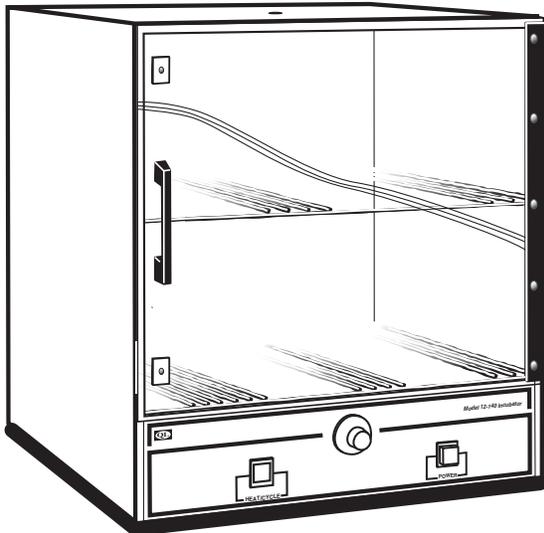
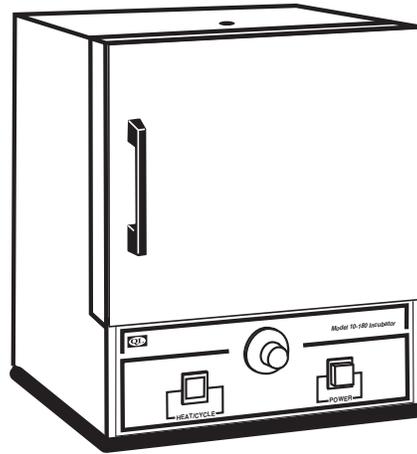




# Model Series 140 & 180 General Purpose Incubators OPERATING MANUAL



Model 12-140



Model 10-180



| SPECIFICATIONS             | MODEL 10-140       | MODEL 12-140        | MODEL 10-180       | MODEL 12-180        |
|----------------------------|--------------------|---------------------|--------------------|---------------------|
| <b>Interior Dimensions</b> |                    |                     |                    |                     |
| INCHES W x H x D           | 12x10x10           | 18x16x12            | 12x10x10           | 18x16x12            |
| (CM) W x H x D             | 31x25x25           | 46x41x30            | 31x25x25           | 46x41x30            |
| <b>Exterior Dimensions</b> |                    |                     |                    |                     |
| INCHES W x H x D           | 13x15x11           | 19x21x13            | 13x15x11           | 19x21x11            |
| (CM) W x H x D             | 33x38x28           | 48x53x33            | 33x38x28           | 48x53x33            |
| <b>Weight (lbs)</b>        | 19 lbs             | 33 lbs              | 19 lbs             | 33 lbs              |
| <b>Cubic Foot Capacity</b> | .7 ft <sup>3</sup> | 2.0 ft <sup>3</sup> | .7 ft <sup>3</sup> | 2.0 ft <sup>3</sup> |

| Standard Electrical | MODEL 10-140 | MODEL 12-140 | MODEL 10-180 | MODEL 12-180 |
|---------------------|--------------|--------------|--------------|--------------|
| VOLTS / WATTS       | 115 / 120*   | 115 / 235*   | 115 / 270*   | 115 / 385*   |

\* Standard models voltage only, optional 230 voltage available. Check label on back of unit.

| Temperature Range | MODEL 10-140          | MODEL 12-140 | MODEL 10-180          | MODEL 12-180 |
|-------------------|-----------------------|--------------|-----------------------|--------------|
|                   | Ambient + 2°C to 62°C |              | Ambient + 3°C to 94°C |              |

## Common Unit Specifications

|                               |  |
|-------------------------------|--|
| <b>Operating Environment:</b> | Indoor use, altitude to 6,500 ft. (2,000m) Installation Category II, Pollution Degree 2, ambient temperature 10°C/50°F to 35°C/95°F, 80% RH maximum. |
| <b>Storage Temperature:</b>   | -10°C/14°F to 70°C/158°F, 70% RH maximum.  |
| <b>Approvals:</b>             | Underwriter's Laboratory Listed, Laboratory Equipment, C/UL United States/Canadian. E212550 (115VAC models only)                                     |
| <b>Compliance:</b>            | UL Standard 61010-1, IEC 61010-1, 2nd Edition.   |

## Common Unit Construction

|                                      |   |
|--------------------------------------|---|
| <b>Exterior:</b> Powder-Coated Steel | <b>Interior:</b> Aluminum                       |
| <b>Insulation:</b> Fiberglass        | <b>Door:</b> 140: Acrylic, 180: Steel Insulated |
| <b>Thermo-control:</b> Bi-Metal      | <b>Heater:</b> Resistive-Tubular Incoloy        |

## Safety Precautions Read Operating Instructions Thoroughly Prior to Operation

Read Operating Instructions thoroughly prior to operation. Use only a grounded outlet that is rated for your models' electrical requirement. Do not modify the oven or factory control settings to operate the oven above the stated maximum operating temperature. Exterior surfaces on the 180 models may become hot to the touch when operating at higher set temperatures. Conduct periodic maintenance as required.

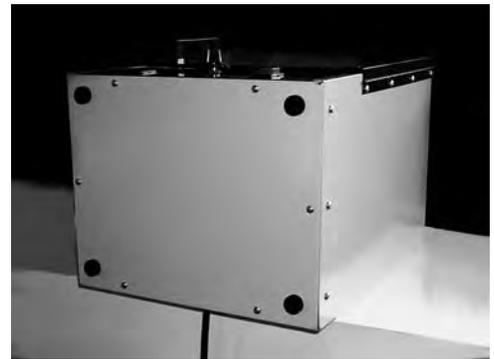
### Receiving

After unpacking, verify receipt of correct quantities of each component and that each component has not suffered any shipping damage. If there are any problems, please refer to the enclosed **Damaged/Missing Item Report**.

### Set-up & Installation

Place the unit on its back with the bottom surface facing you. Install the (4) rubber feet into the (4) mounting holes by pressing in and turning. **(FIG 1)** Do not operate unit without the feet installed.

Place the unit upright. Position unit in its ultimate operating location. Keep a minimum of 2" of airspace around the unit and a minimum of 16" above the unit to allow for thermometer.



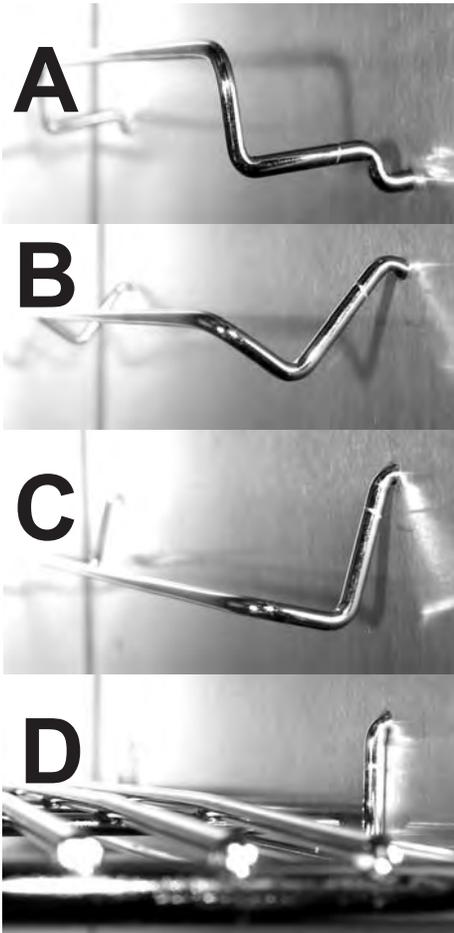
**FIG. 1**

Remove the glass thermometer from its container and insert into the rubber grommet. **(FIG 2)**

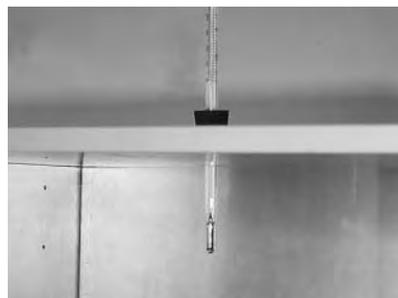
Insert the rubber grommet/thermometer assembly into the port through the top of the incubator. The thermometer should extend into the incubator at least 1-1/2". **(FIG 3)**

Install adjustable shelf by placing the 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 into the holes until the first bends in the bracket are against the wall, then rotate the bracket down. Place the shelf on the brackets. **(FIG 4)**

Plug the unit into a grounded outlet for your unit's rated voltage. See unit's electrical label located on rear panel.



**FIG. 4**



**FIG. 3**



**FIG. 2**

## General Operation

Push the illuminated power button. Rotate the thermostat knob clockwise to approximately the number 6 on the dial. The heat cycle light will illuminate to indicate that the heating element is energized.

Observe the thermometer. When the desired temperature is reached, slowly turn the thermostat knob counter clockwise until the heat cycle indicator turns off. The temperature will continue to rise slightly due to latent heat from the heating element.

Allow unit to cycle empty for a minimum of 20 minutes to allow the interior chamber to reach a thermal equilibrium. Check the thermometer to see if any minor adjustments to the thermostat should be made. With any subsequent adjustment allow time for chamber to achieve a steady state before determining if the desired set temperature has been reached. To keep from resetting a frequently used set temperature with each use, leave the thermostat knob at its set point and use the power button to turn the unit on or off.

Setting the unit's temperature with an empty chamber helps to establish a useful correlation between the unit's performance (heating capacity) and proper processing of various chamber loads and densities (load-effect). See Performance and Chamber Loading & Important Operational Notes.

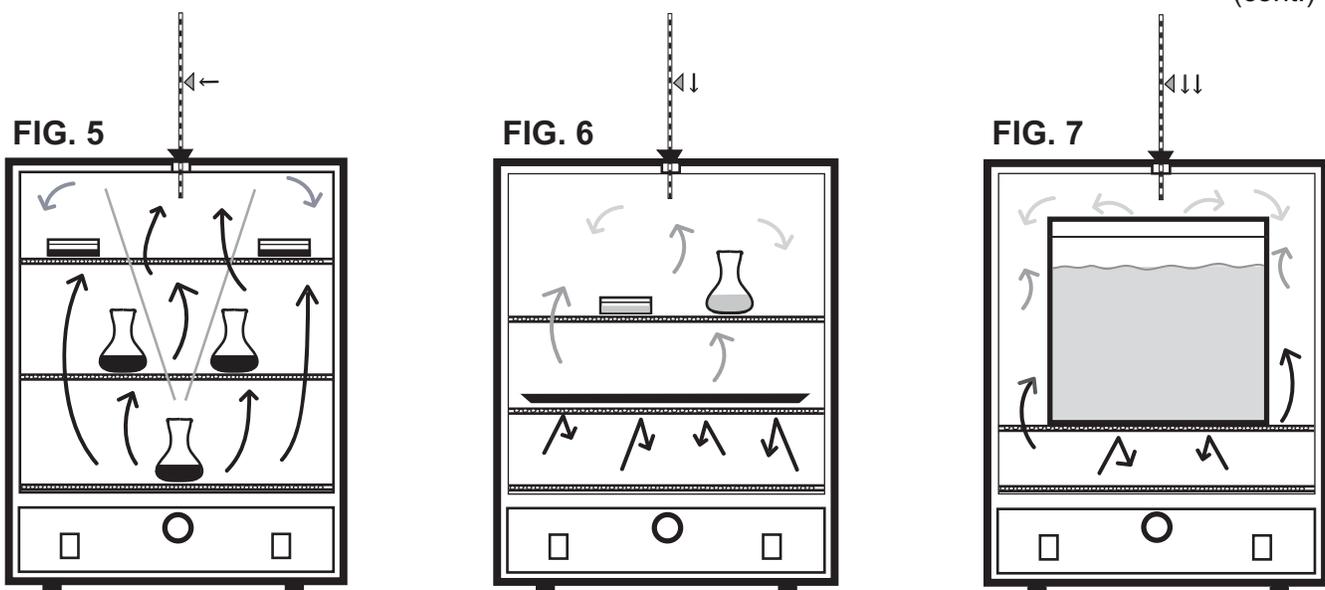
## Performance and Chamber Loading

Understanding the unit's light pressure thermal convection and "load-effect" are necessary to optimizing unit performance. Article or media processing times and/or uniformity are largely dependent on load density and positioning. When processing various loads it's important to remember that the thermostat senses the temperature at the lower part of the chamber where the heat is generated and the corresponding reading of a temperature setting is taken from the top of the chamber with the installed thermometer. Since loads sit between these two points, load variations such as quantity, arrangement, density and their relative thermal properties can temporarily or permanently affect temperature readings. Here are important guidelines to chamber loading and processing:

Load the incubator so that air circulation within the chamber is not impaired. Leave a space between articles on a shelf. Stagger articles from those on lower shelves in a "V" formation. **(FIG 5)**.

Use of large solid trays or foil on lower shelves severely limits heat to shelves and articles placed above. **(FIG 6)** Since not enough heat rises within the chamber, thermometer readings give false indication that the temperature setting is too low. Higher temperature adjustments made as a result of these readings could overheat lower placed articles or media.

(cont.)



## Performance and Chamber Loading (cont.)

Avoid extremely large (in quantity or size), or high-density loads. **(FIG 7)** This will show by non-uniform processing and long or impossible "heat-through" times. To help determine a large load's suitability, use the set-point recovery time (the time it takes for the temperature to recover to the original set temperature once load is placed), as a guide. To reduce recovery time, reduce load proportionally. Also, large loads such as a beaker containing 2 liters of solution may require an elevated set temperature for the solution to reach and maintain a lower target temperature. When possible, measure large loads or solution temperatures directly with an ancillary thermometer or probe. Probes can be inserted at top port.

Process the smallest possible load the application or workload will permit. For best processing of small multiples or a single item, adjust one shelf so that the article(s) is centered in the incubator. 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.

## Important Operational Notes:

The set point of the thermostat or chamber temperature stability can be affected by changes in ambient (room) temperature and/or equipment running in close proximity (creating micro climates) or cycling on the same electrical circuit. Take time to see how unit location or changes in room temperature from seasonal heating or air conditioning may influence the incubator's set temperature. For best chamber temperature stability, keep the ambient temperature stable.

The unit's minimum operating temperature is largely determined by ambient temperature. The unit can operate 2 degrees above room temperature but temperature stability will be degraded. Stability improves appreciably for settings that exceed ambient by 4 degrees C or better. Also, the lower the ambient temperature the lower the maximum adjustable operating temperature. Adjusting the operational temperature range of the unit for non-typical ambient conditions can be done by adjusting the calibration trim screw located recessed in the shaft, behind the knob dial. If a temperature range shift is necessary, contact factory for instructions.

## Maintenance

To clean interior and exterior surfaces, use a damp cloth with or without an all-purpose cleaner. The acrylic door, (on 140 Models), should only be cleaned using a lint-free cloth. Paper towels can mar the surface of the acrylic door. Use of any commercial cleansers on the acrylic door will cause crazing and cracking of the surface of the acrylic door over time. Periodically check the temperature stability (with the unit empty of contents), by observing the temperature through several cycles of the thermostat. (See also Important Operational Notes above).

## Tech Support

If you have any questions or need technical assistance, please contact Quincy Lab customer support at

Voice: 800-482-HEAT  
Fax: 773-622-2282  
Email: [information@quincylab.com](mailto:information@quincylab.com)

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Chicago, Illinois 60639

## Limited Warranty

Quincy Lab, Inc. warrants to the original purchaser that this product will be free from defects in material and workmanship under normal use throughout the warranty period. The standard warranty period for this instrument is 18 months, (3-year coverage on the heater element), from date of shipment. Please refer to your invoice or shipping documents to determine the effective warranty period. This warranty covers parts and labor (labor at factory only), and shipping cost for replacement parts.

