

Manufacturing Forward



MOG SERIES PSA OXYGEN GENERATORS

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mikropor

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Mikropor began its journey in 1987 with a passion to create “Tomorrow’s Technology” and has become one of the leading manufacturers of atmospheric air filtration solutions and compressed air treatment systems for a variety of industries.

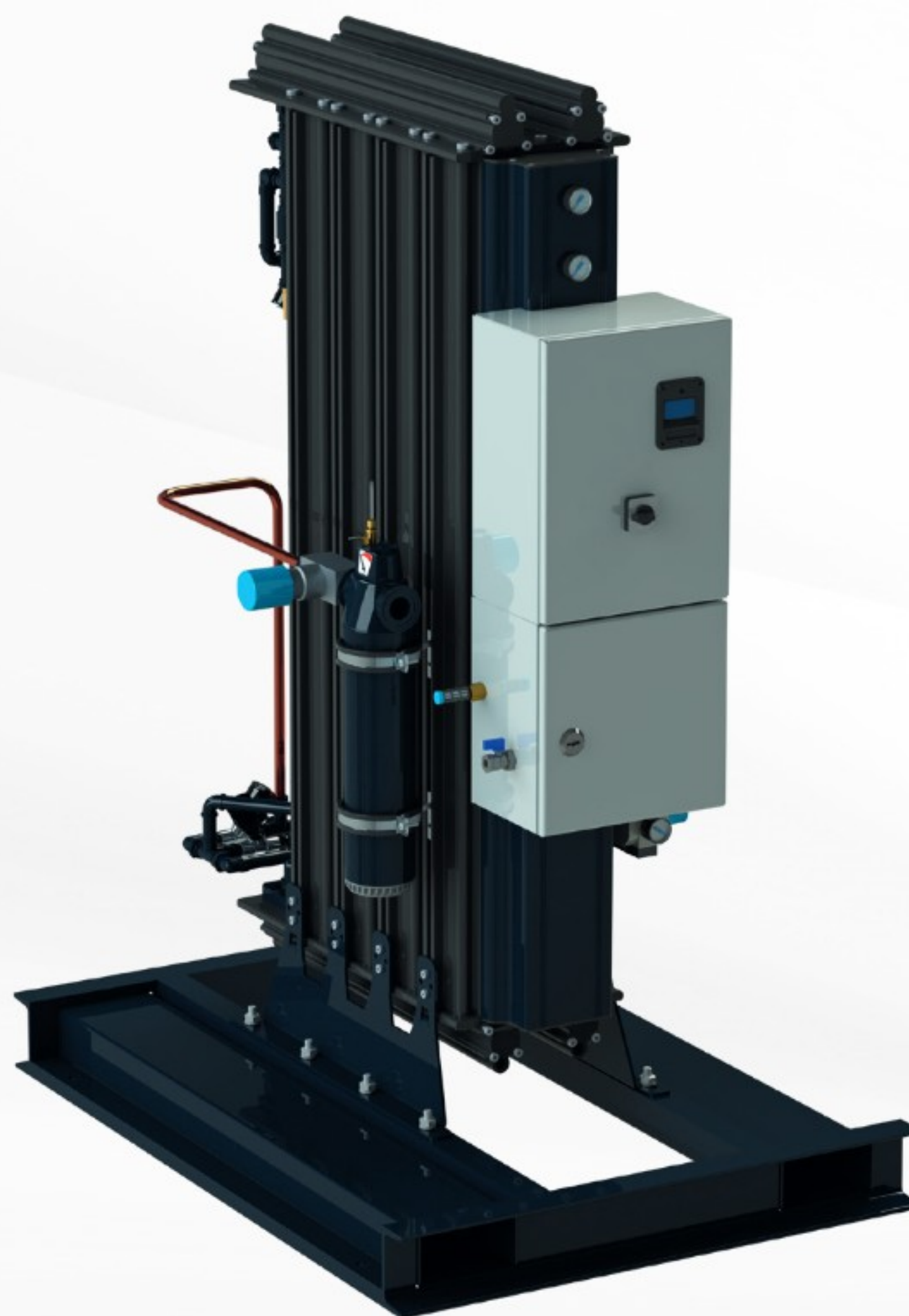
By closely following the latest developments in technology, Mikropor’s “Best in Class” products and solutions are appreciated by customers in more than 100 countries.

The company’s sustainable growth has been provided by its passion for innovation and commitment to quality, as well as its dedication to technology. Mikropor is an environmentally conscious company that values people, while developing products that extend the needs and expectations of customers.

With this mission, Mikropor continues to become one of the most recognized brands in the world by expanding its global penetration in the field of technological filtration and contributes to a healthier planet.

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MOG SERIES PSA OXYGEN GENERATORS



(Capacity 0.2 Nm³ / h -240.5 Nm³ / h; Purity 90-95%)

Mikropor Oxygen Generators are a Pressure Swing Adsorption (PSA) system supplying pure oxygen to the airline. Zeolite molecular sieve (ZMS), an effective adsorbent, separates oxygen and other molecules like nitrogen gas and water molecules in the dry air. Non-oxygen molecules are adsorbed by ZMS under constant pressure, so oxygen is produced.

Working Principle

Mikropor Oxygen Generators are two-bed PSA systems filled with ZMS adsorbers. Including filters, a pressure regulator, valves and assemblies; the oxygen generation process is mainly the separation of oxygen and nitrogen from the clean and dry air. In a bed, zeolite adsorbs non-oxygen molecules such as nitrogen gas and hydrocarbon molecules in the dry air and, at that moment, the regeneration cycle begins in an other bed. Pure oxygen is stored in the special buffer tank. The system provides to the user uninterrupted oxygen up to 95% purity.

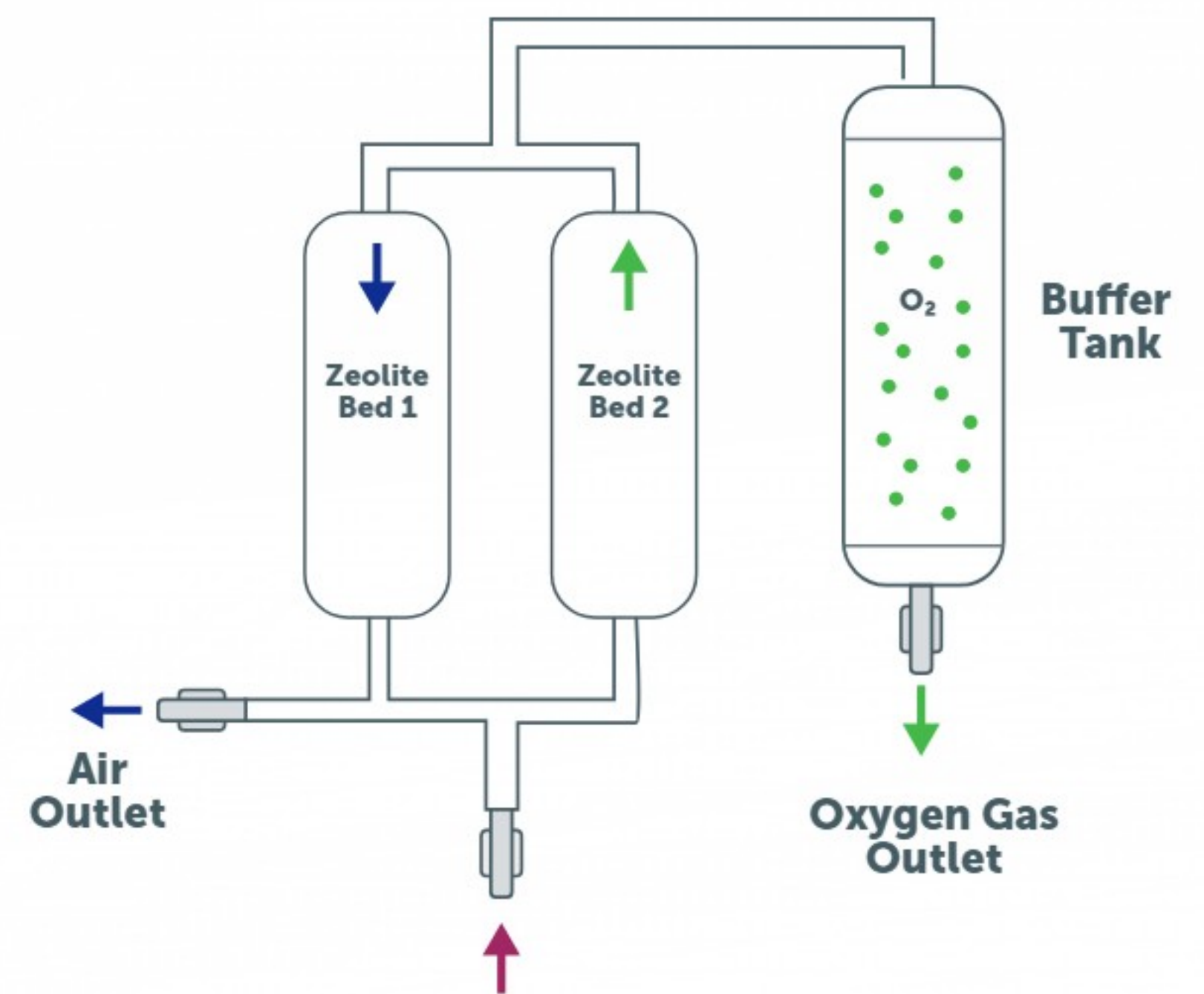


In order to achieve high purity oxygen production special zeolite granules are used. Zeolite, a microporous aluminosilicate mineral, is used as a molecular sieve and as an adsorbent of a wide variety of molecules.

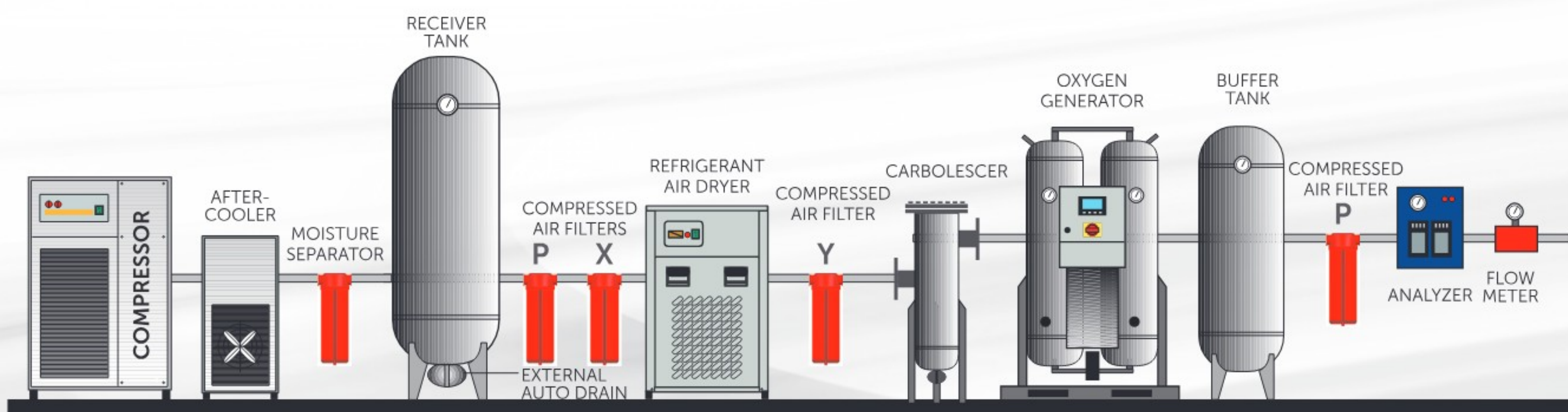
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Oxygen generation by utilising PSA technology follows these steps:

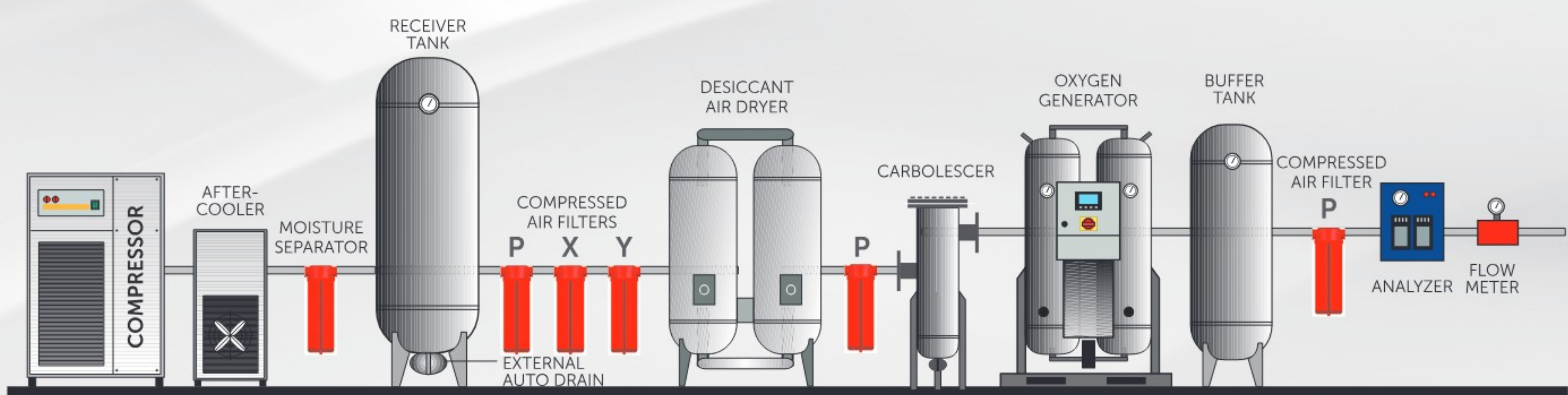
- **Pressurization:** Air is compressed to the tank to get the desired level of oxygen.
- **Adsorption:** Zeolite molecular sieve lets the oxygen flows and holds the other molecules at high pressure.
- **Regeneration:** The pressure of the tank is reduced. In that way, saturated zeolite molecules can be reused again.
- **Pressure Equalization:** After the regeneration cycle pressure valve is opened and pressure equalization of the two tanks is started to minimize the energy loss.



STANDARD AIR LINE DESIGN



PREMIUM AIR LINE DESIGN



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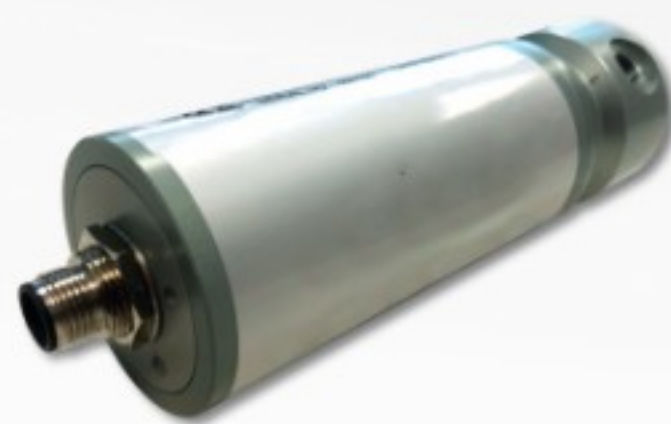
Standard Features

- Oxygen Tanks
- Silencer
- Mini PLC
- Pressure Transmitter
- Particle Filter*
- Tank Manometers
- ECO Mode
- Valve Control Regulator
- Piston Valves

* Replace filter elements periodically, and get normal service for the compressor.



Long Life Valve



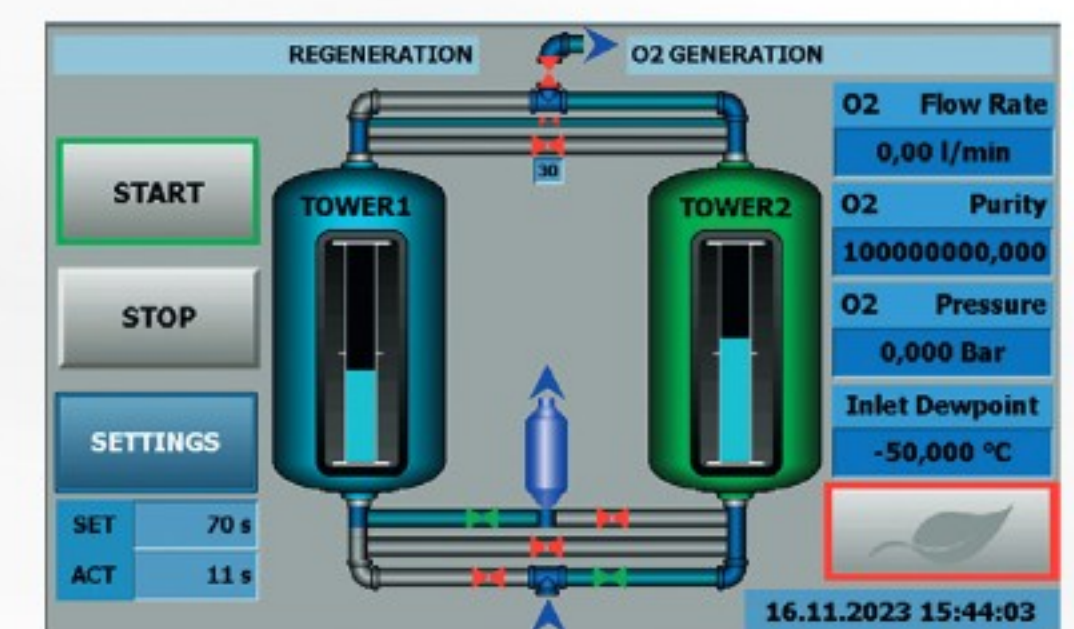
Oxygen Analyzer

Advantages

- On-demand oxygen gas production at high-capacity and purity values (90-95%) upon customer request
- Quick starting
- Highly minimized noise levels at the outlet
- A long lifetime of the special zeolite granules
- Minimum maintenance cost



Flow Meter



Touch Screen PLC

Optional Features

- Carbolescer
- Touch Screen PLC
- Oil Indicator
- Flowmeter
- Dew Point Sensor
- Oxygen Analyzer

Applications

- Medical Industry
- Metal Industry
- Ozone Systems
- Glass Industry
- Mining Process
- Laboratories
- Fishing Farms
- Paper Industry
- Industrial Ovens



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Correction Factor

To determine the oxygen generator model in the reference conditions, divide the oxygen flow rate to the related factors value.

$$\text{Correct Model} = (\text{Oxygen Flow Rate}) / (F1) / (F2)$$

Inlet Temp. (°C)	F1	Inlet Pressure (bar)	F2
10	1	6	1
15	1	6.5	1
20	1	7	1
25	1	7.5	1
30	0.91	8	1.05
35	0.82	8.5	1.11
40	0.74	9	1.17
45	0.6	9.5	1.25
—	—	10	1.33

NOMINAL CONDITIONS

Ambient Temperature	20°C
Ambient Pressure	1013 mbar
Inlet Temperature	20°C
Inlet Pressure	7.5 barg
Unit Outlet Oxygen Purity	90-95%
Compressed Air Inlet Quality	ISO 8573-1Class1-4-1
Max. Compressed Air Inlet Temperature	45°C
Max. Ambient Temperature	45°C
Min. Compressed Air Inlet Temperature	5°C
Min. Ambient Temperature	0°C
Min. Compressed Air Inlet Pressure	4 barg
Max. Compressed Air Inlet Pressure	10 barg
Pressure Dew Point	≤3°C

Technical Specifications

Model	Air Demand @ Following Purity Level (m³/h)			Free Oxygen Delivery @ Following Purity Level (m³/h)			ELM Models	Connection Sizes		Minimum Recommended Buffer Tank Volume (L) For 90% Purity	Partial Filters (P Filters)	Electrical Datas		
	90%	93%	95%	90%	93%	95%		Air Inlet	Oxygen Outlet			Voltage	Nominal Current Ampacity (A)	Input Power (kW)
MOG-25	2.8	2.7	2.8	0.3	0.2	0.2	G- 100 ELM-C	1/2"	1/2"	5.6	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-40	4.7	4.5	4.6	0.4	0.4	0.4	G- 100 ELM-C	1/2"	1/2"	9.4	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-70	8.4	8.2	8.3	0.8	0.7	0.6	G- 100 ELM-C	1/2"	1/2"	16.9	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-120	14.3	13.9	14.1	1.3	1.2	1.1	G- 100 ELM-C	1/2"	1/2"	28.8	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-140	17.1	16.7	17.0	1.6	1.4	1.3	G- 100 ELM-C	1/2"	1/2"	34.5	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-175	21.4	20.9	21.2	1.9	1.7	1.6	G- 100 ELM-C	1/2"	1/2"	43.2	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-240	28.6	27.9	28.3	2.6	2.3	2.2	G- 100 ELM-C	1/2"	1/2"	57.6	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-380	46.1	45.0	45.6	4.2	3.7	3.5	G- 200 ELM-C	1"	1/2"	92.9	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-530	64.2	62.6	63.5	5.8	5.2	4.9	G- 250 ELM-C	1"	1/2"	129.3	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-660	80.7	78.7	79.8	7.3	6.6	6.1	G- 300 ELM-C	1 1/2"	1/2"	162.5	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-800	98.8	96.4	97.7	9.0	8.0	7.5	G- 500 ELM-C	1 1/2"	1/2"	199.0	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-970	118.5	115.6	117.2	10.8	9.6	9.0	G- 600 ELM-C	1 1/2"	1/2"	238.8	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-1210	148.2	144.5	146.5	13.5	12.0	11.3	G- 850 ELM-C	1 1/2"	1/2"	298.5	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-1550	190.5	185.9	188.4	17.3	15.5	14.4	ELM- 150 -C	DN50	1/2"	-	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-1900	233.0	227.3	230.3	21.2	18.9	17.7	ELM- 150 -C	DN50	1/2"	469.4	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-2310	283.3	276.3	280.0	25.8	23.0	21.5	ELM- 300 -C	DN50	1/2"	570.6	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-2850	346.2	337.8	342.3	31.5	28.1	26.3	ELM- 300 -C	DN50	1/2"	697.5	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-3810	468.1	456.7	462.8	42.6	38.1	35.6	ELM- 300 -C	DN50	1/2"	943.1	GON-55	115-240/1/50-60Hz	<4	< 0.1
MOG-4440	545.9	532.6	539.7	49.6	44.4	41.5	ELM- 600 -C	DN50	1/2"	1099.8	GON-55	115-240/1/50-60Hz	<4	< 0.1
MOG-5350	654.4	638.4	647.0	59.5	53.2	49.8	ELM- 600 -C	DN50	1/2"	1318.4	GON-70	115-240/1/50-60Hz	<4	< 0.1
MOG-6570	807.2	787.5	798.1	73.4	65.6	61.4	ELM- 600 -C	DN50	1/2"	1626.2	GON-100	115-240/1/50-60Hz	<4	< 0.1
MOG-7700	946.0	922.9	935.3	86.0	76.9	71.9	ELM- 600 -C	DN50	1/2"	1905.8	GON-100	115-240/1/50-60Hz	<4	< 0.1
MOG-9050	1109.5	1082.3	1096.9	100.9	90.2	84.4	ELM- 800 -C	DN80	3/4"	2235.1	GON-150	115-240/1/50-60Hz	<4	< 0.1
MOG-13200	1621.0	1581.3	1602.6	147.4	131.8	123.3	ELM- 1200 -C	DN80	3/4"	3265.5	GON-150	115-240/1/50-60Hz	<4	< 0.1
MOG-15700	1928.4	1881.2	1906.5	175.3	156.8	146.7	ELM- 1200 -C	DN80	3/4"	3884.9	GON-225	115-240/1/50-60Hz	<4	< 0.1
MOG-17700	2166.0	2112.9	2141.3	196.9	176.1	164.7	ELM- 1600 -C	DN80	1"	4363.4	GON-225	115-240/1/50-60Hz	<4	< 0.1
MOG-21600	2645.7	2581.0	2615.7	240.5	215.1	201.2	ELM- 1600 -C	DN80	1 1/2"	5329.9	GON-300	115-240/1/50-60Hz	<4	< 0.1

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