

## 30Nm3/H PSA Oxygen Generation Plant 93% Purity Oxygen Generating Equipment

Our Product Introduction

### Basic Information

- Place of Origin: China
- Brand Name: Eco-Tech
- Certification: CE ISO13485 ISO9001
- Model Number: Eco-30
- 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: 30Nm/h
- Outlet Pressure: 4~5.5bar Adjustable
- Filling Pressure: 150Bar Or 200 Bar
- Size: 1800\*1000\*2300 1400kg
- Highlight: 150Bar psa oxygen generation plant,  
30Nm3/H psa oxygen generation plant,  
93% oxygen generating equipment

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## Product Description

93% Purity 30Nm<sup>3</sup>/H Psa Oxygen Generator/Psa Oxygen Gas Generator/Oxygen Gas Generator/

### 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 semi-finished products



### PB 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
PB-5	5	83	17	13	9	93%±3%	LCL
PB-10	10	167	34	22	16.5	93%±3%	LCL/20GP
PB-15	15	250	51	28	20.5	93%±3%	LCL/20GP
PB-20	20	333	68	43	32	93%±3%	20HQ/40HQ
PB-25	25	417	85	43	32	93%±3%	20HQ/40HQ
PB-30	30	500	102	55	40	93%±3%	20HQ/40HQ
PB-40	40	667	136	63	48	93%±3%	40HQ
PB-50	50	833	170	76	57.5	93%±3%	40HQ
PB-65	65	1083	221	101	79	93%±3%	40OT
PB-80	80	1333	272	145	115	93%±3%	40FR
PB-90	90	1500	306	181	144	93%±3%	40FR
PB-100	100	1667	340	214	177	93%±3%	40FR
PB-120	120	2000	408	247	203	93%±3%	40FR+20GP
PB-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).

PB-30 PSA Oxygen Plant Technical Specification				
lot	Item		Description /Specification	
1	Model/Place of Manufacture		PB-30	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		30	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	6.5 m³/min	Recommend Air compressor	37Kw 6.8 m³/min 8Bar
12	Inlet Diameter		DN40	
13	Outlet Diameter		DN15	
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		PB 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:1800*1000*2300// 1400kg	

#### -Standard Features -

Control system with SIEMENS touch operated panel  
Automatic start/stop  
Built in purity analyzer for continues monitoring  
Reliable- built for uninterrupted operation  
Designed for dynamic pressure loading  
Robust design, piping from Stainless Steel

#### -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?**

When it comes to achieving higher oxygen purity levels through additional purification processes in PSA oxygen concentrators, there are several factors to consider.

One method commonly used to enhance oxygen purity is membrane separation. This technique utilizes semi-permeable membranes that selectively allow oxygen molecules to pass through while blocking other gases. By passing the oxygen stream through these membranes, impurities and trace gases are effectively separated, resulting in increased oxygen purity.

Cryogenic distillation is another technique employed to achieve higher oxygen purity. This process involves cooling the oxygen stream to extremely low temperatures, causing different gases to condense at different points. By selectively collecting the condensed impurities and trace gases, the oxygen can be further purified to higher levels.

Pressure swing adsorption (PSA) technology, which is already utilized in PSA oxygen concentrators, can also be optimized to enhance oxygen purity. By adjusting the operating parameters, such as pressure levels and cycle times, the adsorbents used in the concentrator can more effectively remove impurities and trace gases, resulting in increased oxygen purity.

The level of oxygen purity achievable through additional purification processes depends on several factors, including the specific equipment and technology utilized, the quality of the feed air source, and the requirements of the application. By carefully considering these factors, it is possible to attain oxygen purities well beyond the standard 93%, which is particularly valuable in specialized industries and research applications that demand ultra-high purity oxygen.

To determine the optimal purification process for achieving higher oxygen purity, it is essential to consult with manufacturers and suppliers who possess in-depth knowledge of their equipment. They can provide detailed information on the capabilities and specifications of their specific models, as well as offer guidance on the most suitable purification processes, technologies, and equipment options to meet the unique needs of different applications.

Manufacturers and suppliers can assess the specific requirements and constraints of the application, such as the desired oxygen purity level, flow rate, and any specific contaminants that need to be removed. Based on this information, they can recommend the appropriate purification processes that align with the capabilities of their equipment.

Furthermore, they can provide insights into the quality of the feed air source required for optimal performance. This may involve considerations such as air filtration, pre-treatment, or conditioning to ensure that the feed air meets the necessary standards for achieving higher oxygen purity.

By collaborating with manufacturers and suppliers who specialize in oxygen purification technologies, users can access their expertise and benefit from tailored solutions. They can gain a comprehensive understanding of the available options, evaluate the feasibility of achieving higher oxygen purity levels, and make informed decisions regarding the most suitable equipment and purification processes for their specific applications.

In summary, achieving higher oxygen purity levels beyond the standard 93% involves considering various factors and consulting with manufacturers and suppliers who can offer detailed information and guidance. By leveraging their expertise, users can explore the capabilities of different equipment, select appropriate purification processes, and ensure the reliable production of ultra-high purity oxygen for specialized industries and research applications.

##### **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 PARTNERS:



## 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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