


EXCELLENTIA
Its
Keep Breathing...

CONTAINER OXYGEN GENERATOR



Excellentia-its Technology Partnerd with Defence Research and Development Organisation. Excellentia's DRDO Technology which is an offshoot of the On Board Oxygen Generation System (OBOGS) project for medical grade oxygen generation on board Tejas, fighter aircraft. It utilises Pressure Swing Adsorption (PSA) technique

This oxygen plant will be useful to provide oxygen supply during corona pandemic in hospital especially in rural and at high altitude areas.



ADVANTAGES

- Easy to Install & Ready to Use
- Fully Automatic Plug & Play
- Minimal Operator's Attention
- Maintenance
- No changing of Cylinders
- Continuous Purity Check
- Compact Design, Lowest Footprint
- Removable & Relocatable
- Low Generation Cost
- Larger Oxygen Vessel
- Purity up to 95% Achievable
- Proven PSA Technology
- Heat and Sound Insulation
- Smart Monitor & Control System
- Transportable on all kinds of roads
- Customized Sizes
- Serves as Technical Room

SALIENT FEATURES

- Waterproof and Dust-proof
- Fire Safety – Fire Resistant Class Mo- Incombustible
- Isolation - double wall type with isolating material
- All pipes are Medical Degreased Copper / SS
- Compressed air pipes before treatment is made of galvanized steel
- Access Door - 1 double door, 1 Lateral door
- All components in contact with medical oxygen are degreased
- Switch cabinet comes with all electrical & Monitoring Devices
- Ventilation - canned hot air extraction for internal ventilation
- Regulated fan, ventilating grates with anti-insects grate Access
- Size: 30 X 10 X 10 Ft.

GAS FILLING TECHNICAL SPECIFICATIONS

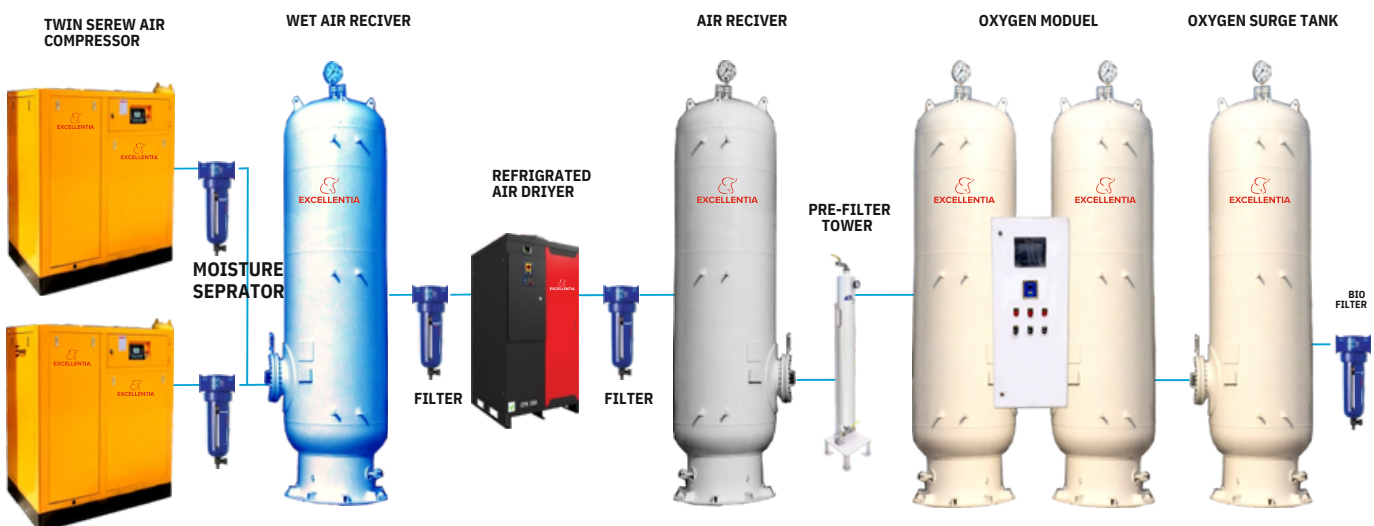
Oxygen Flow	24 m ³ /hr
Oxygen Pressure (Cylinder)	150 – 300 Bar
Oxygen Pressure (O2 Tank)	5 To 6 Bar
Oxygen Concentration (Nominal)	95%

Each Airox 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 300P	AIROX 500P	AIROX 1000P
FLOW RATE (LPM)	300	500	1000
FLOW RATE (Nm3/hr)	12	30	60
OXYGEN PURITY	93% +/-3% (AT GENERATOR OTLET)		
OUTLET PRESSURE	5 Bar G & 6 Bar G AVAILABLE		
BOOSTER OPTIONAL	FOR CYLINDER FILLING 200 & 350 Bar G WITH BOOSTERS AVAILABLE		
OPERATING TEMPERATURE	Upto 45°	Upto 45°	Upto 45°
POWER SUPPLY	380/440/575 VAC +/- 10%,	50/60/60 Hz +/- 3% ,	3-Phase
POWER REQUIRED	60 KVA	150 KVA	190 KVA
POWER CONSUMPTION	30 KW @ 4-5 barG	45 KW @ 4-5 barG	110KW @ 4-5 barG
OUTLET CONNECTION	25 NB	40 NB	40 NB

FLOW CHART OXY GEN GENERATOR



PRESSURE SWING ADSORPTION TECHNOLOGY

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 is quality for your process and application.

Safety Features and Audio-Visual Alarms

The Oxygen Gas Generator are container Mounted and Pre- commissioned at our works and are fully Automatic and requires the Operator. Once started All operations take place automatically and oxygen Purity remains

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

DRDO OXYGEN TECHNOLOGY

Brief Specification of MOP.

Product Oxygen Concentration : 93 ± 3 %.

Outlet Pressure : 4-6 bar 'g' Capacity : 18 NM³/hr (300 LPM)

Oil Content : ≤ 0.1 ppm Dew Point : < -50 °C

Oxygen Compressor to charge oxygen cylinders of 47 litre water capacity at the rate of 20 cylinders per 8 hours.

Patient Handling Capacity – The Oxygen plant is designed for a capacity of 18 NM³/hr. The system caters for 60 patients at a flow rate of 5 LPM and can charge 60 cylinders per day as per the calculation given below. The capacity can be varied as per hospital requirement, if required.

No. of persons = $300/5=60$

Cylinder Charging Capacity

The oxygen capacity depends on the pressure of filling, which is about 150-200bar.

- Capacity of standard jumbo cylinder = 47 litres Cylinder pressure = 150 bar. Volumetric capacity of cylinder = $150 \times 47 = 7,050$ litres (at NTP)

Oxygen capacity of plant for 24 hours = $18000 \times 24 = 4,32,000$ (at NTP)

No. of cylinders that can be charged in 24 hours = $432000/7050 \cong 60$

Cylinders designed by DRDO are:- Type-I: Aluminium cylinder (6061-T6)

Service Pressure : 150 bar, Burst Pressure : 400 bar,

Cost (2.3 to 5 liters capacity) :

(10 liters capacity) :

(21 liters capacity) :

Production Capacity : 3000 cylinders/month

Type/ Design-II: Aluminium cylinder

Proof pressure : 225 bar, Burst pressure : 400 bar

Cylinder volume (Water Capacity) : 2.3 ± 0.2 Liter

Volumetric expansion at proof pressure: < 10 %

Empty weight of the cylinder : Max. 1.5 Kg

Type-III: Carbon fibre based composite cylinder

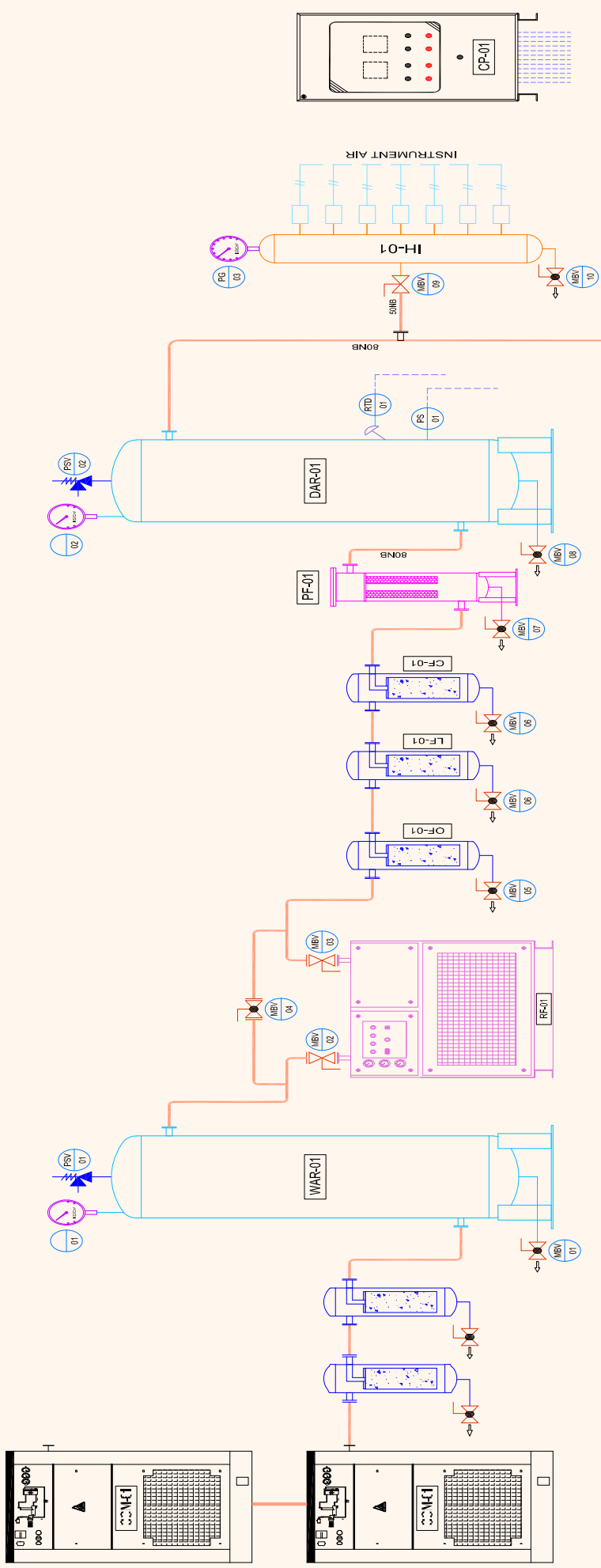
Service Pressure : 200 bar. Burst Pressure : >600 bar

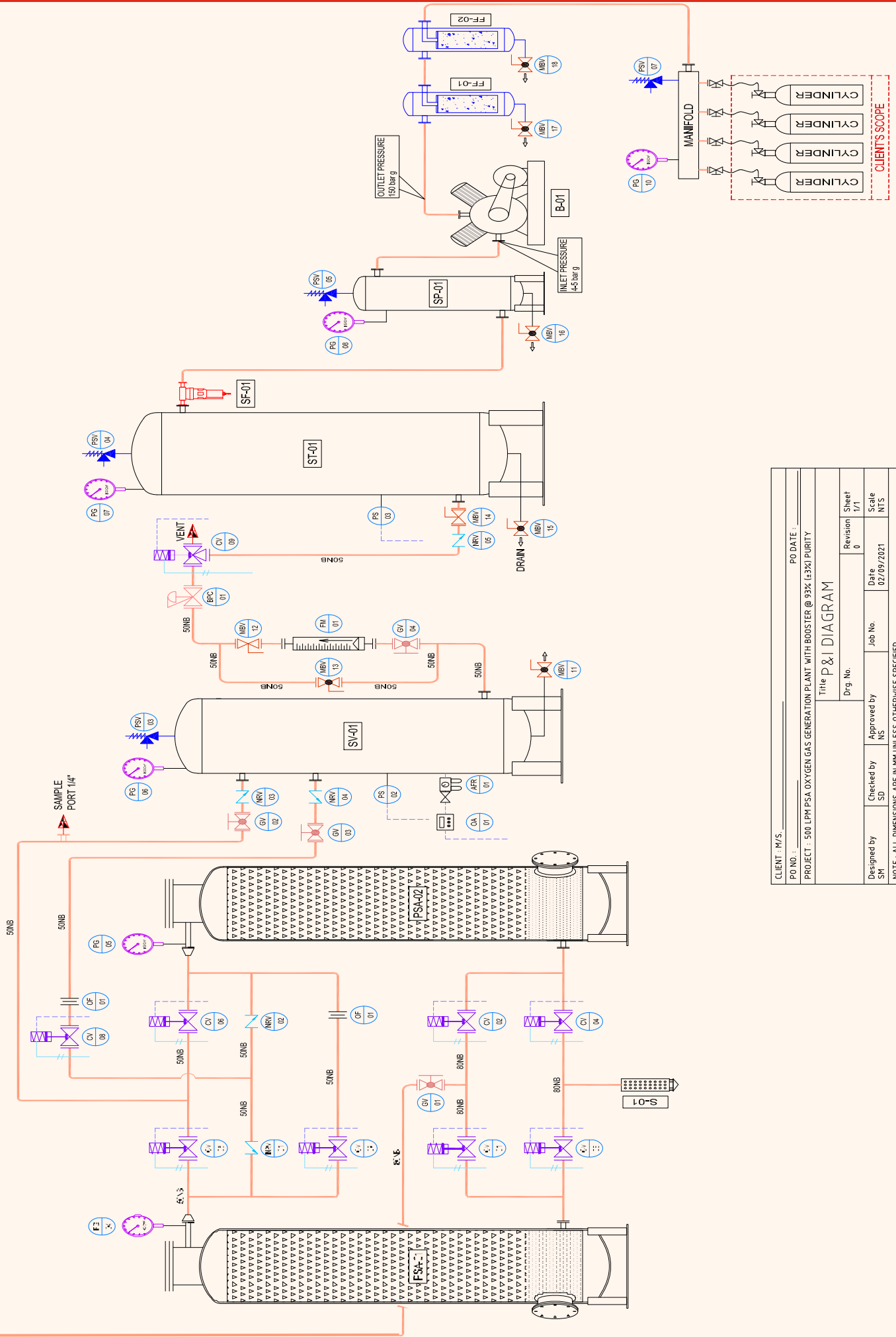
Cost (2.3 to 5 liters capacity) : Max Weight : 1.65 Kg

Production Capacity : 1000 cylinders/month/ industry



P&I DIAGRAM FOR PSA OXYGEN PLANT WITH BOOSTER 500LPM @ 93% ($\pm 3\%$) PURITY





CLIENT - M/S. _____ PO DATE: _____

PO NO. : _____ PROJECT : 500 LPM PSA OXYGEN GAS GENERATION PLANT WITH BOOSTER @ 93% (±3%) PURITY

Title P & I DIAGRAM

Designed by SM	Checked by SD	Approved by NS	Job No. _____	Date 02/09/2021	Revision 0	Sheet 1/1
				Scale NTS		

NOTE : ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.

SAFETY FEATURES AND AUDIO-VISUAL ALARMS

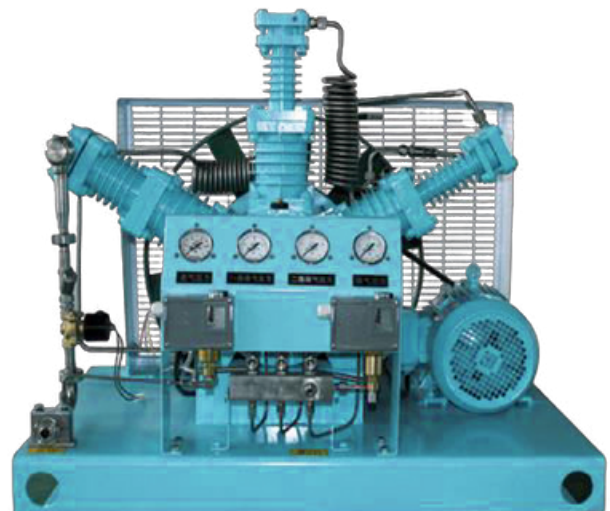


Excellentia Airox PSA Container Based Oxygen Gas Generator are Mounted and Pre-commissioned at our works and are fully Automatic and requires the Operator.

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

AIROX 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



INSTALLATIONS



Government Hospital, KGF



With NDRF Team, Yadagiri



Government Hospital, Channagiri



Government Hospital, Chinthamani



Government Hospital, Chennai



Government Hospital, Kunigal



Government Hospital, Pune



Government Hospital, Mysore



Government Hospital, Hyderabad



Government Hospital, Sindhanoor



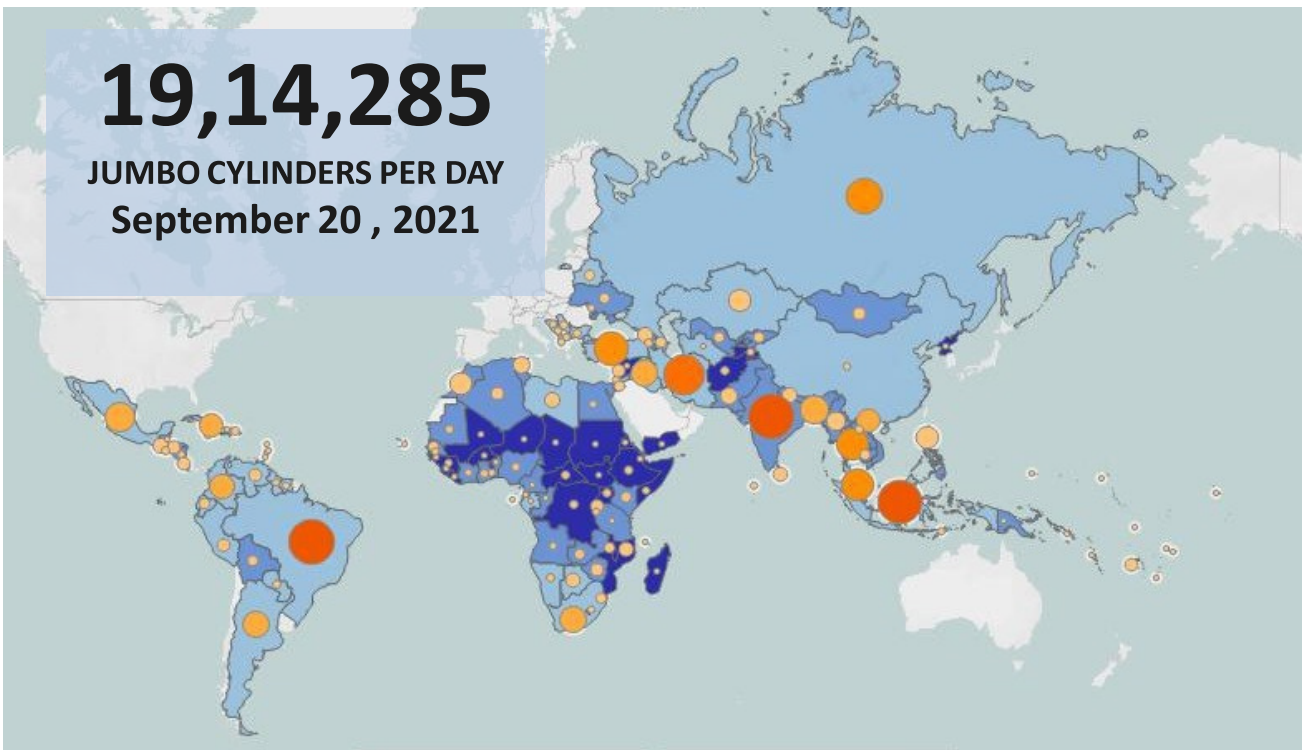
M.L. Deshpande
Director



Balraj Nune
Legal Advisor

19,14,285

JUMBO CYLINDERS PER DAY
September 20 , 2021



GLOBAL DAILY MEDICAL OXYGEN NEED

INDIA DAILY MEDICAL OXYGEN NEED FOR COVID-19
AS OF SEPTEMBER 20, 2021

[instructions](#) ?

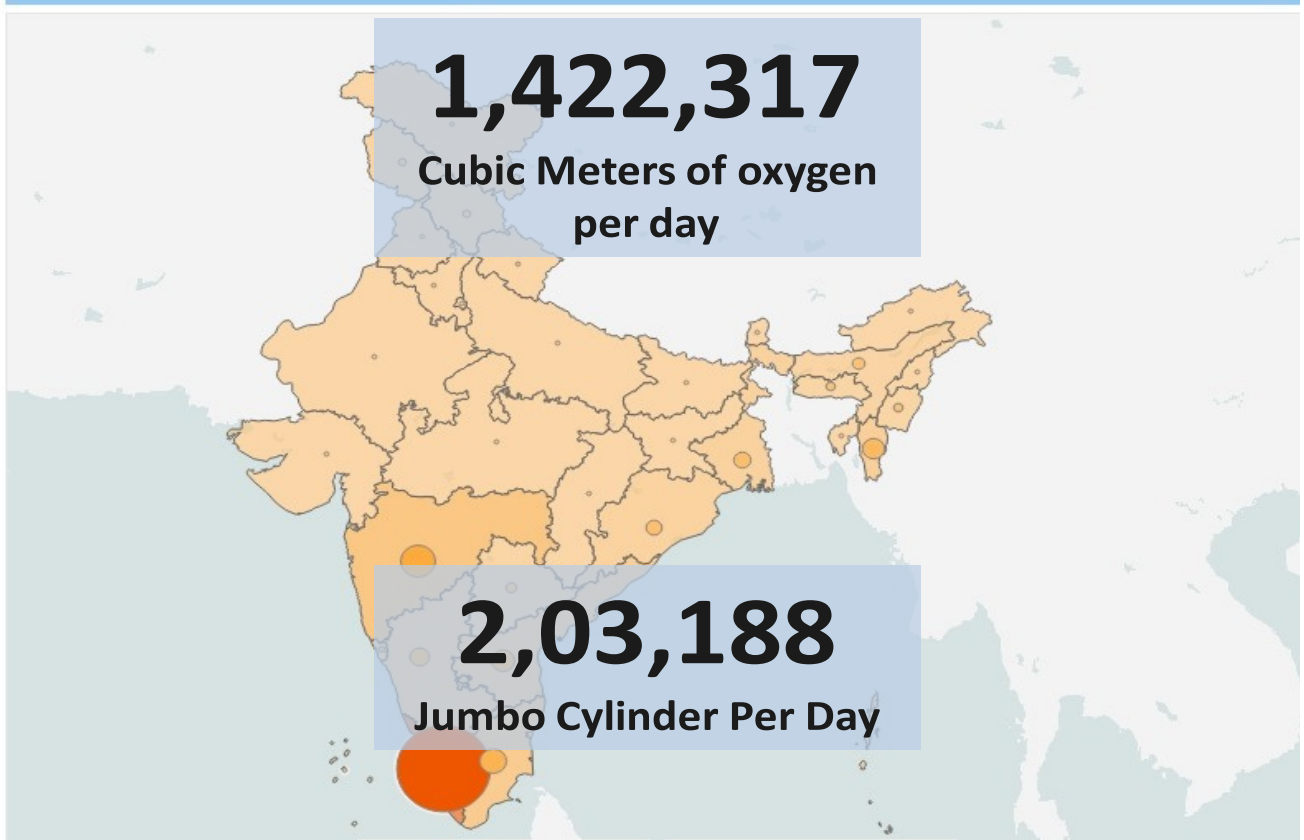
[about this resource](#) i

1,422,317


Cubic Meters of oxygen
per day

2,03,188

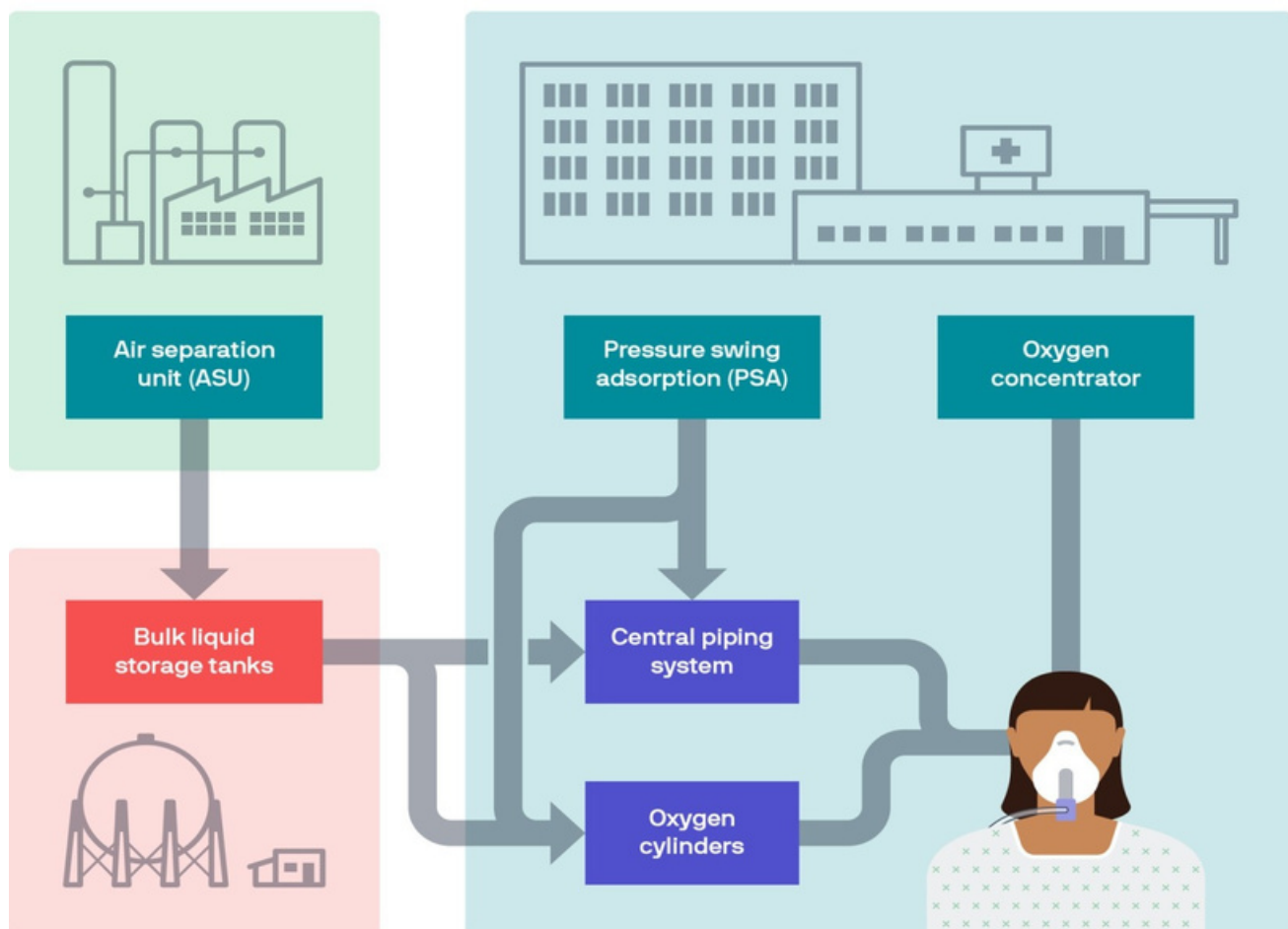
Jumbo Cylinder Per Day



Oxygen Therapy & Production Methods



	Nasal cannula	Simple face mask	Reservoir mask	Nasal high flow	CPAP	Ventilator
	Low oxygen flow	Moderate oxygen flow	High oxygen flow	Very high oxygen flow	Specialised form of pressure positive ventilation.	Invasive form of pressure positive ventilation.
	For regular hospital and home care.	For regular hospital and home care.	For hospital care.	Used in situations of respiratory failure.	Can be used for patients with apnea or to maintain an open airway.	Required when a patient's lungs are severely impaired.
OXYGEN FLOW	1-6 Litres/min	5-10 Litres/min	15 Litres/min	UP TO 70 Litres/min	15 Litres/min	AS PER LIFE SUPPORT NEEDS
FI02* FRACTION OF INSPIRED OXYGEN	24-50%	40-60%	60-90%	UP TO 100%	UP TO 100%	UP TO 100%



OUR ESTEEMED CLIENTS



EXCELLENTIA

Its

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