

















Med Freshe actively working in the hospital Medical Gas Pipeline System (MGPS). We offer a single window service from offering technical service solutions, manufacturing, supply, installation, testing, commissioning (SITC) job. The vision of our firm is to fulfill international standards in customer demands without compromising critical value, ensure customer satisfaction and aims to raise the quality of life of patients.

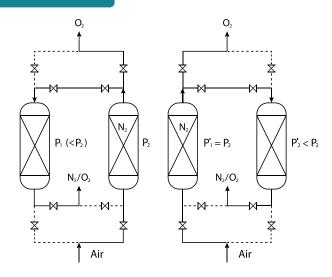
Solutions that Make Value Continuing its work without sacrificing the quality of service, **Med Freshe** which acts as a partner to all its customers, with its expertise, experience, knowledge and a more creative and innovative approach offers more usable and valuable solutions.

Med Freshe, watching very closely all developments related to the sector it serves world, technological innovations and their applications in certain has been working to bring its customers. With a young and dynamic team structure, our customers receives fast, quality and affordable solutions.

Pressure Swing Adsorption Technology

Pressure Swing Adsorption (PSA) technology is used with specially developed absorbents called zeolite to separate oxygen from nitrogen to be able to use pure oxygen in many applications.

First, air is compressed up to 10 bars with the help of compressors, then air is dried out to remove the moisture in the air using refrigerant air dryers. Filtration takes place thereafter to filter out the remaining particles, aerosol and oil which is in the pressurized air stream by using the filters of as low as 0.01um filteration capacity. Carbon Tower filter ensures long term oil free oxygen delivery. PSA unit consists two tanks filled with zeolite. Each column undergoes cyclic sequence of pressurization, generation, equalization and exhaust cycles for continuous flow of high purity oxygen. The oxygen is stored in the osyten buffer tank and again passed through a filter assembly for delivery of purified oxygen.







- Reduction of oxygen cost
- Safe low-pressure oxygen usage instead of explosive high-pressure cryogenic cylinders
- Elimination of logistical and administrative operations
- Elimination of orders and deliveries / Indian Pharmacopoeia / US Pharmacopoeia / EU
- Pharmacopoeia as per IP, USD
- Ready to use high technology solutions

Our products are designed for producing $93\pm3\%$ purity medical oxygen gas from air. Our devices are used in:

- Hospitals.
- Polyclinics.
- · Rehabilitation Centres.

Oxygen Generators should be used by technical staff who have successfully finished their training.





Specification

Product : 93 ± 3 Medical Oxygen Gas Zeolite Type : High Efficiency Molecular Sieve

Control Modes : $93\pm3\%$, $95\pm1\%$

Control System : PLC

Use : Fully Automatic / Touch Screen Screen Type : Color TFT, Touchscreen LCD

Real Time Operation Animation: Yes

Keypad : Touchscreen

Communication : Micro SD and Ethernet

Warning System : Visual, Audible, SD Card and Ethernet

Data Recording : Yes

Real Time Monitoring : Touchscreen and Remote Desktop

Security : 1 Operator, 1 Service

Service Maintenance Reminder: Yes

Language : English (Other languages available on request)
Sensors : 4 x Pressure, 1 x Temperature, 1 x Humidity,

1 x Oxygen 1 x Flow meter, 1 x CO (optional), 1 x CO2 (optional)

Filters : $5 \mu m$, $1 \mu m$, $0.01 \mu m$, Carbon Filter, Sterile Filter, Dust Filter in accordance with

ISO 8573-1, ISO 8573-2 & ISO 8573-4

Oxygen Sensor : Our system is supported by galvanic sensor which has been widely used in PSA oxygen

concentrator to measure the oxygen concentration and flow.

Related Directives and Standards

Medical Device Directive : MDD 93/42/EEC

Medical Device Class : Class 2b, acc. to EC MDD

93/42/EEC

Low Voltage Directives : EN 60601-1
Electromagnetic Compatibility Directives : EN 60601-1-2
Quality Management System Requirements : ISO 9001
Medical Devices Regulatory Requirements : ISO 13485
Environment Management System : ISO 14001

Electrical Connection : $110-220V \pm 10\% - 50-60Hz$

 $220-440V \pm 10\% - 50-60Hz$

Safety and Quality

- · Protection against current leaks
- Short circuit protection
- · Password protection
- · Emergency stop button
- Over pressure protection
- · Low oxygen tank pressure warning
- · Low oxygen purity warning
- UPS support for electricity failures

EU / IN / US / Pharmacopoeia Requirements for Medical Oxygen 93

Working Conditions

Operating Temperature : 5 °C- 40 °C Max. Operating Pressure : 10 bar(g) Test Pressure : 15 bar(g)

Pictures shown here are for illustration purpose only





Key Features of PSA Oxygen Generator

- Medical Oxygen from 93% to 95% (93±3%) / 99%
- Fully Automatic 24/7
- Real time trends of process parameters
- · Visual recommended service maintenance reminders
- · Algorithm against electricity cuts-off (Purity does not drop after electricity
- cuts-off)
- Highest packing density of zeolites (specifically designed filling station)
- Uniform flow distribution design to maximize zeolite life
- Specifically designed Starting and Stopping points to protect purity from
- dropping
- Humid protection system (Humid air cannot enter the zeolite tanks)
- Medical Grade Oxygen Filtration
- High Efficiency Molecular Sieve +
- · Real Time Monitoring
- · Remotely Manageable via Ethernet
- · Recording Capabilities and Data Logging
- Multi-level secured access for supervisory control
- Top quality valves and flow meter
- Medical Device CE
- · User Friendly Interface
- · Multi language



Performance of Medical PSA Oxygen Generator

Model No.	Capacity of Medical PSA Oxygen Generator	93%		Air Cons.		95%		Air Cons.	
		Nm3/h	NL/min	SCFH	Nm3/h	Nm3/h	NL/min	SCFH	Nm3/h
MEDIOXY-30	30 LPM	1.8	30	64	20	1.6	27	57	20
MEDIOXY-50	50 LPM	3.0	50	106	34	2.7	45	95	34
MEDIOXY- 70	70 LPM	4.2	70	148	46	3.7	62	131	46
MEDIOXY-100	100 LPM	6.0	100	212	66	5.3	88	187	66
MEDIOXY-150	150 LPM	9.0	150	318	99	7.9	132	279	99
MEDIOXY-200	200 LPM	12	200	424	126	10.5	175	371	126
MEDIOXY-250	250 LPM	15	250	530	162	13.6	227	480	162
MEDIOXY-300	300 LPM	18	300	636	192	15.9	265	562	192
MEDIOXY-400	400 LPM	24	400	848	286	21.0	350	742	286
MEDIOXY-500	500 LPM	30	500	1060	350	26.0	433	918	350
MEDIOXY-600	600 LPM	36	600	1271	425	32.1	535	1134	425
MEDIOXY-750	750 LPM	45	750	1589	519	40.1	668	1416	519
MEDIOXY-1000	1000 LPM	60	1000	2119	668	52.0	867	1836	668
MEDIOXY-1250	1250 LPM	75	1250	2649	870	65	1083	2295	870
MEDIOXY-1500	1500 LPM	90	1500	3178	954	77	1283	2719	954
MEDIOXY-1800	1800 LPM	108	1800	3814	1260	96	1600	3390	1260
MEDIOXY-2000	2000 LPM	120	2000	4260	1333	106.6	1801.8	-	_

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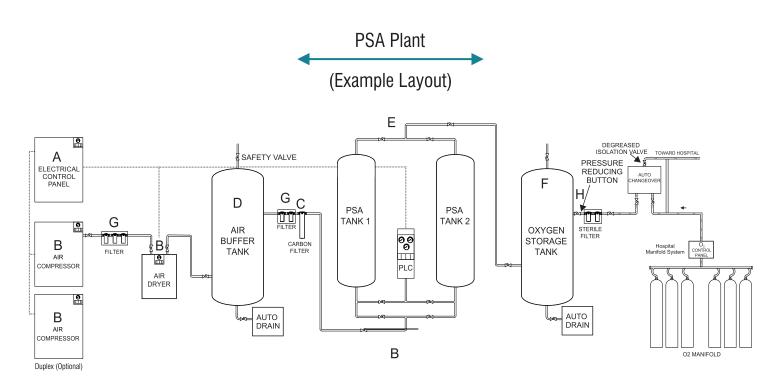


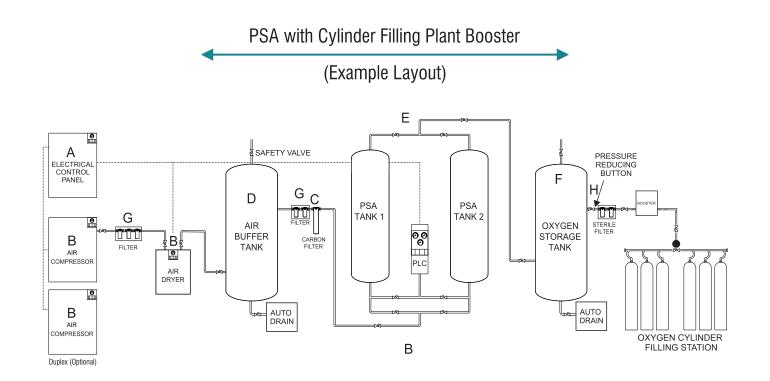
Performance at 20°C and 1 bar atmospheric conditions.

Required inlet compressed air quality is 1:4:1 according to ISO 8573-1.

Purity and Capacity values may slightly change during the life time of the generator.

Purity and Capacity values may slightly change depending on the atmospheric conditions.









Main Installation Parts

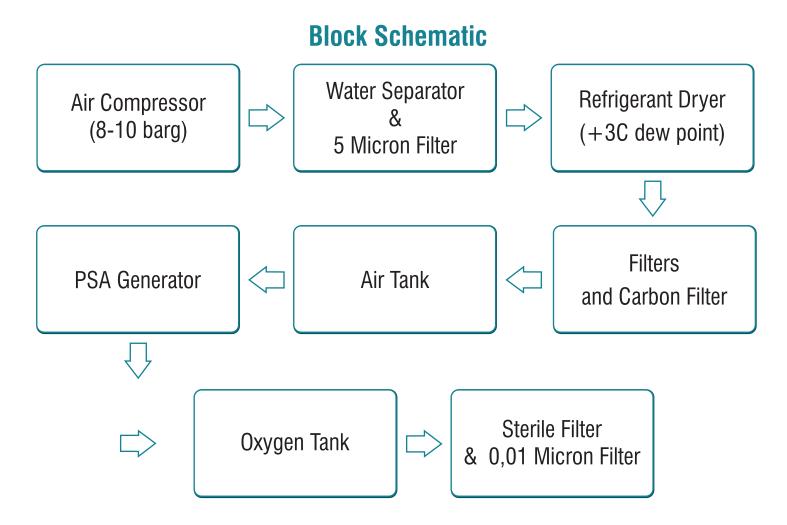
- Compressor
- Air dryer with dew point
- Coal Filter
- Air tank as per ASME / IS standard D.
- 2-Column PSA generator with internal piping & electric cabinet
- O2 storage tank as per IS standard
- **Filters** G.
- Н. Pressure reducing station(0-4.5 bar)
- Degreased copper pipe installation from oxygen receiver to auto changeover panel as per HTM 02-01 / Other International Standards

Optional System

- Second Compressor
- Cylinder Filling System

Parts in the Cabinet

- 1. Valves for air inlet
- Valves for nitrogen exhaust
- Feed air pressure regulator
- Valve island pressure regulator
- Oxygen sensor pressure regulator
- Valve island
- 7. Axial valve for equalization
- Axial valves for production
- Oxygen sample port
- 10. Oxygen sensor hose connection
- 11. Oxygen sensor
- Nitrogen Muffler







CERTIFICATES



ISO 9001:2015





MSME



ISO 13485:2016



WHO - GMP

CE















OUR SOLUTIONS

- Pneumatic Waste & Laundry Collection System (PWLCS) Pneumatic Tube System (PTS) Bio-Medical Waste Treatment System (ISS)
- Central Sterile Supply Department (CSSD) Modular OT / ICU / Emergency Room / OT Integration Medical Gas Pipeline System (MGPS)
- Oxygen Generation System (OGS) Nurse Call System (NCS) Automated Storage & Retrieval System (ASRS) Burns Ward & Equipment
- Hospital Furniture / OT Table & OT Lights Curtain Track / IV Track / Wall Guard Smart Bin System (SBS) Electric Track Vehicle (ETV)
- Automated Pharmacy Dispensing System (APDS)
 Hospital Consultancy & Designing on Turnkey Basis

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