

Futurex 
LET'S BUILD THE FUTURE TOGETHER



DELIVERING EXCELLENCE FOR OXYGEN PROCESSING NEEDS





PSA BASED ON SITE OXYGEN GENERATION SYSTEM

The Futurex on-site oxygen generator systems are perfect for anyone who wants their own flexible and reliable supply of oxygen without compromising on quality. Futurex Oxygen Generators allow you to produce the gas exactly where you need it, when you need it.

BENEFITS

- Produce as per Demand
- Avoid Cylinder Availability Issues
- Avoid Logistics and Management Problem
- Faster Payback period within 1 Year and lesser
- Eliminate safety risk associated with handling high pressure cylinders
- Can be used as Mobile application also.
- Gas sensors and PLC Based Warning system
- Oxygen as per ISO 13485
- Concentration up to $93 \pm 3\%$

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 depressurization brings out nitrogen molecules strapped in the sieve's 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 results 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 resulted in consistent performance in Oxygen Series. Highly reliable PLC based controller with digital display of generator operations.



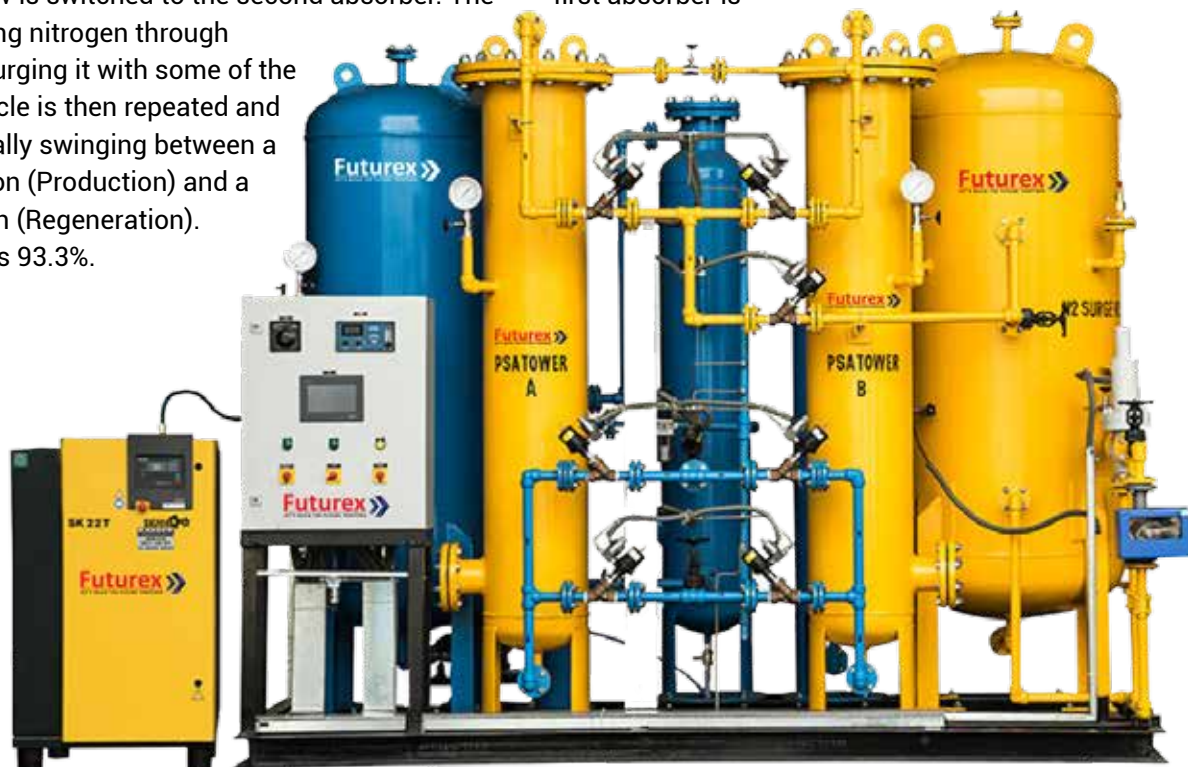


HOW OXYGEN PSA GENERATORS WORK

Air contains 21% Oxygen, 78% Nitrogen, 0.9% Argon and 0.1% other trace gases. Oxygen generator separates this oxygen from Compressed Air through a unique process called Pressure Swing Adsorption. (PSA)

The Pressure Swing Adsorption process for the generation of enriched oxygen gas from ambient air utilizes the ability of a synthetic Zeolite Molecular Sieve to absorb mainly nitrogen. While nitrogen concentrates in the pore system of the Zeolite, Oxygen Gas is produced as a product.

Oxygen generation plant's use two vessels filled with Zeolite Molecular sieve as absorbers. As Compressed Air passes up through one of the absorbers, the molecular sieve selectively absorbs the Nitrogen. This then allows the remaining Oxygen to pass on up through the absorber and exit as a product gas. When the absorber becomes saturated with Nitrogen the inlet airflow is switched to the second absorber. The first absorber is regenerated by desorbing nitrogen through depressurization and purging it with some of the product oxygen. The cycle is then repeated and the pressure is continually swinging between a higher level at adsorption (Production) and a lower level at desorption (Regeneration). Produce Oxygen Purity's 93.3%.



PSA OXYGEN GENERATOR PLANT

S. NO	DESCRIPTION	NORMAL CUBIC METER/ HR (NM ³)	LITRES PER MINUTE-LPM	DELIVERY PERIOD
1	PSA OXYGEN GENERATOR PLANT	5NM ³ /HR	83.35LPM	4 – 6 WEEKS
2	PSA OXYGEN GENERATOR PLANT	10NM ³ /HR	166.70LPM	4 – 6 WEEKS
3	PSA OXYGEN GENERATOR PLANT	15NM ³ /HR	250.05LPM	4 – 6 WEEKS
4	PSA OXYGEN GENERATOR PLANT	20NM ³ /HR	333.40LPM	4 – 6 WEEKS
5	PSA OXYGEN GENERATOR PLANT	30NM ³ /HR	500.10LPM	4 – 6 WEEKS
6	PSA OXYGEN GENERATOR PLANT	40NM ³ /HR	666.80LPM	4 – 6 WEEKS
7	PSA OXYGEN GENERATOR PLANT	50NM ³ /HR	833.50LPM	4 – 6 WEEKS
8	PSA OXYGEN GENERATOR PLANT	60NM ³ /HR	1000.20LPM	4 – 6 WEEKS



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