USER MANUAL

DRUMFILTER 55
m³/h
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1. INTRODUCTION

This is the manual for your Filtreco drum filter 55m³/h.

With the purchase of the Filtreco drum filter, you have made a good choice. Please read this manual carefully before using the equipment to become familiar with the device. All operations which are performed on and with this equipment must comply with the information in this manual.

Please respect the security rules for a correct and safe use. Keep this manual in a safe place and give this manual to the new owner if the unit's owner changes.

2. DELIVERY CONTENTS

- PP box
- PP drum with brushes
- RVS sieve with 70 mikron
- PP dirt channel
- Water level measurement with 3 pins
- Drum motor
- Submersible pressure pump
- Spray tube with 7 nozzles and increased capacity
- 4 inputs 110 mm
- 4 outputs 110 mm
- 4 drum bypasses 110 mm
- 1 outflow 1 1/2 " with ball valve
- Control box
- Cover with lid securing

3. PRODUCT DESCRIPTION
The drum filter consists of a polypropylene (PP) box, in which there is a PP drum with wire mesh. The drum filter is operated according to the principle of gravity and built in a pit. The inputs must be located below the water level so that the polluted water can flow through the floor drains or skimmer with the help of gravity in the first filter chamber. On the output side, the water is sucked out from the drum. As the dirty water is located in the area in front of and inside the drum, the dirt sticks on the inside of the drum. Once the inside of the drum is too dirty, less water can penetrate on the outside of the drum, so that the water level drops. The water level measurement detects this and initiates a flushing. Here, the drum motor and the pressure pump can be activated. The drum rotates about a full rotation while the spray nozzles clean the screen. The spray water with the dirt is removed through the drain into the sewer system. This cycle is repeated as often as necessary.

4. BUILDUP OF THE FILTER

The housing of the filter consists of a PP container with an intermediate bulkhead. The partition is provided with a silicone sealing strip mounted on the flange, separating the waste water from the clean. Also in the partition wall, there are four holes, which are covered with a lid. In case of failure of the drum control, this lid may be removed so that the water can flow past the drum, but without any filter function. Through this, at least the biological filtration can be operated until the error rectification.

On housing a removable dirt tray is mounted. The slope of the dirt channel accelerates the water sufficiently, so that the dirt is discharged into the drain. On the inside of the drum 4 brushes are mounted, which rid the screen of algae and other coarse, fixed particles. The drum filter is equipped with a removable PP injection tube, which is provided with flat jet nozzles. The nozzles are equipped with a quick release system and are therefore very easy to remove and to clean. The water level measurement in the housing consists of three electrodes, a water level electrode, a low-level security electrode and a common electrode. The water level when the automatic flush is activated can be adjusted. In the housing a submersible pressure pump is integrated, which feeds the nozzles during the flush cycle with high-pressure water.

The drum motor is mounted on the outside of the drum filter and the shaft is sealed by a sealing ring in the mounting plate. The drum is fixed via a flange to a pipe, which is mounted on the shaft. With this type of connection, the drum can be easily taken off and removed for maintenance of the shaft. The motor must not be removed for this purpose.
5. USE OF THE FILTER

The Filtreco drum filter and all accessories and components within the scope of supply should only be used as follows:

- For cleaning garden ponds
- Use in accordance with the technical data

The following restrictions apply for the device:

- Works exclusively with water temperatures between +4˚ C and +35˚ C
- Only suitable for filtering water
- Do not use it for commercial or industrial purposes
- Not suitable for salt water
- Never use the filters without water
- Do not use in conjunction with chemicals, foodstuffs and flammable or explosive liquids

6. SAFETY ADVICE

This device can be a danger to people and other things when it is used for any incorrect or ineffective manner, or if the safety instructions are not followed. This device must not be used by children and adolescents under 16 years. In addition, persons with reduced physical-, sensory- or mental capabilities should deal with the filter exclusively under the supervision of a professional and competent person, who knows the dangers and risks. Children must be made clear that they do not play with the appliance. Cleaning and maintenance must be performed by an adult user. This must not be done by children, even when they are being monitored.

6.1 HAZARDS RESULTING FROM THE COMBINATION OF WATER AND ELECTRICITY

The combination of water and electricity can cause serious injury from electrical shock or even death for not complying with the safety regulations or due to improper handling. That's why all electrical equipment has to be taken from the power supply, best via an upstream main fuse switch, before reaching into the water.

6.2 PACEMAKER

The lid has a magnetic circuit. The magnetic field can adversely affect pacemakers.

6.3 ELECTRICAL INSTALLATION IN ACCORDANCE WITH THE REGULATIONS

The electrical installation must comply with national regulations and must be performed only by a nationally recognized electrician. This assumes that he or she has acquired the necessary training, knowledge and experience to assess and perform the work assigned to him or her can and thus has the power to take responsibility for it. Only a specialist can recognize potential hazards and know the relevant regional and national standards, rules and regulations.
• Please contact in case of questions or problems about your own safety, an electrician.
• Connection of the device is only permitted if the electrical data of the power supply meet the requirements of the drum filter. The instrument data are given in this manual.
• The appliance must be protected by a residual current device (RCD) with a residual current of 30 mA maximum.
• Use only splash-proof extension cable and power distribution whose cross-section is not less than that of the already supplied cable.
• Protect the power connections against moisture.
• Use only a properly installed power outlet without dimmer device.

6.4 SECURE USE

• Do not use the appliance if it has defective electrical wiring or a faulty case.
• Never move the appliance by pulling on the cord; Avoid any stress on electrical lines.
• Route the cables via a secure cable routing to avoid damage and make sure that no one can trip or fall over.
• Open the housing of the drum filter or components only when it is needed in the operating instructions.
• Work on the equipment only as specified in this manual.
• In case of problems which cannot be resolved please get in touch with us, our service will help you.
• Use only original spare parts for your drum filter.
• Do not make any technical changes on the device.
• The connection cable cannot be replaced. In the event of a cable break, the affected component must be completely replaced.
• Hold the control box with the control panel, the sockets and the plug always dry.
• A power surge can lead to failure of the device.
• Do not breathe spray mist from the flushing system! The spray may contain harmful bacteria. When the lid is lifted during the flushing process, it is automatically stopped. Therefore wait with opening the lid until just after the end of the flush cycle.
7. PLACEMENT AND INSTALLATION

If the proposed installation is materially different from the recommendations in this manual: Let by a professional to ensure that all technical specifications are met.

The drum filter must be placed below the pond water level in a filter pit. Here, the bottom of the drum filter should be completely seated. Therefore preferably build a flat cement surface. Also ensure for sufficient free space in the filter pit for simple operation and maintenance.

The maximum permissible water level, which must correspond to the maximum pond water level, is marked by an arrow in the first filter chamber. Thus, the water level should be kept stable and should not deviate more than 3 cm below and 1 cm up in order that the filter works properly.

A larger deviation would result in a distortion of the water level measurement result value. If the water level rises by more than 2 cm above the maximum value, the water will overflow over the dirt tray into the sewers. A constant water level can be maintained though the installation of an automatic filling system with overflow into the pond.

Use all four supply connections for optimal flow. If this is not done, the frequency of flushing cycles would increase. Use preferably flexible rubber bushings to connect the tubes. Those can compensate small differences in the size and simultaneously absorb vibrations.

Place the connections between the drain valve and the sewer / septic tank so, that the filter can be completely emptied for maintenance.

Keep a safe distance between the pit wall and the waste water pipe in order to be able to remove it.

The dirt channel can be connected to a sewer / drain with 110 mm diameter. Make sure that a sufficient slope is given. Also preferably use rubber bushings to connect the pipes and compensate any dimensional variations and vibrations. Moreover, these can also be easily solved again in order to remove the dirt water pipe for maintenance purpose.

Use connecting pipes of good quality and sufficient thickness.

Preferably use bends of 45 degrees.

Arrange the pipes so, that they can be emptied for frost protection in winter.

Attention! Risk of electrical shock.

Possible consequences: Severe or fatal injuries in the operation of electrical devices or appliances on (swimming) ponds.

Use only in accordance with national and regional regulations.

Use only suitable lifting and transport equipment for the placement and installation.
7.1 CONNECTING THE CONTROL BOX

Open the control box **without the power cord being plugged in** and fix the housing with four screws through the recesses provided on the rear of the housing. (Distances of the holes in the wall: \( w = 280 \times h = 251 \)) Consider doing it the length of the electrical cable of 3 meters. Consider when opening the control box, that the screws you need to unscrew to open the door, do not survive if they are loose and the case is open. This also applies when closing the control box.

7.2 CONNECTING THE ELECTRODES AND THE WATER LEVEL MEASUREMENT

Open the control box, **without that the power cord is plugged in**.

Loosen the strain relief cap on the bottom of the housing and slide it over the cable. Insert the cable with the strain relief cap into the housing and ensure that it long enough. Fasten the strain relief cap back on the housing. Connect the electrodes as shown below using a suitable screwdriver. The labels on the lead wires need to meet the markings on the plugs in the housing.
8. PUTTING INTO OPERATION

Before taking the drum filter into operation, it is recommended to thoroughly clean the pool manually and if possible, to flush the pipes in order to avoid that the filter is clogged immediately if the pond is heavily contaminated.

ATTENTION! DANGEROUS ELECTRICAL VOLTAGE!

- Turn the power supply of the device off, if you intend to go into the pond.
- Protect the system against accidental switch.
- Do not connect the device to a power supply with dimmer.
- Do not use the device in conjunction with a timing mechanism.
- Turn the controller on only when the submersible pressure pump and the electrodes are located under water.

8.1 PROCEDURE OF THE INITIAL STARTUP

- Remove the lid from the filter.
- Check all connections at the inlet and the outlet.
- Check if the pipes from the submersible pressure pump to the spray tube are firmly seated.
- Make sure that the drain ball valve is closed.
- Open a shut-off valve in the supply line.
- Fill the pond and the filter until the maximum water level is reached.
- Adjust the placement of the filter, if the required water level is not reached.
- Check all connections at the inlet and the outlet again.
- Plug the connectors of the individual components in the control box at the designated and marked sockets:

Insert the submersible pressure pump into the socket “Spray Pump “
Insert the drum motor into the socket “Drum Motor “
Insert the circulation pump(s) into the socket(s) “Pond Pump“
Insert any extra components (e.g. UVC lamps) into the socket “Spare“

Note that the sockets "Pond pump" and "Spare" may be loaded with a maximum of 2500W total power.
8.2 ADJUSTING THE WATER LEVEL MEASUREMENT

The water level measurement includes three stainless steel electrodes.

The flushing electrode - short coated electrode
The low water level electrode - long coated electrode
The common electrode - the long non-coated electrode

The flushing electrode is set by default to the lowest water level. This means that the flushing is initiated at a fall of the water level of approximately 90 mm.

If you want to choose the activation time for the flushing cycle a little earlier, you can loosen the fixing nut and move the electrode to the top. Then tighten the nut.

Attention! The two long electrodes have no control function.
The control box consists of a housing with the following connections:

- 5 sockets
  - "Pond Pump" for circulation pump 1
  - "Pond pump" for circulation pump 2
  - "Spare" for a further circulation pump or extra components (e.g. UVC lamps)

**Attention! These three sockets have a combined capacity of 2500 watts!**

- "Spray pump" for the submersible pressure pump - Max. 1000 Watt
- "Drum Motor" for the drum motor - Max. 100 Watt
- "Main Switch" to turn the power supply in the control box on and off
10. THE CONTROL PANEL & DISORDERS

The control panel is located behind a locked door. This cover is easy to unlock and to fold up. Close this cover after all operations carefully.

1 “Start/Stop” button: Allows you to start or to stop a flushing cycle. This button can be operated in manual or in automatic mode.

2 “Reset Error” button: Resets the system after a fault condition. If the error has been fixed properly, the correct functioning of the system is possible again. If the actual source of error is not resolved, the ERROR - LED will flash again.

3 “Change Mode” button: By pressing this button you can switch from auto(matic) mode in the manual mode and reverse. In the manual mode, a flushing cycle can be started and stopped by pressing the "Start / Stop" button. A flushing cycle cannot be started only in manual mode.

In the auto mode, a flushing cycle starts if:
• The set water level for the flushing cycle is achieved (the electrode detects the filter contamination on the basis of low water level)
• AND after the set time interval (if set) since the last flushing cycle.
4 “Change Interval” button: By pressing this button a time interval is set, to carry out flushing cycles regardless of how dirty the filter is.

5“Power LED” : The Power LED lights green when the system is powered on.

(main switch is off).

6“Error LED” This LED flashes red if an error condition occurs. The following errors are possible:

- System Error: Fault in the control unit (relay, electrodes, fuse, circuit board)
  - Circulating pumps were switched off.
  - A flushing cycle is not possible.
- Level Error: The water in the filter reaches a too low level. More water is pumped from the filter than lags.
  - The circulating pumps were switched off.
  - A flushing cycle is not possible.
- Turn the "Main Switch " to OFF.
- Pull all the plugs from the control box.
- Pull the power plug of the control box from the socket.
- Turn off the F1 fuse and then back on.
- Close to the box and put the power plug back into the socket.
- Turn the "Main Switch" on.
- If the error persists, contact Filtreco.

- Remove the cover and locate the problem.
- Check the supply pipes for a problem.
- As soon as the end of the low water level electrode is under water again:
  - Put the cover back on the filter.
  - Press the button "Reset Error".

The operating mode is set to Manual

- Press “Start” to initiate a manual flushing cycle:
  - The "Flush" LED lights green.
  - Check if the submersible pressure pump and the motor work
  - If the submersible pressure pump is not working, check whether the plug is connected to the control box and stuck.
  - If the drum motor is not working, check whether the plug is connected to the control box and stuck.

If this is the case, turn off the main switch, open the control box and press the reset button "F2" (the additional security of submersible pressure pump)

- After the flushing cycle is finished, the "Flush" LED goes out.
- Remove the cover and check if the water level is within the allowable tolerance.
- If necessary, repeat the steps above.
- If this manifestation repeats constantly, you need to increase the supply capacity to the filter or to decrease the pump power after the filter.

**Door Error**: The cover contact is not closed: the cover is not mounted or is not seated properly.

- The circulating pumps were switched off.
- A flushing cycle is not possible.

  - Make sure the cover is closed properly.
  - Press "Reset Error" to switch back to manual mode.
  - The LED "Door" turns off and the LED "Manual" lights up.
  - Press the "Change Mode" button to switch to automatic mode.

If the problem persists:

  - Check if the magnet is still sitting in the holder under the cover. If this is the case,
  - Turn the "Main Switch" to OFF.
  - Pull the power plug of the control box from the socket.
  - Open the control box.
  - Check it if the cables DR + and DR - are stuck.

**Interval Error**:

- The circulating pumps were switched off.

Fifty flushing cycles occurred in succession without that the water level in the filter reaches the level of the flushing electrode layer and also not the low water level electrode. This can occur when a lot of pollution is present.

  - Set the flushing electrode on its highest level. Now the flushing cycle should be triggered earlier.
  - Check if the supply lines are clogged.
  - Check the spray nozzles and clean them if necessary.

If that does not help, reduce the outward flow (circulation pump capacity) until the worst dirt is gone.

7  "Auto Mode" LED: This LED lights up when the system is in "Auto Mode".

8  "Manual Mode" LED: This LED lights up when the system is in "Manual Mode".

9 LED's for the selected time interval.
If your pond is clean and an automatic flushing cycle is rarely activated, the system can also initiate flushing cycles within certain time intervals.

The optional time intervals in which at least one flushing cycle should be performed.

T1 t/m T5 can be selected by pressing the "Change Interval" button in the manual mode.

- **T1** An automatic flushing cycle every 2 hours (except automatic or manual cycles).
- **T2** An automatic flushing cycle every 4 hours (except automatic or manual cycles).
- **T3** An automatic flushing cycle every 6 hours (except automatic or manual cycles).
- **T4** An automatic flushing cycle every 12 hours (except automatic or manual cycles).
- **T5** No time-dependent flushing cycles.

Confirm by pressing the "Change Mode" button. Your selection is now saved. In "Manual" mode, this can be changed again.

10 Safety Switch

If the "Safety-door switch E" is pressed, the system is powered. After activating the "Safety-door switch E", the system will always start in manual mode. If you want to open the control box, the "Safety-door switch E" must be switched off, otherwise you cannot open the door. This is an additional safety mechanism.

11. CLEANING AND MAINTENANCE

Attention! Risk of electrical shock, serious injury or death may result!

When cleaning and maintaining take the following measures:

- Before you touch the water or intend to carry out work on the unit, switch off the power supply to OFF and prevent unintentional restart.

  General cleaning: 1 x per month.

  - Turn the "Main Switch" to the OFF position and unplug the main power connector of the control box from the socket.
  - Remove gross contamination (e.g. filamentous algae) from the dirt channel.
  - Clean the brushes in the drum,
  - Clean the inside of the drum,
  - Clean the cover fuse blocks,
  - Clean the electrodes of the water level measurement.

Cleaning the spray nozzles (2x per month)

  - Remove the spray nozzles with a left turn movement from the quick release mechanism.
  - Remove the seal from the holder.
  - Remove the nozzle from the compound.
  - Clean the parts.
  - Mount the spray nozzle back into the seal and the holder.
• Turn the whole thing with a right turn movement onto the quick release mechanism.

Complete cleaning

• Turn the "Main Switch" to the OFF position and unplug the main power connector of the control box from the socket.
• Close the inlet and outlet valves and let the water through the drain ball valve leak until the filter is completely discharged.
• Remove the dirt channel and clean it.
• Remove the drum and clean it and the brushes completely with running water.
• Remove the submersible pressure pump and wash it completely.
• Clean the entire inside of the filter.

The drum is expanded as follows:

• Remove the spray tube by loosening the coupling and remove the dirt channel.
• The dirt channel is removed by unscrewing the fixing screws. Keep the packing rings and packing!!
• Rotate the drum until the bolt of the axle connection is up and remove the bolt.
• Push the drum slightly to the bulkhead until the flange is of the axle and remove the silicone seal gently out of the drum.
• Lift the drum out of the filter housing.
• Put the drum carefully to avoid damage.

The drum is fitted as follows:

- Lower the drum gently into the filter housing and lead the flange on the axle.
- Press the silicone seal by hand around back into the flange.
- Slide the drum with the flange on the axle.
- Rotate the drum until the pin hole in the axle is located under the hole in the flange.
- Place the M8 x 15 bolt back in its place and fix it good.
12. POSSIBLE ERRORS

Possible errors can be:

- **No water flow:**
  - Check if the inlet slide valves are open.
  - Check if the circulation pumps are connected.
  - Check if the inlet and outlet are blocked.

- **Insufficient water flow:**
  - Check if the inlet and outlet are blocked.
  - There are not enough inlet ports installed.
  - The circulation pump capacity is not sufficient.
  - Dirt and water got to the "clean water" side of the drum.
  - Check the seal between the partition wall and the flange of the drum.

- **The submersible pressure pump does not work:**
  - The plug is not plugged in.
  - The fuse is out, press F2 Resetknop.
13. **WINTER PREPARATION**

Keep for the proper functioning of the drum filter a minimum temperature of + 4 ° C.

Measures that can be carried out:

- Cover the filter pit thermally insulating.
- Protect the control box from rain and frost. The control box is not frost resistant.

If the water temperature threatens to drop below +4 ° C or risk of frost, the drum filter should be taken out of service.

- Empty the drum filter and clean it as described.
- Empty all pipes.
- Let the valves in the open position.
- Protect pipes and other parts if necessary against frost.

14. **WEAR PARTS:**

The following parts can wear out:

- The silicone drum seal Item Number 11
- The seal Item Number 12
- The brushes Item Number 13
15. **SPECIFICATIONS:**

- Working voltage: Vac 230V
- Plug: 16 A Euro Plug
- Total power: 3680 Watt
- Length of the supply cable: 3 Meters
- Drum diameter: 50 cm
- Drum length: 60 cm
- Maximum Flow: 55m³/h
- Weight: 75kg
- Height above the pond water level: 175mm
- Minimum operating water level: 30mm below the arrow stroke
- Maximum operating water level: 10 mm above the arrow stroke
- Number of Panels: 2
- Number of nozzles: 7
16. TECHNICAL DRAWING

17. DRAWING OF THE INSTALLATION IN THE PIT