Quincy Lab, Inc.

Model GCE Digital Series Lab Ovens

With Microprocessor Control & Digital Display

OPERATING MANUAL

Standard Contents

(1) GCE Series Lab Oven
(2) Adjustable chrome wire shelf
(4) Shelf brackets

⚠ Not For Use With Flammable Solvents or Gases.

SPECIFICATIONS	MODEL 10GCE	MODEL 20GCE	MODEL 30GCE	MODEL 40GCE
INTERIOR DIMENSIONS				
INCHES W x H x D	12x10x10	13x13x13	18x16x12	18x21x14
(CM) W x H x D	31x25x25	33x33x33	46x41x31	46x53x36
EXTERIOR DIMENSIONS				
INCHES W x H x D	14x17x12	15x21x15	20x25x14	20x30x16
(CM) W x H x D	36x43x31	38x53x38	51x64x36	51x76x41
TEMPERATURE RANGE				
Ambient + 25°F to: F / C	450°/ 232°	450°/ 232°	450°/ 232°	450°/ 232°
CONTROL STABILITY				
@ 75°C	0.5° / 1.0°	0.5° / 1.0°	0.5° / 1.0°	0.5° / 1.0°
STANDARD ELECTRICAL				
VOLTS/AMPS	115/5.2*	115/6.3*	115/10.5*	115/12.5*
WATTS	600	750	1200	1500
PLUG/NEMA	5-15P*	5-15P*	5-15P*	5-15P*
WEIGHT (lbs)				
SHIPPING	44	61	78	94
STAND ALONE	38	54	70	85

* Standard models voltage only, optional 220 voltage available. Check label on back of unit.

Common Unit Construction

Exterior: Powder Coated Steel
Insulation: Fiberglass
Thermo-control: PID Microprocessor
Interior: Aluminized Steel
Motor: AFE models only
Heater: Resistive-Tubular Incoloy

Safety Precautions ⚠ Read Operating Instructions Thoroughly Prior to Operation

⚠ The GCE Series lab ovens are not designed for use with any flammable solvents or gases or for materials that may contain flammable solvents or gases. Use only a grounded outlet that is rated for your model's electrical requirement. Oven exterior walls and doors may become hot to the touch when operating at higher set temperatures. Do not leave the oven unattended during operation, especially when processing materials that have flash point temperatures lower than the model oven's maximum operating range. Do not modify the oven or control parameters to operate the oven above the stated maximum operating temperature.

Set-up

Position unit in its ultimate operating location. Keep a minimum of 2" of airspace around the unit and a minimum of 10" above the unit. The port holes at the top of the unit will expel a small amount of warm air through natural convection. This port can also be used as an access for an external temperature probe to verify the chamber's temperature or the chamber's contents directly.

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 1)**

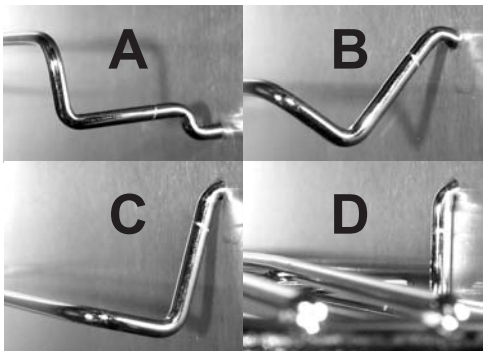


FIG. 1

Plug the unit into a grounded outlet for your unit's rated voltage.

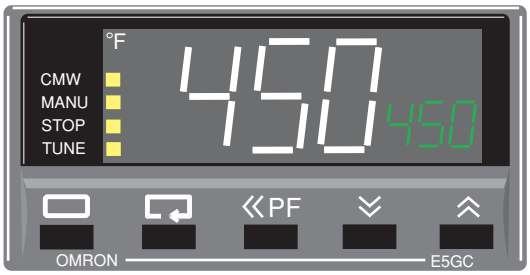
General Operation

The unit is ready for your immediate use. All control parameters, calibration and tuning has been done at the factory, no adjustments are necessary.

Push the illuminated power button. All LED's on the temperature control will light-up and display the current chamber temperature and the set temperature.

Set temperature is constantly displayed in the lower right-hand corner of the display. To change the set temperature, simply press either the up arrow key or the down arrow key, until desired set temperature is reached. (FIG. 2) The temperature control is set at the factory to read in 1/10th degree F, or Fahrenheit units.

To change Controller functions see: Menu Level Functions Guide (page 3).



Enter/Exit Menu

Menu Scroll

Increase/Decrease Setpoint

(PRESS)

FIG. 2

Once the unit nears the desired temperature allow the unit to cycle for 20 minutes at set point before temperature becomes fully stable. NOTE: Upon each initial powering-up, the control may typically overshoot the set temp by 3 or 4 degrees especially if the temperature set point is close to the operating ambient temperature. After equilibrium is achieved the control will hold set temperature within 1 unit degree.

Chamber Loading

Article processing times and temperature uniformity are largely dependent on load density and positioning. Load the oven so that air circulation within the oven is not impaired. Here are some general guidelines:

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

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.

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

Do not overload the unit with large or high-density loads. This will show by non-uniform processing and/or long "heat-through" times where control display temp is slow to return or achieve set temperature.

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

Menu Level Functions Guide

To access menu for common menu functions, please refer to ***Menu Guide*** below: Menu setting changes are quick and easy with the our new 5-button digital microprocessor. Through the use of these controls you can: set the operating temperaure, lock the set-temperature, select either degrees F or C, calibrate your unit to your independent device, slect a different thermocouple type, and auto-tune your oven to your specific application.

Digital Controller Function Buttons

Enter / Exit MENU

MENU Scroll

Changes digit cursor on set temperature

Decrease

Increase

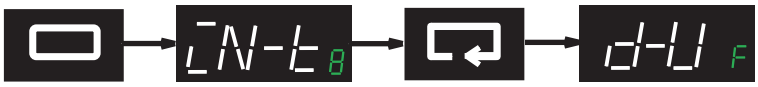
To set setpoint temperature

Decrease

Increase

Up and down arrow keys (shown left) are used to increase or decrease set-point control temperature as desired by user

To adjust control to read in C or F temperature units



Hold 3 sec. — View — Hit ONCE — Use ⩔⩒ to choose F or C

Default set to F

To lock setpoint temperature

Hold together 3 seconds

Lock setpoint by changing to '3'

Default set to 0

To calibrate control to independent probe/sensor

Hit ONCE — Hit ONCE — Use ⩔⩒ keys to enter temperature shift in degrees

To calibrate oven, add (or subtract) the temperature differential, to the existing iNS value shown at prompt

To change thermocouple type

Hold 3 sec. — Use ⩔⩒ keys to change type

Default set to "J"

All Lab Series Ovens are factory equipped with a standard "J-type" thermocouple as the default, but you may change from this type of thermocouple to either a different thermocouple, RTD, or infrared sensor, depending on your particular application. Due to the four-digit LED limit of the display, when changing to some of the alternate device types, you may lose the decimal feature allowing you to view temperatures in tenths of a degree.

To Auto-tune oven

Hit ONCE — Use ⩔⩒ keys to change setting

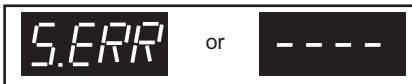
Default set to 40%

All ovens are Auto-tuned at the factory using the 'At-1' option for faster response time. You may, however, want to Auto-tune your oven to your specific application. To do this, once at the 'At' prompt (at left), use arrow keys to initiate either Auto-tune option: 'At-1' (for 40% Auto-tune), or 'At-2' (for 100% Autotune). The 40% Auto-tune (At-1), will stabilize the oven temperature quicker and with less 'overshoot' than the 100%, but will be somewhat less precise. The 100% Auto-tune (At-2), will take longer to stabilize oven temperature but will be more precise, and take a little longer to complete the Auto-tune process.

Control Self Diagnostics

Control prompts will only display when a fault or alarm condition exists.

ALARM Codes "S.ERR" & "- - - -"



Indicates Input Error

Check to make sure Thermocouple wiring is connected securely

ALARM Code "E333"

Indicates Internal Circuit Error

Turn Controller OFF and On. If problem remains, replace Controller

ALARM Code "E111"

Indicates Internal Memory Error

Turn Controller OFF and On. If problem remains, replace Controller

Common Replacement Components

All replacement components are readily available and are easily replaced in the field.

COMPONENT	MODEL	VOLTAGE	PART #	COMPONENT	MODEL	VOLTAGE	PART #
Digital Controller	All	All	401-1230	Fuse (15 amp)	30, 40	All	Q-1190
Relay	All	All	401-1233	Fuse Holder (red)	All	All	Q-1198
Rocker Switch	All	115 Volt 230 Volt	201-2213 201-2213-1	Wire Shelf	10	All	101-1000
Thermocouple	All	All	701-6253	Shelf Supports (2)	10	All	101-1001
Friction Catch (set)	All	All	101-2221	Wire Shelf	20	All	201-2000
6' Cord & Plug	20, 30, 40	115 Volt 230 Volt	101-1403 101-1403-1	Wire Shelf	30	All	101-3000
6' Cord & Plug	10	115 Volt 230 Volt	101-1603 101-1603-1	Wire Shelf	40	All	201-4000
Fuse (10 amp)	10, 20	All	Q-1191	Shelf Supports (2)	20, 30, 40	All	101-3001

⚠ Periodic Oven Maintenance

The GCE Series Lab Ovens are designed to be virtually maintenance free. But operational safety requires periodic cleaning and chamber temperature accuracy verification. Periodically check the rear air intake vents for dirt or dust build-up. Keep the intake & exit ports clear of obstruction and clean of dust and dirt. Once a year, check the actual oven chamber temperature against a known accurate temperature measurement device. Maintain temperature accuracy to within 5 degrees F of the control setting. Calibrate the control as necessary. To clean exterior and interior surfaces, use a damp cloth or with an all-purpose cleaner. Avoid commercially available oven cleaners.

Technical Support

If you have any questions or need technical assistance, please contact Quincy Lab Tech Support at:

Email: information@quincylab.com
Voice: 800-482-HEAT (4328)
Fax: 773-622-2282

Quincy Lab, Inc.
1925 N Leamington Ave
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 eighteen months from date of shipment. The instrument warranty is supplemented with a three year warranty on the heating element. Please refer to your invoice or shipping documents to determine the active warranty period. This warranty covers parts & labor (labor at factory only) and shipping cost for replacement parts.