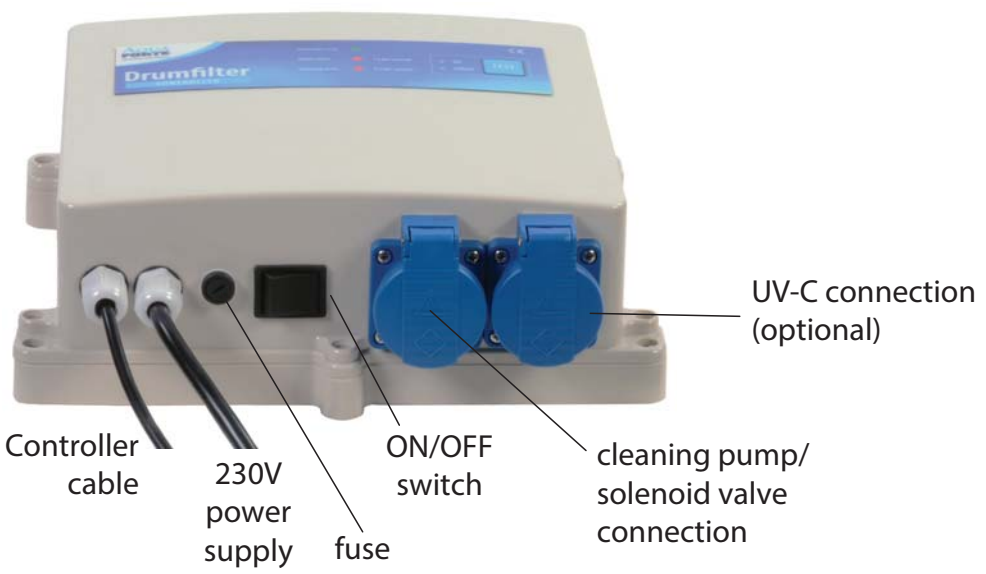
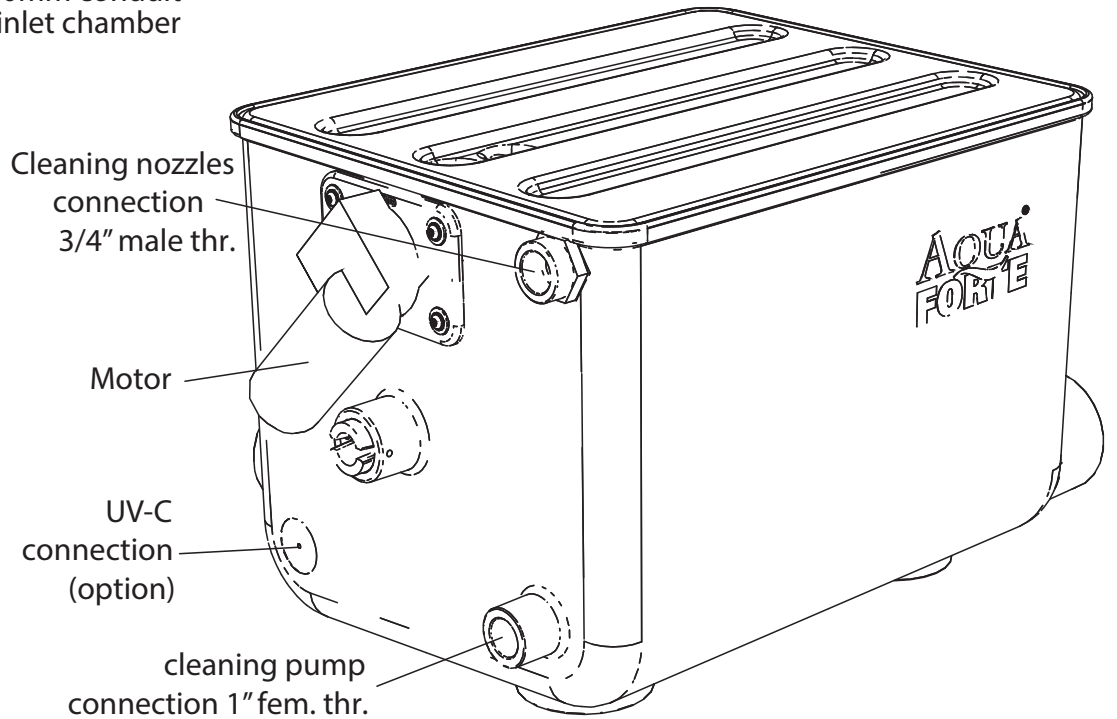
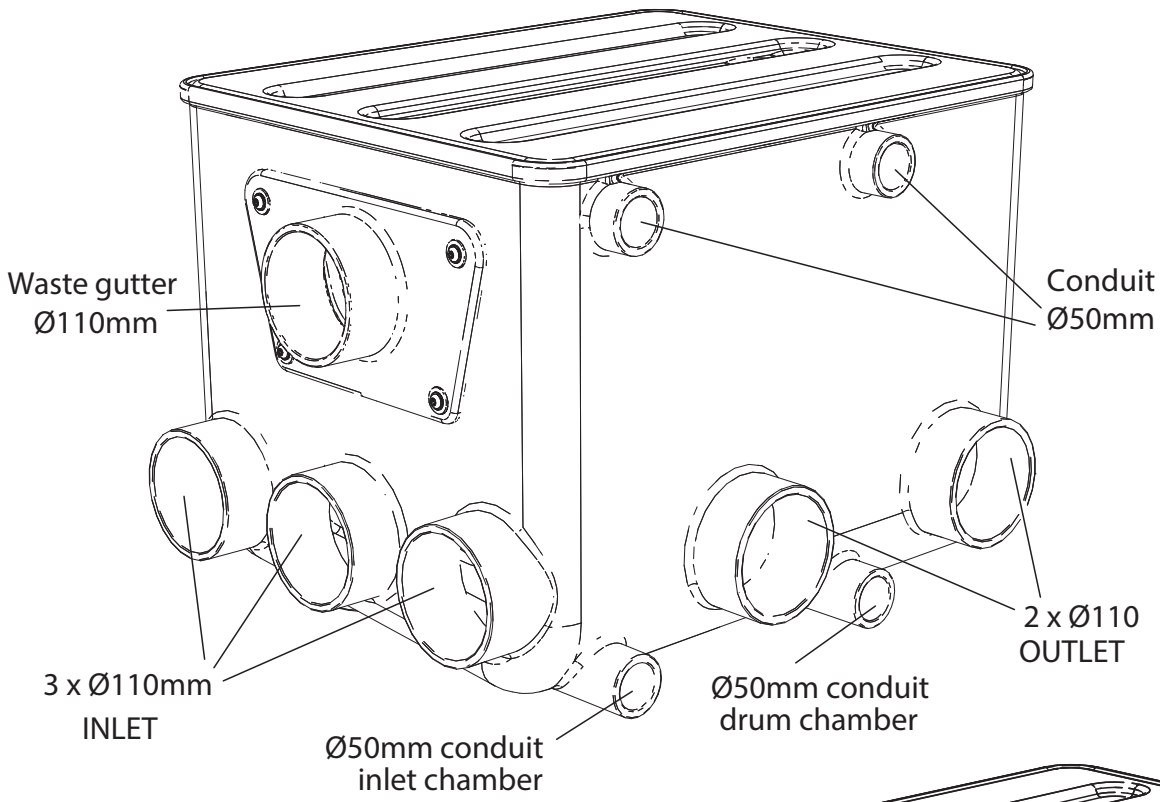


DRUMFILTER



Instruction Manual



GENERAL INFORMATION

Read this manual carefully before installing the drumfilter!

Keep this manual close to the drumfilter so you can consult it at all times.

For external components (such as cleaning pumps) the manufacturer supplies separate manuals for installation and maintenance. Read these manuals also carefully and follow the concerning instructions.

This manual does not include site/country specific regulations, the installer of the drumfilter is responsible for acting according these local regulations.

The manufacturer of this drumfilter is not responsible for damages or injuries as a result of not following this manual.

Factory warranty will be voided in case of incorrect use and/or not allowed modifications by the installer/user.

Refrain from any unsafe actions! Always respect the basic safety regulations!

Regularly check the drumfilter for correct and safe operation.

The manufacturer only grants warranty when the drumfilter is used properly with original manufacturer parts.

SAFETY



Always be sure that the main power supply cable is removed from the wall outlet before doing any installation or maintenance!

WARNING: not following the safety instructions can lead to serious personal injuries or damages!

Always comply to the national and international safety regulations, apart from the safety instructions in this manual!

GENERAL FUNCTION

The drumfilter will filter solid waste particles from the water. The water will enter the filter at this inlet chamber and then flow into the drum. Waste particles will deposit on the inside of the drum which will decrease the output flow of clean water through the drum. This will cause a change in water level inside and outside the drum. The level switch will detect this change in water level and send a signal to the controller to activate the cleaning process. The controller will then activate the motor to rotate the drum and activate the power supply to the cleaning pump/solenoid valve to provide the spray nozzles with water. The water pressure will rinse off the waste particles from the drum. The dirty water will leave the filter through the waste gutter. You can choose to rinse with clean pond water (from outside the drum) with an external (optional) cleaning pump or with tap water (minimum pressure 2 bar, max. pressure 4 bar) with an (optional) solenoid valve.

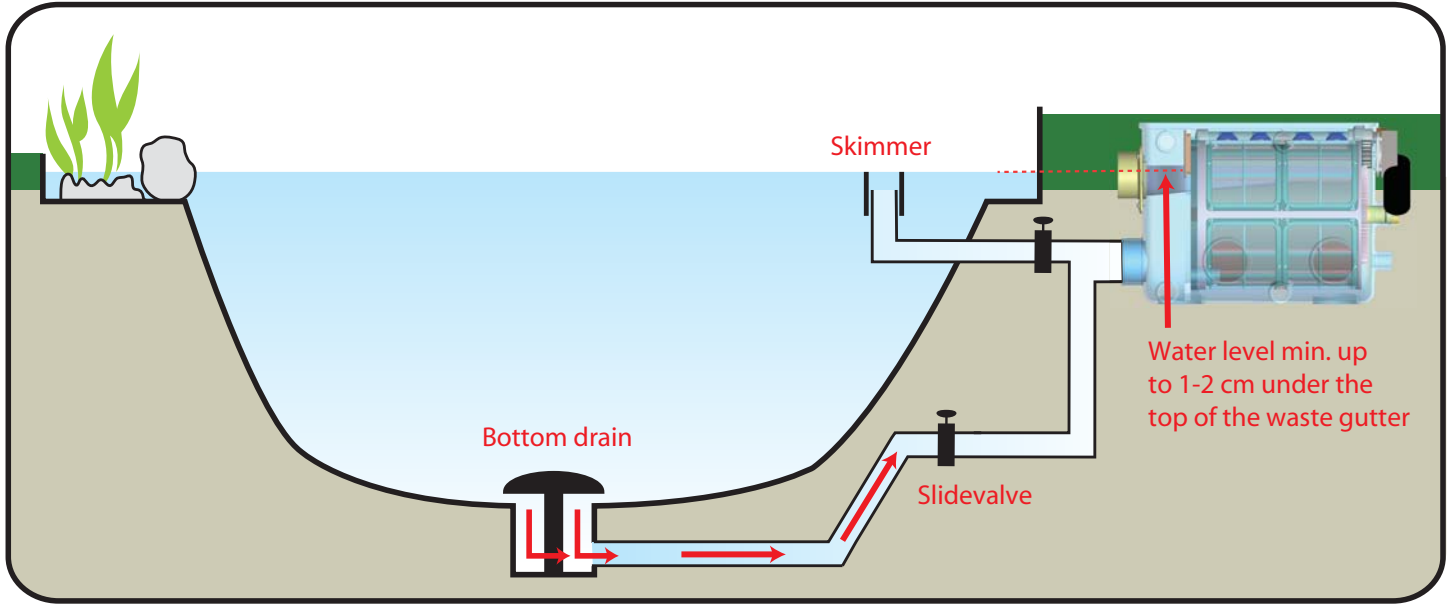
If you clean with pond water the water loss should be compensated (with an automatic top up system for example) to guarantee a correct functioning system.

The cleaning process intervals are determined by the pollution in the water but the controller will automatically rinse the filter every hour for 10 seconds.

INSTALLATION

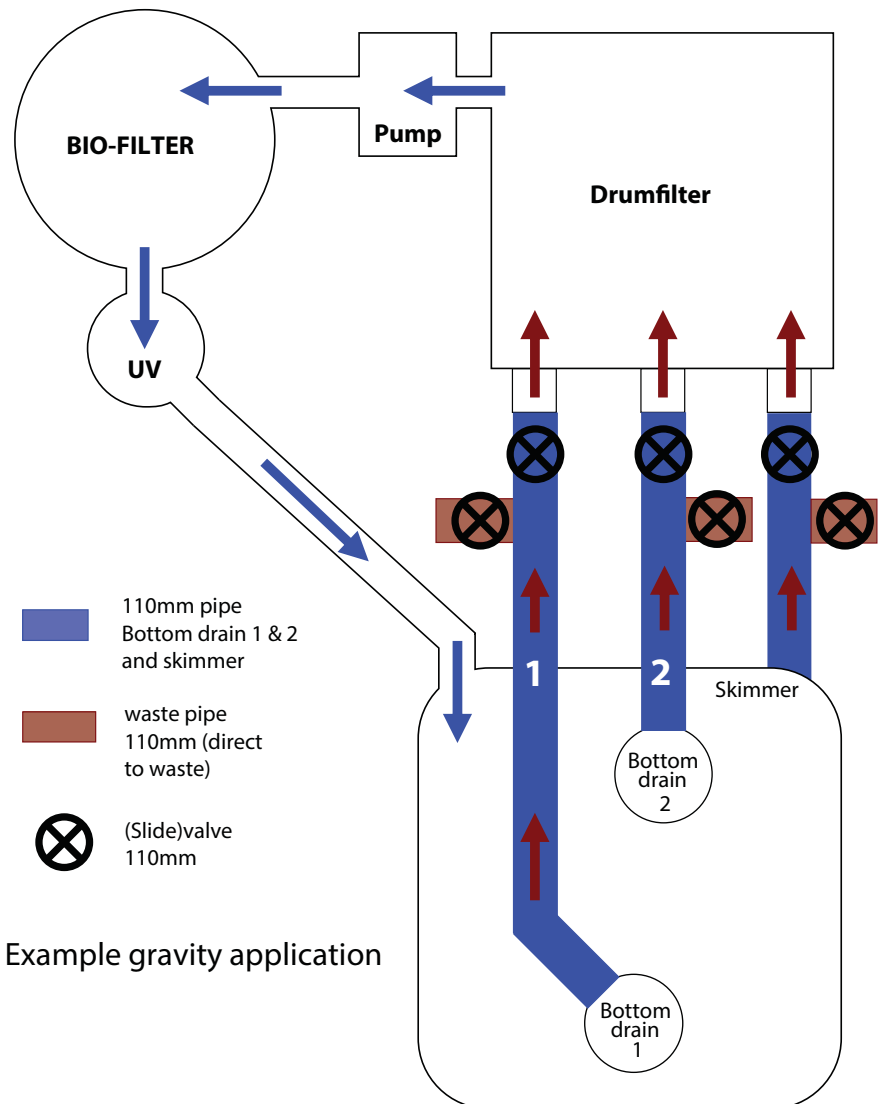
The drumfilter must be placed on a firm, flat (level!) surface. The drumfilter is suited for gravity- and pump fed applications. Default position of the level switch is for gravity application (level switch in drum chamber).

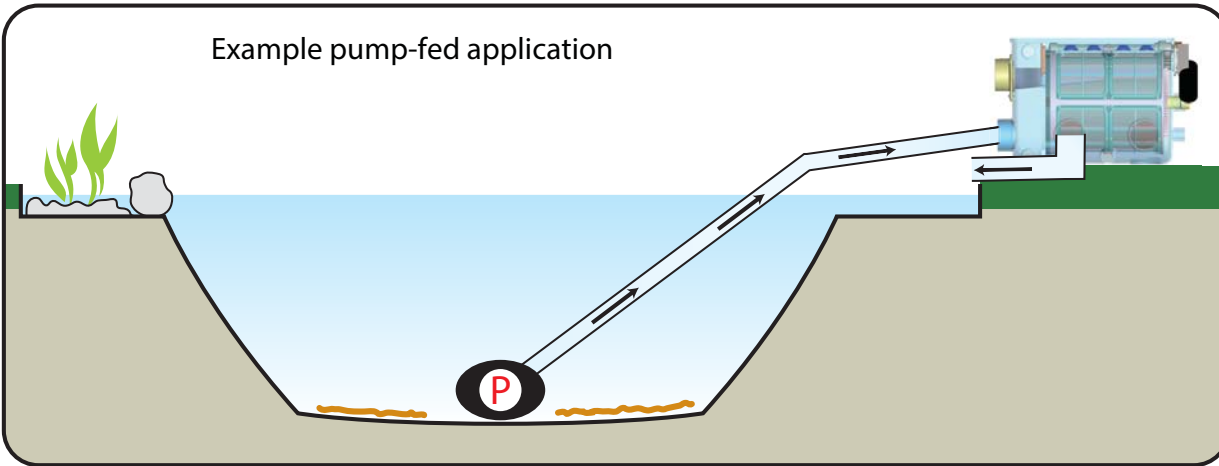
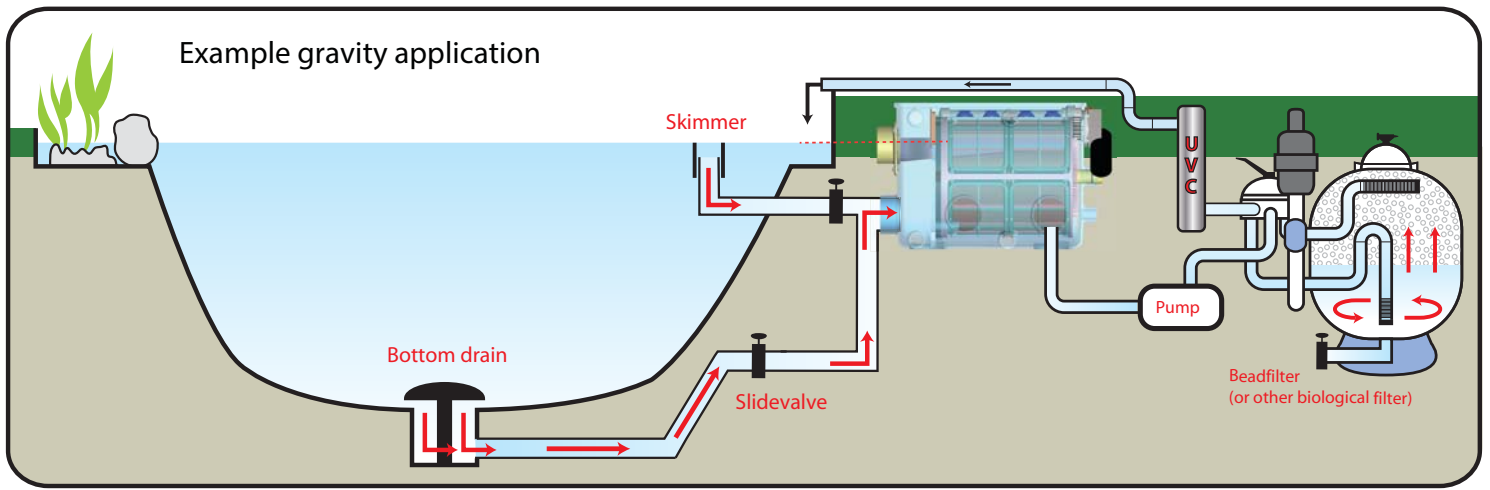
For pump fed application you must change the position of the level switch from the drum chamber mounting bracket to the inlet chamber mounting bracket. For pump fed application the level switch must be rotated 180 degrees (see illustration). Do not install the plastic inserts (see illustration) in a pump fed application to prevent water loss in case of a technical problem. These openings in the wall will allow (unfiltered) water to overflow to the drum chamber and back to the pond.



The drumfilter is fitted with 3 Ø110 mm inlets. If you do not use all 3 of them we recommend to keep the middle inlet closed. The left and right inlets will not enter the drum directly but first hit the walls of the inlet chamber which allows a more quite flow into the drum. When you use all 3 inlets we recommend to use the middle inlet for the pipe with the least flow (like the skimmer or the bottom drain that is installed the farthest from the drumfilter). We strongly recommend the use of a slide valve for every incoming pipe to regulate the flow individually.

TIP: It is also advisable to have a direct slide valve to waste on every incoming pipe. This way you can flush the bottom drains direct to waste without burdening the rest of the filter system (see example gravity application).

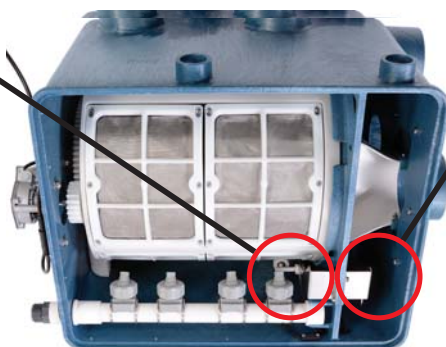
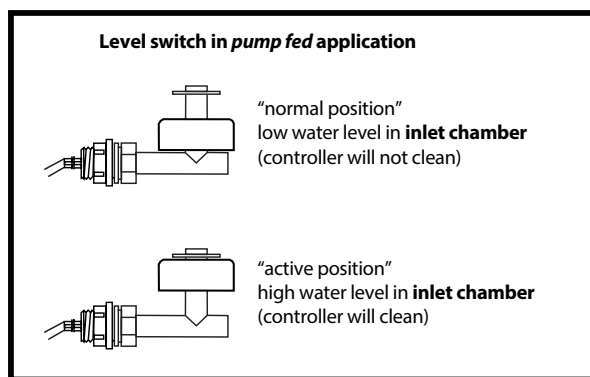
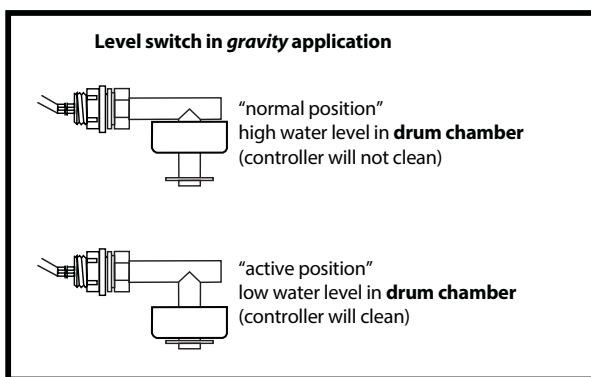




For pump fed application you must change the position of the level switch from the drum chamber mounting bracket to the inlet chamber mounting bracket (see next page for detailed instructions). For pump fed application the level switch must be rotated 180 degrees (see illustration). Do not install the plastic inserts (parts 3 & 4 on parts list) in a pump fed application to prevent water loss in case of a technical problem. These openings in the wall will allow (unfiltered) water to overflow to the drum chamber and back to the pond.

The drumfilter housing is made of HDPE; you cannot solvent weld (PVC glue) HDPE. Use flexible waste fittings or fittings with a rubber gasket (ask your dealer for advise).

The controller unit is splash water proof (IP65) and should be mounted dry and protected from direct sunlight.



Level switch position change from drum chamber to inlet chamber.

Default situation: level switch in the far left opening, blind plug in the middle, cover switch on the far right. Take out the spray pipe first to have good access to the level switch. Slide the level switch up in the mounting bracket to tighten the nut. Remove the nut from the level switch.



Take out the rubber plug from the housing and pull out the level switch connector. Push the connector through the rubber plug so it is free.



Remove the level switch from the drum chamber by taking the nut and connector through the mounting bracket. Remove the blind plug from the middle and put it in the left opening.



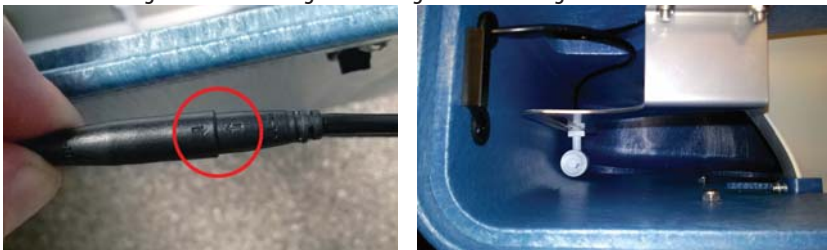
Push the connector through the mounting bracket in the inlet chamber. Please keep in mind that the level switch must be rotated 180 degrees in regards to the gravity position! Then put the nut over the connector and screw it on the level switch.



Push the connector through the opening and push it through the rubber plug. The small hole of the plug can be widened with a sharp knife to make this a little easier. Put the plug in the middle opening.



Put the connectors together. Keep in mind to have the arrow symbols opposite to each other! Slide the level switch to the correct position and tighten the nut. Keep in mind that the active position of the level switch (float goes upwards) must be lower than the top edge of the waste gutter! If the level switch is higher than the waste gutter water will go over the gutter and will go to waste.



CLEANING PROCESS

Due to a change of the water level the level switch will give the controller a signal to start the cleaning process. As the water around the level switch can move as “waves”, the controller will only start this process once the level switch will stay in this position for 5 continuous seconds (to prevent an ongoing “on/off” signal that would start and stop the motor and cleaning pump for short periods).

After this delay time of 5 seconds the cleaning process will begin. This process involves 2 actions:

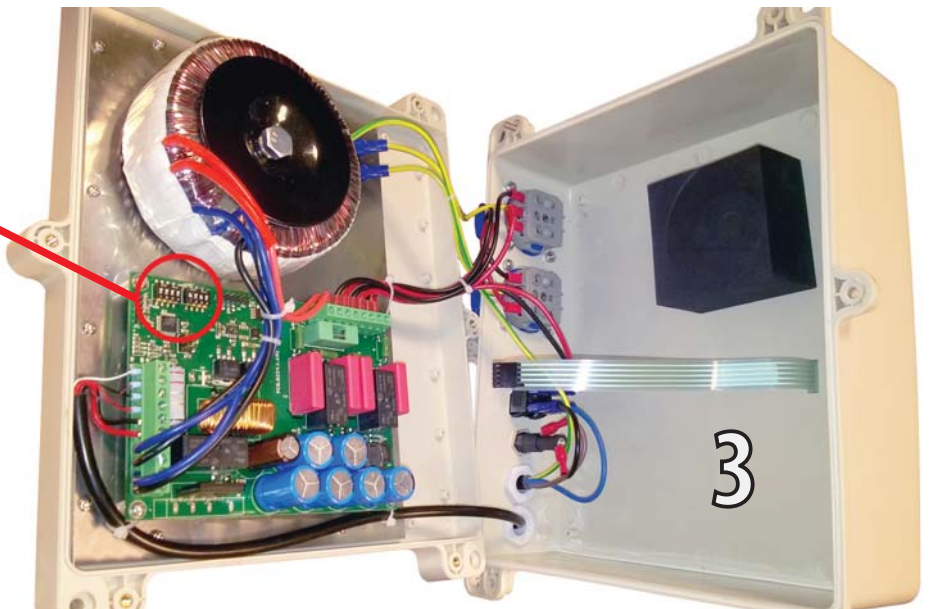
1. The motor to rotate the drum will be activated. Due to the advanced software technology of the controller, the motor will start slowly before it reaches its maximum power to prevent that the full torque of the motor is released to the shaft. The motor will reach full power after about 2 seconds.
2. The power outlet for the cleaning pump/solenoid valve will be provided with 230V to provide the spray nozzles with water. This will rinse off the waste particles that have been collected on the inside of the drum. The dirty water will exit the filter through the waste gutter outlet. The cleaning process stops as soon as the level switch has returned to its normal position (plus the eventual extra cleaning time as discussed later in this manual).

OPENING THE CONTROLLER



WARNING! Be sure you have removed the power plug from the wall outlet before you open the controller! Not following these safety precautions can lead to serious injuries through electric shock! You are responsible for opening the controller unit.

Remove the 6 screws of the controller housing. Carefully open the cover on the top side (opposite from the cables) a little bit. The cable of the LED display is still connected (1). Carefully disconnect this cable (2). The cover can now be opened all the way (3).

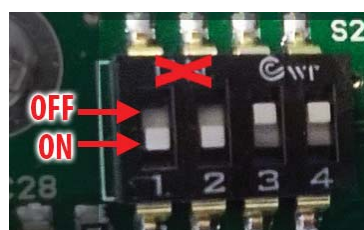
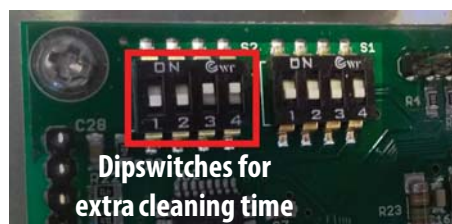


CLEANING PROCESS DURATION

As it is not always desirable to stop the cleaning process as soon as the level switch has reached its normal position we offer a few possibilities here. With 4 dipswitches on the inside of the controller unit you can adjust the time increase according to these options:

All dipswitches in the **"OFF"** position: the cleaning process stops as soon as the level switch has reached its normal position.

Dipswitch	Extra cleaning time
1	1 second
2	5 seconds
3	10 seconds
4	15 seconds



A combination of the above is also possible, this will add up the selected time increases.

Example: switching dipswitch 1 & 2 to the **"ON"** (with position 3 & 4 in **"OFF"** position) will increase the cleaning time with 6 seconds after the level switch has reached the normal position.

Increasing the duration time of the cleaning process can be useful to extend the interval in between cleaning processes. Normally the cleaning process stops as soon as the level switch has reached the normal position and starts again once the level switch is in "activation" position for 5 consecutive seconds. Extending the cleaning time will allow more clean water flowing into the drum chamber which creates a longer "normal" position for the level switch (dependant on its position in the mounting bracket).

NOTE: The default position of the controller is already set to 6 seconds extra cleaning time (dipswitch 1 & 2 to **"ON"**).



WARNING! Be sure you have removed the power plug from the wall outlet before you open the controller! Not following these safety precautions can lead to serious injuries through electric shock! You are responsible for opening the controller unit.

SAFETY OPTIONS

The cleaning process will be activated (and stopped) with the level switch. There are however circumstances that can negatively influence this process.

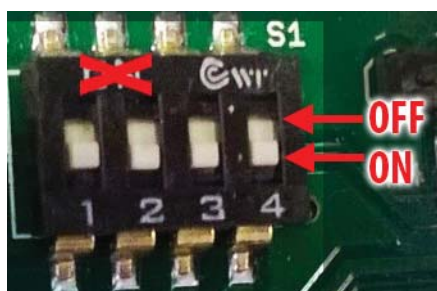
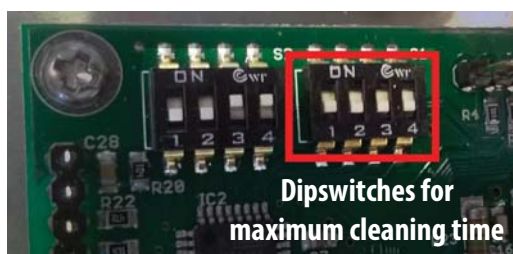
Example: in a pond without an automatic top up (re-filling) system the water level can reach a certain level (due to evaporation or cleaning water loss) that prevents the level switch from reaching its normal position (in a gravity set up). This would activate the cleaning process but it would not be stopped as the level switch will stay in this position. This would imply a unwanted water loss due to the ongoing cleaning process that eventually could lead to pump damages when they end up running without water.

To prevent this situation the software offers maximum cleaning time options

The default maximum cleaning time is set for 20 seconds (dipswitch 1, 2, 3 & 4 to **"ON"**).

This time can be changed with the 4 dipswitches on the right inside the controller to these times:

Max. cleaning time	Dipswitch
3 seconds	1 + 3
10 seconds	1
15 seconds	2 + 3 + 4
20 seconds	1 + 2 + 3 + 4
25 seconds	2 + 3
30 seconds	1 + 2 + 4
35 seconds	1 + 2 + 3
40 seconds	1 + 2
50 seconds	3 + 4
60 seconds	3
70 seconds	1 + 4



Example: the maximum cleaning time is set to 20 seconds. If the level switch will not return to its normal position after these 20 seconds a safety procedure will be initiated. This procedure follows these steps:

1. The controller stops the motor and the cleaning pump/solenoid valve
2. The controller directs the motor to rotate in the opposite direction for 5 seconds and will clean with water.
3. The controller stops the motor and the cleaning pump/solenoid valve
4. The controller directs the motor in the normal direction and cleans with water according the set maximum cleaning time
5. The controller stops the motor and the cleaning pump/solenoid valve
6. The controller directs the motor to rotate in the opposite direction for 5 seconds and will clean with water.
7. The controller stops the motor and the cleaning pump/solenoid valve
8. The controller directs the motor in the normal direction and cleans with water according the set maximum cleaning time

If the level switch does not reach its normal position after these extra cleanings the ERROR led on the controller unit will start flashing red (2 x per second) to indicate this anomaly. However, as soon as the level switch reaches its normal position (e.g. due to a slow filling system), the ERROR led will go off and will be a continuous green led to indicate a normal situation.

AUTOMATIC CLEANING

The software of the controller offers an automatic periodic cleaning function that will perform a cleaning process of 10 seconds once per hour. This cleaning process will take place independent of the level switch position. The automatic cleaning will not take place during a motor ERROR.

MOTOR PROTECTION

Another advantage of our software based controller is the motor protection. Besides the already mentioned “slow start” feature, the controller also offers a motor blockage protection. In case the motor is blocked, for whatever reason, it will try to move anyhow. This will cause a higher amp use then in a normal (unblocked) situation. As soon as a certain threshold is exceeded, the controller will rotate the drum in the opposite direction as an attempt to get rid of possible object that could block the drum. If this offers no solution and the threshold value is still exceeded, the controller will stop the motor and the cleaning pump and the ERROR led on the controller will start blinking red (1 x per second). This ERROR message will not disappear by itself, the user has to find out what causes the blockage and remove it. During this ERROR message the controller will not clean the drumfilter. The ERROR message will only disappear after restarting the controller.

COVER SWITCH

Underneath the cover of the drumfilter is a small magnet that is in contact with a switch on the inside of the drumfilter housing. When the cover is opened this contact is interrupted which will deactivate the motor, cleaning pump/solenoid valve and UV-C device. It prevents any chance to personal injuries caused by strangulated body parts between moving parts and the possibility of persons looking into the UV-C radiation.



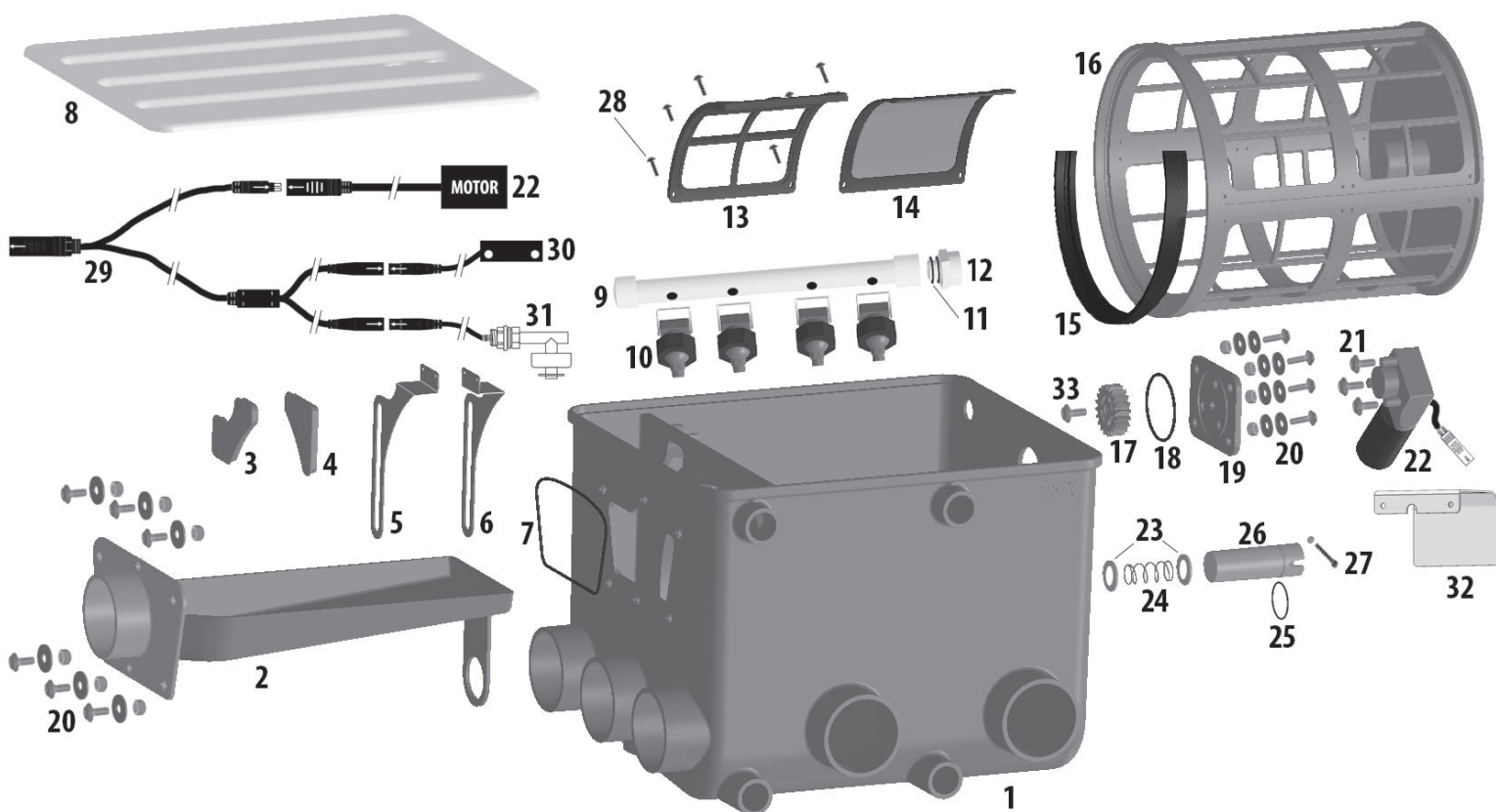
WARNING! Pressing the **TEST** button while the cover is removed will still activate the motor, cleaning pump/solenoid valve and (optional) UV-C device! Only press this button if you are sure that no one could be harmed by this action.
Pressing the **TEST** button is at your own risk!

MAINTENANCE

It is recommended to regularly check all vital parts of the drum filter such as the motor, drum, spray nozzles, cleaning pump/solenoid valve, etc. Pay special attention to the waste gutter for any obstructed waste particles such as leaves and blanket weed. These waste particles are rinsed off with water but sometimes stay behind in the waste gutter. Remove these parts manually.

Dependant on the water hardness it can be necessary to remove calcium deposits on the filter screen elements (part 14 on the part list). Calcium deposits can reduce the flow of the filter screen elements. Use a mild anti scaling product such as cleaning vinegar.

Also check the shaft (part 26 on the parts list) from time to time if it still runs smoothly. The shaft can produce a squeaking noise when it runs “dry” on the drum. Use some Vaseline around the shaft and the O-ring (part 25 on the parts list) to lubricate the shaft to prevent this.



PARTS LIST

1	Housing
2	Waste gutter
3	Insert for overload protection left
4	Insert for overload protection right
5	Mounting bracket level switch inlet chamber
6	Mounting bracket level switch drum chamber
7	Seal ring waste gutter
8	Cover (white)
9	Spray pipe
10	Spray nozzles
11	Seal rings spray pipe
12	Threaded nipple spray pipe
13	Frame for filter screen elements
14	Filter screen element
15	Rubber seal for drum
16	Drum

PARTS LIST

17	Gearwheel motor
18	Seal ring motor construction plate
19	Motor construction plate
20	Screws motor construction plate with 2 rings and locknut (4 pieces)
21	Screws motor construction plate to motor (3 pieces)
22	Motor with connector
23	Stainless steel rings for shaft (1 is attached to shaft with kit)
24	Spring for shaft
25	Seal ring for shaft
26	Shaft
27	Screw with lock nut for shaft
28	Screws for filter screen element frame (6 per frame)
29	Main cable for motor, level switch and cover switch
30	Cover switch with connector
31	Level switch with connector
32	Stainless steel motor protection plate