O.GEN®
ON-SITE OXYGEN GENERATION SYSTEM

COST-EFFECTIVE OXYGEN GENERATION
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

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

<table>
<thead>
<tr>
<th>O.GEN® 93% Purity¹</th>
<th>O.GEN® 10</th>
<th>O.GEN® 50</th>
<th>O.GEN® 100</th>
<th>O.GEN® 250</th>
<th>O.GEN® 500</th>
<th>O.GEN® 1000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OUTPUT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal oxygen flow</td>
<td>10 Nm³/h</td>
<td>50 Nm³/h</td>
<td>100 Nm³/h</td>
<td>250 Nm³/h</td>
<td>500 Nm³/h</td>
<td>1000 Nm³/h</td>
</tr>
<tr>
<td>Pressure</td>
<td>Max. 5 bar(g)</td>
<td>Max. 5 bar(g)</td>
<td>Max. 5 bar(g)</td>
<td>Min. 0.25 bar(g)</td>
<td>Min. 0.25 bar(g)</td>
<td>Min. 0.25 bar(g)</td>
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<tr>
<td><strong>TYPICAL CONSUMPTION DATA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Ambient air</td>
<td>115 Nm³/h</td>
<td>570 Nm³/h</td>
<td>1140 Nm³/h</td>
<td>2100 Nm³/h</td>
<td>4200 Nm³/h</td>
<td>8400 Nm³/h</td>
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<tr>
<td>Electricity consumption²</td>
<td>15 kWe</td>
<td>60 kWe</td>
<td>100 kWe</td>
<td>85 kWe</td>
<td>170 kWe</td>
<td>340 kWe</td>
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<tr>
<td><strong>DIMENSIONS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Size</td>
<td>20 ft</td>
<td>30 ft</td>
<td>30 ft</td>
<td>45 ft</td>
<td>45 ft</td>
<td>45 ft</td>
</tr>
<tr>
<td>Weight</td>
<td>3.000 kg</td>
<td>6.000 kg</td>
<td>13.000 kg</td>
<td>18.000 kg</td>
<td>25.000 kg</td>
<td>35.000 kg</td>
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<tr>
<td><strong>OPERATING CONDITIONS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Start up time (warm)</td>
<td>30 min.</td>
<td>30 min.</td>
<td>30 min.</td>
<td>30 min.</td>
<td>30 min.</td>
<td>30 min.</td>
</tr>
<tr>
<td>Start up time (cold)</td>
<td>60 min.</td>
<td>60 min.</td>
<td>60 min.</td>
<td>60 min.</td>
<td>60 min.</td>
<td>60 min.</td>
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<tr>
<td>Ambient temperature Range</td>
<td>-20 ºC to +40 ºC</td>
<td>-20 ºC to +40 ºC</td>
<td>-20 ºC to +40 ºC</td>
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<td>-20 ºC to +40 ºC</td>
<td>-20 ºC to +40 ºC</td>
</tr>
</tbody>
</table>

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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