oxywise.com

Efficient Oxygen Generation Solutions for Aquaculture

Maximize Fish Growth & Profits
with On-Site Oxygen Generation

How Oxygen Impacts Fish Growth

Maintaining optimal dissolved oxygen (DO) levels is crucial for the health and productivity of aquaculture operations. Adequate oxygen supports fish respiration and removal of toxins, enhances feed conversion efficiency, and promotes robust growth. Conversely, low DO concentrations can lead to stress, reduced appetite, increased susceptibility to disease, and ultimately, mortality.

Key Benefits of Optimal Oxygenation:

- **Enhanced Growth Rates:** Increased oxygenation accelerates metabolism, leading to faster growth and shorter production cycles.
- **Improved Feed Efficiency:** Fish utilize feed more effectively in oxygen-rich environments, reducing feed costs.
- **Higher Stocking Densities:** Sufficient oxygen levels allow for increased stocking densities without compromising fish health, maximizing yield per unit area.
- **Disease Resistance:** Well-oxygenated water strengthens fish immune systems, decreasing the likelihood of disease outbreaks.

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Oxygenation Solutions for Aquaculture

Implementing efficient oxygenation systems is essential for maintaining optimal DO levels. Advanced technologies, such as oxygen generators, provide a continuous and reliable oxygen supply, ensuring a stable environment for fish.

Why Choose Oxywise Oxygen Generators:

- **On-Site Oxygen Production:** Eliminates the need for oxygen deliveries, reducing operational costs.
- **Reliable and Safe:** Designed for uninterrupted operation, ensuring a consistent oxygen supply.
- **Fully Automated:** Equipped with advanced control systems for ease of use and monitoring.
- **Extensive Experience in Aquaculture:** Oxywise is a trusted provider, present in the aquaculture industry for several decades. Years of experience enable our team to work closely with customers and make sure that the delivered solution is well tailored to customer needs.

Investing in Oxywise Oxygen generators, enhances overall efficiency and profitability of aquaculture operations, by ensuring an on-demand immediate supply of purified oxygen.

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Oxygen Generators Overview

Oxywise provides end users, distributors, and compressed air OEMs with top-quality oxygen generation systems available in a vast array of configurations – from small standard units to tailor made systems. We collaborate closely with our customers to provide them with on-site oxygen generation solutions perfectly suited to their business needs.

Oxygen generators produce gaseous oxygen from compressed air on site and offer a cost-effective, reliable and safe alternative to traditional oxygen gas supplies such as cylinders or cryogenic liquid. Oxywise design is made for round the clock 24/7 operation. Each generator is equipped with automatic start&stop function, enabling the generator to start and stop automatically according to the consumption.

Our unique PSA Oxygen generator consists of two columns filled with a molecular sieve. In order to secure a steady flow of each generator is built from two columns; one is active while the other is inactive. At the end of each columns cycle, they switch roles providing continuous trouble-free and efficient operation.

During operation, pre-treated compressed air enters the active column and flows up through the molecular sieve. Unwanted gases are adsorbed while the selected gas passes through. The active column then becomes fully pressurized. When this pressure is released, the column becomes inactive and completely regenerates during the depressurization.

Oxywise products are renowned on the market for providing users with several key features and benefits:

Certified
ISO-9001, ISO-13485, CE, MDD

Optimized Cost of Ownership
Standard ROI is less than 2 years

User-friendly solutions

Space saving
Compared to liquid source or cylinders

Application support

Energy-efficiency

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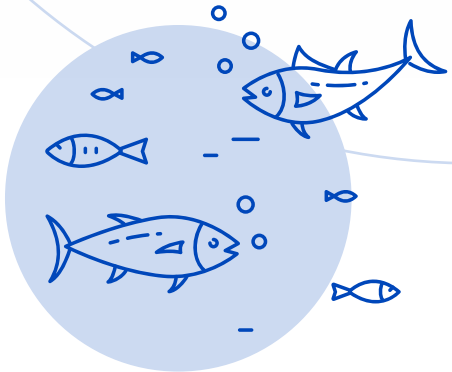
Efficient Oxygenation for Maximum Fish Growth

How It Works – Step-by-Step Process:

1	**Compressed Air Enters the System**	The air compressor, paired with dryers and filtration, supplies clean, dry air
2	**Oxygen is Separated from Nitrogen**	The PSA (Pressure Swing Adsorption) process filters out nitrogen
3	**Oxygen is Collected & Stored**	The buffer tank ensures a steady supply of high-purity oxygen
4	**Oxygen is Delivered to Fish Tanks**	Ensures optimal dissolved oxygen levels for fish health and growth
5	**Optional Storage & High-Pressure Supply**	Oxygen can be compressed and stored in cylinders for backup use



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Efficient Oxygenation for Maximum Fish Growth

1 Oxygen Distribution Panels – Precision Oxygen Control

Automatically Adjusts Oxygen Supply	→	Regulates flow based on real-time oxygen demand
Prevents Overuse & Waste	→	Ensures fish receive optimal oxygen levels without excess consumption
Manual Override for Power Failures	→	Keeps operations running smoothly even in emergencies
Fully Customizable	→	Designed to match individual farm requirements

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Efficient Oxygenation for Maximum Fish Growth

2 Oxywise Oxygen Cones – High-Efficiency Oxygen Dissolution

Up to 95% Oxygen Transfer Efficiency	Maximizes oxygen absorption, minimizing waste
Compact & Easy to Install	Simple integration into existing systems
Lower Energy Costs	Requires less power than inefficient aeration systems
Supports Higher Stocking Densities	More oxygen = healthier, faster-growing fish

Feature	Oxywise Oxygen Cones	Traditional Aeration
Oxygen Transfer Efficiency	Up to 95%	30-50%
Energy Consumption	Low	High
Oxygen Waste	Minimal	Significant Loss
Ease of Installation	Plug & Play	Complex Setup
Fish Growth Impact	Faster Growth, Better Health	Slower Growth, Higher Mortality Risk

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Product specifications

Aquaculture Oxygen Generator

Model		Flow @90%		Flow @93%		Flow @95%	
		kg/h	m³/h	kg/h	m³/h	kg/h	m³/h
Standard	O2	1.6	1.2	1.5	1.1	1.4	1.1
	O4	3.4	2.6	3.2	2.4	2.9	2.2
	O6	4.2	3.2	3.9	2.9	3.5	2.6
	O9	5.8	4.4	5.4	4.1	4.9	3.7
	O12	8.2	6.2	7.7	5.8	6.9	5.2
	O15	11.2	8.4	10.5	7.9	9.5	7.1
SEP	O20	13.5	10.2	12.6	9.5	11.4	8.6
	O20+	15.2	11.4	14.2	10.7	12.8	9.6
	O27	19.4	14.6	18.1	13.6	16.3	12.3
	O27+	20.6	15.5	19.3	14.5	17.4	13.1
	O35	24.8	18.6	23.2	17.4	20.9	15.7
	O35+	27	20.3	25.2	19	22.7	17.1
	O50	31	23.3	29	21.8	26.1	19.6
	O50+	38.5	28.9	36	27.1	32.4	24.4
	O65	42.7	32.1	39.9	30	35.9	27
	O65+	49.6	37.3	46.4	34.9	41.8	31.4
	O80	54.3	40.8	50.8	38.2	45.7	34.4
	O80+	61.3	46.1	57.3	43.1	51.5	38.7
	O100	69.8	52.5	65.3	49.1	58.7	44.1
	O100+	76	57.1	71	53.4	63.9	48
	O125	85.3	64.1	79.8	60	71.8	54
	O125+	93.1	70	87	65.4	78.3	58.9
	O150	105.5	79.3	98.6	74.1	88.7	66.7
	O150+	114	85.7	106.5	80.1	95.9	72.1

Performance based on 7 bar inlet pressure.
Unit inlet air quality 1.4.1. according to ISO 8573-1:2010.

Oxyport

Model	Purity (%)	Flow (SLPM)
Oxyport	94	10

Oxygen Filling Station

Model	Purity (%)	Capacity (m³/h)	Max. outlet pressure (bar)	Cylinders filled (in 24h)	Dimensions (LxWxH) m	App. weight (kg)
O4FS	95	3.4	152	13.6	1.0 x 5.0 x 1.9	600
O8FS	95	6.8	152	27.2	1.5 x7.5 x 2.1	2200
O18FS	90/93/95	19	172	76	1.5 x 7.5 x 2.4	2600
O21FS	90/93/95	21	207	84	1.7 x 8.7 x 2.5	4000
O38FS	90/93/95	38	172	152	2.0 x 10.5 x 2.5	6000
O42FS	90/93/95	42	207	168	2.2 x 10.5 x 2.6	6300

6m³ volume cylinder considered.
Stated models are delivered in a stand-alone configuration. For skid-mounted and/or containerized units, please, contact us.
Larger capacities also available.
Unit inlet air quality 1.4.1. according to ISO 8573-1:2010.
Capacity at 95%.

Containerized Oxygen Plant

Model	Filling capacity (m3/h)	Cylinders filled (in 24h)	End pressure (bar)	Power (kW)	Container size (ft)	Dimensions (LxWxH) m	Weight (kg)
MOFS4	3.4	13.6	152	7	9	2.9 x 2.2 x 2.3	2100
MOFS8	6.8	27.2	152	12	20	6.1 x 2.5 x 2.6	4300
MOFS18	19	76	172	25	20	6.1 x 2.5 x 2.6	5300
MOFS21	21	84	207	38	20 (HC)	6.1 x 2.5 x 2.9	6000
MOFS38	38	152	172	50	40 (HC)	12 x 2.5 x 2.9	9200

6m³ volume cylinder considered.
Other options available on request.
Unit inlet air quality 1.4.1. according to ISO 8573-1:2010.

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Dynamic Load Protection: Engineered for 24/7 Performance

Most PSA generators operate in cycles, with pressure tanks fluctuating between **0 and 10 bar** every few minutes. **Standard pressure vessels wear out quickly** under these conditions, leading to **frequent inspections, expensive repairs, and unexpected downtime.** Oxywise oxygen generators are engineered for durability and efficiency in demanding aquaculture environments. With dynamic load protection and an advanced molecular sieve safeguard, our systems minimize downtime, reduce maintenance costs, and ensure long-term reliability.

Oxywise pressure vessels last 2M+ cycles.

Standard vessels?
Only a fraction of that!

That's **years of savings** on maintenance and downtime costs.

How Oxywise Solves This:

Standard Pressure Vessels	Oxywise Dynamic Load Vessels
Designed for static loads; not suited for frequent pressure changes.	Built for dynamic loads; handles rapid pressure cycles easily.
Fatigue-prone under cyclic loading; may fail prematurely.	Lasts 2M+ cycles before requiring an inspection.
Frequent inspections and maintenance required.	Longer inspection intervals; lower maintenance costs.
Higher risk of downtime due to structural fatigue.	Continuous operation with minimal downtime.
Lower upfront cost, but high long-term expenses.	Higher initial cost, but long-term savings on maintenance.

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Molecular Sieve Protection: Maximum Efficiency, Minimal Maintenance

The **Molecular Sieve** inside the PSA generator is what **separates oxygen from nitrogen.** If it gets contaminated with moisture, the entire system can **malfunction or degrade quickly,** leading to **expensive sieve replacements.**

How Oxywise Solves This:

Dew Point Sensor

Detects moisture before it can cause damage.

Automatic Shutdown Protection

If abnormal moisture levels are detected, the system pauses operation to prevent contamination.

Saves Money on Repairs

No unnecessary molecular sieve replacements **= big cost savings.**

Oxywise prevents that loss with smart monitoring.

Without moisture protection, a damaged sieve can cost **thousands** to replace.

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Built-in Purity Controller

Built-in oxygen purity controllers on Oxywise generators keep your DO program honest. They verify oxygen purity in real time at the outlet, auto-divert anything off-spec, alarm to your PLC/SCADA, and trigger backup changeover. Net result: steadier dissolved oxygen, calmer fish, predictable growth—and fewer 2 a.m. tank-side heroics.

Stable DO = stable growth	Consistent oxygen purity prevents sudden DO dips that spike stress, mortality, and FCR	**Fewer manual checks**	Continuous monitoring and auto-logging reduce clipboard time
Protection at peak load	Ensures DO during heat waves, grading, and harvest when biomass and demand jump.	**Planned service, not panic**	Trend data flags sieve wear and compressor drift so you schedule maintenance between crops
Less waste, lower cost	Only on-spec oxygen reaches cones/LHOs/diffusers; diluted gas is diverted, not blown into the water	**Audit-ready records**	Purity logs support SOPs, certifications, and insurer/investor due diligence

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Intelligent Control & Durable Stainless Steel Piping

Managing oxygen levels shouldn't be complicated. **Oxywise's SIEMENS-powered control system** ensures **fully automated, easy-to-use,** and **precise oxygen management** for your aquaculture operations. Combined with **corrosion-resistant stainless steel piping,** our system delivers **long-lasting reliability with minimal maintenance.**

Intelligent SIEMENS Control System: Precision at Your Fingertips

User-Friendly Touchscreen	Intuitive interface for real-time monitoring
Automated Oxygen Management	Adjusts supply to match demand, optimising efficiency
Remote Monitoring & Alerts	Get SMS notifications for system performance & maintenance needs
Reliable Global Support	SIEMENS technology ensures global support base

Stainless Steel Piping: Engineered for Durability

Corrosion-Resistant	Ensures clean oxygen delivery & long-term performance
Low Maintenance	No rust or leaks, reducing operational downtime
Built for Harsh Environments	Performs reliably in humid and demanding aquaculture settings

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Service support

Maintain Peak Performance with OXYWISE Aftermarket Solutions

Proper maintenance of your nitrogen and oxygen generators is essential to unlocking maximum performance and efficiency. With regular upkeep, you can prevent costly downtime and unexpected breakdowns, ensuring your operations run smoothly and reliably. Routine maintenance not only extends the lifespan of your equipment but also boosts its overall performance, saving you money and enhancing productivity. Invest in maintenance today to safeguard your investment and keep your systems operating at peak efficiency. Oxywise offers and array of services to keep your gas generator running smoothly at all times:

- **Scheduled Inspections:** Conducting scheduled inspections to check all components of the generator for wear and tear.
- **Annual maintenance:** Regularly service of the equipment with original genuine annual service kits, to ensure clean and efficient gas production.
- **Genuine Spare Parts:** We provide genuine OXYWISE annual maintenance service kits and spare parts. Our kits are designed for 1 to 10-year maintenance cycles.
- **Calibration:** Periodically calibrating sensors and other related devices to maintain the purity levels and accuracy.
- **Component Testing:** Testing major components such as compressors, dryers, and sieves to ensure they are functioning correctly.

Service Kits and Components

- **1 to 10-year** service kits
- **Purity sensor** components
- **Main controller** components

Service Centres:

- **OXYWISE has a robust distribution and service network** around the world.
- **Our state-of-the-art Service and Repair Centre,** located in Slovakia, with highly educated engineers and technicians.

By adhering to a comprehensive maintenance schedule, you can significantly enhance the efficiency, reliability, and longevity of your nitrogen and oxygen generators.

For further details, information, and support, please visit our website www.oxywise.com, or contact your local OXYWISE distributor.

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Oxywise specializes in developing and producing PSA Oxygen and Nitrogen systems, leveraging extensive engineering experience.

Our product range includes dosing systems, filling ramps, and gas distribution systems, with installations available in ISO certified shipping containers tailored to customer specifications. We are committed to delivering effective, reliable, and affordable solutions that meet our customers' needs. Our goal is to continuously improve the quality of our products and services, focusing on installation and maintenance. Oxywise is your dependable partner in the industrial gases sector, driven by qualified staff, responsible management, and a customer-oriented approach. Contact us today to discuss how we can help you improve your operations and grow your business.

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