

## Introduction

The MARS unit is submerged at intermittent points in a pond where it is fed air via flexible weighted tubing from an onshore air compressor/blower. The following diagrams illustrate the components to the patented MARS 1500 Aeration System:

### A. MARS 1500 Aerator (US Patent #5,938,983)

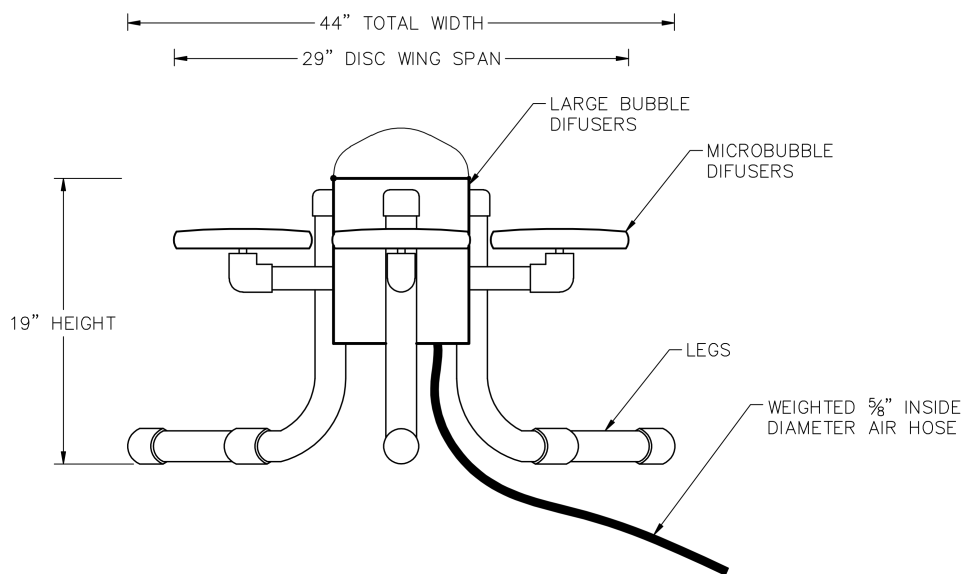


Figure 1: physical characteristics of the MARS 1500 Aeration Diffuser

### Unique Features

- Venturii Effect:** the patented design of the MARS is composed of a coarse bubble, static tube aerator surrounded by fine bubble diffusers. When at the bottom of a pond, both components work in tandem to create an upward movement of water that pulls oxygen deprived water from the lowest part of the pond and propels it towards the surface. Here, it is exposed to fine bubbles (see figure 2). This, in turn, efficiently raises the dissolved oxygen content while effectively circulating and de-stratifying the water column. By law, no other aeration technology can provide the efficiency and effectiveness of this process.
- High efficiency, self-cleaning membranes:** the fine bubble diffusers utilized on the MARS are equipped with EPDM membranes that have proved to have a high Oxygen Transfer Efficiencies (OTE) in laboratory tests. The membranes are also designed to be self cleaning, therefore lowering the risk fouling that can lead to diminished oxygen transfer over time.
- Minimal maintenance design:** the unique design of the MARS positions the fine bubble diffusers 12" above the bottom sediments in order to avoid the clogging and fouling that has

plagued conventional fine bubble aerators.

- **Self checked coarse bubble diffusers:** the coarse bubble diffuser utilized by the MARS is specially designed with anti-clogging technology that has positive backflow sealing. This prevents backflow of water and debris into the unit and prevents maintenance.
- **Proprietary air regulation system:** both aeration components are supplied air via a proprietary regulation system that regulates the air distribution between the fine and coarse bubble components at a specified rate.
- **Robust composition:** the MARS has no moving parts and is made with corrosion resistant, heavy duty, high density polyethylene and EPDM materials. No MARS unit has ever been replaced.

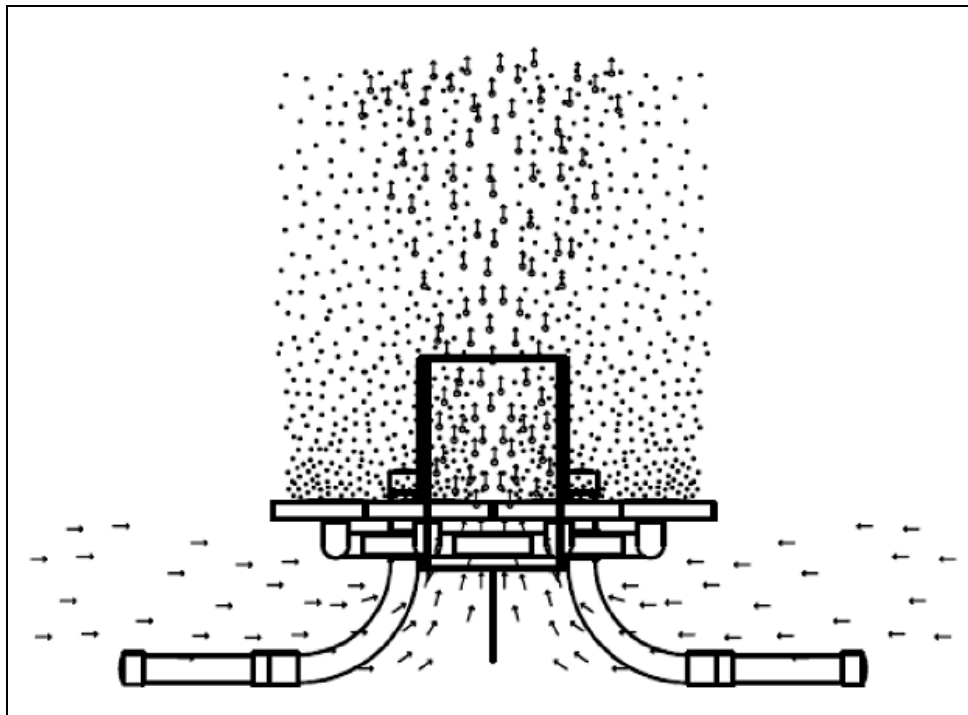


Figure 2: MARS flow diagram illustrating the patented venturii action