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PSA NITROGEN GAS GENERATOR TECHNOLOGY

PSA Nitrogen (N₂) Gas Generator plant is an Inertisation Gas Atmosphere Generator ... enabling a permanent source of onsite NITROGEN Gas , with minimum energy consumption. PSA Nitrogen (N₂) Gas Generator Equipment is an Inert Gas Atmosphere Generator & incorporates Two sets of columns filled with Carbon Molecular Sieves CMS. Under Pressure these columns retain all Active Molecules compounds present in air like (Oxygen, Carbon Dioxide and Water) with the exception of the inert gases like Nitrogen & Argon.. The N₂ Gas can be produced onsite for direct use or can be stored in Nitrogen storage tanks / Cylinders for intermittent use. (Nitrogen and Argon). This process is referred as PSA (Pressure Swing Adsorption).



Mining Application

The use of Nitrogen Gas for fighting underground fires was based on the experience with the use of carbon dioxide. Many countries have used nitrogen Gas successfully in their mining industry. For more then last 50 years, nitrogen has been used most widely in the mining industries of the Czech Republic, later in the Great Britain, Russia, Germany, France, Poland, Romania, Slovakia, China, Canada, Bulgaria, India, Australia and in other countries with a modern coal mining industry.



Description

Mellcon is the world leader in gas separation technology, providing on-site, non-cryogenic Industrial Nitrogen Gas Generators and Oxygen Gas Generation Systems . Mellcon Offers NITROLINE a line of robust, reliable and modular Nitrogen Gas generators, based on Pressure Swing Adsorption (PSA) technology incorporating state-of-the-art Carbon Molecular Sieves (CMS) Adsorbents to deliver dry Dry Nitrogen Gas (N₂) onsite..

PSA NITROGEN GAS GENERATOR

Mellcon Engineers Manufactures PSA Nitrogen Gas Generators (Inert Gas) which produce high purity Nitrogen from compressed air, allowing continuous availability at a very competitive cost, compared to alternative supply with Nitrogen Gas cylinders or cryogenic Liquid N₂ Storage tank. Each Nitrogen system can be equipped with a Nitrogen Gas Analyser to monitor the purity of of N₂ Gas continuously.

NITROGEN N₂ Gas Generator plant eliminates all disadvantages associated to the purchase and operation costs of high- pressure N₂ cylinder systems or cryogenic nitrogen gas storage tanks, enabling a permanent source of **onsite NITROGEN**, with minimum energy consumption and maintenance requirements. PSA NITROGEN Gas Plant is designed to be easily installed in any indoor facility. requiring only a compressed air line and a power connection.

With purities up to 99.9999% of **N₂**, **NITROGEN Gas** can be connected to an external buffer allowing a reserve or a delay of production/consumption in accordance to the needs of each application.

Standard system design

- Automatic Pressure control
- Automatic Flow control
- Automatic Purity control
- Alarms available for visual, audible or output contacts

Custom designed systems to meet customer requirements

- Integrated Compressor packages
- Redundant components for service
- Receiver tank integration
- High pressure systems
- Customer special control systems
- System integration to customer components

Advantages of Onsite Nitrogen Gas Generator

- Return on investment is less than 2 years.
- Independence from external gas suppliers and from fluctuation of the nitrogen gas market price.
- Suppression of logistic operations with cylinders or liquid Nitrogen and supplier management.
- Modular, flexible and low maintenance units as compared to Cryogenic Liquid Nitrogen plants.
- Don't waste more money with Nitrogen Cylinders /Cryogenic Liquid N2 tanks.

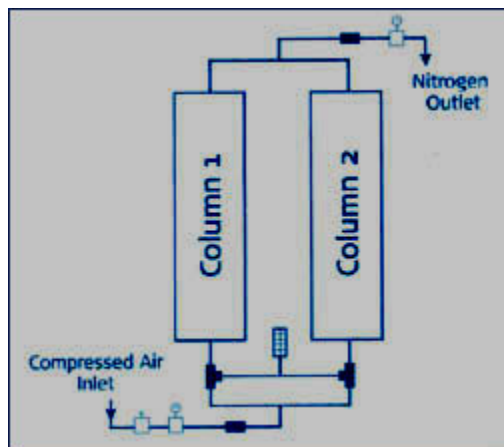
Industry	Application	Main technical Specification									
FOOD and MAP Processes	<ul style="list-style-type: none"> • Modified Atmospheric Packaging of juice, milk, water, coffee etc. • Olive Oil • Wine Storage and Production • Cooking Oil • Milling • Cold Storage of fresh vegetables. Learn More 	Nitrogen Gas Purity	Up to 99.999 %								
	<ul style="list-style-type: none"> • Laser Cutting Learn More • Heat Treatments 			Nitrogen Gas Pressure	Up to 83.5 bar						
	<ul style="list-style-type: none"> • Packaging • Process 					Minimum Air Pressure	6 Bar				
	<ul style="list-style-type: none"> • Nitration • Blanketing Learn More 							Maximum Particle Content	0.01 µm		
	<ul style="list-style-type: none"> • Heat Treatment • Aluminum extrusion Learn More 									Electrical Consumption	120 W @ 230 VAC
	<ul style="list-style-type: none"> • Laser Cutting 										
	<ul style="list-style-type: none"> • Reservoir Blanketing • Solvent Blanketing • Fuel Storage • Polymer production • Solvent paint Production 										
	<ul style="list-style-type: none"> • Tyre inflation, Tire Inflation Learn More • Leak testing Learn More • Pest Control Learn More 										
	<ul style="list-style-type: none"> • Copper Cable production • Moulding Injection • Protective Atmosphere for Heat Treatment Of Steels & Metals 										
	<ul style="list-style-type: none"> • Coal Mill Bag Filter Inertisation Plant • Fire Fighting in Coal Mines 										
OTHER											



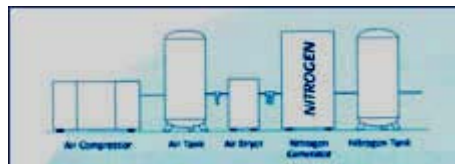
A modular PSA Nitrogen Gas Generator system allows synchronized operation of several parallel units. in order to ensure a constant flow at the required purity.

Standard PSA Nitrogen Gas Generator Installations

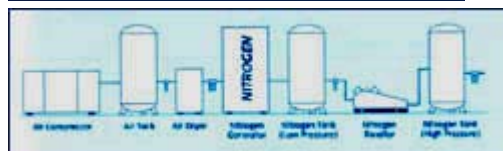
The installation is designed according to the customer needs, however the standard installation are shown below.



Low Pressure Diagram PSA N2 gas Plant



High Pressure Diagram PSA N2 gas Plant




Model	Flow (N ₂ Nm ³ /h)			
	99%	99.5%	99.9%	99.999%
NITROLINE 5	1.00	0.8	0.50	0.20
NITROLINE 10	2.50	1.6	1.10	0.30
NITROLINE 15	3.00	2.4	1.60	0.50
NITROLINE 30	7.10	5.5	3.60	1.00
NITROLINE 50	11.80	9.2	6.00	1.70
NITROLINE 90	18.01	13.7	9.50	2.90
NITROLINE 120	26.00	20.4	13.80	4.40

The above capacities of PSA N2 Gas Generator are rated at 7.0 bar INlet Air Pressure
For Higher capacities PSA Nitrogen Generators Please Contact Us

OUR PRODUCT RANGES	
PSA Nitrogen Gas Generator (New !!!)	
Air / Gas Dryers	
Heatless Air Dryer	Refrigerated Air Dryer
Custom Made Air Dryer	High Pressure Air/Gas Dryer
Blower Heat Regenerated Air Dryer (BHR)	Internal Heater Dryer (IHR)
Heat of Compression Air Dryer (HOC)	Split Flow-No Purge Loss Air Dryer (SFNL)
Chillers	
Air Cooled Water Chiller upto30Tr	Water Cooled Chiller up to 150Tr
Packaged Dry Air Plants	Liquid CO2 Storage Tanks
Packaged Dry Air Plant	Liquid CO2 Storage Tank
Refrigerants	
Recovery System	
Other Products	

Auto Drain Trap	Air Receiver	Liquid Dryer	Walk in Cooler
Water Cooled After Cooler	Dew Point Apparatus		Hot Air Blowing Equipment

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