

Inebriometer Cleaning protocol Per D. Guarnieri, 2003
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- 0. Set up y-control x X⁺X flies, so that you can test the columns after cleaning.**
- 1. Disconnecting the columns from the water supply (1 person, 30-45 min.)**
[Need: razor gloves, new screen, garbage pail, and a 1-liter beaker.]
 - a. Remove the computer monitors from the inebriometer area. Be careful to prevent water damage to the hard drives. Label cords as needed to aid in reassembly.
 - b. Remove notepads below the collection bottles, using caution not to damage the glass funnels.
 - c. Clean the electronic pieces of the activity monitors with compressed air.
 - d. Label the wires for the Drosophila activity monitors so they are reassembled correctly later.
 - e. Loosen the clamps holding the inebriometer column. Raise it up a little, then reclamp it in place.
 - f. Remove the items below (funnels, bottles, etc.)
 - g. Slide the circulator out from below the bench. The circulator water contains fungicide, so gloves are recommended.
 - h. Use a red slide-clamp to clamp the outlet tube on the back of the circulator. [Work quickly, so that clamps are applied for the minimum time to prevent damage to the tubing.]
 - i. Clamp the tubing at the top of each column.
 - j. Clamp the tubing at the outlet to the evaporator.
 - k. Carefully remove the tube at the top of the column without cutting it, if possible. [This is the weakest part of the glass column, so caution is required.]
 - l. Remove the clamp from the tube at top of the column and drain the water into the circulator.
 - m. Remove the clamp from the outlet tube on the back of the circulator and drain the circulator water into a garbage pail. Bail out the remaining water with a beaker.
 - n. Slice through the silicon to remove the column tops. Label funnels, because they need to return to the same columns.
 - o. Make a new screen for the top connector.
 - p. Undo screws at the bottom of the columns.
- 2. Clean the boxes at the base of the columns (1 person, 15 min.)**
 - a. Use soap and water to clean each box.
 - b. Wipe each box down with ethanol, and dry them all by hand.
 - c. Clean the area around the base of the columns.
 - d. Change both air filters.
- 3. Column cleaning**
[Need: stapler, scissors, dry ice “tape”, large Kimwipes, fresh razors, tube-cleaning brush, “The inebriometer tool”]

- a. Prepare an open space for cleaning the columns. **(3a-d. 1 person, 10-15 min.)**
 - b. Carefully take down a column and move it to your cleaning area.
 - c. Remove the baffles from the column. (They must be kept in order.)
 - d. Dry brush each of the baffles to remove any flies or fly parts.
 - e. Clean off the residual silicone at the top of the column with a fresh razor. Be very thorough. **(3e. 1 person, 10-15 min.)**
 - f. Clean the inside of the column using large Kimwipes folded into quarters wetted with 95% ethanol. Clean thoroughly until there is no dirt visible on your Kimwipes. **(3f. 1 person, 10-15 min.)**
 - g. Reinsert the baffles, adding reinforcing strips as needed. **(3g. 2 people, 1.5 hrs.)**
 1. Work from the bottom up.
 2. When adding reinforcing strips, staple them on at an angle, then use pliers to flatten the staple as much as possible.
 3. For “loose” baffles, add a reinforcing strip that is 1/4 of the circumference of the baffle. For “very loose” baffles, add a strip that is 1/2 the circumference.
 4. This is a very variable step and must be done carefully.
 - h. Clean the funnels from the top of the column with water.
 - i. Set the column back up vertically in its clamps.
 - j. Carefully lower the column down onto the glass funnel in the box.
 - k. Straighten the column to be perfectly vertical. Use a level to straighten it in the left to right axis, then straighten it in the front to back axis. **(2 people, 15 min.)**
- 4. Reattach the tubing, water, and tops (1 person, 45 min.)**
- a. Reattach the top funnel to its tube.
 - b. Use silicone to reattach the top funnel to the column. Thoroughly tape the funnel and tube down, so that the tube doesn't pull the funnel away from the silicone. Let rest for 4 hours.
 - c. Remove the tape. Add a second layer of silicone and be sure the seal is tight.
 - d. Dry for 24 hours.
- 5. Change the ethanol in the evaporator**
- 6. Run y-control flies to verify that the columns run with a normal MET.**

Inebriometer Maintenance

- A. Clean columns as needed. ["If it ain't broke, don't fix it."]
- B. Change the circulator water about 1/month. Add 10 drops of fungicide to the fresh water [Fisher Cat# 13-641-337]. Vacuum the filter for the air intakes with each cleaning to maintain energy efficiency.
- C. Refill ethanol in the evaporators as needed. Use 100% Gold Shield ethanol and dilute to 95% with ddH₂O. If needed, completely change the ethanol in the evaporator using the same proportions.
- D. Replenish the Drierite as needed.
- E. Replace air filters as needed.

Inebriometer Disassembly / Reassembly

If you need to completely disassemble an inebriometer in order to move it entirely, be sure to do the following:

- A. Before disassembly, draw diagrams showing the connections between all parts.
- B. During disassembly, label the ends of all tubes with lab tape, describing what that end of the tube connects to.
- C. During reassembly, wherever tubing connects to something else, use a hose clamp.
- D. Use Teflon tape when connecting tubing to flowmeters, air filters, and the bubblers.