

Airox Nigen

The Leaders in Adsorption Technology



ONSITE LOW COST

Pressure

Swing

Adsorption

NITROGEN GAS

GENERATORS

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- Well Proven Pressure Swing Adsorption Technology
- More than 10,000 Units working successfully 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 Hassel of changing Cylinders
- Continuous Purity Check - Purity up to 99.9999% Achievable

The Technology

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

PSA 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 PSA System when compressed air is passed through an 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 Auto-change 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 and 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.

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
- High Moisture Content (Optional)
- High Storage Tank Pressure

The System Start 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



Standard Scope of supply

- Air Intake after cooler, Moisture separator, Prefilter, Auto Drain valve & Wet Air Receiver
- Twin Tower Desiccant based Air Dryer or Refrigerated Air 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 MOLECULARSIEVES) One Charge filled in P.S.A. Adsorption Towers
- Flow meters with Flow control valve, Nitrogen Three Way Vent Valve NRV and Back Pressure Controller
- Centralized control panel with PLC / Sequence Programmer and Fault Indications Lamps
- Online Oxygen Analyzer 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



Downstream Equipment for Nitrogen Purification

For Nitrogen required with oxygen content in PPM level following downstream equipment's can be added.

1. Palladium based De-Oxo System for Oxygen up to Less than 2 ppm and Dewpoint up to Minus 70 Deg C
2. Copper based De-Oxo System for Oxygen up to Less than 1 ppm and Dewpoint up to Minus 70 Deg C

Allied Equipments / Accessories

Ammonia Crackers & Manifolds
Gas Purification & Mixing Stations

Gas Analyzers
Gas Boosters for 30 Bar, 70 Bar 150 Bar 300 Bar

Storage Vessels

**Models for Onsite Skid Mounted Airox Nigen
Pressure Swing Adsorption Nitrogen Gas Generator**

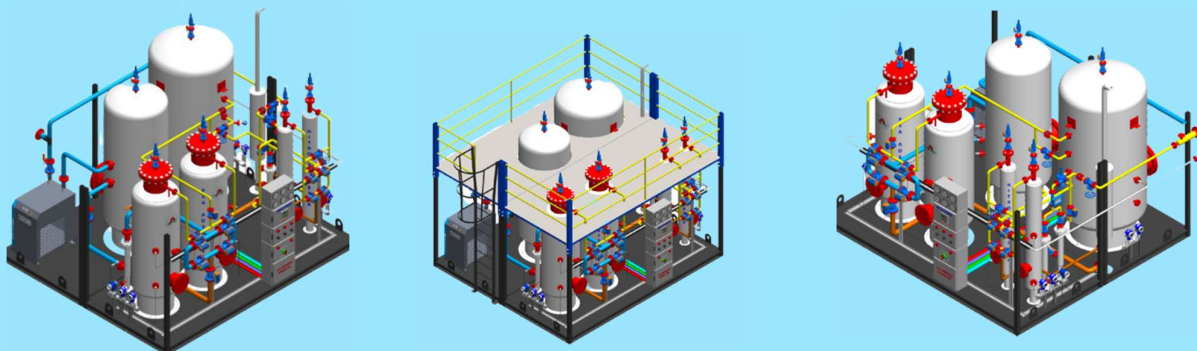
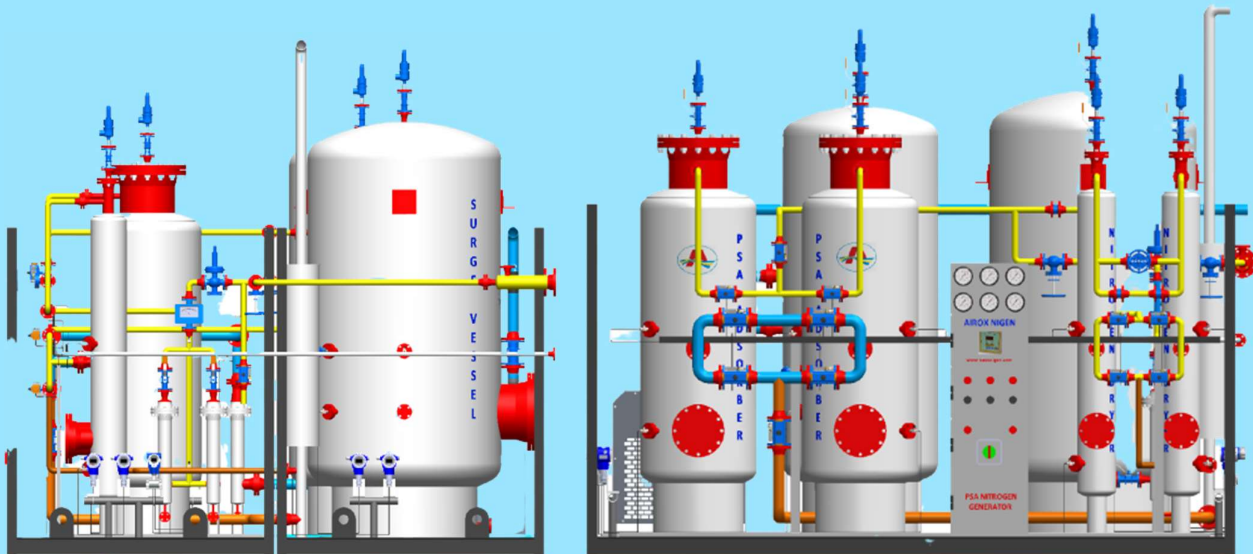
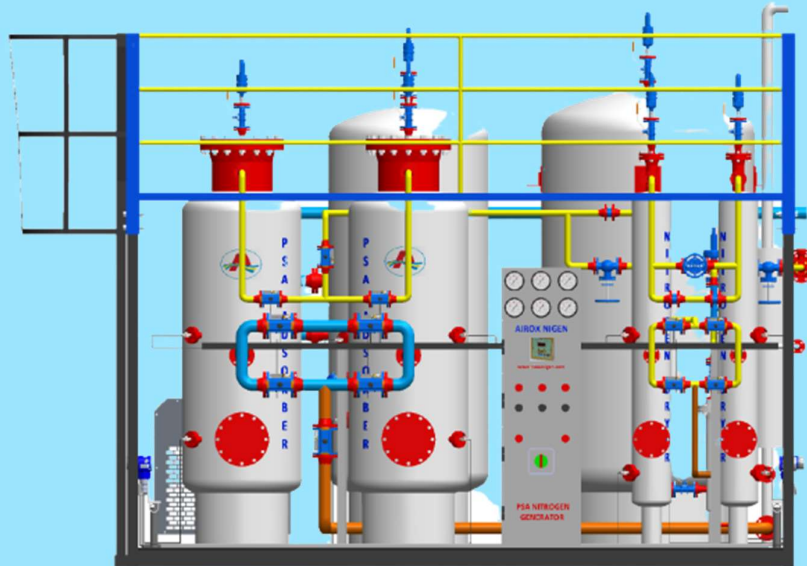
MODEL	NITROGEN GAS PURITY				
	98.00%	99.00%	99.50%	99.90%	99.99%
AP- 005	8	6	5	3	1.7
AP- 010	16	12	10	6	3.3
AP- 015	24	18	15	9	5.0
AP- 020	32	24	20	12	6.7
AP- 025	41	30	25	15	8.3
AP- 030	49	36	30	18	10
AP- 040	65	48	40	24	13
AP- 050	81	60	50	30	17
AP- 060	97	72	60	36	20
AP- 075	122	90	75	45	25
AP- 100	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 %

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

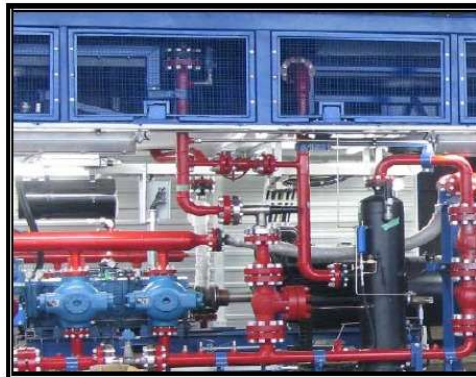
CUSTOM MADE PLANTS OF HIGHER CAPACITIES UPTO 10,000 Nm³/Hr OFFERED ON REQUEST.

Engineered Nitrogen Gas Generation Package

Airox Nigen Has built Various Nitrogen Gas Generation Packages Engineered and Tailor Made to Suit Customer Requirement. Airox Nigen has Fabricated Custom Built Packages with most stringent Technical Specification and Mechanical Fabrication codes like ASME, U-stamp, PED (Pressure Equipment Directive) MDD (93/42/EEC), JIS, BS 5500, Canadian CRN , American National Build Number and fabrication with stage wise Inspection with all most all the World Inspection Agencies .

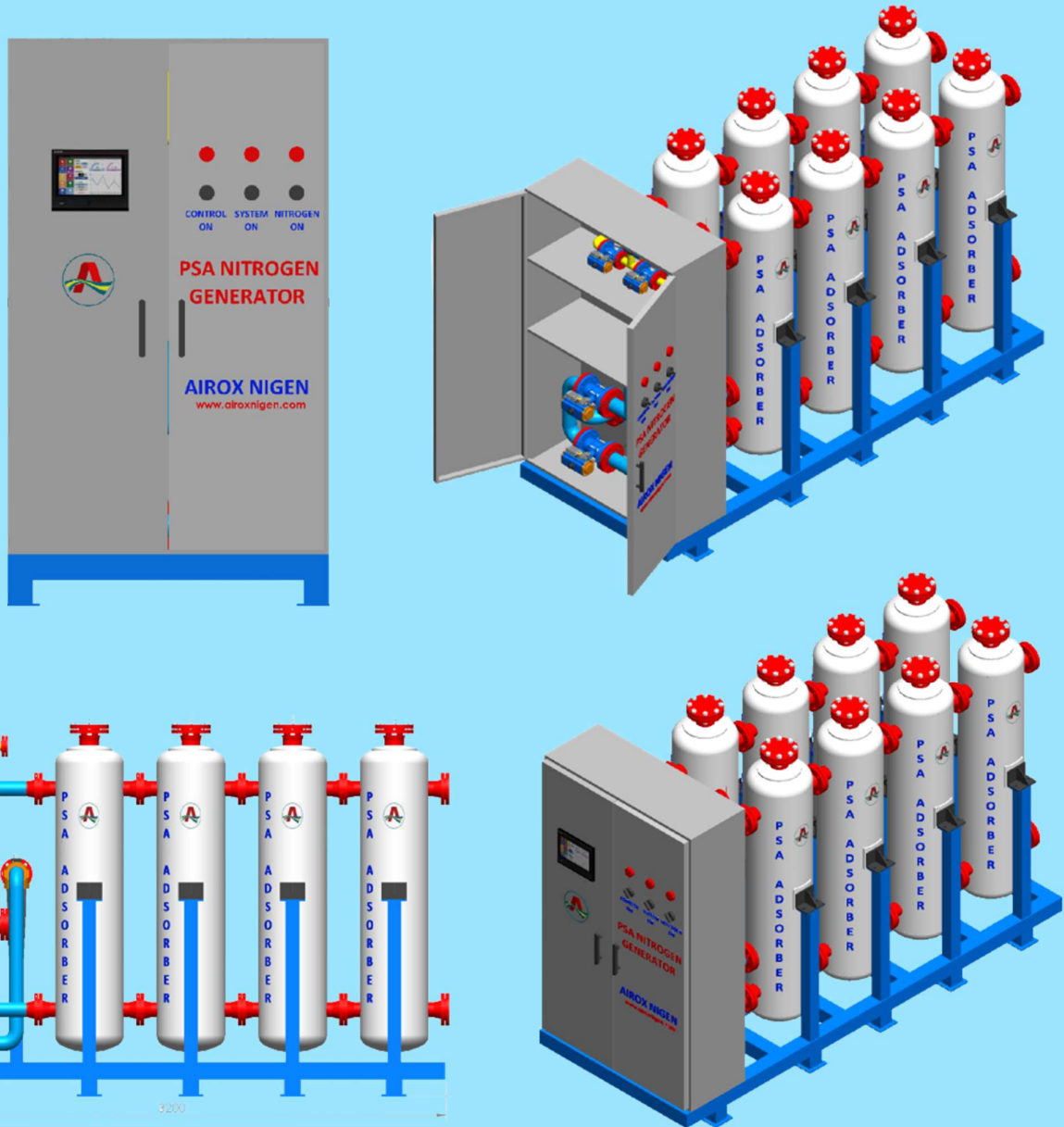


**Skid Mounted Nitrogen System: 5 Nm³/hr to 5,000 Nm³/hr and in multiples
Pressure Offered : 6 Bar G to 11 BarG without Booster (with Booster up to 450 Bar G)**



Nitrogen Booster Offered : Skid Mounted, Open Frame or Containerized

Modular Nitrogen Gas Generators (Model ANM 200)



Model	98 %	99 %	99.5 %	99.9 %	99.99 %	99.999 %	Weight (kgs)
ANM – 200-10	65	48	40	24	13	8	1100
ANM – 200-20	130	96	80	48	26	16	1700
ANM – 200-30	195	144	120	72	39	24	2300
ANM – 200-40	260	182	160	96	52	32	2900

Dimensions (mm) [Front (width) X Length X Height]

APM – 200-10: 1250 X 1200 X 2200,
APM – 200-30: 1250 X 2400 X 2200,

APM – 200-20: 1250 X 1800 X 2200,
APM – 200-40: 1250 X 3000 X 2200

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 DETECTION 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 CONTROLS
- AFTER COOLERS, HEAT EXCHANGERS & AIR RECEIVERS



Factory at Changodar, Ahmedabad



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