

STANDARD OPERATING PROCEDURES
DIVISION OF COMPARATIVE MEDICINE
UNIVERSITY OF SOUTH FLORIDA

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TITLE:	Surgi-Vet® and Matrix® Veterinary Capnograph
SCOPE:	Research and Animal Care Personnel
RESPONSIBILITY:	Facility Manager, Technical Staff, Professional and Administrative Staff
PURPOSE:	To Outline the Proper Procedures for Use and Maintenance of a Veterinary Capnograph

I. PURPOSE

1. This procedure outlines the use and maintenance of a veterinary capnograph to monitor inspired and expired oxygen and carbon dioxide levels, heart rate, and respiration rate during anesthesia in a variety of species.

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 staff ensures that all research and technical staff using this equipment are adequately trained and experienced to perform veterinary capnograph determinations.

III. EQUIPMENT SET UP

1. Attach A/C adapter to rear of unit.
2. Attach SpO₂ connector to front of unit.
3. Insert moisture trap into gas port inlet on front of machine.
4. Attach sample incoming line to moisture trap.
5. Insert CO₂ absorber to rear of unit.
6. Attach either lingual clip or rectal probe to patient sensor cable and place on patient.
7. Connect adapter to sample line and place on endotracheal tube and Y adaptor of the ventilator circuit.

IV. EQUIPMENT USE

1. Turn unit on by pressing stand by/on button. After a few seconds the measurements will be displayed.
2. Select high and low alarm limits and volume for alarm and pulse beep tones.

V. MAINTENANCE

1. Inspect condition of unit and electrical cord/plug to ensure safe operation. Equipment determined to be unsafe will be removed from service immediately.
2. Clean unit and sensors prior to each use by wiping with a mild soap solution (e.g., dilute chlorhexidine 1oz. /1 gal. water) and soft cloth. Disinfect surfaces but not the screen) prior to survival procedures by wiping with isopropyl alcohol.
3. Maintain battery charge by connecting external charge to rear of unit
4. Moisture trap should be replaced when full and occludes.
5. Check pneumatic system for leaks periodically and after replacing moisture trap.
6. Replace CO₂ absorber when the majority of pellets turn blue or when end-tidal CO₂ is >5mmHg.
7. Consult Operation Manual for maintenance details and troubleshooting.
8. Any additional maintenance/service should be performed by authorized personnel.

VI. CALIBRATION

1. Calibration ensures that the ETCO₂ and inspired CO₂ measurements are accurate and is **performed once a month** when unit is in-service or prior to use if frequency of use is less than monthly.
2. LOW CAL procedure resets the baseline measurement for CO₂ to zero. This procedure can be performed while a patient is attached to the monitor. Perform LOW CAL as describes below:
 - a. Highlight capnograph on device display.
 - b. Highlight "LOW CAL" and select
 - c. Select "YES"
 - d. "LO CAL in progress" will display in the CO₂ parameter box
 - e. When calibration procedure is finished, CAL DONE will appear in CO₂ parameter box.
3. The Low/High procedure should be performed only after the capnograph parameter has been on for at least 15 minutes. Remove patient from device before proceeding. **Perform a Low/High Cal** as described below:
 - a. Turn on the device.
 - b. Locate the calibration gas canister.
 - c. Remove the moisture trap and attach the calibration adapter to the gas inlet.
 - d. Highlight **Capnograph** on device display. Select **Low/High Cal** and follow the directions on the display.
 - e. After the message "**Please Turn On Cal Gas**" appears, quickly open the flow control valve on the calibration gas canister. The valve must be opened in less than 30 seconds.
 - f. When the message "**Please Turn Off Cal Gas**" appears, close the flow control valve of the calibration gas canister.

- g. When the “**Calibration Complete**” message appears, the unit is done. Disconnect the calibration test fixture and exit all menus.
4. Refer to manufacturer’s manual for additional information.
5. Calibration is documented on **CMDC 205, Anesthesia Machine Hang Tag** with the date of calibration.

VII. REFERENCES

1. Refer to manufacturer’s manual for additional information.

Approved:

Date: