JELENKO
ACCU-TERM® II 750 AND 850 BURNOUT FURNACES

OPERATING AND MAINTENANCE INSTRUCTIONS
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 the top.

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

3. Unpackage the Ceramic Vent Tube and install the tube in the Vent Hole located at the top of the furnace. When properly installed, the Vent Tube should protrude approximately one-half inch (1.3 cm) from the top surface of the furnace.

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

5. Place the Ceramic Tray or Trays on the bottom of the furnace Heating Chamber. The trays serve to collect wax residue and foreign material and prevent their soaking into the bottom of the furnace Heating Chamber.

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" position. The Indicator Lamp inside the switch will illuminate, the DIGITAL DISPLAY will indicate the actual Heating Chamber temperature and the Indicator Lamp above the TONE Key will illuminate.

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

IMPORTANT NOTE: It is important that your Accu-Therm 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

POWER SWITCH (1): Turns the electrical power to the furnace on or off. An internal indicator lamp will illuminate when this switch is in the "on" position.

START/STOP KEY (2): Used to either begin or terminate the burnout program. When this key is depressed to begin the program, the Indicator Lamp above the key will illuminate 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.

A brief tone response will be heard each time this key is depressed.

ALARM INDICATOR (3): This Indicator Lamp will illuminate and an Alarm Tone will sound if the temperature which is maintained by the furnace varies excessively from the programmed value, or the furnace does not heat once the START/STOP Key has been depressed to begin a burnout program.

If the ALARM INDICATOR illuminates repeatedly, the instructions outlined under "TROUBLESHOOTING AND SERVICE" on page 18 of this manual should be followed.

HEATER ON INDICATOR (4): This Indicator Lamp illuminates whenever electrical power is being applied to the furnace Heating Elements. This Indicator Lamp will normally cycle on and off at varying rates as the furnace is heating or maintaining a programmed temperature.

This Indicator Lamp will turn off when the furnace Door is opened, indicating that electrical power to the furnace Heating Elements has been disconnected.

GRAPHIC DISPLAY (5): Graphically represents the status of the furnace during a burnout program and, during programming, identifies the selected burnout program parameter.

While the furnace is in the process of completing each parameter within burnout program (HEAT RATE and SOAK TIME), the Indicator Lamp corresponding to that parameter will illuminate. Each of the Indicator Lamps of the GRAPHIC DISPLAY will continue to illuminate as the burnout program is completed until all of the Indicator Lamps are illuminated.

The CYCLE COMPLETE Indicator Lamp will illuminate once the burnout program has been completed.

The furnace will continue to maintain the programmed temperature for the last stage of a burnout program, until the START/STOP Key is depressed.
SET POINT DECREASE KEY
(11):
Used when programming the furnace to decrease the value of the parameter being displayed.

The longer this key is held depressed, the faster the displayed parameter will decrease in value.

When this key is depressed once quickly, the displayed value will decrease by one digit.

These two aspects of operation for this key allow the operator to quickly decrease the value of the displayed parameter by a large quantity and then set the exact value by decreasing the value of the parameter one digit at a time.

Note that once the desired value for parameter being programmed appears correctly on the DIGITAL DISPLAY, the ENTER Key must be depressed to place the displayed value in the program.

SET POINT INCREASE KEY
(12):
Used when programming the furnace to increase the value of the parameter being displayed.

The longer this key is held depressed, the faster the displayed parameter will increase in value.

When this key is depressed once quickly, the displayed value will increase by one digit.

These two aspects of operation for this key allow the operator to quickly increase the value of the displayed parameter by a large quantity and then set the exact value by increasing the value of the parameter one digit at a time.

Note that once the desired value for the parameter being programmed appears correctly on the DIGITAL DISPLAY, the ENTER Key must be depressed to place the displayed value in the program.
REAR PANEL

FUSE (13): A safety device designed to protect the furnace electronics in the event of an electrical short circuit or overload.

It is important that the fuse be replaced only with the type and rating indicated on the furnace Rear Panel.

DESCRIPTION OF BURNOUT PROGRAM PARAMETERS

START TIME— The length of time, programmable in both hours and minutes, over which the burnout program will be delayed before starting.

Once this time has been programmed and the START/STOP Key depressed, the furnace’s internal clock will begin timing to turn the furnace “on” automatically after the programmed Start Time has elapsed.

Any Start Time from 0 minutes through 99 hours and 59 minutes may be programmed into the furnace.

HEAT RATE 1— The rate of temperature rise within the furnace Heating Chamber, in degrees per minute, during the first stage (Stage 1) of the burnout program. The programmed Heat Rate will be maintained linearly throughout Stage 1 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 Stage 1.

STAGE 1 TEMPERATURE— Indicated on the GRAPHIC DISPLAY as “Stage 1,” this is the first temperature which will be achieved and/or maintained in a burnout program containing two stages.

If desired, the furnace may be programmed so that one additional stage follows Stage 1 or a single stage burnout program.

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

SOAK TIME 1— The length of time, programmable in both hours and minutes, over which the furnace will maintain the STAGE 1 TEMPERATURE.

Upon completion of SOAK TIME 1, 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 SOAK TIME 1.
PROGRAMMING A BURNOUT CYCLE PROGRAM

The burnout cycle program is fully programmable by the operator and may consist of up to six possible burnout program parameters.

If desired, the operator may program a burnout program to consist of either one or two stages with any desired combination of heating rates or temperatures. It is also possible to program the second stage temperature lower than the first stage temperature.

Once programmed, the burnout program will be retained in furnace memory for use as needed, even when the furnace POWER SWITCH has been turned "off" or line power to the furnace is disconnected.

Outlined below is the procedure for programming a burnout cycle program. To illustrate this procedure, the following parameters will be used:

<table>
<thead>
<tr>
<th>PARAMETER NAME</th>
<th>PARAMETER VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEAT RATE 1</td>
<td>13°F/Minute (7°C/Minute)</td>
</tr>
<tr>
<td>STAGE 1 TEMPERATURE</td>
<td>600°F (316°C)</td>
</tr>
<tr>
<td>SOAK TIME 1</td>
<td>15 Minutes</td>
</tr>
<tr>
<td>HEAT RATE 2</td>
<td>40°F/Minute (22°C/Minute)</td>
</tr>
<tr>
<td>STAGE 2 TEMPERATURE</td>
<td>1000°F (538°C)</td>
</tr>
<tr>
<td>SOAK TIME 2</td>
<td>45 Minutes</td>
</tr>
</tbody>
</table>

NOTE: The procedure outlined in this section uses degrees Fahrenheit for temperature and heat rate. If the furnace is a degrees Celsius model, degrees Celsius for temperature and heat rate (numbers in parenthesis) should be used.

1. Make certain that the Accu-Therm II 750/850 furnace has been installed as outlined under "INSTALLATION" on page 3 of this manual and that the POWER SWITCH has been placed in the "on" position. The Indicator Lamp inside the switch will illuminate and the DIGITAL DISPLAY will indicate the actual Heating Chamber temperature and the Indicator Lamp above the TONE Key will illuminate.

2. Depress the PROGRAM Key. The Indicator Lamp above the key will illuminate, indicating that the furnace is in the Program Mode of operation.

   The PRESET TIME and START Indicator Lamps on the GRAPHIC DISPLAY will illuminate.

   The DIGITAL DISPLAY will indicate the Start Time presently programmed into the furnace.

3. If necessary, use the SET POINT DECREASE Key to decrease the Start Time until the following numbers appear on the DIGITAL DISPLAY:

   0 0 : 0 0 - To correspond to 0 Hours and 0 Minutes for the desired Start Time

Once the desired Start Time appears correctly on the DIGITAL DISPLAY, depress the ENTER Key. This parameter will be entered and the display will automatically advance to the next parameter and the HEAT RATE 1, SOAK TIME and TEMP Indicator Lamps on the GRAPHIC DISPLAY will illuminate.

If it was desirable to delay the starting of the burnout program, the number of hours and minutes for this delay would be entered at this time using the SET POINT DECREASE or SET POINT INCREASE Keys. However, for this exercise, an entry of zero is being used.

The Temperature for Stage 1 which is presently programmed into the furnace will appear on the DIGITAL DISPLAY.
Once the desired Temperature for Stage 2 appears correctly on the DIGITAL DISPLAY, depress the ENTER Key. This parameter will be entered and the display will automatically advance to the next parameter and the HEAT RATE 2 and RATE Indicator Lamps on the GRAPHIC DISPLAY will illuminate.

The Heat Rate for Stage 2 which is presently programmed into the furnace will appear on the DIGITAL DISPLAY.

8. Using either the SET POINT DECREASE or SET POINT INCREASE Keys, decrease or increase the value of the displayed Heat Rate until the following numbers appear on the DIGITAL DISPLAY:

4 0 - To correspond to the desired Heat Rate for Stage 2

Once the desired Heat Rate for Stage 2 appears correctly on the DIGITAL DISPLAY, depress the ENTER Key. This parameter will be entered and the display will automatically advance to the next parameter and the SOAK TIME and SOAK Indicator Lamps on the GRAPHIC DISPLAY will illuminate.

The Soak Time for Stage 2 which is presently programmed into the furnace will appear on the DIGITAL DISPLAY.

9. Using either the SET POINT DECREASE or SET POINT INCREASE Keys, decrease or increase the value of the displayed Soak Time until the following numbers appear on the DIGITAL DISPLAY:

0 0 : 4 5 - To correspond to the desired number of Hours and Minutes for a Soak Time at Stage 2

Once the desired Soak Time for Stage 2 appears correctly on the DIGITAL DISPLAY, depress the ENTER Key. This parameter will be entered and the display will return to indicate the actual furnace Heating Chamber temperature.

10. At this time, programming for the burnout cycle program is complete and may be used to perform the programmed burnout program by depressing the START/STOP Key.

Once the START/STOP Key has been depressed to begin a burnout program, the Indicator Lamps on the GRAPHIC DISPLAY will sequentially illuminate to show the status of the furnace in the burnout program.

After the CYCLE COMPLETE Indicator Lamp illuminates, the burnout program is complete. The furnace will continue to maintain the temperature programmed for the final stage until either the START/STOP Key is depressed or the POWER SWITCH is placed in the “off” position.
CALIBRATION

Your new Jelenko Accu-Therm II 750/850 burnout furnace has been factory tested and calibrated and should not require calibration upon initial installation. However, it is recommended that the calibration be checked every two months as part of normal furnace maintenance and this Calibration Procedure performed if calibration adjustment is required.

The Calibration Procedure should also be performed if any major furnace components, such as the Thermocouple or Control Circuit Board have been replaced.

IMPORTANT NOTE

THE CALIBRATION PROCEDURE OUTLINED IN THIS SECTION REQUIRES OPERATION AND ADJUSTMENT TO THE FURNACE WHILE THE UNIT IS IN OPERATION AND CONNECTED TO THE LINE POWER SOURCE.

EXTREME CAUTION MUST BE EXERCISED TO ELIMINATE THE POSSIBILITY OF ELECTRIC SHOCK HAZARD WHEN PERFORMING THIS PROCEDURE. IT IS RECOMMENDED THAT THIS PROCEDURE BE PERFORMED BY QUALIFIED SERVICE PERSONNEL.

For the Calibration procedure, a 1300°F (704°C) Tempil pellet should be used according to the following procedure:

1. Place the furnace POWER SWITCH in the “off” position and rotate the furnace so that the rear of the furnace is facing you.

2. Unplug the furnace Power Cord from the wall receptacle.

3. Loosen and remove the four screws located along the edge of the furnace Front Panel. Remove the Front Panel and position it facing downward at the rear of the furnace.

4. Locate the Calibrate Potentiometer located in the center of the Control Circuit Board.

5. Making certain that all electrical connections at the rear of the furnace are away from and not touching the furnace chassis, plug the furnace Power Cord into the wall receptacle.

6. Place the furnace POWER SWITCH in the “on” position.

7. With the furnace Heating Chamber at a temperature no greater than 500°F (260°C), place a small, empty casting ring in the center of the furnace Heating Chamber.

8. Position a thin tray or small piece of ring lining material on top of the casting ring and then place a 1300°F (704°C) Tempil pellet on top of the tray or ring lining material.

   When properly positioned, the Tempil should be horizontally and vertically centered within the furnace Heating Chamber.

9. Close the furnace Door and place the furnace POWER SWITCH in the “on” position.
15. Using either the SET POINT DECREASE or SET POINT INCREASE Keys, decrease or increase the value of the displayed Temperature until the following numbers appear on the DIGITAL DISPLAY:

1 5 0 0 - To correspond to the desired Stage 2 Temperature to be used for this procedure

Once the desired Temperature for Stage 2 appears correctly on the DIGITAL DISPLAY, depress the ENTER Key. This parameter will be entered and the display will automatically advance to the next parameter and the HEAT RATE 2 and RATE Indicator Lamps on the GRAPHIC DISPLAY will illuminate.

The Heat Rate for Stage 2 which is presently programmed into the furnace will appear on the DIGITAL DISPLAY.

16. Using either the SET POINT DECREASE or SET POINT INCREASE Keys, decrease or increase the value of the displayed Heat Rate until the following numbers appear on the DIGITAL DISPLAY:

5 0 - To correspond to the desired Heat Rate for Stage 2

Once the desired Heat Rate for Stage 2 appears correctly on the DIGITAL DISPLAY, depress the ENTER Key. This parameter will be entered and the display will automatically advance to the next parameter and the SOAK TIME and SOAK Indicator Lamps on the GRAPHIC DISPLAY will illuminate.

The Soak Time for Stage 2 which is presently programmed into the furnace will appear on the DIGITAL DISPLAY.

17. Using either the SET POINT DECREASE or SET POINT INCREASE Keys, decrease or increase the value of the displayed Soak Time until the following numbers appear on the DIGITAL DISPLAY:

0 0 : 0 0 - To the Soak Time for Stage 2 to zero

Once the desired Soak Time for Stage 2 appears correctly on the DIGITAL DISPLAY, depress the ENTER Key. This parameter will be entered and the display will return to indicate the actual furnace Heating Chamber temperature.

18. At this time, programming for the Calibration Procedure is complete and may be used to perform the Calibration Procedure by depressing the START/STOP Key.

19. Depress the START/STOP Key. Once the actual furnace Heating Chamber temperature, as indicated on the DIGITAL DISPLAY, reaches 1200°F (649°C), open the furnace Door slightly and begin to check for melting of the Tempil pellet.

Continue to check the Tempil pellet every 25°F (14°C), opening the furnace Door just enough to determine at a quick glance if the pellet has begun to melt.

20. When the Tempil pellet BEGINS to melt or liquefy around the edges, immediately adjust the Calibrate Potentiometer on the Control Circuit Board for a DIGITAL DISPLAY reading of 1300°F (704°C).

21. The Calibration Procedure is now complete. Depress the START/STOP Key to terminate the Calibration Program and replace the Lower Rear Panel on the furnace.
ACCU-THERM II 750 MODEL*
(FRONT PANEL REMOVED)

A. FRONT CIRCUIT BOARD
B. CONTROL CIRCUIT BOARD
C. DOOR INTERLOCK SWITCH
D. CALIBRATE POTENTIOMETER

*850 SERIES LAYOUT SIMILAR BUT LESS COMPACT.
ACCU-THERM II 750 MODEL
(UPPER REAR PANEL REMOVED)

ACCU-THERM II 850 MODEL
(UPPER REAR PANEL REMOVED)

H. Jumper Lead
I. Rear Insulating Panel
J. Thermocouple
K. Heating Plate Wire
L. Heater (Power) Leads
REPLACEMENT OF THE HEATING ELEMENTS — ACCU-THERM II 850 MODELS

1. Place the furnace POWER SWITCH in the "off" position.

2. Unplug the furnace Power Cord from the wall receptacle.

3. With the rear of the furnace facing you, loosen and remove the nine screws located along the edge of the furnace Upper Rear Panel. Remove the Upper Rear Panel.

4. Locate the Ceramic Terminal Block and loosen and remove the nuts which secure the Heating Element Leads and the Jumper Lead to the terminals of the Ceramic Terminal Block. Straighten the eight Heating Element Leads.

5. Carefully remove the Thermocouple by sliding it out of the hole in the furnace Rear Insulating Panel. Once the Thermocouple has been completely removed, bend it downward and out of the way.

6. With the front of the furnace facing you, open the furnace Door and push on the rear Heating Elements until the Rear Insulating Panel is completely out of the rear of the furnace. Remove the Rear Insulating Panel and the furnace insulation.

7. Note the position of the Rear Heating Elements and remove the Heating Elements from the Heating Chamber.

8. Carefully slide the two Heating Elements, located along the sides of the Heating Chamber, out from the rear of the furnace.

9. Check the condition of the Heating Chamber Insulation and the Rear Insulating Panel. Replace these parts if necessary.

10. To install the new Heating Elements, reverse this procedure. Note that the Side Heating Elements must be installed first with the exposed element facing the inside of the furnace Heating Chamber. The Rear Heating Elements are installed last, with the flat ceramic surface of the element facing the inside of the furnace Heating Chamber. When reconnecting the Heating Element Leads, make certain that all connections are very tight, otherwise a failure of the connection could occur.

11. Recalibrate the furnace as outlined under "CALIBRATION" on pages 15 - 17 of this manual.
REPLACEMENT OF THE CONTROL CIRCUIT BOARD

1. Place the furnace POWER SWITCH in the "off" position.

2. Unplug the furnace Power Cord from the wall receptacle.

3. With the rear of the furnace facing you, loosen and remove the six screws located along the edge of the furnace Lower Rear Panel. Remove the Lower Rear Panel.

4. Locate the two Thermocouple Leads which are connected to the four position Terminal Strip located at the rear of the Control Circuit Board.

   Note the position and color coding of these leads so that they may be reconnected in the same manner and disconnect the leads from the Terminal Strip.

5. Locate the two Door Interlock Switch wires which are connected to the four position Terminal Strip located at the rear of the Control Circuit Board.

   Note the position and color coding of these wires so that they may be reconnected in the same manner and disconnect the wires from the Terminal Strip.

6. Locate the four Power Leads which are connected to the four position Terminal Strip located on the left side of the Control Circuit Board.

   Note the position and color coding of these wires so that they may be reconnected in the same manner and disconnect the wires from the Terminal Strip.

7. Locate the two wires which interconnect the Solid State Relay and the Control Circuit Board.

   Note the position and color coding of the wires which are connected to the terminals of the Solid State Relay so that they may be reconnected in the same manner and disconnect the wires from the Solid State Relay.

8. Locate the Connector for the Flat Cable which interconnects the Front Circuit Board and the Control Circuit Board and unplug the Connector from the Control Circuit Board by pulling upward on the Connector.

9. Loosen and remove the six screws with nuts which secure the Control Circuit Board to the bottom of the furnace Lower Housing. Remove the Control Circuit Board.

10. Reverse this procedure to install the replacement Control Circuit Board.

11. Recalibrate the furnace as outlined under "CALIBRATION" on pages 15 - 17 of this manual.
<table>
<thead>
<tr>
<th>Jelenko Product No.</th>
<th>Part Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>335460</td>
<td>Door Insulation Kit - 750 Model</td>
</tr>
<tr>
<td>335160</td>
<td>Door Insulation Kit - 850 Model</td>
</tr>
<tr>
<td>335461</td>
<td>Complete Set of Heating Chamber Insulation - 750 Model</td>
</tr>
<tr>
<td>335161</td>
<td>Complete Set of Heating Chamber Insulation - 850 Model</td>
</tr>
<tr>
<td>335462</td>
<td>Rear Insulating Panel - 750 Model</td>
</tr>
<tr>
<td>335162</td>
<td>Rear Insulating Panel - 850 Model</td>
</tr>
<tr>
<td>335163</td>
<td>Heating Element Assembly - 750 Model - 115V (Set/2)</td>
</tr>
<tr>
<td>335164</td>
<td>Heating Element Assembly - 750 Model - 230V (Set/2)</td>
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<tr>
<td>335165</td>
<td>Heating Element Assembly - 850 Model - SIDE (Set/2)</td>
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<tr>
<td>335166</td>
<td>Heating Element Assembly - 850 Model - REAR (Set/2)</td>
</tr>
<tr>
<td>335466</td>
<td>Ceramic Terminal Block with Terminals</td>
</tr>
<tr>
<td>335467</td>
<td>Power Leads for Heating Elements (Set/2)</td>
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<tr>
<td>335468</td>
<td>Power Jumper Lead for Heating Elements</td>
</tr>
<tr>
<td>335469</td>
<td>Tray for Heating Chamber</td>
</tr>
<tr>
<td>335470</td>
<td>Ceramic Vent Tube</td>
</tr>
<tr>
<td>335471</td>
<td>Thermocouple</td>
</tr>
<tr>
<td>335860</td>
<td>Door Interlock Switch</td>
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<tr>
<td>335861</td>
<td>Power Switch - 115V</td>
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<tr>
<td>335862</td>
<td>Power Switch - 230V</td>
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<tr>
<td>335863</td>
<td>Front Circuit Board</td>
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<tr>
<td>335864</td>
<td>Control Circuit Board - 115V</td>
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<tr>
<td>335865</td>
<td>Control Circuit Board - 230V</td>
</tr>
<tr>
<td>335183</td>
<td>Solid State Relay</td>
</tr>
<tr>
<td>335482</td>
<td>Fuseholder</td>
</tr>
<tr>
<td>335188</td>
<td>Line Cord - 750 Model - 115V</td>
</tr>
<tr>
<td>335189</td>
<td>Line Cord - 750 Model - 230V</td>
</tr>
<tr>
<td>335190</td>
<td>Line Cord - 850 Model - 115V</td>
</tr>
<tr>
<td>335191</td>
<td>Fuse - 115V (Pkg/5)</td>
</tr>
<tr>
<td>335484</td>
<td>Fuse - 230V (Pkg/5)</td>
</tr>
</tbody>
</table>

**335075** 15amp Circuit Breaker
FRONT PANEL CONTROLS

1. POWER SWITCH
2. START/STOP KEY
3. ALARM INDICATOR
4. HEATER ON INDICATOR
5. GRAPHIC DISPLAY
6. DIGITAL DISPLAY
7. TIME DISPLAY KEY
8. TONE KEY
9. PROGRAM KEY
10. ENTER KEY
11. SET POINT DECREASE KEY
12. SET POINT INCREASE KEY
DIGITAL DISPLAY (6): A multiple function display which indicates any one of the following: the actual Heating Chamber temperature, the time remaining in the Start Time or either of the two Soak Times or the values for any of the six burnout program parameters.

Incorporated into the DIGITAL DISPLAY are four Indicator Lamps, labeled TEMP, RATE, SOAK and START. These Indicator Lamps, located on the left side of the display, illuminate to indicate whether a Temperature, Heat Rate in degrees per minute or a Soak or Start Time is being displayed.

TIME DISPLAY KEY (7): When depressed, the DIGITAL DISPLAY will momentarily indicate the amount of time remaining, in hours and minutes, for the Start Time or either of the two Soak Times. After displaying the remaining time, the DIGITAL DISPLAY will automatically resume indicating the actual furnace Heating Chamber temperature.

The Indicator Lamp above this key will illuminate momentarily and brief tone response will be heard each time this key is depressed.

TONE KEY (8): When this key is depressed, the furnace tone function is activated and a tone will sound each time one of the Front Panel Keys is depressed, as the furnace completes each stage in a burnout program or the furnace ALARM INDICATOR illuminates.

The Indicator Lamp above this key will illuminate when the tone function has been activated and a brief tone response will be heard each time this key is depressed.

PROGRAM KEY (9): When this key is depressed, the furnace is placed into the Program Mode of operation and will accept burnout program parameter changes entered by means of the SET POINT DECREASE, SET POINT INCREASE and ENTER Keys. This key must be depressed when entering or changing the parameters in the burnout program.

The Indicator Lamp above this key will illuminate when the furnace is in the Program Mode of operation and a brief tone response will be heard each time this key is depressed.

ENTER KEY (10): Used to enter a displayed burnout program parameter into the program once the value appears correctly on the DIGITAL DISPLAY.

The Indicator Lamp above this key will illuminate momentarily and brief tone response will be heard each time this key is depressed.
REAR PANEL

13. FUSE
HEAT RATE 2—
The rate of temperature rise within the furnace Heating Chamber, in degrees per minute, during the second stage (Stage 2) of the burnout program. The programmed Heat Rate will be maintained linearly throughout Stage 2 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 Stage 2.

STAGE 2 TEMPERATURE—
Indicated on the GRAPHIC DISPLAY as "Stage 2," this is the second temperature which will be achieved and/or maintained in a burnout program containing two stages.

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

SOAK TIME 2—
The length of time, programmable in both hours and minutes, over which the furnace will maintain the STAGE 2 TEMPERATURE.

Upon completion of SOAK TIME 2 the burnout program will be completed.

Any time between 0 minutes and 99 hours and 59 minutes may be programmed into the furnace for SOAK TIME 2.

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>START TIME</td>
<td>0 Minutes</td>
<td>99 Hours 59 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 TEMPERATURE</td>
<td>100°F (50°C)</td>
<td>2000°F (1100°C)</td>
</tr>
<tr>
<td>SOAK TIME 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 TEMPERATURE</td>
<td>100°F (50°C)</td>
<td>2000°F (1100°C)</td>
</tr>
<tr>
<td>SOAK TIME 2</td>
<td>0 Minutes</td>
<td>99 Hours 59 Minutes</td>
</tr>
</tbody>
</table>
4. Using either the SET POINT DECREASE or SET POINT INCREASE Keys, decrease or increase the value of the displayed Temperature until the following numbers appear on the DIGITAL DISPLAY:

6 0 0 - To correspond to the desired Temperature for Stage 1

Once the desired Temperature for Stage 1 appears correctly on the DIGITAL DISPLAY, depress the ENTER Key. This parameter will be entered and the display will automatically advance to the next parameter and the HEAT RATE 1 and RATE Indicator Lamps on the GRAPHIC DISPLAY will illuminate.

The Heat Rate for Stage 1 which is presently programmed into the furnace will appear on the DIGITAL DISPLAY.

5. Using either the SET POINT DECREASE or SET POINT INCREASE Keys, decrease or increase the value of the displayed Heat Rate until the following numbers appear on the DIGITAL DISPLAY:

1 3 - To correspond to the desired Heat Rate for Stage 1

Once the desired Heat Rate for Stage 1 appears correctly on the DIGITAL DISPLAY, depress the ENTER Key. This parameter will be entered and the display will automatically advance to the next parameter and the SOAK TIME and SOAK Indicator Lamps on the GRAPHIC DISPLAY will illuminate.

The Soak Time for Stage 1 which is presently programmed into the furnace will appear on the DIGITAL DISPLAY.

6. Using either the SET POINT DECREASE or SET POINT INCREASE Keys, decrease or increase the value of the displayed Soak Time until the following numbers appear on the DIGITAL DISPLAY:

0 0 : 1 5 - To correspond to the desired number of Hours and Minutes for a Soak Time at Stage 1

Once the desired Soak Time for Stage 1 appears correctly on the DIGITAL DISPLAY, depress the ENTER Key. This parameter will be entered and the display will automatically advance to the next parameter and the HEAT RATE 2, SOAK TIME and TEMP Indicator Lamps on the GRAPHIC DISPLAY will illuminate.

The Temperature for Stage 2 which is presently programmed into the furnace will appear on the DIGITAL DISPLAY.

7. Using either the SET POINT DECREASE or SET POINT INCREASE Keys, decrease or increase the value of the displayed Temperature until the following numbers appear on the DIGITAL DISPLAY:

1 0 0 0 - To correspond to the desired Temperature for Stage 2
ADDITIONAL PROGRAMMING INFORMATION

The Jelenko Accu-Therm II 750/850 burnout furnace has been designed for maximum flexibility in operation with the following features:

1. The furnace may be programmed for one stage operation by programming 100°F (50°C) for the STAGE 1 TEMPERATURE, 50°F (28°C)/Minute for the STAGE 1 HEAT RATE AND 0 Hours and 0 Minutes for the STAGE 1 SOAK TIME.

2. The furnace has been designed to allow the operator to program a temperature for STAGE 2 which is lower than the STAGE 1 temperature.

"IN-CYCLE" PARAMETER CHANGES

The Accu-Therm II 750/850 burnout furnace has been designed to provide the operator with the capability of changing any of the parameters within a burnout program, provided the parameter has not been reached within the program.

Parameters may be changed by using the following procedure:

1. With the START/STOP Key depressed and the Indicator Lamp above the key illuminated, depress the PROGRAM Key.

   The Indicator Lamp above this key will illuminate, indicating that the furnace is in the Program Mode of operation.

2. Using the ENTER Key, depress the key until the desired parameter to be changed appears on the DIGITAL DISPLAY.

3. Using either the SET POINT DECREASE or SET POINT INCREASE Keys, decrease or increase the displayed value until the desired value appears on the DIGITAL DISPLAY. Depress the ENTER Key to change the displayed value.

4. Continue to depress the ENTER Key to either change more parameter values or exit the Program Mode by depressing the key after the SOAK TIME for Stage 2 is displayed.

5. The program changes are now complete and will be retained in furnace memory for future use as needed.
10. Depress the PROGRAM Key. The Indicator Lamp above the key will illuminate, indicating that the furnace is in the Program Mode of operation.

The PRESET TIME and START Indicator Lamps on the GRAPHIC DISPLAY will illuminate.

The DIGITAL DISPLAY will indicate the Start Time presently programmed into the furnace.

11. If necessary, use the SET POINT DECREASE Key to decrease the Start Time until the following numbers appear on the DIGITAL DISPLAY:

0 0 : 0 0 - To correspond to 0 Hours and 0 Minutes for the desired Start Time

Once the desired Start Time appears correctly on the DIGITAL DISPLAY, depress the ENTER Key. This parameter will be entered and the display will automatically advance to the next parameter and the HEAT RATE 1, SOAK TIME and TEMP Indicator Lamps on the GRAPHIC DISPLAY will illuminate.

The Temperature for Stage 1 which is presently programmed into the furnace will appear on the DIGITAL DISPLAY.

12. Using either the SET POINT DECREASE or SET POINT INCREASE Keys, decrease or increase the value of the displayed Temperature until the following numbers appear on the DIGITAL DISPLAY:

1 0 0 - To bypass Stage 1 for this procedure

Once the desired Temperature for Stage 1 appears correctly on the DIGITAL DISPLAY, depress the ENTER Key. This parameter will be entered and the display will automatically advance to the next parameter and the HEAT RATE 1 and RATE Indicator Lamps on the GRAPHIC DISPLAY will illuminate.

The Heat Rate for Stage 1 which is presently programmed into the furnace will appear on the DIGITAL DISPLAY.

13. Using either the SET POINT DECREASE or SET POINT INCREASE Keys, decrease or increase the value of the displayed Heat Rate until the following numbers appear on the DIGITAL DISPLAY:

5 0 - To correspond to the desired Heat Rate for Stage 1

Once the desired Heat Rate for Stage 1 appears correctly on the DIGITAL DISPLAY, depress the ENTER Key. This parameter will be entered and the display will automatically advance to the next parameter and the SOAK TIME and SOAK Indicator Lamps on the GRAPHIC DISPLAY will illuminate.

The Soak Time for Stage 1 which is presently programmed into the furnace will appear on the DIGITAL DISPLAY.

14. Using either the SET POINT DECREASE or SET POINT INCREASE Keys, decrease or increase the value of the displayed Soak Time until the following numbers appear on the DIGITAL DISPLAY:

0 0 : 0 0 - To correspond to the desired number of Hours and Minutes for a Soak Time at Stage 1

Once the desired Soak Time for Stage 1 appears correctly on the DIGITAL DISPLAY, depress the ENTER Key. This parameter will be entered and the display will automatically advance to the next parameter and the HEAT RATE 2 and RATE Indicator Lamps on the GRAPHIC DISPLAY will illuminate.

The Temperature for Stage 2 which is presently programmed into the furnace will appear on the DIGITAL DISPLAY.
TROUBLESHOOTING AND SERVICE

This section outlines some of the possible areas of furnace malfunction with the Accu-Therm II 750/850 model burnout furnaces and the recommended corrective action.

When diagnosing a furnace malfunction, determine the SYMPTOM(S) of the malfunction and the CAUSE/SOLUTION by following the table shown below. It is recommended that the parts be replaced in the order indicated.

SYMPTOM

I. POWER SWITCH "on"; POWER SWITCH lamp not illuminated; Furnace does not heat.

II. POWER SWITCH "on"; POWER SWITCH lamp illuminated; DIGITAL DISPLAY and Front Panel Indicator Lamps blank.

III. POWER SWITCH "on"; POWER SWITCH lamp illuminated; Stage 1 and Stage 2 Temperatures set above actual Heating Chamber temperature; Furnace does not heat.

IV. Furnace does not stop heating once Stage 1 or Stage 2 Temperatures are reached (exceeds programmed Stage Temperature by more than 200°F (111°C); Actual Heat Rate 1 or Heat Rate 2 are higher than the programmed value.

V. DIGITAL DISPLAY reads "- - -" only; Furnace does not heat.

CAUSE/SOLUTION

A. No power at wall receptacle.
B. Replace fuse.
C. Replace POWER SWITCH.

A. Replace Front Circuit Board.
B. Replace Control Circuit Board.

A. Replace Heating Element(s).
B. Replace Solid State Relay.
C. Replace Control Circuit Board.

A. Replace Solid State Relay.
B. Replace Control Circuit Board.

A. Replace Thermocouple.
B. Replace Control Circuit Board.
ACCU-THERM II 750 MODEL*
(REAR PANEL REMOVED)

E. THERMOCOUPLE LEADS
F. POWER LEADS
G. SOLID STATE RELAY

*850 SERIES LAYOUT SIMILAR BUT LESS COMPACT.
REPLACEMENT OF THE HEATING ELEMENTS — ACCU-THERM II 750 MODELS

1. Place the furnace POWER SWITCH in the "off" position.

2. Unplug the furnace Power Cord from the wall receptacle.

3. With the rear of the furnace facing you, loosen and remove the eight screws located along the edge of the furnace Upper Rear Panel. Remove the Upper Rear Panel.

4. Locate the Ceramic Terminal Block and loosen and remove the nuts which secure the Heating Element Leads and the Jumper Lead to the terminals of the Ceramic Terminal Block. Straighten the four Heating Element Leads.

5. Carefully remove the Thermocouple by sliding it out of the hole in the furnace Rear Insulating Panel. Once the Thermocouple has been completely removed, bend it downward and out of the way.

6. With the front of the furnace facing you, open the furnace Door and push on the rear surface of the Heating Chamber until the Rear Insulating Panel is completely out of the rear of the furnace. Remove the Rear Insulating Panel and the furnace insulation.

7. Carefully slide the two Heating Elements, located along the sides of the Heating Chamber, out from the rear of the furnace.

8. Check the condition of the Heating Chamber Insulation and the Rear Insulating Panel. Replace these parts if necessary.

9. To install the new Heating Elements, reverse this procedure. When reconnecting the Heating Element Leads, make certain that all connections are very tight, otherwise a failure of the connection could occur.

10. Recalibrate the furnace as outlined under "CALIBRATION" on pages 15 - 17 of this manual.
REPLACEMENT OF THE THERMOCOUPLE

1. Place the furnace POWER SWITCH in the "off" position.

2. Unplug the furnace Power Cord from the wall receptacle.

3. With the rear of the furnace facing you, loosen and remove the six screws located along the edge of the furnace Lower Rear Panel. Remove the Lower Rear Panel.

4. Loosen and remove the screws located along the edge of the furnace Upper Rear Panel. Remove the Upper Rear Panel.

5. Locate the two Thermocouple Leads which are connected to the four position Terminal Strip located at the rear of the Control Circuit Board.

   Note the position and color coding of these leads so that they may be reconnected in the same manner and disconnect the leads from the Terminal Strip.

6. Carefully remove the Thermocouple by sliding it out of the hole in the furnace Rear Insulating Panel and remove the Thermocouple completely from the furnace Lower Housing.

7. Bend the new Thermocouple wires to a 90° angle, approximately 3/8" (8.6 cm) from the exposed tip of the Thermocouple. Make certain that there is a Ceramic Insulating Bead covering the Thermocouple Leads at each point where they pass the exposed Heating Element Leads.

8. Feed the two Thermocouple Leads through the hole at the top of the furnace Lower Housing and insert the new Thermocouple into the hole at the rear of the furnace Heating Chamber.

9. Reconnect the Thermocouple Leads to the Terminal Strip, connecting the negative Thermocouple Lead (RED) to the (-) terminal of the Terminal Strip and the positive Thermocouple Lead (YELLOW) to the (+) terminal of the Terminal Strip.

10. Reassemble and then recalibrate the furnace as outlined under "CALIBRATION" on pages 15 - 17 of this manual.

REPLACEMENT OF THE DOOR INSULATION

1. While the furnace is cool, open the furnace Door.

2. Locate and remove the two screws which secure the Retainer Strip located near the furnace Door hinges. Remove the Retainer Strip.

3. The one piece Door Insulation may now be removed by slightly lifting the rear section of the insulation upward while sliding it toward the rear of the furnace.

4. Reverse this procedure to install the replacement Door Insulation.
REPLACEMENT OF THE FRONT CIRCUIT BOARD

1. Place the furnace POWER SWITCH in the "off" position.

2. Unplug the furnace Power Cord from the wall receptacle.

3. With the front of the furnace facing you, loosen and remove the four screws located along the edge of the furnace Front Panel. Remove the furnace Front Panel and position the Front Panel faced downward in front of the furnace.

4. Locate the Connector for the Flat Cable which interconnects the Front Circuit Board and the Control Circuit Board and unplug the Connector from the Front Circuit Board by pulling upward on the Connector.

5. Remove the Front Circuit Board from the furnace Front Panel by pushing on the back side of the circuit board until it snaps out of the furnace Front Panel.

6. Reverse this procedure to install the replacement Front Circuit Board.

REPLACEMENT OF THE SOLID STATE RELAY

1. Place the furnace POWER SWITCH in the "off" position.

2. Unplug the furnace Power Cord from the wall receptacle.

3. With the rear of the furnace facing you, loosen and remove the six screws located along the edge of the furnace Lower Rear Panel. Remove the Lower Rear Panel.

4. Locate the four wires which are connected to the Solid State Relay and note the position and color coding of these wires so that they may be reconnected in the same manner in which they were removed.

5. Disconnect the four wires from their terminals on the Solid State Relay.

6. Reverse this procedure to install the replacement Solid State Relay, making certain to properly reconnect the four wires which were removed in Step 4.