

AIR FLO 2 SPECIFICATIONS



PURPOSE: The diffused air, aeration manufacturer shall provide an underwater aeration system designed to aerate, de-stratify, and circulate water without disturbing the natural surroundings of the lake environment.

SCOPE: The diffused air, aeration package shall be capable of being installed in lakes deeper than 3ft (1 m) or more (specific design considerations must be allowed for lakes with more than 40ft (12 m) in depth).

PACKAGE:

This aeration package shall include the following equipment:

- a. Air compressor/s
- b. Air compressor cabinet enclosure/s. To include external circuit disconnect, and thermal overload protection. To be designed to operate on either:
 - i. 60 HZ power, 115/208/230 volt, single phase **-OR-**
 - ii. 50 HZ power, 220/240 volt, single phase.
- c. Air/Oxygen diffuser manifolds
- d. Valve Box with valve assembly/s
- e. Tubing

DIFFUSER MANIFOLD/S (Stone or Dome)

Quantity	Type
_____	Stone Diffuser Manifold/s
_____	Dome Diffuser Manifold/s

TUBING:

_____ feet (_____ m)	Weighted polyvinyl chloride tubing
_____ feet (_____ m)	Non-weighted polyethylene tubing
_____ feet (_____ m)	Air diffuser assemblies

SPECIFY: _____ VOLTS _____ Hz _____ PHASE

PISTON AIR COMPRESSOR: (for lakes 3ft (1m) deep or larger) The air compressor/s shall be a 3/4HP rocking piston, dual frequency, permanent split capacitor (psc) electric motor with oilless lubrication, direct drive (no belts or pulleys), designed for field service capability, polyurethane rust protection, and to include the following motor protection: thermal overload protection, and air filter. The only wearing parts: piston cups, retainer screws, cylinder o-rings, head o-rings, valve and valve retainers; should last two years in continuous operation. These maintenance parts shall be replaceable with common tools. Please consult your local distributor if you require assistant in choosing sizes, accessories, or applications.

AIR COMPRESSOR CABINET ENCLOSURE:

- a. Construction shall be 304 stainless steel, minimum thickness 0.049" (0.125cm), and include full EPDM gasketing.

- b. Cabinet to be lined with 1/2" (1.27cm) flame resistant type acoustical foam absorber in conformity with the UL 94HBF flammability standard.
- c. Cooling system to provide filtered intake air & auto thermal protection circuit.
- d. Compressor-intake air to be quick change cartridge type filters.
- e. Cabinet enclosure equipment pad shall be gray, molded of 100% recycled plastic and pre-mounted to Air Flo 2 cabinet enclosure.

AIR/OXYGEN DIFFUSER MANIFOLDS:

Air Stone Diffuser Manifolds

The air/oxygen stone diffusers shall include, but not be limited to, the following materials of construction:

- a. Body shall be manufactured out of Silica Glass
- b. Fitting shall be ABS, Linear Polyethylene or special order
- c. Maximum pore size shall be 140 microns (.0055 inches)
- d. Bubble size shall be 1 to 3 millimeters (.04 to .15 inches)
- e. Flexural strength shall be 2500 psi
- f. Modulus of rupture shall be 500 psi
- g. Nominal particle retention shall be 50 microns
- h. Back-flow preventing check valves shall be installed on each manifold
- i. Each diffuser shall include a manifold that will connect 6 air-stones to the air supply tubing
- j. Each manifold shall include flow restrictors that shall balance the flow of air between air-stones

Dome Diffuser Manifolds

The air/oxygen dome diffusers shall include, but not be limited to, the following materials of construction:

- a. Disc type 9"/228mm membrane diffusers are resistant to Ozone and UV
- b. Membrane material to be premium quality compression molded EPDM with an oil content of less than 12%
- c. Diffuser membranes should have a minimum of 6600 perforations and be at least 70% hydrophilic, with tensile strength at 2000 psi
- d. Diffuser to consist of membrane with integral gasket, base, retaining ring, and air flow control orifice
- e. Membrane shall collapse and seal when aeration system air is turned off
- f. Sealing method of retaining device shall generate a minimum of 50 pounds per inch/58 Kg/cm of circumference of the sealing gasket to provide a long term positive seal and to prevent air escape
- g. Back-flow preventing check valves shall be installed on each manifold
- h. Diffuser base and retaining ring to be constructed of polypropylene with organic UV stabilizers and a tensile strength of 5000 psi
- i. Diffuser to have one 3/4" (2.5cm) connection method to manifold
- j. Each diffuser shall include a manifold that will connect 4 air-domes to the air supply tubing

VALVE BOX: Enclosure shall be structural foam molded polyofin plastic with ultra-violet polyethylene additives conforming to ASTM-D-V1248 and comply to UL-94 (Flammability of Plastic Articles.) Enclosure tensile strength to equal 4415 PSI with impact strength of 38ft/lbs.

WEIGHTED POLYVINYL CHLORIDE TUBING: Tubing shall be constructed of heavy, negative buoyancy, polyvinyl chloride (PVC) material. The PVC tubing shall be 1/2" (1 cm) with a minimum wall thickness of 1/4" (.64 cm). Pressure rating shall be 225 psi at 70° F (21° C). Coil lengths shall be 100' (30 m), with a weight per 100' (30 m) of 43lbs (20 kg). Tubing shall be self-sinking, lead free, and contain carbon black for UV protection. Please consult your local distributor for additional information.

NON-WEIGHTED POLYETHYLENE TUBING: The polyethylene tubing shall be 1/2" (1 cm) with a minimum wall thickness of .06" (1.5 mm). Pressure rating shall be 100 psi at 73 F (22 C). Coil lengths shall be 100' (30 m), with a weight per 100' (30 m) of 11 lbs (5 kg). Tubing shall contain 2% carbon black for long term UV protection. Please consult your local distributor for additional information.

INSERT FITTINGS: Insert fittings are used to repair, adapt, or connect with the polyethylene tubing. Fittings available shall include line size couplings, male adapters, and elbows.

SAFETY APPROVALS: The diffused air, aeration system shall include ETL approvals (CE where applicable,) with components listed by UL and CSA.

MANUFACTURER: The diffused air, aeration system shall be Air Flo 2 Model # _____ as manufactured by Otterbine Barebo, Inc., 3840 MAIN ROAD EAST, Emmaus, PA 18049, U.S.A. PH. (610) 965-6018, or approved equal. For approved equal status, supplier shall provide the following information to the project designer, within 10 days of the bid opening date, for written approval.

WARRANTY: The aeration system shall include a two year warranty on the air compressor, air diffuser and underwater tubing.

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TECHINICAL DATA:

System	Comp. Units	Diffuser Pads	Valve Manifolds		Affected Area		Operating Depth		Volume Influenced		Volts/Amps/Hz @ 28PSI 1 Phase Only
			Quantity	Desc.	Acres	m2	Feet	Meters	GPM	m3/hr	
Air Flo 2 System 1	1	2	1	2 Valve Manifold	To 1/2 To 1 To 3 To 3	To 2023 To 4047 To 12140 To 12140	4-7 8-14 14-19 20-40	1-2 2-4 4-6 6-12	2250 3250 3750 4000+	511 738 852 908+	115V/8A/60Hz 230V/3A/60Hz 220V/2.75A/50Hz
Air Flo 2 System 2	1	1	1	1 Valve Manifold	To 1/2 To 1 To 3	To 2023 To 4047 To 12140	8-26 14-26 20-40	2-8 4-8 6-12	4000+	908+	115V/8A/60Hz 230V/3A/60Hz 220V/2.75A/50Hz
Air Flo 2 System 3	2	4	2	2 Valve Manifold	To 1 To 5	To 4047 To 20234	4-7 8-18	1-2 2-5	2250 3750	511 852	115V/8A/60Hz 230V/3A/60Hz 220V/2.75A/50Hz
Air Flo 2 System 4	2	6	2	3 Valve Manifold	To 3 To 8 To 12	To 12140 To 32376 To 48562	4-7 8-18 14-19	1-2 2-6 4-6	2250 3250 3750	511 738 852	115V/8A/60Hz 230V/3A/60Hz 220V/2.75A/50Hz
Air Flo 2 System 5	1	3	1	3 Valve Manifold	To 3	To 12140	8-14	2-4	3250	738	115V/8A/60Hz 230V/3A/60Hz 220V/2.75A/50Hz
Air Flo 2 System 6	2	2	2	1 Valve Manifold	To 5	To 20234	19-26 26-40	6-8 8-12	4000+	908+	115V/8A/60Hz 230V/3A/60Hz 220V/2.75A/50Hz

Pumping rates may vary due to voltage, elevation, and relative humidity. Running Amp Draw is per compressor. Specifications are subject to change.