

Modular high purity PSA oxygen generators



OG series

■ About SR

"Trust, Growing, Win-Win" is our philosophy. Our goal is to provide the most comprehensive range of filters that allow customers to filter gases and liquids simply and reliably, even in the most demanding conditions. We are a leading supplier of high efficiency filters for a variety of industries and applications in China.

Through a wide choice of standard designs in an assortment of materials, our comprehensive range of filter housings enables greater flexibility for customers. The development of new products is client driven, which ensures continual improvement of our capabilities. We will continue to cooperate with our world class suppliers to provide the unique solutions.

Our logo **SR** means Supportting/ Save /Solutions and Reliable /Reward/Reputation.

■ Problems that need to be solved in typical oxygen supply methods

Additional costs

- Rental fees, refill and delivery surcharges of the liquid or bottled oxygen
- Permits, installation, leasing and maintenance costs for large liquid storage
- Years of order processing charges and the increasing costs due to the continuous rise in prices

Logistics & safety

- Potential frequent transportation hazards
- High-pressure storage can easily cause decompression or leakage, and even explosions
- Oxygen cylinders or liquid oxygen tanks require laborious manual handling
- Once liquid oxygen leaks, it can easily cause serious frostbite accidents and even explosions.

Loss and waste

- It is unpredictable whether the gas supplier can continue to supply stably
- About 10% of the oxygen remains in the oxygen cylinder
- Downtime = loss of revenue



■ Oxygen is readily available

78% of the air is nitrogen and 21% is oxygen. If we can separate out this nitrogen and remove the moisture and dust particles from it, then we will obtain sufficient oxygen. Since we can produce oxygen on-site with an oxygen generator, why do we still have to spend money on expensive stored oxygen?

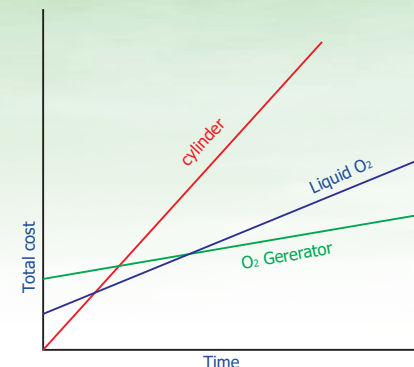
■ OG series oxygen generators

SR recognize the significance of providing customers with high-purity oxygen that is safe, reliable and cost-effective.

We have developed the OG series modular PSA oxygen generator, which is energy-saving and efficient, can be used on-site to meet users' increasing demands for high-quality oxygen generation solutions.

When you choose an OG series oxygen generator, you can usually recover the investment cost within 6 to 24 months. Compared with traditional oxygen generators, bottled oxygen and liquid oxygen, its unique modular design and energy-saving and efficient features have greater advantages.

The OG series oxygen generator has a compact structure and is easy to install. It can produce oxygen on site as long as there is a pre-treated compressed air system. On-site oxygen production can generate oxygen according to the actual demand, and the oxygen production cost is much less than purchasing oxygen from suppliers.



Compared with purchasing bottled oxygen, the investment payback period of OG series oxygen generators is less than 1 year.

Compared with purchasing liquid oxygen, the investment payback period of OG series oxygen generators is 2 to 3 years.

■ Benefits

Guaranteed performance

- Reliable performance based on decades of experience with pressure swing adsorption technology.
- 100% function and performance tested at our factory.
- 1 year warranty.

Safe & Reliable

- Lower air consumption and refined controls provide greater energy efficiency.
- Reduces carbon footprint by eliminating gas delivery to your facility.

Rapid return on investment

- Significant cost savings over cylinder or liquid supply provides a typical return on investment within less than 24 months.

Easy to maintain

- Advanced PLC with HMI touchscreen controls simplify operation and require minimal training.
- Innovative piston valves significantly reduce maintenance schedules and minimise downtime.

Easy to install

- The compact design makes the size and weight of the oxygen generator less than half that of the twin-tower oxygen generator, saving space and facilitating installation.

Fits any application

- Maximum design operating pressure is 10 barg.
- Provide various oxygen flow rates and purities.
- Can handle any power supply from 120 to 240 VAC in 50 or 60 Hz, 24VDC is optional.

■ Working principle

The OG series oxygen generator uses clean and dry compressed air as raw material, and continuously separates out oxygen by using the principle of pressure swing adsorption.

The dual chamber adsorption cylinder formed by high-strength aviation aluminum extrusion is filled with zeolite molecular sieve (ZMS) and connected through upper and lower manifolds, forming a dual-bed adsorption system.

Clean and dry compressed air enters through the inlet manifold to the bottom of the 'online' bed and flows up through the ZMS to separate the compressed air where oxygen and other trace gases are preferentially adsorbed. The oxygen then passes through the supporting bed layer and outlet manifold to the buffer vessel and a buffer vessel filter before re-entering the OG oxygen generator for purity monitoring. After a pre-set time the control system automatically switches the beds. One bed is always online generating oxygen while the other is being regenerated. During regeneration, the oxygen that has been collected in the ZMS stage is exhausted to atmosphere. A small portion of the outlet oxygen gas is expanded into the bed to accelerate the regeneration process.

①	compressor
②	wet air receiver
③	water separator
④	pre filters
⑤	precision filter
⑥	dryer
⑦	dust filter
⑧	generator
⑨	buffer vessel
⑩	buffer vessel filter
⑪	oxygen outlet



■ System performance

1 "Blizzard style" molecular sieve filling

The "blizzard style" filling makes the molecular sieves (ZMS) in the adsorption bed uniform and dense without mutual movement and friction to form dust, making the adsorption bed stable, extending the service life of the dust removal filter, and providing users with high quality oxygen they need

2 Mult-bank design

The unique multi-bank design enables additional generators to be added in the future as demand increases.

3 PLC controlled operation

Each OG oxygen generator is operated by a reliable PLC control system with digital and analog (optional) outputs for remote monitoring and alarm capabilities. OG has an easy-to-operate touch screen which offers valuable features including 'power on', 'hours run', 'oxygen purity', 'pressure', 'online column' and 'service required'. In addition, four pressure gauges provide continuous pressure indication of column A, column B, air inlet and oxygen outlet.

4 Oxygen analyzer

Built-in high-quality oxygen analyzer continuously monitors oxygen concentration, featuring advanced sensing technology, higher accuracy, faster response, and longer service life.

The oxygen analyzer outputs signals to the PLC control system, providing intuitive oxygen concentration information. It also offers network communication and 4 - 20 mA output for remote monitoring.

5 Design quality

- Mass flow controller: prevents the oxygen generator from overflowing, ensures correct application pressure and flow.
- Remote monitoring - enabling connection to proprietary remote management and generator control systems

6 ESC energy saving control

This unique control feature utilizes an outlet pressure monitor to reduce energy consumption during periods of low demand to ensure a continuous uninterrupted oxygen supply while minimising power consumption.

7 Reliable high performance valves

Inlet, outlet and exhaust valves are managed through unique integrated high quality piston valves, which are designed for reliability, long service life and ease of maintenance. The generator also incorporates adjustable equalisation valves which smooth the column switch over, improve air/oxygen ratios and extend ZMS life.

8 Maximum corrosion protection

High tensile aluminum columns are first anodized and then powder coated to provide maximum protection for corrosive environments.

■ What kind of oxygen quality do we need ?

Most applications require oxygen with purities lower than 99%, rather than ultra-high purity oxygen.

■ Typical applications

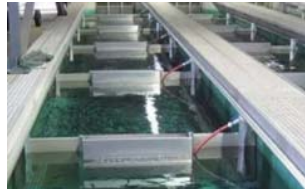
Plateau diffuse oxygen

The OG series oxygen generator improves the external environment of the human body by increasing the oxygen content (oxygen concentration) in relatively enclosed spaces such as hotels, offices, bedrooms, etc., placing the human body in an oxygen rich environment, thereby improving the respiratory environment of the human body



Aquaculture

The OG series oxygen generator provides efficient and stable oxygen supply, reducing the challenges and waiting for delivery demands in remote areas, and maximizing the oxygen saturation efficiency of farms and hatcheries.



Wastewater treatment

From improving the survival rate of aerobic bacteria in biological treatment to supplying gas to ozone generators, the OG series oxygen generator provides an economically efficient and readily available all-day internal supply, allowing you to focus on maximizing operational efficiency.



Welding, cutting and brazing

The OG series oxygen generator provides a sustainable oxygen source that can be used with fuel to improve the thermal efficiency of the blowtorch flame. In addition, the OG series oxygen generator is cost-effective and energy-efficient, helping to reduce product processing delays through delayed batch delivery, while saving money and maximizing profits.



■ Oxygen Skid Installation System

The design of the OG series takes into account cost-effective-ness, safety, and reliability, and can be installed on sliding plates. As a true turnkey solution, it includes everything needed to supply high-quality industrial grade oxygen on-site from compressed air and generate it on demand.

In addition, its compact footprint and flexible portability mean that its installation is hassle free, simplifying the connection with existing distribution pipelines, and easy to move within your facility as your infrastructure and settings change over time.



■ Sizing & Specifications

OG generator model	rated outlet flow(1)	oxygen purity at the outlet		dimensions mm			weight kg
		93%	height (A)	width (B)	depth (C)		
109	m³/h	1	1218	400	584		144
209	m³/h	2	1218	400	752		202
309	m³/h	3	1218	400	919		260
216	m³/h	4	1918	400	750		279
316	m³/h	6	1918	400	916		373
416	m³/h	8	1918	400	1082		467
516	m³/h	10	1918	400	1248		561
616	m³/h	12	1918	400	1414		655
816	m³/h	16	1918	400	1746		843
1016	m³/h	20	1918	400	2078		1031
1216	m³/h	24	1918	400	2410		1219

Inlet Parameters

Inlet Air Quality	ISO 8573-1:2010 Class2.2.2(2.2.1 with high oil vapour content)
Inlet Air Pressure Range	5-8barg

Port connection

Air Inlet	G1
O2 Outlet to Buffer	G1
O2 Inlet from Buffer	G1/2
O2 Outlet	G1/2

Electrical Parameters

Supply Voltage	100-240VAC 50/60Hz
Power	80W

Environmental Parameters

Ambient Temperature	5- 50°C (41 - 122°F)
Humidity	50% @ 40°C (80% M AX ≤ 31°C)
IP Rating	IP20/NEMA 1
Noise	< 80dB(A)

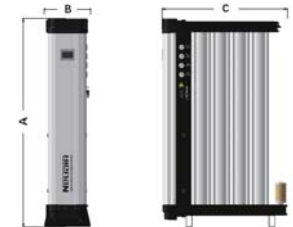
Temperature correction factors (5)

inlet air temperature(°C)	5	10	15	20	25	30	35	40	45	50
correction factor	0.80	0.90	0.94	1.00	1.00	0.98	0.95	0.90	0.85	0.72

Pressure correction factors (5)

inlet air pressure (barg)	6	7	8
correction factor	0.88	1.00	1.10

- (1) At 7 barg inlet pressure and 20 to 25°C inlet temperature. For outlet flow at all other conditions, refer to the correction factors above or contact us.
- (2) For pressures above 10 barg, contact us.
- (3) If the altitude exceeds 2000 meters, contact us.
- (4) Requires an upstream dryer. Contact us for assistance selecting the optimum dryer for your application.
- (5) If you want to consult a medical oxygen concentrator, contact us.
- (6) To be used as an approximate guide only, all applications should be confirmed by us, contact us for sizing assistance.



Why choose **SR** ?

Industry Leader

SR has become a leader in PSA oxygen generation equipment, with many years of experience creating gas generation systems.

Turnkey Solutions

Our highly experienced technical team specializes in designing one-stop solutions that precisely address business needs.

Expertise & Support

Our profound industry and technical expertise, coupled with high-quality after-sales service, has set benchmarks in the industry in terms of customer service, innovation, and product reliability.

Project Management

Our project teams manage every stage of the process, initial consultation, system design, procurement, installation, and debugging, ensuring you are kept fully informed at each step.

Global Partner

Our business and partners are spread all over the world, and we provide you with the best gas technology solutions.



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