

# EcoJet™ Aerator

EcoJet™ High Speed Floating Aerators Set The Standard For Aerator Performance

For more than half a century, the EcoJet™ aerator design has provided proven results for municipal and industrial markets throughout the world. With ultimate versatility, no other mechanical aerator is more rugged or more efficient.

The EcoJet™ offers unparalleled performance and superior reliability, low operating costs, and remarkable resistance to environmental conditions that can cause natural wear and damage.

## Benefits

### Effective Wastewater Treatment

Providing powerful pumping action, the EcoJet™ aerator transfers oxygen by breaking up wastewater into a spray of particles. This action creates more surface area for atmospheric pressure to drive oxygen into the wastewater. At the same time, the oxygen-enriched water is dispersed and mixed. The entire process offers more efficient wastewater treatment for municipalities and industrial applications.

### Major Features

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### Major Features and Components

Specifically designed for optimum efficacy, the EcoJet™ aerator design meets the most demanding operational requirements. The high-speed aerator provides ultimate versatility

with modular units that can easily be added, repositioned or upgraded, allowing for greater adaptability and flexibility to maintain efficiencies throughout changing conditions.

#### 1. Proprietary Motor

- Totally enclosed motor, fan-cooled
- Heavy gauge cast iron fan shield
- Class F insulation
- Service factor of 1.15, optionally up 1.25
- Standard or premium efficient available
- Double-row bearings on drive end
- Heavy-duty L-10, 100,000-hour bearings
- Dynamically balanced and vibration tested
- Designed to meet the most demanding operational requirements

#### 2. Motor Junction Box

- Opening in motor housing for winding leads is completely potted with epoxy filler

#### 3. Motor Shaft

- One-piece continuous shaft from upper bearings to the propeller
- 17-4 PH stainless steel in the 1150°F heat-treated condition
- 135,000 PSI minimum yield strength, 35 % stronger than competition
- Largest diameter shaft
- Threaded and keyed on drive end for simple propeller installation

#### 4. Labyrinth Seal Guard

- Positioned below the bottom motor bearing to prevent moisture from migrating up the shaft into the lower bearing

#### 5. Deflector Bearing

- Shaft runs free under normal operating conditions
- Provides support only when under load

## 6. Discharge Cone

- Massive monolithic casting, heavier than competition
- Large integral webs for rigid stability and increased lateral strength
- Designed for minimum head loss
- 304 stainless steel or cast steel epoxy-coated
- Provides for lowest vibration levels
- Produces maximum diffusion of water particles
- 100% contact with the volute, which distributes both static and dynamic loads

## 7. Float

- Largest one-piece float available
- Engineered to provide stability and better buoyancy
- Fiberglass reinforced polyester (FRP), or
- 14-gauge, 304L or 316L stainless steel
- Filled with closed-cell polyurethane foam that adds structural stability and prevents the possibility of sinking if damage occurs to the float exterior

## 8. Debris Deflector

- Machined for smooth fluid passage over the surface
- Material: Delrin® – An Industry-Leading, High-Performance
- Acetal Resin made by DuPont™
- Attached with three recessed, stainless steel set screws
- Double engagement provides an extra measure of preventing water migration up the shaft

## 9. Propeller and Key

- Maintenance friendly propeller exchange with keyed design and threaded shaft
- Keyed to mate to motor shaft in proper position
- Secured to shaft by stainless steel locking nut
- Precision investment casting

- 316L or 15-5 stainless steel
- Dynamically balanced
- Anti-fouling, non-cavitating for greater operational efficiency

#### 10. Locking Nut

- Stainless steel
- Firmly and securely locks the propeller to the shaft
- Just two tools required to install or remove the propeller 11 Volute
- 304L or 316L stainless steel
- All sizes have bottom flange for simple bolt-on attachment of the standard intake cone or optional anti-erosion assembly or draft tube
- Gussets at top and bottom flanges add strength

#### 11. Volute

- 304L/316L stainless steel
- All sizes have bottom flange for simple bolt-on attachment of the standard intake cone or optional antierosion assembly or draft tube
- Gussets at top and bottom flanges add strength

#### 12. Intake Cone

- 304L stainless steel
- Hydraulically designed for proper loading on propeller
- Sufficiently sturdy to support assembled aerator on hard, flat surface
- (Optional) Draft Tube for deep water depth application

#### 13. Anti-erosion Assembly

- (Optional) for low-water depth application

## Aerator Construction Materials That Meet Your Requirements.

When it comes to design, engineering, versatility and performance, the EcoJet™ aerator meets and exceeds the demands and standards of industrial and municipal wastewater treatment.

Offering a variety of standard aerator models and custom material combinations, the EcoJet™ aerator will help ensure maximum return on investment, cost-effective operations and efficient results.

### SSS Series

- Motor Shaft – One-piece 17-4 PH stainless steel
- Propeller – 316L or 15-5 stainless steel, dynamically balanced
- Discharge Cone – 304 stainless steel, monolithic casting
- Volute – 304L stainless steel
- Intake Cone – 304L stainless steel
- Float – 14-gauge, 304L stainless steel shell filled with closed-cell polyurethane foam

### CSS Series

- Motor Shaft – One-piece 17-4 PH stainless steel
- Propeller – 316L or 15-5 stainless steel, dynamically balanced
- Discharge Cone – Cast steel, monolithic casting, epoxy coated
- Volute – 304L stainless steel
- Intake Cone – 304 stainless steel
- Float – 14-gauge, 304L stainless steel shell filled with closed-cell polyurethane foam

### SFG Series

- Motor Shaft – One-piece 17-4 PH stainless steel
- Propeller – 316L or 15-5 stainless steel, dynamically balanced

- Discharge Cone – 304 stainless steel, monolithic casting
- Volute – 304L stainless steel
- Intake Cone – 304L stainless steel
- Float – Fiberglass-reinforced polyester shell filled with closed-cell polyurethane foam

## CFG Series

- Motor Shaft – One-piece 17-4 PH stainless steel
- Propeller – 316L or 15-5 stainless steel, dynamically balanced
- Discharge Cone – Cast steel, monolithic casting, epoxy coated
- Volute – 304L stainless steel
- Intake Cone – 304L stainless steel
- Float – Fiberglass-reinforced polyester shell filled with closed-cell polyurethane foam

## Special Materials

- For applications that require special materials, such as 316, 316L or other materials, please contact us or request a quote for more information

## Robust Motors Designed For Rugged Environments

One of the many reasons Aerator Solutions is the leading aerator solution for the wastewater industry, is our proprietary motor design brings ultimate efficiencies to your operations.

The EcoJet™ aerator IEEE 841 TEFC motors are specifically suited for pulp and paper mills requiring severe-duty, long-life motors.

## EcoJet™ Aerator TEFC Motor Standard Features:

- Class F insulation
- One piece 17-4PH stainless steel shaft
- Rated severe chemical duty
- Totally enclosed fan-cooled
- Potted junction box for motor leads
- 135,000 psi yield strength on motor shaft
- Available in all OSHA colors

## Optional Features:

- Dual speed
- Space heaters
- Explosion proof
- Tnemec special paints
- Thermal overload protection

## Technical Details:

- 25 service factor
- InproSeal bearing isolators at both ends
- Bearing protection meets IP56
- Rubber lead separator between terminal box and frame
- Epoxy paint system exceeds 250 hours salt fog test
- Interior surfaces are epoxy coated
- Non-sparking fan
- NPT threaded terminal box

- Seamless copper lead lugs
- Seamless stainless steel grease extension tubes
- Class F insulation (Impregnation resin and magnet wire are Class H)
- All frames with re-greasable ball bearings

## Proven Results With Optimal Aerator Controls

The EcoJet™ High-speed aerator offers motor and control options for optimum customization.

### Motor Options:

- Premium efficient
- Space Heaters
- Dual speed
- Thermal overload protection
- Explosion-proof construction

### Control Panels

- NEMA compliant enclosures available for manual, semi-automatic or automatic operation
- Standard control panel consists of across-the-line starters, pushbutton start/stop switches, and main disconnect safety lever switch
- Other special enclosures such as timers, pilot lights, alarm horns, or elapsed time meters, are available