

SOLVOX[®] OxyStream. Low-pressure oxygen dissolver.



Typical installation of SOLVOX[®] OxyStream in a fish tank.

Introduction Recently, there has been a trend of moving aquaculture production from sea cages to land-based sites. On-growing of salmon smolts and production of full-size fish in large tanks on land, leads to significantly improved productivity and excellent product quality. Improved oxygenation of sea water and optimal tank hydrodynamics can be achieved by BOC's new SOLVOX[®] OxyStream system.

Description SOLVOX[®] OxyStream is a low-pressure oxygenation system for sea water, brackish water and fresh water tanks. The system is a patented all-in-one product which oxygenates the water and evenly distributes it using an adjustable flow regime in the fish tank. SOLVOX[®] OxyStream includes a water flow indicator which provides the user with an overview of the water flow into each tank.

The microbubbles created by SOLVOX[®] OxyStream reduce the concentration of dissolved nitrogen and the total gas pressure of the water. Due to this beneficial effect, external degassing units have become obsolete in many cases. SOLVOX[®] OxyStream achieves maximum effect beginning at about 15 ‰ salinity and requires a pressure of only 0.05–0.2 barg to oxygenate the water, strip nitrogen and create optimal tank hydrodynamics for fish production. The low pressure requirement makes the system very energy-efficient.

In fresh water installations, SOLVOX[®] OxyStream, combined with SOLVOX[®] C or comparable pressure dissolvers, can oxygenate the water to a greater level and ensure that even very high oxygen demands can be consistently satisfied.

Installation SOLVOX[®] OxyStream is installed by connecting it to the water inlet pipe and fixing the unit to the bottom of the tank. A retrofit of SOLVOX[®] OxyStream to existing tanks is therefore very simple and cost effective.

SOLVOX[®] OxyStream is designed to achieve stable operation and requires minimum maintenance. It is also simple to remove, e.g. for disinfection. The direction of the water outlet jets can easily be adjusted to tune tank hydrodynamics to optimal operation as well as improve fish size, stock density, and water retention time. A SOLVOX[®] OxyStream installation will be adapted to each individual tank. For large fish tanks with high water flow rates, multiple SOLVOX[®] OxyStream units can be installed. SOLVOX[®] OxyStream is available for a wide range of tank sizes from 6 to 20 m in diameter, and volumes from 40 to 1,500 m³. Larger units are currently under development.



SOLVOX® OxyStream in operation combined with SOLVOX® F oxygen control cabinet.

It is recommended that SOLVOX® OxyStream installations are supplemented with SOLVOX® F oxygen control cabinets for optimal operation and oxygenation. SOLVOX® F can be connected to the customer's existing automatic oxygen management system.

- Benefits**
- High oxygenation efficiency
 - Low pressure requirement
 - Low power consumption
 - Optimal tank hydrodynamics
 - Reduced nitrogen saturation
 - Easy to install
 - Low maintenance

Technical data*

Tank diameter [m]	Water flow rate [litres/min]	Number of SOLVOX® OxyStream units per tank	Outer diameter SOLVOX® OxyStream [mm]	Connection pipe diameter [mm]	Oxygen capacity per SOLVOX® OxyStream unit [kg/h]
6	700	1	200	140	1.1
8	1,700	1	315	200	2.5
10	4,000	1	450	315	6.0
12	6,600	1	500	355	9.5
15	12,000	2	500	355	8.5
20	24,000	2	800	500	17.5

* Indicative values

Contact Would you like to know more about our SOLVOX® OxyStream and other gas application technologies for aquaculture? Experts from BOC are at your service.

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