



MPF

For crystal clear pond water

**INSTALLATION AND USER GUIDE FOR
MAKOI DRUM FILTERS AND BIODRUMS**



1. Preface

We thank you for the purchase of a MPF drum filter or Bio-drum. This filter is a premium quality product with exceptionally high production-standards. This manual is intended to assist with the installation of the filter for usage and to advise you with regard to the necessary maintenance.

KEEP THIS MANUAL IN A SAFE PLACE! IF THIS PRODUCT CHANGES FROM OWNER, PASS ON THE COMPLETE MANUAL!

In order to be able to enjoy this product for a long time, we recommend that you carefully read this manual and strictly follow the guidelines stipulated in this manual. If you are uncertain about the content of this manual, or do not entirely understand the assembly instructions, or if you are not sure about certain parts of the product, please contact the shop where you purchased this product.

The manual also informs you about possible hazards that may be caused by the filter. The user, the installer and the maintenance technician are responsible for observing and checking the procedures, as described in this manual. This filter was built in accordance with the existing safety regulations. However, this filter may cause risks for individuals and for real estate, if the filter is not used/installed professionally or is not being deployed for the purpose/use it was intended for, or if the safety regulations are ignored. If the filter is not deployed correctly, the manufacturer will accept no liability whatsoever. For reasons of safety, children and youngsters below the age of 16 years old, as well as people who are unable to recognise/estimate the possible risks involved in this product, or who are not familiar with this manual, are not permitted to use this device.

The combination of water and electricity may form an imminent threat to life and limb, if the filter is not being installed in accordance with the instructions or when the filter is being used incorrectly.

The general terms of MPF apply to all MPF products.

2. Shortcomings and claims for compensation, disclaimer

2.1 Shortcomings and claims for compensation

MPF can only be held liable in case the delivered goods show shortcomings at the time of delivery to the user. Small variations of the model/appearance that do not marginally influence the intended usage of the product, are excluded from this.

Warranty with regard to the usage and the suitability of an application, will only be accepted if they fall within the

MPF specifications specified in writing as, for instance, stated in this manual.

Any other verbal agreements, for instance during preparatory discussions, advertisement, etc., in relation to the product are valid only in case what was pledged is an integral part of a written agreement.

Only the terms and specifications stated by MPF will be valid. MPF will accept no terms and/or specifications from third parties. The specifications as set out in this manual, are prevailing.

If the customer wishes to use the product for purposes other than the intended purpose, they are obliged to thoroughly investigate the suitability for that particular other purpose. In any case, the customer will be entirely responsible and any liability will lapse if the product is not being used for the purpose intended by us, unless MPF expressly agrees to a specific other purpose, in writing. In case of modifications to this product, made by the user, the warranty will expire, as well as all claims and entitlements.

Every user is personally responsible for the correct usage or the filter. The manual does not exempt the user from the responsibility for safe application, correct installation, operation and maintenance.

By using this manual, you agree that the manufacturer cannot be held liable for any personal injury or material damage whatsoever, as a possible consequence of the usage of the filter. This applies for damage as a result of using inadequate pipes or connections in particular.

Damage resulting from insufficient cleaning or maintenance intervals are not covered by the warranty.

2.2

The warranty for shortcomings is strictly limited to the additional efforts to remedy the shortcomings. This is the remedying of the shortcomings or the replacement of the parts that do not suffice, at the discretion of MPF. In case the shortcomings cannot be remedied or replacement parts cannot be supplied, the customer is entitled to cancel the purchase agreement.

It is stated explicitly that the warranty is limited to the filter itself. MPF cannot be held liable for consequential damage (flood, loss of animals, etc.) due to non-functioning of the filter in whatever form, or as a result of a defect on or malfunction of the filter.

2.3

The customer shall thoroughly inspect the goods immediately after delivery. (Apparent/possible) damage must be reported in writing. Hidden defects must be reported immediately after identification. The customer is



responsible for reporting any transport damage to the transporter and/or MPF within 24 hours. The untimely checking and reporting of transport damage may lead to expiry of the warranty.

2.4

MPF is not responsible for the consequences of incorrect application, the use, maintenance and/or operation of the product by the customer, nor for normal wear. This applies to consequences of thermal, chemical, electro-chemical or electrical influences in particular, as also for failure to observe our user guide. The same applies for damage as a consequence of modifications or adjustments to the product which were not approved by MPF in advance.

2.5

Damage that can be unambiguously attributed to incorrect usage of the product, is the responsibility of and for the account of the user. In case of returning of the product, the customer shall ensure proper packing and shipment free of breakage/damage. The customer himself is responsible for damage caused by inadequate packaging.

2.6

Claims against MPF become barred within a year after delivery of the goods to the customer. The same applies to a claim for damage, regardless the legal cause. The period of limitation does not apply in case of concealment of damages, physical injury and other damage as a consequence of intent or deliberate negligence.

2.7

If, during the investigation of the reported damage or during the repair of the failure/defect by us, it appears that the reported damage or claims were intentional or a result of negligence, we can charge a fee for the removal of the defects. The customer has the right to refuse a necessary repair and demand the return of the filter. In principle, every investigation is bound to a lump-sum indemnity if the customer himself is responsible for the damage.

2.8 Replacement parts

The replacement parts will be available for a period of 5 years after the delivery of the product. Prices apply, as set out on the website of MPF.

2.9 Reservation of changes

The manufacturer reserves the right to modify the product at all times without prior notification. No claims can be made if, e.g. the design, the functionality or performance of the filter is subject to modification. The specifications of the filter offer will prevail and are guaranteed.

3. General

3.1 Description of the drum filter

The Bio-drum and/or the drum filter consists of a drum sieve that is driven by an electro-motor. Additionally, control electronics and a rinse pump are included. The drum filter serves to filter and discharge floating particles, dirt particles and algal remains. Regarding the Bio-drum there is an additional space, fitted with an air stone or air disc, in which the organic filter material Helix can be placed.

This drum filter is a product that may be applied only in fresh water. The filter was designed for use in ponds.

The water to be filtered flows (due to gravity or pumping) into the inlet openings of the drum. On the inside of the drum, dirt will remain behind as a result of the mesh that was fitted across the drum. As the cloth gets more polluted, less water will flow through the drum. The water level behind the drum will fall (in case of a gravity installation) and a sensor present there, measuring the water level, will subsequently activate the electronics. The electronics will send a signal to the motor of the drum and to the rinse pump. The drum will rotate, while the rinse pump will, under high pressure, control the nozzles that spray the mesh in the rotating drum clean. The waste water is collected by a duct in the drum and will flow outside, via the duct, for instance into the sewer. After the set rinsing time has elapsed (14 seconds as standard), the electronics will be deactivated again. The drum will stop rotating and the pump will stop spraying water towards the nozzles.

3.2 Warnings

Only staff with sufficient knowledge about drum filters is permitted to perform maintenance/activities on this equipment. This staff must be familiar with the international regulations for accident prevention. Connection and settings must be in conformity with the applicable electrical regulations.

3.3 Used symbols and warnings

WARNING – ELECTRICAL DANGER! LIFE-THREATENING!



Electric shocks may lead to death or serious physical injury for staff, or damage to the equipment. Ensure that unauthorised people are not able to get access or may come in contact with the device. Disconnect the device from the power supply before you start working on it. Do not put the filter in use if the power supply has not been correctly connected to the (protective)earth.





**PLEASE NOTE! ROTATING PARTS!
AUTOMATIC RESTART!**

Take adequate measures to ensure that all rotating parts are secured against physical contact when the filter is in operation. Rotating parts may make the operation of the machine a source of danger for the service staff.



CAUTION!

Before connecting the filter, make sure it is not damaged. Carefully check the power cables and plugs before connecting them.



Please note:

In case of installation works, disconnect all plugs of the device from the power supply. Plugs of other equipment that are in contact with water, must also be removed.

Please note:

Never put your hands in the water before the plug has been removed from the socket. This applies to all electric equipment that is immersed or in contact with water.

Please note:

Keep out of reach of children before and during assembly. Only suitable for people who are aware of the possible dangers of this device.

Please note:

Never try to stop the drum with your hands when it is rotating.

Please note:

Ensure that the rinse pump always has sufficient water during operation. It should not run dry.

Please note:

The drive motor and all electrical connections may not come in contact with water. If this happens, you must ensure that everything is thoroughly dry before taking the filter back into use.

Please note:

The control and rinse pump of this drum filter may only be connected to an earthed socket. This socket must be equipped with a 30mA residual current device.

4. Usage of the filter

Only use the filter when no body parts are in contact with the water! Before touching the water you must always disconnect the filter from the socket.

Compare the electrical specifications on the type plate of the device with the specification of the connection on the power supply. Ensure that the device is connected to a socket with earth and a ground leak switch with a maximum residual current of 30 mA (DIN VDE 0100T739). Use the device only when connected to a correctly installed socket.

Keep the plug and the wiring dry! Ensure that the cables are protected to prevent damage and consequential short-circuit.

THE ELECTRICAL WIRING AND/OR PLUGS MAY NOT BE CUT (THROUGH). DOING THIS WILL CAUSE THE MANUFACTURER'S WARRANTY AND LIABILITY TO EXPIRE IMMEDIATELY.

Only use cables, installations, adapters, extension cables and connection cables with earthed plugs, that were approved for outdoor use (DIN VDE 0620) with sufficient cable diameter. If the wiring is damaged or broken, it must be replaced. Ensure that the plug will not fall into the water or get wet. A wet plug must be cleaned by use of demineralised water and dried. Protect the plug and cables against heat, oil, UV-light and sharp corners. The manufacturer is not responsible in any way for any damage, caused by incorrect installation or as a result of carelessness of the user or installer.

The cable may not be altered or replaced. Electrical installations must always comply with the national and international requirements/guidelines. Never open the casing of the control electronics. Never make technical modifications. Use only original parts and accessories, as set out in this manual. Only authorised dealers are empowered to perform repairs.

Never use the filter with other liquids than water.

5. Application fields

The Bio-drums or drum filters are suitable for the filtration of fresh or slightly brackish water.

Temperature water: 4-40 °C.

Ambient temperature: 2 °C to +50 °C

Protection class Electronics: IP54



6. Installation/Connection

Carefully read the manual before installing the filter. Damage as a result of failing to properly observe the manual, will not be covered by the warranty.

When unpacking the filter, check whether all parts are complete and undamaged. Any identified damage must be reported to your supplier within 24 hours. Check the filter for damage before you put it into service. Do not use the filter if it is damaged. If the filter has been used and is damaged, the warranty and liability will expire.



The filter must not be connected to the power supply during installation. Remove the plug from the socket and make sure that the filter cannot be activated. In order to prevent injury, you must ensure that you are absolutely unable to reach the rotating parts of the filter with your hands and fingers once it has been connected to the power supply.

7. Commissioning of the filter

NEVER USE THE DEVICE WITHOUT WATER FLOW.



The drum motor must be stored dry, otherwise the warranty will be void.



7.2.1 UV CONNECTION

This is a 32mm pipe on the front of the filter that can easily be fitted with an MPF Drum-UV. With a 32-25mm rubber coupling you can easily install it. Beware! No rubbers (or caps) are supplied as standard! You must order these yourself.



7.2.2 WASTE CHUTE AUTO FLUSH

A built-in waste chute flush ensures that the chute is cleared of the dirt lying in the waste chute. Sometimes, for example, leaves or twigs remain in the waste chute and the spray nozzles do not spray this away properly.



We have devised a system that makes it easy to flush away this contamination. By means of a tap, you can easily flush away the fill lying in the gutter. The tap is connected to the built-in flushing pump. You can flush the drum manually by keeping the button pressed on the MPF controller or by pressing the green button of MPF Professional Drum control once. If you open the tap, the chute will be flushed. You can also choose to always open the tap so that the chute is automatically flushed when the drum filter is cleaned (automatic flushing cycle).



7.1 Positioning of the filter

- You must strictly follow regulations that are mentioned below to work safely and prevent damage to the device.

Make sure that the substrate is levelled and sufficiently solid; a concrete slab is preferred.



- The drum motor must be installed in a dry place, otherwise the warranty will become expired.

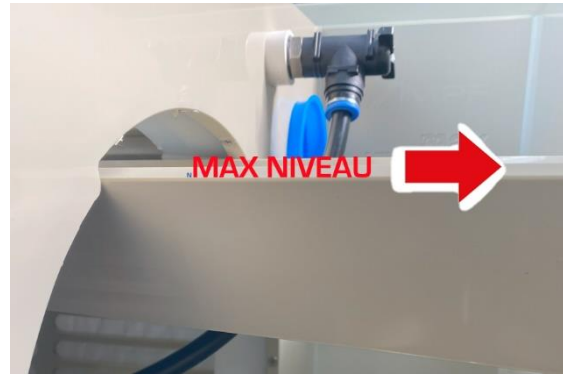


- When checking whether the rinse pump or motor of the drum still works, the lid must always be closed. Never put your hands in the filter, or try to stop the drum.
- The rinse pump must always be below the water level before it is activated. Otherwise it will be damaged irreparably due to running dry or overheating. Damage to the rinse pump as a result of running dry will not be covered by the warranty.
- The electronics must hang in a dry and well ventilated space. The temperature of the space with the electronics must be between 2 and 30 °C. In case of higher temperatures, the electronics cannot get rid of its heat as a result of which it may get damaged.
- The electronics contains switching components and must be placed in an interference-free room.
- Certain pumps or UV-units may negatively affect the functioning of the electronics.
- In case of frost, the filter must be protected against freezing. If the filter is taken out of operation, all pipes must be empty. If the filter remains operative, the pipes for the rinse water must be protected against freezing. Damage as a result of freezing of water is not covered by the warranty.



7.2 Connecting Gravity

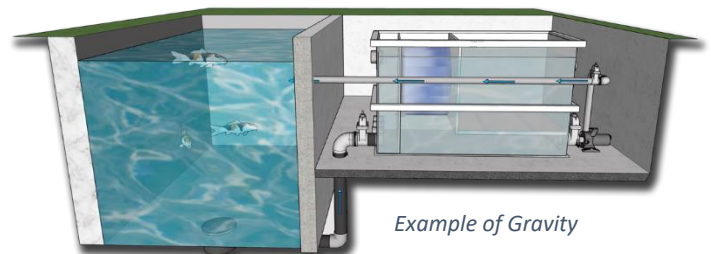
If the water flows into the drum with gravity flow, the **maximum water** level must be properly aligned with the drum. The maximum and minimum water levels are indicated on the inside of the filter and it should be between them, preferably as close to the maximum level as possible (see image). The filter has 110 mm entries and 110 mm exits.



Please note:

For installation on gravity-basis, sufficient water feed is very important for proper functioning of the filter!

There is a risk of the rinse pump running dry and a very frequent activation of the rinse cycle if there is insufficient water supply, due to an incorrectly installed system.



A rule of thumb is that per 110 mm of pipe, approximately 10 m³/hour can be moved in a gravity-setup. However, this quantity largely depends on the length of the pipe and the maximum height difference between the pond water and the filter. In some cases only 3 m³/hour can be moved.

So pay attention to the following, with regard to a maximum flow per pipe:

The pond water level should not sink too much. If the pond water level sinks by 1 cm, the flow per tube may fall by as much as 1 to 2 m³/hour. In case of large fluctuations of the pond water level (due to evaporation, replenishing or if you rinse the filter) there is a risk of insufficient water being supplied to the filter. If your pump pumps more water than arrives into the filter, the drum will be pumped empty and the sensor will appear above

the water level, which will cause the filter to go in rinse cycle.

If the supply pipes are of significant length, with many curves, there will be lots of friction loss and a lot less than 10 m³/hour may be supplied per pipe.

Entries that are not used should be sealed.

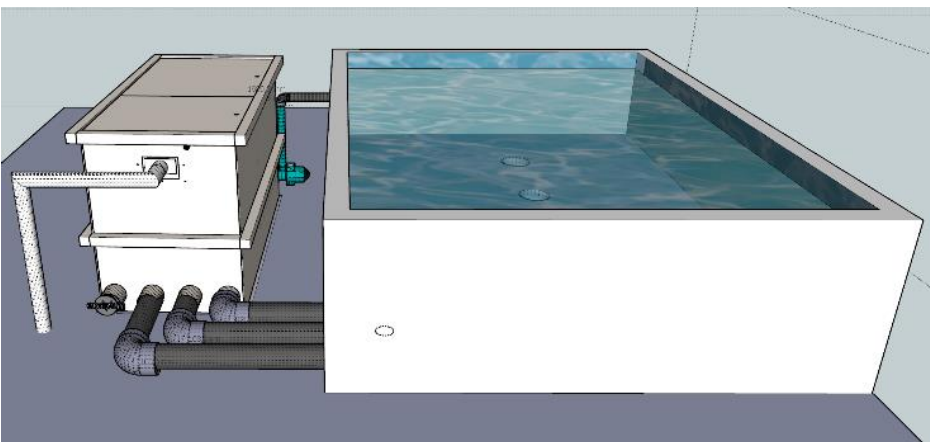
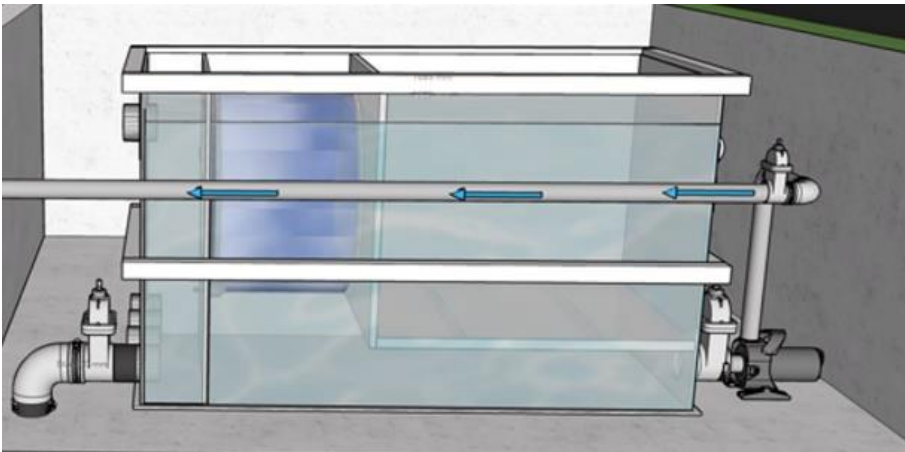
drainage of dirt:

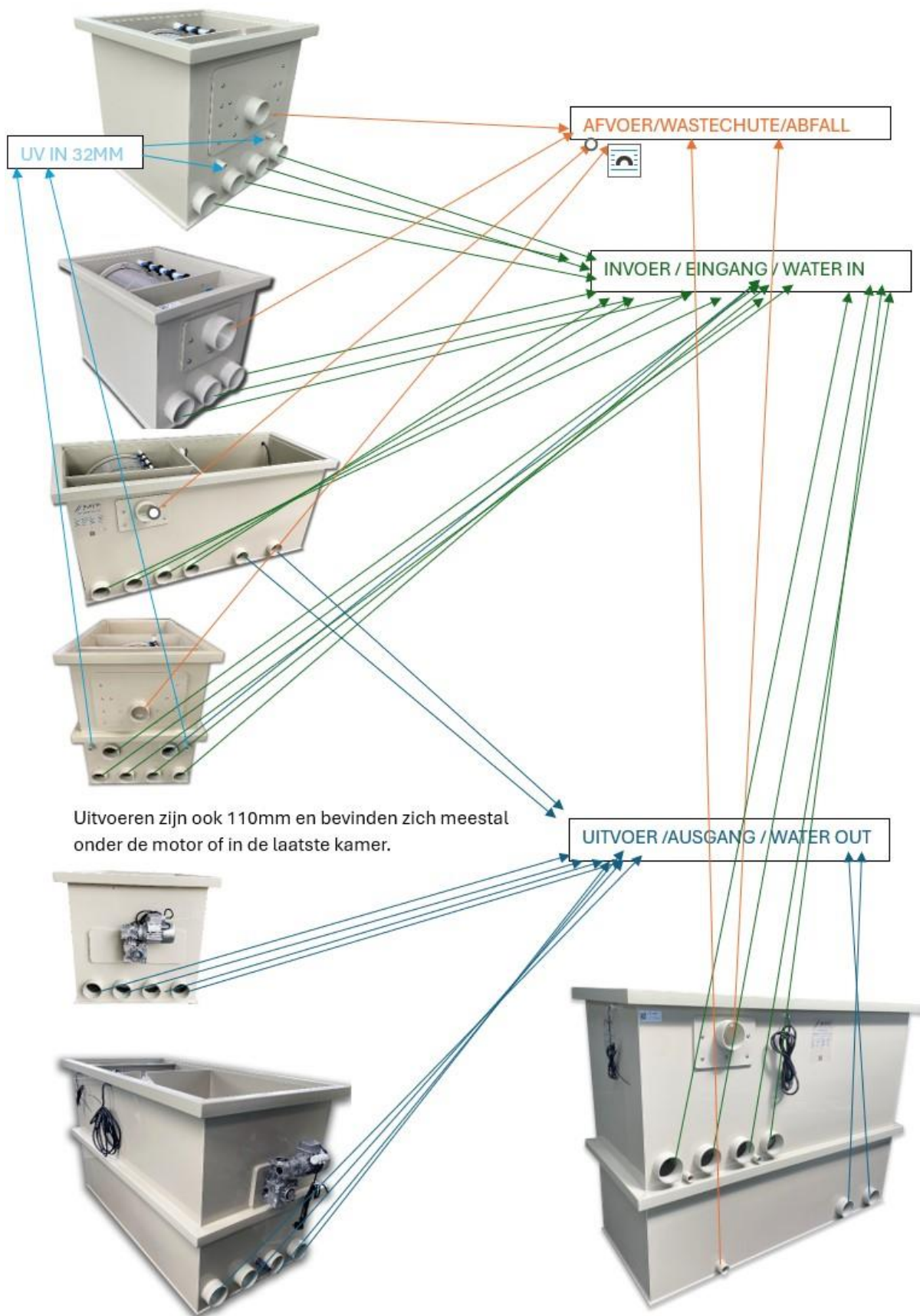
The dirt will be sprayed through the nozzles of the mesh, into the flushing channel. The flushing channel can be connected directly to the sewer or to a drainage point.

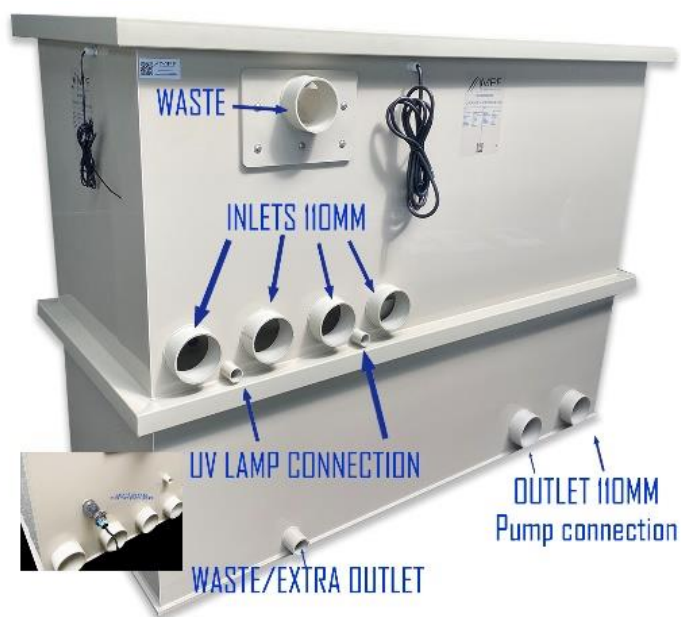
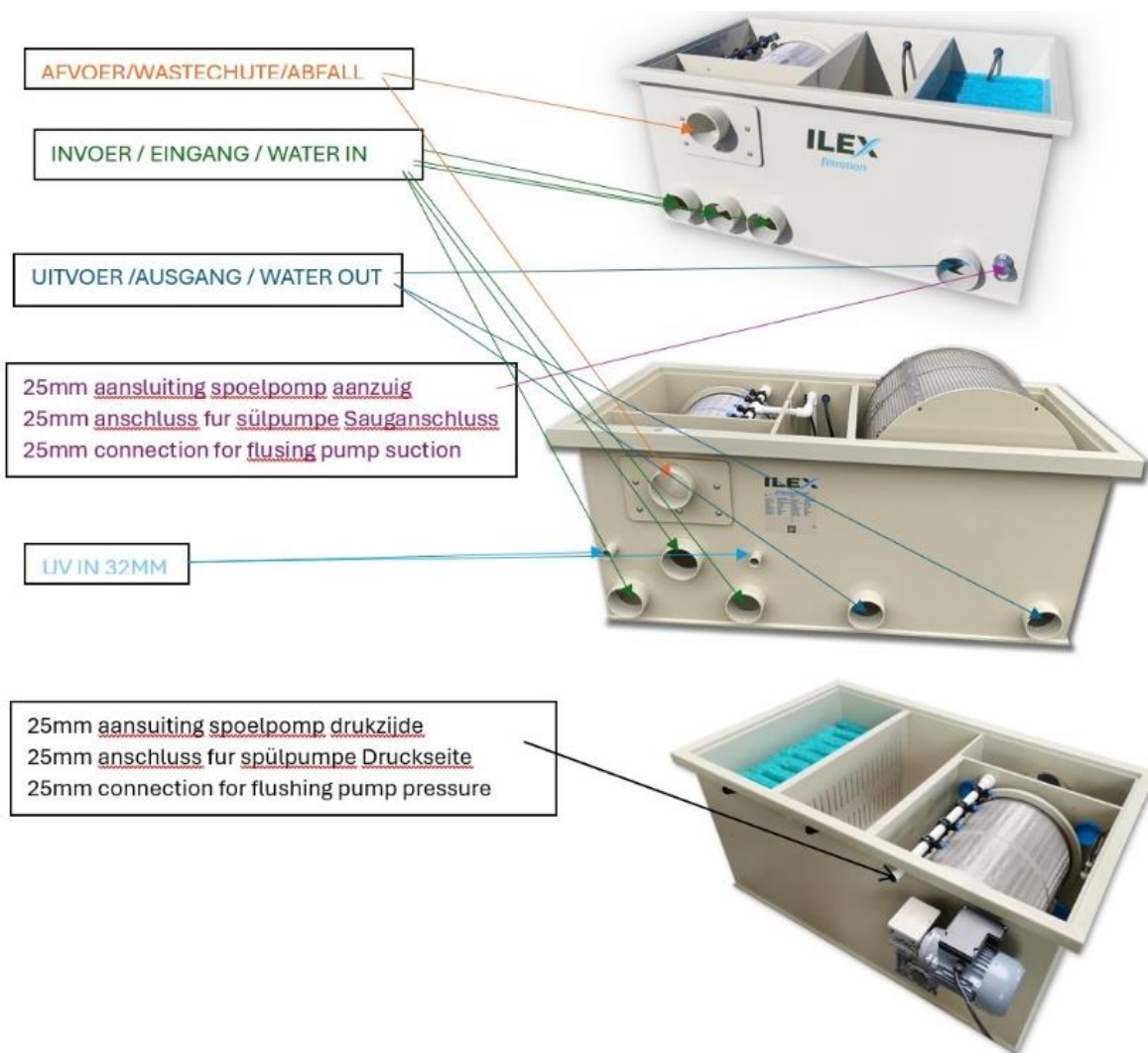
Return to pond:

The pump is connected to the 110 mm drain. If necessary, make use of a flexible coupling, for a good transit to your pump. A flexible connection will also reduce vibrations.

Make sure that you never apply a pump larger than recommended for the filter. As you go towards the maximum of the filter in terms of the selected pump, you should ensure that sufficient water is supplied and that the dry running function of the electronics is engaged. This is indicated on the display in the Electronics box.



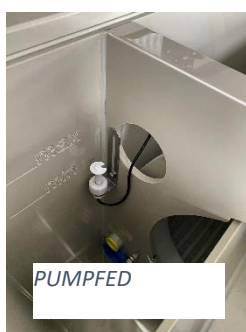
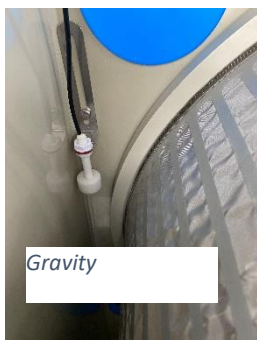




7.3 CONNECTING / SETTING SENSOR/FLOAT



The sensor is already mounted in the filter upon delivery for gravity use and in such a way that it functions well in most situations. You only need to install the wires in the electronics cabinet.



CONNECTIONS: MOTOR, RINSING PUMP AND POND PUMP



GERBOX = Motor
HP PUMP = Flushing pump
CIRC PUMP = Pond pump

Switching on the electronics:

Press the 2 AUT buttons to start the system.

Connecting float switch CONTROLLER

1 OPEN THE CABINET. First set the red button to o.

2 Connect the float:

Feed the wire from the float into the top passage. Now connect the wires to the green plug:

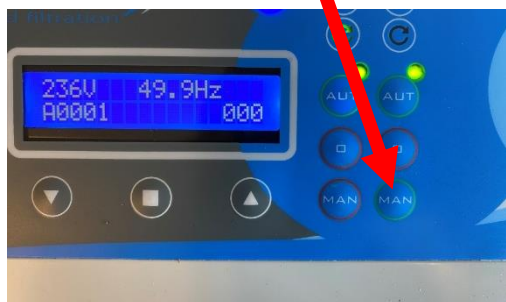
You don't have to take the colours into account..



THE GREEN LIGHTS MUST BE ON AT ALL TIMES! OTHERWISE THE SYSTEM WILL BE OFF OR FLUSHING WILL NOT OPERATE! CHECK THIS.



Manual flushing MPF Controller



If you hold this button down, the motor and flushing pump will be activated.

If you press the red button on the right, the pond pump will be switched off.



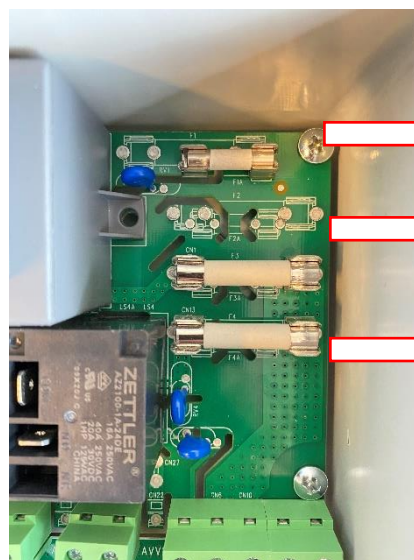
AUT light goes out.

Then press the AUT button again to switch the pond pump on again. AUT light comes on again.

If you press the Left Red button, the pond pump, motor and flushing pump will turn off. Always press the AUT buttons again to switch everything back on to avoid problems.

Fuses:

If a short circuit occurs, a fuse may blow. In the cabinet you will see the fuses at the top right. The top one of the display is 1 ampere. The middle one is from the Pond Pump. And the bottom one is of the Motor and High Pressure Pump. If these are defective, you can replace them yourself.



1 ampère: Display

3 ampère: Vijverpomp

4 ampère: Motor en spoelpomp

The control electronics have protection class IP54.

Electrical installations must always comply with national and international requirements/guidelines.

Only open the electronics housing to connect the float or set the parameters (Drum control).



When connecting the Float, disconnect the device from the power supply before connecting it! Changing the parameters is done at your own risk if the power supply is connected. Be careful of electrical hazards when opening.

The control box must be connected to an approved earthed socket. The electronics must be mounted vertically. The electronics must not be mounted unprotected in the rain. A maximum of 1500W of peripheral equipment may be connected per connected side.

7.3.1 Connecting MPF professional Drum control

The plug of the drum filter motor must be connected to the control electronics. Use the plug connection 'GEAR BOX' 'MOTOR DRUMFILTER' for this purpose.

Connection float MPF Professional Drum Control number 5-6



Press 1 time:
Quickly press 2 times:
Quickly press 4 times:

Filter will start to rinse.
Filter and shoot will rinse*
Filter into emergency mode
Periodic rinsing if float is defective.

Press for 3 seconds:
Press for 8 seconds:

Rinse counter reset.
Text message module sends (test) alarm.

While pressing:

Total number of rinses visible on screen.

Display on white: Filter is operational

Display is red: (option) not available on standard version.

Lid is open en Drum Filter is not flushing! Pond pump will continue to run, but only if the magnetic contact is connected to 3-4 or 5/6 (new model). If not connected, the drum will not respond to the opening or closing of the lid. Standard warning sticker on lid.



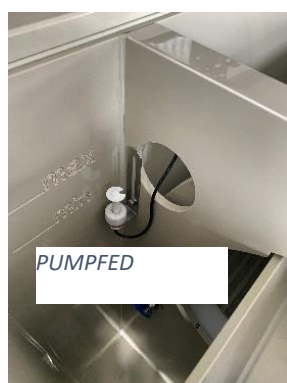
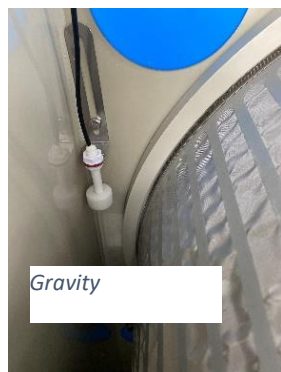
Display flashes red-white:

Dry-running protection is switched on. You can reset it by pressing the button on the front of the box (drum will then rinse 1 x again) when the float is in the top position again.



7.2.1 Setting for sensor/float

Upon delivery, the sensor has already been installed for use as gravity and in such a way that it will function properly in most situations. Still you will need to check on proper functioning after installation and adjust the float in the best way possible.



If the float is in lowest position (4), the filter will postpone the rinsing function, creating more pressure in the drum (not recommended). Although, in case of a calamity or too little water supply from the soil drains, this could be a temporary solution, so the filter can keep running. If the float is in highest position (image 3) the filter will rinse more quickly and more often. Image 1 represent the 'normal' position, recommended for most ponds.

The sensor is already mounted upon delivery for gravity use and in such a way that it functions well in most situations.

However, after installation you should check the correct operation and adjust the float as best as possible.

If the Float is in the Lowest position, the filter will wait longer to rinse and there will be more pressure in the drum (not recommended), but in the event of an emergency or insufficient water supply from the bottom drains it can be a temporary solution so that the filter can continue. If the float is in the highest position, the filter will rinse faster and more often.

If the float remains in the lowest position (if the pond pump is on), there will be insufficient water supply from the pond. The drum will rinse for 40 (default value) seconds and then **enter dry-run mode**. This is to protect your pond pump. When the float is back in its normal position (it floats again because sufficient water has entered the filter), the pump at the MPF controller will immediately switch on again.



NB! Do not carry out any maintenance if the lid is removed from the drum. Remove the plug from the socket and ensure that the filter cannot be switched on. To avoid injury, ensure that your hands or fingers cannot reach the rotating parts of the filter when it is connected to the mains.

7.2.3. Connecting the rinse pump

The external Rinse pump is included with the MPF drum filters and Bio-drums, as standard. In case of the Bio-drum 30, a connection has already been installed for the suction side of the rinse pump. For the other types, you can use one of the 110 mm exits, by applying an adapter (ring) towards 32 or 25 mm for the rinse pump.

Or create a transit yourself at the location of your choice, using a 25 or 32 mm tank transit. Make sure that you assemble this transit into the 'clean' side of the filter and not into the first chamber where the dirt enters. This is to prevent clogging of the spray nozzles.

You connect the exit of the Rinse pump with a hose (or even better, PVC) to the $\frac{3}{4}$ " cable that is assembled to the pipe with the nozzles.

Ensure proper adhesion bonding! The pipe is under pressure during rinsing! Use high pressure PVC. The plug of the rinse pump must be connected to the electronics in the FLUSHING PUMP plug.



7.2.5 Flushing frequency

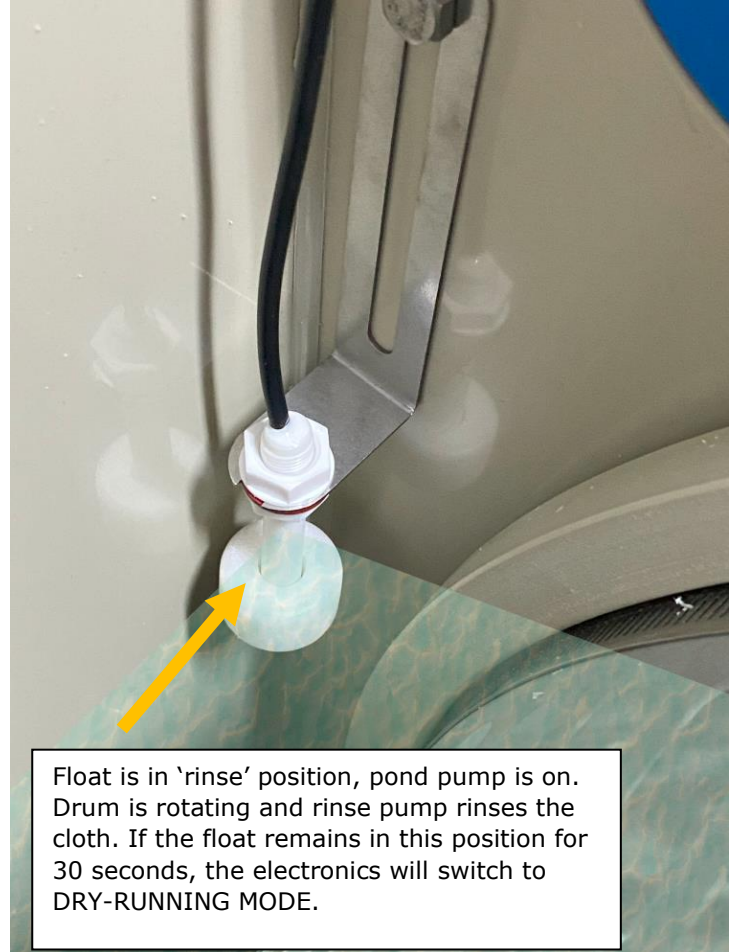
Make sure that the flushing frequency is not too high. If the drum is installed in an existing system, the coil frequency will be high over the first days/weeks, because the pond is being 'cleaned'. In case of warm weather, the flushing frequency will be higher (more food and more algae growth) than in case of colder weather.

Other causes of a (too) high flushing frequency are:

- A pond pump that is too large
- Too little water is supplied, due to a low pond water level or incorrect supply system from the pond, e.g. too long pipes, too few pipes or pipes with an insufficient diameter
- Float is set too high
- Clogged mesh, due to e.g. bacteria
- Too little pressure in rinse pump
- Too little flow from rinse pump

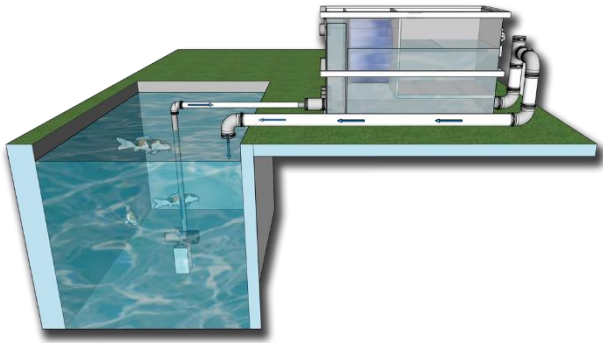


Float is in 'normal' position, pond pump is on.



Float is in 'rinse' position, pond pump is on. Drum is rotating and rinse pump rinses the cloth. If the float remains in this position for 30 seconds, the electronics will switch to DRY-RUNNING MODE.

7.3 Connecting the pump-fed system



The MPF drum filters and Bio-drums can also be connected as a pump-fed system. The water will be pumped into the filter by the pump. Exits that are not used must be sealed. **Pump fed will decrease the max capacity to 30% less!**

7.3.1 Assembly of float

In this case, you will need to assemble the float upside down for the drum section (at the inlet) 1st chamber:



Please note:

The float must be installed in reverse, because the circuit here is to work reversely. The upper blue caps must be removed. If the water rises in front of the drum filter, it becomes polluted and the rinse cycle must be activated. If, in the reversed situation, the float goes up and stays up, the system should deactivate after 40 seconds otherwise the water will flow straight to the sewer, via the flushing channel, and your pond will run empty. Therefore, the float must be assembled at the right height, so the system will be deactivated before the water flows into the flushing channel.

As an additional safety precaution, **the 2 caps of the upper sealed holes must be removed so**, in case of a calamity, the water will continue flowing unfiltered, eliminating the risk that water is pumped directly into the flushing channel.

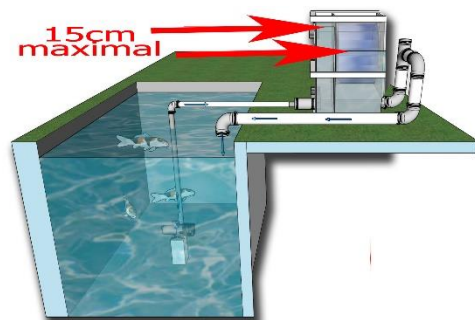
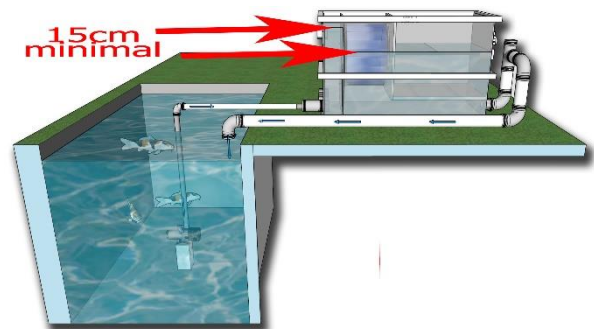
If the float is in the lowest position, the system is in stand-by. If the float is in highest position (float is floating) then the process will commence (drum will start rotating and the rinse pump will spray-clean the cloth). This will last for 14 seconds (standard value).

If the float remains in the highest position (if the water pump is on), too little water will flow away from the filter. The drum will rinse for 40 seconds (standard value) and the electronics will switch to dry-running protection.

7.3.2 Connection of return to pond

The return after the filter should first go up to determine the desired height inside the filter. It should not be too low, in connection with the bio-filter material present. Neither should it be too high, because this will lead to a high coil frequency of the filter. Also here it applies that the drum should be adjusted during operation. A rinse cycle must be started when the water level difference before and after the drum is approx. 10-15 cm. Make sure that the vertical section remains open to prevent tilting action, causing the drum filter to be pumped dry.

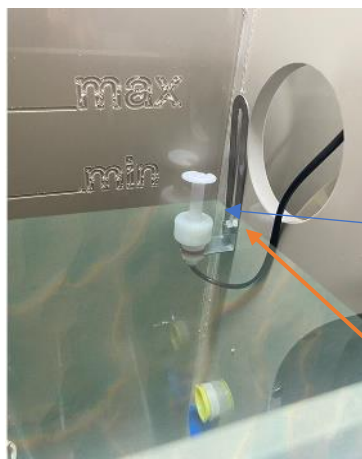
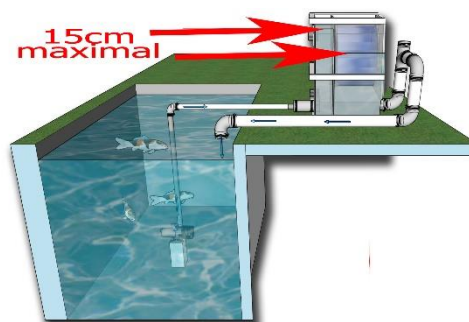
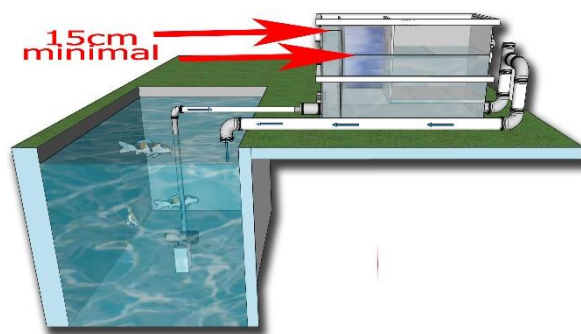
If you wish to pump more water than 1x 110 mm pipe can handle concerning the gravity, you must create additional transits. You can also connect the return to the pond by use of a wider diameter pipe.



NOTE:

If you choose a pump-fed system, you need to take a few things into account. Firstly, pump-fed systems have less capacity.

Take into account a loss of 30%. For example, a Biodrum 100 can handle a maximum of 50m³ per hour in gravity setup, and a pump-fed system a maximum of 35m³. Also, the biological part will not be completely filled with water, so less biological material will be added.



Filter need to flush at this point!

IMPORTANT

10-15cm The water must decrease

5-15cm. depending on the flow/model!



water level after end of flushing!



Please note:

That in terms of Bio-drums, the water in the last chamber (biological chamber) is at least 15 cm lower than in image 2. So this is just before your drum filter will rinse.

With Drum filters 100 and 50, the incoming water column may not be more than 15 cm higher than the outgoing water column at the time of rinsing. If this is the case, too much water will remain in the Drum and the drum may deform.

Extra information:

If the water rises in front of the drum filter, it is dirty and the rinse cycle must be activated. So if the float now goes up, a rinse cycle follows (approx. 20 seconds). If the float remains in the highest position (if the pond pump is on), too little water will flow from the filter. The drum rinses for 45 seconds (standard value) and then the electronics switches to dry-running protection. If the flushing frequency is too high or the electronics repeatedly goes into dry-running protection, see, among other things, the points under 7.2.5. The following points may also play a role in a pump-fed system:

- Return line too high
- Contamination of the sensor

7.4 Plaatsen n De Gravity Trickle

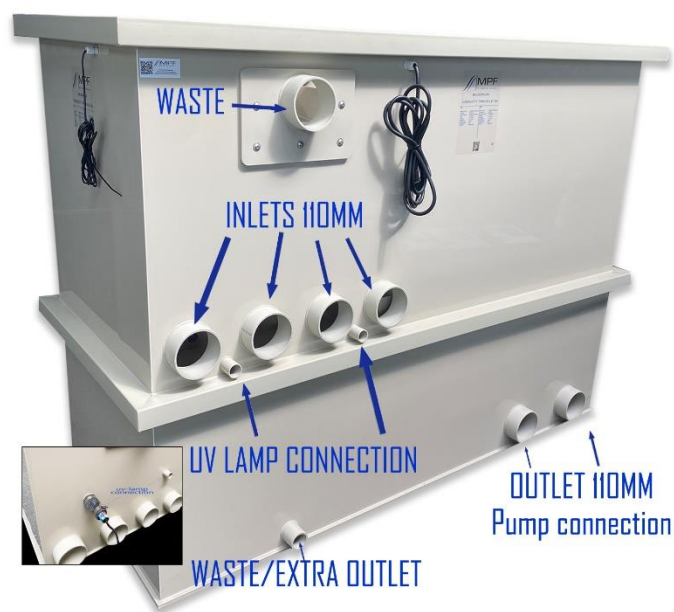
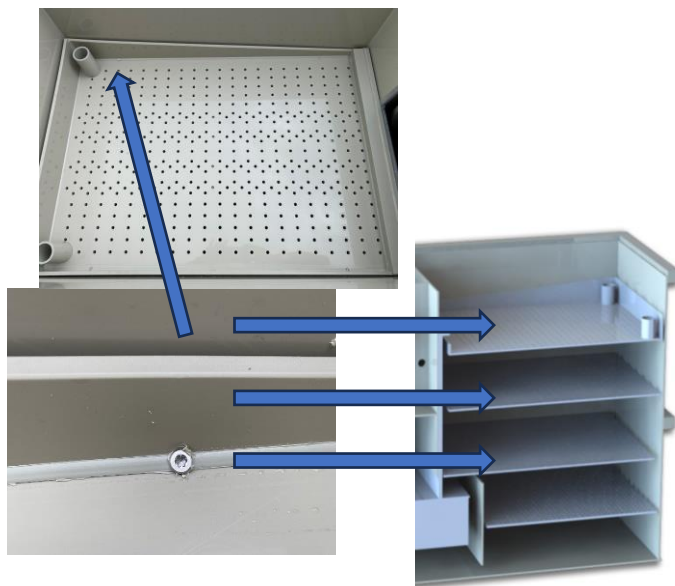
Make sure the surface is level and firm; A concrete slab is preferred. The surface must be level at all times, otherwise the warranty will be void.



- WATERLEVEL MUST BE AT THE MAX!!!



- You must fill the filter yourself with biological material. The drop plates (3X) are pre-screwed. You must unscrew this yourself to place the biological filling. Screw all plates back on as they were tightened at the factory. Otherwise the warranty will be void.



Maintenance and cleaning

The filters are low maintenance. However, maintenance- and inspection tasks below are required for proper functioning:

- Check the correct functioning of the float every month.
- Perform a manual rinse every month and check whether the nozzles perform good spraying. A nozzle may get clogged or calcified. The rinse pump may also perform less pressure. Clean the nozzles if necessary.
- Clean the sieve element with a strong acid (hydrochloric acid 30-35%). After a while, biofilm and calcium deposits may arise, as a result of which the rinse frequency will strongly increase. Observe the safety regulations during cleaning with acids. Wear protective clothing and safety goggles.

BYPASS:

You can remove the blue caps in the front chamber if there are calamities with, for example, the engine or steering. This allows you to continue using the filter without pre-filtering.



10.0 ONDERHOUD

We would like to provide you with some important maintenance instructions to ensure your product continues to perform optimally.

* Once a month (at least once a quarter) change or top up the oil in the engine gearbox. Regularly changing or adding oil will extend the life of your product and ensure it continues to function as intended. This simple maintenance ritual can help prevent potential problems and ensure reliability.



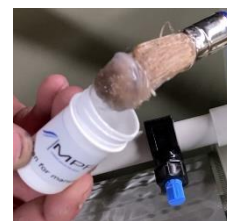
* The control will have to be checked for defects once every 3 years. Electronics can wear out or age over time, which can reduce performance or even cause malfunctions. By performing regular maintenance and replacing devices as necessary, you can ensure that your electronics remain reliable and functioning properly. We recommend conducting a professional inspection to identify and resolve any issues in a timely manner. This way you can continue to benefit from the latest technologies and maintain optimal performance.



* We recommend having the motor of your drum filter checked once every three years for possible defects. The motor is a crucial part of the filtration system and regular inspections can help identify and correct any problems in a timely manner. Additionally, we recommend considering engine replacement every five years, even if there are no immediate problems. By periodically renewing the motor, you can ensure the long-term reliability of your drum filter and prevent possible malfunctions. Our maintenance team is ready to support you in planning these checks and any replacements, so that you can continue to enjoy your filtration system worry-free.



* Regularly (at least once a month) lubricate the silicone seal of the drum with MPF Lubricant. By regularly lubricating the silicone seal, it remains smooth and elastic, which extends the life and effectiveness of your drum filter. Please feel free to contact us for more information about maintaining your drum filter and obtaining the right lubricant for your seal. We are happy to help you ensure that your filtration system continues to function optimally.



* Water SEAL between axle and engine at least once every 2 years: An essential part of the maintenance of your drum filter is regularly replacing the oil seal. at least once every 2 years. This critical component ensures that no water can enter the engine via the shaft. This contributes to the efficient functioning of the filter and prevents leakage that can disrupt the operation of the system.



* Check the float regularly. The float plays a crucial role in rinsing your drum filter. We therefore recommend replacing the float once every three years to ensure that your drum filter continues to function as intended. Regular checking and replacement of the float will help prevent possible malfunctions and contribute to trouble-free operation of your drum filter. Please feel free to contact us for more information about maintaining your drum filter and obtaining replacement parts if necessary. We are ready to support you in maintaining your filtration system for optimal operation.



* It is essential to always store the drum filter motor in a dry place. If the engine is exposed to wet/rainy conditions, it can cause serious damage and significantly shorten the life of the product. Make sure that a hood is always mounted over the engine so that rainwater has no chance of penetrating the engine. Ignoring this instruction may void the warranty on the drum filter.



9. Technical specifications

Rinse pump external:
Pressure: 4.1 bar.
P: 600W
Qmax: 3000 l/h
U: 220-230V

Rinse pump internal:
druk: 6 bar.
P: 1000W
Qmax: 3500 l/u
U: 220-230V

Electronica: MPF Drum Control
IP55
Max. capacity : 3100W
Pressure: 220V/50-60Hz

Electronics: Siemens Logo8
IP54
Max. capacity per side: 800 W
Voltage: 220 V/50-60 Hz

10. Declaration of distributor

In addition to what is set out in this manual, the general terms of MPF B.V. apply for any claims against MPF with regard to the products in this manual.

Specifications may vary as a consequence of technical improvements.

Should this filter in any way not meet the requirements you would expect, then contact the dealer where you purchased the filter.

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