

Vetamac Vapors

(800)334-1583

www.vetamac.com

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We're just a phone call away!
Feel free to call between your annual service
visits if you have questions or are having any problems.
We are your anesthetic machine service company.



As Left

This issue of Vapors is to give you a better understanding of the service we provide. We now issue a certificate of conformity following service. This certificate states: "The equipment, as left, conforms to the service protocols and standards of Vetamac, Inc.". Just what does this mean?

First it means that the machine does not have leaks. This does not mean that there are absolutely no leaks but that any leak is within a very small tolerance. The machine is inspected and tested for two kinds of leaks: High Pressure and Low Pressure.

The test for a high pressure leak determines if there is any oxygen leaking from the connections and plumbing fittings on the machine. If all the high pressure fittings are external, any leak can be corrected. On some older machines that were originally from human medicine, the high pressure plumbing is extensive and difficult to access. In these machines there is a tolerable leak, which when left, would empty an E-tank of oxygen in 45 days. Any leaks larger than this will be noted and reported on the service sheet.

The test for a low pressure leak determines if there are leaks in the fresh gas circuit and the breathing system. The fresh gas circuit includes the flowmeter, flush valve, and vaporizer and these are tested at a pressure of 100cm H₂O to verify the absence of any leaks. Each component is tested separately so that if there are any leaks they can be isolated and corrected. The breathing system, which includes the soda sorb canister, one way valves, pop-off valve and all associated connections, is tested at a pressure of 30cm H₂O. Although we strive for no leaks, FDA guidelines allow for a 200cc/minute leak at 30cm H₂O. The system is then tested with the breathing tubes and bag on the system. This verification process assures a safe anesthetic device that operates economically.

If the equipment, as left, conforms to the service protocols and standards of Vetamac, that also means the components of the machine function properly. The function of the flowmeter needle valve is verified to assure that it is opening and closing properly. The flow indicator and flow tube are also inspected and cleaned if necessary. The flush valve is also tested for proper closure. In the event that it does not close completely, the leakage of oxygen into the breathing system dilutes the concentration of anesthetic. The one way valve discs are inspected for proper operation assuring that both the inspiratory and expiratory valves open and close properly and that they are not warped or otherwise distorted. The pop-off valve is inspected for proper function. This is the most "tempermental" component on the

machine due to different manufacturers and designs. The most important function of the valve is that it will open properly and remain open while providing a small amount of resistance to flow so that the bag does not collapse. The valve should also close the system in the event that ventilation needs to be assisted or controlled. Some pop-off valves are designed to be either open or closed. Others are designed to be adjustable or to "pop-off" at various pressures. This is only important if the patient needs to be manually ventilated throughout a procedure.

The third part of Vetamac's service is the vaporizer calibration verification. The vaporizer pressure test was mentioned above and if it does not pass that test, it is failed. It must also pass the calibration, which is accomplished by using an analyzer that measures the concentration of anesthetic agent. If the calibration falls outside the standard, the vaporizer is failed. In either case of failure, a complete vaporizer service is recommended to the client.

The final test is of the evacuation system. If the system is a passive system, all tubing is tested for leaks and also for appropriate measures to prevent the flow of gas back into the environment. If the system is active, it is tested for appropriate movement of air and the atmospheric interface is also tested. All tubing is pressure tested to verify the absence of leaks.

This is a brief overview of Vetamac's Van-Gard 7© service protocols. If there are any questions, please contact us by any of the following methods: web, phone or e-mail.

By Harry Latshaw
MS, RVT, VTS (Anesthesia)

FAQs

Q: How do we know Vetamac technicians are qualified to service our machines?

A: Vetamac technicians have been trained using Vetamac's Van-Gard 7© service protocols. They have also passed a certification exam that authorizes them as service technicians.

Q: How are Vetamac's service protocols and standards established?

A: Since there are no standards established for Veterinary Medicine, we draw on the FDA standards for human medicine as well as manufacturer's recommendations and consultation with board certified anesthesiologists.

If you have a question you would like answered in our FAQs, please email us at info@vetamac.com.

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