

## Animal Processing Wastewater Treatment



# Aeration and Mixing Technologies Ideally Suited for Wastewater Treatment



Meat processing facilities produce millions of gallons of wastewater every year. Wastewater generated from animal processing typically includes by-products such as animal wastes, hair, feathers, and manure.

Animal processing generates heavy loads of fats, oils, grease, solids, and high levels of BOD and TSS. Treatment is required to remove solids and oils. Wastewater produced by animal processing plants requires treatment processes unique to the wastewater characteristics. Treated water must meet increasingly stringent quality criteria.

Aeration is a simple but versatile secondary treatment, with uses ranging from removing gases and dangerous compounds from wastewater, to encouraging the action of microbes as they break down solids.

Fluence offers high- and low-speed surface aerators, and submerged aerators and mixers designed to provide maximum oxygen transfer and mechanical reliability in industrial wastewater treatment. Fluence designs aeration equipment manufactured with stainless steel, equipped to withstand harsh industrial wastewater environments.



## TORNADO® Family of Surface 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 models are available for high oxygen demand applications

## TWISTER® Low-speed Surface Aerators

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) models
- 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 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.

Animal Processing Wastewater Challenges	Fluence Equipment Advantages
Foul odors	Mixers are designed to eliminate splashing or spraying. Surface aerators create an air cap at the water's surface and provide aeration and mixing below the surface to avoid splashing or spraying.
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.
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 with no draining or dredging necessary for regular maintenance.
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.
Acidic environment due to organic materials or chemicals cause 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.



TORNADO® Self Aspirating Aerator



HURRICANE® Submersible Aerator/Mixer



TWISTER® 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.

### 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

- Aerobic digesters
- Equalization basins
- Activated sludge basins
- Post aeration basins

### Industries Served

- Pork Processing
- Beef Processing
- Poultry Processing
- Fish Processing
- Clam Processing
- Shrimp Processing
- Lamb Processing

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

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



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Value from Water