

# ECH<sub>2</sub>STORM<sup>®</sup>

*Venturi Aeration System for  
Gorman-Rupp Pumps & Pump Packages*



**GR<sup>®</sup>**  
**GORMAN-RUPP**  
**PUMPS**

*The Pump People<sup>®</sup>*



# ECH<sub>2</sub>OSTORM®

## APPLICATIONS:

### MUNICIPAL

- Wet Well Influent Aeration
- Lagoon Aeration
- Oxidation Ditch Aeration
- Drinking Water Conditioning
- Effluent Aeration/Polishing
- Odor & Corrosion Control
- Aerobic Sludge Digestion
- Lake Destratification
- Algae Control

### INDUSTRIAL

- Fat, Oil & Grease Digestion
- Heavy Metal Separation
- Landfill Leachate
- Nitrate Neutralization
- Non-Chemical Corrosion Control
- Mine Water Treatment
- Algae Control

### AGRICULTURAL

- Animal Wastewater Aeration
- Lagoon Aeration
- Storage Pond Aeration



Since the Ech,oStorm® is such a simple, versatile device, it can be used in a variety of Municipal, Industrial and Agricultural applications. It can also be configured to operate in multiple pumping environments including: flooded suction, submerged discharge or surface discharge.

## What is it and how does it work?

The Ech,oStorm® is a static venturi aeration device installed in-line on the discharge side of a Gorman-Rupp centrifugal pump that introduces dissolved oxygen into the liquid being pumped. As the liquid moves through an internal nozzle, a drop in pressure is created known as the Venturi Effect. The Venturi Effect creates a vacuum and ambient air is drawn into the body of the Ech,oStorm. The air then mixes with the pumped liquid and is discharged, oxygenating the liquid.

## System Benefits

With no moving parts, the Ech,oStorm is an extremely reliable device, with only routine maintenance of the Gorman-Rupp pump required. Unlike other methods of aeration, the Ech,oStorm is mounted on the bank of the basin, tank or lagoon allowing for easy maintenance and maneuvering of the system. The simplicity of the Ech,oStorm, when paired with a Gorman-Rupp pump, allows the entire system to be competitively priced compared to other aeration systems. When offered as part of a factory-designed, -assembled and -tested ReliaSource® packaged system, the Ech,oStorm comes standard with a 60-month warranty\* offering guaranteed reliable performance.

\*When sold as a stand-alone product the Ech,oStorm® comes standard with a one-year warranty.

## Functions:

### • Adding oxygen to wastewater

Adding additional dissolved oxygen to aerobic bacteria allows organic compounds in wastewater to be broken down quickly, preventing it from becoming septic and odorous. The addition of dissolved oxygen allows these organic compounds to be converted into non-polluting compounds.

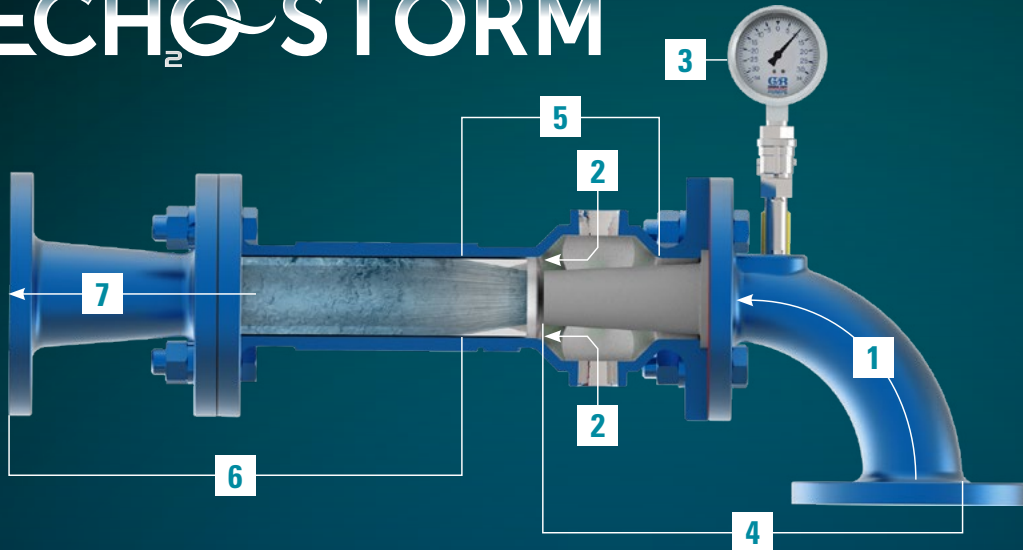
### • Reducing the size of organic solids

The Venturi Effect inside the Ech,oStorm also causes rapid decompression of any pumped organic solids, allowing them to be dispersed throughout the wastewater. This environment promotes aerobic bacteria and accelerates organic solids reduction.

### • Degassing organic solids

The Ech,oStorm explodes confined gas bubbles separating the solids, gases and grease found in most wastewater. This separation promotes the settling of solids and flotation of grease, greatly improving the operation of primary clarifiers in wastewater treatment plants and increasing the quality of primary effluent.

# ECH<sub>2</sub>O STORM<sup>®</sup>



All Ech,oStorm<sup>®</sup> systems come standard with a five-year warranty when included as part of a ReliaSource<sup>®</sup> packaged station.\*

*\*One-year warranty on individual units.*

- 1 | Suction**
- 2 | Air Inlet**
- 3 | Pressure Gauge**  
Ensures required operating pressure between 15 & 30 PSI.
- 4 | Liquid Speed**  
Liquid under pressure at 20 PSI is accelerated to 54 FPS.
- 5 | Vacuum**  
Accelerated liquid creates a vacuum from 28.5 to 29.5 in HG drawing air into the mixing zone.
- 6 | Hydraulic Shear**  
The air and water mixture facilitates the release of gases and volatiles while under pressure.
- 7 | Discharge**

## Municipal, Industrial and Agricultural Wastewater Treatment

Maintaining sufficient dissolved oxygen content in wastewater is key in minimizing odors and corrosion. Odors and corrosion are usually caused by a lack of dissolved oxygen in the wet well of a lift station or collection system. The available oxygen in the environment is rapidly consumed by aerobic bacteria. As a result, wastewater becomes septic and produces corrosive and odorous sulfide gases.

Gorman-Rupp's Ech,oStorm<sup>®</sup> can be installed in virtually any location throughout a treatment system, and often at a lower cost to other odor and corrosion control methods. Multiple installations throughout a system promote aerobic activity from start to finish.

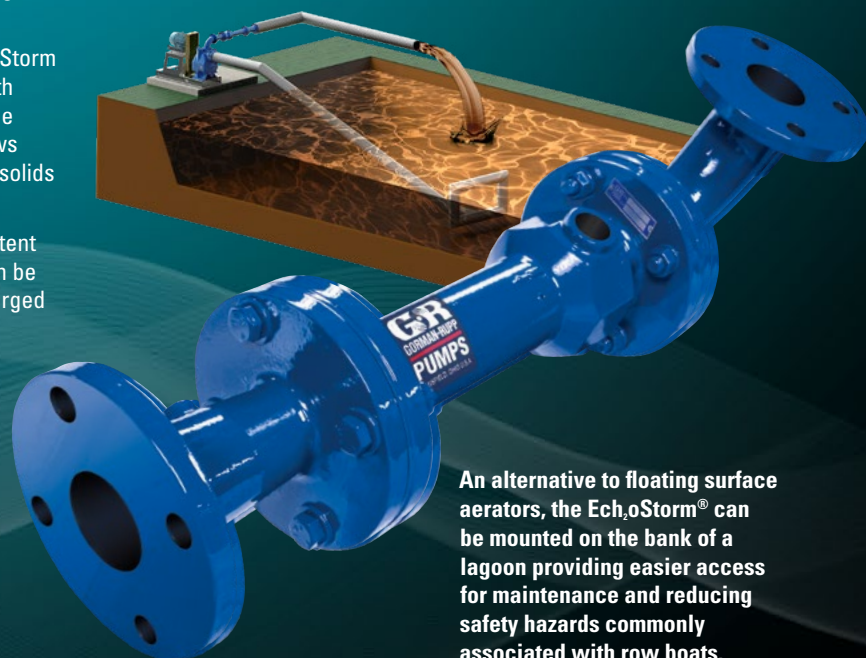
When installed at the headworks of a treatment plant, the Ech,oStorm adds oxygen to the influent, preconditioning the wastewater with dissolved oxygen, minimizing odors and corrosion throughout the remainder of the plant. Implementing a Ech,oStorm system allows grease particles to quickly rise to the surface for skimming and solids to settle to the bottom, improving primary clarifier operation.

When local regulations require a specific dissolved oxygen content within the effluent leaving the plant, a pump and Ech,oStorm can be installed at the tail end of treatment facility to ensure the discharged effluent is safe for the environment.

Gorman-Rupp's Ech,oStorm is a valuable addition to pumps and pumping stations. It is a simple, economical solution that

can be incorporated throughout the various processes of municipal wastewater treatment.

Utilizing the same municipal wastewater treatment principles, the Ech,oStorm is a cost-effective solution for adding oxygen into liquids and wastewater in a variety of industrial and agricultural applications such as aerating landfill leachate and livestock wastewater lagoon systems.



An alternative to floating surface aerators, the Ech,oStorm<sup>®</sup> can be mounted on the bank of a lagoon providing easier access for maintenance and reducing safety hazards commonly associated with row boats.



## Product Availability



**Ech\_oStorm®**  
Size: 2" (50 mm)  
Optional elbow flange available



**Ech\_oStorm®**  
Size: 3" (75 mm)



**Ech\_oStorm®**  
Size: 4" (100 mm)



**Ech\_oStorm®**  
Size: 6" (150 mm)

## Product Specifications

Model No.	Size	Flow	Operating Pressure	Maximum Available Oxygen*
VA2	2" (50 mm)	50-150 GPM (189.3-567.8 lpm)	14-30 psi (.96-2.07 bar)	82 lbs/day (37.2 kg/day)
VA3	3" (75 mm)	180-350 GPM (681.4-1325 lpm)	14-30 psi (.96-2.07 bar)	253 lbs/day (115.0 kg/day)
VA4	4" (100 mm)	400-650 GPM (1514-2461 lpm)	14-30 psi (.96-2.07 bar)	359 lbs/day (163.2 kg/day)
VA6	6" (150 mm)	800-1300 GPM (3028-4921 lpm)	14-30 psi (.96-2.07 bar)	857 lbs/day (389.5 kg/day)

\*Note: performance may vary based on pumping conditions.

## Powered By Gorman-Rupp Pumps



**Super T Series®**  
Self-Priming



**Ultra V Series®**  
Self-Priming



**Super U Series®**  
Self-Priming



**80 Series®**  
Self-Priming



**10 Series®**  
Self-Priming



**6500 Series®**  
Standard Horizontal  
End Suction



**GORMAN-RUPP PUMPS**

P.O. BOX 1217  
MANSFIELD, OHIO 44901-1217 | USA  
TEL: 419.755.1011 | FAX: 419.755.1251

**GRPUMPS.COM**



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