



CONSERVE

ENHANCE

GROW

GAS TRANSFER

ADVANCING SUSTAINABLE AQUACULTURE



CARBON DIOXIDE STRIPPER

Carbon Dioxide Strippers are ideal for water reuse and recirculating aquaculture systems. PR Aqua offers seven sizes for flow rates up to 2,000 gpm. Excess carbon dioxide in culture water can be toxic to fish, and removal of excess carbon dioxide is critical. The Carbon Dioxide Stripper simultaneously removes carbon dioxide and aerates water.

Water enters the vessel from the top and cascades inside the column. A blower, sized specifically for the desired flow and carbon dioxide removal, forces fresh air across the water droplets. Carbon dioxide is driven off and oxygen is absorbed until the dissolved gases are close to saturation. Treated water drops into the header tank and is ready for distribution.



KEY ADVANTAGES

- Uses forced air to strip elevated carbon dioxide from culture water
- Reduces total gas pressure (TGP) when necessary
- Can use excess elevation from biofilter, which reduces pumping requirements
- Includes built-in blower redundancy

LOW HEAD OXYGENATORS



The Low Head Oxygenator (LHO) System super-saturates water with oxygen without using high pressure pumps or compressed oxygen typical of other oxygenation equipment. PR Aqua customizes LHOs to meet desired oxygenation results, footprint restrictions, and flow rate requirements.

Water with a low dissolved oxygen concentration is distributed across an orifice plate at the top of the LHO. Water droplets fall evenly into chambers where oxygen (and/or ozone) is injected at one side of the vessel and passes through each chamber in series. Oxygen is driven into the water while nitrogen is forced out. The oxygen depleted gas mixture escapes by bubbling out of the burp tube.

KEY ADVANTAGES

- Minimizes overall water consumption
- Installs easily into raceways, header tanks, or centralized treatment modules
- Efficiently distributes oxygen by using internal baffle design
- Requires minimal maintenance
- Uses gravity fed supply water to allow for low head requirement—no high pressure pumps
- Achieves up to 200% oxygen saturation with low pressure oxygen supply (less than 5 psi when using an oxygen generator)
- Offers durability—aluminum or stainless steel construction
- Uses either bulk or generated oxygen and can be used to dissolve ozone into water
- Allows for adjustment of burp tube depth to suit hydraulic loading rate



OXYTOWER™ GAS TREATMENT SYSTEM



PR Aqua's OxyTower Gas Treatment Systems for culture water deliver maximum value, performance, and security to aquaculture operators. One rugged, compact unit removes carbon dioxide and oxygenates water. The cost-effective design can be used in partial reuse systems, in recirculating aquaculture systems, or in flow-through systems.

Designed for optimal gas transfer performance, the OxyTower System delivers energy efficiency through precise pump sizing and low head oxygenation. Blowers are used to strip carbon dioxide. An optional alarm system is easily integrated.



Water enters the vessel from the top orifice plate and cascades down through a Carbon Dioxide Stripper. Blowers, sized specifically for desired flow rates and carbon dioxide removal, force fresh air across water droplets. This process drives off carbon dioxide and absorbs oxygen until the dissolved gases are close to saturation. Treated water flows into a stilling chamber and is delivered to the top of the LHO chamber where water is supersaturated with oxygen.

The OxyTower System, with integrated controls, can be installed into existing facilities and requires:

- ◆ Simple plumbing and electrical connections on site
- ◆ A pump, header tank, oxygen flow meter, and oxygen source



KEY ADVANTAGES

- ◆ Combines carbon dioxide removal and oxygenation into one space-saving, energy-efficient unit
- ◆ Lowers energy costs by reducing pumping requirements
- ◆ Reuses 50 to 70% of water within a tank system
- ◆ Increases fish production without increasing water consumption
- ◆ Improves fish health by optimizing water quality
- ◆ Installs easily into raceways or tank culture systems
- ◆ Allows conversion of a flow-through system into a partial reuse system to significantly reduce water usage
- ◆ Treats flows of 100 to 2,000 gpm—seven models available
- ◆ Provides durability—aluminum construction
- ◆ Offers improved security with built-in blower redundancy
- ◆ Integrates with optional components for complete reuse packages



VACUUM DEGASSERS



The PR Aqua Vacuum Degasser is an open bottom column designed to be installed in a header tank containing water to a required depth. Water enters the vessel through a sealed top and cascades down into the vessel. A vacuum pump or blower creates lower pressure within the vessel thereby releasing gases from the water into the atmosphere. Stripped water is discharged into a header tank and is ready for further treatment if required.

KEY ADVANTAGES

- Reduces TGP to below saturation
- Simplifies operation and maintenance
- Installs easily into a retrofit or into a new system
- Removes potentially harmful gases like hydrogen sulfide
- Offers rugged construction—stainless steel, aluminum, fiberglass or concrete with metal fittings
- Allows for addition of oxygen
- Includes sight tube for easy measurement of vacuum level within vessel

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Contact us for more information on these and other fine products



1631 Harold Road
Nanaimo, BC, V9X 1T4 Canada
Phone: 250-714-0141 • Fax: 250-714-0171
Toll Free - North America: 1-866-714-0141
info@praqua.com • www.praqua.com

WHAT'S IN YOUR WATER?