TSAAS Intelligent Veterinary Oxygen Generator (10L Plus)

Thanks for purchasing our products. Carefully read this manual before operating the product, in order to operate it properly.
For animal use only.

Keep it properly for future use.

Safety Notes

NOTE: For avoiding power outage or possible oxygen generator failure, animals in urgent need of oxygen and critically ill animals must be equipped with other backup oxygen supply devices (for example: oxygen cylinders, oxygen bags). This device is suitable for oxygen supplementation, not as life support or life extension.

Warnings & Precautions

1. Before installation

1) TSAAS Intelligent Veterinary Oxygen Generator Tower (hereinafter referred to as: Oxygen Generator) is prohibited to be laid upside down or horizontally.

2) If the power supply voltage is unstable, and beyond the range of 220V±10%, please connect the voltage regulator before use.

3) Use socket or connecting plate which meet the national safety requirements.

4) Only professionals can open the Oxygen Generator shell.

5) Beware of electric shock. It is strictly prohibited to dismantle the machine by yourself. If necessary, please contact qualified maintenance personnel for maintenance.

2. Safety Marks and Explanation

The marks and explanation below are intended for the proper and safe use of the product, to prevent harm or damage to the user or others. Safety marks and explanations are as below:

	Connect (used only on some part of the equipment)		This side up
	Disconnect (used only on some part of the equipment)		Keep dry
	Fragile		No smoking
	Attention! Check the attached manual		No burning
	Disconnect (main power supply)		Connect (main power supply)

	Alternating current		Stacking layer limit

WARNING: To prevent risks caused by power outages or oxygen generator malfunction, an alternative oxygen supply source must be available for emergency use (such as oxygen cylinders, oxygen storage bags, etc.).

This device is intended for supplemental oxygen only and is NOT designed for life support or life-sustaining purposes.

Operating Conditions:

- Ambient Temperature: 5℃–40℃
- Relative Humidity: ≤80%
- Atmospheric Pressure: 86–106 kPa
- Power Supply: AC 220V±10%, Frequency: 50 Hz

Transportation and Storage Conditions

Item	Packed Transportation & Storage	Unpacked Transportation & Storage
Temperature	-20℃ - 55℃	-5℃ - 40℃
Humidity	10% - 93%	10% - 70%
Atmosperic Pressure	50 - 106kPa	50 - 106kPa

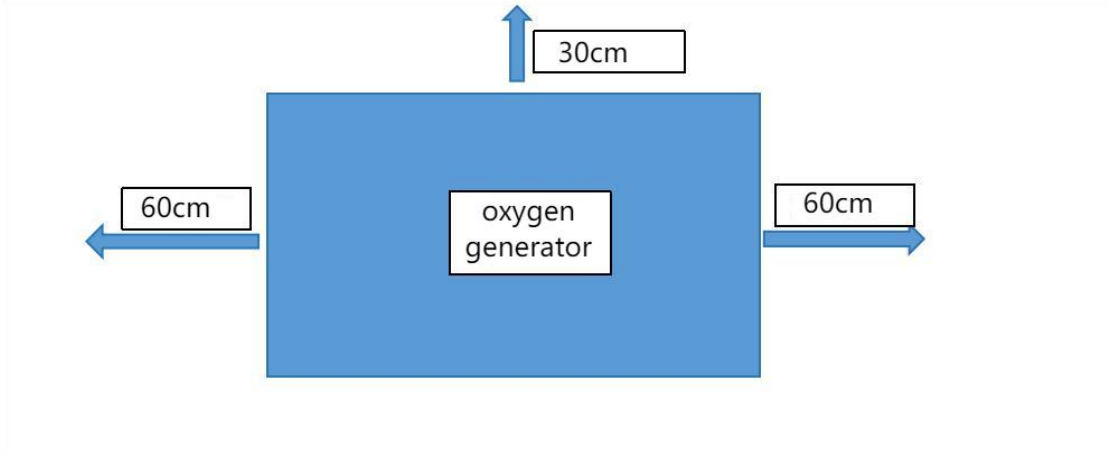
Warnings, Statements, and Precautions

1. Before connecting this product to a power supply, please ensure that the provided power source meets the input power requirements specified on the product label.
2. Clean the filter cotton on the air inlet cover of the oxygen generator every 100 operating hours.
3. Replace the air inlet filter located beneath the inlet cover every 1,000 operating hours.
4. Do not share the power outlet with other electrical appliances to prevent damage caused by voltage instability.
5. Before performing maintenance, repair, or cleaning, always unplug the power cord and ensure the device is completely disconnected from the power supply.

6. Regularly inspect the power cord and plug for damage, and ensure that the power cord is not pinched or compressed by other objects.
7. The power switch is not a safety disconnect device. The power plug is the only safety means of disconnection and is intentionally designed as the isolation method. Therefore, ensure that the power plug is easily accessible at all times.
8. Only trained personnel are permitted to operate this device.
9. To avoid the risk of strangulation and/or suffocation caused by entanglement of the tubing, keep children and pets away from the connecting tubing.
10. Children must not be allowed to play with the device or its accessories, as this may result in accidental ingestion and suffocation.
11. Allergic reactions may occur in response to materials that are accessible on the oxygen generator.
12. Long-term contact with applied parts or other accessories may cause skin irritation.
13. At an ambient temperature of 20°C, the minimum time required for the oxygen generator to become ready for its intended use after storage at the lowest storage temperature is at least 4 hours.
14. At an ambient temperature of 20°C, the time required for the oxygen generator to become ready for its intended use after storage at the highest storage temperature is approximately 30 minutes.
15. In the operating environment, minimize the presence of lint, dust, or debris to prevent blockage of the air inlet or filter compartment cover, which may cause overheating or reduced performance.
16. Place the oxygen generator in a well-lit area while avoiding direct sunlight to allow clear identification and viewing of device displays and markings.
17. During use, avoid contact between pets or insects and the oxygen generator to prevent damage to the device.
18. While the device is operating, prevent children from accessing it to avoid unintended changes to device settings.
19. The service life of supplied components or accessories is indicated on the accessory packaging.
20. The device must not be used in environments containing flammable mixtures.

21. Do not use the device, do not open the enclosure, and do not replace parts under the following conditions. Repairs must only be performed by the manufacturer or an authorized service provider:
    a. Damage to the power cord
    b. Device malfunction
    c. Physical damage to the device
    d. Water ingress
    e. Excessive noise or sharp, abnormal sounds during operation
22. When the operator leaves the area, the power plug must be unplugged.
23. Disposal of waste must comply with local health and environmental regulations.
24. Do not use or store the device outside the specified environmental conditions.
25. To prevent mechanical and electrical damage, avoid dropping accessories.
26. To ensure proper operation, make sure the power cord remains securely connected during oxygen generation and is protected from damage.
27. When switching the oxygen generator to a different power outlet, always turn off the device first.
28. If the supply voltage exceeds or falls below the normal operating range, or if voltage fluctuations are significant, install a voltage stabilizer before using the oxygen generator.
29. After each shutdown, wait at least 5 minutes before restarting the device to prevent pressurized compressor startup, which may reduce the service life of the oxygen generator.
30. Do not open the air inlet cover or outer housing while the oxygen generator is operating.
31. Do not use this device in environments with strong magnetic fields.
32. Untrained personnel are strictly prohibited from opening the oxygen generator or its enclosure.
33. Maintenance and repair of the oxygen generator must be performed by trained professional service personnel.

34. Always disconnect the power supply before replacing any electrical components.
35. After the oxygen generator is decommissioned, disposal of capacitors and electronic components must comply with local laws and regulations.
36. Place the device at least 0.6 meters (2 feet) away from walls, fabrics, or other objects, and ensure adequate ventilation. This allows sufficient airflow into and out of the device. Avoid placing the oxygen generator in areas with pollutants or smoke.



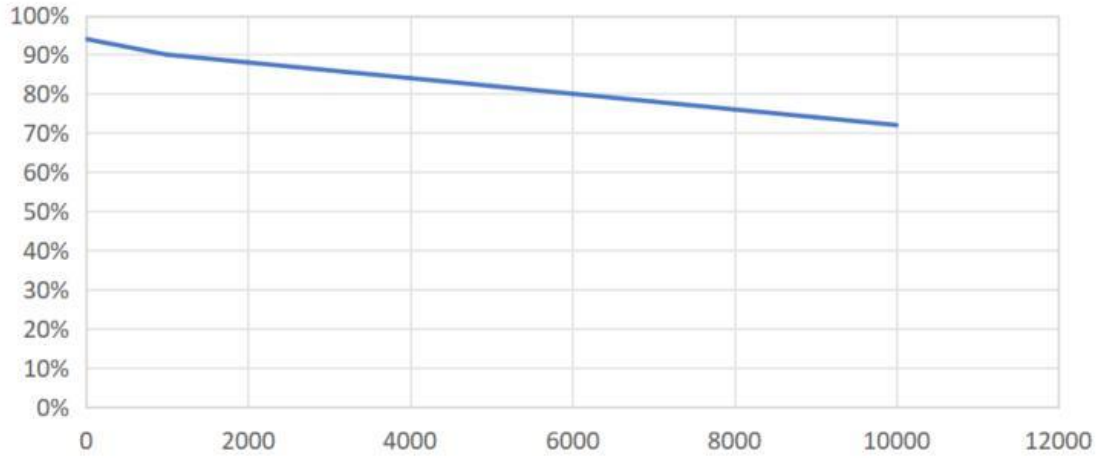
37. Use only accessories recommended in this instruction manual.
38. Place the device on a stable, level surface.
39. During oxygen generation, increased oxygen concentration presents a fire risk. Do not use the oxygen generator or its accessories near sparks or open flames.
40. Do not use the oxygen generator near oils, grease, detergents, or other flammable substances. Oils, grease, or similar substances must never be applied to the oxygen generator.
41. Turn off the oxygen generator when not in use.
42. To prevent performance degradation caused by dust blocking the air inlet, clean or replace filters in a timely manner. To ensure proper operation, use only original manufacturer-supplied filters or accessories approved by the manufacturer.
43. If any abnormal condition occurs, stop using the product immediately.
44. Do not lubricate accessories, connectors, tubing, or other components of the oxygen generator to avoid fire risk.

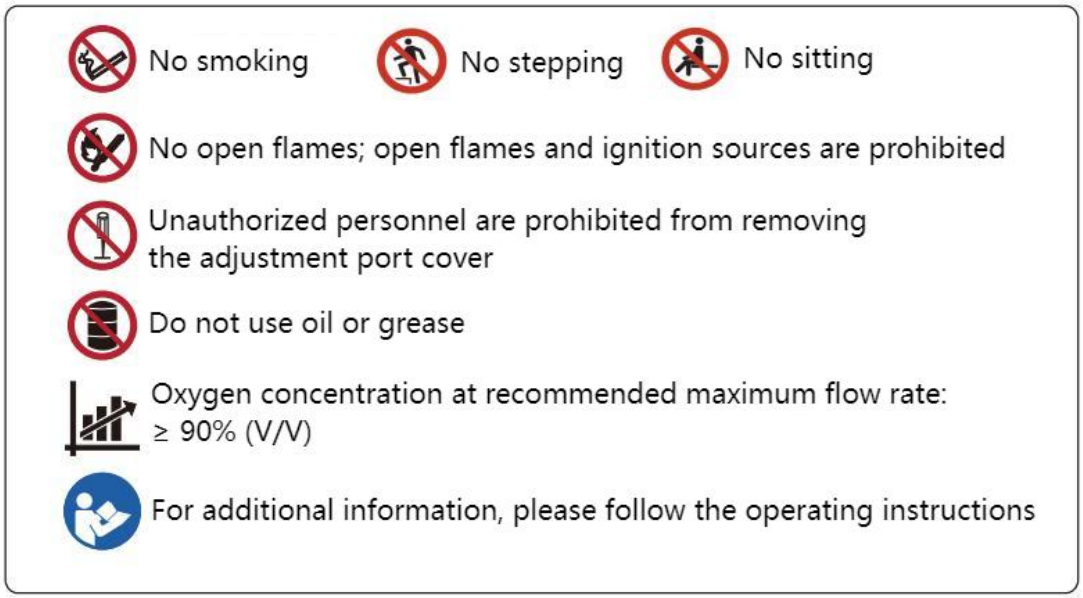
45. Operation at altitudes above 1,500 meters, temperatures outside the range of 5°C–40°C, or relative humidity above 80% may affect flow rate and oxygen concentration.
46. Oxygen promotes combustion and fire spread. When the oxygen generator is powered on but not in use, do not place the tubing on flammable materials, as oxygen enrichment may cause ignition. Turn off the oxygen generator when not in use to prevent oxygen accumulation.

Consumable and Wear Parts

- Connecting tubing
- Air inlet filter sheet
- Air inlet filter
- Compressor cup
- Molecular sieve

Relationship between oxygen concentration and operating time





Installation and Operation

I. Unpacking

Note: Unless the oxygen generator is put into immediate use, the carton and all storage packaging materials must be retained prior to operation.

1. Inspect the carton or other packaging for any visible damage. If damage is found, notify the carrier or your local distributor immediately.

2. Remove all loose packaging materials from inside the carton.

3. Carefully remove all components from the carton.

II. Inspection

1. Inspect the exterior surface of the oxygen generator for damage such as cracks, dents, or scratches.

2. Check all components to ensure they are complete and undamaged.

III. Storage

1. Store the repackaged oxygen generator in a dry location.

2. Do not place any objects on top of the oxygen generator.

IV. Pre-Operation Check

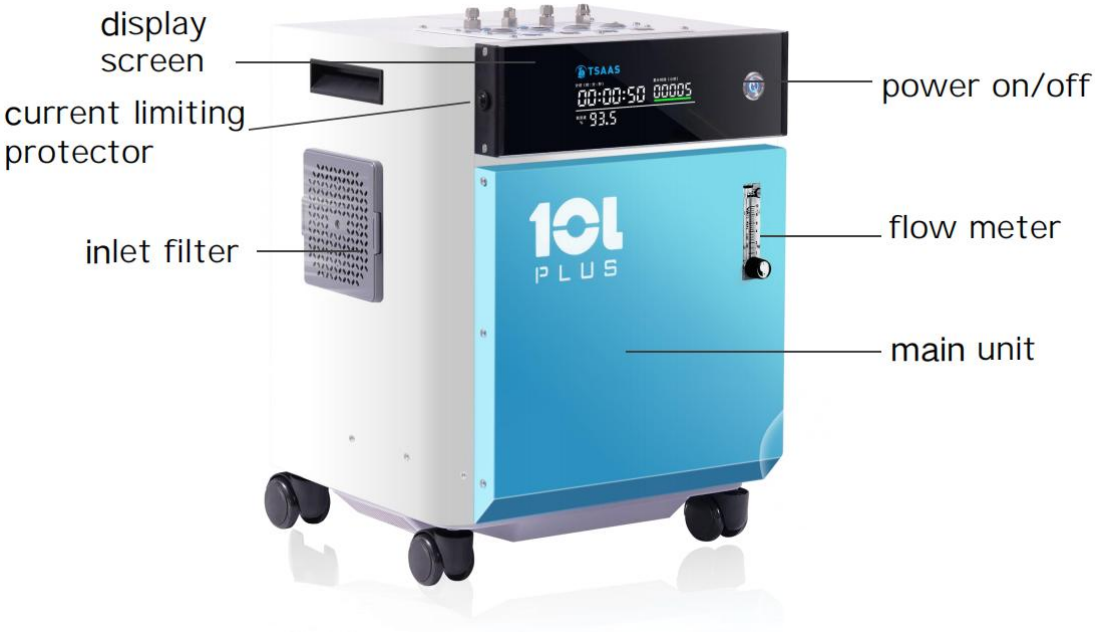
1. Before installing or operating the product, the user should first check that the appearance of the device is in good condition and that the type and quantity of accessories match the packing list provided at the end of this manual. If any items are missing or damaged, contact the supplier or manufacturer promptly.

2. Before each start-up, check the cleanliness of the air inlet filter element. If the filter is visibly dirty, stop using the device and replace the filter immediately.

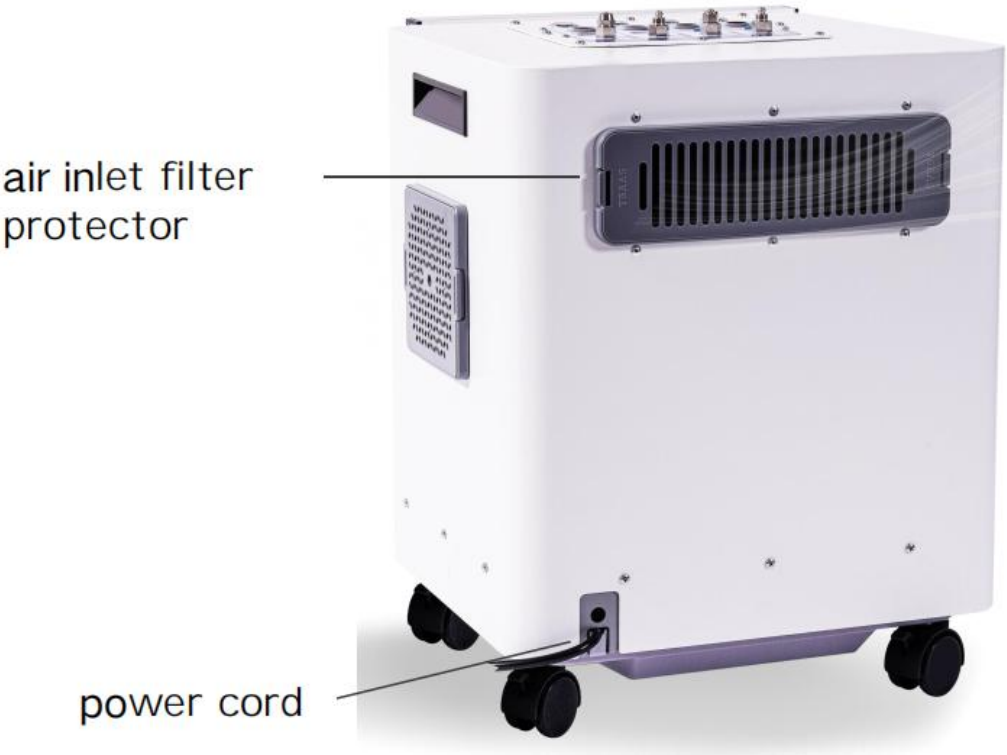
V. Packing List

- 10 L oxygen generator × 1 unit
- User Manual × 1 piece
- Filters × 2 pcs
- USB Signal Cable × 2 pcs
- Oxygen Tubing × 4 pcs
- 2-way/3-way Connectors (Spare) × 2 sets

VI. Product Overview




timer reset
handle
model indicator
inlet filter
air vent

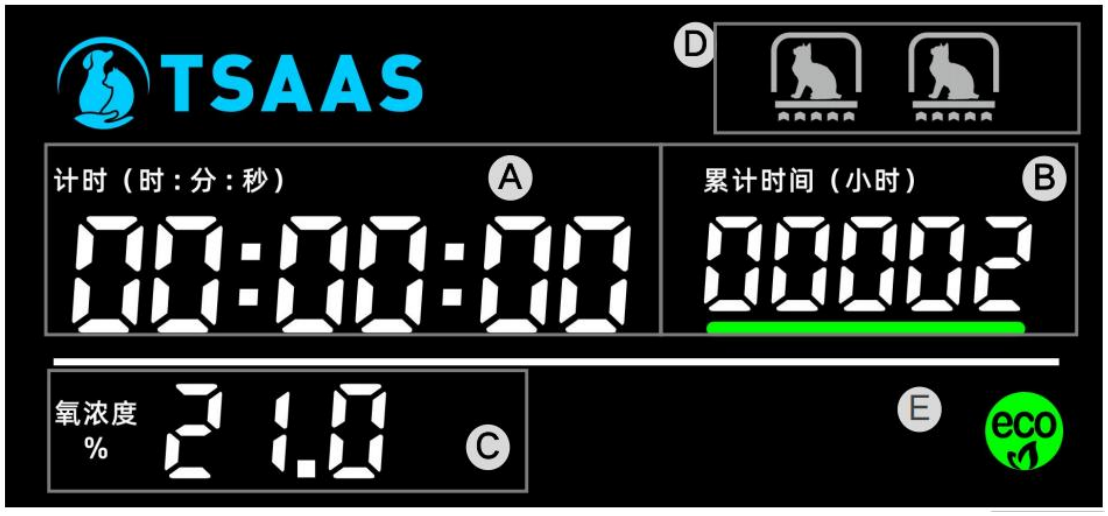

air inlet filter protector
power cord

I/O control signal port:

USB Ports 1 & 2: Connect to the ICU.

Type-C Ports 3 & 4: connect to the cages

VII. Screen Display Diagram



A. oxygen generator start-up timer (accumulated)
B. total operating time
C. oxygen outlet concentration
D.ICU / cage interlock status indicator

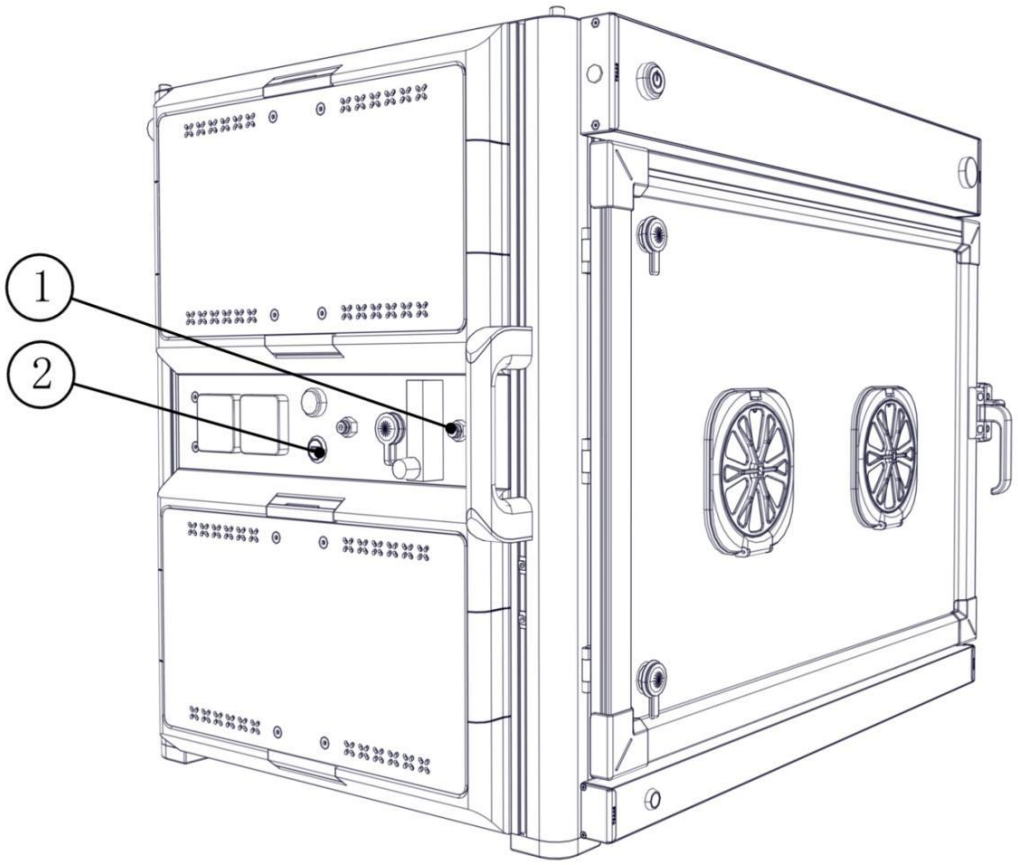
E. eco status indicator

Green - standby / energy-saving mode

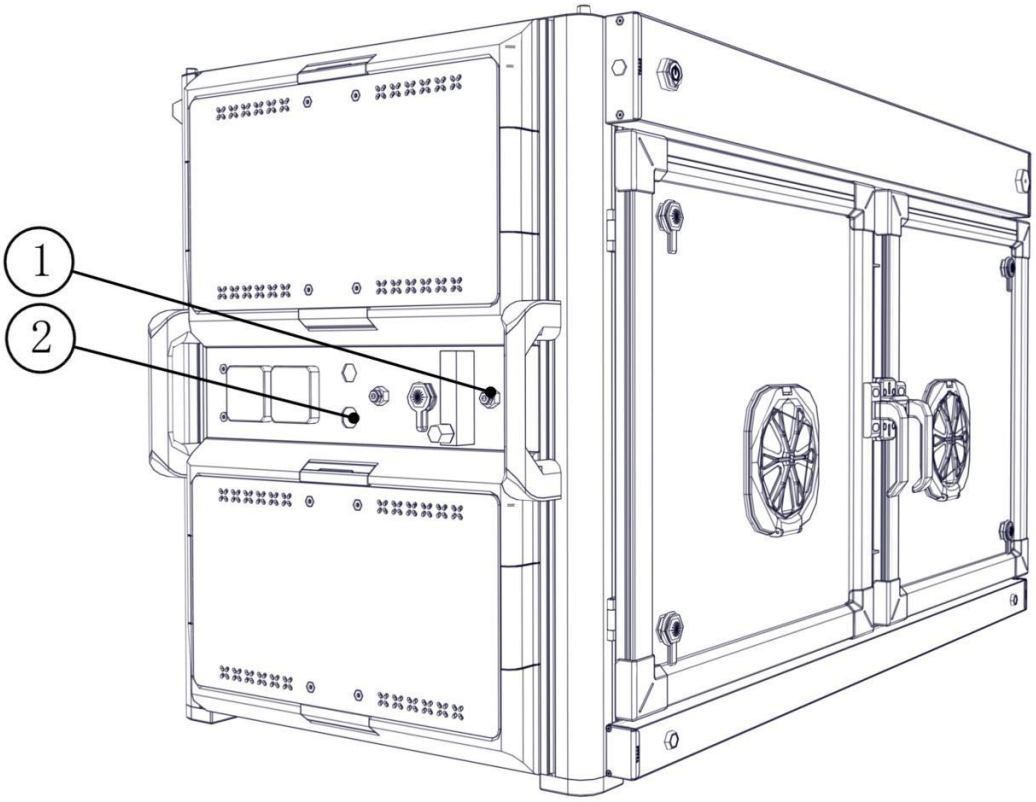
Blue - tubing blockage alarm; the oxygen generator will automatically shut down after 15 seconds

VIII. Connection to ICU or First-Class Cages

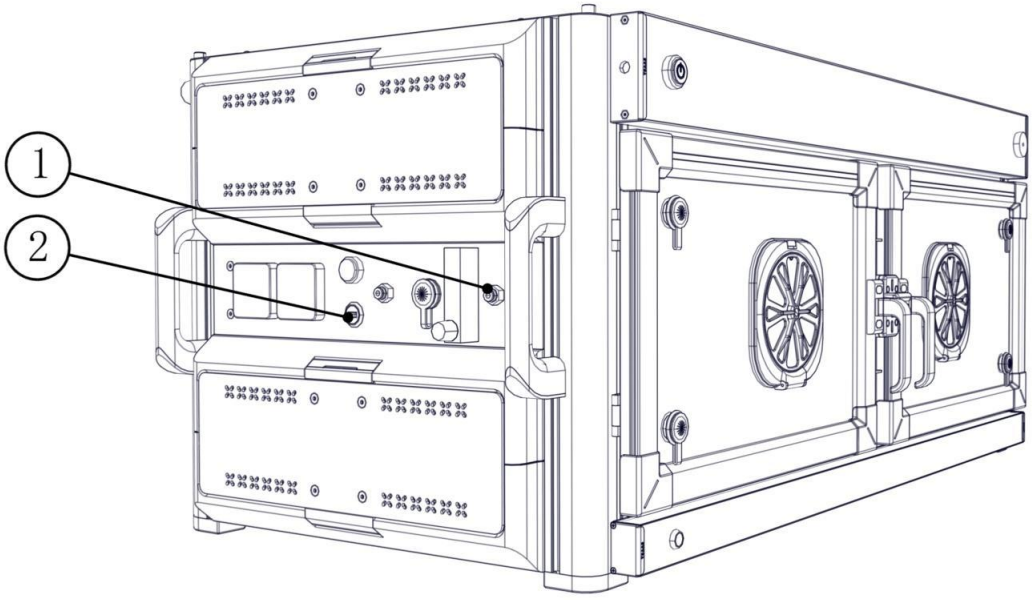
1. Use the dedicated signal cable to connect the oxygen generator to the ICU via the I/O control signal interface (Ports 1 & 2).
2. Use the dedicated signal cable to connect the oxygen generator to the cage via the I/O control signal interface (Ports 3 & 4).
3. Ports 1 & 2 (USB interfaces) can each be connected to one ICU. Using a dedicated T-connector, oxygen can be supplied to the left and right chambers of the dual-chamber unit.
4. Ports 3 & 4 (Type-C interfaces) can each be connected to one cage control interface. Using a dedicated T-connector, oxygen can be supplied to the left and right chambers of the dual-chamber unit.
5. Press the channel start button to open the tubing for the selected channel.
6. When the blue indicator light turns on and the on-screen icon  changes to green, the channel is open and the oxygen generator is interlocked with the ICU or cage.
7. Interlock operation between the ICU or cage and the oxygen generator: when the oxygen chamber is opened and the preset oxygen concentration has not been reached, the oxygen generator starts automatically; once the oxygen chamber reaches the concentration set by the ICU, the oxygen generator stops automatically.



Single-chamber unit connect with oxygen generator



Dual-chamber unit connect with oxygen generator

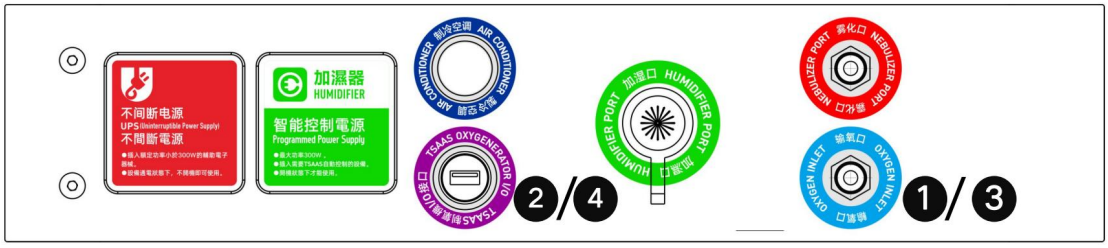


Exotic series: dual-chamber unit connect with oxygen generator

① ICU Left Side (Left Chamber) – Oxygen Tubing Connection Port

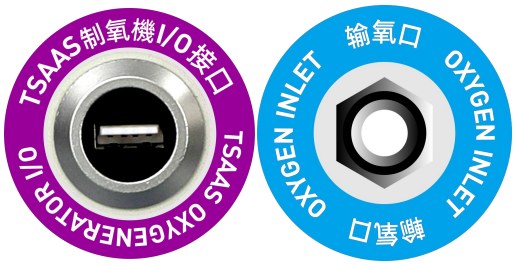
② / ③ ICU Left/Right Side – I/O Control Signal Cable Port (One control cable connects to either side only.)

④ ICU Right Side (Right Chamber) – Oxygen Tubing Connection Port



IX. Connection Between Oxygen Tubing and ICU Interface

The oxygen generator is capable of supplying oxygen to all KANISTAR ICU oxygen chamber models.



1. Connection Between the oxygen generator and KANISTAR ICU Oxygen Interface

Insert an 8 mm outer-diameter oxygen tubing into the blue oxygen inlet port of the ICU. The retaining ring inside the inlet port will automatically clamp and seal the tubing.

Insert the same 8 mm outer-diameter oxygen tubing into the oxygen outlet port on the oxygen generator.

2. Oxygen Supply Configuration

Each channel supplies oxygen to one ICU.

For dual-chamber model ICUs, use a T-connector to split the oxygen supply into two tubing lines, which are then inserted into the left and right chamber oxygen inlet ports of the ICU.

3. Removal of the Oxygen Tubing

When removing the oxygen tubing, press and hold the retaining ring inside the oxygen inlet port, then gently pull out the tubing.

X. Start-Up Operation

1. Connect the oxygen generator to the power supply and switch on the power.

2. Manual Start: Press the channel ON/OFF control button to open the tubing channel. The status indicator light turns white. Adjust the flow meter to select the required oxygen flow rate.

3. Automatic Start:

In standby mode (status indicator light is green), when the oxygen chamber concentration falls below the preset level, the oxygen generator will start automatically, and the status indicator light will turn white.

XI. Status Indicator Light & Warning Handling

1. Off - Power off / Device is switched off
2. White - Operating mode
3. Green - Standby / Energy-saving mode
4. Blue - Tubing blockage alarm; the oxygen generator will automatically shut down after 15 seconds
5. Status bar under the total time display: turns from green to red - Replace the air inlet filter protector (see instructions on the back of the unit)

XII. Timer Reset

Method 1: Press and hold the knob on the right side of the screen for 3 seconds to reset the current session time.

Method 2: Restart the power supply to reset the current session time.

XIII. Current Limiting Protector Reset

When the current is too high, the current limiting protector will trip to protect the internal components. In this condition, the oxygen generator will be in a power-off (disconnected) state.

Press the current limiting protector button to reset it, and the oxygen generator will resume operation.

XIV. Warnings

Each time the oxygen generator is switched on, it takes approximately 30 minutes to reach the optimal oxygen output condition.

If the oxygen concentration is below the acceptable standard, please contact your supplier immediately. Do not attempt any repairs or servicing yourself.

Maintenance

WARNING: Before performing any maintenance on the oxygen generator, disconnect the power supply first.

To avoid the risk of electric shock, do not open the enclosure.

I. Oxygen Generator Maintenance

1. Regular Replacement of the Air Inlet Filter

Regular replacement of the air inlet filter is essential to protect the compressor and molecular sieve and to extend the service life of the oxygen generator. The air inlet filter protector should be replaced after 1,000 hours of normal operation. Replacement filters are available from authorized dealers.

WARNING: Do not operate the oxygen generator without the air inlet filter installed or when the filter is wet, as this may cause damage to the device.

2. Molecular Sieve Maintenance

During normal use, the molecular sieve may gradually wear and produce fine particles. It is recommended that the molecular sieve be inspected by an authorized dealer every two years and replaced if necessary.

If the oxygen generator is used frequently, with an average daily operating time exceeding 5 hours, inspection or replacement of the molecular sieve is recommended once per year.

3. Routine Maintenance

To ensure optimal performance, the oxygen generator requires routine maintenance every 2,000 operating hours. Routine maintenance must be performed by an authorized service provider.

4. Disposal of Waste and Residues

Disposal of the main unit, components, accessories, and any waste or residues must comply with local laws and regulations. Improper or illegal disposal may result in environmental pollution.

II. Cleaning and Care of the Oxygen Generator

1. Cleaning the Exterior Housing

Clean the exterior housing at least once per month. Before cleaning, disconnect the power supply. Wipe the surface using a clean, soft, damp cotton cloth or sponge.

Do not allow liquids to enter the enclosure openings or seams.

2. Cleaning and Replacement of the Filters

Timely cleaning and replacement of the filters are essential to protect the compressor and molecular sieve and to extend the service life of the oxygen generator. Clean the filters every 200 operating hours and replace them as required.

WARNING: Do not operate the oxygen generator without the filters installed or when the filters are wet, as this may cause permanent damage to the device.

Air Inlet Filter Protector

Air Inlet Filter

3. Safety During Operation

When the device is operating, the patient or operator must not clean the machine or replace the filters, in order to prevent the risk of electric shock or damage to the device.

III. Troubleshooting

1. The Oxygen Generator Does Not Operate After Power-On, and the Power Indicator Is Off

Possible Cause & Solution:

The power cord is not properly plugged into the power outlet, or the outlet has no power.
→ Check that the power cord is securely connected to the outlet, or switch to a suitable, powered outlet.

2. No Oxygen Output While the Device Is Running

Solution 1:

The air filter may be clogged.
→ Check the air filter and replace it if it is dirty.

Solution 2:

The exhaust system may be blocked.
→ Check the exhaust outlet and ensure that nothing is obstructing the airflow.

Solution 3:

The flow meter has not been adjusted.
→ Check the flow rate and adjust the flow meter knob accordingly.

3. Other Malfunctions

Solution:

Turn off the device, switch to a backup unit if available, and contact your supplier immediately.

Product Characteristics

I. Intended Use

1. Diffuse oxygen delivery, suitable for oxygen chambers, low-pressure oxygen chambers, animal-specific ICU systems, and similar applications.
2. The product uses a zeolite molecular sieve as the adsorbent and produces oxygen through Pressure Swing Adsorption (PSA) technology. It is intended to supply supplemental oxygen for animal oxygen masks, oxygen flow delivery, nasal oxygen delivery, oxygen chambers, and related equipment or environments.
3. Contraindications:

   Animals with oxygen toxicity or oxygen hypersensitivity must not use this product.

II. Structural Features

1. The product consists of the following main components: compressor, adsorption towers, flow meter, humidifier, solenoid (switching) valve, control circuit board, enclosure, connecting tubing, and filters.
2. All-plastic enclosure, safe and reliable.
3. Operating hour accumulation function: the total operating time is displayed on the screen.
4. Equipped with an over-pressure safety valve for enhanced safety.

5. Features fault alarm functions, including pressure alarm, circulation fault alarm, and compressor fault alarm.
6. The compressor is equipped with a thermal protection device, providing improved protection for both the compressor and the entire unit.

III. Oxygen Generation Principle

This device uses an AC 220 V power supply as the power source and ambient air as the raw material.

By utilizing a high-quality molecular sieve, oxygen is produced at normal ambient temperature through the Pressure Swing Adsorption (PSA) process, generating high-purity oxygen that meets applicable standards.

IV. Technical Specifications

Key Specifications

Parameter	Specification
Maximum recommended flow rate	10L/min
Oxygen concentration	≥90%
Oxygen outlet pressure	40kPa - 80kPa
Rated power	800VA
Noise level	≤60dB(A)
Net weight (approx.)	26.3kg

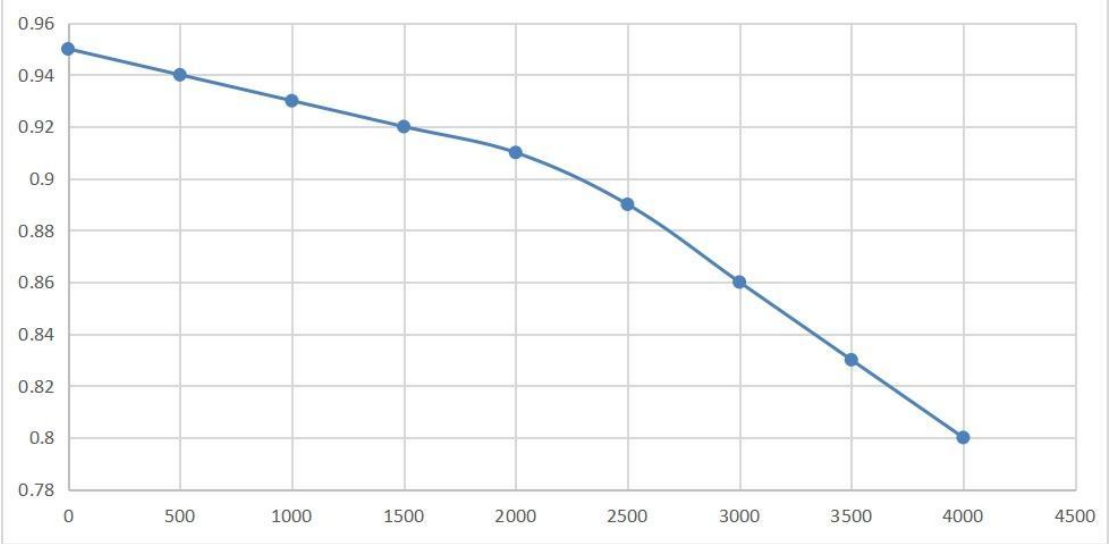
Performance Parameters

Item	Model	Performance
Flow range at outlet pressure of 0 and 7kPa	10L	0.5L-10L/min
Flow variation at maximum recommended flow with 7kPa back pressure applied		±1L/min
Compress safety valve release pressure		250kPa±50kPa

Dimensions

Product dimensions (L×W×H): 438.50mm×412mm×691mm

Relationship Between Altitude and Oxygen Concentration (At the Same Flow Rate, 0–4000 m)



At altitudes from 0 to 2000 meters, oxygen concentration is ≥ 90%.

At altitudes from 2001 to 4000 meters, oxygen concentration is < 90%.

Warranty & Service Policy

1. Warranty Coverage

Under normal conditions of use, this product is covered by the following warranty:

Complete unit: 1-year limited warranty

Compressor: 1-year limited warranty

During the warranty period, the manufacturer will provide free repair service for failures caused by manufacturing defects or non-user-related factors, subject to the terms outlined below.

The warranty period is calculated from the date of purchase as shown on a valid sales invoice.

If a valid invoice is not available, the warranty period will be determined based on the product serial number or factory production date, plus an additional 30 days.

2. Warranty Exclusions

This warranty does not cover the following:

- Consumable or wear parts, including but not limited to oxygen tubing, filters, filter elements, and casters;
- Damage caused by improper use, misuse, or failure to follow the instructions in the user manual;
- Damage resulting from unauthorized disassembly, repair, modification, or alteration of the product;
- Damage caused by dropping, impact, or improper handling during use or transportation;
- Malfunctions caused by liquids (such as water or medications) entering the device due to user-related reasons;
- Damage resulting from environmental conditions or operating conditions outside the specified limits;
- Damage caused by force majeure events, including but not limited to fire, flood, earthquake, or other natural disasters.

3. Out-of-Warranty Service

For products that are outside the warranty period or not covered by this warranty, paid repair services are available.

Repair services may be provided through:

- Authorized service personnel, or
- Shipment of the product to an authorized service center.

Out-of-warranty service charges may include:

- Shipping and handling costs

- Labor charges
- Replacement parts costs

All charges will be assessed according to the manufacturer's standard service pricing.

4. Limitation of Liability

This warranty is limited to repair or replacement of the product or its defective parts and does not cover any indirect, incidental, or consequential damages arising from the use or inability to use the product, except where prohibited by local law.

Service Support

Contact us if you cannot solve your problem with this manual.

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