

Xenon/Master®

Surveys, Inspections, Logs, Set-up Instructions and Operating Instructions



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Xenon/Master[®] Exhaust Survey

1. Survey recommended to be performed weekly.
2. Survey may be performed with:
 - A. Side window GM Survey Probe with window Open and inserted into exhaust chamber.¹
 - B. Pancake GM Survey Probe with Beta Shield removed and held facing air stream at exit from exhaust chamber.²
 - C. End window GM Survey Probe with Beta Shield removed and held facing air stream at exit from exhaust chamber.³
3. With pump running during purge cycle observe highest reading and record on log.
4. Action level is:
 - A. Side window: 0.8 mr/hr (10⁻²uCi/cc)
 - B. Pancake: 11.9 mr/hr (10⁻²uCi/cc)
 - C. End window: 3.2 mr/hr (10⁻²uCi/cc)
5. Upon reaching action level, the charcoal trap should be replaced. Charcoal trap should be replaced at least annually.

¹Side window - Civil Defense Type, 30 mg/cm² window.

²Pancake – 1.75” Diameter, 1.5 mg/cm² window.

³End window – 1.12” Diameter, 1.4 mg/cm² window.



Xenon/Master[®] Bio Maintenance Inspection Procedures

1. Unless a complaint has been received assume unit is functioning properly.
2. Visually inspect condition of components in upper compartment. This includes the 5 liter black bag and two canisters.
3. Rotate three-position knob on instrument faceplate. Knob should move with some resistance but not overly hard.
4. Remove Allen head bolt on left side of unit so that hinged upper section may be lifted and locked into the open position. Visually inspect interior for any appearance of wear or tear including the 35 liter expansion bag.
5. Re-position upper compartment and re-lock with the Allen head machine bolt.
6. With the unit plugged into an AC outlet, turn on the Xenon/Master[™], place the control knob in the “system purge” position and monitor the exhaust from the trap exhaust port located on the left side of the Xenon/Master[™]. After monitoring the exhaust with a survey meter per the attached directions, you will be able to determine if it is time for a trap replacement.
7. Newly charged replacement traps are immediately available from Medi/Nuclear and easily installed in the Xenon/Master[™]. If you wish, in the local Los Angeles area, replacement can be done by Medi/Nuclear personnel on a time and material basis.



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Recommended Service Inspections for the Xenon/Master[®]

Weekly:

1. Exhaust survey.
 - A. Using a survey meter, monitor exhaust and record on log. Notify supervisor if reading approaches action level. Per attached instruction sheet.
 - B. Typically performed by department staff.

Quarterly or every 4 months at User's discretion:

1. General P.M. service.
 - A. Visual check of canisters and bags for integrity.
 - B. Visually check all plastic tube joints for integrity.
 - C. Inspect control valve for free movement. Should be cleaned with alcohol and lubricated with vaseline if movement becomes stiff.
 - D. Typically performed by house maintenance staff or outside vendor.

Annual:

1. Air flow measurements of all rooms where Xenon-133 is used or stored. Typically performed by house physics staff or outside vendor.
2. Xenon/Master charcoal trap should be changed annually or as indicated by weekly exhaust survey. Typically performed by Technologist, Bio Maintenance staff or outside vendor.



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Xenon/Master® Initial Set-Up Instructions

1. Perform inspections on the following:
 - a. Equilibrium Bag – located in the top compartment of the Xenon/Master. Ensure that tubing with the nozzle is inserted into the bag and the other end of the bag is attached to the nozzle on the canister on the right side of the unit.
 - b. Interface Bag 80 liter – remove the Allen head screw on the left side of the Xenon/Master. It is located just below the top portion of the unit. Raise the hinged upper section of the unit and use the locking mechanism on the brass Lid Support Arm to lock the upper section in place. Ensure that the Interface bag is completely attached to the outlet valve. Unlock the Lid Support Arm and close the upper section of the unit. Replace the Allen head screw.
 - c. Rotate the three position knob on the instrument faceplate. Knob should move with some resistance but not overly hard.
2. The 22 mm Blue Corrugated tubing should be attached to the white plastic tubing on the right side of the Xenon/Master.
3. Feed the thin tubing sticking out of the plastic tubing on the right side of the unit into the Blue Corrugated tubing. The thin tubing does not go to the end of the Blue tubing.
4. Using the supplied funnel add CO₂ Absorbent Granules (Carbolyme) to the canister on right side. Fill only $\frac{3}{4}$ of the canister.
5. Using the supplied funnel add Moisture Absorbent Granules (Drierite) to the canister on the left side. Fill only $\frac{3}{4}$ of the canister.
6. Insert the electrical plug into an electrical outlet.
7. Place the control knob in the “System Purge” position and determine if there is air flow through the trap exhaust port on the left side of the Xenon/Master.

Once this inspection is complete you are ready to perform a Xenon Study. Please refer the page 6 titled “Xenon/Master Operating Instructions” for further operational instructions.



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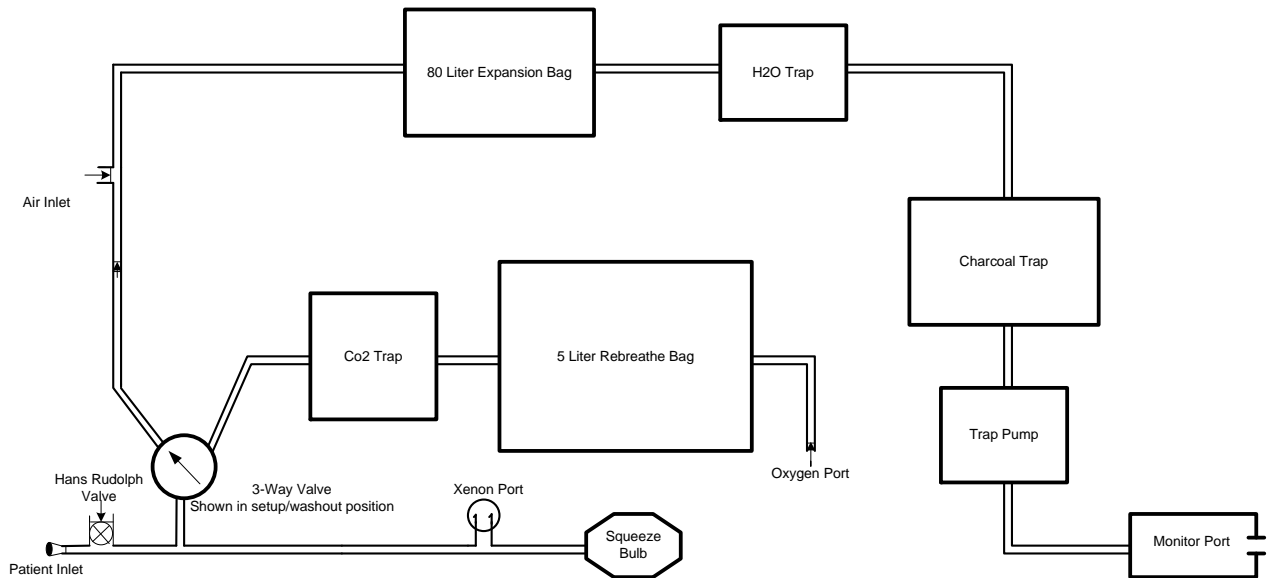
Xenon/Master® Operating Instructions

- Step 1 - Attach Hans Rudolph Valve, mouthpiece or face mask, tubing and bacteria filter to blue tubing attached to the side of the Xenon/Master. Confirm that the breathing tube (capillary tube) is attached to the Xenon/Master and that the capillary tube is extended to its full length inside the breathing tube. Capillary tube does not extend to the end of the breathing tube. Confirm that the Carbolyme (right side canister), which does not change color is replaced before each patient. Change the Drierite (left side canister) when the blue color changes to pink.
- Step 2 - Turn Control Knob to SET UP/WASHOUT.
- Step 3 - Close Hans Rudolph Valve at mouthpiece.
- Step 4 - Add approximately 2 liters of oxygen via OXYGEN Port into the black bag in the upper portion of the Xenon/Master.
- Step 5 - Add ¹³³XENON to system by inverting single dose vial/shield and firmly inserting it into XENON port.
PLEASE NOTE: YOU CANNOT USE A XENON GUN WITH A NEW XENON/MASTER WHICH HAS THE XENON VIAL PORT.
- Step 6 - Insert mouthpiece into patient's mouth or attach face mask.
Attach nose clip.
Instruct patient to exhale completely and suspend respiration momentarily.
- Step 7 - Administer Xenon to patient by squeezing delivery bulb sharply two times.
Instruct patient to inhale fully and hold breath. Start camera.
- Step 8 - Turn Control Knob to EQUILIBRIUM. Instruct patient to breathe normally.
- Step 9 - At conclusion of equilibrium phase, turn Control Knob to SET UP/WASHOUT
Turn purge pump ON.
Open valve on Hans Rudolph Valve to admit room air.
- Step 10 -At conclusion of study remove the patient from the system.
Remove mask or take out mouthpiece and remove nose clip and discard as appropriate.
Detach tubing and bacteria filter from Xenon/Master tubing and discard as appropriate,
Do not remove breathing or capillary tube.
Turn the Control Knob to SYSTEM PURGE.
Turn ON Purge Pump
Run for 2 minutes on system purge and turn pump OFF.
- Step 11 - Remove empty Xenon vial and place in storage for decay.



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Xenon/Master® Block Diagram



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