



# **BioTec Premium** 80000

Gebrauchsanleitung Operating instructions Notice d'emploi DE

ΕN

FR

NLGebruiksaanwijzing

Instrucciones de uso ES

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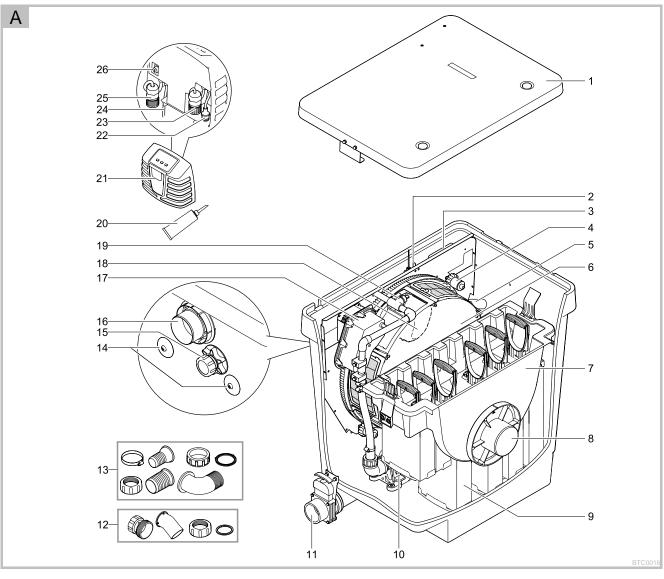
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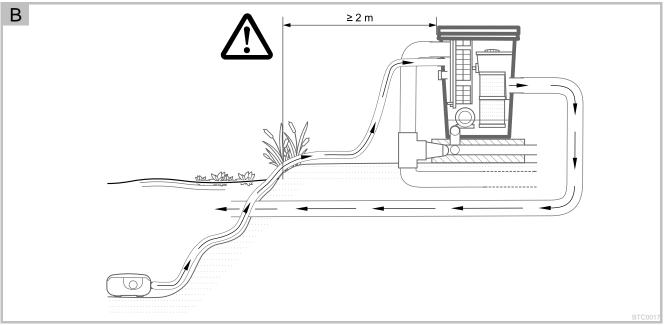
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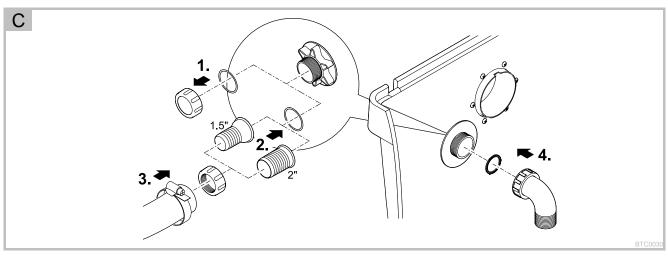
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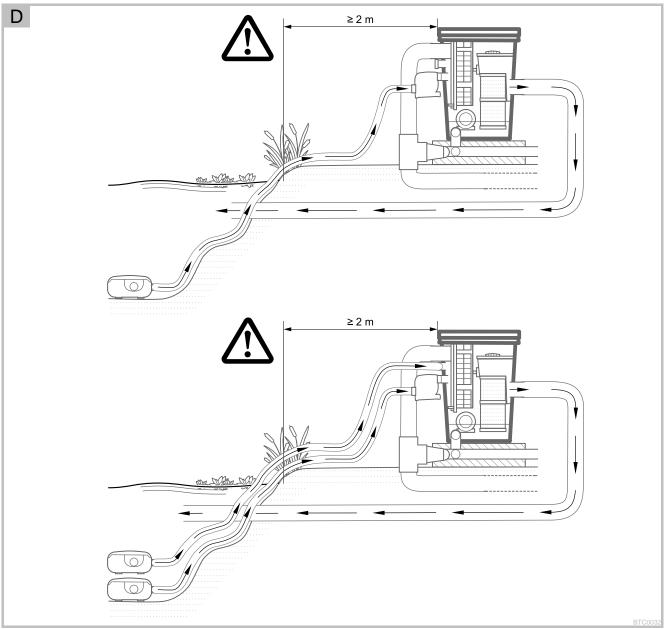


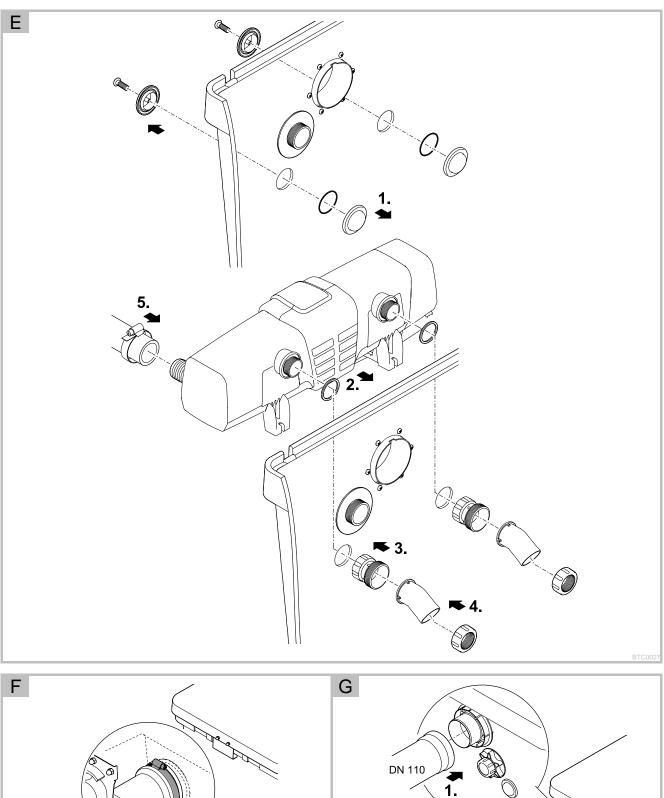


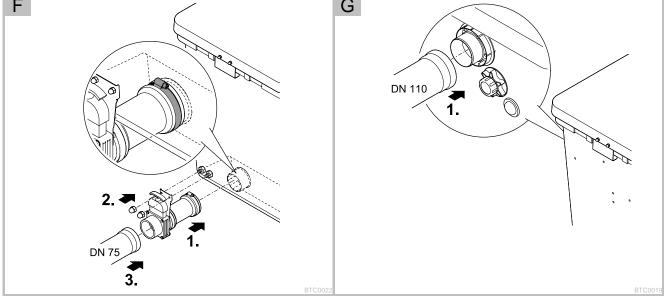




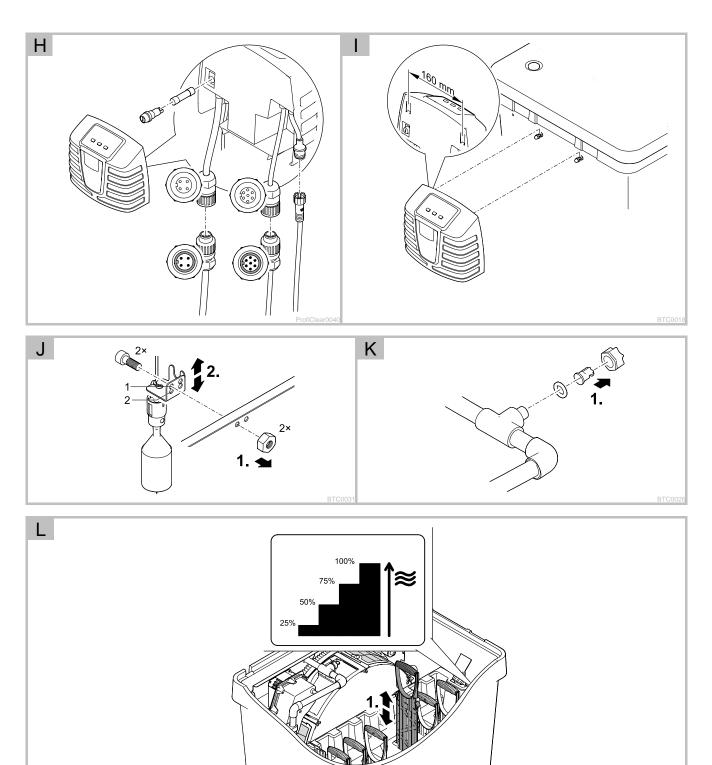


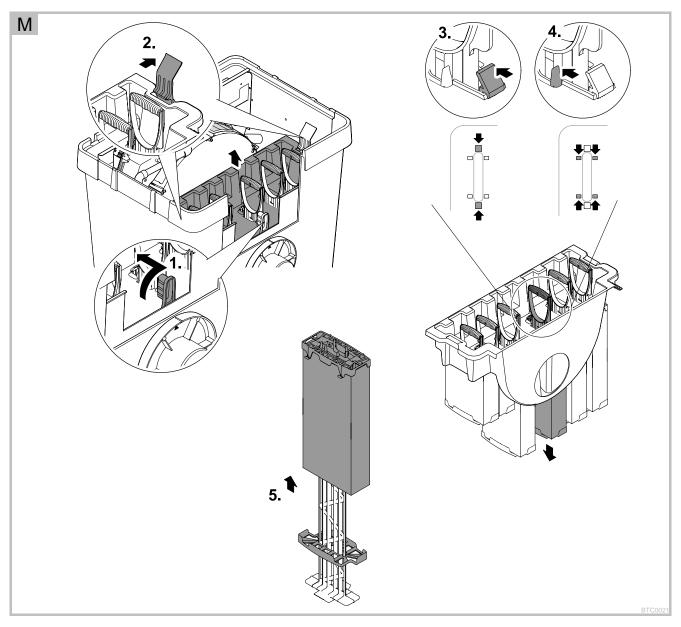


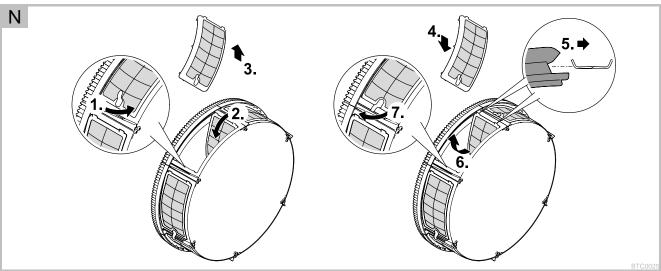




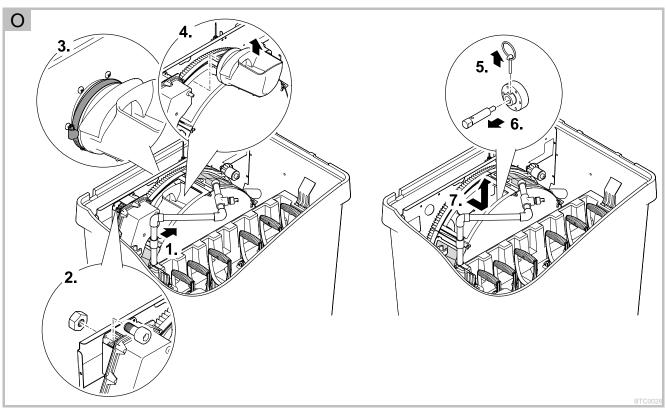


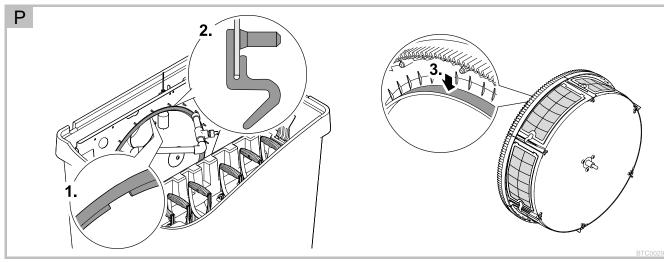


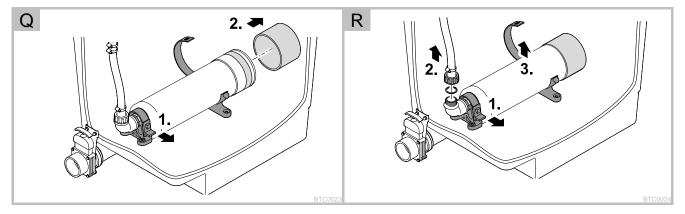














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#### **Translation of the original Operating Instructions**

# 1 Information about these operating instructions

Welcome to OASE Living Water. You made a good choice with the purchase of this product **BioTec Premium 80000**.

Prior to commissioning the unit, please read the instructions of use carefully and fully familiarise yourself with the unit. Ensure that all work on and with this unit is only carried out in accordance with these instructions.

Adhere to the safety information for the correct and safe use of the unit.

Keep these instructions in a safe place! Please also hand over the instructions when passing the unit on to a new owner.

## 1.1 Symbols used in these instructions

The symbols used in this operating manual have the following meanings:

# Risk of injury to persons due to dangerous electrical voltage

This symbol indicates an imminent danger, which can lead to death or severe injuries if the appropriate measures are not taken.

# 

This symbol indicates an imminent danger, which can lead to death or severe injuries if the appropriate measures are not taken.

- Important information for trouble-free operation.
- ☐ A Reference to one or more figures. In this example: Reference to Fig. A.
- → Reference to another section.

# 2 Product Description

# 2.1 Unit configuration

□ A	Description	
1	Container cover	
2	Level detection device - Signals the water level in the filter system	
3	Signal box with level detection device and temperature probe - The signal box is connected to the control system.	
4	Rollers for guiding the filter drum	
5	Temperature probe - monitors the water temperature	
6	Filter drum with 6 screen elements - screen elements for coarse dirt particles larger than 150 µm	
7	Inner cover - foam filter holder - integrated water level indicator	
8	DN 110 outlet	
9	Foam filters with holder - 2x blue - 2x red - 2x violet	
10	Rinsing pump for supplying the rinsing device	
11	DN 75 dirt outlet with slide valve	
12	Connection set, for connecting the Bitron  - 2 × 38 / 50 mm (1½ / 2 ") adapters  - 2 × 30° inlet bends  - 2 × union nuts  - 2 × flat seals 60 × 47 × 3 mm	
13	Connection set, for connecting filter pumps  - 1 × 38 mm (1½ ") hose connector  - 1 × 50 mm (2 ") hose connector  - 1 × union nut for hose connector  - 1 × 40 60 mm hose clip  - 1 × 90° (2 ") connection bend  - 1 × union nut for connection bend  - 1 × flat seal 56 × 43 × 3 mm	
14	2 x 38 mm (1½") connection, closed with sealing plugs – optional connection for a Bitron UVC clarifier	
15	50 mm (2 ") connection for connecting the filter pumps	
16	DN 110 dirt outlet for coarse dirt	
17	Drum motor for filter drum - the motor is connected to the control system	
18	Dirt channel - collects the coarse dirt and rinsing water from the screen elements	
19	Rinsing device - sprays water at high pressure onto the screen elements to rinse off the coarse dirt	
20	Grease for the drum seal	
21	Control system	
22	Connector for drum motor	
23	Connector for signal box	
24	Power cable	
25	Connector for rinsing pump	
26	Fuse holder - Fuse protection of the control system with 5 × 20 mm, T8 A 250 V safety fuse	



#### 2.2 Function description

The filter system must be installed above the water level of the pond. A filter pump pumps the dirty pond water out of the pond into the filter system. The clean water is returned to the pond through a pipe via gravity.

The task of the BioTec Premium 80000 is to separate the dirt from the water. Screens (150  $\mu$ m) remove all types of dirt particles and foam filters provide a surface for the colonisation of bacteria for biological filtration.

The separation of suspended solids and the activity of the filter bacteria on the foam filters removes a large amount of the nutrients from the water.

The control system with integrated microcontroller system automatically controls and monitors the filtration process. The automatic self-cleaning function can be individually adjusted to meet the user's requirements.

The drum filter can be extended by connecting filter modules from the ProfiClear Classic series, for which the drum filter has to be positioned 20 cm higher. In addition, the DN 110 outlet has to be replaced with a DN 150 outlet, provided with the ProfiClear Classic.

#### Advantages of the filter system:

- Minimal installation work required
- ▶ High flow rate of 12500 I/h
- Simple extension using modules from the ProfiClear Classic series
- Easy upstream connection of UVC clarifiers
- ▶ Perfectly tailored to the AquaMax Eco Premium filter pump from OASE

#### 2.3 Intended use

BioTec Premium 80000, referred to in the following as "unit", may only be used as specified in the following:

- For cleaning garden ponds.
- ▶ Operation under observance of the technical data.

The following restrictions apply to the unit:

- ▶ Only operate with water at a water temperature of +4 °C to +35 °C.
- Never use the unit to convey fluids other than water.
- ▶ Do not use for commercial or industrial purposes.
- Not suitable for salt water.
- ▶ Never run the unit without water.
- ▶ Do not use in conjunction with chemicals, foodstuff, easily flammable or explosive substances.

# 3 Safety information

Hazards to persons and assets may emanate from this unit if it is used in an improper manner or not in accordance with its intended use, or if the safety instructions are ignored.

This unit can be used by children from the age of 8 and by persons with physical, sensory or mental impairments or lack of experience and knowledge, as long as they are supervised or instructed on how to use the unit safely and are able to understand the potential hazards. Do not allow children to play with the unit. Do not allow children to clean or maintain the unit without close supervision.

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#### 3.1 Hazards encountered by the combination of water and electricity

- ► The combination of water and electricity can lead to death or severe injury from electrocution, if the unit is incorrectly connected or misused.
- ▶ Prior to reaching into the water, always switch off the mains voltage to all units used in the water.

#### 3.2 Danger for persons with pacemakers

▶ The container cover contains a magnet with a strong magnetic field that may affect the operation of pacemakers or implantable cardioverter defibrillators (ICDs). Always keep magnets at least 20 cm away from implanted devices.

#### 3.3 Correct electrical installation

- ► Electrical installations must meet the national regulations and may only be carried out by a qualified electrician.
- ▶ A person is regarded as a qualified electrician, if, due to his/her vocational education, knowledge and experience, he or she is capable of and authorised to judge and carry out the work commissioned to him/her. This also includes the recognition of possible hazards and the adherence to the pertinent regional and national standards, rules and regulations.
- ► For your own safety, please consult a qualified electrician.
- ► The unit may only be connected when the electrical data of the unit and the power supply coincide. The unit data is to be found on the unit type plate or on the packaging, or in this manual.
- ▶ Ensure that the unit is fused for a rated fault current of max. 30 mA by means of a fault current protection device.
- ▶ Extension cables and power distributors (e. g. outlet strips) must be suitable for outdoor use.
- ▶ Protect the plug connections from moisture.
- Only plug the unit into a correctly fitted socket.

# 3.4 Safe operation

- ▶ Never operate the unit if either the electrical cables or the housing are defective!
- Do not carry or pull the unit by its electrical cable.
- ► Route cords/hoses/lines in a way that they are protected against damage, and ensure that they do not present a tripping obstacle.
- Only open the unit housing or its attendant components, when this is explicitly required in the operating instructions.
- Only execute work on the unit that is described in this manual. If problems cannot be overcome, please contact an authorised customer service point or, when in doubt, the manufacturer.
- Only use original spare parts and accessories for the unit.
- Never carry out technical modifications to the unit.
- ► The power connection cables cannot be replaced. When the cable is damaged, the unit or the component needs to be disposed of.
- ► Keep the socket and power plug dry.
- ➤ Overvoltage in the mains could lead to operating malfunctions of the unit. For information, please refer to chapter "Remedy of faults".
- ▶ Do not breath in the spray from the rinsing device. The spray may contain harmful bacteria. When the container cover is lifted up, the rinsing device continues operating.



#### 4 Installation and connection

**Important**: If the planned installation deviates significantly from the recommendations contained in this manual:

 Have your specialist retailer check whether all technical specifications were adhered to. This is crucial for a problem-free operation.

#### 4.1 Installation planning



Attention! Dangerous electrical voltage.

**Possible consequences:** Death or severe injuries caused by electric shock from electrical units operated in or near water.

#### Protective measures for accessible ponds:

- ▶ Only use electrical units or installations with a rated voltage of U<sub>AC</sub> ≤ 12 V or U<sub>DC</sub> ≤ 30 V in the water.
- ► Electrical installations with a rated voltage of UAC > 12 V or UDC > 30 V must be located at a distance of at least 2 m from the water.

#### Protective measures for non-accessible ponds:

Electrical installations with a rated voltage of UAC > 12 V or UDC > 30 V must be located at a distance
of at least 2 m from the water.



#### Note:

Use suitable transport and lifting aids to transport and install the unit.

The unit weighs more than 25 kg ( $\rightarrow$  Technical Data).



#### Note!

The filter system operates day and night and causes rinsing noises during the automatic cleaning cycles. (→ Technical data)

- ▶ Please protect the general public and your neighbourhood from noise disturbance and comply with the statutory noise regulations.
- The filter system can be enclosed such that the enclosure effectively absorbs the noises.
- ▶ Select the location of the filter system in order to avoid noise disturbance.

Plan the installation of the filter system. With careful planning, taking the ambient conditions into account, you will obtain optimum operating results.

The following conditions must be met:

- ► The filter system starts the cleaning cycles automatically day and night. These cleaning cycles cause noise emissions (→ Technical data).
- As the filter module is very heavy when filled, it must be placed on a suitable base (at least on slabs, but preferably on a poured concrete base) to prevent it from subsiding.
- Horizontally align the base slab.
  - The filter system must be horizontally positioned (max. deviation  $d \pm 5$  mm).
  - Tip: Use commercially available concrete slabs, each measuring 500 x 500 mm. One concrete slab is required for the operation of the filter system on its own; four concrete slabs are required for operation of the filter system together with the ProfiClear Classic modules.
- ▶ Plan sufficient space for carrying out cleaning and maintenance work.
- Drain the dirty water into the drain or far enough away from the pond so that it cannot flow back into the pond.
  - If the coarse soiling and dirty water both run into the same pipe, it is important to use at least DN 110 pipes.
- ▶ Position the inlet in the pond (e.g. via a water course or waterfall) so that it is lower than the outlet of the filter system.



#### Note:

A water course or waterfall guarantees optimum water return to the pond.

In this way, the filtered pond water is enriched with oxygen before it is returned to the pond.

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#### 4.2 Connect the unit

#### 4.2.1 Information regarding pipes

- ▶ Use suitable pipes.
- ▶ Do not use any right-angled bends. Bends with a maximum angle of 45° are very efficient.
- Standing water in pipes can freeze when there is a hard frost and cause pipes to burst. For this reason, lay the pipes and hoses with a gradient (50 mm/m) to ensure that they can run empty.

#### 4.2.2 Connecting the inlet

The filter system is equipped with a 50 mm (2 ") or 38 mm (1.5 ") connection for the filter pump.

- ▶ You can additionally connect a UVC clarifier. (→ Fitting a UVC clarifier)
- ► The maximum flow rate is 12500 l/h.
- It is necessary to remove a screen element to access the internal connection. (→ Removing/fitting a screen element)
- ▶ Leave the connection for the filter pump on the container closed if it is to remain unused.

How to proceed:

 $\square$  B, C

- 1. Unscrew the cover cap.
- 2. Screw the union nut with 50 mm (2 ") or 38 mm (1.5 ") hose connector and flat seal onto the connection. Hand-tighten the union nut.
- 3. Slip the 50 mm (2") hose of the filter pump onto the hose connector and secure with a hose clip.
- 4. Screw the union nut with the 90° connection bend (2 ") and the seal onto the connection on the inside of the container. Hand-tighten the union nut.
  - Ensure that the connection bend points downwards.
  - A correctly positioned connection bend prevents unintended overflow (emptying of the pond) and also serves to reduce noise emissions.



#### Note!

If two pumps are connected but only one pump is switched on, water can flow back via the hose of the switched-off pump without being filtered.

#### Protective measures:

- Always fit a non-return valve into the hose.
- Always switch on both pumps.

#### 4.2.3 Installation of the UVC clarifying unit

The Bitron UVC clarifier is fitted to the drum filter module. The max. flow rate of the Bitron and the overall system is 12500 l/h.

It is necessary to remove a screen element to access the sealing plugs. (→ Removing/fitting a screen element)

How to proceed:

□ D, E

- 1. Undo the screws with a screwdriver and remove the sealing plugs.
- 2. Guide the outlet sockets of the Bitron with flat seals through the holes in the container wall.
- 3. Screw the adapters onto the outlet sockets and hand-tighten.
- 4. Screw the 30° inlet bends with cap nuts onto the adapters and hand-tighten.
  - Position the inlet bends so that they are pointing downwards.
  - Correctly positioned inlet bends prevent unintended overflow (emptying of the pond) and also serve to reduce noise emissions.
- 5. Connect the Bitron to the filter pump in accordance with the operating manual.



# 4.2.4 Connecting the dirt outlet

The water in the container can be drained via the DN 75 dirt outlet with slide valve at the bottom of the container if required (for cleaning, repair, overwintering).

▶ Connect a suitable DN 75 pipe and drain the dirty water into the sewer system.

How to proceed:

- $\Box$  F
- 1. Remove the cap nuts and push the dirt outlet onto the connection.
- 2. Tighten the hose clip.
- 3. Tighten the cap nuts.



Connect the DN 75 pipe to the DN 110 pipe and drain the dirty water via a DN 110 pipe into the sewer system. This will ensure that the dirty water pipe will be conveniently flushed out with sufficient pressure.

#### 4.2.5 Connecting the coarse dirt outlet

 $\Box$  G

The coarse dirt that collects in the dirt channel drains away via the DN 110 coarse dirt outlet (top outlet on the container) on the input side.

Connect a suitable DN 110 pipe and drain the dirty water into the sewer system.

### 4.3 Connecting and installing the control system

The cable harness of the Drum Filter Module contains the connection cables of the signal box, the drum motor and the rinsing pump.

#### Connecting

 $\Box$  H

- Connect the three connectors of the cable harness to the control system sockets. Hand-tighten the union nuts.
  - The connections are designed to prevent misconnection.
  - First flood the container with water, then connect the control system to the mains voltage/power supply.

#### Installation

 $\Box$  I

- Protect the control system from direct sunlight.
- ▶ The control system is splash-proof and may be exposed to rain.
- Suspended installation of the control system: Either on the mount on the container wall of the drum filter module or using the threaded hooks in another position.

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# 5 Commissioning/start-up

- ► Thoroughly clean the pond before starting up the filter system for the first time to ensure that it is not overloaded by excessively soiled water. OASE recommends using the PondoVac pond vacuum cleaner for cleaning the pond.
  - This cleaning measure is normally not necessary for newly installed ponds.
- ▶ It is necessary to operate the filter system for 24 hours a day during the pond season.



Attention! Dangerous electrical voltage.

Possible consequences: Death or severe injury.

**Protective measures:** Isolate the unit prior to reaching into the water and carrying out any work on the unit. Secure the unit from being switched on inadvertantly.



Attention! Sensitive electrical components.

Possible consequence: The unit will be destroyed.

#### Protective measure:

- Do not connect the unit to a dimmable power supply.
- Do not operate the unit with a timer.



Attention! Never allow the rinsing pump to run dry!

Possible consequences: The rinsing pump will be destroyed.

#### **Protective measures:**

- Check the water level at regular intervals. Ensure that the rinsing pump is always under water during operation.
- Do not switch on the control system until the container is flooded with water.

#### 5.1 Adjusting the level detection device

A rise in the water level during operation indicates that the system is soiled. The level detection device signals possible soiling to the control system and the cleaning cycle is started.

The water level in the filter system is independent of the water level in the pond. The water level in the filter system is dependent upon the circulation capacity. Therefore it may be necessary to adjust the level detection device.

The level detection device can be fitted in two positions.

- ▶ Position 1: Suitable for circulation capacities greater than 8000 l/h (factory default setting).
- ▶ Position 2: Suitable for circulation capacities smaller than 8000 l/h and short automatic cleaning intervals.

How to proceed:



- 1. Undo both lock nuts. Remove nuts and Allen screws.
- 2. Move the level detection device according to the hole pattern and fix in place with Allen screws and lock nuts. Tighten both nuts.

#### 5.2 Biological filter starter

The foam filters take several weeks to reach their full biological cleaning effect. We recommend the OASE filter starter Biokick to ensure fast growth of bacterial populations. Micro-organisms colonise the filter system, multiply and ensure an enhanced quality of the pond water by the decomposition of excess nutrients.



#### 5.3 Order of starting up steps

How to proceed:

- 1. Close the slide valve for the dirt outlet at the bottom of the container.
- 2. Check that the entire filter system (pipes and hoses) is complete.
- 3. Remove the container cover.
- 4. Manually turn the filter drum for one whole rotation to ensure unobstructed movement.
- 5. Fill the filter with water until the rinsing pump is submerged (dry run protection of the rinsing pump).
- 6. Fit the container cover.
  - The filter drum is stopped for safety reasons if the filter cover is lifted.
- 7. Switch on the control system and perform any necessary adjustments. (→ Operation)
- 8. Switch on the filter pump and UVC clarifier (if applicable).
  - Ensure that the water is returned to the pond via the return pipe.
- 9. Check all pipes, hoses and their connections for leaks.
  - Expansion seals may leak initially until they have fully expanded on contact with water.

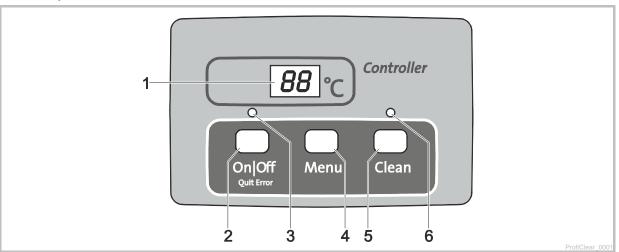


When using filter starter, medicines or pond water treatments, leave the UVC clarifying unit switched off for at least 36 hours so as not to impair their efficacy.



#### 6 **Operation**

#### 6.1 **Control system overview**



- 1
  - for displaying the operating status
  - for displaying the menus and values for setting the drum filter
  - the current water temperature [°C] is displayed as standard
- On|Off button, Quit Error
  - for switching the drum filter on or off for resetting error messages
- LED, 2 colours
  - LED is lit red: Control system switched OFF (OFF)
  - LED is lit green: Control system switched ON (DM)

For selecting the following menus and changing the values:

- cleaning time "Cleaning" (£L)
- extended cleaning time "Extra Cleaning" (EL)
- time-dependent cleaning "Interval" (In)
- Clean button
  - for starting the manual cleaning cycle and for cancelling the active cleaning cycle
  - LED (6) is lit when the cleaning cycle is active
- - LED is lit: Cleaning cycle active

#### 6.2 **Switching ON/OFF**

How to proceed	Information	
Switching on:  Press on of of 3 s.  - LED (3) is lit green.  - The display indicates $\mathcal{Q}_n$ for approx 5 s.	The display indicates the water temperature as standard.     If there is a voltage interruption, the control system will remain switched on.	
Switching off:  Press Onloff for 3 s.  - LED (3) is lit red.  - The display indicates OFF.	The control system switches off all functions.     If there is a voltage interruption, the control system will remain switched off.	



#### 6.3 Operating modes

Description	Information
Automatic mode:  - Operating mode for normal operation.	<ul> <li>The display indicates the water temperature as standard.</li> <li>A cleaning cycle is automatically started if the level detection device signals an excessive deviation in the water level.</li> <li>The level exceeds a certain water level.</li> <li>After 20 automatic cleaning cycles, a cleaning cycle with extended cleaning time is performed.</li> </ul>
Time-dependent operation	<ul> <li>In addition to the automatic cleaning cycle (dependent upon the water level in the drum filter), a time-dependent cleaning cycle can be performed. (→ In: Time-dependent cleaning "Interval")</li> <li>The duration of the cleaning cycle corresponds to the time set in the cleaning time "Cleaning" menu. (→ ££: Cleaning time "Cleaning")</li> </ul>

#### 6.4 Manual cleaning

How to proceed	Information
Press for Clean 3 s  LED (6) is lit  The display indicates &  To cancel the process: Press the button again	<ul> <li>The drum motor is stopped for safety reasons if the filter cover is lifted.</li> <li>The rinsing pump can still be manually started to check the function of the nozzles.</li> <li>Each active cleaning cycle (automatic, time-dependent or manual) can be stopped by pressing the button.</li> </ul>

## 6.5 Settings in the menus



#### Note:

Settings can only be made in the menus when the control system is switched on. ( $\rightarrow$  Switching on / off).

# 6.5.1 (L: Cleaning time "Cleaning"

Setting the cleaning time changes the duration of the cleaning cycle. Extend the cleaning time if the dirt is not completely carried away by the water, for example if the drain pipes are very long or have lots of bends, or there is a particularly large amount of sticky dirt (e.g. during spawning).

Please take into consideration that an extended cleaning time leads to increased water consumption. The default setting of 10 s is normally sufficient (corresponds to approx. a  $^{7}/_{8}$  drum rotation).

How to proceed		Information
1.	Press Menu several times until & appears in the display.	- To cancel and exit the menu: Either wait for 10 s or press Onloff or Clean.
2.	Press Menu for 5 s until the time is indicated in the display.	- To cancel and exit the menu: Either wait for 5 s or press Onloff or Clean.
3.	Press Menu several times to change the value.  - To change the value quickly: Hold down the button	- Settable range: 10 – 30 s - Increment: 1 s - The number can only be changed upwards. Once the value 30 is reached, the display returns to 10 Saving the set value: Wait for 5 s until the menu is automatically exited Cancel without saving and exit the menu: Press Onloff or Clean.



#### 

To prevent larger deposits from building up in the dirt channel or pipework, the unit performs a cleaning cycle with an extended cleaning time after every 20 cleaning cycles. This ensures that the pipework is flushed out at regular intervals.

However, if dirt and residue build up due to unfavourable conditions, you can increase the cleaning time and flush out the pipe with additional water. The default setting for the extended cleaning time is 20 s.

How to proceed		Information
1.	Press several times until EC appears in the display.	- To cancel and exit the menu: Either wait for 10 s or press OnlOff or Clean.
2.	Press Menu for 5 s until the cleaning time is indicated in the display.	- To cancel and exit the menu: Either wait for 5 s or press Onloff or Clean.
3.	Press Menu several times to change the value.  - To change the value quickly: Hold down the button.	- Settable range: 10 – 60 s - Increment: 1 s - The number can only be changed upwards. Once the value 60 is reached, the display returns to 10 Saving the set value: Wait for 5 s until the menu is automatically exited Cancel without saving and exit the menu: Press

## 6.5.3 In: Time-dependent cleaning "Interval")

In addition to automatic cleaning, the unit can also perform a time-dependent cleaning cycle. This is particularly useful for ponds containing fish because even if there is only a small amount of dirt, excrement is always removed from the water cycle before it leads to build-up of nutrients.

Adjust the time interval to meet the requirements. The Drum Filter Module is normally optimally set with a time interval of 20 minutes (default setting). The function is deactivated with a time setting of 0 minutes.

The time-dependent cleaning cycle does not have any influence on the automatic cleaning cycle that starts when the water level is too low. After each automatic cleaning cycle, the time interval is reset and starts again from the beginning.



The time-dependent cleaning cycle also protects the filter system from freezing. For this, please refer to the information about safe overwintering. (→ Storage/overwintering)

How to proceed		Information
1.	Press several times until la appears in the display.	- To cancel and exit the menu: Either wait for 10 s or press OnlOff or Clean.
2.	Press Menu for 5 s until the time is indicated in the display.	- To cancel and exit the menu: Either wait for 5 s or press OnlOff or
3.	Press Menu several times to change the value.  - To change the value quickly: Hold down the button.	- Settable range: 0, 3 – 60 min - 0 min: No time-dependent cleaning - Increment: 1 min - The number can only be changed upwards. Once the value 60 is reached, the display returns to 0 Saving the set value: Wait for 5 s until the menu is automatically exited Cancel without saving and exit the menu: Press Onloff or Clean.



# 6.6 Reading out the number of cleaning cycles

# 6.6.1 Cleaning cycles in 24 hours

How to proceed	Information
Press Menu and Clean for 5 s.	The sum of the automatic and time-dependent cleaning cycles is saved. The 4-digit value is displayed by two groups of two digits that appear in succession in the display.
	Example: מו-וז: Corresponds to 117 cleaning cycles The number is repeated five times after an extended pause to make it easier to read: מו-וזמו-וזמו-וזמו-וז
	Note: If the mains voltage is switched off, the counter is reset to 0.

# 6.6.2 Total cleaning cycles

How to proceed	Information
Press OnlOff and Clean for 5 s.	The sum of the automatic, manual and time-dependent cleaning cycles is saved. The 8-digit value is divided into four groups of two digits that appear in the display in succession.
	Example: 00-00-12-44: Corresponds to 1244 cleaning cycles
	The number is repeated four times after an extended pause to make it easier to read:  00-00-12-4400-00-12-4400-00-12-44
	Note:  If the mains voltage is switched off, the number of cycles is rounded off to the nearest hundred and saved.

# 6.7 Loading default settings

How to proceed	Information
Press OnlOff and Menu for 10 s until rE appears in the display.	All individually set values will be overwritten!  The following values are set:  Cleaning time *\mathcal{L}\$: 10 s  Extended cleaning time *\mathcal{E}\$C: 20 s  Interval of the time-dependent cleaning *\mathcal{h}\$: 20 min



# 8.9

**System messages**The 4-digit system message is displayed as two groups of two digits appearing in succession.

Resetting the system message	Automatic when the	container cover is replaced		Press Onloff key for 5 s	- Automatic as soon as the	level detection device is triggered			Press Onloff key for 5 s											
Remedy	Refit the container cover	Turn the container cover around so that the magnets in the container cover are located over the signal box	Connect the signal box to the control system	Check screen elements, replace if necessary	Check the drum seal	Clean the level detection device to ensure that the mechanics operate freely, replace if necessary	Adjust the level detection device ( $\rightarrow$ Adjusting the level detection device)	Time-dependent cleaning is automatically activated by floats after check mode.	Clean the level detection device to ensure that the mechanics operate freely, replace if necessary	Clean the screen elements, descale (→ Replacing screen element)	<ul> <li>Clean the bottom of the container, clean the rinsing pump</li> <li>(→ Cleaning/removing the rinsing pump)</li> <li>Check the pump connection</li> </ul>	Clean the rinsing nozzle	<ul> <li>Check the motor connection</li> <li>Check the rotating movement of the filter drum.</li> <li>Tip: Mark the filter drum and check on the basis of the markings if the drum rotates.</li> </ul>	Adjust the level detection device ( $\rightarrow$ Adjusting the level detection device)		- Clean outlet pipes	- Enlarge outlet opening	- Reduce flow quantity (adjust pump capacity)	<ul> <li>Thoroughly clean the pond.</li> <li>Install the pump in an elevated position.</li> </ul>	- Clean foam filters
Possible cause	Container cover raised	Container cover incorrectly fitted	Signal box not connected	Screen elements leaking	Drum seal leaking	Level detection device stuck or defective	Level detection device set incorrectly	24 hour check mode is active and timedependent cleaning is deactivated.	Level detection device stuck or defective	Screen elements heavily soiled	Rinsing pump not operating	Rinsing nozzle clogged	Filter drum not rotating	Level detection device set too low	Water level in the system too high:	- Outlet pipes soiled	- Outlet opening too small	- Excessive flow quantity (pump capacity too high)	- The pond water is very dirty and the filter pump is conveying an excessive amount of dirt.	- A large amount of dirt has entered the filter system, water is flowing over (instead of through) the foam filters.
Functions that are still available	- Manual cleaning (only	nozzles, filter drum not rotating)		- Manual cleaning	<ul> <li>Automatic mode</li> <li>Time-dependent cleaning</li> </ul>			<ul><li>Manual cleaning</li><li>Automatic mode</li></ul>	<ul><li>Manual cleaning</li><li>Time-dependent cleaning</li></ul>											
	Container cover raised			ပ	AND the last automatic				20 cleaning cycles in succession											
System message	Erm			£r55					£r33											



System	System message	Functions that are still available	Possible cause	Remedy	Resetting the system message
44.43	Motor blocked (The control system attempted to start up the motor three times - 5 times per attempt)	None	Filter drum rotating sluggishly or jammed	<ul> <li>Clean edge of the drum/drum seal and grease edge of the drum Only use original OASE grease (order number 27872).</li> <li>Ensure that the rollers move smoothly</li> <li>Remove larger particles (e.g. snails, stones) from the sprocket</li> </ul>	Press Only key for 5 s
			The lips of the drum seal were squeezed when the drum was installed.	<ul> <li>Disassemble the drum and ensure that the drum seal is positioned correctly during re-assembly</li> </ul>	
			The drum load is distributed unevenly	- Align the container horizontally	
£r.55	More than 960 cleaning cycles in 48 hours	<ul><li>Manual cleaning</li><li>Automatic mode</li><li>Time-dependent cleaning</li></ul>	Temporary heavy soiling - Start-up phase of the filter system (e.g. during the first start-up) - Fish are spawning	Wait until the soiling decreases - This operating status is atypical. Avoid long-term operation in this state.	- Press Only key for 5 s - Automatic if the number of cleaning procedures drops below 960.
			Pond heavily soiled	<ul> <li>Clean the pond</li> <li>Reduce the amount of soiling</li> <li>Install the filter pump in an elevated position.</li> </ul>	
			Screen elements heavily soiled	Clean the screen elements, descale ( $\rightarrow$ Replacing screen element)	
			Insufficient cleaning effect due to soiled nozzle	- Clean nozzle	
			Water level in the system too high:		
			- Outlet pipes soiled	- Clean outlet pipes	
			- Outlet opening too small	- Enlarge outlet opening	
			- Max. flow rate exceeded	- Reduce flow rate	
			<ul> <li>A large amount of dirt has entered the filter system, water is flowing over (instead of through) the foam filters.</li> </ul>	<ul> <li>Clean the foam filters</li> </ul>	
£r.55	Switch element for rinsing pump in the control system overheated	None	Control system is exposed to excessive heat (sun, ambient temperature)	Protect the control system from heat	Automatic when cooled down

# 7 Remedy of faults

Malfunction	Possible cause	Remedy		
No flow of water	Filter pump not switched on	Switch on the filter pump, connect the power plug		
	Supply to filter system or return to pond blocked	Clean the supply and/or return		
Water flow insufficient	Bottom drain, pipe or hose blocked	Clean, replace if necessary		
	Hose kinked	Check hose, and replace if necessary		
	Excessive loss in lines	Reduce line length to necessary minimum		
Water remains cloudy	Insufficient pump capacity	Adjust the pump capacity accordingly - For AquaMax Eco Premium 12000, 16000, 20000, switch off the SFC (Seasonal Flow Control). SFC reduces the quantity of water by up to 50 %.		
	The water is extremely soiled.	<ul> <li>Remove algae and leaves from the pond.</li> <li>If the water is particularly contaminated, change 30 % of the water to avoid damage to the fish.</li> </ul>		
	Dirt particles do not reach the drum filter module.	<ul> <li>Optimise the water flow so that the skimmer and/or the filter pump can draw in the dirt particles.</li> <li>Align the skimmer and/or filter pump in relation to the water flow so that they can draw in dirt particles.</li> </ul>		
	Too many pond animals	Reduce number of pond animals		
	Screen elements clogged or damaged	Clean or replace screen elements		
	Drum seal incorrectly positioned	Check the seating of the drum seal		
	Drum seal is damaged	Replace the drum seal		
	Foam filters soiled	Clean the foam filters		
Unusual noises in the drum	Large dirt particles have collected in the filter drum	Remove a screen element and remove dirt particles from the filter drum		
Rinsing channel blocked	Large particles of dirt such as string algae are blocking the dirt channel	Remove a screen element and clean the dirt channel		
Filter drum is partially soiled, cannot be cleaned	Rinsing nozzle clogged	Clean the rinsing nozzle, replace if necessary		
Water is flowing via the	Screen elements clogged	Clean/descale the screen elements		
emergency overflow	Pump capacity too high	Reduce the pump capacity		
	The pipe of the dirt outlet is blocked	Clean the pipe		
Time-dependent cleaning function (interval) does not start	The control system checks the function of the level detection device.  - This check is started automatically if too few automatic cleaning procedures have been carried out.	<ul> <li>Wait. The check takes a maximum of 24 hours.</li> <li>The check is completed once the level detection function is triggered. An automatic cleaning procedure is carried out.</li> <li>If the level detection device is not triggered within 24 hours, &amp; ≥ is displayed. The time-dependent cleaning cycle is activated. (→ System messages)</li> </ul>		
No display on the control	Cable not connected	Check cable connection		
system	Control system has switched off due to overheating (temperature switch)	Protect the control system from heat and allow it to cool down  - The control system will switch back on automatically when it has cooled down  - Error message Er66 gives a warning before the control system overheats		
	Safety fuse has tripped due to a blockage of the rinsing pump (excessive current consumption)	Clean the rinsing pump (→ Cleaning/removing the rinsing pump)  - Replace the fuse (□ N)  - Only use 5 × 20 mm, 8 A slow-blow / 250 V safety fuse.		
Oil film in the drum filter module	Harmless food-grade oil may leak from a new rinsing pump for a short time when first used	No measure is necessary		



Malfunction	Possible cause	Remedy
Foam holders are unstable	Foam filters are worn	Replace the foam filters
The water level is frequently above the foam	Pump capacity is too high	Connect a filter pump with the correct flow rate (→ Technical data)
filters and inner cover	A screen is worn or missing	Replace the screen
	The pond was not thoroughly cleaned before initial start-up	Thoroughly clean the pond
	The bacteria of the biological filter system are not sufficiently established	Use OASE Biokick filter starter
	The level detection device is clogged or soiled	Clean the level detection device
	The level detection device is set to position 2	Set the level detection device to position 1 (→ Adjusting the level detection device)
A cloud of dirt briefly appears in the pond	Dirt from the foam filters flows out via the outlet after cleaning	Drain the dirty water produced briefly after cleaning via the outlet into the sewer system.

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# 8 Maintenance and cleaning



Attention! Dangerous electrical voltage.

Possible consequences: Death or severe injury.

**Protective measures:** Isolate the unit prior to reaching into the water and carrying out any work on the unit. Secure the unit from being switched on inadvertantly.

# 8.1 Cleaning the unit

- Never use aggressive cleaning agents or chemical solutions. These could attack the housing surface or impair the function.
- Recommended cleaning agent for removing stubborn limescale deposits:
  - Pump cleaning agent PumpClean from OASE.
  - Vinegar- and chlorine-free household cleaning agent.
- After cleaning, thoroughly rinse all parts in clean water.

#### 8.2 Regular tasks

The filter system is self-cleaning. Carry out the following work regularly to ensure the optimum cleaning capacity of the filter system.

#### Regular checks

- ► Check the display of the control system for any error messages. (→ Error messages)
- Check the area in front of the separating plate and the inside of the filter drum for excessive soiling (e.g. string algae). To do this, remove a screen element. (→ Removing/fitting a screen element)
- Check the water level at the water level indicator on the inner cover.

#### Removing accumulated dirt

Dirt that cannot be collected by the filter drum, sinks to the bottom and has to be removed.

- ▶ Open the DN 75 dirt outlet for approx. 10 seconds once per month.
- Remove accumulated dirt in front of the filter drum.
- Remove string algae from the dirt channel.
- ▶ Remove accumulated dirt from the level detection device.

#### 8.3 Cleaning foam filters

- When the water reaches the 100 % mark of the water level indicator, it is necessary to clean the foam filters.
- ▶ Do not use any chemical cleaning agents as they would kill the filter bacteria.

#### **Prerequisite**

- ► The filter pump is switched off.
- All other electrical units of the filter system are switched off (e.g. UVC clarifier).
- ► The water level in the filter system has dropped by approx. 10 cm.



#### How to proceed:

 $\Box$  L

- 1. Pull up the foam holders five or six times.
  - This will compress the foam filters, washing out the dirt.
- 2. Open the DN 75 dirt outlet and allow the dirty water to drain out completely.
- 3. Rinse the container with running water. Then close the DN 75 dirt outlet.
- 4. Start up the unit again.
- 5. Repeat the process if the water is still above 25 % on the water level indicator.

#### 8.4 Replacing foam filters

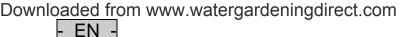
#### **Prerequisite**

- ▶ The filter pump is switched off.
- All other electrical units of the filter system are switched off (e.g. UVC clarifier).
- ► The foam filters are cleaned. (→ Cleaning the foam filters)
- ▶ Open the slide valve for the DN 75 dirt outlet at the bottom of the container and dispose of the soiled water in a permissible way.

#### How to proceed:

 $\square$  M

- 1. Release the the bayonet closure in the inner cover by turning it counter-clockwise (looking down onto the bayonet ring).
- 2. Press the retaining clamps on both sides and remove the inner cover together with foam holders from the container.
  - Recommendation: First unlock the inner cover on one side and lift up slightly, then unlock the other side.
  - If the inner cover is too heavy, release the foam holders, allowing them to lower into the container, before lifting out the inner cover.
- 3. Pull the foam holders up slightly, press both engagement hooks on the foam holders together and push them down and out of the inner cover.
- 4. Press in the four engagement hooks on the top foam part and take out the foam holders together with the filter cartridge.
  - Recommendation: Press each pair of opposing engagement hooks together one after the other and push them down and out of the inner cover.
- 5. Remove the used filter cartridge and bottom foam part from the foam holder.
  - Correctly dispose of the filter cartridges in accordance with the regulations.
- 6. First fit the bottom foam part then the new filter cartridge onto the foam holder.
  - Ensure that the filter cartridge fits exactly into the bottom foam part.
- 7. Insert the foam holder with the new filter cartridge into the inner cover from below, pulling the foam holder up until the engagement hooks engage in the inner cover.
  - Perfect seating of the filter cartridge is only guaranteed when all engagement hooks are engaged.
- 8. Turn the bayonet closure in the inner cover clockwise to fasten.



#### 8.5 Cleaning the rinsing device

How to proceed:

 $\Box$  K

- 1. Start a manual cleaning cycle to check that the rinsing nozzle is functioning perfectly. (→ Manual cleaning)
- 2. Loosen the union nut on a clogged nozzle, remove the nozzle and seal from the rinsing pipe and clean the parts.
- 3. Push the union nut onto the nozzle and screw it together with the seal onto the rinsing pipe.
  - Align the nozzle so that the marking is at the top.
  - Hand-tighten the union nut.

#### 8.6 Cleaning the screen element

#### 8.6.1 Removing/fitting a screen element

How to proceed:

 $\square$  N

#### Removing

- 1. Turn the filter drum manually until the screen element is located opposite the drum motor. Undo the locking mechanism (turn through 180°).
- 2. Lower the screen element completely into the filter drum.
- 3. Remove the screen element from the filter drum.

#### **Fitting**

- 4. Lower the screen element completely into the filter drum.
- 5. Turn the screen element and push the two hinges onto the support of the filter drum.
- 6. Use the cross element to pull the screen element up.
- 7. Close the locking mechanism (turn through 180°).

# 8.6.2 Decalcifying the screen elements

The error messages *Er33*, *Er55* or an excessive rise in the frequency of cleaning cycles (counter) indicate that there are limescale deposits on the screen elements. (→ Reading out the number of cleaning cycles) Oase recommends that you descale the unit every two to three months as a preventative measure if the water is very hard.

- ▶ Recommended cleaning agent for removing stubborn limescale deposits:
  - Pump cleaning agent PumpClean from OASE.
  - Vinegar- and chlorine-free household cleaning agent.

#### How to proceed:

- 1. Remove a screen element. (→ Removing/fitting a screen element)
- 2. Descale the screen element using a descaler (follow the manufacturer's instructions).
  - Do not remove the rubber seal of the screen element.
- 3. Scrub the screen element with a soft brush under running water and rinse well.
- 4. Refit the screen element. (→ Removing/fitting a screen element)



#### 8.7 Removing/fitting the filter drum

Remove a screen element to allow work to be carried out inside the filter drum. (→ Replacing a screen element)

#### Removing

How to proceed:

- 1. Pull the rinsing device out of the fastening clips and separating plate.
- 2. Undo and remove both Allen screws (width across flats 5), pull the drum motor out of the hole in the separating plate and remove.
  - Do not allow the drum motor to hang from the connection cable.
- 3. Undo the hose clip fastening the dirt channel.
- 4. Pull the dirt channel from the socket of the dirty water outlet and place it in the filter drum.
- 5. Open the cotter pin and pull it out.
- 6. Pull out the drum shaft.
- 7. Pull the filter drum from the separating plate and lift it out of the container.
  - Proceed carefully: The fastening clips on the container wall could damage the screen elements.

#### **Fitting**

How to proceed:

 $\bigcap$  F

Before fitting the filter drum check that the drum seal is undamaged and correctly positioned. Lubricate the seal with the supplied grease. Replace the drum seal if damaged.

- 1. Fitting a new drum seal: Ensure that the recess in the drum seal is at the top.
- 2. Ensure that the separating plate is completely seated in the groove of the drum seal.
- Continue to assemble in the reverse order.

#### 8.8 Cleaning the rinsing pump



It is often possible to remove soiling from the rinsing device and rinsing pump by cleaning the rinsing device without the nozzle/nozzles. (→ Cleaning the rinsing device)

Remove the nozzle/nozzles for cleaning so that the dirt particles are flushed out.

Remove the inner cover to allow work to be carried out on the rinsing pump. (→ Replacing the foam filters) How to proceed:

 $\square$  Q

- 1. Undo the fastening device. To do this, unhook both rubber straps.
- 2. Lift the rinsing pump, remove the rubber ring and filter sock.
  - Clean all parts in clean water.



#### 8.9 Replacing the rinsing pump

Remove the inner cover to allow work to be carried out on the rinsing pump. (

Replacing the foam filters)

How to proceed:

 $\square$  R

- 1. Undo the fastening device. To do this, unhook both rubber straps.
- 2. Loosen the union nut and disconnect the hose.
- 3. Take out the rinsing pump and replace.
  - Disconnect the connection cable from the cable harness.
- 4. Fit the rinsing pump in the reverse order.

# 9 Storage/Over-wintering

#### The unit is protected from frost:

The unit can be operated as long as the water temperature does not go below +4 °C.

- ► Set the interval for time-dependent cleaning to 20 minutes to avoid damage to the rinsing device in the event of frost.
- ▶ Install the control system in such a way that it is protected. The minimum operating temperature of the control system is -10 °C.

The deeper areas of the pond have a water temperature of approx. +4 °C in winter and are essential for the fish. By taking the following measures it is possible to reduce the cooling effect on the water of the circulation by the filter system:

- Position the pump nearer to the surface of the water so that only colder water closer to the surface of the pond enters the pump.
- Insulate the return pipes from the filter system into the pond.
- ▶ Do not allow water to flow into the pond via a water course.

#### The unit is not protected from frost:

Take the unit out of operation at water temperatures below +8° C or, at the latest, when freezing temperatures are to be expected.

- Drain the unit as far as possible, clean thoroughly and check for damage.
- ▶ Empty all hoses, pipes and connections as far as possible.
- ▶ Leave the slide valves open.
- ▶ Cover the filter container to prevent the penetration of rain water.
- ▶ Protect pipes and slide valves that are in contact with water from frost.

## 10 Wear parts

The following components are wear parts and are excluded from the warranty:

- ▶ Foam filters
- Capacitor of the rinsing pump
  - Do not open the rinsing pump. Send the rinsing pump to OASE. You will be sent an immediate replacement.
- Safety fuse
- Screen elements
- Drum seal

# 11 Disposal



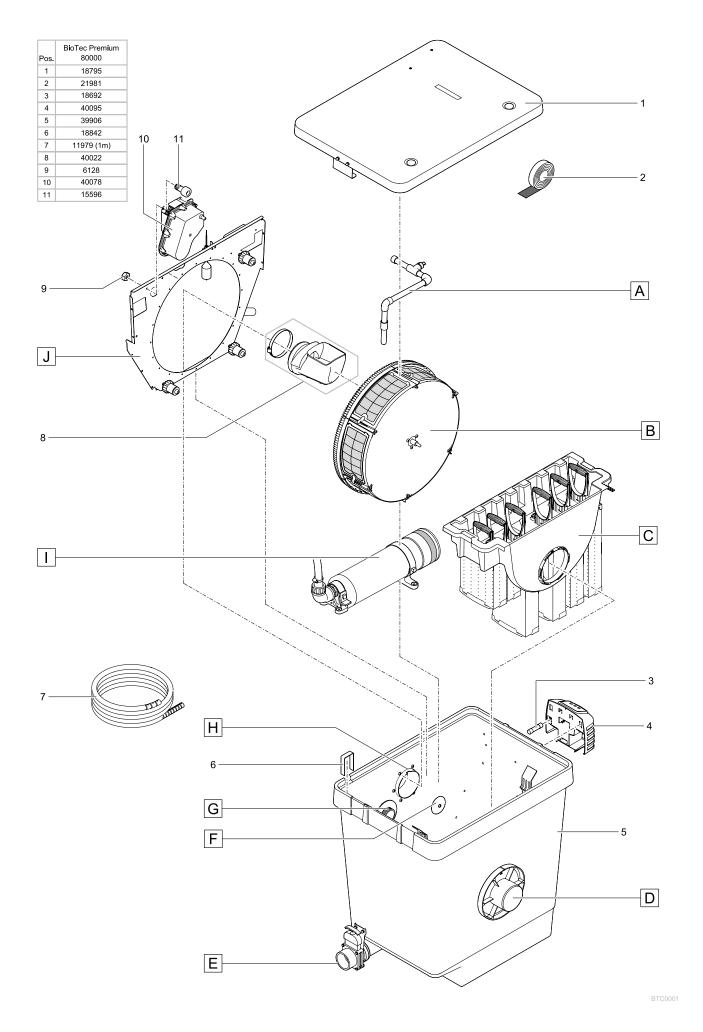
Do not dispose of this unit with domestic waste! For disposal purposes, please use the return system provided. Disable the unit beforehand by cutting off the cables.



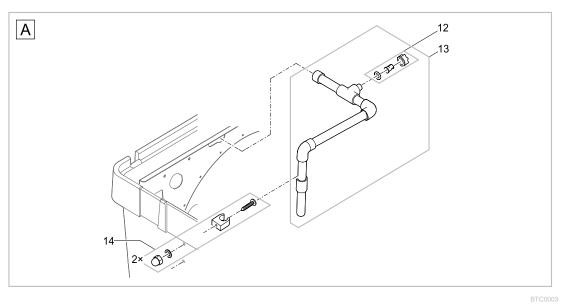
# 12 Technical data

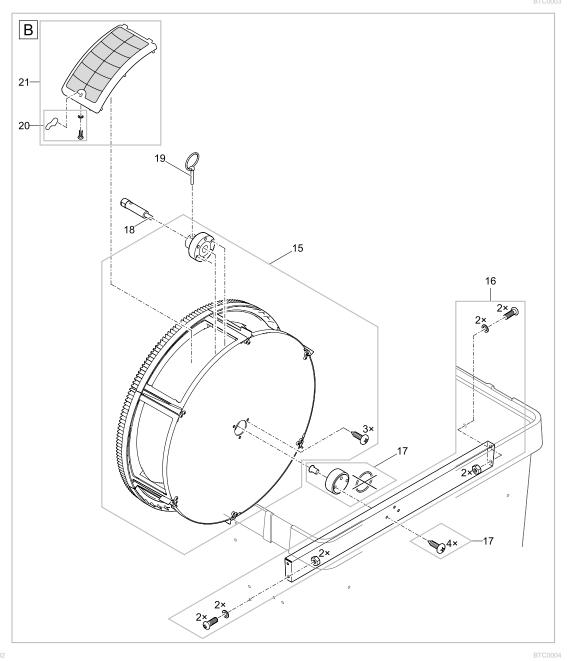
Description			Value	
Control system	Rated voltage	V AC	230	
	Mains frequency	Hz	50	
	Power consumption in idle state	W	5	
	Power consumption during cleaning cycle	W	670	
	Maximum power consumption (theoretical)	W	870	
	Rinsing pump output voltage	V AC	230	
	Drum motor output voltage	V DC	12	
	Signal box output voltage	V DC	12	
	Ambient temperature	°C	-10 +35	
	Safety fuse 5 x 20 mm, 250 V	А	Т8	
	Length of power cable	m	5	
Permissible water tempe	erature	°C	+4 +35	
Length of drum filter cab	le harness	m	1	
Airborne noise emitted	Normal operation	dB(A)	<50	
	Operation with rinsing cycle	dB(A)	<70	
Dimensions	L×W×H	mm	885 × 675 × 820	
Weight	Without water	kg	70	
	With water	kg	280	
Rinsing pump	Water pressure	bar	4	
	Water consumption	I/m	≈4	
Drum	Diameter	mm	500	
	Width	mm	160	
Screen elements	Quantity	pce.	6	
Inlet, filter pump	Quantity	pce.	1	
	Connection		50 mm (2 ") 38 mm (1.5 ")	
	UVC clarifier		Bitron UVC	
Outlet	Quantity	pce.	1	
	Connection		DN 110	
Dirt outlet	Quantity	pce.	2	
	Connection		DN 75 / DN 110	
Circulation capacity	Min.	l/h	7500	
	Max.	l/h	12500	
Breakdown of fish food		g/day	195	

	Nicht mit normalem Hausmüll entsorgen!	Do not dispose of together with household waste!	Ne pas recycler dans les ordures ménagères !	Niet bij het normale huisvuil doen!	iNo deseche el equipo en la basura doméstical	Må ikke bortskaffes med det almindelige husholdningsaffald	Får inte kastas i hushållssoporna!	A készüléket nem a normál háztartási szeméttel együtt kell megsemmisíteni!	Nie wyrzucać wraz ze śmieciami domowymi!	Nelikvidovat v normálním komunálním odpadul	Не утилизировать вместе с домашним мусором!
	Achtung! Lesen Sie die Gebrauchsanleitung.	Attention!  Read the operating Instructions.	Attention! Lire la notice d'emploi.	Let op! Lees de gebruiksaanwijzing.	iAtención! Lea las instrucciones de uso.	OBSI Læs brugsanvisningen.	Varning! Läs igenom bruksanvisningen.	Figyelem! Olvassa el a használati útmutatót.	Uwaga! Przeczytać instrukcję użytkowania!	Pozor! Přečtěte Návod k použití!	Внимание! Прочитайте инструкцию по использованию.
	Nicht in Einlauf oder Auslauf greifen. Verletzungsgefahr durch Scherbewegung.	Do not reach into the inlet or outlet. Risk of injury due to shearing movement.	Ne pas exécuter de manipulations dans les conduits d'admission et d'écoulement. Risque de blessure par le mouvement de cisaillement.	Niet in inloop of uitloop grijpen. Verwondingsgevaar door schaarbeweging.	No toque en la entrada ni en la salida. Peligro de lesión por el movimiento de cizalla.	Grib ikke fat i indløbet eller afløbet. Risiko for kvæstelser ved skydebevægelse.	Stick inte ner handen i inloppet eller utloppet. Skaderisk genom skjuvning.	Nem szabad a bemenetbe vagy a kimenetbe nyúlni. A vágó mozgás sérülésveszélyes.	Nie wkładać rąk do wlotu ani do wylotu. Zagrożenia odniesienia ran w wyniku ścinania.	Nesahejte do přívodu nebo vyústění. Nebezpečí poranění v dúsledku střížného pohybu.	Не прикасаться к входу или выходу. Опасность Птравмирования в связи с режущими движениями.
**	Bei Frost das Gerät deinstallieren!	Remove the unit at temperatures below zero (centigrade)!.	Retirer l'appareil en cas de gel !	Bij vorst moet het apparaat gedeïnstalleerd worden!	Desinstale el equipo en caso de heladas.	Afinstaller enheden ved frostvejri	Demontera apparaten innan första frosten!	Fagy esetén a készüléket szerelje le!	W razie mrozu zdeinstalować urządzenie!	Při mrazu přístroj odinstalovat!	При наступлении морозов прибор демонтировать!
类	Vor direkter Sonneneinstrahlung schützen	Protect from direct sun radiation.	Protéger contre les rayons directs du soleil.	Beschermen tegen direct zonlicht.	Protéjase contra la radiación directa del sol.	Beskyt mod direkte sollys.	Skydda mot direkt solstrålning.	Óvja közvetlen napsugárzástól.	Chronić przed bezpośrednim nasłonecznieniem.	Chránit před přímým slunečním zářením.	Защищать от прямого воздействия солнечных лучей.
Ø	Mögliche Gefahren für Personen mit Herzschritt- machern!	Possible hazard for persons wearing pace makers!	Dangers possibles pour des personnes ayant des stimulateurs cardiaques!	Mogelijke gevaren voor mensen met een pacemaker!	Posibles peligros para las personas con marcapasos.	Mulig fare for personer med pacemaker	Möjlig risk för personer med pacemaker!	A készülék veszélyes lehet szívritmus- szabályozóval rendelkező személyekre!	Možliwość wystąpienia zagrożeń dla osób ze stymulatorami	Možná nebezpečí pro osoby s kardiostimulátory!	Возможная опасность для лиц с кардиостимулятором!
T8A	Schmelzsicherung 8 A / 250 V, träge	8 A / 250 V slow-blow safety fuse	Fusible 8 A / 250 V, à action retardée	Smeltzekering 8 A / 250 V, traag	Fusible 8 A / 250 V, retardado	Smeltesikring 8 A /250, træg	Smältsäkring 8A/250V, trög	Olvadóbiztosíték 8 A / 250 V, késleltetéses	Bezpiecznik topikowy 8 A / 250 V, zwłoczny	Tavná pojistka 8 A / 250 V, setrvačná	Плавкий предохранитель 8 A / 250 В медленного срабатывания
<b>IP 44</b>	Staubgeschützt. Geschützt gegen Spritzwasser	Dust protected. Splash water protected	Protection contre la poussière. Protection contre la projection d'eau	Stofvrij. Beschermd tegen spatwater	Protegido contra polvo Protegido contra chorros de agua	Støvbeskyttet. Stænkvandsbeskyttet	Dammskyddad. Skyddad mot droppvatten	Porvédett. Fröccsvíz-védett	Ochrona przed pyłem. Odporne na rozpryskującą się wodę	Chráněný proti prachu. Chráněný proti odstřikující vodě	Пылезащищен. Защищен от водяных брызг
	<b>B</b>	Z	Æ	뒬	E	PA	S	<b>P</b>	7	S	D.

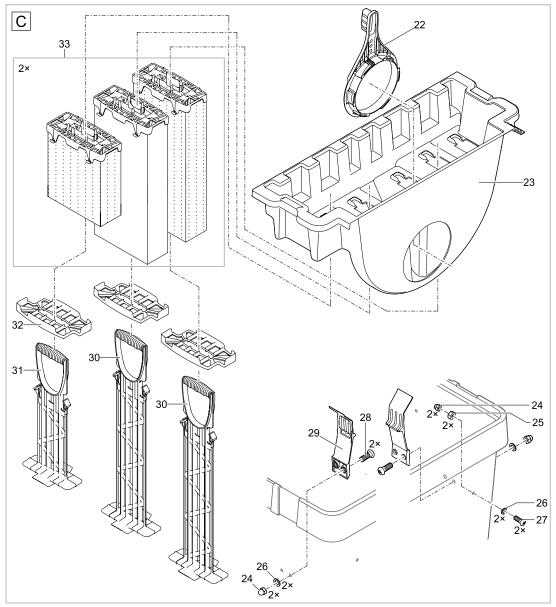


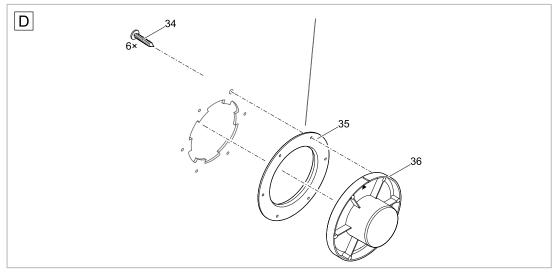
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13	40238
14	41472
15	41476
16	41887
17	18791
18	16288
19	19515
20	41889
21	41473





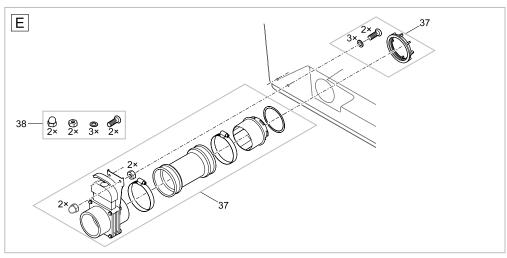
	BioTec Premium
Pos.	80000
22	22629
23	22422
24	6117
25	6105
26	20609
27	17918
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30	41253
31	40121
32	13629
33	40456
34	27572
35	22676
36	26963

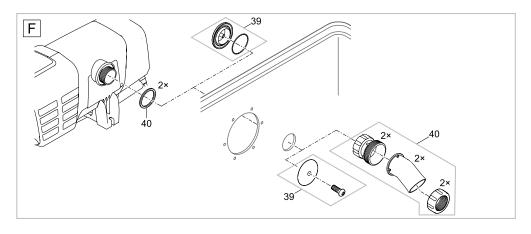




BTC0006

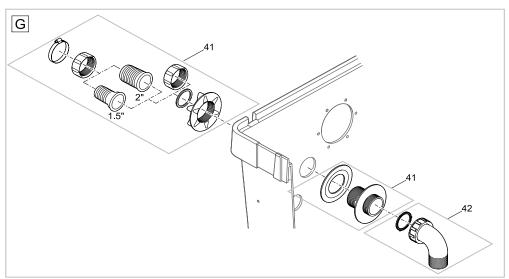
	D. T. D.
	BioTec Premium
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38	18448
39	35570
40	22746
41	18798
42	50540
43	19005

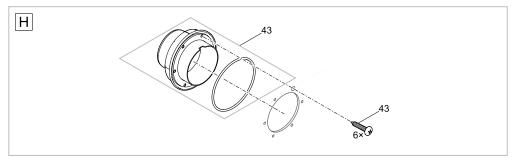




BTC0010

BTC0011

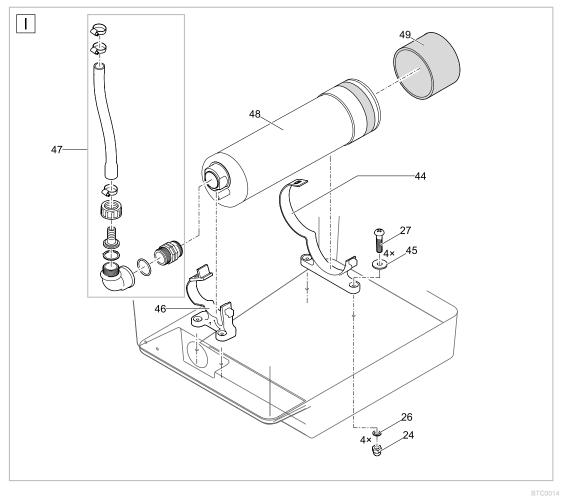


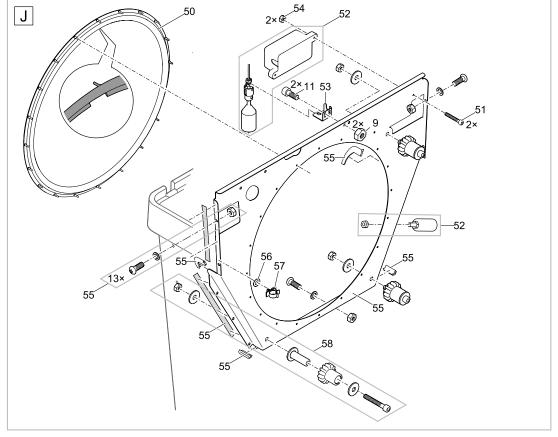


BTC0008

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Pos.	BioTec Premium 80000
9	6128
11	15596
24	6117
26	20609
27	17918
44	40114
45	6143
46	40074
47	41479
48	40075
49	18943
50	23192
51	20320
52	40129
53	40099
54	11113
55	41481
56	19023
57	19402
58	18794









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