



VETROSON® Oxy-Gen™ Systems

Installation, Operation & Maintenance Manual



SUMMIT HILL LABORATORIES

3 Sheila Drive

Tinton Falls, NJ 07724

Phone 732-933-0800

Fax 732-933-0055

Toll Free 1-800-922-0722

sales@summithilllaboratories.com

www.summithilllaboratories.com

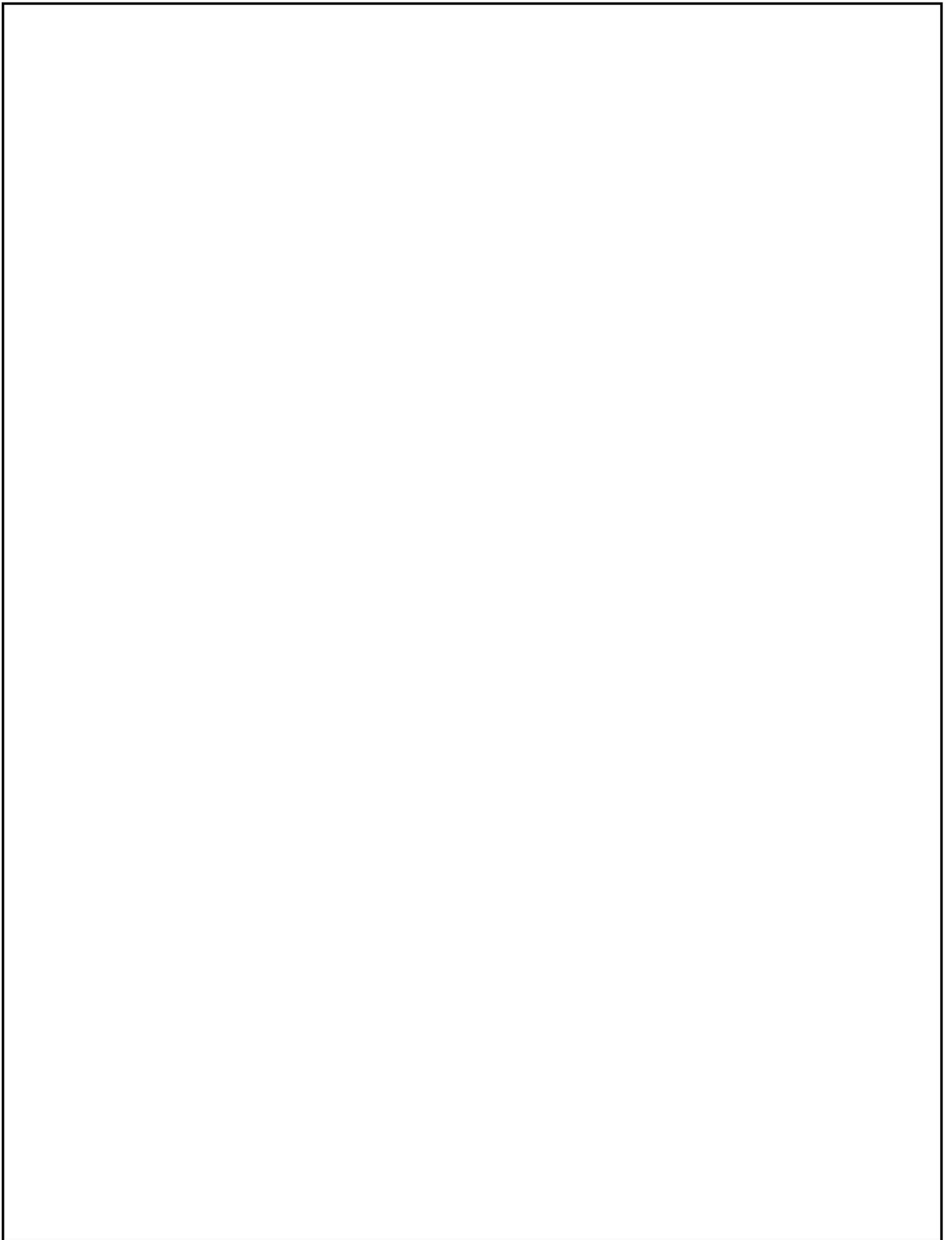
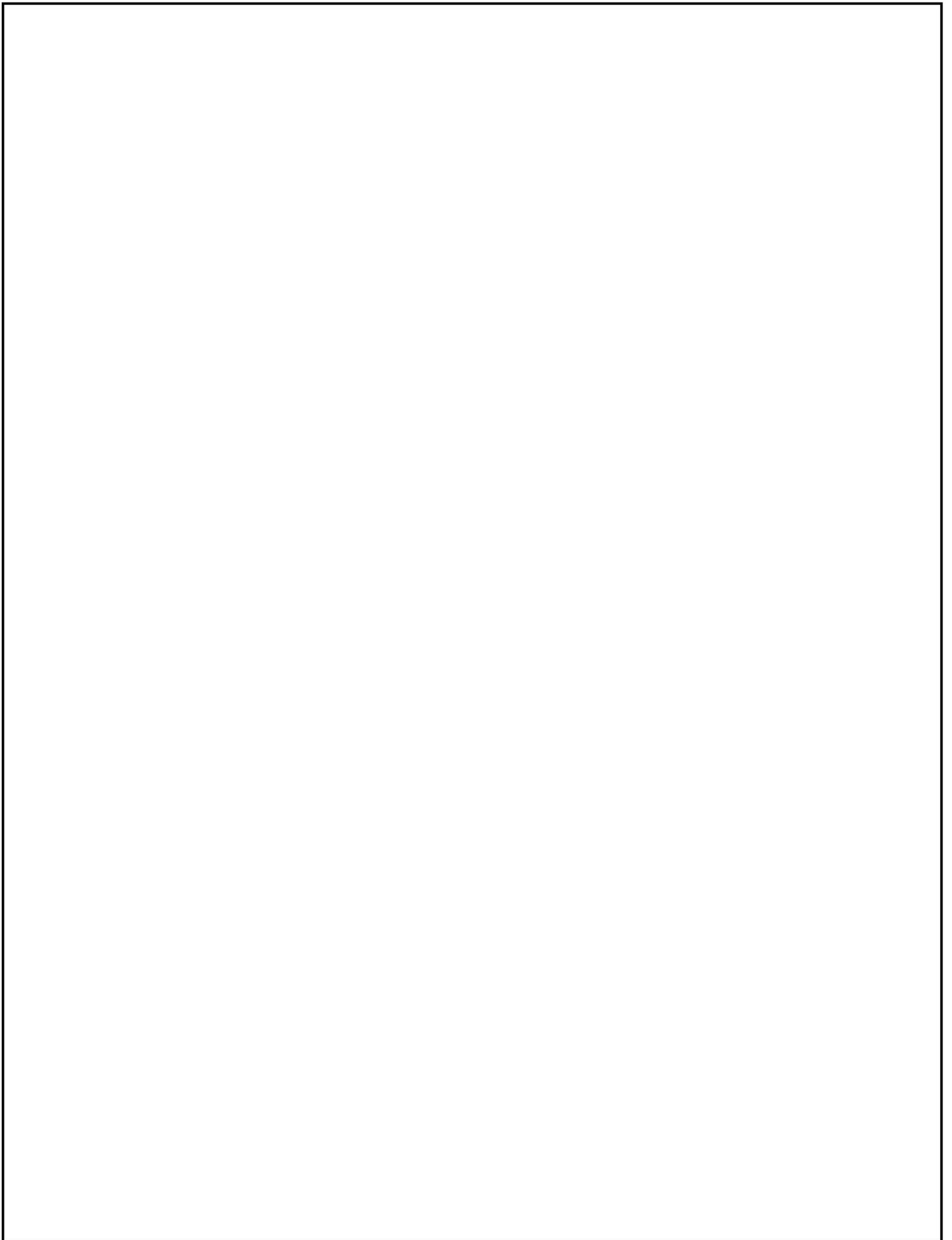


Table of Contents

FREIGHT DAMAGE CLAIMS & INITIAL INSPECTION	1
SAFETY PRECAUTIONS.....	2
SETUP & INSTALLATION INSTRUCTIONS	3
SHUTDOWN PROCEDURES	6
WARRANTY	7
LIMITS OF LIABILITY.....	8
PROBLEM SYMPTOMS	9
EXTERNAL COMPONENTS DESCRIPTION	10
GENERATOR	10
RECEIVER TANK COMPONENTS	10
VETROSON® OXY-GEN™ GENERATOR SPECIFICATIONS.....	111
ROUTINE MAINTENANCE INSTRUCTIONS.....	12
LONG TERM MAINTENANCE	122
TECHNICAL SERVICE AND ASSISTANCE.....	133



Freight Damage Claims & Initial Inspection

The Receiver Tank and Generator will be packed in separate boxes. Both boxes should be opened and inspected immediately upon delivery. The large box contains the Generator. The second box contains the Receiver Tank and other components. Both boxes will be shipped on one pallet. If the exterior of the box is noticeably damaged at the time of delivery, make a note on the freight bill before signing it. Unpack the unit at once and perform a visual inspection to determine if it is dented, bent or scratched. Also check to make sure that the power cord is attached (for US units) and that the control panel has not been damaged in any way during shipment.

Unpacking the VETROSON® Oxy-Gen™ System

Slide the generator box off the pallet. Open one side and remove all packing material. Wheel the generator out of the box and to the place where it will reside. (Please note that one or more HEPA filters are packaged in “bubbly” in the oxygen generator box. They should be firmly pressed into the port(s) at the back of the unit.)

The smaller box will contain the receiver tank with the shorter, 3’ oxygen hose attached to the tank on one side. The larger, 9’ oxygen hose will be attached to the tank on the other side. These hoses will be wrapped around the tank. Remove the plastic sleeve covering the tank and hoses.

(Instructions for attaching the hoses to the generator and the oxygen manifold will follow)

Please retain the shipping box. If for any reason the unit should need to be serviced, this box is the best way to ship it back to **Summit Hill Laboratories**.

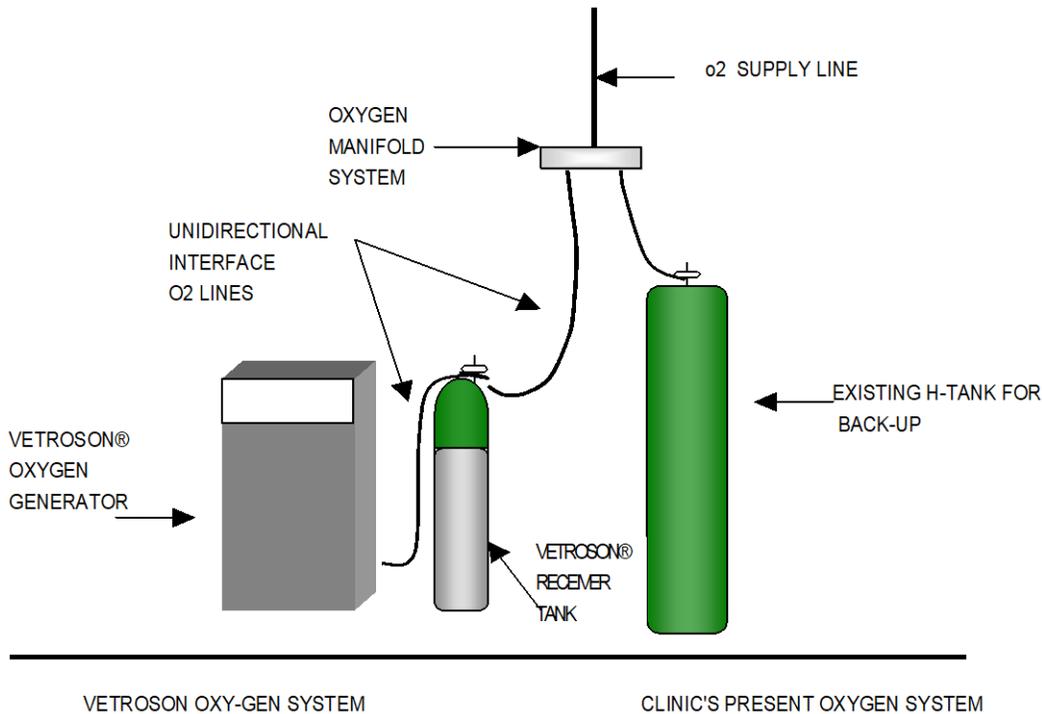
If any damage is discovered during the initial visual inspection, call the freight company immediately. ***This must be done within 24 hours of delivery.*** Claims of damage due to freight handling can only be filed by you, the consignee, as *our* shipping terms are Free On Board (FOB). **Summit Hill Laboratories** has no legal claim against any shipping company for damage.

Safety Precautions

It is very important that you read the precautions below and make yourself and others operating the **VETROSON® Oxy-Gen™ System** aware of the hazards of oxygen in general. While oxygen can be handled and used very safely, it can be dangerous if mishandled.

1. **Oxygen is a fire hazard.** It can be very dangerous, as it vigorously accelerates the burning of combustible materials. To avoid fire and/or the possibility of an explosion, oil, grease or any other easily combustible materials must not be used on or near the **VETROSON® Oxy-Gen™ System**. Smoking, heat and open flames are prohibited near the unit. Individuals who have experience handling oxygen systems should become the designated operators of the **VETROSON® Oxy-Gen™ System** within your facility.
2. **Ensure that the oxygen outlet stream is not directed toward anyone's clothing** when bleeding a tank or line. Oxygen could embed itself in the material and one spark or hot ash from a cigarette could ignite the clothing.
3. It is important to have a backup supply of oxygen, as the receiver tank component of the **VETROSON® Oxy-Gen™ System** holds only 10-20 minutes of reserve oxygen. **During power outages, oxygen will not be produced.**
4. **Do not use extension cords to power the VETROSON® Oxy-Gen™ System.** The draw into the unit is high and could overheat some extension cords. It is also important to use only a properly grounded outlet.

Setup & Installation Instructions



Although every **VETROSON® Oxy-Gen™ System** is thoroughly tested and checked before it is shipped from our factory, the following checks are necessary to ensure that none of the internal components has been damaged in shipment.

1. Make a visual inspection of the machine, receiver tank unit and stand.
2. Before installing the **VETROSON® Oxy-Gen™ System**, it is necessary to determine the location, necessary space and power supply for the **VETROSON® Oxy-Gen™ System**. **Failure to follow the below requirements will void the Summit Hill Laboratories Warranty.**

A Summit Hill Laboratories representative will phone you to review the installation and maintenance requirements with you prior to delivery. If you need assistance with your set up, please call our office. We will have a Technical Support Representative contact you once your unit has been delivered.

a. Positioning the **VETROSON® Oxy-Gen™ System**:

- i The **VETROSON® Oxy-Gen™ System** must be located in an area that is indoors and remains between 40°F (5°C) and 75°F (24°C). Operating the VETROSON® Oxy-Gen™ System outdoors or in an area that is outside the “peak performance zone” temperature range will void the **Summit Hill Laboratories Warranty**. Therefore, if temperatures in the hospital or mobile hospital unit are outside of the “peak performance zone” the temperature of the hospital should be brought into the “peak performance zone” before operating the generating system.

- ii The **VETROSON® Oxy-Gen™ System** must be operated in an upright position only and at least 12 inches (30.5 cm) from any wall or obstruction to ensure that airflow into the machine is not restricted. Placing the **VETROSON® Oxy-Gen™ System** too close to walls or obstructions will void the **Summit Hill Laboratories Warranty**.

b. Space necessary for the **VETROSON® Oxy-Gen™ System**:

The **VETROSON® Oxy-Gen™ System** should be located in a well-ventilated, air conditioned room that is free from toxic gases and high concentrations of hydrocarbons and is at least 1000 cubic feet or 25 cubic meters in size with a 100cfm exhaust fan to prevent the buildup of nitrogen in the room. It is necessary to have at least 5 air changes in the room per hour to prevent the buildup of nitrogen. Hot, humid, dirty, oily air deteriorates and degrades the performance of the molecular sieve. In order to preserve the effectiveness and extend the useful life of the **VETROSON® Oxy-Gen™ System**, all precautions should be taken to ensure that cool, dry, clean, oil-free air is provided to it. Failure to meet minimum requirements will void the **Summit Hill Laboratories Warranty**.

c. Power supply for the **VETROSON® Oxy-Gen™ System**:

The **VETROSON® Oxy-Gen™ System** must be positioned within 8 feet (2.2 meters) of a grounded electrical outlet that will power it. ***It must have a dedicated line.***

It is very important NOT to use any extension cords with the unit, as these cords could overheat and melt, possibly causing a fire. Failure to comply with the electrical requirements will void the **Summit Hill Laboratories Warranty**.

- 3. Install the HEPA Filter(s) which will be packed in the generator box. The port(s) located on the rear panel accept the HEPA filter with a foam cap. Press each firmly into place. Also, the filter systems must be cleaned and replaced as per our instructions on Page 11.
- 4. Once you have positioned the **VETROSON® Oxy-Gen™ System** in accordance with the above criteria, plug the unit into a properly grounded, dedicated electrical outlet.

Note: It is required that a 20 amp circuit be dedicated to both our 115V and 230V systems. The 115V units are supplied with a 3-pronged ground fault protected plug. The 230V 60Hz (US) units are supplied with a 20 amp-230V slotted plug, Type #6-20P. This requires a 6-20R receptacle.



6-20R Receptacle-20 amp- 230V, 60Hz (US)

Warning to owners of 230V Systems:

Many veterinary hospitals have a 209V triple phase electrical system. This must be converted to 230V, Single phase. Our generator will produce oxygen using 209V but output will be lower and continued use will result in burning out certain parts. If single phase, 230V electrical service cannot be provided, a Hammond Power Solutions step up transformer, Model QC 50 ER CB may be purchased and installed by your local electrician.

A receptacle plug of local configuration will need to be attached if the machine has been shipped outside North America.

The receiver tank should not be attached at this time.

- a) Turn the On/Off switch to the On position.
 - b) Listen for the sound of the compressor to start running. If you do not hear it within a few seconds, shut the machine down immediately and call **Summit Hill Laboratories** customer service for assistance.
5. You should be able to feel oxygen being discharged from the lower left oxygen outlet port. If you do not feel oxygen, call **Summit Hill Laboratories** customer service for assistance.
6. Turn the machine off. You're ready to connect the receiver tank.

One end of the 3' oxygen hose is already connected to the receiver tank at the factory. Connect the male fitting on the other end to the female fitting on the oxygen outlet located at the lower left rear corner on the generator. A 6' oxygen hose is attached to the elbow on the receiver tank. It should be connected to the low pressure side of the manifold. Leave the H tank connected to the manifold, but turn it off.

7. Turn the **VETROSON® Oxy-Gen™ System** on.
8. Wait five minutes for the unit to come up to maximum specifications. The oxygen pressure gauge on the front panel should read 20 or 50, depending on the model. The flowmeter on the cabinet does not have an adjustment knob and is set to reflect the LPM being produced on the 5015 model and the LPM being utilized on the 2015 model. After the initial set up, the **VETROSON® Oxy-Gen™ System** will come up to specifications in about one minute after being turned on.

Note: There is a circuit breaker button on the right side lower rear corner above the power cord. It is an automatic shut off to protect the generator in case of power overload.

When operating your VETROSON® Oxy-Gen™ System, please make sure the cabinet door is closed and locked. This is not only for safety reasons. Leaving the door open when running the machine may cause overheating of the compressors.

Please note there is an aluminum Safe Guard Block on the receiver tank. This continuously releases a liter or so of oxygen, depending on the model, when the unit is on. This release of oxygen results in a low hissing sound. This is normal. There should be no attempt to make any adjustments of the valve.

Shutdown Procedures

To shut the machine off, press the On/Off button to Off. The compressor noise should quickly die out. Please wait for approximately two minutes after turning the machine off to restart it.

To save wear and tear on the compressors, it is suggested that you leave the machine in the "Off" position when not in use.

Warranty

Summit Hill Laboratories (hereinafter **SHL**) provides a warranty on its products against defects in material and workmanship, under normal use and operation, and in accordance with the specifications set forth in the **Installation, Operation & Maintenance Manual**, as applicable in the statements below.

The **SHL** Warranty provides the following:

- i. Free repair or replacement (at the discretion of SHL) of the product when defects in the material and/or workmanship are evident at the time of delivery, **exclusive of shipping damages**. If the product is received from the shipper and is obviously damaged, accept the product and phone the shipping company immediately to file a claim. Then contact Summit Hill Laboratories for further instructions.
- ii. If the product is received from the shipping company apparently undamaged, follow The **Safety Procedures** and **Set Up & Installation Procedures**. If there is hidden damage, phone the shipping company immediately to file a claim and phone Summit Hill Laboratories for instructions on how to continue. Free repair or replacement (at the discretion of SHL).
- iii. When defects in workmanship become evident between the date of shipment and one (1) year or 1000 hours (whichever comes first), free repair or replacement of the product at the discretion of SHL (excluding the molecular sieve elements) will be affected. The practice will pay shipping and insurance charges to Summit Hill Laboratories. Summit Hill Laboratories will pay shipping charges back to the practice.

This Warranty shall also become null, void and not binding on **SHL** if a defect or malfunction occurs in the product or any part of the product as a result of user error including but not limited to:

- i. A failure to operate the **VETROSON® Oxy-Gen™ System** in accordance with the **Set Up & Installation Instructions**;
- ii. Repair, attempted repair, attempted adjustment, modification, enhancement or attempted modification or enhancement, or servicing by anyone other than an authorized representative of **SHL**;
- iii. External causes; or
- iv. A demand upon the **VETROSON® Oxy-Gen™ System** in excess of the LPM or PSI model specifications. For example:
 - Do not connect machines totaling 20 LPM to a 15 LPM system.
 - Do not connect a ventilator or any electronically controlled anesthesia machine (i.e. a Vetland Anesthesia EX3000 or an Engler ADS1000) to a 20 PSI system. They require 50 PSI.
 - Do not restrict air flow to the unit. Filters must be changed/cleaned as recommended and the room must be large enough (1000 cft) with a 100 cfm exhaust fan to supply the necessary feed air.
- v. Failure to replace the switch valve after every 1000 hours of use.

These are examples of conditions that will overload a molecular sieve and spread zeolite powder throughout the unit.

Molecular Sieve Replacement

The breakdown of the molecular sieve(s) inside the **VETROSON® Oxy-Gen™ System** may occur if the switch valve on top of the molecular sieve is not replaced at each 1000 hours of use, if excess heat, water (i.e. humidity) or oil are introduced in the feed air stream, if the LPM capacity of the model is exceeded by connecting more oxygen consuming machines to the system than its capacity, or if the air flow to the generator is insufficient due to inadequate room size or being placed too close to the wall. Additionally, a failure to clean and replace the filters will restrict air flow to the generator and may also cause a breakdown of the molecular sieve.

Under no circumstances is the molecular sieve covered under warranty by SHL.

Transfer

This Warranty may be transferred to subsequent owners of the **VETROSON® Oxy-Gen™ System** only with the prior written approval of **SHL**. The warranties above are given expressly in lieu of any other warranty stated or implied and constitute the only warranties made by **SHL**.

Limits of Liability

Summit Hill Laboratories shall not be liable for any special, indirect, incidental, or consequential damages resulting from the use or malfunction of **Summit Hill Laboratories VETROSON® Oxy-Gen™ System** or any components thereof.

Problem Symptoms

Before checking below, verify power to unit.

Low oxygen pressure and/or purity has not yet been reached

This may be the result of a leak in the external system. Test all oxygen hoses and lines for leaks. Low pressure may also be the result of exceeding the LPM the unit is designed to produce or blocked filters.

Oxygen purity has fallen below acceptable limits after the machine has been running for a length of time without problems

This may be an indication of a leak within the system or in the external oxygen lines. Test for leaks.

A malfunctioning switch valve that has not been changed every 1000 hours could also cause this problem. If this is the case, call **Summit Hill Laboratories** customer service for assistance.

This may also indicate that you are asking the unit to supply more than the LPM specified for your **VETROSON® Oxy-Gen™ System** or a ventilator has been added to a 20 PSI system.

The filters may be clogged.

The sieve beds may be contaminated due to excess humidity (ie: water or oil introduced into the atmosphere.)

Also on an older machine this may be an indication that the compressor has expended its useful life.

The ball on the external flowmeter is swinging up and down

This may be an indication that:

- 1) The practice is asking the unit to supply more LPM than it is designed to handle. Double check the LPM being use.
- 2) If there is a leak in the oxygen lines, you will be overtaxing the system.
- 3) Compressor malfunction. Call Summit Hill Laboratories for assistance.

The system will not start up immediately after it was turned off.

The unit was not turned off long enough to release the compressor pressure. When the unit is turned off, wait two minutes before turning it back on.

Asking the system to provide more LPM than its specs call for

This will cause low oxygen pressure; the receiver tank will drop in pressure. Reduce your oxygen demand by turning any of the machines off that are causing the problem. One must manage the oxygen lpm and psi demand to the capability of the generator.

VETROSON® Oxy-Gen™ System

External Components Description

Generator

Vent Ports -	Three rectangular vent ports are positioned in the front to accept large particle filters.
Oxygen (O ₂) hose Outlet -	This female fitting is at the lower left-hand side. The 3' hose from the receiver tank connects to it.
On/Off Switch -	Controls power to machine
Hours Meter -	The hours meter tracks time while the unit is running. It provides an indication as to when service intervals are due.
Hepa Air Inlet Filter Ports -	Located on the back panel. Number varies by model. A Hepa filter with a foam cap must be inserted into the round ports(s) on the back panel of the unit.
Power Cord -	The power cord is designed for use on 120 vac/60 Hz electrical systems and comes with a 3-pronged ground fault protected plug. The 230V 60Hz (US) units are supplied with a 20 amp, 250V slotted plug, Type #6-20P. This requires a 6-20R receptacle



6-20R Receptacle – 230V, 60Hz (US)

For foreign shipments the plug will be removed and a plug of local configuration should be installed. The green wire is the Earth Ground and the black and white wires are for the AC Supply

Receiver Tank Components

Tank-	Holds approximately 30 liters of oxygen. This allows the system to function without interruption when the flush is used, when an ICU cage is being filled or when ventilators are in use (with the 50 PSI models).
Hoses-	The 3' hose carries oxygen from the generator to the receiver tank. The 9' hose takes the oxygen from the receiving tank to the practice's central manifold. The system is equipped with check valves to prevent back flow from the manifold to the VETROSON® Oxy-Gen™ System .
Tank Safe-Guard Valve-	Allows continuous flow of oxygen when the VETROSON® Oxy-Gen™ System is in operation

VETROSON® Oxy-Gen™ Generator Specifications

Model	Delivers	Volts	Starting Amps	Running Amps	Power Watts	Weight (Lbs.)*	Width (Inches)	Depth (Inches)	Height (Inches)
VGS2015	20 PSI, 15 LPM	120	20	8	920	145	25	17	38
VGS5015	50 PSI, 15 LPM	230	15	7	1610	175	25	17	38

*Weights shown are for the generator only.

The Receiver Tank weighs an additional 34#

The shipping weight will be more due to the box, packing material and pallet.

Routine Maintenance Instructions

Filter Replacement

Depending upon the model, one or more pleated HEPA Air Intake Filters (VGS1500) are used. VGS1500 consists of two parts: the HEPA Filter component and a foam filter which caps it. They fit into the round holes at the rear of the unit. The HEPA filter should be replaced every 6 months or every 500 hours or sooner if indicated. The Large Particle Filters (VGS1600) are located in the cabinet door. The Large Particle Filters and the foam filter that is part of VGS1500 should be brushed off or vacuumed, washed as indicated, and replaced every six months. Both filter systems should be inspected weekly.

Failure to replace the filters on schedule will result in the Warranty becoming invalid.

Cabinet & Power Cord

The cabinet and power cord should occasionally be washed down with a clean sponge or clean rag and some soapy water. Do not use ammonia or other strong chemical based cleaning solvents. Avoid a buildup of dust and dirt on the machine.

The inside of the cabinet should also be inspected weekly and vacuumed if dust is noted.

Long Term Maintenance

Air Compressor

Air compressors are an important part of the **VETROSON® Oxy-Gen™ System**. The fans at the inside rear should remain free of debris/dust.

A compressor may last from 5-10 years depending on use and hospital conditions. After years of use low oxygen purity and flow rate may be indicators that the air compressor has expended its useful life. Contact **Summit Hill Laboratories** customer service for repair or replacement.

Switch Valve Replacement

The switch valve on top of the molecular sieve beds should be replaced after every 1000 hours of use.

Contact **Summit Hill Laboratories** customer service for repair.

Technical Service and Assistance

Technical service personnel are available at **Summit Hill Laboratories** from 9:00 A.M. through 5:00 P.M. Eastern Standard Time:

- **By Telephone from within the United States**

For Immediate Assistance:

(800) 922-0722 Summit Hill Laboratories Main Office

(732) 933-0800 Summit Hill Laboratories Main Office

- **By Telephone from outside the United States**

+(1) (732) 933-0800

- **By Fax**

(732) 933-0055

- **By E-Mail**

sales@summithilllaboratories.com

- **By Mail, UPS, FEDEX or Common Carrier at:**

Summit Hill Laboratories

3 Sheila Drive

Tinton Falls, NJ 07724 USA

Shipping Units for Repairs:

A sturdy box must be used. We recommend keeping the original shipping box. The box must be strapped on a pallet in an upright position. "Bubbly" packing material is mandatory. "Peanuts", shredded paper and such loose and dusty material should not be used as they will migrate into the working parts of the generator.

©2021, **Summit Hill Laboratories.**

All rights reserved.

VETROSON® and **Oxy-Gen™** are registered trademarks of

Summit Hill Laboratories

This publication may not be reproduced in part or whole

without express written permission of

Summit Hill Laboratories