

Installation & Operation Manual for Red Sea's WaveMaster Pro



1. Introduction

Water motion along with clear water, sufficient light, low nutrient level and a stable high temperature plays a very important role in creating the crucial conditions for a favourable reef environment. A natural coral reef is a complex community, with an incredible amount of animals and plants packed together in a relatively small space. Constant circulation is vital to the supply of nutrients and oxygen, as well as the removal of waste products and sediment off the corals. Without these continuous and ever changing currents the natural reef would soon suffocate.

Natural reef inhabitants have, over billions of years of evolution, adapted to their environment. Corals, the most conspicuous member of the reef community, as well as most other creatures including algae, need water circulation.

Recent experiments have shown that soon after the water currents cease, the oxygen production by algae is reduced. In a natural coral reef there are occasional quiet nights with still water, where marine biologists have measured reduced oxygen levels. Fortunately, in nature conditions like this do not occur very often. In the reef aquarium circumstances like this are all too often the norm.

Methods have been designed to replicate the coral reef water circulation. The most common is the use of strong powerheads, which by means of a timer are periodically switched on or off, creating repetitive water circulation.

Scientists and technicians at Red Sea have one of the greatest coral reefs close to their laboratory. Inspired by observations on the Red Sea coral reef and after careful design and numerous tests, the WaveMaster Pro was created.

This microprocessor control system creates randomly flowing and ever changing water currents, similar to a natural coral environment. The effect the WaveMaster Pro creates in the aquarium is dramatic: not only corals but also other aquarium inhabitants display their natural "bloom" and behaviour.

The WaveMaster Pro offers several smart options and settings that make this device suitable for practically every marine aquarist and aquarium set up.

A distinction is made between the typical reef fish tank with few invertebrates (Marine mode) and the typical reef tank with predominant numbers of invertebrates (Reef mode). The Reef mode facilitates feeding of invertebrates that live on suspended particles or plankton, by giving sufficient time to feed, without losing the food into the bio-filter or protein skimmer.

The Marine mode facilitates feeding by the smallest as well as the largest fish by temporarily switching off all but one of the powerheads,

while the main pump keeps running the water through the life support systems.

As in nature the water currents become weaker during the night, the Wavemaster Pro is able to imitate this period with its 8 hour night program, that switches automatically to a calmer wave motion.

Different parts of the reef are characterised by differences in water circulation, which is also reflected in the species composition of a specific area. Depending on whether you wish to simulate a gentle or more turbulent section of the reef or even a varying water motion, the Wavemaster Pro enables you to select from its 4 different wave programs for both the marine and the reef aquarium.

2. Set-up Options





2.1 Pump options

The Wavemaster Pro provides 4 power outlets. Outlets P1, P2 & P3 are dedicated powerheads to provide random water circulation. Outlet P4 can be set as either a 4th powerhead (P4) or as a dedicated main filtration system pump (MP).

Using the selector switch located on the back panel set this outlet either to MP or P4. When set as MP the P4/MP light on the front panel will be red and constantly on. When set as P4 the P4/MP light will be green and will switch on and off according to the chosen wave program.

NOTE: The P4/MP selector switch must be set before turning on the Wavemaster Pro. Changing the setting after switching the unit on will disrupt the correct operation of the unit.

2.2 Wave program options

	Gentle - Slow random waves: Powerheads P1 & P2 alternating, P3 & P4 slow random action sequence .
	Rolling - Short periodic waves: gradually increasing to maximum and decreasing to minimum.
	Turbulent - Fast random waves: Powerheads P1 & P2 alternating, P3 & P4 fast random action sequence.
	Alternating - Sequential 4 hour periods of Gentle, Rolling and Turbulent wave programs

The Wavemaster Pro offers 4 distinct settings of varying wave motion: By pressing the control button on the left of the front panel, you can sequentially choose one of the 4 wave program options as indicated by the round bicolour (red/green) lights above the program symbols. Red is for Marine mode and green is for Reef mode. The Marine & Reef modes affect the water motion when the Feed program is initiated as described below. Use the Marine mode for aquariums which are predominantly stocked with fish and Reef mode for aquariums that are predominantly stocked with invertebrates.

Try each of the 4 wave programs for a few days to determine which gives the best results for your aquarium.

2.3 Feed program

The Wavemaster Pro provides a feed switch that temporarily suspends the wave program to provide a period of water motion more suited for feeding.

Press the Feed button immediately before feeding. The green indicator light below the button indicates that the Feed program is in operation. The Feed program will turn off automatically after 10 minutes when the Wave program is set to Marine mode and 30 minutes when in Reef mode. Thereafter the Wave program you have chosen will continue as before. The preprogrammed changes in the powerheads / main pump (as described below) will be displayed by the indicator lights. The Feed program can be canceled at any time by again pressing the Feed button.

Powerhead / Main Pump settings for Marine Feed program - Operates for 10 minutes after pressing the feed button.

If the P4/MP selector switch is set to MP, the main pump will remain on during feeding indicated by the red light on the front panel and powerheads P1, P2 & P3 will be turned off.

If the P4/MP selector switch is set to P4, all of the powerheads will be turned off.

Powerhead / Main Pump settings for Reef Feed program - Operates for 30 minutes after pressing the feed button.

If the P4/MP selector switch is set to MP, the main pump, P1 & P3 will be turned off and powerhead P2 will be turned on, indicated by the green light on the front panel.

If the P4/MP selector switch is set to P4, only powerhead P2 will be turned on, indicated by the green light on the front panel.

2.4 Night program

The night program provides an 8 hour period of calmer water motion, irrespective of which Wave program has been selected.

The Night program can be set either at the beginning (night time) or at the end (morning) of the desired 8 hour Night period. Once the Night program has been initiated it will run automatically i.e. initiating the Night period at exactly the same hour every day until either switched off manually

or the Wavemaster Pro is reset by either switching off the unit or by a power outage. At the end of the 8 hour Night period the Wavemaster Pro will return to the selected Wave program.

Pressing the Night program button once will set the beginning of the Night period indicated by a green light below the button. Pressing the Night program button a second time will set the beginning of the day period indicated by a red light below the button. Pressing the Night program button a third time will switch the Night program off. Correct operation of the Night program can be seen by the indicator light changing from green to red to green etc. during the relevant period.

The main pump (if P4/MP is set to MP) will not be affected by the operation of the Night program. The Night program is the same for both the Marine or Reef modes and all of the 4 Wave program options. Example: If you press the Night program button at 11.00 PM (green light). The pre-programmed Night powerhead settings will run for eight hours, switching automatically to the selected Wave program during the day (red light) the next day at 7.00 AM.

Default settings

When switching on or resetting the Wavemaster Pro the following default setting will be in operation:

Wave program - set to Gentle, Marine mode

Night Program - Off

P4/MP - according to setting of selector switch (located on back panel)

3. Positioning of the powerheads

To achieve optimal circulation in the aquarium, position the powerheads at different depths. Place at least one powerhead near the surface, one about midway and one near the bottom.

The current should be directed along the length of the aquarium. Permanent positioning of the powerheads as well as choosing the most suitable program is a gradual process. Carefully observe your corals for signs of discomfort. Corals vary in their preference for current strengths, Some species prefer quiet water and may have to be protected from the full force of the powerheads. Never direct the full force of a current straight to a coral colony or sea anemone as this may dislodge the colony, causing it to fall over.

When connecting the powerheads to the Wavemaster Pro remember P1 & P3 are operated alternately in the Gentle and Turbulent Wave options and during the Night. When the Wavemaster Pro is in Reef Mode P2 is the only powerhead in operation when the feed program is activated.

4. Installation Instructions

4.1 Ensure that your powerheads (and main pump) are positioned correctly in the Aquarium and Sump.

4.2 Locate the Wavemaster Pro in a safe position either next to or

under the aquarium.

4.3 Connect the power cables of your powerheads and main pump to the 4 power outlets on the back panel of the Wavemaster Pro, using drip loops as directed below.

4.4 Connect the main pump (if applicable) to the outlet marked P4/MP and set the selector switch to MP.

NOTE: The Wavemaster Pro is suitable for powerheads/pumps up to a maximum total of 720 W, 110V units (680W, 220 V units), including a main pump of up to 360 W, 110 V units (350 W, 220 V units).

4.5 Connect the power cable to a wall mounted receptacle. Switch the Wavemaster Pro on using the power switch located on the back panel.

4.6 On start up the Wavemaster Pro will perform a self-test of all of its functions, indicated by the sequential lighting up of the indicator lights located on the front panel.

4.7 Select the Wave program of your choice in either Marine or Reef Mode as panel.

5. Important safety instructions

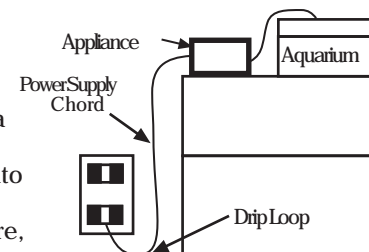
WARNING - To guard against injury, basic safety precautions should be observed, including the following.

READ AND FOLLOW ALL SAFETY INSTRUCTIONS.

DANGER - To avoid possible electric shock, special care should be taken since water is employed in the use of aquarium equipment. 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.

- If the appliance falls into the water, DON'T reach for it! First unplug it and then retrieve it. If electrical components of the appliance get wet, unplug the appliance immediately.
- Do not operate any appliance if it has a damaged cord or plug, or if it is malfunctioning or if it is dropped or damaged in any manner.

- To avoid the possibility of the appliance plug or receptacle getting wet, position aquarium stand and tank to one side of a wall mounted receptacle to prevent water from dripping onto the receptacle or plug. A "drip loop" shown in the figure, should be



arranged by the user 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 travelling along the cord and coming into contact with the receptacle. If the plug or receptacle does get wet, DON'T 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.

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

E. To avoid injury, do not contact moving parts or hot parts such as heaters, reflectors, lamp bulbs, and the like.

F. Always unplug an appliance from an outlet when not in use, before putting on or taking off parts, and before cleaning. Never yank cord to pull plug from outlet. Grasp the plug and pull to disconnect.

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

H. Do not install or store the appliance where it will be exposed to the weather or to temperatures below freezing.

I. Make sure an appliance mounted on a tank is securely installed before operating it.

J. Read and observe all the important notices on the appliance.

K. If an extension cord is necessary, a cord with a proper rating should be used. 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 will not be tripped over or pulled.

SAVE THESE INSTRUCTIONS

Red Sea Fish Pharm Aquarium Products Limited Warranty

This limited warranty sets forth all Red Sea Fish pHarm Ltd. (Red Sea) responsibilities regarding your products. There are no other express or implied warranties from Red Sea.

RSFP warrants your product against defects in materials and workmanship for a period of 12 months from date of original purchase and will repair this product free of charge (not including shipping costs) with new or rebuilt parts.

In the event that a problem develops with this product during or after the warranty period contact your dealer or Red Sea (at the company address indicated on the following page) for details of your nearest authorized service center. This 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 water damage which occurs in shipment or failures which result from misuse, abuse, neglect, improper installation or 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 salability and fitness for a particular purpose, are limited to the applicable warranty period set forth above.

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

Technical Specifications					
Power Rating					Dimensions
Voltage	Main Pump	P1	P2	P3	Casing : Shock Proof Casing Height: 54 mm Width: 150 mm Length: 170 mm Weight: 800 grams
110 V	360 W	120 W	120 W	120 W	
220 V	350 W	110 W	110 W	110 W	
Environment					
Temperature: 0-45°C (32-113°F)					
Humidity: 5-85%					

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