



# Oxygen and Nitrogen On-site Solutions



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# Oxymat at a Glance

Oxymat is a Denmark based company specialized in designing and manufacturing on-site Oxygen and Nitrogen solutions, using Pressure Swing Adsorption (PSA) Technology. We have been designing, engineering and manufacturing Oxygen generator systems since 1978 and nitrogen systems since 2001. We possess first hand knowledge of the market, development, demands and possibilities the PSA technology holds. It is our mission to be your preferred innovative, dynamic and environmentally responsible supplier of on-site oxygen and nitrogen solutions worldwide.

Our team of more than 80 skilled and dedicated employees is based in 3 different locations:

- Denmark: Administration, R&D, Sales and Service
- Slovakia: Administration, Production, Project management, Sales and Service
- China: Administration, Sales and Service

With more than 20 engineers (project managers, 3D CAD designers, automation engineers and experienced sales engineers) making sure we offer the right solution for any demand.

Through an ever ongoing process we are always focused on developing Oxymat to be cost-effective and ahead of the competition in terms of quality, performance and price. This strategy has made it possible to grow to the size and position Oxymat has in the market today. Our 2015 turnover was 20,1 mil. € and our product range is the most energy efficient in the market and even at a competitive price.

Our team of specialists will always be able to serve any demand. From our extensive standard industrial or marine programme to highly specialized turnkey projects, Oxymat will provide the quality solution. We offer a wide range of standardized control systems, and remote access and offer to tailor make automation solutions according to your requirement.

It is our priority to always deliver high quality products and services. Oxymat holds all relevant approvals for serving the numerous applications we supply.

- ISO 9001
- ISO 13485
- ISO 14001
- ISO 18001 (OHSAS)
- PED 97/23/EC Module B+D
- MDD 93/42/EEC (Medical Device Directive)

Marine Class societies - we can deliver according to the rules of:

- American Bureau of shipping
- Bureau Veritas
- Det Norske Veritas
- Germanischer Lloyd
- Lloyd's Register
- Nippon Kaiji Kyokai
- RINA

# Bringing Nitrogen & Oxygen Generator Systems to Your Business

## **Why Oxymat PSA generators are the wise choice?**

At Oxymat, we only see challenges - not problems! No matter your need or application we can provide state-of-the-art design to meet your requirements. Our wide range of standard generator systems supplies:

- Oxygen from 0,6 to 2000 m<sup>3</sup>/h purities up to 95% (60TPD)
- Nitrogen from 0,3 to 10000 m<sup>3</sup>/h with purities up to 99,9999% (300TPD)

Unique Oxymat design features include:

- High performance top quality solutions
- Low energy consumption (from 0,2kW/m<sup>3</sup> Nitrogen and from 1,0 kW/m<sup>3</sup> Oxygen)
- Low CO<sub>2</sub> emission
- Heavy duty construction designed for rough conditions and industrial use
- High quality & durable components
- 3D design
- Optional container or Frame-built design
- Design and customization, to meet any specification
- Plug and play installation
- High quality Touch Screen Control Unit
- Remote Control Access
- Optional delivery as "own brand" OEM solution fully implemented with your system.
- Specialist support from planning, installation and operation of your project
- Oxymat is approved and recognized as a quality supplier by major gas companies

## **The essence of PSA**

The PSA process is an extremely clean operation and the only 'raw material' is air.

On-site generators allow for an uninterrupted supply of gas with a high purity output. This means that you can produce gas where and when you need it, and in the exact quantity and quality you need.

## **Worldwide manufacturer**

More than 3500 Oxymat generator systems are currently in operation around the world.

To provide first class aftermarket service, we have a team of service technicians, who are always ready to make sure your equipment stays in good condition. Our service team can be reached 24 hours 7 days a week.

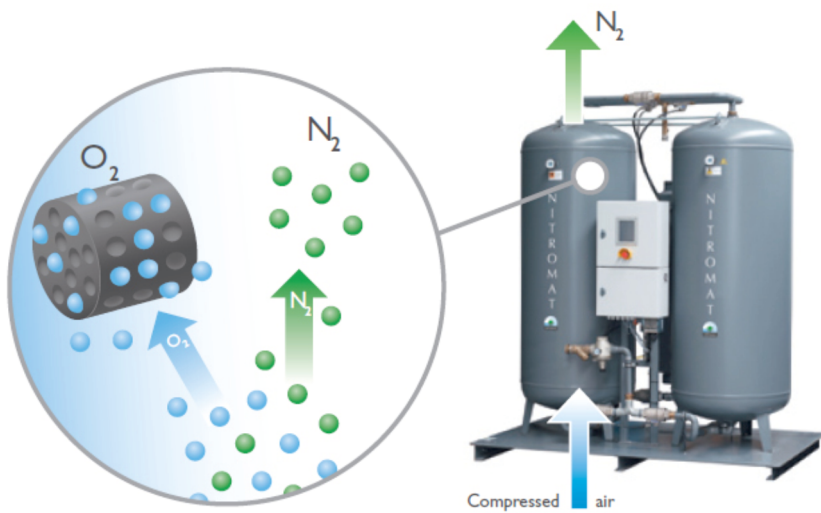
Our products and services are well known around the world, and via our extensive network of more than 100 distributors and agents worldwide, you are never far from qualified feedback, when it comes to onsite gas solutions.

Some of the industries we have served so far...

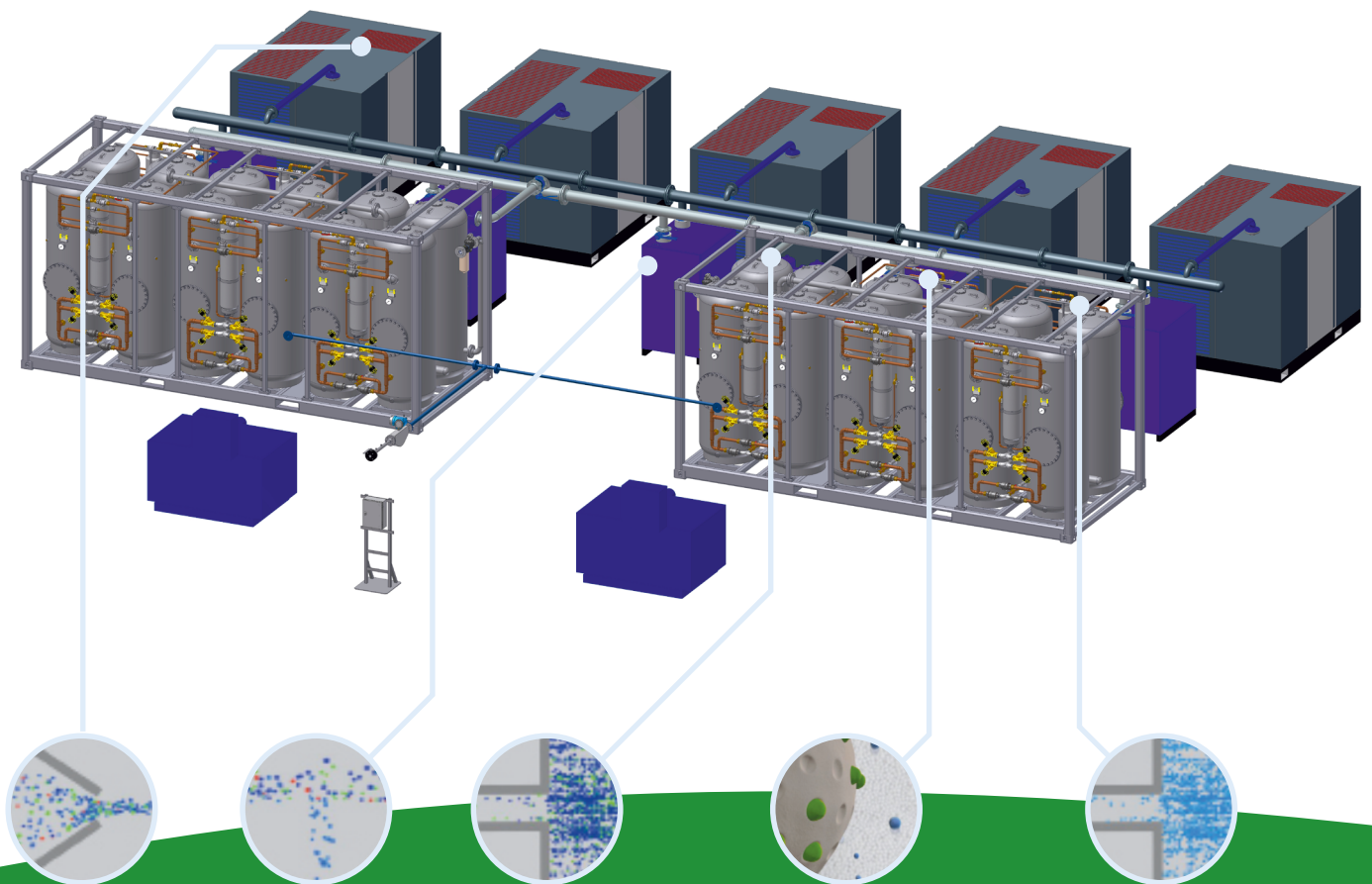
Medical	Laser cutting	Petrochemical
Food and Beverage	Electronics	Marine & Offshore
Process Industry	Aquaculture & Ozone	Goldmining

...and waiting to serve yours.

# Technology / Process Description



Our generators are very easy to operate and require a minimum of maintenance and service. Oxymat uses only high quality components and our systems are designed for 24 hours, 365 days a year operation. A Nitrogen generator combined with cylinder back up gives the highest level of safety. In comparison with cylinders it gives overall cost reduction up to 80%.



**Compressor**  
increases air compression to required pressure level

**Dryer**  
removes moisture from air (air humidity) by cooling

**Air tank**  
accumulates necessary volume of air for PSA generator

**Zeolite**  
filling with its ion-exchange bed traps Nitrogen molecules and allows Oxygen molecules to stream through

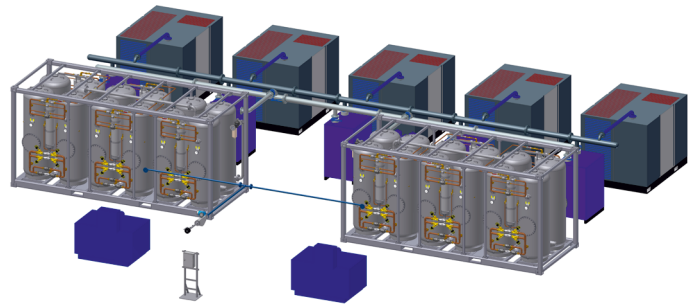
**High Purity Oxygen**  
flows from PSA generator to product tank and is ready for use

# Industries We Serve

## Gold Mines

- **Air Liquide**

In Autumn 2010 we installed one of the largest Oxymat Oxygen system in a gold mine in Ivory Coast. Heavy duty construction of PSA is designed for rough conditions of the mining environment. The system was delivered with a remote control in order to monitor all process parameters and alarms. The advanced control system makes the operation of PSA systems easier to handle, user-friendly and reliable. Onsite oxygen production made the mine independent on deliveries of liquid Oxygen from remote locations.

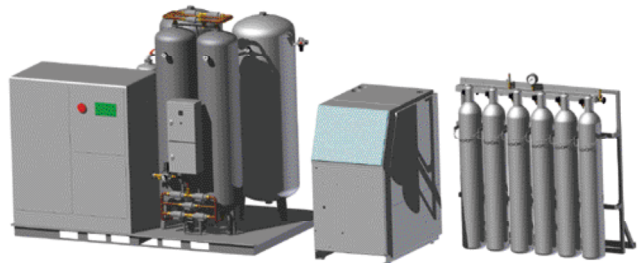


- **model 2x O800x5, 20 tons per day, 93%, 12.0 bar**

## Laser Cutting

- **KGZ / Dobropolje / Slovenia**

Laser cutting will normally require high flow rates combined with relatively high purity and pressure, to ensure a clean and smooth cut. Our tailor-made solutions with nitrogen booster just needs to be connected to power supply and start filling cylinders. The cost of own produced nitrogen reduced more than 50 % in comparison with inconvenient external gas supply.



- **model N600, 7.2 m<sup>3</sup>/h, 10 ppm, 200 bar**

## Medical

- **King Faisal Hospital / Kigali / Rwanda**

Complete line including air package, filtration, PSA generator, O<sub>2</sub> receiver, HP booster, vacuum pump and filling line for 20 HP cylinders has been successfully installed and commissioned at King Faisal Hospital, Kigali, Rwanda. Such a solution makes hospital fully independent from external gas supply and even provides O<sub>2</sub> delivery at the event of primary source failure thanks to special back up system.



- **model O500 28Nm<sup>3</sup>/h, 95% purity incl. HP filling, vacuuming and back up supply**

## Food & Beverage

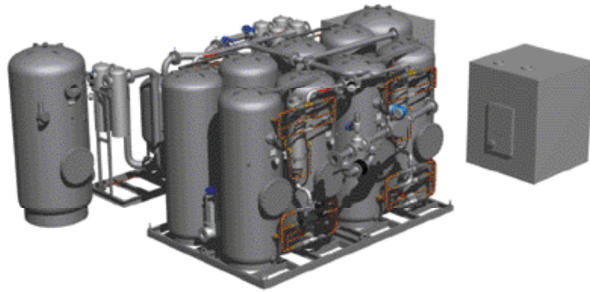
- **San Clemente / Santiago de Chile / Chile**

The system is used for a Controlled Atmosphere (CA) storage systems applied for a long-term fruit and vegetable storage in a remote area in Chile. Since high-pressure technology was applied PSA technology was the best solution. The system has been delivered on the skids as a „plug & play“ solution.

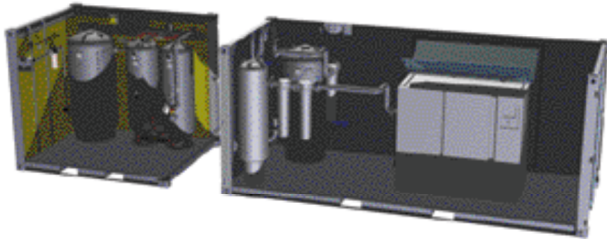


- **model 2 x NI000 ECO, 2x 115 m<sup>3</sup>/h, 99%**





• model X4000 Marine Nitrogen PSA, 4.000 m<sup>3</sup>/h, 95 %, 6.0 bar



• Container Nitrogen Systems 1300 m<sup>3</sup>/h, 95% ; 120 m<sup>3</sup>/h, 99.5%



• model O40, 2.3 Nm<sup>3</sup>/h, 93% purity

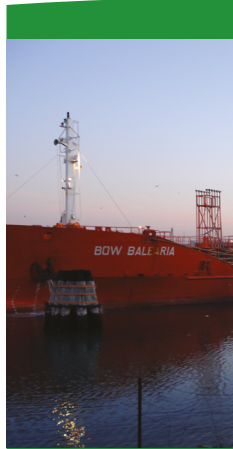


• Model N600ECO, 7.96 m<sup>3</sup>/h, 99.999 %

## Marine & Off-Shore

### • Oddfell

During 2006-2009 Oxymat developed our marine versions, and we have so far sold more than 35 units to Chemical Carriers, LNG Carriers & Supply Vessels. The unique design eliminates the need for air- and product vessels. Together with a very low power consumption of 0,2 kW per m<sup>3</sup>, we have launched the smallest foot print worldwide. Oxymat offers Marine Nitrogen PSA from 100 to 10.000 m<sup>3</sup>/h delivered with certificate by all major class associations like DNV, ABS, GL, Lloyds, BV etc.



## Petrochemical

### • VAOS / Austria

Two unique sets were both containerized designed for outdoor placement and suitable for transport to different locations. Each of the lines were split into two containers, with an Air package in one, and in the second PSA with complete control. The PSA units were designed for the use in EX environment close to the point of use and capable of remote controlling of the air compressors and dryers located in a safe area. This solution enables the customer to cut down the costs for EX air treatment units to standard ones while keeping the PSA unit capable to perform in the EX environment.



## Aquaculture & Ozone

### • Damas Zivju Audzetava / Latvia

A customer was looking for a supplier of oxygen to their new fish farm in Latvia, looking through different ways of supplying the oxygen to their fish farm, they choose a solution from, thinking „Why buy it - when we can, make it on-site“. This will help the customer for a fast return on their investment. Adding oxygen into the fish tank and enclosures by diffusers keeps the fish healthy and allow them to grow bigger. Protecting the environment Damas Zivju Audzetava also uses the Oxymat oxygen generator to their ozone production for their water recirculating and water treatment program.



## Electronics

### • Note / Torsby / Sweden

The customer uses 10ppm Nitrogen in order to protect the soldering processes from oxidation and leaves a clean solder point resulting in increased products quality. After the comparison the end user found the Oxymat Nitrogen PSA solution as the most economical and effective source of Nitrogen (constant delivery, competitive pricing and top performance in air/gas relation).





The sky is the limit when it comes to the type of industry Oxymat PSA generators serve.

While the bulk of our generators are used in marine and offshore, medical and aquaculture, we also serve many other interesting sectors.

Oxygen generators, for instance, are used in areas ranging from glass work, mining and ozone production to steel and metal cutting and waste water treatment.

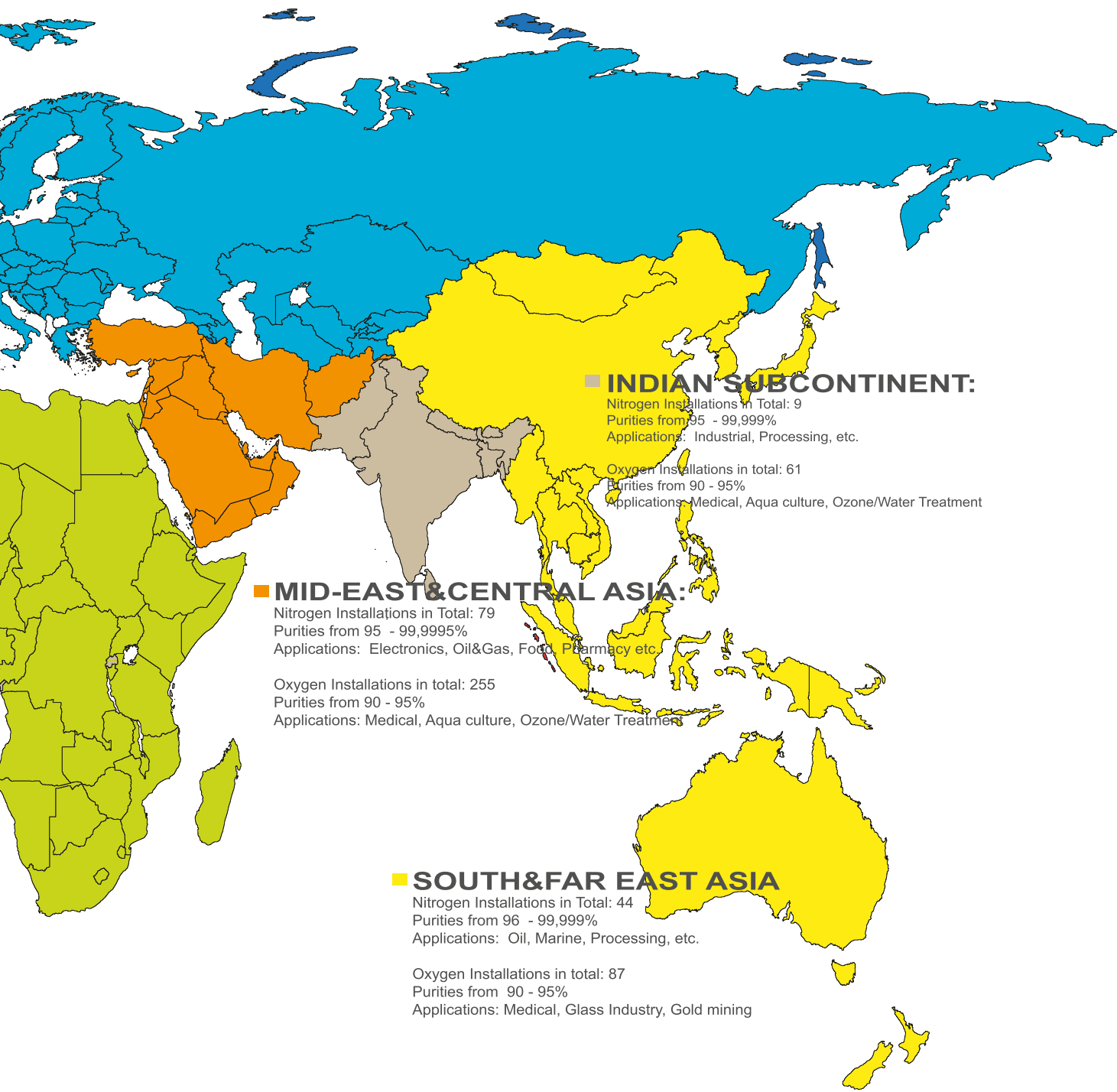
The range of use for nitrogen generators is just as wide ranging from petro-chemical and oil industry to electronics and food and beverage.

Oxymat products can be found in all corners of the world,

from Asia, Africa and Australia to South America and Europe.

We embrace new challenges and out-of-the-box solutions are designed and developed to serve any need.

Through the years this approach has resulted in state-of-the-art solutions ranging from field hospital filling stations for NATO and Swedish Nuclear power stations to gold mines in Sahara and hospitals in Greenland.



**INDIAN SUBCONTINENT:**

Nitrogen Installations in Total: 9  
 Purities from 95 - 99,999%  
 Applications: Industrial, Processing, etc.

Oxygen Installations in total: 61  
 Purities from 90 - 95%  
 Applications: Medical, Aqua culture, Ozone/Water Treatment

**MID-EAST & CENTRAL ASIA:**

Nitrogen Installations in Total: 79  
 Purities from 95 - 99,9995%  
 Applications: Electronics, Oil&Gas, Food, Pharmacy etc

Oxygen Installations in total: 255  
 Purities from 90 - 95%  
 Applications: Medical, Aqua culture, Ozone/Water Treatment

**SOUTH & FAR EAST ASIA**

Nitrogen Installations in Total: 44  
 Purities from 96 - 99,999%  
 Applications: Oil, Marine, Processing, etc.

Oxygen Installations in total: 87  
 Purities from 90 - 95%  
 Applications: Medical, Glass Industry, Gold mining

We know that service plays a key role to PSA generator systems, from project start-up to evaluation, and throughout the life-span of the generator system. Once installed our customers rightly expect the generator operate flawlessly and we know that any unforeseen problems can have an immediate and major impact to running any business, whether it is fish farm, an oil tanker or a medical facility. Our highly educated specialist can travel worldwide at short notice. At headquarters in Denmark and branches in Slovakia and China they have a call centre with technically trained staff on duty 24 hours a day.

In addition to our call centre, we have a global network of skilled partners and distributors, who are always at your service, whether your demand is finding an answer to a simple question or helping you, solve a complex issue. Our

customers are always our top priority.

Our extensive spare part program ensures day-to-day delivery of high quality original spare parts throughout the lifetime of your plant.

**Service agreements**

Oxymat Service Agreements are the easiest and best way to ensure you keep the system in perfect working condition. This way, you make sure you will always have the unique performance and reliability that comes with every Oxymat system.

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## Highest level of international approval

Oxymat Oxygen and Nitrogen systems are designed and manufactured according to European directives:

- PED(97/23/EC)
- MDD (93/42/EEC)

Oxymat has long experience in designing, engineering and delivering of hundreds of Oxygen and Nitrogen systems all over the world, in accordance with international and national authorities.

Oxymat operates a QA system in accordance with international standards

- ISO 9001 (Quality Management Systems)
- ISO 13485 (Quality Management Systems – Medical Devices)
- ISO 14001 (Environmental Management Systems)
- ISO 18001 (OHSAS)

certified by Apragaz.

