The information contained herein relative to data, dimensions and recommendations as to size, power and assembly are for purpose of estimation only. These values should not be assumed to be universally applicable to specific design problems. Particular designs, installations and plants may call for specific requirements. Consult Aqua-Aerobic Systems, Inc. for exact recommendations or specific needs. Patents Apply.

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Aqua-Jet® Surface Mechanical Aerator

Pulp and Paper Mills
- Simple and flexible installation
- Equipment is easily retrievable without dewatering basin
- Short lead times
- High-efficiency motors reduce energy consumption
- Low installation cost
- Easily retrofitted into existing aeration systems

Digesters/Sludge Holding Basins
- Provides efficient oxygen transfer and complete mixing
- Pivotal Mooring or Restrained Mooring accommodates large changes in water level
- Units can be pulled to the side of the basin for service without dewatering
- Aerator can be cycled on/off to control dissolved oxygen (DO) and save energy

Post/Maintenance Mooring
A mooring post is installed on shore and the mooring line is attached to an eyebolt in the post. A maintenance loop enables the operator to pull the unit to shore or opposite side of the basin without disconnecting the line. Available for 3 or 4 point mooring.

Span Mooring
Span Mooring is used in larger lagoon applications, allowing more than one (1) aerator to be attached to a single mooring cable across the lagoon. Each aerator is attached to the cable using a 3 point mooring concept and can be removed individually for service (plan view shown to the right).

Restrained Mooring
Restrained Mooring is used in applications with varying water levels. The Aqua-air mooring frame fills around the mooring post and allows the aerator to slide up and down the post as the water level changes.

Pivotal Mooring
A Pivotal Mooring arm is used in applications with varying water levels with arm lengths up to 40 feet. The arm fits at the base of the motor allowing the aerator to adjust to varying water levels.

Providing TOTAL Water Management Solutions
Visit our website at www.aqua-aerobic.com to learn more about the Aqua-Jet® Surface Mechanical Aerator and our complete line of products and services.

Aeration & Mixing
Biological Processes
Filtration
Oxidation & Disinfection
Membranes
Controls & Monitoring Systems
Aftermarket Products and Services

Aqua-Jet® Mooring Arrangements
There are four standard mooring arrangements for the Aqua-Jet aerator. The type selected is dependent on the specific application.

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Pivotal Mooring
A Pivotal Mooring arm is used in applications with varying water levels with arm lengths up to 40 feet. The arm fits at the base of the motor allowing the aerator to adjust to varying water levels.
Aqua-Jet® Surface Mechanical Aerator

The Aqua-Jet® aerator is the most durable, highly efficient wastewater aerator on the market today. Since 1993, more than 8,000 Aqua-Jet® aerators have been installed worldwide, representing 10 million horsepower and over 1 billion hours of runtime.

The robust design and use of the highest quality materials have made the Aqua-Jet® the most trusted aerator in the industry, outlasting other aerators 2 to 1.

Features and Advantages

- Vibration limiting design; velocity of 3 inches/second or less
- Proven oxygen and mixing performance
- Easy and feasible installation
- Short lead times

Aqua-Jet® Components

- Diffusion Head
- Motor
- Motor Shaft
- Couplings
- Anti-Deflection Insert
- One-Piece Float Deflector
- Influent Pipe
- Intake Cone
- Labyrinth Seal/Guard

Aqua-Jet® Operation

The Aqua-Jet® aerator is a mechanical draft tube unit designed for installation in a variety of municipal and industrial wastewater applications. The performance of the Aqua-Jet® aerator also provides the mixing necessary to uniformly disperse oxygen and organic matter within the microbial population.

How it Works

Water is pumped up into the intake cone and through the intake, and is dispersed through the diffusion head in a spray pattern. Oxygenation occurs at two critical points: 1) when the water exits the diffusion head and 2) when the spray enters the water surface.

Aqua-Jet® Unit Sizes and Dimensions

<table>
<thead>
<tr>
<th>SS Series (Stainless Steel)</th>
<th>FSS Series (Fiberglass)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
<td><strong>Capacity (horsepower)</strong></td>
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Aqua-Jet® Aerator Model SS-PW

- Ideal for Total Trihalomethane (THM) stripping in potable water applications with a minimum volume of 100,000 gallons
- ANSI/NSF 61 approved by Underwriters Laboratory (UL)
- Anti-Erosion Assemblies are available for all horsepower water applications with a minimum volume of 100,000 gallons

Low Trajectory Diffuser (L.T.D.) Assembly

The Low Trajectory Diffuser (L.T.D.) assembly is a high density polyethylene ring that is attached to the top of the diffusion head, increasing the diameter of the diffuser. This arrangement causes the spray of the Aqua-Jet® aerator to mist downward in a spray pattern, and to exit at the top of the basin. Low Trajectory diffusers are used in colder climates, and where a vertical spray pattern is desired.

Aqua-Jet® Accessory Options

- Anti-Erosion Assemblies
- Anti-Erosion Assemblies consist of a stainless steel plate attached to the bottom of the Aqua-Jet® aerator intake cone via an anti-surge cross. The assembly assures water to be drawn from the sides of the intake cone, rather than from directly below it, and prevents damage to the basin liner or version of the basin. These assemblies are available for all horsepower water applications with a minimum volume of 100,000 gallons. Consult Aqua-Aerobic Systems for larger applications.

Aqua-Jet® Aerator Operating Depths*

- Ideal for Total Trihalomethane (THM) stripping in potable water applications with a minimum volume of 100,000 gallons
- ANSI/NSF 61 approved by Underwriters Laboratory (UL)
- Anti-Erosion Assemblies are available for all horsepower water applications with a minimum volume of 100,000 gallons

*These charts are intended for approximation purposes only. Requirements are dependent upon basin geometry. Consult Aqua-Aerobic Systems for larger applications.

Aqua-Jet® accessories include the Arctic Pak ring and the ship’s motor. The Arctic Pak ring contains thermal resistance heaters which minimize the chance of freezing in exposed surfaces of the Aqua-Jet® aerator, such as the cast diffuser head. The Arctic Pak is complete with its own junction box which mounts on the motor fan cover, automatic controls and control panel. Operation of the Arctic Pak is controlled by an ambient temperature thermostat. The unit is available in either 230 or 460 volts, and can be used on either floating or fixed-mounted Aqua-Jet® aerators. Drawings and wiring diagrams are available upon request. Consult your Aqua-Aerobic representative.
### Aqua-Jet® Surface Mechanical Aerator

The Aqua-Jet® aerator is the most durable, highly efficient wastewater aerator on the market today. Since 1989, more than 80,000 Aqua-Jet® aerators have been installed throughout the world, representing 10 million horsepower and over 2 billion hours of runtime.

The robust design and use of the highest quality materials have also made the Aqua-Jet® the most trusted aerator in the industry, outselling all other aerators 2 to 1.

**Features and Advantages**

- Vibration limiting design; velocity of 3.3 inches/second or less
- Proven oxygen and mixing performance
- Easy and flexible installation
- Short lead times

#### Aqua-Jet® Components

- **Diffusion Head**: One-piece, 17-4 precipitation hardened (PH) ss, eliminates O&M costs and increases performance
- **Propeller**: Adds structural stability and prevents sinking. Heavy wall ss volute
- **Intake Cone/Anti-Vortex Cross**: (TEFC), Class F insulation, 1.15 service factor

**Aqua-Jet® Operation**

The Aqua-Jet® aerator is a mechanical direct-drive unit designed to provide efficient aeration in a variety of municipal and industrial wastewater applications. The performance of the Aqua-Jet® aerator also provides the mixing necessary to uniformly disperse oxygen and organic matter within the microbial population.

**How it Works**

Water is pumped up into the intake cone and then through the intake cone, and is dispersed through the diffuser head in a spray pattern. Oxygenation occurs at two critical points:

1. When the water exits the diffuser head and 2) when the spray enters the water surface.

### Aqua-Jet® Unit Sizes and Dimensions

**SS Series (Stainless Steel)**

<table>
<thead>
<tr>
<th>Water Depth, FT</th>
<th>Motor HP</th>
<th>Diffuser Dia</th>
<th>Volute Dia</th>
<th>Fluid Deflector Dia</th>
<th>Float Dia</th>
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**FSS Series (Fiberglass)**

<table>
<thead>
<tr>
<th>Water Depth, FT</th>
<th>Motor HP</th>
<th>Diffuser Dia</th>
<th>Volute Dia</th>
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<td>0.0</td>
<td>0.0</td>
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</tr>
</tbody>
</table>

### Aqua-Jet® Aerator Model SS-PW

- Ideal for Total Trichloromethane (THM) stripping in potable water applications with a minimum volume of 130,000 gallons
- ANSI/ASME ET approved by Underwriters Laboratory (UL)
- Endura® Series high efficiency, low maintenance motors

### Low Trajectory Diffuser (L.T.D.) Assembly

- Low Trajectory Diffuser (L.T.D.) Assembly is a high density polyethylene ring that is attached to the top of the diffuser head, increasing the diameter of the diffuser. The arrangement causes the spray of the Aqua-Jet® aerator to disperse in a spray pattern. Low trajectory diffusers are used in colder climates, and where a spray (misting) spray pattern is desired.

### Arctic Pak

The Arctic Pak ring contains thermal resistance heaters which enhance the chance of spraying on exposed surfaces of the Aqua-Jet® aerator, such as the cast diffuser head. The Arctic Pak is complete with its own junction box (which rests on the motor fan cover), automatic controls and control panel. Operation of the Arctic Pak is controlled by an ambient temperature thermostat.

The unit is available in either 230 or 460 volts, and can be used on either floating or fixed-mounted Aqua-Jet® aerators. Drawings and wiring diagrams are available on request. Contact your Aqua-Jet® representative.
There are four standard mooring arrangements for the Aqua-Jet aerator. The type selected is dependent on the specific application.

- **Post/Maintenance Mooring**: A mooring post is installed on shore and the mooring line is attached to an eyebolt in the post. A maintenance loop enables the operator to pull the unit to shore or opposite side of the basin without disconnecting the line. Available for 3 or 4 point mooring.

- **Restrained Mooring**: Restrained Mooring is used in applications with varying water levels. The Aqua-Jet mooring frame fits around the mooring posts and allows the aerator to slide up and down the posts as the water level changes.

- **Span Mooring**: Span Mooring is used in larger lagoon applications, allowing more than one (1) aerator to be attached to a single mooring cable across the lagoon. Each aerator is attached to the cable using a 3 point mooring concept and can be removed (individually for service) (plan view shown to the right).

- **Pivotal Mooring**: A Pivotal Mooring arm is used in applications with varying water levels with arm lengths up to 40 feet. The arm fits at the base of the motor allowing the aerator to adjust to varying water levels.

**Aqua-Jet® Typical Applications**

- **Pulp and Paper Mills**
  - Simple and detailed installation
  - Equipment is easily retrievable without dewatering basin
  - Short lead times
  - High efficiency motors reduce energy consumption
  - Low installation cost
  - Easily retrofitted into existing aeration systems

- **Digesters/Sludge Holding Basins**
  - Provides efficient oxygen transfer and complete mixing
  - Pivotal Mooring or Restrained Mooring accommodates large changes in water levels
  - Units can be pulled to the side of the basin for service without dewatering
  - Aerator can be cycled on/off to control dissolved oxygen (D.O.) and save energy

**Aqua-Jet® Mooring Arrangements**

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Aqua-Jet® Mooring Arrangements

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**Pivotal Mooring**
A Pivotal Mooring arm is used in applications with varying water levels with arm lengths up to 40 ft. The arm fits at the base of the motor allowing the aerator to adjust to varying water levels.

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**Aqua-Jet® Typical Applications**

- Extended aeration
- Aerobic digestion
- Oxidation ditches
- Municipal/industrial combinations
- Batch reactor processes
- Pulp and Paper Mills
- Simple and flexible installation
- Equipment is easily retrievable without dewatering basin
- Short lead times
- High efficiency motors reduce energy consumption
- Low installation cost
- Easily retrofitted into existing aeration systems

- Digesters/Sludge Holding Basins
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