



## **QUANTAER™ Fine Bubble Aeration Systems**

## SIMPLY THE BEST

With over a decade of experience in the design, application and operation of wastewater treatment aeration systems, we have the knowledge to select the right diffused aeration system for your application.

Quantaer Fine Bubble Aeration Systems provide:

- Process and Application Design Support
- Mechanical Design Expertise
- Proven System Performance
- Energy Efficiency
- System Reliability through a Proprietary Manufacturing Process
- Made In the USA

You can be confident in the Quality of a Quantaer Fine Bubble Aeration System where our "Q" stands for Quality.

## Quantaer Aeration Delivery System

An aeration grid design is only as good as the air delivery system. High performance diffused aeration systems require the right grid design including:

- High Performance Piping and Fixed Joint Design for Durability in all Environmental Conditions
- Proprietary Threading and Retaining Mechanism for Increased Joint Reliability
- Greater Thread Profile, Thicker Retainer Ring and Four-Sided O-ring Compression Vs Comparable Two-Sided Compression
- Anti-Rotational Joints with Infinite Angular Rotation Reduces Joint Stress Decreasing Chances of Leaking and Failure
- Diffuser Holder Manufacturing Process Incorporates Factory Solvent and Ultrasonic Welded Connections
- A Mechanical Bond Stronger than the Pipe
- No Sealing Gaskets for Field Installation
- Field installation of the Holder Not Required
- Air Purge System
- Removal of Condensation Build Up in Piping Available for Manual or Continuous Operation

## Materials of Construction

- Dropleg: 304L or 316L Stainless Steel
- Manifold: Stainless Steel or Polyvinyl Chloride (PVC) to Prevent Ultraviolet (UV) Degradation
- Air Distributors: PVC
- Supports and Anchors: 304 or 316 Stainless Steel
- Gaskets: Styrene-butadiene (SBR) Natural Rubber, Ethylene Propylene Diene Monomer (EPDM) or Neoprene

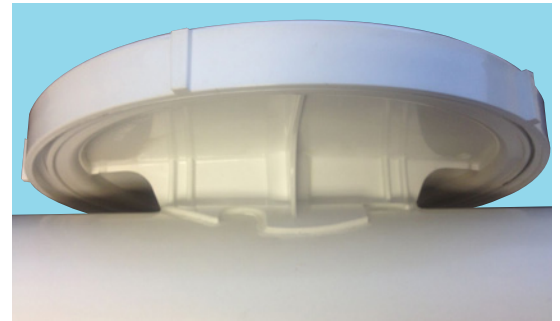
## Selecting the Right Diffuser

We know every application is unique and selecting the right diffuser makes the difference in meeting performance expectations.

Whether it is our EPDM, EPDM Low Pressure Membrane or Ceramic Disc Diffuser, you can rely on us to recommend a system to meet or exceed your expectations.



*Quantaer Aeration Delivery System*



*Factory Solvent and Ultrasonic Welded Connections*

## EPDM Membrane and Ceramic Disc Diffusers Performance

Quantaer Diffused Aeration System design and performance is based on type, diffuser density, submergence and airflow rates.

### EPDM Standard Membrane Disc Diffusers

Aeration solution where greater chemical stability, longer life and energy efficiency are the objective:

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- Standard EPDM Diffusers Membrane Life in Aggressive Environments
- Advanced EPDM membrane Blend with Less than 10 Percent Extractable Oils
- Aquarius Perforation Pattern is Designed for Increased Oxygen Transfer Efficiencies Resulting in Energy Savings
- Integral Check Valve Prevents Backflow During Intermittent Operation
- Improved Air Distribution Resulting in Fewer Diffusers Required to Meet Performance Objectives
- Typical Useful Life: 7-10 Years
- Low Cost of Ownership

### Operating Range

- Configuration: 9-inch Disc
- Normal Airflow Per Diffuser: 0.5 to 4 SCFM
- Design Airflow Per Diffuser: 1.25 to 1.5 SCFM
- Typical Standard Oxygen Transfer Efficiencies Over 2 Percent Per Foot of Submergence

### Applications

Our most versatile Standard EPDM diffused aeration system is designed for biological treatment aeration. Its resistance to fouling and intermittent operation makes it ideal for swing zones in biological nutrient removal systems and mixing applications.

### EPDM Low Pressure Membrane Disc Diffusers

Aeration solution providing a wide range of airflows and resistance to fouling.

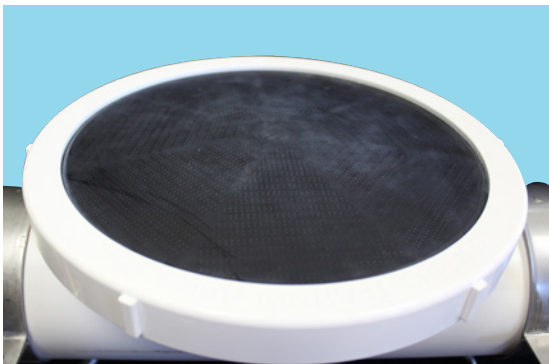
- Constructed with the Same Chemical Properties as the Standard Membrane Disc Diffuser
- Unique Perforation Pattern Produces Low Headloss and Expands Gradually as Air Flow Increases and is Resistant to Fouling
- Capable of Operating Over a Wide Range of Air Flows while Maintaining Consistent Oxygen Transfer Efficiency
- Integral Check Valve Prevents Backflow During Intermittent Operation
- Typical Useful Life: 7-10 Years
- Low Cost of Ownership

### Operating Range

- Configuration: 9-inch Disc
- Normal Airflow Per Diffuser: 0.5 to 10 SCFM
- Design Airflow Per Diffuser: 3 SCFM
- Typical Standard Oxygen Transfer Efficiencies Over 2 Percent Per Foot of Submergence

### Applications

Developed for heavy solids, aerated mixing, and industrial applications requiring high air flow rates. The Low-Pressure EPDM diffused aeration system can also be applied in Standard EPDM Diffuser Applications to meet lower headloss requirements.



EPDM Disc Diffuser



EPDM Disc Diffuser



Quantaer Fine Bubble Aeration System

#### QUANTAER FINE BUBBLE AERATION SYSTEM



## Ceramic Disc Diffusers

Aeration solution for aggressive and corrosive wastewater requiring high oxygen transfer and energy efficiencies. Diffuser construction:

- Constructed of High Temperature Composite Alumina Oxide Ceramic
- Contoured Profile with Peripheral Channel for Uniform Air Distribution
- Compression of the Ceramic Disc at the Peripheral O-Ring Seat, Forces Air to the Center of the Disc Creating Positive Seal
- Prevents Short Circuiting Near Retainer Ring Minimizing Diffuser Fouling
- Typical Useful Life: 20 Years
- Clean in Place Gas Cleaning System Available
- Low Cost of Ownership

## Operating Range

- Configuration: 9-inch Disc
- Normal Airflow Per Diffuser: 0.5 to 4 SCFM
- Design Airflow Per Diffuser: 1.25 to 1.5 SCFM
- Typical Standard Oxygen Transfer Efficiencies Over 2 Percent Per Foot of Submergence

## Applications

Ideal for biological treatment aeration and dependable performance in aggressive industrial wastewater. Recommended for continuous operation over a range of air flows.

## Pressure Monitoring System

Diffuser pressure monitoring systems are optional for fine bubble aeration systems and can be provided on each or select aeration grids. Monitoring parameters include:

- Airflow Rate Per Diffuser
- Diffuser Pressure Changes due to Aging or Fouling
- Change in Pressure trends for scheduling of Preventative Maintenance

## Cleaning in Place System

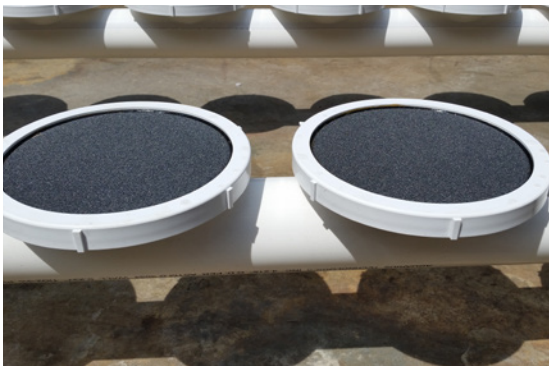
An easy-to-use, safe cleaning system without the need to interrupt the process or dewater aeration basins.

When to Clean:

- Increase in Operating Pressure
- Decrease in System Efficiency Indicated by Dissolved Oxygen (DO) Measurements

How to Clean:

- A Small Amount of Cleaning Agent is Introduced into the Process Air Downstream of Each Aeration Grid Drop Pipe
- The Cleaning Agent Combines with the Process Air and is Distributed and Permeates the Diffusers to be Cleaned
- Mineral Fouling is Dissolved and Biological Fouling is Sloughed from the Diffuser Surface



Quantaer Ceramic Aeration System



Ceramic Disc Diffuser



Cleaning and Monitoring System

## QUANTAER FINE BUBBLE AERATION SYSTEM