



Airox Nigen The Leaders in Adsorption Technology

PRESENTS

ONSITE LOW COST
P. S. A.
NITROGEN GAS
GENERATOR

- Well Proven Pressure Swing Adsorption Technology
- More Than 10,000 Units Working Satisfactorily Worldwide
- Skid Mounted Pre-commissioned Ready To Use Units
- Fully Automatic Plant - Requires No Operator's Attention
- Low Generation Cost - Pay Back Period Less Than A Year
- Negligible Maintenance No Hassles of Changing Cylinders
- Continuous Purity Check - Purity Upto 99.9999% Achievable

www.airoxnigen.com
www.psanitrogen.com



The Technology

Our Nitrogen Generators operates on Pressure Swing Adsorption, commonly known as P S A Technology.



P S A Technology is based on the selective adsorption phenomena of gas molecules under pressure on the surface of highly porous and efficient adsorbent, In this case of Nitrogen Generation the Adsorbent is carbon based Molecular Sieve (C.M.S.)

In P S A System when compressed air is passed through a adsorption tower field with C.M.S. the molecules of oxygen, moisture & other unwanted gases are adsorbed on surface of C.M.S. and Nitrogen which is not adsorbed by C.M.S. comes out of adsorption tower and is collected in a surge vessel.

For continuous generation of nitrogen two Adsorption towers are provided which are interconnected with Autochange over valves controlled by PLC in the control panel. After saturation of one tower with oxygen the process automatically changes over to another tower and thus the nitrogen production is continuous.

Our systems are the best ones in industry to ensure the highest efficiency, user friendly design, Reliable Economical and Durable.

Our onsite nitrogen generators are custom made and can be adjusted to give the desired nitrogen quality for your process and application.

Safety Features and Audio Visual Alarms

The Nitrogen Gas Generator are Skid Mounted and Pre-commissioned at our works. Are fully Automatic and requires virtually no attention of the Operator. Once started it can be left-unattended. All operations take place automatically and Nitrogen Purity remains very consistent. In case of any abnormality the gas Generator would trip automatically with Audio Visual Alarms for Necessary action.

In case of Storage Tank Getting Filled The Gas Generator Goes to Sleep and restarts Once the pressure in storage Tank is Reduces to set Limit.

The System Starts with only three Switches

Control on - To Energize the Control Panel

System on - To Start the System or Gas Generator

Nitrogen on - To Start Feeding Nitrogen to your System

Audio Visual alarms in our Standard System

Air Compressor Trip

Low Feed Air Pressure & High Air Inlet Pressure

Low Surge Tank Pressure

High & Very High Oxygen Content - 2 Set Limits

High Moisture Content (Optional)

High Storage Tank Pressure



Standard Scope of supply

- Air Intake after cooler, Moisture separator, Prefilter, Auto Drain valve & Wet Air Receiver
- Twin Tower Desiccant based Air Dryer Fully Automatic with Pneumatically Operated Changeover-Valves (REF. Dryer - Optional)
- Dry Air Receiver with Pressure Gauge, Pressure Switch and Candle type After Filter
- Twin Tower P.S.A. Module with Automatic Pneumatically Operated Changeover valves, Pressure Gauges & Interconnecting Piping
- Surge Vessel with Instruments & Drain valve
- C.M.S. (CARBON MOLECULAR SIEVES) One Charge filled in P.S.A. Adsorption Towers
- Flow meters for Nitrogen with Flow control valve, Nitrogen Three Way Vent Valve NRV and Back Pressure Controller
- Centralized control panel with sequence programmer and Fault Indications Lamps
- Online Oxygen Analyser with settable high oxygen and very high oxygen alarms

Upstream Equipment for Feed Air
In case the Feed Compressed Air required for Nitrogen Generator is not available from your centralized air supply you will be required to attach the following upstream equipment.

Choose Between Screw or Reciprocating Compressor

Packaged Screw Compressor Air Cooled Lubricated Electrically Operated Silent, complete with integral Instruments & Starter Panel along with oil filters (needs no foundation and is vibration free)

OR

Oil free Water Cooled Reciprocating Compressor with its Standard Accessories, Electric Motor, Drive Arrangement, Foundation Bolts for Grouting it to Foundation, with Instrument Panel and Separate Motor Starter Panel



Models for Onsite Skid Mounted AP P.S.A. Nitrogen Gas Generator

| MODEL | NITROGEN GAS PURITY | | | | |
|---------------|---------------------|--------|--------|--------|--------|
| | 98.00% | 99.00% | 99.50% | 99.90% | 99.99% |
| AP- 005 | 8 | 6 | 5 | 3 | 1.7 |
| AP- 010 | 16 | 12 | 10 | 6 | 3.3 |
| AP- 015 | 24 | 18 | 15 | 9 | 5.0 |
| AP- 020 | 32 | 24 | 20 | 12 | 6.7 |
| AP- 025 | 41 | 30 | 25 | 15 | 8.3 |
| AP- 030 | 49 | 36 | 30 | 18 | 10 |
| AP- 040 | 65 | 48 | 40 | 24 | 13 |
| AP- 050 | 81 | 60 | 50 | 30 | 17 |
| AP- 060 | 97 | 72 | 60 | 36 | 20 |
| AP- 075 | 122 | 90 | 75 | 45 | 25 |
| AP- 100 | 162 | 120 | 100 | 60 | 33 |
| AP- 125 | 203 | 150 | 125 | 75 | 42 |
| AP- 150 | 243 | 180 | 150 | 90 | 50 |
| AP- 175 | 284 | 210 | 175 | 105 | 58 |
| AP- 200 | 324 | 240 | 200 | 120 | 67 |
| AP- 250 | 405 | 300 | 250 | 150 | 83 |
| AP- 300 | 486 | 360 | 300 | 180 | 100 |
| AP- 400 | 649 | 480 | 400 | 240 | 133 |
| AP- 500 | 811 | 600 | 500 | 300 | 167 |
| AP- 1000 | 1620 | 1200 | 1000 | 600 | 335 |
| Nit/Air Ratio | 45 % | 38 % | 34 % | 25 % | 18 % |

Downstream Equipment for Nitrogen Purification

For Nitrogen required with oxygen content in PPM level following downstream equipments can be added.

- 1) Palladium based De-Oxo System
- 2) Copper based De-Oxo System

Allied Equipments / Accessories

- Ammonia Crackers & Manifolds
- Gas Purification & Mixing Stations
- Storage Vessels • Gas Analysers

CUSTOM MADE PLANTS OF HIGHER CAPACITIES UPTO 5000 Nm³/Hr OFFERED ON REQUEST.

Note : The Figures above are capacity (in Nm³/hr) of Nitrogen Generated at Various Purity.

OUR RANGE OF OTHER ALLIED PRODUCTS

- NITROGEN AND OTHER GASES PURIFICATION SYSTEMS
- P.S.A. OXYGEN GAS GENERATORS
- COMPRESSED AIR DRYING SYSTEMS
- AIR & GAS DRYERS - HOC, HEATLESS, HEATED & REFRIGERATED
- OXYGEN & HYDROGEN GAS ANALYZERS (PPM & PERCENTAGE)
- GAS SENSORS AND DETECTIONS SYSTEMS FOR ALL GASES
- DEW POINT METERS FOR MOISTURE ANALYSIS IN GASES
- PROCESS FILTERS & SEPARATORS - AIR, GAS & LIQUID
- AUTOMATIC DRAIN VALVES FOR MOISTURE REMOVAL
- PIPING CONTRACTS & ELECTRIC CONTROL PANELS
- AFTER COOLERS, HEAT EXCHANGERS & AIR RECEIVERS



Factory at Changodar, Ahmedabad

SOME OF OUR ESTEEMED CUSTOMERS

AARTI IND.
ABB LTD.
ALKEM LAB
AMOLI ORGANICS
ATUL LTD.
BAJAJ
BARC
BILAG IND.
BPCL
CHEMTREAT
CIPLA
DOLPHIN OFFSHORE
FLEX CHEMICAL
FRITOLAY (LAYS)
FINOLEX
GARDEN SILK
GLEN MARK
GODREJ
GUPTA SYNTHETICS

H A L
HALDIRAM
HINDUSTAN INKS
HINDUSTAN LIVER
INTAS PHARMA
INTEC POLY
ISRO
J.B.F. INDUSTRIES
JAI CORP
JINDAL
KOPRAN
LUPIN
MICO
MICRO INKS
MITSU
NOVA PETRO
ONGC
PIDILITE
PEPSI

PUNJ LLYODS
RELIANCE
SAJJAN INDIA
STERLITE
SUPREME OFFSHORE
TAGROS CHEM.
TISCO
UNIMARK REMEDIES
UPL
VIDUSHI
VNS
VITAL HEALTHCARE
WELSPUN SYNTAX
& MANY MORE...



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