

BIG IDEAS IN MICRO BUBBLES



BRADLEY
INNOVATION GROUP

Bradley Innovation Group

Bradley Innovation Group (BIG) started the quest for optimal wastewater treatment in the aquaculture industry **over 30 years** ago. In this industry, water quality is paramount. This challenge is what drove us to create our patented micro bubble system for wastewater treatment.

Our Experience

BIG's experience in water treatment - from bio filters to heterotrophic biofloc has drawn worldwide attention and led to the development and patent of this premier product: **The ProFusion Aerator Pump**.

PROFUSION BY BIG

- High Efficiency 1 HP Stainless Steel Aerator Pump
- Moves & Oxygenates 600+ Gallons Per Minute From Any Depth, For Deep Or Shallow Water Mixing And Micro Bubble Aeration
- Customizable Discharge Ports For Directional Flow To Break Up Short-Circuiting
- Mass Sludge Removal By Digestion
- Dual Blade Process Adds Oxygen And Strips Carbon Dioxide
- No Tools Or Heavy Equipment Required To Remove For Maintenance
- Excellent For Lagoons, Ponds, EQ Basins
- **AND MORE!**



PROFUSION TECHNOLOGY

ProFusion's 1 horsepower motor drives the operation of a high flow, =600 GPM, low-head pumping system with a **24 hour turnover rate of 864,000 GPD.**



ProFusion pump mounts in a housing that floats on the surface of the water.

Twin propeller axial pump creates multiple zones of low & high pressure that severely agitates the circulating fluid causing gases to be stripped from the oxygen/micro bubble-rich discharge stream.

Housing allows for multiple configurations. The suction connection accepts an inlet pipe that can draw fluid from various depths and can employ a guard to prevent debris from entering the pump.

Housing can be fitted with multiple outlet ports that are adjustable for direction and depth of the discharge streams.

ProFusion pulls water from multiple levels of the basin creating an oxygen-rich micro bubble discharge stream, which is pushed in multiple directions. This creates a large area of influence; the entire column of wastewater is mixed and aerated.

Oxygen transfer rate of the ProFusion is 1.5 pounds per hour and has been verified by 3rd party laboratory testing.

Anaerobic & aerobic digestion requires effective sludge mixing. Without it, sludge blankets accumulate.

STAINLESS FEATURES

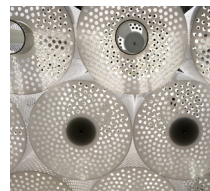
- **Stainless Steel Bale For Easy Lifting**
- **Pump Is Removed Without The Use Of Tools**
- **Stainless Steel 1 HP Motor, Single Or Three Phase**
- **Coupled Connector For Easy Motor Removal**
- **Stainless Steel Mechanically Sealed Bearings**
- **316 Stainless Steel Shaft**
- **316 Stainless Steel Cast Props**
- **Stainless Steel Volute**

OUR ACCESSORIES

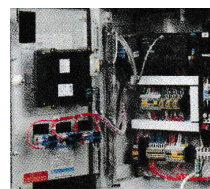


PROFUSION SPHERICAL HOUSING

Provides flexibility to draw and discharge water in multiple depths and directions. The ProFusion can easily be installed and withdrawn without removing the entire unit from the water.



DEBRIS GUARD Keeps items such as weeds and rags out of the pump to reduce the need to clean and maintain the ProFusion. The guard is attached to floats and is easy to clean.



CONTROL PANELS Customizable & ensure the ProFusion are running when needed most. Available with multiple switches, hour meters & alarm configurations.

PROFUSION CAPABILITIES

Pumping Capacity	~600 Gallons Per Minute
24 Hour Turnover Rate	~864,000 Gallons Per Minute
Oxygen Transfer Rate @20° C	1.5 Pounds Per Hour Per Unit

PROFUSION SPECIFICATIONS

Electrical Requirements	115v, 208/230v, 460v Single Or Three Phase
Motor	1 HP, TEFC Stainless Steel Motor
Propellers/Impellers	Stainless Steel
Shaft	Stainless Steel
Pump Volute	Stainless Steel
ProFusion Housing, Option 1	42-Inch Diameter, High-Density
ProFusion Housing, Option 2	30-Inch Diameter, 42-Inch Tall Stainless Steel Cylinder
ProFusion Housing, Option 3	72-Inch Diameter, High-Density Poly Sphere With MBBR Media
ProFusion Bearings	Mechanically-Sealed Stainless Steel
Inlet Connection Size	(1) 8-Inch PVC SDR 35 Female Coupling
Inlet Location	Customizable For Application
Outlet Size	Multiple Schedule 40 PVC 3-Inch To 6-Inch Ports
Outlet Configuration	Customizable For Application
Maximum Dimension w/ Floats	90 Inches Long x 48 Inches Wide x 54 Inches High, w/ Motor
Minimum Water Depth	3-Foot Deep
Warranty	1-Year Warranty, Parts Only
Weight (Shipping/Dry)	~ 250 Pounds For Weight (Option 1 And Option 2)

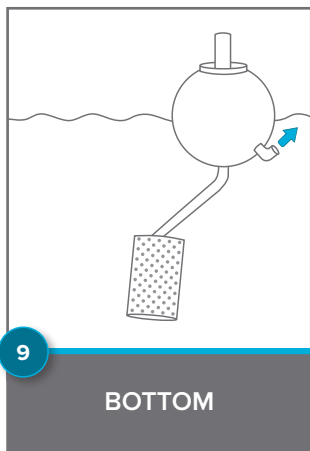
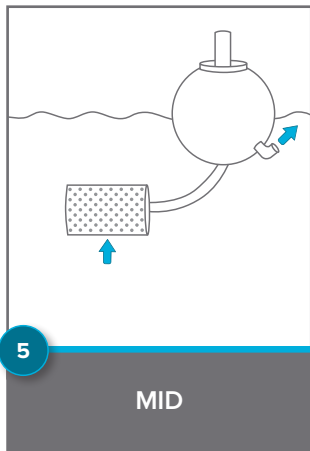
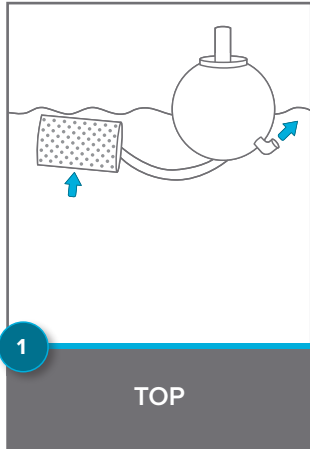
BASIN ISSUES

Short Circuiting	600 GPM Directional Flow For Improved Treatment
Poor Mixing	Horizontal And Vertical Mixing
Excessive Sludge	Oxygen And Flow For Optimum Aerobic Digestion
Low Oxygen	O ₂ Transfer With Directional Flow
Excessive Algae	Strips Carbon Dioxide And Breaks Thermocline

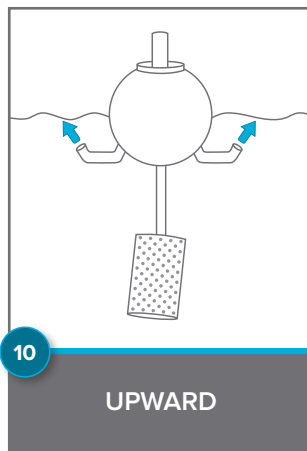
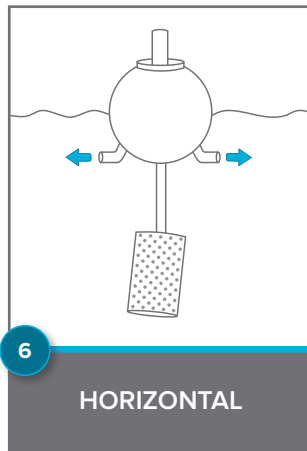
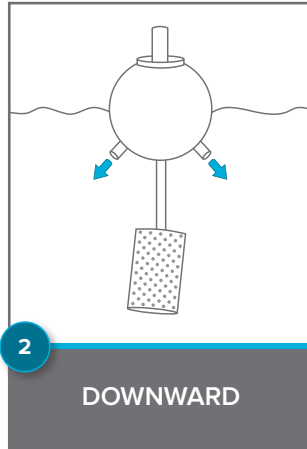
BIG SOLUTIONS

SEVERAL INTAKE AND DISCHARGE OPTIONS

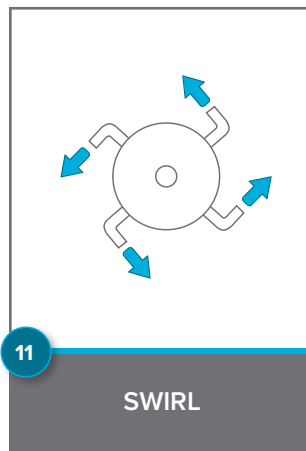
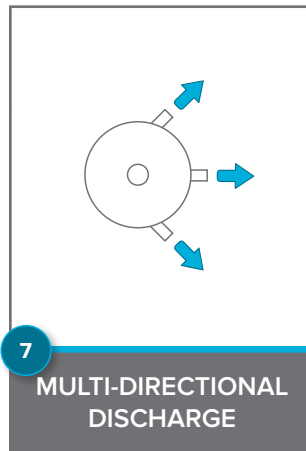
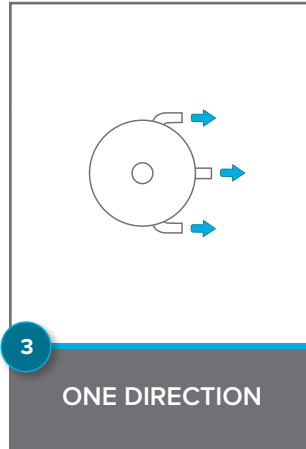
INTAKE OPTIONS



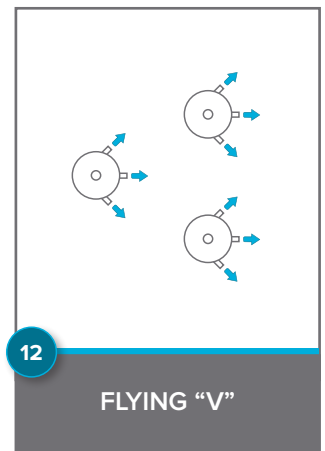
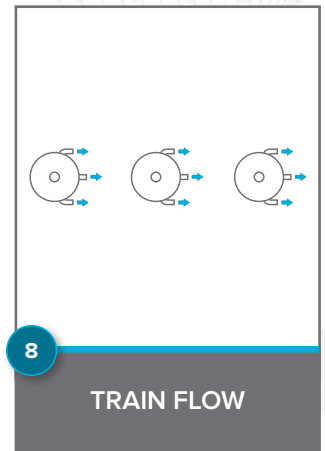
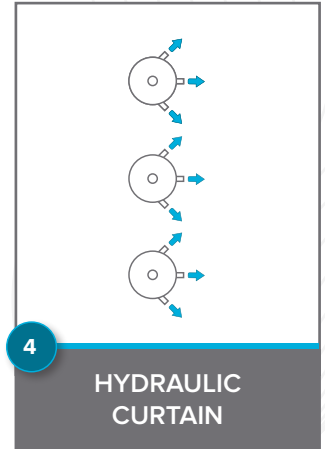
VERTICAL DISCHARGE OPTIONS



HORIZONTAL DISCHARGE OPTIONS



MULTIPLE UNIT CONFIGURATIONS



INNOVATION FOR CLEAN WATER

A Waste Stabilization Lagoon was having issues with excessive sludge and short circuiting. BIG installed ProFusions in a line and created a hydraulic curtain that pushes the water against the natural flow of the lagoons. By adding biostimulants to reduce sludge, **Capacity Increased & Overall Treatment Improved.**

“**BIG has been GREAT to work with and very responsive to our needs.**”

- Certified Operator for Utility

An aerated step system with a goal to **reduce their energy use by 40%** and improve overall water quality. BIG provided the system to help make this a reality.

“**Lagoons are an extremely efficient, effective, and inexpensive treatment process for small towns, and I believe this technology can save them.**”

- Certified Operator for Municipality

Due to stricter limits being enforced, a waste stabilization utilized ProFusions equally spaced for mixing and stirring in a circular fashion. The elimination of short-circuiting and the addition of **oxygen through micro bubbles** brought them into compliance without the need for mechanical filtration and ammonia removal.

“**We were skeptical that breaking the short-circuiting and adding oxygen would help enough, but we have seen great results so far.**” - Certified Contract Operator

A large waste stabilization lagoon purchased equipment from BIG to improve winter removal rates of bod and ammonia. **BIG was able to improve overall water quality and clarity**, eliminating the need to chemically treat algae.

“The natural process of algae removal by stripping CO₂ is what surprised me the most. We no longer have to hire a company to come in and treat our algae, and **the town is saving money** on algae removal.”

- Town Superintendent

PROVIDED BY  **covalen** ENVIRONMENTAL GROUP



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