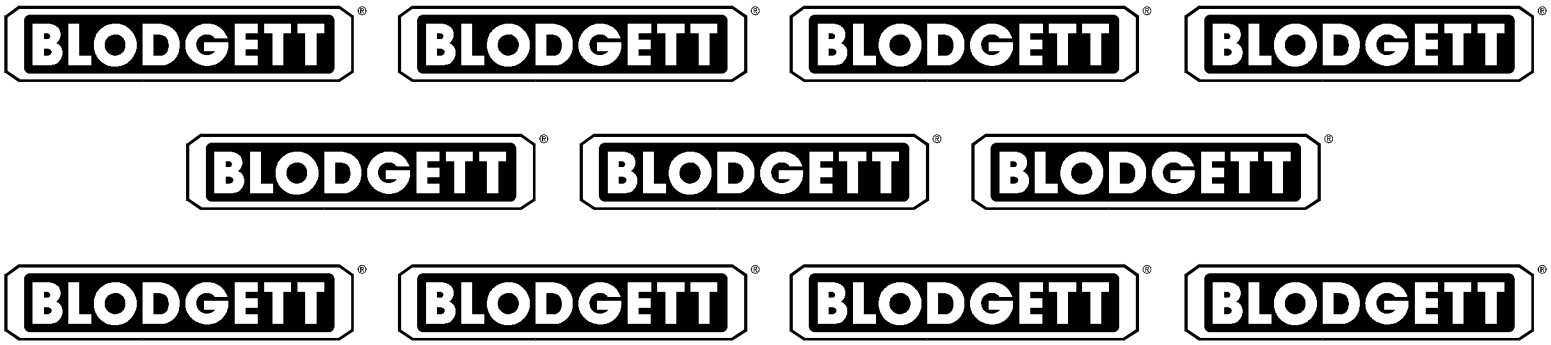

BLODGETT®

McDonald's®

UNIVERSAL HOLDING CABINET
SERVICE AND REPAIR MANUAL

BLODGETT OVEN COMPANY

www.blodgett.com

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PN 33954 Rev B (6/01)

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CHAPTER 1

INTRODUCTION

DESCRIPTION

The Blodgett Universal Holding Cabinet is a short term holding device designed to maintain the freshness of a variety of food product. The UHC contains four product slots which can be controlled independently. Control panels are located above each slot on both the front and rear of the cabinet. All operator mode selections can be made from either the front or rear display.

Power Switch – controls power to the cabinet.

Product Slot – holds up to three trays of product per slot.

Control Panel – indicates the holding time and product selection for each tray position.

1/3 Size Product Tray – designed for all grilled products (meat, eggs, chicken). This tray maintains the product's moisture.

1/2 Size Crumb Tray with Wire Rack – designed for fried products (crispy chicken, nuggets, fillet). The tray keeps the fried crumbs from dropping through the racks. It also allows moisture to escape leaving the outside of the product crispy.

Full Size Product Tray – designed for bread products (biscuits and muffins). This tray allows a small amount of moisture to escape.

Each Universal Holding Cabinet is shipped with the following:

- Equipment manual
- PM card
- Training video
- Quick-reference guide
- Cleaning brush

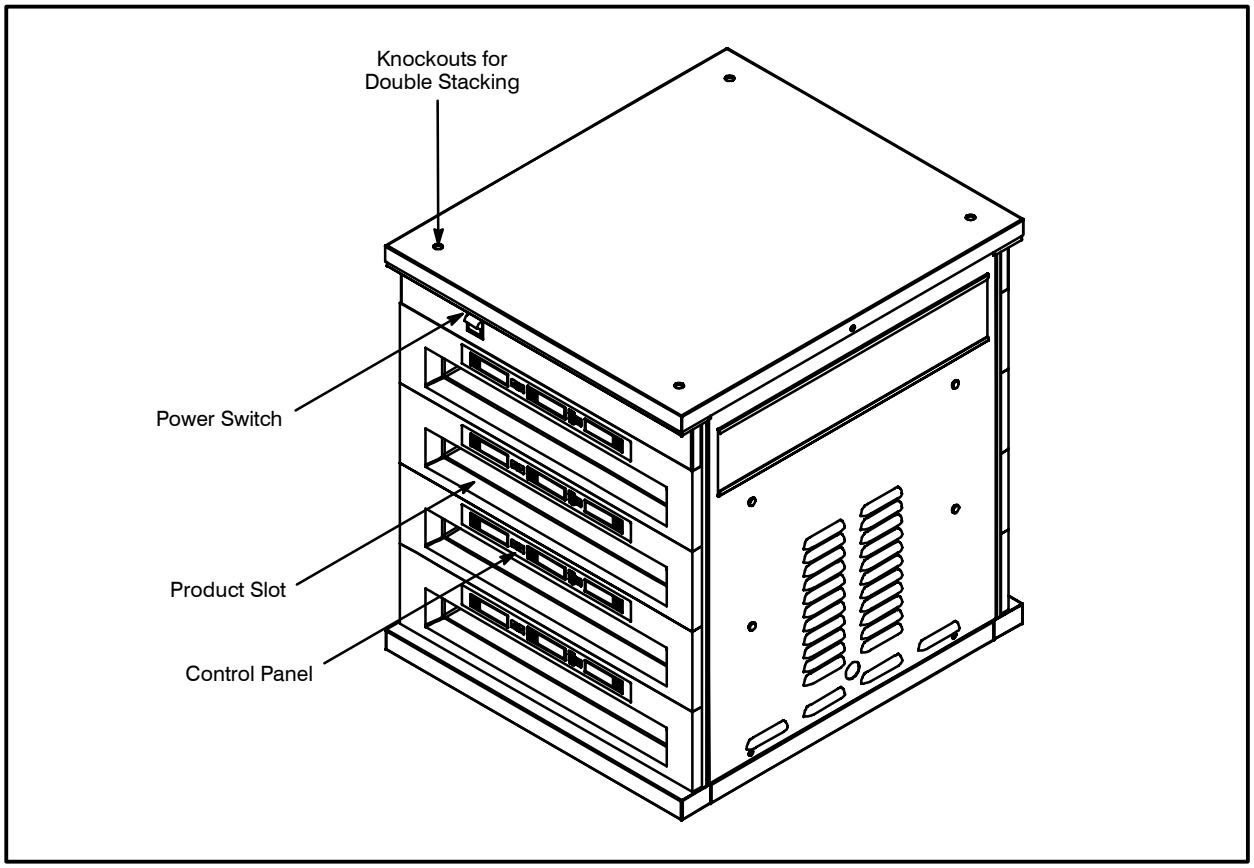

FIGURE 1

SPECIFICATIONS

OVEN CLEARANCES

The following clearances must be available for servicing.

- Cabinet body sides – 22" (56 cm)
- Cabinet body back – 25" (64 cm)

ELECTRICAL SPECIFICATIONS

Electrical Specifications (per section)				
KW	**Hz**	**Volts**	**Phase**	**Amps**
U.S. and Canadian installations				
2.5/3.3	50/60	208/240	1	20
General Export installations				
2.5/3.3	50/60	208/240	1	20

TABLE 1

Installation must conform with local codes, or in the absence of local codes, with the *National Electrical Code, ANSI/NFPA 70–Latest Edition and/or Canadian Electrical Code CSA C22.2* as applicable.

Wiring diagrams are located inside the right side panel.

This appliance is equipped with a three-prong grounding plug for your protection against shock hazard and must be plugged into a properly grounded three-prong receptacle. **DO NOT cut or remove the grounding prong from this plug.**

CONTROL SPECIFICATIONS

Operating Voltage	208 VAC +10/–15% or 240 VAC+10/–15% 50 or 60 Hz
Input Voltage	264 VAC maximum 177 VAC minimum
Load Requirements (heaters)	400 watt maximum at 240 VAC, resistive load, 8 heaters per cabinet max.
System Operating Environment	50-104°F (10-40°C) with 400 ft/minute airflow over circuit board assemblies
Required Handling Precautions	**Circuits contain sensitive electronic components. DO NOT ship or store near strong electrostatic, electromagnetic, magnetic or radioactive field.** **CAUTION: Due to electrostatically sensitive components. All technicians performing service work must be grounded. Grounding may be accomplished using a grounding strap or other suitable means. Connect to another grounded unpowered piece of equipment. (ie. equipment other than the one you are currently working on.)**

TABLE 2

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CHAPTER 2

OPERATION

CONTROL PANEL DESCRIPTIONS

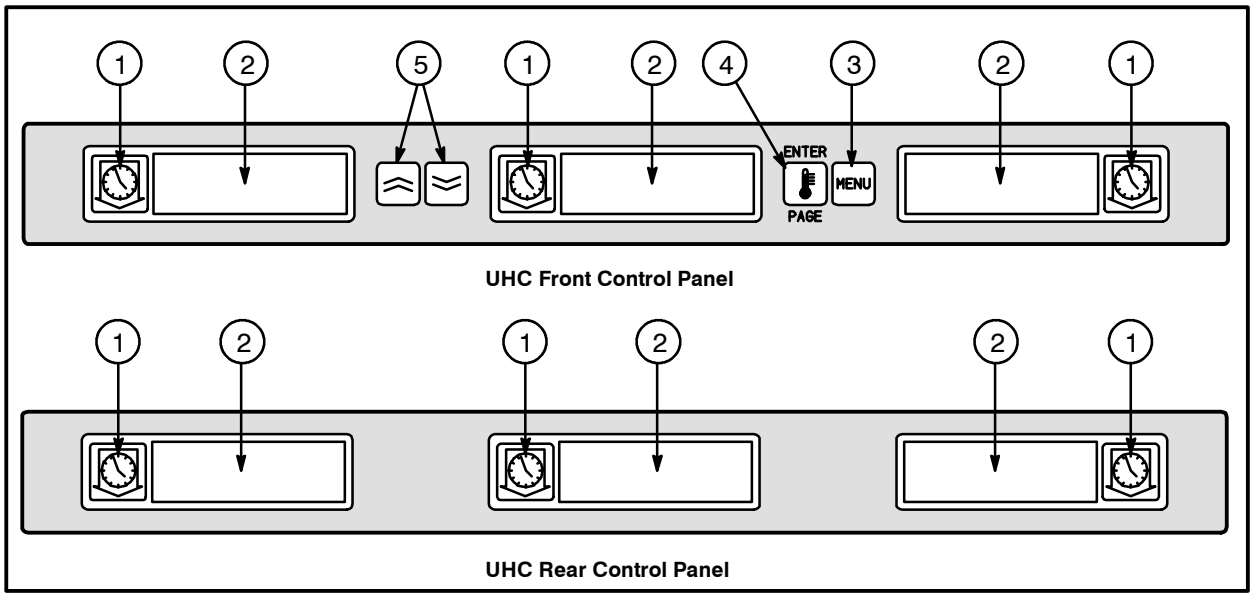

FIGURE 1

FRONT CONTROL PANEL

1. TIMER KEYS – start and stop the timer associated with each tray position. The timer keys also turn off audible alarms. There are three timer keys on each front panel (left, center and right).
2. DISPLAYS – show product selection and hold time for each tray position. The displays also provide programming information in the program mode. There are three displays on each front panel (left, center and right).
3. MENU KEY – press to select meal transitions (breakfast to lunch), clean mode operation and to turn individual slots on or off. The menu key also provides access to the program mode.
4. TEMPERATURE/ENTER/PAGE KEY – this key has three separate functions.
   - Display slot temperature information
   - Enter operational changes
   - Select page parameters in program mode.
5. UP and DOWN ARROW KEYS – press to increase/decrease variables or change selections.

REAR CONTROL PANEL

NOTE: The rear panels are used for operational functions only. All programming must be performed from the front panels.

1. TIMER KEYS – start and stop the timer associated with each tray position. The timer keys also turn off audible alarms. There are three timer keys on each front panel (left, center and right).
2. DISPLAYS – show product selection and hold time for each tray position. There are three displays on each front panel (left, center and right).

OPERATOR MODE

The operator mode is the normal operating mode of the controller when all slots are at the proper temperature and no alarm conditions exist. Product information and hold time are displayed.

SLOT TEMPERATURE CONTROL

Each product selection has its own temperature setpoint and product hold time. All product timers run independently.

The slot temperature is controlled by the temperature setpoint of the left most product entry in each slot as viewed from the front of the cabinet (side with the On/Off switch). Product selections that have a hold temperature different than the left most product selection will not be available for entry into that slot's configuration.

DISPLAY INFORMATION

In the operator mode the slot displays provide the following information:

- The product selection for each tray location.
- The hold time remaining (in minutes) for active timers.

NOTE: An active timer alternately displays the product selection and the time remaining. Inactive timers display only product selection.

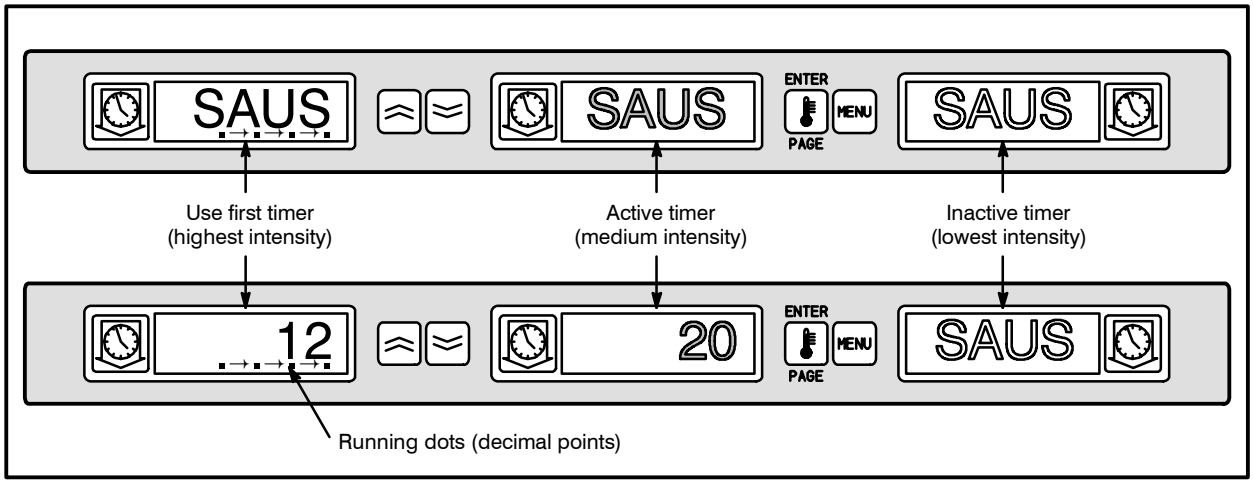

FIGURE 2

TIMER OPERATION

NOTE: If more than one tray of product is timing, the tray with the least hold time remaining is indicated by the Use First display.

Starting a timer

1. Press the TIMER KEY above the desired tray position to start the timer. The timer counts down from a preset value and alternately displays product selection and the hold time remaining.

Stopping a timer

1. Press the TIMER KEY above the slot position to turn off an active timer. The timer stops timing. The display changes to the inactive status.

Timing out

1. The time out alarm alerts the operator that the product hold time has expired. When the hold time remaining reaches zero an audible alarm sounds and the display reads *–00–*.

   NOTE: The audible alarm is indicated by a modulating tone. A continuous tone signals a warning alarm.

   All other active displays in the cabinet switch to the lowest intensity level until the audible alarm is turned off.

2. Press the TIMER KEY to clear the timed out display and silence the alarm.

   If other timers in the cabinet have timed out, the audible alarm remains on until all timed out displays are cleared.

3. When all timers are cleared, active timers return to normal status. The Use First status is switched to the next timer with the least hold time remaining.

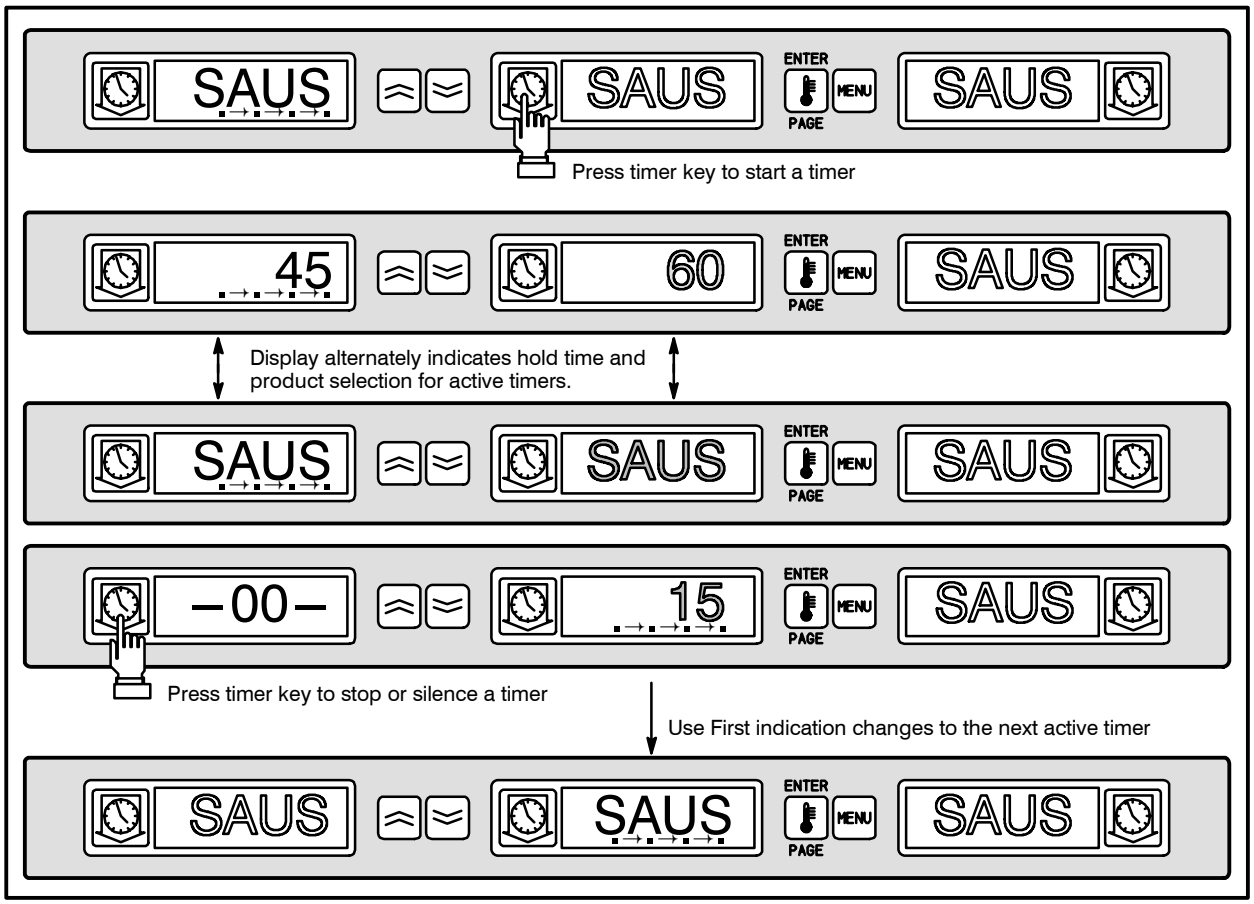

FIGURE 3

MEAL SELECTION

Selecting breakfast and lunch

NOTE: The following example is for selecting breakfast. The same procedure applies for selecting lunch.

1. Press the MENU KEY to change the product selection of the slot from breakfast to lunch. All displays are highlighted.
2. Press the ENTER KEY to activate the meal selection. The displays switch to the inactive mode.

   NOTE: If the enter key is not pressed within five seconds, the product selection returns to the breakfast meal selection.

Changing meal selections

Active slots with active timers will not change to the new meal selection until the timer(s) are stopped or time out and are reset. Active timers are stopped by pressing the timer key.

If the product selection for the meal has a hold temperature different than the current meal, a high or low temperature alarm is displayed to alert the operator that the hold temperature is being changed. Should the high or low temperature condition remain for two or more minutes, an audible alarm sounds. (See page 4–1 of the Troubleshooting section.) To silence the alarm press any timer key. This does not affect the timer operation unless the timer key is pressed again. The display alternately indicates the product selection and the alarm message until the slot temperature is within the preset limits.

If no keys are pressed, the alarm message automatically resets when the slot temperature is within the preset limits.

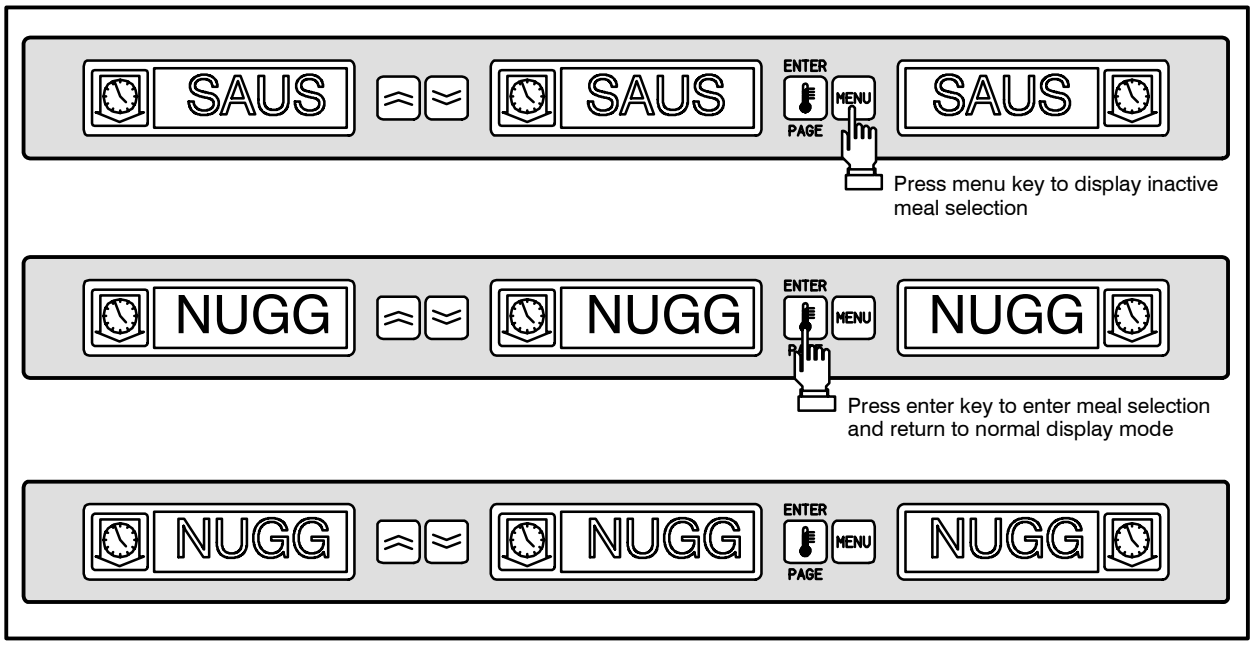

FIGURE 4

CLEAN MODE

The clean mode changes the temperature setpoint of all slots in the cabinet to 125°F (52°C).

To start the clean mode

1. Press the MENU KEY to scroll to the clean mode message, *CLN MODE*.
2. Press the ENTER KEY to activate the clean mode. All slots change to clean mode.

   NOTE: If the enter key is not pressed within 5 seconds the control returns to the previous meal selection.

   If the temperature is above 125°F (52°C), the display alternately reads *SLOT CLN MODE* and *NOT SAFE YET*. The display reads *SAFE TO CLN* when the slot is 125°F (52°C).

To exit clean mode

1. Press the MENU KEY to display *CLN MODE*.
2. Press the ENTER KEY to exit the clean mode and return to normal operation. The slot alternately displays *SLOT TEMP LOW* and the product selection until the temperature is within the normal operating limits.

   NOTE: If the enter key is not pressed within 5 seconds the slot returns to the clean mode.

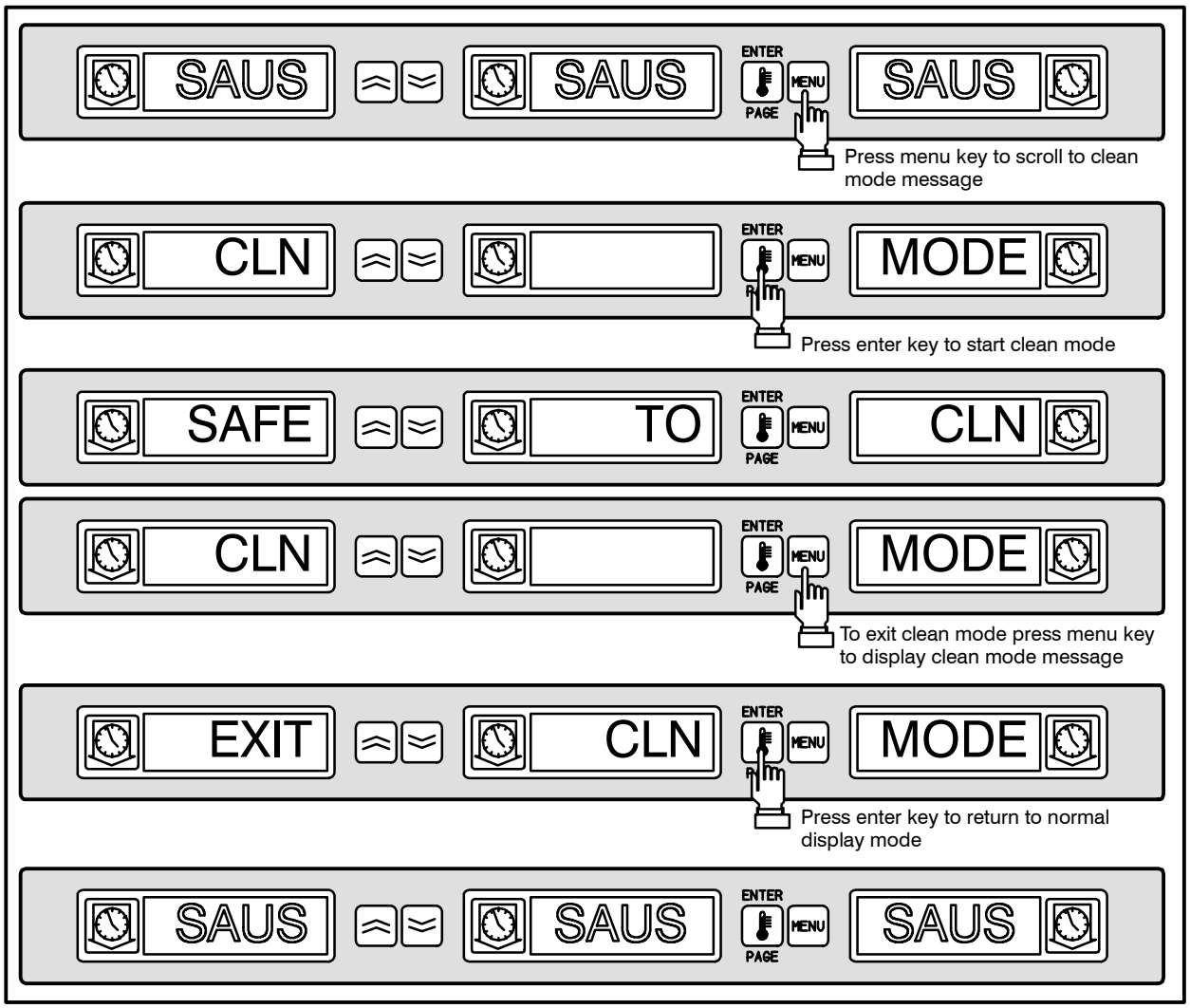

FIGURE 5

SLOT ON/OFF

To turn slot off

1. Press the MENU KEY to scroll to the slot off message, *TURN SLOT OFF*.
2. Press the ENTER KEY to enter the selection. The display reads *SLOT IS OFF*.

   NOTE: If the enter key is not pressed within five seconds the product selection returns to the operator mode.

To turn slot on

1. Press the MENU KEY to scroll to the slot on message, *TURN SLOT ON*.
2. Press the ENTER KEY to enter the selection and return to the operator mode. The display alternately reads *SLOT TEMP LOW* and the product selection until the temperature is within normal operating limits.

   NOTE: If the enter key is not pressed within five seconds the slot returns to slot off status.

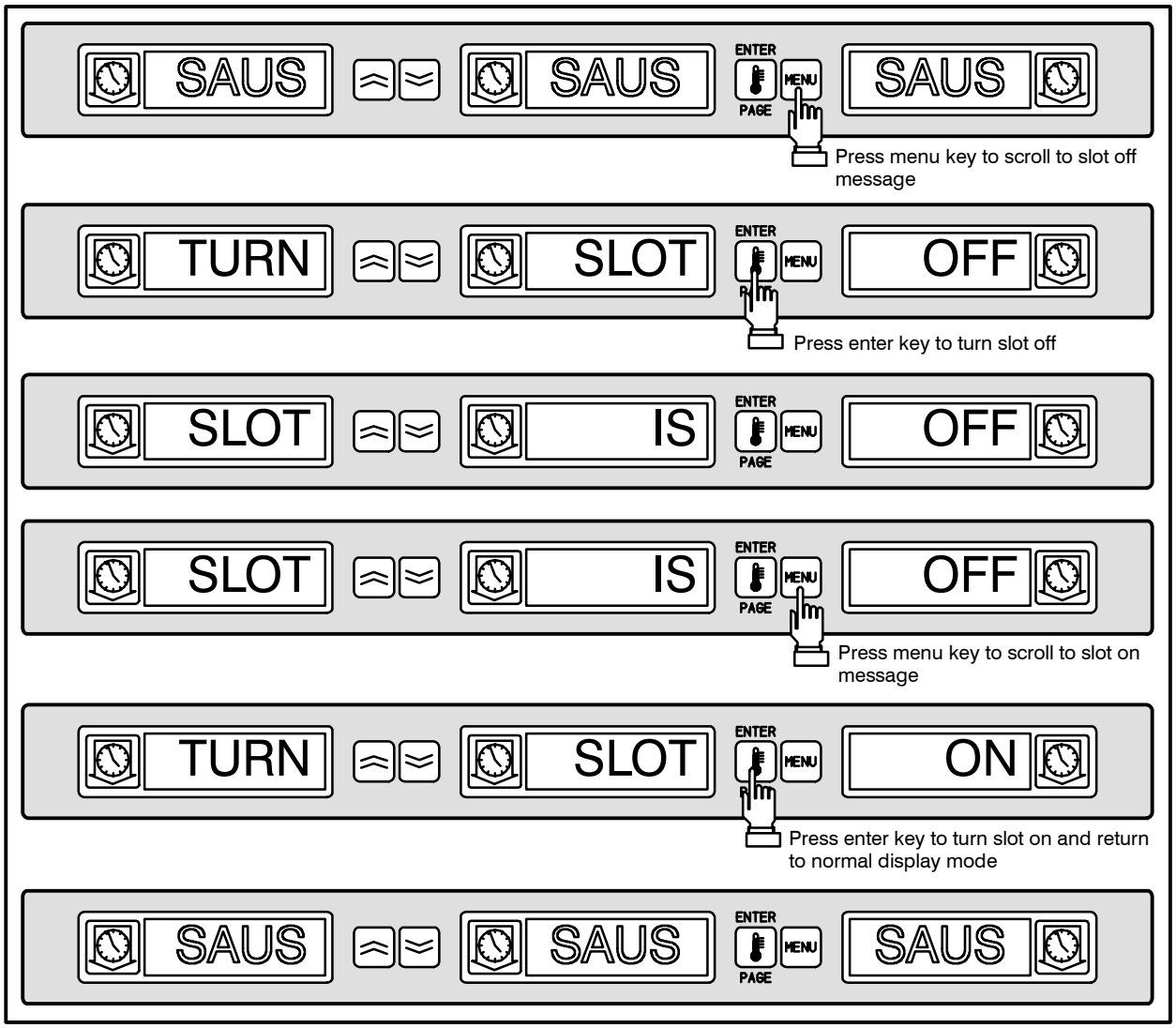

FIGURE 6

DISPLAYING SLOT TEMPERATURE INFORMATION

1. Press the TEMPERATURE KEY to scroll the following temperature information for each slot:
   - Top plate actual temperature
   - Bottom plate actual temperature
   - Top plate setpoint temperature
   - Bottom plate setpoint temperature
2. The display automatically returns to operator mode if no key is pressed for five seconds.

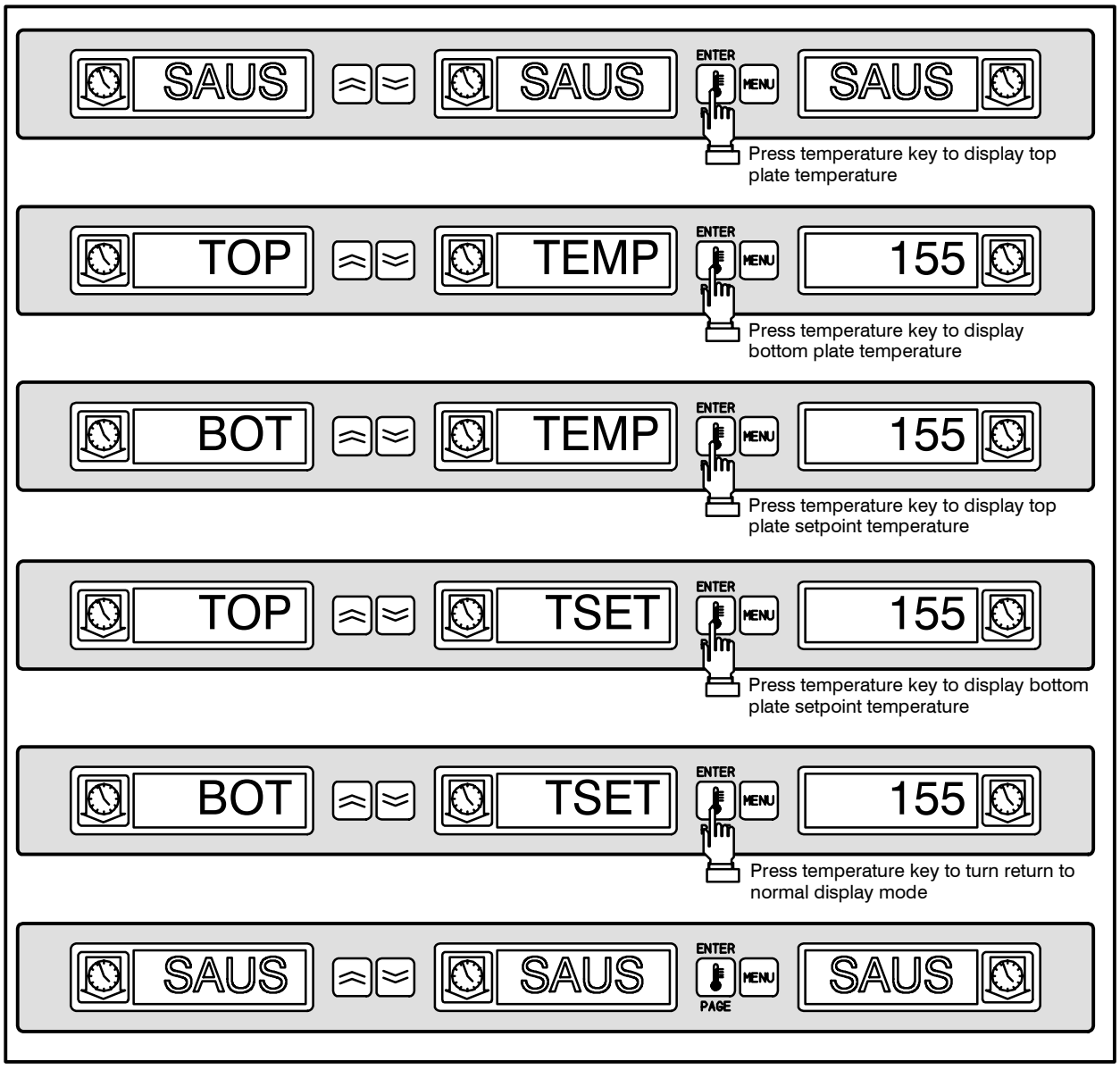

FIGURE 7

OPERATING TIPS

Correct heat and moisture levels are important to the proper operation of the UHC. There are no doors in the cabinet. The trays act as doors, therefore it is important that they be positioned correctly. The trays must be inserted to the stop line. The stop line is clearly marked on the handle of all three tray styles.

Product Slots

The UHC has four slots that can hold up to three trays of product per slot.

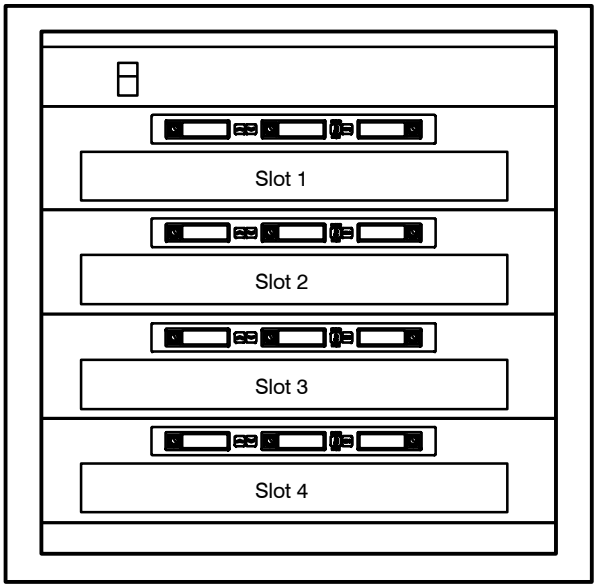

FIGURE 8

Fried Products

The 1/2 crumb tray with the wire rack is designed to hold all fried products.

- Product should be held in the wire rack which is placed in the crumb tray.
- UHC tray liners are not necessary when using the wire rack for fried product.

Baked Products

The full size tray is designed to hold all baked products such as biscuits and muffins.

- Use a UHC tray liner with the full size tray.
- After biscuits have been removed from the biscuit oven, remove the wrapper and open the cardboard box. Slide the biscuits onto the tray liner.
- Full size trays can hold up to 30 frozen biscuits, 20 scratch biscuits or 20 muffins.

Grilled Products

The 1/3 tray is designed to hold all grilled products.

- Product should not be drained when picked up from the grill.
- Use a UHC tray liner with the 1/3 tray.
- Product should be stacked when placed in the lined 1/3 size tray. 10:1 and sausage patties can be stacked up to six high. Eggs (except scrambled), grilled chicken and 4:1 patties can be stacked up to three high.
- Product should be placed towards the center of the tray.

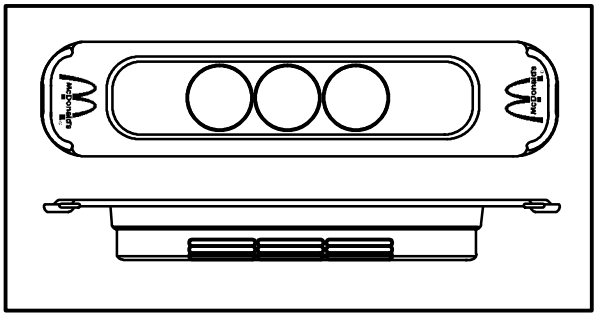

FIGURE 9

Production control charts

Laminated charts can be ordered through O'Brien Budd, Inc. The ordering numbers are:

- Breakfast UHC card #MCD 63102
- Regular Menu UHC card # MDC 63102A

SEQUENCE OF OPERATION

COMPONENT REFERENCE

NOTE: Refer to FIGURE 10 page 2–10 for component locations.

1. METAL OXIDE VARISTOR
2. DPST POWER SWITCH
3. TANGENTIAL BLOWER
4. TRANSFORMER 200-240V
5. HEATER TRIAC
6. HEATER ELEMENTS
7. SHELF PROBES
8. SHELF 1 DRIVER BOARD
9. SHELF 2 DRIVER BOARD
10. SHELF 3 DRIVER BOARD
11. SHELF 4 DRIVER BOARD
12. SHELF 1 FRONT DISPLAY ASSY.
13. SHELF 2 FRONT DISPLAY ASSY.
14. SHELF 3 FRONT DISPLAY ASSY.
15. SHELF 4 FRONT DISPLAY ASSY.
16. SHELF 1 REAR DISPLAY ASSY.
17. SHELF 2 REAR DISPLAY ASSY.
18. SHELF 3 REAR DISPLAY ASSY.
19. SHELF 4 REAR DISPLAY ASSY.
20. SHELF 1 FRONT MEMBRANE
21. SHELF 2 FRONT MEMBRANE
22. SHELF 3 FRONT MEMBRANE
23. SHELF 4 FRONT MEMBRANE
24. SHELF 1 REAR MEMBRANE
25. SHELF 2 REAR MEMBRANE
26. SHELF 3 REAR MEMBRANE
27. SHELF 4 REAR MEMBRANE
28. CN-1 CONNECTOR
29. CN-2 CONNECTOR

OPERATION

1. Apply power to the unit. The input voltage is applied to the DPST POWER SWITCH (2), the TANGENTIAL BLOWER (3) and the primary side of the 200-240V TRANSFORMER (4). The input power is also applied to pins 2, 5, 8, and 11 of CN-7 on the mother board and to one side of each HEATER ELEMENT (6) on WH-11.
2. 18VAC is applied to the mother board through the secondary side of the TRANSFORMER (4) between OR-20 and Y-20. 9VAC is applied to the mother board from the secondary of the TRANSFORMER (4) between BL-20 and OR-20 and between BL-20 and Y-20. The mother board applies 18VAC to each shelf driver board through the wire bundle at CN-1 (28) while continuously exchanging operational logic signals with each shelf driver board through the wire bundle attached to CN-2 (29). After the individual SHELF DRIVERS (8–11) receive power and communications from the mother board they send power and logic signals to its FRONT and REAR DISPLAY ASSEMBLIES (12–19) and their respective MEMBRANE SWITCH/DISPLAY DECALS (20–27).
3. The main control board uses the inputs from the eight individual RTD PROBES (7) to determine if any of the eight HEATERS (6) need to be energized to bring their respective shelf sections to the proper temperature.

   NOTE: The eight probes react independently and sense temperature by resistance. Refer to the table on page 6–3 of the Technical Appendix.
4. If the main control decides that an individual shelf section is not at the correct temperature it energizes the proper TRIAC (5) and sends power through CN-7 to the respective heater.

   NOTE: If the main control senses that the temperature of an individual shelf section is much lower than the setpoint it will pulse the voltage to the heater to maintain a consistent temperature with a minimum overrun.
5. When the main control determines that all individual shelf sections are within their programmed setpoints it maintains these temperatures with a continual pulsing of the input voltage to each shelf section independently.

   NOTE: If the main control senses that a heater is not performing to its programmed specifications it can display a variety of failure conditions. See page 4–1 of the Troubleshooting section.

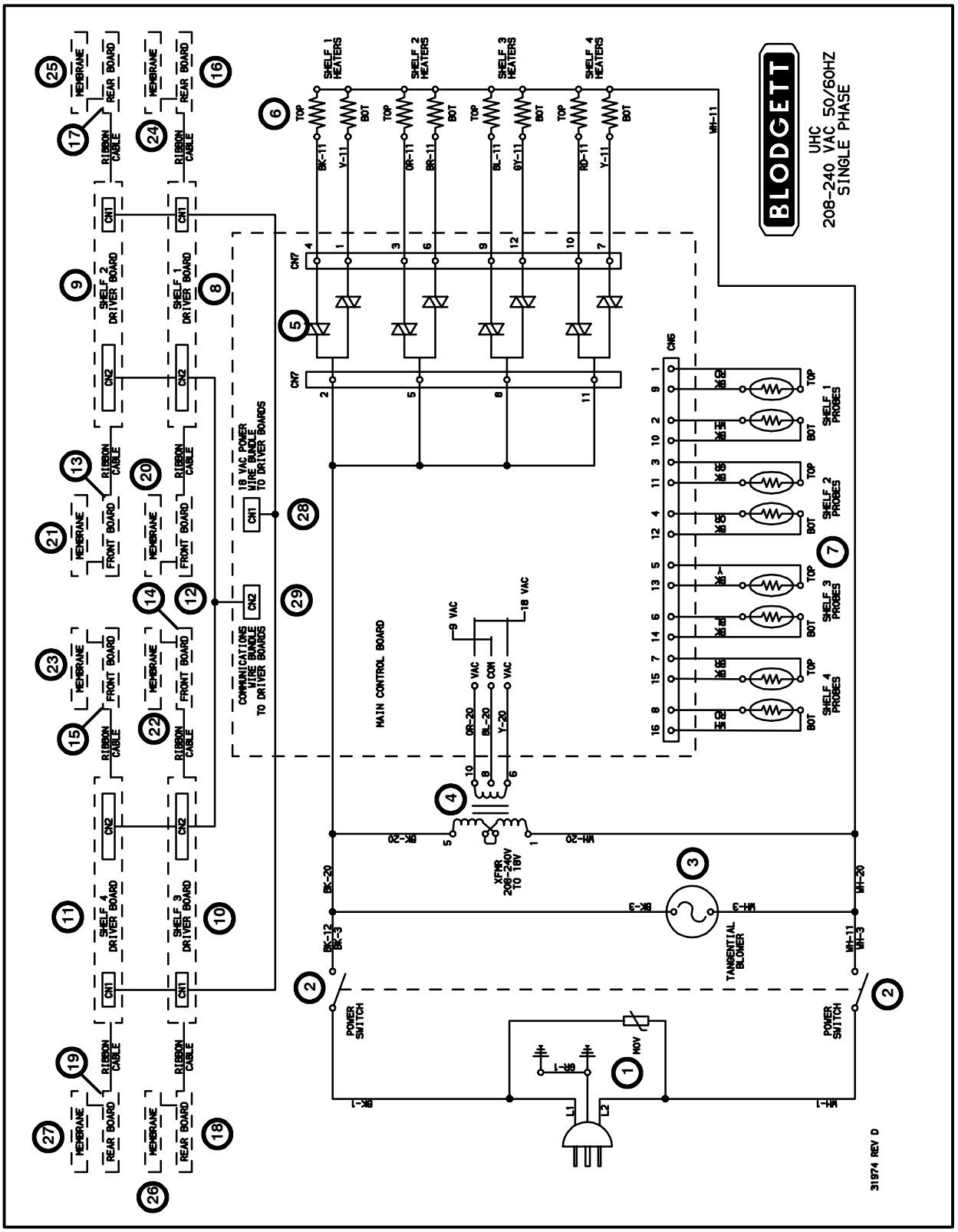
BLODGETT
UHC
208-240 VAC 50/60HZ
SINGLE PHASE
MAIN CONTROL BOARD
SHELF 1 HEATERS
SHELF 2 HEATERS
SHELF 3 HEATERS
SHELF 4 HEATERS
SHELF 1 PROBES
SHELF 2 PROBES
SHELF 3 PROBES
SHELF 4 PROBES
SHELF 1 DRIVER BOARD
SHELF 2 DRIVER BOARD
SHELF 3 DRIVER BOARD
SHELF 4 DRIVER BOARD
FRONT BOARD
REAR BOARD
MEMBRANE
RIBBON CABLE
COMMUNICATIONS WIRE HARNESS TO DRIVER BOARDS
18 VAC POWER WIRE HARNESS TO DRIVER BOARDS
XFMR 208-240V TO 18V
TANGENTIAL BLOWER
POWER SWITCH
MOV
9 VAC
18 VAC
31974 REV D

FIGURE 10

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CHAPTER 3

PROGRAMMING AND CALIBRATION

STORE MANAGER PROGRAMMING

PRODUCT SELECTION FOR EACH SLOT

Program mode is used to select the products for each slot. All entries are made through PAGE and MENU selections. Each slot has a page of configuration menus. The top slot in the cabinet is Slot 1.

- The PAGE key selects the slot (1-4) pages.
- The MENU key selects the configuration menu items (meal and tray location).
- The UP/DOWN arrow keys select the available products for each meal.

To enter Program Mode

1. Press and hold the MENU KEY for at least five seconds. The display reads *PROG MODE*.

To enter Page Selections

Each slot page (1-4) contains product selection for each meal.

1. Press the PAGE KEY to scroll to the slot (1-4) pages.

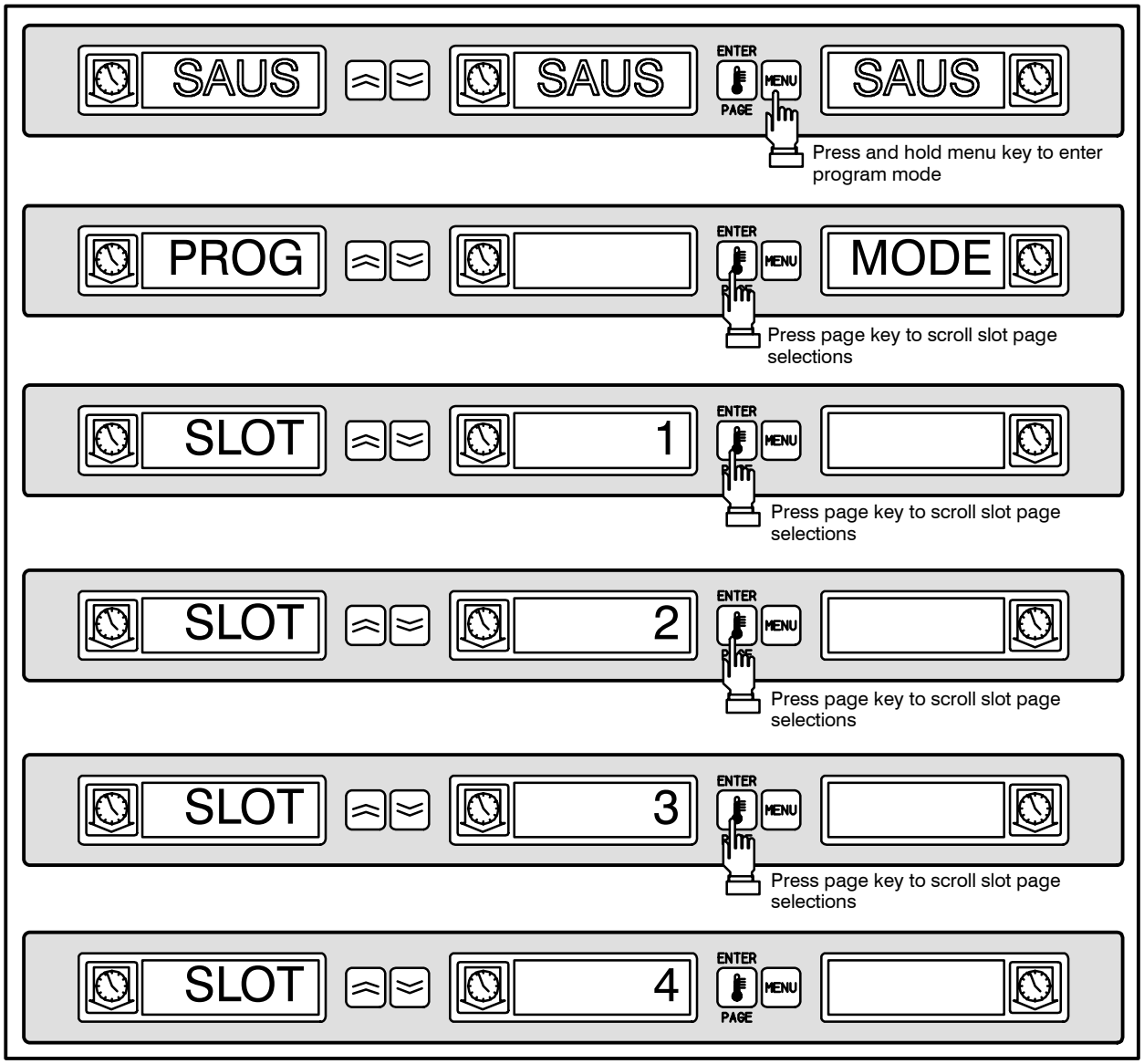


FIGURE 1

Meal Selection and Tray Position

1. Press the MENU KEY to scroll the meal and tray position in the left and center displays. The current product selection is indicated in the right display.

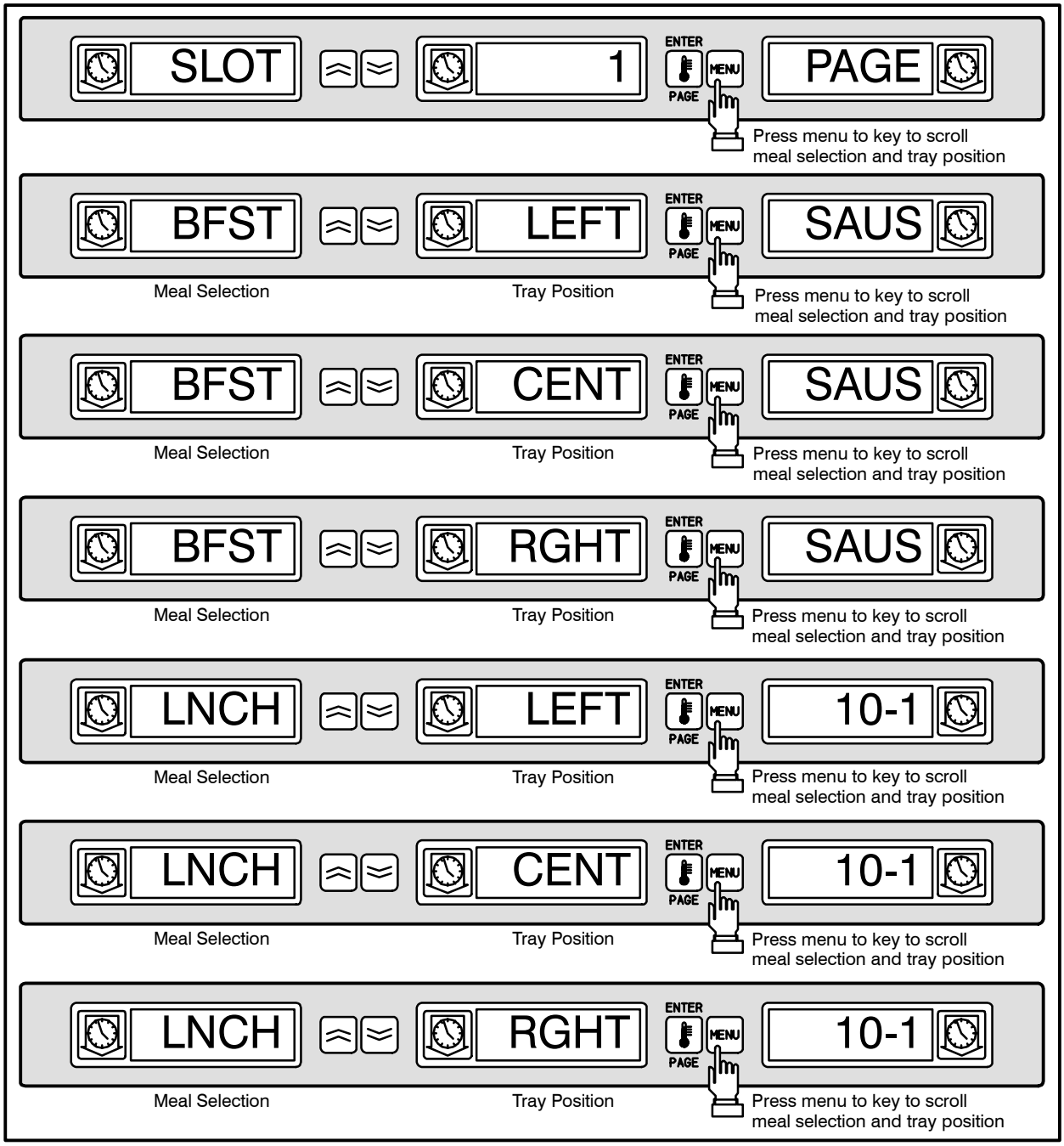


FIGURE 2

To enter Product Selection

1. Press the UP/DOWN ARROW KEYS to scroll the available product selections for each meal and tray position.

The product selection for the left tray position of each meal determines the hold temperature for the slot. Only products that have hold temperatures within 5°F (2.8°C) of the left most product selection will be displayed for selection in the center and right tray position. If the left most product selection is changed, the center and right positions must be reentered. If the product selection for an active timer is changed, the timer is automatically reset.

To exit Program Mode

1. Press and hold the MENU KEY for five seconds.

   NOTE: The controller automatically exits the program mode if no entries are made for five minutes.

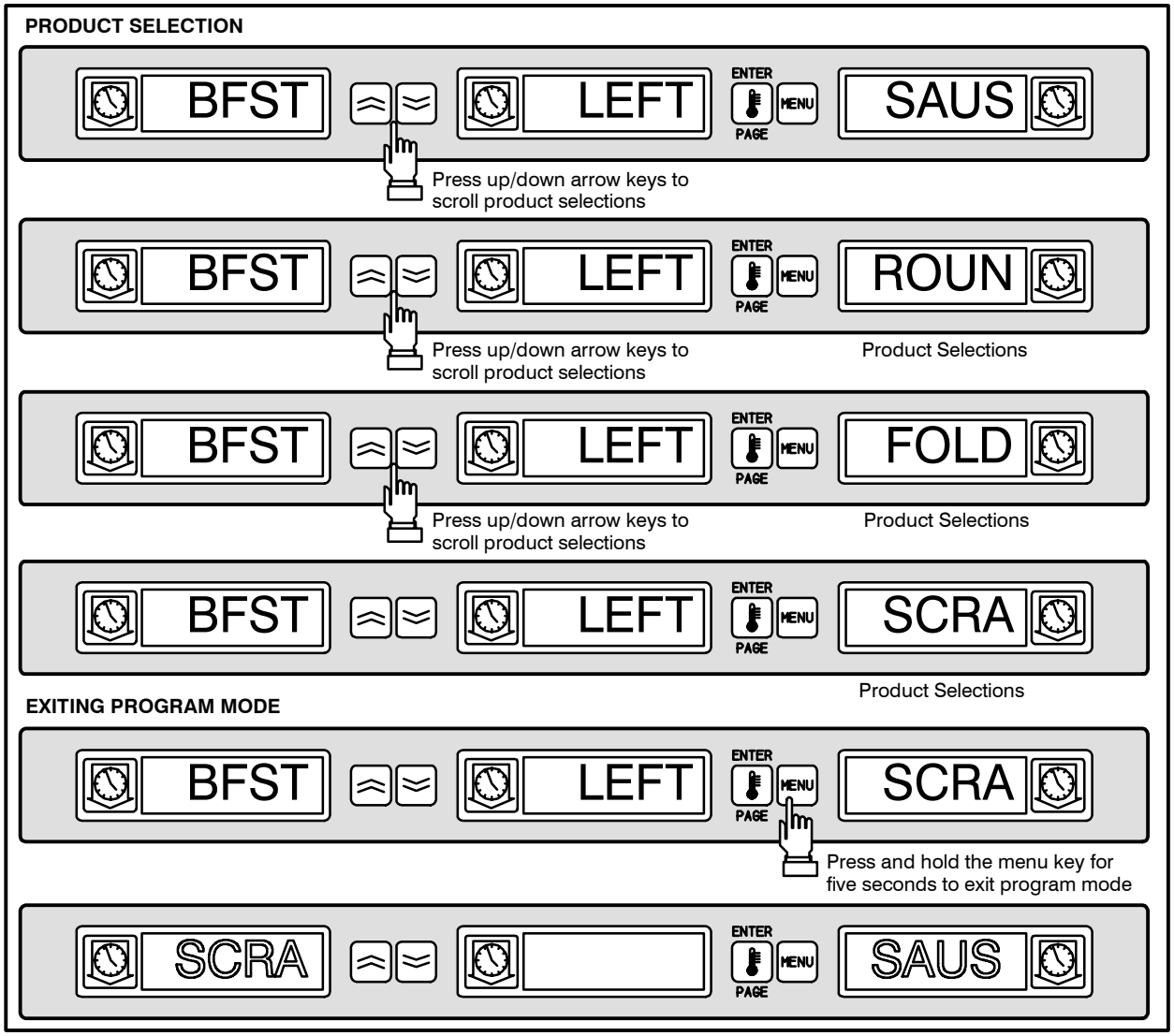
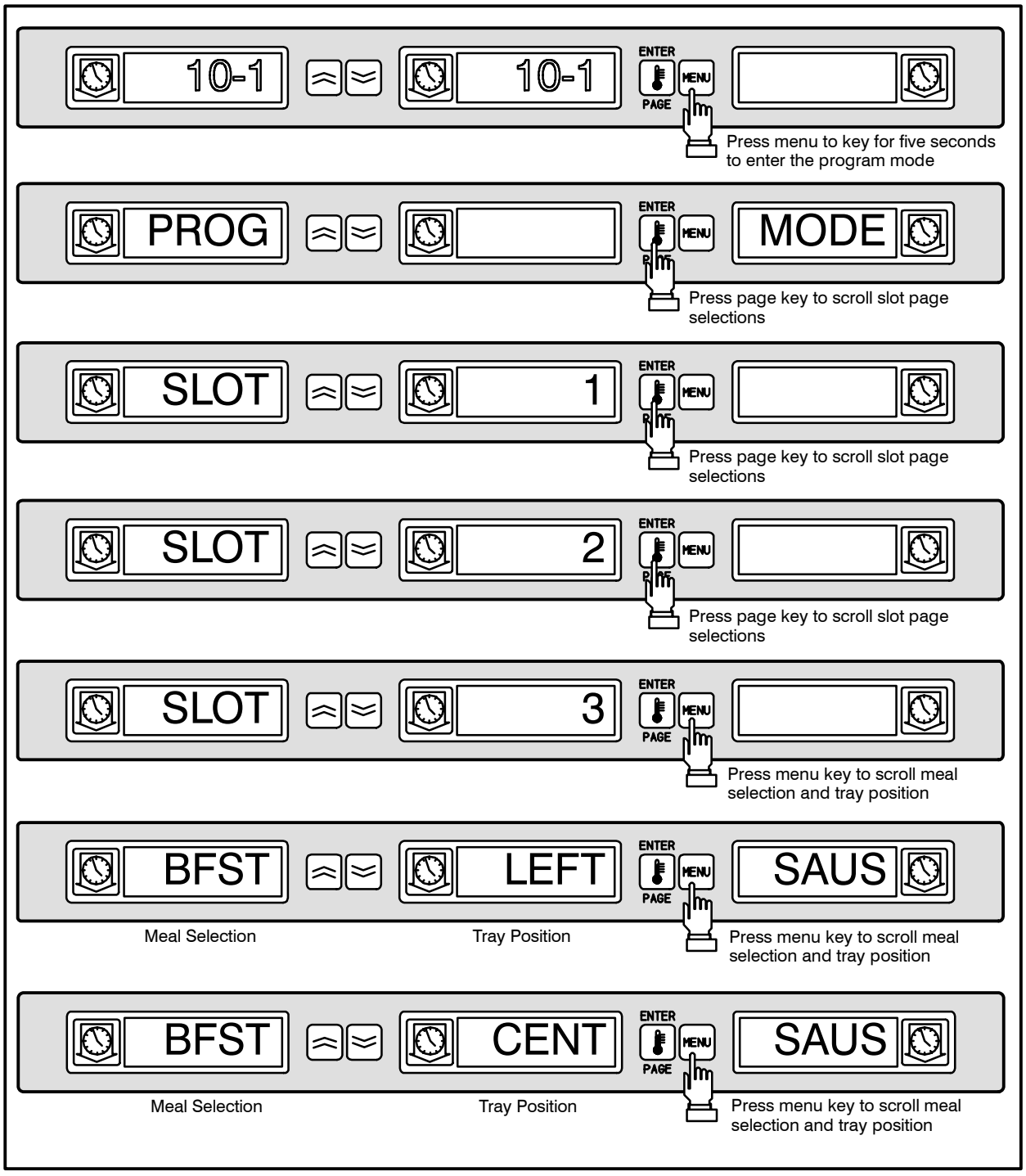


FIGURE 3

Sample product selection change

This example changes the lunch product selection in the left position of slot 3 from 10-1 to NUGG. Since the hold temperature for NUGG is different than 10-1, the center and right product selections are cleared. Only items with hold temperatures within 5°F (2.8°C) of the left product selection can be entered for the center and right position.



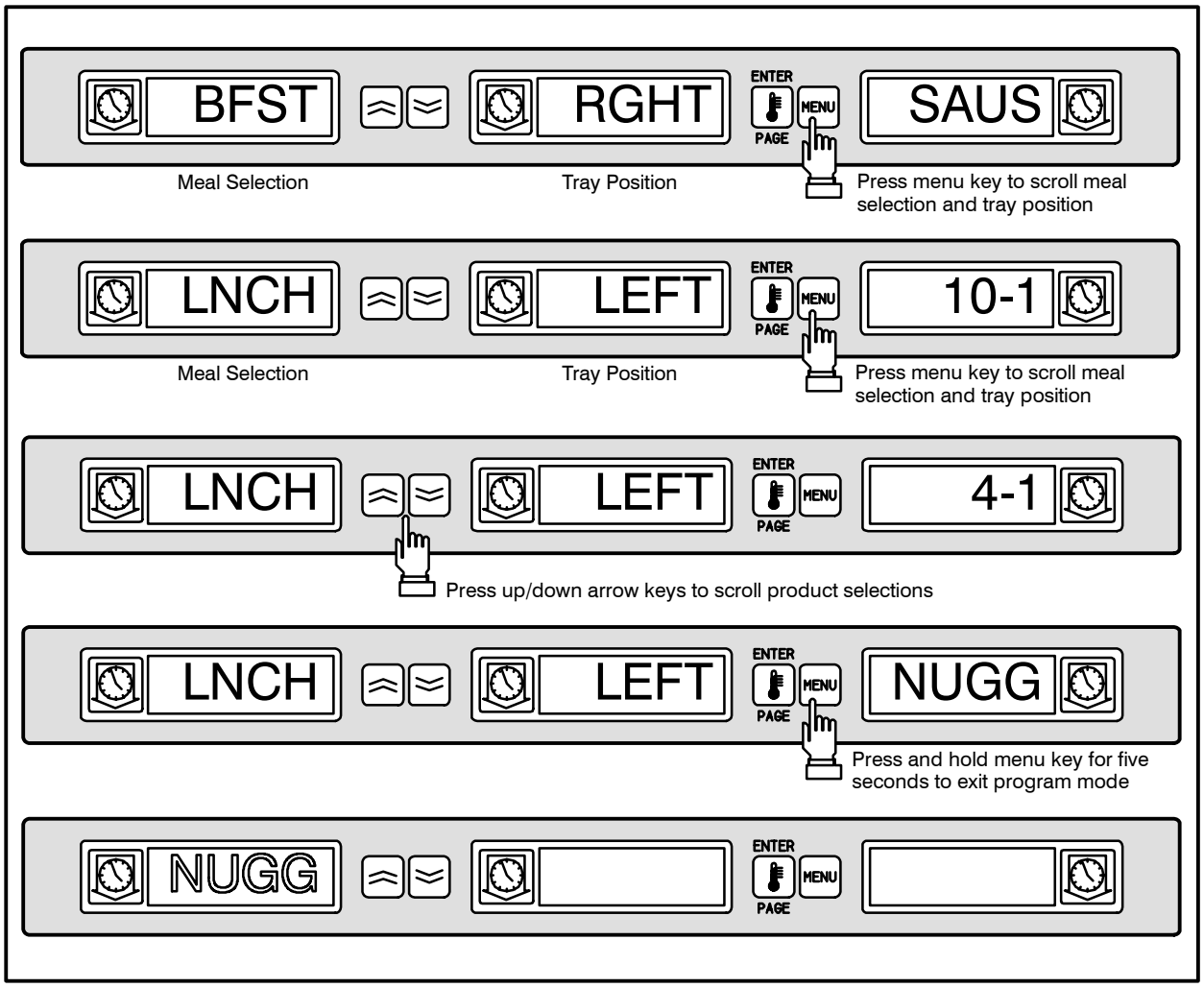

BFST
RGHT
ENTER
PAGE
MENU
SAUS
Meal Selection
Tray Position
Press menu key to scroll meal selection and tray position
LNCH
LEFT
10-1
Meal Selection
Tray Position
Press menu key to scroll meal selection and tray position
LNCH
LEFT
4-1
Press up/down arrow keys to scroll product selections
LNCH
LEFT
NUGG
Press and hold menu key for five seconds to exit program mode
NUGG

FIGURE 4

ENTERING AND EDITING PRODUCT INFORMATION

Changing or entering new product selections, hold timer and temperature setting are password protected functions.

To enter the password

1. Press and hold the MENU KEY for five seconds. The display reads *PROG MODE*.
2. Press the ENTER/PAGE KEY to scroll to *VIEW PAGE*.
3. Press the MENU KEY to select the security lock, *SECR LOCK*.
4. Press the UP and DOWN ARROW KEYS to enter the security code 123.
5. Press ENTER/PAGE KEY..

A new product entry requires entry of:

- the product name,
- hold time,
- hold temperature from 55-250°F (13-121°C),
- meal selection,

The following example enters a new product, named XXY, with a hold time of 25 minutes and hold temperature of 180°F (82°C).

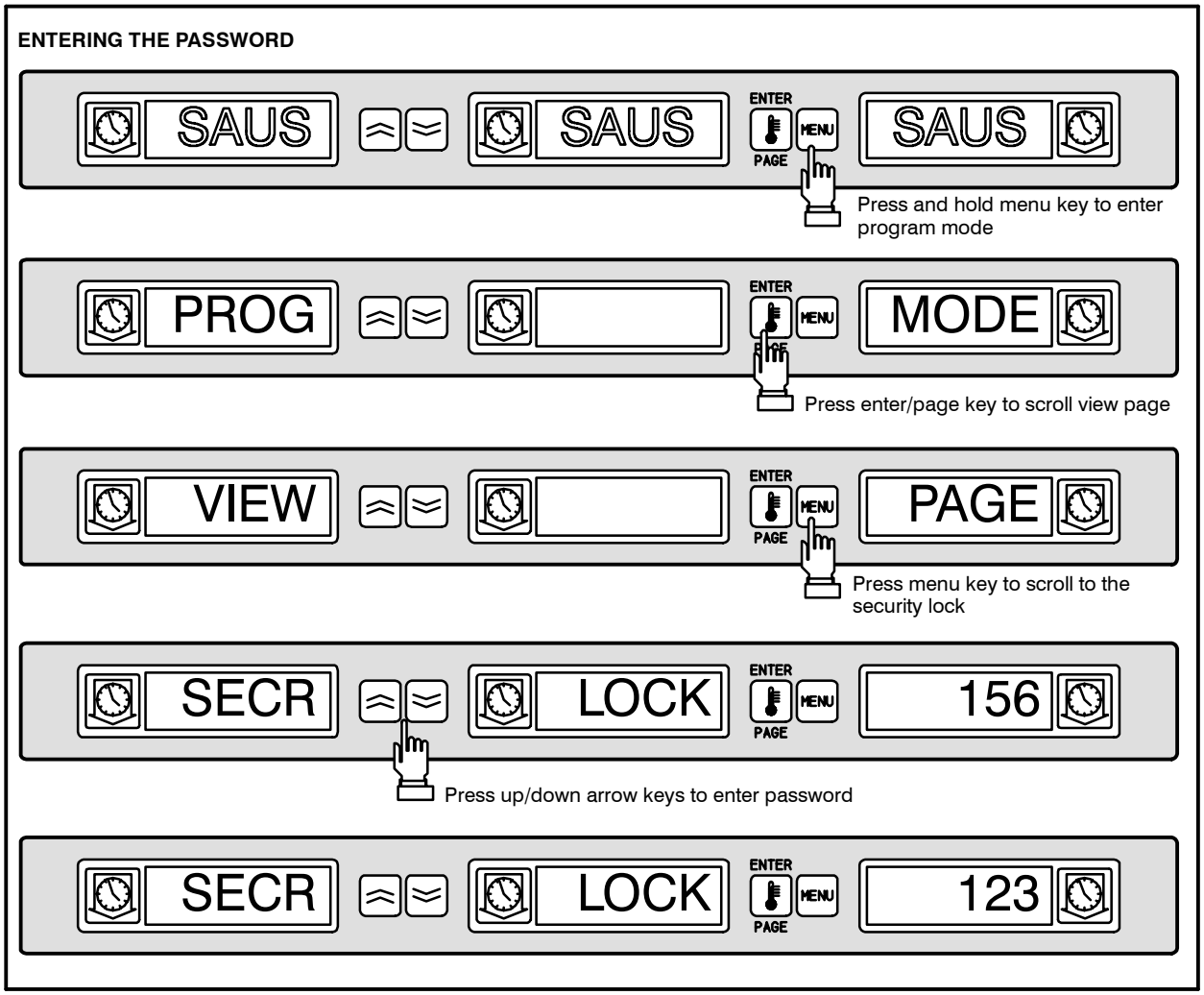


FIGURE 5

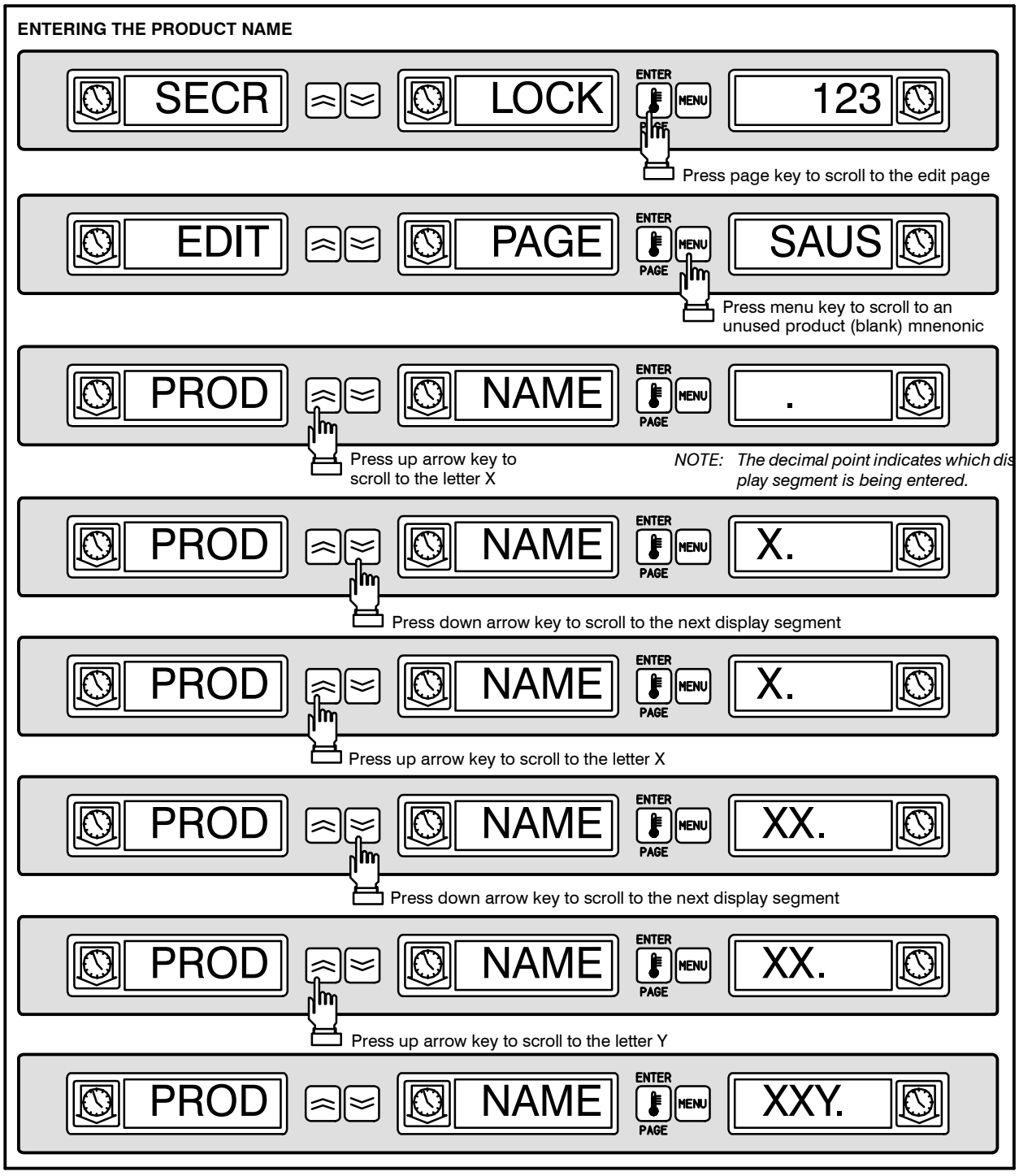

ENTERING THE PRODUCT NAME
SECR
LOCK
ENTER
MENU
PAGE
123
Press page key to scroll to the edit page
EDIT
PAGE
SAUS
Press menu key to scroll to an unused product (blank) mnenonic
PROD
NAME
.
Press up arrow key to scroll to the letter X
NOTE: The decimal point indicates which dis play segment is being entered.
X.
Press down arrow key to scroll to the next display segment
Press up arrow key to scroll to the letter X
XX.
Press down arrow key to scroll to the next display segment
Press up arrow key to scroll to the letter Y
XXY.

FIGURE 6

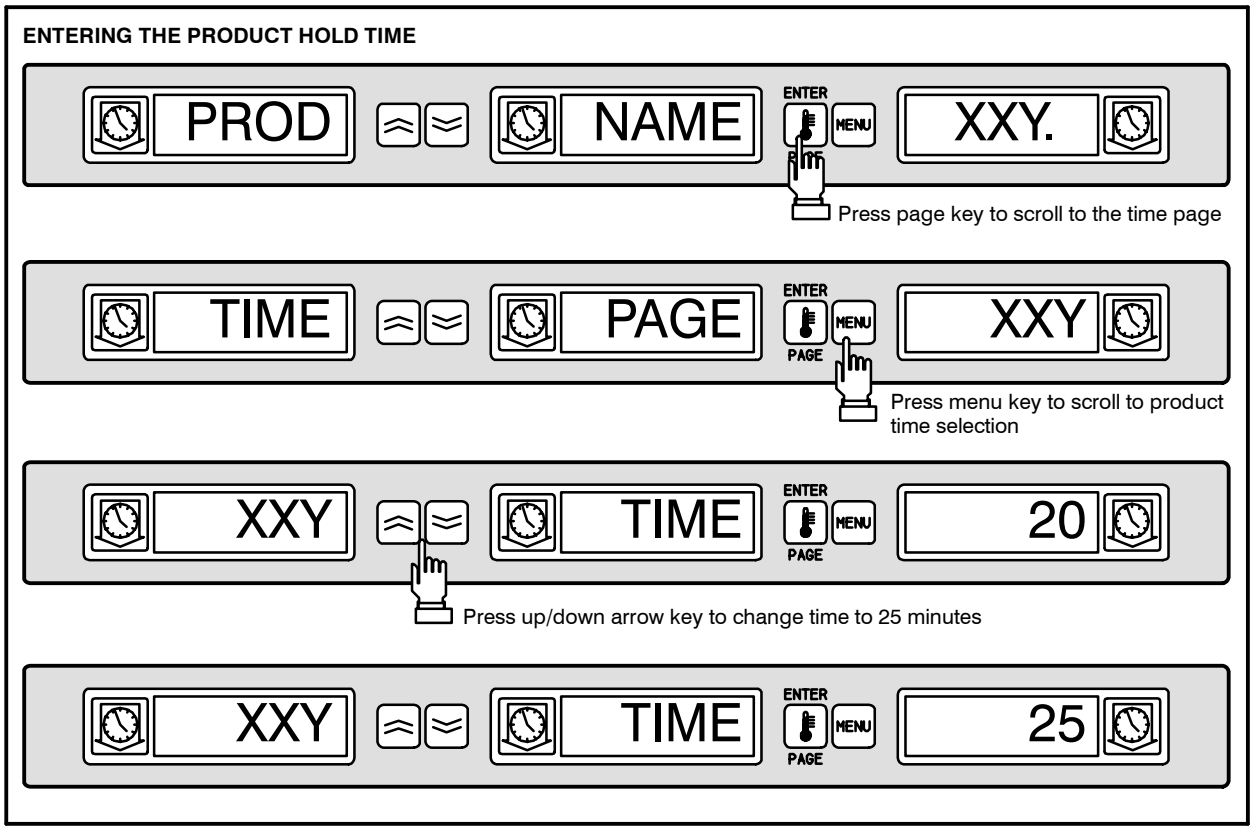

ENTERING THE PRODUCT HOLD TIME
PROD
NAME
ENTER
MENU
XXY.
Press page key to scroll to the time page
TIME
PAGE
ENTER
MENU
PAGE
XXY
Press menu key to scroll to product time selection
XXY
TIME
ENTER
MENU
PAGE
20
Press up/down arrow key to change time to 25 minutes
XXY
TIME
ENTER
MENU
PAGE
25

FIGURE 7

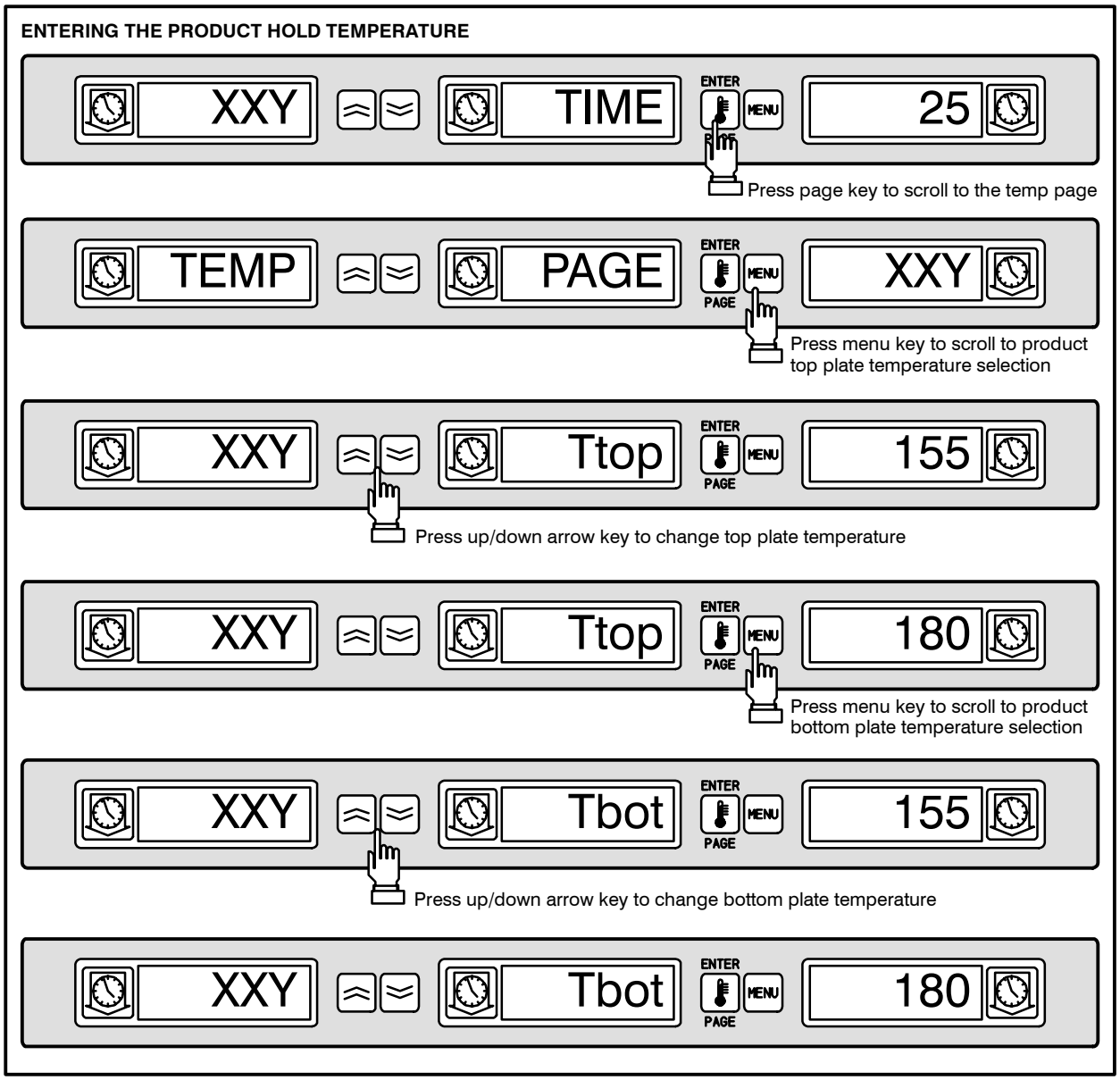

ENTERING THE PRODUCT HOLD TEMPERATURE
XXY
TIME
ENTER
MENU
PAGE
25
Press page key to scroll to the temp page
TEMP
PAGE
XXY
Press menu key to scroll to product top plate temperature selection
Ttop
155
Press up/down arrow key to change top plate temperature
180
Press menu key to scroll to product bottom plate temperature selection
Tbot
Press up/down arrow key to change bottom plate temperature

FIGURE 8

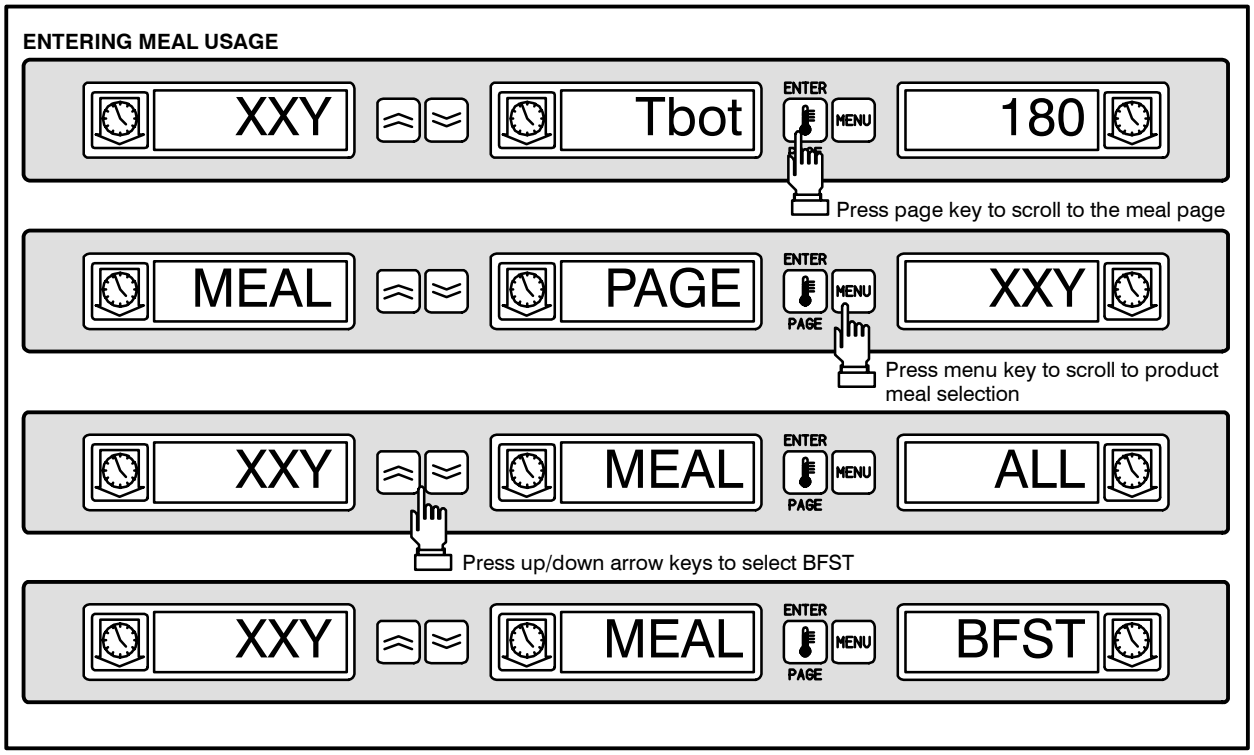

ENTERING MEAL USAGE
XXY
Tbot
ENTER
MENU
PAGE
180
Press page key to scroll to the meal page
MEAL
PAGE
ENTER
MENU
PAGE
XXY
Press menu key to scroll to product meal selection
XXY
MEAL
ENTER
MENU
PAGE
ALL
Press up/down arrow keys to select BFST
XXY
MEAL
ENTER
MENU
PAGE
BFST

FIGURE 9

MORE PRODUCT PROMPT TIME FEATURE

A cook more time may be entered for each product type that will alert the operator to cook more product before the holding time reaches zero. When the product timer equals the cook time the audible alarm will chirp for 3 seconds and the display message will alternately display *PRODUCT NAME, TIMER TIME, COOK* and *MORE* until the timer times out. If more than one tray of a product type is active the cook more alarm will not occur until all active timers reach the cook time.If a position is indicating, COOK MORE and another timer of the same product is started, the *COOK MORE* message will be cleared. During transition from breakfast to lunch the COOK MORE indication is disabled. Use the following procedure to change or enter the cook time of a product svelection:

1. Press and hold the menu key for 5 seconds.
2. Press the page key to scroll to view page.
3. Press the menu key to scroll to the security lock.
4. Press the up and down arrow keys to enter the manager security code: 3 3 1.
5. Press the page key to scroll to cook page.
6. Press the menu key to scroll to product selection.
7. Press the up and down arrow keys to increase or decrease the prompt time (in minutes) to cook more product.
8. When complete, press and hold the menu key for 5 seconds to return to normal operation.

DEFAULT SELECTIONS FOR THE PROMPT TIME

MNEMONICS			Description	Available Settings	Access Level
Left	Center	Right*			
COOK	PAGE		Cook Page		
SAUS	COOK	4	Product 1 Cook Time	0–30 Minutes	3
ROUN	COOK	4	Product 2 Cook Time	0–30 Minutes	3
FOLD	COOK	3	Product 3 Cook Time	0–30 Minutes	3
SCRA	COOK	3	Product 4 Cook Time	0–30 Minutes	3
RBAC	COOK	0	Product 5 Cook Time	0–30 Minutes	3
CBAC	COOK	1	Product 6 Cook Time	0–30 Minutes	3
MUFF	COOK	3	Product 7 Cook Time	0–30 Minutes	3
BISC	COOK	22	Product 8 Cook Time	0–30 Minutes	3
BURR	COOK	0	Product 9 Cook Time	0–30 Minutes	3
10–1	COOK	2	Product 10 Cook Time	0–30 Minutes	3
4–1	COOK	4	Product 11 Cook Time	0–30 Minutes	3
GRCK	COOK	5	Product 12 Cook Time	0–30 Minutes	3
NUGG	COOK	5	Product 13 Cook Time	0–30 Minutes	3
FISH	COOK	5	Product 14 Cook Time	0–30 Minutes	3
McCK	COOK	7	Product 15 Cook Time	0–30 Minutes	3

NOTE: The right display gives the time in minutes.

CHANGING THE DISPLAY TIME

The rate at which an active timer alternately displays product selection and hold time may be adjusted as follows:

1. Enter the manager programming security code. See page 3–6.
2. Press the MENU KEY to scroll to product display time, *PROD TIME*.
3. Press the UP and DOWN ARROW KEYS to change the product display time.
4. Press the MENU KEY to scroll to timer display time, *TIMR TIME*.
5. Press the UP and DOWN ARROW KEYS to change the timer display time.
6. Press and hold the MENU KEY for five seconds to return to normal operation.

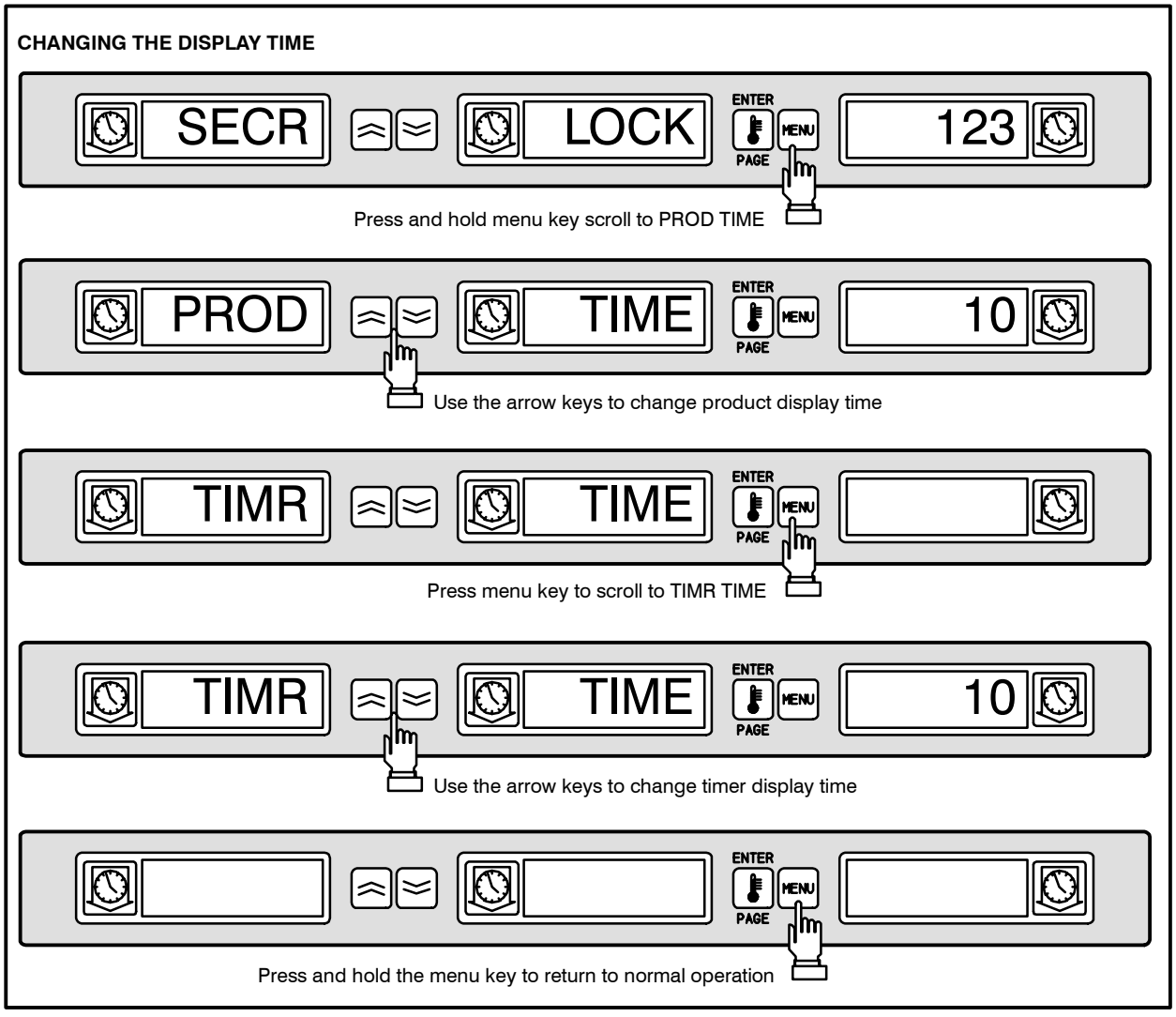


FIGURE 10

CHANGING THE DISPLAY INTENSITY

The brightness of each of the three intensity levels used for product status may be adjusted as follows:

1. Enter the manager programming security code. See page 3–6.
2. Press the MENU KEY to scroll to display intensity level. The display reads *DISP IntX*. There are three display intensity levels available.

Level #	Display	Range	Default
1 (dimmest)	Int1	10–25	10
2 (mid-level)	Int2	10–25	10
3 (brightest)	Int3	67-100	100

TABLE 1

3. Press the UP and DOWN ARROW KEYS to change the intensity level.
4. Press and hold the MENU KEY for five seconds to return to normal operation.

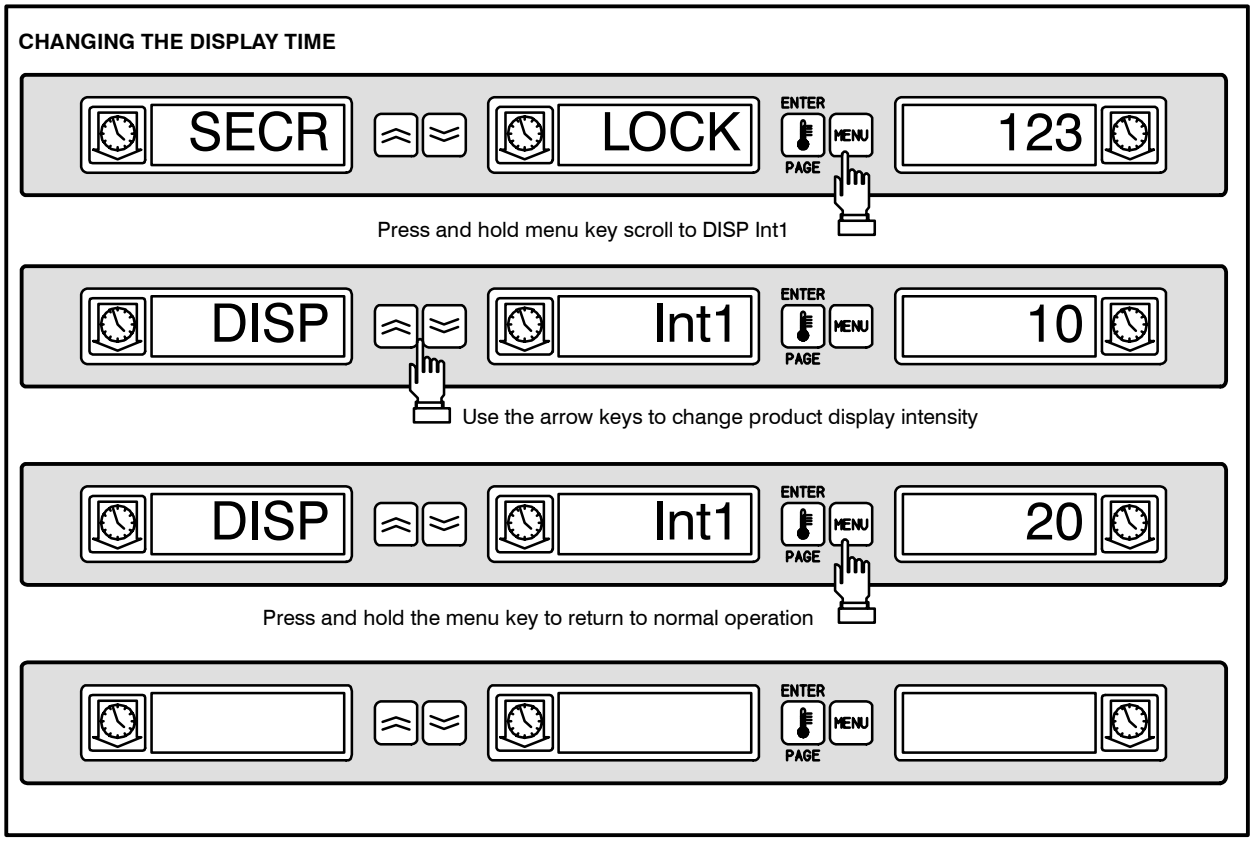


FIGURE 11

SERVICE PROGRAMMING AND CALIBRATION

THE FOLLOWING PROGRAMMING AND CALIBRATION INFORMATION IS FOR AUTHORIZED SERVICE PERSONNEL ONLY.

TO ACCESS SERVICE PROGRAMMING

Service programming is password protected. Use the following procedure to enter the password and access service programming (level 3 programming).

1. Press and hold the MENU KEY for five seconds.
2. Press the ENTER/PAGE KEY to scroll to *VIEW PAGE*.
3. Press the MENU KEY to scroll to the security lock, *SCR LOCK*.
4. Press the UP and DOWN ARROW KEYS to enter the security code 247 or 331.
5. Press ENTER/PAGE KEY.

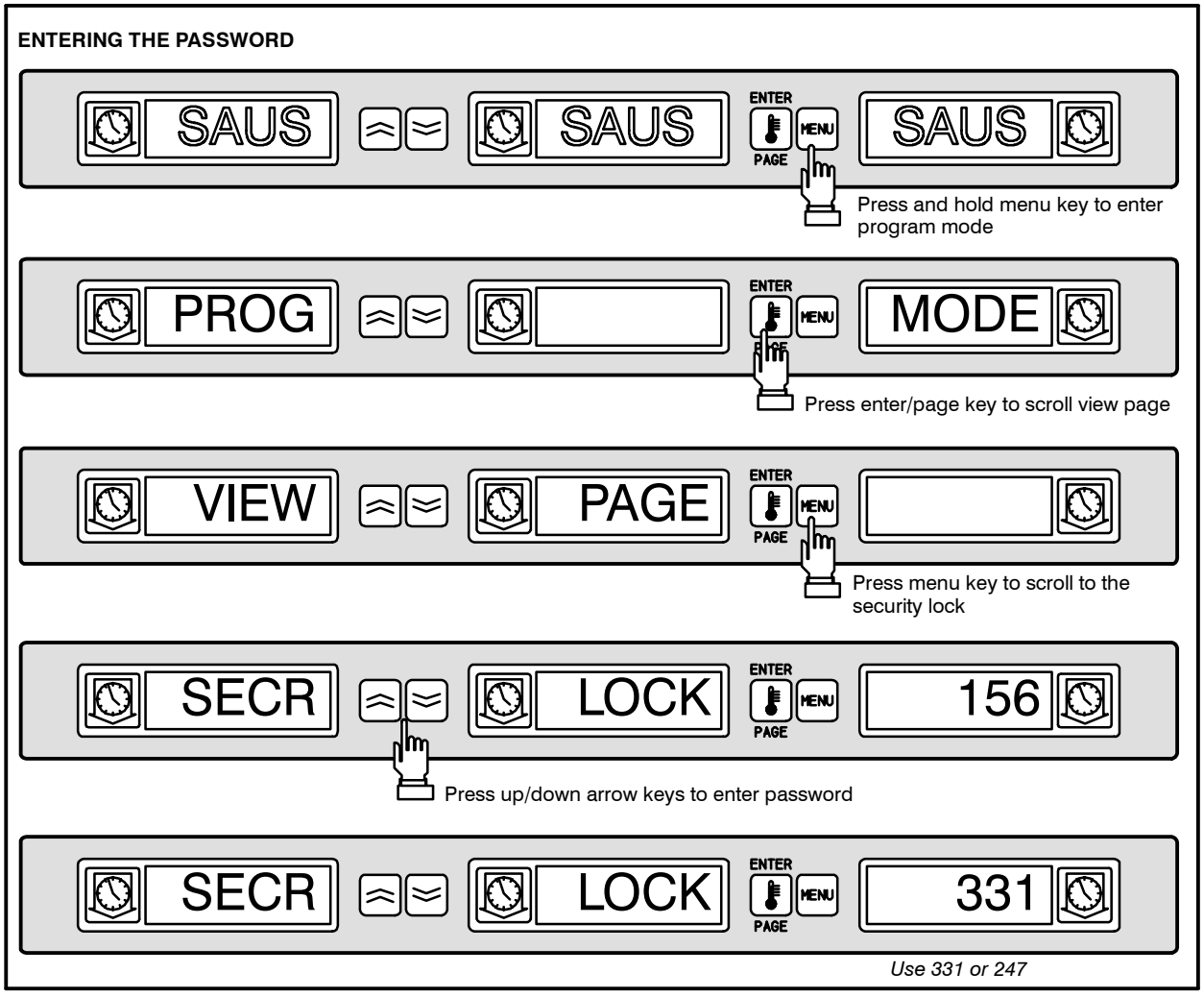


FIGURE 12

OFFSET CALIBRATION

The offset value is the difference between the setpoint and the actual temperature. If the actual temperature is lower than the setpoint a negative offset is needed. If the actual temperature is higher than the setpoint a positive offset is needed.

Use the surface probe to compare the top and bottom temperatures to the setpoint value of 155°F (68°C). Take all measurements from the slot center position. Record the value. Repeat for all slots. If the actual temperature varies from the setpoint by ±5°F (3°C) adjust the temperature offset as follows:

1. After accessing the service level programming, press the ENTER/PAGE key to scroll to the slot number requiring adjustment.

   NOTE: It is possible to access all slots from any display.

2. Press the MENU key to advance to top or bottom of offset selection. Use the ARROW keys to select the offset value. Press the ENTER key to advance to the next slot. Repeat for all slots.
3. Press the MENU key for five seconds to exit service programming.

   NOTE: It is not necessary to exit the programming mode if you wish to advance to Display Test or Timer Test.

DISPLAY TEST MODE

The display test verifies all display segments are operational.

NOTE: Executing the display test requires access to level 5 programming. Contact Blodgett Service to acquire the necessary password.

1. Press the ENTER/PAGE key to scroll to *TEST PAGE*.
2. Press the MENU KEY to scroll to *DISPLAY TEST OFF*.
3. Press and hold the bottom two outside timers until the displays change. All segments should illuminate and stay lit to give the operator time to check both sides of the UHC. After the displays have been checked, turn the unit off and back on again to exit the display test mode.
4. After verifying all slot display segments illuminate, press the ARROW KEY to stop the test. The display reads *DISPLAY TEST OFF*.
5. Press the MENU key for five seconds to exit service programming.

   NOTE: It is not necessary to exit the programming mode if you wish to advance to the Timer Test.

TIMER FAST TEST

This test changes the timing on the TIMER KEYS from minutes to seconds to allow for quick test of the timer keys. Access service level programming to execute the timer test.

1. Press the ENTER/PAGE key to scroll to *TEST PAGE*.
2. Press the MENU KEY to scroll to *FAST TEST OFF*.
3. Press the ARROW KEY to toggle to *FAST TEST ON*.
4. It is necessary to exit the service programming level to test the timer keys. Press the MENU KEY for five seconds to exit service programming and test the timer keys.
5. Press any TIMER KEY to activate and verify the timer count down while in seconds mode. The timer counts down and an alarm sounds. To silence the alarm press the TIMER KEY.
6. To cancel TIMER FAST TEST re-enter the service level programming. See page 3–14.
7. Press the ENTER/PAGE key to scroll to *TEST PAGE*.
8. Press the MENU KEY to scroll to *FAST TEST ON*.
9. Press the MENU KEY to toggle to *FAST TEST OFF*.
10. Press the MENU KEY for five seconds to exit the service level programming.

OFFSET CALIBRATION

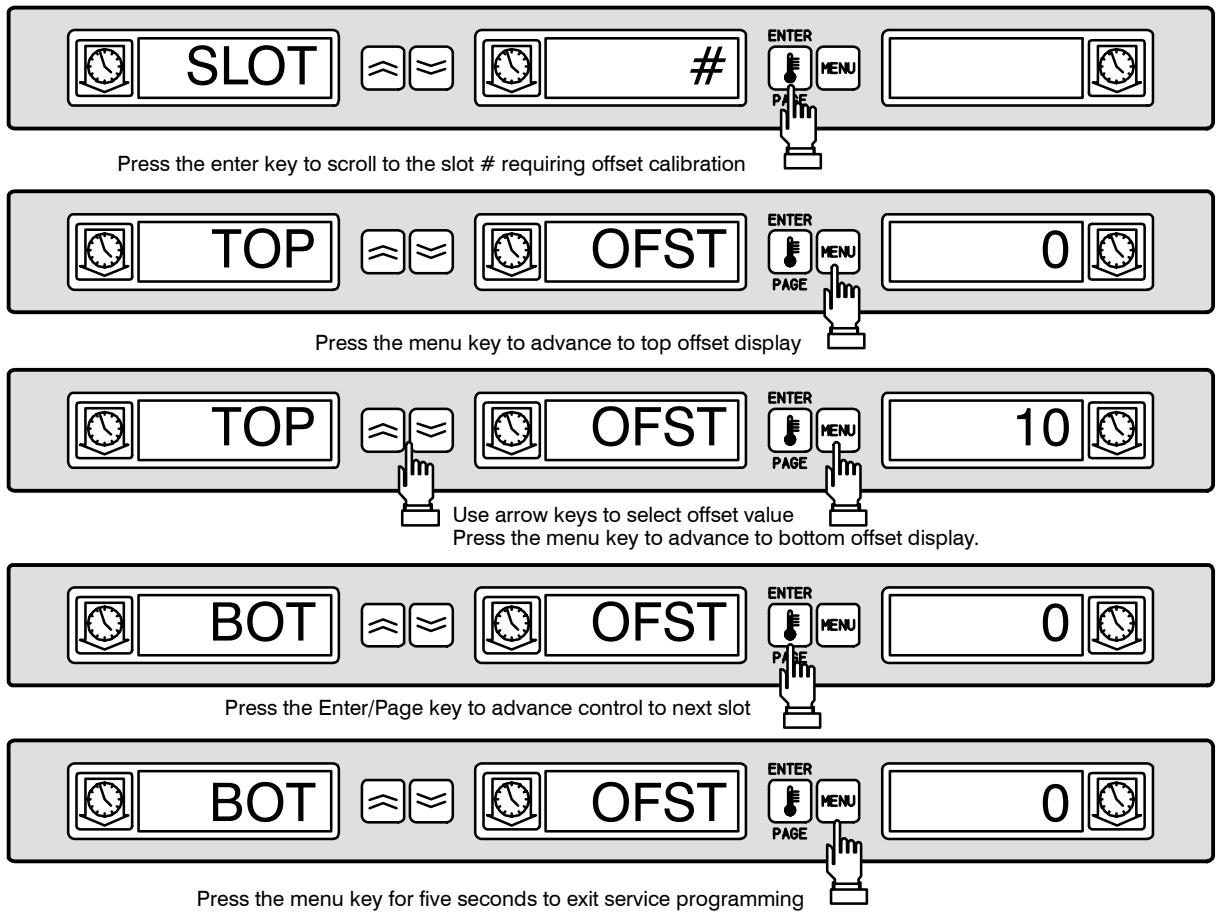


FIGURE 13

DISPLAY TEST

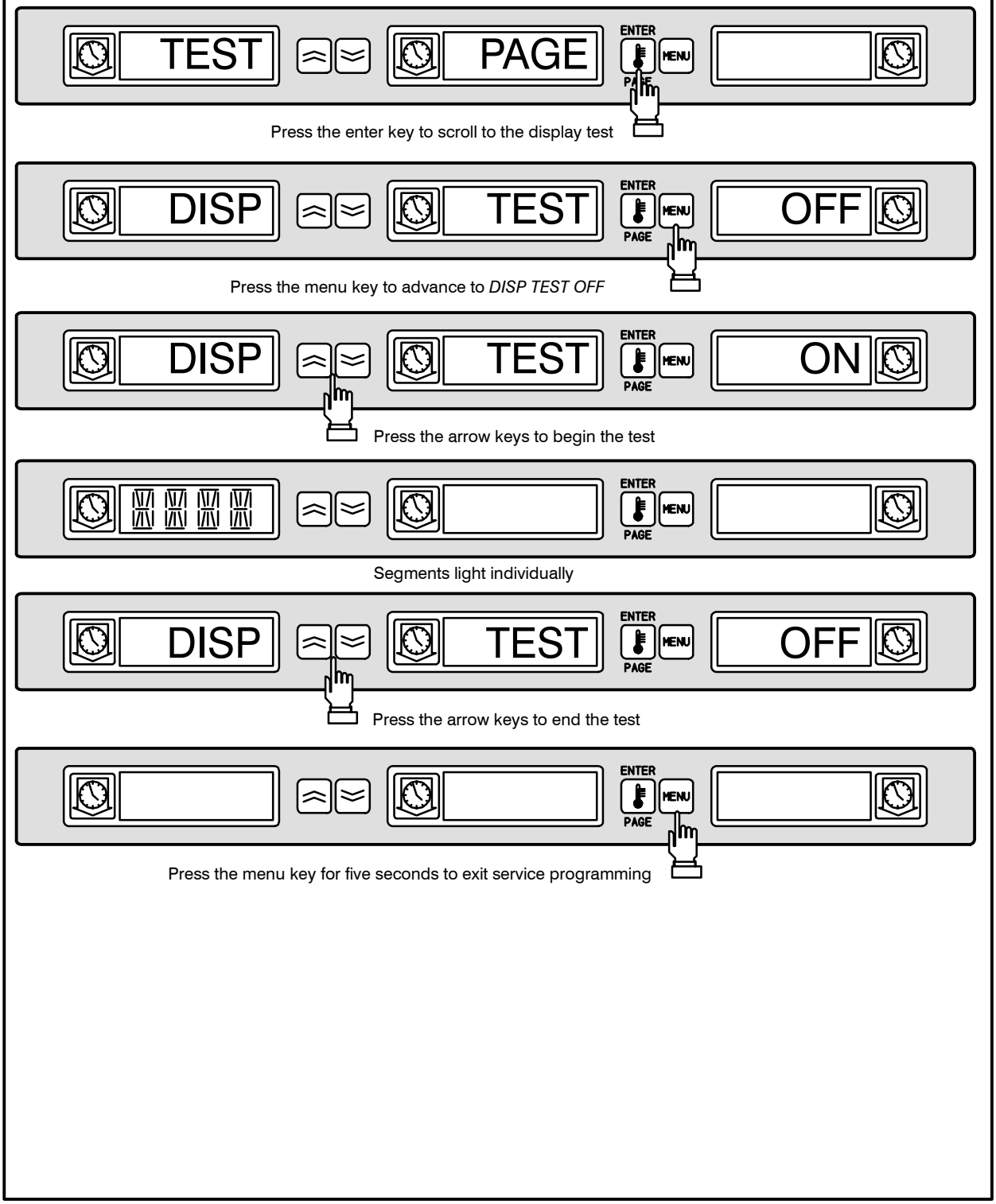


FIGURE 14

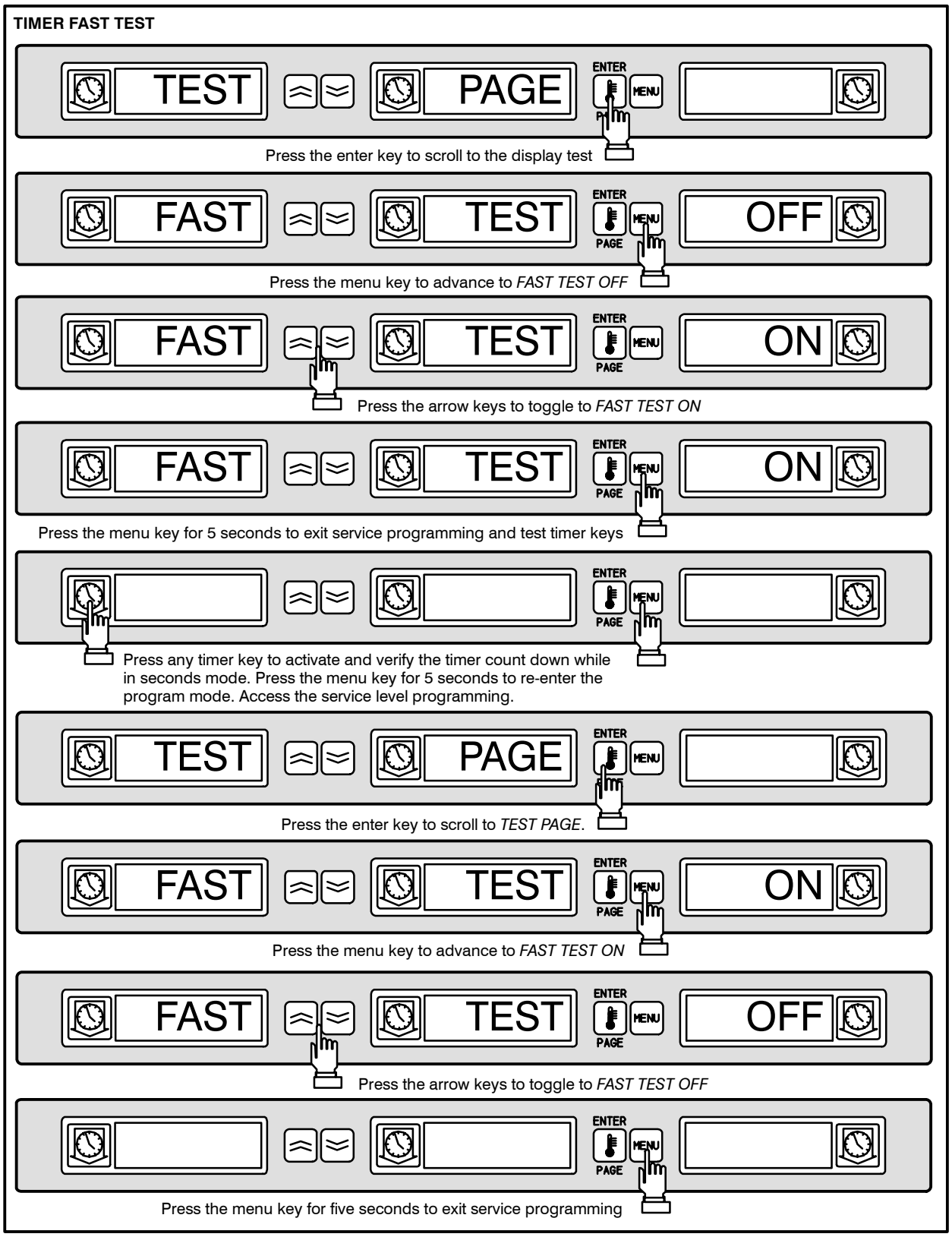

TIMER FAST TEST
TEST
PAGE
ENTER
MENU
Press the enter key to scroll to the display test
FAST
TEST
OFF
Press the menu key to advance to FAST TEST OFF
ON
Press the arrow keys to toggle to FAST TEST ON
Press the menu key for 5 seconds to exit service programming and test timer keys
Press any timer key to activate and verify the timer count down while in seconds mode. Press the menu key for 5 seconds to re-enter the program mode. Access the service level programming.
Press the enter key to scroll to TEST PAGE.
Press the menu key to advance to FAST TEST ON
Press the arrow keys to toggle to FAST TEST OFF
Press the menu key for five seconds to exit service programming

FIGURE 15

CHANGING FROM °F TO °C

The following changes the temperature units from °F to °C.

1. Enter the service programming security code. See page 3–14.
2. Press the MENU KEY to scroll to display units.
3. Press the UP and DOWN ARROW KEYS to change from °F to °C.
4. Press and hold the MENU KEY for five seconds to return to normal operation.

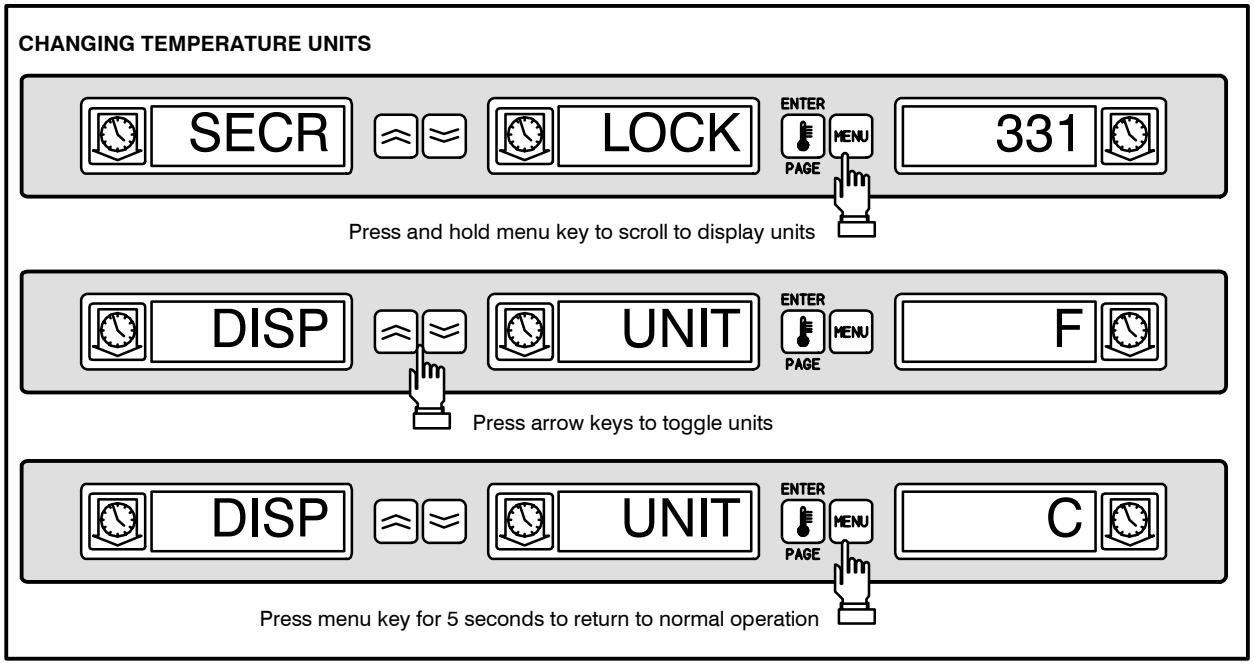


FIGURE 16

PROGRAMMING ALARMS

FOOD AND DRUG ADMINISTRATION (FDA) ALARM

The FDA alarm indicates the slot temperature is below the FDA temperature setpoint (140°F) for a time greater than the FDA time setting.

1. Enter the service programming security code. See page 3–14.
2. Press the MENU KEY to scroll to *FDA PAGE*.
3. Press the ENTER key to advance the control. Use the ARROW keys to enter FDA time from 0-5 minutes. The default is 2 minutes. Press the ENTER key to advance the control.
4. Use the ARROW keys to enter FDA temperature from 55-140°F. The default is 140°F. Press the ENTER key to advance the control.
5. Press and hold the MENU key to exit programming.

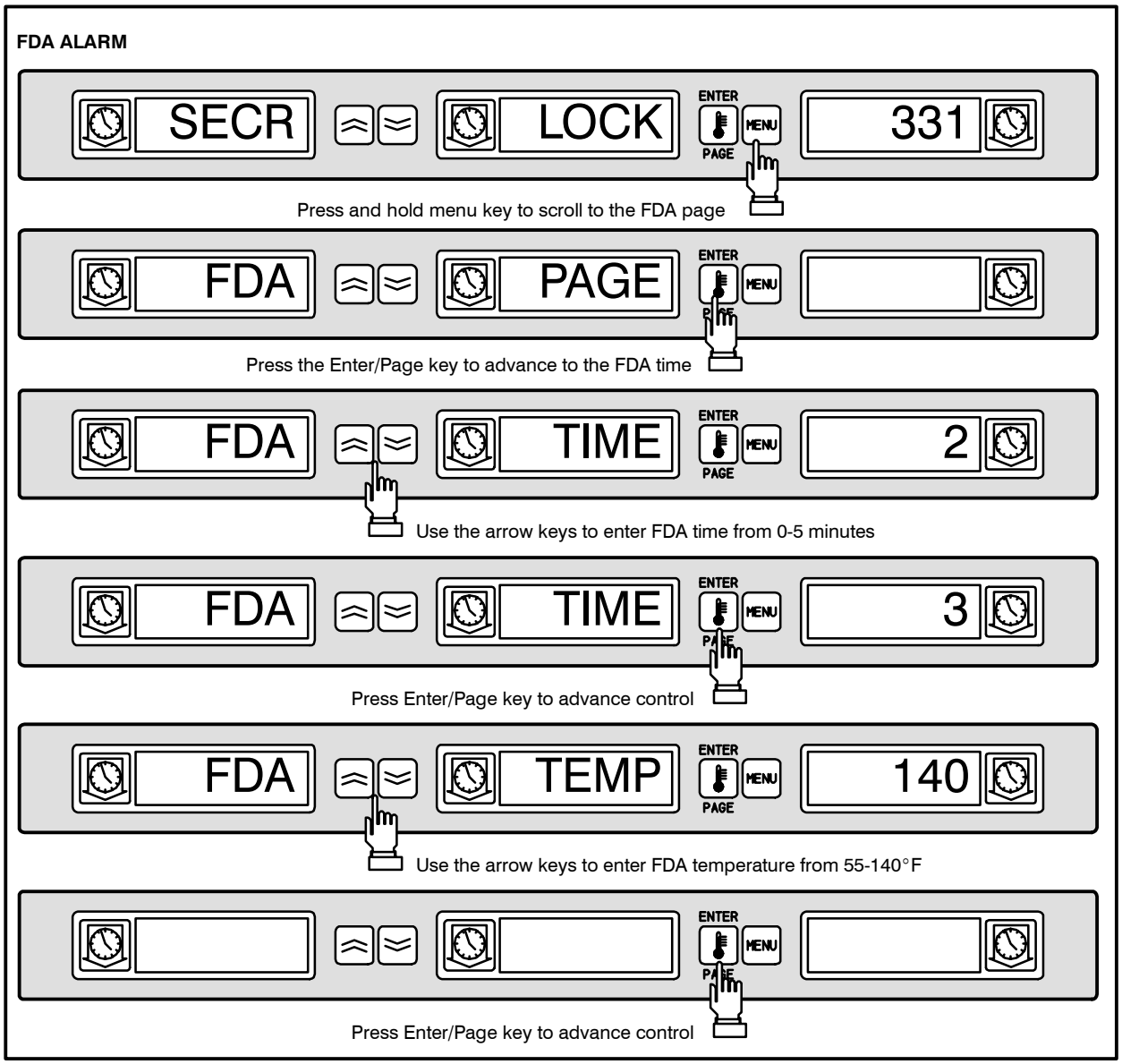


FIGURE 17

HI AND LOW TEMPERATURE ALARMS

If the slot temperature is above or below the preset limits for a product selection, the control enters the high or low alarm condition. The alarm setpoints can be programmed from the ALRM PAGE. They are entered as °F offsets from the product setpoint. The default settings are 10°F.

NOTE: When switching menus or products the temperature alarm is displayed if the new product or menu requires a holding temperature outside of the current alarm band. If the condition remains for two or more minutes an audible alarm sounds. Press any timer key to silence the alarm. The display returns to normal when the new hold temperature has been reached.

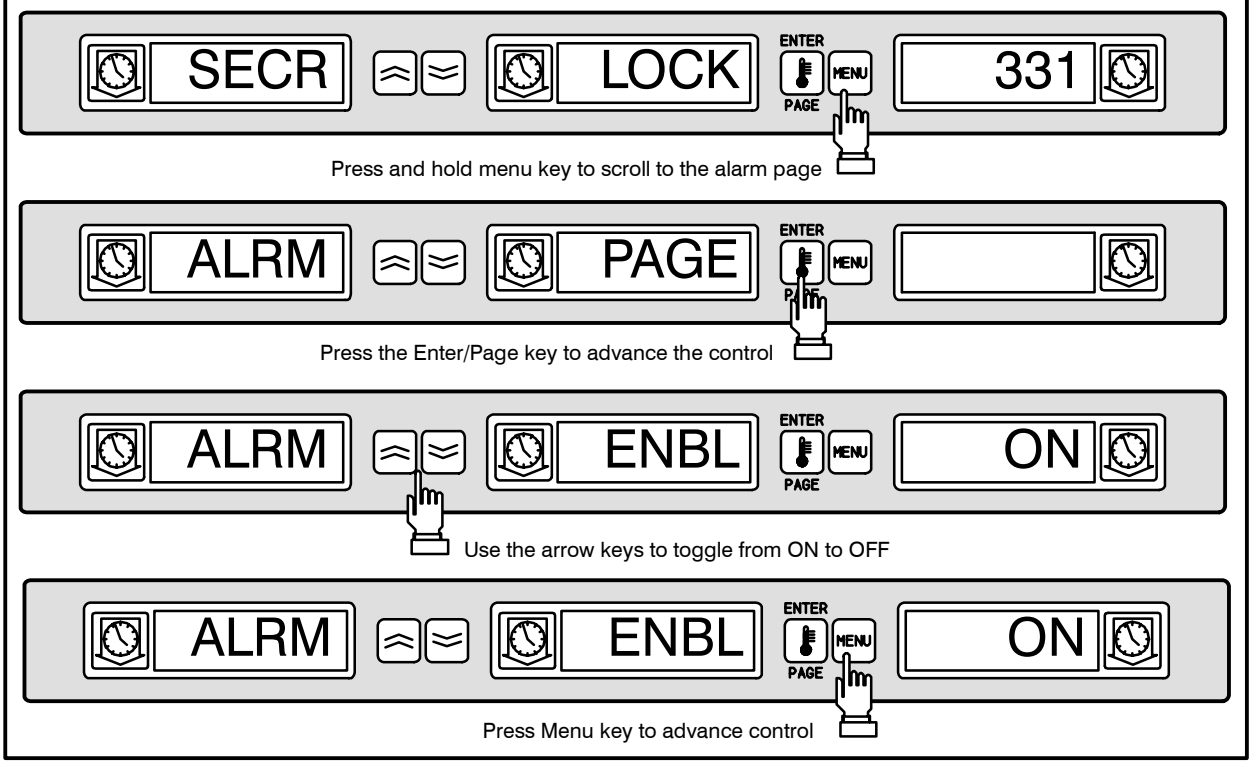
1. Enter the service programming security code. See page 3–14.
2. Press the MENU KEY to scroll to *ALRM PAGE*.
3. Press the ENTER KEY to advance the control. The display reads *ALRM ENBL ON.*

   NOTE: Selecting ALRM ENBL OFF disables the visual and/or audible product alarms for all slots.

4. Use the ARROW KEYS to toggle bewteen off and on. Press the MENU KEY to advance the control.
5. The display reads *ALRM LoSP X.* Use the ARROW KEYS to enter the desired low temperature alarm from 1-10°F. Press the MENU KEY to advance the control.
6. The display reads *ALRM HiSP X.* Use the ARROW KEYS to enter the desired high temperature alarm from 1-10°F. Press the MENU KEY to advance the control.
7. The display reads *ALRM TIME X.* The alarm time allows an alarm condition to exist for up to 5 minutes before activating the audible alarm. The default setting is 2 minutes.

   Use the ARROW KEYS to enter the desired alarm time from 0-5 minutes. Press the ENTER KEY to advance the control.
8. Press and hold the MENU key to exit programming.

HIGH AND LOW TEMPERATURE ALARM



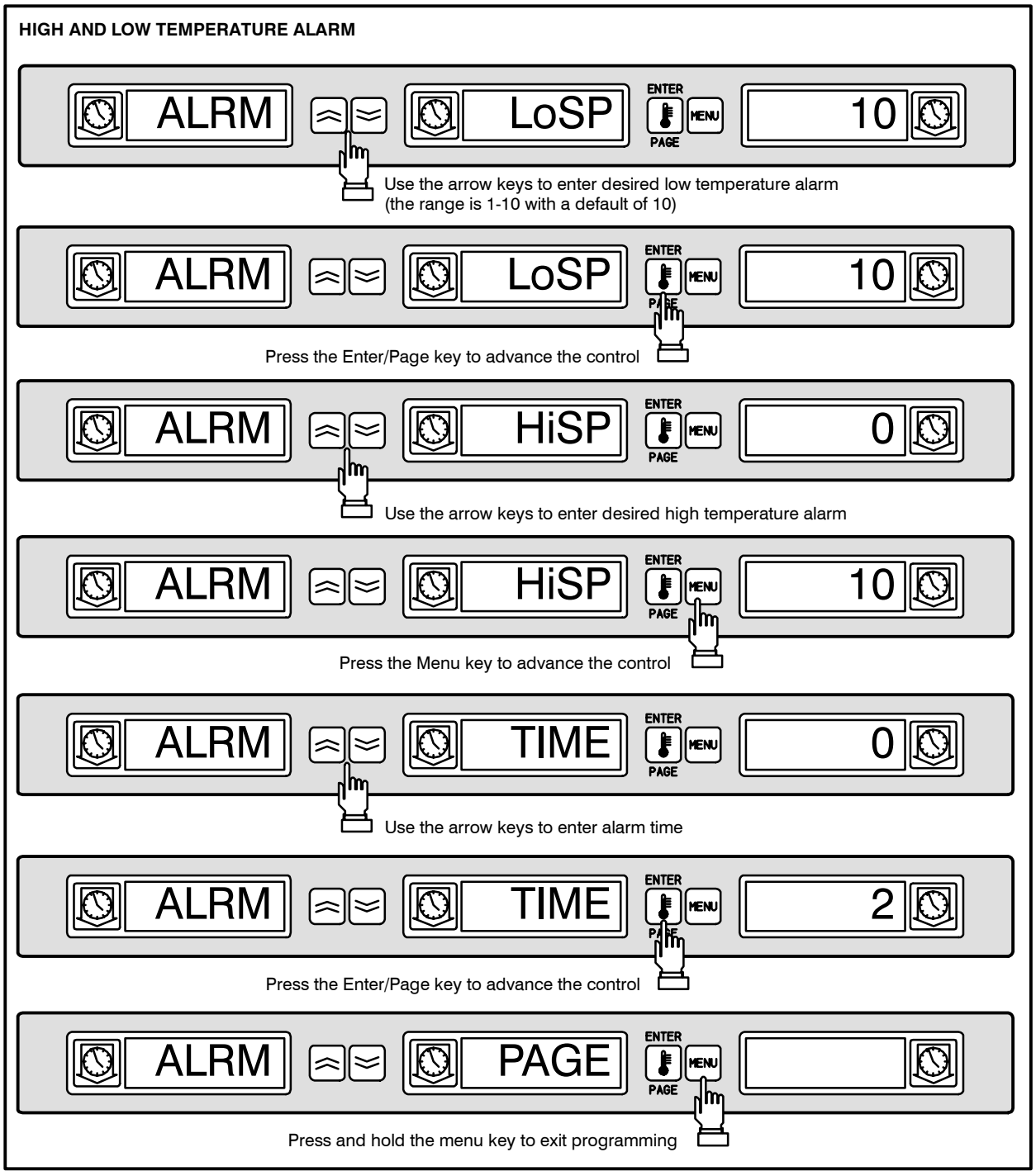

HIGH AND LOW TEMPERATURE ALARM
ALRM
LoSP
ENTER
MENU
PAGE
10
Use the arrow keys to enter desired low temperature alarm
(the range is 1-10 with a default of 10)
ALRM
LoSP
ENTER
MENU
PAGE
10
Press the Enter/Page key to advance the control
ALRM
HiSP
ENTER
MENU
PAGE
0
Use the arrow keys to enter desired high temperature alarm
ALRM
HiSP
ENTER
MENU
PAGE
10
Press the Menu key to advance the control
ALRM
TIME
ENTER
MENU
PAGE
0
Use the arrow keys to enter alarm time
ALRM
TIME
ENTER
MENU
PAGE
2
Press the Enter/Page key to advance the control
ALRM
PAGE
ENTER
MENU
PAGE
Press and hold the menu key to exit programming

FIGURE 18

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CHAPTER 4

TROUBLESHOOTING

TROUBLESHOOTING ELEMENTS AND WARNING ALARMS

CAUTION: Due to electrostatically sensitive components. All technicians performing service work must be grounded. Grounding may be accomplished using a grounding strap or other suitable means. Connect to another grounded unpowered piece of equipment. (ie. equipment other than the one you are currently working on.)

During initial heat from a cold start, the unit applies full voltage to the elements. As the shelf approaches the setpoint temperature, the control pulses the output of the elements. This allows for an accurate set point response with minimum temperature overrun.

NOTE: The control also pulses output during normal operation to provide an even temperature response.

To Troubleshoot an Element

1. Verify offset calibration. Refer to page 3–15. If correct continue with step 2.
2. Attach an amp clamp to the input. Observe the steady amp draw during the initial startup and the subsequent pulsing of this input at temperatures close to set point.

The main control applies voltage to the element assemblies by way of a TRIAC solid state device. This circuit normally fails in the closed position and can result in an overheat condition. If the elements do not receive the pulse input, the main control is defective. To replace a defective element, the upper and lower portion of the shelf must be replaced whichever is defective.

Several warning alarms can result from a defective element:

- High and low temperature alarm
- FDA alarm
- Sensor alarm
- Rise time alarm

If an alarm conditions occurs, a display alarm appears. An audible alarm may sound depending on the alarm condition. Press the timer key to silence the audible alarm. Timers cannot be started when a slot is in an alarm condition.

HI AND LOW TEMPERATURE ALARM

If the slot temperature is above or below the preset limits for a product selection, the controller enters the high or low alarm condition. The display reads either *SLOT TEMP HIGH* or *SLOT TEMP* LOW.

1. An audible alarm sounds if the alarm condition remains for two or more minutes.

NOTE: The low temperature audible alarm is inhibited at power up. The SLOT TEMP LOW message is displayed alternately with the product selection until the slot is within the preset limits.

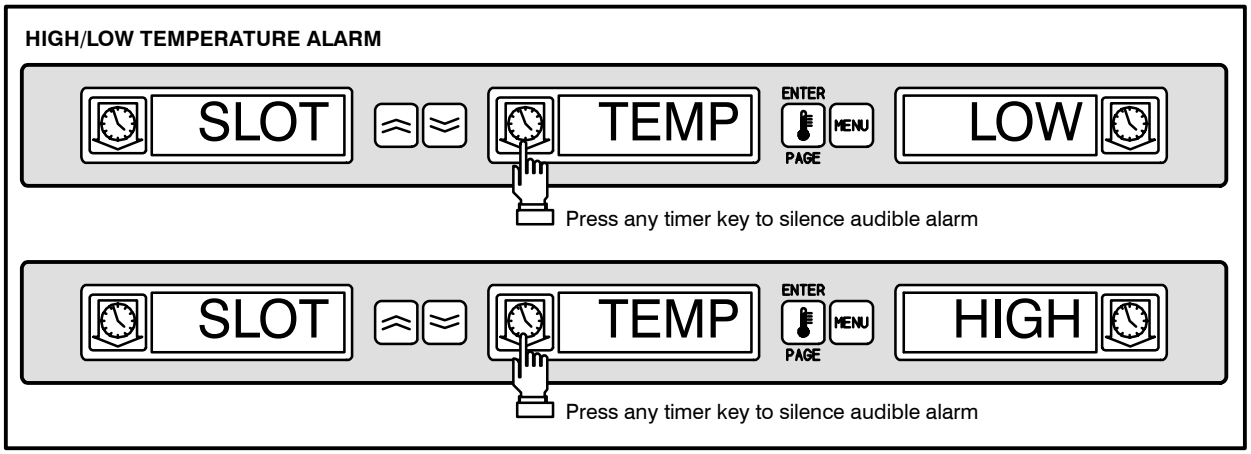

FIGURE 1

FOOD AND DRUG ADMINISTRATION (FDA) ALARM

The FDA alarm indicates the slot temperature is below the preset limit to hold the product. The audible alarm sounds and the display reads *TEMP UNDR FDA*. Active timers are automatically reset.

1. To turn off the audible alarm press any TIMER KEY. The alarm message remains until the slot temperature is within the preset limits. If no keys are pressed the audible and visual alarm remain.

See page 4--8 for troubleshooting.

SENSOR RANGE ALARM

The sensor fail alarm indicates a sensor temperature value above or below the operating limits of the slot, 50–250°F (10-121°C).

1. To turn off the audible alarm press any TIMER KEY. The alarm message is displayed until the slot temperature is within the operating limits.
2. Press the temp/enter key to display the error message *HHHH* or *LLLL*. HHHH indicates high resistance, high temperature or open/shorted probe. LLLL indicates low resistance, low temperature or open/shorted probe. Measure the resistance of the probe, see page 5–5.
3. Scroll through the menu key until *TURN SLOT OFF* is displayed. Press the enter key within five seconds.

Service is required to correct a sensor alarm. Refer to the flow diagrams in this chapter for troubleshooting.

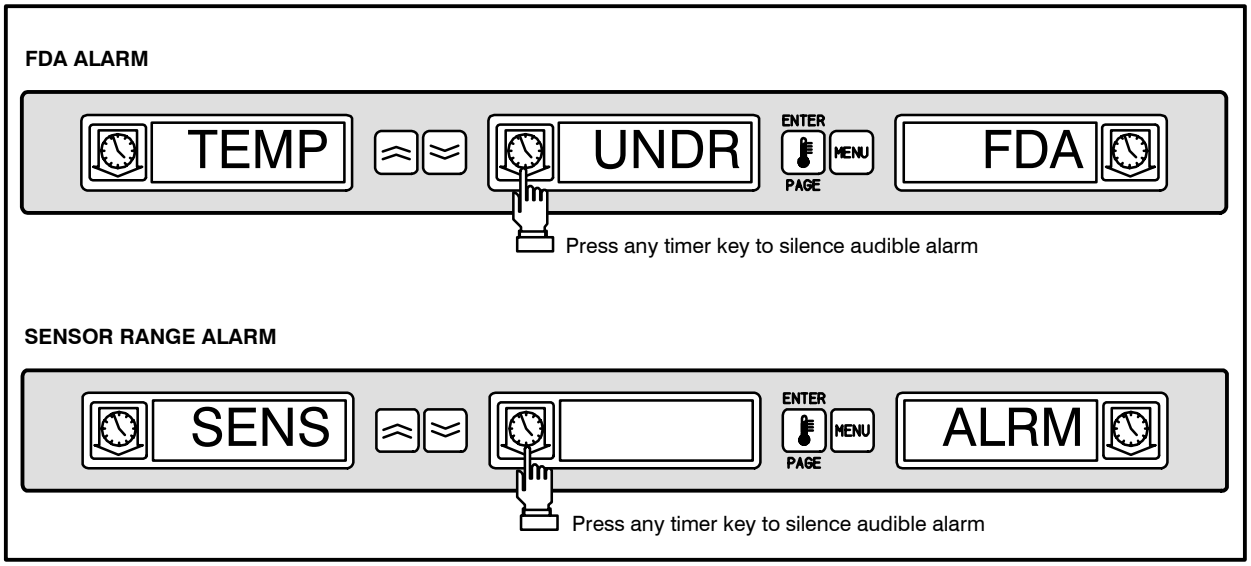

FIGURE 2

RISE TIME ALARM

The rise time alarm indicates that the slot temperature failed to reach operating temperature within the preset time limits of the system at power up. The system measures the time that each plate takes to go from 100–125°F. If this time is greater than 15 minutes the alarm is activated and SLOT RISE RATE is displayed.

1. To turn off the audible alarm press any TIMER KEY.

Service is required to correct a rise time alarm. See page 4--8 for troubleshooting.

Use the following procedure to view the rise times for each plate:

1. Press and hold the MENU key to enter the program mode.
2. Press the PAGE key to scroll to the TEST PAGE.
3. Press the MENU key to scroll the time recorded for each slot at start up.

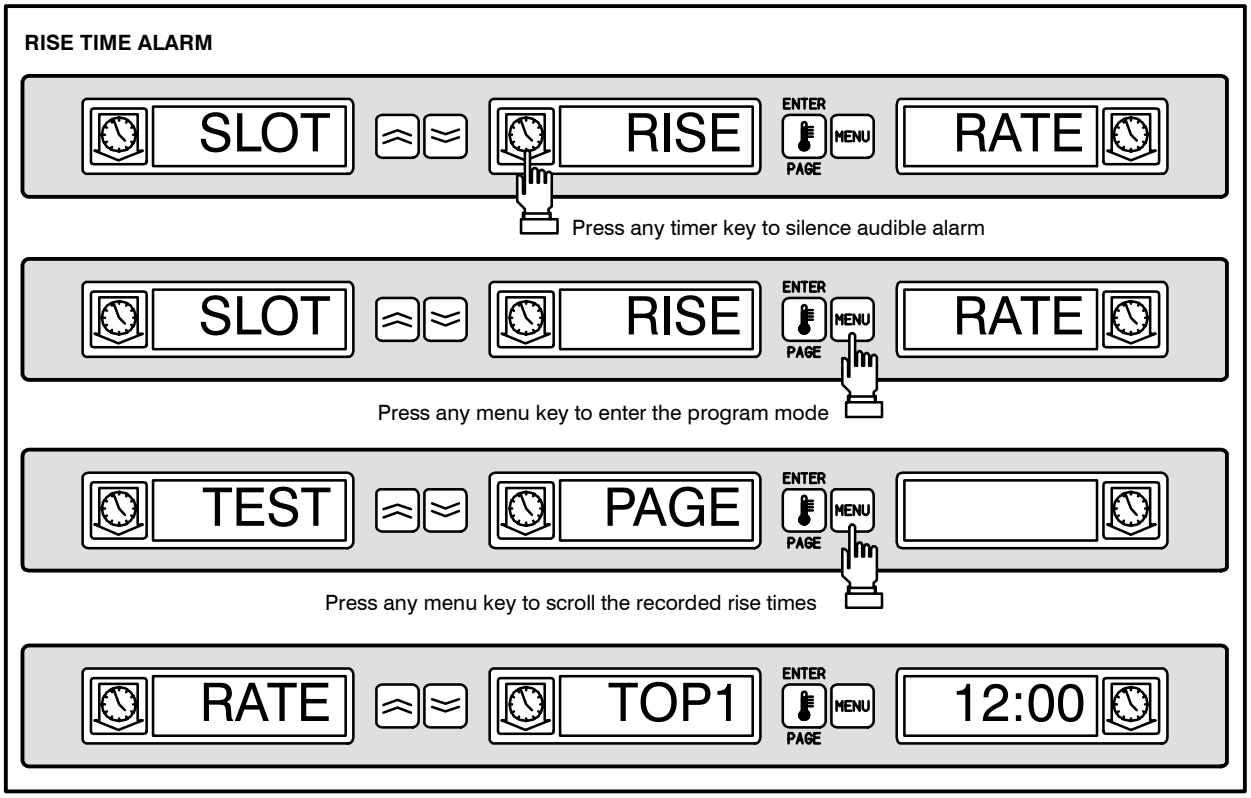

FIGURE 3

TROUBLESHOOTING FLOW DIAGRAMS

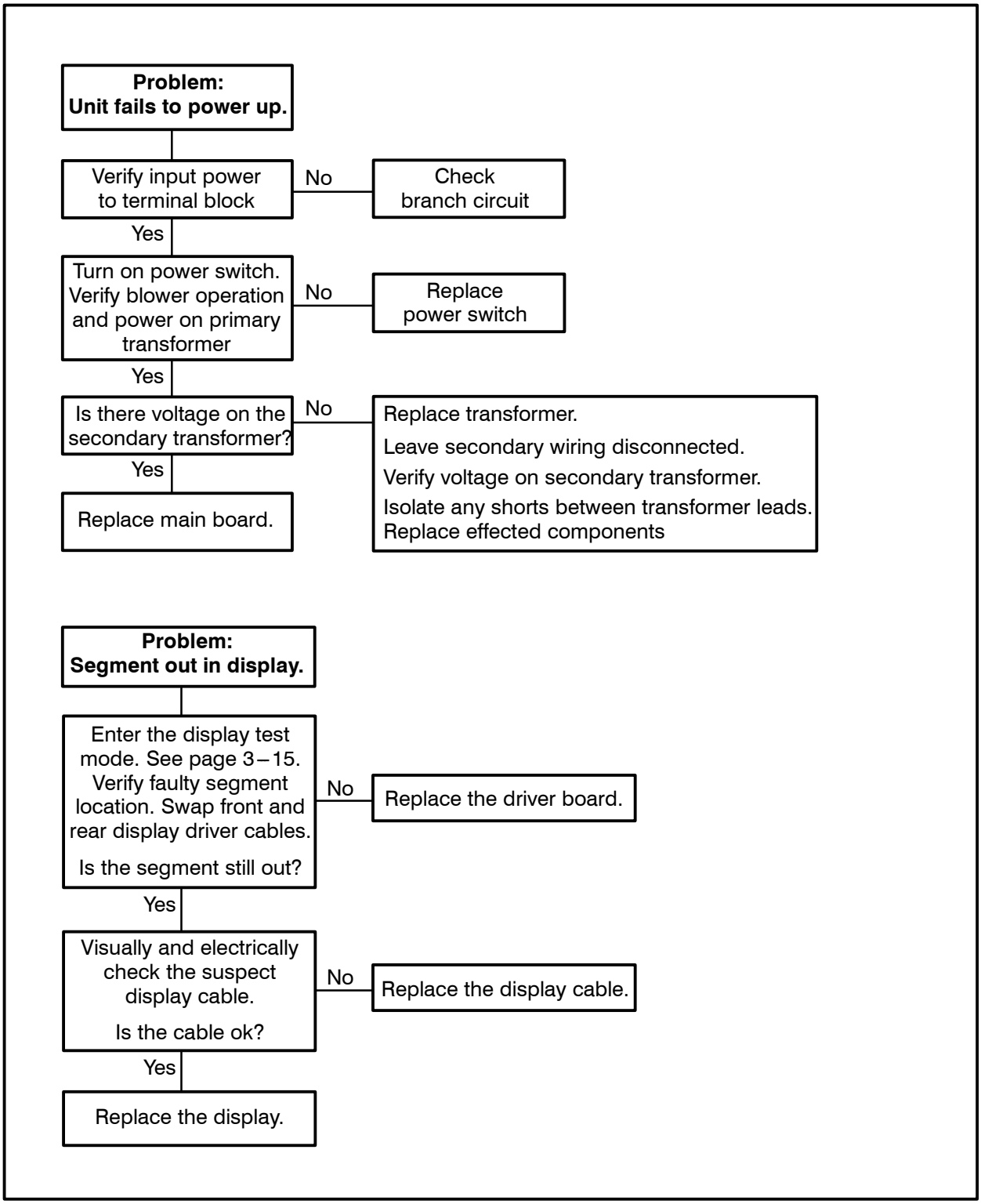

FIGURE 4

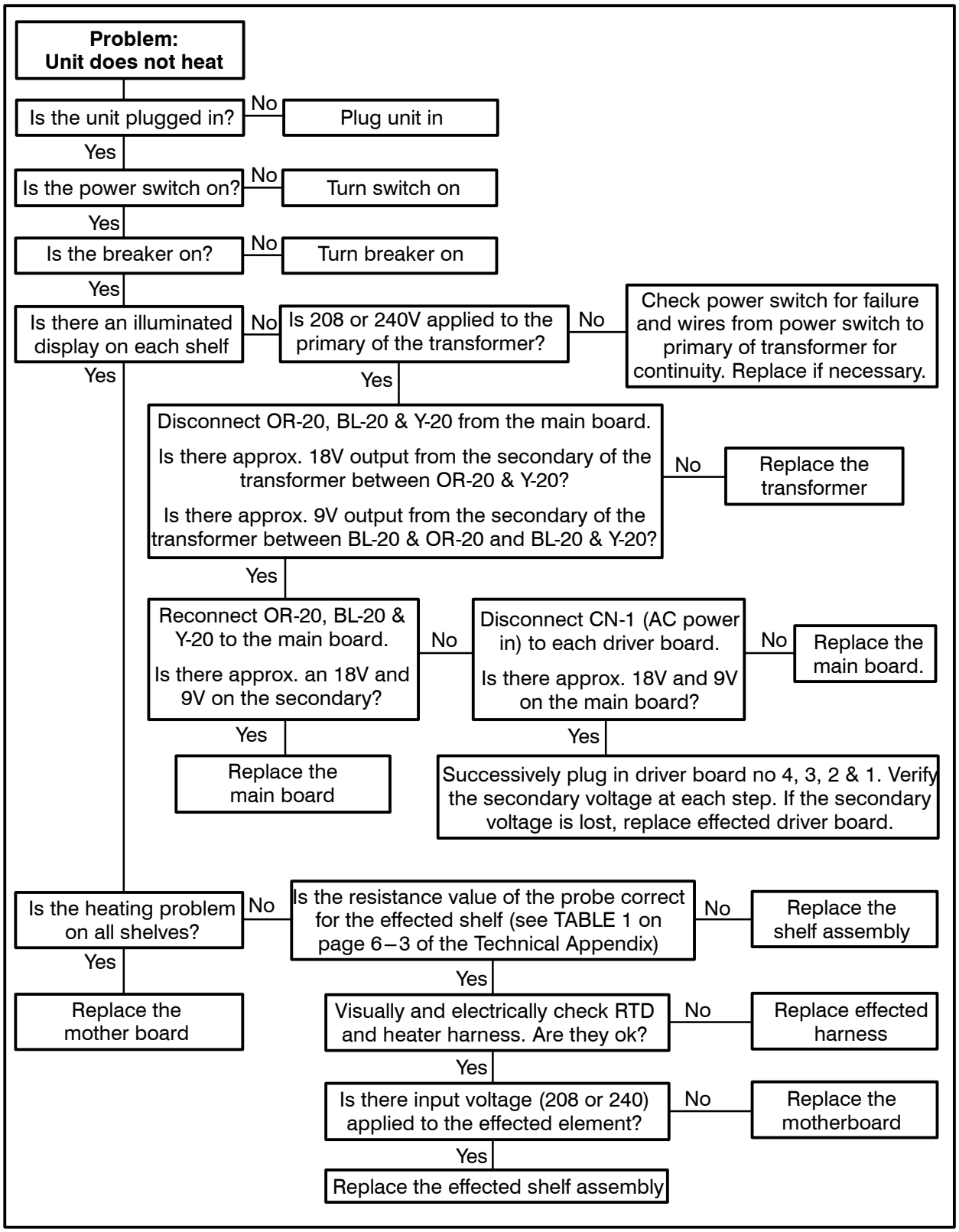
Problem:
Unit does not heat
Is the unit plugged in?
No
Plug unit in
Yes
Is the power switch on?
No
Turn switch on
Yes
Is the breaker on?
No
Turn breaker on
Yes
Is there an illuminated display on each shelf
No
Is 208 or 240V applied to the primary of the transformer?
No
Check power switch for failure and wires from power switch to primary of transformer for continuity. Replace if necessary.
Yes
Yes
Disconnect OR-20, BL-20 & Y-20 from the main board.
Is there approx. 18V output from the secondary of the transformer between OR-20 & Y-20?
Is there approx. 9V output from the secondary of the transformer between BL-20 & OR-20 and BL-20 & Y-20?
No
Replace the transformer
Yes
Reconnect OR-20, BL-20 & Y-20 to the main board.
Is there approx. an 18V and 9V on the secondary?
No
Disconnect CN-1 (AC power in) to each driver board.
Is there approx. 18V and 9V on the main board?
No
Replace the main board.
Yes
Yes
Replace the main board
Successively plug in driver board no 4, 3, 2 & 1. Verify the secondary voltage at each step. If the secondary voltage is lost, replace effected driver board.
Is the heating problem on all shelves?
No
Is the resistance value of the probe correct for the effected shelf (see TABLE 1 on page 6–3 of the Technical Appendix)
No
Replace the shelf assembly
Yes
Yes
Replace the mother board
Visually and electrically check RTD and heater harness. Are they ok?
No
Replace effected harness
Yes
Is there input voltage (208 or 240) applied to the effected element?
No
Replace the motherboard
Yes
Replace the effected shelf assembly

FIGURE 5

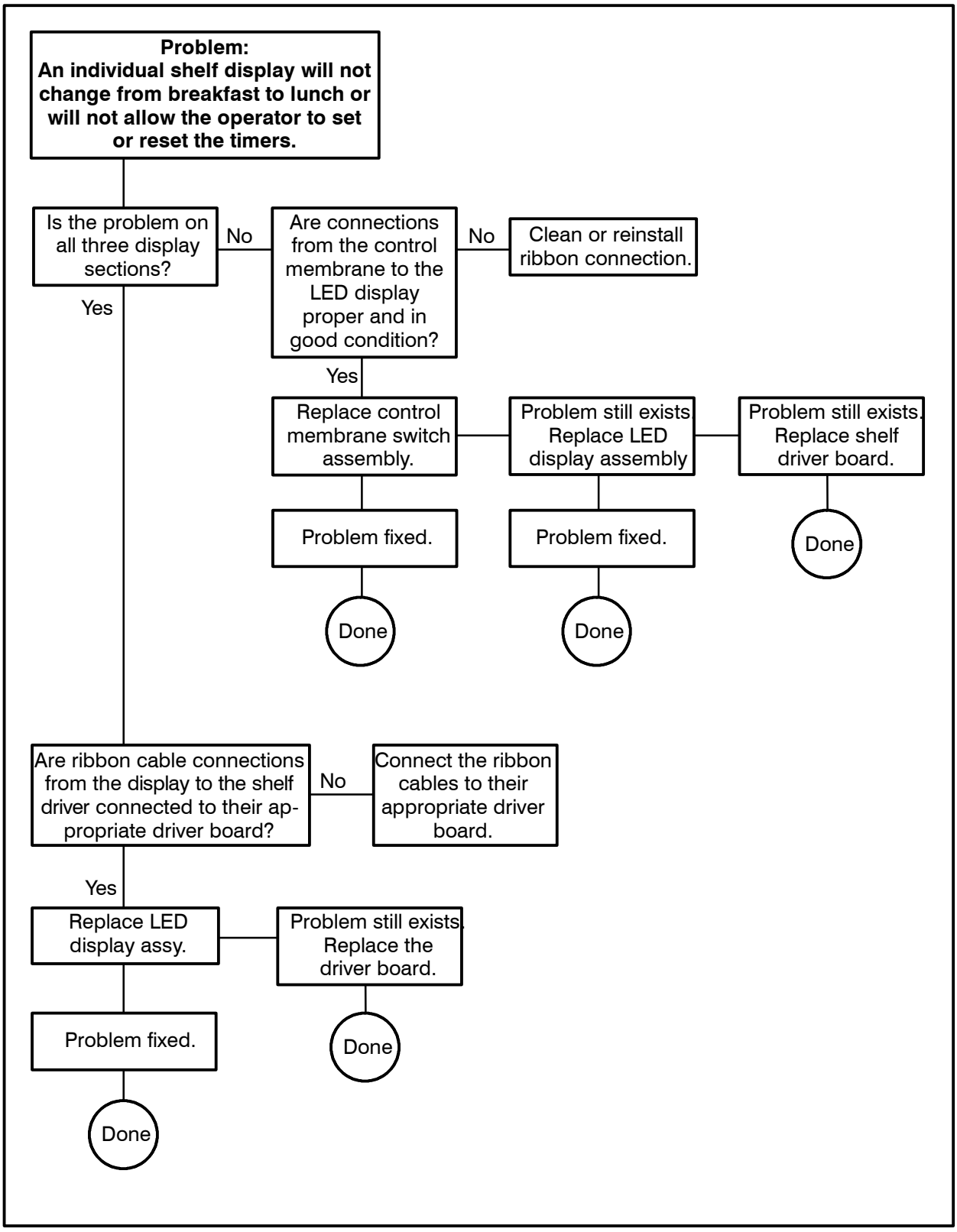
Problem:
An individual shelf display will not change from breakfast to lunch or will not allow the operator to set or reset the timers.
Is the problem on all three display sections?
No
Are connections from the control membrane to the LED display proper and in good condition?
No
Clean or reinstall ribbon connection.
Yes
Yes
Replace control membrane switch assembly.
Problem still exists Replace LED display assembly
Problem still exists. Replace shelf driver board.
Problem fixed.
Problem fixed.
Done
Done
Done
Are ribbon cable connections from the display to the shelf driver connected to their appropriate driver board?
No
Connect the ribbon cables to their appropriate driver board.
Yes
Replace LED display assy.
Problem still exists. Replace the driver board.
Problem fixed.
Done
Done

FIGURE 6

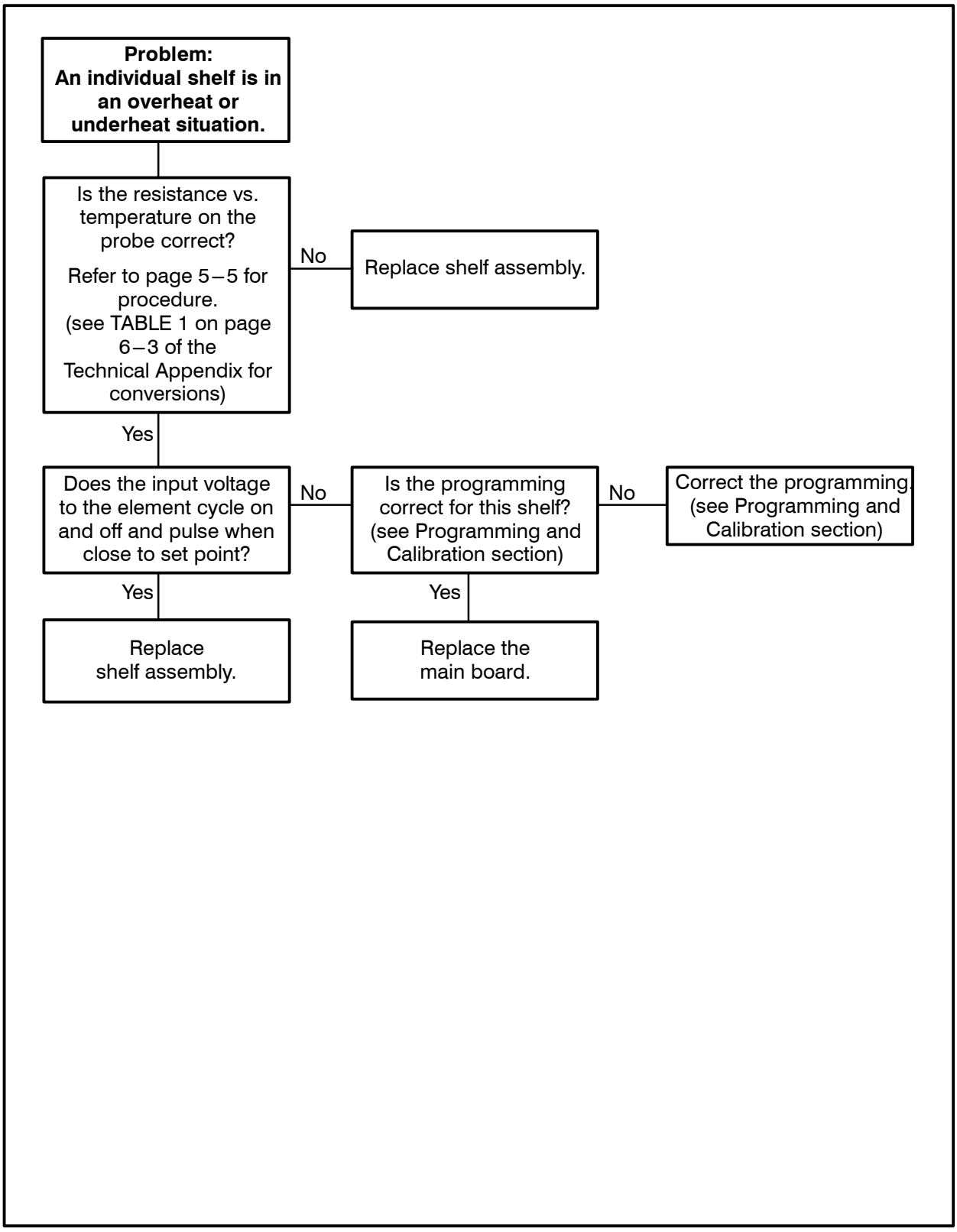
Problem:
An individual shelf is in an overheat or underheat situation.
Is the resistance vs. temperature on the probe correct?
Refer to page 5–5 for procedure.
(see TABLE 1 on page 6–3 of the Technical Appendix for conversions)
No
Replace shelf assembly.
Yes
Does the input voltage to the element cycle on and off and pulse when close to set point?
No
Is the programming correct for this shelf? (see Programming and Calibration section)
No
Correct the programming. (see Programming and Calibration section)
Yes
Replace shelf assembly.
Yes
Replace the main board.

FIGURE 7

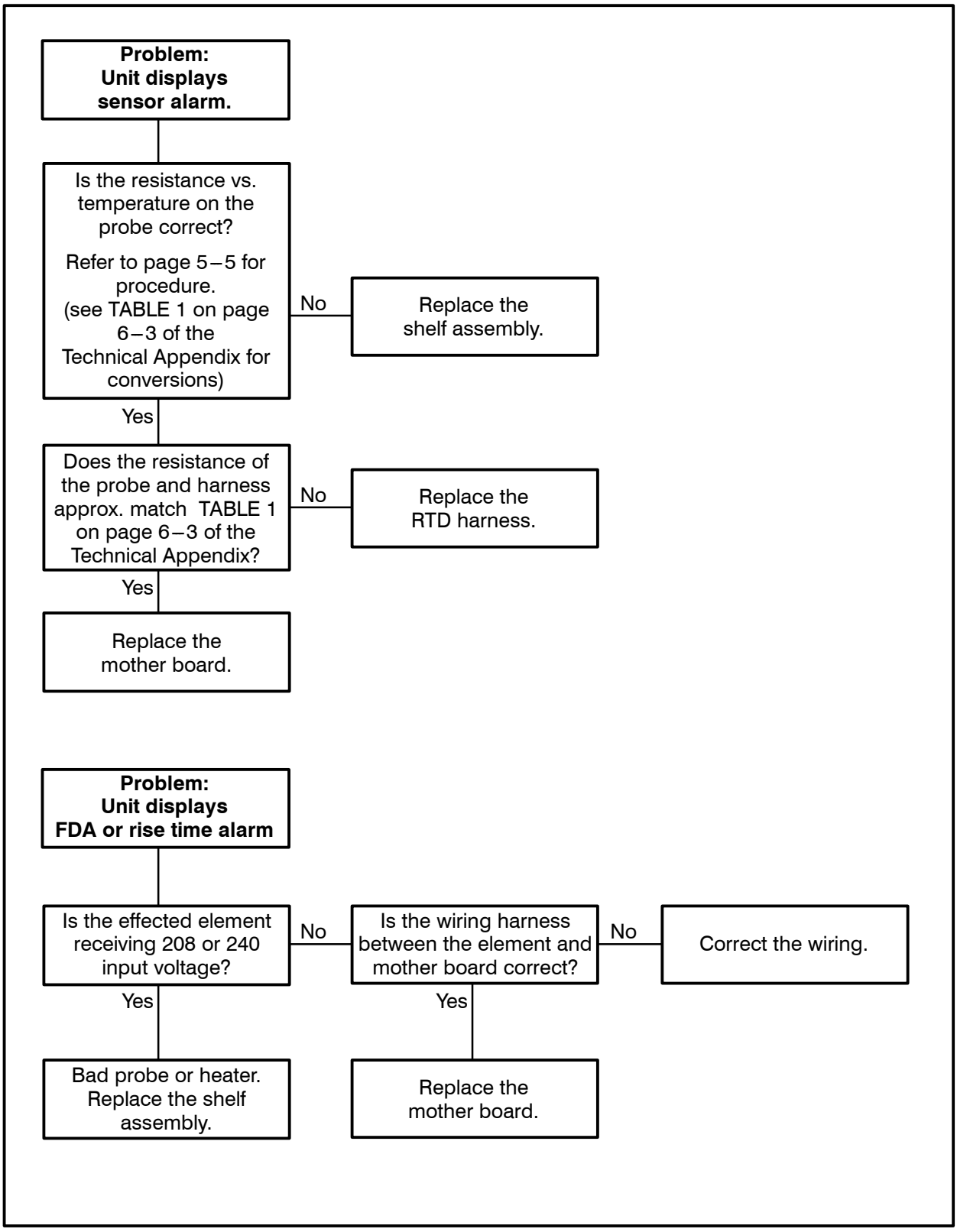
Problem:
Unit displays
sensor alarm.
Is the resistance vs. temperature on the probe correct?
Refer to page 5–5 for procedure.
(see TABLE 1 on page 6–3 of the Technical Appendix for conversions)
No
Replace the shelf assembly.
Yes
Does the resistance of the probe and harness approx. match TABLE 1 on page 6–3 of the Technical Appendix?
No
Replace the RTD harness.
Yes
Replace the mother board.
Problem:
Unit displays
FDA or rise time alarm
Is the effected element receiving 208 or 240 input voltage?
No
Is the wiring harness between the element and mother board correct?
No
Correct the wiring.
Yes
Yes
Bad probe or heater. Replace the shelf assembly.
Replace the mother board.

FIGURE 8

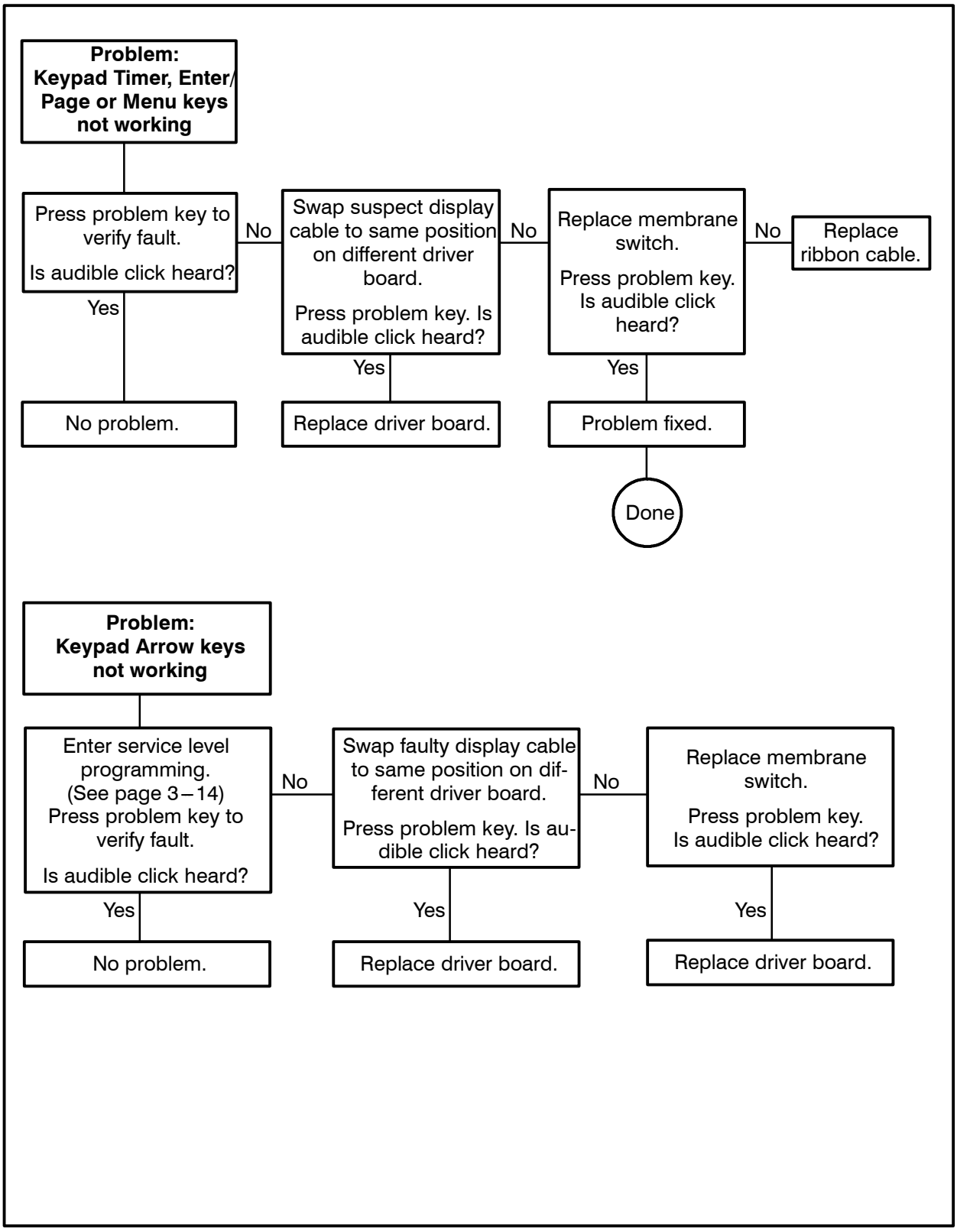
Problem:
Keypad Timer, Enter/
Page or Menu keys
not working
Press problem key to verify fault.
Is audible click heard?
No
Swap suspect display cable to same position on different driver board.
Press problem key. Is audible click heard?
No
Replace membrane switch.
Press problem key. Is audible click heard?
No
Replace ribbon cable.
Yes
No problem.
Yes
Replace driver board.
Yes
Problem fixed.
Done
Problem:
Keypad Arrow keys
not working
Enter service level programming.
(See page 3–14)
Press problem key to verify fault.
Is audible click heard?
No
Swap faulty display cable to same position on different driver board.
Press problem key. Is audible click heard?
No
Replace membrane switch.
Press problem key.
Is audible click heard?
Yes
No problem.
Yes
Replace driver board.
Yes
Replace driver board.

FIGURE 9

TROUBLESHOOTING A LOCKED OUT SLOT

1. Remove the rear ribbon cable from the driver board.

   If the front membrane starts to work, you have now isolated the problem to one of three of the rear components.

   If the front is still locked up then remove the front ribbon and try using the rear timers.

   If they work then you have isolated the problem to one of three front components.

2. **Before replacing the membrane switch**, Plug the new membrane into the display board and try it in your hand. If it continues to lock up then the problem is, in either the ribbon cable, or the display board.

TROUBLESHOOTING SENSOR ALARMS

The following is a test procedure to be used on the UHC-1 cabinet to determine the cause for many of the sensor alarms we are experiencing. You will need the probe resistance chart, found on page 6–3 to perform the following tests.

1. Determine the slot experiencing the "SENSOR ALARM".
2. Determine the plate causing the alarm. To do this you need to press the ENTER key 4 times in succession and read the displays.

   A.) Push ENTER key once display reads: *TOP ACT ** HHHH.*

   B.) Push ENTER key again display reads: *BOT ACT 200.*

   C.) Push ENTER key again display reads: *TOP SET 200.*

   D.) Push ENTER key again display reads: *BOT SET 200.*

   This has now determined that the "SENSOR ALARM" is being caused by a high probe resistance reading. (This example is indicative of a potential probe problem on the top plate of the slot experiencing the alarm).
3. Using a Pyrometer get the actual temp. of the plate in question This is the temp you will be referencing.
4. Remove the probe harness from the mother board and get the resistance reading from the correct probe leads (reference the schematic on page 6–1). The resistance value and temperature should match according to the chart.

   If the resistance reading did not coincide proceed to STEP 5.

   If the resistance coincides with the actual temp the problem is either in the harness connection or the mother board. Before replacing the mother board check all the pins in the connector, reinstall the harness to the board, take a tooth pick, snap it in half and insert each piece into the back of the probe wires. Check the temp displays again to see if the *TOP ACT* coincides with the actual temperature. If so the problem was in the connection and the probe harness should be replaced. If you still have *HHHH* the problem is in the mother board and it should be replaced.

   A.) ** *HHHH* = high resistance or open probe

   B.) *LLLL* = low resistance or shorted probe
5. Disconnect the probe from the harness on the side of the unit and read the resistance through the probe while verifying the actual plate temperature. If the resistance reading at the probe does not match the temperature according to the chart, make sure you have a good connection with your meter. If probe proves faulty, replace the liner assembly. The probe and element are vulcanized to the liner and cannot be replaced separately.

   If the plate temperature and probe resistance match according to the chart, check and tighten connections at the side probe harness then read resistance at top of harness again. If the resistance now coincides with the temperature, the problem was in the connection. If the resistance is still incorrect the problem is in the harness and should be replaced.
6. If the problem is intermittent or you cannot find anything wrong test the probe. Shut the slot off and cool it down with a pan of water then allow it to reheat. As it's heating note the top and bottom temps using your pyrometer. As you note the temperatures, read the probes resistance in 50 deg. increments. You should compare these readings with your probe chart. If they do not match run the test again. If they still do not match the probe is going bad and the liner assembly should be replaced.

TROUBLESHOOTING THE DRIVER BOARD AND CONTROL

The following is a test procedure to be used on the UHC-1 cabinet to determine if there is a problem with driver board, the display control, the control membranes, or the connecting harnesses.

1. Turn off power to the unit, locate the driver board to the shelf to be tested, disconnect the communications port (this being the 18 pin connector with the blue jumper wire), turn the power back on. The shelf should now read "**Display Test Mode**".
2. Starting with the front left timer push ALL buttons one at a time in order with the last one being the right rear timer. Each time you press a key the four DOTS at the bottom of the display will light up. If at any time during this test you get a **"Key Press Error"** reset the unit, by turning off then back on and start again. If the **"Key Press Error"** comes up at the same place, the unit did not see the previous key activate and the following procedure should be considered:
   A.) Clean the ribbon cable connections at the display control. If the problem persists move on to next.
   B.) Determine if the gray ribbon cable is good by swapping it with one from another shelf and running the test again. If the **"Key Press Error"** goes away replace the ribbon cable. If not move on to next.
   C.) Remove the display control from the bezel assy. and inspect both ribbon connection areas for burns or corrosion. If control looks bad you can prove it by swapping it out with one from another shelf. If the **"Key Press Error"** goes away replace the display control. If not replace the membrane.
3. After you hit the last key the shelf will go into an LED test, at this time all led segments will light up. If some of the segments do not light clean the connection between the gray ribbon cable and the display control, and check the gray ribbon for cuts or burns. If they still will not light replace the control.
4. During the LED test look at all 6 displays. If the same led segment is out in all 6 displays the driver board is bad and should be replaced‘

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CHAPTER 5

PARTS REPLACEMENT

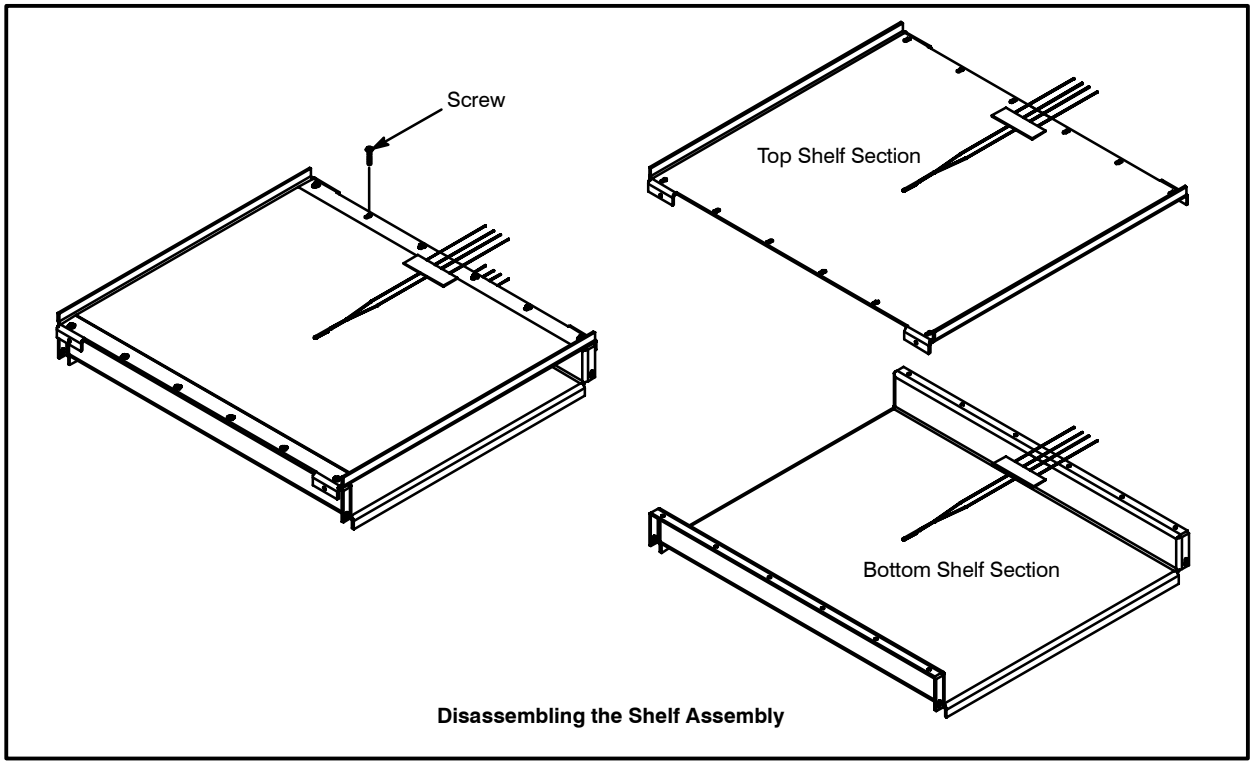
ELEMENT OR PROBE ASSEMBLY

1. Remove the right and left hand exterior panels by removing the two lower phillips head screws.
2. Remove the top exterior panel by removing the two upper phillips head screws.
3. Loosen the two hex head bolts located on either side of the bezel assembly.
4. Trace the ribbon cable from the bezel assembly to its associated driver board. Remove the ribbon cable from the driver board.

   NOTE: Mark the location of the ribbon cable to ensure it is replaced in the proper location.
5. Remove the ribbon cable clamps from the ribbon cable bundle on the right side of the unit.
6. Repeat steps 3–5 for the adjacent bezel assembly.
7. Remove both bezel assemblies to allow for unobstructed access to the shelf assembly.
8. Disconnect the two probes and element wire connections from the affected shelf assembly.
9. Remove the four phillips head screws that attach the shelf assembly to the frame.
10. Remove the shelf assembly from the frame by sliding it out from either side.

    NOTE: If you are removing the #1 shelf assembly, you must also remove the two wire clamps attached to the right side of the shelf assembly before removing the shelf from the frame.
11. Remove the insulation cover from the shelf assembly by removing the two phillips head screws on either side of the cover assembly.
12. Remove the four pieces of insulation from the shelf assembly.

    NOTE: The foil wrapped insulation is VERY FRAGILE. Please use extra care when handling.
13. Remove the twelve phillips head screws from the top shelf section. See FIGURE 1.



Disassembling the Shelf Assembly

FIGURE 1

14. Discard the defective shelf section.
15. Install the new shelf section. Be sure to align both the front and rear faces of the shelf assembly so that both the top and bottom shelf sections are flush.
16. Install the foil wrapped shelf insulation and insulation cover assembly.
17. Insert the shelf assembly into the unit frame. Install the four phillips head screws through the shelf assembly into the unit frame.
18. Connect the two probe and element wire connections at the right side of the shelf assembly.
19. Feed the ribbon cables from the bezel assemblies over the top of the shelves to their associated driver boards.

    NOTE: Be careful not to pinch the ribbon cable between the bezel and the shelf assembly.

20. Inspect the gasket assembly on the bezel. Replace if necessary. See Bezel Gasket Replacement on page 5–6.
21. Install the front and rear bezel assemblies. Tighten the four hex head bolts on either side of the bezel assemblies.
22. Install the ribbon cable clamps on the ribbon cable bundle located on the right side of the unit.
23. Install the side and top panels.
24. Check the unit for proper operation.

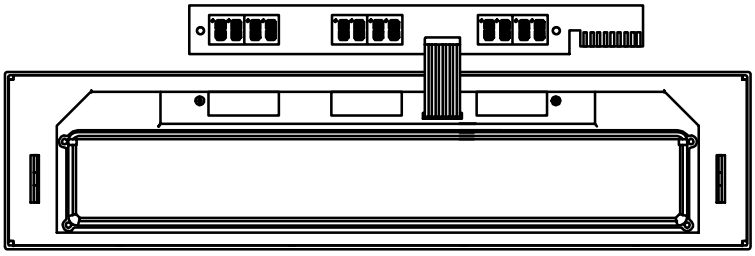
COOLING BLOWER

1. Remove the right and left hand exterior panels by removing the two lower phillips head screws.
2. Remove the top exterior panel by removing the two upper phillips head screws.
3. Remove the black and white power connections from the blower motor.
4. Loosen the two phillips head screws holding the blower bracket to the unit frame.
5. Remove the blower and bracket from the unit.
6. Remove the blower from the bracket by removing the three phillips head screws.
7. Install the new blower on the bracket with the screws provided.
8. Install the blower and bracket into the unit frame.
9. Connect the black and white power wires to the blower motor.
10. Install the side and top exterior panels of the unit.
11. Check the unit for proper operation.

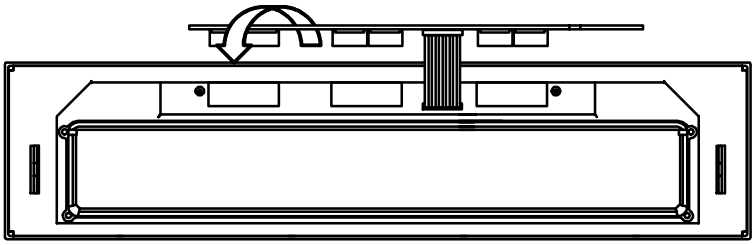
BEZEL ASSEMBLY

1. Remove the right and left hand exterior panels by removing the two lower phillips head screws.
2. Remove the top exterior panel by removing the two upper phillips head screws.
3. Loosen the two hex head bolts at either side of the bezel assembly. Remove the bezel from the shelf.
4. Remove the two screws attaching the LED assembly to the bezel. Remove the ribbon cable attaching the membrane switch to the LED assembly.
5. Discard the bezel assembly.
6. Install the gasket into the new bezel assembly. See Bezel Gasket Replacement on page 5–6.
7. Install the membrane switch ribbon cable into the LED assembly. Attach the LED assembly to the bezel with the two screws provided. See FIGURE 2 for proper placement and attachment of the membrane switch ribbon cable.
8. Install the bezel assembly on the frame by tightening the two hex head bolts located on either side of the bezel assembly.

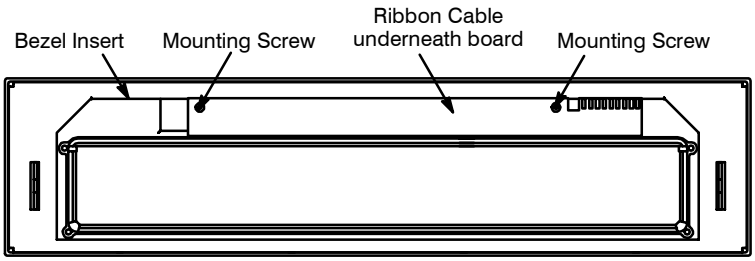
   NOTE: Be sure not to pinch the ribbon cable between the bezel and the shelf assembly.
9. Install the side and top exterior panels.
10. Check the unit for proper operation.



Connect ribbon cables to the LED board



Flip the LED board as shown



Slide LED board under metal insert on bezel. Align the screws holes and attach the LED board.

FIGURE 2

MEMBRANE SWITCH

1. Remove the right and left hand exterior panels by removing the two lower phillips head screws.
2. Remove the top exterior panel by removing the two upper phillips head screws.
3. Loosen the two hex head bolts located on either side of the bezel assembly. Remove the bezel assembly.
4. Remove the two screws holding the LED assembly to the bezel. Remove the membrane switch ribbon cable from the LED board.
5. Remove the defective membrane switch from the bezel.
6. Clean all of the excess adhesive from the bezel.
7. Install the new membrane switch on the bezel.
8. Inspect the bezel gasket and replace if necessary. See Bezel Gasket Replacement on page 5–6.
9. Install the membrane switch ribbon cable to the LED board. See FIGURE 2 on page 5–3 for proper placement and attachment of the membrane switch ribbon cable.
10. Install the LED board into the bezel.
11. Install the bezel assembly on the frame by tightening the two hex head bolts located on either side of the bezel.

    NOTE: Be sure not to pinch the ribbon cable between the bezel and the shelf assembly.

12. Install the side and top exterior panels of the unit.
13. Check the unit for proper operation.

LED BOARD

1. Remove the right and left hand exterior panels by removing the two lower phillips head screws.
2. Remove the top exterior panel by removing the two upper phillips head screws.
3. Loosen the two hex head bolts located on either side of the bezel assembly. Remove the bezel assembly.
4. Remove the two screws holding the LED assembly to the bezel. Remove the membrane switch ribbon cable from the LED board.
5. Remove the ribbon cable clamps from the ribbon bundle on the right side of the unit.
6. Trace the LED ribbon cable to its driver board. Remove the ribbon cable.
7. Feed the new LED board ribbon cable to its driver board.
8. Install the membrane switch ribbon cable to the LED board. See FIGURE 2 on page 5–3 for proper placement and attachment of the membrane switch ribbon cable.
9. Install the LED board into the bezel.
10. Install the bezel assembly on the frame by tightening the two hex head bolts located on either side of the bezel.

    NOTE: Be sure not to pinch the ribbon cable between the bezel and the shelf assembly.

11. Install the side and top exterior panels of the unit.
12. Check the unit for proper operation.

DRIVER BOARD

The driver boards are static sensitive. Make sure you use proper grounding procedures when handling these boards.

1. Remove the right and left hand exterior panels by removing the two lower phillips head screws.
2. Remove the top exterior panel by removing the two upper phillips head screws.
3. Remove the ribbon and power connections from the affected driver board.

   NOTE: Mark the location of these connections to ensure they are replaced in their proper locations.
4. Release the four metal standoffs and remove the defective driver board.
5. Install the new board on the four metal standoffs.
6. Install the ribbon and power connections on the new board.
7. Install the side and top exterior panels of the unit.
8. Check the unit for proper operation.

TEMPERATURE PROBE

1. Unplug the probe from the harness.
2. Connect an ohm meter to the probe.
3. Press the timer key to silence the alarm. The slot heats up.
4. Place the pyrometer. Refer to TABLE 1 on page 6–3 of the Technical Appendix for resistance values.

MOTHER BOARD

The mother board is a static sensitive component. Make sure you use proper grounding procedures when handling this board.

1. Remove the right and left hand exterior panels by removing the two lower phillips head screws.
2. Remove the top exterior panel by removing the two upper phillips head screws.
3. Remove all power, sensor and communications connections from the board.

   NOTE: Mark the location of these connections to ensure they are replaced in their proper location.
4. Release the six plastic standoffs to remove the board.
5. Install the new mother board. Connect all of the power, sensor and communications connections.
6. Install the side and top exterior panels of the unit.
7. Check the unit for proper operation.

BEZEL GASKET

1. Remove the right and left hand exterior panels by removing the two lower phillips head screws.
2. Remove the top exterior panel by removing the two upper phillips head screws.
3. Loosen the two hex head bolts located on either side of the bezel assembly. Remove the bezel assembly.
4. Remove the two screws holding the LED assembly to the bezel. Remove the membrane switch ribbon cable from the LED board.
5. Remove the old gasket from the bezel assembly.
6. Remove all of the old RTV from the bezel assembly.
7. Place a small bead of RTV along the bottom edge and in the top corners of the bezel where the new gasket will be placed.
8. Install the new gasket in the bezel. See FIGURE 3 for proper gasket placement.
9. Install the membrane switch ribbon cable in the LED board. Attach the LED board to the bezel. See FIGURE 2 on page 5–3 for proper placement and attachment of the membrane switch ribbon cable.
10. Install the bezel assembly on the frame by tightening the two hex head bolts located on either side of the bezel.

    NOTE: Be sure not to pinch the ribbon cable between the bezel and the shelf assembly.

11. Install the side and top exterior panels of the unit.
12. Check the unit for proper operation.

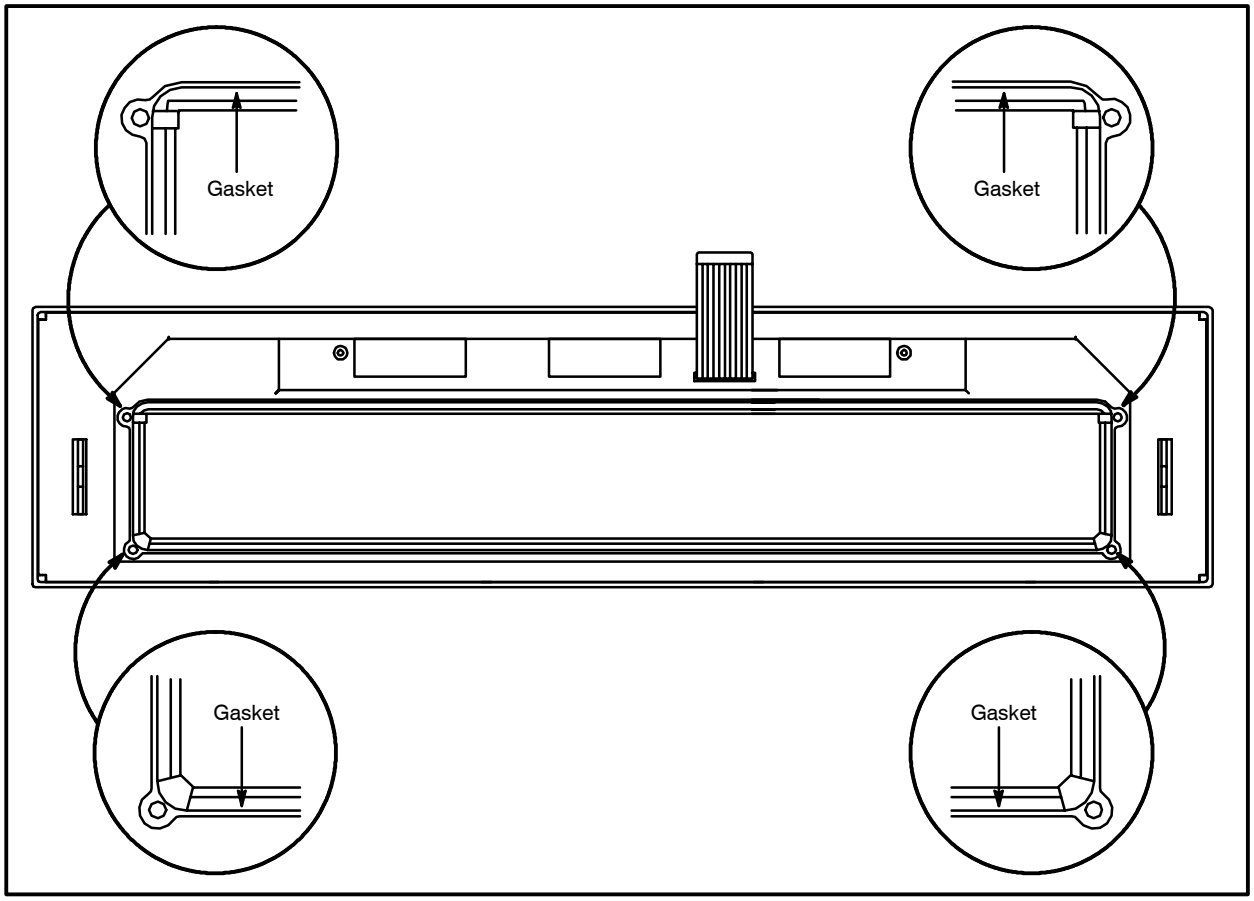


FIGURE 3

CHIP REPLACEMENT

The installation of the chips must be performed by a Blodgett Authorized Service and Parts (ASAP) agency. Failure to follow this mandate will result in the nullification of your warranty.

Read all instructions for understanding prior to chip installation.

This service kit installs two IC chips which change the functions on your UHC:

- allow adjustment of product hold times
- replace the cook function with a COOK MORE product prompt feature

Check that all of the following parts were received:

P/N	Description
35098	IC3/IC4 Chips and Puller
35111	ESD Wrist Strap
L-680	Lit Sheet
33355	Manual

THE MOTHER BOARD IS A STATIC SENSITIVE COMPONENT. MAKE SURE YOU USE PROPER GROUNDING PROCEDURES BEFORE BEGINNING THIS PROCEDURE.

1. Disconnect power to the unit.
2. Ground yourself using the ESD wrist strap provided.
3. Remove the two screws securing the top panel of the unit.
4. Remove the top panel.
5. Use the chip removal tool provided to remove the chip labeled IC3 (Integrated Circuit 3) as follows:
   - d Insert the chip removal tool into one of the square corners of the chip socket. Slowly pull the chip upward.

     NOTE: Be sure that the chip you are removing is labeled IC3.
   - e Move the chip removal tool to another corner of the chip socket. Slowly pull the chip upward.
   - f Alternate corners until the chip is completely removed from the chip socket.
6. Install the new IC3 chip as follows:
   - a Remove the chip labeled IC3 from its packaging.

     NOTE: Be sure that the chip you are installing is labeled IC3.
   - b Be sure to line the new IC3 chip up with the IC3 socket correctly. One corner of the chip has a 45° angle. One corner of the socket has a 45° angle and an arrow. The 45° angle on the chip must line up with the 45° angle and the arrow on the socket. See NO TAG.
   - c Push gently with your finger until the new chip is completely inserted into the socket.
7. Repeat steps 5 and 6 for the IC4 chip.
8. Replace the top panel on the unit.
9. Run the unit through the functional test.

OPERATION VERIFICATION

1. Power up the UHC. Let the unit warm up to the set temperature.

   NOTE: As soon as the LED display lights up the display should read BOC VER 2.00
2. **Product Timer**
   - a Press the product key to initiate the product program.
   - b Press the product key again within 3 seconds to verify that the displayed holding time decreases by 5 seconds.
   - c Repeat for each product program.

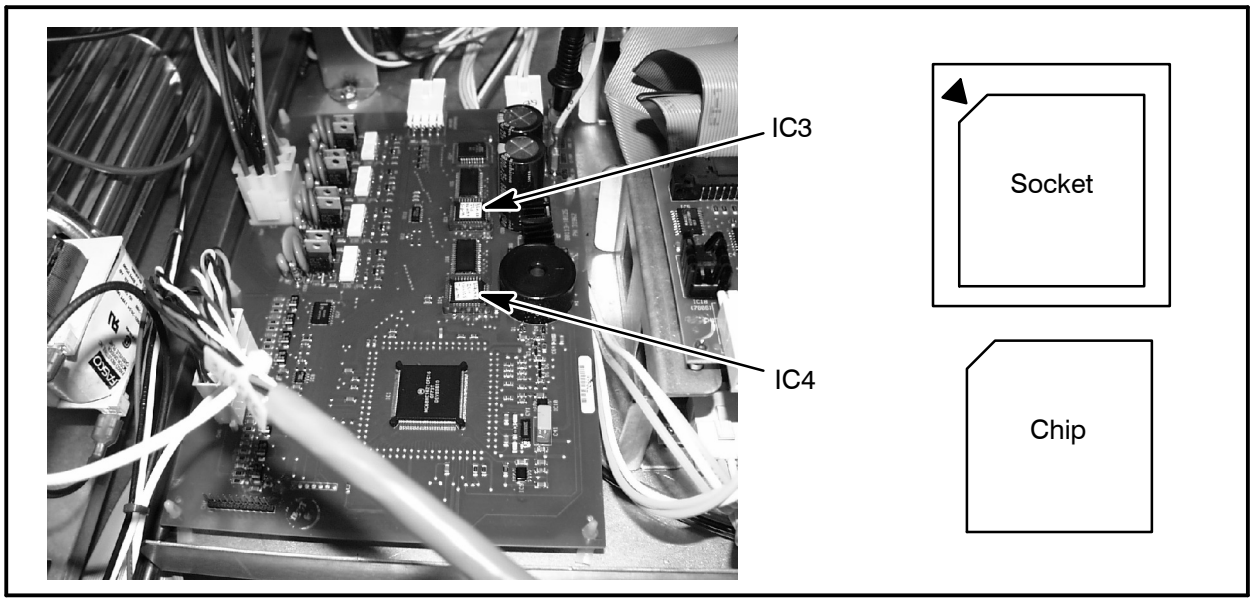


FIGURE 4

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CHAPTER 6

TECHNICAL APPENDIX

SCHEMATIC

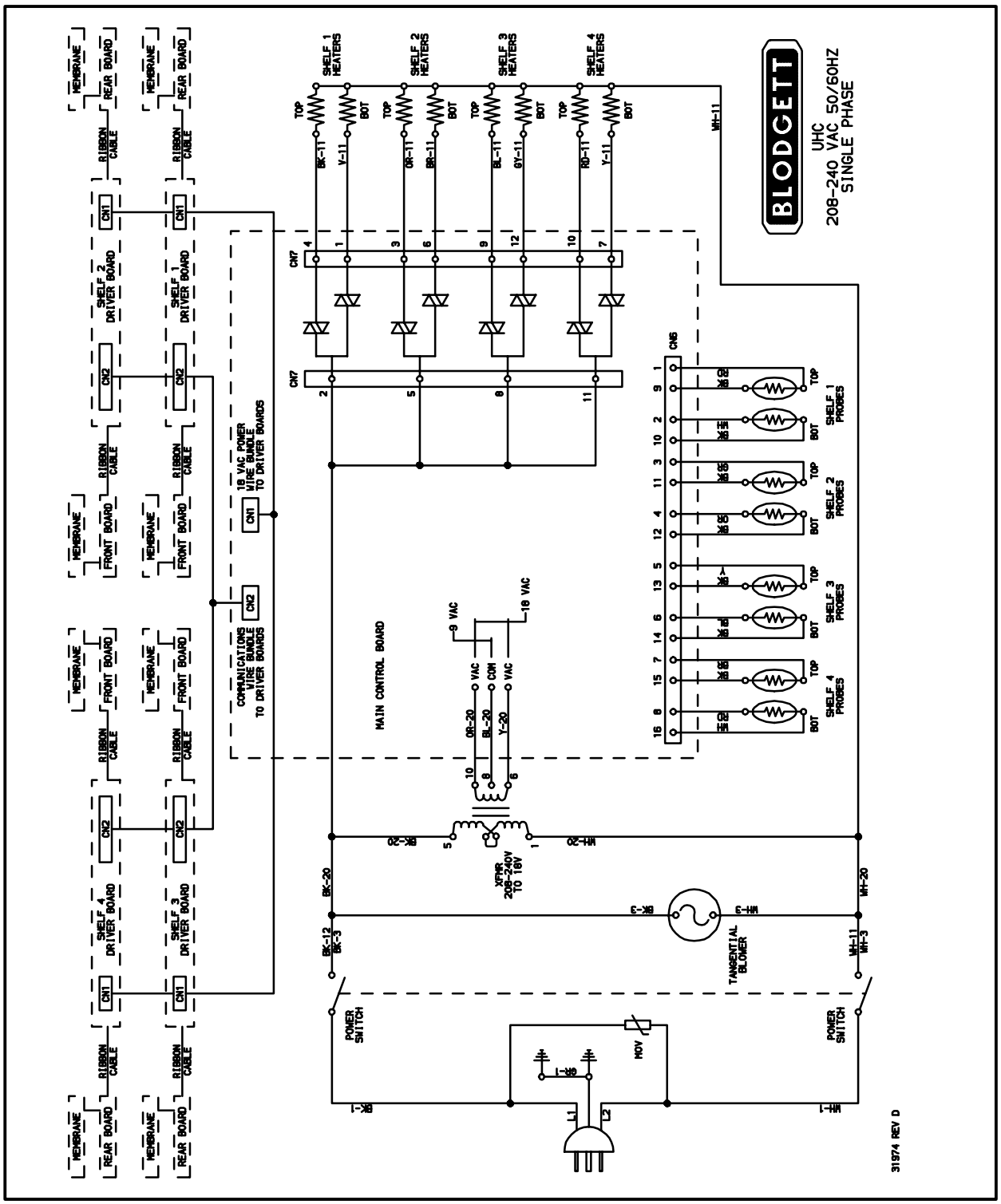

FIGURE 1

WIRING DIAGRAM

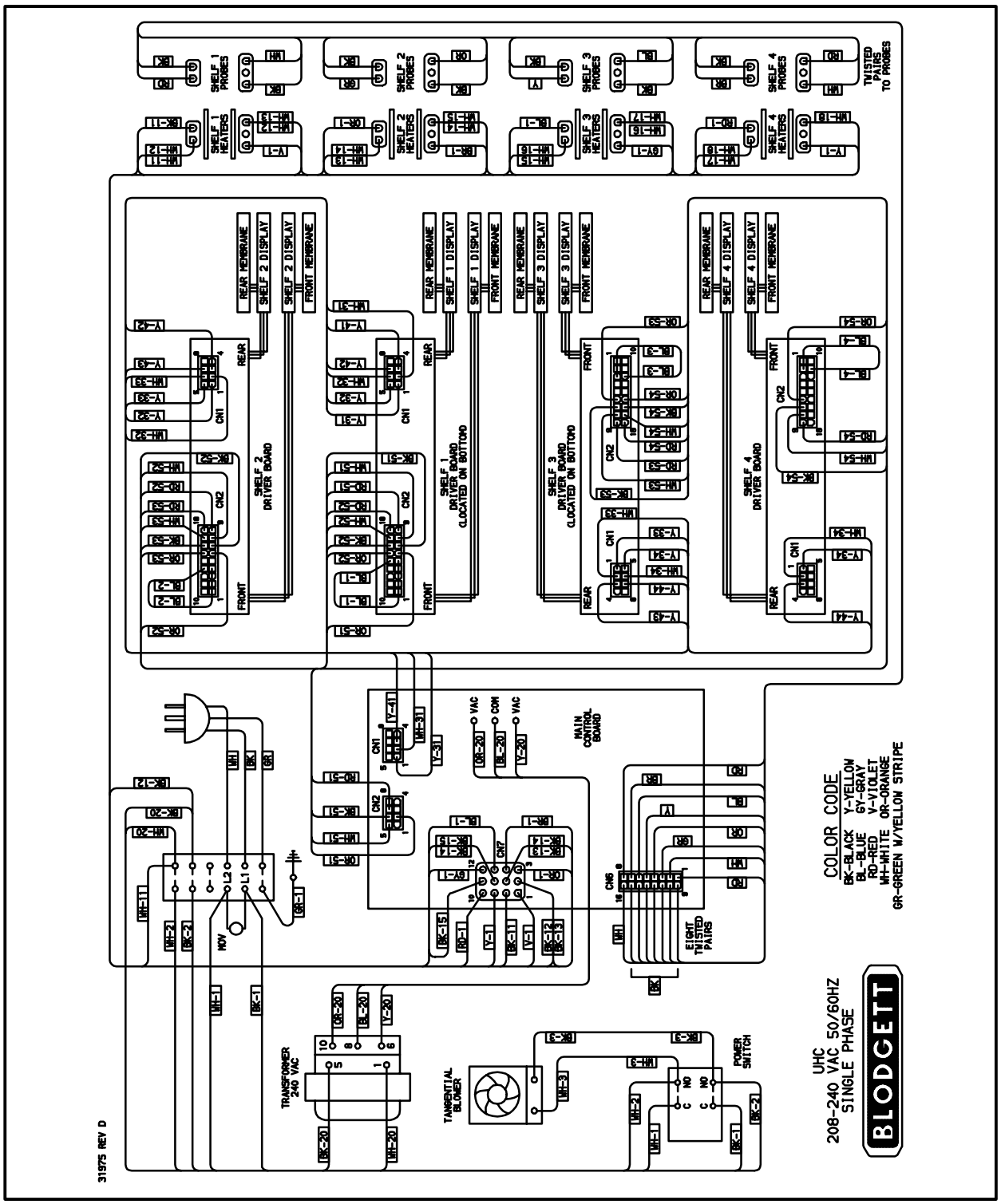

FIGURE 2

TEMPERATURE PROBE

°F	°C	Res/Ohms	°F	°C	Res/Ohms
61	16	106.0	189	87	133.5
68	20	107.8	194	90	134.7
75	24	109.3	199	93	135.6
81	27	110.5	207	97	137.3
86	30	111.6	212	100	138.5
91	33	112.8	217	103	139.6
100	38	114.7	225	107	141.1
109	43	116.7	230	110	142.3
117	47	118.2	235	113	143.4
122	50	119.4	243	117	144.9
127	53	120.5	248	120	146.0
135	57	122.1	253	123	147.2
140	60	123.2	261	127	148.7
145	63	124.4	266	130	149.8
153	67	125.9	271	133	151.0
154	68	126.3	279	137	152.5
158	70	127.1	284	140	153.6
163	73	128.2	289	143	154.7
171	77	129.7	297	147	156.2
176	80	130.9	300	149	156.9
181	83	132.0	350	177	167.0

TABLE 1