

# Operation Manual

## Pond Bio-Filter CBF-200T, CBF-200U, CBF-200

51188–51190



Illustration similar, may vary depending on model

Read and follow the operating instructions and safety information before using for the first time.

Technical changes reserved!

Due to further developments, illustrations, functioning steps, and technical data can differ insignificantly.

Updating the documentation

If you have suggestions for improvement or have found any irregularities, please contact us.



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## Introduction

Thank you for purchasing this quality product. **To minimise the risk of injury we urge that our clients take some basic safety precautions when using this device. Please read the operation instructions carefully and make sure you have understood its content.**

Keep these operation instructions safe.

## Safety instructions

### **ATTENTION:**

The device is not intended for use by persons (including children) with impaired or limited physical, sensory, and mental abilities or lack of experience and/or real knowledge, unless they are supervised by a person responsible for their safety or you follow the instructions made by this person how to use the device correctly. Children should be supervised to make sure they do not play with the device

### **ATTENTION:**

- Run a visual inspection of the device before every use. Do not use the device if the safety installations are damaged or worn out. Never override safety regulations.
- Use the device exclusively according to the intended purpose stated in the instructions for use.
- You are responsible for the safety of the working environment.
- The device cannot be installed in the drinking water circuit.
- The device can be installed only out of the water.
- It must be ensured that the device cannot fall into the water.
- Place the device in such a way so that it is not exposed to direct sun light.
- The universal hose connectors (stepped hose tails) can be shortened if necessary to match the hose diameter.
- Apply/mount the hoses and hose clamps.

### **WARNING:**

**Carefully read all the safety guidelines and the instructions.** Keep the instructions and the safety guidelines in a safe place in case you need them in the future.

## Wear resistance

- The temperature of the liquid pumped should not exceed +35 °C in permanent operation.
- The filter is exclusively designed and intended for filtering garden ponds.
- The filter is not suitable for filtering water whose temperature exceeds 40 °C or falls below 8 °C
- Do not use in combination with oil, petrol, or lubricant. The filter is not frost-resistant! Therefore, it is recommended not to use the filter in winter!
- The filter cannot be used under water.
- The filter must be placed at least 2 m away from the pond edge.



## Technical data

Model	CBF-200T	CBF-200U	CBF-200
Item number	51188	51189	51190
Dimensions (mm)	400 × 275 × 400		
Maximum water flow ( $\frac{1}{h}$ )	6000		
Hose inlet (mm)	20, 25 ( $\frac{3}{4}$ " , $1\frac{1}{4}$ " )	20, 25, 32 ( $\frac{3}{4}$ " – $1\frac{1}{4}$ " )	
Outlet/outflow (mm)	50		
Number filter mats	1		
Number coarse sponges	1		
Number fine sponges	1		
Suitable for fish ponds up to (ℓ)	4000		
Suitable for ornamental ponds up to (ℓ)	8000		
UV lamp power consumption (W)	9	–	

## Circulation

According to the type of use, the optimal circulation cycle is dependent on various factors: fish population, water plants, solar radiation, and the desired water clarity. Of course, the other components of the filter circuit must be harmonised with one another if necessary.

Basically, there are two distinctions:

### *Optimal pond circulation*

This refers to how often the whole pond content is directed through the filter within a specific time unit (circulation per hour).

The following values may serve as guide values:

- **Koi pond/ fish pond:**
  - 1 circulation in 3 hours up to
  - 2 circulations in 1 hour (without plants and with high fish stock)
- **Garden pond/plants pond:**  
If the pond has no fish stock, circulation is not necessary at all. In this case, water and marsh plants are a sufficient replacement/substitute for a filter system.
- **Natural swimming pond:**
  - Here the circulation cycle depends strongly on the plants and your own requirements.
  - The upper limit is 1× in 2–3 hours, the lower limit is no circulation at all.

### *Length of stay of the water in the filter (length of stay)/filter volume*

- Here, the real volume of the filter applied by pressure-less systems is interesting: 51190 (CBF-200), 51189 (CBF-200U), 51188 (CBF-200T) = approx. 55 ℓ
- After a period of approx. 2–3 weeks, nitrifying bacteria settle in the filter sponges. These need time to affect (have an impact on) the water.



- The intended time that the pond pump needs to fully fill the filter lies between 1,5 min and 3 min with the above-mentioned filter volume.
- A good “run-in” filter needs therefore **NO** circulation cycle of 2–3× per hour. It is sufficient, depending on the pond size, to have cycles of 1–2× every 10 hours.

### Calculation example:

A specific example: Our pump copes with 10.000  $\frac{\text{ℓ}}{\text{h}}$ . This means that, with our **test pond** of 100.000 ℓ volume, the **pond** is completely filtered every 10 h, which means that the water flows through our **pond filter** 2,4 times in 24 h and is clarified. Because our filter takes 250 ℓ of water, and in one hour 10.000 ℓ are pumped into the **pond filter**, the pond filter is fully filled with water 40 times per hour. This means that every 1,5 min the filter is fully filled. Consequently, our **bacteria** only have 1,5 min to have an effect on the water and produce clear, filtered water.

**We recommend according to your needs to find a reasonable compromise between both systems to achieve an optimal pond filtration.**

### Intended use

- Products of this series are optimal for the cleaning of garden and fish ponds. If it is correctly applied the pond water is effectively cleaned.
- Biodegradable filter materials clean the water from bacteria through mechanical filtering.

### Equipment features (partly optional)

- efficient cleaning through ultraviolet light sterilisation before filtering.
- powerful bio-filtering by means of large filters, multi-chamber system, easy installation, and cleaning due to its modular structure
- water flow system that conducts the first step of the filtration reduces the pressure on the filter mats and the maintenance
- optimal filter design enables easy cleaning
- dirt indicator
- temperature indicator

### Commissioning

1. The filter must be placed on a solid and even ground. It is necessary that the filter is in balance to avoid an overflow.
2. In case a UVC-clarifier is in use, it is advisable to place the filter at least 2 m from the pond.
3. Before operation clean the filter sponges and filter mats.
4. Make sure that the drainage hose for the water outlet to the pond and the hose for the waste outlet to the sewerage or to the flower bed has a sufficient slope.
5. Saw off the hose connector at the appropriate place.
6. Now fix the hose to the hose connector and secure it with a hose clamp.
7. Then connect the other end of the hose to the pump.
8. Please make sure not to turn on the filter until it is filled with water.
9. Check the filter for any leaks.
10. Provide the filter with voltage. Now the filter starts working.



**NOTE:** The bio-filter is a biological filter system, so from its initial installation it requires some weeks until its full biological efficacy. Is reached.

## Cleaning and maintenance

**Beware!** Always pull the mains power plug of the pump before cleaning and maintenance!

The device should be cleaned as needed – see the waste display **(1)**.



1. Turn off the pump and the UV-clarifier.
2. Remove the filter sponges.
3. The sponges can be cleaned and squeezed out in clear water. You can also use pond water.
4. Never use any detergent or soap as those will destroy the bacteria inside the filter sponges.
5. Clean the filter tank with clear water, too.
6. It is not necessary to renew or clean all filter sponges at the same time. If you just clean/renew a part of them, the important nitrifying filter bacteria are saved to a large extent and need not to grow completely.
7. In case the base of the filter is too contaminated, it is recommended to drain the water completely from the filter.
8. After cleaning the filter, it is reinstalled as described.

### Cleaning of the UV-clarifier

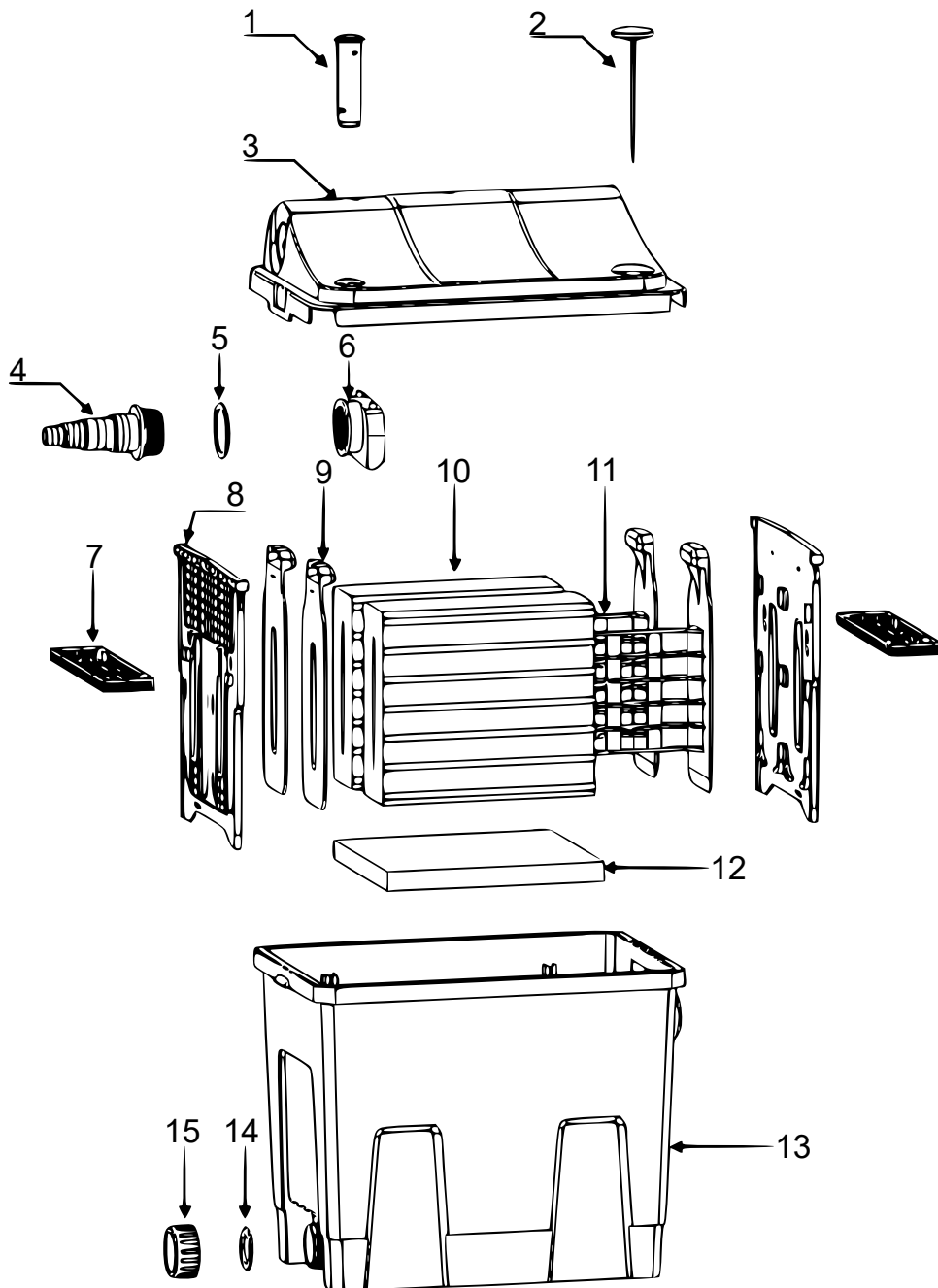
1. Open the filter cover to get out the UV-clarifier.
2. Turn the head of the UV-clarifier in counter-clockwise direction and pull out the lamp device with care.
3. Carefully pull the quartz sleeve from the UV lamp.
4. Remove the O-ring from the quartz sleeve and check it for any damage.
5. Check the UV-lamp and clean it with a damp, clean cloth.
6. Clean the quartz sleeve thoroughly, both from the inside and from the outside. If necessary, replace the UV lamp.
7. After an operational life of 6000 h, the UV lamp should be replaced.

At temperatures below 8 °C or higher than 40 °C, the device must not be operated! Therefore, empty the filter and clean the device thoroughly. Remove all filter materials to dry them. Keep the filter materials in a dry, frost-free place during the winter. Cover the filter housing so that no rain water can ingress. Empty all hoses, pipelines, and connectors to the extent possible.

Before starting-up the filter again, install it again with the open side towards the exit.

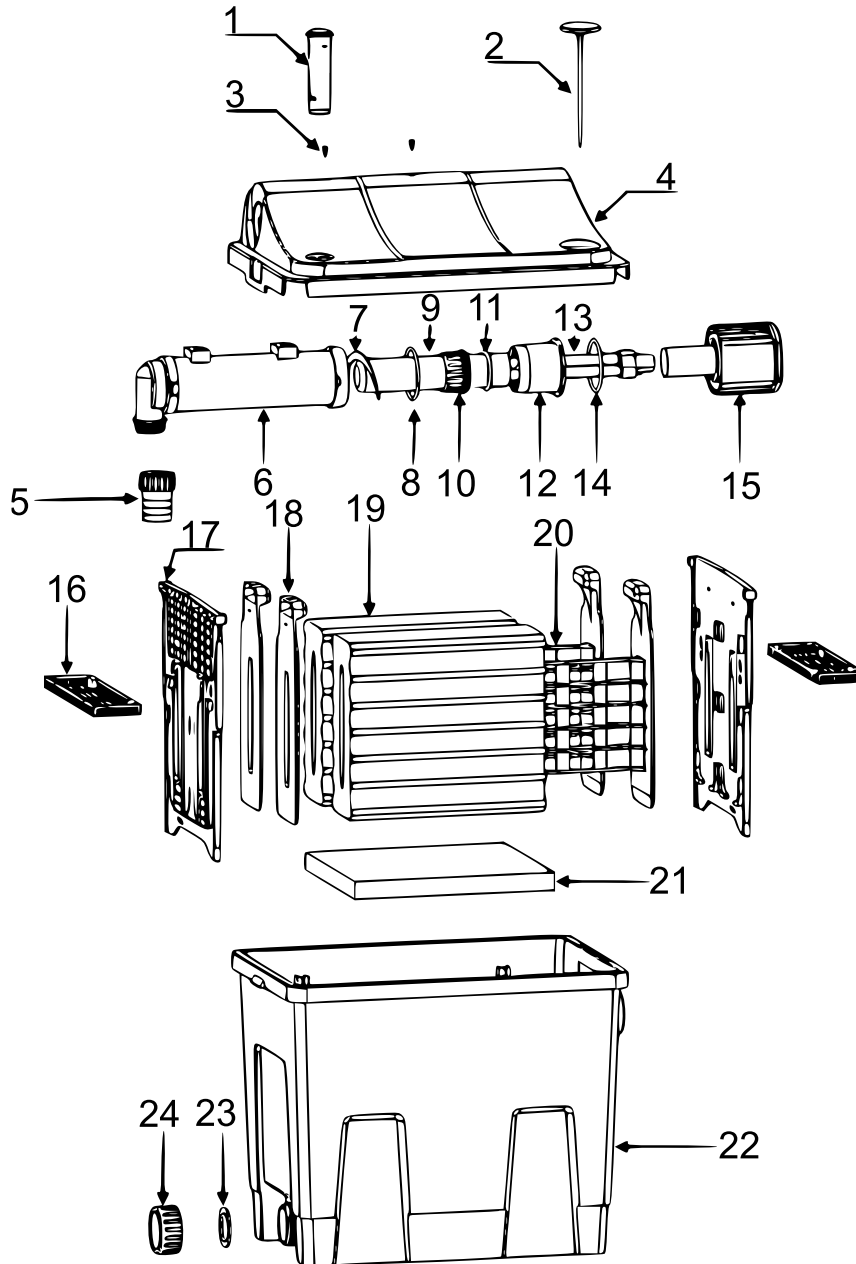
**Parts lists**

51190 – CBF-200



No	Name	No	Name	No	Name
1	Water level/waste indicator	7	Rail fence	12	Japan mat
2	Thermometer	8	Insert frame	13	Filter tank
3	Cover	9	Filter sponge pressure plate	14	Gasket 2
4	Inlet	10-1	Blue filter sponge (coarse)	15	Screw-in ring
5	Gasket 1	10-2	Yellow filter sponge (fine)		
6	OX-Add / oxygen supply	11	Filter sponge support		

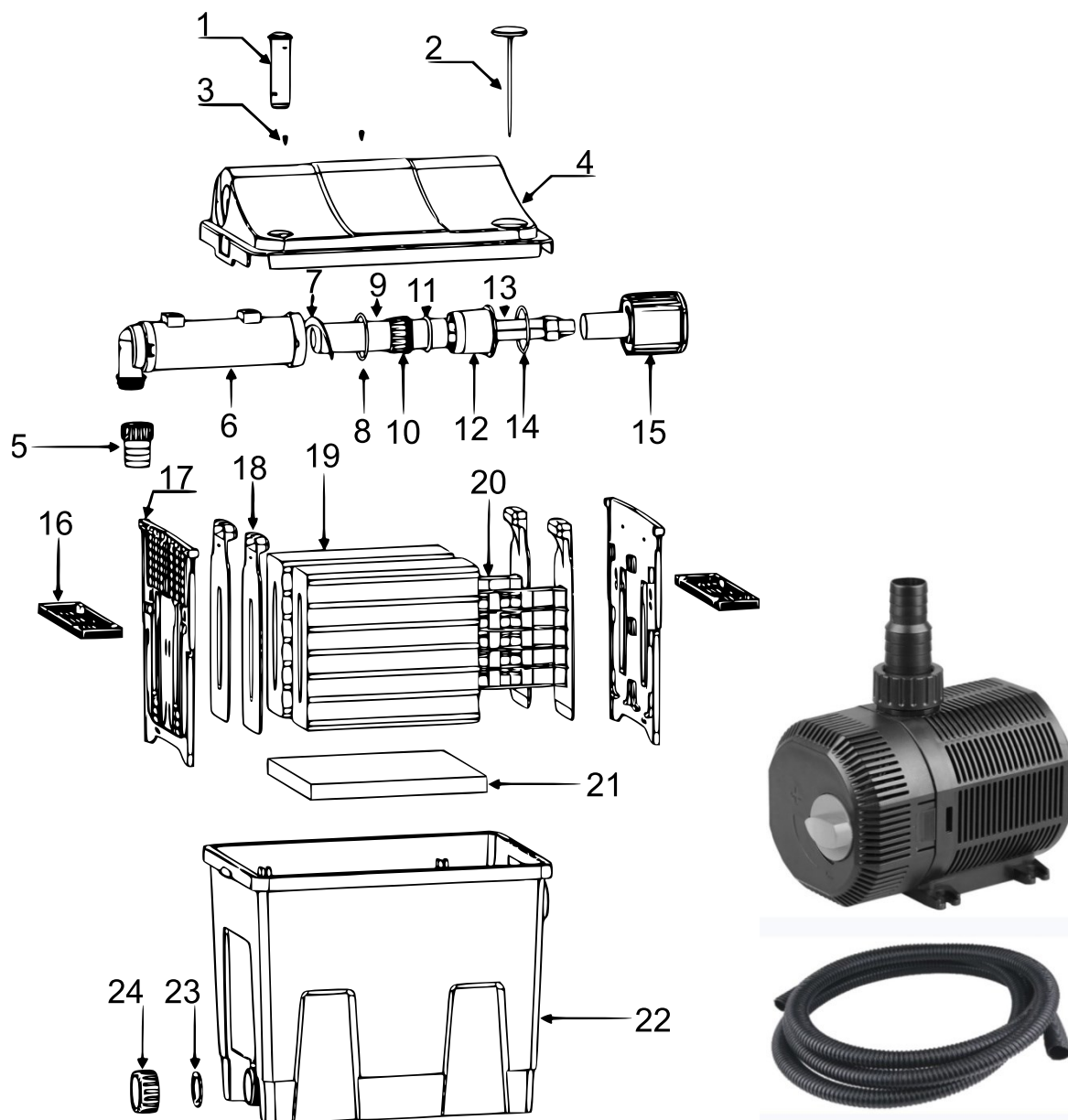
51189 – CBF-200U



No	Name	No	Name	No	Name
1	Water level/waste indicator	10	Screw-in ring	19-1	Blue filter sponge (coarse)
2	Thermometer	11	O-ring 2	19-2	Yellow filter sponge (fine)
3	Screw	12	Quartz glass fixation	20	Filter sponge support
4	Cover	13	UV-lamp	21	Japan mat
5	Outlet	14	O-ring 3	22	Filter tank
6	Casing	15	Connecting unity	23	Gasket
7	Helix	16	Rail fence	24	Screw-in ring / waste outlet
8	O-ring 1	17	Insert frame		
9	Quartz sleeve	18	Filter sponge pressure plate		



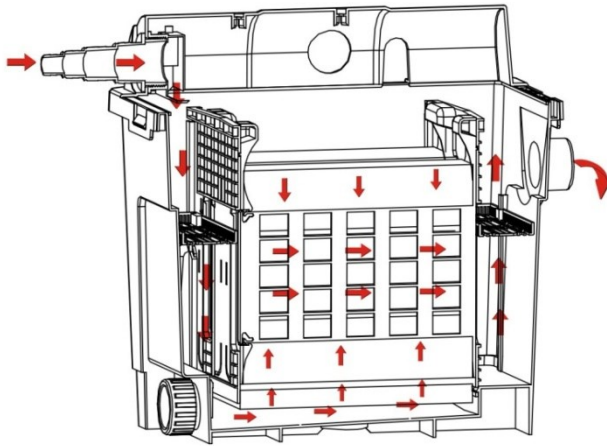
51188 – CBF-200T



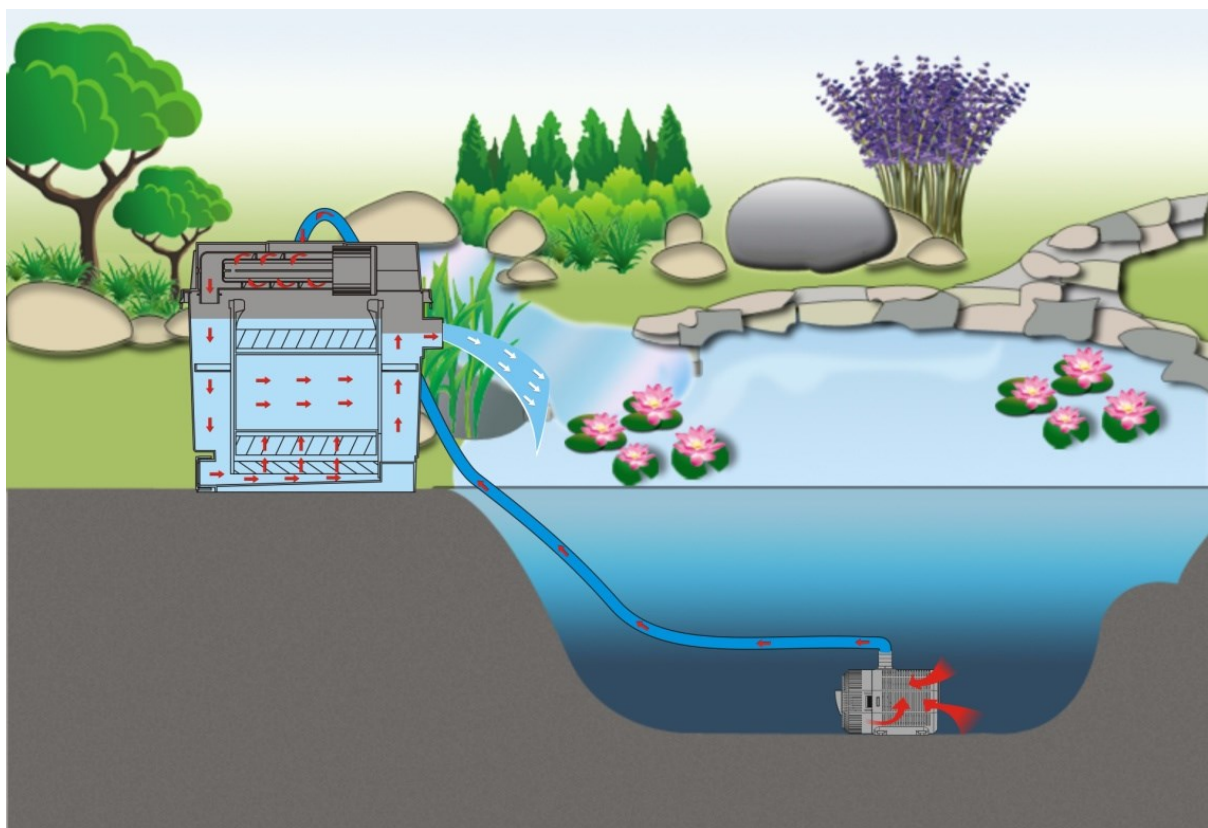
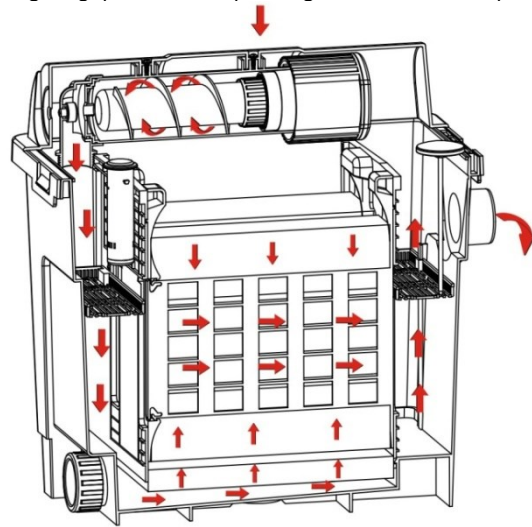
No	Name	No	Name	No	Name
1	Water level/waste indicator	10	Screw-in ring	19-1	Blue filter sponge (coarse)
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3	Screw	12	Quartz glass fixation	20	Filter sponge support
4	Cover	13	UV-lamp	21	Japan mat
5	Outlet	14	O-ring 3	22	Filter tank
6	Casing	15	Connecting unity	23	Gasket
7	Helix	16	Rail fence	24	Screw-in ring / waste outlet
8	O-ring 1	17	Insert frame	25	Pump CQB-2000 (50248)
9	Quartz sleeve	18	Filter sponge pressure plate	26	3 m hose ø20 mm

**Function**

51190 (CBF-200)



51189 (CBF-200U) and 51188 CBF-200T



## Disposal regulations

EU guidelines regarding the disposal of scrap electric appliances (WEEE, 2012/19/EU) were implemented in the law related to electrical and electronic equipment and appliances.

All WiITec electric devices that fall under the WEEE regulations are labelled with the crossed-out wheeled waste bin logo. This logo indicates that this electric equipment must not be disposed with the domestic waste.

The company WiITec Technik GmbH has been registered in the German registry EAR under the WEEE-registration number DE45283704.

Disposal of used electrical and electronic appliances (intended for use in the countries of the European Union and other European countries with a separate collection system for these appliances).

The logo on the article or on its packaging points out that this article must not be treated as normal household waste but must be disposed to a recycling collection point for electronic and electrical waste equipment. By contributing to the correct disposal of this article you protect the environment and the health of your fellow men. Environment and health are threatened by inappropriate disposal.



Material recycling helps reduce the consumption of raw materials.

Additional information on recycling this article can be provided by your local community, municipal waste disposal facilities, or the store where you purchased the article.

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