AquaDDM®

Direct Drive Mixer~Blender

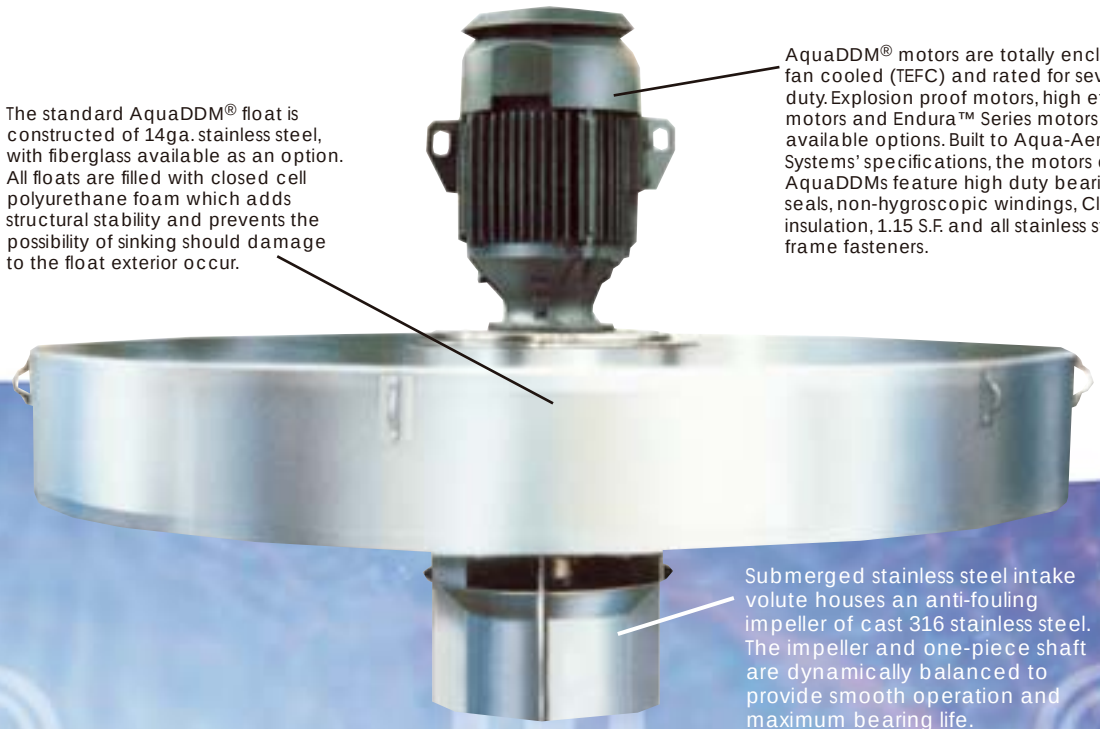
Often Imitated...Never Duplicated

Aqua-Aerobic Systems, Inc.

AquaDDM®

Direct Drive Mixer-Blender

No troublesome gear-reducers, no couplings, no submerged bearings or seals. The AquaDDM® is directly driven from the motor shaft to the impeller for a simple, reliable operation.



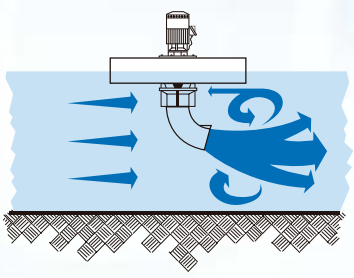
The standard AquaDDM® float is constructed of 14ga. stainless steel, with fiberglass available as an option. All floats are filled with closed cell polyurethane foam which adds structural stability and prevents the possibility of sinking should damage to the float exterior occur.

AquaDDM® motors are totally enclosed, fan cooled (TEFC) and rated for severe duty. Explosion proof motors, high efficiency motors and Endura™ Series motors are available options. Built to Aqua-Aerobic Systems' specifications, the motors of all AquaDDMs feature high duty bearings and seals, non-hygroscopic windings, Class F insulation, 1.15 S.F. and all stainless steel motor frame fasteners.

Submerged stainless steel intake volute houses an anti-fouling impeller of cast 316 stainless steel. The impeller and one-piece shaft are dynamically balanced to provide smooth operation and maximum bearing life.

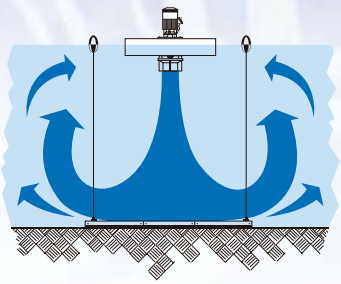
Options

Directional Flow Assembly



The AquaDDM® is available with an optional directional discharge assembly which converts 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



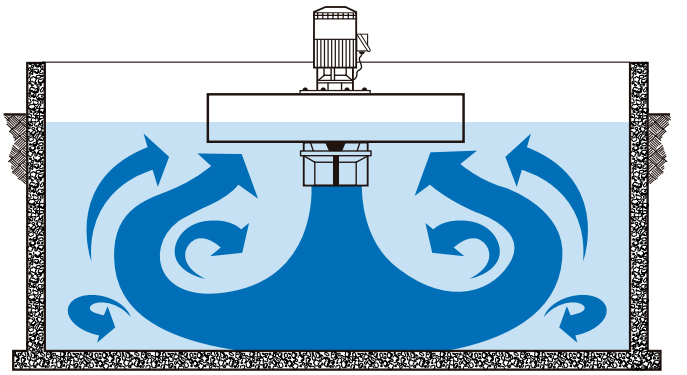
Aqua-Aerobic Systems has designed an anti-erosion plate for use in those applications which the AquaDDM® is installed in earthen basins.
Our unique patented installation procedure allows the anti-erosion plate to be easily installed without dewatering the basin. With the use of a float mounted winch, the anti-erosion plate is suspended from the float of the AquaDDM® directly below the discharge volute. The mixer and plate are then towed into position and lowered, as one, into the basin.

AquaDDM® Mixer

Proven mixing efficiency

The AquaDDM® Mixer is designed to provide maximum mixing efficiency. For those applications where mixing requirements are the controlling factor, the AquaDDM® can reduce power costs, while delivering 3-4 times the mixing of any aerator of the same size. The ducted impeller of the AquaDDM® improves pumping efficiency; and the integrated flow vanes and lower input torque eliminate the need for tank baffles.

The AquaDDM® establishes a powerful downflow mixing pattern that transports surface liquid downward and increases mass transfer. Flow entrainment and regenerative flow create high reactor turnover rates for efficient mixing.



Advantages

- Simple physical construction makes handling easy
- Lower initial cost, and less expensive to install and maintain than gear reduced (slow speed) units
- Better and more reliable service than submerged directional mixers
- One-piece stainless steel shaft. No couplings, no submerged bearings
- Suitable for most basin configurations
- Anti-erosion plate available for use in earthen basins, or basins with synthetic liners
- Directional flow option available

Performance

- Increased reliability for critical process requirements
- High efficiency mixing reduces power consumption
- Eliminates need for tank baffling or counter rotational equipment
- High volume downflow discharge, combined with near surface intake, eliminates short circuiting of mixed liquid back through the mixer
- Hydraulic flow regime reduces fillet formation in tank corners and wall/floor joints
- Eliminates or greatly reduces surface splashing and foaming
- No surface spray mist or associated “wind drift” problems
- Submerged intake eliminates air entrainment
- Floating mixer is operable in varying liquid depths

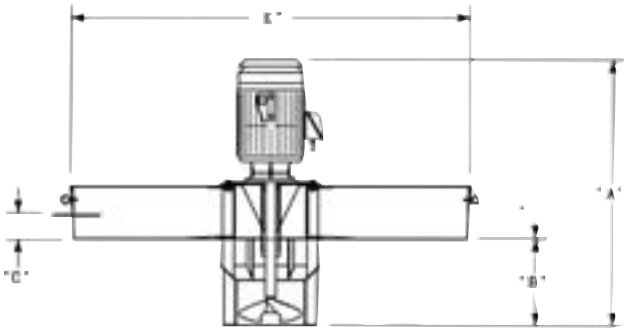
AquaDDM® Equipment

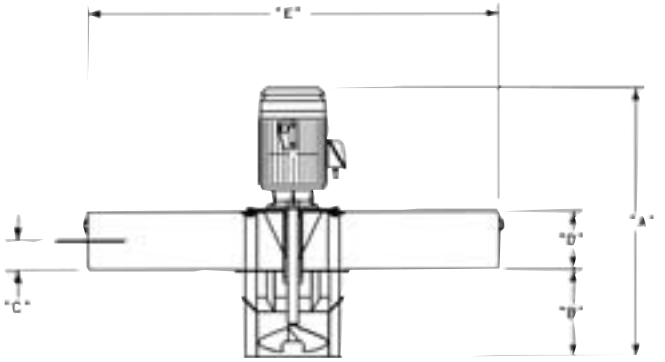
Available in a Full Range of Horsepower 3 - 75

Component Part	SS*	FSS*
Impeller	316 S.S.	316 S.S.
Impeller Shaft	17-4 PH S.S.	17-4 PH S.S.
Motor Base Assembly	304 S.S.	304 S.S.
Intake Volute Assembly	304 S.S.	304 S.S.

Component Part	SS*	FSS*
Flotation Assembly	304 S.S.	Fiberglass
All Chassis Fasteners	18-8 S.S.	18-8 S.S.
Float Center Structure	304 S.S.	304 S.S.
Float Filler	–Closed Cell Polyurethane–	

**These are standard materials of construction. Optional materials of construction include 304L, 316, 316L and Carpenter 20 stainless.*





FSS Series

FSS Model	HP	RPM	Apprx. Shpg. Wt.(lbs)	DIMENSIONS(inches)					Shaft Dia.	Mooring Cable Dia.
				A	B	C	D	E		
5700331	3	1200	577	51.187	18.563	7	12.25	71	2	3/16"
5700531	5	1200	691	51.187	18.563	7	12.25	71	2	
5700731	7.5	1200	722	56.125	18.563	7	12.25	71	2	
5701031	10	900	857	60	19.75	6	12.25	84	2.25	
5701531	15	900	887	60	19.75	6	12.25	84	2.25	
5702031	20	900	1227	65.938	22.563	7	12.75	94.5	2.75	
5702531	25	900	1267	65.938	22.563	7	12.75	94.5	2.75	
5703031	30	900	1676	74.312	27.812	7	13.25	114.5	2.75	1/4"
5704031	40	900	1780	74.312	27.812	7	13.25	114.5	2.75	

Stainless Steel Series

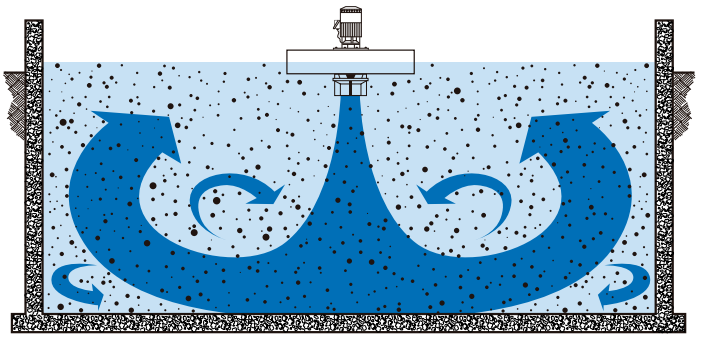
SS Model	HP	RPM	Apprx. Shpg. Wt.(lbs)	DIMENSIONS(inches)					Shaft Dia.	Mooring Cable Dia.
				A	B	C	D	E		
5900331	3	1200	647	51.312	18.938	7	12	70	2	3/16"
5900531	5	1200	762	51.312	18.938	7	12	70	2	
5900731	7.5	1200	792	56.125	18.938	7	12	70	2	
5901031	10	900	952	59.625	19.75	6	12	83	2.25	
5901531	15	900	982	59.625	19.75	6	12	83	2.25	
5902031	20	900	1319	65.812	22.563	7	12.625	91	2.75	
5902531	25	900	1359	65.812	22.563	7	12.625	91	2.75	
5903031	30	900	1806	74.063	27.812	7	13	114.625	2.75	1/4"
5904031	40	900	1910	740.63	27.812	7	13	114.625	2.75	
5905031	50	900	2641	83	31.25	8	16	114.625	3.5	
5906031	60	900	2711	83	31.25	8	16	114.625	3.5	
5907031	75	900	2801	88.625	31.25	8	16	114.625	3.875	

Applications

- Water and Wastewater Treatment
- Back Mixing
- Equalization
- Disinfection
- Anoxic Systems
- Neutralization
- Denitrification
- Directional Mixing
- Biomass Suspension
- Biomass Conditioning
- Blending Combined Streams
- Sequencing Batch Reactor (SBR) Systems

Anoxic Basins

The AquaDDM® is the ideal mixer for use in anoxic basins for denitrification and phosphorus reduction. Provides unrivaled mixing and uniform top-to-bottom blending of the basin. Unlike horizontal mixers, side-entering mixers and submersible mixers, the AquaDDM® provides efficient intermixing of the basin contents - and does not employ any gear reducers, submerged bearings or submerged seals. The AquaDDM® will greatly reduce or eliminate short circuiting, and eliminate deadspots in the basin.



Aqua MixAir®

Improved aeration efficiency

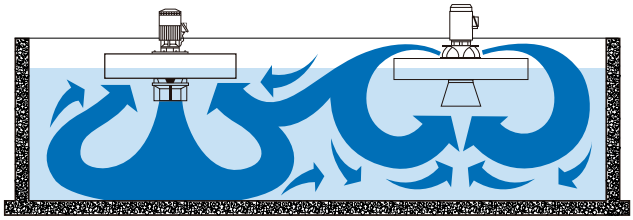
Aqua-Aerobic Systems offers the Aqua MixAir® system which utilizes mechanical aeration, or fine or coarse bubble diffusers and the AquaDDM® mixer.

The AquaDDM® mixer, in combination with the Aqua-Jet® aerator or diffused aeration, provides excellent oxygen control and minimizes energy consumption. The biomass is maintained at constant concentration, while variable oxygen input keeps the system operating at the most efficient oxygen transfer level. Short circuiting and excess dissolved oxygen are eliminated.

The Aqua MixAir® system permits a greater choice of reactor sizes and shapes, and simplifies the layout of the air distribution system.

Aqua MixAir® with Mechanical Aeration

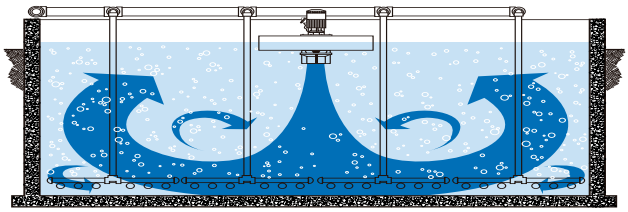
The combined use of downflow AquaDDM® mixers and upflow Aqua-Jet® surface aerators creates complementary flow patterns, and results in better suspension of solids and better distribution of oxygen and substrate. This improved process efficiency can result in energy savings of 30-40% in many applications.



Aqua MixAir® with Diffused Aeration

The Aqua MixAir® System with diffused aeration provides full range aeration control without compromising mixing by enabling the operator to operate the diffused air systems only when the oxygen is required.

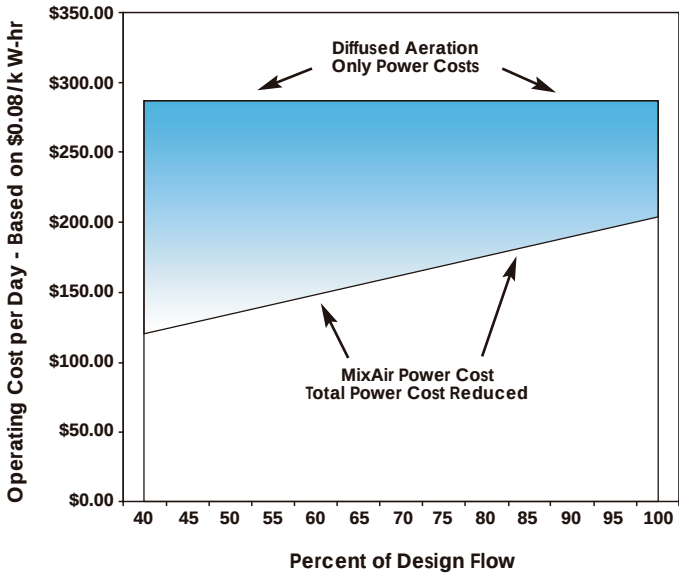
The fine bubble system is available with retrievable diffusers which allow inspection and maintenance without dewatering the basin.



Full scale tests and operation in various installations have demonstrated that the addition of an AquaDDM® mixer(s) to diffused aeration systems improves aeration efficiency by up to 30%.

In digester applications, the addition of AquaDDM® mixers improves mixing efficiency while decreasing operation costs.

Power Savings Chart



This chart demonstrates relative cost savings that can be realized by using a strategy that separates aeration and mixing.

Often, power savings can be realized by using a combination of aeration and mixers. This is especially true when design loads will not be expected for several years. The chart to the left shows typical power savings based on percent of design flow.

Aqua-Jet®
Surface Aerators

Aqua-Jet II®
Contained Flow Aerators

AquaDDM®
Direct Drive Mixer-Blenders

Aqua MixAir®
Aeration Systems

Aqua EnduraDisc®
Fine Bubble Diffusers

Aqua EnduraTube®
Fine Bubble Diffusers

Aqua CB-12™
Coarse Bubble Diffusers

Aqua CB-24®
Coarse Bubble Diffusers

AquaSBR®
Sequencing Batch Reactors

AquaExcel™
Batch Reactor with IntelliPRO ™

AquaMB Process™
Multiple Barrier Membrane Systems

MSBR®
Modified Sequencing Batch Reactor

AquaPASS™
Phased Activated Sludge Systems

AquaDisk®
Cloth Media Filters

AquaMiniDisk™
Cloth Media Filters

AquaDiamond™
Cloth Media Filters

AquaDrum™
Cloth Media Filters

AquaABF®
Automatic Backwash Filters

ThermoFlo®
Surface Spray Coolers

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