1. Master Reset Power on Holding PROG/CLEAR/ENTER Depressed

2. Press Final 4 actual (should read Aux 4)
Press CD ENTER

JELENKO
ACCU-THERM III 3000 and 6000
BURNOUT FURNACES

OPERATING AND
MAINTENANCE
INSTRUCTIONS
SPECIFICATIONS

ACCU-THERM III 3000

Maximum Temperature:
2000°F (1100°C)

Overall Dimensions:
13 5/16"W x 15 1/8"D x 19 3/4"H
(33.8cm W x 38.4cm D x 50.1cm H)

Heating Chamber Dimensions:
5 7/8" W x 6 1/8"D x 5 5/8" H
(14.9cm W x 15.6cm D x 14.3cm H)

Capacity:
18 Medium
or
6 Large
or
3 Extra-Large

Electrical:
115/230 V 50/60 Hz 900 Watts
PN 335900

Net Weight (Unpackaged):
56.3 lbs (25.5 kg)

Finish:
Black Enamel over Stainless Steel

Supplied Accessories:
1 Ceramic Floor Tray
1 Ceramic Vent Tube
10 Calibration Tempils

ACCU-THERM III 6000

Maximum Temperature:
2000°F (1100°C)

Overall Dimensions:
18 1/4"W x 15 1/8"D x 19 3/4"H
(46.4cm W x 38.4cm D x 50.1cm H)

Heating Chamber Dimensions:
10 7/8" W x 6 1/8"D x 5 5/8" H
(27.6cm W x 15.6cm D x 14.3cm H)

Capacity:
33 Medium
or
14 Large
or
6 Extra-Large

Electrical:
115/230 V 50/60 Hz 1400 Watts
PN 335950

Net Weight (Unpackaged):
72 lbs (32.6 kg)

Finish:
Black Enamel over Stainless Steel

Supplied Accessories:
2 Ceramic Floor Trays
1 Ceramic Vent Tube
10 Calibration Tempils
INSTALLATION

1. Remove all packaging material from around the furnace and from within the furnace Heating Chamber.

2. Position the furnace in an area which provides a minimum of three inches (7.6 cm) of free air space on all sides and top of the unit.

   Note: This furnace, as with all burnout furnaces, MUST be used with adequate exhaust and ventilation equipment at all times.

3. Unpack the Ceramic Vent Tube and install the tube in the Vent Hole located at the top of the furnace. When properly installed, the shoulder of the Vent Tube will rest directly on the top of the furnace Heating Chamber.

4. Open the furnace Door by pulling the Door Handle forward.

5. Place the Ceramic Floor Tray(s) on the bottom of the furnace Heating Chamber. The tray(s) collect wax residue and foreign material and prevent their soaking into the bottom of the furnace Heating Chamber Insulation.

6. Plug the furnace Power Cord into a wall receptacle rated for a minimum of 15 Amperes. An independent electrical circuit must always be used (see note below).

7. Press the furnace POWER SWITCH to the ON ("I") position. The DIGITAL DISPLAY will indicate the actual Heating Chamber temperature.

8. Your Accu-Therm III burnout furnace is now ready for programming and operation.

   Note: It is important that your Accu-Therm III furnace be operated only from an independent electrical outlet, with no other equipment on the same circuit.

   This furnace, as with all microprocessor-controlled devices, will perform reliably when it is operated from a stable power source, free from voltage fluctuations.
FRONT PANEL CONTROLS

1. POWER SWITCH
2. DIGITAL DISPLAY
3. GRAPHIC DISPLAY
4. ACTUAL SET TIME KEY
5. FINISH SET TIME KEY
6. PROGRAM KEY
7. STEP KEY
8. NUMERIC KEYBOARD
9. START/STOP KEY
FRONT PANEL CONTROLS

POWER SWITCH (1) Turns the power to the furnace on and off. When this switch is placed in the ON or "1" position, the furnace DIGITAL DISPLAY will illuminate, indicating the actual Heating Chamber temperature.

GRAPHIC DISPLAY (2) This display indicates the status of the furnace during operation of any one of the twenty programs.

As the furnace goes through each stage, the corresponding indicator lamp for that stage will illuminate to display which parameter is being operated within that stage.

DIGITAL DISPLAY (3) A multiple function display which indicates any one of the following: the actual Heating Chamber temperature, the time or the program number.

While setting or confirming the "AUX" Timer, the number of minutes the start of a burnout cycle will be delayed will be displayed.

While setting or confirming the "ACTUAL" or "FINISH" Time, the date and time information will be displayed.

While in the "program" mode, the parameters of the selected burnout cycle will be displayed.

FINISH SET TIME KEY (4) Used to program the delayed start timer (also called the PRESET timer) for operation.

Used to input the date and time you wish a selected burnout program to be completed and the work ready for removal from the furnace.

ACTUAL SET TIME KEY (5) Used to program the actual year, date and time into furnace memory.

PROGRAM KEY (6) When this key is depressed and the indicator lamp above the key is illuminated, the furnace is placed into the "program" mode and will accept information entered through the NUMERIC KEYBOARD for storage into any of the twenty programs.

This key must always be depressed (and the indicator lamp above the key illuminated) when entering, changing or reviewing information in any of the twenty programs.

STEP KEY (7) Each push of this key will alternate the DIGITAL DISPLAY between the actual Heating Chamber temperature, present time of day or the program number.
When used while in the “program” mode, each push of this key will advance the GRAPHIC DISPLAY by one parameter to allow program review.

Holding this key depressed while in the “program” mode will cause the GRAPHIC DISPLAY to automatically advance through a program and allow the program information to be checked more rapidly.

**NUMERIC KEYBOARD (8)**  A group of twelve keys labeled zero through nine, including CLEAR and ENTER keys, used when programming the furnace.

The numbered keys should be depressed while programming to correspond to the desired parameter value for the burnout cycle.

If, while inputting the data, a mistake is made, the “CLEAR” key may be used to remove the incorrect information from the display.

Once the correct information appears on the display, the value may be placed into the memory by pushing the “ENTER” key.

**START/STOP KEY (9)**  Used to either begin or terminate a burnout program.

When this key is depressed to begin the program, the indicator lamp above the key will light and remain illuminated while the program is in operation.

When this key is depressed to terminate the program, the indicator lamp above the key will turn off and the furnace will stop heating.
10. CIRCUIT BREAKER
11. AFTERBURNER REMOTE SOCKET
REAR PANEL

CIRCUIT BREAKER (10)  A safety device designed to protect the furnace electronics in the event of an electrical short circuit or circuit overload.

AFTERBURNER  Provided as a means for automatic control of an afterburner unit (optional accessory).

REMOTE SOCKET (11)  This receptacle will automatically activate and deactivate an afterburner unit*.

*May require use of a special adapter (optional accessory).
DESCRIPTION OF BURNOUT PROGRAM PARAMETERS

AUX

The length of time, programmable in minutes, that an afterburner will start prior to a selected burnout cycle beginning, to allow the afterburner device to preheat.

Once this time has elapsed, the selected burnout cycle will then begin to operate.

If an afterburner device is not being used, the value of zero should be used to bypass this function.

PRESET

An indicator lamp on the GRAPHIC DISPLAY that will blink on and off indicating that the delayed start timer has been engaged and is counting down to begin a selected program.

The “FINISH” key is used to program the PRESET (Delayed Start Timer) function.

HEAT RATE

The rate of temperature rise within the furnace Heating Chamber, in degrees per minute, during any of the stages (STAGE 1, 2, 3 or 4) of the burnout program.

The programmed HEAT RATE will be maintained linearly throughout any of the stages by the furnace electronic control system.

Any HEAT RATE, from 2°F (1°C) per minute through 50°F (28°C) per minute, may be programmed for any of the four stages.

A maximum non-linear HEAT RATE code of 999, may also be programmed into any of the four stages.

See “PROGRAMMING NOTES” on page 15 of this manual.

STAGE 1

Indicated on the GRAPHIC DISPLAY as STAGE 1, this is the first temperature which will be reached in a burnout program.

The furnace may be programmed for single-stage operation or so that a second, third or fourth additional stage follows STAGE 1.

Any temperature between 100°F (50°C) and 2000°F (1100°C) may be programmed for the STAGE 1 temperature.

SOAK

The length of time, programmable in both hours and minutes, over which the furnace will maintain the temperature for that stage.
Upon completion of SOAK, the burnout program will either continue to the next stage or will be completed as programmed by the operator.

Any time between 0 minutes and 99 hours and 59 minutes may be programmed into the furnace for the SOAK time in any of the four stages.

**STAGE 2**

Indicated on the GRAPHIC DISPLAY as STAGE 2, this is the second temperature which will be reached in the burnout program.

The furnace may be programmed for two-stage operation or so that a third or fourth stage follows STAGE 2.

Any temperature between 100°F (50°C) and 2000°F (1100°C) may be programmed for the STAGE 2 temperature.

**STAGE 3**

Indicated on the GRAPHIC DISPLAY as STAGE 3, this is the third temperature which will be reached in the burnout program.

The furnace may be programmed for three-stage operation or so that a fourth stage follows STAGE 3.

Any temperature between 100°F (50°C) and 2000°F (1100°C) may be programmed for the STAGE 3 temperature.

**STAGE 4**

Indicated on the GRAPHIC DISPLAY as STAGE 4, this is the fourth temperature which will be reached in the burnout program.

This is the final temperature which the furnace will reach as programmed by the operator.

Any temperature between 100°F (50°C) and 2000°F (1100°C) may be programmed for the STAGE 4 temperature.
PROGRAMMING A BURNOUT CYCLE

The furnace has twenty burnout programs marked “P-01” through “P-20.” They are fully programmable by the user.

Each program consists of 14 possible parameters (or steps).

You may program a burnout program consisting of one, two, three or four stages with any combination of heating rates or temperatures as listed in the section “UPPER AND LOWER PARAMETER LIMITS” on page 16 of this manual.

Once programmed, the information will be retained in the furnace memory.

The example listed below is for a two-stage Burnout Cycle being stored into Program 3 (“P-03”) with the following parameters:

<table>
<thead>
<tr>
<th>PARAMETER NAME</th>
<th>PARAMETER VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEAT RATE 1</td>
<td>20°F/Minute (11°C/Minute)</td>
</tr>
<tr>
<td>STAGE 1 TEMP</td>
<td>500°F (260°C)</td>
</tr>
<tr>
<td>SOAK TIME 1</td>
<td>10 Minutes</td>
</tr>
<tr>
<td>HEAT RATE 2</td>
<td>35°F/Minute (19°C/Minute)</td>
</tr>
<tr>
<td>STAGE 2 TEMP</td>
<td>1000°F (538°C)</td>
</tr>
<tr>
<td>SOAK TIME 2</td>
<td>1 Hour 0 Minutes</td>
</tr>
<tr>
<td>HEAT RATE 3</td>
<td>0°F/Minute (0°C)</td>
</tr>
<tr>
<td>STAGE 3 TEMP</td>
<td>0°F</td>
</tr>
<tr>
<td>SOAK TIME 3</td>
<td>0 Minutes</td>
</tr>
<tr>
<td>HEAT RATE 4</td>
<td>0°F/Minute (0°C)</td>
</tr>
<tr>
<td>STAGE 4 TEMP</td>
<td>0°F</td>
</tr>
<tr>
<td>SOAK TIME 4</td>
<td>0 Minutes</td>
</tr>
</tbody>
</table>

1) Turn the POWER SWITCH to the ON position, the ambient temperature will be displayed.

2) Push the “STEP” key until the program number appears on display as “P-??”. This will allow you to select where the information will be stored.

3) Push “0” “3” “ENTER” to choose Program 3.

Note: The “PROGRAM” key must be disengaged so that the indicator lamp above the “PROGRAM” key is off when you are selecting a program number.

4) “P-03” will now appear on display.

5) To store the burnout cycle information into “P-03”, push the “PROGRAM” key so lamp above the key illuminates. This will place the unit into the “program” mode and allow you to input information into Program 3.
6) Push the “STEP” key once.

7) The indicator lamp for HEAT RATE of STAGE 1 will illuminate on the GRAPHIC DISPLAY.

8) Push “2” “0” “ENTER” to correspond to HEAT RATE 1 (20°F/Minute).

10) The indicator lamp for STAGE 1 will illuminate on the GRAPHIC DISPLAY.

11) Push “5” “0” “ENTER” to correspond to the STAGE 1 temperature (500°F).

12) The indicator lamp for SOAK of STAGE 1 will illuminate on the GRAPHIC DISPLAY.

13) Push “0” “0” “1” “0” “ENTER” to correspond to SOAK Time 1 (00:10 Min).

14) The indicator lamp for HEAT RATE of STAGE 2 will illuminate on the GRAPHIC DISPLAY.

15) Push “3” “5” “ENTER” to correspond to HEAT RATE 1 (35°F/Minute).

16) The indicator lamp for STAGE 2 will illuminate on the GRAPHIC DISPLAY.

17) Push the “1” “0” “0” “ENTER” to correspond to the STAGE 2 temperature (1000°F).

18) The indicator lamp for SOAK of STAGE 2 will illuminate on the GRAPHIC DISPLAY.

19) Push “0” “1” “0” “0” “ENTER” to correspond to SOAK TIME 2 (01:00 Hr).

20) To operate this program as a two-stage program, the information for all other stages (STAGES 3 and 4) must be programmed with a “0”.

21) Push the “PROGRAM” key to turn off the indicator lamp above this key and exit the “program” mode.

22) “P-03” will now appear on display indicating that the furnace is ready to operate Program 3.

23) To begin the program immediately, with no delay, push the “START/STOP” key once. The indicator lamp above this key will illuminate and the furnace will begin the cycle.

Note: The chamber temperature may be monitored on the display by pushing the “STEP” key two times.
PROGRAMMING NOTES

The Accu-Therm III 3000/6000 burnout furnace has been designed for maximum operator flexibility. The following features will allow you to custom tailor the programs to your needs:

1) MAXIMUM RATE (FULL POWER CONTROL)

The HEAT RATES for STAGES 1 through 4 may be programmed so that the temperature increases at a maximum rate (full power) without linear control.

To achieve maximum rate, the numbers “9” “9” “9” should be programmed for the HEAT RATE value in any of the stages where maximum temperature increase is desired.

2) PROGRAMS WITH LESS THAN FOUR STAGES

The furnace may be programmed to operate as a one, two, three or four-stage furnace as follows:

ONE-STAGE OPERATION
If a program with only one stage operation is desired, program the number “0” for all values of STAGE 2, STAGE 3 and STAGE 4.

TWO-STAGE OPERATION
If a program with only two stages is desired, program the number “0” for all values of STAGE 3 and STAGE 4.

THREE-STAGE OPERATION
If a program with only three stages is desired, program the number “0” for all values of STAGE 4.

3) TEMPERATURE UP/DOWN CAPABILITIES

The Accu-Therm III 3000/6000 furnace will allow the user to program temperatures for all four stages either above or below one another.

This feature gives the furnace the capability of either increasing or decreasing the Heating Chamber temperature in any of the four burnout stages.
UPPER AND LOWER LIMITS FOR THE BURNOUT PROGRAM PARAMETERS

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>LOWER LIMIT</th>
<th>UPPER LIMIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUX TIMER</td>
<td>0 Minutes</td>
<td>60 Minutes</td>
</tr>
<tr>
<td>HEAT RATE 1</td>
<td>2°F (1°C)/Minute</td>
<td>50°F (28°C)/Minute</td>
</tr>
<tr>
<td>STAGE 1 TEMP</td>
<td>100°F (50°C)</td>
<td>2000°F (1100°C)</td>
</tr>
<tr>
<td>SOAK 1</td>
<td>0 Minutes</td>
<td>99 Hours 59 Minutes</td>
</tr>
<tr>
<td>HEAT RATE 2</td>
<td>2°F (1°C)/Minute</td>
<td>50°F (28°C)/Minute</td>
</tr>
<tr>
<td>STAGE 2 TEMP</td>
<td>100°F (50°C)</td>
<td>2000°F (1100°C)</td>
</tr>
<tr>
<td>SOAK 2</td>
<td>0 Minutes</td>
<td>99 Hours 59 Minutes</td>
</tr>
<tr>
<td>HEAT RATE 3</td>
<td>2°F (1°C)/Minute</td>
<td>50°F (28°C)/Minute</td>
</tr>
<tr>
<td>STAGE 3 TEMP</td>
<td>100°F (50°C)</td>
<td>2000°F (1100°C)</td>
</tr>
<tr>
<td>SOAK 3</td>
<td>0 Minutes</td>
<td>99 Hours 59 Minutes</td>
</tr>
<tr>
<td>HEAT RATE 4</td>
<td>2°F (1°C)/Minute</td>
<td>50°F (28°C)/Minute</td>
</tr>
<tr>
<td>STAGE 4 TEMP</td>
<td>100°F (50°C)</td>
<td>2000°F (1100°C)</td>
</tr>
<tr>
<td>SOAK 4</td>
<td>0 Minutes</td>
<td>99 Hours 59 Minutes</td>
</tr>
</tbody>
</table>

TEMPERATURE DISPLAY MODE

The furnace may be operated in either degrees Fahrenheit or degrees Celsius as a unit of measurement for temperature on the furnace display.

1) Confirm the furnace is NOT in the “program” mode. The indicator lamp above the “PROGRAM” key should not be illuminated.

2) Push the “STEP” key until the chamber temperature appears on the DIGITAL DISPLAY.

   a) To operate the temperature display in degrees Fahrenheit mode:

      Push both the “CLEAR” key and the number “1” key simultaneously.

   b) To operate the temperature display in degrees Celsius mode:

      Push both the “CLEAR” key and the number “0” key simultaneously.

The furnace will retain your selected unit of measure (°F or °C) in memory and display all information accordingly.
IN-CYCLE PARAMETER CHANGES

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>U</th>
<th>U</th>
<th>U</th>
<th>U</th>
<th>U</th>
<th>U</th>
<th>U</th>
<th>U</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEAT RATE 1</td>
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<td></td>
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<tr>
<td>STAGE 1 TEMP</td>
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<tr>
<td>SOAK TIME 1</td>
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<td>HEAT RATE 2</td>
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<td>STAGE 2 TEMP</td>
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<td>SOAK TIME 2</td>
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<td>HEAT RATE 3</td>
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<td>STAGE 3 TEMP</td>
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<tr>
<td>SOAK TIME 3</td>
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<tr>
<td>HEAT RATE 4</td>
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<tr>
<td>STAGE 4 TEMP</td>
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</tr>
</tbody>
</table>

A = ACCEPTED BY FURNACE  U = UNACCEPTED BY FURNACE
SETTING THE ACTUAL TIME

You will need to set the internal clock/calendar of the furnace to the correct date and time for your time zone.

We will use June 15, 1994 at 1:30 PM as the current date/time for this example of setting the Actual Time.

1) Push the “ACTUAL” key once.

2) Push “1” “9” “9” “4” “ENTER” to correspond to the current calendar year of 1994.

3) Push “0” “6” “1” “5” “ENTER” to correspond to the current month and day of June 15 (06-15).

4) Push “0” “1” “3” “0” to correspond to the present time of 1:30 and push the “STEP” key to indicate AM or PM.

5) Push “ENTER” to store your information into memory and exit the Actual Time programming mode.

6) The display will return to reading the actual Heating Chamber temperature.

SETTING THE AUX TIMER

The AUX Timer is used to automatically control an optional afterburner unit.

It is the amount of time, programmable in minutes, that the connected afterburner unit will preheat prior to the start of your selected cycle.

Perform the following steps to program the AUX Timer:

1) Push the “STEP” key until “P-??” appears on display.

2) Push both the “ACTUAL” and “FINISH” keys simultaneously.

3) The display will read “AUX??”.

4) If you are not connecting an afterburner unit to your 3000/6000 furnace, bypass the AUX Timer as follows:

   a) Push “0” “0” “ENTER” to set the AUX timer to zero and exit the AUX timer programming mode.
If you are connecting an afterburner unit to your 3000/6000 furnace, set the AUX Timer as follows:

b) Push “1” “5” “ENTER” to set the AUX Timer to a 15 Minute preheat delay, to allow the afterburner to reach proper operating temperature before starting your selected program.

Note: See the operating instructions for the recommended preheat time needed for your afterburner unit.

5) The display will return to reading the actual Heating Chamber temperature.

SETTING THE DELAYED START TIMER (PRESET TIMER)

You must first select the program you wish to operate with delayed starting.

Note: Please remember that you must use the date and time you want the selected program to be completed.

The furnace will do the rest and automatically calculate when it must start, based on the information in your selected program, so that it will have your program completed at the date and time you programmed.

We will select Program 3 and have the cycle completed for June 29 at 8:00 AM for this example.

1) Push the “STEP” key until “P-??” appears on display.

2) Push “0” “3” “ENTER” to select program 3 for delayed starting.

3) Push the “FINISH” key once.

4) Push “0” “6” “2” “9” “ENTER” to correspond to the date of June 29 (06-29).

5) Push “0” “8” “0” “0” to correspond to the time 8:00 and push the “STEP” key to indicate AM or PM.

6) Push “ENTER” to store your information into memory and exit the Delayed Start Timer (PRESET Timer) programming mode.

7) Push the “START/STOP” key so the indicator lamp above this key illuminates.

8) The indicator lamp marked “PRESET TIME” on the GRAPHIC DISPLAY will now blink on and off, confirming the Delayed Start Timer (PRESET Timer) is in operation.

You may confirm the programmed finish time as follows:

a) Push the “FINISH” key once.
The date and time the furnace will automatically start your selected program will appear on display.

**Note:** This is the date and time the furnace will start your selected program. This information is automatically calculated by the furnace.

b) Push the "FINISH" key again.

The date and time you set for the selected program to be completed will appear on display.

c) Push the "FINISH" key a third and final time and the display will return to normal, indicating the chamber temperature.

**BYPASSING THE DELAYED START TIMER (PRESET TIMER)**

Bypassing the Delayed Start Timer can only be done when the PRESET TIME indicator lamp on the GRAPHIC DISPLAY is blinking on and off, indicating that the timer is in operation.

To bypass the timer, perform the following steps:

1) Push the "START/STOP" key to turn off the indicator lamp above this key.

2) Push the "START/STOP" key again, so the indicator lamp illuminates again.

3) The program previously selected for Delayed Starting will now begin immediately without delay.

**Note:** To re-engage the Delayed Start Timer (PRESET Timer) after it has been bypassed, it will be necessary to reprogram the Timer (starting from Step 1 of "SETTING THE DELAYED START TIMER" on page 19 of this manual).

**CALIBRATION**

1) Prepare the furnace for calibration by placing a small casting ring, with a ceramic tray or piece of ring lining material across the top, into the center of the Heating Chamber.

2) Place a 1300°F (704 °C) Calibration Tempil pellet on top of the tray or ring lining material and close the furnace door.

**Note:** The Tempil pellet should only be placed into the Heating Chamber at a temperature of 300°F (149°C) or lower.

Placing the Tempil pellet in chambers with temperatures higher than indicated above will result in inaccurate calibration.

3) Push the "STEP" key until the program number appears on the display as "P-??".
4) Push “9” “9” “ENTER” to select Program 99 (Calibration Program).

Note: The “PROGRAM” key must be disengaged so that the indicator lamp above the “PROGRAM” key is off.

5) “P-99” will now appear on display.

6) To begin the Calibration Cycle, push the “START/STOP” key once.

The indicator lamp above the “START/STOP” key will illuminate and the DIGITAL DISPLAY will alternate between “CALb” and the actual furnace chamber temperature, indicating the Calibration Cycle has begun.

7) When the furnace reaches approximately 1200°F (649°C), open the furnace door periodically, and observe the Tempil pellet.

Note: The amount of time the door remains open should be a short as possible to minimize heat loss from the chamber.

8) When the edges of the pellet become rounded, the actual chamber temperature is at 1300°F (704°C) and the “ENTER” key should be pushed.

The furnace temperature display will no longer toggle between “CALb” and the actual chamber temperature once the “ENTER” key has been pushed.

Tones will be heard, indicating that the Calibration program is completed.

Note: Once the unit has completed the calibration cycle, power will no longer be applied to the furnace heating plates and the temperature display will begin to drop.

It is recommended that the furnace be calibrated once a month as part of normal furnace maintenance.

9) Push the “STEP” key until “P-99” appears on the display.

10) Push “0” “1” “ENTER’ to exit Program 99 (Calibration program) and select Program 1 for operation.

Note: The “PROGRAM” key must be disengaged so that the indicator lamp above the “PROGRAM” key is off.
ERROR CODES

"Err 1" AUX TIMER DATA ERROR
This error occurs when the User attempts to enter information in the “AUX” Timer that is not within the allowable limits of operation.

Cause:
1) The programmed value for the “AUX” Timer is either below or above the acceptable programming limits.

Remedy:
1) Select a value for the “AUX” Timer which is within the indicated operating limits specified in “UPPER AND LOWER PARAMETER LIMITS” on page 16 of this manual.

"Err 2" DATA OUT OF RANGE DATE/TIME ERROR CALIBRATION ERROR
This occurs when the User attempts to enter a parameter with a value which is not within the acceptable limits of the furnace.

Cause:
1) The unit is in the wrong temperature display mode (°F or °C) for the information you are attempting to program.

2) The burnout program information is either above or below the outlined parameter limits of the furnace.

Remedy:
1) Confirm that the furnace is operating in the correct temperature display mode (°F or °C) as outlined in “TEMPERATURE DISPLAY MODE” on page 16 of this manual.

2) You must select a parameter value which is within the outlined limits of “UPPER AND LOWER PARAMETER LIMITS” on page 16 of this manual.

This is also a date/time error which occurs when the User attempts to enter incorrect or conflicting information for the Delayed Start Timer (PRESET Timer) or Actual Timer.

Cause:
1) Actual Timer has not yet been programmed by User.

2) The Calibration cycle cannot be operated with the Finish Timer.

3) Finish date/time conflicts with Actual date/time.

4) Your selected program required more time than allowed for by the Finish Timer.

Remedy:
1) Program the correct Year, Date and Time into furnace memory as indicated by “SETTING THE ACTUAL TIME” on page 18 of this manual.
2) You must select a burnout program (P-01 through P-20), other than the Calibration program (P-99).

3) Set a Finish date/time which is ahead of the present Actual date/time.

4) Shorten the length of your selected program or set the Finish date/time further ahead.

This error also occurs when Calibration information has either been lost from memory or the User attempts to Calibrate the furnace within an unacceptable temperature range.

**Cause:**
1) The User has attempted to Calibrate the furnace at a temperature which is either too high or too low.

2) The Battery which supports Calibration reference information in the furnace memory has become weak and requires replacement.

**Remedy:**
1) You must use a 1300°F (704°C) Tempil pellet and push the “ENTER” key at the proper time while Calibrating. See “CALIBRATION” on page 20 of this manual.

2) Replace the Memory Battery.

   Reset the Circuit Board as listed in Error 7 Remedy Step 1 - “Calibration Reset” on page 24 of this manual.

**Err 4** THERMOCOUPLE ERROR
This Error code will appear and a warning tone will sound in the event of a thermocouple failure.

**Cause:**
1) Faulty Thermocouple or Thermocouple connection.

2) Faulty Control Circuit Board.

**Remedy:**
1) Inspect the Thermocouple and its connections. Replace the Thermocouple if the tip is deteriorated or corroded.

   **Note:** The furnace must be Calibrated after Thermocouple replacement.

2) Replace the Control Circuit Board.

**Err 5** HEATER MALFUNCTION
This Error code will appear if, after a predetermined period of time, the programmed temperature is not reached or the actual furnace temperature varies excessively from the programmed furnace temperature.
Cause:
1) Faulty Heating Plate(s) or Heating Plate connections
2) Faulty Thermocouple or Thermocouple connection
3) Faulty Door Interlock Switch
4) Faulty Triac
5) Faulty Control Circuit Board

Remedy:
1) Tighten and clean any loose or corroded Heating Plate connections. Replace any Plates which no longer have continuity (are open circuit).
2) Inspect the Thermocouple for signs of corrosion or cracking at the tip. Replace the Thermocouple if either condition is found.
3) Adjust the positioning of the Door Interlock Switch so when the Door is in the closed position the switch plungers are fully depressed.
4) Inspect the Triac for either a “constant” open circuit or closed circuit condition. If either “constant” condition occurs, replace the Triac.
5) Replace the Control Circuit Board.

“Err 7” CPU MALFUNCTION
This Error code will occur when a malfunction occurs with the microprocessor located on the control circuit board.

Cause:
1) Electrical noise or interference has “confused” the microprocessor.

2) The Control Circuit Board is faulty.

Remedy:
1) Push the “CLEAR” key to reset the display.
   Turn the Power Switch to the Off or “O” position for a period of ten minutes. If the problem still occurs after ten minutes, perform the following procedure:
   Calibration Reset (Clearing the Circuit Board)
   a) Turn the Power Switch to the Off or “0” position.
b) Push the "PROGRAM", "CLEAR" and "ENTER" keys simultaneously and keep them depressed.

c) While holding the above keys, turn the Power Switch to the On or "1" position, and continue to hold the keys depressed for a period of ten seconds.

d) After ten seconds has elapsed, release the keys. Operation should return to normal.

Note: After performing this procedure, the furnace must be Calibrated and the Actual Date and burnout program information for P-01 through P-20 must be re-programmed into memory.

2) Confirm that the furnace is being operated on an independent electrical circuit as outlined under "INSTALLATION" on page 5 of this manual; otherwise, replace the Control Circuit Board.

* Blinking Display - change Battery *
# REPLACEMENT PARTS LIST

<table>
<thead>
<tr>
<th>Description</th>
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<td>Ceramic Floor Tray</td>
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<td>Ceramic Hearth Collar - Upper/Lower (3000 only)</td>
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<td>Ceramic Hearth Collar - Upper/Lower (6000 only)</td>
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<tr>
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<td>Triac</td>
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### FAHRENHEIT/CELSIUS CONVERSION CHART

Locate the temperature you wish to convert in the Reference Column (REF)

- To find the Fahrenheit equivalent - read to the RIGHT.
- To find the Celsius Equivalent - read to the LEFT.

Example: You are working at 990°C. Find 990 in the Reference column. Read to the right. Fahrenheit equivalent is 1814°F.

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