N2 PSA Gas Generator 500Nm3/H 99.9% Purity, For Food, Metallurgy, Chemical

Our Product Introduction

Basic Information

- Place of Origin: China
- Brand Name: Powerbuilder
- Certification: CE ISO13485 ISO9001
- Model Number: PN3500
- 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: 500Nm/h
- Inlet Diameter: DN80
- Outlet Diameter: DN65
- Size: 2500*1600*3750 7200kg
- Demand For Clean Compressed Air: 30.83
- Recommend Air Compressor: 200Kw 31.3m3/min 10Bar) Or 185Kw (32.3m3/min 8Bar)
- Control System: PLC
- Type: Nitrogen Generator
- Warranty: 1 Year
- Highlight: **N2 PSA Gas Generator**, **PSA Gas Generator 500Nm3/H**, **99.9% psa nitrogen gas plant**

Our Product Introduction

for more products please visit us on psa-generators.com

Product Description

PSA Nitrogen Generator/Psa N2 Generator: 500Nm3/H, 99.9% Purity, For Food, Metallurgy, Chemical
Description of 99.9% Purity 500Nm3/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.

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.

PN3500 PSA Nitrogen Plant Technical Specification					
lot	Item			Description /Specification	
1	Model/Place of Manufacture			PN3500	
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			500	Nm3/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/m3	
10	Residual dust			≤0.01um	
11	Residual water			≤0.069mg/m3	
12	Air inlet atmospheric dew point			-15	
13	Demand for clean compressed air	30.83	Nm^3/min	Recommend Air compressor	200Kw (31.3m3/min 10Bar) or 185Kw (32.3m3/min 8Bar)
14	Inlet Diameter			DN80	
15	Outlet Diameter			DN65	
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 unqalified 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:2500*1600*3750// 7200kg	
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

- 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.
- Compact Design: Emphasize the development of analyzers with a compact design, ensuring they occupy minimal space when installed in online inspection systems. This enables easy integration into existing production lines or inspection setups without requiring significant modifications or space allocation.
- User-Friendly Interface: Simplify the user interface of the analyzer to ensure ease of operation and accessibility. Implement intuitive controls, clear display screens, and user-friendly software interfaces that allow operators to quickly understand and navigate the system. This reduces the learning curve and facilitates efficient operation and maintenance.
- Energy-Efficient Technology: Employ energy-efficient components and technologies in the analyzer's design. Utilize low-power consumption sensors, optimized algorithms, and energy-saving modes to reduce overall energy consumption without compromising performance. This not only lowers operational costs but also contributes to environmental sustainability.
- High-Performance Sensors: Integrate advanced sensors with high accuracy and reliability into the analyzer. These sensors should be capable of detecting and analyzing the desired parameters or substances with precision, ensuring reliable and consistent inspection results. High-performance sensors minimize the need for complex calibration procedures and reduce maintenance requirements.
- Modular Configuration: Adopt a modular approach in the analyzer's design, allowing for flexible configurations and scalability. Modular analyzers enable customization based on specific inspection requirements, allowing users to choose the necessary modules and functions while reducing unnecessary costs and complexity.
  emote Monitoring and Control: Implement remote monitoring and control capabilities in the analyzer system. This enables operators to access and manage the analyzer from a centralized control room or through a web-based interface, reducing the need for physical presence at the inspection site. Remote access facilitates real-time monitoring, troubleshooting, and data analysis, improving operational efficiency and reducing maintenance downtime.
- Cost-Effective Solutions: Focus on cost-effective solutions by considering factors such as initial investment, maintenance, and consumables. Optimize the analyzer's design to minimize production and maintenance costs while ensuring reliable performance. Additionally, explore partnerships with suppliers and manufacturers to obtain competitive pricing for components and consumables.

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	Purity	Size mm	Inlet Diameter	Outlet Diameteer	Weight Kg	Power
PN3010	10Nm3/H	≥99.9%	1000*800*1600	DN15	DN15	300	AC220V/0.2KW
PN3015	15Nm3/H	≥99.9%	1200*850*1900	DN15	DN15	400	AC220V/0.2Kw
PN3020	20Nm3/H	≥99.9%	1200*850*1900	DN25	DN15	500	AC220V/0.2Kw
PN3025	25Nm3/H	≥99.9%	1450*900*1900	DN32	DN15	600	AC220V/0.2Kw
PN3030	30Nm3/H	≥99.9%	1450*900*1900	DN32	DN15	700	AC220V/0.2Kw
PN3040	40Nm3/H	≥99.9%	1450*900*1900	DN40	DN15	800	AC220V/0.2Kw
PN3050	50Nm3/H	≥99.9%	1450*900*1900	DN40	DN25	900	AC220V/0.2Kw
PN3060	60Nm3/H	≥99.9%	1600*1100*1950	DN40	DN25	1100	AC220V/0.2Kw
PN3100	100Nm3/hr	≥99.9%	1800*1000*2300	DN40	DN25	1850	AC220V/0.2Kw
PN3120	120Nm3/hr	≥99.9%	1800*1300*2450	DN40	DN25	2400	AC220V/0.2Kw
PN3150	150Nm3/H	≥99.9%	2000*1300*2450	DN40	DN25	2600	AC220V/0.2Kw
PN3200	200Nm3/H	≥99.9%	2000*1400*2550	DN40	DN25	2900	AC220V/0.2KW
PN3250	250Nm3/H	≥99.9%	2200*1500*2650	DN50	DN40	3400	AC220V/0.2KW
PN3300	300Nm3/H	≥99.9%	2500*1600*2680	DN50	DN40	3600	AC220V/0.2Kw
PN3400	400Nm3/H	≥99.9%	2500*1600*2900	DN50	DN40	5000	AC220V/0.2KW
PN3500	500Nm3/H	≥99.9%	2500*1600*3750	DN80	DN65	7200	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, puring 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 industy application**
  Packaging, reduction, strage 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**
  Mianly 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?

- In environments where the highest degree of purity is an absolute requirement, such as research laboratories, analytical instrumentation, and specialized manufacturing processes, the utilization of ultra-high purity nitrogen is of utmost importance. With purity levels typically surpassing an impressive 99.999%, this ultra-pure form of nitrogen plays a critical role in ensuring minimal interference and contamination, thereby enabling precise and accurate results in the most sensitive experiments and cutting-edge technologies.
- The exceptional purity of ultra-high purity nitrogen is achieved through advanced purification techniques, meticulously removing impurities and contaminants to infinitesimal levels. This level of purity is essential for applications that demand absolute precision and reliability, where even the tiniest traces of impurities can significantly impact the outcome.
- Ultra-high purity nitrogen is a critical component within research laboratories, playing a vital role in a wide range of analytical techniques, including mass spectrometry, chromatography, and spectroscopy. Its exceptional purity level serves as the foundation for reliable and accurate results in these analytical methods.

- The remarkable purity of ultra-high purity nitrogen offers several key advantages in laboratory settings. Firstly, it ensures baseline stability, minimizing unwanted variations and fluctuations in analytical measurements. This stability is crucial for achieving consistent and reproducible results, enabling researchers to confidently interpret their data.
- Additionally, the exceptional purity of ultra-high purity nitrogen minimizes background noise, which is particularly important in sensitive analytical techniques. By reducing interference from impurities, scientists can enhance the signal-to-noise ratio, allowing for precise detection and quantification of analytes of interest. This capability is invaluable in fields such as environmental analysis, pharmaceutical research, and forensic investigations, where accurate identification and measurement of trace substances are essential.
- In environmental analysis, ultra-high purity nitrogen enables precise monitoring of pollutants and contaminants in air, water, and soil samples. In pharmaceutical research, it ensures the accurate determination of drug compounds and impurities, contributing to the development of safe and effective medications. In forensic investigations, the high purity of nitrogen enables the reliable identification and quantification of trace evidence, assisting in criminal investigations and legal proceedings.
- The level of purity provided by ultra-high purity nitrogen is a cornerstone of analytical precision and reliability. By utilizing this exceptional gas, research laboratories can achieve the highest standards of accuracy and sensitivity in their analytical techniques, facilitating advancements in scientific discovery and innovation.
- In the realm of environmental analysis, ultra-high purity nitrogen enables researchers to accurately determine the presence and concentration of pollutants, trace elements, and volatile compounds in air, water, and soil samples. Its exceptional purity ensures minimal interference and background signals, allowing for precise measurements and reliable data for environmental monitoring and impact assessments.
- In pharmaceutical research, ultra-high purity nitrogen serves as a critical tool for drug development and quality control. Its purity guarantees the integrity and accuracy of analytical results, enabling researchers to identify and quantify active pharmaceutical ingredients, impurities, and degradation products with exceptional precision. This level of accuracy is crucial in ensuring the safety, efficacy, and compliance of pharmaceutical products.
- Furthermore, in forensic investigations, ultra-high purity nitrogen plays a crucial role in the analysis of trace evidence and the identification of chemical substances. Its purity eliminates the risk of contamination and ensures the reliability of analytical results, allowing forensic scientists to accurately identify and characterize minute amounts of substances found at crime scenes. This level of precision aids in criminal investigations, providing crucial evidence and supporting the pursuit of justice.
- Overall, ultra-high purity nitrogen is an indispensable asset in research laboratories, providing the foundation for accurate and reliable analytical techniques. Its exceptional purity ensures the stability of baselines, reduces background noise, and facilitates precise identification and quantification of analytes. In fields such as environmental analysis, pharmaceutical research, and forensic investigations, this level of purity is crucial for achieving accurate measurements, reliable data, and advancing scientific knowledge and applications.
- Additionally, in advanced manufacturing processes, particularly in semiconductor fabrication and electronics assembly, ultra-high purity nitrogen is indispensable. The presence of impurities, such as oxygen, moisture, or particulate matter, can severely compromise the performance and reliability of delicate electronic components. Ultra-high purity nitrogen provides an inert and controlled atmosphere, preventing oxidation, reducing defects, and enhancing the overall quality of the manufactured products.
- Moreover, in industries involving high-tech materials and technologies, such as nanotechnology, microelectronics, and aerospace, ultra-high purity nitrogen ensures the integrity and functionality of intricate structures and devices. Its purity is crucial in processes like thin film deposition, lithography, and cleanroom operations, where even the slightest impurities can lead to catastrophic failure or suboptimal performance.
- By offering an unmatched level of purity, ultra-high purity nitrogen empowers researchers, scientists, and manufacturers to push the boundaries of their respective fields. It enables precise measurements, accurate analyses, and reliable manufacturing processes, fostering innovation and ensuring the highest quality standards are met.

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 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:

Honeywell 霍尼韦尔 · ABB · 上海电气 SHANGHAI ELECTRIC · ZKH 震坤行 · Qindanda · MGM MULTI GAS MEDIKA · ICA · BOSCH Invented for life · Yanfeng · SIMCO · AMETEK FLOORCARE & SPECIALTY MOTORS · 绿塔 AIR CLEANSE · YOKOGAWA · Unit Safety Ltd · BYD · 富士康 FOXCONN · 迈邦生物 MediumBank · 比亚迪汽车 BYD AUTO

OUR PARTNERS:

上海交通大學 SHANGHAI JIAO TONG UNIVERSITY

Warranty

After Sales Support

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.

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