# Introduction of the aquasonic equipment family

## 1. Principle :

It is known for long that ultrasound can kill algae. The problem was that the power requirement for generating ultrasound wave was very high !
The major breakthrough came through the invention, where it was demonstrated for the first time that we can generate the ultrasound waves with only a very limited power consumption (max 50W)

**How does it work :**

Algae are killed by :

a. Through breaking of the cell membrane for the algae close to the ultrasound source
b. Through breaking of the vacuoles for the algae at moderate distance from the ultrasound source
c. Through induced stress when the algae are present far away from the source. The special frequencies of ultrasound waves let the algae come under 'resonance' and after some time die due to stress.

- *What are algae ?*

*Algae are one cellular, some species have own chlorophyll and are thus capable of producing their own food through photosynthesis. Algae can grow on other plants, in the air or, in the water. Algae can be circulated very easily in the air and water. By consequence, algae are growing on many places!*
*Algae grow very fast and main elements for the growth are : light, feed and temperature. Even at 4°C they can grow, the warmer the environment, the faster is the growth.. Ideal growing temperature is 27°C*

- *Different types of algae*

*String algae (filament algae)*
*Looks like a wire which is 'fixed' aside of the water*
*Floating algae*
*Float in the water ( 7-20µ diameter)*
*Blue algae*
*Are in fact cyanobacteria, but also killed by ultrasound*

2. different applications and models.

**2.1 application fields :**

Horticulture and agriculture :

More and more rainwater is used water for irrigation has to be re-used, due to scarcity of water, all over the world.!
The water is collected in large basins. These are the ideal places for algae to grow.
Because the irrigation is done by using very small tubes, they are clogged very soon by using water with algae in it.
Installing ultrasonic in these basins solves this problem.
Swimming and other pools and fountains

Fish farms :

Most fish farms and fish pools for pleasure have too much algae. Fish does not grow well in presence of excessive algae . By using poolsonic or ultrasonic the algae is kept under control and the problems are solved .

Other major application areas of ultrasonic waves are:

Cooling Towers :

Recreation lakes

Natural lakes

Waiting pools for drinking water

Large airco systems for buildings and offices

Ultrasonic treatment for overhead water tanks on the roof of the building complex .

**2.2 Models :**

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| NT4.1 | : | Mostly sold for industrial purpose : working distance 150m |
| NT5 | : | A double sized NT4.1 working distance 300 m |
| NT6 | : | Recreation water reservoirs |
| Poolsonic | : | For small ponds and swimming pools : working distance 25m |
| Biosonic | : | Horticulture, agriculture and industrial piping |
| Boatsonic | : | At the waterline, small growth of algae, after one our sailing it is removed at the under part of the hull, there is square part along the length of the boat this is to strengthen the boat structure. |
| Aquanet | : | For smaller pools : Working distance 10m |

(may'09')