

**STANDARD OPERATING PROCEDURES**  
**DIVISION OF COMPARATIVE MEDICINE**  
**UNIVERSITY OF SOUTH FLORIDA**

SOP#: 1135.2

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**TITLE:** Portable IMPAC 6<sup>®</sup> Veterinary Anesthesia Machine  
**SCOPE:** Research and Animal Care Personnel  
**RESPONSIBILITY:** Facility Manager, Technical staff, and Professional & Administrative Staff  
**PURPOSE:** To Outline the Proper Procedures for Use and Maintenance of the IMPAC 6<sup>®</sup> Veterinary Anesthesia Machine

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**I. PURPOSE**

1. Isoflurane inhalation provides safe general anesthesia for a variety of animal species. This procedure outlines the use and maintenance of a veterinary inhalation anesthesia machine that incorporates an oxygen flow meter, anesthetic vaporizer, and a non-rebreathing system with a passive (or active) waste gas scavenging system.

**II. RESPONSIBILITY**

1. The Facility Manager ensures that equipment is appropriately cleaned, maintained in good working order, and available for research personnel as requested.
2. The veterinary professional, administrative, and managerial staffs ensure that all research and technical staff using this equipment are adequately trained and experienced to use the IMPAC 6<sup>®</sup>.

**III. EQUIPMENT SET- UP**

1. Assemble all supplies (e.g., isoflurane, Spor-Klenz<sup>®</sup>, wipes, etc).
2. Assemble and check all equipment (e.g., anesthesia machine, patient monitors).
3. Check to ensure that the control dial of the vaporizer is in the "off" position.
4. **Check isoflurane level** in the sight glass and fill if needed. (See Maintenance section.)
5. **Weigh** the charcoal scavenging device (e.g., F/Air<sup>®</sup> or EnviroPure<sup>®</sup> canisters) to ensure weight is below the manufacturer's recommended threshold for replacement.
6. **Check all hoses and connections.** Ensure quad chamber is seated and latched for a proper seal.

7. **Connect recovery chamber** to “To Chamber” and to “From Chamber” ports; alternatively, if using chamber for euthanasia, connect CO<sub>2</sub> line to CO<sub>2</sub> tank regulator.
8. **Attach an “E” tank to the regulator** on the green oxygen hose. **Secure / strap down tank** to avoid broken valve or damaged tank. Using a tank wrench, turn knob on oxygen E tank counter-clockwise and check pressure. A full tank will register 2000 PSI. The tank should be replaced when the pressure gauge registers less than 200 PSI. Reducing valve on regulator lowers tank pressure to **50 PSI delivery pressure**.
9. **Turn the oxygen flow meter “on” then “off”** to check that the gas supply is operational.
10. **Depress and release the oxygen flush valve(s)**.
11. **Close all of the valves and turn on oxygen**. Check the pressure gauge on the front of machine. **Observe that pressure in the system stabilizes**. If the pressure drops, open the oxygen flow meter until the pressure stabilizes. If more than 3 L/min of oxygen is required to stabilize the system pressure, the leak is of a great enough magnitude to justify servicing.
12. Clean machine surfaces, hoses, circuits, masks/ nose cones, and induction chambers with chlorhexidine solution (1 ounce to 1 gallon of water).
13. Contact Facility Manager or Supervisor for assistance.

#### IV. EQUIPMENT USE

1. **For anesthetic induction**, set the isoflurane vaporizer **dial to 3-4%**.
2. Oxygen flow rate during anesthetic induction and should approximate **1 L/min**.
3. Turn on switch to flush O<sub>2</sub>. Place rodent into one of the quad chambers. Secure the latch. When adequately anesthetized, flush chamber with oxygen and remove rodent. Place rodent on nosecone and turn on patient circuit switch for extended procedures.
4. **For anesthetic maintenance**, set the isoflurane vaporizer **dial to 1.5-2%** and oxygen flow rate to 0.8 L/min.
5. **For recovery, turn off the vaporizer**, flush the patient circuit system with oxygen. Turn off oxygen flowmeter and oxygen supply.
6. **Monitor respiration, color, and warmth of rodent during recovery until fully awake**, as indicated by purposeful movement.

#### V. MAINTENANCE

1. **Weigh the charcoal scavenging** device (e.g., F/Air<sup>®</sup> or EnviroPure<sup>®</sup> canisters) to ensure weight is below the manufacturer's recommended threshold for replacement. Refer to manufacturer's directions.
2. To fill vaporizer: remove filler cap and carefully pour Isoflurane into opening, observe proper level of isoflurane through sight glass. Replace cap.
3. To drain vaporizer: removing the filler cap reveals the drain plug. Using the inverted filler cap, unscrew the plug but do not remove it. Drain only into a properly marked container.
4. Inspect the anesthesia machine connections and rubber parts before use for looseness, damage, cracks, or wear, and replace when necessary. Detach quad boxes and wipe boxes and machine with Spor-Klenz<sup>®</sup>. NOTE: do not use Spor-Klenz<sup>®</sup> on rubber gaskets as it may cause deterioration. Do not use alcohol or ammonia on the quad boxes.
5. The vaporizer should be **certified annually** by an authorized technician.
6. Certification is documented by labeling the equipment with the date of certification and the date when certification is due.
7. Facility Managers are responsible for maintaining current records of Division-owned equipment inspections, calibrations, maintenance, non-routine repairs, and current inventory for their facility on the division's ***Equipment Maintenance Log (CMD#192)***.

## VI. REFERENCES

1. Refer to the manufacturer's manuals for additional information.

Approved:

Date: