Semiconductor Packing Industy PSA Nitrogen Generator/Gas Nitrogen Generator: 99.999% Purity

Our Product Introduction

Basic Information

- Place of Origin: China
- Brand Name: Powerbuilder
- Certification: CE ISO13485 ISO9001
- Model Number: PN5060
- 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: 60Nm/h
- Inlet Diameter: DN40
- Outlet Diameter: DN25
- Size: 1800*1200*2300 1500KG
- Demand For Clean Compressed Air: 6.5
- Recommend Air Compressor: 45Kw 6.5 M3/min 10 Bar) Or 37Kw (6.8m3/min 8Bar)
- Control System: PLC
- Product Name: PSA Nitrogen Generator
- Warranty: 1 Year
- Highlight: **semiconductor psa nitrogen generator**, **semiconductor high pressure nitrogen generator** , **dn25 psa nitrogen generator**

Our Product Introduction

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Product Description

Description of 99.999% Purity 60Nm3/H PSA Nitrogen Generator For Oil and gas industry,Semiconductor packing industy application

A PSA nitrogen generator is a sophisticated device engineered to generate nitrogen gas of exceptional purity. It capitalizes on the distinct physical properties of oxygen and nitrogen found in the atmosphere, effectively separating and extracting nitrogen from the ambient air. This cutting-edge technology caters to diverse industries such as manufacturing, healthcare, and scientific research, where there is a need for high-purity nitrogen for a wide range of applications.

PN5060 PSA Nitrogen Plant Technical Specification					
lot	Item			Description /Specification	
1	Model/Place of Manufacture			PN5060	
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			60	Nm3/hr
5	Nitrogen Gas Purity			≥99.999 % 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	6.5	Nm^3/min	Recommend Air compressor	45Kw (6.5 m3/min 10 Bar) or 37Kw (6.8m3/min 8Bar)
14	Inlet Diameter			DN40	
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-260	
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 Smar	
		electrical box	built-in	1 set
		touch screen	Mitsubishi core integrated screen/ MCGS	
25	size LxWxH (mm) / Weight:(Kg)		About: 1800*1200*2300 1500KG	
26	lead time		20 days	

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

- A nitrogen generator utilizes ambient air, sourced from nature, as the raw material for nitrogen production. By supplying compressed air and power, nitrogen gas can be generated. The purity of nitrogen can be conveniently adjusted by regulating the supply of compressed air.
- The nitrogen generator is characterized by its high level of automation, enabling rapid gas production without the need for constant supervision. It can operate unattended, and nitrogen gas can be generated within a short period of 10-15 minutes after starting up the equipment.
- The equipment itself is designed with a straightforward process, requiring minimal space and consuming less energy, which leads to cost savings. To ensure the long-term durability of the molecular sieves, the snowstorm method is employed during their filling. This method prevents the pulverization of the molecular sieves caused by the impact of high-pressure airflow.
- For efficient monitoring, the nitrogen generator is equipped with an imported analyzer that facilitates online inspections. This analyzer has excellent accessibility, occupies a small area, and contributes to energy and cost efficiency.

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 Nm3/H	Purity	Size mm	Inlet Diameter	Outlet Diameteer	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, 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.
- **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.
- **Oil and gas industry**
- Oil refining, container machine pipeline nitrogen-filled purge box leak detection, nitrogen injection oil recovery.

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 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 main purpose of a nitrogen generator is to separate oxygen and nitrogen from an air source to produce nitrogen gas of high purity. Nitrogen generators are specifically designed to exclusively generate nitrogen gas and do not simultaneously produce oxygen gas under normal circumstances.
The separation process in a nitrogen generator relies on technologies such as membrane separation, pressure swing adsorption (PSA), or cryogenic distillation. These methods selectively remove oxygen and other impurities from the air, leaving behind pure nitrogen gas as the desired output.
If there is a need for simultaneous production of nitrogen and oxygen gases, additional equipment or alternative techniques must be employed. Some industrial processes or medical applications may require both gases to be produced together. In such cases, specialized systems like air separation units (ASUs) or oxygen concentrators can be used. These systems employ more complex and energy-intensive processes to achieve the simultaneous production of nitrogen and oxygen gases.
It is crucial to note that most nitrogen generators are designed solely for the production of nitrogen gas. They are optimized for the separation of oxygen and nitrogen to generate high-purity nitrogen. Simultaneous production of nitrogen and oxygen is not a standard feature of nitrogen generators.
However, in cases where the co-production of nitrogen and oxygen is necessary, specific equipment and techniques can be employed. Additional systems, such as air separation units (ASUs) or oxygen concentrators, are available for such applications. These specialized setups utilize more complex processes and technologies to facilitate the simultaneous generation of nitrogen and oxygen gases.
To summarize, the primary objective of a nitrogen generator is to separate oxygen and nitrogen to produce nitrogen gas of high purity. While nitrogen generators are not typically designed to simultaneously generate nitrogen and oxygen, alternative equipment and techniques exist to accommodate applications that require the co-production of both gases.

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.

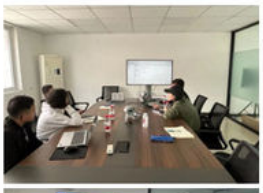
OUR SERVICE

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

PRODUCT INTRODUCTION-SERVICE

Inner training, pre-shipment training, onsite commissioning, onsite training—Focus on detail and complete

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COMPANY INTRODUCTION—LOCATIONS


Suzhou PSA Factory


Shanghai Powerbuilder


APAT Mexico


UPAT

APAT -USA


YoCo（Hongkong)

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 · ICA · MGM MULTI GAS MEDIKA · BOSCH Invented for life · Yanfeng · 绿塔 AIR CLEANSE · SIMCO · AMETEK FLOORCARE & SPECIALTY MOTORS · YOKOGAWA · Unit Safety Ltd · BYD 比亚迪汽车 BYD AUTO

OUR PARTNERS:

上海交通大學 SHANGHAI JIAO TONG UNIVERSITY · 富士康 FOXCONN · 迈邦生物 MediumBank

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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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