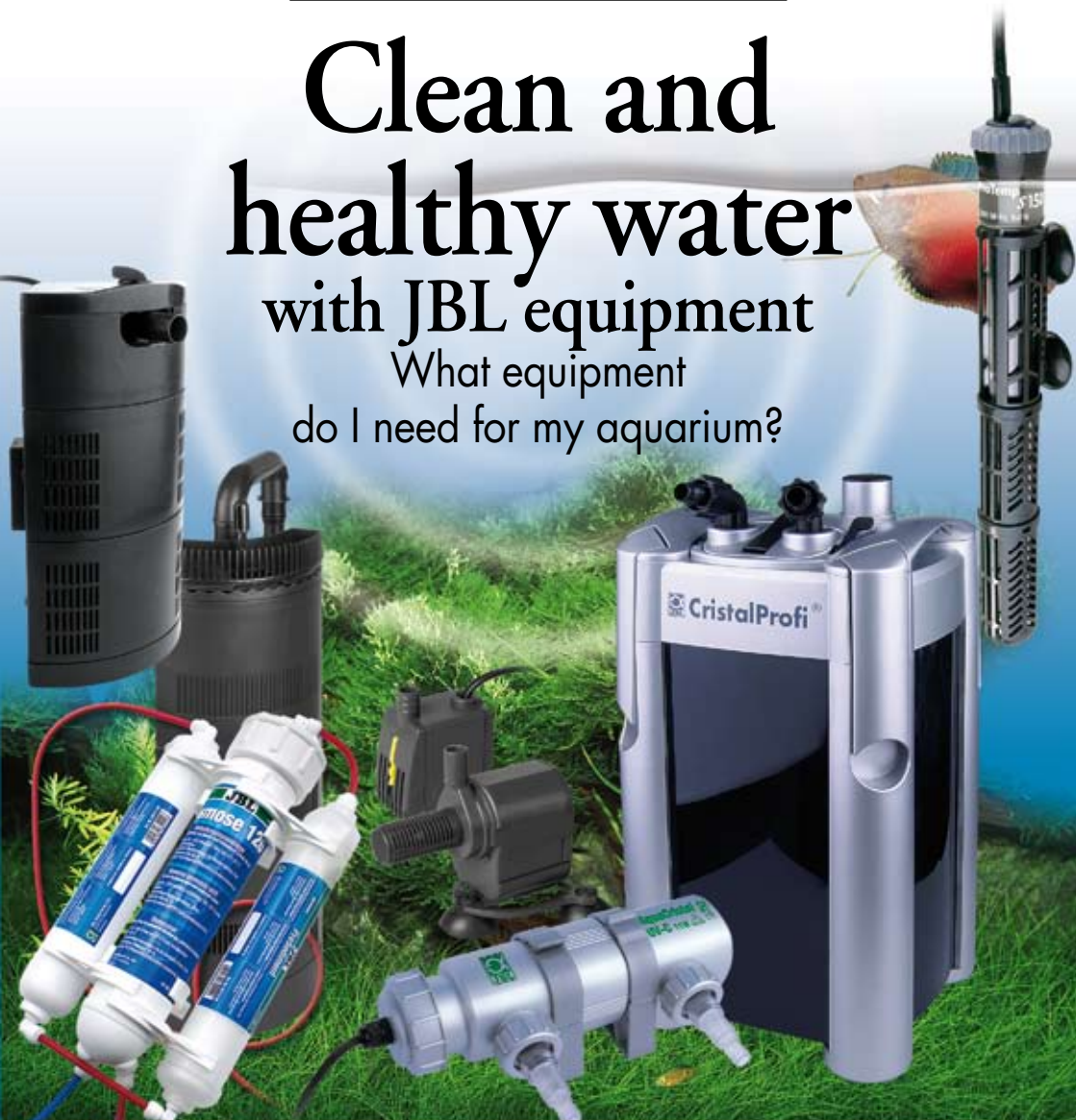


What - Why - How ?

Clean and healthy water

with JBL equipment

What equipment do I need for my aquarium?



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Introduction

All aquariums, from the smallest to the largest, need some degree of technical support to stay attractive and to function in the long term. This brochure describes the technical products designed by JBL for clean and healthy water. Don't be afraid that aquarium equipment might be too complicated. Not only scientists work in the research department but also aquarium-keepers who always check that the equipment is simple to install and operate.

Equipment such as CO₂ systems and ground heating can be found in the JBL Plant care brochure WWH No. 6. Lighting equipment

for aquariums is described in Brochure No. 7. Both brochures are, of course, also available to download on the JBL Homepage at www.jbl.de.

Saltwater: JBL CristalProfi Filters can be used in freshwater as well as in saltwater. For saltwater we recommend selecting a somewhat larger filter and supplementing it with a protein skimmer. This combination has also been used with great success by experts.

Which equipment for which aquarium size?

In general, the same principle applies as for buying an aquarium: the larger, the better! An exception to this is the heater, which should not be over-large as the automatic switching intervals would otherwise be too short. The following table is intended as a guideline to help you purchase suitable equipment. Look for your aquarium size in liters

or aquarium length and find the right equipment for your needs. In the case of filters, you can safely select a size larger. This gives you the advantage that the cleaning intervals are longer, and who isn't happy to have less work to do?



INTERNAL OR EXTERNAL FILTER?

This question is not so easy to answer and depends on several factors which are discussed in the following pages. One important point to begin with: no aquarium filter can keep an aquarium completely clean! To do that, a filter would have to be so powerful and large that it would cause a surging current in the water, far too strong for most fish to swim against. The job of a filter is rather to remove floating particles from the water and create favorable conditions for beneficial bacteria to settle and break down hazardous nitrogen compounds such as ammonium, nitrite and nitrate. 95 % of all bacteria in an aquarium which break down pollutants live in the filter. This is therefore the most important task of the filter. Bacterial cultures (JBL FilterStart / JBL Denitrol) should be added after the filter has been cleaned in order to ensure re-colonization by beneficial bacteria. In addition to the filter, therefore, a partial change of water should be carried out every 2 weeks using a sediment bell, (a floor cleaner such as JBL AquaEX Set, for example), to remove most of the dirt produced from the floor.

ARGUMENTS FOR JBL CRISTALPROFI INTERNAL FILTER:

Does not take up any room in the cupboard or stand inconveniently next to the aquarium. No hoses outside the aquarium which might be "re-arranged" by children or pets. Can be extended as modules, growing in size if a larger aquarium is acquired. Suitable for aquariums of up to 200 l contents.



ARGUMENTS FOR JBL CRISTALPROFI EXTERNAL FILTER:

Does not take up any room in the aquarium. Maintenance work can be carried out without disturbing the aquarium. Needs cleaning less frequently due to larger filter volume. Suitable for aquariums containing up to 600 liters.

SUMMARY:

External filters need cleaning less frequently and are also suitable for larger aquariums. However, if you have pets or children, it is probably better to avoid hoses hanging outside the aquarium and to use an internal filter instead, even though this takes up room in the aquarium.

Internal filter range JBL CristalProfi® i (i for internal)



With the JBL CristalProfi i Model you are selecting a highly modern internal filter which has many of the advantages of a professional filter system.

FEATURES AND ADVANTAGES – AN OVERVIEW:

ADJUSTABLE CAPACITY: adjust the pump capacity to suit your aquarium. For example, in thickly planted aquariums lower water output is preferred than in aquariums with cichlids.

EASY AND SAFE ANCHORING FROM THE OUTSIDE USING MAGNETS:

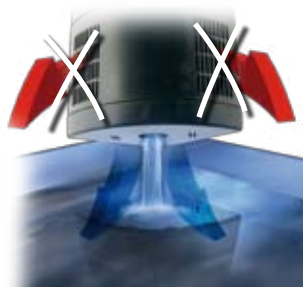
no more fiddling with loose suction holders, which at some point no longer hold the filter securely to the pane with the result that the crooked angle of the filter may direct water out of the aquarium.

Magnetic holders also have the

advantage that there is no gap between the filter and the pane where fish could get trapped.

WATER RETENTION SYSTEM IN THE FILTER CHAMBERS:

when the filter is lifted out of the aquarium to be cleaned, dirty water no longer flows back into the aquarium from the filter chambers. Instead the water flows through the filter material and a valve (patent registered) back into the aquarium. This also reduces the weight of the filter when it is removed.



ALTERNATIVE FILTER MATERIAL OPTION: (p 17)

it can sometimes be an advantage to use alternative filter material: e.g. active carbon to remove medication residue or a phosphate remover if algae has become too rampant. In many common internal filters, alternative



filter material cannot be used. With the JBL CP i range these solutions to problems are available as a specially designed accessory pack. In fact, any filter material at all can be used, as each filter basket has its own sieve hose.

EXTENDABLE MODULAR CONSTRUCTION:

If you wish to increase the volume of the filter because you have purchased a larger aquarium or would like to have to clean the filter less frequently, you can change the filter to whatever size you want by adding one or more modules (up to the maximum aquarium height).

FULLY ENCASED PUMP IN PUMP HEAD:

this enables you to use the filter in any position required.

The JBL CP i can even be operated lying flat in aqua-terrariums with very shallow water.

SWIVELING WATER OUTLET:

whatever corner the internal filter is placed in, the direction of the water flow back can be infinitely adjusted, directing the current in the aquarium. This is an advantage for tall plants such as Vallisneria.

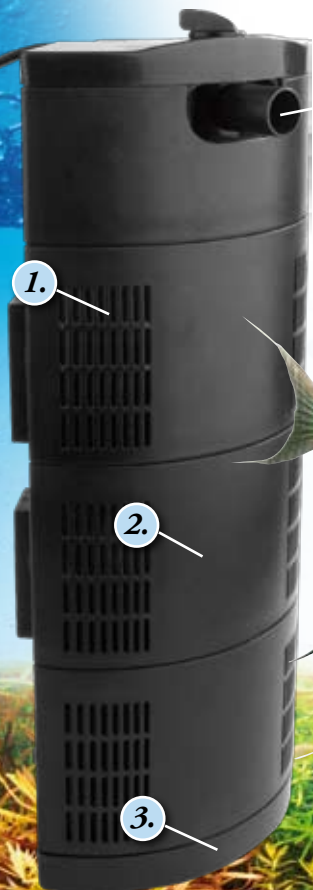
CLEANING THE INTERNAL FILTER:

This takes 10 to 15 minutes, depending on practice. The plug is disconnected from the mains and the filter lifted slowly above the surface of the water. A simple Velcro attachment holds the magnets in position.

During this procedure, clean water runs out of the bottom of the filter. Then the filter foam is removed from the individual filter baskets and rinsed in aquarium water which has been taken from the aquarium earlier. Tap water could also be used, but has the disadvantage that aggressive substances in the tap water destroy beneficial bacteria (hence the need for a water conditioner!) After cleaning, the foam is put back into the chambers, a few milliliters of cleansing bacteria (JBL FilterStart) added to the foam and then the filter can then be placed back in position in the aquarium. The magnets outside on the pane ensure that the filter can be put back in its original position.



How does the CristalProfi® i work ?



1. FROM THE AQUARIUM
Here the dirty water from the aquarium flows into the filter

2. 2-CHAMBER FILTER MODULE
Here the water flows through the inlet chamber into the filter chamber.



3. RETENTION SYSTEM FOR DIRTY WATER
When the filter is taken out of the aquarium only filtered water flows out from underneath.



4. BACK INTO THE AQUARIUM
Here the clear, healthy water is fed back into the aquarium.

What are the advantages of the CristalProfi® i 40 ?



1. *EXCELLENT BIOLOGICAL CLEANING POWER DUE TO SLOW WATER FLOW*
2. *LONG SERVICE LIFE DUE TO T-PROFILE CARTRIDGE*
3. *EASY TO PLACE IN AQUARIUM, NO SUCTION PADS REQUIRED*
4. *COMPLETE WITH HOSE + AIR PUMP*
5. *ESPECIALLY SUITABLE FOR YOUNG FISH (ARE NOT CAUGHT IN SUCTION CURRENT)*
6. *EXTENDABLE*

An overview of the complete CristalProfi® i range



External filter range JBL CristalProfi® e (e for external)

The JBL external filter range has several advantages which are not immediately obvious: in external filters the water usually flows from the bottom through to the top, although the water enters at the top. Inside the filter, the “dirty water” goes to the bottom and then flows from the bottom to the top through the filter materials. As a result, the filter materials at the bottom are always the dirtiest, reducing the water flow and needing most frequent cleaning.

In the JBL CP e external filter series a technical breakthrough has been achieved: this filter series has a pre-filter in the uppermost part of the filter (patent registered), which retains the coarsest dirt, preventing the other filter material becoming dirty so fast. The outstanding feature: due to its position in the top part of the filter, the pre-filter can be easily taken out and cleaned when the filter is opened. This only takes a few minutes and saves the aquarium-keeper the trouble of remov-

ing all the filter baskets to reach the bottom basket. Depending on the amount of dirt in the aquarium, the filter only needs a full clean after the pre-filter has been cleaned 3-5 times!



FEATURES AND ADVANTAGES OF THE JBL CRISTALPROFI E SERIES – AN OVERVIEW:

INTEGRATED PRE-FILTER, POSITIONED AT THE TOP, can be cleaned in minutes, significantly prolonging the service life of the other filter material.

READY TO USE:

attach the hoses, prime the start button of the filter with aquarium water to flood it, and plug into the mains power – that’s all, the filter is up and running!

VERY LARGE FILTER VOLUME

(up to 25 % more) in comparison with other external filters: that means the JBL external filter has to be cleaned less frequently and has a greater cleaning capacity.

WITH START BUTTON:

the filter automatically pumps in aquarium water when the start button on the top of the filter is activated. This means that awkward siphoning is no longer needed.

READY PREPARED FOR

SPECIAL FILTER MATERIALS:

the foam inlays inside the filter baskets have



a round plug which can be removed and replaced with special filter materials such as active carbon, peat or phosphate remover. The unique feature: even when the special filter material becomes clogged with time, water can still flow freely through the foam surrounding it.

cocks. Only then, by means of the large central stopcock, can the entire unit of hose connections on the filter be lifted to be removed. This mechanism prevents the unit being removed by mistake when the hoses are open. The stopcock on the outlet hose can also be used to regulate the flow capacity.



SUPPLEMENTARY RANGE OF FILTER MATERIALS:

For the JBL CristalProfi e Filter series there is a range of supplementary filter materials which are specially cut to fit. From replacement foam to nitrate remover, this series provides everything ready to use. Nothing needs to be cut up or made to fit any more. The filter material concept is designed for immediate use.

CONNECTION SYSTEM, WITH PATENT APPLIED FOR,

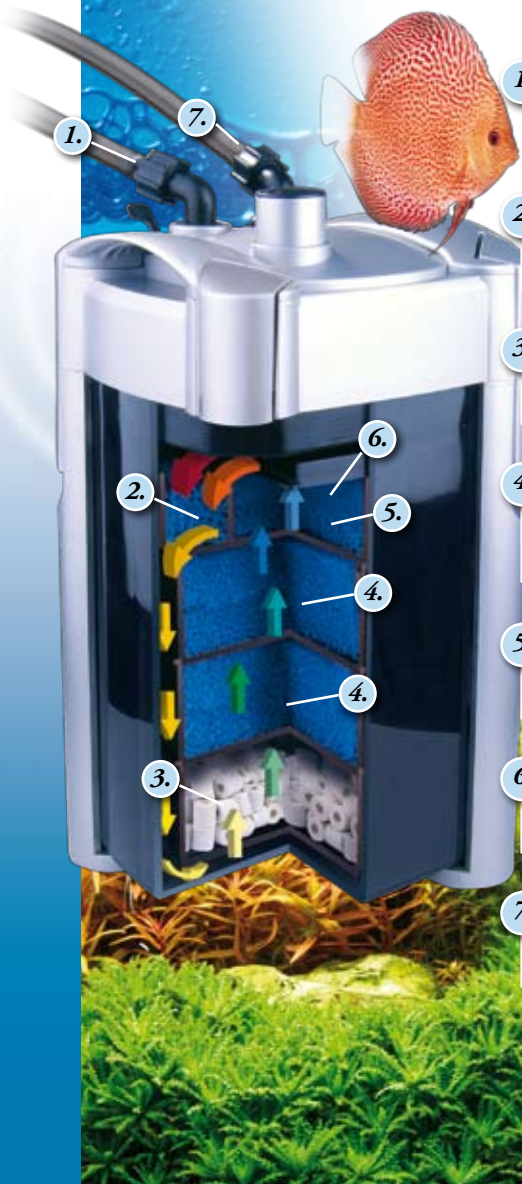
hoses with safety lever and adjusting mechanism: sounds complicated, but offers huge advantages together with safety. To clamp off the hoses from the filter, for example, e.g. if a full clean is to be carried out in the bathroom, the hoses can remain on the aquarium as a closed unit. The hoses on the filter are first closed with two separate stop-

NO DOWN-PIPE IN THE FILTER:

contrary to other external filters, all JBL CristalProfi e external filters have no awkward pipe in the middle. The pipe prevents the use of filter materials and makes handling more difficult. In the JBL Filter, after passing through the pre-filter, the "dirty water" flows down the side past the filter baskets instead of through the down-pipe.



How does the CristalProfi® e work ?



1. FROM THE AQUARIUM
Here the dirty water from the aquarium flows into the filter.

2. PRE-FILTER ON TOP
Here coarse particles of dirt are removed from the water. Foam T-profile, 10 ppi*

3. CERAMIC RINGS
Mechanical-biological filter material, channels water

4. BIOLOGICAL FILTER FOAM
Biological main filter material: foam mat 20 ppi*
The modular pad can be used as an alternative here.

5. BIOLOGICAL FILTER FOAM
Biological main filter material: foam mat 20 ppi*

6. BIOLOGICAL FINE FILTER FOAM
Mechanical-biological fine filter material: foam mat 30 ppi*

7. BACK INTO THE AQUARIUM
Here the clear, healthy water is fed back into the aquarium.

*ppi: pores per inch; 1 inch = 2.54 cm

Technical Data for CristalProfi® e



CristalProfi® e700

180 x 210 x 350 mm


 700 l/h

 60-160 l

13 W

230 V / 50 HZ


 6,1 l

 1 x 1,1 l
2 x 1,2 l

CristalProfi® e900

180 x 210 x 405 mm


 900 l/h

 90-300 l

15 W

230 V / 50 HZ

 7,6 l

 1 x 1,1 l
3 x 1,2 l

CristalProfi® e1500


200 x 235 x 460 mm


 1500 l/h

 200-600 l

35 W

230 V / 50 HZ

 12 l

 1 x 2,3 l
3 x 1,9 l



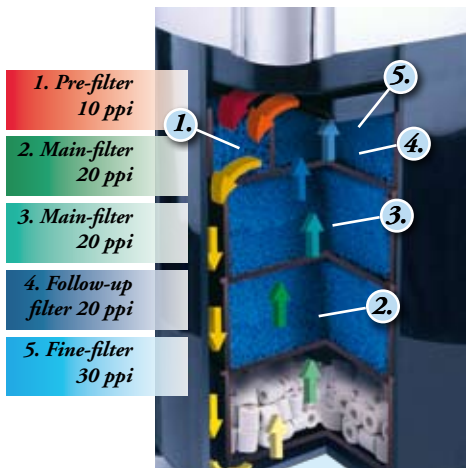
Filter materials

As already described in the question of whether to use an internal or an external filter, the main task of the filter is to remove floating particles from the water and provide room for beneficial bacteria to settle in order to break down pollutants. All JBL CristalProfi Filters come ready-fitted with top quality foam which retains floating particles as well as providing a large surface for bacteria to settle. Foam with three different pore sizes is used – according to the purpose: the coarsest foam with a pore size of 10 ppi (pores per inch) does its job in the pre-filter of the JBL CP e. In the second or second and third filter baskets from the bottom, the medium-pored

here and not, as in the external filter, from the top to the bottom.

FILTER MATERIAL WITH FOAM EDGE

The following filter material sets are constructed according to a new two-stage principle which is specially designed for the JBL CristalProfi Filters of the e-Series. It consists of a core area and an edging. The core area is made up of relatively fine-grained special filter material, which needs a fine mesh net against the edging. The edging is made of medium-pored foam. Water flows slowly through the special filter materials for optimum effectiveness, whilst at the same time the total flow of water through the filter is obstructed as little as possible through the medium-sized pores of the edging. The size and volume of each set exactly fits a filter basket of the JBL CristalProfi e-series.



foam with 20 ppi is used and in the last (the top) filter basket is the medium-pored and finally the fine-pored foam with 30 ppi. All JBL internal filters use medium-pored foam with 25 ppi exclusively, as the water flows evenly over the entire surface





JBL CARBOMEC ULTRA PAD

Set with high-capacity active carbon. Removes medication residue, water discoloration and high molecular pollution from fresh and saltwater. Practically no increase in conductivity and phosphate level of water.



JBL NITRATEx PAD

Set with nitrate eliminator. Eliminates nitrates in freshwater. Prevents or eliminates the growth of undesirable algae by reliably removing the nutrient, nitrate, in freshwater. Ion exchange resin, which can be regenerated with cooking salt.



JBL PHOSEx ULTRA PAD

Solves algae problems by reliably eliminating phosphates. Prevents or removes undesirable algae growth by eliminating the main nutrient, phosphate, from fresh and saltwater.



JBL CLEARMEC PAD

Pollutant eliminator for crystal-clear water without algae problems. A mixture of clay balls and special resin removes the pollutants, phosphates, nitrates and nitrites from freshwater, preventing undesirable algae growth. The clay balls provide favorable conditions for colonization by cleansing bacteria and also promote the biological breakdown of pollutants. The result is crystal-clear and healthy water.



JBL COMBIBLOC

Set with pre-filter pads and fine filter foam
Filter foam pads for uppermost basket of the JBL CristalProfi® e-range.
2 (+ 2 extra) pre-filter T-profile pads (10 ppi), 1 medium-pored foam mat (20 ppi), 1 fine-pored foam mat (30 ppi)



JBL UNIBLOC

Bio filter foam pads for the JBL CP e-range
Pore width specially designed for bio filtering (bacteria colonisation).
Filter foam pads for the middle basket of the JBL CristalProfi e-range.
Round center section can be removed and replaced with special filter materials.



JBL TORMEC

Active peat pellets for the CP e-range
Prevents algae growth in freshwater.
2-component active peat pellets, gently reducing pH and CH.
One component for immediate results and one for long-term effectiveness.



JBL MICROMEC

High-performance filter pellets break down nitrogen in the CP e-range
Bacteria in the outer layer break down ammonium and nitrite (aerobic zone).
In the center, bacteria in the anaerobic zone break down nitrate.
Sintered glass pellets with highly porous structure.



The right choice of filter material:

The following table gives an overview of which filter material solves which problem. There are some filter materials available as specific, ready-to-use modules for the JBL CristalProfi external filter. However, all other filter materials can be used in the filter baskets of the internal and external filters.

JBL Filter-material	removes						
	mechanical		biological		chemical		By adsorption
	coarse	fine	NH ₄ NO ₂	NO ₃	NO ₂	NO ₃	PO ₄
	Suspended particles						Herbicide Pesticide Medications Dyes

Filter material for CristalProfi® e-Series

CombiBloc	++	++					
UniBloc	+	++	+				
CarboMec ultra Pad							++
NitratEX Pad						++	
PhosEx ultra Pad							++
ClearMec Pad			+		+	+	+
TorMec							
MicroMec			++	++			

Filter material for CristalProfi® i-Series

UniBloc	+	++	+				
CarboMec ultra							++
BioNitrat EX				++			
PhosEx ultra							++
ClearMec			+		+	+	+
TorMec mini							
MicroMec mini			++	++			

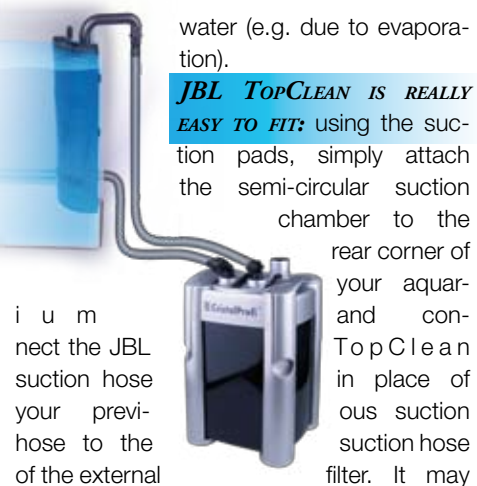
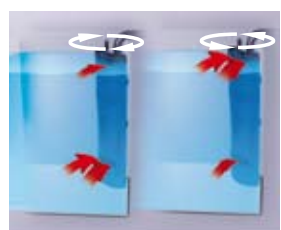
Surface Skimmer JBL TopClean

A REALLY USEFUL ACCESSORY FOR ANY EXTERNAL FILTER is a surface skimmer (JBL TopClean), which keeps the water surface clean and guarantees maximum oxygen enrichment of the water via the water surface.

Normally the external filter draws the "dirty water" off through the suction hose, with the suction basket positioned just above the ground-covering material. However, this means that the surface water is not included in the filter circulation. Often this results in floating plant residue and the formation of a layer of "scum". This scum is a whitish "skin", comprised of bacteria and fungi, which floats on the surface of the water and prevents the exchange of gases at the surface of the water.

With JBL TopClean you can now suction off surface water as well as water from deeper levels. By means of the regulating pin, which is easily accessible from above, the proportion of surface water suction to deep water suction can be freely selected and infinitely adjusted.

A FURTHER ADVANTAGE IS THE FLOATING UPPER SECTION, which adapts to any variation in the level of the



water (e.g. due to evaporation).

JBL TopClean IS REALLY EASY TO FIT: using the suction pads, simply attach the semi-circular suction chamber to the rear corner of your aquar-

ium
connect the JBL suction hose to your previous hose to the of the external

and con-
TopClean
in place of
ous suction
suction hose
filter. It may

be necessary to re-start the external filter (priming). Once the water is flowing, you can set the ratio of surface water to deeper water suctioned off using the adjustment spindle. A red inner part can be seen through the lower suction slit. The

higher the position of the red inner part, the more water is suctioned off from the surface.



How does TopClean work?



- 1. SURFACE EXTRACTION**
Here the dirty water from the aquarium flows into the filter

- 2. REGULATION PIN**
Here you can freely select the extraction ratio of surface water to water from deeper levels

- 3. EXTRACTION OF DEEPER WATER**
Here the dirty water from the aquarium flows into the filter

- 4. FLOATING SUCTION COMB**
Automatically adapts to varying water levels (e.g. due to evaporation)

Pumping water with JBL ProFlow

WATER PUMPS ARE USED IN MANY AREAS OF FISH-KEEPING – FROM BIO-FILTERS TO FLOW PUMPS.

JBL ProFlow T PUMPS ARE SPECIALLY DESIGNED FOR APPLICATIONS DEMANDING SMALL DIMENSIONS WITH GOOD CAPACITY. The mains cable is connected to the top of the pump, eliminating wasted space at the side, a disadvantage of

of pumps with mains attachments on the side. They are ideally suited as delivery pumps, for example in the clear water chambers of bio-filters both in freshwater and saltwater.

The low minimum water depth of 3 cm makes this the ideal pump for aqua-terrariums or indoor fountains. The pump capacity can be regulated within a wide range and is therefore suitable for almost any application.

The hose connection piece itself can be turned 360°, allowing optimum use of available space. It is suitable for hoses with 12 x 16 mm diameter.



**PUMPING WATER
IN SMALL BIO-FILTERS**

The low minimum water depth of 3 cm makes this the ideal pump for aqua-terrariums or indoor fountains. The pump capacity can be regulated within a wide range and is therefore suitable for almost any application.



IN AN AQUA-TERRARIUM

An integral thermostat switches off if the motor overheats (e.g. jammed rotor etc.).

JBL ProFlow U PUMPS CAN BE OPERATED BOTH SUBMERSED IN WATER AND OUT OF THE WATER. An integral thermostat switches off if the motor overheats (e.g. jammed rotor etc.).

JBL ProFlow Pumps (t and u) can be universally used for practically any application both in freshwater and marine aquariums. Secure attachment ensured by hold-



**PUMPING WATER
IN LARGE BIO-FILTERS**



**OPERATING OUT OF
THE WATER WITH
PIPES AND HOSES**

ers with three suction pads. The holders can be attached to any of three sides of the pump as preferred. The rotor cover can be

swivelled allowing the water outlet to be directed in any direction as required.



FAST FILTER UNDERWATER

Overview ProFlow pumps



Mod.	V	W	l/h	Head/Lift	Ø Pressure/Out
400	220/240	4	80-420	0,75 m	12,5 mm
600	220/240	5	320-570	0,98 m	12,5 mm

Mod.	V	W	l/h	Head/Lift	Ø Suction/In	Ø Pressure/Out
500	220/240	6	490	0,95 m	16,5 mm	12,5 mm
750	220/240	7,5	670	1,65 m	16,5 mm	12,5 mm
1000	220/240	13	1000	1,48 m	19,0 mm	12,5 mm



Heating

Although you might think that an unheated „cold water“ aquarium is the easiest, this is a misconception. Fluctuating ambient temperatures and high temperatures in summer can cause problems. In some circumstances, depending on the country, expensive cooling units may even be needed. A warm water aquarium is a far simpler way, as fish can tolerate temperatures of between 23 and 29 °C without any problem.

A heater stat, such as the JBL ProTemp S reliably keeps the water temperature in fresh and salt water at the required level, as long as the room temperature is not higher. Many aquarium-keepers think that tropical fish also need tropical water temperatures of 28-29 °C. This is not the case, however. Despite high air temperatures in the tropics, the water temperature is often only 25 – 27 °C. In addition to this, fish often have greater resistance if the water temperature is between 24 – 26 °C. By the way, this temperature range is also much better tolerated by most aquatic plants.

As fish are not able to sense hot surfaces, the JBL ProTemp S has a protective plastic basket to prevent fish from burning themselves. Although the JBL heaters can be accurately adjusted to +/- 0.5 °C, we strongly advise placing a thermometer in the aquarium.

if you forget to do this when changing the water, and the heater dries out by mistake, no harm will be done: the JBL heater has “dry running protection” which then switches the heater off. When the water level has been corrected again, the heater automatically switches itself on again.

THE JBL PROTEMP S HEATER RANGE OFFERS THE FOLLOWING ADVANTAGES:

SAFE

- With a plastic protective basket
- With a safety switch (anti-dry running device)
- With 2 mm quartz safety glass

PRECISE

- High adjustment accuracy: +/- 0.5 °C
- Star-shaped ceramic heating element for optimum heat radiation.

EASY TO USE

- Large dial to pre-set the temperature
- Compact size
- Completely submersible, can also be installed on its side
- Temperature range 20 - 34 °C
- 2 m power cable

A FURTHER TIP ON CHANGING WATER: when working in the aquarium the plug should always be disconnected from the power supply. However,



What are the advantages of the ProTemp s



1. *HIGHLY ACCURATE REGULATING PRECISION FROM +/- 0.5 °C*

2. *LARGE SELECTION DIAL FOR PRE-SELECTING TEMP.*

3. *TEMPERATURE RANGE 20 - 34 °C*

4. *COMPACT DESIGN*

5. *WITH SAFETY SWITCH
(PROTECTION AGAINST DRY-RUNNING)*

6. *HIGHLY ROBUST WITH 2 MM SAFETY GLASS*

7. *WITH PLASTIC PROTECTIVE GUARD*

8. *2 M MAINS CABLE*



the water, but only to cause water circulation through the floor by means of low heat. This water circulation stimulates the root growth of the plants and transports nutrients to the roots. Floor heaters are therefore primarily installed to promote plant growth. More information can be found in our brochure No. 6 on Plant care or on the JBL homepage at www.jbl.de.

FLOOR HEATING:

The subject of floor heating is not discussed in detail here, as a floor heater such as the JBL ProTemp Basis is not designed to heat

Reverse osmosis unit

Using the water conditioning unit Osmose 120 by JBL you can create the conditions for the optimum care of even the most fastidious aquarium inhabitants. Irrespective of the water quality supplied by the mains, the JBL Osmose 120 unit produces water of almost laboratory quality by means of reverse osmosis. In addition to hardness, almost all substances are removed which damage the water quality or promote the growth of algae. An osmosis unit is beneficial for both fresh and saltwater.

(95%) of the problem substances dissolved in the water such as hardness, nitrates and phosphates. To prevent the sieve from becoming blocked too quickly by the substances filtered out, part of the water is used to rinse these substances off the sieve. For this reason the unit has two water outlets: one for the "rinsing water" containing problem substances and one for the clean water which has been filtered through the membrane.



HOW DOES A REVERSE OSMOSIS UNIT FUNCTION?

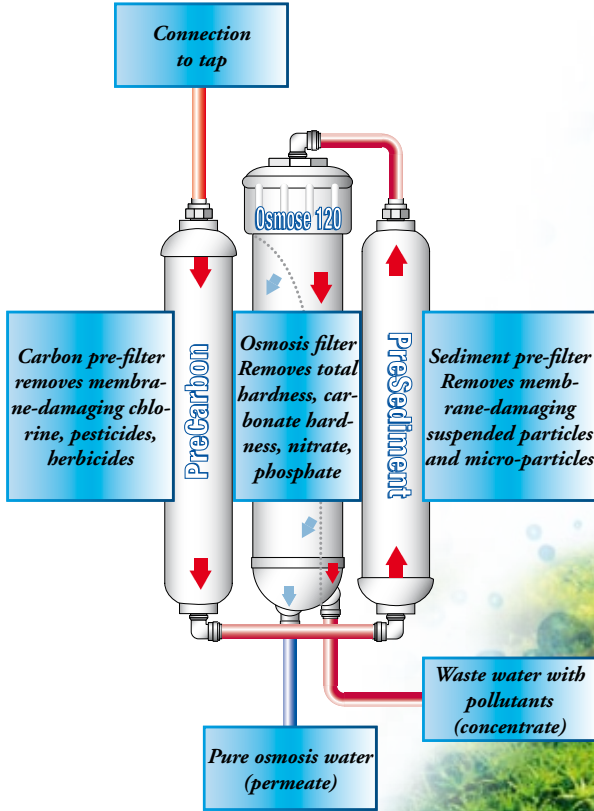
By being directly connected to the water supply, the mains pressure forces the water through the system at approximately 3-4 bar. The mains water first passes through the active filter, which filters out pollutants such as chlorine, herbicides and pesticides from the water. The mains water then goes through a micro filter which filters out any mechanical particles which might damage the following main membrane. The main membrane acts like an extremely fine sieve which retains all



HERE THE DATA AT A GLANCE:

- Ready for installation with 3/4" water connection
- Produces laboratory quality osmosis water
- High capacity with up to 120 liters in 24 hours at 24 °C
- With precision flow limiter
- With carbon and micro filter

Clean water for your pets with JBL Osmose 120



Removes Wasser



UV-C water clarifier:

Despite perfect filtering, the water in the aquarium can become cloudy. This can be removed quickly and safely with a UV-C water clarifier (JBL AquaCristal). This discoloration can be green (floating algae) or white (bacterial) cloudiness.

WHAT CAUSES FLOATING ALGAE AND BACTERIAL DISCOLORATION?

The cause of floating algae is an excess of nutrients combined with light. Direct sunlight in combination with increased nitrate and phosphate levels lead to green water, both in an aquarium as well as in a garden pond. White cloudiness, on the other hand, is caused by an increase in bacteria. This can often be seen in newly set up aquariums and ponds in particular. Sometimes, however, changes in water values can lead to an explosive increase in bacteria.

UV-C is proven to destroy germs. However, since „good“ bacteria live attached to the substrate in the filter and the ground materials, UV-C light is highly effective against germs which cause diseases and which are almost exclusively to be found in the open water. The low

number of germs in the water reduces the exposure of the fish to infection, so they have fewer diseases to fight against.

WHAT IS UV-C RADIATION AND HOW DOES IT HELP?

The JBL UV-C water clarifiers produce UV-C light with a wavelength of 258 nm. A strong germ-destroying effect is only proven at this wavelength. Floating algae as well as bacteria, fungus and spores floating in the water are reliably and quickly destroyed. The radiation is contained within the casing of the JBL UV-C water clarifier and therefore does no damage at all to the flora and fauna of the aquarium.

Please note that vitamins and modern fertilizer preparations are also affected by UV-C light. Therefore vitamins and additional fertilizer should not be used during the time when the UV-C unit is switched on.

PRINCIPLE, MODE OF EFFECT, EFFECTIVENESS AND SPECIAL FEATURES

The aquarium or pond water is pumped through the casing of the UV-C water clarifier by an external pump or a filter. It flows directly past the UV-C light which destroys all germs and algae in the water. The effectiveness of the JBL UV-C water clarifier was doubled by installing water channel walls to make the route of the water within the unit twice as long. A further doubling of capacity



has been achieved by the use of a UV-C reflecting paint on the inside of the casing.

This high efficiency is reflected in the compact design of the unit.

As both connections are on the same side of the casing, the unit can be installed where it is most practical and takes up little space.



JBL AquaCristal UV-C 5 Watt

Removal of discoloration		Partial disinfection	
Aquarium size	Recommended flow rate	Aquarium size	Recommended flow rate
200-400 l	100-200 l/h	20-100 l	50-100 l/h

JBL AquaCristal UV-C 9 Watt

Removal of discoloration		Partial disinfection	
Aquarium size	Recommended flow rate	Aquarium size	Recommended flow rate
300-600 l	100-200 l/h	100-150 l	50-100 l/h

JBL AquaCristal UV-C 11 Watt

Removal of discoloration		Partial disinfection	
Aquarium size	Recommended flow rate	Aquarium size	Recommended flow rate
600-1000 l	150-350 l/h	150-200 l	100-150 l/h

JBL AquaCristal UV-C 18 Watt

Removal of discoloration		Partial disinfection	
Aquarium size	Recommended flow rate	Aquarium size	Recommended flow rate
1000-1500 l	300-500 l/h	200-400 l	150-200 l/h

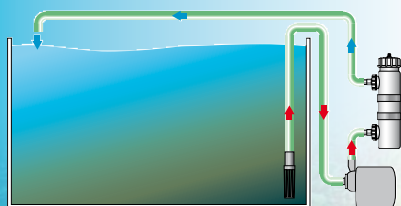
JBL AquaCristal UV-C 36 Watt

Removal of discoloration		Partial disinfection	
Aquarium size	Recommended flow rate	Aquarium size	Recommended flow rate
1500-3000 l	400-1000 l/h	300-600 l	200-400 l/h

USE IN THE AQUARIUM

Connect a water pump in front of the JBL UV-C water clarifier. The pump capacity required can be seen from Table.

If you wish to combine the UV-C water clarifier with your filter, it should be installed after the filter, as installation should always be on the delivery side of a pump.



*Your specialist aquarium supplier
will gladly advise you and
recommend further literature.*

JBL-WWH-BROCHURES
*are available from your aquarium supplier
on other aspects of aquarium-keeping.*

Your specialist supplier

