

10. Warranty

Red Sea Fish Pharm Aquarium Products Limited Warranty

The limited warranty sets forth all Red Sea Fish Pharm LTD (Red Sea) responsibilities regarding your 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 from the date of original purchase and will repair this product free of charge (not including shipping costs) with new/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) 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 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 a particular purpose, are limited to the applicable warranty period set forth above.

These statements do not affect the statutory rights of a 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 exclusions or limitations may not apply to you.

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Installation and Operational Manual for Red Sea's Prizm Protein Skimmers



The unique reaction chamber is divided into 2 compartments consisting of a convergent upward flow first stage, followed by a divergent downward flow second stage. The decreasing cross-sectional area of the convergent first stage, causes great turbulence and extended contact time between the air bubbles and water. The increasing cross-sectional area of the divergent second stage, causes the air bubbles to flow both co-and-counter-current before arriving to the water surface. The combined action of the 2 compartments creates a protein loaded, stable foam at the throat of the skimmer, positively pushing dry foam up into the collection cup.

Air is introduced into the skimmer via the collection cup to significantly reduce the noise of the air and water being mixed by the TurboJet Injector.

The bubble-trap under the reaction chamber redirects any escaping air bubbles ensuring that bubble free water is returned to the aquarium via the cascade. In addition, the bubble-trap acts as a Mechanical filter by trapping small particulate matter, thus removing it from the water flow. The Flow Regulator located on the Inlet Pipe allows the skimmer's performance to be optimized for all aquarium conditions.

3. Safety

IMPORTANT SAFETY INSTRUCTIONS

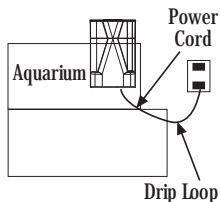
WARNING - To guard against injury, basic safety precautions should be observed, including the following.

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.

- I) 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.
- II) 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 traveling along the cord and coming into contact with the receptacle. If the plug or receptacle does get wet, DON'T unplug the cord.



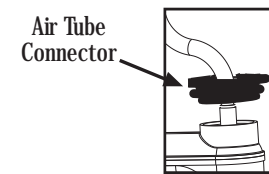
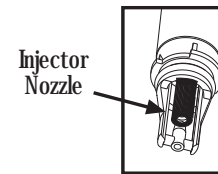
should be cleaned, since settling organic matter prevents new foam from rising into the cup. Before removing the Collection Cup disconnect the Upper Air Tube from the Hose Barb and reduce the flow to minimum or switch off the pump. In conjunction with cleaning the Collection Cup, wipe the Throat of the Reaction Chamber with a tissue to remove settled organic matter.

Cleaning Inlet Pipe :

Disassemble the Inlet Pipe by removing the Air Tube and Flow Regulator as described below and clean thoroughly with a bottle brush.

To Disassemble :

- a) To remove the Flow Regulator rotate and pull the Regulator out of the Inlet Pipe.
- b) To remove the Air Tube, first disconnect the lower Air Tube from the Air Injector nozzle, thereafter remove the Air Tube connector (with Air Tube attached) by rotating and pulling the connector out of the Inlet Pipe.



To assemble :

- a) Insert the Regulator into the Inlet Pipe by rotating and pushing inward. After inserting check that the o-ring is seated correctly i.e. in a straight line and in contact with the Inlet Pipe.
- b) To replace the Air Tube attach it to the underside of the Connector, thread the Lower Air Tube into the Inlet Pipe, push and rotate the connector into position within its housing. After inserting check that the o-ring is seated correctly i.e. in a straight line and in contact with the Inlet Pipe. Connect the Lower Air Tube to the Injector Nozzle.

All other parts of the Prizm should be cleaned periodically to remove settled organic matter that will decompose and pollute the aquarium, this will also prevent clogging and a loss of water pressure.

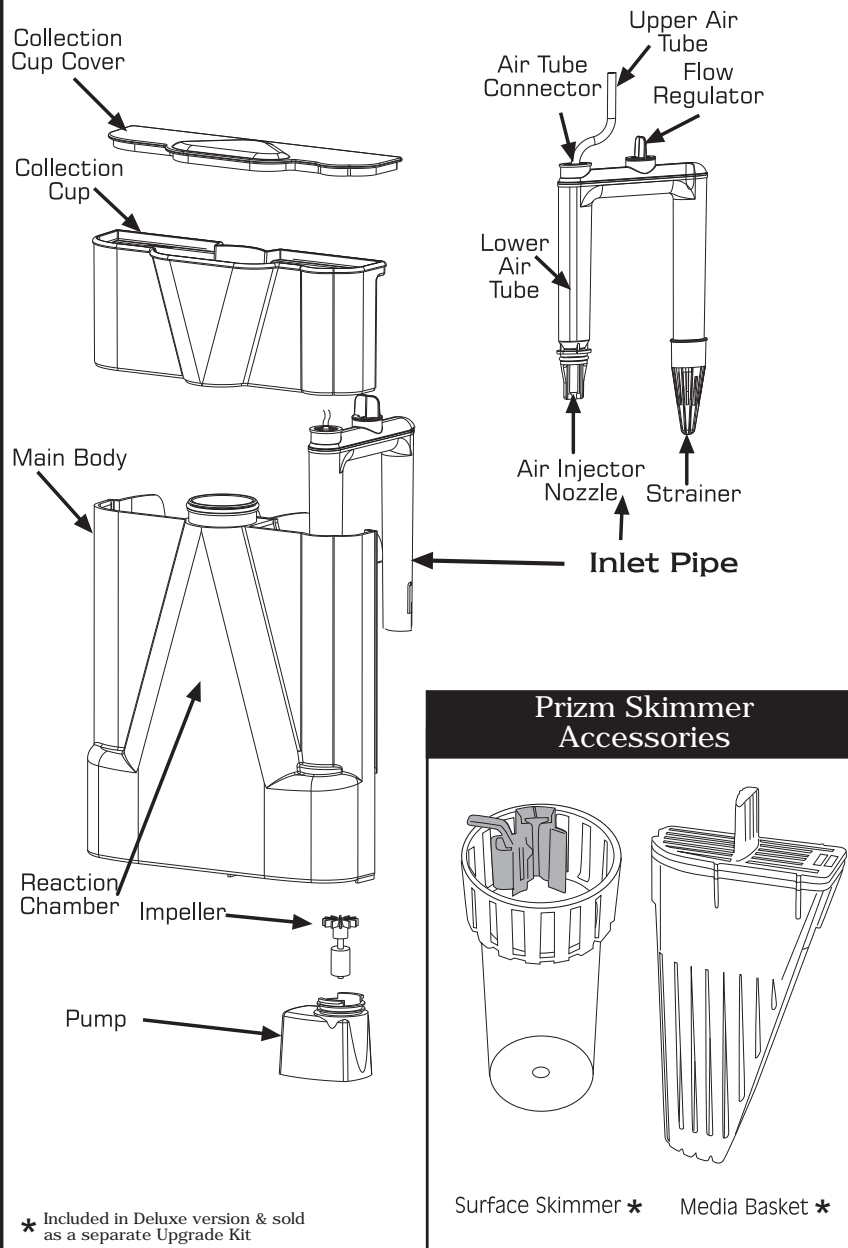
9. Troubleshooting

Problem : The Inlet Assembly Pipe does not fill with water.

Solution : Check for the following in order :

- 1 That the Upper Air Tube is connected to the Priming Plug and not the Hose Barb on the Collection Cup.

Components of the Prizm Skimmer



- 1 That the Impeller is rotating and that the power socket is switched on.
- 1 There is at least 1" of water in the Reactor so that the Impeller Chamber is flooded.
- 1 That the water level in the aquarium is above the strainer or surface skimmer.
- 1 The Inlet Pipe has been assembled correctly and is airtight (o-rings of the Flow Regulator and Air Tube Connector are seated correctly).

Problem: Water is flowing through the Skimmer but there is no air flow.

Solution : Make sure that the Upper Air Tube is connected to the Hose Barb and not the Priming Plug on the Collection Cup. Check that the Flow Regulator is not almost closed. Check the air path for other blockages.

Problem : The water is flowing very slowly through the Skimmer.

Solution : Check that the Flow Regulator is not almost closed. Check that there are no other blockages in the Inlet Pipe.

Problem : The Skimmer is producing a lot of diluted foam.

Solution : Reduce the flow through the Skimmer with the Flow Regulator until you obtain the desired results.

Problem : My aquarium is full of micro bubbles or air mist.

Solution : Reduce the flow until air bubbles are not present in the water outflow. Do not try to run the Skimmer with real wet foam, since this will waste a lot of seawater.

Problem : The Skimmer was working but now there is no water in the Inlet Pipe.

Solution : Due to evaporation the water level in the aquarium has dropped below the height of the Strainer. Adjust the water level in your Aquarium.

Problem : The bubbles in the Skimmer are too large.

Solution : Make sure you are using the Skimmer in salt water. Skimmers of this design are not effective for freshwater aquariums.

Problem : Particulate matter is collecting inside the Skimmer.

Solution : This is normal however if the quantity is excessive it is time to clean the Main Body.

Problem : The Skimmer is new (or just cleaned), and doesn't seem to be skimming properly.

Solution : If it's new, clean it with soap and water and rinse thoroughly with hot water. If it's just been cleaned re-rinse with water. Allow the skimmer to run for 48 hours before worrying. Skimmers react to changes in water density; soap and other chemical residue from the molding process. While this is safe for your aquarium, it does impede the Skimmer's efficiency for a few days. Allow a 2 day break in time.

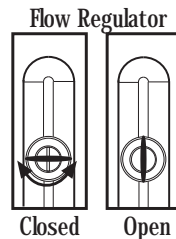
- g) If an air pocket remains in the Inlet Pipe, rotate the Flow Regulator to the closed position. The water flow will reduce and the air will be sucked into the Reaction Chamber. Return the Flow Regulator to the fully open position.
- h) Disconnect the Upper Air Tube from the Priming Plug and connect it to the Hose Barb. Air will immediately be injected with the water flow into the reaction chamber, filling the 1st and 2nd stages of the Reactor with a concentrated air/water mixture. Adjust the Flow as described below.

Once the Inlet Pipe has filled with water (after Priming) it will remain full of water even if the pump is switched off therefore the Prizm will function properly as soon as power is restored. In the event that the siphon in the Inlet Pipe is broken, the Prizm will have to be primed as described above.

Surface Skimmer - Adjust the height of the surface skimmer such that normal evaporation will not cause the water level in the aquarium to drop below the level of the strainer. - Err on the side of caution i.e. set the surface skimmer lower than you expect. Setting the surface skimmer too high may result in the water supply to the Prizm being cut-off.

8. Flow Adjustment

Initially adjust the Flow with the Flow Regulator so that the water level in the Throat of the Reaction Chamber is just below the o-ring and that there are no air bubbles in the water returning to the aquarium. Due to various aquarium conditions the above setting may produce a wet instead of dry foam causing "Over skimming", wasting a lot of seawater.



The performance of skimmers are affected by changes in the aquarium water chemistry, which occurs regularly due to feeding, addition of supplements, changes in salinity due to evaporation, changes in the bio-load and general tank maintenance.

Monitor the performance of the Prizm, making small adjustments to the flow as necessary. During approximately the first three days after installation, the Prizm may remove a lot of relatively light colored waste. As the Prizm cleans up your tank, less, but more concentrated material will be skimmed off. The daily amount removed will generally stabilize and the ideal flow setting for your aquarium will be established.

9. Maintenance

To ensure a high skimming efficiency the following maintenance should be carried out on a regular basis:

The collection cup, especially the part through which the foam rises

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.

- III) Close supervision is necessary when any appliance is used by or near children.
- IV) To avoid injury, do not contact moving parts.
- V) 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.
- VI) 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.
- VII) Do not install or store the appliance where it will be exposed to the weather or to temperatures below freezing.
- VIII) Make sure an appliance mounted on a tank is securely installed before operating it.
- IX) Read and observe all the important notices on the appliance.
- X) 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

4. Assembly Instructions

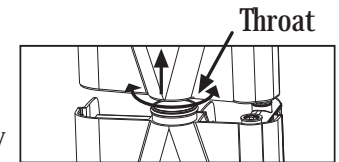
Since the Prizm is a Hang-on unit, all of the parts are connected with o-rings to ensure waterproof seals. In addition to the o-rings the Pump and Inlet Pipe have bayonet style connectors to fix them in the correct position for operation.

Before using, familiarize yourself with the components by disassembling and reassembling the unit as described hereafter.

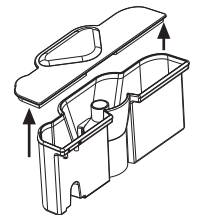
Collection Cup

An o-ring located on the Throat of the Reaction Chamber holds the Collection Cup in position above the Main Body.

To remove/replace the Collection Cup simply pull/push the Cup with small back and forth rotations.



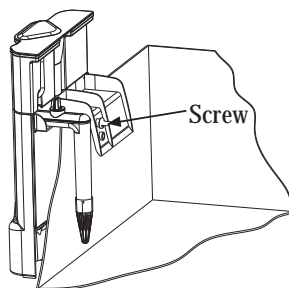
The Collection Cup Cover is removed by pulling it upwards and away from the Cup.



6. Installation

The Prizm is designed to be hung on the outside of the aquarium with only the Inlet Pipe submersed in the aquarium water. The Pump is submersible and therefore the Prizm can be safely installed in a sump.

Select a position on either the back or side of your aquarium that allows for easy access to the Flow Regulator and a good view of either the front or back of the Reaction Chamber Throat. The Collection Cup should also be readily accessible as it must be removed regularly for draining the collected waste. The water level in the aquarium should be no more than 4" (10 cm) below the edge from which the Prizm is to be hung. With the Prizm in its desired position, use the Fixing Screw provided in either of the threaded holes to firmly attach it to the aquarium wall.



7. Operation & Priming

Ensure that the Inlet Pipe and Pump have been installed correctly on the Main Body (as described above) so that both connections are watertight.

When assembling the Prizm for the first time it is advisable to test the integrity of the seals by filling the Prizm with freshwater through the Throat while holding it above a sink.

There should not be any water in the chamber above the Inlet Port.

- Fix the Prizm (without the Collection Cup) in its desired position with the Fixing Screw.
- Pour approx. 1" of aquarium water into the 1st stage of the Reaction Chamber.
- Assemble the Collection Cup in position above the Main Body and attach the free end of the Upper Air Tube to the Priming Plug on the Collection Cup.
- Set the Flow Regulator on the Inlet Tube Assembly to the fully open position. (i.e. perpendicular to the Main Body)
- Plug the power cord of the pump into the power outlet socket ensuring that the power cord has a drip loop.
- The Pump will begin to draw water into the Inlet Pipe until all of the air has been expelled at which point the Reaction Chamber will fill with water. Thereafter the water will flow back to the aquarium through the cascade return. This process should take between 20 seconds to 1 minute. If the Inlet Pipe does not fill with water see Troubleshooting hereafter.

Installation and Operation Manual For Red Sea's Prizm Skimmer

1. Introduction to Protein Skimming

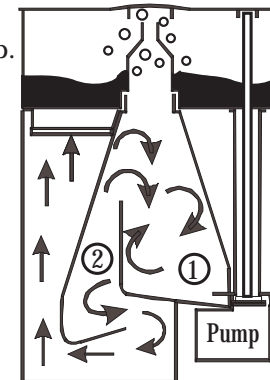
Protein skimming removes suspended or dissolved organic materials from the aquarium water by a mechanical process called foam fractionation. These materials consist of protein fragments and other waste, produced by the living organisms in the marine aquarium. Since these are potentially harmful to the aquarium inhabitants, rapid removal is essential.

The waste products are surface active substances (surfactants), which assemble at air/water surfaces in a one molecule thick layer. Inside a good Protein Skimmer a very large air/water contact area is created by blowing numerous fine air bubbles into the seawater. Protein molecules and other organic matter assemble on the surface of these bubbles. As the protein covered bubbles rise to the water surface of the Skimmer, a protein rich foam is formed, which is pushed into the collection cup, by the constantly administered air.

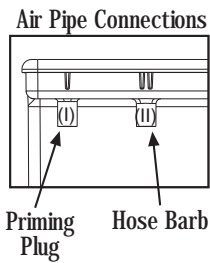
The great advantage of Protein skimming lies in the fact that as waste material is removed, it is separated from the water flow. In contrast, the particulate matter collected in a mechanical filter, stays in contact with the water flow and if not removed breaks down, increasing the organic loading of the aquarium.

2. The PRIZM Principle of Operation

The Prizm Skimmer consists of 4 components; Main Body, Collection Cup, Inlet Pipe and Pump. The Prizm is designed as a complete hang-on skimmer that combines an efficient 18 blade Turbo air/water injector together with Red Sea's (patented) convergent-divergent flow technology Reaction Chamber. Water and air are sucked into the skimmer through the Inlet Pipe by the 18 blade air/water mixer, which has been designed to generate the optimum ratio between the water/air flow rates, producing a constant stream of super-fine air bubbles in a homogenous air/water mixture.

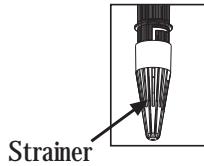


The Air used by the Prizm is channeled through the Collection Cup that acts as a sound damper, significantly reducing the noise of the Air and Water mixing in the powerful TurboJet injector. The Collection Cup has a Hose Barb (II) to connect the air intake to the Injector for regular operation and a Priming Plug (I) for start-up as further described below.



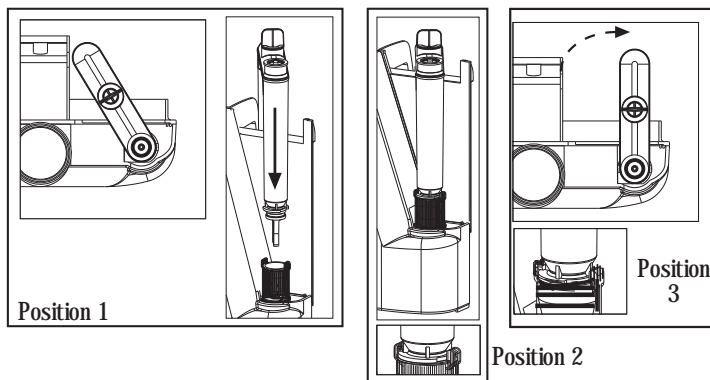
Inlet Pipe

In addition to being the water inlet, the Inlet Pipe houses the Air Inlet Tube and Flow Regulator. A strainer is provided on the aquarium side of the Inlet Pipe to prevent large particulate matter or livestock from inadvertently being sucked into the skimmer. Attach the Strainer to the Inlet Pipe by aligning the pins on the inside of the Strainer with the slots on the Pipe. Push the Strainer onto the Pipe and rotate to lock into position.



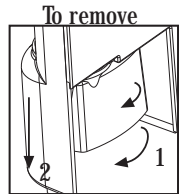
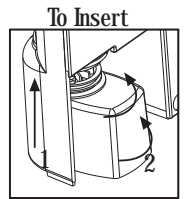
To attach the Inlet Pipe to the Main Body

Remove the Collection Cup from the Main Body and place the Inlet Pipe above the Inlet Port in Position 1 as shown in the diagram below. With small movements clockwise and anti-clockwise of a few degrees, push the Inlet Pipe downwards until the Flange is in contact with the top of the Inlet Port as shown by position 2. After ensuring that the o-ring is seated correctly, lock the Inlet Pipe by rotating to position 3. (Note : wetting the o-ring prior to insertion will make it easier). Replace the Collection Cup and attach the Upper Air Tube.



Pump

The Pump is attached to the Main Body with a bayonet connector and sealed with an o-ring. To Insert, hold the Pump below the Pump housing so that it is perpendicular to the Body. Push upwards and rotate inwards 90°. To remove the Pump, rotate it outwards by 90° until it is perpendicular to the unit and pull downwards.

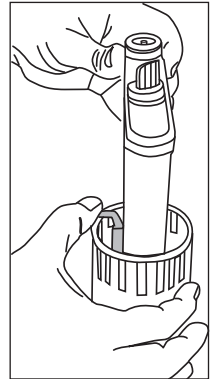


5. Prizm Accessories

Surface Skimmer – (included in Prizm Deluxe)

The adjustable height Surface Skimmer is an attachment to the Inlet Pipe (instead of the Strainer) that directs the more protein-loaded water from the water surface of the aquarium into the skimmer.

To connect the Surface Skimmer to the Inlet Pipe hold the Surface Skimmer below the Inlet Pipe. Align the notched rail on the Inlet Pipe with the Slot on the Surface Skimmer. Press the Ratchet lever outwards, towards the edge of the Surface Skimmer and slide it up the Inlet Pipe. The correct position for the Surface Skimmer should be set once the Prizm is installed on the aquarium.



Media Basket – (included in Prizm Deluxe)

The Media Basket allows for either Chemical or Biological filtration to be added to the Outlet Chamber of the Prizm Skimmer. To insert/remove the Media Basket either remove the Collection Cup or rotate it by 90 degrees. The Media Basket sits near the top of the Water Outlet and is held in position by the Collection Cup. To open the Media Basket press on the snap-lock located on the side of the basket and raise lid.

