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SERVICE DOCUMENT FOR PRIVATE PRACTICE VETERINARIANS 12/1/2016

Thank you very much for contacting Summit Medical Equipment with respect to your need to have your inhalant anesthesia system serviced. I sincerely appreciate your interest in our products and services.

There is always some confusion with respect to what needs to be done—or what is done—at a “service” of inhalant anesthesia systems; and what the time interval between servicing should be. In Human Medicine, there are strict rules governing the “service” of inhalant anesthesia systems. However, in Private Practice Veterinary Medicine, there is no regulatory body, nor agency which oversees and/or makes written recommendations with respect to servicing inhalant anesthesia systems. Having said that, we do get some written and verbal recommendations from the ACVA and AAHA—but it is rather vague with respect to what should be done and when. Here is a synopsis of those recommendations by the ACVA (American College of Veterinary Anesthesiologists) taken directly from its website:

1. “Appropriate checkout methods and routine maintenance for such equipment should be standard operating procedures for veterinary facilities that use inhalant anesthetics.”
2. “The routine maintenance procedures for anesthetic equipment are usually explained in the operations manuals. Many anesthesia textbooks include guidelines for checkout of machines, breathing systems, ventilators, and scavenging systems. The specifics of these evaluations are too extensive for this report. However, each piece of equipment involved in the delivery of inhalant anesthetics should be evaluated regularly to assure its function and integrity.”

Our recommendation for a time interval, since we manufacture inhalant anesthesia systems, is once a year. But please understand that there are issues which may impact the time interval—especially the servicing of the anesthetic vaporizers.

What is even more confusing, is that most of the veterinary “service” companies seem to have different notions as to what a thorough service of the system is. We see everything from an agency doing the 10 second test and calling it “good,” to what we try to accomplish—which is a very thorough inspection of not only the components of the anesthesia machine, but ancillary systems as well. For example, in addition to the basic machine, we include the inspection of the carrier gas system, appliances used to deliver the inhalant anesthetic (non-rebreathing systems, induction chambers, etc.), and the waste gas management system.

Our basic service of the inhalant anesthesia system includes the following:

1. Visual inspection of vaporizer for defects
 - A. Broken Dial Stop
 - B. Loose drain / drain seal

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- C. Loose cap / cap seal
 - D. Cleaning of main bearing plates if required
 - E. "Feel" of vaporizer
2. Leak test of vaporizer
- A. 100 mmHg in closed position
 - B. 200 mmHg in open position

PLEASE NOTE THAT THE BASIC SERVICE OF THE INHALANT ANESTHESIA SYSTEM DOES NOT INCLUDED PROFESSIONAL CLEANING AND CALIBRATION OF THE VAPORIZER (SEE BELOW)

3. Output test of vaporizer
- A. Tested with Riken Analyzer to see if at each dial setting the output is within manufacturer's allowed tolerances.
4. Visual inspection of all components of system including induction chambers, non-rebreathing systems, rebreathing systems, flowmeters, tubing, oxygen flush, appliances such as Universal Control Arms, ventilators, gaskets seals, etc.
5. Leak test High Pressure System
6. Leak test Low Pressure System
7. Replace silicone conductive tubing (if necessary)
8. Service stickers installed on the machine and the vaporizer indicating that the devices are operating within manufacturer's tolerances
9. Written reports with respect to the status of the devices, including a Vaporizer Efficacy Report

The cost for the basic service varies, but is approximately \$175.00 plus parts (if any) and trip charge to the facility.

And, there are really two main components to the inhalant anesthesia system: 1) the vaporizer, and, 2) everything else. This may appear as an oversimplification, but is meant to show that vaporizers have special issues independent of the rest of the system.

The vaporizer is the heart of the device. In recent years, there has been confusion with respect to the time interval to have these vaporizers Professionally Cleaned and Calibrated. Please see our document "Vaporizer Issues for Private Practice Veterinarians."

The Professional Cleaning and Calibration of vaporizers is **not** done in the field. The process requires sophisticated instrumentation; and must be performed under strict temperature and humidity conditions. The vaporizer is completely disassembled, wicks and seals are replaced, and the internal components are cleaned with a special solvent. The vaporizer is then partially reassembled, calibrated, and tested for proper operation. After complete assembly, the vaporizer is leak tested. The cost to have this done is approximately \$395.00 (It depends upon the style of vaporizer and if any ancillary parts need to be replaced).



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Most Service Centers for anesthetic vaporizers recommend once a year Professional Cleaning and Calibration. It is my opinion that the Isoflurane and Sevoflurane vaporizers in Private Practice Veterinary Medicine should be Professionally Cleaned and Calibrated on a 3 year basis. There is justification for having the vaporizers serviced more frequently because of the exposure of these vaporizers to heavy use, potential for foreign object and/or liquid contamination, and issues related to safety for the animals. However, we leave the time limit up to the veterinarian and his/her comfort level.

And, please note that we are very sensitive to our customer's comfort level, too. If for any reason you do not wish to have the vaporizer Professionally Cleaned and Calibrated each year, at the very minimum we recommend the following:

1. Yearly inspection of the vaporizer to ensure that there are no leaks, no obvious broken parts, and that the vaporizer performs (output) within original manufacturer's specifications.
2. Professional Cleaning and Calibration of the vaporizer on a 3 year time interval. Approximate cost \$395.00 plus freight back and forth to Service Center.

Also, if you would like to schedule service, please let me know.

I hope that this has helped to answer the questions of service of inhalant anesthesia systems. Please let me know if you have any additional questions and/or concerns.

Best regards,

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