

HYDRA



Laminar Flow Aerator Systems

Highly Effective Low Energy Consumption Tube
Diffuser Systems For Ponds & Lakes



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Features & Advantages

Hydra Laminar Flow Aerator Systems are highly effective for large bodies of water whilst retaining the natural look of the water body.

- Supplies oxygen to the water as well as mixing different levels
- Improves quality of life for fish and aquatic organisms
- Improves quality of water e.g. less algae growth
- Prevents water from stagnating and smells emanating
- Promotes the break-down of toxic substances in the water, like ammonia and nitrite
- Keeps useful aerobic bacteria active
- Ideal for use in winter for de-icing and de-stratification
- Commercial grade construction with very low energy consumption compared to other systems

The Problem

Your pond has:

- Poor Water Quality
- Unsightly Algae
- No Beneficial Bacteria
- Minimal Aquatic Life
- Oxygen Deficient Water
- High Nutrient Load
- Harmful COD Levels

Does this sound like your pond or lake?

Lakes and ponds are living aquatic ecological systems, which have fish, vegetation and various types of organisms, both vertebrates and invertebrates, all of which require oxygen to live and thrive.

Most pond owners don't realize that it's not a question of "if", but a matter of "when" they could face the consequences of a fish kill due to oxygen depletion.



Oxygen depletion occurs because oxygen is used even when there is insufficient natural water current, wind or sunlight occurring

Waste products are generated from various sources such as fish wastes, unutilized fish feed, dying or decomposing vegetation and leaves from surrounding trees.

There are also organic and inorganic sediment deposits from nearby runoff and nutrient build ups from all of the aforementioned.

These waste products are decomposed by a biological process called oxidation and in this process large amounts of oxygen are required.

This spells disaster for any fish in the pond, since all the water is literally "instantly robbed" of oxygen.

The most common time when this occurs is after a cold, hard rain or in the heat of summer.

The oxygen levels are at their lowest levels just before dawn, as any oxygenating plants not only stop producing oxygen at night but actually consume small amounts.



The Solution

How Laminar Flow Subsurface Aeration Works

The purpose of any pond aeration system is to introduce oxygen into the water column.

Oxygen efficiency is the measure of the amount of oxygen (in pounds of oxygen per acre) created by one horsepower of energy.



Aeration of water is achieved by exposure of water to air, which contains oxygen.

In nature, wind activity provides this in large bodies of water by creating waves, which both moves the water by creating currents and also oxygenates it by exposure to the air.

Subsurface aeration has the unique ability to create what is known as an airlift current from the bottom to the top of the pond/lake, while at the same time introducing oxygen to the water through millions of tiny air bubbles.

The air bubbles rising from the bottom to the surface of the pond/lake originate from self-cleaning flexible membrane diffusers.



These aerate the water body by the most economical and efficient method: de-stratification and can lift the maximum amount of water from the bottom to the surface using the minimum of energy.

The surface boil, created by the kinetic energy of the rising water, rises about 2 inches above the surrounding water level.

From there, the water rushes outward until its energy has dissipated, sometimes traveling more than 100 ft, then revolving back down in a clockwise manner back to the water body bottom and up again.



This completes a full 360 degree circulation cycle, a critical component of water circulation efficiency.

This high oxygen efficiency is achieved due to the fact that so much surface area of air (from the literal millions of bubbles that create huge amounts of surface area) is coming in direct contact with the water, which translates into "water touching bubbles" in layman's terms.

Because these systems require very little horsepower to operate (i.e. low energy costs), the net cost to produce the oxygen is greatly reduced, thus substantially increasing the oxygen efficiency.

By starting the bubbles at the bottom of the water body and allowing them to rise up the entire column of water, the water in the pond is exposed to a tremendously larger amount of oxygen than a traditional surface aerator could ever hope to create.

In addition to this, the use of fine bubbles is far more efficient than that of coarser bubbles. This is due to the higher amount of surface area of many smaller vs. one large air bubble.

When aeration systems are employed, available nutrients are highly utilized and thus reduced by the abundance of aerobic bacteria, thereby starving the algae of food and tremendously reducing the amounts of algae.

In many cases, the savings in treatment costs to control algae offsets the cost of a subsurface aeration system.

The **Hydra Laminar Flow Sub-Surface Aeration Systems** provide the best oxygen efficiency of any aeration system.

System - Technical Specification



Model Code	Air Volume	Diffuser	Watts	Noise	Size Pond / Lake
ET60T500	3,600 litres hour	Tube 500mm	55w	40 db	10,000-60,000 litres
ET80T500	4,800 litres hour	Tube 500mm	85w	40 db	30,000-90,000 litres
ET80T750	4,800 litres hour	Tube 750mm	85w	40 db	40,000-100,000 litres
ET100T750	6,000 litres hour	Tube 750mm	105w	45 db	50,000-150,000 litres
ET100T1000	6,000 litres hour	Tube 1000mm	105w	45 db	60,000-160,000 litres
ET120T1000	7,200 litres hour	Tube 1000mm	125w	55 db	150,000-200,000 litres
ET150T1000	9,000 litres hour	Tube 1000mm	125w	45 db	250,000-1,000,000 litres or 1/4 acre
ET200T2000	12,000 litres hour	2 x 1000mm	210w	46 db	400,000-2,000,000 litres or 1/2 acre
ET200T2000 comes with 50m air hose, t-piece, 2 air diffusers and extra hose clips					

All of the above systems include VAT, are complete with 25m of 3/4" air hose, hose clips a linear air pump or optional piston pump and a commercial grade EPDM sleeved diffuser mounted on a corrosion resistant weighted base. Vented waterproof enclosures for the air pump are available in two different sizes depending on the pump used.



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