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**Kleen 03**

# Industrial Water



# High Volume Quad Flow Aerator with O3



Picture: Demo Blower and O3 manifold for industrial water

The Patent Pending High Volume Quad Flow Aerator / Mixers are high efficiency all welded, heavy duty aluminum or stainless-steel devices. These state-of-the-art quad flow aerators are designed to pull water from the bottom of a produced water tank and or pond/basin for treatment. By injecting them with heavy concentrations of dissolved oxygen and adding high strength ozone directly into water column. By operating with low-pressure (>2.5 P.S.I.) high-volume ambient airflow, these devices maximize oxygen transfer and energy efficiency. These units are scalable, multi voltage and can be modified to fit any industrial water application.

Kleen O3 utilizes the latest "Green Technology" and continues to set the standards in the water industry. Our products are designed to be as maintenance-free as possible. Constructed from heavy-duty all welded Coated Aluminum or stainless steel which allows

our units to withstand extreme temperatures and harsh environments encountered in every produced water application. Our O3 manifold is constructed of heavy-duty aluminum designed for ozone. In most installations, our clients have seen a cost reductions up to 95%. Our product line is the most energy efficient, maintenance friendly, and cost-effective product introduced to the industrial water market in the past 40 years.

Our O3 uses corona discharge with a 5 year warranty on the whole O3 manifold. Since there are no moving parts to wear out inside of the tank and or pond/basin Since it is secured in place, there is no need for man entry in any installation. Since the blowers and O3 manifold are located outside the tank and or pond/basin, Units operate at low pressure ambient/controlled temperature, and the power can be turned off and locked-out at the blower location.

# Process

Air supply is provided to each aerator and O<sub>3</sub> manifold via regenerative air blower placed at a remote location on the outside of the tank for easy access. With no electricity in or around the water and no moving parts, Kleen O<sub>3</sub> reduces the worker's exposure to risks associated with old and out-dated equipment used today. We have designed the safest and most environmentally friendly industrial water solution on the market.

By directly adding air and O<sub>3</sub> simultaneously into the water column. We can achieve results that will virtually eliminate the cost associated with industrial water. By being able to reuse or discharge the water with no further transportation or fines. Our units will be able to achieve a COD/BOD level Set forth by E.P.A. to use as drill water or discharge. Eliminate the environmental impact of reinjection.

The primary tasks and functions of the units are to aerate and de-stratify the water column and add ozone directly to the water column. Other tasks are completed simultaneously including but not limited to:

Breaking up sludge deposits into smaller particulates, de-stratifying the water column, producing high levels of dissolved oxygen. O<sub>3</sub>/"Ozone", one of the strongest oxidants and sterilizer available without the use of chemicals and reoccurring cost.

All Kleen O<sub>3</sub> Aerators draw water into the device by means of the Venturi effect with no bottom scoring or no negative affects to equipment. Water is then expelled through the upper chambers. This process creates a vacuuming effect drawing sludge deposits into the process chamber where they are injected with high levels of oxygen and ozone.

This process accelerates the digestion of heavy sludge deposits that are sitting dormant on the bottom of the tank. The quad flow aerators are designed to deliver a unique combination of coarse, medium, and fine bubbles which when released at a specific depth, draws the water in through the bottom of the unit creating a true venturi. Water is pulled upward and O<sub>3</sub> injected on all sides being redirected into a flow across the highly oxygenated upper portion of the water column.



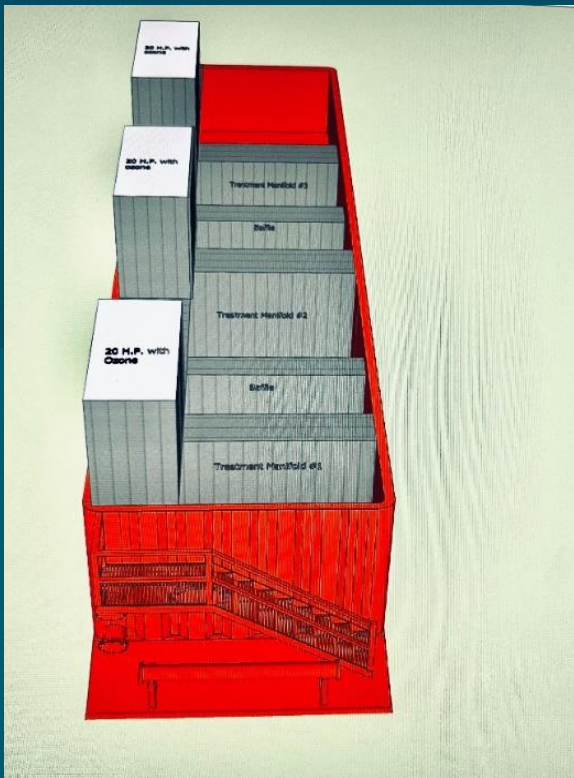
Picture: Demo aerator

# How It Works

The Patent Pending Quad Flow High Volume State of the Art Aerator and O3 manifold injects high volume, low-pressure air through a specially designed multi chambered air manifold located at the bottom of the unit. This unit creates a surface current up to 3 knots for up to 100 ft.

Using a unique combination of coarse air and fine air bubble aeration, we can move high volumes of water (up to 28.1 million gallons per day), while at the same time transferring high volumes of dissolved oxygen and O3 throughout the water column. The fine air bubbles maximize the oxygen and O3 transfer while the coarse air bubbles provide maximum velocity.

The unique combination coarse and fine air bubbles released at a specific water depth within a confined space allows for a highly efficient aeration and mixing. Each Unit is custom built for your produced water volume. Will significantly reduce C.O.D. and B.O.D. To E.P.A. Permissible limits.



Picture: Produced water tank

## Features

- Increases Dissolved Oxygen
- High Volume Water Flow
- Improves Worker Safety
- Reduces COD & BOD
- Reduces MOST Heavy Metals
- Reduces MOST VOC'S
- Reduces Ammonia
- Oxidizes Hydrocarbons
- De-stratifies the Water Columns
- No Chemicals needed
- Reduces Maintenance Costs Up To 85%
- Reduces Sludge Build-Up Up To 75%
- Reduces Fecal Coli Form
- Reduces Pharmaceuticals
- Reduces H2S

# 100% Satisfaction Guaranteed!

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