

# Setting water levels and Adjusting the solid state float switch

## Gravity fed systems

All our new drum systems now come with etched markings to help with setup of the system.

### G F STATIC LEVEL

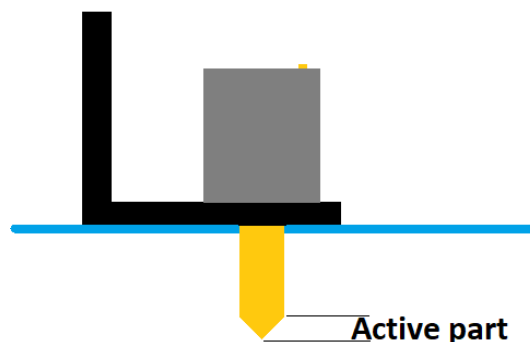
- 1 \_\_\_\_\_
- 2 \_\_\_\_\_
- 3 \_\_\_\_\_
- 4 \_\_\_\_\_
- 5 \_\_\_\_\_
- 6 \_\_\_\_\_

In the above picture, the line under the “G F STATIC LEVEL” is where your pond water level should be, with your circulations pumps switched off. This will maximise the amount of drum you have underwater, increasing available flow rate and time between washes.

The numbers underneath will help with diagnosing problems. When you turn your pumps on, the water level will naturally drop. It is always worth noting which number your water drops to when first installing, so that if there are issues in the future, it can be referred to. Ideally the water drop should not pass 4 as that would show a limitation in your bottom drain/skimmer pipework that reduces wanted flow.

## Setting the water sensor

The sensor we use is an opto- electrical unit. It operates by changing diffraction in the tip of the sensor as it passes in and out of liquid. It also has a yellow led on top which lights up when the sensor is active, helping with diagnosis.



As you can see from the above diagram, submerging only the tip and the first 2 mm of the bottom of the sensor is all that is needed to trigger the unit.

In a gravity fed system, as the screen of the drum gets dirty, the water level around the sensor will drop. Eventually it will drop so much that it will expose the tip of the sensor making it active as shown by the lighting up of the integral LED. This will trigger the drum which will then clean itself and allow the water level to rise back up to its previous level, submerging the tip of the sensor. This will switch it off and allowing the drum to stop washing.

To set the ideal height, perform a manual wash of the drum by pressing the green button on the control panel. Then turn your circulation pump on and allow the water level to drop and stabilise. Loosen the M6 bolt that holds the sensor in place, and slide it up or down so that the horizontal part of the bracket is just above or touching the water surface. Tighten up the bolt so the sensor doesn't slip down. This should allow the drum to immune from any transient fluctuations in water level in the filter.

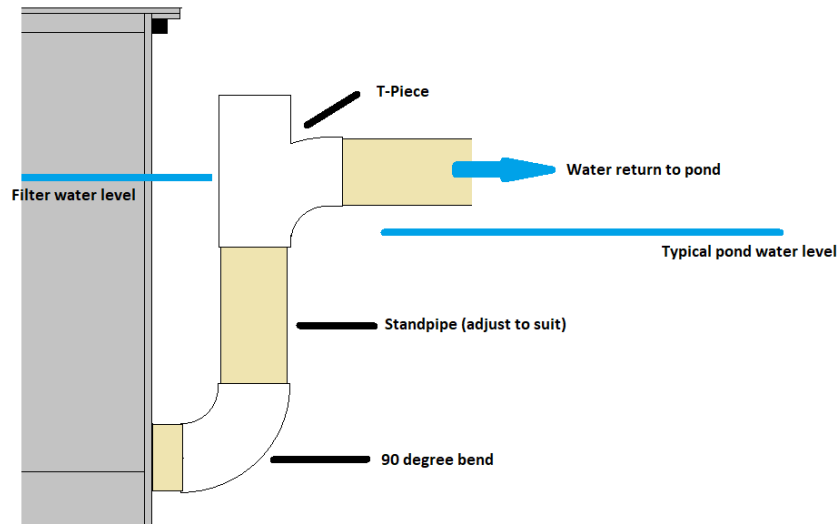
## Pump fed systems

In pump fed systems, the drum relies on water in front of the drum to rise as it gets dirty, so the water level in the filter system as a whole will be naturally lower than a gravity system. Again, on our new systems, we have handily marked where the water level should be when the circulation pumps are turned on

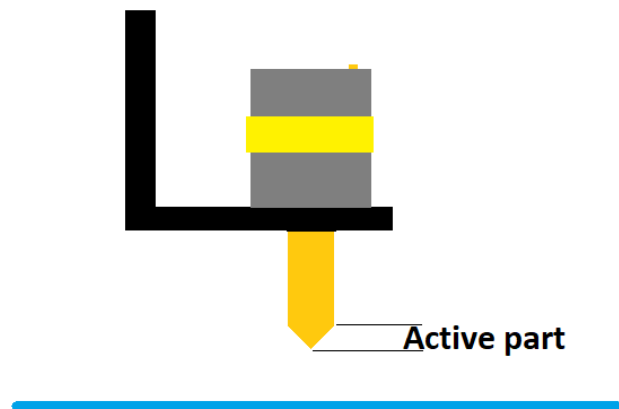


P F RUN LEVEL

Again as in the gravity system, perform a manual wash on the drum before proceeding. Then, using a standpipe on your return to the pond, you should be able to “tune” the water level so it hits this mark.



The sensor should then be set up as shown in the diagram, with the tip out of the water and set about 25mm above your running water level. To verify, the horizontal part of the bracket should be level, or just above the top of the waste tray allowing the tip to be below it. Loosen the M6 bolt that holds the sensor in place, and slide it up or down to get it into position.



When in operation, in a pump fed system the water level will rise and this will trigger the sensor as the tip is submerged. The integral yellow LED light will come on, showing it is active. The drum will then start its cleaning process, allowing the water level to drop back down, switching the sensor back off and allowing the drum to stop cleaning.

## Maintenance

There is very little to go wrong with the sensor, as it is a solid state, fully sealed unit. However, over time and depending on the nature of your water it may need cleaning. In a hard water area, calcium may build up over time and stop the sensor from triggering. In this case, using only a soft cloth soaked in white vinegar, give the lower part of the sensor a good wipe. In high fish density ponds, the problem may be biofilm. This will cause erratic triggering. Again, with only a soft cloth, wipe the end of the sensor. In both cases, take care not to scratch the plastic as this may impair the operation of the sensor.

## Replacing / Upgrade Fitting.

These sensors are backwards compatible with our older systems with the exception of the pump fed drop in units (Draco2, origin 16 and origin 25) but are compatible with the same units in gravity fed. The minima requires an extra bracket and should be fitted in the rear chamber, with modification to the bio chamber lid. The wiring schematic in the junction box is shown below. Bear in mind it is a 3 wire unit and its “ground” is now shared with the motor ground. Be mindful that the sensor has to be wired correctly or it will result in permanent damage to the unit.

