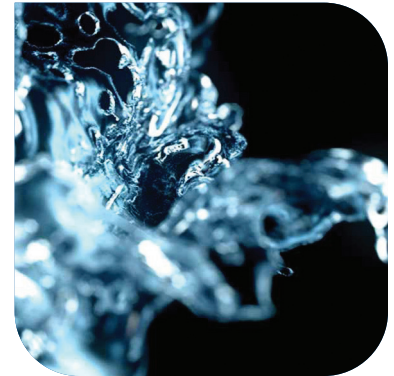
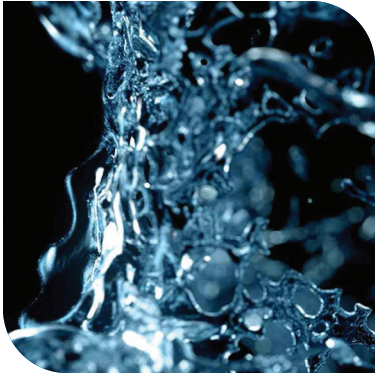




PHi

Pulsed Hydraulics, Inc.

Pulsed Hydraulics is a proven mixing technology for water and wastewater, cutting the energy used for mixing by 50% over traditional mechanical mixing equipment.

The PHi mixing system is designed for use in:

- Anoxic and Aeration Basins
- Sludge Holding Tanks
- Chemical Mixing
- Polymer and Alum Mixing
- Lift Stations
- Distilled Spirits
- EQ Basins
- Belt Press Sludge
- Backwash Basins

PHi's Hydro-Pulse™ – BIG Bubble Mixing

Our patented process mixes the entire contents of the tank. The PHi mixing process is non-shear and does not entrain oxygen into the tank contents. There are no moving parts within the tank, which keeps the system's reliability high and maintenance costs low.

Pulsed Hydraulics' mixing technology is well accepted in the petroleum, chemical, food, wine and other industries. There are thousands of installations worldwide. This proven mixing solution is finding wide acceptance for potable water mixing and multiple applications in the wastewater industry.



How it works

Basic Concept of PHi Mixing

PHi's Mixing technology uses the concept of Hydro-Pulses to mix liquids. A Hydro-Pulse™ is a sequential injection of compressed air into a tank of liquids.



NO Dissolved Oxygen (DO)

PHi's mixing technology uses compressed air for mixing a tank's contents but does not add measurable DO.

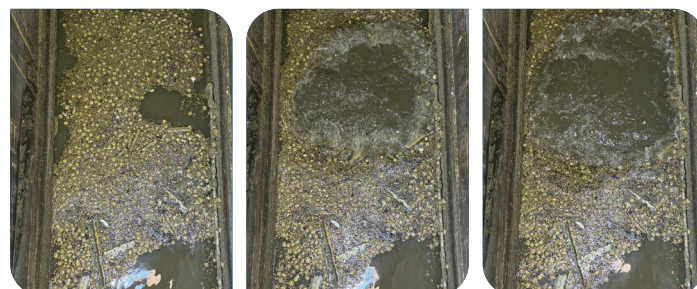
It seems counterintuitive that introducing air into the tank would not increase DO. However, due to the large bubble size and short residence time, the PHi mixing technology does not increase oxygen levels. Actual independent test results also show PHi does not add DO in anoxic mixing.

PHi Hydro-Pulse™ Mixing Technology

Pulsed Hydraulics' Mixing technology, Hydro-Pulses compressed air through 316 stainless steel forming plates on the bottom of the tank, forming very large bubbles that rise at 4 feet per second to the surface. As they rise, the drag tank contents with them.

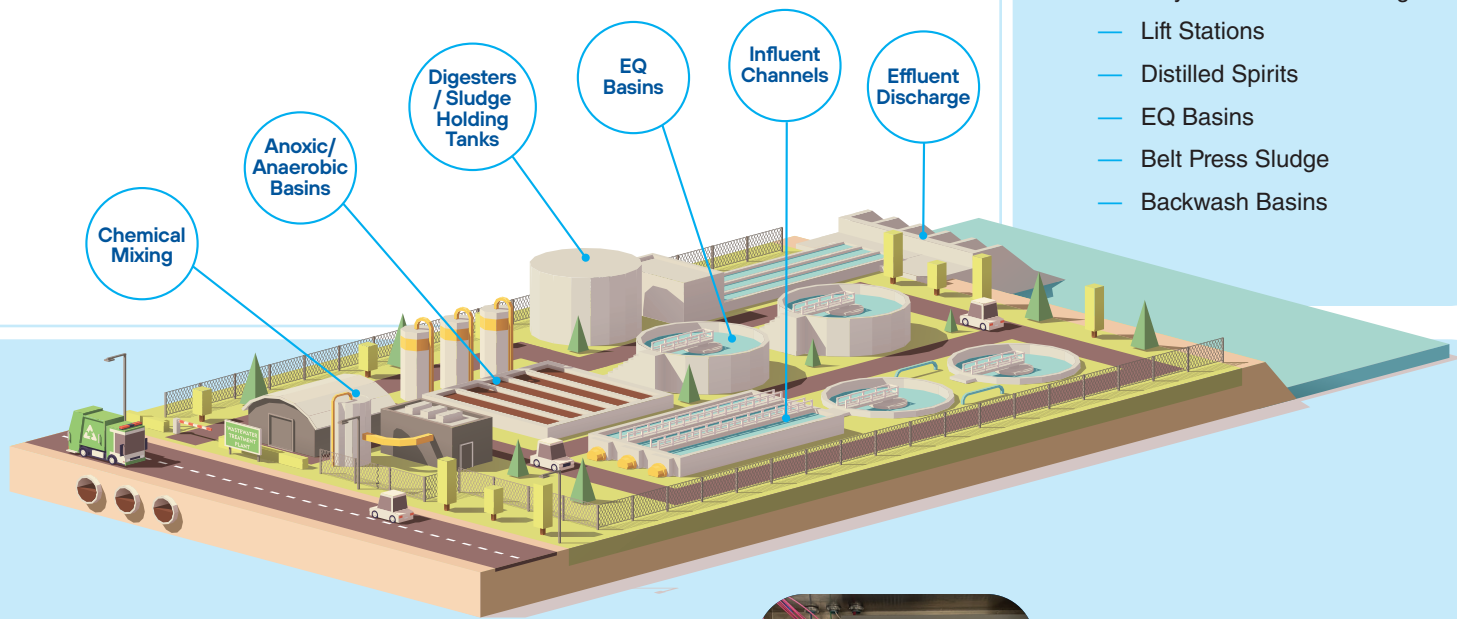
When the bubbles break the surface and exit to the atmosphere, the tank contents move horizontally until they meet a tank wall or meet a wave of contents coming from another forming plate bubble. The contents move down until they hit the tank bottom, where they move sideways to the forming plate, which results in a circular mixing action in the tank. The PHi mixing system is not like diffusers or coarse-air mixers, which use a continuous stream of air.

The Hydro-Pulses are released 2-4 times per minute, depending on the mixing application. Each pulse is approximately 3 cubic feet in size. Both the pulse times and sizes are adjustable. This allows PHi to use the minimum amount of energy necessary to keep solids in suspension.

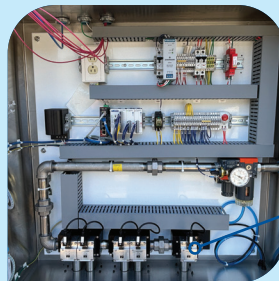


Perfect for:

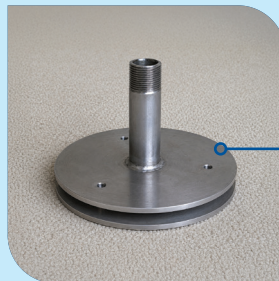
- Anoxic and Aeration Basins
- Sludge Holding Tanks
- Chemical Mixing
- Polymer and Alum Mixing
- Lift Stations
- Distilled Spirits
- EQ Basins
- Belt Press Sludge
- Backwash Basins



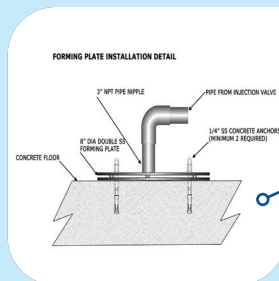
Compressor



2-8 Valve/1-16 Output Enclosure



Forming Plate



Forming Plate Installation Detail

Benefits:

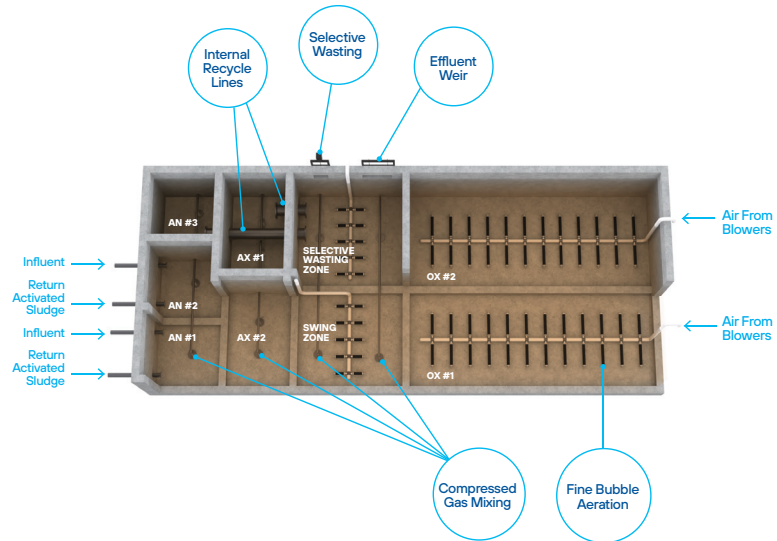
- No moving Parts in Basin or Tank
- Power Savings over Traditional Mixers
- 100% Online Standby
- Greatly Reduces Costs
- Variable Speed and Intensity Mixing
- Complete Tank Mixing
- Scalable to Any Size Basin or Tank
- Significantly Less Sediment Buildup
- SCADA Interface
- Eliminates FOG, Ragging and Odors in Lift Stations
- Enhances Aeration Efficiency
- Eliminates Temperature Stratification in Potable Water Tanks
- Prevents Ice Build-up
- NSF-61 Approved



The Parkson Experience

The combination of class-leading mixing technology with Parkson's proven execution and service capabilities creates a powerful offering for both municipal and industrial water and wastewater treatment markets. This partnership brings together innovation and reliability to deliver results across the full spectrum of applications.

Parkson's PHi big bubble mixing used in the Granite AGS™



Schreiber
MRI – Meurer Research
FilterONE USA™
Hycor®
PHi

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