

UF | ICBR Cytometry

University of Florida, Interdisciplinary Center for Biotechnology Research

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CTAC / ICBR SOP : Recognition of Components on the IVIS Spectrum

Title: Recognition of the Physical Components of the IVIS Spectrum Imaging System

Materials Required:

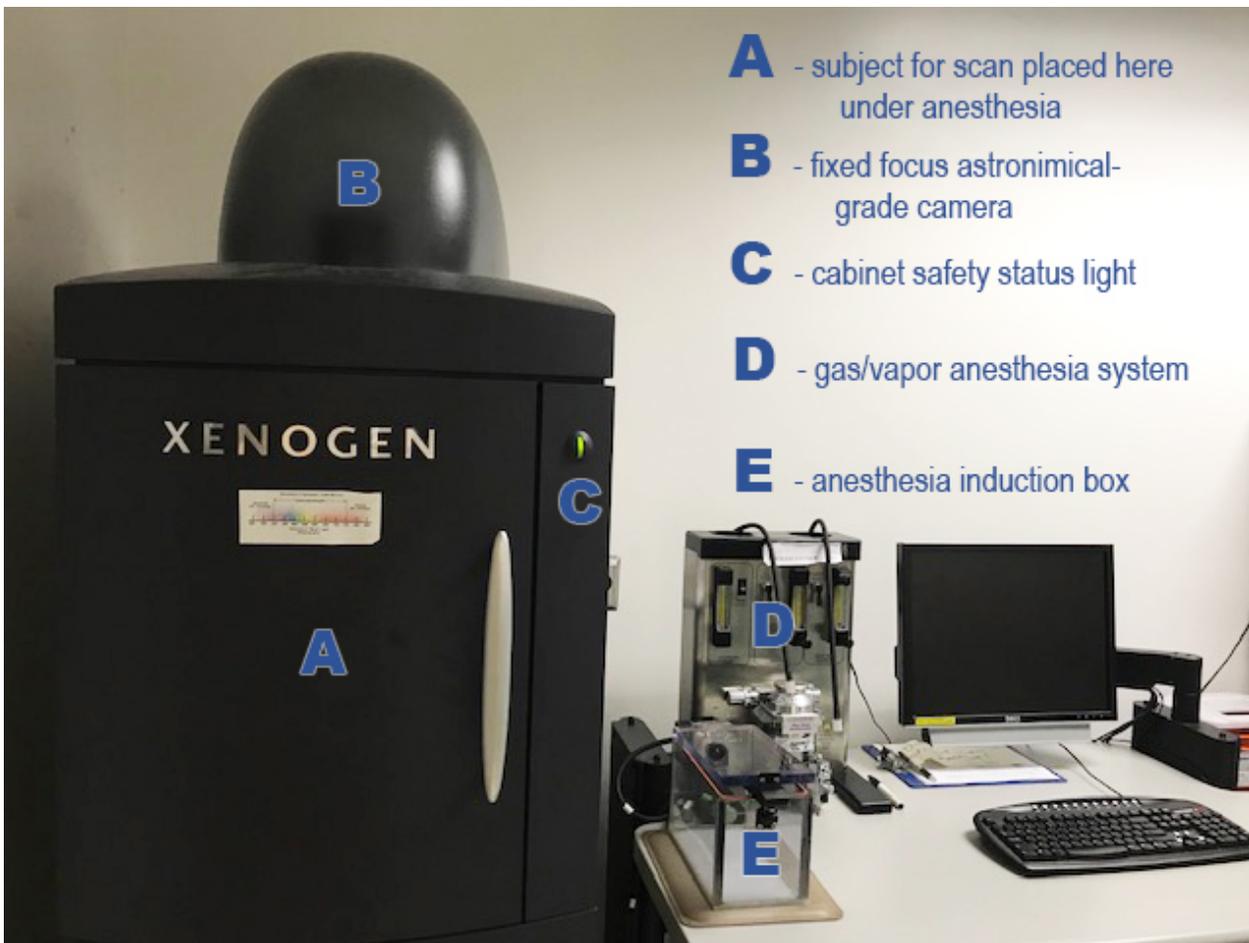
IVIS Spectrum Imaging System

Purpose:

To aid the user in recognition of the physical component parts of the IVIS Spectrum Imaging System.

Background:

The IVIS Spectrum Imaging System is constructed to image live subjects under anesthesia, for which it has an integrated anesthesia delivery system. This comprises the majority of the physical component parts accessible to the user. The electromechanical control of the instrument is operated through software on the computer. For details on operation of the software controls, please see SOP.



System component identification:

A. Is the cabinet that the experimental subjects are scanned in. This comprises of a warmed (37°C base surface), covered with a sheet of photon dark plastic to protect it from animal contact. This surface will raise and lower to affect an adjustment in focus for the camera. At the rear there is an anesthetic manifold that can accommodate up to 5 mice or 3 rats for imaging at one time.

B. Is the astronomical grade camera which is in a fixed position at the top of the instrument. The scan surface vertical movement under control of the instrument can change the focus to 5 different settings.

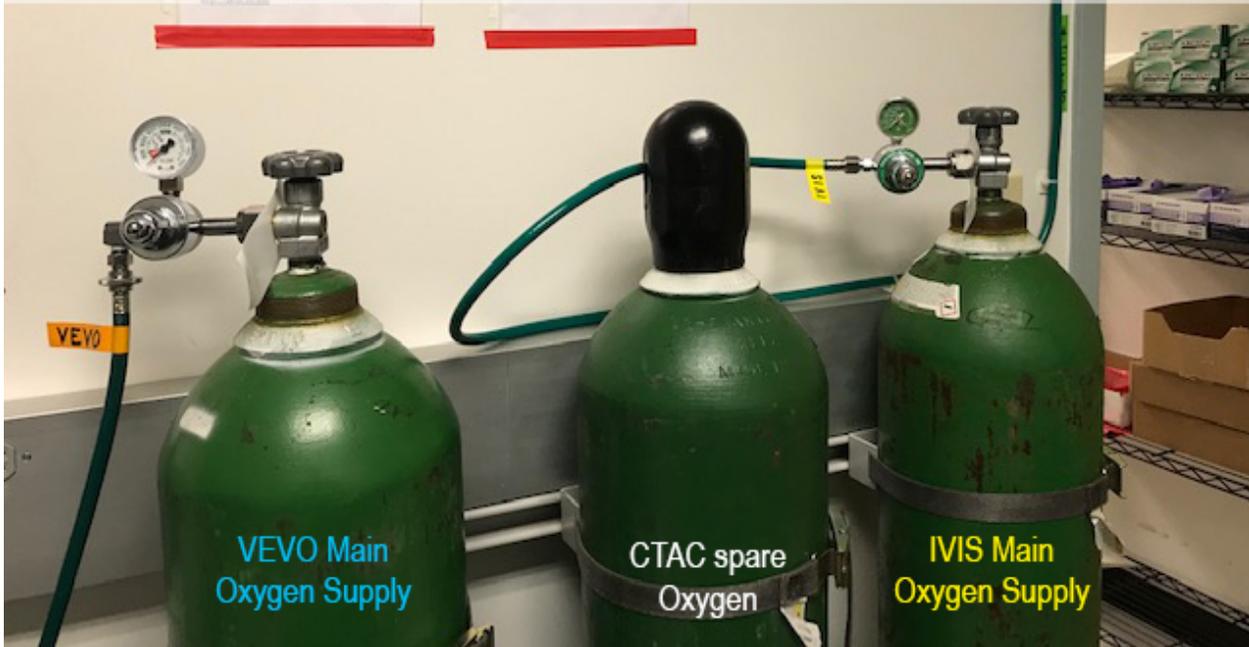
C. Is the cabinet safety light, indicating that it is safe to open the cabinet doors and that all detectors are in a “safe” position.

D. Is the gas/vapor anesthesia system, using isoflurane, that maintains the animals anesthetized and immobile for scanning.

E. Is the isoflurane anesthetic induction box, where the experimental subjects are anesthetized prior to being moved into the instrument cabinet.

Turn oxygen ON and OFF at main valve when using oxygen tanks

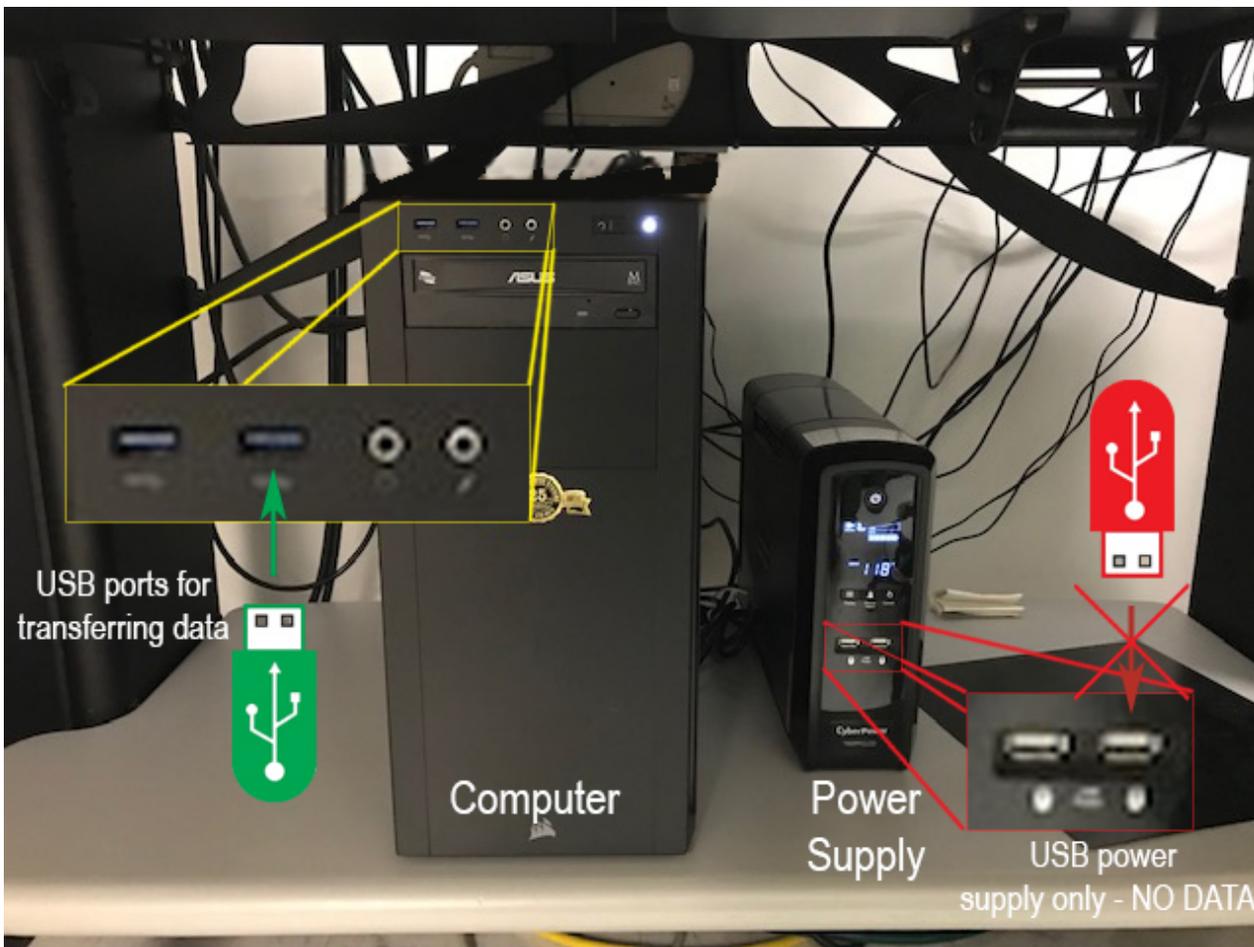
*** OXYGEN is a fire hazard if allowed to accumulate over time ***



The tank closest to the door in this picture, is also clearly marked “IVIS”. This is the main oxygen supply tank for the instrument’s gas/vapor anesthetic delivery system.

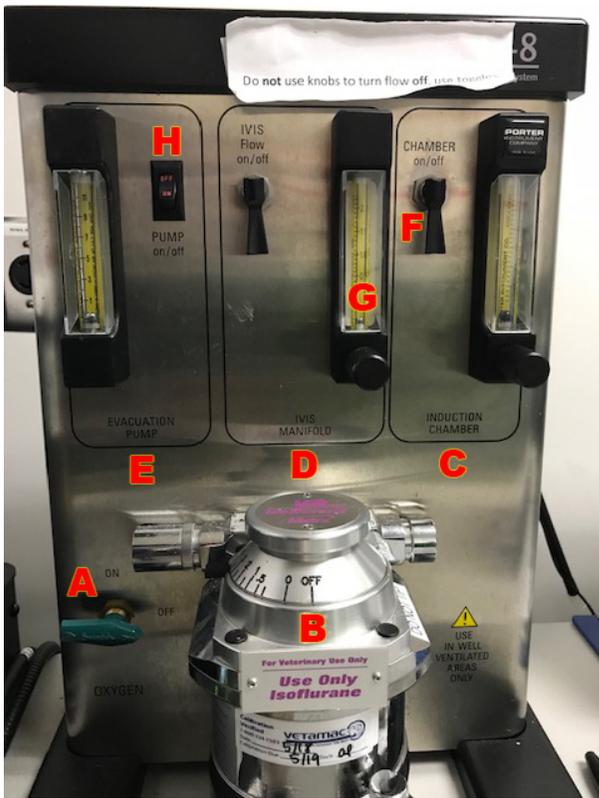
The oxygen supply has a simple pressure gauge, but no regulator. It should not be touched. The main tap upon the top of the tank is used to switch the oxygen on or off to the IVIS system. In either instance, the tap should always be turned until fully open or fully closed (hitting the stop).

Should the oxygen tank be exhausted during your time on the instrument, please alert CTAC staff to have the oxygen replenished with a fresh tank.



Underneath the instrument table resides the main computer that runs the instrument software. Users are to remove the data that they acquire from the instrument. This is done by saving the data to a USB or thumb drive. There are two USB ports accessible on the front of the computer on the top left edge. Either may be used.

Do not confuse the computer with its power supply, to the right. This is a much smaller box, yet it does have two USB ports on the front. This will not allow transfer or saving to a USB device plugged into these ports.



- A** - system main oxygen toggle
- B** - system isoflurane vaporizer unit
- C** - system induction chamber settings / controls
- D** - system manifold settings / controls
- E** - system exhaust pump settings and switch
- F** - system horizontal/vertical toggle to engage / restrict anesthetic flow
- G** - system flow meters (DO NOT ADJUST - CTAC personnel only)
- H** - system exhaust switch, to be engaged for a minimum of 3 minutes during sanitization / clean up

- A. Is the system main oxygen toggle to switch ON / OFF oxygen gas flow into the vapor anesthesia system.
- B. Is the vaporizer unit that provides the mixture in the dosage selected to either the induction chamber, the manifold inside the scanner cabinet, or both.
- C. Is the controls or settings for the induction chamber. As the flow rate is already predetermined, the only user setting available is to toggle the flow ON or OFF into the chamber.
- D. Is the controls or settings for the manifold within the instrument's scanning area within the cabinet. As the flow rate is already predetermined, the only user setting available is to toggle the flow ON or OFF into the manifold.
- E. Is the controls or settings for the evacuation pump. As the flow rate is already predetermined, the only user setting available is to toggle the extraction of anesthetic vapor from the whole system. This pump should be engaged for a minimum of 3 minutes.
- F. Is a flow rate toggle switch. The OFF position is when pointing down in a vertical orientation. The ON position is when the bottom is raised to the horizontal, pointing back at the user.
- G. Are system flow rate meters. Users are not to adjust these settings – any adjustments must be made by CTAC personnel only.
- H. Is the anesthetic extraction pump switch for the system.