

# GSA Oxygen Generators

## GOG Series

PSA Oxygen Generators

*Global Standard Air & Gas*



# Why O<sub>2</sub> Generator?

## Why O<sub>2</sub> Generator?

Oxygen is one of must-have gases in diverse industries. It has been widely used in various fields such as chemical processing, electronics, laser cutting, food and medicine, and the demand for this gas keeps rising. Therefore, it is critical to supply oxygen in a stable and continuous fashion.

GSA's O<sub>2</sub> generator provides high-quality oxygen which can meet customer needs at the lowest costs, using pressure swing adsorption (PSA) technology.

## Applications

- Chemical processing
- Food and fermentation
- Electronic industry
- Iron making and steel making
- Aviation
- Metal refining
- Welding and cutting
- Pharmaceuticals
- Medicine
- Incineration and water treatment
- Fish farming
- Ozone formation



## Positive Effects



- Installed on the site and immediately produces oxygen from compressed air
- No production setbacks from an issue in oxygen refill, delivery or supply
- Reduction of operating and maintenance costs
- Offers 90-95% oxygen purity according to customer needs

## O<sub>2</sub> Generator

The O<sub>2</sub> generator is operated under the following mechanism: Oxygen is supplied by separating nitrogen from compressed air, using desiccants filled in two absorbers. Compressed air including both nitrogen and oxygen supplies oxygen by adsorbing nitrogen while passing through a zeolite molecular sieve (ZMS) layer which has micro pores filled in the absorbers.

The two absorbers repeat pressurizing, absorbing, depressurizing and washing by taking turns and supply oxygen consecutively.

GSA's pressure swing adsorption (PSA)-based O<sub>2</sub> generator has a specially designed distributor at the bottom of the absorber so that it is able to supply high-quality oxygen which meets customer needs in a continuous and stable manner. In addition, the use of durable valves enables stable operation. Since diverse features needed to control the system are supported, settings and operations which meet user needs are enabled.



# O<sub>2</sub> Generator for Stable Supply

## O<sub>2</sub> Generator with Diverse Features



- |  |   |  |
|--|---|--|
| <p><b>1</b> <b>PRESS. SAFETY VALVE</b><br/>Guarantees system stability with KOSHA-certified safety valves</p>                          | <p><b>4</b> <b>Precision Orifice</b><br/>Minimizes flow rates for regeneration, using a precision orifice</p>   | <p><b>7</b> <b>Activated Alumina</b><br/>Activated alumina added to the bottom, ensuring stable performances</p>                                     |
| <p><b>2</b> <b>Reliable AUTO Valve</b><br/>Guarantees stable operations even under frequent use with proven angle-sheet valves</p>     | <p><b>5</b> <b>Control Panel</b><br/>Enables stable and precise control, using PLC and touchscreen</p>  | <p><b>8</b> <b>High-quality Muffler</b><br/>Minimizes noise which occurs during purge with Allied Witan or an optimally designed muffler</p>         |
| <p><b>3</b> <b>High-quality Desiccant</b><br/>Supplies oxygen in a stable fashion, using high-quality carbon molecular sieve (CMS)</p> | <p><b>6</b> <b>High-quality Measuring Instruments</b><br/>Low failure rates and great operating performances with high-quality measuring instruments such as a pressure gauge</p> | <p><b>9</b> <b>Distributor for Stable Purity</b><br/>Installs a distributor to prevent drifting inside a large absorber and ensure stable purity</p> |

## Technical Specification

| Oxygen Capacity (Nm <sup>3</sup> /h)         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 90%  | 1.7   | 2.9   | 4.3   | 6.8   | 9.9   | 12.1  | 14.9  | 18.1  | 26.2  | 41.1  | 54.2  | 73.7  | 86.3  | 116.6 |
| 93%  | 1.5   | 2.7   | 3.9   | 6.3   | 9.1   | 11.1  | 13.6  | 16.6  | 24.0  | 37.7  | 49.7  | 67.5  | 79.1  | 106.9 |
| 95%  | 1.4   | 2.5   | 3.6   | 5.8   | 8.4   | 10.3  | 12.6  | 15.3  | 22.2  | 34.8  | 46.0  | 62.4  | 73.2  | 98.9  |
| Dimensions (mm)                              |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| L  | 2,100 | 2,400 | 2,650 | 2,850 | 3,300 | 3,400 | 3,550 | 3,650 | 4,000 | 4,700 | 5,100 | 5,800 | 6,000 | 6,200 |
| W  | 1,200 | 1,350 | 1,600 | 1,950 | 2,150 | 2,350 | 2,400 | 2,500 | 2,600 | 3,100 | 3,500 | 4,000 | 4,250 | 4,500 |
| H  | 2,000 | 2,050 | 2,100 | 2,100 | 2,100 | 2,100 | 2,200 | 2,230 | 2,540 | 2,600 | 2,700 | 3,000 | 3,150 | 3,300 |
| Required Compressed Air (Nm <sup>3</sup> /h) |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Capa.  | 19    | 33    | 48    | 77    | 112   | 137   | 168   | 204   | 296   | 464   | 612   | 831   | 974   | 1,316 |

## Components

| Power consumption (kW) |      |      |      |       |      |      |      |      |      |      |      |      |       |       |
|------------------------|------|------|------|-------|------|------|------|------|------|------|------|------|-------|-------|
| Air Comp.              | 4    | 5.5  | 7.5  | 11    | 15   | 18   | 22   | 27   | 37   | 55   | 75   | 90   | 110   | 150   |
| Ref. Dryer             | 0.46 | 0.62 | 0.68 | 0.72  | 1.3  | 1.3  | 1.6  | 1.6  | 2.1  | 2.3  | 3.0  | 4.6  | 5.1   | 8.5   |
| Oxy. Gener.            | 1.0  | 1.0  | 1.0  | 1.0   | 1.0  | 1.0  | 1.0  | 1.0  | 1.0  | 1.0  | 1.0  | 1.0  | 1.0   | 1.0   |
| Total                  | 5.46 | 7.12 | 9.18 | 12.72 | 17.3 | 20.3 | 24.6 | 29.6 | 40.1 | 58.3 | 79.0 | 95.6 | 116.1 | 159.5 |

### Design Conditions

- Inlet Air Press. : 7.0 barg
- Inlet Air Temp. : 5 °C ~ 45 °C
- Ambient Temp. : 20 °C
- Inlet Air Quality : ISO8573-1 class 1-4-1
- Unit Performance : ±5%

### References

- Models under VSA as well as PSA are also customizable.
- Models under ASME in addition to KS are also customizable.
- Large models bigger than those stated in the specifications above are also customizable.
- The specifications are subject to changes without notice for product improvement.

### Nomenclature

GOG - XX - XXX

Purity

Product Flow Rate

### Components

- 1 Air Compressor
- 2 Air Receiver Tank
- 3 5 8 Air Filter
- 4 After-cooler
- 6 Ref. Air Dryer or Cooler
- 7 Desiccant Air Dryer
- 9 Oxygen Generator with O<sub>2</sub> Holder

