

## PSA Mobile Nitrogen Generation System 50Nm<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: EN3050
- 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: 50Nm/h
- Inlet Diameter: DN32
- Outlet Diameter: DN25
- Size: 1450\*900\*2000 850kg
- Demand For Clean Compressed Air: 3.083
- Recommend Air Compressor: 30Kw 4.3m<sup>3</sup>/min 10Bar ) Or 22Kw (3.7m<sup>3</sup>/min 8Bar)
- Control System: PLC
- Type: Nitrogen Generator
- Warranty: 1 Year
- Highlight: **22kw mobile nitrogen generator, 30kw mobile nitrogen generator, 50Nm/h mobile nitrogen generation system**



for more products please visit us on [psa-generators.com](http://psa-generators.com)

## Product Description

### Description of 99.9% Purity 50Nm<sup>3</sup>/H PSA Nitrogen Generator Food, metallurgy, chemical

PSA Nitrogen Generator/Mobile Nitrogen Generator: 50Nm<sup>3</sup>/H, 99.9% Purity, For Food, Metallurgy, Chemical industry applicable

We have been engaged in the assembly of PSA nitrogen generators and oxygen generators in our factory for 15 years, providing approximately 400 sets of PSA nitrogen generators 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.



PN3050PSA Nitrogen Plant Technical Specification

lot	Item		Description /Specification
1	Model/Place of Manufacture		PN3050
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		50 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	3.083	Nm <sup>3</sup> /min	Recommend Air compressor	30Kw (4.3m3/min 10Bar )or 22Kw (3.7m3/min 8Bar)
14	Inlet Diameter			DN32	
15	Outlet Diameter			DN25	
16	Maximum inlet temperature			MAX 30	
17	Allowable working pressure range			Min7.5Kgf / cm2 Max9.9Kgf / cm2	
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 ungalified Gas)
24	Control System	Control Power Supply		0.2kw/set 220V 50 HZ	
		PLC		Mitsubishi core integrated screen /or Siemens S7-200 Smart	
		electrical box		built-in	1 set
		touch screen		Mitsubishi core integrated screen/ MCGS	
25	size LxWxH (mm) / Weight:(Kg)			About:1450*900*2000// 850kg	
26	Price			含税含 交期20天	
The reference Pic					
				Box Type	

## 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

- Raw material air is taken from nature. Nitrogen can be produced by supplying compressed air and power.
- Nitrogen purity can be adjusted conveniently and be produced by supplying compressed air
- The equipment is highly automated, produces gas quickly, and can be unattended. Nitrogen can be produced within 10-15 minutes of startup.
- The equipment process is simple, occupies a small area, consumes less energy and costs.
- Molecular sieves are filled by snowstorm method to avoid the pulverization of molecular sieves caused by avoid the pulverization of molecular sieves caused by high-pressure airflow impact and ensure the long-term use of molecular sieves.
- On-line inspection of imported analyzer with high access is simple, occupies a small area, consumes less energy,and costs.

## 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	10Nm <sup>3</sup> /H	≥99.9%	1000*800*1600	DN15	DN15	300	AC220V/0.2 KW
PN3015	15Nm <sup>3</sup> /H	≥99.9%	1200*850*1900	DN15	DN15	400	AC220V/0.2 Kw
PN3020	20Nm <sup>3</sup> /H	≥99.9%	1200*850*1900	DN25	DN15	500	AC220V/0.2 Kw
PN3025	25Nm <sup>3</sup> /H	≥99.9%	1450*900*1900	DN32	DN15	600	AC220V/0.2 Kw
PN3030	30Nm <sup>3</sup> /H	≥99.9%	1450*900*1900	DN32	DN15	700	AC220V/0.2 Kw
PN3040	40Nm <sup>3</sup> /H	≥99.9%	1450*900*1900	DN40	DN15	800	AC220V/0.2 Kw
PN3050	50Nm <sup>3</sup> /H	≥99.9%	1450*900*1900	DN40	DN25	900	AC220V/0.2 Kw
PN3060	60Nm <sup>3</sup> /H	≥99.9%	1600*1100*1950	DN40	DN25	1100	AC220V/0.2 Kw
PN3100	100Nm <sup>3</sup> /hr	≥99.9%	1800*1000*2300	DN40	DN25	1850	AC220V/0.2 Kw
PN3120	120Nm <sup>3</sup> /hr	≥99.9%	1800*1300*2450	DN40	DN25	2400	AC220V/0.2 Kw
PN3150	150Nm <sup>3</sup> /H	≥99.9%	2000*1300*2450	DN40	DN25	2600	AC220V/0.2 Kw
PN3200	200Nm <sup>3</sup> /H	≥99.9%	2000*1400*2550	DN40	DN25	2900	AC220V/0.2 KW
PN3250	250Nm <sup>3</sup> /H	≥99.9%	2200*1500*2650	DN50	DN40	3400	AC220V/0.2 KW
PN3300	300Nm <sup>3</sup> /H	≥99.9%	2500*1600*2680	DN50	DN40	3600	AC220V/0.2 Kw
PN3400	400Nm <sup>3</sup> /H	≥99.9%	2500*1600*2900	DN50	DN40	5000	AC220V/0.2 KW
PN3500	500Nm <sup>3</sup> /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: Nitrogen is used in semiconductor packaging processes to create a controlled environment. By displacing oxygen and moisture, nitrogen helps prevent oxidation, corrosion, and the degradation of semiconductor components during packaging, ensuring their integrity and reliability.  
  
Reduction: Nitrogen is employed for reduction purposes in semiconductor packaging. It helps reduce the presence of oxygen, preventing oxidation reactions that could negatively impact the quality and performance of the packaged devices.  
  
Storage: Nitrogen is utilized for storage purposes in the semiconductor industry. By maintaining an oxygen-free environment, nitrogen helps safeguard the integrity and stability of packaged semiconductor devices during storage, preventing oxidation and degradation over time.  
Moisture Control: Nitrogen is used to control moisture levels during semiconductor packaging. By maintaining a dry environment, nitrogen helps prevent moisture-related issues such as corrosion and electrical shorts, ensuring the long-term reliability of the packaged devices.  
  
Purging: Nitrogen is employed for purging operations in semiconductor packaging. It is used to remove unwanted gases and contaminants from packaging materials, ensuring the cleanliness and purity of the packaging environment.
- **Powder metallurgy, metal processing industry**  
Heat Treatment: Nitrogen is extensively used in the heat treatment of steel, iron, copper, and aluminum products. It provides a controlled atmosphere for processes such as annealing and carbonization, ensuring uniform heating, improved mechanical properties, and enhanced surface hardness of the metal components.  
  
High Temperature Furnace Protection: Nitrogen is employed for furnace protection in high-temperature applications. By creating an inert atmosphere, it prevents oxidation and minimizes the formation of scale on the metal surfaces, ensuring the quality and integrity of the processed materials.  
  
Low Temperature Assembly: Nitrogen is utilized in low-temperature assembly processes of metal parts. It helps to reduce the risk of oxidation or contamination during the assembly, ensuring the integrity and performance of the finished products.

**Plasma Cutting:** Nitrogen is commonly used as a plasma cutting gas in metal processing. It assists in improving the cutting quality and precision by providing a clean and stable plasma arc, resulting in smooth and accurate cuts on various metal parts.

**Inert Atmosphere:** Nitrogen serves as an inert atmosphere during various metal processing operations, such as welding, brazing, and soldering. It aids in preventing oxidation, minimizing the formation of defects, and ensuring the quality and strength of the metal joints.

- **Chemical industry, advanced material industry application**

Nitrogen is used to create oxygen - free atmosphere in chemical process, improve the safety of production process, fluid transmission power source, etc: It can be used for nitrogen purging of pipes and vessels in the system, filling nitrogen Storage tank, gas displacement, leak detection, combustible gas protection, chemical reaction agitation, chemical fiber production protection, also used in diesel hydrogenation and catalytic reforming.

- **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?

A nitrogen generator typically requires air as the input source. When operating the nitrogen generator, air is compressed using an air compressor and then processed through the adsorber with molecular sieves or the membrane separator within the nitrogen generator. Finally, pure nitrogen is obtained as the output. Some nitrogen generators may also require an electrical power supply.

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?

To ensure optimal performance, the maintenance of a nitrogen generator typically encompasses several essential tasks. These include regular cleaning and replacement of the adsorber with molecular sieves or membrane separator, inspection and maintenance of the compressed air system, and monitoring the nitrogen generation performance. It is important to consult the user manual or follow the guidance provided by the manufacturer of the nitrogen generator for specific maintenance requirements.

Routine cleaning and replacement of the adsorber with molecular sieves or membrane separator are crucial to maintain the efficiency and effectiveness of the gas separation process. This helps ensure the consistent production of pure nitrogen and prevents the buildup of contaminants or blockages that may hinder performance.

Inspecting and maintaining the compressed air system is vital to guarantee proper functioning and prevent any leaks or inefficiencies. Regular checks on air filters, valves, and pressure regulators help maintain the integrity of the system and optimize nitrogen generation.

Monitoring the nitrogen generation performance involves regularly assessing the nitrogen purity and flow rate to ensure they meet the desired specifications. This may involve using appropriate testing equipment or sensors to verify the nitrogen quality and quantity.

To ensure the nitrogen generator's longevity, reliability, and optimal performance, it is essential to refer to the user manual or follow the manufacturer's guidance for specific maintenance procedures, intervals, and other relevant considerations. Adhering to these guidelines plays a crucial role in maximizing the nitrogen generator's lifespan and efficiency while ensuring consistent and high-quality nitrogen production.

The user manual provided by the manufacturer serves as a valuable resource, offering detailed instructions and recommendations tailored to the specific nitrogen generator model. It outlines essential maintenance procedures, such as cleaning and replacing components, inspecting and servicing the compressed air system, and monitoring performance metrics. By following the prescribed maintenance procedures and adhering to recommended intervals, potential issues can be identified and addressed promptly, preventing any adverse effects on nitrogen production. Regular maintenance helps minimize the risk of system failures, optimizes operational efficiency, and upholds the consistent delivery of high-quality nitrogen.

In addition to routine maintenance, the user manual may also provide valuable insights into troubleshooting potential problems, safety precautions, and guidelines for effective operation. Familiarizing oneself with this information ensures that the nitrogen generator is operated and maintained correctly, promoting safe and efficient usage.

Ultimately, consulting the user manual and adhering to the manufacturer's guidance is essential for maximizing the lifespan, reliability, and performance of the nitrogen generator. By doing so, one can ensure a consistent supply of high-quality nitrogen and avoid potential issues that may hinder its operation.

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



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