



## **Storage, Shipping, and Handling Tips for the Radiometer OSM3**

### **Shut-Down Procedure (Temporary)**

It is interesting to note that Radiometer has a “Temporary Shut-Down” procedure in the Operator’s Manual, however, the procedure begins with “Leave the OSM3 unit turned on”; thus, in effect, the OSM3 has no temporary shut-down. It is either running and in use, running and not in use, or in a long-term shut-down mode. We have found that shutting down the unit for less than a few hours does not harm the unit. Therefore:

Leaving the OSM3 Running, But Not in Use:

- Leave the unit running if it is not needed for a few weeks.
- Make certain that it is connected to, and drawing fluid from, a rinse solution bottle at all times. At a 4-hour automatic Water Calibration interval, the unit will consume about 2.5mL every 24 hours. This is the calibration interval we use whenever a unit is not in use. (The unit can be set to any desired interval from 0.5 to 8 hours.)
- Make certain that the waste container is connected and empty it at an appropriate interval to ensure that it does not fill up and that the OSM3 does not start trying to draw waste fluid into the wet section.

Very Short Term Shutdown (for a few hours or less):

- Run a couple of water calibrations to ensure that there is no blood left in the unit.
- Turn off the power at the back of the unit.
- Leave the inlet flap closed to prevent drying out at the inlet port.

### **Shut-Down Procedure (Long Term or for Transport)**

If your OSM3 unit must be stored for long periods of time, or is being readied for shipment, Kestrel Labs recommends the following procedure to ensure that the salts from the normal rinse solution or deposits from blood samples will not dry up, crystallize, or otherwise block the inside of the cuvette, the inlet port, or elsewhere within the wet section of the unit:

- Run the Protein Remover and Cleaning Solution procedures per the Operator’s Manual.
- Run a Water Calibration by pushing the Cal button on the front panel when it is illuminated.
- Repeat the Water Calibration a second time.
- Remove the Rinse Solution bottle and place the free end of the tubing into a beaker filled with distilled water.
- Run two rinse cycles by opening and closing the inlet flap. Wait for the green ready light to illuminate after each cycle.

- Open the inlet flap and clean the inside of the inlet flap where it covers the inlet port with distilled water.
- Gently Inject approximately 60cc of distilled water from a syringe into the inlet port. Let the water run out into the waste container. (Caution: Pushing too hard could damage the inlet tubing seal or other seals.)
- Pull the end of the rinse solution tube out of the beaker of distilled water and call two more rinse cycles by opening and closing the inlet flap. This will flush the distilled water out of the unit and fill the wet section with air.
- Gently inject approximately 60cc of air from a syringe into the inlet port to ensure that the port and cuvette are free of solution.
- Turn off the unit. Remove and store the power cord.
- On the side of the unit, lift the sliding cover and carefully pull the pump tubing from around the peristaltic pump rollers. Allow the tubing to hang free.
- Open the inlet flap so that the inlet washer is not under pressure. This can be done by placing a segment of popsicle stick (or a stiff straw or similar, see photo below) behind the inlet flap, about halfway between the microswitch and the inlet washer.



- Remove the waste container and 3-port waste container cap.
- Soak the waste container and cap in a solution of 5-10% bleach in water for ~10 minutes, followed by a thorough rinsing with water.

## **Shipping Instructions (to Kestrel Labs for Service)**

- Run the Long-Term Shut-Down procedure to prepare the wet section.
- Turn off and unplug the unit.
- Wipe down the exterior with a 10%-bleach/90%-water solution. Pay special attention to the region around the inlet washer and under the inlet flap. Stay clear of the inlet needle. Use care to not get water into the rear electronics.
- Wrap the unit in 2-3" of bubble wrap.
- Place inside a sturdy cardboard box
- Do not ship the power cord, bottle side tray, rinse solution bottle, waste container, three-port waste cap, or any other accessories (dyes, solutions, manuals, etc.) with the unit.
- Ship insured using ground service with UPS or FedEx to: Kestrel Labs, Inc., 3133 Indian Rd, Boulder CO 80301.

## **Handling and Transport**

The Radiometer OSM3 is a sensitive optical instrument that makes its hemoglobin measurements based on absorption measurements at six different wavelengths. If the optical bench (monochromator) becomes misaligned, device accuracy will suffer. Use care whenever moving a unit to a new location, because sudden jarring can misalign the monochromator.

- If you are transporting the OSM3 in a vehicle, we recommend that it be placed on a front seat with the seat belt wrapped around it to protect it from tipping over in case of a sudden stop.
- Do not place the unit down hard or bump it once it has been calibrated. Any sudden jarring can potentially throw the monochromator out of calibration. (Having said that, we have successfully serviced, calibrated, and shipped these units hundreds or thousands of miles without knocking them out of calibration.)
- Always double check the calibration and proper operation of the unit after moving it, or after having it serviced, prior to putting it back into use. This should include running quality check dyes, performing a tHb calibration, and verifying monochromator alignment.