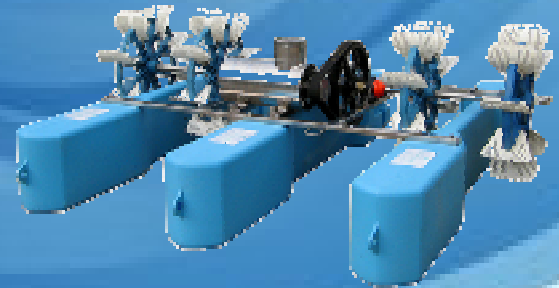
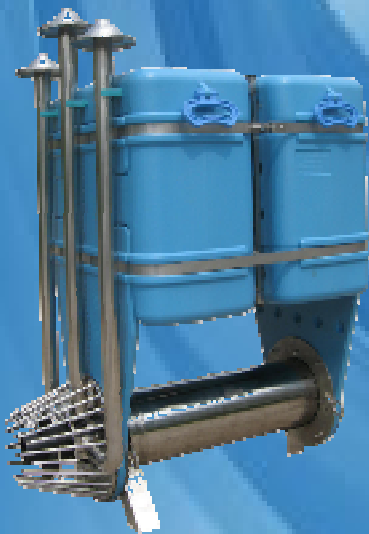
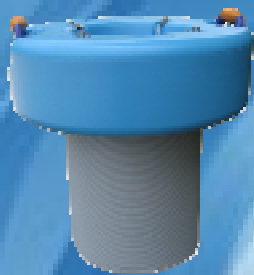


Ventus Aerator



VENTUS™

Submersible Jet Aerator

Ventus Jet Aerator is a submersible electric motor driven, propeller-type, directional, aspirating aerator. The aerator propellers induce a negative pressure zone behind the aerator head; the atmospheric air is sucked in and mixed with the jet stream. The continuous process of oxygen transferring from the air into the water carries out while provides strong directional mixing.

Ventus submersible jet aerators are available from 0.75kw to 11kw at 50 hertz. Larger size will be available upon request.

VENTUS™

Paddlewheel Aerator

Ventus Paddlewheel Aerator is an electric motor-driven, paddle-type, horizontal, surface aerator. The aerator paddles lift the surface water into air, encourages the dissolved oxygen transferring from the air into the water and provides horizontal mixing in the same time.

Ventus paddlewheel aerator is available at 1.1kw at 50 hertz.

What are the differences between conventional submersible jet aerator and "Ventus" jet aerator?

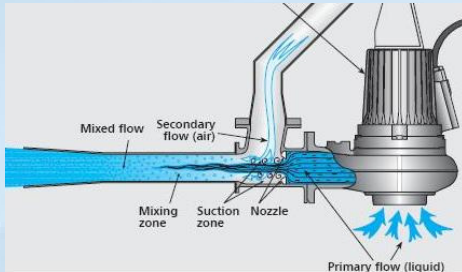


Figure 1 - Conventional Jet Aerator

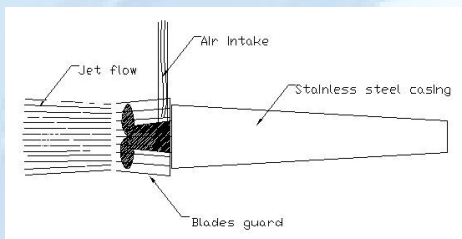


Figure 2 - "Ventus" Jet Aerator

A jet aerator has two main functions: 1. to transfer oxygen into the water 2. to push the water forward creating circulation.

Figure 1 shows a typical conventional jet aerator working diagram: the submersible pump sucks water in and pushes water out. During this process, air gets drawn into the water through a Venturi section. A section of straight pipe is also used to provide an air-water mixing zone. It is difficult to get a balance between achieving the thrusting jet stream strength and maximising the oxygen transfer efficiency. In order to force air into the water in a matter of seconds, a significant portion of the energy is lost to overcome the head losses through the Venturi section and the mixing pipe wall (friction). The thrusting strength gets further compromised when the air (bubbles) escapes at the end of the mixing pipe.

Figure 2 shows the "Ventus" submersible jet aerator working diagram. The unique aeration technique of the air suction prior to the jet flow is the main difference to conventional submersible jet aerators. The turbulent air-water jet flow that is caused by high speed rotating propellers creates a high oxygen transfer rate in the water as well as superior mixing effect. It guarantees the perfect mixing of water, air and sludge (activated sludge). Very little energy is wasted on head loss and heat loss. It produces the strong thrusting force together with maximising the oxygenation.

What are the differences between Bottom Air Diffusion Aeration and "Ventus" bottom aeration?



Figure 3 - Bottom Air Diffusion Setting

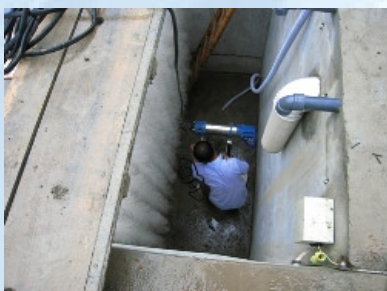


Figure 4 - "Ventus" aerator bottom aeration setting



Figure 5 - Bottom air Diffusion in operation



Figure 6 - "Ventus" aerator in operation

In simple words, they do the same job but, with the different technologies. There are also different financial and operational outcomes.

Figure 3 shows one type of bottom air diffusion system. Figure 4 shows a worker is installing a "Ventus" aerator on the floor of the activated sludge basin. Figure 5 and 6 show these two aeration systems in operation.

To compare these two systems, we list their differences in the following table.

	<i>Bottom Diffusion Aeration</i>	<i>"Ventus" Bottom Aeration</i>
Equipment	<ul style="list-style-type: none"> air compressor (blower) blower house air piping system bottom diffusers 	<ul style="list-style-type: none"> Ventus submersible jet aerator
Oxygen transfer theory	Through air bubble diffusion, transfer oxygen into water as air bubbles float to the surface	The jet aerator's aspirating aeration.
Sludge mixing/suspension theory	Relies on air bubbles to float to the surface to overturn the water.	Relies on jet stream to cause the vertical and horizontal circulation.
Treatment level	High	High
Capital investment	High	Low
Maintenance requirement	High	Low
Energy efficiency	Low (Head loss and heat loss)	High
Noise level	High (air blower)	Low

What are the differences between Vertical Propeller Aerator and "Ventus" Jet Aerator?



Figure 7 - Vertical propeller aerator



Figure 8 - "Ventus" double-head aerator

Both aerators are commonly used in aerated ponds which provide high rate aeration.

Figure 7 shows a typical setting of vertical propeller aerators in an aerated pond. Figure 8 shows a Ventus double-head jet aerator in an aerated pond.

To compare these two aerators, we list their differences in the following table.

	<i>Vertical Propeller Aerator</i>	<i>"Ventus" Double-head Aerator</i>
Aeration theory	Water lifted into air, oxygen is transferred between air-to-water interface.	Jet aerator's aspirating aeration.
Sludge mixing	Vertical	Vertical and horizontal
Parts Combination	motor, shaft, gearbox, turbine, floats, etc.	100% stainless submersible motor, nylon propellers, PE float.
Weight	Heavy set	Light set
Maintenance requirement	High	Low

"Ventus" Aerator Product Range

Jet Aerator



Paddlewheel Aerator



Fountain Aerator



Landscape Aerator



Full details of Ventus Aerator can be found in www.infracon.co.nz/ventus.htm

Infracon Environmental

Infracon Ltd is a large civil contracting company operating through Hawke's Bay and the Tararua regions. We are a 100% locally owned company.

Infracon is a diverse organisation with a team of 300 across our 5 operational divisions. We offer a broad range of services and products in roading, civil construction, facilities management, environmental services, land development and aggregates supply.

Infracon Environmental is a division of Infracon Ltd. It has been formed to provide better environmental outcomes for local authorities and private businesses in the areas of wastewater and drinking water.

Our services will cover sourcing, design and build in civil engineering works that we have our expertise in.

<http://www.infracon.co.nz/environmental.htm>

We look forward to discussing with you how our products and services can assist you in your finding the best solution to your problems.

Our Current Services Area Include:

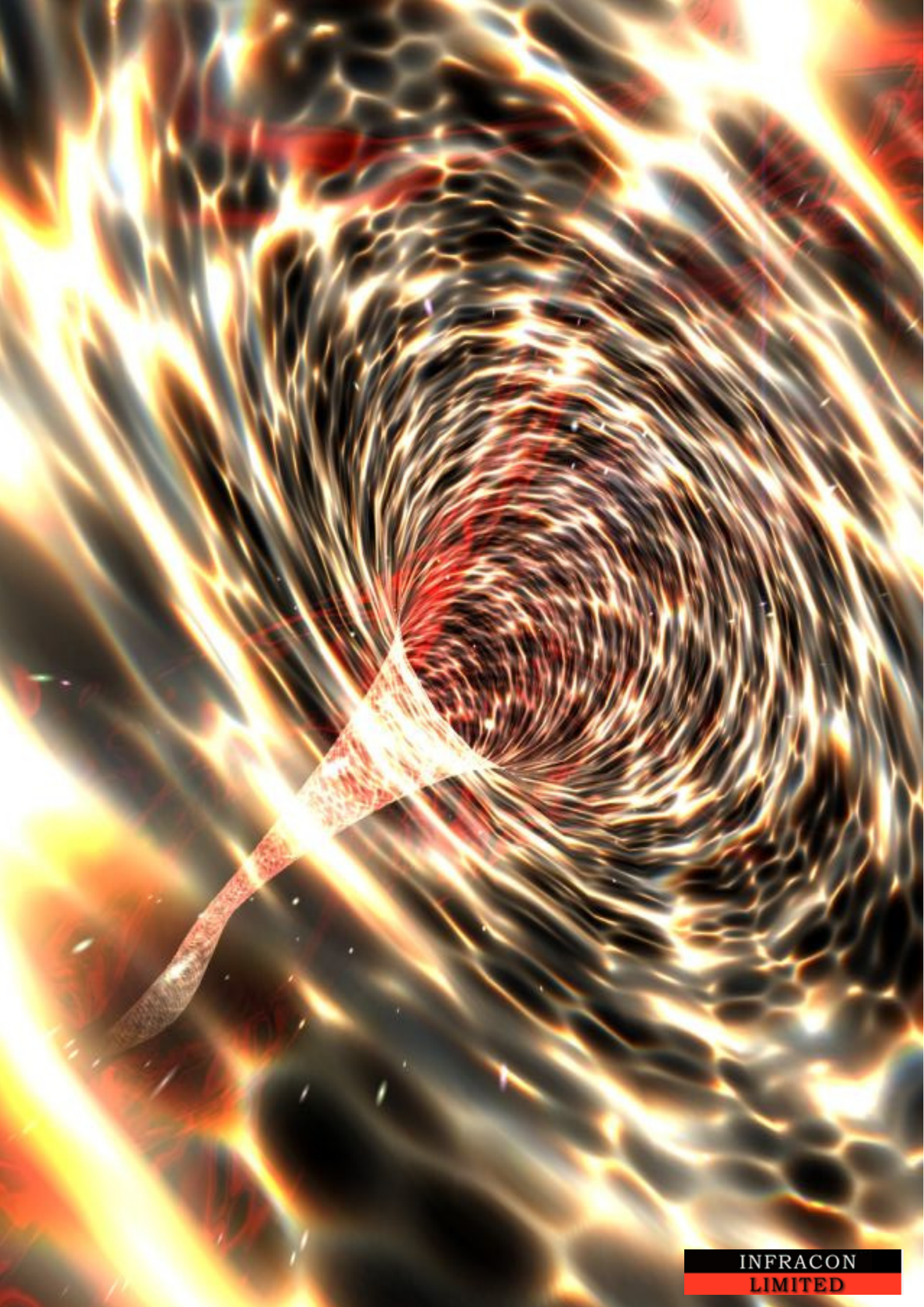
- Water Odour Control/Disinfection
- Water Manganese/Iron Removal
- Wastewater Aeration
- Water Filtration

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