HENCAIR

PSA CATALOGUE

OXYGEN GENERATION PLANT BASED ON PRESSURE SWING ADSORPTION SYSTEM

BY : HEAVEN ENGINEERS & CONTRACTORS PVT. LTD.

HENCAIR is a brand promoted and managed by Heaven Engineers & Contractors (P) Ltd. is a professionally managed company with technically qualified team and supporting staff in the field of Engineering, Procurement, and Construction.

We are ISO-9001-2008 certified for quality systems and ISO-14001-2004 certified for Environment Management.
We are ISO 17839 certified for medical oxygen.
We are CE certified and FDA certified.

- Formally incorporated it as a Pvt. Ltd. in year 2012.
- More then 300 customer's.
- More then 150 installation's.

We have proven expertise in infrastructure, sewage treatment plant, industrial projects, sanitary and water supply works, Electrical and Air-conditioning works etc.

Integrated In-House Design and Manufacturing Facilities, Spread across **689. Sq. m.** Area.

In a very short span of time, the company has witnessed exponential growth and has tried to carve a niche for itself at the top. with the most advanced technological expertise in given services, We are trying to keep us abreast with technological developments and are implementing the advanced technology with full awareness.

Today, We are growing at a rapid pace with a vision to become one of top engineering & Contracting companies in **INDIA**.

OUR AREA OF EXPERTISE

VRV units Kidwai Nagar Revamp

VIVO & OPPO Mobile Units

Zero Liquid Discharge for textile Waste

Municipal Supply DJB

Metro

National War Memorial

5 Star Hotels

Malls & Complex

- AIR

Oxygen Plant, Comfort Air conditioning, Ventilation , Kitchen Exhaust i.e. Chillers , Ductable's, Packaged and VRF Projects.

- Pre Fabricated System Solutions

HYDROPNEUMATIC SYSTEMS , ro Packeged STP etc.

- WATER

Water treatment plants and Sewage treatment plants Heavy Metals Treatment.

MANUFACTURING FACILITY (689 Sq mtrs)

Fabrication

2D-3D Design

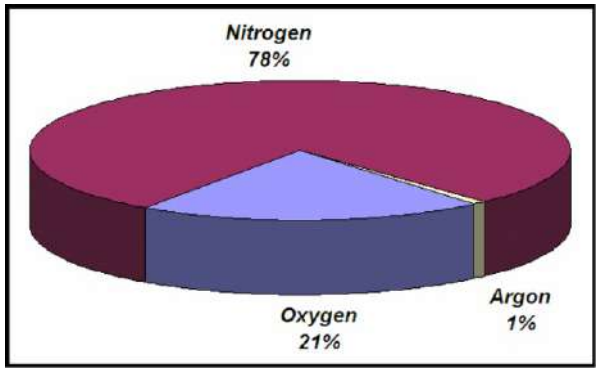
Machining

Paint Shop

Test Bed

Factory Dispatched

AIR SEPERATION PROCESS



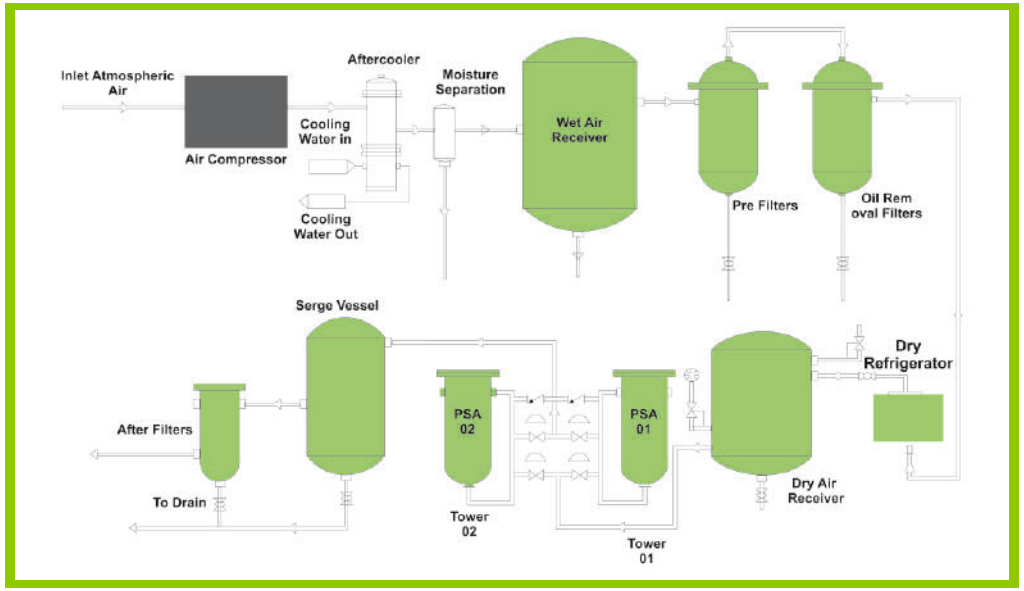
- Air is generally a mix of Nitrogen (78%), oxygen (21%), Argon (1%) and others in negligible qty.
- Molecular size of Nitrogen is bigger then of almost similar sizes of Oxygen and Argon.

- Air is used as feed stock.
- Oxygen is Separated Based on physical characteristics.
- Must remove Nitrogen and Other gases for 93% +- 3 % Pure Oxygen
- Pressure Swing Adsorption Methods is used for design.
- It uses adsorbents in two columns to separate Molecules of Oxygen from Air, removing Nitrogen and Argon in continuous flow.

PRE - TREATMENT

- Air from environment is pre treated for Moisture, Carbon Dioxide & any other disinfection for bacteria.
- A UV pre treatment chamber may be used for bacteria disinfection.
- Silica gel Beds are used to remove moisture with a Heating Coil.
- A Dry referigerator must be used to make air complete dry , moisture free and in range of dew point temperature.

FLOW DIAGRAM

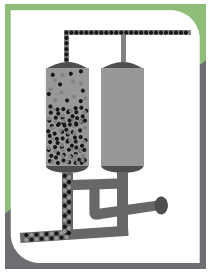


PRESSURE SWING ADSORPTION PROCESS

- As described Above it uses two Adsorption Columns and it is a 04 Stage process.
- 1. Adsorption 2. Production 3. Blowdown & 4. Purge.

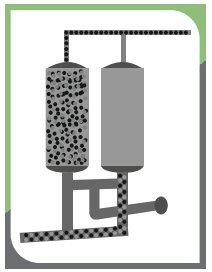
STAGE 1

Compressed air is fed into the first molecular sieve bed. Nitrogen is trapped, while Oxygen is allowed to flow through



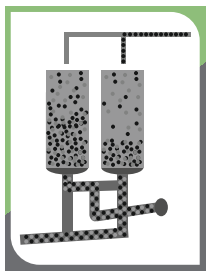
STAGE 2

When the sieve in the first bed becomes full of nitrogen, the airflow is then directed into the second bed.



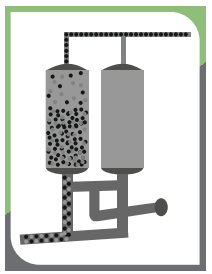
STAGE 3

As the second bed separates the oxygen from the nitrogen, the first bed vents its nitrogen into the atmosphere.

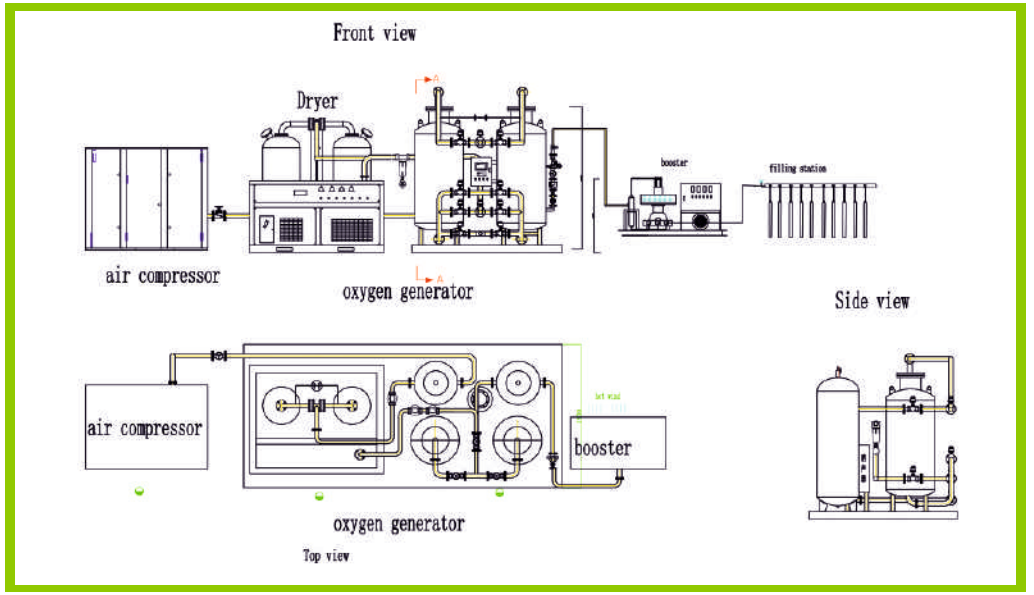


STAGE 4

Compressed air is once again fed into the first bed, and the process is repeated continuously. A constant flow of oxygen is produced.



GENERAL ARRANGEMENT OF EQUIPMENTS



- Using PSA process a continous supply of 93 ±3% pure oxygen can be acheived.
- it can be directly supplied to a hospital to be consumed by patients directly or it can be filled in cylinders at high pressures to be consumed in either hospitals or other industrial process like cutting, welding etc.
- Oxygen is free from any contamination.

CERTIFICATES

MOLECULAR SEIVES TECHNICAL DATA

ĭ BŌB	Description	Type 13X-HP
1	Shape	
2	Diameter (mm)	1.6-2.5
3	Loss on ignition (wt/%575)degree C, 1hr	< equal to 1.0
4	Bulk density (g/ml)	> equal to 0.62
5	Crushing strength (N)	> equal to 30/piece
6	Static H20 capacity (wt%rh60%, 25 degree C)	> equal to 27
7	Static CO2 capacity (wt%250mmHg, 25 degree C)	> equal to 19.8
8	Attrition (wt%)	< equal to 0.2
9	Particle Ration (%)	> equal to 97
10	N2 capacity (ml/g)	> equal to 8
11	N2/O2 Selectivity (a)	> equal to 3

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Thank you

Heaven Engineers & Contractors Pvt. Ltd.

www.henc.in, info@henc.in