



OXYGEN PLANT

BOSCO INDIA is the lead manufacturer of Industrial Oxygen Plant and Medical Oxygen Plant.

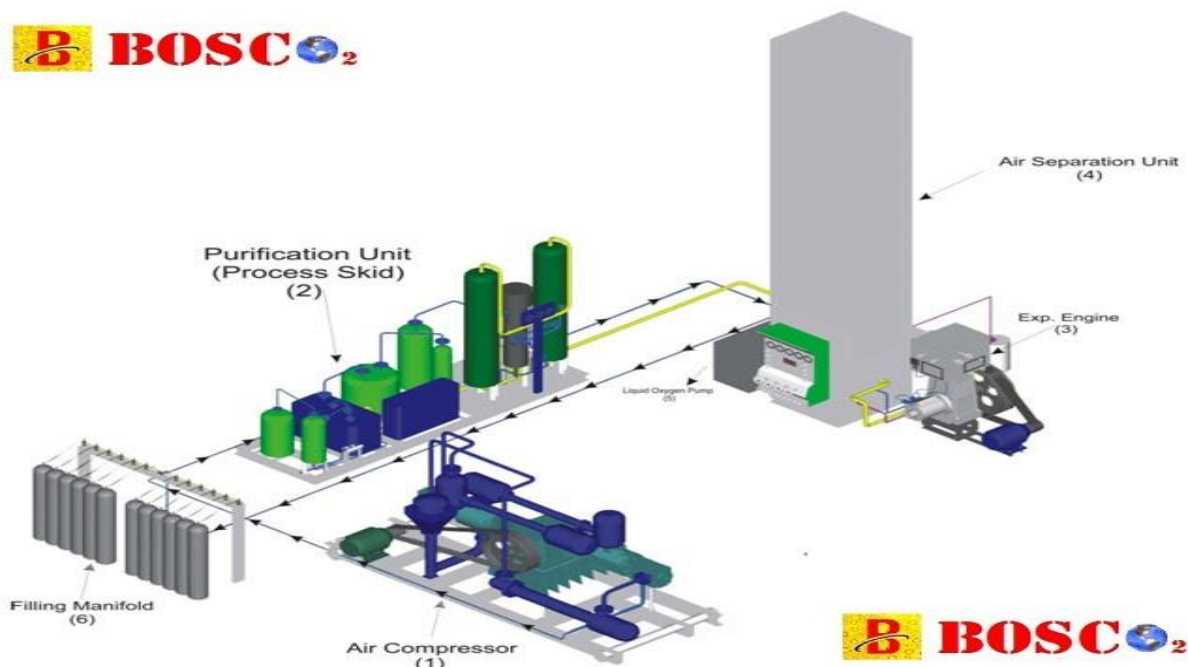
BOSCO INDIA makes Small & Medium sized Gas and Liquid Oxygen / Nitrogen plants ranging from 50 m³/hr. to 1000 m³/hr. Skid mounted plants are also available.

BOSCO INDIA is a premier manufacturer and a leading supplier of nitrogen gas plants, oxygen gas plants, liquid oxygen plant, cryogenic oxygen plant, oxygen generator and acetylene gas plants. We at BOSCO, provide services in advanced designs for gas plants, erection of gas as well as liquid plants, gas plants constructing, commissioning of Nitrogen / Oxygen Plants, Acetylene Plants, Industrial Gas Plants, Nitrous Oxide plants, nitrogen gas plant, liquid nitrogen plant and machinery.

BOSCO Plants are supplied with very efficient reciprocating four-stage air compressor, which consumes low power. BOSCO INDIA Plants are supplied with a specially designed highly efficient cascade cooler, which eliminates the need for chilling unit and saves on recurring maintenance and power cost.

A Molecular sieve Battery drier unit for separation of moisture and carbon dioxide is another money saving device in the BOSCO INDIA plant. It removes acetylene and other hydrocarbons from the process air, thus eliminating the need for separate acetylene absorbers, and moreover it eliminates recurring caustic soda costs.

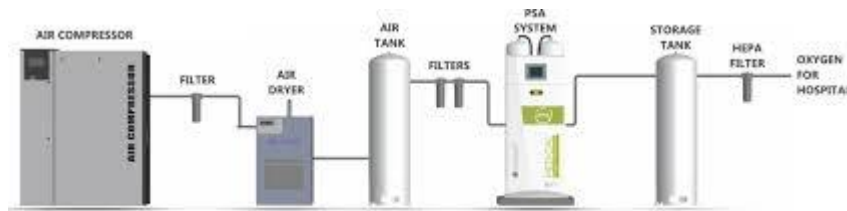
Capable of simultaneously producing oxygen and High purity nitrogen, the BOSCO INDIA plant has an internal compression liquid oxygen pump to fill dry gaseous oxygen in cylinders. The plant can also be fitted with a separate liquid Nitrogen pump to fill dry Nitrogen directly into cylinders. Plants to produce liquid Oxygen/ Nitrogen can also be offered. We also undertake supervision of Installation and Commissioning of the plant.



BOSCO INDIA plants are equipped with a Refrigerant based Chilling Unit, which is necessary for operating the plant efficiently of increase in ambient temperature. The Chilling unit also ensures the air Molecular Sieve Battery as a lower temperature, thereby increasing the life of Molecular Sieve. Our experience shows that plants, which are not equipped with chilling unit, tend to have frequent stoppages due to CO₂ choking in the column, which leads to increase to power consumption and also requires frequent replacement of expensive Molecular Sieve.

BOSCO INDIA Gas Plants are functioning trouble free in different parts in the **India**, testimony to our quality and reliability.





Salient features of Oxygen Plant:

- Leak-proof Argon welded Column
- Skid Mounted Version available
- Oversize Molecular Sieve Dryer
- Quick start for fast cooling
- Very simple to operate
- No raw material is required.
- Trouble free operation for years
- Easy availability of spare parts
- Low power consumption. Less than 1 unit per cu.m of gas.
- Production of oxygen & nitrogen simultaneously using separate liquid pumps (no bulky gas holder, no oxygen compressor)
- Latest molecular sieve technology without recurring cost of chemicals
- Very compact & sturdy.
- Low working pressure
- Option for Liquid Nitrogen withdrawal facility
- Option for Liquid Oxygen withdrawal facility
- Option for PPM grade nitrogen i.e., less than 10 PPM
- Very low maintenance
- Raw material – Free Atmospheric Air for producing oxygen / Nitrogen gas / liquid
- Hydraulic type Expansion Engine for Oxygen / Nitrogen Plant with bursting disc and solenoid valve for safe operation
- Highly efficient Heat-Exchanger for recovery of waste cold energy to reduce operating cost.
- The oxygen gas plant is supplied complete as per standard scope of supply.
- Special bypass valve is provided for quick production and better cooling.
- Fool proof digital temperature indicating system
- Option for filling of Oxygen as well as Nitrogen in Single Pump
- Option for separate Nitrogen & Oxygen Pumps.



Plant Specifications

Production Capacity – The plant is very versatile and can be set to produce varying combinations of Oxygen & Nitrogen in gaseous and liquid form.

Sr.no	Plant Model	Oxygen Gas Qty	Purity	Product Pr.
01	BOSCO 80	80 cu.m/hr	99.6%	150/220 KG/CM2
02	BOSCO 110	110 cu.m/hr	99.6%	150/220 KG/CM2
03	BOSCO 150	150 cu.m/hr	99.6%	150/220 KG/CM2
04	BOSCO 170	170 cu.m/hr	99.6%	150/220 KG/CM2
05	BOSCO 200	200 cu.m/hr	99.6%	150/220 KG/CM2
06	BOSCO 250	250 cu.m/hr	99.6%	150/220 KG/CM2
07	BOSCO 300	300 cu.m/hr	99.6%	150/220 KG/CM2
08	BOSCO 400	400 cu.m/hr	99.6%	150/220 KG/CM2
09	BOSCO 500	500 cu.m/hr	99.6%	150/220 KG/CM2
10	BOSCO 600	600 cu.m/hr	99.6%	150/220 KG/CM2
11	BOSCO 800	800 cu.m/hr	99.6%	150/220 KG/CM2
12	BOSCO 1000	1000 cu.m/hr	99.6%	150/220 KG/CM2





Process Description Oxygen Plant

The free atmospheric air is sucked in by a multi-stage air compressor through a filter and compressed to the working pressure. After each stage, intermediate coolers and water separators are provided. The compressed air then passes through the cascade cooler and then to the molecular sieve battery where the moisture and carbon dioxide are removed from the process air. It then passes through the exchanger No. 1 where it is cooled by the out-going waste nitrogen and product oxygen. A part of this cold air then flows through an expansion machine and the balance through the 2nd heat exchanger. An expansion valve, R1 Both these streams of air then unite in the lower pressure column where it partially liquefies, controls the ratio of the two air streams. The liquid air (rich air) then passes through the expansion valve R2 to the upper column, which is at a lower pressure than the lower column. Similarly the liquid nitrogen (poor liquid) travels from the lower column to the upper column through an expansion valve R3 where the separation of oxygen and nitrogen occurs. Nitrogen being more volatile passes out as a gas from the top of the column and this waste nitrogen flows through both the heat exchangers cooling the in-coming air. Similarly product oxygen is also passed through the two heat exchangers to cool the in-coming air and then to the filling manifold via a liquid pump. If a small amount of air is vented out from the upper column, higher purity nitrogen can also be obtained from this plant. R4 Valve is provided in order to fasten cooling during start-up.

Main Equipment

1. AIR COMPRESSOR (Rotary Air Compressor)
2. PROCESS SKID : (Moisture separator, oil absorber, 2 molecular sieve battery, nitrogen cooler, after cooler with tank, Chilling Unit , defrost heater, gas/water lines, dust filter, Freon unit)
3. CRYOGENIC EXPANDER
4. AIR SEPARATION COLUMN -COLD BOX (Leak proof stainless steel column)
5. LIQUID OXYGEN PUMP (Oil free stainless steel Liquid Oxygen Pump)
6. ELECTRIC PANEL
7. CYLINDER FILLING MANIFOLD –(The high pressure oxygen gas up to 150 bar coming out of the cold box at 99.7% purity and bone dry (- 60 dew point) will be filled directly into oxygen cylinders in a oxygen cylinder filling manifold)

MEDICAL OXYGEN PLANT

BOSCO INDIA also manufacture Medical Oxygen Plant.

Oxygen is the most important clinical gas used in health care centres and Hospitals. No modern hospital can manage without oxygen gas Generator. Pure oxygen is an essential resource in the operating room during anaesthesia, for the respiration of patients, and in the intensive care or neonatal units. The constant high demand for this gas renders substantial expenses for hospitals. Currently, hospitals buy oxygen from bulk oxygen gas Generator manufacturers. The bulk oxygen is bought in both liquid and gaseous form. These sources of oxygen can become an economic burden as large hospitals can spend more money in a year on oxygen supply alone.

Fortunately, Medical oxygen can be generated on-site in any hospital, clinic, or health care centre in a much more cost effective manner. Using pressure swing adsorption method oxygen is generated and it is being used, thus enabling a health care centre to be self-sufficient in meeting its oxygen demand.

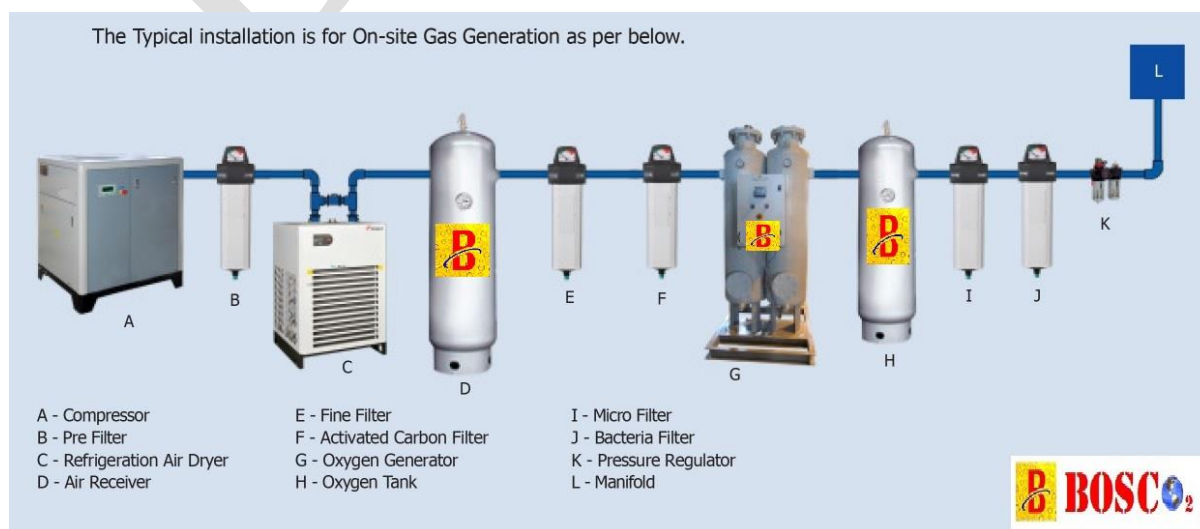
PSA methods are capable of producing oxygen in medium capacity. This is ideal for an on-site hospital unit, because it is a safe process with reasonable energy and area requirements. And acceptable as per standards.

Principle of Operation:

Drying Cycle: Purified (Moisture and oil Free) air from the compressed air system, passing through one of the tower filled with molecular sieves (Zeolite type). The sieves selectively adsorb nitrogen, allowing oxygen to pass through at the desired purity level.

Regeneration Cycle: During regeneration cycle, the sudden depressurisation brings out nitrogen molecules strapped in the sieve pores to the surface of the beads. Small portion of oxygen from the drying tower is passes over the sieves through the regeneration orifice. This result in complete regeneration of molecular sieves.

The automatic cycling of the adsorption and desorption between the two beds enables the continuous production of oxygen.



Detailed design of process parameters followed by extensive validation has results in consistent performance in oxygen series.

Highly reliable PLC based controller with digital display of generator operations.

BENEFITS

- Produce as per Demand
- Avoid Cylinder Availability Issues.
- Avoid Logistics and Management Problem
- Faster payback period within a year and lesser
- Eliminate safety risk associated with handling high pressure cylinders.



CONTACT US:

BOSCO INDIA

***B-51, Arpan Complex, Nizampura
Vadodara, Gujarat, India – 390002
Phone: +91-9723064638
E-mail: bosco2india@yahoo.com***

Our International offices:

BOSCO INDIA

**23, Huntington Place
Langley , Slough
SL 3 8 EY
England , UK**

BOSCO INDIA

**Plot 53, SIR Apollo Kagwa
Road, Kampala, Uganda
Phone : +256 778093224**

BOSCO INDIA

**Suit F4,F & F Plaza,
Cement Bus Stop
Lagos,Nigeria**

BOSCO INDIA

**House 178,Road #2 ,
DOHS,Bahidhara,
Dhaka -1206
Bangladesh ,
Phone No: +880 1963519986**

: