Portable N2 Nitrogen Generator For Laser Cutting Machine Brewery 500 Psi 60CFM

Our Product Introduction

Basic Information

- Place of Origin: SUZHOU, CHINA
- Brand Name: SUMAIRUI GAS
- Certification: ISO9001, CE, BV, SGS, TUV, ASME, GOST,NB,NR ETC
- Model Number: OSP100-A
- Minimum Order Quantity: 1 set
- Price: Negotiable
- Packaging Details: Exporting wooden case /Film packing
- Delivery Time: 30-45 days
- Payment Terms: L/C, T/T, Western Union, MoneyGram
- Supply Ability: 100 sets/months

Product Specification

- Voltage: 220-575V 50-60Hz
- Production Rate: 30-100%
- Usage: For General Industrial Working
- Condition: Brand New
- Weight: Actual Weight
- After-sales Service Provided: Available Send Engineers Coming For Assistant Installation & Commission
- Dimension(l*w*h): Actual Size
- Power(w): 0.5 Kw
- Purity: 99%-99.999%
- Capacity: 1-5000 Nm3/hr
- Application: Laser Cutting
- Color: Customized
- Product Name: Sumairui Gas
- Type: PSA Modular

Our Product Introduction

for more products please visit us on n2-nitrogengenerator.com

Product Description

60 CFM nitrogen generator with purity 99.99%-99.999% 500 psi used for 12000 fiber laser cutting

What Is a PSA Nitrogen Generator?

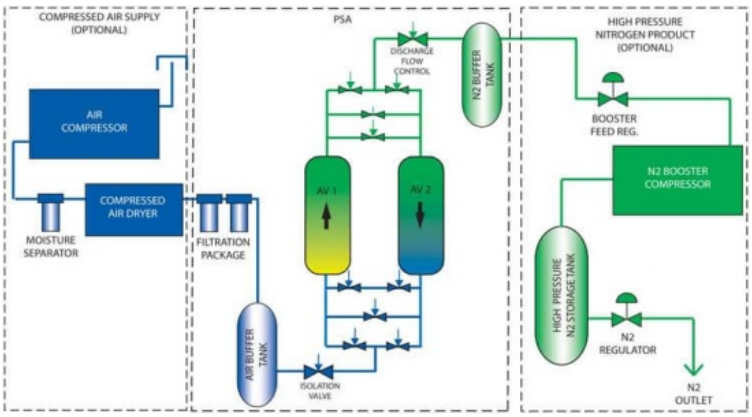
Pressure Swing Adsorption is a technology used for separating gas species from a mix of various gases under pressure, depending on the affinity for an adsorbent material and the species' molecular characteristics. This technology differs significantly from cryogenic-distillation gas separation techniques. Specific adsorptive materials, such as activated carbon or molecular sieves, are used as a trap, adsorbing the target gas species at a high pressure. Operating at near-ambient temperatures, the process swings to low pressure, desorbing the adsorbed material.

How Do Industrial PSA Nitrogen Generators Work?

For this process, pressure swing adsorption relies on the principle that under high pressure, gas tends to be attracted to solid surfaces. Higher pressures result in more gas being adsorbed. When pressure is reduced, adsorbed gas is then released (desorbed). Pressure Swing Adsorption processes are often used to separate gases from mixtures because different gases are attracted to different solid surfaces more/less strongly. For example, if air (gas mixture) passes under pressure through a particular vessel containing an adsorbent bed of CMS (which attracts O2 more strongly than it does N2), some or all of the oxygen will remain in the bed, and gas exiting the vessel will then be enriched in N2. When the bed reaches its capacity's end to adsorb oxygen, it can regenerate by reducing pressure, consequently releasing adsorbed oxygen. It can then begin the cycle again and produce more high purity N2 gas.

Using two (2) adsorbent vessels allows for near-continuous production of target gas. This technique also permits pressure equalization, which is where gas leaving a depressurized vessel is used to partially pressurize a second vessel. This common industrial practice leads to significant energy savings.

Typical System Configuration (PFD)



System Specification

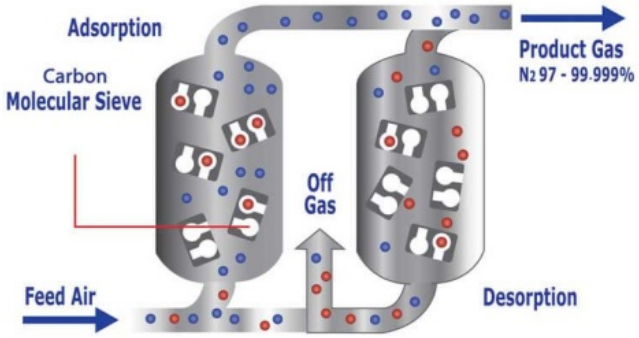
Sumairui Gas offers completely turn-key system designs, including all components, elements, and design drawings. Our engineering teams will work directly with you to design and install systems to your exact specifications. Our full-service team is ready to answer any questions you may have 24/7.

Technology

How Does a Pressure Swing Adsorption System Work?

Nitrogen PSA Generator Systems send air over a bed of adsorbent material, which bonds with O2 and leaves a rich stream of nitrogen gas to exit.
Adsorption separation is achieved by the following steps:
FEED AIR COMPRESSION & CONDITIONING
The ambient inlet air is compressed, dried by an air dryer, filtered, all before entering the process vessels.
PRESSURIZATION & ADSORPTION
The pre-treated filtered air is then directed into a CMS-filled vessel, where oxygen is adsorbed preferentially into the CMS pores. This permits concentrated nitrogen, with adjustable purity as low as 50 ppm O2, to stay in the gas stream until it flows out of the vessel. The separation process interrupts the inlet flow (before the full adsorption capacity of the CMS is reached) and finally switches over to the other adsorber vessel.
DESORPTION
The O2-Saturated CMS is then regenerated by means of pressure reduction, below the previous adsorption step. It achieves this by using a pressure release system where exhaust/waste gas stream is carefully vented from the vessel, typically through a diffuser/silencer, then back into the safe surrounding atmosphere. Regenerated CMS is now refreshed and can be used again for generating nitrogen.
ALTERNATING VESSELS/SWING
Desorption and Adsorption should take place at equal time intervals, alternately. This way, the constant generation of nitrogen is be achieved by using two (2) adsorbers. As one is adsorbing, the second is in regeneration mode. Constant switching back and forth results in a controlled and continuous flow of nitrogen.
NITROGEN RECEIVER
Continuous nitrogen product flow & purity is maintained by a connected product buffer vessel which stores the N2 output. This

is designed for a pressure up to 150 psig (10 bar) and Nitrogen purity up to 99.9995%.
NITROGEN PRODUCT
The resulting product is a constant stream of high purity, on-site produced Nitrogen, and costs significantly below the standard price of liquid/bottled gases.



Features include:

Dualbed and Monobed design
Complete package with pre-filtration and buffer tank
Safe and reliable
Produce 95 - 99.999% pure nitrogen continuously
Dewpoints to -58°F (-50°C)

Final stage sterile air filter is USDA / FSIS accepted for use in federally inspected meat and poultry plants. In full compliance with FDA and GFSI requirements

PSA towers require no maintenance

Item	Nitrogen purity (Nm³/hr)							Dimensions	Weight
	95%	99%	99.5%	99.9%	99.99%	99.995%	99.999%	(L*W*H) mm	KG
OSP5	21	13	11	8	5	4.2	3	1100*600*1700	300
OSP10	38	29	25	15	10	7.5	6.1	1200*650*1800	450
OSP20	80	56	52	32	20	16	14	1600*1000*2200	450
OSP40	160	116	105.2	67.2	40	34	28	1800*1000*2200	600
OSP60	252	174	157.8	100.8	60	51	45	1900*1200*2200	750
OSP80	339.2	232	211	132	80	70	62	2000*1200*2400	980
OSP100	420	290	263	168	100	90	78	2100*1600*2500	1300
OSP150	630	435	394.5	252	150	135	120	2500*1800*2600	1600
OSP200	848	580	526	336	200	180	160	2800*1900*2850	2200
OSP250	1060	725	657.5	420	250	225	200	3100*2000*3200	2600
OSP300	1270	870	780	500	300	260	240	3900*2600*3400	3850
OSP400	1696	1160	1052	672	400	360	320	4500*3250*3600	5000
OSP500	2120	1450	1300	840	500	450	400	4900*3600*3800	6500
OSP600	2540	1740	1578	1000	600	540	480	5300*3600*3900	7800
OSP800	3390	2320	2100	1340	800	720	640	5600*3900*4100	10200
OSP1000	4240	2900	2630	1680	1000	900	800	5800*4000*4500	11800

Design reference :

Compressed air inlet pressure 7.5 bar(g)/108 psi(g)
Air quality 1.4.1 according to ISO 8573-1:2010
Nitrogen outlet pressure 6 bar(g)/87psi(g)
Nitrogen quality 1.2.1 according to ISO 8573-1:2010.
Designed working temperature max 50
Dew point at Nitrogen outlet - 40

Notes:

OSP nitrogen generator max working pressure 10 bar(g)/145psi(g)
Following request of PSA on-site nitrogen generator will be customized :
Working pressure 10 bar(g)/145 psi(g)
Dew point - 50
Plug and play
Movable/containerized
Other special requirements as per site conditions

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