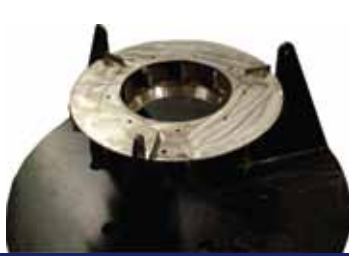




**AquaTec, Inc.**



AquaTec's SAM (Submersible Aerator-Mixer) is a combination aeration and mixing device designed to independently operate submerged in a tank or lagoon.

The basic principal is that of a slow speed impeller that has a hollow hub, through which process air is pumped to allow maximum distribution of the air into the surrounding mass of liquid.

This air, water mixing and interface, also increases the oxygen transfer and intimate contact with substrate to enhance the overall biological synthesis and improve carbonaceous biochemical oxygen demand (CBOD) removal.

The principal of "turbine" aerator design is very well established in the wastewater process industry. For variable speed powered SAM units, it is unique for the "turbine" to be torque sensitive with an "intelligent" driver, which senses the load on the impeller and self-adjusts the impeller speed and/or the power draw of the electric motor.

This allows for:

1. 100% of the process air to be introduced to the SAM impeller
2. An adjusted percentage of air to be introduced to the SAM impeller
3. The SAM to provide only mixing and no air

All this is done by the preset load selection chosen for the VFD used in controlling the SAM units. As the VFD responds to the air/water mixture it can determine the impeller speed. This allows the SAM's to manage the aeration and mixing as total independent functions without service personnel being required. Lastly, if Dissolved Oxygen (DO) pacing is used, the SAM unit can maintain the preset Dissolved Oxygen level without losing the Biomass mixing at any process air input level.

### *Clean, Simple & Quick Installation*



### **DESIGN FEATURES**

- 5,7.5,10,15,20,25,30,40,50,60,75 HP
- Submersible VFD drive motor
- In-line gear reducer
- 200,000 hours bearings
- No "scheduled" maintenance
- Epoxy coated motor & reducer
- 17-4 SS drive shaft
- Hard surface shaft seal contact area
- Silicon carbide output shaft seal
- Gas compression impeller design
- Fully automatic speed control
- Zero to 100 percent air turn-down
- Mix /Aeration with same unit
- Stainless steel impeller & stator
- Epoxy coated heavy steel base
- Install-Remove without dewatering