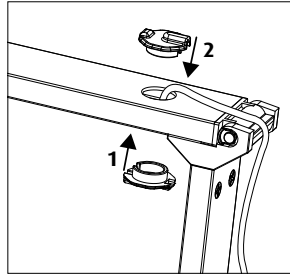
Put the swivel connector pins and fixing screw within easy reach of the aquarium. Locate the LED Module in front of the mounting arm and push swivel connector in position. Insert the connector pins to both sides and push until firmly in position. Screw the fixing screw into the top of the connector. Adjust the position of the LED module until it is parallel with the top of the aquarium and tighten the fixing screw. The swivel connector allows rotational adjustment for personal preference of approximately 5 degrees.





Place the power supply in the cabinet, underneath the power center and thread the cable out the back of the cabinet through the hole in the rear wall.

Bring the cable to the rear of the mount and thread the cable through the hole in the arm so that there is sufficient cable to plug the DC jack into the connector on the LED module. Flatten the cable against the underside of the mounting arm and insert the bottom cable plug. Insert the cable plug into the top of the arm so that the cable is facing backwards. Flatten the cable along the back side of the mounting column and place the cable in the channel below the mount.



Plug the power cord into the dedicated socket at the rear of the power center and connect the power supply to the cord.

**WARNING:** The LED module is not waterproof. Do not get the unit wet and do not submerge any part of it or the power cord in the aquarium water.

To provide access for maintenance to the rear sump and aquarium, the LED modules can be rotated to the upright position. LED lights produce extremely intense light output that may damage or injure your eyes. Do not look directly into the LED's any time the fixture is illuminated. Before raising the LED modules to the upright position either unplug the DC jack of the cord from the module or turn off the light switch on Power Center.

## 9 Operation of Power Center

With all of the electrical components now installed and plugged into the Power Center, slide the Splash cover along the length of the sockets, allowing the recess in the bottom of the cover to collect the cables and moving them towards the back of the cabinet. With the splash cover in position, ensure that the individual switches are in the off position and plug the Power Center to the wall outlet.

The Power Center is protected by a resettable circuit breaker which will switch off the power to the complete power center in the event of a short circuit in one of the components. In the event that the circuit breaker is activated, locate the faulty item, disconnect it from the power center and depress the circuit breaker reset switch.

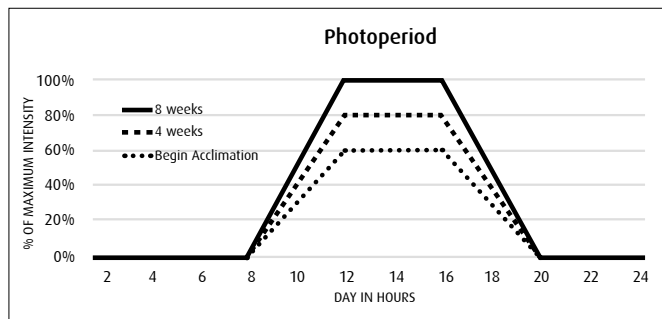
## 10 LED Set up and programming

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.

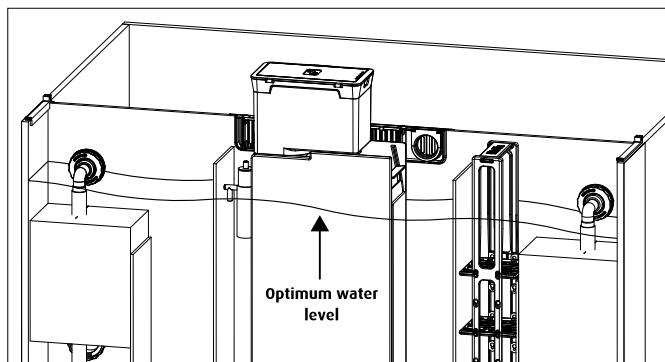
When introducing new corals to already acclimated systems, start by positioning them at the lower levels of the aquarium and gradually raising them to their desired position over a period of several weeks. Keep watching for signs of photo inhibition/stress and if necessary return an affected coral to 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, circulation pump/s and chiller pump (if installed) and add more water to the system until the water level in the rear sump is at the optimum water level.



**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 function of the skimmer will not be affected by the normal fluctuation of the water level in the rear sump (due to evaporation) however the water level must be maintained between the maximum and minimum levels shown.

The consistency of the foam produced by the MSK 900 protein skimmers 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.

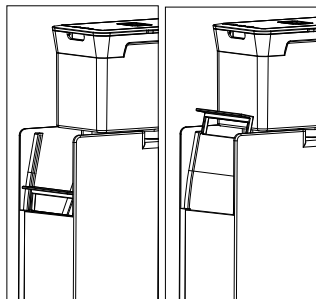
### Over-Skimming

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 skimrate 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 skimrate 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 rear chamber on a daily basis and add fresh water as required to compensate for any evaporation. Do not allow the water level in the sump to remain outside of the min/max water levels. If the water in the aquarium is too high check that the combs of the surface skimmer are not blocked.

## Surface Skimmer

Remove and clean the combs of 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 the combs 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

Checking that the circulation pumps are working well and are pointed in the right directions. If you notice any regression in currents, check each pump and the outlet nozzles for any obstructions (snails, crabs, carbon chips, etc.).

To ensure proper function of skimmer and circulation pumps 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:

- Unplug the power cord of the pump from the electric supply 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, adjusting the heater/chiller as necessary.

## 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 19).

**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 pump has stopped working or is making mechanical noise.**

A. Disassemble and clean the pump as instructed above.

**Q. The circulation pumps are 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® E-Series 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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## PRINTING INSTRUCTIONS

To print **only** the Cabinet Installation Guide, print pages 30-33.

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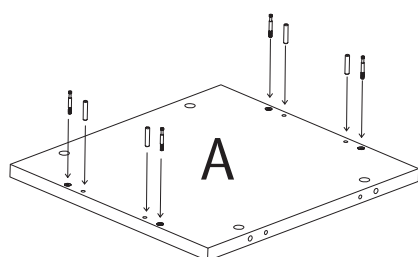
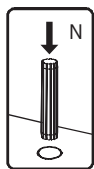
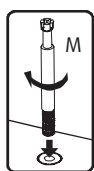
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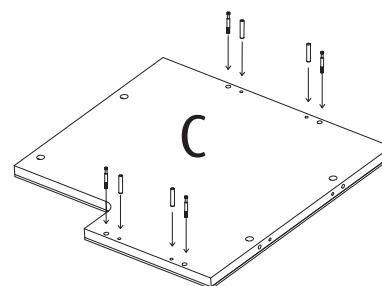
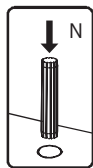
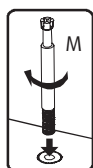


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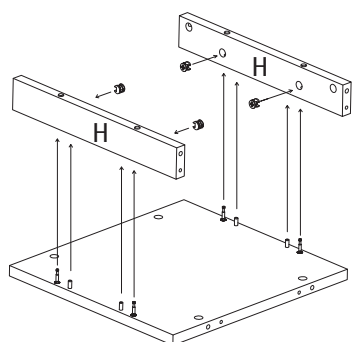
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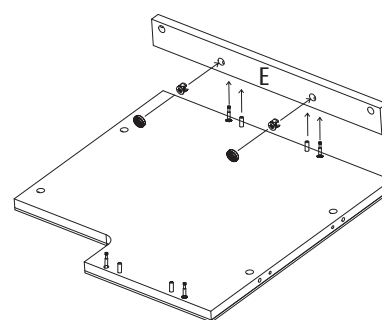


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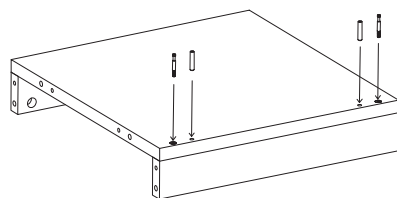
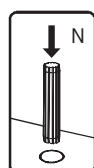
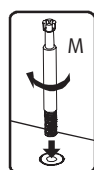
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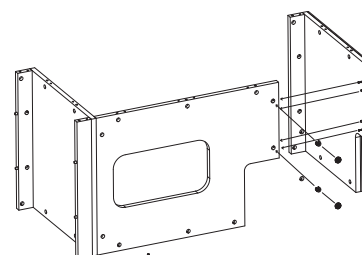
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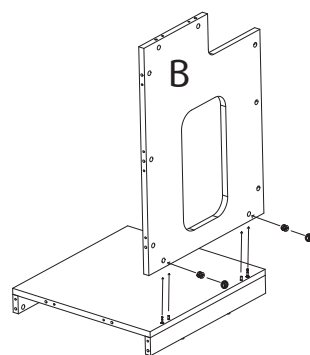
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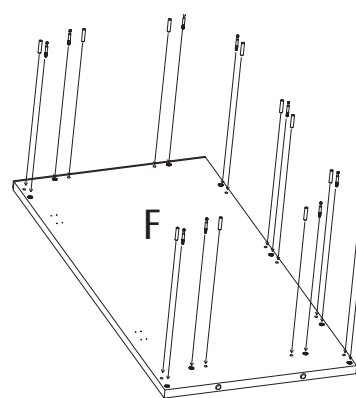
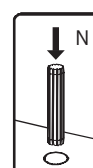
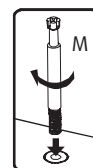
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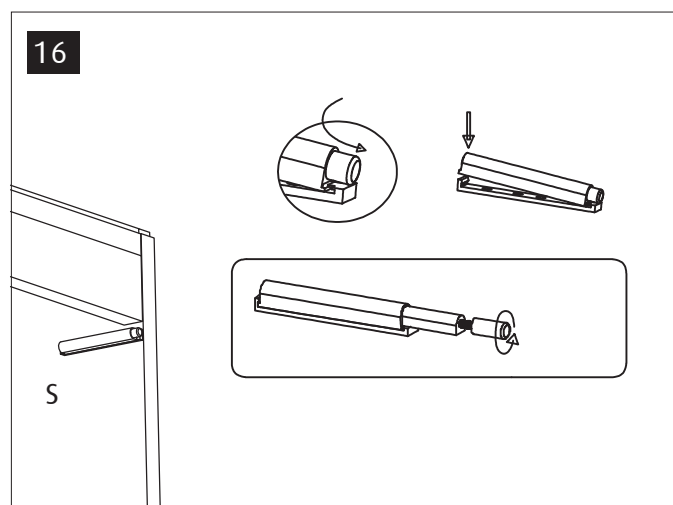
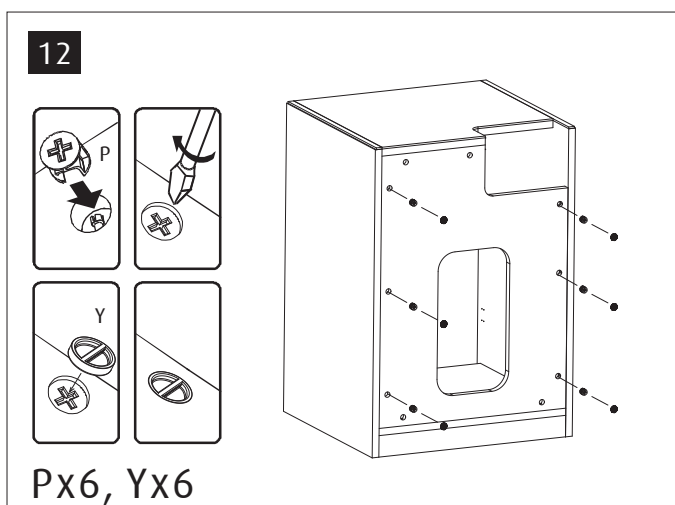
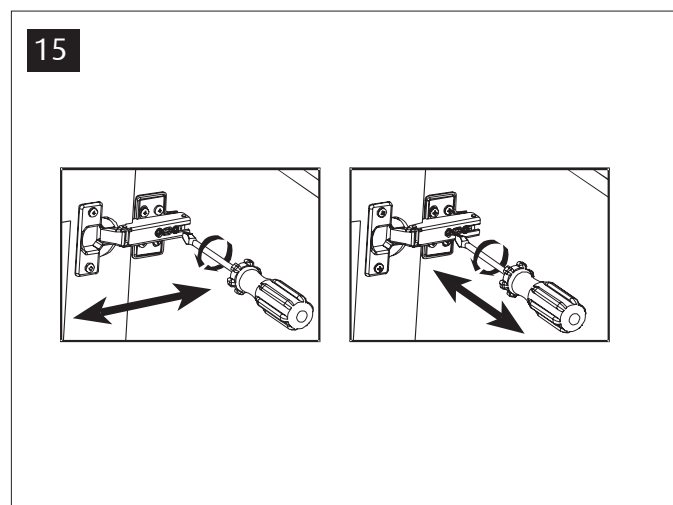
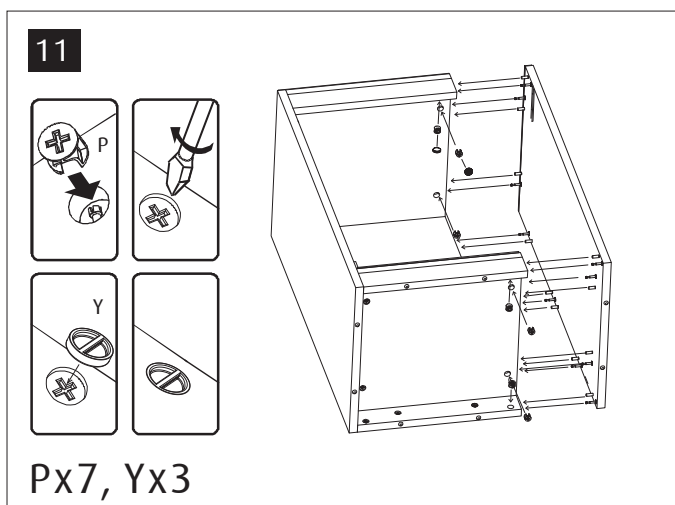
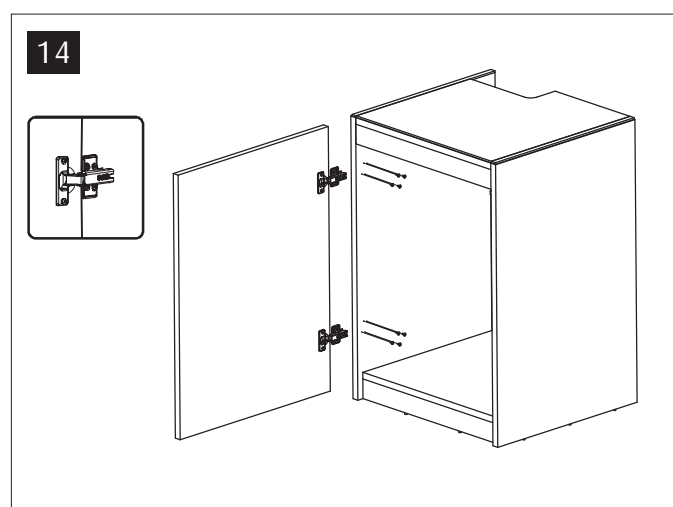
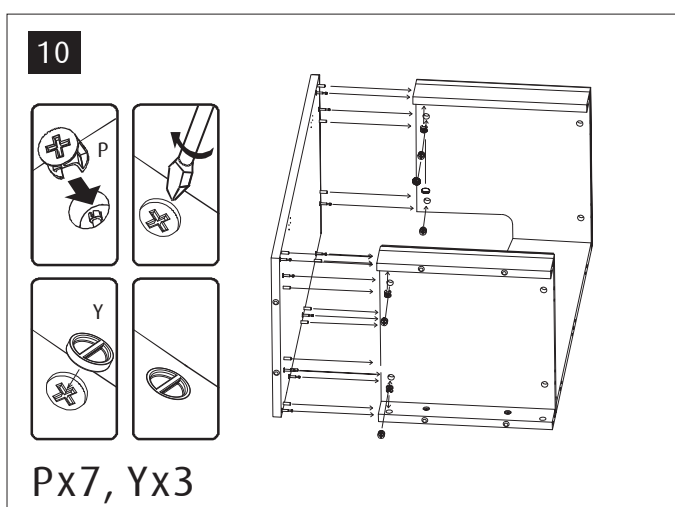
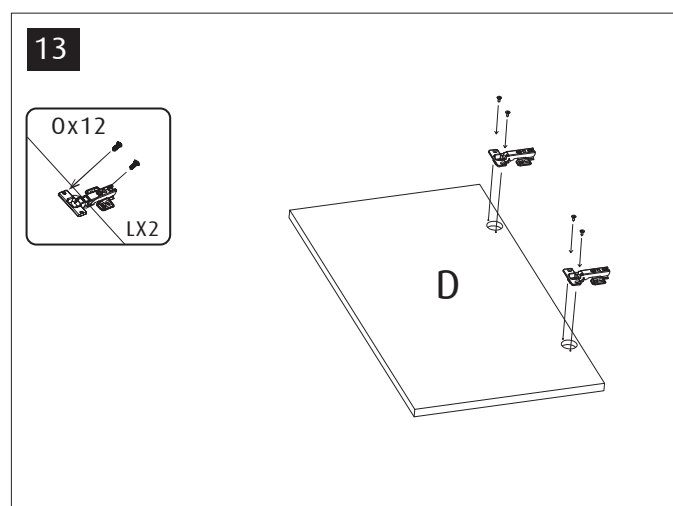
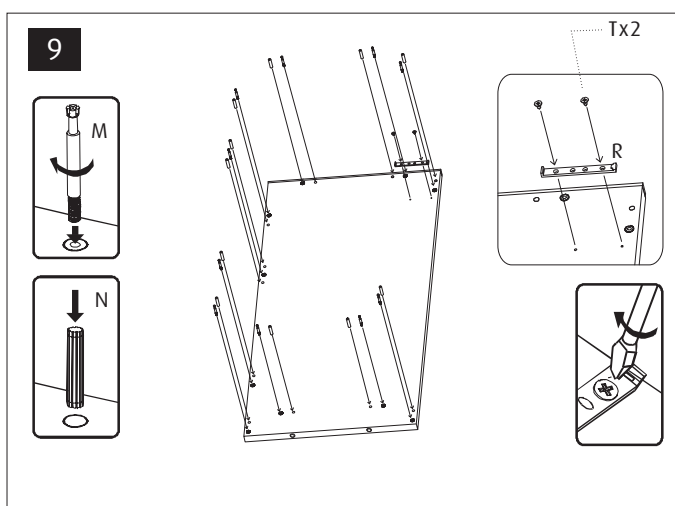


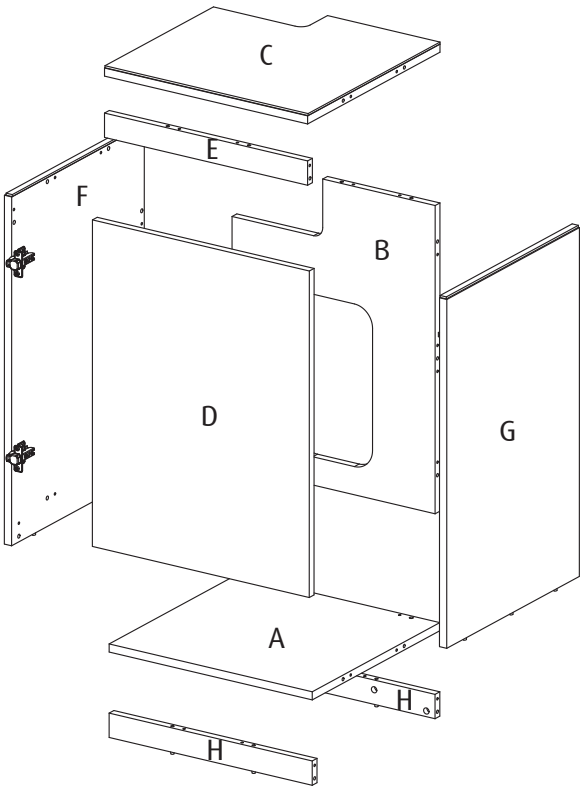
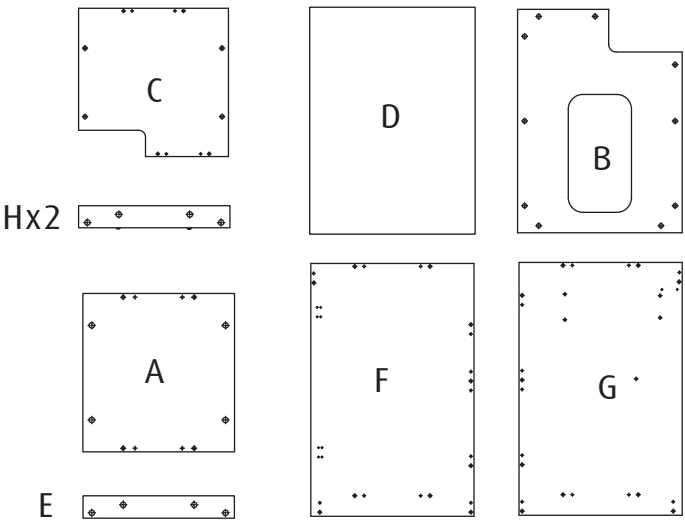
Px4, Yx2



8







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

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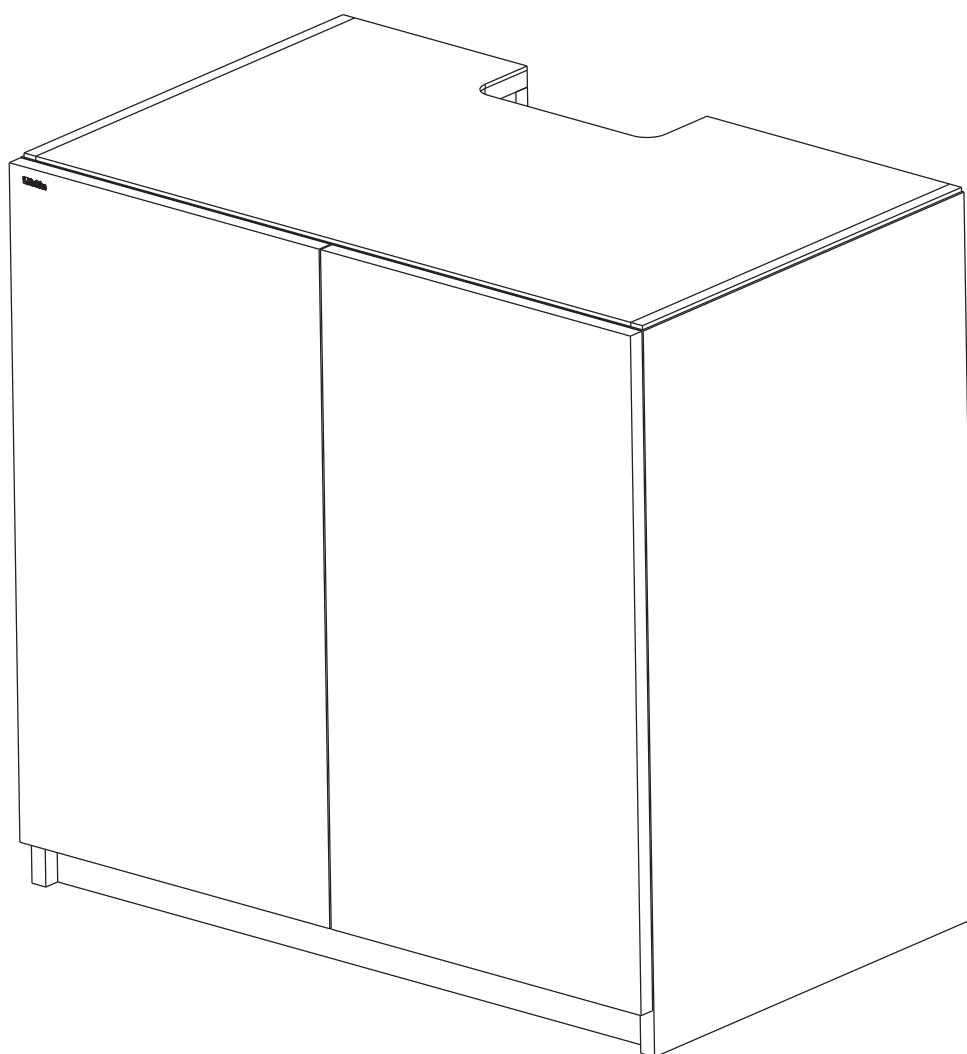
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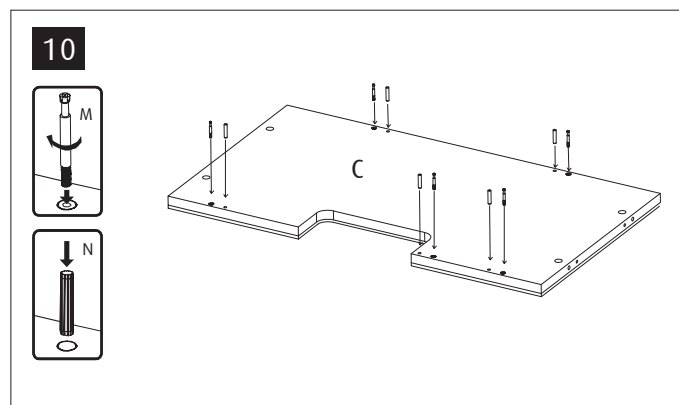
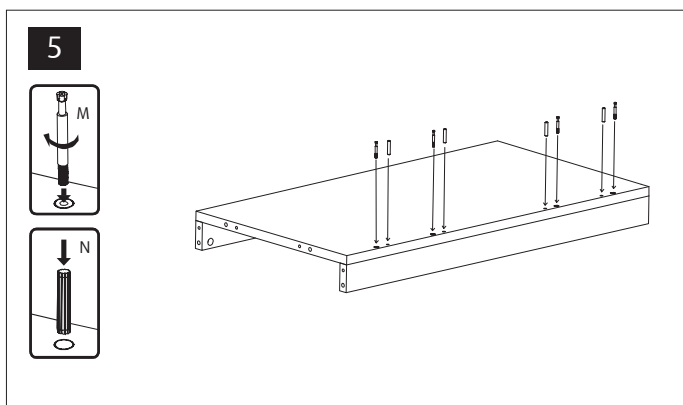
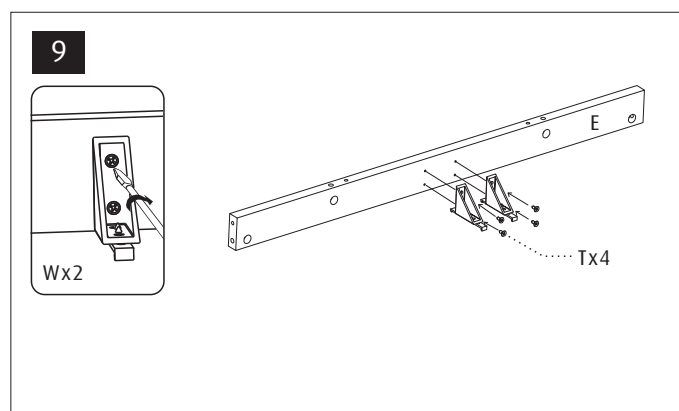
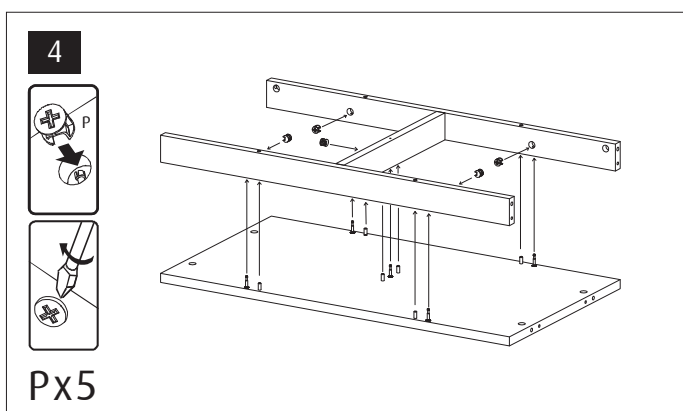
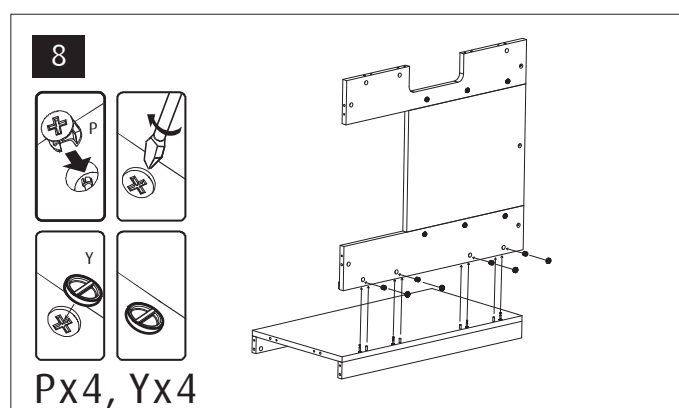
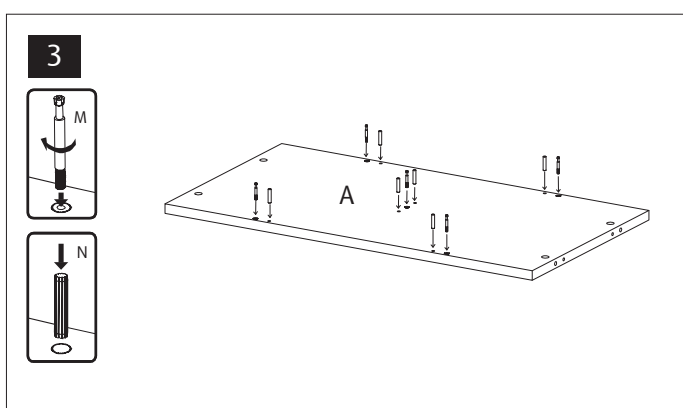
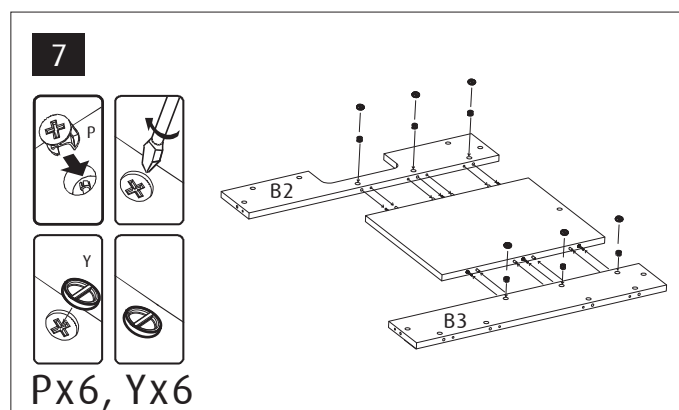
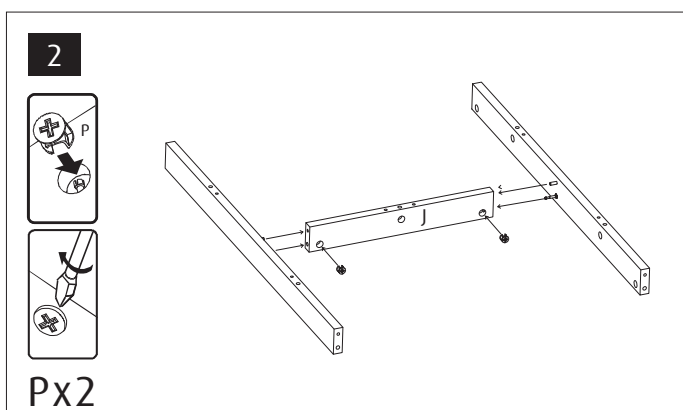
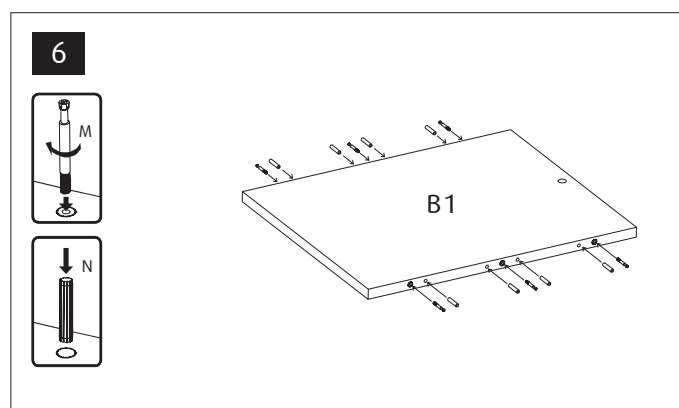
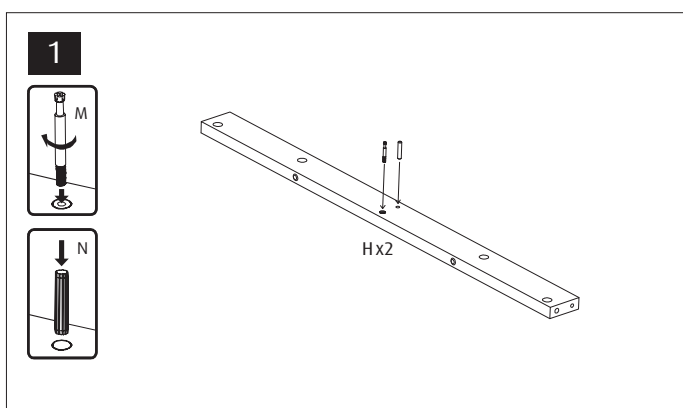
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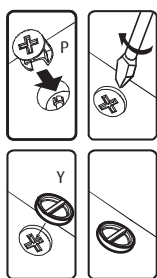


 **Red Sea**

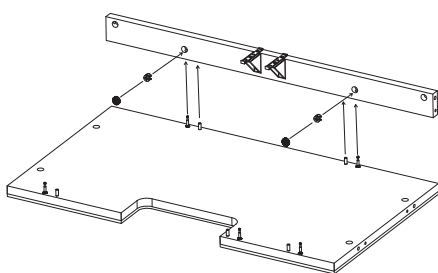




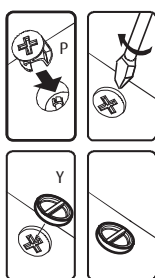
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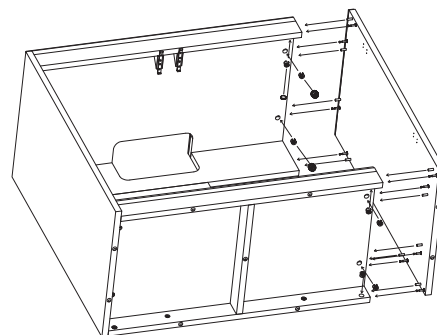
Px2, Yx2



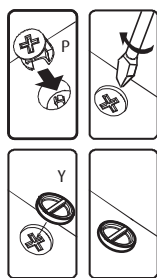
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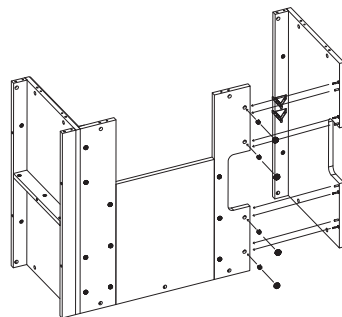
Px7, Yx3



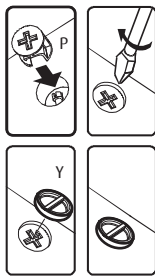
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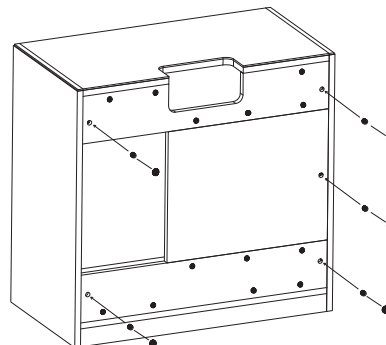
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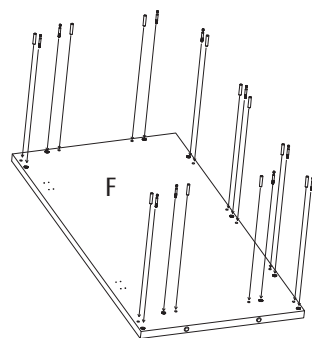
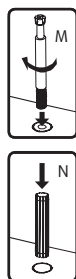
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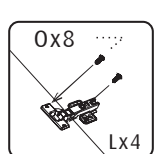
Px5, Yx5



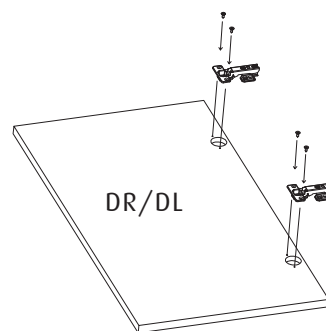
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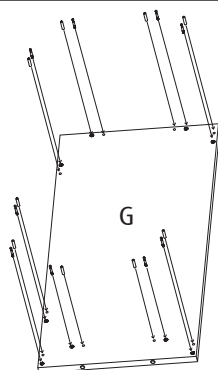
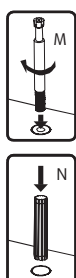
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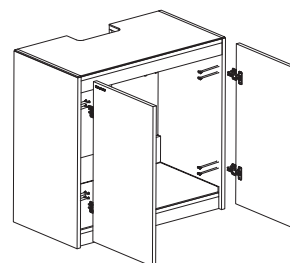
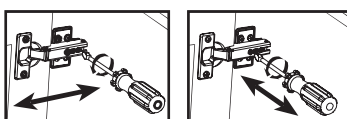
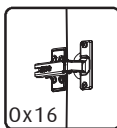
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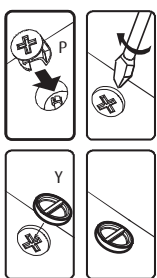
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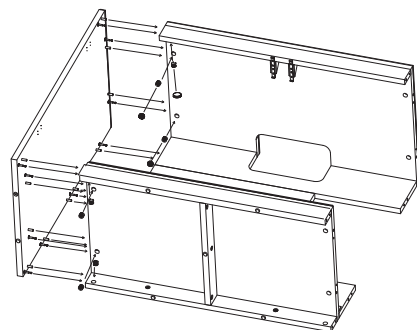
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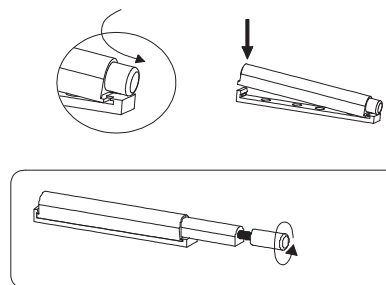
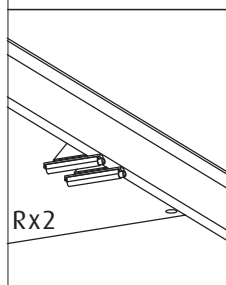
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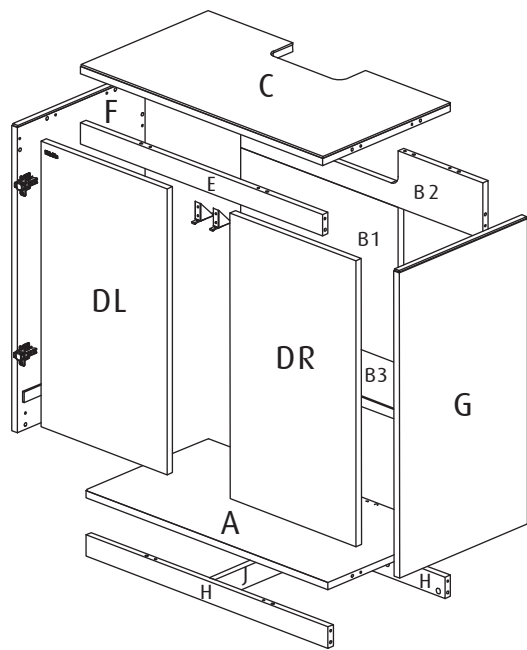
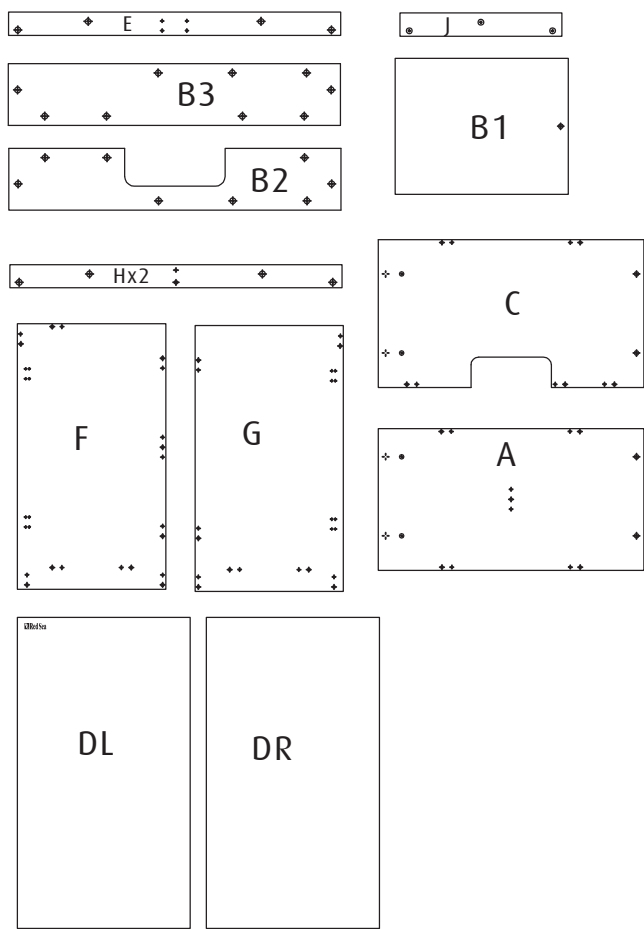


Px7, Yx3



20





L		x 4
M		x 41
N		x 45
O	 ST3.9 x16	x 24
P		x 41
R		x 2
Y		x 26
T	 ST3.5 x14	x 4
W		x 2

#4631 MAX E-260 \_v15A

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## PRINTING INSTRUCTIONS

To print **only** the In-Cabinet Sump Upgrade Manual, print pages 38-44.

# Red Sea MAX<sup>®</sup> E-Series

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

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## In-Cabinet Sump Upgrade Manual

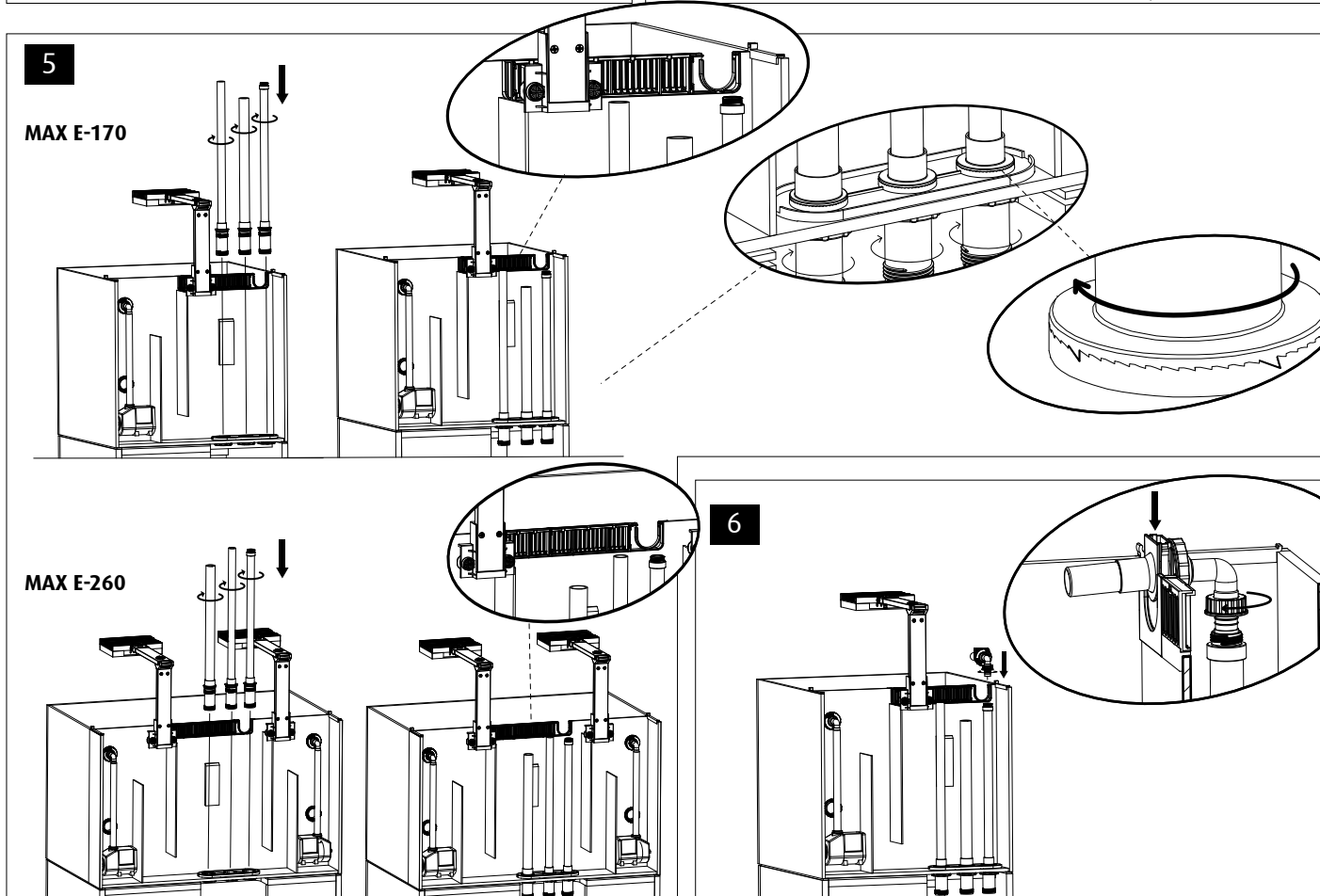
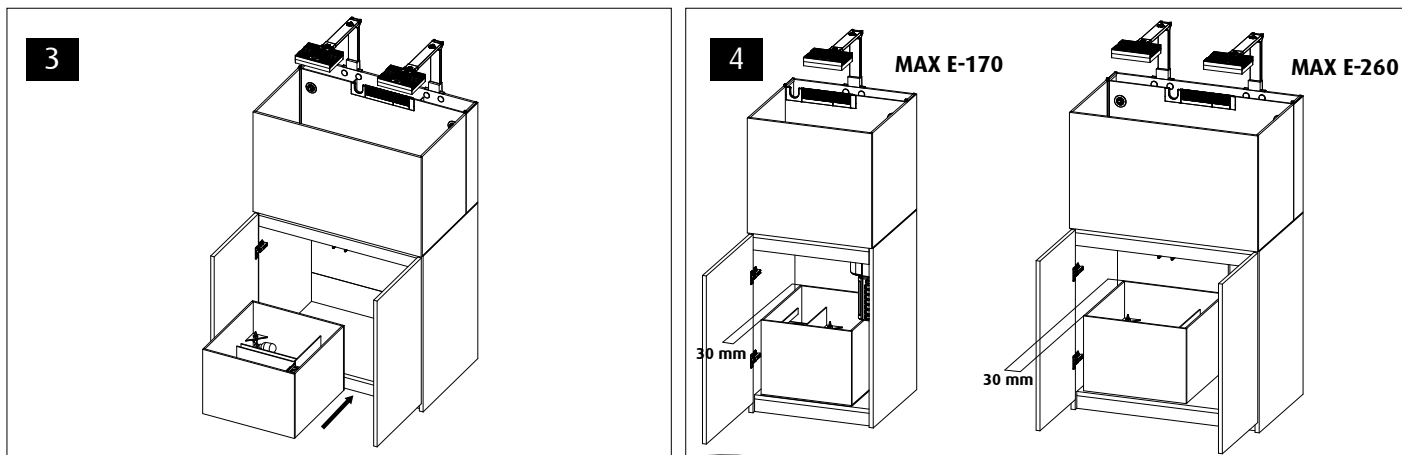
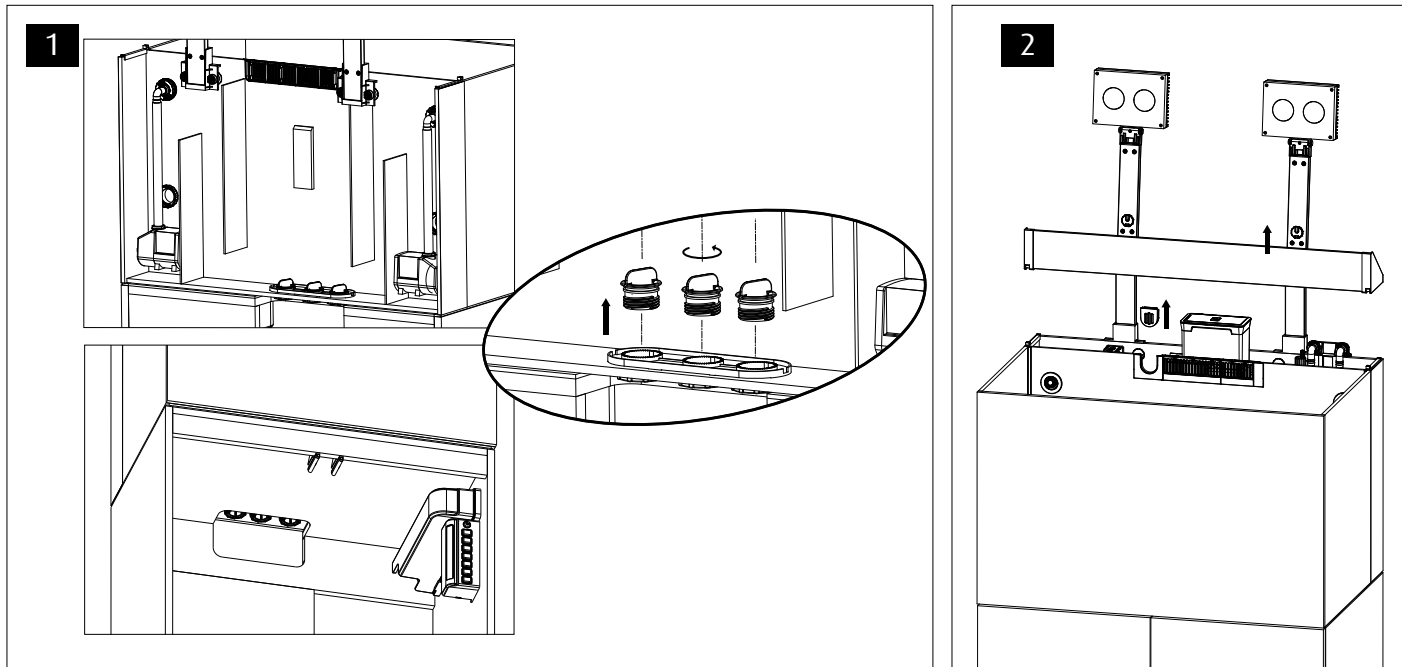


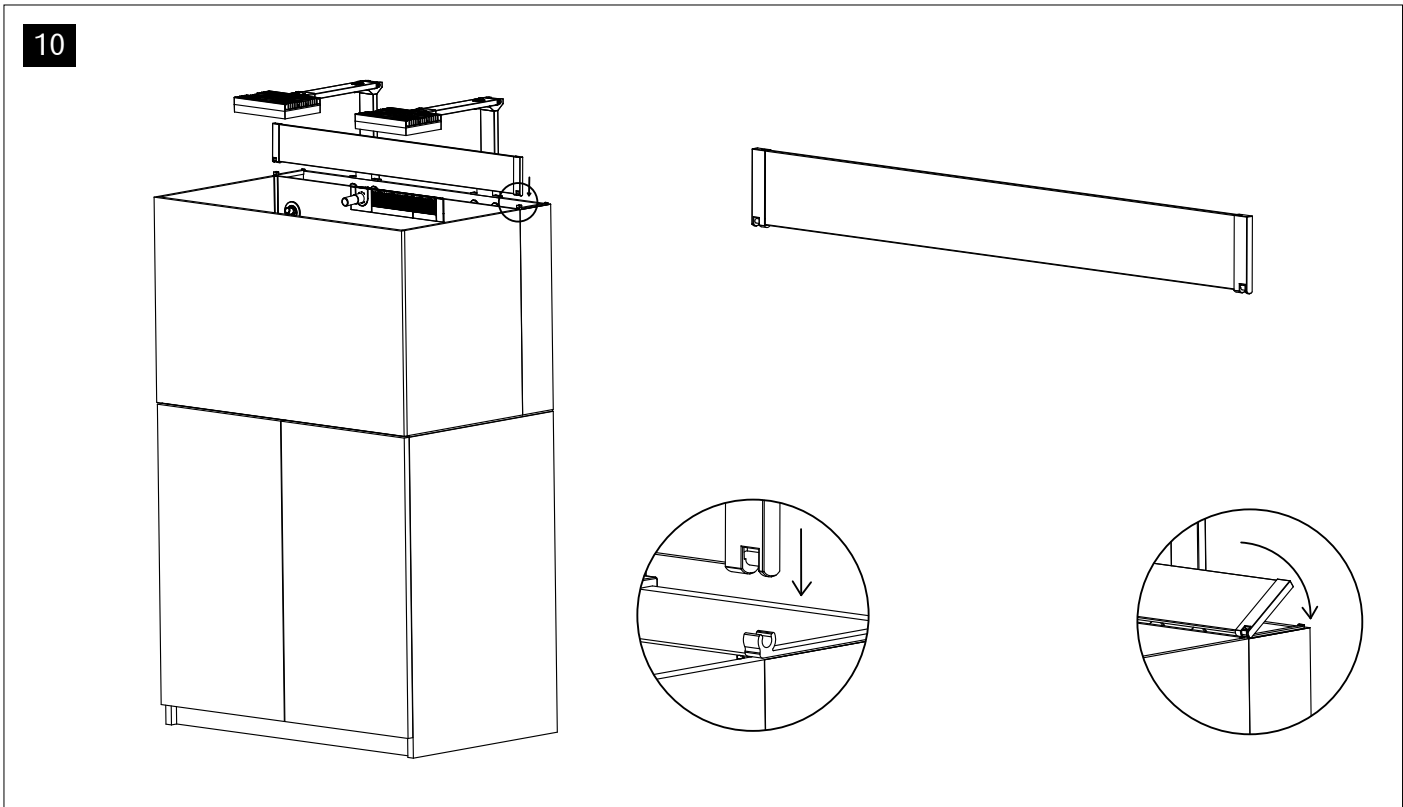
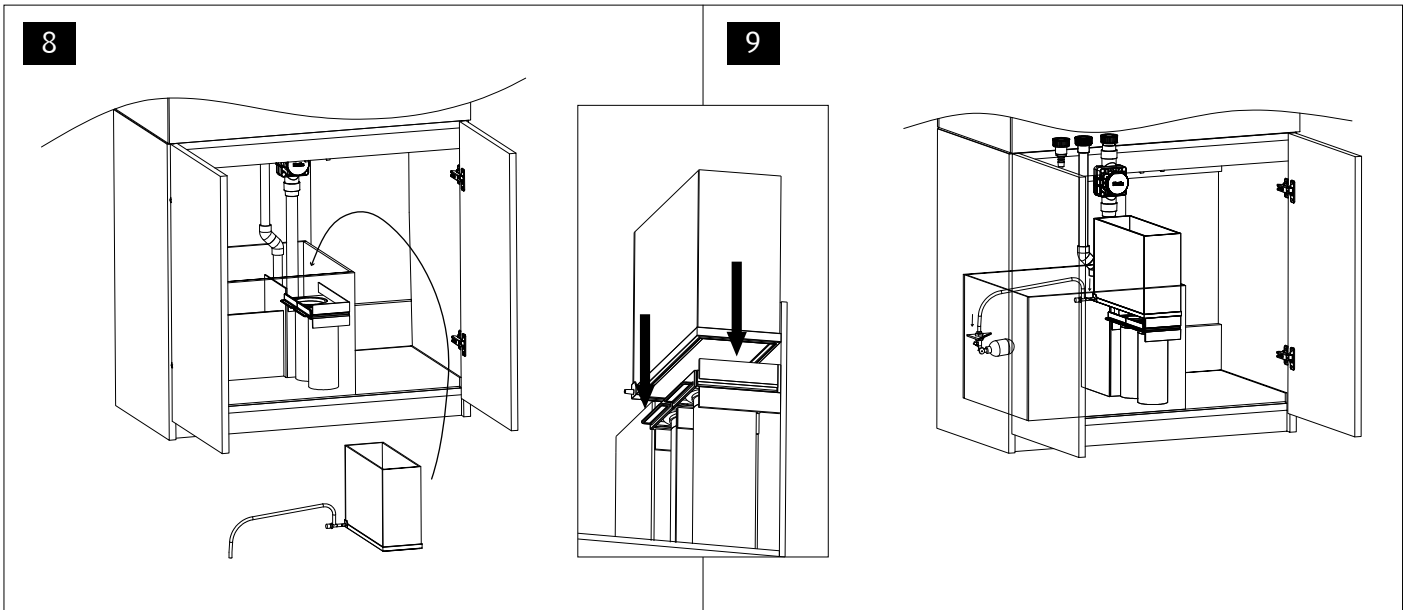
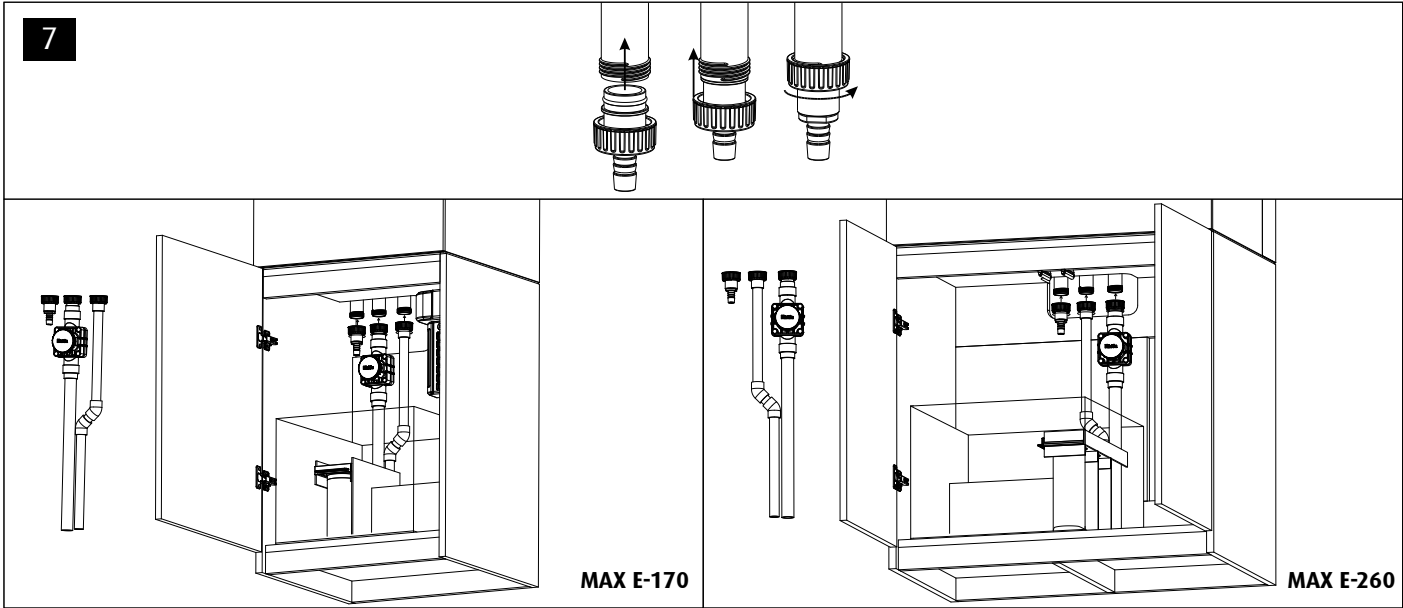
## **Red Sea MAX<sup>®</sup> E-Series**

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### In-Cabinet Sump Upgrade Manual

# In-Cabinet Sump Upgrade Manual







ENG

## Red Sea MAX® E-Series | In-Cabinet Sump Upgrade Manual

### Introduction

Congratulations on your purchase of the MAX® E-Series upgrade kit to convert the rear sump of your MAX® E-Series complete reef system to an in-cabinet sump.

This manual covers the installation and operation of the in-cabinet sump and complements the operation manual provided with your E-Series aquarium system.

### Upgrade Options

- **Piping kit:** Includes flow-regulated main downpipe, a secondary overflow bypass pipe and return pipes for assembly in the multiport bulkhead.
- **Glass Sump (optional):** including Bubble trap sponge, 225 micron filter bags and Float valve for automatic top-up and RO Reservoir.
- **Rear Cover (optional):** An optional rear cover is available to replace the sump screen. This cover reduces noise from the water fall of the surface skimmer and will help in reducing evaporation.

### Overview of the E-Series water management system

#### Pipe System

The silent-flow downpipe system includes a flow-regulated main downpipe and a secondary overflow bypass pipe.

The fine adjustment flow valve on the main downpipe enables the water level in the rear to be maintained at a constant height between the intakes of the main and bypass pipes, which ensures positive surface skimming while eliminating all noise from the water flow to the sump. An incorrect setting of the flow valve will be accompanied by the sound of the water returning to the sump and is an indication that the flow valve needs adjusting.

The multidirectional eyeball outlet on the return pipe is easily disassembled for maintenance.

#### Sump /ATO (optional)

Water from the flow-regulated main downpipe and the secondary overflow bypass pipe enter a compact reception chamber in the sump that is also suitable for housing chemical media such as carbon.

The water then flows through the 225 micron filter before entering the constant-height main reactor or skimmer chamber. If the filter bags are not cleaned frequently enough and become blocked, the water will bypass the filter bags without affecting the overall operation of the sump.

A bubble trap labyrinth with coarse foam separates the reactor chamber from the pump compartment to prevent bubbles from the skimmer being returned to the aquarium.

Any loss of water due to evaporation will cause a drop in the water level in the pump compartment of the sump which will be compensated by the ATO system.

Maintaining a constant water height in the pump compartment (with the ATO) is essential for the stability of the entire water management system by ensuring a constant head pressure on the intake of the main pump. The reservoir contains water for approximately 3 days of evaporation and should be kept topped up at all times.

It is recommended to use a return pump with at flow of at least 2700 lph.

Technical Data				
Model	Sump Total Volume	Sump Working Volume	Total System volume with Sump	Skimmer Chamber Dimensions
MAX® E-170	85L – 22gal	41L – 11gal	200L – 53gal	30 x 32cm 11.8" x 12.6"
MAX® E-260	95L – 25gal	46L – 12gal	288L – 76gal	35 x 32cm 13.8" x 12.6"

### Installation

**WARNING:** If you are not experienced in the installation of aquarium systems, seek suitably qualified assistance.

Before adding the sump to the cabinet it is recommended to seal the join between the walls and the base of the cabinet with a silicone sealant.

Please refer to the accompanying graphic manual as directed below.

**Note:** Before performing the upgrade prepare new seawater according to the sump working volume (see table above) plus 6% to compensate for the higher water level in the rear sump.

1. Switch off all of the components at the power center.
2. Remove the Rear Sump Screen and the grill from the return outlet port.
3. Inspect the plugged multiport bulkhead from the cabinet side while the cabinet is still empty to better understand the construction.
4. Unplug the skimmer pump and remove the skimmer from the rear sump.
5. Make sure that the cabinet doors are correctly aligned (review the instructions in the cabinet assembly manual). Once the sump is in position it will not be possible to make adjustments to the lower hinge without moving the sump. Insert the sump into position in the cabinet, see the graphic manual for the exact position. **Do not** put the RO reservoir in position or add any other additional equipment to the sump until instructed.
6. Syphon aquarium water **from** the skimmer chamber of the rear sump down into the empty sump until the **skimmer chamber is dry** and remove any remaining water with a cloth.
7. The water in the main tank will drop to between 9cm (3.5") and 16.5cm (6.5") below the normal water height. There is more than enough room in the sump to take all of the water that will drain from the tank.
8. Remove the 3 plugs from the multiport bulkhead by either unscrewing by hand from the top of the tank or by using an open pair of pliers from the cabinet side. Any residual water in the skimmer chamber will flow through the open bulkhead.
9. Thread the 3 top pipes into the multiport bulkhead as shown in the graphic manual. Make sure that that the O-rings are in position on the connectors before assembly. To ensure correct assembly, firmly hold the threaded connectors from inside the cabinet and tighten well by hand. Do not use tools. Avoid unscrewing the pipes from the multiport bulkhead once assembled as the locking mechanism that prevents counter-rotation will be less effective.
10. Insert the return outlet assembly into the outlet port and return pipe and tighten the securing nut.
11. Connect the main downpipe and secondary overflow bypass pipe to the connectors of the top pipes as shown in the graphic manual. Make sure that that the O-rings are in position on the connectors before assembly.
12. Using the flexible hose provided attach your return pump to the return pump connector making sure that all joins are secure and if necessary add a hose clip. Place the return pump into the return pump chamber in the sump and attach to the connector of the return pipe.
13. After assembly check that the pipes are vertical and the securing nut is holding the pipe in position. Do not use tools and do not overtighten.
14. Check that the outlet nozzles of the return pipe and the circulation pumps are pointed downwards.



## Red Sea MAX® E-Series | In-Cabinet Sump Upgrade Manual

ENG

15. Pour approximately 3 liters of seawater into the skimmer chamber of the rear sump to ensure that all of the pipe joints are watertight. Check for leaks inside the cabinet.
16. Remove the black sponge from above the circulation pump/s and replace the closed grill plugs with the open grill plugs that are supplied with the pipe kit.
17. Open the main flow valve (rotate anti-clockwise) to maximum.
18. Plug the return pump into one of the auxiliary outlets on the power center.
19. Place the RO reservoir in position, connect the outlet to the float valve and fill with RO water but close the flow valve on the outlet of the reservoir.

**WARNING:** Overfilling the sump with equipment may cause a flood in the event of an interruption of electric power.

20. Install your protein skimmer and any other equipment that will be in the sump. Please note that at this point the water height in the sump is still much higher than normal.
21. Add approximately 40 liters (10 gallons) of new seawater to the aquarium.
22. Switch on the return pump, the circulation pumps and any equipment you have added to the sump. Add more water as required to maintain 15cm/6" of water in the return pump compartment.
23. Allow the system to run for a few minutes and adjust the flow valve (as described below) so that the water level in the rear sump is between the main downpipe and the overflow bypass and there is no noise. Add/remove water to/from the system and adjust the flow valve until the water levels in the system stabilize.

### Main downpipe valve adjustment

To raise the water level in the rear sump, rotate the valve clockwise.

To lower the water level in the rear sump, rotate the valve anti-clockwise.

**The main downpipe flow valve provides a very fine control of the flow rate however after making adjustments it takes the system a few minutes to stabilize at the new setting.**

Once you have established the approximate setting for the valve make very small adjustments and wait for a few minutes each time. It may take a number of occasional adjustments to reach a stable level. When set properly this system removes all of the noise of water flowing down to the sump.

### ATO:

On initial set-up, wait until the saltwater system is stable before using the ATO.

Disconnect the top-up flow valve from the float valve and slowly open the flow valve until the top-up water drips at a rate of approximately 1 drop per second. Reconnect the flow valve to the float valve.

Adjust the angle of the float so that the valve is closed when the water level is above the inlet of the pump but below the top of the bubble trap.

**NOTE:** It is recommended to close the valve on the outlet of the reservoir whenever doing maintenance in the sump.

### Power-out test:

After completing the upgrade and after adding any new equipment to the sump, make any adjustments necessary to the main valve to stabilize the system and perform a "power-out" test to check that water does not rise above the rim of the sump.

### MSK 900 Protein Skimmer:

The MSK900 protein skimmer is designed specifically for a rear sump application with a high water level.

The MSK900 will operate with full reef spec performance if used inside the in-cabinet sump however there will be excessive noise due to the approximately 20cm 8" of height difference between the skimmer outlet and the water level in the skimmer chamber. Attaching sponge to the side of the skimmer will effectively cancel the noise.

### Maintenance

For continuous smooth operation of the water management system make regular checks of the following:

Water level in the rear sump - adjust the flow valve as required.

Water level in the reservoir - top up with RO water as required.

Water level in the sump, check that the top-up float valve is operating correctly.

Micron Filter Bags - check that water is flowing through the bags and replace as required.

Surface skimmer combs - remove any deposits that reduce water flow.

Pump outlet nozzle - check for blockages and build-up of algae.

### Micron Filter bags

It is recommended to have at least 3 sets of filter bags.

There are a few options for cleaning the filter bags:

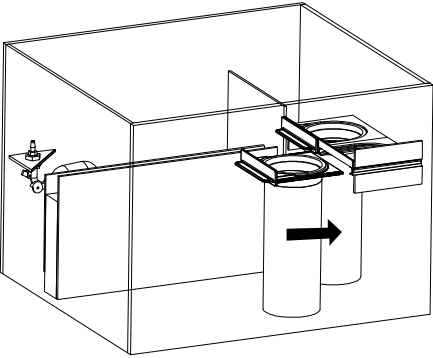
Quick and effective - Spray the outside of the bags with a powerful water jet such as a garden hose to back-flush the detritus from the felt.




More thorough - soak the bags in bleach or diluted vinegar for 24 hours prior to spraying as above. Rinse well to remove all chemicals before returning to sump.

The filter bags can also be put in a cold wash in a washing machine with regular detergent or with vinegar (may require approval from a higher authority).

MAINTENANCE

A






R42195 100 Micron felt

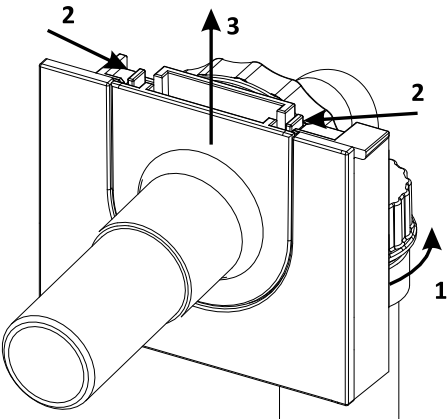
R42196 225 Micron felt

R42197 225 Micron thin Mesh

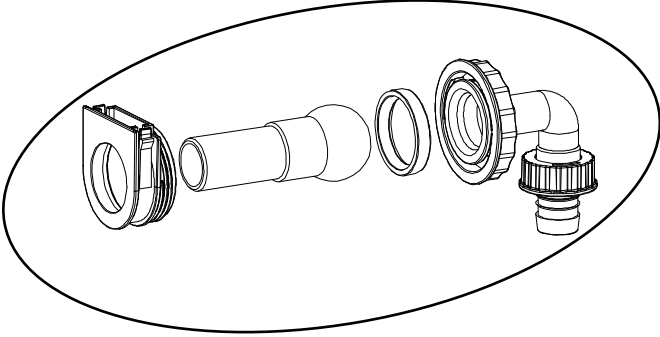
R42190



B

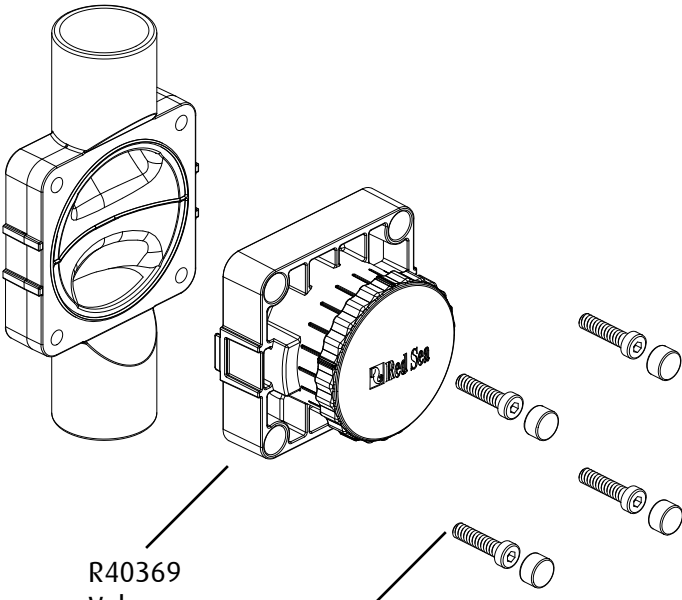


R42188 Outlet Assembly



C

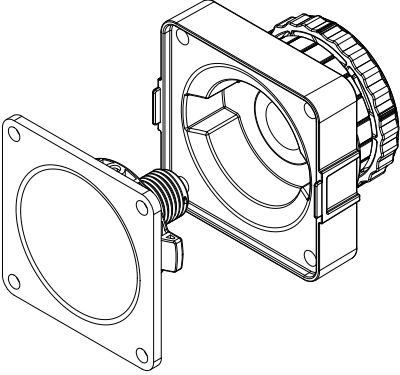
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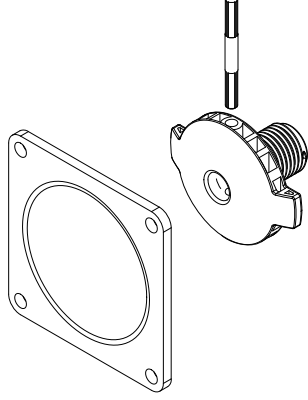
R40369 Valve

R40371 Screw Set

2



3



R40370 Diaphragm

#4634\_EN\_DE\_FR\_JP\_CHN\_V16A

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## PRINTING INSTRUCTIONS

To print only the Hydra 26 HD LED Manual, print pages 45-53.

Page Handling

Copies: 1 ☐ Collate

Page Scaling: Multiple pages per sheet

Pages per sheet: 2 by

Page Order: Horizontal

☒ Print page border ☐ Auto-Rotate Pages



# Red Sea Hydra 26™ HD LED



Scan this QR to register  
& activate your Red Sea  
Hydra 26™ HD LED

\*Hydra TwentySix HD is a registered Trade Mark of AI



# **Red Sea** Hydra 26<sup>™</sup> HD LED

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## 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”.

### 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

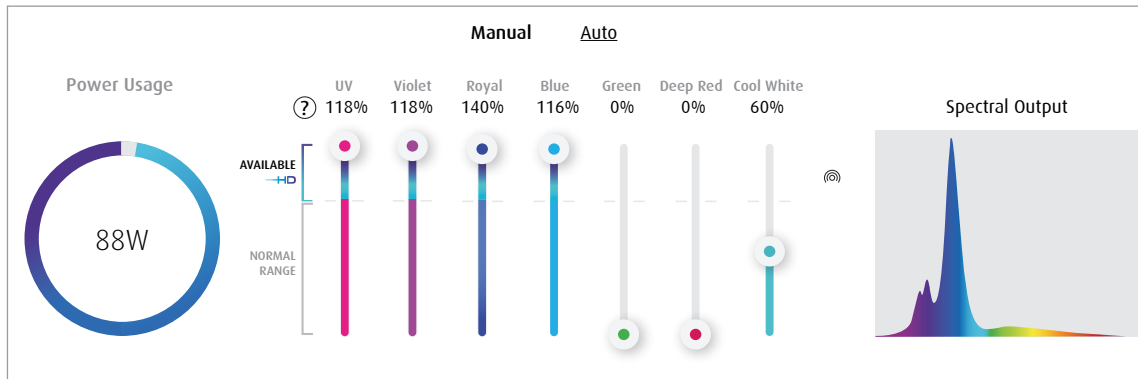
The controller provides automatic and manual modes for the lights.

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.

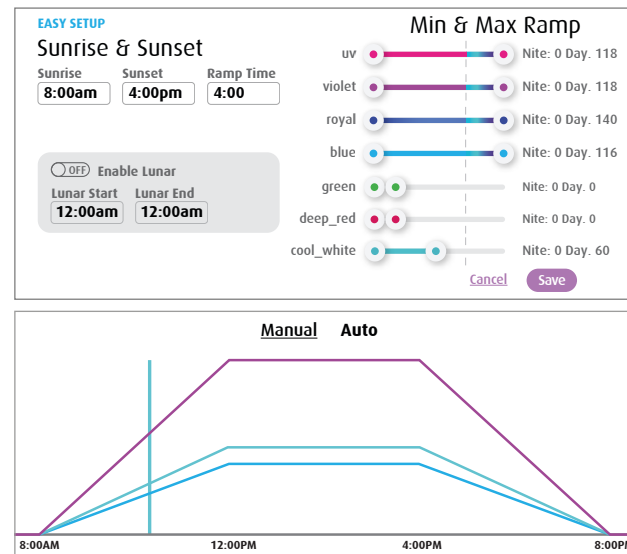


Recommended  
REEF-SPEC® setting for  
maximum power for  
Reef aquariums.

## Day / Night Programming

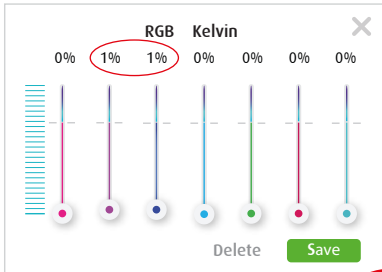
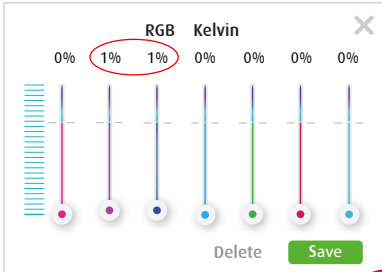
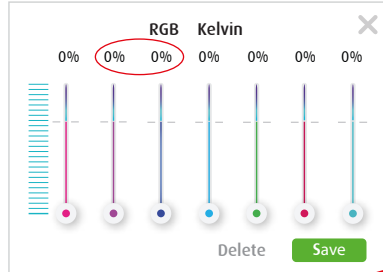
Before setting up your 24 hour program refer to the general programming guidelines given in the MAX® instruction manual.

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>RGB Kelvin</p> <p>0% 1% 1% 0% 0% 0% 0%</p> <p>Delete Save</p> <p>◀ 8:30 PM ▶</p>	 <p>Easy Setup</p> <p>RGB Kelvin</p> <p>0% 1% 1% 0% 0% 0% 0%</p> <p>Delete Save</p> <p>◀ 11:00 PM ▶</p>	 <p>Easy Setup</p> <p>RGB Kelvin</p> <p>0% 0% 0% 0% 0% 0% 0%</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, the "Starting Percent Reduction" is shown with eight sliders (for Red, Orange, Yellow, Green, Cyan, Blue, Purple, and White) all set to 40%. The "Start" date is "Jan 1, '15" and the "End" date is "Feb 26, '15".
- ON State:** The screen shows "Acclimation" with a question mark icon, the "Start: Jan 1, '15" and "End: Feb 26, '16" dates, and an "EDIT" button at the bottom right.

Arrows indicate the flow from OFF to EDIT and from EDIT to ON.

## LED Indicator States

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

## 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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