

Operational manual

Marine sources

High performance aquarium products

MS-200-2-6540



Marine Sources

Internal Type MS-200-2-6540

FOR AQUARIUM UP TO 2500 LITERS

2- Hailea 6540/33W

Special Technology

Needle wheel



Venturi Air Intake



Thank you for purchasing a MARINE SOURCES series protein skimmer
All of our skimmers are handcrafted using the latest tools and technology. It has
been specifically designed for the aquarium use and tested by professionals.
Before enjoying our high performance products, please read our operational
manual carefully.

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PARTS CHECK LIST

- ◆ TOP COVER
- ◆ COLLECTION CUP & O-RING
- ◆ WATER LEVEL ADJUSTER POLE
- ◆ 2 AIR HOSE
- ◆ 2 NEEDLE WHEEL PUMP & VENTURI AIR INTAKE
- ◆ 2 SILENCER
- ◆ 4 UNION & O-RING

Basic knowledge of protein skimmers

Protein skimmers are used mostly in saltwater aquaria to remove organic compounds from the water before they break down into nitrogenous waste. Protein skimming is the only form of filtration that physically removes organic compounds before they begin to decompose, lightening the load on the biological filter and improving the water's redox potential.

Protein skimmers extract dissolved organic waste products (proteins) from the aquarium by mechanically removing them through foam fractionation. Efficient skimmers remove proteins before they breakdown and pollute the water. Skimming enhances the quality of the aquarium's environment as well as its appearance.

The function of protein skimming

Protein skimming removes certain organic compounds, including proteins and amino acids, by using the polarity of the protein itself. Due to their intrinsic charge, water-borne proteins are attracted to the air/water interface. Protein skimmers work by injecting numerous tiny bubbles into the water column. The small bubbles present an enormous air/water interface for the protein molecules to cling to. The longer the bubble resides in the water, the more proteins it is able to attract. The action of a protein skimmer is often compared to the action of waves producing sea foam.

Besides removing proteins, our skimmers also remove other substances such as fats and fatty acids, carbohydrates, metals such as copper complexed with proteins, and certain trace elements such as iodide, in addition to particulates and other detritus, phytoplankton, and bacteria.

Although copper and other metals can be removed through protein skimming, the element is attached to organic molecules, and then removed with the organic. Oil molecules (fats) can cause skimmer foam to collapse, handicapping its efficiency to produce a dry foam.

About NEEDLE WHEEL technology

MARINE SOURCES protein skimmers with needle wheel technology are designed to being housed inside the filter sump. It is made from top quality cast acrylic, which allows the use of ozone. Injection is carried out directly to the central part of the needle wheel, producing excellent air-water mixture, extending the pump's useful life and minimizing vibrations.

INTERNAL TYPE protein skimmer

The internal MARINE SOURCES protein skimmers are high performance skimmers with design and production based upon high quality standard, maximum effect in spite of the very low height. This type of skimmer has to be placed inside the filtration plant. Very fine bubbles are obtained through the special pins and the air venturi intake in which works through the water flow. The skimmers are available in different sizes, suitable for all tanks.

The pumps for these internal protein skimmers have to be completely under water while they are running. An incorrect use is when the pumps are running dry which could result in the damaging of the pump. Due to the danger of overflowing, do not use the protein skimmer with new saltwater.

MS protein skimmer feature

1 The main characteristic of MARINE SOURCES MS protein skimmers is their **double reaction chamber**, which can make the bubble spread evenly over the upside reaction chamber and prolong the contact time between the water and the bubble. The special design of the **lotus root-shape funnel** can make the bubble be richer, thereby reach to the utmost performance.

2 **Absolutely low power consumption** The latest improved needle wheel impeller can efficiently lower the water frictional pressure in the working situation, thereby it can reduce the pump wattage consumption to the maximum 33 Watt

3 **Venturi air intake.** It not only can increase the air intake volume greatly and enhance the skimmer efficiency, but also can keep the pump running silence

Installation/ operation

1 Remove the protein skimmer body and all the assembly parts from the box according to the parts check list and check for damages

2 Get rid of any packing fabrication debris by rinsing the skimmer thoroughly..

3 Screw the union with pump to skimmer body according to the demonstration image as shown on page 2.

4 Screw the silencer to the skimmer.

5 Connect the air hose from venturi air intake to the silencer pipe..

6 Install the collection cup and top cover onto the protein skimmer tower by turning the locking-cap with o-ring. Make sure the o-ring is available and must keep smooth. .

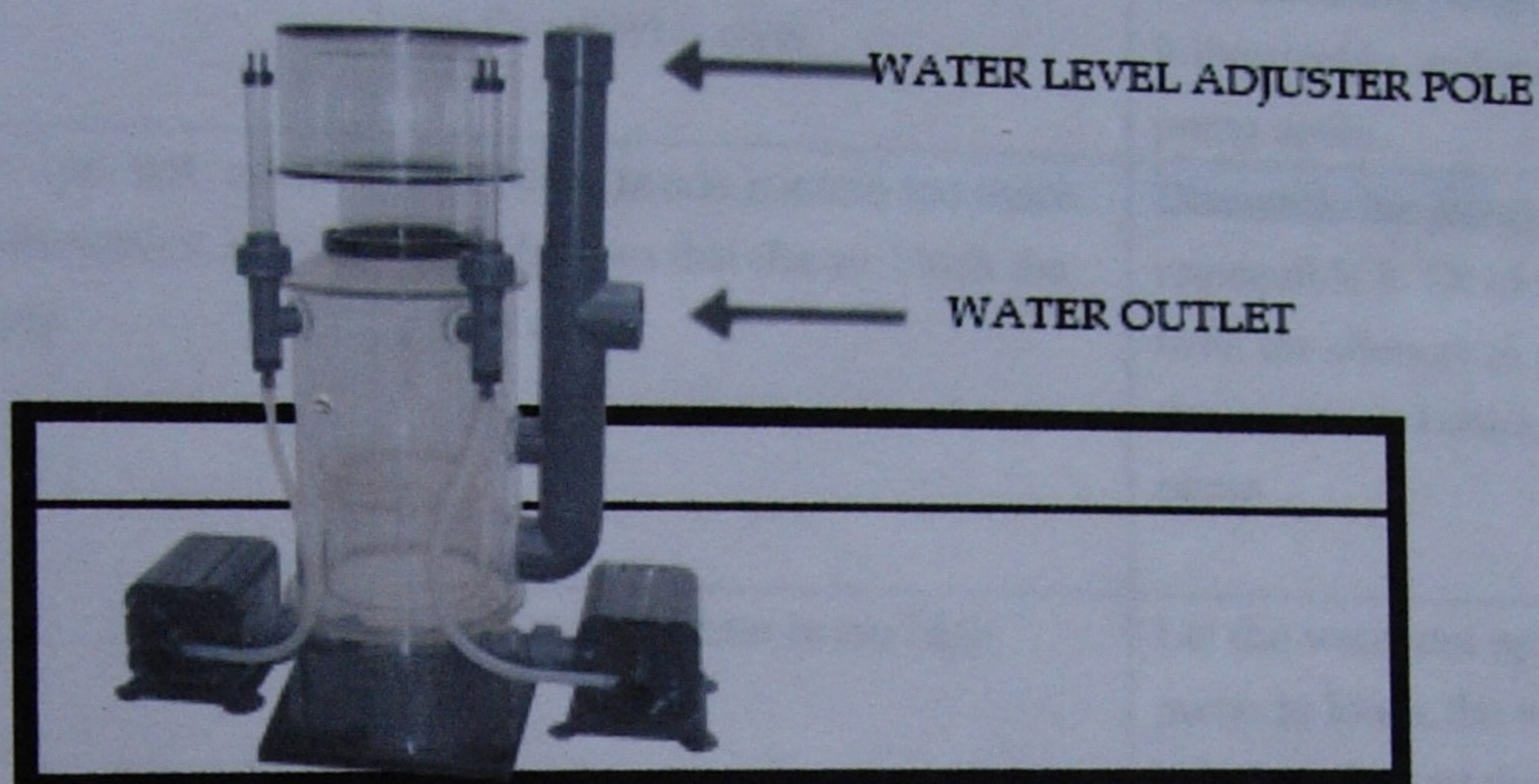
7 Place the water level adjuster pole into the skimmer outlet pipe.

8 Put the skimmer to the place which shown as below diagram.

9 Turn pump on and let it operate.

10 The water level in the skimmer can be adjusted by turning the water level adjuster pole.

INTERNAL SKIMMER INSTALLATION DIAGRAM



Maintenance

Collection cup: Depending on the organic load the cup should be clean daily to weekly. Once a week is minimum! Even the collection cup is not very full, cleaning it will enhance extraction substantially. Dry it thoroughly inside and out before placing it back on the skimmer.

Reaction chamber: This needs only occasional cleaning. We recommend intervals from 6 to 12 months.

Safety hint

- 1 Never allow the skimmer pump to run dry.
- 2 Never operate the pump with in an area where the intake of the pump will be in close contact with a liquid calcium supplement. It will be easy to cause the motor to seize and burn out!
- 3 Never touch electrical plugs with wet hands to connect pumps to outlet.
- 4 Never clean the protein skimmer with any chemicals that contain alcohol or ammonia.

Fault finding

Malfunction	Cause	Remedy
An excess of waste and bubble at 1 st time.	At the 1 st time using, the waste material and the bio-load is excessive in the aquarium.	Let skimmer runs 24-48 hours depending on the bio-load. Adjust the water level by water level adjuster pole to obtain better consistency in foam water from getting to the collection cup

The ratio between supplied air and the water volume is not correct	The air injection nozzle is clogged	Clean the air injection nozzle with a thin brush or blunt instrument.
	The pump chamber containing the needle wheel is dirty.	Dismantle the pump and clean it thoroughly, and assemble the pump again.
The pump can not restart after an interruption of the power supply	The pump inside contain too much air bubble so that the air block the pump work.	Dismantle the pump and reassemble it. Or blow the air from the silencer to get rid of the excessive bubble inside the pump.
	The water pressure is too high	Let the water out up to the pump to lower the water pressure. Restart the pump

Warranty

The skimmers have 1-year warranty on craftsmanship. We always guarantee the product if it has been installed correctly, is used for the purpose that was intended by us, is used in accordance with the operational manual. The warranty is not applicable on the consumable products.

Proof of purchase is required by presentation of an original invoice or receipt including the dealer name, the model item number and the date of purchase.

This warranty may not apply if the unauthorized persons or organizations have executed repairs, modifications or alterations, or damage is caused by accident, misuse or neglect.

We regret that we are unable to accept any liability for any consequential loss.

If your MARINE SOURCES product dose not appear to be working correctly or appears to be defective please contact your dealer.

Before calling your dealer please ensure you have read and understood the operational manual, if you have any questions your dealer cannot answer please contact us at www.marineart.com.cn

We reserve the rights to modify and adjust the specifications of our products without prior notification.