



# NITROGEN GAS SYSTEM



## APPLICATIONS

Industry we serve..

STEEL



GLASS



PETROCHEMICAL



PHARMACEUTICAL

FOOD PACKAGING



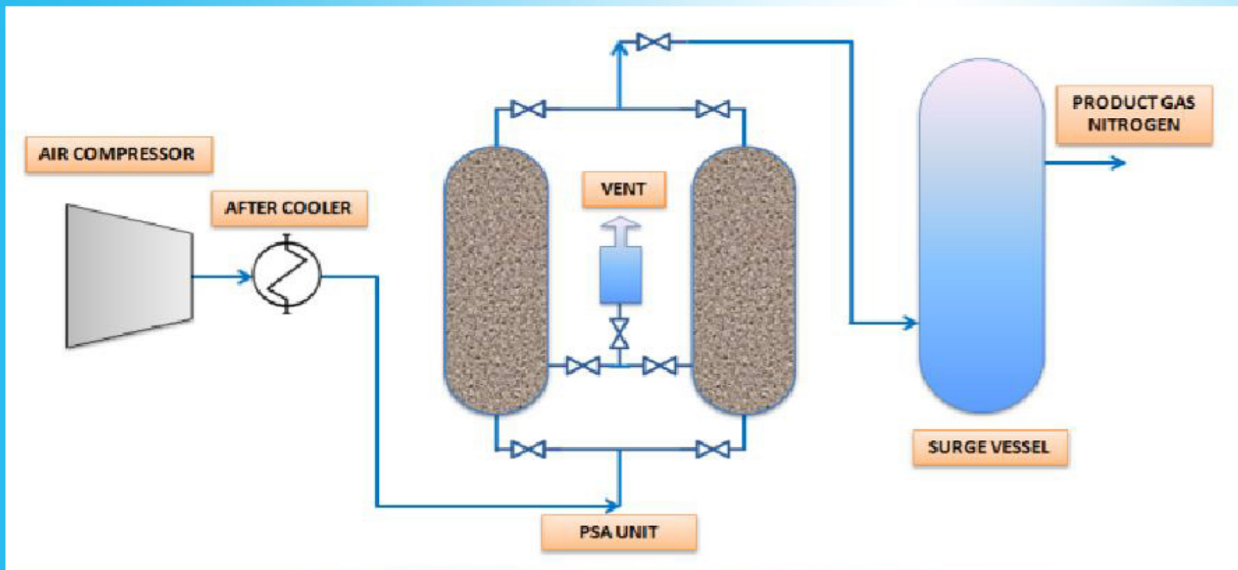
# Mecburg Engineering & Consultancy

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## HOW DOES NITROGEN GAS SYSTEM WORKS?

The Nitrogen Gas System produces Nitrogen gas from atmospheric air using Molecular Sieves Separation process. It uses Carbon Molecular Sieves which has ability to preferentially remove oxygen from air. Nitrogen Gas System consists of 2-Beds filled with Carbon Molecular Sieves. When compressed air is passed, Nitrogen comes out as product gas from one bed while other bed is simultaneously regenerated by de-pressurisation to atmospheric pressure. This process is called "PRESSURE SWING ADSORPTION" (PSA). From Nitrogen Gas System, gas of purity from 99% to 99.9999% can be produced. A simple PSA unit produces Nitrogen of 99% purity and by adding Purification unit, high purity Nitrogen is produced.



## NITROGEN GAS SYSTEM MODELS

### ME-MX-Model

This is the most effortless model of Nitrogen Generator. It produces commercial grade Nitrogen of 99% purity most economically. Even 99.9% purity Nitrogen can be produced from this model by increasing Carbon Atomic Sieves. This model is conservative and is proposed for purity up to 99.9%. This model is generally utilized for cleansing / Inertizing necessities.

### ME-DX-Model

This model is proposed for utilization in Metallurgical commercial Plants to produce oxygen free Nitrogen gas for Heat Treatment Furnaces. Oxygen impurity is less than 1 ppm is achieved. Plus, the Hydrogen content is 0.5 to 1%, which is desirable as decreasing constituent in generally Heat Treatment applications. Model "SE-DX Model" is upgraded version of "SE-MS" Generator and includes Palladium reactant Deoxo Purification Unit. This model is popular in Chemical / Steel industries and regularly utilized for cleansing / Inertizing applications.

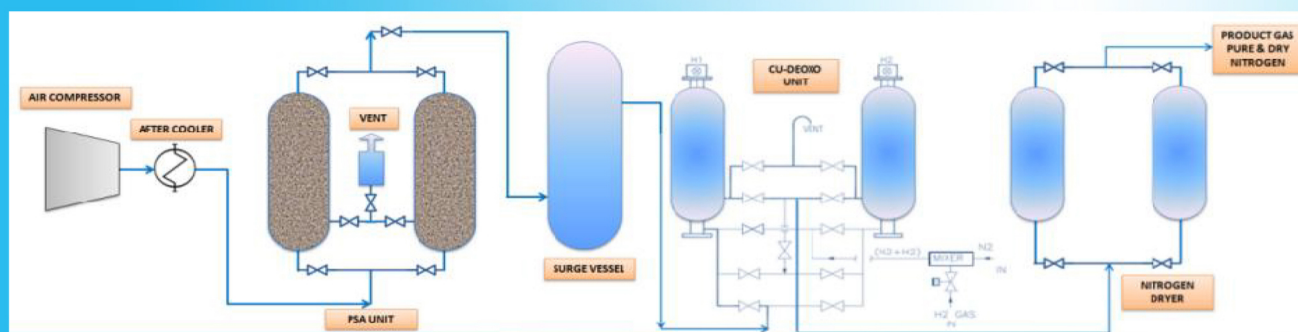
### ME-Cu-DX-Model

In certain provisions where one needs exceptionally immaculate gas free from Oxygen and Hydrogen, Nitrogen Purification Module dependent upon Copper Deoxo Catalyst is included. By including this Copper Catalyst Module to "SE-MS" Generator it comes to be Model "SE-(Cu) DX". This finds provision in steel rolling mills, synthetic fiber, and optical links and also in Electronic industries. Nitrogen purity is 99.9999%.

## GAS COMPOSITION AND SPECIFICATION

GAS COMPOSITION	MODELS		
	ME-MX	ME-DX	ME-(Cu)-DX
OXYGEN	0.1 to 5%	1-ppm to 3-ppm (max)	1-ppm
HYDROGEN	Nil	0.5 to 1%	Nil
NITROGEN	95 to 99.9%	99.9997 to 99.9999%	99.9999%
DEW POINT	Up to (-)40°C	(-)40 to (-)80°C	(-)40 to (-)80°C

### FLOW SCHEME



### APPLICATIONS

#### ME-MX-Model

As Inert gas in Chemical Industries, Food & Pharmaceutical Industries. For fire control in Coal mines etc.

#### ME-DX-Model

As Inert gas in Chemical & Steel Industries. In applications where Oxygen impurity is not acceptable.

#### ME-Cu-DX-Model

As Inert gas in Electronic, Synthetic Fiber, Hi-tech Industries where one needs Ultrahigh purity Nitrogen.

### ADVANTAGES

- > Less Start-up time, say 5-7 minutes only.
- > Skid mounted units for easy site installation and easy usability.
- > Cost of Nitrogen only INR 3.00 to INR 5.00 (US 8 to 10 cents) per cubic meter only.
- > Nitrogen Gas supply always under your control.
- > Carbon Molecular Sieves life is around 5-7 years.



## NITROGEN CAPACITY

Nitrogen Gas Systems are tailor-made equipment and are manufactured as per customer's requirements. However, standard units are available in the capacity of 3, 5, 10, 25, 50, 75, 100, 150, 200, 300, 500 NM<sup>3</sup>/hr etc. These Gas Systems are manufactured in sizes up to 5000 NM<sup>3</sup>/hr capacities.

## NITROGEN PRESSURE

Standard Nitrogen Gas System produces Nitrogen at 5.5 kg/cm<sup>2</sup>g pressure. This pressure comes automatically as feed air pressure to the PSA unit is 7 kg/cm<sup>2</sup>g. If Nitrogen is needed at higher pressure, we provide a Nitrogen booster compressor after the Gas System.



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