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AQUA-ICE 2018

**Sea Cage Oxygenation
SOLVOX[®] DropIn**

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SOLVOX® DropIn

Advanced oxygenation in sea cages

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- Sea cages have been operated without oxygenation for decades
- Sea cages are increasingly facing:
 - Sea lice treatment
 - Sea lice prevention
 - Algae bloom
 - Low oxygen levels



SOLVOX® DropIn

Advanced oxygenation in sea cages

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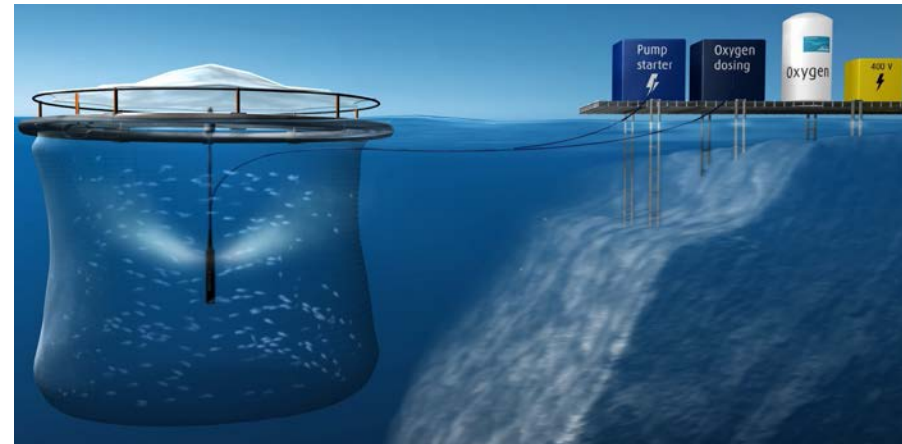
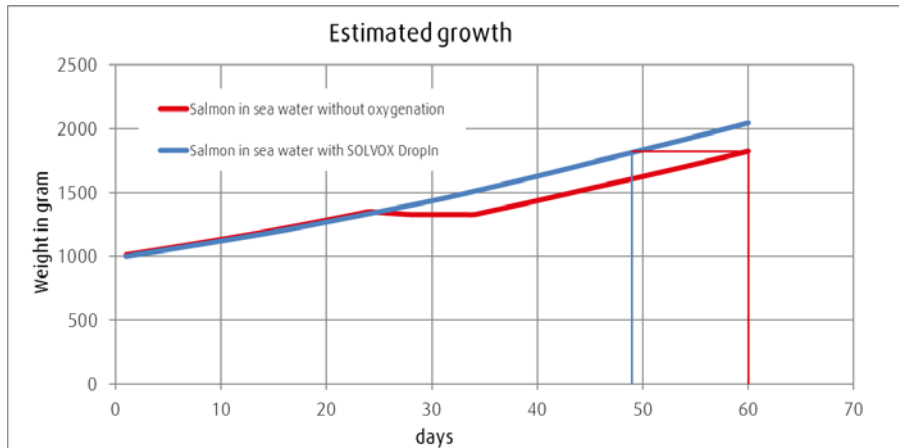
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Without oxygenation

- Reduce or stop feeding
- Accept no growth
- Wait for better environmental conditions

With oxygenation

- Prepare oxygenation installation
 - Power supply
 - Oxygen tank
 - Automatic oxygen control
 - Connection from shore to cage
 - Gas dissolving device



SOLVOX® DropIn, The Movie.

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SOLVOX® Dropln Twin Kit



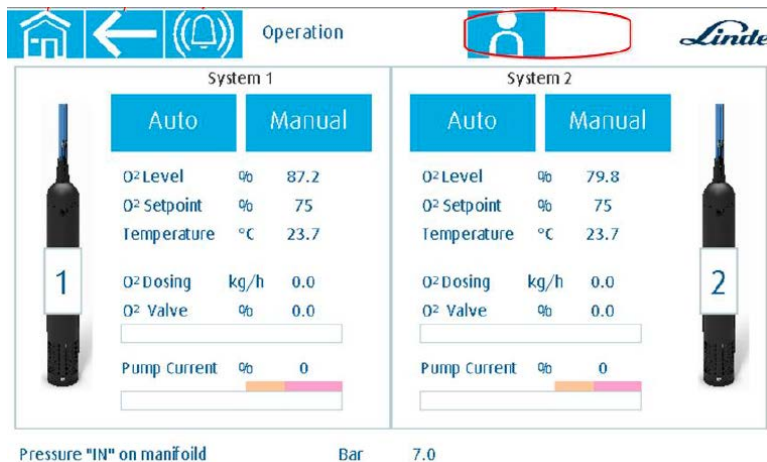
SOLVOX® DropIn

Advanced Control System

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- Gas dosing with modular valves instead of on/off valves
- Gas flow measurement via differential pressure
- Data logging (oxygen dosing, oxygen concentration,...)
- Wifi connection
- 3G connection
- Remote operation possible

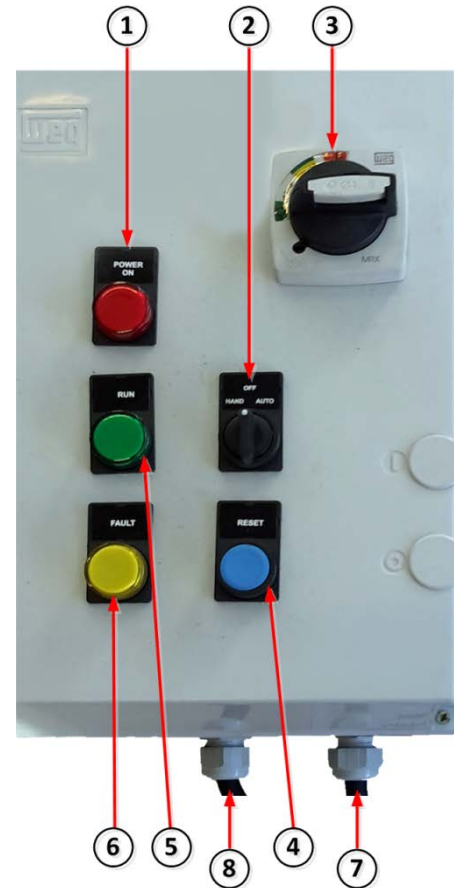
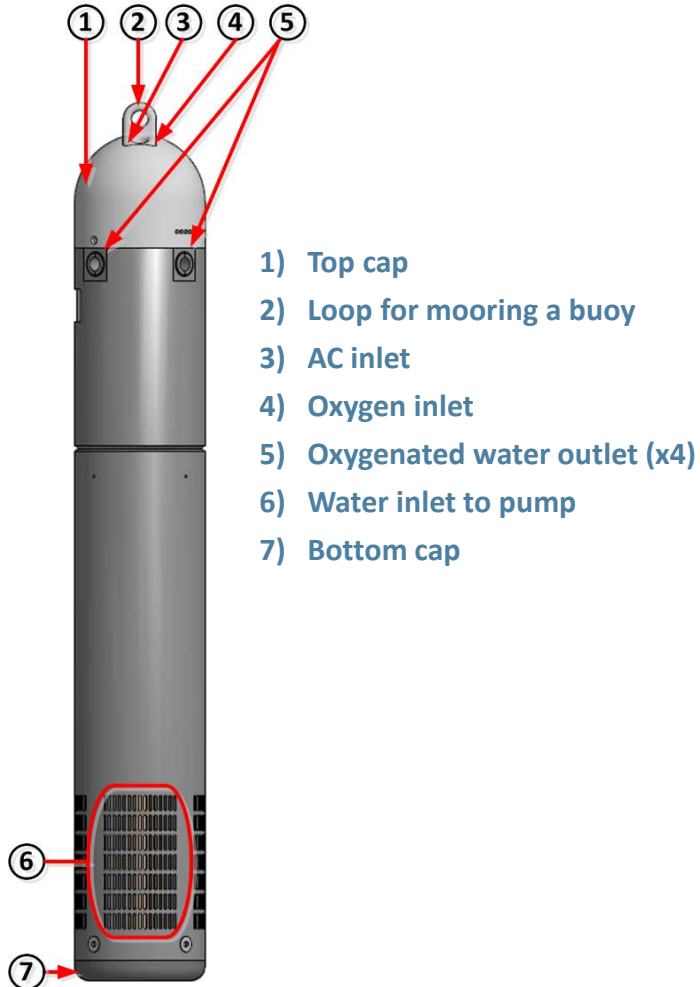


SOLVOX® DropIn

Single Basic Solution

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SOLVOX® DropIn

Supplement oxygen anywhere, anytime, quick startup

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Components

- “Diving units” (DropIn`s)
- Handling device (Twin kit)

Value proposition

- Up to 30% less oxygen consumption compared to perforated hose systems
- Increasing your fish farm productivity through
 - Improved food conversion ratio
 - Minimized non feeding times (→better growth)
 - Better fish health
 - Lower mortality rates
- Safe
- Quick
- More flexible
- High reliability
- Low maintenance
- Low Capex investment through rental

DropIn unit



Handling device / Twin kit



Marine Harvest Norway, Sea-Lice Treatment SOLVOX® DropIn Twin Kit

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Source: Linde T&I AT F&B AC team analysis 2016.

Marine Harvest Norway

SOLVOX® DropIn Permanent Oxygenation, Sea Cages with Skirts (Sea Lice Prevention)

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Source: Linde T&I AT F&B AC team analysis 2016.

Wellboat- Frøy Merlin- Sea-Lice Treatment SOLVOX® DropIn Twin Kit

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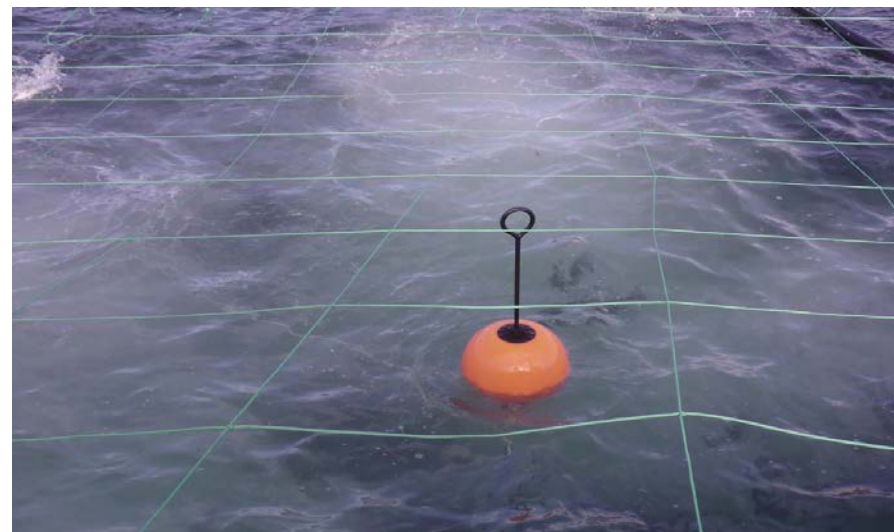
Source: Linde T&I AT F&B AC team analysis 2016.

Huon Aquaculture, Tasmania

SOLVOX® DropIn

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Source: Linde T&I AT F&B AC team analysis 2016.

Sigerfjord, Norway
Arctic Char, Brackish Water
SOLVOX® DropIn

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Greece

SOLVOX® DropIn, Customer Demo

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Linde Aquaculture Innovation Center

Ålesund, Norway

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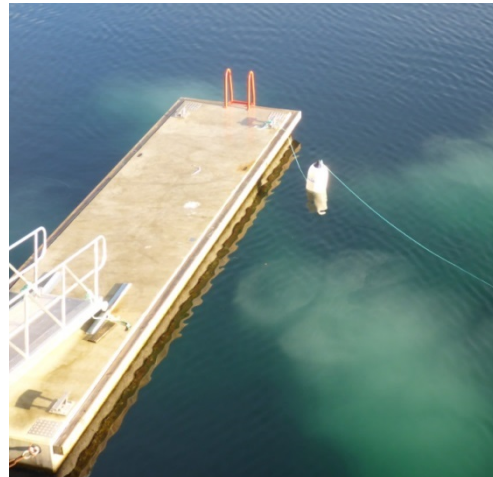
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The test area contains:

- Test hall
- Circular tanks
- Technical rooms
- Workshop
- Floating dock
- Offices

Activities:

- Pre studies
- Performance tests
- Equipment development
- Research cooperation
- Customer trainings
- Co-development with customers



Thanks for your attention!