

# JBL

## 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.



Adam Golik: Dance Stones

# 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?

The chart displays the following equipment recommendations for different aquarium sizes:

| Aquarium Size (cm) | Filter (CristalProfi) | Heater (ProTemp) | Lighting (greenline) |
|--------------------|-----------------------|------------------|----------------------|
| 30 cm              | 40                    | 25               | -                    |
| 40 cm              | 60                    | 50               | -                    |
| 60 cm              | 80                    | 100              | -                    |
| 80 cm              | 100                   | 150              | -                    |
| 100 cm             | 200                   | 200              | -                    |
| 120 cm             | 300                   | 300              | -                    |
| >120 cm            | 401                   | -                | -                    |
| >150 cm            | 701                   | -                | -                    |
| >150 cm            | 901                   | -                | -                    |
| >150 cm            | 1501                  | -                | -                    |
| >150 cm            | 1901                  | -                | -                    |

The chart also features the 'greenline' logo and a background image of a blue discus fish in an aquarium.

### **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.

**COMFORTABLE AND SECURE MOUNTING WITH SPECIAL SUCTION CUPS**

that can easily be loosened with practical push buttons. The suction cups can hold 15 kg and thus guarantee an absolutely firm grip of the internal filter.



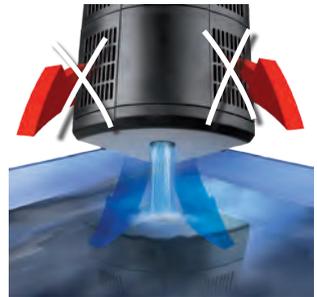
## greenline

**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 18)**

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 fil-



ter 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:**

Depending on experience, the time required for changing the filter lies between 10 – 15 minutes. For this purpose it is necessary to pull the plug and then push both unlock keys of the suction cup. The filter is then slowly lifted above

the surface of the water during which clean water will flow from the bottom of the filter. At this time the filter sponges are taken from the particular filter baskets and washed with water that had previously been taken from the aquarium. It would also be possible to use tap water, but this has the disadvantage that aggressive substances are contained in tap water (which is the reason why water needs to be conditioned) and can destroy beneficial filter bacteria! After cleaning, the sponges are returned to the chambers and a few millilitres of cleansing bacteria (JBL FilterStart) are poured onto the filter. After that the filter can return to its corner of the aquarium. Be sure to place the filter in such a way so that the water exiting the filter only lightly moves the water surface, e.g. slightly below the surface of the water.



# How does the CristalProfi® i work ?

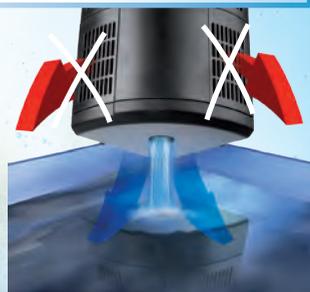


**1. FROM THE AQUARIUM**  
Here the dirty water from the aquarium flows into the filter

**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.

greenline



# 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

| <b>i 60</b><br>85 x 85 x 155 mm                       | <b>i 80</b><br>85 x 85 x 225 mm | <b>i 100</b><br>85 x 85 x 295 mm | <b>i 200</b><br>85 x 85 x 365 mm |
|---|---------------------------------|----------------------------------|----------------------------------|
| 420 l/h   | 420 l/h                         | 720 l/h                          | 720 l/h                          |
| 40-80 l   | 60-110 l                        | 90-160 l                         | 130-200 l                        |
| 4 W   | 4 W                             | 8 W                              | 8 W                              |
| 230 V / 50 HZ   | 230 V / 50 HZ                   | 230 V / 50 HZ                    | 230 V / 50 HZ                    |
| 1x 0,25 l   | 2x 0,25 l                       | 3x 0,25 l                        | 4x 0,25 l                        |
| <b>Energy savings compared to the preceding model</b> |                                 |                                  |                                  |
| 61 kWh/a  | 61 kWh/a                        | 26,25 kWh/a                      | 26,25 kWh/a                      |
| 12,2 €/a**  | 12,2 €/a**                      | 5,25 €/a**                       | 5,25 €/a**                       |
| 48,8 €/4a**   | 48,8 €/4a**                     | 21 €/4a**                        | 21 €/4a**                        |

\*\* at 0,20 € / kWh

## Internal Filter Series JBL CristalProfi® *m* (*m* for *mat*)

greenline



The JBL CristalProfi®

***m*** is probably the first Mattenfilter which can be bought right off the shelf as a ready-to-use product. Typical for Mattenfilter is the large filter mat, which is easily accessible for aquarium inhabitants since there are no suction slits. This results in a slow water flow, distributing itself across the entire area and consequently creating optimal conditions for beneficial bacteria and other small organisms to settle. These small organisms can directly serve as feed for juvenile fish and prawns without getting sucked into dangerous suction slits. Conceptualised especially for smaller aquariums, the JBL CristalProfi® ***m*** is the perfect option for nano aquariums. It is however also possible to expand the

filter for use in larger aquariums by merely adding filter modules. The limiting factor is essentially the height of the aquarium.

A special suction cup, which can be locked with a lever, provides an optimal hold in the aquarium. At the same time the filter housing rests directly against the side of the aquarium without space in between so that no animals can hide behind and be in danger of getting crushed.

A small thermometer that fits small aquariums is included in the package.



## What are the advantages of the CristalProfi® m ?

1. **HIGH CAPACITY FOR BIOLOGICAL PURIFICATION DUE TO A SLOW WATER FLOW.**
2. **WHEN REMOVED WITH THE SERVICE COVER THE NEW VALVE SYSTEM EMPTIES THE FILTER WITHOUT GETTING DIRT INTO THE AQUARIUM.**
3. **JUVENILE FISH AND SHRIMP CAN COMFORTABLY GRAZE ON THE MICROORGANISMS AND OTHER GROWTH ON THE OPENLY ACCESSIBLE FILTER-PAD.**
4. **COMFORTABLE AND SECURE MOUNTING WITH A LOCKABLE SUCTION CUP.**
5. **WITH MOUNTED WIDE JET OUTLET NOZZLE FOR SMOOTH WATER MOVEMENT AND OPTIMAL GAS EXCHANGE.**
6. **THANKS TO THE MODULAR CONSTRUCTION ALSO EXPANDABLE FOR LARGER AQUARIUMS.**



## 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.

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.

**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.

**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 stopcocks. Only



## 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. JBL MicroMEC**  
High-performance filter pellets. Sintered glass pellets with highly porous structure.

**4. BIOLOGICAL FILTERING**  
Foam mats with 20ppi\* filter turbid agents from the aquarium water and provide pollutant-absorbing bacteria with a large area for colonization reducing ammonium and nitrite levels.

**5. POST-FILTERING**  
Fine filter foam with 30ppi removes the last fine dirt particles from the water.

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

greenline

# Technical Data for CristalProfi® e

| <b>e401</b><br>180 x 210 x 284 mm | <b>e701</b><br>180 x 210 x 350 mm | <b>e901</b><br>180 x 210 x 405 mm | <b>e1501</b><br>200 x 235 x 460 mm | <b>e1901</b><br>200 x 235 x 564 mm |
|-----------------------------------|-----------------------------------|-----------------------------------|------------------------------------|------------------------------------|
| 450 l/h                           | 700 l/h                           | 900 l/h                           | 1400 l/h                           | 1900 l/h                           |
| 40-120 l                          | 60-200 l                          | 90-300 l                          | 160-600 l                          | 300-800 l                          |
| 4 W                               | 9 W                               | 11 W                              | 20 W                               | 36 W                               |
| 230 V / 50 HZ                      | 230 V / 50 HZ                      |
| 4,6 l                             | 6,1 l                             | 7,6 l                             | 12 l                               | 15 l                               |
| 1 x 1,1 l<br>1 x 1,2 l            | 1 x 1,1 l<br>2 x 1,2 l            | 1 x 1,1 l<br>3 x 1,2 l            | 1 x 2,3 l<br>3 x 1,9 l             | 1 x 2,3 l<br>4 x 1,9 l             |



Energy savings compared to the preceding model

|            |            |               |
|------------|------------|---------------|
| ↓ 35 KWh/a | ↓ 35 KWh/a | ↓ 131,4 KWh/a |
| 7 €/a**    | 7 €/a**    | 26,28 €/a**   |
| 28 €/4a**  | 28 €/4a**  | 105,12 €/4a** |

\*\* at 0,20 € / KWh



## Filter Cleaning

Depending on the amount of pollution in the aquarium, external filters should be partially cleaned every 4 – 8 weeks. The JBL CristalProfi series contains two pre-filters at the side in the topmost filter basket which can be cleaned or exchanged at any time in just a couple of minutes. The remaining filter material should be thoroughly washed with running water and after re-filling it into the filter it should be inoculated with beneficial filter bacteria (JBL FilterStart). In the past considerably longer intervals between filter cleaning were recommended, but as it turned out, “dirty” filters are a breeding ground for bacteria and facilitate disease. Therefore, this new finding leads to cleaning intervals of 4 - 8 weeks which solve a number of problems.

The cleaning of the filter should NOT be conducted at the same time as a partial water change since both measures at the same time are too great an interference for the biological structure

of the aquarium. Assessments have, by the way, confirmed that dirty filter hoses reduce the pump capacity by up to 25%! Regular cleaning of the filter hoses with hose brushes such as JBL Cleany maintains the performance of the filter and can be administered quickly.



# Substrate Cleaner

Many aquarium enthusiasts wrongly believe that a filter keeps the aquarium completely clean. No filter in the world can achieve this because its pump capacity would have to be so enormous that it would have to flush the dirt from the gravel!

Since most of the dirt sinks to the bottom, the most important way to care for the aquarium is to partially change the water every two weeks where one-third of the water is siphoned off and at the same time dirt removed from the gravel. The proper device for this is the gravel cleaner. The gravel cleaner consists of a suction cup which has a hose at one end. If one shortly sucks on it to get the water going then it flows into a bucket dedicated for this purpose all on its own or directly into the sink with a long enough hose. With the help of the suction cup one plows the gravel and simultaneously siphons the stirred up dirt. The siphoned water is then filled back in together with fresh tap water and

turned into biotope-suitable aquarium water with the help of water conditioner (JBL Biotopol). One of the most important ways to support the filter is to use a substrate cleaner and is consequently the most important method of caring for the aquarium! Don't be afraid: It is easier than you think and can even be fun.



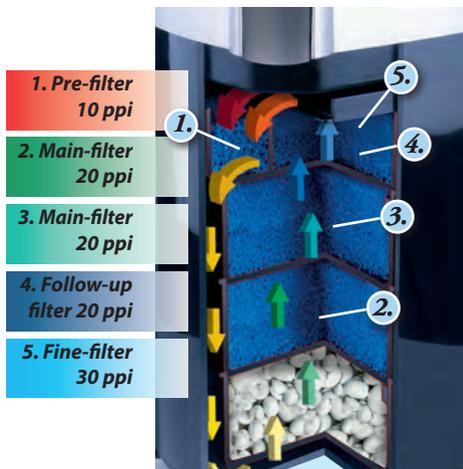
## Filter materials

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 bag, 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





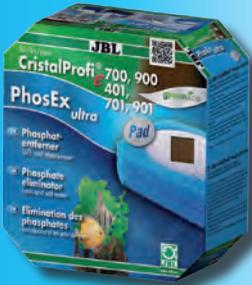
**JBL CARBOMEC ULTRA PAD**

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 nitrate from fresh water. Nitrate is the primary nutrient for algae. Exchange resin which can be reactivated with common salt.



**JBL PHOSEx ULTRA PAD**

Removes phosphate from fresh and salt water quickly and reliably. Algae require phosphate for growing.



**JBL CLEARMEC PAD**

Pollutant eliminator for crystal clear water. A mixture of clay pellets and special resin removes the pollutants phosphate, nitrate and nitrite from fresh water. The clay pellets facilitate the settlement of cleansing bacteria and furthermore facilitate the biological elimination of pollutants. Crystal clear and healthy water is generated.



**JBL COMBILOC**

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 MICROMECC**

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 <sub>4</sub><br>NO <sub>2</sub> | NO <sub>3</sub> | NO <sub>2</sub> | NO <sub>3</sub> | PO <sub>4</sub> | Herbicide<br>Pesticide<br>Medications<br>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

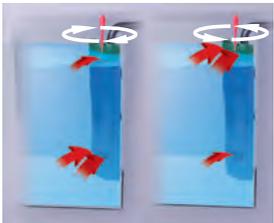
|                |   |    |    |    |   |   |    |    |
|----------------|---|----|----|----|---|---|----|----|
| UniBloc        | + | ++ | +  |    |   |   |    |    |
| CarboMec ultra |   |    |    |    |   |   |    | ++ |
| BioNitrat EX   |   |    |    | ++ |   |   |    |    |
| PhosEx ultra   |   |    |    |    |   |   | ++ |    |
| 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 wa-



ter (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

the JBL suction hose your previous to the suction external be necessary 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



aquarium and connect TopClean in place of suction hose of filter. It may to re-start the

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 AND STREAM PUMPS

**WATER PUMPS ARE NOT ONLY IMPLEMENTED IN AQUARIISTICS FOR A VARIETY OF PURPOSES:**

- For generating a current in the aquarium.
- For the recirculation of water from filter holders, e.g. biofilters.
- For the water recirculation from "Hamburg Mattenfilter" (HMF).
- For waterfalls in aqua terrariums.
- For the operation of UV C water clarifiers.
- For supporting the filter as a fast filter (with the filter cartridge JBL ProFlow sf).
- As a fast filter (with filter cartridge) in quarantine aquariums.

The JBL pump series ProFlow has stainless steel pins and water-proof sealed motors so that the pumps can be operated under water. The mounting position is not relevant: they can perform in any mounted position. It is important to know however that the performance of water pumps is reduced if they have to pump water upwards (upstream performance is decisive), e.g. having to pump water upwards into the aquarium from an extra filter sump underneath the aquarium.



**IN AN AQUA-TERRARIUM**



**PUMPING WATER  
IN SMALL BIO-FILTERS**

the end of the axis are little rubber bearings that should also be replaced when the axis is exchanged and can be easily lifted out with a small special tool



**PUMPING WATER  
IN LARGE BIO-FILTERS**

### CARE:

The impeller should be cleaned with a small brush every 3 months. Located at



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

(JBL Pulling Aid for Rotor). required.



**FAST FILTER UNDERWATER**

# Overview ProFlow pumps



| Mod. | V       | W | l/h     | Head/Lift | Ø Pressure /Out |
|------|---------|---|---------|-----------|-----------------|
| 300  | 220/240 | 4 | 80-300  | 0,50 m    | 12/16 mm        |
| 500  | 220/240 | 5 | 200-500 | 0,80 m    | 12/16 mm        |

| Mod. | V       | W  | l/h  | Head/Lift | Ø Suction /In | Ø Pressure /Out |
|------|---------|----|------|-----------|---------------|-----------------|
| 800  | 220/240 | 7  | 900  | 0,95 m    | 19/25 mm      | 16/22 mm        |
| 1100 | 220/240 | 12 | 1200 | 1,30 m    | 19/25 mm      | 16/22 mm        |
| 2000 | 220/240 | 35 | 2000 | 2 m       | 27/35 mm      | 19/25 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. Depending on the country, cooling might even be necessary. 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.

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

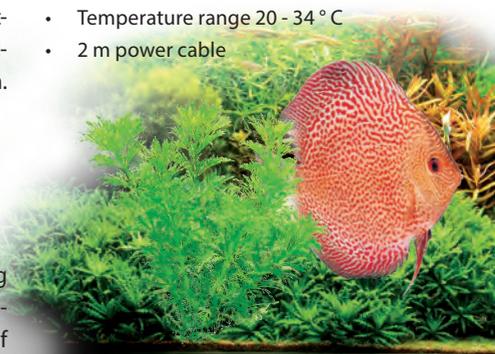
- With a plastic protective basket
- With a safety switch (anti-dry running device)
- With 2 mm quartz safety glass

### 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



# What are the advantages of the ProTemp s

**1.** HIGHLY ACCURATE REGULATING PRECISION FROM  $\pm 0.5^{\circ}\text{C}$

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

**3.** TEMPERATURE RANGE  $20 - 34^{\circ}\text{C}$

**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

# Substrate Heater

It is NOT the purpose of a substrate heater to heat the substrate or the water but to generate water circulation in the gravel. A substrate heater consists of a heating cable attached directly to the bottom glass pane of the aquarium underneath the gravel. Warm water rises to the top directly at the heating cable and between the heating cables cold water flows back down. The circulation generated this way brings nutrition to plant roots and flushes the gravel in the aquarium. This however does not work with fine sand. Due to the intensive provision of nutrients your plants will grow considerably faster and will be much stronger!

A substrate heating cable consists of two parts: A PTC thermistor (unheated cable outside of the substrate, does not get warm) and the heating element which does get warm. The transition from the unheated to the heated part of the cable is color-coded. With the help of suction cups the heating element is fixed to the bottom pane in a sinuous line. Experienced aquarists fasten the heating cable to the glass pane using a little drop of silicone. Both ends of the cable are screwed into a transformer which creates a safety voltage. The substrate heating cable is then covered with plant nutrient substrate (JBL AquaBasis plus) and cleaned substrate (JBL Manado, JBL Sansibar or gravel). A special temperature controlling instrument is not necessary since the voltage of the

heating cable was chosen so that it does not heat the water on a large scale but rather merely causes water circulation in the substrate.



|  | <b>b10</b>           | <b>b20</b>             | <b>b40</b>              | <b>b60</b>            |
|--|----------------------|------------------------|-------------------------|-----------------------|
|  | 10W                  | 20W                    | 40W                     | 60W                   |
|  | 3,6 m<br>2 x 1,8 m   | 4,9 m<br>2 x 2,0 m     | 7 m<br>2 x 2,2 m        | 9 m<br>2 x 2,5 m      |
|  | 60-80 cm<br>50-120 l | 80-100 cm<br>100-250 l | 100-150 cm<br>200-400 l | > 150 cm<br>300-600 l |
|  | 20 x                 | 30 x                   | 30 x                    | 40 x                  |

## Cooling

It can happen that the temperature rises above 29 °C, in warm countries but also in summer time in cold countries. This is a problem for many fish species and especially for water plants. Ice cubes and cold packs are not really adequate solutions. JBL uses the physical effect of perspiration cooling in order to lower high water temperatures. The JBL coolers consist of ventilators that are mounted in such a way as to blow air stream over the surface of the water. As a consequence, the evaporation of the water increases which causes perspiration cooling. Due to perspiration cooling the temperature of the water can drop by 2 – 4 °C. Do NOT replace the evaporated water with tap water since the mineral content (total hardness) of the water is increased. Water from a reverse osmosis unit (JBL Osmose 120) is much better suited for this or distilled water.

JBL also has a controlling instrument for JBL Cooler on offer (JBL CoolControl) which turns the cooler off as the set temperature is achieved.



## Air Pumps



Oxygen contained in the aquarium water is primarily regulated by movement at the water surface: the more the water surface moves the higher the oxygen content. Through spray bars of the filter or ascending air bubbles from an air stone the water surface is brought into motion. If one has figures in the aquarium that require air for their movement, such as the JBL ActionAir Figures, an air pump is required. Also air driven filters such as the JBL TekAir require an air pump for operation. For some ornamental fish treatments but also with extensive use of algae remedies additional aeration of the water is recommended. Aquariums with many plants are an exception. During the lighting period plants produce oxygen, at night however they consume oxygen.

Thus, with many plants in the aquarium it can happen that the oxygen in the aquarium is not sufficient at night. In this case it is useful to install an air pump at night for aeration.

Those who install a CO<sub>2</sub> fertiliser system in the aquarium should think twice whether aeration is absolutely necessary. Reason is that a strong water surface current would release the added CO<sub>2</sub> gas and thus counteracts the CO<sub>2</sub> system. With an oxygen test (JBL O<sub>2</sub> Test Set) it is possible to quickly and easily check whether the amount of oxygen in the aquarium is at least 6 mg/l.



| Mod.         | V         | W   | l/h | dB(A) | Pressure  | Membrane | Exit | Adjustable | Aquarium |
|--------------|-----------|-----|-----|-------|-----------|----------|------|------------|----------|
| <b>a 50</b>  | 230/50 Hz | 3   | 50  | <38   | >160 mbar | 1        | 1    | -          | 10-50l   |
| <b>a 100</b> | 230/50 Hz | 3   | 100 | <37   | >160 mbar | 1        | 1    | 1          | 40-150l  |
| <b>a 200</b> | 230/50 Hz | 3,4 | 200 | <37   | >160 mbar | 1        | 1    | 1          | 50-300l  |
| <b>a 300</b> | 230/50 Hz | 3,9 | 300 | <38,5 | >160 mbar | 2        | 2    | 2          | 100-400l |
| <b>a 400</b> | 230/50 Hz | 5,5 | 400 | <39,5 | >180 mbar | 2        | 2    | 2          | 200-600l |



# CO<sub>2</sub> Fertiliser System

Carbon dioxide, also referred to as CO<sub>2</sub>, is the staple food of all plants. Aquarium water usually lacks CO<sub>2</sub> which hinders plant growth. In order to facilitate plant growth CO<sub>2</sub> fertiliser systems have been developed in order to enrich aquarium water with CO<sub>2</sub> gas which then dissolves in the water. In principle there are two types of CO<sub>2</sub> fertiliser systems:

- 1) BioCO<sub>2</sub> systems which generate carbon dioxide as a result of the meeting of two bio components that generate carbon dioxide (sugar / yeast fermentation process). For smaller aquariums these CO<sub>2</sub> systems (e.g., JBL ProFlora BioCO<sub>2</sub>80) provide a perfect and inexpensive introduction.
- 2) Professional CO<sub>2</sub> systems which provide the gas via gas cylinders and dissolve

in the water with the help of a diffuser. For this one-way CO<sub>2</sub> cylinders are available (JBL ProFlora u System) as well as refillable CO<sub>2</sub> cylinders (JBL ProFlora m System).



## 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

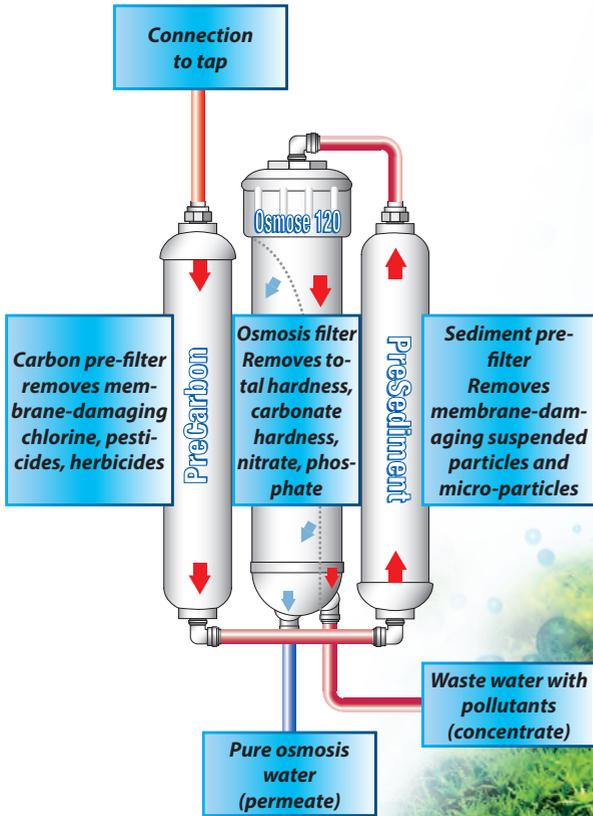


**HERE THE DATA AT A GLANCE:**

- 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*



## 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*

| <i>Removal of discoloration</i> |                       | <i>Partial disinfection</i> |                       |
|---------------------------------|-----------------------|-----------------------------|-----------------------|
| 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*

| <i>Removal of discoloration</i> |                       | <i>Partial disinfection</i> |                       |
|---------------------------------|-----------------------|-----------------------------|-----------------------|
| 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*

| <i>Removal of discoloration</i> |                       | <i>Partial disinfection</i> |                       |
|---------------------------------|-----------------------|-----------------------------|-----------------------|
| 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*

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

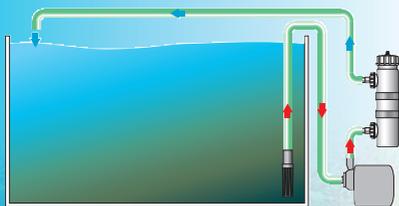
### *JBL AquaCristal UV-C 36 Watt*

| <i>Removal of discoloration</i> |                       | <i>Partial disinfection</i> |                       |
|---------------------------------|-----------------------|-----------------------------|-----------------------|
| 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.



# JBL

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