

10Nm³/H PSA Nitrogen Generator 99.99% Purity Liquid N₂ For Laser Cutting

Basic Information

- Place of Origin: China
- Brand Name: Eco-Tech
- Certification: CE ISO13485 ISO9001
- Model Number: EN4010
- 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: 10Nm³/h
- Inlet Diameter: DN15
- Outlet Diameter: DN15
- Size: 1200*850*1500mm 300 Kg
- Demand For Clean Compressed Air: 0.83
- Recommend Air Compressor: 7.5Kw 1.0 M³/min 10Bar) Or 7.5Kw (1.1m³/min 8Bar)
- Control System: PLC
- Type: Nitrogen Generator
- Warranty: 1 Year
- Highlight: 1.1m³/min psa nitrogen gas generator, 10Nm³/H PSA Nitrogen Generator, 1.0m³/min PSA Nitrogen Generator



Product Description

PSA Nitrogen Generator/ Psa System Nitrogen Production: 10Nm³/H, 99.99% Purity, For Food, Metallurgy, Chemical
Description of 99.99% Purity 10Nm³/H PSA Nitrogen Generator 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.

Through our partnership with Burkert Valves, we have developed a customized double-acting pneumatic valve for our equipment. This valve incorporates innovative features such as top and middle pressure equalization and airflow orifice plates. These design elements enable us to continuously optimize and reduce the air consumption ratio, resulting in significant energy savings.

We take pride in achieving the highest level of energy efficiency in China with our equipment. By minimizing air consumption, we not only reduce operational costs but also contribute to a more sustainable and environmentally friendly operation.

Furthermore, we have implemented our patented silencer technology to effectively control the noise generated by our equipment. With noise levels below 55 dB, we prioritize a quiet and comfortable working environment for our customers.

Our commitment to continuous improvement and innovation allows us to deliver high-performance equipment that not only saves energy but also ensures a quieter and more efficient operation.

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.



PN4010 PSA Nitrogen Plant Technical Specification			
lot	Item		Description /Specification
1	Model/Place of Manufacture		PN4010
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	10	Nm ³ /hr
5	Nitrogen Gas Purity		≥99.99 % 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 ³
10	Residual dust		≤0.01um

11	Residual water			≤0.069mg/m3	
12	Air inlet atmospheric dew point			-15	
13	Demand for clean compressed air	0.83	Nm³/min	Recommend Air compressor	7.5Kw (1.0 m3/min 10Bar) or 7.5Kw (1.1m3/min 8Bar)
14	Inlet Diameter			DN15	
15	Outlet Diameter			DN15	
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 unqualified 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:1200*850*1500mm 300 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

Our nitrogen generation system offers enhanced features and benefits for efficient production of nitrogen:

Convenient Nitrogen Production: Nitrogen can be easily produced by supplying compressed air and power. The purity of nitrogen can be conveniently adjusted as per requirement by varying the input parameters.

Automation and Quick Gas Generation: The equipment is highly automated, allowing for unattended operation. It rapidly produces nitrogen within just 10-15 minutes after startup, ensuring quick availability of the gas.

Compact Design and Energy Efficiency: The equipment has a simple process flow and occupies minimal space. It consumes less energy, resulting in reduced operational costs and environmental impact.

Snowstorm Method for Molecular Sieve Filling: To prevent the pulverization of molecular sieves caused by high-pressure airflow impact, we utilize the snowstorm method for molecular sieve filling. This ensures the long-term usability and efficiency of the molecular sieves.

On-line Inspection with High Accessibility: The system is equipped with an imported analyzer that allows for on-line inspection of nitrogen purity.

This analyzer has a high level of accessibility, occupying minimal space and consuming low energy.

With these optimized features, our nitrogen generation system offers a reliable and cost-effective solution for producing nitrogen gas, meeting diverse industrial requirements.

4. Technical indicators

- Capacity Range : 2~2000Nm3/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 Nm ³ /H	Purity	Size mm	Inlet Diameter	Outlet Diameter	Weight Kg	Power
PN5003	3	≥99.999%	900*500*1400	DN15	DN15	200	AC220V/0.2KW
PN5005	5	≥99.999%	1200*850*1550	DN20	DN15	300	AC220V/0.2KW
PN5010	10	≥99.999%	1450*1000*1900	DN25	DN15	600	AC220V/0.2KW
PN5015	15	≥99.999%	1450*1000*1900	DN25	DN15	700	AC220V/0.2KW
PN5020	20	≥99.999%	1450*1000*1900	DN25	DN15	800	AC220V/0.2KW
PN5030	30	≥99.999%	1650*750*1900	DN32	DN15	900	AC220V/0.2KW
PN5040	40	≥99.999%	1800*1200*2300	DN32	DN25	1100	AC220V/0.2KW
PN5050	50	≥99.999%	1800*1200*2300	DN25	DN25	1200	AC220V/0.2KW
PN5060	60	≥99.999%	1800*1200*2300	DN40	DN25	1500	AC220V/0.2KW
PN5080	80	≥99.999%	1800*1200*2450	DN40	DN25	2500	AC220V/0.2KW
PN5100	100	≥99.999%	2000*1400*2550	DN50	DN25	2600	AC220V/0.2KW
PN5120	120	≥99.999%	2000*1400*2550	DN50	DN25	2800	AC220V/0.2KW
PN5130	130	≥99.999%	2000*1400*2550	DN50	DN25	2950	AC220V/0.2KW
PN5150	150	≥99.999%	2200*1600*2650	DN50	DN25	3200	AC220V/0.2KW
PN5180	180	≥99.999%	2500*1600*3200	DN65	DN40	4500	AC220V/0.2KW
PN5200	200	≥99.999%	2500*1600*2900	DN65	DN40	5500	AC220V/0.2KW
PN5250	250	≥99.999%	2500*1600*2900	DN65	DN50	5500	AC220V/0.2KW
PN5300	300	≥99.999%	3000*2000*3550	DN80	DN50	8500	AC220V/0.2KW

-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 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?

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 have become increasingly prevalent across multiple industries, serving essential functions in industrial, medical, food and beverage, and laboratory applications. They are extensively employed in sectors such as chemicals, electronics, and metal processing, where they play critical roles in various processes.

In the medical field, nitrogen generators are indispensable components of anesthesia and gas delivery systems, providing a reliable source of medical-grade nitrogen. This is crucial for respiratory support, patient care, and surgical procedures, ensuring optimal healthcare outcomes.

The food and beverage industry heavily relies on nitrogen generators for packaging and preservation purposes. By displacing oxygen, nitrogen helps extend the shelf life of perishable products, preventing spoilage and maintaining product freshness. This ensures that consumers receive high-quality and safe food and beverage products.

In laboratories, nitrogen generators are vital for creating controlled atmospheres and safeguarding sensitive equipment. They establish inert environments that shield samples and chemicals from degradation, oxidation, and contamination. Additionally, nitrogen serves as a carrier gas in chromatography applications, ensuring accurate analysis and reliable results.

The widespread adoption of nitrogen generators across industries highlights their importance in optimizing processes, maintaining product quality, and upholding safety standards. By providing a continuous and readily available supply of nitrogen, these systems contribute to the success and advancement of various sectors.

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?

Nitrogen generators are designed with a focus on energy efficiency, aiming to minimize energy consumption compared to traditional nitrogen supply methods that rely on gas cylinders. The energy efficiency of a nitrogen generator depends on various factors, such as its design, operating conditions, and usage patterns.

One of the key advantages of nitrogen generators is their ability to produce nitrogen on demand, tailored to the specific requirements of the application. This on-demand production ensures that nitrogen is generated only when needed, eliminating wastage and optimizing energy usage. By adapting nitrogen production to real-time demand, nitrogen generators minimize energy consumption and contribute to cost savings.

The energy efficiency of a nitrogen generator can be enhanced through the use of advanced technologies and intelligent control systems. These features help monitor and optimize nitrogen production, ensuring efficient operation and minimizing unnecessary energy usage. Additionally, the selection of energy-efficient components and the optimization of system design further contribute to reducing energy consumption.

It's important to note that the energy efficiency of a nitrogen generator can vary depending on factors such as the required nitrogen purity, flow rate, and pressure. Manufacturers provide specifications and guidelines that outline the energy consumption of their nitrogen generator models, allowing users to make informed decisions based on their specific needs.

By choosing energy-efficient nitrogen generators, businesses can achieve significant energy savings, reduce environmental impact, and improve overall sustainability. The efficient utilization of energy resources not only benefits the bottom line but also aligns with the growing focus on environmental responsibility.

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



Meliss.Zhao@eco-techsz.com



psa-generators.com

Room 101, Building 19, No. 4388 Dong Shan Avenue, Lin hu Town, Wu Zhong District, Suzhou, China zip
215106