Operation Manual
for the AQUA MEDIC
Sea Water Aquarium System
PERCULA

The sea water aquarium **PERCULA** is a complete ready to use system with integrated internal filtration, protein skimmer, lighting and cabinet.
The cabinet has a cupboard/shelf combination finished in black ash veneer. The cabinet doors and aquarium trims are available in either Black or Russet Burr Elm laminate.

1. Product description

The aquarium system **PERCULA** is delivered in 2 sizes, Percula 90 and Percula 120.

Percula 90

- 1 x aquarium 90 x 60 x 61 cm, incl frame
- 1 x cabinet
- **aquastarlight** 1 x 150 Watt inclusive **aqualine 10000** bulb
- 1 x Protein Skimmer Turboflotor Percula
- 1 x post skimming trickle filter with circulation pump (1000 l/h)
- 2 x filtered circulation pumps (1000 l/h each)

Percula 120

- 1 x aquarium 122x 66,5 x 66 cm, incl frame
- 1 x cabinet
- **aquastarlight** 2 x 150 Watt inclusive **aqualine 10000** bulb
- 1 x Protein Skimmer Turboflotor Percula
- 1 x post skimming trickle filter with circulation pump (1000 l/h)
- 2 x filtered circulation pumps (1000 l/h each)

Not included are a heater stick, a wall mounting for the lighting system, a timer and a socket board.

The performance of the required heater stick depends on the temperature of the aquarium environment. If it is installed in an unheated room, it should have a power output of approx. 250 Watt. In heated rooms, 100-150 Watt are sufficient.

The luminary **aquastarlight** can be fixed by using chaines, wire cables or our wall fastening **aquawall**. The lamp must not be positioned directly on the aquarium but should be fixed 20 cm above the water surface.

2. Construction of the cabinet

The assembly of the cabinet is done according to the enclosed drawing.
Take care that the bore-hole of the cabinet plate is located on the right side of the cabinet. Also the door behind which a socket board can be positioned, has to be fixed at this side.

3. Set-up of the aquarium

The aquarium can be placed directly onto the cabinet. Beforehand, any dust on the plate should be removed to avoid a bursting of the bottom sheet caused through grains of sand or other coarse particles.
The cable shaft of the aquarium must be positioned above the bore-hole of the cabinet.

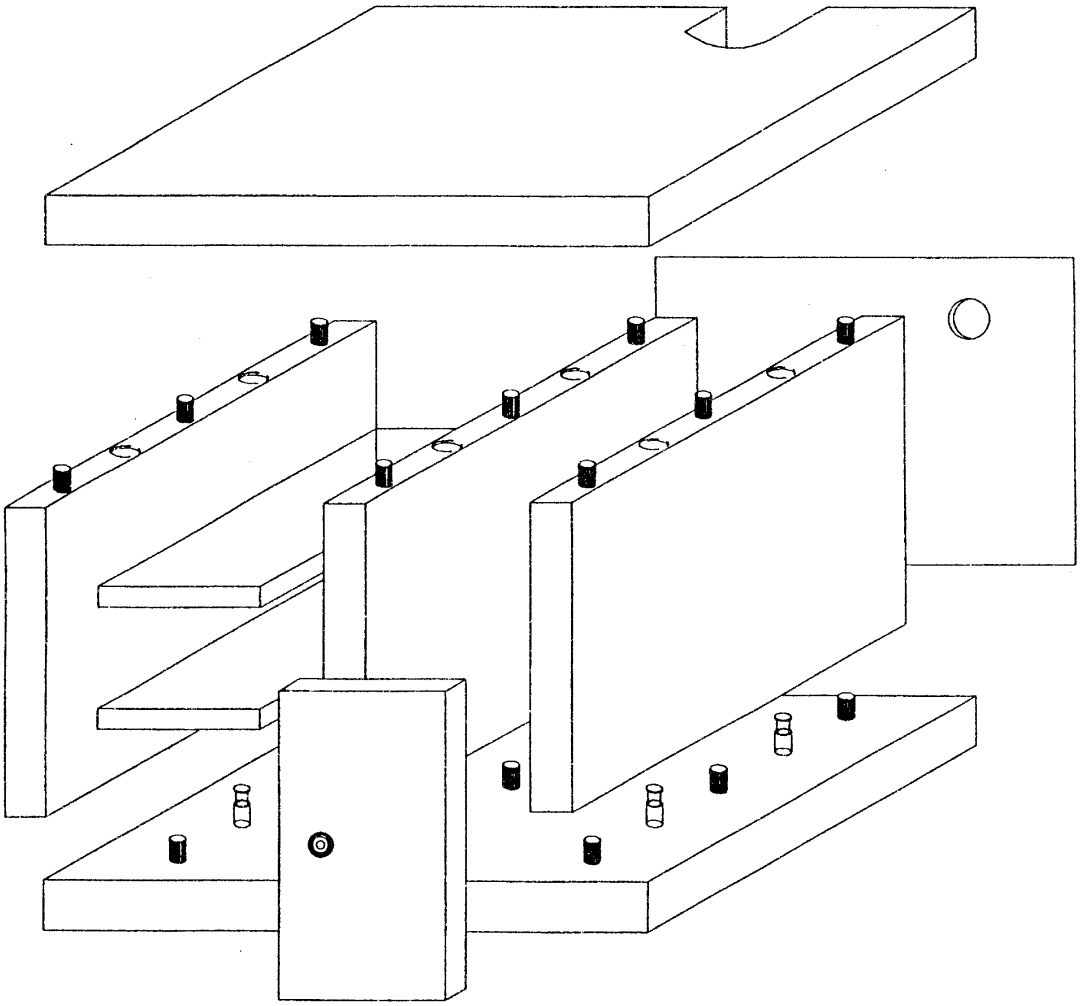


Fig 1: Cabinet

part list

1 bottom plate
1 lid with cap
2 inlaid plates
2 wall plates
1 wall plate with hole for hinhe
1 door
1 back panel
18 dowels
12 connecting pins
4 pins for inlaid plates
2 hinges
1 knob
nails

view of aquarium

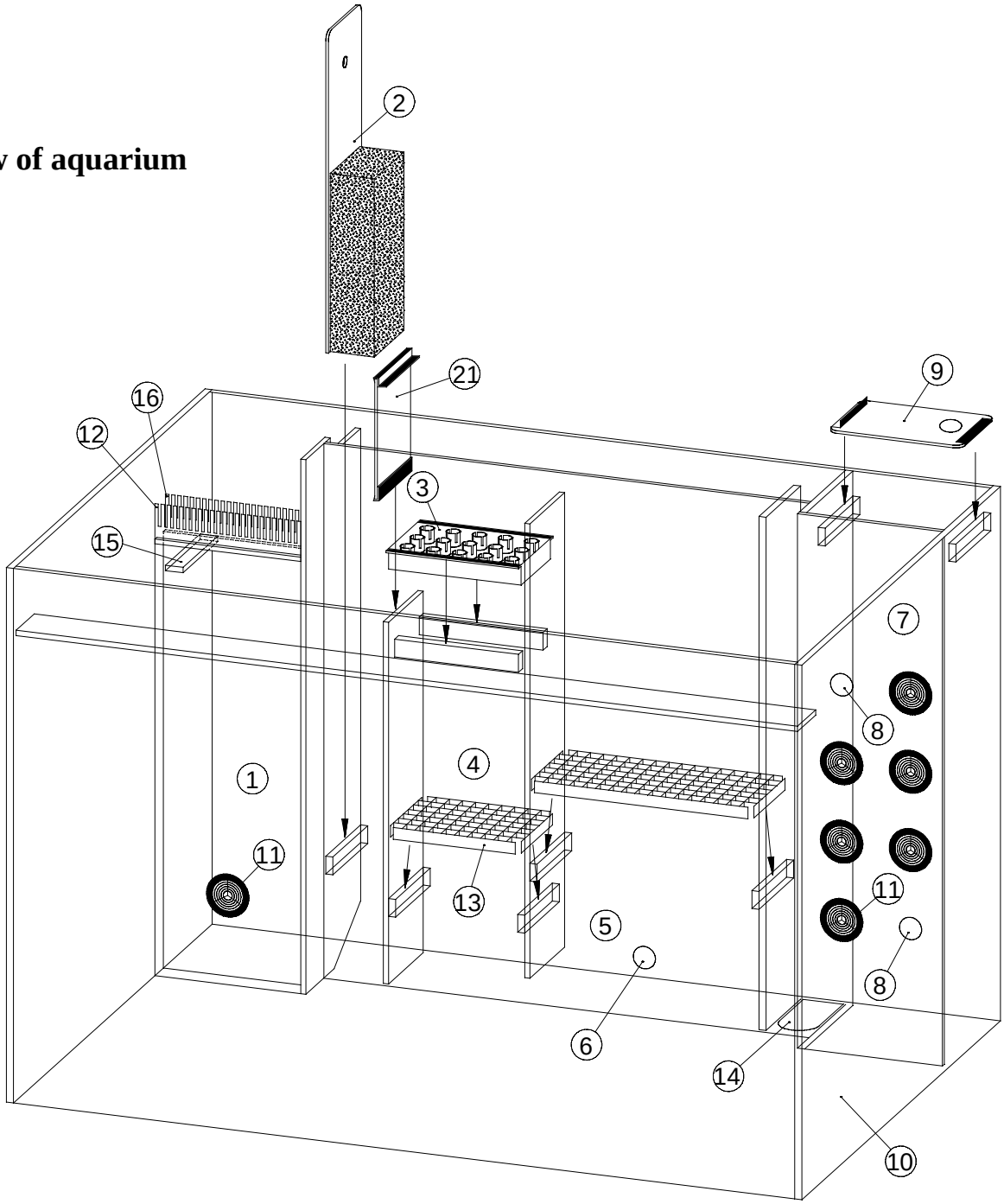


fig 2:

1. inflow compartment
2 prefilter sponge,on plastic plate
3.trickle plate
4.trichlefilter
5. clean water compartment
6. hole for backflow

7.compartment for current pumps

8. holes for backflow of the current pumps
9. lid, including hole for the heater (heater not included)
10 aquarium
11. inlet grate
12. overflow comb
13. grate
14. hole in the cable compartment
15. glas bar,
16. overflow comb to control the water level in the aquarium
21. adjustment plate for the water level in the inflow compartment (for the Turboflotor)

4. Protein Skimmer Turboflotor Percula

4.1. Product description

The ***Turboflotor percula*** consists of the following parts:

- Foam cup, cover and reaction-pipe
- a venturi pump inclusive
  AQUA MEDIC ***Needle wheel***

4.2. Parts of the Turboflotor percula

1. cup cover
2. foam cup
3. bayonet socket
4. 0-ring
5. elongation for foam pipe (option)
6. skimmer, reaction pipe
7. inner tube
8. inlow tube
9. power cable
10. bottom bayonet
11. holderwith rubber suction cups
12. venturi pump with needle wheel
13. air injection nozzle and air hose
14. air regulation valve
15. silencer
16. clip
17. holderwith rubber suction cups

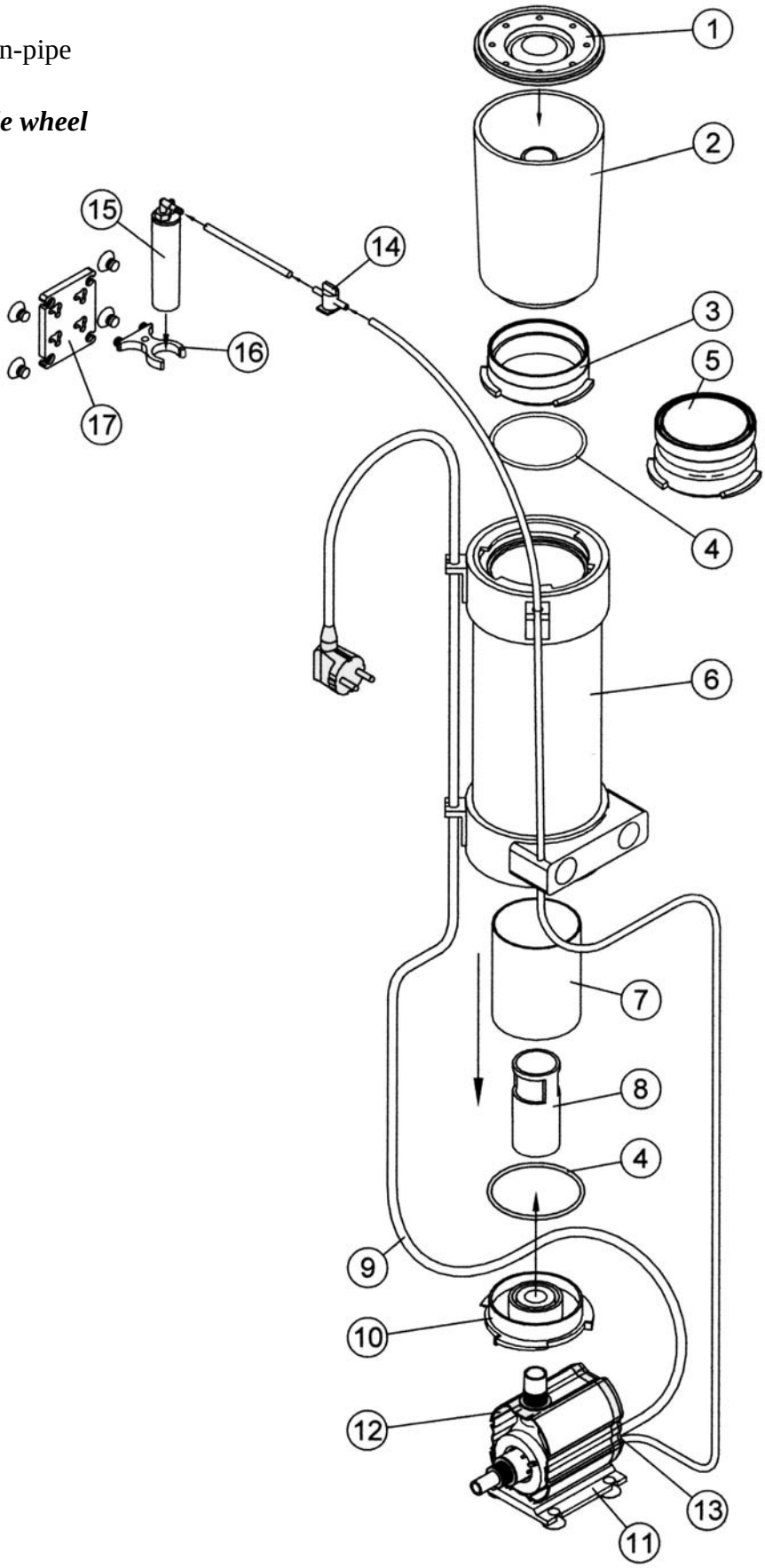


fig.3: Turboflotor percula

4.3. Theory

Protein skimming is a method of physical water treatment. It uses a phenomenon known from our daily experience: the adhesion of surface active substances to air water layers. If we add a drop of oil to a water surface, a thin film is produced with a thickness of only one molecule. Surface active compounds like proteins behave in the same way. The ***Turboflotor percula*** uses its air bubbles to create a large water surface for the waste substances to attach themselves to. These air bubbles are forced into the reactor-pipe in a such a way that they undergo a long contact time within the counter current. Enriched with organic substances, they rise to the top and form a firm foam, that is dehydrated and pushed into the collection cup. This method removes organic wastes from the aquarium water before they become part of the biological waste treatment cycle.

The venturi pump of the ***Turboflotor percula*** draws the water out of the aquarium or the filter chamber, mixes it in the pump housing with air, which is then cut into small air bubbles by the **AQUA MEDIC** ***Needle wheel***. This water/air mixture is pumped into the reaction pipe where the organic substances are taken up by the air bubbles. Foam is formed and is pushed into the foam cup. The cleaned water flows to the bottom of the skimmer back into the aquarium or into the filter chamber.

4.4. Set-up

The ***Turboflotor percula*** designed for the use in the Aqua Medic Percula aquarium. Of course, it can be used in any other well circulated filter chamber. For use directly in an aquarium, the skimmer is not recommended, because the maintenance of the pump may be difficult. In the percula aquarium, the skimmer is just placed in the firts filtration chamber of the filter – and can be started.

4.5. Starting / Performance

The system can be started when the ***Turboflotor*** is correctly installed. After switching the pump on, air is automatically drawn into the skimmer. To minimize the noise level, connect the air inlet tube with the blue connecting piece of the silencer supplied. Fix the silencer with the holding device on the aquarium or the filter system.

The needle wheel breaks the air into small bubbles. This method eliminates the greater proportion of the noise. The quantity of drawn air should be adjusted so that 75 % of the reaction pipe is filled with air bubbles. After the initial start, some hours may pass before the first foam is pushed into the collection cup. This is due to a reaction between the surface of the acrylic glass and the aquarium water. Equilibrium of electrical charges takes place. After a maximum of 24 hours, the foam should push evenly into the collection cup. The quantity of liquid and organic substances is dependent on the pollution of the aquarium.

Adjustments: Due to the construction, air and water mixing is automatic, and no adjustment is required. It is, however depending on the water level in the filtration chamber. In the percula aquarium, this water level can be adjusted by means of the adjustment plate for the water level in the inflow compartment to the trickle filter.This adjustment plate can also be used for the regulation of the skimmer. If the water is heavily polluted, and the foam production is huge, the bayonet socket (3) can be changed to the elongation piece (5). In this case, the cover of the percula will not fit. After a short time, the foam production should be self regulated, so the short bayonet socket can be used again and the elongation can be removed.

Air bubbles. If the skimmer is added to an existing aquarium there may be a high concentration of organic substances already dissolved in the water. This results in very tiny bubbles in the skimmer. These tiny bubbles remove the organic substances effectively, however it may be that some of these bubbles are drawn back into the aquarium. After a few days, the concentration of organic substances will have decreased to such low levels that this effect will have gone and the water flow is free of air bubbles.

Some types of frozen food may have the same effects. It is best to thaw and wash the food prior to feeding it to the fish. The air bubbles will stop after a short period by themselves.

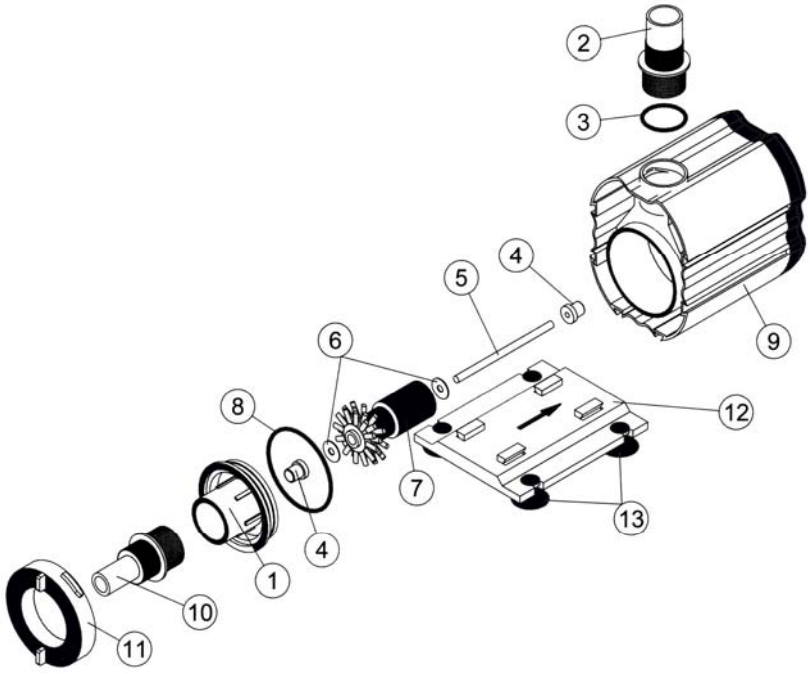
Wet foam. With freshly prepared sea water, after using water conditioners or at extremely high loading, excessive wet foam may be produced. This wet foam is forced into the cup, requiring more frequent emptying than normal. After approximately one day the aquarium load will be normal, and the skimmer will produce the correct foam.

Dry foam: Not enough foam or too dry a foam could be an indication that the needle wheel is dirty, or the venturi is obstructed. A thorough cleaning is recommended.

4.6. Parts of the Dispergator pump

Fig 4: Venturi Pump

1. lid of the pump housing
2. Pressure connection fitting
3. 0-Ring
4. Rubber bearing
5. Ceramic shaft
6. Washers
7. Rotor (Magnet and impeller)
8. 0-Ring
9. Pump housing
10. suction connection fitting
11. Bayonet
12. Holding plate
13. Rubber suckers



4.7. Maintenance

The collection cup should be cleaned regularly (daily or weekly, depending on the organic load). The reaction pipe of the skimmer needs to be cleaned only once or twice a year. The venturi pump should be cleaned at the same time. The pump has to be removed and the complete pump housing and the ***Needle wheel*** flushed with clean water. The same procedure should be undertaken with the air injection nozzle.

4.8. Problems

Problems may arise if the relationship between drawn air and water is not in correct.

The reasons could be:

- The air injection nozzle is clogged or the pump housing with the needle wheel is dirty. (remove and clean)
- In calcareous aquarium water, the nozzles often can get clogged.
- If the nozzle cannot be removed mechanically, the whole nozzle should be put into vinegar or citrus acid over night.

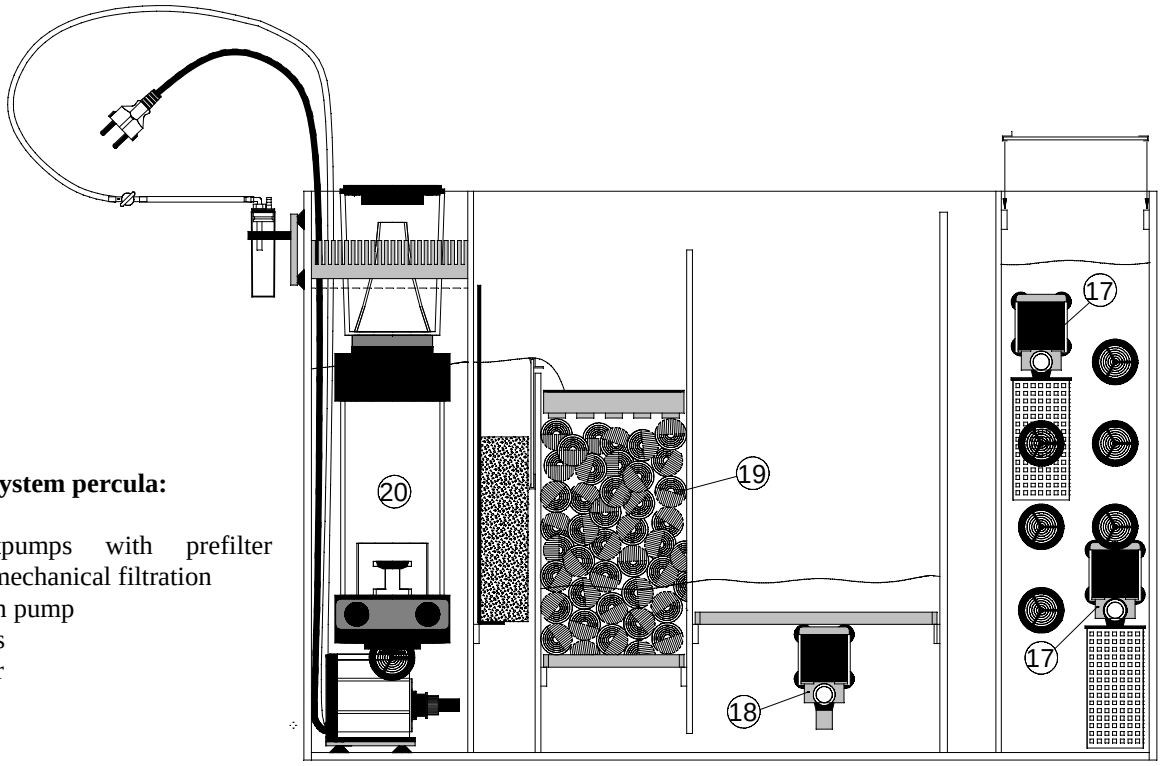


fig 5: Filtersystem percula:

17. currentpumps with prefilter sponges for mechanical filtration
18 circulation pump
19 Bactoballs
20 Midiflotor

5. Installation of circulation pumps and heater stick

The two filtered circulation pumps are installed in the right filtration chamber.

Put each of the tubes through the designated bore-holes, put the pump piece into the tubes and fix the pumps with suckers at the glass sheet.

The cover for the pump chamber contains a bore-hole for the inclusion of the heater stick (not included). If the cover is removed, i.e. for cleaning of pumps, the heater has to be switched off to avoid a burst through overheating.

6. Installation of trickle filter pump

The aquarium water flows via two combs and a bore-hole with grating into the skimmer chamber. The combs can be shifted. So the relation between the water quantity sucked on by the first comb and the quantity flowing through the bore-hole located further down in the sheet can be regulated. The higher the first of both combs is located, the lower is the share of surface water.

The water flows from the skimmer chamber into the prefilter. The prefilter contains a removable sponge.

The water flows further via a slide into the trickle filter.
The position of the slide regulates the water-level in the skimmer chamber.

IMPORTANT: The slide must be positioned deep enough that the water-level in the skimmer chamber is directly below the foam cup!

Then follows the pure water chamber containing a pump which transports the water back into the aquarium. Simultaneously, it carries out a reef flushing. This reduces deposits at inaccessible places behind the decoration. The pump has to be connected with a piece of tube and inserted into the chamber by putting the tube through the deisgnated bore-hole.

It has to be taken care that the water-level in the aquarium remains constant. Otherwise, the pump in the pure water chamber may temporarily run dry and causing strong noises. Therefore it is important to refill evaporated water regularly.

The filtration chamber can be extended by using our nitratereductor, calcium reactor or phosphate filter.

7. Operation of the aquarium

For the optimum health of your aquarium's livestock we recommend our **REEF LIFE** water conditioners:

- **REEF LIFE CALCIUM** provides calcium and trace elements to the aquarium.
- **REEF LIFE IODINE** is an essential trace element for corals.

The combination and regular addition of both conditioners is a guarantor for a successful sea water aquaristic.

To minimize algae problems through silicic acid, phosphate and nitrate, prepare the sea water with osmosis water. Sea salts supplied by ***AQUA MEDIC*** consist of salts of high purity. They help to keep the level of harmful substances low.
Phosphate problems can be solved by using the efficient absorber **antiphos**. **antired** proved to be good in eliminating slime algae.

Rock constructions and corals can be safely fixed with the epoxy putty **REEF CONSTRUCT** which cures under water.
The **REEF HOLDER** from ***AQUA MEDIC*** is a useful accessory for the creation of overhangs. With this holder rocks can be easily hanged up at the back wall of **PERCULA**.

8. Lighting – aquastarlight

- Technical Data
Power requirements:
230 Volt, 50 Hz
Dimensions: 90 x 12 x 7.5 cm / 26 x 4.8 x 3 inch
Bulbs:150 W **aqualine 10000** (colour temperature 10.000 K)

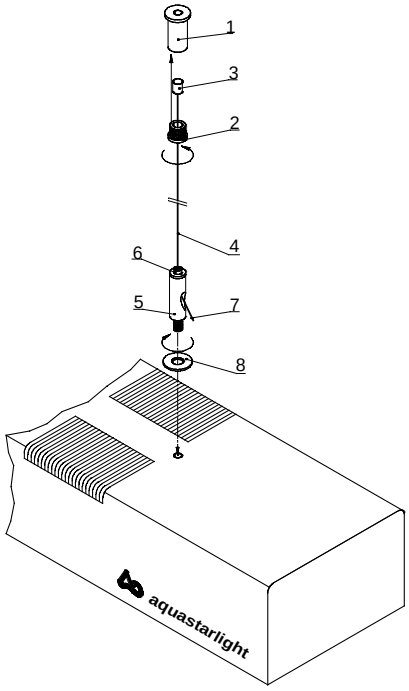
- Unpacking
Control the lighting system immediately after unpacking with respect to any damages. In case of complaints please contact directly your dealer.

- Safety advices

- The lighting system cannot be used as aquarium cover. It has to be mounted only above the aquarium. The minimum distance between lighting and aquarium must be at least 30 cm.
- The housing and protection glasses may become hot during operation. Be cautious when touching them!
- Before any replacement of bulbs disconnect the lighting system from the main connection and let it cool down. Afterwards take the lighting down.
- When cleaning, take care that no humidity passes the ventilation slits and enters the interior of the lighting system!
- Pay attention to a sufficient thermal exchange. Keep the ventilation slits always free!
- Do not try to repair the lighting system. Please send it in for checking, preferably with a list of defects.

Installation

Suspension: The lighting can be suspended either by using a steel cable or a chain (not included) or by using our wall mounting **aquawall** which is available as accessory.
The side panels of the lighting are equipped with a slit at the top (Fig. I). Because of the raster screen it is possible to align the lighting system exactly.



1.Ceiling plate 2. Retaining bush
3. Ferrule 4. Stainless steel wire
5. Luminaire attachment 6. Top cap
7. End of the wire. 8. Plastic washer

Pay attention to the required minimum distance of 30 cm to the water surface!

Electrical connection:
The **aquastarlight** can be connected to any safety socket or to a timer if automatic operation is desired. Lighting systems inclusive moonlight can be operated either with two timers or the ***AQUA MEDIC*** **Light Computer**.
Caution: If the mains plug of a lighting is pulled out during operation, note that high voltages remain at the contact pins for a longer time.
Avoid touching them!

- Replacement of bulbs

Disconnect the lighting from the mains connection and let it cool down.
Take the lighting down.
Unscrew one of the side panels and pull out the filter disc to the side.
The replacement of the bulbs differs depending on the type of bulb.

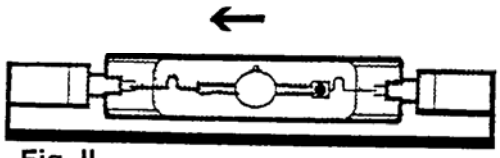


Fig. II

Removal: Pressing one base of the bulb against the spring pressure deeply into the holder (Fig. II) until it is possible to remove the second base (Fig. III).
Inset: Do not touch the cylindric part of the new bulb! Take it at the small side and insert it in a way that the small elevation on the cylindric part of the bulb shows to the reflector.

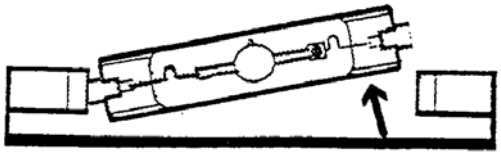


Abb. III

Inset: Do not touch the cylindric part of the new bulb! The small elevation on the cylindric part of the bulb must show to the reflector. Insert the new bulb and push the bases simultaneously into the holders.
Note: Fingerprints etc. on the cylindric part of the bulb can be easily removed with alcohol or
methylated spirit.

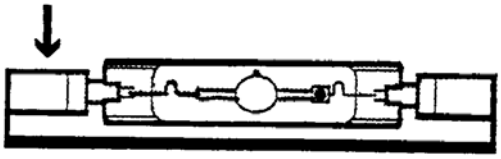


Fig. IV

- Maintenance and Care

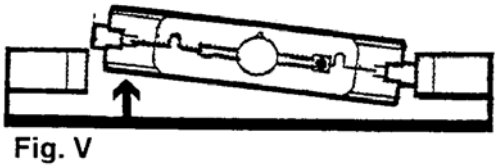


Fig. V

The bulbs have a life span of approximately 6,000 hours. This corresponds to around 1.5 years with a daily illumination time of 10 hours. It is recommended to replace the bulbs before this time because performance and colour composition change towards the end of the lifespan.
Clean the filter glass regularly (Caution: let it cool down!) from residues from water splashes and evaporation with a moistened cloth. Never use additional cleansing agents!
Note: A fuse is located on the upper side of the lighting (exception: 2 x 250 W) which ensures a switch-off of the lighting in case of any electric fault. This means an increased operational safety for the complete aquarium as in case of interferences only the lighting will be switched off.

9. Warranty

The tank is guaranteed watertight for three years in normal home usage.
The several devices are warranted for 12 months after date of purchase on material and production defects.
Claims by improper use will not be warranted. Our obligation under this warranty is limited to the free of charge repair or replacement of defective parts.
AQUA MEDIC is not liable for any consequential damages caused by the use of this product.
The bulbs are excluded from this warranty.
Warranty only by proof of purchase with the original invoice.

Technical changes reserved -