Pureline®
OXYGEN CONCENTRATORS

Operators Manual

Model OC8000 & OC8200

M8000 (not shown)

For Veterinary Use Only

SUPERA | ANESTHESIA INNOVATIONS

Examination and Preparation for Use

We are delighted to have you as a Supera Anesthesia Innovations customer and want you to be completely satisfied with your purchase. Please inspect the contents of your order to see if everything is as you expected. Should anything not be exactly right or if anything was damaged in shipping, please contact your sales representative right away for help.

Our goal is to make your new machine as easy to use and care for as possible.

This device is meant to be operated under the normal surveillance and control of a veterinarian trained in its use. However, you need to know more about this device than just how to operate it.

Please read this manual in its entirety before using the machine.

Thank you!

Brian Lawson
President,
Supera Anesthesia Innovations

Proudly Designed and Made In Oregon, USA


FOR VETERINARY USE ONLY
Pureline™
By Superia Anesthesia Innovations, LLC
1-877-620-1500
www.SuperiaVet.com
AUX
MAIN
O2
OK
Pureline®
OXYGEN CONCENTRATORS

OC8200 Machine Assembly

*** NOTE: THIS REQUIRES TWO PEOPLE TO SAFELY ASSEMBLY ***

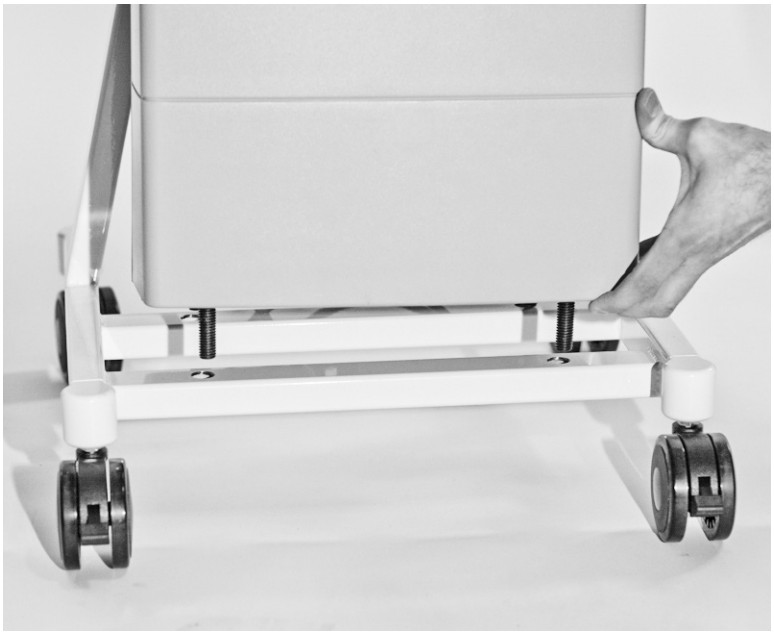
1. Carefully unpack the top assembly and frame from the box

2. Align the top to the frame as shown.

NOTE: The frame base has two cross bars with holes in them for mounting the concentrator. That is the front of the frame.
See next page for fastening to frame

3. Assemble the top assembly with the frame by installing the 1/4-20 X 1 3/4" long screws and washers provided.

4. Tighten the screws with the 3/16" allen wrench provided VERY tightly.

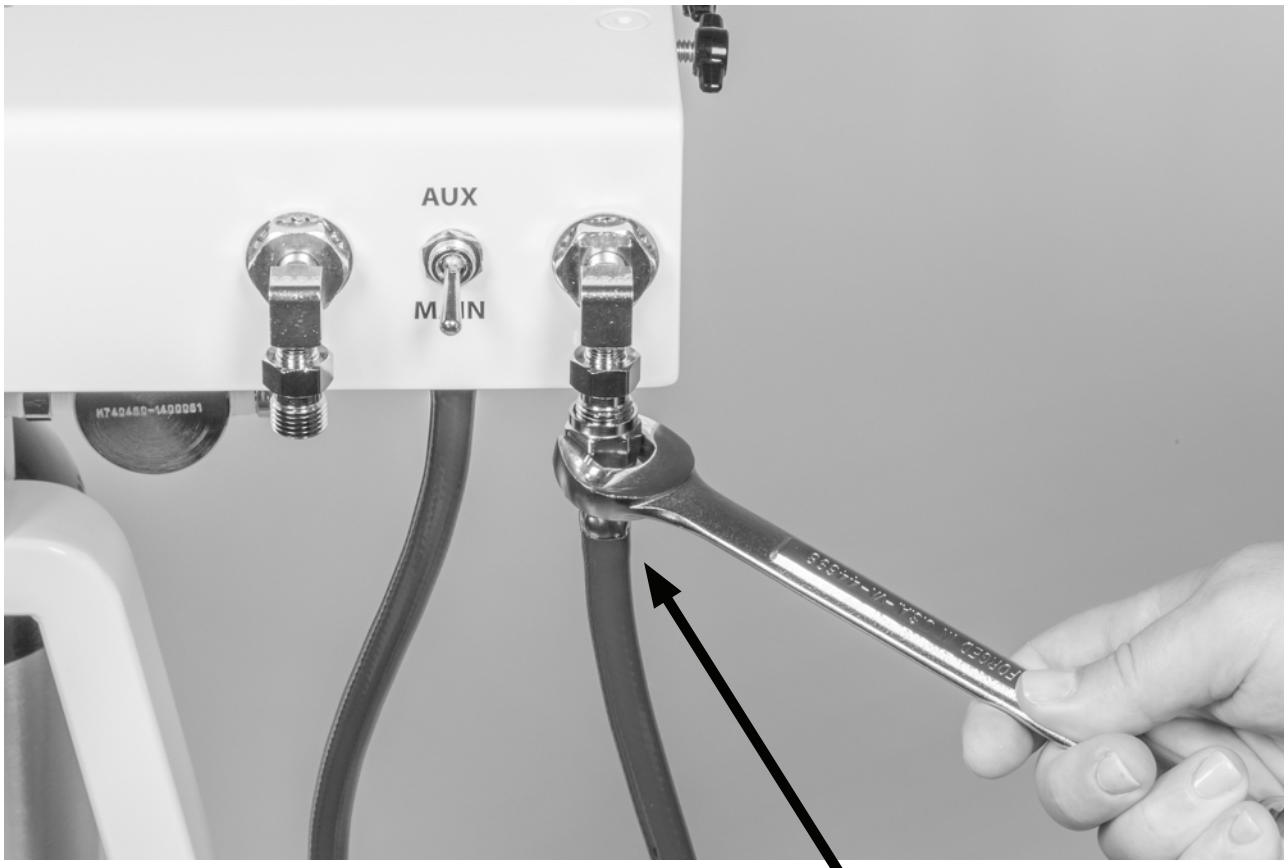


1. Remove the oxygen concentrator from the box and guide the 4 threaded post into the frame

2. Install and tighten the nuts.

DO NOT OVER TIGHTEN THE NUTS, SNUG FIT IS ALL THAT IS NEEDED

Oxygen Hose Setup



Attach the green hose from your anesthesia machine to one of the threaded fittings.
NOTE: Both output the same

DO NOT OVER TIGHTEN

Attach the green hose from the OC8000 top assembly to the threaded fitting on the concentrator.

DO NOT OVER TIGHTEN

Auxiliary & Main Oxygen Switch

MAIN Switch Position

With the switch in the "MAIN" position the supply of oxygen to the anesthesia machine comes directly from the oxygen concentrator.

NOTE: It does not fill the "E" tank.

AUXILARY Switch Position

With the switch in the "AUX" position, the supply of oxygen to the anesthesia machine comes from "E" tank on the back of the machine or another source using the "E" tank adapter (p/n OC6050)

To use the "E" tank as a souce for oxygen or to flush the machine, it must be turned on by rotating the valve on top of the tank counter-clockwise ***SLOWLY*** to open.

NOTE: The "E" tank must be filled (about 2100 psi) by your local oxygen supply company. The concentrator does NOT fill the tank.

Pureline®
OXYGEN CONCENTRATORS

USER'S GUIDE

OC8000

OXYGEN CONCENTRATOR

FOR VETERINARY USE ONLY

GLOSSARY OF SYMBOLS

- : ON (power switched on)
- : OFF (power switched off)
- : Class II protection
- : Do not expose to open flames
- : Do not use oil or grease
- : Technical information
- : Consult the accompanying documents
- : Keep in the vertical position
- : Fragile - handle with care
- : Oxygen concentration warning light

GENERAL SAFETY GUIDELINES

Only persons who have read and understood this entire manual should be allowed to operate the *O2 concentrator*

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The WARNINGS below indicate a potential hazardous situation. If conditions are not avoided a situation could occur that results in serious injury or death.

- Oxygen is not a flammable gas, but it accelerates the combustion of materials. Do not use in explosive atmosphere. To avoid risk of fire and explosion the concentrator should be kept away from Flames, Heat sources, Incandescent sources, Smoking Materials, Matches, Oil, Grease, Solvents, Aerosols, etc.
- Use of other accessories not described in this User's Guide are not recommended.
-
- No modification to the equipment is allowed.
- Device must have power to operate. In the event of power loss and for continued operation a backup source is recommended.
- DO NOT disassemble due to danger of electrical shock. Refer servicing to qualified service personnel.

The CAUTIONS below indicate a potentially hazardous situation. If conditions are not avoided a situation could occur that results in property damage or minor injury or both.

- Use the power cord provided, and check that the electrical characteristics of the power socket used match those indicated on the manufacturer's plate on the rear panel of the device.
- We recommend against the use of extension cords and adapters, as they are potential sources of sparks and fire.
- The concentrator has an audible alarm to warn the user of problems. In order that the alarm may be heard, the maximum distance that the user can move away from it must be determined to suit the surrounding noise level.
- Do not use in a specifically magnetic environment (MRI, X-ray, etc.). May cause device malfunction.
- This unit may be equipped with a polarized plug. That is one blade wider than the other. If it does not fit into the outlet, reverse the plug. If it still does not fit, contact a qualified electrician. Do not defeat this safety feature.

CONFORMITY WITH IEC60601-1 (2nd Edition)

"The manufacturer, assembler, installer or distributor are not considered to be responsible themselves for the consequences on the safety, reliability and characteristics of a device unless the:

- Assembly, fitting, extensions, adjustments, modifications or repairs have been performed by persons authorized by the party in question.
- Electrical installation of the corresponding premises complies with local electrical codes. (e.g. IEC / NEC).
- Device is used in accordance with the instructions for use.

If the replacement parts used for the periodic servicing by an approved technician do not comply with the manufacturer's specifications, the manufacturer is not responsible in the event of an accident.

1. UNPACKING and PACKAGING

The Oxygen Concentrator is packaged to protect the device from damage while being transported and stored. Check for damage to the packaging. After device is removed from the package inspect for damage. If damage is detected please contact your equipment provider. Operating environmental condition guidelines are discussed later in another section of this User's Guide.

1.1 METHOD FOR WASTE DISPOSAL

All waste from the device (Patient Circut, Filters, Etc.) must be disposed of using methods appropriate to the civil authority of the location where disposed.

2.0 METHOD FOR DISPOSING OF DEVICE

This device has been supplied by an environmentally aware manufacturer. A majority of the parts in the device are recyclable.

Follow local governing ordinances and recycling plans regarding disposal of the device or components normally used in operation. Any accessories not original to the device must be disposed of in accordance with the individual product markings for disposal.

2.1. Front panel (Fig. 2.1)

1 - I/O (ON/OFF) switch
2 - Indicator lights
3 - Oxygen product outlet
4 - Circuit breaker
5 - Flow meter

3.1 Turning on device

a. Plug the power cable into a power outlet (Fig. 3.3) of the correct voltage and frequency as defined on the manufacturer's technical label

115V (Fig 3.3)

b. Press the power switch **(I/O)** (item 1 in Fig.2.1) to the ON position **(I)**. The green indicator light flashes until concentration is achieved.

TURN THE ANESTHESIA MACHINES OXYGEN FLOW METER ON TO A MINUMUM FLOW RATE OF 0.25 LPM

A "NO FLOW" ALARM WILL SOUND
IF THE ANESTHESIA MACHINE FLOW METER ISN'T OPEN

4. CLEANING - MAINTENANCE

Only the outside of the concentrator is to be cleaned. Use a damp sponge or cloth with water only.

Acetone, solvents or any other inflammable products **must not be used**. Do not use abrasive powders.

Cabinet air filter (Item 1 Fig.4.1) must be cleaned in warm water and household detergent weekly or after approximately 100 hours of use. Dry before reinstalling. More frequent cleaning is recommended in dusty environments.

Fine filter (Item 2 Fig.4.2) remove the right side filter grate (Item 3 Fig.4.2) The fine intake filter should be replaced annually or every 2000 hours of use. More frequently dusty / dirty environments.

P/N OC8000-2

3.2 Turning off device

At the end of the usage, press the **I/O** Switch to place it in the O (OFF) position to stop the device. The oxygen enriched air flow continues for approximately one minute after the device is stopped.

Note: After turning the unit off, the user must wait 3-5 minutes before turning it back on. System pressure must dissipate before the unit will properly restart.

FILTER MAINTENANCE

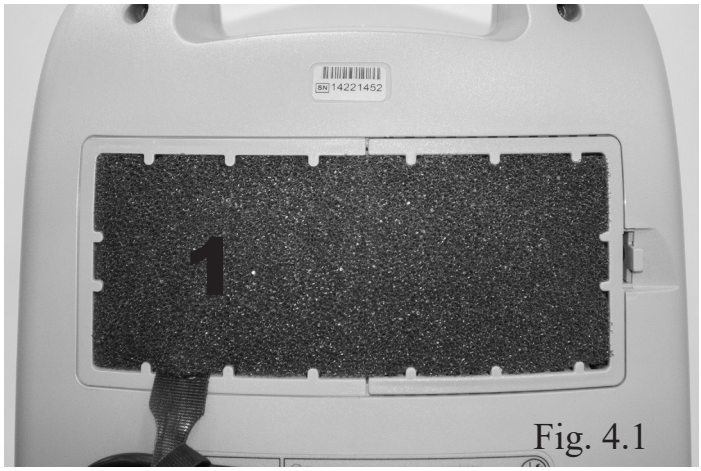


Fig. 4.1

Fig. 4.2

1. Filter / Silencer
2. Cabinet filter
3. Ventilation grill
Note: Shown with grate removed

4.3. Maintenance

NO INTERNAL MAINTENANCE IS REQUIRED OR SHOULD BE PERFORMED.

OPENING THE CASE WILL VOID THE WARRANTY.

THE COARSE CABINET FILTER SHOULD BE CLEANED AS NEEDED IN YOUR ENVIRONMENT.
P/N OC8000-1

CHANGE FINE INTAKE FILTERS EVERY 2000 HOURS OR MORE OFTEN DEPENDING ON ENVIRONMENT.
P/N OC8000-2

5. USEFUL INFORMATION

5.1. Accessories and spare parts

The accessories used with the ***O2 concentrator*** must:

- be oxygen compatible.
- be biocompatible.

The connectors, tubes must be designed for oxygen usage.

5.2. Materials in direct or indirect contact with the product output

Concentrator casing .....ABS
Power Cord ..... PVC
Cabinet Air Filter .....Polyester
I/0 (On/Off) switch.....Nylon
Casters.....Nylon
Oxygen product outlet .....Aluminum
Printed labels.....Polycarbonate
Pipe/Tubing.....Aluminium,PVC, polyurethane or silicone

5.3. Operating principle

The compressor sends filtered room air to a solenoid valve, which allows compressed air to pass to the column in production. The columns contain a molecular sieve, whose function is to adsorb the nitrogen and thus allow oxygen to pass. The oxygen enriched product is then directed through a pressure reducing valve continuing to the oxygen product outlet fitting.
During this time, the column which is being "regenerated" is connected to the ambient air and flow of oxygen enriched product is passed through it (from the column "in production"). In this way, when one column is in production, the other is in a nitrogen desorption or "regeneration" phase. The oxygen enriched product finally passes through a final product filter located prior to the oxygen outlet fitting.

5.4. Alarms - Safety devices - Indications

5.4.1. Alarms

- **No voltage detection**

In the event of a loss of mains power, an intermittent audible alarm is activated and the green light turns off. Test alarm by actuating the I/O (ON/OFF) switch when the power cord is not plugged into the wall outlet.

- **Process fault**

In the case of a process fault, a visible and audible alarm is activated (continuous red light or lighted alarm and audible alarm).

- **Oxygen Concentration**

If the oxygen concentration level falls below the required range the red light comes on and the green light goes out. After a 15 minute delay the audible alarm will sound.

5.4.2. Safety devices

- **Compressor motor**

Thermal safety is ensured by a thermal switch situated in the motor winding (145 ± 5 °C).

- **Electrical protection**

A 5 amp circuit breaker is incorporated into the front cabinet of all models.

Class II devices with insulated casings (EN60601-1 standard)

- **Safety valve**

This is fitted on the compressor outlet and is calibrated to 2.7 bar (40 psig).

5.4.3 Indicators

- The green indicator light (Fig.5.1) indicates that power is applied to the device. When first turned on the indicator will flash until correct oxygen concentration is achieved. At that time the green indicator will remain illuminated and the device is ready to provide oxygen enriched air to the patient.

5.4.3 Indicators (continued)

- The red indicator warns of a process fault. One event that can cause the red indicator to be illuminated is low oxygen concentration. The low oxygen concentration red indicator will light when oxygen concentration falls below a predetermined set point. Another event that will cause the red indicator to light is a blocked oxygen flow. In this case the green indicator and red indicator will be illuminated simultaneously.

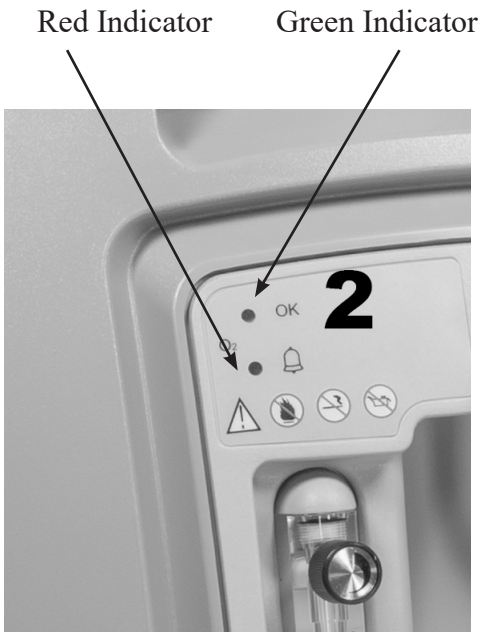
5. 5. OCSI (oxygen concentration status indication module) **function**

5.5.1. Operating principle

The oxygen monitor (Item 2 Fig 2.1) is an electronic module capable of checking the effective oxygen concentration supplied by the concentrator.

The oxygen monitor measures the concentration and activates an audible and visual alarm if it falls below the alarm set point percentage.

(Refer to Section 5.4 for information on the operation of the indicators and alarms for the OCSI function)



(Fig. 5.1)

5.5.4 Maintenance of the Device Alarms

No special maintenance is required. The alarm set-point is factory set and the setting cannot be adjusted. All models are set at 84%.

The equipment supplier verifies that the device is still operating correctly when the routine checks are performed.

5.6. Technical characteristics

Dimensions: L x W x H: 394 x 396 x 706 mm (15.5 x 15.6 x 27.8 in.)
Caster diameter: 50 mm (2.0 in.).
Tilt angle (transport with humidifier fitted): 70°.
Weight: 24 kg /54 lbs
Noise level < 53 dBA

Flow values:

Continuously Adjustable Flowmeter: 2 to 8 liters/minute.
(Some models may have other values.)

Noise level conforms to ISO 8359 Standards.

Oxygen Concentration - USP93%

In compliance with the ISO 8359 standard, the flow supplied is equal to the flow set on the flowmeter, accurate to within ± 10% or 200 ml/min, whichever is the larger of the two.

Average oxygen content:
8 l/min: 90%. +5.5% / -3.0%
(Values at 21°C and at one atmosphere pressure).

Minimum recommended flow, 2 lpm.
Maximum recommended flow, 8 lpm.

The variation of the maximum recommended flow does not exceed ± 10 % of the indicated value when a back pressure of 6.9 kPa (1 psig) is applied to the output of the device. The maximum outlet pressure is 117 kPa (17 psig).

Electrical power supply:

	115 V Units	230 V Units
Frequency:	60Hz	50/60Hz
Average Power:	490 watts	490/585 watts
Protection Class:	Class II	Class II
Mains Protection:	10A	5A

Filters:
At the rear of the device: a cabinet air filter.
At the compressor input: an inlet air filter, 5 µm, located behind the cabinet air filter.

Air circulation
One tubeaxial fan cools the compressor compartment and a second fan cools the heat exchanger coil.

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Environmental limit conditions
The performances of the device (especially the oxygen concentration) are quoted at 21°C (70°F) and one atmosphere. They may change with temperature and altitude.

- The device must be stored, transported and used in the vertical position only.
- Ambient temperature of between 5°C and 40°C (40°F to 104°F) operation.
- Storage temperature from -20°C to 60°C (-4°F to 140°F).
- Relative humidity of between 15% and 95% operation and storage, both non-condensing.
- Altitude(21°C): Up to 2,286m (7,500ft) without degradation; Consult your equipment provider for further information regarding 2,286m to 4000m (7500 to 13000 ft)
- Complies with EN60601-1 standard; spilling a glass of water.

5.7. Standards

EN 60601-1[UL60601-1:2003],
CAN/CSA-C22.2 No.601.1-M90 w/A1&A2:
Electrical Safety- Medical Devices.

EN60601-1-2:2001
Electromagnetic Compatibility

PREVENTIVE MAINTENANCE

a. Wash cabinet filter weekly.

b. The fine intake filter should be replaced annually or every 2000 hours of use. More frequently dusty /dirty environments.

c. Check oxygen concentration every 15,000 hours or 3 years of operation to verify the continuing OCSI function.

Use original parts only

5.8. Troubleshooting.

Observations	Possible Causes	Solutions
The I/O (ON/OFF) button is in the **"I"** (ON) position but the device does not operate. The audible alarm sounds intermittently.	Power cord is not correctly plugged into the wall outlet. Power failure.	Check the cable connection. Check the circuit breaker (5) on the front of the unit; Reset if necessary.
Red light remains lighted.	Oxygen concentration is too low.	Contact your equipment supplier.
The alarm test does not work. See 5.4.1.	Capacitor is not charged Internal electrical fault.	Backup capacitor has discharged operate unit for approximately 10 minutes and retest Contact your equipment supplier.
The compressor operates and the I/O (ON/OFF) button is in the **"I"** (ON) position but the green indicator is not lighted.	Faulty indicator.	Contact your equipment supplier.
The I/O (ON/OFF) button is in the **"I"** (ON) position but there is no flow. The audible alarm sounds continuously.	Pneumatic connection broken or other pressure problem.	Stop the device by pressing the I/O (ON/OFF) button and contact your equipment supplier.
The I/O (ON/OFF) button is in the **"I"** (ON) position, the compressor is operating and there is a flow but the audible alarm sounds continuously.	Internal electrical fault. Pneumatic circuit fault.	Stop the device and contact your equipment supplier.
The compressor stops in mid-cycle, then starts again after a few minutes.	Dirty Filters, blockage Fan is not working.	Clean cabinet filter. Restart. Clear blockage. Restart Reset circuit breaker. If the device does not start, contact your equipment supplier.

Maintenance Items

Cabinet Air Filter: **Ref: OC8000-1;** **Wash weekly; Replace as needed.**
Inlet Air Filter: **Ref: OC8000-2;** **Replace every 2000 hours (depending on environment)**

MAINTENANCE

Your oxygen concentrator has filters that must be kept clean for proper operation.

P/N OC8000-1 external cabinet filter
Coarse filter on the back of the machine. This can be washed with mild soap and water. DO NOT INSTALL UNTIL 100% DRY

P/N OC8000-2 Fine inlet filter (square black plastic filter)
The fine particle filter goes under the course filter.
This is a replacement only filter. (non-washable)

Failure to monitor the condition of the filters will void the warranty.

BROWARD A&C
MEDICAL GAS SPECIALISTS

954-725-1470 Ext. 403

Warranty / Return Policy

Supera Anesthesia Innovations is proud to offer our customers the best warranty in the veterinary industry—a full three years.

Supera LLC Limited Warranty

Supera LLC guarantees its products to be free of defects in design, materials, and workmanship for Three years from the date of purchase.

The Supera LLC Limited Warranty covers parts and construction of all products manufactured by Supera LLC in its USA manufacturing facility. If we find that a Supera machine does not operate as stated in the instructions and specifications that come with the product due to defects in design, materials, or workmanship, Supera will repair the unit or replace it with one of equal or greater value at no charge to the customer for up to three years from the date of purchase.

Specific Exclusions from this Warranty

The Supera Limited Warranty does not cover—and Supera LLC shall not be liable for—the following: (1) repairs and replacements required because of misuse, abuse, negligence, alteration, accident, freight damage, or tampering; (2) products that are not installed, used, and properly cleaned as required in the Supera LLC "Installation" and/or "Installation/Operation" manual applicable for the product; (3) products considered to be of a consumable nature such as rubber or plastic goods (4) accessories or parts not manufactured by Supera Anesthesia Innovations; (5) specially manufactured products; (6) damage caused by animals; (7) charges by anyone (including Supera Anesthesia Innovations authorized dealers) for adjustments, repairs, replacement parts, installation, or other work performed upon or in connection with such products which is not expressly authorized in writing in advance by Supera LLC; (8) products manufactured by other companies and resold by Supera LLC. This includes medical gas products. Any warranties on these items are controled directly by the manufacturer of these items to the original purchaser. Information on these manufacturer's warranties will be enclosed with the applicable products. In addition, Supera LLC will furnish copies of any of the warranties controled by any such manufacturers upon request.

For Warranty Service

One of our customer service representatives will be able to answer your questions and provide information on having your machine serviced under warranty by an authorized Supera technician or by returning the unit to Supera for warranty service.

DOCUMENTATION

Date purchased:

Purchased from:

Machine serial number:

Machine service information

Service Date:
Service information:

Service Date:
Service information:

Service Date:
Service information:

SHIPPING POLICIES

1. Do Not Sign The Bill Of Lading Until You Have Inspected The Box Or Crate

2. Examine the box AS it is delivered and BEFORE the truck/driver leaves.

3. If there is any evidence of damage when it arrives, note it in detail with the phrase “possible concealed damage” on the bill of lading and immediately call the office for instructions before the truck/driver leaves if at all possible.

4. If there is obvious damage such as a hole in the box, a crushed box, etc., refuse the shipment. The product will then go back to the freight company’s terminal where they are entirely responsible.

5. Open and inspect your product as soon as possible. DO NOT WAIT.

6. If you find damage, take as many photographs of everything as soon as you can and email them to CS@superavet.com

7. Note: unless the following procedures are followed correctly and we are notified within ten (10) days, SUPERA LLC cannot accept any responsibility for the problems that may ensue.

DO NOT RETURN ANY DAMAGED GOODS TO SUPERA LLC WITHOUT PRIOR AUTHORIZATION OF SUPERA LLC AND THE CARRIER.

KEEP ALL PACKAGING!
DO NOT RETURN ANY DAMAGED ITEMS UNTIL SHIPPING INSTRUCTIONS ARE RECEIVED.

ALL CLAIMS MUST BE FILED WITHIN TEN (10) DAYS OF RECEIPT OF GOODS.

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