The AquaDDM mixer can be utilized in a number of applications: anoxic systems, back mixing, equalization, neutralization, denitrification, directional mixing, blending combined streams, and sequencing batch reactors (SBRs).

### Anoxic Mixing
- This plant installed (54) 7.5 HP AquaDDM mixers in its (18) anoxic mixing basins to meet new permit requirements for denitrification and phosphorus prior to tertiary filtration in order to provide 25 MGD of reclaimed water.

### Denitrification
- (20) 7.5 HP AquaDDM mixers are divided among five anoxic basins to provide a completely mixed environment for successful denitrification, without aeration, in this 65 MGD wastewater treatment facility.

### Sequencing Batch Reactors
- AquaDDM mixers are utilized in this dual-basin AquaSBR system to meet the plant's strict permit effluent levels (mg/l) of 8.0 BOD, 30 TSS, 1.5 Total Kjeldahl Nitrogen, 1.0 Ammonia Nitrogen, and 0.75 Total Phosphorus.

### Aerobic Digesters
- This plant replaced (16) submersible mixers with four (4) AquaDDM mixers in its two anoxic basins and one (1) Aqua MixAir system in its two aerobic digesters (consisting of an AquaDDM mixer combined with diffused aeration).

### Providing TOTAL Water Management Solutions
Visit our website at www.aqua-aerobic.com to learn more about the AquaDDM Direct-Drive Mixer and our complete line of products and services:
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- Biological Processes
- Filtration
- Membrane Systems
- Controls & Monitoring Systems
- Aftermarket Products and Services

The AquaDDM mixer can be utilized in a number of applications: anoxic systems, back mixing, equalization, neutralization, denitrification, directional mixing, blending combined streams, and sequencing batch reactors (SBRs).
Since 1973, Aqua-Aerobic Systems has installed more than 10,000 AquaDDM® Direct Drive Mixers in a variety of municipal and industrial applications. The mixer has also been incorporated into several Aqua-Aerobic processes including the AquaDR® Sequencing Batch Reactor, Aqua-Aerobic® MBR Membrane Bioreactor, and AquaMB Process® Multiple Barrier Membrane System. The AquaDDM mixer is designed to provide maximum mixing efficiency. When mixing requirements are the controlling factor, the mixer can reduce power costs, while delivering 3-4 times the mixing of any aerator of the same size.

**System Features and Advantages**
- **Available** in FSS and SS models ranging from 1.5 to 1 HP
- **Satisfactory** for correction configurations
- Floating motor operates in varying liquid depths
- **Avoids** blocking
- **Agile** mode, downflow mixing pattern and variable surface elevation then circular
- Eliminates or greatly reduces surface came and foaming
- **Directional Flow Assembly and Anti-erosion Plate options available**

**Aqua MixAir® System**

The AquaDDM mixer, in combination with mechanical aeration or diffused aeration, composes the Aqua MixAir system. The combined use of downflow AquaDDM mixer and upflow or diffused aeration, composes the Aqua MixAir system. The AquaDDM mixer, in combination with mechanical aeration equipment, satisfies the demanding vertical flow rate to a horizontal flow. The AquaDDM with a directional flow assembly is ideally suited for use in long narrow tanks and oxidation ditches where directional flow may be necessary or desirable. In such applications, the AquaDDM with a directional flow assembly greatly reduces or eliminates short circuiting of the basin, eliminates deadspots and provides exceptional mixing of the basin contents.

**Anoxic Basins**

The AquaDDM mixer is ideal for use in anoxic basins for denitrification and phosphorus reduction. The mixer provides unrivaled mixing and uniform top-to-bottom blending of the basin. Unlike horizontal, side-entering, and submersible mixers, the AquaDDM provides effective intermixing of the basin contents resulting in increased nutrient reduction.

**AquaDDM® Unit Sizes and Dimensions**

### AquaDDM® Unit Sizes and Dimensions

<table>
<thead>
<tr>
<th>Model</th>
<th>HP</th>
<th>RPM</th>
<th>Dia. (inches)</th>
<th>Cable Dia. (inches)</th>
<th>Mooring (lbs)</th>
<th>Ship Wt. (lbs)</th>
<th>Dimensions (mm)</th>
<th>Shaft Dia. (mm)</th>
<th>Motor Base Assembly</th>
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<tbody>
<tr>
<td>FSS1001</td>
<td>7.5</td>
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<tr>
<td>FSS1002</td>
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<td>1800</td>
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<td>6000</td>
<td>127</td>
<td>14.7</td>
</tr>
</tbody>
</table>

**AquaDDM® Accessory Options**

- **Directional Flow Assembly**
- **Anti-Erosion Plate**

Aqua-Aerobic® Systems has designed an anti-erosion plate for use in those applications where the AquaDDM® is installed in earthen basins.

**AquaDDM® Component Parts**

- **Component** | **Part Number** | **Description** |
<table>
<thead>
<tr>
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**AquaDDM® Unit Sizes and Dimensions (50 Hz Metric Units)**

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<tr>
<th>Model</th>
<th>HP</th>
<th>RPM</th>
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<td>6000</td>
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<td>6000</td>
<td>2920</td>
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<td>127</td>
<td>14.7</td>
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</tbody>
</table>

**AquaDDM® Accessory Options**

- **Directional Flow Assembly**
- **Anti-Erosion Plate**

Aqua-Aerobic® Systems has designed an anti-erosion plate for use in those applications where the AquaDDM® is installed in earthen basins.
AquaDDM® Unit Sizes and Dimensions

### AquaDDM® Unit Sizes and Dimensions

<table>
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<tr>
<th>Model</th>
<th>HP</th>
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<th>Approx. Dimensions (inches)</th>
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<td>100</td>
<td>1000</td>
<td>3867 87.375 30.625 8 15.875 154.9 4.46</td>
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</tbody>
</table>

### AquaDDM® Accessories

#### Directional Flow Assembly

The AquaDDM is available with an optional directional discharge assembly which permits the downward vertical flow to a horizontal flow. The AquaDDM with a directional flow assembly is ideally suited for use in long narrow tanks and oxidation ditches where directional flow may be necessary or desirable. In such applications, the AquaDDM with a directional flow assembly greatly reduces or eliminates short circuiting of the basin, eliminates deadspots and provides exceptional mixing of the basin contents.

#### Anti-Erosion Plate

Aqua-Aerobic Systems has designed an anti-erosion plate for use in those applications where the AquaDDM is installed in earthen basins.

### Anoxic Basins

The AquaDDM mixer is ideally suited for use in anoxic basins for denitrification and phosphorus reduction. The mixer provides uniform mixing and uniform top/bottom blending of the basin. Unlike horizontal side-entering, and submersible mixers, the AquaDDM provides efficient mixing of the basin contents resulting in increased nutrient reduction.

### System Features and Advantages

- Available in FSS and SS models ranging from 1-75 HP
- Suitable for all tank configurations
- Fixed mixer operates in varying liquid depths
- Suitable for most basin configurations
- Available in FSS and SS models ranging from 1-75 HP
- Eliminates or greatly reduces surface splashing and foaming
- Eliminates short circuiting
- Floating mixer operates in varying liquid depths
- Suitable for most basin configurations
- Available in FSS and SS models ranging from 1-75 HP
- Lower initial cost, and less expensive to install and maintain than standard flow
- Intermixing of the basin contents resulting in increased nutrient entering, and submersible mixers, the AquaDDM provides efficient mixing of the basin contents resulting in increased nutrient reduction.

### Aqua DDMD® Unit with mechanical aeration.

AquaDDM® mixer with mechanical aeration.

### Aqua DDMD® Unit with diffused aeration.

AquaDDM® mixer with diffused aeration.

### Aqua MixAir® System

The AquaDDM mixer, in combination with mechanical aeration or diffused aeration, composes the Aqua MixAir system. The combined use of sheetflow AquaDDM impeller and cell flow, AquaJet surface aeration creates complimentary flow patterns, and results in better suspension of solids and better distribution of oxygen to the substrate. This improved process efficiency can result in energy savings of 30-40% in many applications. When combined with diffused aeration, the AquaDDM mixer provides a full range of aeration control without compromising mixing. The combination enables the operator to operate the diffused air system only when oxygen is required. Full scale tests and operation at various installations have demonstrated that the addition of AquaDDM mixers to diffused aeration systems improves aeration efficiency by up to 30%.

### AquaDDM® Component Parts

#### Component

- Air Impeller
- Air Diffusers
- Anti-Erosion Assembly
- Fluid Flow Endura
- Fluid Flow Structure
- Fluid Flow Gearbox
- Fluid Flow Pullywheel
- Fluid Flow Pullywheel

### AquaDDM® Motor Options

- Direct-Drive Mixer units in a variety of municipal and industrial applications. The mixer has also been incorporated into several Aqua-Aerobic processes including the AquaJet Sequencing Batch Reactor, Aqua-Aerobic MBB Membrane Biosolids, and AquaJet Process Multiple Barrier Membrane System. The AquaDDM mixer is designed to provide maximum mixing efficiency. When mixing requirements are the controlling factor, the mixer can reduce power costs, while delivering 4-5 times the mixing of any aerator of the same size.

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The AquaDDM is available with an optional directional discharge assembly which permits the downward vertical flow to a horizontal flow. The AquaDDM with a directional flow assembly is ideally suited for use in long narrow tanks and oxidation ditches where directional flow may be necessary or desirable. In such applications, the AquaDDM with a directional flow assembly greatly reduces or eliminates short circuiting of the basin, eliminates deadspots and provides exceptional mixing of the basin contents.

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### System Features and Advantages

- Available in FSS and SS models ranging from 1-75 HP
- Suitable for all tank configurations
- Fixed mixer operates in varying liquid depths
- Anti-erosion mixer
- Aligned arm, downward moving pattern and variable surface velocity when circuiting
- Elaminate or greatly reduces surface splashing and foaming
- Submersible mixer with diffused aeration.

### Aqua MixAir® System

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The AquaDDM mixer can be utilized in a number of applications: anoxic systems, back mixing, equalization, neutralization, de-nitrification, directional mixing, blending combined streams, and sequencing batch reactors (SBRs).

**Typical Applications**

- **Anoxic Mixing**
  - This plant installed (36) 7.5 HP AquaDDM mixers in its (20) anoxic mixing basins to meet new permit requirements for denitrification and phosphorous prior to tertiary filtration in order to provide 25 MGD of reclaimed water.

- **Denitrification**
  - (20) 7.5 HP AquaDDM mixers are divided among five anoxic basins to provide a completely mixed environment for successful denitrification, without aeration, in this 65 MGD wastewater treatment facility.

- **Sequencing Batch Reactors**
  - AquaDDM mixers are utilized in this dual-basin AquaSBR system to meet the plant’s strict permit effluent levels (mg/l) of 8.0 BOD, 30 TSS, 1.5 Total Kjeldahl Nitrogen, 1.0 Ammonia Nitrogen, and 0.75 Total Phosphorus.

- **Aerobic Digesters**
  - This plant replaced (16) submersible mixers with four (4) AquaDDM mixers in its two anoxic basins and one (1) Aqua MixAir system in its two aerobic digesters (consisting of an AquaDDM mixer combined with diffused aeration).

- **Provisioning TOTAL Water Management Solutions**

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- (20) 7.5 HP AquaDDM mixers are divided among five anoxic basins to provide a completely mixed environment for successful denitrification, without aeration, in this 65 MGD wastewater treatment facility.

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