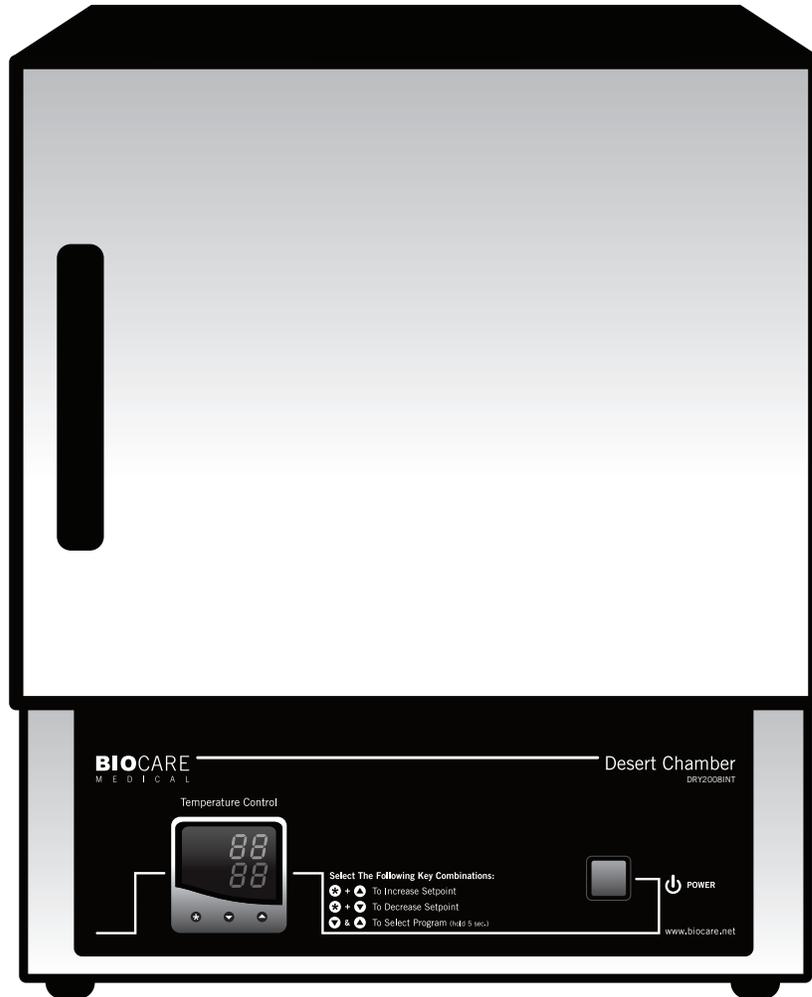


Desert Chamber Pro™ Manual

Turbo-Fan Slide Drying Oven



Biocare Medical

Technical Support:
800-799-9499 Option 3

Customer Service:
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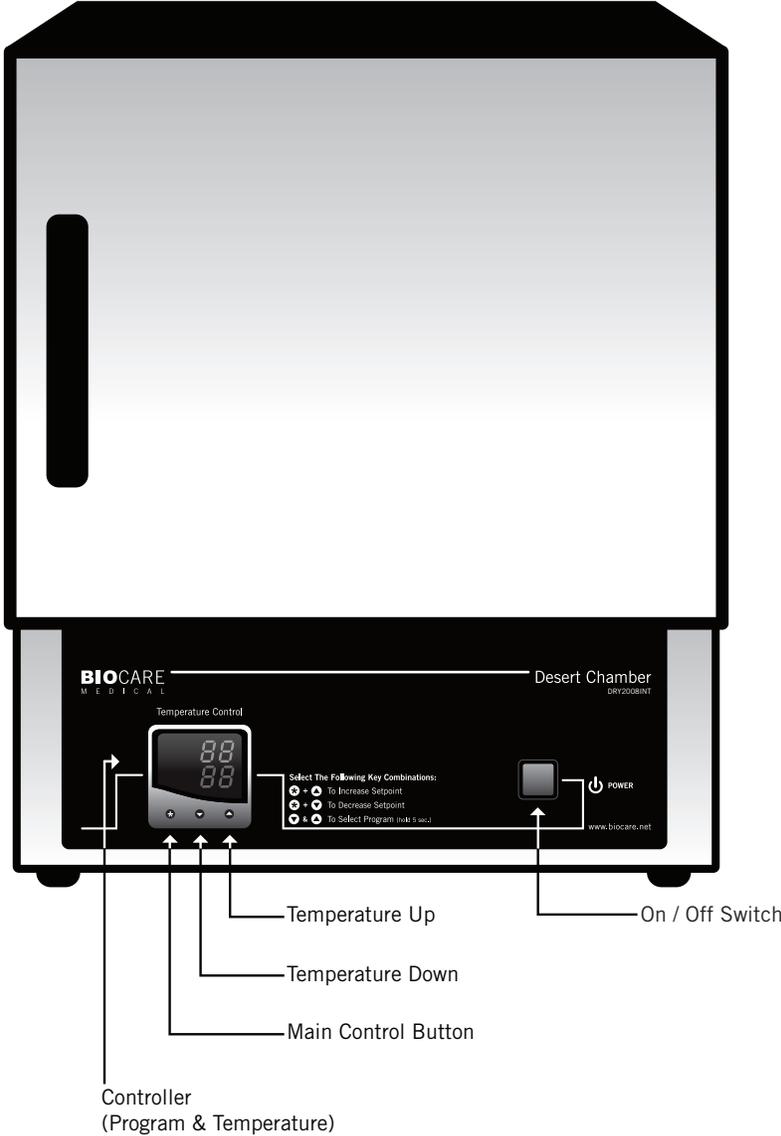
 Not for use with flammable solvents or gases

Warranty

The Desert Chamber Pro warranty is for one year from receipt of purchase and covers all parts and labor when performed solely by Biocare Medical. Warranty is invalidated if equipment is abused, damaged, or improperly maintained by customer. Warranty is not transferable to any other party should the equipment be resold or transferred by the customer to another party. To the extent permitted by law, Biocare Medical disclaims any liability for any incidental or consequential damages related to this equipment or for any warranty related services it performs.

Overview

This innovative compact oven from Biocare Medical is extremely efficient and is specially designed for the rapid drying of slides. The combination of a small footprint, turbo fan, 365-watt element and a digital programmable temperature process controller makes this oven superior to other conventional drying ovens. This controller will autocalibrate for the amount of mass and volume placed inside the oven, keeping the inside temperature constant and accurate. The Desert Chamber Pro™ can be programmed with variable segments, times, temperatures and alarms.



Specifications

Interior Dimensions: 10.5 (W) x 9.5 (H) x 11.5 (D) inches / 26.7 (W) x 24.1 (H) 29.2 (D) centimeters

Exterior Dimensions: 13 (W) x 16 (H) x 13.5 (D) inches / 33.3 (W) x 40.6 (H) x 34.3 (D) centimeters

Weight: 27 pounds, 12.2 kilograms

Cubic Foot Capacity: 0.7 cubic feet

Standard Electrical: 230 volts / 365 watts (DRY2008INTL), 115 volts / 365 watts (DRY2008US)

Temperature Range: Ambient - 100°C

Common Unit Specifications

Operating Environment:

Indoor use. Installation Category II, Pollution Degree 2, ambient temperature 10°C - 35°C (50°F - 95°F); 80% maximum relative humidity.

Storage Temperature: -10°C - 70°C (14°F - 158°F); 70% maximum relative humidity.

Approvals: Underwriter's Laboratory Listed, Laboratory Equipment, C/UL United States / Canadian. E212550 (115 VAC models only)

Compliance: UL Standard 61010-1, IEC 61010-1, 2nd Edition



Common Unit Construction

Exterior: Powder-coated steel

Insulation: Fiberglass

Thermo-control: PID microprocessor

Interior: Aluminum

Door: Steel insulated

Heater: Resistive-tubular Incoloy

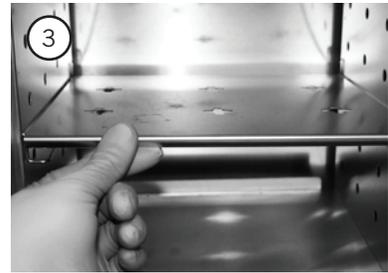
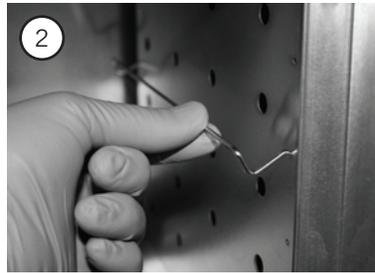
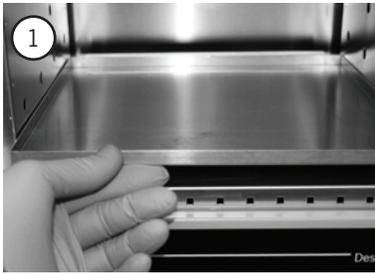
Contents

Inspect the packaging and immediately report any damage to Biocare Medical.

1. Oven with Digital Programmable Temperature Process Controller
2. Adjustable Shelves
3. Wire Shelf Brackets
4. Removable Drip Tray

Assembling the Oven

1. Position the unit in its ultimate operating location, keeping a minimum of two inches of airspace around the unit and ten inches of airspace above the unit.
2. Place the removable drip tray on the bottom of the oven. (Figure 1)
3. Push the ends of the wire shelf brackets into the holes until the first bend is against the wall. Then rotate the bracket down. (Figure 2)
4. Place the adjustable shelves on top of the brackets. (Figure 3)
5. Plug the Desert Chamber into a properly grounded receptacle (either 115 volt or 230 volt, depending upon the model).



Electrical Precautions

Basic safety precautions should always be followed when using electrical equipment.

- Do not immerse cord or plug in water.
- Unplug the instrument when not in use and before cleaning.
- Do not operate the instrument with a damaged cord or plug.
- Do not let the cord hang over the edge of a table or counter or touch hot surfaces.

Important Note

The oven temperature has been calibrated at the factory and should not be adjusted by the end-user. If any problems arise with the oven, call Biocare Medical for technical service at 800-799-9499.

Maintenance

The Desert Chamber Pro oven is designed to be virtually maintenance-free. However, the oven does require periodic cleaning and chamber temperature accuracy verification in order to maintain operational and safety standards. Periodically check the rear air intake vents for dirt or dust build-up. Keep the intake and 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. To clean exterior and interior surfaces, use a damp cloth with an all-purpose cleaner. Avoid commercially available oven cleaners.

Slide Drying Protocol For Immunohistochemistry

Drying slides correctly for immunohistochemistry (IHC) is essential to achieving optimal staining. Tissue sections will not adhere to the slide if all the water is not removed prior to deparaffinization and Heat Induced Epitope Retrieval (HIER). Tissues with a high collagen content such as skin or a high fat content such as breast can be especially problematic.

Slide Drying Protocol

Use distilled water only in the Water Bath. Do not use any organic or inorganic adhesion products such as gelatin. The water bath temperature should be 10 - 12°C lower than the paraffin melting point—usually 40 - 45°C.

Use Biocare Medical Kling-On Slides or other positively charged slides for optimal tissue adhesion. Shake the slides with a snapping action of the wrist to remove excess water that may be trapped between the tissue section and the glass slide. Drain slides in a vertical position for 5 - 10 minutes.

Place slides in a slide rack and tap on the counter to remove residual water. Position slide rack in oven. Close oven door. Dry slides using one of the Preset Programs. All the water should be evaporated from beneath the tissue section and the glass slide, and the paraffin should be melted prior to deparaffinization and HIER.

*Note: the times may vary according to the number of slides placed in the oven.

Program 1: Standard Program

Segment 1 - 37°C for 30 minutes

Segment 2 - 60°C for 30 minutes

Program 5: Delayed Program

Segment 1 - 25°C for 720 minutes

Segment 2 - 37°C for 60 minutes

Segment 3 - 60°C for 60 minutes

Technical Notes:

Under-fixed tissue is more likely to not adhere to the slide. Ideally, the tissue should be grossed at 3mm, placed in 20X volume of formalin and fixed for 16-24 hours to allow adequate infiltration prior to processing.

Do not dry slides for immunohistochemistry at temperatures higher than 60 - 70°C, or for longer than one hour. Longer drying times or higher temperatures may compromise the antigen of interest (e.g., Estrogen and Progesterone Receptors).

Slide Loading Guidelines

Load the oven so that air circulation within the oven is not impeded.

- Stagger slide racks on the shelves.
- Do not overload; leave a space between racks being processed.
- For the best processing performance for a single item, place it in the center of the oven.
- Do not use acids or corrosive reagents inside the oven.

Manual Operation Instructions

Operation Instructions

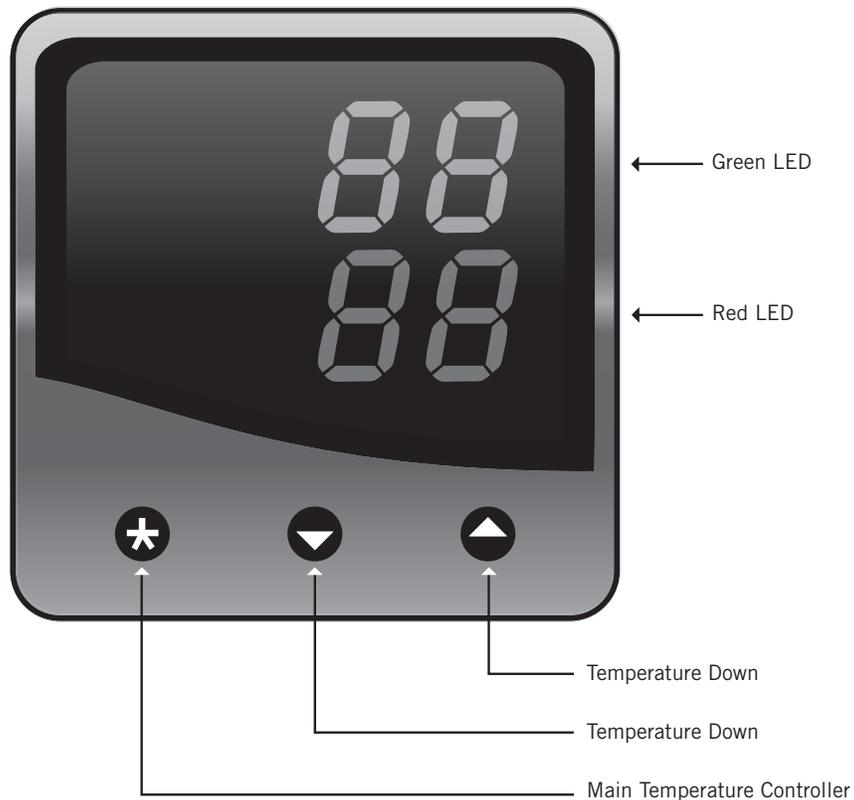
1. Turn on the oven by pushing the Heat/Recirculation toggle switch into an upward position.
2. The Temperature Controller is pre-set at 25°C (red LED, bottom right corner). To change the target temperature, press and hold the main temperature control (asterisk) button and at the same time, press the up or down arrow buttons to increase or decrease the temperature readout.
3. To turn off the oven, place the Heat/Recirculate toggle switch in the downward position.

The green LED is the actual temperature inside the oven. The red LED is the target temperature.

Stopping a Manual Run

1. Push the up and down arrows simultaneously, then push and release the up arrow twice and finally push the asterisk button and down arrow simultaneously.
 2. Do not end a programmed run prematurely by turning off the toggle switch. Make sure the LED display shows the temperatures before stopping a manual run using the toggle switch. Run Off will be displayed until the LED displays the temperatures. This may take several minutes.
- *Note: Attempting to stop a manual run using the toggle switch will result in the oven retaining the current run settings.

If the program controls become jammed due to an electrical power surge or power outage, unplug the unit's power cord, wait a few seconds and plug it back in to reset.



Preset Program Descriptions

Level P = 1

Program 1: Standard Program

Segment 1 - 37°C for 30 minutes
Segment 2 - 60°C for 30 minutes

Level P = 2

Program 2: Fast Dry Program

Segment 1 - 45°C for 20 minutes
Segment 2 - 70°C for 10 minutes*

Level P = 3

Program 3: Bulk Program

Segment 1 - 45°C for 30 minutes
Segment 2 - 70°C for 30 minutes*

Level P = 4

Program 4: Overnight Program

Segment 1 - 37°C for 60 minutes
Segment 2 - 60°C for 60 minutes

Level P = 5

Program 5: Delayed Program

Segment 1 - 25°C for 720 minutes
Segment 2 - 37°C for 60 minutes
Segment 3 - 60°C for 60 minutes

*Note: All programs can be customized to user-defined specification.

*Temperatures over 60 - 70°C are not recommended for IHC

Preset Program Operation Instructions

Starting a Program (Run On):

1. Push the Heat/Recirculation toggle switch in an upward position to activate. A green indicator light will indicate that the oven is in the “on” position, and the screen will display the actual temperature.
2. Press and hold the up and down arrow buttons until the screen displays Level P.
3. Press the up arrow button and immediately release. The screen will display Program 1.
4. Press and hold the asterisk button and use the up arrow buttons to select the desired program number (Programs 2-5). Omit this step if desired program is currently displayed.
5. Press the up arrow button once and immediately release. The screen display will read Run Off.
6. Press and hold the asterisk button down, and then press the up arrow button. Immediately release. The screen display will read Run On.
7. Press and hold the up and down arrow buttons until the screen displays the current temperature as well as the set temperature. The program will start immediately; however, it may take several minutes to display.
8. To turn the oven off, place the Heat/Recirculation switch in the downward position. The green indicator light will turn off.

Stopping a Program (Run Off):

1. Place the Heat/Recirculation toggle switch in an upward position to activate. A green indicator light will indicate the oven is in the “on” position, screen will display temperature.
2. Press the up and down arrow buttons and hold until the screen displays Level P.
3. Press the up arrow button and immediately release. The screen will display Program (1-5).
4. Press and hold the asterisk button and use the up or down buttons to desired program number. Omit this step if desired program is currently displayed.
5. Press the up arrow button once and immediately release. The screen display will read Run On.
6. Press and hold the asterisk button down, and then press the down arrow button and immediately release. The screen display will read Run Off.
7. Press and hold the up and down arrow buttons and hold down until screen displays current and set temperatures.
8. To turn the oven off, place the Heat/Recirculation toggle switch in the downward position. The green indicator light will turn off.

Checking the Sequence

Program

To check the program number which is currently selected:

1. Press and hold the asterisk button.
2. Release the asterisk button to return to the original display.

Segment

To check the segment information for the program:

1. Press and hold the asterisk button and press the up arrow button.
2. Release the asterisk and up arrow buttons to return to the original display.

Temperature

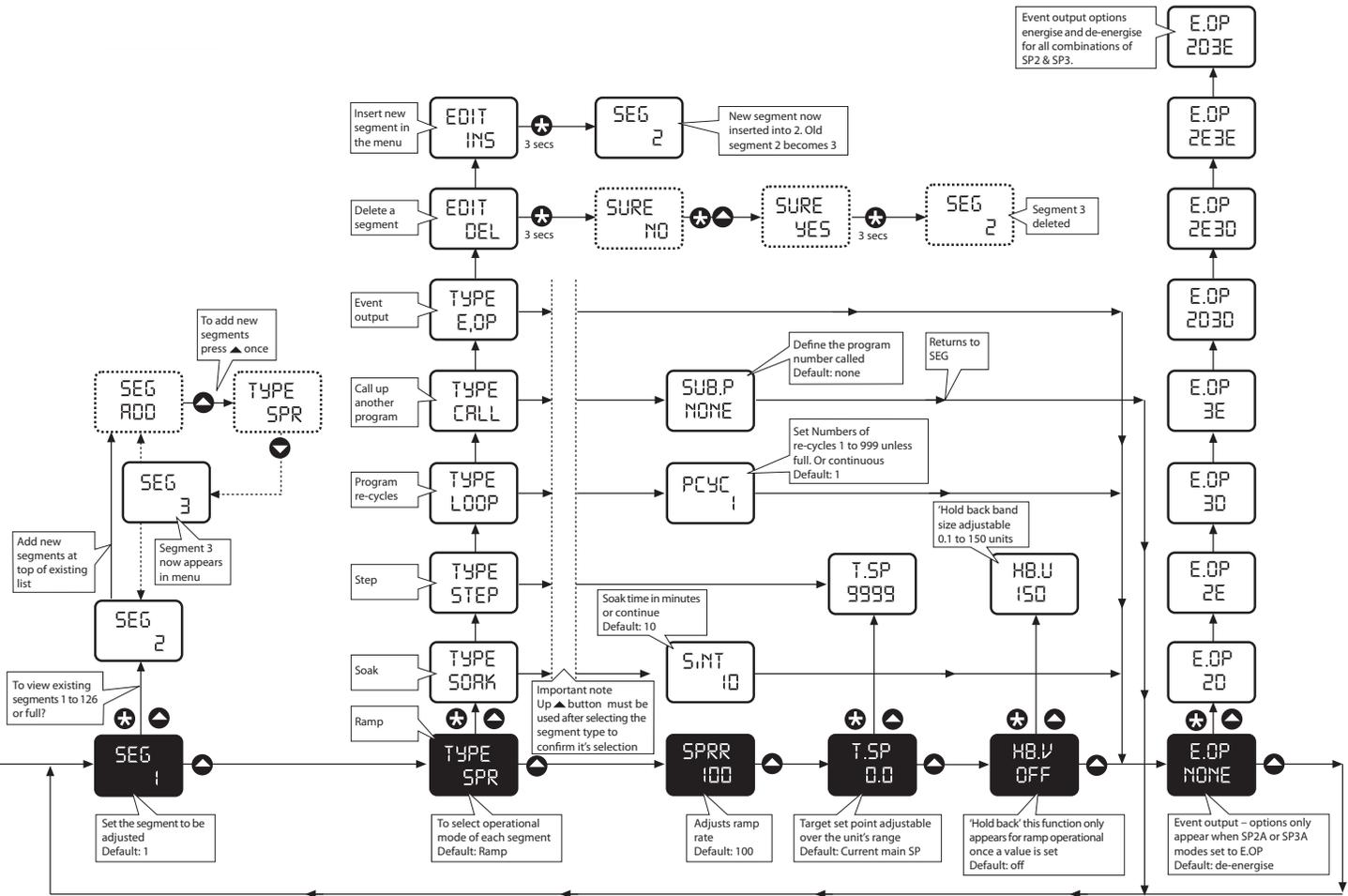
To display the time remaining (in minutes) for a Program:

1. Press and hold the asterisk button and press the up arrow button.
2. Continue to press and hold the asterisk button and press the up arrow button again.
3. Release both the asterisk and up arrow buttons to return to the original display.

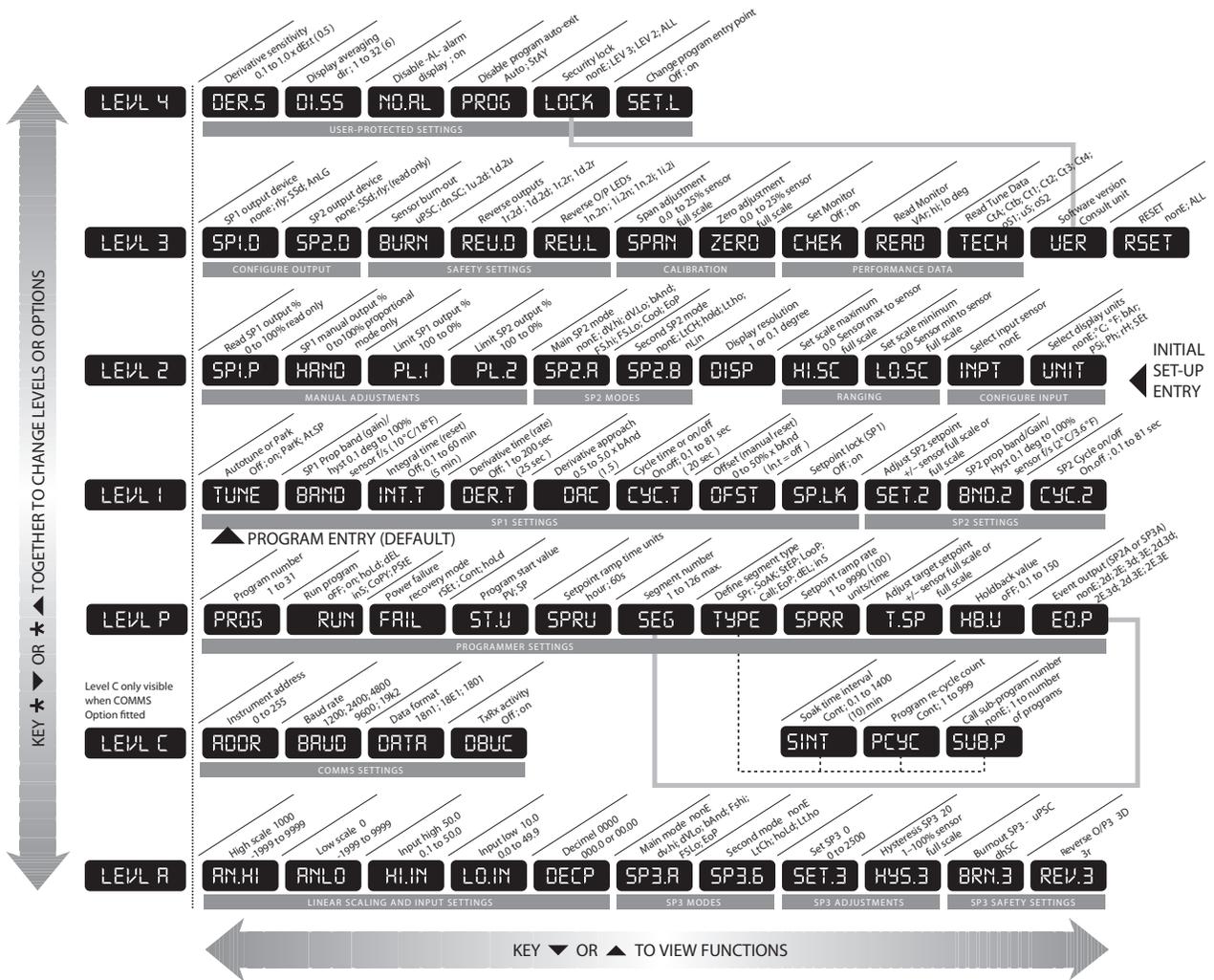
Changing Between Preset Programs

1. Place the Heat/Recirculation toggle switch in an upward position to activate. A green indicator light will indicate the oven is in the “on” position, and the screen will display the temperature.
2. Press and hold the up and down arrow buttons until the screen displays Level P.
3. Press the up arrow button and immediately release. The screen will display Program 1-5.
4. Press the up arrow button once and immediately release. The screen will display Run On.
5. Press and hold the asterisk button, and press the down arrow once, immediately release. The screen will read Run Off.
6. Press and hold the up and down arrow buttons until the screen displays the temperature.
7. Press and hold the up and down arrows buttons and hold until the screen displays Level P.
8. Press the up arrow button and immediately release. The screen will display Program 1-5.
9. Press and hold the asterisk button, and press the up or down arrow button to the desired program number (Programs 2-5).
10. Press and hold the asterisk button, press the up arrow button once, and immediately release. The screen will display Run Off.
11. Press and hold the asterisk button and press the up arrow button once. The screen will read Run On.
12. Press and hold the up and down arrow buttons, until screen displays the selected temperature.
13. Press the asterisk button to verify the selected program.
14. To turn the oven off, place the Heat/Recirculation toggle switch in the downward position. The green indicator light will turn off.

Appendix 1: Program Function Map (continued)



Appendix 2: Function Menu



Quick Operation Guide

Manual Use

1. Turn the oven on. The green light should be on.
2. Temperature control is preset at 25°C. To change the temperature, hold the main temperature control (asterisk) button down and at the same time, push the up or down arrows to increase or decrease the temperature.
3. When finished, turn off the oven.

Program Instructions

1. Turn the oven on.
2. Temperature control is preset at 25°C.

Selecting a Program

1. Hold the up and down arrow simultaneously for five seconds. Level P will be displayed.
2. Push the up arrow and immediately release. Program 1 will be displayed.
3. Push the asterisk button and up or down arrow for desired program.

Turning On a Program

1. Go through "Selecting a Program" as above.
2. Push the up arrow and release. Run Off will be displayed.
3. Push the asterisk button and push the up arrow and immediately release. The screen will read Run on.

Turning Off a Program

1. Turn the oven on.
2. Hold the up and down arrows simultaneously for five seconds. Level P will be displayed.
3. Push the up arrow and immediately release. Program 1 will be displayed. Select the desired program.
4. Push the up arrow once and release. Run On will be displayed.
5. Push the asterisk button and push the down arrow and immediately release. The screen will read Run Off.

Changing from One Program to Another Program

1. Hold the up and down arrows simultaneously for five seconds. Level P will be displayed.
2. Push the up arrow and immediately release. Program 1 will be displayed.
3. Push the up arrow once and release. Run On will display.
4. Push the asterisk button and push the down arrow and immediately release. The screen will read Run Off.
5. Push the up and down arrows and hold until the screen displays the temperature.
6. Select another program by holding the up and down arrows for five seconds. Level P will be displayed.
7. Push the up arrow and immediately release. Program 1 will be displayed. Select the desired program by holding the asterisk key down and pushing the up or down arrows.

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