

SOP #: 801.02Title: SOP - Use and Maintenance of Small Animal/Rodent Anesthesia Machine

Approvals:

Attending Veterinarian

Date:

06/27/20191. Purpose

1.1 The intent of this standard operating procedure (SOP) is to ensure the proper use of the small animal/rodent anesthesia machine

2. Responsibility

2.1 This SOP is intended for use by Principal Investigators and Animal Care Facility personnel that use the anesthesia machine.

3. Definitions

3.1 ACF - Animal Care Facility

3.2 PI – Principal Investigators

4. Guidelines

4.1 The LabVac Anesthesia machine is intended to be used for small animal inhalation anesthesia machines which incorporate an oxygen flowmeter, anesthetic Drager vaporizer, and a circle rebreathing system with CO₂ absorption. This systems vaporizer provides isoflurane anesthesia.

4.2 Add-on equipment (LabValve) that can be connected with the vaporizer will provide 4 controllable outlets to be used for rodent nose-cone anesthesia. This will create a completely autonomous non-rebreathing system that will also incorporate an active anesthetic waste scavenging system.

4.3 The manual is available in the central equipment file kept by the assistant director.

	<u>FREQUENCY</u>	<u>RESPONSIBLE PERSON</u>
INSPECTION:	Before each use	Vet Technician
CLEANING:	Before & after each use	Vet Technician
MAINTENANCE:	Once a year	Anesthesia Equipment Service & Supply Inc or other outside vendor
CALIBRATION /STANDARDIZATION:	Once a year	Anesthesia Equipment Service & Supply Inc or other outside vendor

4.4 Operation:

4.4.1 Oxygen tanks must be at a supply greater than 500 PSI (Backup available at all times).

4.4.1.1 Inlet pressure to anesthesia equipment should be set at 50 PSI.

4.4.2 Keep anesthetic agent (Isoflurane) level above minimum.

4.4.2.1 Fill before each use and in a well -ventilated area at least a day prior to use. This allows the anesthetic fumes to dissipate safely.

4.4.2.2 Keep fill funnel clean.

4.4.3 Waste Gas Scavenging:

4.4.3.1 Make sure the LabVac charcoal canister used in the active scavenging system is not over maximum weight. Record current weight on form. Discard the charcoal and replace it with fresh one if the canister weight is approaching maximum limit.

4.4.3.2 Make sure the scavenging system is turned ON during anesthesia.

4.4.3.3 Be sure that "recovery" for isoflurane patients is in a well-ventilated area to prevent personnel exposure to anesthetic waste gases.

4.5 Pre-use check should include:

4.5.1 Be sure LabValve outlet handles are functioning properly, including no restriction when handled.

4.5.2 Be sure flow meter functions properly over full range of flowmeter scale.

4.5.3 Breathing tubes and nose cones are in good condition.

4.6 Patient Induction:

4.6.1 Induction Chambers will be used for induction.

4.7 Maintaining Anesthesia:

4.7.1 For economical use, the lowest flow and % concentration is recommended.

4.7.2 Positive ventilation is not possible with this system.

4.7.3 The method of operation is continuous delivery.

4.8 Output Control:

Outlet #	Location	Color Code	On Position	Off Position	User Designation
1	Upper Left	White	Always On	N/A	Anesthesia
2	Upper Right	Red	Parallel	Perpendicular	Induction
3	Lower Right	Green	Parallel	Perpendicular	Anesthesia
4	Lower left	Yellow	Parallel	Perpendicular	Anesthesia

4.8.1 Outlet #1 is always on

4.8.2 Outlet #2, #3 and #4 can be disconnected by pressing release allowing male hose barb to be removed.

4.8.3 The female outlet is self-sealing.

4.8.4 Outlet #2, #3 and #4 can be turned on and off by turning black handle.

4.8.5 The valve is on when the handle is parallel with the valve and off when the handle is perpendicular.

4.9 Large animal Anesthesia Machine Operation

4.9.1 CO2 absorbent (Bara-lyme or equivalent) replacement:

4.9.1.1 After installing a CO2 absorbent canister, it needs to be replaced if there is a 50% color change (blue/purple) if in use or after 14 days even if it wasn't used at all.

4.9.1.2 Change when there is a 50% color change (blue/purple).

4.9.1.3 When multiple surgeries or prolonged surgeries are expected, replace the absorbent canister prior to use.

4.9.2 Waste Gas Scavenging:

4.9.2.1 Be sure charcoal canister (F/air or equivalent) is not over maximum weight. Record current weight on the canister in the space provided.

4.9.2.2 Be sure that “recovery” for isoflurane patients is in a well-ventilated area to prevent personnel exposure to anesthetic waste gases.

4.9.2.3 Use only cuffed endotracheal tubes.

4.9.3 Pre-use check should include:

4.9.3.1 Be sure pop-off functions properly, including no restriction when fully open.

4.9.3.2 Be sure flow meter functions properly over full range of flowmeter scale.

4.9.3.3 Breathing tubes and bag are in good condition.

4.9.4 Breathing system (absorber) leak test:

4.9.5 Connect a single breathing tube between the inhalation valve and the breathing bag mount.

4.9.6 Turn dial of vaporizer to any other position other than off or “0” during leak test to include vaporizer in test.

4.9.7 Close the pressure release valve (APL - adjustable pressure limiter / Pop-off) by turning clockwise

4.9.8 Slowly open the oxygen needle valve on the flowmeter until the system pressure is 40 cm H₂O on the pressure manometer gauge.

4.9.9 It should take no more than 200ml/min of O₂ to hold 40 cmH₂O.

4.9.10 IMPORTANT: The APL (pop-off) should only be closed while using an automatic ventilator or while patient is disconnected, and a leak test is being performed. Always leave an anesthesia machine after use with the APL (pop-off) completely open. A closed APL (pop-off) with the patient connected and an automatic ventilator disconnected may cause permanent severe injury to the patient.

4.10 Note: If the anesthetic machine is not functioning properly, contact the Attending Veterinarian.

5. Revision

5.1 Rev 02 (June 2019) Minor formatting.