

## Portable PSA Oxygen Generator 93% Purity 80Nm<sup>3</sup>/H Oxygen Manufacturing Machine

Our Product Introduction

### Basic Information

- Place of Origin: China
- Brand Name: Eco-Tech
- Certification: CE ISO13485 ISO9001
- Model Number: Eco-80
- Minimum Order Quantity: 1
- Price: USD 12000-25000 pieces
- Packaging Details: Wooden Case
- Delivery Time: 40 days
- Payment Terms: L/C, D/A, D/P, T/T, Western Union, MoneyGram
- Supply Ability: 1000 pieces per year



### Product Specification

- Capacity: 80Nm<sup>3</sup>/h
- Outlet Pressure: 4~5.5bar Adjustable
- Filling Pressure: 150Bar Or 200 Bar
- Size: 2500\*1400\*2900 5500kg
- Highlight: **Portable PSA Oxygen Generator, 80Nm<sup>3</sup>/H PSA Oxygen Generator, 93% Oxygen Manufacturing Machine**

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## Product Description

93% Purity 80Nm<sup>3</sup>/H Portable Oxygen Equipment/Portable Oxygen Units/Oxygen Manufacturing Machine/

### Description for PSA Oxygen Generator

PSA Oxygen Generator is consisted of the screw air compressor, air dryer, filters, buffer tanks, oxygen generator, electricity control system and the optional oxygen cylinder filling station. The complete system is installed and tested at factory, delivery to customer's turn-key project. PB containerized oxygen generator is removable, and makes the onsite installation and operation very easy. It can also save the cost for the decoration cost of the machine room.

### Main Features for PSA Oxygen Generator

- Runs automatically without human intervention
- Routine maintenance reminder and 10 years spares parts available
- Complete support, from installation to debugging to training to support
- End-to-end monitoring of pressure, purity, flow rate and alarm function.
- Quiet, safe and energy efficient
- Automatic discharge of unqualified gas
- PID output function
- Emergency Stop Control
- All the tubing is in stainless steel bright tube ensuring a bactericidal action

## Some transport pictures



### Eco-Tech PSA Oxygen Generator Model Select

| Range of the PSA Oxygen Generator |  |                           |   |                        |                        |        |           |
|-----------------------------------|--|---------------------------|---|------------------------|------------------------|--------|-----------|
| Model                             | O <sub>2</sub> Flow (Nm <sup>3</sup> /h) | O <sub>2</sub> Flow (LPM) | Equivalent cylinder-7m <sup>3</sup> (per day Nos) | Power With booster(Kw) | Power Without HPBC(Kw) | Purity | Loading   |
| Eco-5                             | 5  | 83                        | 17  | 13                     | 9                      | 93%±3% | LCL       |
| Eco-10                            | 10                                       | 167                       | 34  | 22                     | 16.5                   | 93%±3% | LCL/20GP  |
| Eco-15                            | 15                                       | 250                       | 51  | 28                     | 20.5                   | 93%±3% | LCL/20GP  |
| Eco-20                            | 20                                       | 333                       | 68  | 43                     | 32                     | 93%±3% | 20HQ/40HQ |
| Eco-25                            | 25                                       | 417                       | 85  | 43                     | 32                     | 93%±3% | 20HQ/40HQ |
| Eco-30                            | 30                                       | 500                       | 102   | 55                     | 40                     | 93%±3% | 20HQ/40HQ |
| Eco-40                            | 40                                       | 667                       | 136   | 63                     | 48                     | 93%±3% | 40HQ      |
| Eco-50                            | 50                                       | 833                       | 170   | 76                     | 57.5                   | 93%±3% | 40HQ      |
| Eco-65                            | 65                                       | 1083                      | 221   | 101                    | 79                     | 93%±3% | 40OT      |
| Eco-80                            | 80                                       | 1333                      | 272   | 145                    | 115                    | 93%±3% | 40FR      |
| Eco-90                            | 90                                       | 1500                      | 306   | 181                    | 144                    | 93%±3% | 40FR      |
| Eco-100                           | 100                                      | 1667                      | 340   | 214                    | 177                    | 93%±3% | 40FR      |
| Eco-120                           | 120                                      | 2000                      | 408   | 247                    | 203                    | 93%±3% | 40FR+20GP |
| Eco-150                           | 150                                      | 2500                      | 510   | 263                    | 218                    | 93%±3% | 40FR+20GP |

### Working Principles for PSA Oxygen Generator

Air contains 21% Oxygen, 78% Nitrogen, 0.9% Argon and 0.1% other trace gases. Oxygen plant separates this oxygen from Compressed Air through a unique process called Pressure Swing Adsorption. (PSA).

The Pressure Swing Adsorption process for the generation of enriched oxygen gas from ambient air utilizes the ability of a synthetic Zeolite Molecular Sieve to absorb mainly nitrogen. While nitrogen concentrates in the pore system of the Zeolite, Oxygen Gas is produced as a product. Oxygen generation plant's use two vessels filled with Zeolite Molecular sieve as adsorbers. As Compressed Air passes up through one of the adsorbers, the molecular sieve selectively adsorbs the Nitrogen. This then allows the remaining Oxygen to pass on up through the adsorber and exit as a product gas. When the adsorber becomes saturated with Nitrogen the inlet airflow is switched to the second adsorber. The first adsorber is regenerated by desorbing nitrogen through depressurization and purging it with some of the product oxygen. The cycle is then repeated and the pressure is continually swinging between a higher level at adsorption (Production) and a lower level at desorption (Regeneration).

| Eco-80 PSA Oxygen Plant Technical Specification |                                     |                      |  |
|---|-------------------------------------|----------------------|--|
| lot   | Item                                |                      | Description /Specification                           |
| 1   | Model/Place of Manufacture          |                      | PB-80 China  |
| 2   | Oxygen making principle             |                      | PSA Pressure swing adsorption PSA 吸附(放式)             |
| 3   | Application                         | Operation place      | Indoor   |
|   | Environment                         | Ambient temperature  | Min -5 /Max 50 / design temperature37                |
|   |                                     | Ambient humidity     | Min 40%RH Max90%RH                                   |
| 4   | Capacity                            |                      | 80 Nm3/hr  |
| 5   | Oxygen Gas Purity                   |                      | 93% ±3% Test at outlet of psa oxygen generator       |
| 6   | Oxygen Purity Sensor                |                      | HT-TA530 1set  |
| 7   | Oxygen Flowmeter                    |                      | Japan SMC flowmeter 1 sets                           |
| 8   | Inlet compress air pressure         |                      | 0.55~0.7 Mpa   |
| 9   | Inlet Oil Content                   |                      | ≤0.001mg/m3  |
|   | Residual dust                       |                      | ≤0.01um  |
|   | Residual water                      |                      | ≤0.069mg/m3  |
| 10  | Air inlet atmospheric dew point     |                      | -15  |
| 11  | Demand for clean compressed air     | 17.3 m³/min          | Recommend Air compressor 110Kw 20.0 m³/min 8Bar      |
| 12  | Inlet Diameter                      |                      | DN50   |
| 13  | Outlet Diameter                     |                      | DN25   |
| 14  | Maximum inlet temperature           |                      | MAX 30   |
| 15  | Allowable working pressure range    |                      | Min7.5Kgf / cm2 Max9.9Kgf / cm2                      |
| 16  | Carbon molecular sieve model/origin |                      | JLOX-500   |
| 17  | The tower body pipe                 |                      | 2 sets   |
| 18  | Air and Oxygen buffer tank          |                      | Piped storage tank                                   |
| 19  | Instrument Tank, silencer           |                      | Silencer ≤55dB(A)                                    |
| 20  | Solenoid valve brand/origin         |                      | AirTAC 9 sets  |
| 21  | Pneumatic valve brand/origin        |                      | Powerbuilder 9 Sets+2 Sets                           |
| 22  | Control System                      | Control Power Supply | 0.2kw/set 220V 50 HZ                                 |
|   |                                     | PLC                  | Siemens PL Smart S7-200 or Mitsubishi integrated PLC |
|   |                                     | Electrical box       | built-in 1 set                                       |
|   |                                     | Touch screen         | MCGS 7 inch or Mitsubishi integrated PLC with screen |
| 23  | size LxWxH (mm) / Weight:(Kg)       |                      | About:2500*1400*2900// 5500kg                        |

**-Standard Features -**

The PSA oxygen concentrator is equipped with a cutting-edge control system featuring a user-friendly touch-operated panel provided by SIEMENS. This advanced interface enables effortless operation and control of the concentrator's functions, ensuring a seamless user experience.

With the automatic start/stop feature, the concentrator initiates and halts operation as needed. This intelligent functionality

optimizes oxygen production efficiency while conserving energy during periods of inactivity, promoting cost savings and environmental sustainability.

To guarantee the continuous monitoring of oxygen purity, the concentrator is equipped with a built-in purity analyzer. This sophisticated analyzer enables real-time monitoring of the oxygen output, providing users with confidence in the purity levels and ensuring compliance with the required standards.

The concentrator is engineered to deliver reliable performance, designed for uninterrupted operation. Its robust construction and utilization of high-quality components contribute to its durability, allowing it to withstand prolonged usage without compromising its efficiency or performance.

Designed to handle dynamic pressure loading, the concentrator can adapt to varying pressure conditions. This adaptive design ensures consistent and reliable oxygen production even in environments with fluctuating pressure levels, maintaining a steady supply of oxygen.

The choice of stainless steel piping in the PSA oxygen concentrator offers numerous advantages that contribute to optimal performance and hygienic oxygen production.

First and foremost, stainless steel is renowned for its exceptional durability. It can withstand high pressures and maintain structural integrity over an extended period, ensuring the longevity and reliability of the concentrator. This durability minimizes the need for frequent maintenance or replacement, reducing downtime and associated costs.

Corrosion resistance is another key benefit of stainless steel piping. It is highly resistant to rust, oxidation, and other forms of corrosion that can degrade the quality of the oxygen output. This corrosion resistance helps maintain the purity and integrity of the oxygen by preventing contaminants from leaching into the gas stream.

Hygiene is a crucial factor in oxygen production, particularly in medical and healthcare settings. Stainless steel is inherently hygienic due to its smooth, non-porous surface. It does not harbor bacteria, mold, or other pathogens, reducing the risk of contamination and ensuring the delivery of clean and uncontaminated oxygen to patients or users.

Furthermore, stainless steel is easy to clean and sanitize, making it suitable for applications that require strict hygiene standards. Regular cleaning procedures can effectively remove any potential buildup or contaminants, maintaining the purity of the oxygen output.

By utilizing stainless steel piping, the PSA oxygen concentrator demonstrates a commitment to delivering oxygen of the highest quality. It ensures the purity and integrity of the oxygen output while minimizing the risk of contamination, meeting stringent hygiene requirements in various industries and applications.

In summary, the PSA oxygen concentrator incorporates a user-friendly SIEMENS touch-operated panel, features automatic start/stop functionality, includes a built-in purity analyzer for continuous monitoring, is designed for reliable uninterrupted operation, and utilizes robust stainless steel piping. This choice of material ensures optimal performance, corrosion resistance, durability, and hygienic oxygen production, meeting the stringent requirements of diverse industries and applications.

#### **-Optional Features-**

- Molecular sieve moisture protection
- GSM modem (remote start/stop, status SMS, alarm warning SMS)
- Flow meter with totalize
- Oxygen dew point sensor
- Temperature sensor
- Purity and pressure control
- Audio/visual alarm
- Modbus TCP/IP connection
- Remote control system
- Data-logging (saved on memory card)

#### **-Applications-**

- Aquaculture
- Feed Gas for Ozone Generators
- Glass blowing
- Leaching
- NOx Reduction for Fuel Burners
- Oxygen Lancing
- Welding, Brazing
- Wellness

#### **Ten frequently asked Questions about PSA oxygen generators**

##### **1.What is a PSA oxygen concentrator?**

A PSA oxygen concentrator is a device that separates and purifies high-purity oxygen from the air using pressure swing adsorption (PSA) technology. It utilizes molecular sieve adsorbents to achieve the separation and purification of oxygen based on the differential adsorption properties of oxygen and nitrogen in the molecular sieve.

##### **2.How does a PSA oxygen concentrator work?**

The working principle of a PSA oxygen concentrator is based on the adsorption properties of the molecular sieve. It cycles compressed air and passes it through the bed of molecular sieve adsorbents. Nitrogen molecules are adsorbed onto the sieve, while oxygen molecules pass through, thereby achieving the separation and purification of oxygen.

##### **3.What are the advantages of a PSA oxygen concentrator?**

PSA oxygen concentrators have several advantages:

- They can generate oxygen on-demand in real-time, eliminating the need for oxygen storage.
- They are easy to operate and maintain.
- They can be used indoors without the need for external gas pipelines.
- They produce high-purity oxygen, suitable for medical-grade applications.

##### **4.What are the main uses of a PSA oxygen concentrator?**

PSA oxygen concentrators are widely used in medical, pharmaceutical, food processing, and electronic industries. They provide high-purity oxygen to meet the requirements of various industries and applications, such as oxygen therapy in hospitals and oxygen combustion in industries.

##### **5.What is the oxygen purity achievable with a PSA oxygen concentrator?**

Typically, PSA oxygen concentrators can provide oxygen with a purity of 93% or higher. For specific requirements, the oxygen purity can be further increased through additional oxygen purification processes.

##### **6.Does a PSA oxygen concentrator require maintenance?**

Yes, PSA oxygen concentrators require regular maintenance and servicing to ensure their proper operation and extended lifespan. Maintenance tasks include cleaning filters, inspecting, and replacing adsorbents, among others.

##### **7.What is the noise level of a PSA oxygen concentrator?**

PSA oxygen concentrators generally have low noise levels, typically below 50 decibels. However, the noise level may vary depending on the model and brand of the concentrator, but most are designed to operate quietly.

#### 8.Does a PSA oxygen concentrator require a power source?

Yes, PSA oxygen concentrators require a power source to function properly. Typically, they need to be connected to a 220V AC power supply with a frequency of 50Hz.

#### 9.Does a PSA oxygen concentrator need a compressed air source?

Yes, a PSA oxygen concentrator needs to be equipped with a compressed air source. It uses compressed air as the oxygen feedstock for its operation.

#### 10.Is it necessary to frequently replace the adsorbents in a PSA oxygen concentrator?

Adsorbents are critical components in a PSA oxygen concentrator, and their lifespan is generally long, lasting several years. However, over time and with increased usage, the adsorbents gradually lose their effectiveness and need to be checked and replaced periodically. The specific replacement cycle depends on usage and the model of the oxygen concentrator, so it is recommended to follow the manufacturer's guidelines for proper operation.

## COMPANY INTRODUCTION—BUSINESS LINE

- 1) Fabrication line and Automation system
- 2) Calibration/Testing system, ICT/FCT
- 3) PSA Oxygen and Nitrogen Generator
- 4) ABB Instrumentation Agent(Pressure, flow, Level, Temp, Drive, Motor)
- 5) ODM include Software & Hardware development and structure/fluid simulation
- 6) Onsite engineering Services / Technology Services: Installation, Commissioning and Maintenance

#### OUR CLIENTS:



## OUR SERVICE

1. Setting trace file for every sold product, quarterly survey for every sold product.
2. Providing remote instruction and training for free.
3. Providing on-site services and repairs for free during warranty period
4. Spare parts and on-site service would be charged with best price after warranty period.
5. 7\*24 hours online service for free, solution within 48 hours.
6. If customer required, assigning experienced after-sales engineer for on-site service with 7 days. (Visa apply should be considered)

### Warranty

The Guarantee/Warranty Period shall be a period of twelve months after on-site startup & commissioning or eighteen months after shipment, whichever occurs first. If any trouble or defect, originating with the design, material, and workmanship or operating characteristics of any Goods, arises at any time during GUARANTEE/WARRANTY period, PB shall, at his own expense and as promptly as possible, make such alterations, repairs and replacements.

### On-Site Support

PB can do paid services of on-site startup, commissioning, installation supervision, training, by providing purchaser with the services of qualified English-speaking engineer at step shall obtain all permits and licenses required to perform the services under this Agreement.

### After Sales Support

## Our Certifications



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