

## Membrane Type PSA Nitrogen Generator 15Nm<sup>3</sup>/H, 99.9% Purity For Food, Metallurgy, Chemical

Our Product Introduction

### Basic Information

- Place of Origin: China
- Brand Name: Eco-Tech
- Certification: CE ISO13485 ISO9001
- Model Number: EN3015
- Minimum Order Quantity: 1
- Price: USD 12000-25000 pieces
- Packaging Details: Wooden Case
- Delivery Time: 20 days
- Payment Terms: L/C, D/A, D/P, T/T, Western Union, MoneyGram
- Supply Ability: 1000 pieces per year



### Product Specification

- Capacity: 15Nm/h
- Inlet Diameter: DN25
- Outlet Diameter: DN15
- Size: 1200×850×1900 Mm About 400 Kg
- Demand For Clean Compressed Air: 0.93
- Recommend Air Compressor: 11Kw 8Bar 1.6m<sup>3</sup>/min Or 11Kw 10Bar 1.4m<sup>3</sup>/min
- Control System: PLC
- Type: Nitrogen Generator
- Warranty: 1 Year
- Highlight: **PSA Nitrogen Generator 15Nm<sup>3</sup>/H, 15Nm<sup>3</sup>/H PSA Nitrogen Generator, 1.6m<sup>3</sup>/min membrane nitrogen generator**

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## Product Description

PSA Nitrogen Generator/Membrane Type Nitrogen Generator: 15Nm<sup>3</sup>/H, 99.9% Purity, For Food, Metallurgy, Chemical  
**Description of 99.9% Purity 15Nm<sup>3</sup>/H PSA Nitrogen Generator Food, metallurgy, chemical industry applicable**

We have been engaged in the assembly of **PSA nitrogen generator**s and oxygen generators in our factory for 15 years, providing approximately 400 sets of **PSA nitrogen generator**s and oxygen generators for domestic and international customers each year, including production, and debugging.

In collaboration with Burkert Valves, we have customized our own double-acting pneumatic valve. Through the design of top and middle pressure equalization, and airflow orifice plates, we continuously optimize and reduce the air consumption ratio of the equipment, thus achieving energy savings. The energy consumption ratio of our equipment has reached the highest level in China. And through our patented silencer, our device noise is controlled to less than 55 db.

In terms of process flow, we have cutting, welding, assembly, filling of molecular sieves, automatic rust removal, spraying, and complete procedures and supporting equipment for commissioning.

In the supply chain aspect, we provide first-line brands such as Atlas Copco, Ingersoll Rand, GDK, Liutech, Bolaite, Hanbell, and BK for air compressors, and provide Boly, Atlas Copco, and Liutech refrigerated dryers, as well as Anshan Jiapeng and Anqing Bailian boosters. We can provide supporting equipment and accessories.

Currently, our company's products are aimed at end-users and distributors worldwide. We provide customized remote systems, color customization, display interface customization, and many other OEM services. And we also provide ASME standard equipment and pressure tanks for USA and Australian market.

For specific selection, please contact our customer manager. We hope to become your trusted long-term partner.



PN3015 PSA Nitrogen Plant Technical Specification				
lot	Item			Description /Specification
1	Model/Place of Manufacture			PN3015
2	Nitrogen 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		15 Nm <sup>3</sup> /hr	
5	Nitrogen Gas Purity			≥99.9 % Test at outlet of psa Nitrogen
6	Nitrogen Purity Sensor			HT-TA261 1set
7	Nitrogen Flowmeter			Japan SMC flowmeter 1 sets
8	Inlet compress air pressure			0.75 -0.99Mpa
9	Inlet Oil Content			≤0.001mg/m <sup>3</sup>
10	Residual dust			≤0.01um
11	Residual water			≤0.069mg/m <sup>3</sup>
12	Air inlet atmospheric dew point			-15
13	Demand for clean compressed air	0.93	Nm <sup>3</sup> /min	Recommend Air compressor 11Kw 8Bar 1.6m <sup>3</sup> /min or 11Kw 10Bar 1.4m <sup>3</sup> /min

14	Inlet Diameter	DN25	
15	Outlet Diameter	DN15	
16	Maximum inlet temperature	MAX 30	
17	Allowable working pressure range	Min7.5Kgf / cm <sup>2</sup> Max9.9Kgf / cm <sup>2</sup>	
18	Carbon molecular sieve model/origin	CMS-240	
19	The tower body pipe	2 sets	
20	Air and nitrogen buffer tank	Piped storage tank	
21	Instrument Tank, silencer	PB Silencer ≤55dB(A) patent number:ZL 2015 2 0545860.3	
22	Solenoid valve brand/origin	AirTAC	7 sets
23	Pneumatic valve brand/origin	PB-Customized	11 Sets (two for auto drain unqualified Gas)
24	Control System	Control Power Supply	Mitsubishi core integrated screen Or or Siemens S7-200 Smart 三菱内核一体屏或西子 S7-200 Smart
		PLC	built-in 1 set
		electrical box	Mitsubishi core integrated screen or MCGS 三菱内核一体屏或者昆通泰 MCGS
		touch screen	Mitsubishi core integrated screen/ MCGS
25	size LxWxH (mm) / Weight:(Kg)	About:1200×850×1900 mm // About 400 kg	
26	Price	含税含 交期20天	

## 2. Working Principles for PSA Nitrogen Generator

Pressure swing adsorption(PSA)nitrogen generator is an automatic equipment that uses air as material,use carbon molecular sieve as adsorbent, pressure reduction desorption principle to adsorb oxygen from the air, thereby separating nitrogen.

## 3. Main Features for PSA Nitrogen Generator

- In collaboration with Burkert Valves, we have developed a customized double-acting pneumatic valve specifically designed for our nitrogen generation system. This valve incorporates innovative features such as top and middle pressure equalization and airflow orifice plates, which have enabled us to optimize air consumption and achieve exceptional energy savings. As a result, our equipment boasts the highest energy consumption ratio in China, setting new standards for efficiency.
- Moreover, we have implemented our patented silencer technology, effectively controlling the noise generated by our equipment to below 55 dB. This ensures a quiet and comfortable working environment, promoting productivity and user satisfaction. Key benefits of our nitrogen generation system include:
- Convenient Nitrogen Production: Our system allows for easy production of nitrogen by simply supplying compressed air and power. The purity of nitrogen can be conveniently adjusted according to specific requirements by manipulating the input parameters.
- Automation and Rapid Gas Generation: Our highly automated equipment enables unmanned operation, swiftly producing nitrogen within a short timeframe of 10-15 minutes after startup. This ensures immediate availability of the gas as needed.
- Compact Design and Energy Efficiency: Designed with a streamlined process flow and a compact footprint, our equipment minimizes space requirements. It is engineered for energy efficiency, resulting in reduced operational costs and environmental impact.
- Snowstorm Method for Molecular Sieve Filling: To ensure the longevity and optimal performance of our molecular sieves, we utilize the snowstorm method during the filling process. This technique minimizes the risk of pulverization caused by high-pressure airflow impact.
- On-line Inspection with Easy Access: Equipped with a high-access imported analyzer, our system allows for convenient on-line inspection of nitrogen purity. The analyzer is designed to occupy minimal space and consume low energy, providing hassle-free monitoring.
- With these advanced features and benefits, our nitrogen generation system delivers a reliable, cost-effective, and energy-efficient solution for a wide range of industrial applications.

## 4. Technical indicators

- Capacity Range : 2~2000Nm<sup>3</sup>/H
- Purity Range : 95%~99.9999%
- Outlet Pressure :0~6Bar or 0~ 8Bar
- Booster outlet pressure range : 10 to 200Bar
- Service Life 8-10 years as long as regular maintenance

## Carbon Molecular Sieve

High quality,high density, compact spring loaded, top/bottom balance, protected by a dedicated pressure sensor.  
We usually use CMS-240 for purity below 99.99%  
And use CMS-260 for purity of 99.999% in one step .

## 5. Standard Features

- Siemens PLC
- Customized and improved domestic valves
- 7-inch LCD display
- Taiwan AirTAC solenoid valve
- Chengdu Jiuyin Nitrogen analyzer
- SMC flowmeter
- Professional brand molecular sieve

## 6. Optional Features

- Remote control system
  - Better valve of brand Gemu, Burkert
  - Dew point analyzer
  - Import Molecular Sieve
  - Italian ODE solenoid valve

Item No.	Capacity	Purity	Size mm	Inlet Diameter	Outlet Diameter	Weight Kg	Power
PN3010	10Nm3/H	≥99.9%	1000*800*1600	DN15	DN15	300	AC220V/0.2 KW
PN3015	15Nm3/H	≥99.9%	1200*850*1900	DN15	DN15	400	AC220V/0.2 Kw
PN3020	20Nm3/H	≥99.9%	1200*850*1900	DN25	DN15	500	AC220V/0.2 Kw
PN3025	25Nm3/H	≥99.9%	1450*900*1900	DN32	DN15	600	AC220V/0.2 Kw
PN3030	30Nm3/H	≥99.9%	1450*900*1900	DN32	DN15	700	AC220V/0.2 Kw
PN3040	40Nm3/H	≥99.9%	1450*900*1900	DN40	DN15	800	AC220V/0.2 Kw
PN3050	50Nm3/H	≥99.9%	1450*900*1900	DN40	DN25	900	AC220V/0.2 Kw
PN3060	60Nm3/H	≥99.9%	1600*1100*1950	DN40	DN25	1100	AC220V/0.2 Kw
PN3100	100Nm3/hr	≥99.9%	1800*1000*2300	DN40	DN25	1850	AC220V/0.2 Kw
PN3120	120Nm3/hr	≥99.9%	1800*1300*2450	DN40	DN25	2400	AC220V/0.2 Kw
PN3150	150Nm3/H	≥99.9%	2000*1300*2450	DN40	DN25	2600	AC220V/0.2 Kw
PN3200	200Nm3/H	≥99.9%	2000*1400*2550	DN40	DN25	2900	AC220V/0.2 KW
PN3250	250Nm3/H	≥99.9%	2200*1500*2650	DN50	DN40	3400	AC220V/0.2 KW
PN3300	300Nm3/H	≥99.9%	2500*1600*2680	DN50	DN40	3600	AC220V/0.2 Kw
PN3400	400Nm3/H	≥99.9%	2500*1600*2900	DN50	DN40	5000	AC220V/0.2 KW
PN3500	500Nm3/H	≥99.9%	2500*1600*3750	DN80	DN65	7200	AC220V/0.2 KW

## -Applications-

- **Application of SMT industry**
- **Semiconductor silicon industry application**  
Semiconductor and integrated circuit manufacturing process atmosphere protection, cleaning, chemical recovery, etc.
- **Electronic components industry application**  
Selective welding, purging and encapsulation with nitrogen. Scientific nitrogen inert protection has proven to be an essential step in the successful production of high quality electronic components.
- **Semiconductor packing industry application**  
Packaging, reduction, storage with nitrogen.
- **Powder metallurgy, metal processing industry**  
Heat treatment industry application, Steel, iron, copper, aluminum products annealing, carbonization, high temperature furnace protection, Low temperature assembly and plasma cutting of metal parts.
- **Chemical Reaction Agitation**
- Nitrogen is utilized for agitating chemical reactions, promoting mixing, and enhancing reaction efficiency. It helps maintain consistent reaction conditions and improves the quality and yield of chemical products.  
Chemical Fiber Production Protection: Nitrogen is crucial in chemical fiber production as it provides protection against oxidation and degradation. It helps maintain the desired physical and chemical properties of the fibers, resulting in high-quality end products.  
Diesel Hydrogenation and Catalytic Reforming: Nitrogen finds applications in processes such as diesel hydrogenation and catalytic reforming. It is used as a carrier gas or as part of the reaction mixture, facilitating the desired chemical transformations and ensuring optimal process performance.
- **Oil and gas industry**
- Oil refining, container machine pipeline nitrogen-filled purge box leak detection, nitrogen injection oil recovery.

- **Food and medicine industry Application**

Mainly used in food packaging, food preservation, food storage, (Configurable sterilization filter), food drying and sterilization, medicine packing, medical replacement gas, medicine delivery atmosphere, etc.

### Ten common questions about nitrogen generators

1. What purity of nitrogen gas can a nitrogen generator produce?

A nitrogen generator can produce nitrogen gas of various purities, ranging from standard industrial-grade nitrogen (typically 95% to 99% purity) to high-purity nitrogen (usually exceeding 99.9%), and even ultra-high purity nitrogen (typically exceeding 99.999%). The choice of purity depends on specific application requirements.

2. What is the working principle of a nitrogen generator?

The working principle of a nitrogen generator is primarily based on either the adsorption technology using molecular sieves or membrane separation technology. Adsorption technology selectively adsorbs oxygen and moisture using a specific adsorbent material, such as molecular sieves, while allowing nitrogen to pass through. Membrane separation technology, on the other hand, utilizes the size and permeability of gas molecules to achieve the separation of nitrogen from other gas components on a membrane.

3. What inputs does a nitrogen generator require, and how does it operate?

To operate a nitrogen generator, it typically relies on air as its input source. The process begins by compressing the air using an air compressor. The compressed air is then directed through an adsorber that contains molecular sieves or a membrane separator within the nitrogen generator. These components selectively remove other gases, allowing pure nitrogen to be obtained as the final output.

In some cases, certain nitrogen generators may require an electrical power supply to facilitate the compression and separation processes. This power supply ensures the efficient operation of the air compressor and enables the molecular sieves or membrane separator to function effectively.

A nitrogen generator harnesses the input of air, subjecting it to compression and employing specialized gas separation components, enabling the reliable production of pure nitrogen as the desired output. In this process, air is first compressed using an air compressor, and then directed through molecular sieves or a membrane separator within the nitrogen generator. These components selectively remove other gases, allowing for the extraction of pure nitrogen.

In certain cases, an electrical power supply is required to facilitate the smooth operation of the nitrogen generator throughout the nitrogen production process. This power supply ensures the efficient functioning of the air compressor and enables the molecular sieves or membrane separator to effectively carry out the gas separation process.

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By incorporating these steps and components, a nitrogen generator ensures a consistent supply of pure nitrogen, meeting the specific needs and requirements of various applications. The inclusion of an electrical power supply, when necessary, guarantees the uninterrupted operation of the nitrogen generator, enabling a continuous and reliable nitrogen production process.

4. How is a nitrogen generator different from nitrogen supply in gas cylinders?

The main difference between a nitrogen generator and nitrogen supply in gas cylinders lies in the mode of nitrogen supply. A nitrogen generator continuously extracts nitrogen from the air, providing a continuous nitrogen supply without the need for cylinder replacements. In contrast, nitrogen supply in gas cylinders requires periodic cylinder replacements, and the supply quantity is limited by the cylinder capacity.

5. What should be considered for the maintenance of a nitrogen generator?

The maintenance of a nitrogen generator typically involves regular cleaning and replacement of the adsorber with molecular sieves or membrane separator, inspection and maintenance of the compressed air system, monitoring nitrogen generation performance, etc. Specific maintenance requirements should be referred to the user manual or guidance provided by the manufacturer of the nitrogen generator.

6. Which industries are nitrogen generators suitable for?

Nitrogen generators are widely used in various industries, including industrial, medical, food and beverage, and laboratory applications. They are commonly used in industries such as chemicals, electronics, and metal processing. In the medical field, they are used for anesthesia and gas delivery. In the food and beverage industry, they are used for packaging and preservation. In laboratories, they are used for atmospheric control and protection of equipment.

7. What is the noise level of a nitrogen generator during operation?

The noise level of a nitrogen generator varies depending on the model and design. Generally, nitrogen generators have low noise levels, especially when compared to traditional compressed air systems. Specific noise levels can be referred to the technical specifications or noise test reports of the nitrogen generator.

8. How long does it take for a nitrogen generator to start producing nitrogen gas?

The startup time of a nitrogen generator depends on the model and specifications. In general, nitrogen generators have short startup times, typically ranging from a few minutes to several tens of minutes. Larger capacity or higher purity requirement nitrogen generators may require longer startup times.

9. Can a nitrogen generator simultaneously produce nitrogen gas and oxygen gas?

The design purpose of a nitrogen generator is to separate oxygen and nitrogen to produce high-purity nitrogen gas. Therefore, in most cases, a nitrogen generator does not simultaneously produce nitrogen gas and oxygen gas. If simultaneous production of nitrogen and oxygen is required, additional equipment or techniques need to be used for further processing.

10. What is the energy consumption of a nitrogen generator?

The energy consumption of a nitrogen generator varies depending on the model, specifications, and operating conditions. Generally, nitrogen generators have relatively low energy consumption, especially when compared to traditional nitrogen supply in gas cylinders. Nitrogen generators are typically adjusted based on the actual nitrogen demand to improve energy efficiency and minimize energy consumption.

## 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)

## Our Certifications



## 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:



## 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

 18626217683

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