

Food and  
Beverage  
Process  
Wastewater  
Treatment



## Aeration And Mixing Technologies Well-Designed To Achieve Treatment Objectives



### Dealing with Concentrated Wastewaters

Wastewaters generated from fruit, vegetable, and meat processing and from brewery, winery, and distillery operations contain high concentrations of dissolved and suspended solids, fats, oils, nitrogen and phosphorus compounds, and other contaminants. Without a well-designed treatment process, such wastewaters create toxic conditions in receiving waters.

### Treatment is Challenging

The concentration and make-up of food and beverage wastewater contaminants vary widely depending on the product. Wide swings in pH arising from processing and washdown operations compound the challenges to treat such wastewater effectively.

Commonly, a pretreatment stage reduces suspended solids and FOG (fats, oils, grease). This step is followed by mixing and aeration in lagoons, basins, or tanks to fortify the biological reduction of BOD and COD. Measuring and regulating dissolved oxygen content helps to avoid starving the process or wasting energy by adding more oxygen for no additional benefit.

### Fluence Aeration and Mixing Technologies Assist Effective Treatment

Fluence offers aeration and mixing technologies ideally suited for food and beverage process wastewater treatment.

## TORNADO® Surface Aspirating Aerators

The Tornado aerator provides superior subsurface directional mixing and oxygen dispersion to wastewater bodies. The intense action of the aerator shears wastewater solids to increase treatment performance by enhancing the surface area for oxygen and bacteria contact.

- 2 - 100 HP (1.5 - 75 kW) Models
- 1800 rpm at 60 Hz (1500 rpm at 50 Hz)
- Grease-lubricated sealed bearings are ideal for high concentrations of solids, grit, and sand
- Solid shaft; vibration-free design
- Low maintenance and patented replaceable modular seals
- Tapered roller bearings prevent aerator shaft vibration and absorb propeller thrust loads
- Self-heating bearing design is ideal for cold climate locations
- Available in standard 304 stainless steel and optional 316 stainless steel construction
- Premium efficiency motor is designed to work with soft start VFD controllers to eliminate power surge penalties and reduce energy costs
- Blower-assisted model is available for high oxygen demand applications

## TWISTER® Low-Speed Surface Aerator

Twister aerators are designed for long-term continuous operation in the most challenging and heavily-loaded industrial applications.

The Twister pulls oxygen deficient water up from the bottom of the basin, and exposes it to the air above the water's surface. At the surface, the aerator mixes the water into a 360-degree circular pattern, providing exceptional circulation to the deepest parts of the basin floor. 5 - 100 HP (3.75 - 75 kW)

- 40-100 rpm at 50 or 60 Hz
- Flexible mounting options: stainless steel floats, bridges, and platforms
- Minimum 2.0 gearbox safety factor ensures long life
- Floating fiberglass-reinforced rotor

## Hurricane® Submersible Aspirating Aerator/Mixer

The Hurricane Submersible Aerator delivers high oxygen transfer rates with 360-degree radial mixing to depths of up to 24 feet. This equipment is ideal for a wide range of industrial applications including aerobic digesters, equalization basins, activated sludge, and post-aeration basins. The Hurricane is installed at the base of the tank and does not need anchoring to the tank. It can operate as an aerator/mixer or mixer only.

- 14 model sizes ranging from 5 to 100 HP (3.75-75 kW)
- Impeller and stator are manufactured from single pieces of 17-4 stainless steel hardened to Rockwell 45 HRC for superior abrasion resistance
- Impeller is balanced for minimal vibration and maximum chopping action to crush solids
- The base features large extended adjustable legs for stable wide-radius support; vibration-dampening feet help prevent "walking"
- Multiple diffuser tubes adapted to rectangular or circular basins provide uniform air distribution for full-floor coverage
- Mixer or aerator/mixer functionality is created by valving off the air inlet pipe or by changing the water depth in the basin
- Fixed or removable mounting options are available.



HURRICANE® Submersible Aerator/Mixer

Check out our full range of aeration and mixing technologies at: [www.fluencecorp.com/aerators](http://www.fluencecorp.com/aerators)

Food and Beverage Wastewater Treatment Challenges	Fluence Equipment Advantages
Acidic environment due to organic materials or chemicals causes corrosion	All components, including floats, are 304 stainless steel construction—no galvanized parts; 316 stainless steel is available as an option. The Tornado features sealed grease-lubricated bearings which are not exposed to wastewater.
High solids, sludge build-up, and fats, oils, and grease (FOG)	Aeration equipment provides intense horizontal mixing action, maintaining solids in suspension and providing deep aeration and mixing action to help dissolve accumulated sludge.
Foul odors	Surface aerators create an air cap at the water's surface and provide aeration and mixing below the surface to avoid splashing or spraying.
Harsh wastewater environments	Fluence aerators are designed for harsh wastewater conditions. Industrial-grade, chemical-duty and explosion-proof motors are available options and are designed to withstand high temperatures associated with some processing applications. Corrosion- and UV-resistant stainless steel construction ensures long-lasting performance.
Energy-intensive treatment	Premium efficiency motors, turn-down capabilities, and smart aerator technologies.
Maintaining treatment equipment	Aerators are easy to install, require little maintenance, and some models are accessible at the surface, requiring no draining or dredging for regular maintenance.



TORNADO® Self Aspirating Aerator



TWISTER® Low Speed Aerator

## Our Promise to You

Fluence has designed and built our aeration equipment in the US since 1987. We devote our full effort to support the needs of plant operators, consulting engineers, and contractors with premium technology solutions for your wastewater treatment challenges—worldwide.

Contact the parts department at +1 (763) 746-9288 or [aerationparts@fluencecorp.com](mailto:aerationparts@fluencecorp.com).

### Fluence Has Your Back Every Step of the Way

We offer leasing arrangements to reduce your capital expenditures and to provide you with a low-cost method to evaluate our technology in your application. Our program also includes generous lease-to-purchase terms.

We provide high-quality spare parts for our equipment and products. Buying spare parts from Fluence benefits you by offering:

- Full warranty
- Reduced downtime and maintenance requirements
- The right fit and performance with original equipment
- The opportunity to upgrade equipment with the latest innovations
- Extended equipment life while maintaining equipment value.

**Our certified field service technicians provide:**

- Start-up and commissioning assistance
- Inspection, operation, and maintenance services and training
- Installation, supervision, and project management
- Remote monitoring when employing our Smart Operation software
- Technical, process optimization, and plant upgrading support.



### Applications

- Aerated lagoons
- Aerated tanks
- Digesters
- Equalization basins

### Industries Served

- Sugar mill and sugar beet processing
- Beef and poultry processing
- Breweries and wineries
- Distilleries
- Seafood processing plants
- Fruit and vegetable processing/canning
- Olive oil and coconut oil production.

For more information on how we can help you solve your wastewater treatment challenges, contact us