400Nm3/H Pressure Swing Adsorption Nitrogen Generator 99.99% Purity

Our Product Introduction

Basic Information

- Place of Origin: China
- Brand Name: Eco-Tech
- Certification: CE ISO13485 ISO9001
- Model Number: EN4400
- 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: 400Nm/h
- Inlet Diameter: DN80
- Outlet Diameter: DN50
- Size: 3000*2000*3750mm 8500 Kg
- Demand For Clean Compressed Air: 33.33
- Recommend Air Compressor: 220Kw 33.5m3/min 10Bar) Or 200Kw(35.6m3/min 8Bar)
- Control System: PLC
- Type: Nitrogen Generator
- Warranty: 1 Year
- Highlight: **400Nm3/H pressure swing adsorption nitrogen generator** , **dn80 pressure swing adsorption nitrogen generator** , **220kw pressure swing adsorption for nitrogen**

Our Product Introduction

Product Description

PSA Nitrogen Generator/ Industrial Nitrogen Generator: 400Nm3/H, 99.99% Purity, For Food, Metallurgy, Chemical
Description of 99.99% Purity 400Nm3/H PSA Nitrogen Generator Food, metallurgy, chemical industry applicable

We have a rich experience of 15 years in manufacturing PSA nitrogen generators and oxygen generators at our factory. Each year, we supply approximately 400 sets of these generators to both domestic and international customers, encompassing production and debugging processes. In collaboration with Burkert Valves, we have developed our own customized double-acting pneumatic valve. With the inclusion of top and middle pressure equalization design and airflow orifice plates, we continuously optimize and reduce the air consumption ratio of our equipment, resulting in significant energy savings. Our equipment boasts the highest energy consumption ratio in China. Additionally, our patented silencer effectively controls device noise, keeping it below 55 dB.

In terms of process flow, we have a comprehensive range of procedures and supporting equipment, including cutting, welding, assembly, molecular sieve filling, automatic rust removal, spraying, and complete commissioning procedures.

In our supply chain, we source first-line brands such as Atlas Copco, Ingersoll Rand, GDK, Liutech, Bolaite, Hanbell, and BK for air compressors. We also provide Boly, Atlas Copco, and Liutech refrigerated dryers, as well as Anshan Jiapeng and Anqing Bailian boosters. Our offerings extend to supporting equipment and accessories as well.

Presently, our company's products cater to end-users and distributors worldwide. We offer customized remote systems, color customization, display interface customization, and various other OEM services. Moreover, we provide ASME standard equipment and pressure tanks compliant with the requirements of the USA and Australian markets.

For specific selection and inquiries, please reach out to our customer manager. We aspire to become your trusted long-term partner.

PN4400 PSA Nitrogen Plant Technical Specification				
lot	Item		Description /Specification	
1	Model/Place of Manufacture		PN4400	
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		400	Nm3/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/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	33.33	Nm^3/min	Recommend Air compressor	220Kw (33.5m3/min 10Bar) or 200Kw(35.6 m3/min 8Bar)
14	Inlet Diameter			DN80	
15	Outlet Diameter			DN50	
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:3000*2000*3750mm 8500 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

- 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 : 2~2000Nm3/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 Diametee r	Weight Kg	Power
PN4005	5Nm3/H	≥99.99%	1200*850*1 500	DN15	DN15	300	AC220V/0.2 KW
PN4010	10Nm3/ H	≥99.99%	1200*900*1 900	DN15	DN15	500	AC220V/0.2 Kw
PN4020	20Nm3/ H	≥99.99%	1450*900*1 900	DN25	DN15	600	AC220V/0.2 Kw
PN4030	30Nm3/ H	≥99.99%	1450*900*2 250	DN32	DN15	700	AC220V/0.2 Kw
PN4040	40Nm3/ H	≥99.99%	1600*1100* 1950	DN32	DN15	800	AC220V/0.2 Kw
PN4050	50Nm3/ H	≥99.99%	1700*1100* 2200	DN40	DN15	1000	AC220V/0.2 Kw
PN4060	60Nm3/ H	≥99.99%	1800*1000* 2300	DN40	DN25	1200	AC220V/0.2 Kw
PN4070	70Nm3/ H	≥99.99%	1800*1000* 2300	DN40	DN25	1800	AC220V/0.2 Kw
PN4080	80Nm3/ H	≥99.99%	1800*1000* 2300	DN40	DN25	1900	AC220V/0.2 Kw
PN4100	100Nm3/ H	≥99.99%	1800*1300* 2450	DN40	DN25	2500	AC220V/0.2 Kw
PN4120	120Nm3/ H	≥99.99%	1800*1300* 2450	DN40	DN25	2600	AC220V/0.2 Kw
PN4150	150Nm3/ H	≥99.99%	2000*1300* 2450	DN40	DN25	2900	AC220V/0.2 Kw
PN4200	200Nm3/ H	≥99.99%	2200*1500* 2650	DN50	DN40	3400	AC220V/0.2 Kw
PN4250	250Nm3/ H	≥99.99%	2500*1600* 2680	DN50	DN40	3800	AC220V/0.2 Kw
PN4300	300Nm3/ H	≥99.99%	2500*1600* 2900	DN50	DN40	5000	AC220V/0.2 Kw
PN4350	350Nm3/ H	≥99.99%	2500*1600* 2900	DN80	DN50	5500	AC220V/0.2 KW
PN4400	400Nm3/ H	≥99.99%	3000*2000* 3750	DN80	DN50	7500	AC220V/0.2 Kw

-Applications-

The application of Surface Mount Technology (SMT) industry spans across multiple sectors, offering numerous benefits:

Semiconductor Silicon Industry:
Ensures the protection and cleanliness of the atmosphere during semiconductor and integrated circuit manufacturing.
Facilitates the recovery of chemicals used in the manufacturing process.

Electronic Components Industry:
Utilizes nitrogen for selective welding, purging, and encapsulation, guaranteeing the production of high-quality electronic components.

Semiconductor Packaging Industry:
Employs nitrogen for packaging, reduction, and storage purposes, ensuring the integrity and longevity of semiconductor products.

Powder Metallurgy and Metal Processing Industry:
Utilizes nitrogen for heat treatment applications, such as annealing and carbonization of steel, iron, copper, and aluminum products.
Provides protective atmospheres in high-temperature furnaces and facilitates low-temperature assembly and plasma cutting of metal parts.

Chemical and Advanced Material Industry:
Creates oxygen-free atmospheres in chemical processes, enhancing safety and product quality.
Nitrogen is used for purging, filling storage tanks, gas displacement, leak detection, and as an inert medium for chemical reactions.
It finds applications in chemical fiber production, diesel hydrogenation, and catalytic reforming.

Oil and Gas Industry:
Nitrogen is employed in oil refining processes, container machine pipeline purging, leak detection, and enhanced oil recovery through nitrogen injection.

Food and Pharmaceutical Industry:
Nitrogen is crucial for food packaging, preservation, and storage, ensuring freshness and extending shelf life.
It is used in configurable sterilization filters for food drying and sterilization processes.
In the pharmaceutical sector, nitrogen is used for packaging, creating controlled atmospheres for drug delivery, and as a

medical replacement gas.

These optimized applications of SMT industry contribute to enhanced productivity, improved product quality, and increased safety standards across these sectors.

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?
Nitrogen generators rely on two primary technologies: adsorption and membrane separation, to achieve the separation of nitrogen from other gases.
Adsorption technology utilizes a specialized adsorbent material, such as molecular sieves, which has a high affinity for oxygen and moisture. When the gas mixture passes through the adsorbent bed, the oxygen and moisture molecules are selectively adsorbed, while the nitrogen molecules pass through and are collected as the desired product. This process exploits the varying adsorption capacities of different gas components to achieve the separation of nitrogen.
In contrast, membrane separation technology employs a membrane with specific pore sizes that allow the smaller nitrogen molecules to permeate through while blocking larger molecules like oxygen and moisture. The gas mixture is passed through the membrane, and due to the difference in molecular size and permeability, nitrogen selectively permeates through the membrane, leaving behind oxygen and moisture.
Both adsorption and membrane separation technologies offer efficient methods of nitrogen generation. The choice between them depends on factors such as the required purity level, flow rate, and specific application demands. By leveraging these technologies, nitrogen generators provide a reliable and effective solution for producing nitrogen gas in various industries and applications.

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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