



O.GEN[®] ON-SITE OXYGEN GENERATION SYSTEM

COST-EFFECTIVE OXYGEN GENERATION

 **HYGEAR**

ENERGY EFFICIENT OXYGEN GENERATION

For industries with small to medium oxygen consumption, on-site oxygen generation with HyGear's O.GEN® is the most efficient supply option. The O.GEN® is safe and easy to operate, and gives a significant cost reduction in comparison to oxygen supply by cylinders.

The O.GEN® is based on HyGear's extensive experience in PSA gas separation technology and gas processing systems. The product ranges from 10 Nm³/h up to 1000 Nm³/h with purities up to 95%. The O.GEN® offers great flexibility to the customer by overcoming the dependency on third parties. Due to the integration of the remote operation module, autonomous and safe operation is guaranteed.

Applications

- Glass industry
- Metal industry
- Food industry
- Medical industry
- Paper and pulp industry
- Water treatment



KEY BENEFITS

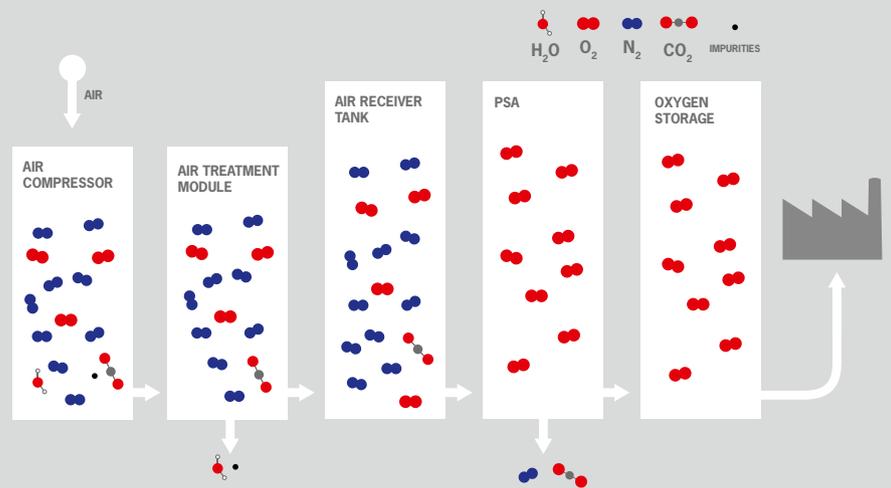
- Cost-effective
- Energy efficient
- Low maintenance
- Reliability of supply
- Independency of third party supply
- Compact and modular system
- Autonomous and safe operation

TECHNOLOGY

First, the ambient air is compressed to the required specifications. Next, the compressed air is dried and filtered from oil, dust and other undesired species.

The pre-treated air proceeds into the air receiver, where the air is buffered to ensure a continuous generation process. In the PSA module, the oxygen is separated from the air by using Zeolite Molecular Sieve (ZMS) adsorption material. Nitrogen, carbon dioxide, argon and other species are adsorbed by the ZMS, while the pure oxygen passes through.

In the last stage, the generated oxygen is stored in the buffer tank to balance pressure fluctuation and ensure a stable oxygen supply.



Advanced compressor

HyGear uses high quality compressors to minimise maintenance and shut downs and lower the energy consumption.

Selective air treatment

To ensure high quality oxygen and long system lifetime, it is essential to dry and filter the air that is fed into the oxygen generator. The selective filtration module ensures accurate pre-treatment of the compressed air and prevents water and impurities from entering the PSA.

Highly efficient PSA technology

The PSA module is the key part of the oxygen generator. HyGear has optimised its design to maximise the energy efficiency. By selecting the best adsorption materials the performance of HyGear's PSA-technology is further improved.

Qualitative adsorption material

HyGear has selected the best Zeolite Molecular Sieve (ZMS) as adsorption material for the O.GEN®. This ZMS minimises the air and power consumption, while maintaining the required purity levels over time. A special ZMS filling method is used to ensure higher density and better distribution of the adsorption material. This increases the production efficiency and ensures a longer lifetime of the material.

Advanced control system

To monitor and control the performance of the system, an advanced control system is integrated in the O.GEN®. The system enables autonomous and safe operation with control from HyGear's head office.

WHAT'S INSIDE



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- | | |
|------------------------|-----------------------|
| 1. Air compressor | 4. Air receiver tank |
| 2. Electronics cabinet | 5. PSA-vessels |
| 3. Oxygen buffer | 6. Air treatment part |

SPECIFICATIONS

O.GEN® 93% Purity ¹	O.GEN® 10	O.GEN® 50	O.GEN® 100	O.GEN® 250	O.GEN® 500	O.GEN® 1000
OUTPUT						
Nominal oxygen flow	10 Nm ³ /h	50 Nm ³ /h	100 Nm ³ /h	250 Nm ³ /h	500 Nm ³ /h	1000 Nm ³ /h
Pressure	Max. 5 bar(g)	Max. 5 bar(g)	Max. 5 bar(g)	Min. 0.25 bar(g)	Min. 0.25 bar(g)	Min. 0.25 bar(g)
TYPICAL CONSUMPTION DATA						
Ambient air	115 Nm ³ /h	570 Nm ³ /h	1140 Nm ³ /h	2100 Nm ³ /h	4200 Nm ³ /h	8400 Nm ³ /h
Electricity consumption ²	15 kWe	60 kWe	100 kWe	85 kWe	170 kWe	340 kWe
DIMENSIONS						
Size	20 ft	30 ft	30 ft	45 ft	45 ft	45 ft
Weight	3.000 kg	6.000 kg	13.000 kg	18.000 kg	25.000 kg	35.000 kg
OPERATING CONDITIONS						
Start up time (warm)	30 min.	30 min.	30 min.	30 min.	30 min.	30 min.
Start up time (cold)	60 min.	60 min.	60 min.	60 min.	60 min.	60 min.
Ambient temperature Range	-20 °C to +40 °C	-20 °C to +40 °C	-20 °C to +40 °C	-20 °C to +40 °C	-20 °C to +40 °C	-20 °C to +40 °C

¹ HyGear's standard oxygen generators range from 10-1000 Nm³/h in purities from 90% up to 95%. Other purities and flows are also possible.

² Including electricity for air compression.

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