



VENTOXAL technology is a submergible technology designed for deep basins (>5m). The different size units allow for sizing small oxygen demands to large oxygen demands.

## The Complete System

A complete package depending on customer requirements can include:

- Optimal number and design of VENTOXAL or other oxygen transfer device(s)
- Oxygen Probe(s)
- Electrical Cabinet which contains the power supply and control system
- Gas Control Cabinet to control oxygen flow rate
- Liquid Oxygen Tank
- Vaporiser

The oxygen flow rate can be adjusted so that the concentration of dissolved oxygen in the biological basin is kept between 2 and 4 ppm.

## VENTOXAL Models

- V100
- V200
- V300
- V600

The numbers represent the pump flow capacity in m<sup>3</sup>/hr. One V400 can dissolve up to 200 kg/hr oxygen under 10 metres of water.

## Low Maintenance

VENTOXAL is a simple, easily installed, compact device. A conventional centrifugal pump is the only part requiring maintenance. Each device is an individual unit with a pump. This makes it easy to remove from the tank without stopping other units. To further facilitate maintenance, the pump can be mounted externally with the hydroejectors inside the tank.

### VENTOXAL vs. Other Aeration Systems

Aerator type	Oxygen Transfer Efficiency (kg/kWh)
Fine bubble	1.15
Submerged mechanical	0.9
Jet aerator	0.8
Coarse bubble	0.65
Surface aerator	0.6
<b>VENTOXAL</b>	<b>1.9 to 2.5</b>



# ASPAL VENTOXAL™



Oxygen can be added by several gas/liquid transfer devices including VENTOXAL.

## Process Implementation

The VENTOXAL device is generally immersed to reduce installation costs but can be mounted on a bypass line off the biological tank. It consists of a submersible pump, a venturi-type injector and a series of hydroejectors. The mixed liquid is drawn by a pump and mixed with the oxygen through a venturi. The super-saturated oxygen/liquid mix is then re-injected into the biological basin, at high velocity, through a set of hydroejectors.

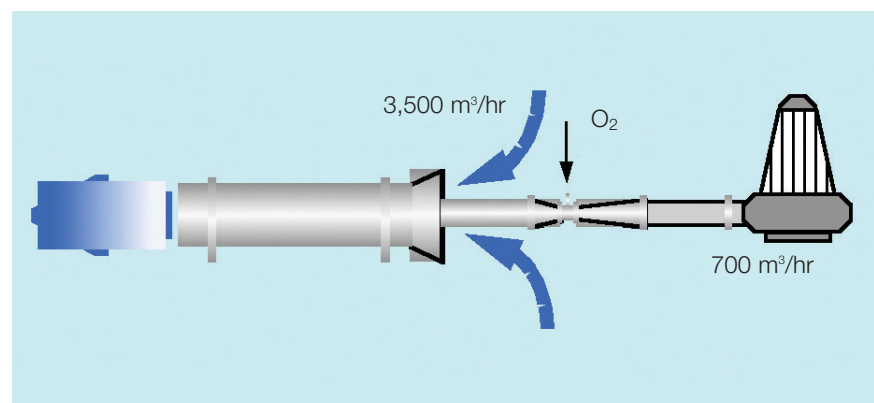
The hydroejectors recover the kinetic energy, producing a flow of mixed liquid equivalent to five times the pump flow capacity. This characteristic of the VENTOXAL enhances the oxygen dissolution resulting in high oxygen transfer efficiencies.

Oxygen transfer efficiencies, oxygen transferred per unit of energy consumed (kg/kWh) for various aeration systems are listed on the previous page. VENTOXAL efficiencies can be twice that of fine bubble diffusers or four times that of surface aerators.

## About Air Liquide

Air Liquide is one of the world's leading producer of industrial gases with operation in more than 70 countries. Our innovative solutions improve our customers' industrial performances, while helping to protect the environment. To learn more about oxygen enrichment and the TURBOXAL and VENTOXAL units, please visit our website at

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