

1. Introduction to Protein Skimming

Protein skimming is a method to efficiently remove waste material from seawater by absorption of dissolved organic substances to fine air bubbles. The substances involved (for example proteins leached out of fish food) tend to assemble at air-water surfaces. A protein skimmer creates an enormous air water surface as numerous fine air bubbles are blown in. The combined rising of the dirt covered air bubbles and the turbulence inside the skimmer create a stable foam that is pushed into a collection cup. The benefit of a protein skimmer lies in the fact that once the waste materials are skimmed off, they are excluded from the water flow, preventing bacteria from decomposing these organic compounds e.g. to nitrate and phosphate. Since it removes their food source, a protein skimmer also reduces the amount of harmful free floating bacteria.

2. Principle of Operation

When air is administered to the Berlin Air-Lift, a continuous stream of fine air bubbles draws aquarium water into the skimmer (air-lift effect). This air / water mixture turbulently flows in to the foam tube where a protein laden forms at the water surface. The constant flow of air forces the foam up into the collection cup, physically removing the waste from the aquarium water.

Any air bubbles remaining in the outward water flow will naturally return to the water surface by the change in water flow rates caused by the flared section at the bottom of the Lower Tube. The Flow Guide separates the water inlet and outlet flows resulting in increased skimming performance.

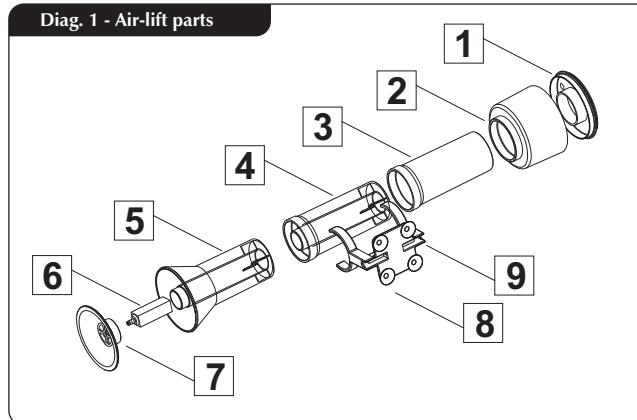
3. Features of the BERLIN AIR-LIFT

- Lime wood air-stone
- Separate water inlet and water outlet
- Triple air pass,
- Disassembles for easy cleaning.
- Compact design.
- Can be installed in aquarium, filter sump or filter compartment.

4. Assembly

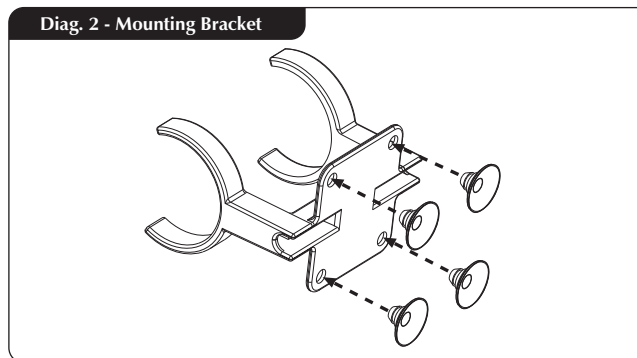
The body of the air-lift is provided fully assembled and consists of the following parts: **(diagram 1 - air-lift parts)**

- 1) Collection cup Lid
- 2) Collection cup
- 3) Upper (Foam) Tube
- 4) Extension tube (Air-Lift 90 only)
- 5) Lower tube
- 6) Air Stone
- 7) Flow Guide
- 8) Suction Cups
- 9) Mounting Bracket
- 10) Air Line

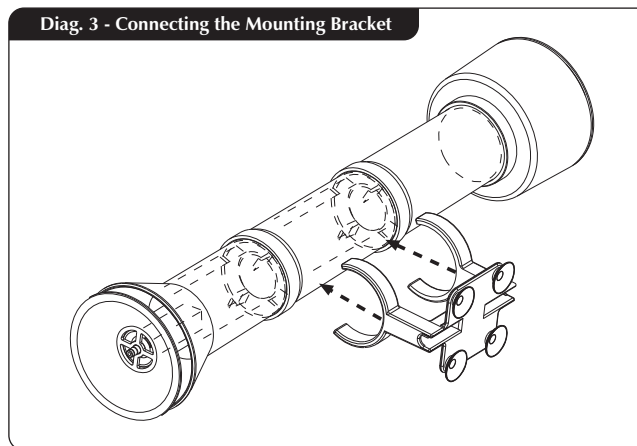


Mounting Bracket

1. Insert the suction cups into the 4 holes located at the corners of the Mounting Bracket **(diagram 2)**.

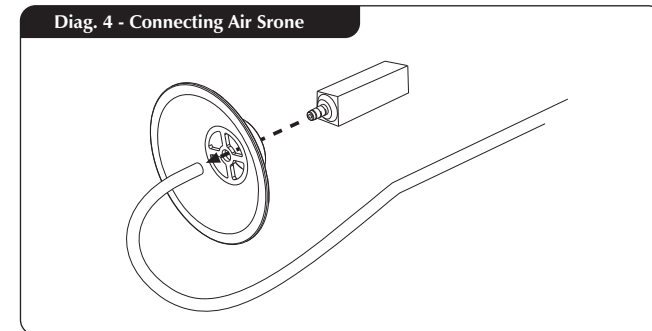


2. Push the the Mounting Bracket on to the body of the skimmer. It can be located anywhere on the height of the skimmer and should be set according to position of the skimmer inside your aquarium **(diagram 3)**.



Air Stone

1. Remove the Flow Guide from the assembled skimmer. A slight rotation of the flow guide may be necessary to separate it from the Lower Tube **(diagram 4)**.

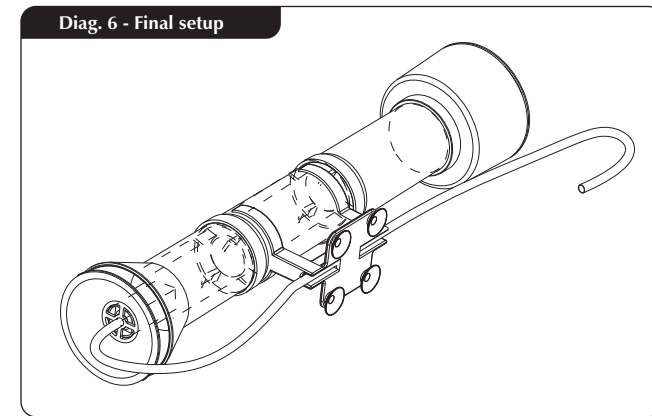
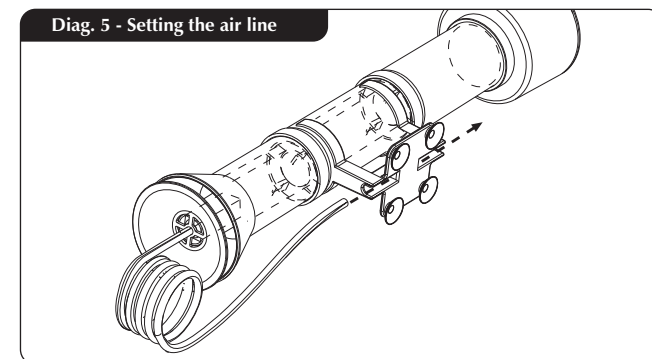


2. Push the hose barb of the Air Stone through the hole in the center of the Flow Guide.

3. Connect the Air Line to the hose barb of the Air Stone so that the Air Stone is now held firmly in place on the Flow Guide.

4. Push the Flow Guide back into position on the bottom of the Lower Tube.

5. Thread the Air Line through the channel provided in the Mounting Bracket **(diagram 5 and 6)**.



5. Installation

1. Immerse the Berlin Air-Lift in your aquarium so that the water level is at the level marker on the Upper Tube. Fix the skimmer in the desired position on the glass wall using the suction cups on the Mounting Bracket.
2. Connect the Air Line to your air pump. To protect your pump from back syphoning install a check valve between the pump and skimmer.
3. Turn on the air pump and adjust the airflow so that a stable foam rises into the foam tube. If very dilute foam is pushed into the foam cup, the airflow should be slightly reduced. It will take approx. 3 days to finalize the airflow adjustment, as the air stone will slowly become saturated with water so that more air bubbles are formed. Check the skimmer regularly and adjust the air flow until the skimmer removes an amber to dark brown colored waste.

6. Regular maintenance

1. The collection cup should be emptied and cleaned regularly. Also the upper part of the outer tube should be cleaned after removal of the collection cup. Any deposits of organic material in these places may prevent the forming of new foam.
2. The air stone should be replaced monthly to insure maximum performance. After replacement of the air stone the air supply may have to be readjusted.

7. Troubleshooting

1. A change in your aquarium may change the performance of your BERLIN AIR-LIFT. An increase in the amount of fish or use of certain reef additives may lead to "over skimming", whereby a lot of very diluted foam is formed. In this case temporarily reduce the airflow.
2. Other aquarium additives or certain aquarium maintenance activities may temporarily stop the foaming completely. In this case the airflow should not be adjusted, as the situation usually returns to normal after several hours.

Warranty

Red Sea Fish Pharm Aquarium Products Limited Warranty

The limited warranty sets forth all Red Sea Fish Pharm LTD (RSFP) responsibilities regarding your product. There are no other express or implied warranties from RSFP.

RSFP 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 RSFP (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, or operation, mishandling, misapplication, alteration,

modification or service by anyone other than an authorized RSFP service center.

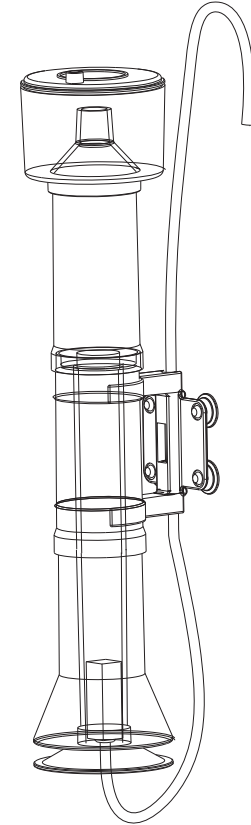
RSFP shall not be liable for incidental or consequential damages resulting from the use of this product, or arising out of any breach of this warranty. All express and implied warranties, including the warranties of saleability and fitness for a particular purpose, are limited to the applicable warranty 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.

Berlin Air-Lift



Made in Israel by Red Sea Fish Pharm Ltd.
P.O. Box 4045, Eilat

Red Sea Europe - ZA de la St-Denis
F-27130 Verneuil s/Avre, France
Tel: (33) 2 32 37 71 37

Red Sea U.S.A. - 18125 Ammi Trail
Houston, TX 77060
Tel: 1-888-RED-SEA9

51350

Installation & Operation Manual

