



**JUST BREATHE  
EASY**

## MEDICAL OXYGEN GENERATORS



Since 1969, CANADIAN CRYSTALLINE has pioneered the discovery and development of beneficial uses of Oxygen Concentrator. Over the years these efforts have led to the development of valuable, cost effective and environmentally sound techniques and products now known and respected throughout the world.

Extensive inventories and a dedicated staff enable CANADIAN CRYSTALLINE to fulfill its commitment to provide fast deliveries and responsive customer service.

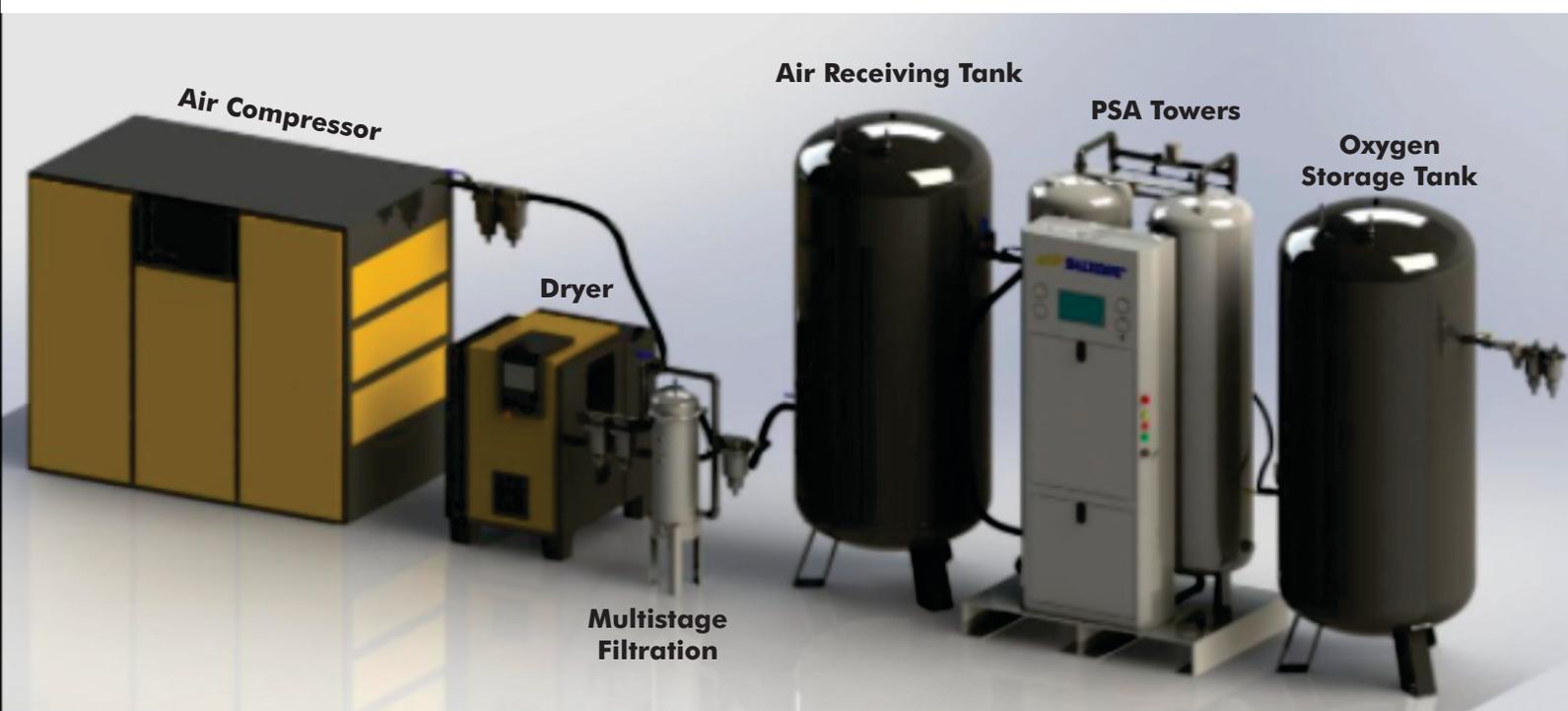
## **FEATURES**

1. Oxygen concentrator with PSA (Pressure Swing Adsorption) technology to get the high-purity quality oxygen.
2. Fully automated operation
3. Complete professional installation done for long life of plant
4. Skid mounted construction allows for fast installation at site
5. Electrical power is only INPUT cost
6. Single push button operation, needs no attendant
7. Automatic Switch ON & OFF as per oxygen demand



# ADVANTAGES OF MEDICAL OXYGEN GENERATORS

1. Electric Power is the only requirement in these gas generators. Cost of Oxygen production is Rs. 10 to Rs. 12 per cubic meter whereas oxygen in cylinders or in bulk may cost around Rs. 25 per cubic meter. So you get great savings.
2. From Oxygen generator, you get Oxygen all 365- days. Whereas there may be interruptions in delivered Oxygen supply due to non-availability of cylinders in time or tanker shortages.
3. No more problems of logistics or maintaining cylinders stock. You are never short of Oxygen from your own Oxygen generator.
4. Our medical oxygen generators are manufactured in accordance with ASME Code & it meets Indian Pharmacopeia Oxygen 93% requirement. It is Oxygen from Air by Molecular Sieve process. "Oxygen 93%" contains not less than 90% Oxygen & not more than 96%, remainder consisting mostly of Argon and Nitrogen and thousands of such installations have proven these are safe for medical use
5. These fully automatic units produce pure oxygen at 4.8 bar pressure and is collected in a storage tank and then used through a pressure regulator at 4 bar pressure and delivered through the hospital pipeline. Pressure in Oxygen storage tank is continuously monitored and when the pressure falls below 3.5 bar, an alarm is sounded. Drop in pressure also activates the reserve supply system to be activated through the switch over panel.
6. Oxygen is produced Onsite, instantaneously from ambient air freely available
7. Onsite production means, no cylinder deliveries and no risk of Oxygen shortage
8. No manpower needed for handling cylinders, a major safety advantage

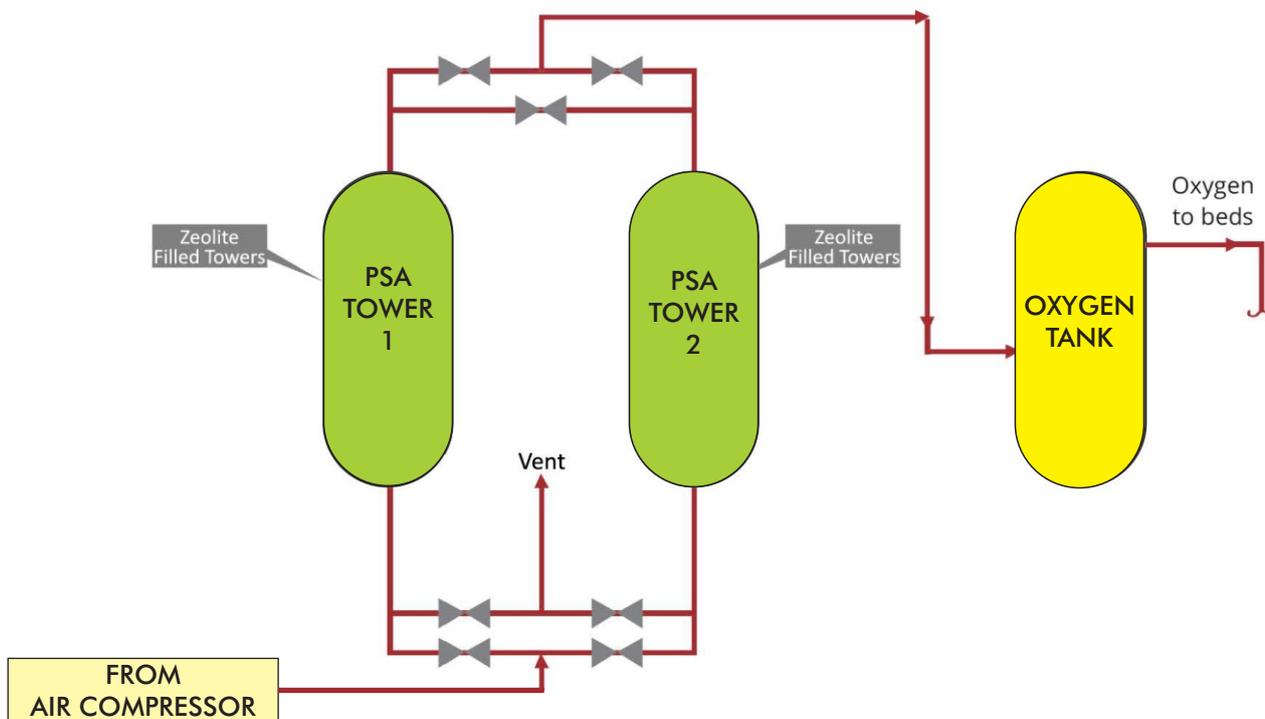


PSA (Pressure Swing Adsorption) is an economical alternative for Onsite production of Oxygen for Medical use and is in use for over 30 years in the medical industry.

Ambient air entering the compressors is 78% nitrogen, 21% oxygen, less than 1% argon and other gases. As nitrogen is separated, the resulting product gas is up to 95.5% oxygen purity.

PSA process comprises of Zeolite filled towers and is based on the fact that different gases have the property to be attracted to different solid surfaces more or less strongly. This happens with nitrogen, which is attracted to the zeolites. As the air is compressed, the nitrogen is forced into the crystalline cages of the zeolite, and the oxygen is less adsorbed and conveyed to the end of the zeolite bed and ultimately recovered in the oxygen buffer tank.

Two zeolite beds are used together: One filters air under pressure until it gets saturated with nitrogen while oxygen passes through. The second filter begins to do the same while the first one is regenerated as nitrogen is expelled (desorbed) by releasing the pressure. The process repeats again, storing the oxygen in a tank



## OXYGEN PLANT-ESSENTIAL BLOCKS

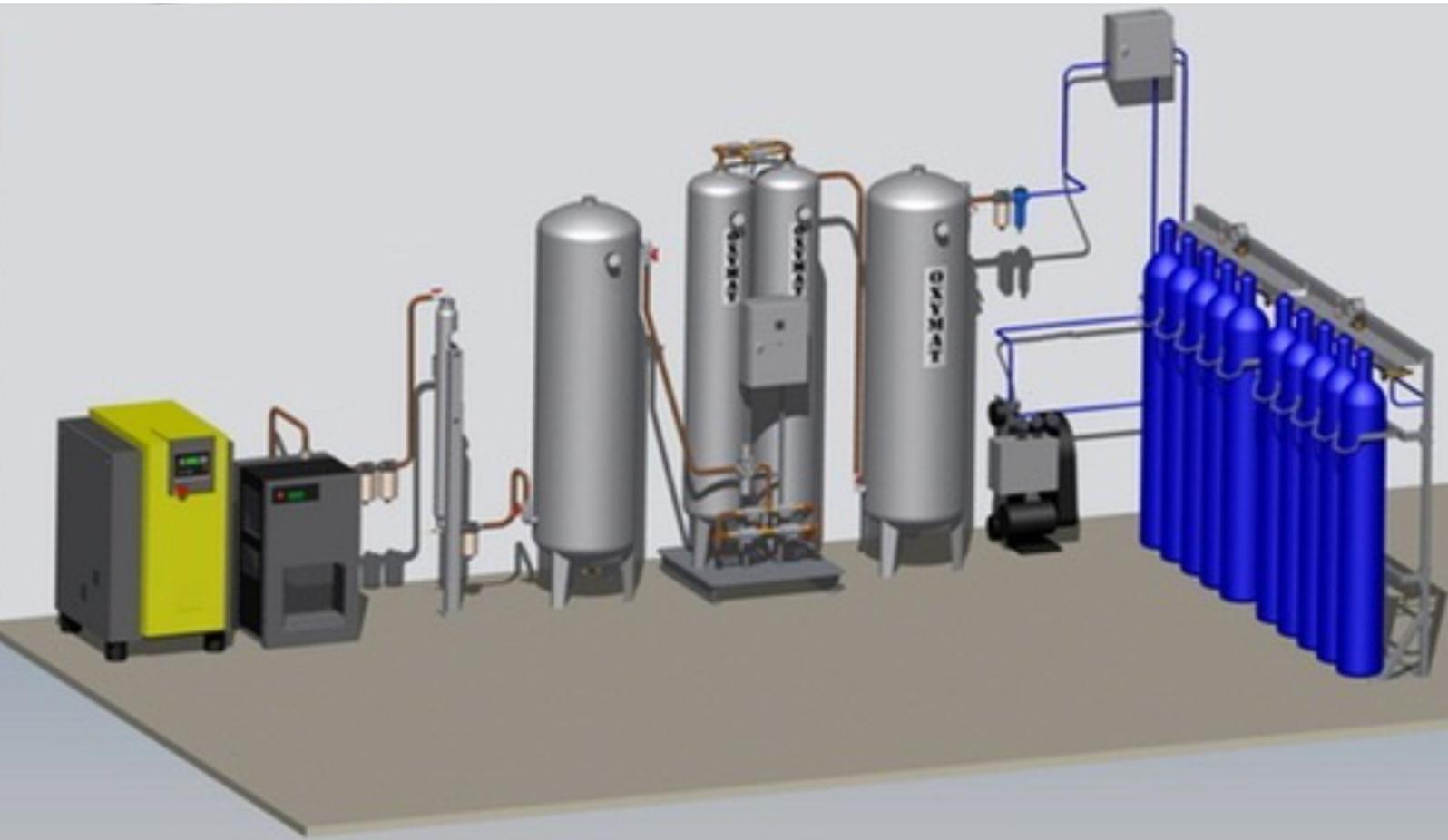
The Oxygen system consists of the following:

- ❖ Screw type Air Compressor with Refrigeration Dryer
- ❖ Multistage Coalescing type Oil filters to purify Air, Oil content below 0.001 ppm
- ❖ Air Receiver
- ❖ Oxygen Generator with PLC Control & Oxygen Analyzer
- ❖ Oxygen Buffer Tank
- ❖ Micro & Bacterial filtration unit

The generator is equipped with Online Digital Analyzer to measure Oxygen purity before it goes to Buffer tank. If purity falls below set points, the Oxygen supply to storage tank stops & alarm signal is displayed to indicate generator malfunction.

Drop in purity also signals for the gas supply to be diverted to the backup Oxygen supply. This is done automatically by the switchover panel. It closes Auto-shut-off valve in Oxygen supply line & actuates reserve cylinder Oxygen supply valve to maintain continuous Oxygen supply.

Pressure in Oxygen Buffer tank is continuously Oxygen Buffer vessel pressure falls below 3.5 Bar, an alarm is sounded. monitored by Pressure Transmitter. Whenever Drop in buffer vessel pressure also activates the reserve supply system to be activated automatically through the switchover panel.



Low noise



Large LCD Display



CE Certified



Easy for  
Maintenance

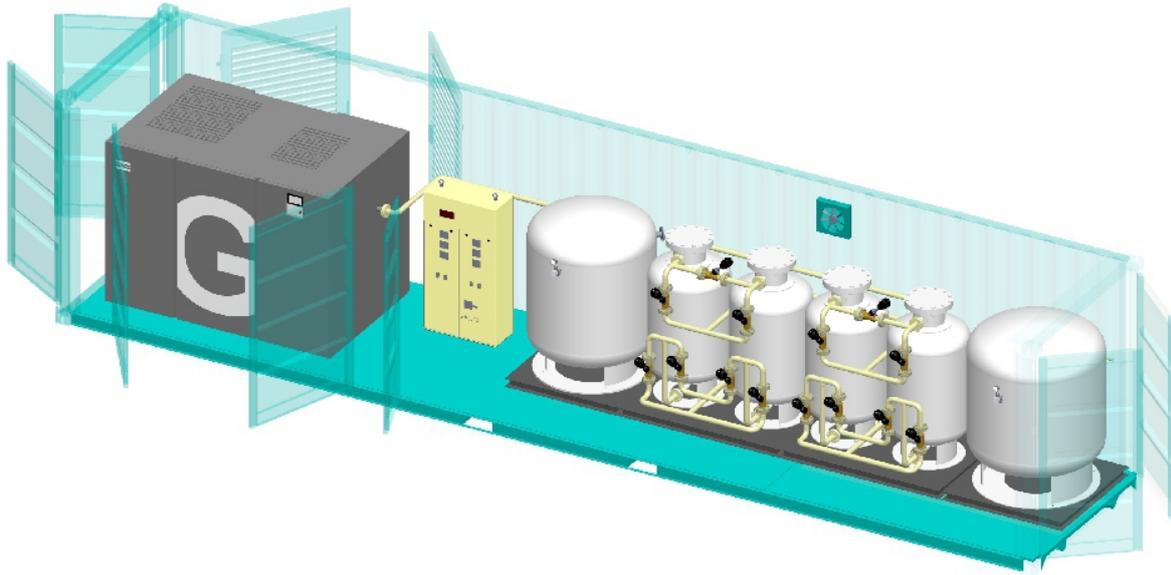


Reliable Quality



Outstanding  
Industrial Design

The Covid 19 pandemic has caused the overcrowding of hospitals and the lack of oxygen, due to the air-blowing of infected patients. For this purpose we have developed emergency oxygen supply equipment that hospitals use to increase oxygen capacity.



## SPECIFICATION

Oxygen Generator	Oxygen Generator Production Capacity			Total Power Required		Space Requirement		
Model	NM3/HR	LPM	No of Cylinders / Day	KW	HP	Length (m)	Width(m)	Height (m)
SS-MOD-1	1	17	3	6	8	3.5	1.5	2.0
SS-MOD-3	3	50	10	6	8	4.0	1.5	2.0
SS-MOD-5	5	83	17	12	16	4.5	1.5	2.3
SS-MOD-10	10	167	34	24	33	5	2.0	2.5
SS-MOD-15	15	250	51	32	43	5.5	2.0	2.5
SS-MOD-20	20	333	69	40	53	6	2.5	2.5
SS-MOD-30	30	500	103	59	78	8	2.8	3.0
SS-MOD-40	40	667	137	80	107	8	3.2	3.0
SS-MOD-50	50	833	171	95	127	10	4.5	3.5
SS-MOD-70	70	1167	240	141	189	12	4.5	4
SS-MOD-100	100	1667	343	196	263	13	5	5
SS-MOD-150	150	2500	514	335	449	15	5	4.5
SS-MOD-200	200	3333	686	454	608	17	6	5.0
SS-MOD-300	300	5000	1029	645	865	20	8	5.0



OXYGEN GENERATOR MODEL	Oxygen Generator Production Capacity			Number of BEDS Oxygen plant can cater to when consuming at the rate in LPM below			
	Nm3/hr	Liter/min	Equivalent cylinders per day	3 LPM	5 LPM	10 LPM	15 LPM
SS-MOD - 1	1	24	3.4	5	3	1	1
SS-MOD - 3	3	50	10	16	10	5	3
SS-MOD - 5	5	83	17	28	17	8	6
SS-MOD - 10	10	167	34	56	33	17	11
SS-MOD - 15	15	250	51	83	50	25	17
SS-MOD - 20	20	333	69	111	67	33	22
SS-MOD - 30	30	500	103	167	100	50	33
SS-MOD - 40	40	667	137	222	133	67	44
SS-MOD - 50	50	833	171	278	167	83	56
SS-MOD - 60	60	1000	206	333	200	100	67
SS-MOD - 70	70	1166	240	389	233	116	77
SS-MOD - 80	80	1333	274	444	267	133	89
SS-MOD - 100	100	1667	343	556	333	167	111
SS-MOD - 150	150	2500	514	834	500	290	166
SS-MOD - 300	300	5000	1029	1668	1000	500	333



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