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Operating Instructions for Zefon Air-O-Cell Mini Pump

Procedure:

NOTE: The Mini-Pump is charged and calibrated to 15L/min prior to shipping. However, the pump may lose charge in certain conditions and over time.

Calibrate the pump with the rotameter prior to use and recalibrate it when non-standard temperatures or pressures are encountered.

1. Place the pump in the desired location.
2. Remove the label from the outlet of the Air-O-Cell cassette and stick it to the side of the cassette.
3. Push the rubber cushion on the top of the pump into the outlet section of the cassette until it fits snugly.
4. Immediately before sampling, remove the Air-O-Cell label from the inlet of the cassette and stick it to the opposite side of the cassette.
5. Turn the sampling time knob on the control box to the desired number of minutes.
6. Examples of recommended sampling times:

<u>Environmental Dust Conditions</u>	<u>Sampling Time (15 L/min)</u>
A. Outdoor sampling depending on the season	2.0 – 5.0 minutes
B. Clean office environment or outdoor (no visible dust)	5.0 minutes
C. Indoor environment, high activity personnel	2.0 – 5.0 minutes
D. Indoor environment, drywall renovation or industrial dust	1.0 minute
E. Indoor environment, visible dust from sources present	30 seconds

7. Turn the power switch ON (battery power) or use the AC (adapter power) and push the Start Button.
8. Let the pump run undisturbed for the desired sampling period.
9. At the end of the sampling period, shut the pump off and replace the Air-O-Cell inlet label on the inlet of the cassette.
10. Pull the cassette off the pump and replace the Air-O-Cell outlet label onto the cassette outlet.
11. **Package the cassettes tightly and ship samples overnight for first morning delivery to the laboratory. Ship the Mini Pump by 2-day air.**

Calibration:

1. Hold the rotameter upright in one hand.
2. Turn the pump upside down and push the rubber cushion on the top of the pump down onto the top of the rotameter until it fits snugly.

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3. Turn the pump on and push the Start Button while continuing to hold it upside down. The ball inside the rotameter will begin to float and should hover within the black line. (If the pump is calibrated, proceed with step 5. If the pump is not calibrated, proceed with step 4.)
4. Calibrate the pump to 15 L/min by inserting the screwdriver into the setscrew hole below the start button on the control box.
5. Turn the pump off and remove the rotameter.

Battery Charging:

A low battery light, located below the main switch on the control box, will light when the battery charge is low. When the low battery light initially illuminates, the pump can maintain a 15 L/min flow rate for approximately five minutes. If the pump is drawing a sample when the light initially illuminates, the sample is still acceptable. However, the battery should be recharged before taking additional samples. If additional samples are needed when the battery is low, the AC adapter can be used. The battery should be recharged before daily use for maximum sampling time.

1. Plug the battery charger receptacle into the "Battery Recharge" jack located on the side of the control box.
2. Turn the power switch to the OFF position. Maximum battery capacity will be restored in eight hours.

Note: The charge duration varies with type of use; typically 18 Air-O-Cell samples taken at five-minute intervals per sample.

Quality Control:

1. Calibrate the pump with the rotameter prior to use and recalibrate it when non-standard temperatures or pressures are encountered.
2. Submit a blank, unexposed Air-O-Cell cassette with each sampling event to serve as a negative control.
3. Collect an outdoor sample for comparison to indoor samples.
4. Collect an indoor control sample from a non-complaint area.

Reference:

Bio-Pump Operating Instructions: 863 Valley View Road, Eighty Four, Pennsylvania 15330