



Aquafighter[®] Snake

Instruction manual

This instruction manual applies to the following Aquafighter products, suitable for diesel fuel tanks only, e.g. trucks, buses, pleasure boats, tractors and construction machinery.

999.026	Aquafighter Snake
999.027	Aquafighter Twin Snake
999.027-2	Aquafighter Triple Snake
999.027-3	Aquafighter Quad Snake

To achieve the maximum performance of your Aquafighter Snake filter, it is important that the following instructions are followed closely.

Please note that:

- This Aquafighter product should NOT be used in gasoline tanks
- This Aquafighter product must only be used in according to the instructions provided in this Instruction manual
- In cases of exposure to skin, eyes or oral intake of diesel or diesel contaminated product, the procedures described in the diesel safety data sheet (SDS) must be followed

About Aquafighter

In today's highly efficient diesel engines, fuel injection systems often operate at 2,000 bar (30,000 psi) or even higher. In such extreme conditions water is your number 1 enemy. Aquafighter is there to protect your high value diesel powered equipment.

In the past, water finding paste was used to detect water in diesel tanks. However, as biodiesel has been introduced into almost all diesel formulations, this has rendered paste an unreliable method for water detection. In addition, biodiesel is significantly more hydroscopic than fossil diesel increasing the probability of water related fuel challenges compared to previous years.



Aquafighter is a unique range of products designed to remove water from fuel. Aquafighter not only removes water in a free phase but also water that is finely dispersed, or even dissolved in the fuel. Aquafighter reduces the water content of diesel to achieve acceptable levels, i.e. water content below 200 mg/kg (200 ppm by mass) according to the European diesel specification EN590 (the maximum water and sediment content in ASTM 0975 is 0.05% volume equal to 500 ppm by volume).

It should however be noted that water is absorbed faster in warmer conditions and significantly slower when the climate is colder. Hence, longer working time should be allowed during cold periods and winter.

Diesel that is not clear and bright at room temperature will in most cases have a too high water content according to the standards and hence the engine manufacturer's requirements. Traditionally, "cloudy" diesel has been disposed of as hazardous waste, but with Aquafighter it is now possible to remove the excess water and bring the contaminated diesel back on specification.

Another important factor is that microbes rely on water to live and multiply. By removing unacceptable amounts of water in the diesel, the "conditions for life" for the microbes will be removed. Consequently, the risk of microbial blooms in diesel storage tanks where Aquafighter is used is minimized. Avoiding microbes significantly reduces the risk of diesel filter clogging - without the use of hazardous biocides.

How to use Aquafighter Snake filter

Aquafighter Snake filter consists of a "bag" with a high-tech water-absorbing material that can absorb approximately 500 times its own weight with water. At one end of Aquafighter Snake filter, a solid cord in fuel-resistant synthetic fibre material is attached. The cord should be used to lower into, and later retrieve the Aquafighter Snake filter from the tank. Always make sure that the cord is not damaged or broken before use.

HIGH IMPORTANCE: The Aquafighter should never be lowered in a tank unless you are able to retrieve it using the cord attached.

Always hold the cord at the loose end when lowering the Aquafighter product into the tank. The cord is used to retrieve Aquafighter product from the tank. It is therefore **VERY IMPORTANT** to ensure that the end of this cord is available. It is recommended to secure the chord e.g. by making a loop around the filler pipe or inspection pipe. The cord must at all times be accessible from outside



of the tank and allowed to run all the way down to the bottom of the tank where the Aquafighter product should be allowed to rest to do its job.

Common to fuel tanks on vehicles, construction machinery and recreational boats is that they have an internal tank structure that includes a float and possibly a fuel pump ("feed pump"). To prevent the Aquafighter from interfering with these components or the fuel supply it is strongly recommended to remove the Aquafighter from the tank when the vehicle, machine or boat is in operation. However, it is highly recommended that the Aquafighter remains in the tank continuously outside of those operating periods, and is regularly inspected for water absorption.

Procedure for use on vehicles, machines, pleasure boats, etc

1. **Installation:** Carefully remove Aquafighter from the airtight bag. Lower Aquafighter into the tank. **IMPORTANT** - take care of the bag as this will be used to contain and/or dispose of the used Aquafighter (see section 2 and 3 below). Ensure that sufficient length of cord is left outside the tank so that it can be attached, e.g. by making a loop around the filler pipe, or other suitable secure attachment.
2. **Removal during operation:** Before starting the engine, machine, vehicle or boat, the Aquafighter filter **MUST** be removed from the tank, inspected for water content (see detailed description in section 4 below) and placed back in the airtight bag. Allow the Aquafighter to drip off excess diesel before placing it in the bag.
3. **Replacement:** After completing the operation of the boat, vehicle or machine, e.g. at the end of the working day, Aquafighter may again be removed from the airtight bag and lowered back into the diesel tank while securing the cord as described in section 1 above. Aquafighter will then continue absorbing any water that may have entered the tank during the day or trip.
4. **Inspection:** The Aquafighter must be inspected regularly, e.g. monthly, for water content / water absorption. If less than 50% of the Aquafighter has turned red, it can be returned to the tank. If more than 50% of the Aquafighter has turned red, replacement is recommended (see "Replacement" below).
5. **Replacement:** When more than 50% of the Aquafighter filter has turned red, replacement is recommended. Used Aquafighter must be safely



placed in the bag it was delivered in, or similar, and disposed of at an approved collection point, e.g. the local recycling centre. The used Aquafighter filter will consist mostly of water, but small amounts of diesel can remain, and it should therefore be treated in the same way as other waste fuels, lubricating, or hydraulic oil, fuel and paint residues.

Note: *When handling the Aquafighter with a risk of diesel exposure, gloves and other adequate protective equipment should be used to avoid contact with skin or eyes. In case of diesel spills and/or diesel getting in contact with the skin or eyes, the procedures described in the diesel safety data sheet (SDS) must be followed.*

When using an Aquafighter for the first time, there may already be a volume free and/or dissolved water in the diesel tank that will be quickly absorbed. Consequently the Aquafighter will reach its maximum capacity and 50% red colour far sooner than normal during this first installation. It is therefore recommended to inspect the Aquafighter on first time installation after maximum of one week. If the Aquafighter needs to be replaced after a week, add a new Aquafighter into the tank and perform a new inspection within a week. Eventually it will take longer and longer between each required replacement with a new Aquafighter. This simply means that the diesel in your tank has reached a level where water is no longer at harmful levels and the conditions for microbes to grow has been removed.

Note: *In some applications components in a diesel tank can be damaged by use of the Aquafighter whilst the tank is in motion during operation. (ONLY USE WHEN TANK IS STATIONARY)*

Product support

Comprehensive support is available either from your Aquafighter distributor, or from Conidia Bioscience via our websites:

www.aquafighter.com www.conidia.com

If you have any additional technical queries regarding your Aquafighter products please contact: info@conidia.com

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