FLORIDA INTERNATIONAL UNIVERSITY

SOP #: 805.01

Title: SOP - Use and Maintenance the Quincy Lab, Inc. Incubator Model 10-140

Approvals:

Attending Veterinarian _____ **Date:** 8/20/2013

1. Purpose
   1.1. The intent of this standard operating procedure (SOP) is to describe how to properly use the Quincy Lab, Inc. General Purpose Incubator Model 10-140.

2. Responsibility
   2.1. All ACF staff is responsible for following this SOP.
   2.2. The Director of the Office of Laboratory Animal Research and facility supervisors must ensure compliance of this procedure and ensure staff is appropriately trained in the execution of this SOP.

3. Definitions
   3.1. ACF – Animal Care Facility
   3.2. Quincy Lab, Inc. General Purpose Incubator Model 10-140: small incubator used for surface sterilization monitoring – by incubating contact plates (RODAC Plates) filled with media that are used to sample tabletops, walls, benches, floors, garments, and gowned personnel. Also used for incubating TSA media containing spores used to determine the effectiveness of VHP disinfection.

4. Guidelines
   4.1. Reagents/Materials
      4.1.1. RODAC Plates (Replicate Organism Detection and Counting)
      4.1.2. Growth medium TSA (Tryptone Soya Agar) supports general microbial colonies.
      4.1.3.EnviroRest Media Paddles

   4.2. Equipment
      4.2.1. Quincy Lab, Inc. General Purpose Incubator Model 10-140.

4.3. Safety Precautions

4.3.1. All personnel should be wearing required Personal Protection Equipment (PPE) as outlined in ACF SOP 512 throughout the Vivarium.
4.3.2. Read operating instructions thoroughly prior to operation.
4.3.3. Use only a grounded outlet that is rated for this model's electrical requirement.
4.3.4. Do not modify the oven or factory control settings to operate the oven above the stated maximum operating temperature.

4.4. *Procedures*

4.4.1. Set-up & Installation

4.4.1.1. Position unit in its ultimate operating location: keep a minimum of 3" of airspace around the unit and a minimum of 6" above the unit. The port hole on top of the unit will expel a small amount of warm air through natural convection.

4.4.1.1.1. Note: This port can also be used as an access way for external temperature measurement of a solution.

4.4.1.2. Install adjustable shelf by placing ends of the wire shelf bracket into the corresponding holes located on the inner sides of the oven at the desired height. Push the ends of the bracket against the wall, and then rotate the bracket down. Place the shelf on the brackets.

4.4.1.3. Plug the unit into a grounded outlet.

4.4.2. General Operation

4.4.2.1. After installation, the unit is ready for immediate use. All control parameters, calibration, and tuning has been done at the factory. No adjustments are necessary.

4.4.2.2. Push the illuminated power button. All LED's on the temperature control will light up for 5 seconds until the current or actual chamber temperature is displayed.

4.4.2.3. To view the set temperature press the star, "*", key. To change the set temperature, hold the star key together with the up (raise temperature) or down (lower temperature) arrow key until the desired temperature is indicated on the LED display.

4.4.2.4. The temperature control is set at the factory to read in 1/10 degree C (centigrade) units. To change temperature units or display resolution, see: Control Menu Functions (4.4.4)

4.4.2.5. Once the unit reaches set temperature, allow the unit to cycle for 20 minutes at set point before temperature becomes fully stable.

4.4.2.6. Upon each initial powering-up, the control may typically overshoot the set temperature by 2-4 degrees, especially if the temperature set point is close to the operating ambient temperature. After equilibrium is achieved, the control will set temperature within 1 unit degree.

4.4.3. Chamber Loading

4.4.3.1. Article processing times and temperature uniformity are largely dependent on load density and positioning. Load the incubator so that air circulation within the incubator is not impaired. Follow these guidelines:

4.4.3.1.1. Leave a space between articles on a shelf. Stagger articles from those on lower shelves.

4.4.3.1.2. Avoid placing articles or media against or within an inch of the walls, especially on the lower shelf. Heated air from the lower plenum openings, designed to travel up the side walls, can have a slightly elevated temperature from set point and the rest of the chamber.

4.4.3.1.3. Use of large solid trays or foils on shelves limits heat to any articles placed on shelves above.

4.4.3.1.4. Avoid extremely large (in quantity or size), or high-density loads. This will show by non-uniform processing and long or impossible "heat-through" times. To help determine a load's suitability, use the set-point recovery time (the time it takes for the temperature to recover to the original set temperature once the load is placed), as a guide. To reduce recovery time, reduce the load proportionally. When possible, measure large loads or solution temperatures directly with an ancillary thermometer or probe. Note: probes can be inserted at the top port.

4.4.3.1.5. For best processing performance for a single item, adjust one shelf so that the article is centered in the incubator chamber.

4.4.4. Control Menu Functions

4.4.4.1. Access the menu levels for the following functions:

4.4.4.1.1. Change the control to read in C or F temperature units (unit in level 2)

4.4.4.1.2. Change to whole degree or $1/10^{th}$ degree display resolution. (disp in level 2)

4.4.4.1.3. Run or read temperature tracking. (CheK or rEAd in level 3)

4.4.4.1.4. Lock temperature setting against inadvertent adjustment (sply in level 1)

4.4.4.1.5. Calibrate control temperature to an external standard. (zero in level 3)

4.4.4.2. To access the control's function menu:

4.4.4.2.1. Press and hold both arrow keys for 3 seconds then release when the "tune" function prompt is displayed from within LEVEL 1. When in the function menu, the LED display will alternate the function prompt with the function setting when the keys are released.

4.4.4.3. To navigate within the functions menu:

4.4.4.3.1. Use up and down arrow keys individually to move "right" or "left" within a level. Press and hold the star key and the up or down arrow keys to move "up" or "down" respectively through levels 1-3. Note: you must be at "LEVL" prompt to move up or down levels.

4.4.4.4. To change a function setting:

4.4.4.4.1. Once at the desired level function prompt, press and hold the star key and press the up or down key to select or change the function setting. Release star

key to set the function. Press the up or down keys together to return to temperature display or the control will auto-return within 60 seconds.

4.4.5. Temperature Tracking Feature

4.4.5.1. This feature monitors the stability of the control during for any given length process. It will record and display:

4.4.5.1.1. The total variation or spread between high and low.

4.4.5.1.2. The absolute or maximum high

4.4.5.1.3. The absolute or minimum low

4.4.5.2. To start the tracking feature navigate to "CheK" prompt in menu level 3. Hold star key then up arrow key to select ON. Return to temp display or control will auto-return in 60 seconds. The control will track the temperature variation until "CheK" is turned off. Recorded readings are retained until next "CheK" ON.

4.4.5.3. You can view readings at any time during or after tracking feature has been turned off. But de-powering the unit will reset "CheK" to OFF and "rEAd" to zero. To view readings navigate to "rEAd" prompt in menu level 3.

4.4.6.Maintenance/ Control Calibration

4.4.6.1. To clean interior and exterior surfaces, use a damp cloth with or without an all-purpose cleaner. The acrylic door should only be cleaned using a lint-free cloth, with or without water. Paper towels can mark the surface of the acrylic door. Use of any commercial cleaners on the acrylic door will cause hazing and cracking of the surface of the acrylic over time.

4.4.6.2. Periodically, check the accuracy of the control's temperature display against a known accurate or calibrated device. This should be done with an empty chamber after the set temperature becomes steady (typically after 45-60 minutes). Calibrate the control in the control's functions menu, level 3.

5. References

5.1. Quincy Lab, Inc. (2010). *Model Series 140E & 180E General Purpose Incubators OPERATING MANUAL*. Chicago, Illinois: Quincy Lab, Inc. (ACF SharePoint/Equipment Manuals)