SPECIFICATIONS
AQUAAIR® ULTRA 9 DIFFUSED AIR AERATION SYSTEM
HIGH FLOW APPLICATIONS

1.0 GENERAL

1.1 DESCRIPTION

A. Manufacturer shall furnish a diffused air aeration system capable of pumping a synergistic air/water lift from the bottom of a body of water to maximum depth of 35'.

B. An on-shore compressor, powered by an electric motor, shall pump air through an individual air supply tube to a bottom-mounted diffuser assembly located in the body of water.

C. The air shall be dispersed through a diffuser assembly that is then transferred vertically with entrained water to the surface of the water body, utilizing micro-bubble technology.

D. This continuous action shall effectively mix, de-stratify, and transfer atmospheric oxygen throughout the body of water.

1.2 AERATION SYSTEM COMPONENTS DESCRIPTION

A. **Compressors –** (4) 1/2HP dual head compressors, 1 phase, wobble piston built for continuous operation and equipped with thermal overload protection, pressure relief valves, and mufflers for quiet operation. They shall be oil-free and require periodic preventative maintenance after every 18 months of run time which consists of a piston replacement kit and air filters. At 5PSI the compressor shall produce 20.0CFM while operating at approximately 14.0 amps @ 120V, 6.8 amps @ 240V. At 25PSI the compressor shall produce 16.8CFM while operating at approximately 20.0 amps @ 120V, 10.0 amps @ 240V.

B. **Compressor Cabinet –** Enclosure shall be rectangular in design and be constructed of minimum 16-gauge stainless steel. Enclosure shall be fully gasketed and equipped with padlock for security, ventilation to provide forced air circulation and an integral cooling fans with thermal protection, producing 230 CFM to guard against excessive compressor operating temperatures. Includes power cord with NEMA 5-30 plug for 120V systems (30A service required) and NEMA 6-15 plug for 240V systems (15A service required).

C. **Diffuser Assemblies** shall be mounted on a round, hollow chamber base constructed of linear low density polyethylene material. Base shall be capable of being filled with pea gravel for weighting. Base shall be designed with a back-flow check valve and adjustable diffuser riser capability to accommodate site requirements.

I. Single Membrane (SM) – consists of (1) 12" diameter, self-cleaning, flexible, fluoroelastomer layered, fine bubble, EPDM membrane diffuser with 100% rebound memory. It shall provide superior resistance to fouling, calcium scaling, chemicals, fats, oils, grease, hydrocarbons, fuels and solvents. It shall produce millions of fine bubbles.

II. Dual Membrane (DM) – consists of (2) 12" diameter diffusers referenced above.

III. Quad Membrane (QM) – consists of (4) 12" diameter diffusers referenced above.

D. **Weighted Air Supply Tubing** – Self-weighted, direct burial submersible tubing for connection from compressor to diffuser assembly. Tubing shall be of flexible PVC composite construction for use with standard PVC solvent weld cement and 0.5" insert fittings. 1/2" tubing shall have 0.52" ID X 1.06" OD, 5/8" tubing shall have .63" ID X 1.15"

OD and both have a .27" wall thickness, for long term durability and protection against punctures. It shall remain flexible in cold temperatures.

E. **Remote Manifold with Valve Box** (optional) – eliminates the need for multiple air line runs in the ground when the cabinet is located away from the pond's edge.

DIFFUSED AIR AERATION DETAIL SPECIFICATIONS

2.0 DETAILED INFORMATION

2.1 This specification is intended to provide prospective bidders the necessary information pertaining to the diffused air aeration system specified for the _____ Project.

2.2 There shall be (4) compressors, all being 1/2HP dual heads, operating at 120 or 240 Volts (circle one), 60 Hertz, 1 Phase.

2.3 The MODEL specified shall be AquaAir® Ultra 9 High Flow MODEL NUMBER 94109-HF (120V) or 94209-HF (240V) (circle choice). It shall come complete with cabinet, compressors, Nine Single Membrane (SM), Dual Membrane (DM), or Quad Membrane (QM) diffuser assemblies (circle one) and _____ feet of weighted air supply tubing. Tubing length(s) are as follows: Diffuser A____ feet, Diffuser B ____ feet, Diffuser C ___feet, Diffuser D ____feet.

2.4 Remote Manifold with Valve Box Option: Yes _____ No _____ If yes, add –RM to above model numbers, and specify the type and size of the air line from the cabinet to the remote manifold _____

3.0 INSTALLATION

The cabinet and compressor must be installed in accordance with the installation instructions, in compliance with all local and National Electrical Code requirements. This should be done by a licensed electrical contractor. Any alterations to or substitution for items in this system, unless allowed by the installation instructions, will void the manufacturer's warranty. It may also create a hazardous installation. Read the instructions thoroughly before starting the installation and follow them carefully throughout.

4.0 SAFETY TESTING

The diffused air aeration system shall be tested and approved as a complete unit. This approval must meet Underwriters Laboratories Inc. requirements in compliance with Category 1450: Motor Operated Air Compressors.

5.0 ACCEPTABLE MANUFACTURER

This diffused air aeration system, as specified in Section 2, shall be manufactured by AQUAMASTER® FOUNTAINS AND AERATORS, 16024 CTH X, Kiel, WI 53042, (800) 693-3144, or approved equal.

6.0 WARRANTY

All AquaMaster® AquaAir® Ultra Diffused Air Aeration Systems have a Limited Lifetime Warranty on the cabinet, 15 years on the tubing, 5 years on the diffuser assembly, and all other components including compressor and cooling fan have a 3 year warranty (excludes wear items including piston assembly and rotary vanes, consult factory for assistance). Warranty is in effect from the date of shipment, when given normal and proper usage as determined by the seller upon examination, and when owned by the original user.