

Airox Nigen

The Leaders in Adsorption Technology www.airoxnigen.com

Serving Industries for 26 years Since 1994

Presents

Airox Med-OX ONSITE LOW COST V.S.A / P. S. A. MEDICAL OXYGEN GAS GENERATOR UNDER LICENCE FROM AIROX NIGEN TEXAS USA

- 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 95.% Achievable

The Technology (P.S.A) (PRESSURE SWING ADSORPTION)

Our Oxygen 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 Medical Oxygen Generation the Adsorbent is Zeolite based Molecular Sieve (Z.M.S.)

In PSA System when compressed air is passed through a adsorption tower field with Z.M.S. the molecules of Nitrogen



Carbon Di Oxide , moisture & other unwanted gases are adsorbed on surface of Z.M.S. and Oxygen which is not adsorbed by Z.M.S. comes out of adsorption tower and is collected in a surge vessel. For continuous generation of Oxygen 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 Oxygen 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 Medical Oxygen 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 Oxygen 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 leftunattended. All operations take place automatically and oxygen Purity remains

very consistent. In case of any abnormality the gas Generator would trip automatically with Audio Visual Alarms for Necessary action.

The Technology (V.S.A) VACUUM SWING ADSROPTION

As energy and operating cost is a major concern today we have VSA technology to offer Our Oxygen Generators which operates on Vacuum Swing Adsorption, commonly known as V S A Technology.

VSA Technology is similar to PSA but operates at very low pressure of less than One Bar G and thus saves us from using of power consuming Feed Compressor as used in PSA. Instead a very efficient Oil free blower are used. While selective adsorption phenomena of gas molecules under on the surface of highly porous and efficient very special Zeolite adsorbent takes place at blower pressure, The regeneration requires to be assisted with vacuum



In VSA System when Blower air is passed through a adsorption tower field with a special Z.M.S. the molecules of Nitrogen Carbon Di Oxide , moisture & other unwanted gases are adsorbed on surface of Z.M.S. and Oxygen which is not adsorbed by Z.M.S. comes out of adsorption tower and is collected in a surge vessel. For regeneration vacuum pump is used which sucks away all the nitrogen and other gases adsorbed in the bed .For continuous generation of Oxygen eighter two Adsorption towers are provided which work in tandem alternatively or One tower is provided where in adsorption and vacuum is done alternatively

Our systems are the best ones in industry to ensure the highest efficiency, user friendly design, Reliable Economical and Durable. Our onsite Medical Oxygen Generators are custom made and can be adjusted to give the desired nitrogen quality for your process and application.



Twin Tower VSA Unit



Single Tower VSA Unit

Safety Features and Audio-Visual Alarms



Airox MED-OX PSA or **VSA** Oxygen Gas Generator are Skid Mounted and Precommissioned at our works and are fully Automatic and requires virtually no attention of the Operator.

All System comes with 7 or 10 inch HMI Once started it can be left-unattended. All operations take place automatically and oxygen Purity remains very consistent. In case of any abnormality the gas Generator would trip automatically with Audio Visual Alarms for Necessary action.

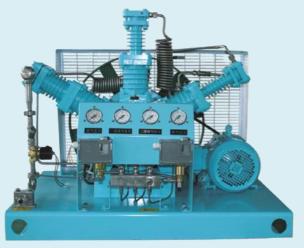
In case of Storage Tank Getting Filled the Gas

Generator Goes to Sleep and restarts Once the pressure in storage Tank is Reduces to set Limit.

Airox Med-OX Oxygen Gas Booster

Airox offers Oxygen Gas Boosters along with gas filling manifolds and pigtails. Oxygen Boosters offered by us are state of art and backed by after sales services. Booster offered are from 3 m3/hr. to 100 m3/hr., Higher Capacities can also be offered





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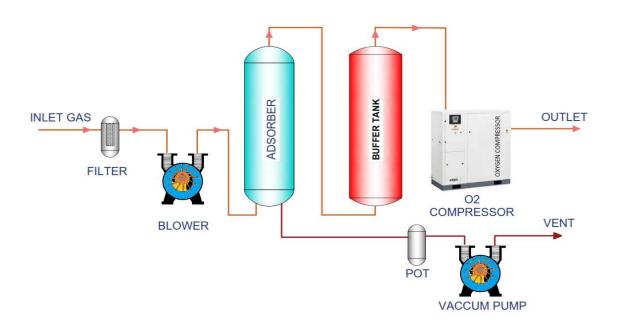
Airox Med-OX Systems (VSA / PSA)

A Reliable and Trusted Source of Online Oxygen Generation for Medical Use Made in India Under License from Airox Nigen Texas USA

SALIENT FEATURES OF AIROX MED-OX SYSTEMS

- Produces Constant Purity of 94-95% Oxygen Designed for Medical Use.
- Gas Purity Much Above Indian / European / American Pharmacopeia Regulations.
- All Airox Med–OX Systems are certified as medical equipment by ISO 13485
- All Airox Med–OX Systems comes with 26 years of existence and experience
- All Airox Med –OX Systems are CE and FDA complied
- System Designed and Backed up by 26 Years of Experience
- Compact Design with Lowest Footprint
- On-line Oxygen Purity Monitoring
- On-line Moisture (Dew Point) Monitoring (Offered as Option)
- Larger Oxygen Vessel for Peak back-up
- Complete Piping used is Sterilized Stainless Steel
- We use state of Art Change Over which comes with 5 years 100 % replacement Guarantee with no question asked
- We Use 5th Generation Zeolite life which ensures lowest Operating Cost and Maximum Gas Generation and comes with 7 Years of Operating life.
- Our system has Off-Spec Vent valve. If the purity goes below Set Limit system does not permit impure oxygen to go into the system and automatic change over to back up cylinders happen.
- 7 (10 as an Option) Inch HMI Display System with full diagnostic and Operating history.
- Med-OX System are monitored by us 24/7 at our Gurgaon Office and on your Mobile

AIROX MED-OX SINGLE TOWER VSA TECHNOLOGY OXYGEN GENERATION SYSTEM



SINGLE TOWER

VSA (VACUUM SWING ADSROTION)

SAVE FLOOR SPACE

AS COMPARED TO OTHER OPTIONS





UNITS ARE COMPACT

EASY TO SHIP

AND

YET COMES WITH

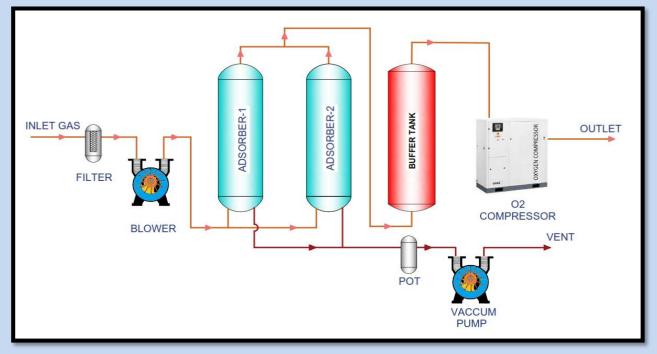
ALL THE FETURES

AIROX MED-OX SINGLE TOWER VSA TECHNOLOGY OXYGEN GENERATION SYSTEM

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TECHNICAL DATA	AIROX MED-OX 50	AIROX MED-OX 100	AIROX MED-OX 200	AIROX MED-OX 500
FLOW RATE (LPM)	50	100	200	500
FLOW RATE (Nm3/hr)	3	6	12	30
OXYGEN PURITY	93%+/-3% (AT GENERATOR OTLET)			
OUTLET PRESSURE	OPTIONS OF 0.2 Bar G, 1.8 Bar G, 5 Bar G & 7 Bar G AVAILABLE			
BOOSTER OPTIONAL	FOR CYLINDER FILLING 200 & 350 Bar G WITH BOOSTERS AVAILABLE		AVAILABLE	
OPERATING TEMPERATURE	-18°C to 49°C	-18°C to 49°C	-18°C to 49°C	-18°C to 49°C
POWER SUPPLY	380/460/57	5 VAC +/- 10%, 5	0/60/60 Hz +/- 3%,	3-Phase
POWER REQUIRED	6 KVA	9 KVA	12 KVA	25 KVA
	2.2 KW @ 1 Bar G	3.5 KW @ 1 Bar G	7.3 KW @ 1 Bar G	17 KW @ 1 Bar G
POWER CONSUMPTION	2.5 KW @ 4 barG	3.7 KW @ 4 barG	8 KW @ 4 barG	17.5 KW @ 4 barG
	2.6 KW @ 7 BarG	3.9 KW @ 7 BarG	8.2 KW @ 7 BarG	19 KW @ 7 BarG
OUTLET CONNECTION	15 NB	15 NB	25 NB	40 NB
SKID SIZE L x W X H (Mtrs)	2.5 x 4 x 3	2.5 x 4 x 3	2.5 x 4 x 3	3.5 x 4 x 3
TECHNICAL DATA	AIROX MED-OX 1K	AIROX MED-OX 1.5K	AIROX MED-OX 2K	AIROX MED-OX 3K
FLOW RATE (LPM)	1000	1500	2000	3000
FLOW RATE (Nm3/hr)	60	90	120	180
OXYGEN PURITY	93%+/-3% (AT GENERATOR OTLET)			
OUTLET PRESSURE	OPTIONS OF 0.2 Bar G, 1.8 Bar G, 5 Bar G & 7 Bar G AVAILABLE			
BOOSTER OPTIONAL	FOR CYLINDER FILLING 200 & 350 Bar G WITH BOOSTERS AVAILABLE			
OPERATING TEMPERATURE	-18°C to 49°C	-18°C to 49°C	-18°C to 49°C	-18°C to 49°C
POWER SUPPLY	380/460/575 VAC +/- 10%, 50/60/60 Hz +/- 3%, 3-Phase			
POWER REQUIRED	40 KVA	60 KVA	90 KVA	220 KVA
	28 KW @ 0.5 Bar G	36 KW @ 0.5 Bar G	55 KW @ 0.5 Bar G	81 KW @ 0.5 Bar G
POWER CONSUMPTION	30 KW @ 4 barG	41 KW @ 4 barG	59 KW @ 4 barG	89 KW @ 4 barG
	32 KW @ 7 BarG	44 KW @ 7 BarG	61 KW @ 7 BarG	95 KW @ 7 BarG
OUTLET CONNECTION	40 NB	50 NB	80 NB	100 NB
SKID SIZE L x W X H (Mtrs)	4.5 x 4 x 3	5.5 x 4 x 3	6.5 x 4 x 3	6.5 x 4 x 3

Single Bed VSA Reduces Number of Process Valves Required.

AIROX MED-OX / IOX TWIN TOWER VSA TECHNOLOGY OXYGEN GENERATION SYSTEM





TWIN TOWER VSA (VACUUM SWING ADSROPTION) TECHNOLOGY CAN BE OFERRED IN ANY SIZE

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AIROX MED-OX / IOX TWIN TOWER VSA TECHNOLOGY OXYGEN GENERATION SYSTEM

TECHNICAL DATA	AIROX IOX / MED-OX 200	AIROX IOX/MED-OX 500	AIROX IOX/MED-OX 1K	AIROX IOX/MED-OX 2K
FLOW RATE (LPM)	200	500	1000	2000
FLOW RATE (Nm3/hr)	12	30	60	120
OXYGEN PURITY	93%+/-3% (AT GENERATOR OTLET)			
OUTLET PRESSURE	OPTIONS	6 OF 0.2 Bar G , 1.8 Bar (G , 5 Bar G & 7 Bar G AV	AILABLE
BOOSTER OPTIONAL	FOR CYLINDER FILLING 200 & 350 Bar G WITH BOOSTERS AVAILABLE			AVAILABLE
OPERATING TEMPERATURE	-18°C to 49°C	-18°C to 49°C -18°C to 49°C -18°C to 49°C		-18°C to 49°C
POWER SUPPLY	380/460/57	5 VAC +/- 10%, 5	0/60/60 Hz +/- 3%,	3-Phase
POWER REQUIRED	12 KVA	25 KVA	50 KVA	100 KVA
	7.3 KW @ 1 Bar G	17 KW @ 1 Bar G	31 KW @ 1 Bar G	75 KW @ 1 Bar G
POWER CONSUMPTION	8 KW @ 4 barG	17.5 KW @ 4 barG	33 KW @ 4 barG	80 KW @ 4 barG
	8.2 KW @ 7 BarG	19 KW @ 7 BarG	37 KW @ 7 BarG	85 KW @ 7 BarG
OUTLET CONNECTION	15 NB	20 NB 25 - 40 NB		50 NB
SKID SIZE L x W X H (Mtrs)	3 x 4 x 3	3 x 4 x 3	5 x 4 x 3	8 x 3 x 3
TECHNICAL DATA	AIROX IOX 5K	AIROX IOX 10K	AIROX IOX 20K	AIROX IOX 50K
FLOW RATE (LPM)	5000	10000	20000	50000
FLOW RATE (Nm3/hr)	300	600	1200	3000
OXYGEN PURITY	93%+/-3% (AT GENERATOR OTLET)			
OUTLET PRESSURE	OPTIONS OF 0.2 Bar G, 1.8 Bar G, 5 Bar G & 7 Bar G AVAILABLE			
BOOSTER OPTIONAL	FOR CYLINDER FILLING 200 & 350 Bar G WITH BOOSTERS AVAILABLE			
OPERATING TEMPERATURE	-18°C to 49°C -18°C to 49°C -18°C to 49°C -18°C to 49		-18°C to 49°C	
	380/460/575 VAC +/- 10%, 50/60/60 Hz +/- 3%, 3-Phase			
POWER SUPPLY	380/460/57	5 VAC +/- 10%, 5	0/60/60 Hz +/- 3%,	3-Phase
POWER SUPPLY POWER REQUIRED	380/460/57 250 KVA	5 VAC +/- 10% 5 500 KVA	0/60/60 Hz +/- 3%, 1000 KVA	3-Phase 2500 KVA
	250 KVA	500 KVA	1000 KVA	2500 KVA
POWER REQUIRED	250 KVA 160 KW @ 1 Bar G	500 KVA 300 KW @ 1 Bar G	1000 KVA 740KW @ 1 Bar G	2500 KVA 1500 KW @ 1 Bar G
POWER REQUIRED	250 KVA 160 KW @ 1 Bar G 170 KW @ 4 barG	500 KVA 300 KW @ 1 Bar G 320 KW @ 4 barG	1000 KVA 740KW @ 1 Bar G 78 KW @ 4 barG	2500 KVA 1500 KW @ 1 Bar G 1650 KW @ 4 barG

AIROX MED-OX / IOX TWIN TOWER PSA TECHNOLOGY OXYGEN GENERATION SYSTEM





All Equipment shown in PFD are not Part of Supply

unless specifically ordered

AIROX MED-OX / IOX TWIN TOWER PSA TECHNOLOGY OXYGEN GENERATION SYSTEM

Each Airox MED-OX PSA System comes with

- 4 stage Air Pretreatment and filtration for particulate/bacterial Elimination
- 2 Stage Bacteria Filter for Oxygen at Final Outlet.
- Activated Carbon Adsorber Bed to remove trace oil from the downstream of air.
- Life of Activated Carbon bed 4 Years

TECHNICAL DATA	AIROX MED-OX 50P	AIROX MED-OX 100P	AIROX MED-OX 200P	AIROX MED-OX 500P
FLOW RATE (LPM)	50	100	200	500
FLOW RATE (Nm3/hr)	3	6	12	30
OXYGEN PURITY	93%+/-3% (AT GENERATOR OTLET)			
OUTLET PRESSURE	OPTIONS OF 0.2 Bar G, 1.8 Bar G, 5 Bar G & 7 Bar G AVAILABLE			
BOOSTER OPTIONAL	FOR CYLINE	DER FILLING 200 & 350 E	Bar G WITH BOOSTERS	AVAILABLE
OPERATING TEMPERATURE	-18°C to 49°C	-18°C to 49°C -18°C to 49°C -18°C to 49°C		-18°C to 49°C
POWER SUPPLY	380/460/57	5 VAC +/- 10%, 5	0/60/60 Hz +/- 3%,	3-Phase
POWER REQUIRED	15 KVA	20 KVA	30 KVA	60 KVA
POWER CONSUMPTION	4.6 KW @ 4-5 barG	8.5 KW @ 4-5 barG	16 KW @ 4-5 barG	38 KW @ 4-5 barG
OUTLET CONNECTION	15 NB	15 NB	25 NB	40 NB
SKID SIZE L x W X H (Mtrs)	2.5 x 4 x 3	2.5 x 4 x 3	2.5 x 4 x 3	3.5 x 4 x 3
TECHNICAL DATA	AIROX MED-OX 1KP	AIROX MED-OX 1.5KP	AIROX MED-OX 2KP	AIROX MED-OX 3KP
FLOW RATE (LPM)	1000	1500	2000	3000
FLOW RATE (Nm3/hr)	60 90 120 180			180
OXYGEN PURITY	93%+/-3% (AT GENERATOR OTLET)			
OUTLET PRESSURE	OPTIONS OF 0.2 Bar G, 1.8 Bar G, 5 Bar G & 7 Bar G AVAILABLE			
BOOSTER OPTIONAL	FOR CYLINDER FILLING 200 & 350 Bar G WITH BOOSTERS AVAILABLE			
OPERATING TEMPERATURE	-18°C to 49°C -18°C to 49°C -18°C to 49°C -18°C to 49°C		-18°C to 49°C	
POWER SUPPLY	380/460/575 VAC +/- 10%, 50/60/60 Hz +/- 3%, 3-Phase			
POWER REQUIRED	90 KVA	130 KVA	200 KVA	450 KVA
POWER CONSUMPTION	70 KW @ 4-5 barG	105 KW @ 4-5 barG	132 KW @ 4-5 barG	205 KW @ 4-5 barG
OUTLET CONNECTION	40 NB	50 NB	80 NB	100 NB
SKID SIZE L x W X H (Mtrs)	4.5 x 4 x 3	5.5 x 4 x 3	6.5 x 4 x 3	6.5 x 4 x 3

COMPARISON ON OFFERED TECHNOLOGIES

	PSA Twin Tower	VSA Single Tower	VSA Twin Tower
Capital Investment	High	Lowest	Moderate
Connected Power	High	Low	Low
Power Consumption	1.1 - 1.4 kW/Nm3	0.5- 0.6 kW/Nm3	0.4 - 0.6 kW/Nm3
Floor Space	Very High	Low	Low – Moderate
Operation	Fully Automatic	Fully Automatic	Fully Automatic
Maintenance	High	Low	Low
Spares Cost	High	Low	Low
Life of Molecular Sieve	5 Years	7 Years	7 Years
Stability of Purity	Moderate	High	High
Feed Air Compressor	Required	Not Required	Not Required
Refrigerated dryer	Required	Not Required	Not Required
Oil Filters	Required	Not Required	Not Required
Compressed Air Filter	Required	Not Required	Not Required
Air Blower	Not Required	Required	Required
Vacuum Pump	Not Required	Required	Required
Adsorption Tower	Two	One	Two
PLC Operation	Yes	Yes	Yes
Change Over Valve	Eight – Ten	Two – Three	Eight
Air Receiver	Required	Not Required	Not Required
Surge Vessel	Required	Required	Required
Purge Vessel	Not Required	Required	Not Required
Vacuum Pot	Not Required	Required	Required
Gas Flow Meter	Yes	Yes	Yes
Oxygen Analyzer	Yes (Online)	Yes (Online)	Yes (Online)



Airox Nigen Credentials and Approvals

CERTIFICAT		Centration & Inspection	Cestfation & Insection
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Serving Industries for 26 years



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	AIROX MED-OX -	CORRECTION OF THE OF TH		

Certificate of Compliance



ISO 9001:2001

ISO 14000:2015

OHSAS 18001:2007

