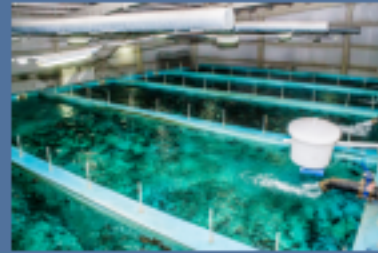




Applications



Aquaculture



Agriculture



Livestock



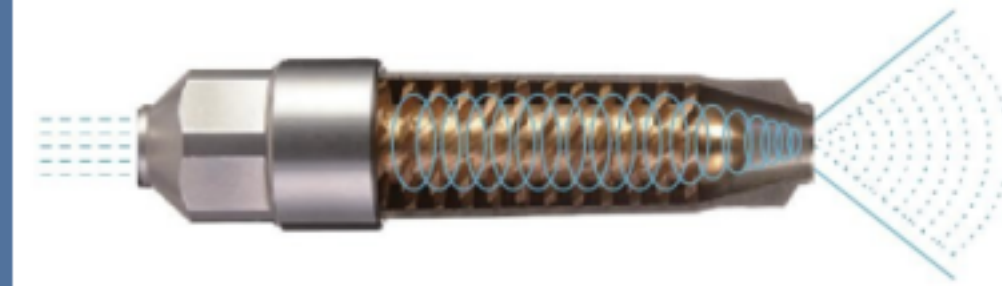
Sanitation / CIP



CNC machining



Cooling Towers



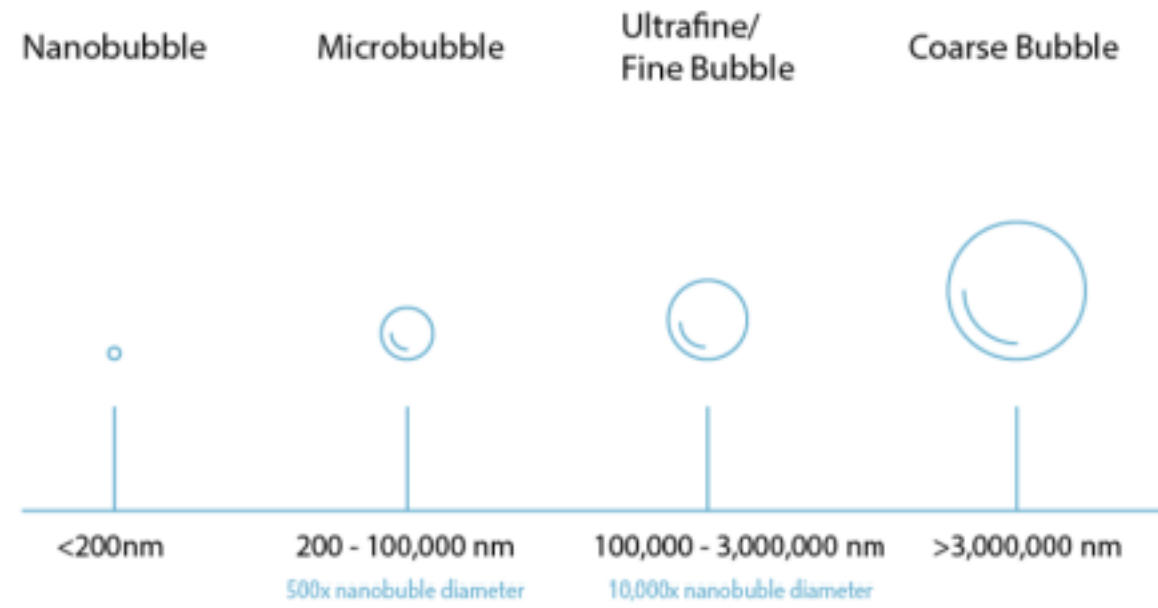
Nanobubbles advantages:

- * Nanobubbles can significantly eliminate microbial biofilms on surfaces
- * Nanobubbles will burst with Ultrasound and kill the bacteria
- * Nanobubbles efficacy will be enhanced in combination with chlorine-based sanitizers
- * Nanobubbles bacterial removal efficacy will be improved with shear force
- * Nanobubbles can induce microbial injury
- * Reduce chemical applications
- * Increase sanitizers delivery to bacteria
- * Penetrate into biofilms
- * Proper for water treatment
- * Proper for agricultural water treatment
- * Could be used for removing biofilms from pipes
- * Membrane sanitation in food industry



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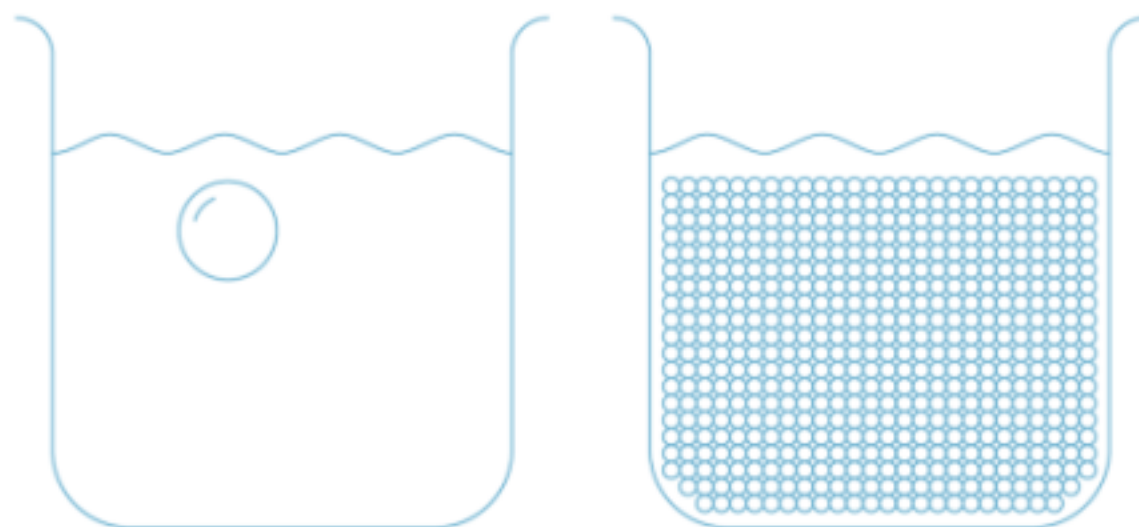
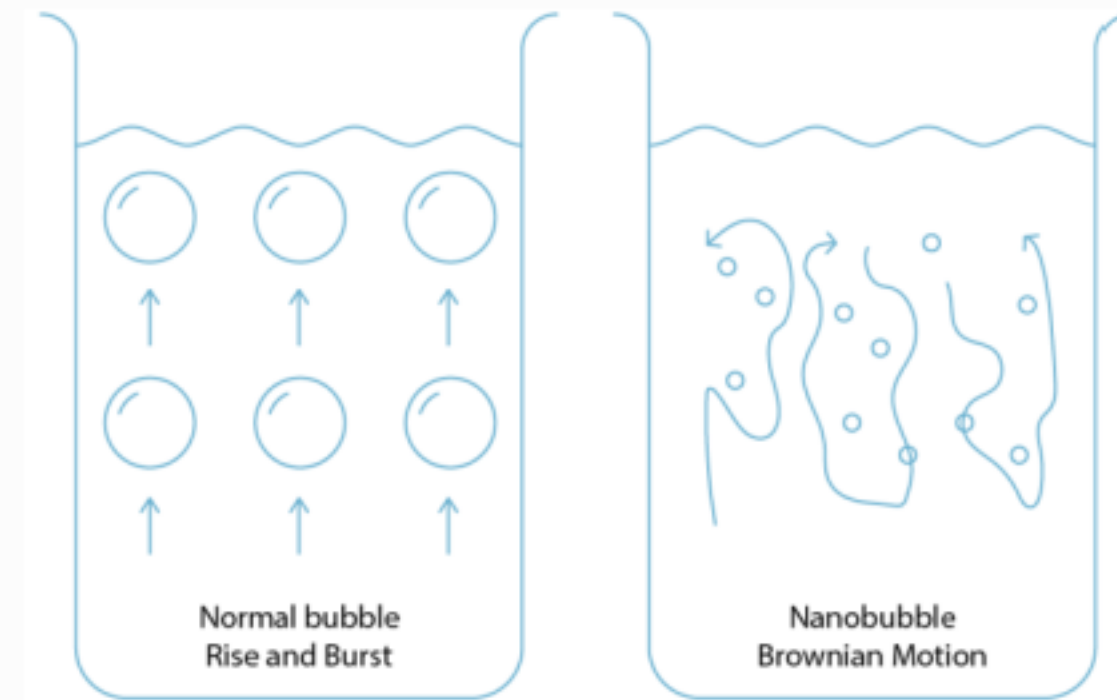
Nanobubbles are long-lasting gas-containing cavities in aqueous solutions. Due to their size, nanobubbles exhibit unique properties that improve numerous physio-chemical, physio-mechanical and biological processes

The Aquaox Nanobubble generation method consistently produces high density solutions of optimally sized nanobubbles, averaging 100 nm in diameter and ranging between 50 and 100 nm. Nanobubbles of this size are stable in liquid because they have reached equilibrium with bubble surface tension, internal pressure, external pressure, surface charge, and their environment. Their stability and size give them neutral buoyancy and remain suspended until they interact with surfaces or contaminants.

Nanobubbles are one of the smallest known bubble sizes, roughly 2500 times smaller than a single grain of salt, or less than 200 nanometers (nm) in diameter.

Nanobubbles have a strong negative surface charge that keeps them stable in liquid and enables them to continuously participate in and stimulate physical, biological, and chemical interactions.

Nanobubbles are neutrally buoyant and can remain suspended in liquid for weeks without rising to the surface and off-gassing.



When one square mm of water is filled with nanobubbles, the surface area-to-volume mass increases exponentially as compared to water filled with normal bubbles.

The increase in surface area dramatically enhances aerobic bacteria activities in the liquid and the efficiency of chemical reaction between the supplied gas and liquid ingredients.

Increased Surface Area-to-Volume Mass

- * Creates a stabilized fluid platform for process optimization
- * Shortens reaction times
- * Improves Heat Exchange efficiency Improves chemical conversion efficiency
- * Penetrates into organic materials including biofilms Drastically reduces pipeline & equipment corrosion

Patented Internal Structure

Our unique, patented technology combines three fluid mechanic principals to produce a high concentration of stable, extremely small size nanobubbles without the need of any external gasses.

Static Mixing

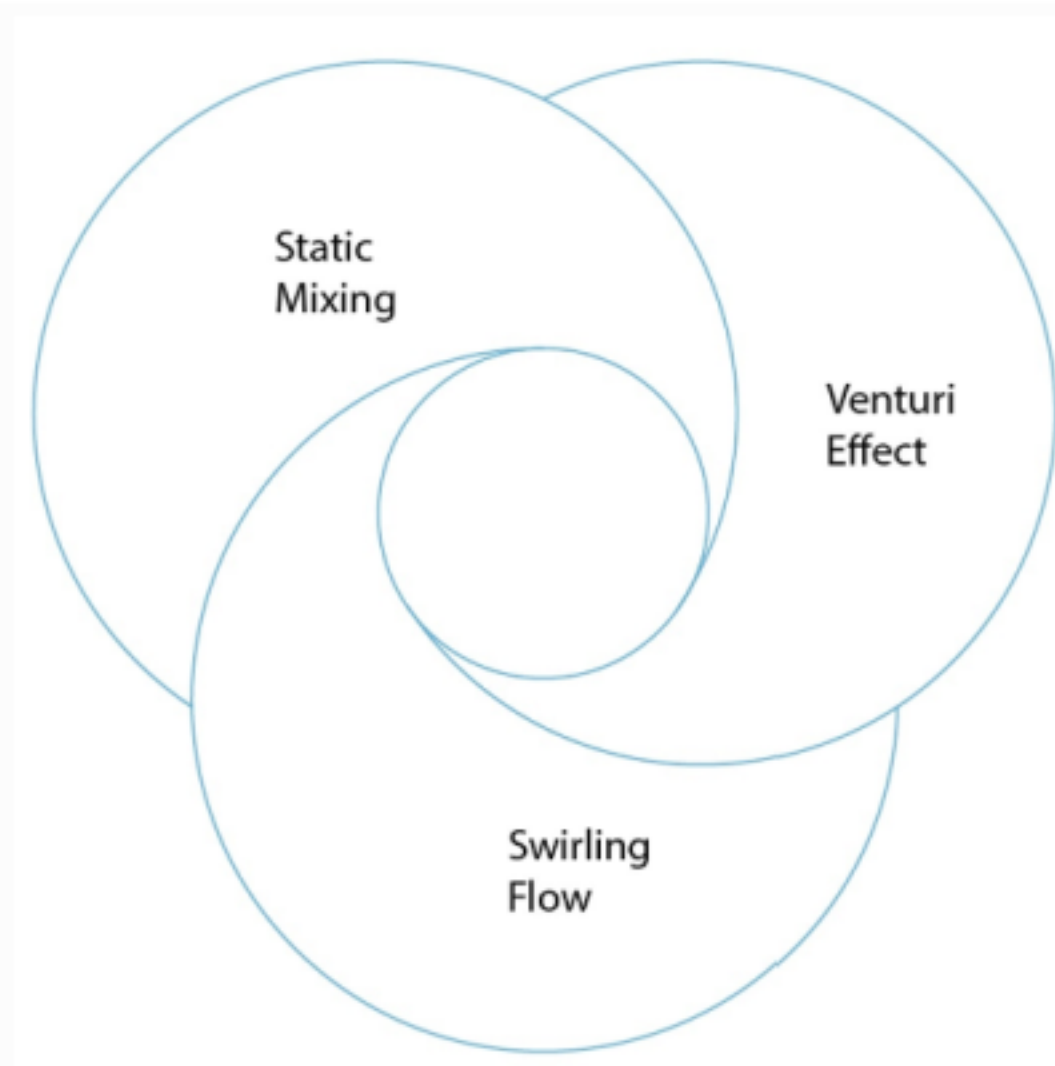
A method for combining fluid materials which are forced feed over a pattern of mixing elements to generate a homogenous fluid stream.

Venturi Effect

The Venturi Effect is the reduction in fluid pressure caused by fluids passing through multiple channels of different widths. At the same time, it induces cavitation which leads to the formation of bubbles.

Swirling Flow

A method in which a swirling flow is generated in the device. The strong centrifugal force of the flow generates fine bubbles due to high smash and shear action of the fluids.



Multiple Functions

Mixing

The Aquaiox generator has a superior ability to blend gas and liquids into a stable solution with consistent particle distribution.

Cleaning

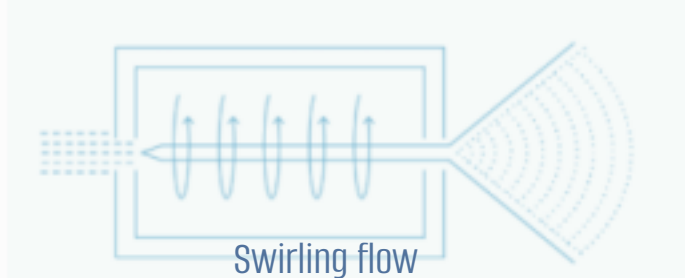
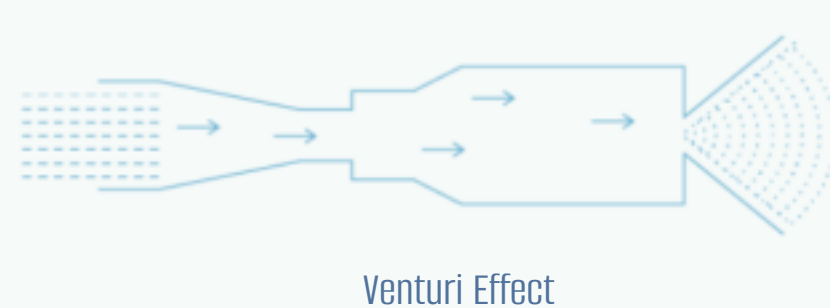
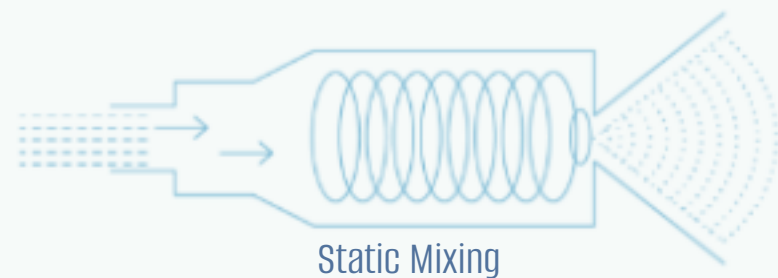
The Aquaiox generator produces a large number of nanobubbles with a strong negative surface charge which allows them to attract and remove dirt. By using nanobubbles you can reduce the amount of detergents and solvents used for cleaning.

Permeability

The patented design of the processor reduces surface tension of fluids which improves its permeability and makes it possible to apply it in various fields.

Cooling

By improving the permeability of the fluid (E.g. CNC machining) the coolant has greater contact between the workpiece and the tool which allows the coolant to reach and cool the heat source.



Advantages Nanobubbles in Sanitation

- * Enhanced cleaning power
- * Cost effective
- * Sustainable
- * Biofilm elimination
- * Multiple applications
- * Reduced chemical usage
- * Water quality improvement
- * Shorter cleaning cycles
- * No running cost



Biofilm Elimination

Nanobubbles have proven highly effective in significantly eliminating microbial biofilms on surfaces. In the context of animal farming, where biofilms can harbor harmful pathogens, this is a crucial advantage.

Increased Sanitizer Delivery

Nanobubbles enhance the delivery of sanitizers to bacteria, ensuring a targeted and efficient approach to microbial elimination.

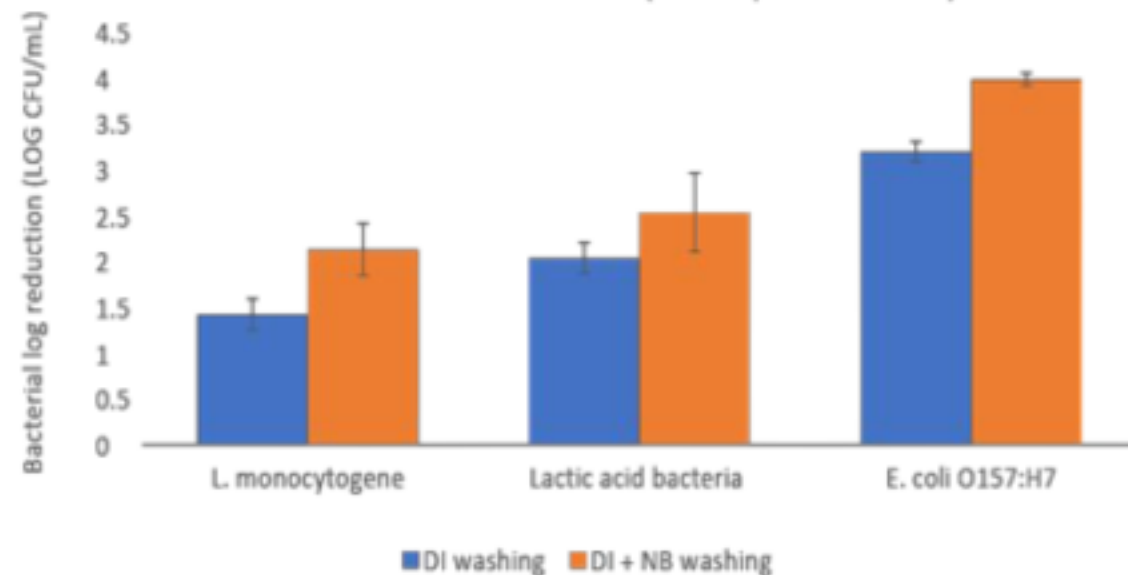
Cost effective and Sustainable

The use of nanobubbles allows for a reduction in the quantity of traditional chemical disinfectants required. This not only contributes to cost savings but also aligns with sustainable and eco-friendly practices.

Versatility Across Equipment

Nanobubbles are versatile and can be integrated into various CIP systems, adapting to the diverse equipment used in the food processing industry. Whether cleaning pipes, tanks, or intricate machinery, nanobubbles prove effective in maintaining the highest hygiene standards.

Bacterial log reduction after washing for 1 min (mono-species biofilms)



Bacterial log reduction after washing for 2 min (mono-species biofilms)

