Operating
and
Maintenance
Instructions

Jelcraft LFC
FIGURE 1

1 Furnace Door
   Furnace Chamber (Behind Door)
2 Front Panel
3 Pyrometer
   3a Pyrometer Temperature Indicator
3b Pyrometer Adjustment Screw
4a Temperature Controller Knob
4b Temperature Controller Dial
5 Power Light Assembly
INSTALLATION
(Refer to Page 2, Figure 1)

1. Remove all packaging material from the furnace and FURNACE CHAMBER (1).

2. Plug the LINE CORD PLUG into an alternating current (AC) wall receptacle rated for a minimum of 15 amps. It is advisable to have a separate circuit for the unit.

3. Open the FURNACE DOOR (1) and install the ceramic tray into the FURNACE CHAMBER. The tray serves to collect wax residue and foreign materials, and prevents their soaking into the floor of the furnace.

4. Close the FURNACE DOOR, the furnace is now ready for operation.

OPERATION
(Refer to Page 2, Figure 1)

1. Turn the TEMPERATURE CONTROLLER KNOB (4a) to the "ON" position. The POWER LIGHT (5) will light. Allow the temperature to rise to the desired temperature.

2. When the desired temperature is reached, turn the TEMPERATURE CONTROLLER KNOB to a setting which will hold this temperature. The TEMPERATURE CONTROLLER DIAL (4b) is marked showing the approximate point in which the POINTER should be set to maintain different temperatures.

   NOTE: Due to variations in line voltage and furnace loads, adjustments may be necessary to find the exact point to hold the desired temperature. It will be helpful to record these settings for various loads for future use.

   NOTE: Do not leave the unit unattended with the TEMPERATURE CONTROLLER KNOB in the "ON" position.
# QUICK REPAIR AIDS
## FOR LFC FURNACE

<table>
<thead>
<tr>
<th>SYMPTOM</th>
<th>ACTION</th>
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| 1. Furnace heats very slowly (takes approximately 2 hours to reach 1200-1300°F, (649-704°C). | 1. a) Check for continuity in both HEATING PLATES. Replace if an open circuit is obtained.  
   b) Replace TEMPERATURE CONTROLLER ASSEMBLY.                                                    |
| 2. Furnace does not heat at all.                                        | 2. a) Check FUSE at rear of furnace, replace if “blown”.  
   b) Check for continuity in both HEATING PLATES. Replace if an open circuit is obtained.  
   c) Check for a loose connection on TEMPERATURE CONTROLLER.  
   d) Replace TEMPERATURE CONTROLLER ASSEMBLY.                                                         |
| 3. Furnace heats but no reading on PYROMETER.                          | 3. Check for a loose connection at PYROMETER terminals.  
   b) Replace THERMOCOUPLE and recalibrate.  
   c) Replace PYROMETER and recalibrate.                                                          |
| 4. Erratic (jumping or sticking) PYROMETER.                            | 4. a) Wipe PYROMETER glass with anti-static fluid.  
   b) Replace PYROMETER and recalibrate.  
   c) Replace THERMOCOUPLE and recalibrate.                                                          |
| 5. Furnace won’t hold 900°F or 1300°F (482°C or 704°C) with the TEMPERATURE CONTROLLER set to the proper setting. | 5. a) Increase or decrease TEMPERATURE CONTROLLER setting as indicated.  
   b) Replace TEMPERATURE CONTROLLER.                                                                       |
8 Insert the new THERMOCOUPLE into the proper hole in the TRANSITE TERMINAL BOARD. Be sure that the END OF THE THERMOCOUPLE protrudes 1" into the FURNACE CHAMBER as seen from the front.

9 Place CLAMP over the first bead (1¼" long) below the bend. Secure by tightening screw.

10 Position bottom bead (¾" long) directly over contact point of bottom HEATING PLATE WIRE (9) to insulate the THERMOCOUPLE. Create a bend in either THERMOCOUPLE WIRE just below the bead to hold it in place.

11 Install the REAR CAGE and secure with 6 SCREWS.

B. REPLACEMENT OF THE PYROMETER (P/N 35311)
(Refer to Page 10, Figure 2)

1 Tag the 2 THERMOCOUPLE WIRES (7a) indicating their location on the PYROMETER TERMINALS (3c).

2 Remove the 2 THERMOCOUPLE WIRES from the PYROMETER TERMINALS by removing the NUT (3c) and washer on each TERMINAL.

3 Remove the 2 PYROMETER MOUNTING NUTS (3d).

4 Carefully slide out the old PYROMETER (3) and insert the new PYROMETER into position.

5 Reinstall the 2 PYROMETER MOUNTING NUTS.

6 Reinstall the 2 tagged THERMOCOUPLE WIRES to the correct PYROMETER TERMINALS.

C. REPLACEMENT OF THE TEMPERATURE CONTROLLER
(115V P/N 35314, 230V P/N 35315)
(Refer to Page 10, Figure 2)

1. Loosen the 2 SET SCREWS on the TEMPERATURE CONTROLLER KNOB (Figure 1(4a)) and remove the KNOB.

2. Remove the 2 TEMPERATURE CONTROLLER MOUNTING SCREWS (4d). NOTE: Between the TEMPERATURE CONTROLLER (4) and FRONT PANEL (2) are 2 SPACERS that fit over the MOUNTING SCREWS. They will drop out of place as the MOUNTING SCREWS are removed.

3. Tag all the WIRES to the TEMPERATURE CONTROLLER, indicating their location on the TEMPERATURE CONTROLLER TERMINALS (4c).

4. Disengage all WIRES at the back of the TEMPERATURE CONTROLLER TERMINALS.

5. Remove the old TEMPERATURE CONTROLLER and insert the new TEMPERATURE CONTROLLER into position. The SPACERS fit over the MOUNTING SCREWS between the TEMPERATURE CONTROLLER and the FRONT PANEL.

6. Secure the 2 MOUNTING SCREWS.

7. Reinstall the tagged WIRES to the correct TERMINALS on the rear of the TEMPERATURE CONTROLLER.
FIGURE 2
(INTERNAL)

2  Front Panel
3  Pyrometer
3c Pyrometer Terminals & Terminal Nuts (2)
3d Pyrometer Mounting Nuts (2)
4  Temperature Controller
4c Temperature Controller Terminals
4d Temperature Controller Mounting Screws (2)
7a Thermocouple Wires (2)
REPLACEMENT OF THE LARGE FLASK FURNACE HEATING PLATES (P/N 1603)
(Refer to Page 11, Figure 3 unless otherwise noted)

1 Turn the TEMPERATURE CONTROLLER KNOB (Figure 1(4a)) to the "OFF" position.

2 Unplug the POWER CORD from your electrical outlet.

3 Loosen and remove the 6 SCREWS along the edge of the REAR CAGE and remove the REAR CAGE.

4 Loosen and remove the SCREW and CLAMP (7b) which secure the THERMOCOUPLE (7) to the TRANSITE TERMINAL BOARD (6). Carefully slide the THERMOCOUPLE from the TRANSITE TERMINAL BOARD and bend the 2 THERMOCOUPLE WIRES (7a) back toward the base of the unit, away from your working area.

5 Loosen and remove the NUTS at the 2 POWER TERMINALS (8). Remove the HEATING PLATE WIRES (9) and the HEATER LEADS (10) from the POWER TERMINALS. Straighten the 4 HEATING PLATE WIRES and bend the 2 HEATER LEADS back toward the base of the unit.

6 Remove the TRANSITE TERMINAL BOARD by sliding it over the straightened HEATING PLATE WIRES.

7 Remove the 2 horizontal INSULATING BRICKS from the back by gently pushing them from the front of the HEATING (FURNACE) CHAMBER with one hand and guiding them out the back with the other hand.

8 Carefully remove the HEATING PLATES, found along the sides of the HEATING CHAMBER, from the back of the unit.

9 Install the new HEATING PLATES by sliding them along the sides of the HEATING CHAMBER until the notches on the front of the HEATING PLATES extend over the cast iron lip at the front of the HEATING CHAMBER.

10 Carefully install both horizontal INSULATING BRICKS, lower one first.
   LOWER BRICK: 2 holes for HEATING PLATE WIRES.
   UPPER BRICK: 5 holes upper left and right hole for HEATING PLATE WIRES.

Guide the 2 lower HEATING PLATE WIRES through the 2 outer holes in the lower INSULATING BRICK and the 2 upper HEATING PLATE WIRES through the upper outer left hole and upper right hole in the upper INSULATING BRICK.

11 Slide the TRANSITE TERMINAL BOARD over the HEATING PLATE WIRES, matching each of the HEATING PLATE WIRES with its corresponding hole. Be sure that the HEATING PLATE WIRE INSULATING PLUGS (9a) are in place in each hole.

12 Connect the HEATING PLATE WIRES to the proper POWER TERMINALS by wrapping each around the TERMINAL once and cutting off the excess WIRED. (See diagram for the proper configuration for 115V or 230V models.)

13 Connect the HEATER LEADS to the proper POWER TERMINALS. Secure all WIRES tightly with the TERMINAL NUTS.

14 Replace the THERMOCOUPLE by carefully sliding it into the hole provided for it in the TRANSITE TERMINAL BOARD. Be sure that the THERMOCOUPLE protrudes 1" into the HEATING CHAMBER as seen from the front. Place CLAMP over first bead (1½" long) below the bend. Secure by tightening screw. Position bottom bead (¾" long) directly over contact point of bottom HEATING PLATE WIRE (9) to insulate the THERMOCOUPLE. Create a bend in either THERMOCOUPLE WIRE just below the bead to hold it in place.

15 Install the REAR CAGE and secure tightly with the 6 SCREWS.
HEATING PLATE CONNECTIONS

HEATING PLATE
P/N 1603

HEATER LEADS

HEATING PLATE
P/N 1603

115 V OPERATION

HEATING PLATE
P/N 1603

HEATER LEADS

HEATING PLATE
P/N 1603

230 V OPERATION