

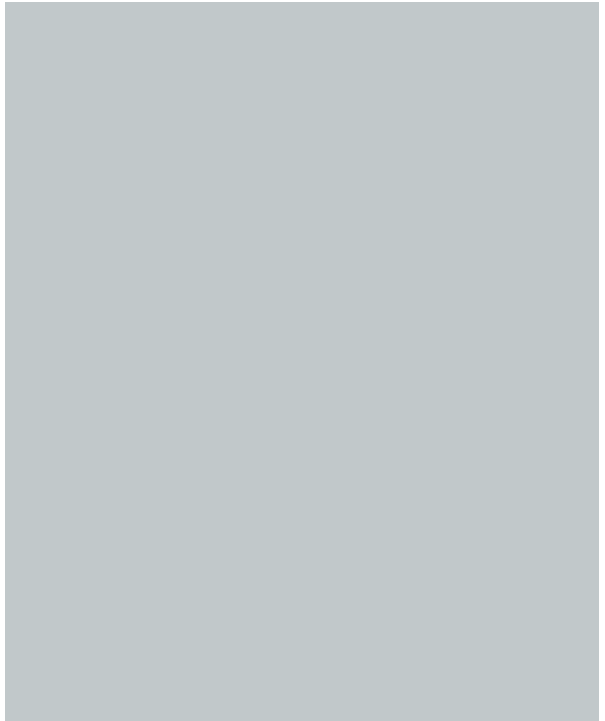


Low Maintenance, High-Quality Aerators

Water Technologies

SIEMENS





4.75 MGD Aerator Installation

Proven performance since 1935.

Siemens Water Technologies has been at the forefront of aerator technology for many years and has seen construction evolve from redwood to steel to fiberglass and finally aluminum. The Siemens maintenance-free aluminum designs that are offered today embody all of the advancements that have been made over the past seventy-five years.

Aeration is Effective and Inexpensive

Induced draft aeration is an effective, inexpensive and low-maintenance method of improving finished water quality in a large number of applications. Generally used at the head of a water treatment plant facility, these units efficiently help remove unwanted water components and help stabilize the pH of corrosive waters for a large range of flows.

The most common aerator application introduces air and water for intimate contact in counter-current flows to promote the oxidation of unwanted iron and manganese. Air is induced up through the aerator

chamber, while the water is introduced at the top of the unit to free-fall through the aerator internals. The upflowing air sweeps through the falling water to increase the oxygen content of the water, removing unwanted dissolved gases such as carbon dioxide and hydrogen sulfide. Dissolved solids such as iron and manganese are transformed to their oxidized states, enabling them to be removed by downstream clarification and filtration equipment. In addition, the aeration process can remove objectionable tastes and odors and reduce the chemical requirements in lime softening.

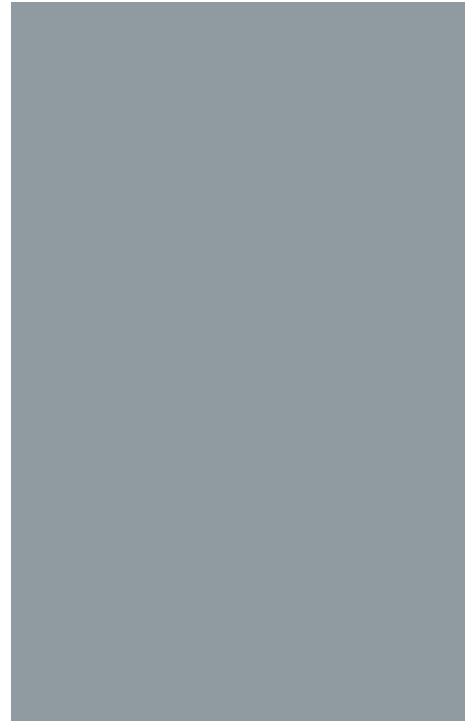
Aerator Specialists

Our specialists apply Aerators on a daily basis to a broad range of applications. From positive draft to natural draft to pressure Aerators, they know which to apply when, and for which conditions.

Our Aerator specialists have dependable, proven answers because of the Company's experience with aeration. No one knows aeration like Siemens.



Forced Draft Aerators for VOC Removal



Aerators have proven their value in thousands of installations

Our experience includes:

Installed Experience

- Iron and Manganese Oxidation
- Oxygen Addition
- Carbon Dioxide Removal
- Hydrogen Sulfide Removal
- Volatile organic compound removal, including Trichloroethylene (TCE), Tetrachloroethylene (PCE), Trihalomethane (THM), and Chloroform
- Methane Removal
- Radon Removal

Aerator Benefits

- **Experience since 1935**
Proven, results-oriented Aerator performance.
- **Thousands of applications**
Thorough knowledge of most water conditions.
- **Aluminum construction**

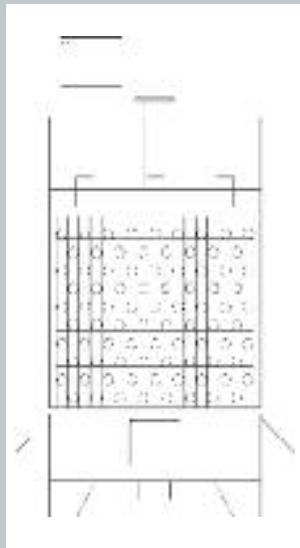
Corrosion-resistant units are maintenance-free and retain their like-new appearance.

- **Replacement parts availability**
Aerators won't become obsolete.
- **Working model**
Helps match right Aerator to application.
- **Complete range of Aerators**
Cost-effectively fits the application needs.
- **Proven Aerator designs**
Assure structural integrity and performance.
- **Factory assembled**
Minimizes installation costs, prevents errors in the field.
- **Low headloss distributor tray**
Reduced pumping cost.
- **Pilot units**
For evaluation of oxidizing and degasifying performance of full scale units.

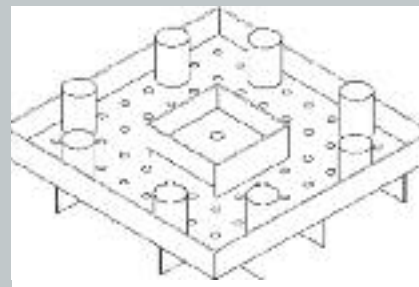
Pilot Plant Testing

A pilot plant can be easily and economically installed at a specific location to fine-tune Aerator design.

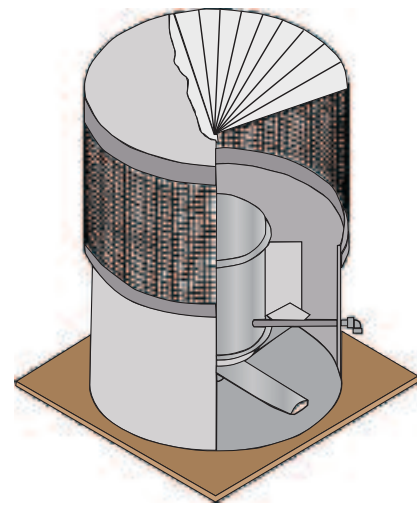
Especially useful for evaluating Aerator performance factors for special applications, it may also be used to verify the conclusions of a predictive model.



Induced Draft Aerator with PVC Slat Internals



Aluminum Distributor Tray



Maintenance-Free Blower Motor

Effective, efficient aeration

No other positive draft Aerator is as maintenance-free as our Aerator. Reliability, convenience and economy are engineered into every Aerator. Common features of every induced draft Aerator include:

Aerator Operations

- Exceptionally high-quality induction blower, constructed of aluminum and stainless steel, is corrosion-resistant and maintenance-free. It mounts atop the Aerator housing, saving space.
- Aluminum is used to provide low maintenance and corrosion resistance for long life.
- Gravity distribution of water reduces long-term pumping costs and eliminates troublesome spray distribution nozzles.
- Special contour of round PVC slats supported on stainless steel reduces clogging. Slats can easily be removed for cleaning.
- Induced draft design is the most common. Forced draft is also available for specific applications.

The standard positive draft Aerator uses an induced draft design to minimize O&M costs.

Water is first distributed by gravity across the area of the Aerator by a distributor tray, which then disperses the water into droplets. As the droplets fall through a series of trays or media, they divide and regroup repeatedly, exposing more surfaces to the air.

A counter-current of air continuously sweeps upward through the water droplets, absorbing and carrying away released gases and supplying oxygen for oxidation.

The air is drawn through inlet ports at the base of the Aerator, is discharged through internal air stacks into the moisture separator, and expelled by a blower on top of the housing.



Partially Assembled Aerator



Round Forced Draft Aerator

AERATOR MATERIALS		
Component	Standard	Common Options
Housing	Aluminum	Stainless Steel
Distributor Tray	Aluminum	Stainless Steel
Media	PVC	Loose Fill
Blower	Induced Draft, Permanently Sealed	Forced Draft, Explosion-Proof
Design Shape	Square	Round

Quality is built into every aerator.

A review of our Aerators shows quality and added value. All seams in the housing are internally welded with a fillet the same size as the plates to be welded. A dye penetrant is put on each weld, assuring water tight construction.

Distributor Tray

The distributor tray assures dispersed water reaches every corner of the Aerator. Incoming water enters at atmospheric pressure and is released through a velocity breaker. Then, gravity target nozzles evenly distribute the water over the Aerator's cross section.

The aluminum distributor tray is corrosion-resistant. Aluminum air exhaust stacks in the tray provide uniform collection of the upward flow of air.

The bell mouthed entrances of the plastic distribution target nozzles

minimize clogging. Integral target distributors provide even water droplet distribution in the aeration zone.

Round EZ clean slats continually break up water droplets. The EZ clean slats can be individually removed for periodic cleaning, unlike mesh or redwood trays which require replacement.

These efficient, round PVC slats are designed to handle high loadings and minimize plugging. Slats are spaced vertically, either 2, 4, or 6 inches apart, depending upon performance requirements. These slats can easily be retrofitted to existing units.

Housing

The corrosion-resistant, all-aluminum housing is a chamber for the counter-current flow of water and air. Standard housings are

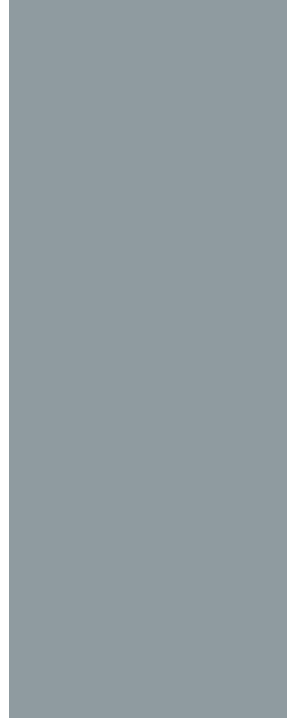
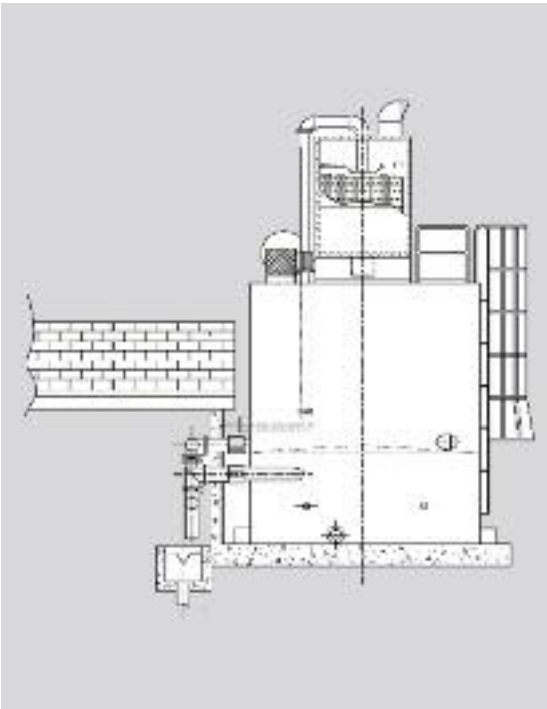
available for capacities ranging from 40 to 5,000 gpm. Larger custom sizes are also available.

A hinged and bolted removable side is furnished for internal access. All our Aerators have a media inspection port.

Inlet and exhaust air ducts are screened and baffled to prevent water loss or debris entrance. The moisture separator at the top provides three changes in air direction for minimal moisture carryover.

A collector pan normally is furnished as a base for the housing, or it may be built with an open bottom for mounting on a steel, aluminum or concrete retention tank.

The aluminum construction permits the Aerator to retain its like-new appearance for the life of the installation.



Aluminum Cascade Aerator



Atomerator with Pressure Filters

Combination Unit for Methane and Iron Removal

Blower Motor

An induced draft blower of exceptional quality virtually eliminates the need to access the only moving mechanical part of an Aerator.

It is designed to run maintenance-free for long, reliable service.

The housing is aluminum for complete corrosion resistance. The blades are cast aluminum and balanced for smooth operation. Sealed bearings and the motor shaft are wear-resistant stainless steel. An aluminum vent line between the motor frame and enclosure relieves condensation accumulation.

Every induced draft blower is factory tested to ensure quality performance. No other blower is as dependable, durable or maintenance-free.

Slats are cut to length and custom-fit to the housing. The blower is operated before it leaves the shop floor as a final quality check.

All Aerators are completely factory assembled and thoroughly inspected, ensuring proper fit-up, thus simplifying field installation.

For most applications, standard construction features are suitable. Certain applications may call for other materials. Consult Siemens for additional options.

Combination Units

Other integral, combination units provide aeration/degasification, chemical feed through a static mixer and then retention time for the chemical reaction to occur.

For information on a specific need, contact Siemens Water Technologies or your local sales representative for details on the complete line of engineered package units.

Pressure Aerators

The compact and economical Atomerator system was first introduced to the market in 1935, and its reliability is assured.

Compressed air is diffused into the pressurized water stream ahead of the pressure filter to oxidize ferrous iron. Excess air is released to the atmosphere at the top of filter.

The Atomerator system can eliminate double pumping in applications where the pH is above 6.9, and organic iron or dissolved gases are not a treatment problem.



Horizontal pressure filters



CONTRAFLO® clarifiers



Trident Trimite™ package water plants



Memcor® microfiltration systems

Put our experience to work.

Our design database includes thousands of Aerator installations. From this database a working model has been developed that helps determine the right size Aerator to achieve the required level of performance. A predictive model for stripping of gases or volatile organic compounds has been developed. We look forward to working with you on your next project. Please contact our local sales representative to have your application reviewed.

Coke Tray Aerators

Siemens coke tray natural draft Aerators are used to a limited extent for oxidation of iron and manganese. These units contribute to the reduction of odors and other dissolved gases, but are not as efficient as positive draft Aerators.

A distribution tray equipped with orifices evenly spreads the incoming water over the top of successive tiers of redwood slats, non-corrosive screens or coke. Splash skirts reduce water drift loss and potential icing.

A protective housing may be provided separately or as an integral part of the Aerator.

Cascade Aerators

Aluminum cascade Aerators are a cost-effective method of aerating. Corrosion-resistant construction and absence of moving parts provides for a maintenance-free installation. Typical uses include iron oxidation and wastewater aeration.

Water Treatment Products

If it's in the water, our engineered processes and equipment can take it out, economically and dependably. Our comprehensive line includes solutions to simple and complex water treatment and conditioning needs, all backed by working installations and years of experience.

- GFH™ arsenic removal systems
- ACTIFLOC™ packaged water systems
- CONTRAFLO® solids contact clarifiers
- SPIRACONET™ sludge blanket clarifiers
- Sludge Sucker™ sludge removal system
- Sludge thickeners
- Vertical and horizontal pressure filters
- CentROL® gravity filters
- AERALATER® packaged treatment
- Trident® packaged surface water treatment plants
- MULTIWASH® Filtration Process
- Gravity filtration equipment
- Memcor® CMF microfiltration system
- MULTICRETE II™ monolithic underdrain system
- MULTIBLOCK™ underdrain
- ESSD™ filter washtroughs and launder systems

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