



# REEFER™ G3 Series

## Operation Manual

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# Extend Your Peace of Mind

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New REEFER G3 systems come with a standard 3-year warranty\*, worldwide. In selected markets, you can register your new system within 90 days of purchase and receive 2 more years of warranty (5y total) for no extra charge! \*\*

\* The warranty covers the glass aquarium and the cabinet (where applicable). It is available to original owners only, subject to providing proof of purchase (T&Cs apply).

\*\* The extended warranty is available in Australia, Austria, Belgium, Canada, France, Germany, Ireland, Japan, Netherlands, Poland, Taiwan, UK and USA.

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# Red Sea REEFER™ G3 SERIES

Reef-Ready systems for advanced hobbyists

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## Operation Manual

REEFER™ G3 Operation Manual

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## **Congratulations on your purchase of the Red Sea REEFER™ reef system.**

Red Sea's REEFER™ Systems provide advanced hobbyists with a solid foundation for building a fully featured reef or marine aquarium. The REEFER™ Series combines a contemporary, rimless, ultra-clear glass aquarium with a stylish cabinet and a comprehensive water management system, including a professional sump with Red Sea's unique silent down-flow system and the Smart ATO automatic top-up.

Incorporating technologies originally developed for Red Sea's all-in-one MAX® coral reef systems, the REEFER™ series is designed for ease of operation while enabling hobbyists to install an unlimited choice of lighting, filtration, circulation and controllers to create a uniquely customized system.

This manual complements the graphic assembly manuals and contains installation and operational instructions for all of the REEFER™ series aquariums.

We hope that you enjoy your REEFER™ and your reef.

To benefit from product update information and exclusive special offers to registered REEFER™ owners, please register your REEFER™ 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 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" (see 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.

Close supervision is necessary when any appliance is used by or near children.

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.

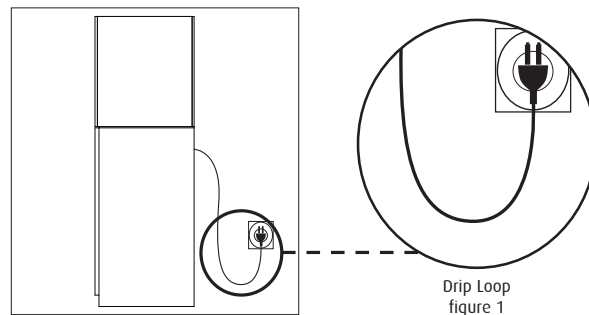
Do not use an appliance for anything other than its intended use. The use of attachments not recommended or sold by the appliance manufacturer may cause an unsafe condition.

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 accidental.



## 2 Location

The first step in setting up the REEFER™ is to choose a suitable location.

### Weight

The flooring directly below the system must be rated to support the following weight:

Approximate total weight of system including water					
Model	170 G3	200 G3	250 G3	300 G3	350 G3
Weight	275kg/ 607lb	315kg/ 695lb	380kg/ 840lb	470kg/ 1035lb	530kg/ 1170lb

Model	425 G3	525 G3	625 G3	750 G3
Weight	690kg/ 1520lb	850kg/ 1875lb	930kg/ 2060lb	1110kg/ 2460lb

Model	P-350 G3	P-500 G3	PS-700 G3	PS-950 G3
Weight	550 kg/ 1213lb	761 kg/ 1678lb	1087 kg/ 2397lb	1460 kg / 3219lb

Model	S-550 G3	S-700 G3	S-850 G3	S-1000 G3
Weight	861kg/ 1899lb	1062kg/ 2342lb	1210kg/ 2675lb	1465kg/ 3240lb

### Room temperature

Site selection is important for correct temperature maintenance.

We recommended 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

Ensure that there is at least 10cm / 4" of clearance behind the REEFER™ to allow easy access for installing/removing cables from the sump as well as sufficient air circulation for a chiller (larger models only). It is recommended to leave approximately 60cm/24" between one of the sides of the aquarium and any adjacent walls or furniture for access to the rear of the tank.

### General considerations

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

**NOTE:** The REEFER™ system should not be moved when full of water.

### 3 Assembly

The following information complements the graphic manuals.

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

**ATTENTION:** The top board of the cabinet (Part C) and some other parts of the cabinet (in certain models) are packed under the aquarium. In order to retrieve these parts, remove the aquarium from its packaging. Make sure to avoid contact between the Bulkheads on the bottom of the tank and the floor, by placing the glass aquarium on Styrofoam parts that are used in the package.

The REEFER™ includes the following main components:

- Glass aquarium
- Cabinet (self-assembly)
- ReefMat Ready glass sump with optional Refugium chamber
- Internal Piping kit with outlet nozzle
- Smart ATO system
- Glass Extension Sump (REEFER 750 G3 and REEFER-S 850 G3 / 1000 G3 / PS-950 G3 models only)

Detailed instructions for the complete assembly of the REEFER™ can be found in the accompanying graphic manuals.

Complete the assembly of the cabinet including the doors as shown in the graphic assembly manual and place in the final operating position (see location above).

**NOTE:** It is important to assemble the REEFER™ in the order indicated.

**WARNING:** Read before lifting the glass aquarium onto the cabinet.

The top of the cabinet is approximately 86cm/34" ( 100cm/40" for Peninsula ) from the floor.

The table shows the approximate weights of the different models of the REEFER™ aquarium glass.

Approximate total weight of Aquarium Glass					
Model	170 G3	200 G3	250 G3	300 G3	350 G3
Weight	35Kg/ 77lb	40kg/ 88lb	55Kg/ 122lb	58kg/ 128lb	64kg/ 140lb

Model	425 G3	525 G3	625 G3	750 G3
Weight	95kg/ 210lb	125kg/ 275lb	155kg/ 340lb	195kg/ 430lb

Model	P-350 G3	P-500 G3	PS-700 G3	PS-950 G3
Weight	101 kg/ 223lb	121 kg/ 267lb	206 kg/ 454lb	251 kg/ 553lb

Model	S-550 G3	S-700 G3	S-850 G3	S-1000 G3
Weight	162Kg/ 358lb	191Kg/ 422lb	226Kg/ 500lb	258Kg/ 570lb



Ensure that you have the correct number of people to lift the aquarium according to its weight and size.

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.

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

For units with adjustable legs: Using a spirit level on the top surface of the glass tank, adjust the height of the legs to level the aquarium. Make sure that all legs are touching the floor.

Before placing the glass sump in the cabinet make sure that the cabinet

doors are correctly aligned (see instructions in the cabinet assembly manual). With the doors properly aligned, rotate the front section of the push opener to the correct extension so that the doors will pop open when pushed.

**Overflow box pipes:** Make sure that the O-rings are in position on the threaded 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 overflow box once assembled as the locking mechanism that prevents counter-rotation will be less effective.

**Sump pipes:** Make sure that the O-rings are in position on the connectors before assembly. After assembly check that the securing nut is holding the pipe in position. Do not use tools and do not overtighten.

**Overflow Box Cover:** The overflow box cover reduces noise from the water fall of the surface skimmer. If you wish to use the rear wall of the overflow box for mounting equipment such as lighting, break out the section of the cover as shown in the graphic manual. After breaking out the removable section, smooth the remaining edge with a file or sandpaper.

**Smart ATO:** Install the ATO sensor and tube holder in the pump chamber of the sump as instructed in the additional manual and select a suitable place for mounting the controller and other components provided with it.

The ATO has many smart features so it is recommended to review the manual to properly understand how to use them.

After initial installation make sure that the Auto-fill is switched off until the REEFER system is filled to its normal operating level with saltwater.

The REEFER G3 systems do not include a reservoir for the top-off water.

## 4 Overview of the REEFER™ water management system

### Surface Skimmer / Overflow Box

Surface water from the aquarium flows via the removable comb sections of the surface skimmer into the overflow box that houses the dual intakes of the silent-flow downpipe system and the outlet nozzle of the sump return pump. The silent-flow downpipe system includes a flow-regulated main downpipe and a secondary overflow bypass pipe. An external pipe is placed over the main downpipe to ensure positive water motion throughout the entire height of the overflow box.

The fine adjustment gate valve on the main downpipe enables the water level in the overflow box 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.

### Sump

Water from the flow-regulated main downpipe and the secondary overflow bypass pipe enter a compact reception chamber in the sump.

Care should be taken in the choice of any filter media placed in the reception chamber as the turbulent flow conditions from the downpipe could cause a constant discharge of fine media particles.

The water then flows through the 225 micron filter bags or cups 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.

To install a ReefMat or other roller filter, remove the filter-bag tray and slide out the removable divider wall.

The optional refugium wall divides the sump chamber into 2 sections. The water level in the front (refugium) section is set by the combs at the top of the wall. The water level in the rear (skimmer) section is set by the height of the pump chamber inlet gate that should be set according to the requirements of your skimmer.

A bubble trap labyrinth with coarse sponge, at the inlet of the pump compartment, will 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. Maintaining a constant water height in the pump compartment 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 Smart ATO supplied with the system will automatically replace the water lost to evaporation and will maintain the water level in the pump compartment at a stable constant level.

## Recommended Return Pump (not included)

Model	170 G3	200 G3	250 G3	300 G3
	1x ReefRun G2 4000 (2000-4000 lph / 530-1060 gph)			

Model	350 G3	425 G3	P-350 G3
	1x ReefRun G2 6000 (3600-6500 lph / 950-1700 gph)		

Model	525 G3	625 G3	750 G3	S-550 G3	S-700 G3	P-500 G3
	1x ReefRun G2 8000 (4100-8300 lph / 1080-2200 gph)					

Model	S-850 G3	S-1000 G3	PS-700 G3	PS-950 G3
	1x ReefRun G2 12000 (5000-12000 lph / 1300-3200 gph)			

## 5 Operation

### Initial Fill

Check that all pipes are properly assembled and that any flexible tubes are suitably secured in position.

Install any equipment that will take up water volume in the sump before starting to fill the system.

Open the main flow valve (rotate anti-clockwise) to maximum.

Add approximately 15cm/6" of water to the overflow box to make sure that all the pipe joins are watertight. Check for leaks inside the cabinet.

Add water to the main tank and once it is full, monitor the water level in the sump as it begins to fill.

As soon as there is approximately 15cm/6" of water in the main pump compartment, switch on the pump and stop adding water.

Switch on skimmers or other filters that will affect the water level in the sump and add more water as required to maintain the 15cm/6" of water in the main pump compartment.

Allow the system to run for a few minutes and adjust the flow valve (as described below) so that the water level in the overflow box is at the correct level.

Add/remove water to/from the system and adjust the flow valve until the water levels in the system stabilise.

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

## Main downpipe gate-valve adjustment

To raise the water level in the overflow box, rotate the valve clockwise. To lower the water level in the overflow box, rotate the valve counter 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.

## Smart ATO

When the water volume and flow in the system has stabilized, check that the ATO sensor and tubing are correctly installed and that the ATO pump is fully submerged in water in your top-off reservoir.

Before activating the Auto-fill from the ReefBeat App, you can check the water level in the pump chamber relative to the sensor by using the "Check sump water level" feature.

If the water level is below the the sensor, you may wish to add some more salt water to the system before activating the Auto-fill.

## Power-out test

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

## 6 Maintenance

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

- Water level in the overflow box - adjust the flow valve as required
- Water level in the reservoir – top up with RO water as required
- Check that the ATO sensor is free from algae or calcium deposits
- Micron Filter Bags – check that water is flowing through the bags and clean/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 Polyester bag.

**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).

# Warranty

## Red Sea Aquarium Systems Limited Warranty.

Thank you for purchasing a Red Sea Aquarium System consisting of an aquarium, sump, pipework, and cabinet (hereinafter "the Aquarium System").

This limited warranty does not cover any additional Red Sea products such as the smart ATO that may be supplied with the Aquarium System or any products purchased together with the Aquarium System as part of a Reefer Deluxe or Reefer Max offering, all such additional products are provided with their own individual warranty.

Red Sea Aquatics (UK) Ltd. (hereinafter "Red Sea") warrants the Aquarium System against manufacturer's defects in material and workmanship for 36 months from the date on which the Aquarium System was originally purchased by the original purchaser (hereinafter "the Original Purchase Date"), as further detailed below.

The warranty provided by Red Sea is NOT TRANSFERABLE AND IS LIMITED TO THE ORIGINAL PURCHASER. If the Aquarium System is eligible under this warranty, Red Sea will either repair the Aquarium System free of charge (not including shipping costs) with new or refurbished parts or replace the Aquarium System with a new or refurbished Aquarium System at Red Sea's sole discretion.

This limited warranty DOES NOT COVER normal wear and tear, or items that have a limited natural life or are consumable, such as, but not limited to impellers, sponges, filter socks, and "O" rings. It also DOES NOT COVER damage which occurs in shipment and/or failures or defects resulting from use outside normal conditions and/or natural disasters, accidents, power line surges, neglect, improper installation, operation or maintenance, and/or servicing of the Aquarium System or tampering with the Aquarium System by anyone other than an authorized Red Sea service center, or failure to use or assemble the Aquarium System in accordance with any instructions provided (in the Aquarium System manual or otherwise including on Red Sea's website) or the technical and/or safety standards of the country in which the Aquarium System is used. Additionally, any modification of the Aquarium System other than by an authorized Red Sea service center will invalidate this warranty.

In order to effect this warranty, please contact your local service center. For your convenience, details of authorized service centers can be found on Red Sea's website. Proof of purchase will be required before warranty performance is rendered.

The sole and exclusive remedy against Red Sea shall be for the repair or replacement of the Aquarium System as provided above. NO OTHER REMEDY (including but not limited to, incidental or consequential damages or damages for lost profits, lost sales, or any other incidental or consequential loss or damage) shall be provided under this warranty. Some jurisdictions do not allow the exclusion of incidental or consequential damage, so the above limitation may not apply to you. To the full extent allowed by applicable law, in no event shall Red Sea be liable for any loss or damage to aquatic life, and/or damage to other property and/or individuals (including but not limited to the original purchaser) resulting from the use of the Aquarium System or arising out of any breach of this warranty. All implied warranties (including but not limited to the warranty of merchantability of the Aquarium System or that the Aquarium System is fit for a particular purpose) are excluded to the full extent allowed by applicable law, and to the extent that they may not be excluded, are limited for the duration of the applicable warranty period set forth above. Some jurisdictions do not allow limitations on how long an implied warranty or condition lasts, so this limitation may not apply to you. The express warranties made in this limited warranty

are the sole and exclusive warranties provided to the original purchaser and may not be altered, enlarged, or changed by any distributor, dealer, or other person, whatsoever.

**SPECIAL TERMS APPLICABLE TO THE ORIGINAL PURCHASER'S OPTION TO OBTAIN AN EXTENDED 24-MONTH WARRANTY.**

The original purchaser and only the ORIGINAL PURCHASER may obtain an extended warranty (hereinafter "the Extended Warranty") covering the structural integrity of the glass aquarium and cabinet (but not on any other components of the Aquarium System or other products provided with or purchased together with the Aquarium System) without charge, by registering the Aquarium System within 90 days of the Original Purchase Date on Red Sea's website at [www.redseafish.com](http://www.redseafish.com) and uploading the proof of purchase.

By registering the Aquarium System and exercising the option to obtain the Extended Warranty, you acknowledge that you have carefully read and understood the terms and conditions that apply to the Extended Warranty, which are set forth below, and that you fully agree to such terms and conditions.

### TERMS AND CONDITIONS OF EXTENDED WARRANTY

The Extended Warranty is NOT TRANSFERABLE AND IS LIMITED TO THE ORIGINAL PURCHASER.

The Extended Warranty is available only for REEFER G3 purchased in one of the following countries: Australia, Austria, Belgium, Canada, France, Germany, Ireland, Japan, Netherlands, Poland, Taiwan, UK and USA.

The Extended Warranty may only be obtained within 90 days from the Original Purchase Date.

The Extended Warranty shall apply for the duration of a consecutive 24-month period commencing on the expiry date of the 36 months from the Original Purchase Date.

The Extended Warranty only covers the structural integrity of the glass aquarium and cabinet (hereinafter "the Covered Components").

If the Covered Components are eligible to be serviced under the Extended Warranty, Red Sea will either repair the Covered Components free of charge (not including shipping costs) with new or refurbished parts or replace the Covered Components with new or refurbished Covered Components, as Red Sea may determine in its sole discretion.

This Extended Warranty DOES NOT COVER normal wear and tear, or items that have a limited natural life or are consumable, such as, but not limited to; "O" rings. This Extended Warranty also DOES NOT COVER damage which occurs in shipment and/or failures or defects resulting from use outside normal conditions and/or natural disasters, accidents, power line surges, neglect, improper installation, operation or maintenance and/or servicing of the Covered Components or tampering with the Covered Components by anyone other than an authorized Red Sea service center, or failure to use or assemble the Covered Components in accordance with any instructions provided (in the Aquarium System manual or otherwise including on Red Sea's website) or the technical and/or safety standards of the country in which the Aquarium System is used. Additionally, any modification of the Covered Components other than by an authorized Red Sea service center will invalidate the Extended Warranty.

Except as specifically modified herein the terms and conditions of the Red Sea warranty provided upon the original purchase of the Aquarium System shall also apply to the Extended Warranty.

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