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## Pureline Oxygen Concentrator Technology And Anesthesia Machines

### *Frequently Asked Questions*

***Q. What is the difference between an oxygen concentrator and a generator?***

A. The term, oxygen generator, in the medical field is a misnomer. In the medical field, oxygen is not generated but rather it is concentrated from the air. An oxygen generator uses a chemical reaction or is produced through electrolysis.

99.9% of room air is made up of nitrogen, oxygen and argon. A concentrator compresses room air into a vessel that contains a molecular sieve material that absorbs nitrogen under pressure. The pressure is then released and the initial escaping gases are 95-96% oxygen.

A chemical oxygen generator is a device releasing oxygen created by a chemical reaction. Chemical oxygen generators are used in aircraft, breathing apparatus for firefighters, mine rescue crews and submarines. The electrolysis method is used on spacecraft and nuclear submarines using water and electricity.

***Q. Do you need 50psi pressure to run an anesthesia machine?***

A. No. It takes less than 1psi to operate a standard small animal anesthesia machine with a precision flow meter. Anesthesia machines function by volume in liters per minute flow, not pressure.

***Q. What if we have a power failure?***

A. The Pureline anesthesia machine has a "Main" and "AUX" (auxiliary) switch. With the "E" cylinder turned on, move the switch from "Main" to "AUX" and adjust the flow meter accordingly. The pressure difference from the "E" cylinder and the concentrator will cause a change in flow rate. This is normal.



**Q. How do I know the machine is functioning correctly?**

A. The Pureline concentrator has a built in oxygen purity and flow alarm. If the concentration drops below 92% it will produce an audible and visual alarm. This generally indicates the intake filters need to be cleaned. If the power is lost to the unit, an alarm will sound.

**Q. Can I operate the machine with just the "E" cylinder.**

A. Yes. With an average of 2 lpm flow rate, you will have approximately 4 hours of oxygen in a full "E" cylinder. Simply switch from "Main" to "AUX"

**Q. Does the concentration output of the machine effect the SP02 level in the animal.**

A. No. The concentrator outputs 95% pure oxygen by volume. Room air only contains 21% oxygen. Under normal breathing conditions (not under anesthesia) the SP02 should remain in the 95-99% range. Patients that require oxygen therapy care are placed in environments with 40% oxygen concentration to achieve the 95-99% levels. The concentrator is more than double the oxygen therapy levels.

**Q. How do I flush the system?**

A. Quick and effective oxygen flush does require 50 psi. As part of the integrated design, the Pureline concentrator anesthesia machines have an E-tank manifold built in as the source for back-up and high flow flush. A standard "E" cylinder has about 650 liters of oxygen. It requires less than 5 liters of oxygen to flush the system. A single "E" cylinder will produce approximately 130 flushes. NOTE: The oxygen flush uses the "E" cylinder regardless of what mode the MAIN/AUX switch is in.