



## INTRODUCTION

This equipment will automatically brew a half-gallon batch of coffee into an awaiting decanter at the press of a button. A hot water faucet is included for allied beverage use. Most functions of the brewer are digitally controlled. It is only for indoor use on a sturdy counter or shelf.

## CONTENTS

Introduction & Warranty .....	2
User Notices .....	3
Electrical & Plumbing Requirements .....	4
Operating Controls.....	5
Initial Set-Up, Coffee Brewing, & Cleaning.....	6
CEZ Adjustments & Optional Settings.....	7
CDBC Adjustments & Optional Settings.....	8
Troubleshooting .....	9
Service.....	20
Wiring Diagrams.....	32

## BUNN-O-MATIC COMMERCIAL PRODUCT WARRANTY

Bunn-O-Matic Corp. ("BUNN") warrants equipment manufactured by it as follows:

- 1) All equipment other than as specified below: 2 years parts and 1 year labor.
- 2) Electronic circuit and/or control boards: parts and labor for 3 years.
- 3) Compressors on refrigeration equipment: 5 years parts and 1 year labor.
- 4) Grinding burrs on coffee grinding equipment to grind coffee to meet original factory screen sieve analysis: parts and labor for 3 years or 30,000 pounds of coffee, whichever comes first.

These warranty periods run from the date of installation BUNN warrants that the equipment manufactured by it will be commercially free of defects in material and workmanship existing at the time of manufacture and appearing within the applicable warranty period. This warranty does not apply to any equipment, component or part that was not manufactured by BUNN or that, in BUNN's judgment, has been affected by misuse, neglect, alteration, improper installation or operation, improper maintenance or repair, damage or casualty. This warranty is conditioned on the Buyer 1) giving BUNN prompt notice of any claim to be made under this warranty by telephone at (217) 529-6601 or by writing to Post Office Box 3227, Springfield, Illinois 62708-3227; 2) if requested by BUNN, shipping the defective equipment prepaid to an authorized BUNN service location; and 3) receiving prior authorization from BUNN that the defective equipment is under warranty.

**THE FOREGOING WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY OTHER WARRANTY, WRITTEN OR ORAL, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF EITHER MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** The agents, dealers or employees of BUNN are not authorized to make modifications to this warranty or to make additional warranties that are binding on BUNN. Accordingly, statements by such individuals, whether oral or written, do not constitute warranties and should not be relied upon.

If BUNN determines in its sole discretion that the equipment does not conform to the warranty, BUNN, at its exclusive option while the equipment is under warranty, shall either 1) provide at no charge replacement parts and/or labor (during the applicable parts and labor warranty periods specified above) to repair the defective components, provided that this repair is done by a BUNN Authorized Service Representative; or 2) shall replace the equipment or refund the purchase price for the equipment.

**THE BUYER'S REMEDY AGAINST BUNN FOR THE BREACH OF ANY OBLIGATION ARISING OUT OF THE SALE OF THIS EQUIPMENT, WHETHER DERIVED FROM WARRANTY OR OTHERWISE, SHALL BE LIMITED, AT BUNN'S SOLE OPTION AS SPECIFIED HEREIN, TO REPAIR, REPLACEMENT OR REFUND.**

In no event shall BUNN be liable for any other damage or loss, including, but not limited to, lost profits, lost sales, loss of use of equipment, claims of Buyer's customers, cost of capital, cost of down time, cost of substitute equipment, facilities or services, or any other special, incidental or consequential damages.

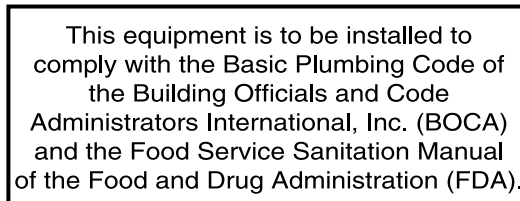
## USER NOTICES

Carefully read and follow all notices in this manual and on the equipment. All labels on the equipment should be kept in good condition. Replace any unreadable or damaged labels.

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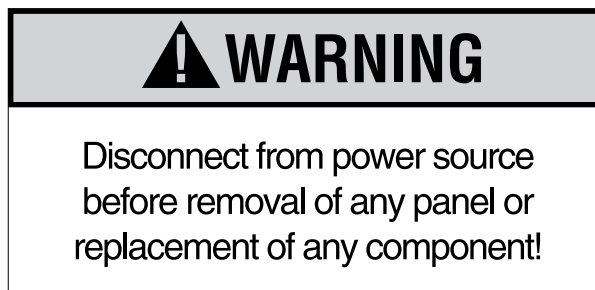
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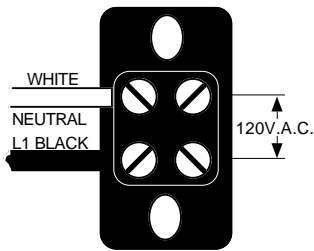
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## ELECTRICAL REQUIREMENTS

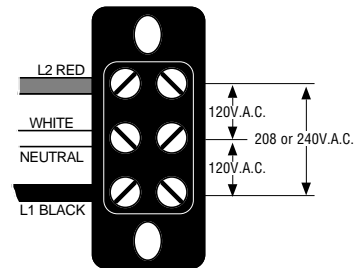
**CAUTION** - The brewer must be disconnected from the power source until specified in *Initial Set-Up*.

**Model 15** has an attached cordset and requires 2-wire grounded service rated 120 volts ac, 15 amp, single phase, 60 Hz.



**Model 20** requires 2-wire, grounded service rated 120 volts ac, 20 amp, single phase, 60 Hz. Proceed as follows:

**Model 35** requires 3-wire, grounded service rated 120/208 or 120/240 volts ac, 20 amp, single phase, 60 Hz. Proceed as follows:



### Electrical Hook-Up

**CAUTION** – Improper electrical installation will damage electronic components.

1. An electrician must provide electrical service as specified.
2. Using a voltmeter, check the voltage and color coding of each conductor at the electrical source.
3. Remove the front panel beneath the sprayhead.
4. Feed the cord through the strain relief and connect it to the terminal block.
5. Connect the brewer to the power source and verify the voltage at the terminal block before proceeding. Replace the front panel.
6. If plumbing is to be hooked up later be sure the brewer is disconnected from the power source. If plumbing has been hooked up, the brewer is ready for Initial Set-Up.

## PLUMBING REQUIREMENTS

These brewers must be connected to a cold water system with operating pressure between 20 and 90 psi from a ½" or larger supply line. A shut-off valve should be installed in the line before the brewer. Install a regulator in the line when pressure is greater than 90 psi to reduce it to 50 psi. The water inlet fitting is ¼" flare. Bunn-O-Matic does not recommend the use of a reverse-osmosis or deionized water supply to this equipment.

**NOTE** - Bunn-O-Matic recommends ¼" copper tubing for installations of less than 25 feet and ⅜" for more than 25 feet from the ½" water supply line. A tight coil of copper tubing in the water line will facilitate moving the brewer to clean the countertop. Bunn-O-Matic does not recommend the use of a saddle valve to install the brewer. The size and shape of the hole made in the supply line by this type of device may restrict water flow.

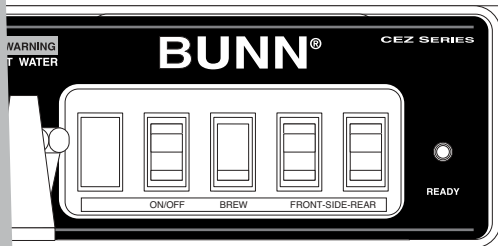
**This equipment must be installed to comply with the Basic Plumbing Code of the Building Officials and Code Administrators International, Inc. (BOCA) and the Food Service Sanitation Manual of the Food and Drug Administration (FDA).**

### Plumbing Hook-Up

1. Flush the water line.
2. Securely attach it to the flare fitting at the rear of the brewer.
3. Turn on the water supply.

## OPERATING CONTROLS

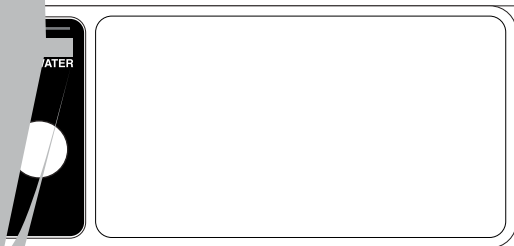
Model CEZ



### ON/OFF SWITCH

Placing the "ON/OFF" switch in the "ON" upper position supplies power to the brew station warmer, enables the brew circuit, and energizes the tank refill circuit. Placing the switch in the "OFF" lower position stops tank refilling and brewing and deenergizes the brew station warmer. Stopping a brew cycle after it has been started will not stop the flow of water into the decanter until the funnel is empty.

**NOTE** – Hot water will be available at the faucet in a limited amount when the switch is in the "OFF" position because the tank will not refill.



## **OPERATING CONTROLS (cont.)**

### **ADDITIONAL WARMER SWITCHES (CDBC only)**

Pressing any additional warmer switch so that the indicator is glowing, supplies power to the associated warmer.

### **READY INDICATOR**

This indicator glows when the preset temperature has been achieved. The word "NOT" above "READY" will glow in all other instances.

### **TEMPERATURE INDICATORS (Feature disabled from the factory – refer to page 8.)**

The indicator glows to communicate the brew water temperature. Two indicators will glow when the temperature is between them.

## **INITIAL SET-UP**

1. Insert an empty funnel into the funnel rails.
2. Place an empty decanter under the funnel.
3. Connect the brewer to the power source.
4. Model CDBC – Press the "ON/OFF" switch (indicator glowing).  
Model CEZ – Place the "ON/OFF" switch in the "ON" upper position.
5. Water will flow into the tank and stop when the tank is filled to its capacity.
6. Wait approximately twenty minutes for the water in the tank to heat to the proper temperature.
7. Place a small vessel beneath the faucet and open the faucet handle. Release it when you hear the tank refilling. If brewer is not equipped with a faucet, place a empty decanter beneath the funnel and initiate a brew cycle.
8. Model CDBC – Place an empty decanter/server beneath the funnel and press the "ON/OFF" switch (indicator glowing) then momentarily press and release the "BREW" switch.  
Model CEZ – Place an empty decanter beneath the funnel and place the "ON/OFF" switch in the "ON" upper position then momentarily press and release the "BREW" switch.
9. Allow the cycle to finish and measure the amount of water in the decanter/server. It should be 64 ounces  $\pm$  2. Refer to the adjustments section of this manual should the volume need to be increased or decreased.

The brewer is now ready for use in accordance with the coffee brewing instructions below.

## **COFFEE BREWING**

1. Insert a BUNN® filter into the funnel.
2. Pour fresh coffee grounds into the filter and level the bed of grounds by gently shaking.
3. Slide the funnel into the funnel rails.
4. Place an empty decanter/server beneath the funnel.
5. Model CDBC – Press the "ON/OFF" switch (indicator glowing) then momentarily press and release the "BREW" switch.  
Model CEZ – Place the "ON/OFF" switch in the "ON" upper position then momentarily press and release the "BREW" switch.
6. When brewing is completed, simply discard the grounds and filter.

## **POUR-OVER FEATURE**

**If the brewer is equipped with a pour-over feature, follow the instructions below.**

1. Remove the thumbscrew and pour-in lid from the top cover of the brewer and set aside.
2. Insert a BUNN® filter into the funnel.
3. Pour fresh coffee grounds into the filter and level the bed of grounds by gently shaking.
4. Slide the funnel into the funnel rails.
5. Place an empty decanter beneath the funnel.
6. Measure 64 ounces of cold water in a container and slowly pour the water into the pour-in opening.
7. Press the ON/OFF button to activate the lower warmer (Indicator lamp on).  
**NOTE:** Do not press the **Brew** Button. It is not necessary when using the pour-over feature.
8. When brewing is completed, simply discard the grounds and filter.

## **CLEANING**

1. The use of a damp cloth rinsed in any mild, non-abrasive, liquid detergent is recommended for cleaning all surfaces on Bunn-O-Matic equipment.
2. Check and clean the sprayhead. The sprayhead holes must always remain open.

**IMPORTANT:** The tank must be full and fill solenoid shut off prior to making these adjustments.

### Adjusting Brew Volumes

The brewer is factory set to deliver 64 ounces  $\pm$  2 for each brew cycle.

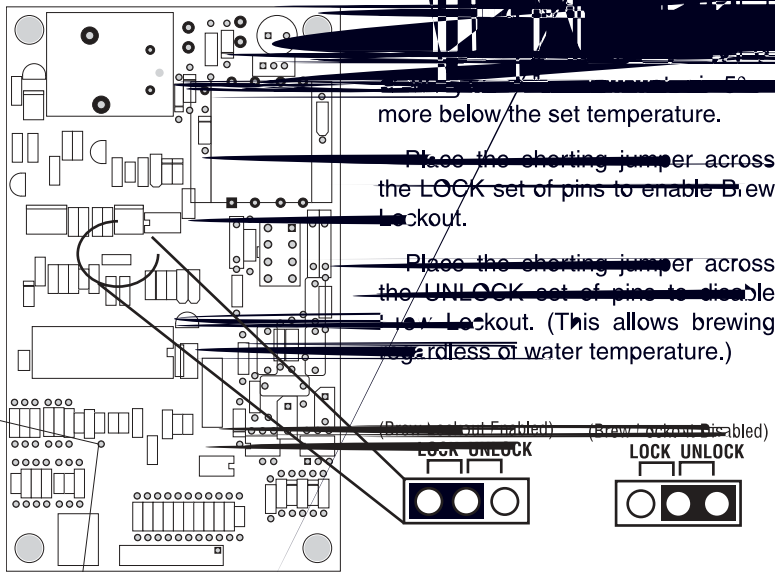
**BREW VOLUME SET-UP:** Use the following steps when the setting is unknown or a different circuit board is being installed.

1. Place an empty funnel in the funnel rails and an empty decanter or graduated vessel beneath the funnel.
2. Place the "ON/OFF" switch in the "ON", upper position.
3. Press and hold the brew start button until you hear the brew solenoid click on-and-off three times (approximately 5 seconds). Release the button.
4. Allow the cycle to continue until the desired amount of water is dispensed and then turn "OFF" the brewer.

The brewer is now set to dispense this amount of water for each subsequent brew cycle.

To **increase** the amount of water for each brew cycle place an empty funnel in the funnel rails and an empty decanter or graduated vessel beneath the funnel. Place the "ON/OFF" switch in the "ON", upper position. Press and hold the "BREW" switch until you hear the solenoid click on-and-off three times (approximately 5 seconds), then release the "BREW" switch. Momentarily press and release the "BREW" switch once for each ounce (approximate) of water to be added to the prior setting and allow the brew cycle to finish.

To **decrease** the amount of water for each brew cycle place an empty funnel in the funnel rails and an empty decanter or graduated vessel beneath the funnel. Place the "ON/OFF" switch in the "ON", upper position. Momentarily press and release the "BREW" switch once for each ounce (approximate) of water to be removed from the existing setting. Press and hold the "BREW" switch until you hear the solenoid click on-and-off three times (approximately 5 seconds), then release the "BREW" switch and allow the cycle to finish.

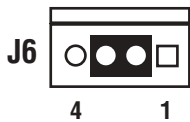


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### Position Shorting Jumper Across The Appropriate Set Of Pins.

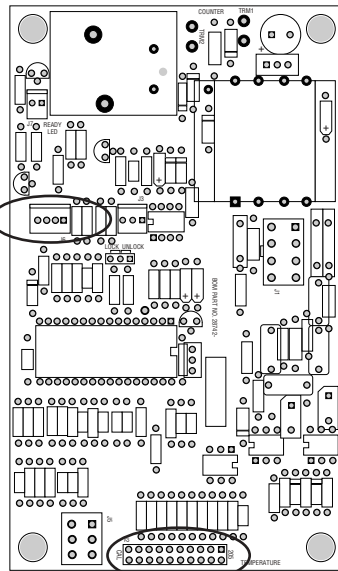
1 & 2 - Tea Brewer or any brewer that does not use a refill system.

2 & 3 - Coffee Brewer or any brewer that uses a refill system.

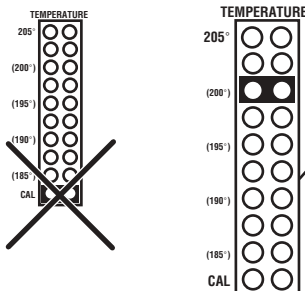


### Setting Brew Temperature

Determine the desired temperature and reposition the shorting jumper across the appropriate set of pins. Each set of pins represents approximately 2.5° F. (200° F shown.)



P1865



**NOTICE** – Do not use the Calibration setting. (bottom set of pins)



## CDBC ADJUSTMENTS & OPTIONAL SETTINGS



P1866

### Setting Brew Temperature

The brewer is factory set to brew at 200°F (93°C). To change this setting, press and hold the "HIDDEN" switch beneath the "®". The word "TEMP" above the "ON/OFF" switch will glow to correspond with the temporary function change of this switch. Repeatedly press and release the "ON/OFF" switch until one of the bank of temperature indicators shows the approximate desired temperature. When two indicators are glowing, the temperature is approximately the number between them.

### Displaying Brew Temperature

The brewer is factory set with the temperature display disabled. To change this setting, press and hold the "ON/OFF" switch and the "HIDDEN" switch beneath the "®" for five seconds, the entire bank of temperature indicators will glow. Release both switches. Pressing and releasing the "ON/OFF" switch will toggle between turning the entire bank of temperature indicators on-or-off, signifying the "ON" or "OFF" condition of this display. Wait for a few seconds, the brewer will maintain this last setting.

### Setting Brew Lockout

The brewer is factory set with the brew lockout disabled. Brew lockout prevents starting a brew cycle if the ready indicator is not glowing. When an attempt at brewing cannot be allowed, the word "NOT" and "LOCKOUT" flash for three seconds to indicate the reason the brew can't begin. To change the condition of the brew lockout, press and hold the "HIDDEN" switch beneath the "®" and momentarily press the "BREW" switch.

### Adjusting Automatic Warmer Shut-Off

The brewer is factory set with this feature disabled. The automatic warmer shut-off deenergizes all warmers after a predetermined time period after the most recent brew cycle. To change the setting, press and hold the "BREW" switch and the "HIDDEN" switch beneath the "®" for five seconds, the entire bank of temperature indicators will flash on-and-off. Release both switches. Pressing and releasing the "BREW" switch will select the number of temperature indicators from none to five. When no indicators are glowing, this feature is disabled and all warmers will be controlled only by their respective switches. When one to five indicators are glowing, it indicates the approximate number of hours of delay before all warmers will be automatically deenergized after the most recent brew cycle.

**IMPORTANT: The tank must be full and fill solenoid shut off prior to making these adjustments.**

### Adjusting Brew Volumes

CDBC & CEZ models are factory set to deliver 64 ounces ± 2 for each brew cycle.

## ADJUSTMENTS & OPTIONAL SETTINGS (cont.)

**BREW VOLUME SET-UP:** Use the following steps when the setting is unknown or a different circuit board is being installed.

1. Place an empty funnel in the funnel rails and an empty decanter/server or graduated vessel beneath the funnel.
2. Place the "ON/OFF" switch in the "ON", upper position.
3. Press and hold the brew start button until you hear the brew solenoid click on-and-off three times (approximately 5 seconds). Release the button.
4. Allow the cycle to continue until the desired amount of water is dispensed and then turn "OFF" the brewer. The brewer is now set to dispense this amount of water for each subsequent brew cycle.

To **increase** the amount of water for each brew cycle place an empty funnel in the funnel rails and an empty decanter/server or graduated vessel beneath the funnel. Press the "ON/OFF" switch. Press and hold the "BREW" switch until you hear the solenoid click on-and-off three times (approximately 5 seconds), then release the "BREW" switch. Momentarily press and release the "BREW" switch once for each ounce (approximate) of water to be added to the prior setting and allow the brew cycle to finish.

To **decrease** the amount of water for each brew cycle place an empty funnel in the funnel rails and an empty decanter/server or graduated vessel beneath the funnel. Press the "ON/OFF" switch. Momentarily press and release the "BREW" switch once for each ounce (approximate) of water to be removed from the existing setting. Press and hold the "BREW" switch until you hear the solenoid click on-and-off three times (approximately 5 seconds), then release the "BREW" switch and allow the cycle to finish.

## TROUBLESHOOTING

A troubleshooting guide is provided to suggest probable causes and remedies for the most likely problems encountered. If the problem remains after exhausting the troubleshooting steps, contact the Bunn-O-Matic Technical Service Department.

- Inspection, testing, and repair of electrical equipment should be performed only by qualified service personnel.
- All electronic components have 120 volt ac and low voltage dc potential on their terminals. Shorting of terminals or the application of external voltages may result in board failure.
- Intermittent operation of electronic circuit boards is unlikely. Board failure will normally be permanent. If an intermittent condition is encountered, the cause will likely be a switch contact or a loose connection at a terminal or crimp.
- Solenoid removal requires interrupting the water supply to the valve. Damage may result if solenoids are energized for more than ten minutes without a supply of water.
- The use of two wrenches is recommended whenever plumbing fittings are tightened or loosened. This will help to avoid twists and kinks in the tubing.
- Make certain that all plumbing connections are sealed and electrical connections tight and isolated.
- This brewer is heated at all times. Keep away from combustibles.

- WARNING** –
- Exercise extreme caution when servicing electrical equipment.
  - Unplug the brewer when servicing, except when electrical tests are specified.
  - Follow recommended service procedures.
  - Replace all protective shields or safety notices.

### ***Before troubleshooting this brewer, check for the following:***

#### A. Control Boards (CDBC)

1. Make sure ribbon cable is properly attached to the control board (ALL PINS INSERTED INTO PLUG).
2. Make sure there is a nylon insulating washer under each screw head that holds the control board to the plastic front end cap. This is important for proper operation.

#### B. Control Boards (CEZ)

Locate J6 connector on control board. If jumper is across pins 1 & 2, board is set up to operate tea brewer or a brewer that DOES NOT use a water level probe. If jumper is across pins 2 & 3, board is set up to operate a coffee brewer or a brewer that uses a water level probe. Look at the bottom side of the control board. Pin 1 of connector J6 is marked by a square solder pad on the foil side of the board and pins 2,3 & 4 are marked by a round solder pad.

#### C. Control Boards (CDBC & CEZ)

Make sure before servicing brewer that voltage is present at control board.

On CDBC models, press any warmer switch or observe if any indicator lights are glowing on the control panel. If so, proceed with testing. If not, check for voltage across pins 1 & 2 of the ten pin J1 connector (black and white wires). If voltage is present, replace the control board. If voltage is not present, check wiring and voltage across terminal block (black and white). Correct the problem and retest before proceeding with testing.

On CEZ models, check for voltage across pins 1 & 7 of the eight pin J1 connector (black and white wires). If voltage is present, proceed with testing. If voltage is not present, check wiring and voltage across terminal block (black and white). Correct the problem and retest before proceeding with testing.

## TROUBLESHOOTING (cont.)

### REFILL CIRCUIT

#### **PROBLEM**

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Will not fill or refill

#### **PROBABLE CAUSE**

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1. Power off to brewer (all models)
2. Water shut off (all models)
3. Display flashing (CDBC) or ready light flashing (CEZ)
4. ON/OFF Switch (all models)
5. Lime build up on Probe (all models)
6. Refill Valve or Control Board (all models)

#### **REMEDY**

---

Press warmer switches on control panel to determine if power is ON.

Make sure water is ON.

Brewer has shut down due to malfunction (See Diagnostic Chart in manual, Page 19, or under top lid of brewer).

Make sure ON/OFF Switch is "ON" and indicator is lit.

Remove the Probe and check for lime deposit on tip. Clean and reinstall.

Disconnect the brewer from the power source and remove wires from refill valve coil. Check for continuity across the terminals of the solenoid coil. If continuity is not present, replace the refill valve (See page 30). If continuity is present, the coil may be stuck closed. Shut water off to brewer. Set the ON/OFF switch to the "OFF" position. Open the faucet and drain water down in the tank until flow stops or slows to a trickle. Attach a voltmeter to the terminals of the refill solenoid. Connect the brewer to the power source. Press the switch "ON". Within five seconds, voltage should be present at the solenoid terminals. If voltage is not present, refer to the wiring diagrams and check the wiring harness.

## TROUBLESHOOTING (cont.)

### REFILL CIRCUIT (cont.)

#### PROBLEM

Fill or refill does not shut "OFF"  
(ON/OFF Switch "ON")

#### PROBABLE CAUSE

1. Lime build up on probe (all models)

2a. Water Level Probe Sensing System (CDBC)

2b. Water Level Probe Sensing System (CEZ)

3. Refill valve or control board (all models)

Fill or refill does not shut "OFF"  
(ON/OFF Switch "OFF")

1. Refill valve or control board (all models)

#### REMEDY

Remove Probe and check for lime deposits on tip. Clean and reinstall.

A) Disconnect the brewer from the power source. Disconnect the J3 connector from the control board. Check for continuity from the nut on top of the level probe to pin 1 of the plug, continuity should be present. Pull the temperature probe up about an inch from the grommet. Check for continuity from the outside surface of the temperature probe and pin 4 of the plug, continuity should be present. Connect the J3 plug to the control board and proceed to step 3.

B) Disconnect the brewer from the power source. Disconnect the J5 connector from the control board. Check for continuity from the nut on top of the level probe to pin 5 of the plug, continuity should be present. Pull the temperature probe up about an inch from the grommet. Check for continuity from the outside surface of the temperature probe and pin 2 of the plug, continuity should be present. Connect the J5 plug to the control board and proceed to step 3.

Press ON/OFF switch to "ON" (Indicator lamp should be lit). If water continuously flows out of air vent tube, disconnect the brewer from the power source. If water flow stops, replace the control board. If water flow does not stop, repair or replace the refill solenoid. (See page 30)

If water continuously flows out of air vent tube, disconnect the brewer from the power source. If water flow does not stop, repair or replace the refill solenoid. If the valve closes when power is removed, replace the control board. (See pages 21 & 22)

## TROUBLESHOOTING (cont.)

### HEATING CIRCUIT PROBLEM

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Water does not heat to proper temperature

**IMPORTANT:** Make sure no temperature tests are taken before the ready light is "ON". Tank temperature must be stabilized before readings are taken.

### PROBABLE CAUSE

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1. Display flashing (CDBC) or ready light flashing (CEZ)

2. Water not touching temperature probe

3a. Dry Plug In Probe Sensing System (CDBC)

3b. Dry Plug In Probe Sensing System (CEZ)

### REMEDY

---

Brewer has shut down due to malfunction (See Diagnostic Chart in manual, Page 19, or under top lid).

Remove probe and grommet. Look into hole on tank lid. Water must be within one inch from top of tank.

A) Disconnect the brewer from the power source. Disconnect the J3 connector from the control board. Check for continuity from the tank mounting screw where the green wire mounts, to pin 2 of the plug, continuity should be present. Pull the temperature probe up about an inch from the grommet. Check for continuity from the outside surface of the temperature probe and pin 4 of the plug, continuity should be present. Connect the J3 plug to the control board and proceed to step 4a.

B) Disconnect the brewer from the power source. Disconnect the J5 connector from the control board. Check for continuity from the tank mounting screw where the green wire mounts, to pin 5 of the plug, continuity should be present. Pull the temperature probe up about an inch from the grommet. Check for continuity from the outside surface of the temperature probe and pin 2 of the plug, continuity should be present. Connect the J5 plug to the control board and proceed to step 4b.

## TROUBLESHOOTING (cont.)

### HEATING CIRCUIT (cont.)

#### PROBLEM

Water does not heat to proper temperature (cont.)

**IMPORTANT:** Make sure no temperature tests are taken before the ready light is "ON". Tank temperature must be stabilized before readings are taken.

#### PROBABLE CAUSE

4a. Temperature Probe (CDBC)

4b. Temperature Probe (CEZ)

5. Limit Thermostat (all models)

6. Tank Heater (all models)

Spitting or excessive steaming

1. Lime build up on temperature probe, tank or tank heater

#### REMEDY

A) Remove the probe from the grommet and submerge in a water bath of approximately 70°F(21°C). Connect an ohmmeter to pins 3 and 4 of the J3 connector. At 60°F(16°C) the reading should be 15.3k ± 2k OHMS, at 70°F(21°C) the reading should be 11.8k ± 2k OHMS, and at 80°F(27°C) the reading should be 9.3k ± 2k OHMS. If the probe is within these parameters, reconnect the J3 plug to the control board.

B) Remove the probe from the grommet and submerge in a water bath of approximately 70°F(21°C). Connect an ohmmeter to pins 2 and 3 of the J5 connector. At 60°F(16°C) the reading should be 15.3k ± 2k OHMS, at 70°F(21°C) the reading should be 11.8k ± 2k OHMS, and at 80°F(27°C) the reading should be 9.3k ± 2k OHMS. If the probe is within these parameters, reconnect the J5 plug to the control board.

Disconnect the brewer from the power source. Check for continuity across the limit thermostat terminals. Continuity should be present. If not replace the limit thermostat.(See page 27)

Disconnect the brewer from the power source. Check for continuity between the white terminal of the terminal block (or Red terminal on 208/240 volt models) and the black wire on the relay on the control board. There should be a low OHM reading. If no continuity is present, check for a wiring problem, then replace the tank heater if no wiring problem is found. (See page 28)

Inspect probe and tank assembly for excessive lime deposits. Delime as required.

## TROUBLESHOOTING (cont.)

### HEATING CIRCUIT (cont.)

#### PROBLEM

Spitting or excessive steaming (cont.)

#### PROBABLE CAUSE

2a. Temperature Probe (CDBC)

#### REMEDY

A) Remove the probe from the grommet and submerge in a water bath of approximately 70°F(21°C). Connect an ohmmeter to pins 3 and 4 of the J3 connector. At 60°F(16°C) the reading should be 15.3k ± 2k OHMS, at 70°F(21°C) the reading should be 11.8k ± 2k OHMS, and at 80°F(27°C) the reading should be 9.3k ± 2k OHMS. If the probe is within these parameters, reconnect the J3 plug to the control board.

2b. Temperature Probe (CEZ)

B) Remove the probe from the grommet and submerge in a water bath of approximately 70°F(21°C). Connect an ohmmeter to pins 2 and 3 of the J5 connector. At 60°F(16°C) the reading should be 15.3k ± 2k OHMS, at 70°F(21°C) the reading should be 11.8k ± 2k OHMS, and at 80°F(27°C) the reading should be 9.3k ± 2k OHMS. If the probe is within these parameters, reconnect the J5 plug to the control board.

3. Control Board (all models)

Set the temperature to 200°F (93°C). Let tank temperature stabilize. If temperature in tank is above temperature setting by more than 7°F(-14°C), replace the control board.(See pages 21 & 22)

Brewer is making unusual noises

1. Plumbing lines

Plumbing lines should not rest on the counter top.

2. Water supply

The brewer must be connected to a cold water supply.

3. Lime build up

Remove the tank lid and clean inside of tank with a deliming agent, if necessary.



## TROUBLESHOOTING (cont.)

### BREWING CIRCUIT

#### PROBLEM

---

Brew cycle will not start

#### PROBABLE CAUSE

---

1. Display flashing (CDBC) or ready light flashing (CEZ)

#### REMEDY

---

Brewer has shut down due to malfunction (See Diagnostic Chart in manual, Page 19, or under top lid of brewer).

2. No water

Water lines and valves to the brewer must be open.

3. No power or incorrect voltage to the brewer

Check for voltage across the black and white terminals at the terminal block.

4. ON/OFF switch not in the "ON" position

The indicator lamp must be lit

5. Low water temperature (Brew lockout is enabled)

Allow brewer to heat until ready lamp is lit, or disable the brew lockout feature. (See page 7 or 8)

6. Water not touching refill probe inside tank

Press ON/OFF switch (indicator must be lit). Brewer will refill until water touches probe inside tank. Water must be in contact with refill probe before brew cycle will start.

7. Switch panel (CDBC)

Disconnect the brewer from the power source. Disconnect the ribbon connector from the control board. Check for continuity between pins 1 & 2 (An arrow on the connector indicates pin 1). No continuity should be present. Press the BREW switch. Continuity should be present for as long as the switch is held "ON". If no continuity is present, replace the switch membrane decal. (See page 23)

## TROUBLESHOOTING (cont.)

### BREWING CIRCUIT (cont.)

#### PROBLEM

---

Brew cycle will not start (cont.)

#### PROBABLE CAUSE

---

8. Control board or dispense valve (all models)

#### REMEDY

---

If the start switch (CEZ) or switch panel (CDBC) is operating properly, proceed as follows. Attach a voltmeter to the terminals of the dispense solenoid. Connect the brewer to the power source. Turn on the brewer and press the BREW switch. Voltage should be present at the solenoid terminals. If voltage is not present, refer to the wiring diagrams and check the wiring harness. If voltage is present, check for continuity across the terminals of the solenoid coil. If continuity is not present, replace the solenoid (See page 26). If continuity is present, the valve may be stuck closed.

Consistently low beverage level in the dispenser or beverage overflows dispenser

1. Brew volume (all models)

Set up brewer according to instructions in section **Adjustments-Brew Volumes**. (See pages 7 or 8) Using a stop watch or second hand, time the length of the brew cycle. Record this time inside the top lid. If service is ever needed again, use the time as reference to determine if time has changed.

2. Lime build up

Inspect the dispense valve and spray head for excessive lime deposits. Delime as required.

3. Dispense Valve

Remove dispense valve and clear any obstructions. Rebuild or replace valve if necessary. (See page 26)

## TROUBLESHOOTING (cont.)

### BREWING CIRCUIT (cont.)

#### PROBLEM

---

#### PROBABLE CAUSE

---

#### REMEDY

---

Dripping from spray head

1. Lime build up

Inspect the tank assembly for excessive lime deposits. Delime as required.

2. Dispense valve

Remove the dispense valve and clear any obstructions. Rebuild or replace the valve if necessary. (See page 26)

Weak beverage

1. Sprayhead

A six-hole stainless steel sprayhead must be used for proper extraction.

2. Water temperature

Place an empty brew funnel on an empty decanter beneath the sprayhead. Initiate brew cycle and check the water temperature immediately below the sprayhead with a thermometer. The reading must not be less than 195°F(91°C). Adjust the temperature setting to increase the water temperature. Refer to *Initial Set-up* instructions.

3. Filter type

BUNN® paper filters must be used for proper extraction.

4. Coffee grind

A fine drip or grind must be used for proper extraction.

5. Funnel loading

The BUNN® paper filter must be centered in the funnel and the bed of grounds leveled by shaking gently.

## TROUBLESHOOTING (cont.)

### BREWING CIRCUIT (cont.)

#### PROBLEM

Dry coffee grounds remain in the funnel

#### PROBABLE CAUSE

1. Sprayhead

#### REMEDY

Make sure sprayhead is present and holes are clear and unobstructed. There should be six separate streams of water coming out of the sprayhead.

2. Funnel loading

The BUNN® paper filter must be centered in the funnel and the bed of grounds leveled by shaking gently.

Low beverage serving temperature

1. Warmer

Disconnect the brewer from the power source. Remove the warmer plate and turn upside down to expose the warmer terminals. Remove the two wires. Check for continuity across the two warmer terminals. If continuity is not present, replace the warmer element (See page 31). If continuity is present, reconnect the wires to the warmer element. Check for voltage at the warmer terminals. Turn the warmer switch "ON". The indicator light will come on. Voltage should be present at the terminals. If not, disconnect power supply and check wiring and switch.

## DIAGNOSTICS

Intermittent flashing of the READY indicator (Model CEZ) or the bank of temperature indicators (Model CDBC) indicates that a fault exists. Count the number of flashes between pauses and use this chart as a guide to investigating the fault.

FLASHES	CAUSE	THINGS TO CHECK
1	Dry Plug - In Fault - Sheath of temperature probe dry for 10 minutes after power-up	Water Pressure (Is water shut "OFF") Temperature probe wiring Fill valve wiring, function, & strainer Green wire between tank and circuit board
2	Low Tank Level Fault - Level probe dry for 7 minutes after fill valve is energized	Water pressure (Is water shut "OFF") Shorting pin on J6 connector of control board not on correct set of pins (CEZ only) See page 7. Level probe wiring Temperature probe wiring Fill valve wiring, function, & strainer
3	Low Water Temperature Fault - Sensor in tank is calling for heat for 30 minutes or more	Tank heater wiring & function Temperature probe wiring
4	Tank Sensor Disagreement - Level probe detects water, but dry plug-in probe dry	Temperature probe wiring Level probe wiring Green wire between tank and circuit board
5	Temp Sensor Out-of-Range - High	Sensor not connected to circuit board
6	Temp Sensor Out-of-Range - Low	Sensor wires shorted together or to chassis

## SERVICE

This section provides procedures for testing and replacing various major components used in this brewer should service become necessary. Refer to **Troubleshooting** for assistance in determining the cause of any problem.

**WARNING** - Inspection, testing, and repair of electrical equipment should be performed only by qualified service personnel. The brewer should be unplugged when servicing, except when electrical tests are required and the test procedure specifically states to plug in the brewer.

## COMPONENT ACCESS

source before the removal of any panel or the replacement of any component.

All components are accessible by the removal of the top cover or warmer housing, front access panel and warmer plate(s).

The top cover is attached with one #4-40 screw.

The front access panel is attached with four #6-32 screws.

Each warmer assembly is attached with three #4-40 screws.

## Contents

Control Board - CDBC .....	21
Control Board - CEZ .....	22
Switch Panel - CDBC .....	23
ON/OFF Switches - CEZ .....	24
BREW Switch (Start) - CEZ .....	25
Dispense Valve .....	26
Limit Thermostat .....	27
Tank Heater .....	28
Refill Valve .....	30
Warmer Elements .....	31
Wiring Diagrams .....	32

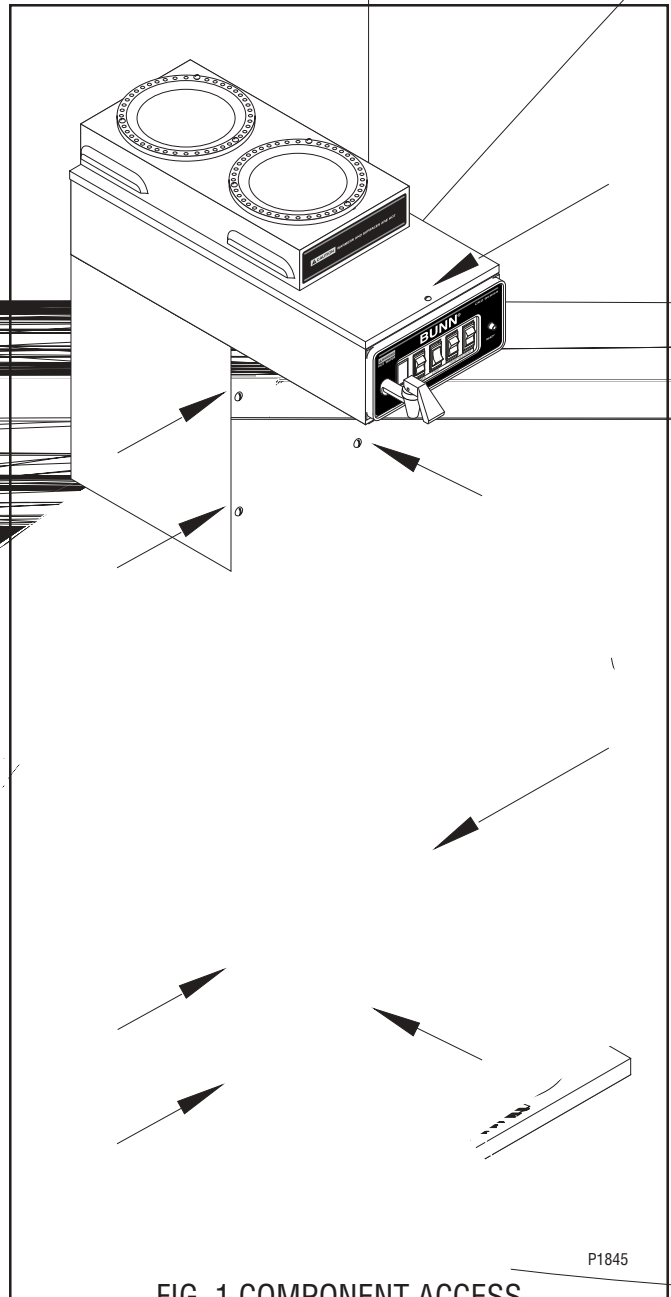
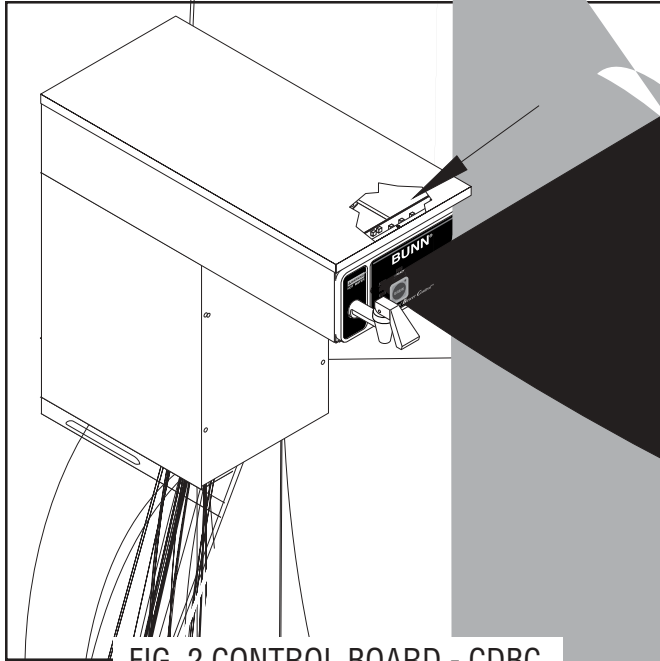


FIG. 1 COMPONENT ACCESS

P1845

**SERVICE (cont.)**

**CONTROL BOARD - Model CDBC**



**FIG. 2 CONTROL BOARD - CDBC**

Location:

The control board is located behind the front panel of the coffee machine.

Test Procedure:

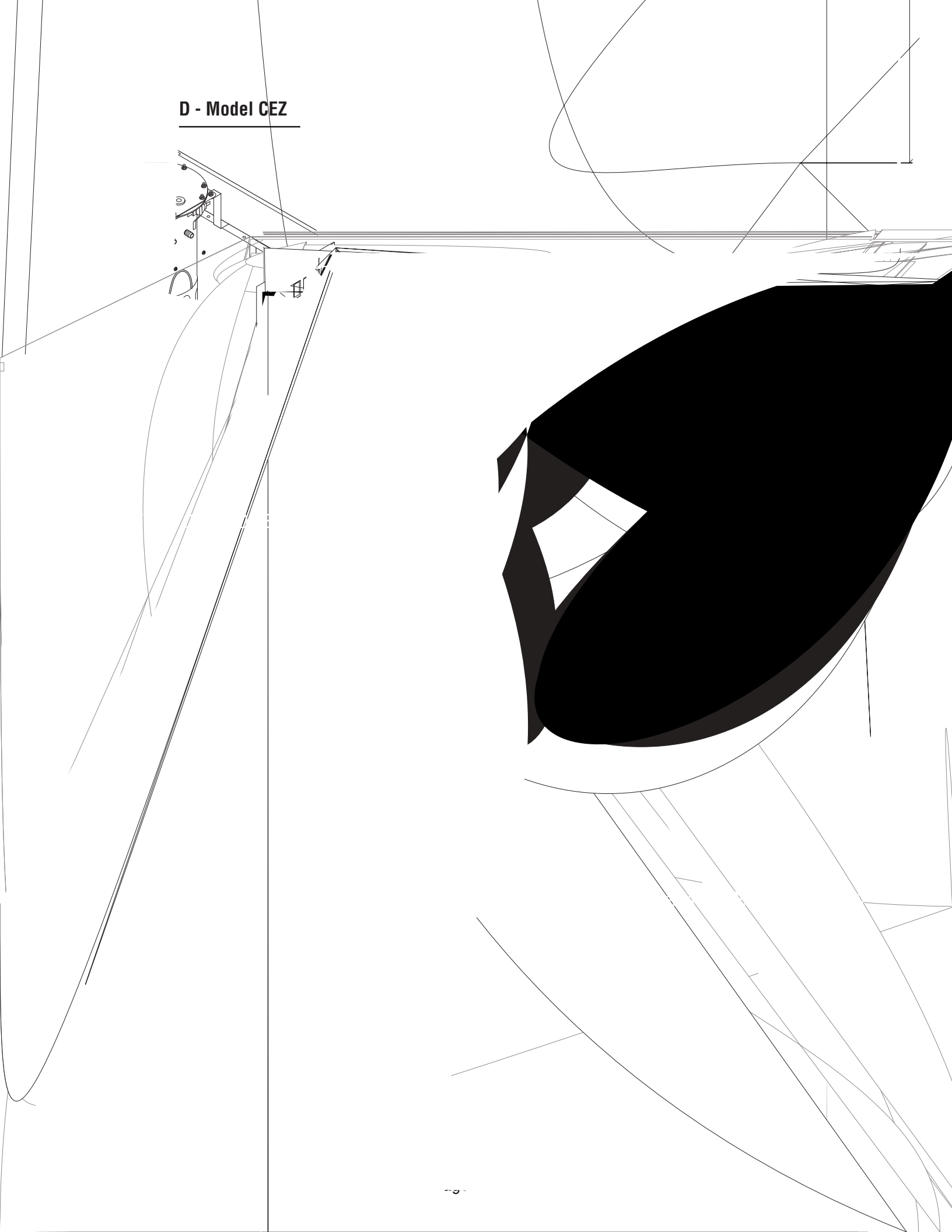
The test procedure is dependent on the model of the coffee brewer. For more information, refer to the test procedure on page three of this manual.

Removal:

1.

2. Remove the control board from the machine.
3. Disconnect the 11-pin connector from the control board.
4. Disconnect the 10-pin connector and the 4-pin connector from the main wiring harness.
5. Disconnect the blue wire and black wire from the relay on the control board.
6. Connect the 11-pin connector from the control panel.
7. Connect the 10-pin connector and the 4-pin connector from the main wiring harness.
8. Connect the blue wire and black wire to the relay on the control board.
9. Refer to *CDBC Adjustments and Optional Settings* to program the new control board.

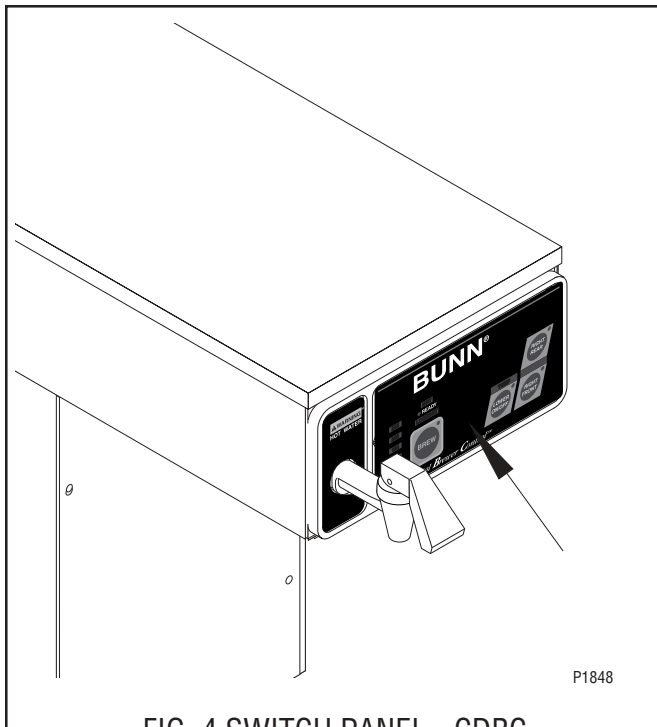
**D - Model CEZ**





## SERVICE (cont.)

### SWITCH PANEL - Model CDBC



#### Location:

The Switch Panel is located in the front of the hood.

#### Test Procedures:

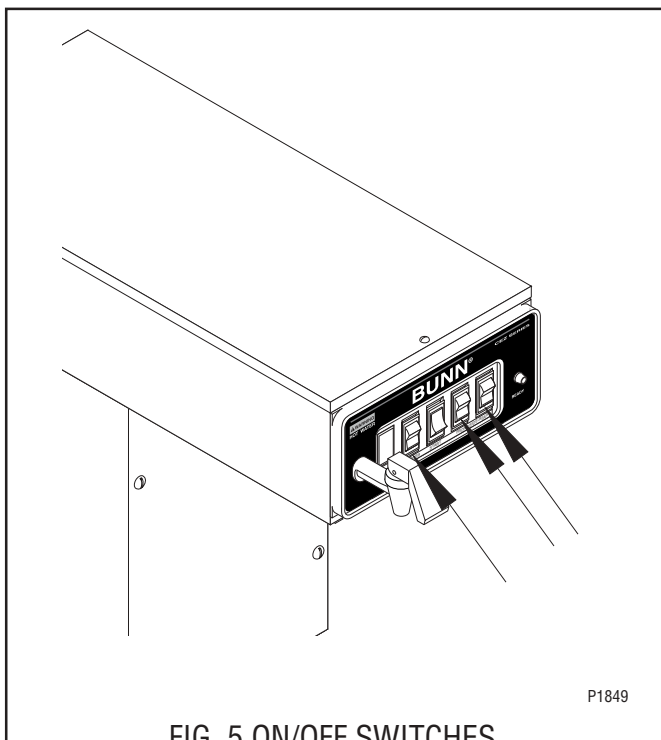
The test procedures for the switch panel and the control board will vary depending upon the problems experienced by the brewer. Refer to the Troubleshooting guide beginning on page 9. The troubleshooting guide is divided into three sections, Refill Circuit, Heating Circuit, and Brewing Circuit.

#### Removal and Replacement:

1. Disconnect the 11-pin connector to the switch panel from the control board.
2. Remove the four #6 screws, nylon washers and the two #4-40 screws securing the control board to the end cap assembly and set aside.
3. Gently pry the switch panel from the end cap assembly.
4. Remove any adhesive that remains on the end cap.
5. Remove the adhesive backing from the new switch panel. Insert the ribbon connector through the slot in the end cap and apply the switch panel to the end cap.
6. Install the control board to the back side of the end cap using the four #6 screws, nylon washers and the two #4-40 screws to the end cap assembly.  
**NOTE:** The four nylon washers **must** be installed under the heads of the four #6 screws to prevent a possible shorting of the control board circuits.
7. Reconnect the 11-pin connector from the switch panel to the control board making sure every pin on the control board is inserted into the ribbon cable plug.

## SERVICE (cont.)

### ON/OFF SWITCHES - Model CEZ



#### Location:

The ON/OFF switches are located on the front of the hood.

#### Test Procedure:

1. Disconnect the brewer from the power source.
2. Viewing the switch from the back remove the white wire from the upper terminal and the black wire from the center terminal.
3. With a voltmeter, check the voltage across the white wire and the black wire. Connect the brewer to the power source. The indication must be 120 volts ac for two wire 120 volt models and three wire 120/240 volt models.
4. Disconnect the brewer from the power source.

If voltage is present as described, reconnect the white wire and proceed to #5.

If voltage is not present as described, refer to the *Wiring Diagrams* and check the brewer wiring harness.

5. With the black wire removed, remove the wire from the lower terminal.

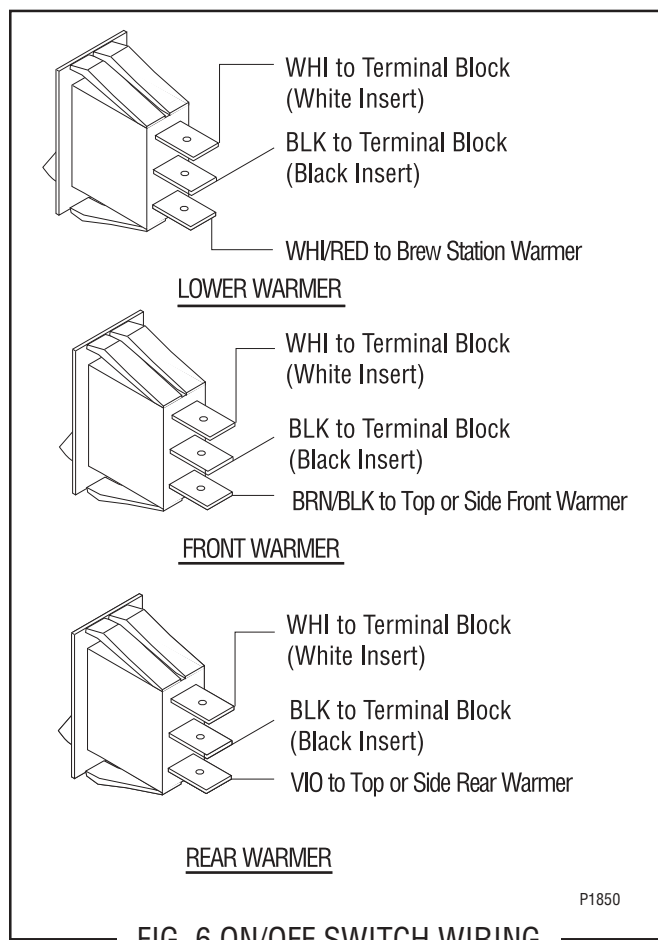
6. Check for continuity across the center and lower terminal with the switch in the "ON" position. Continuity must not be present when the switch is in the "OFF" position.

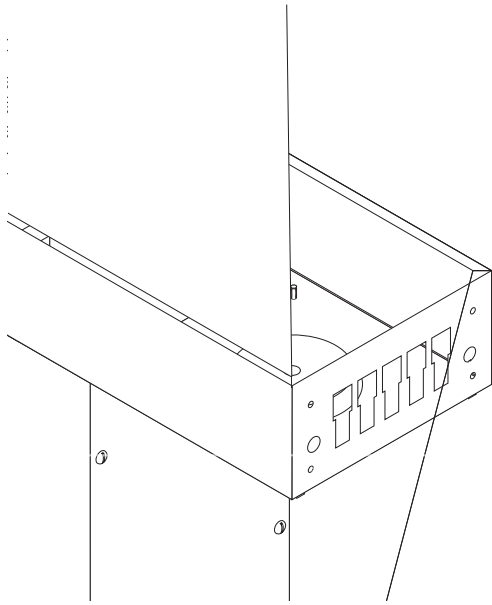
If continuity is present as described, reconnect the black wire to the center terminal and the remaining wire to the lower terminal.

If continuity is not present as described, replace the switch.

#### Removal and Replacement:

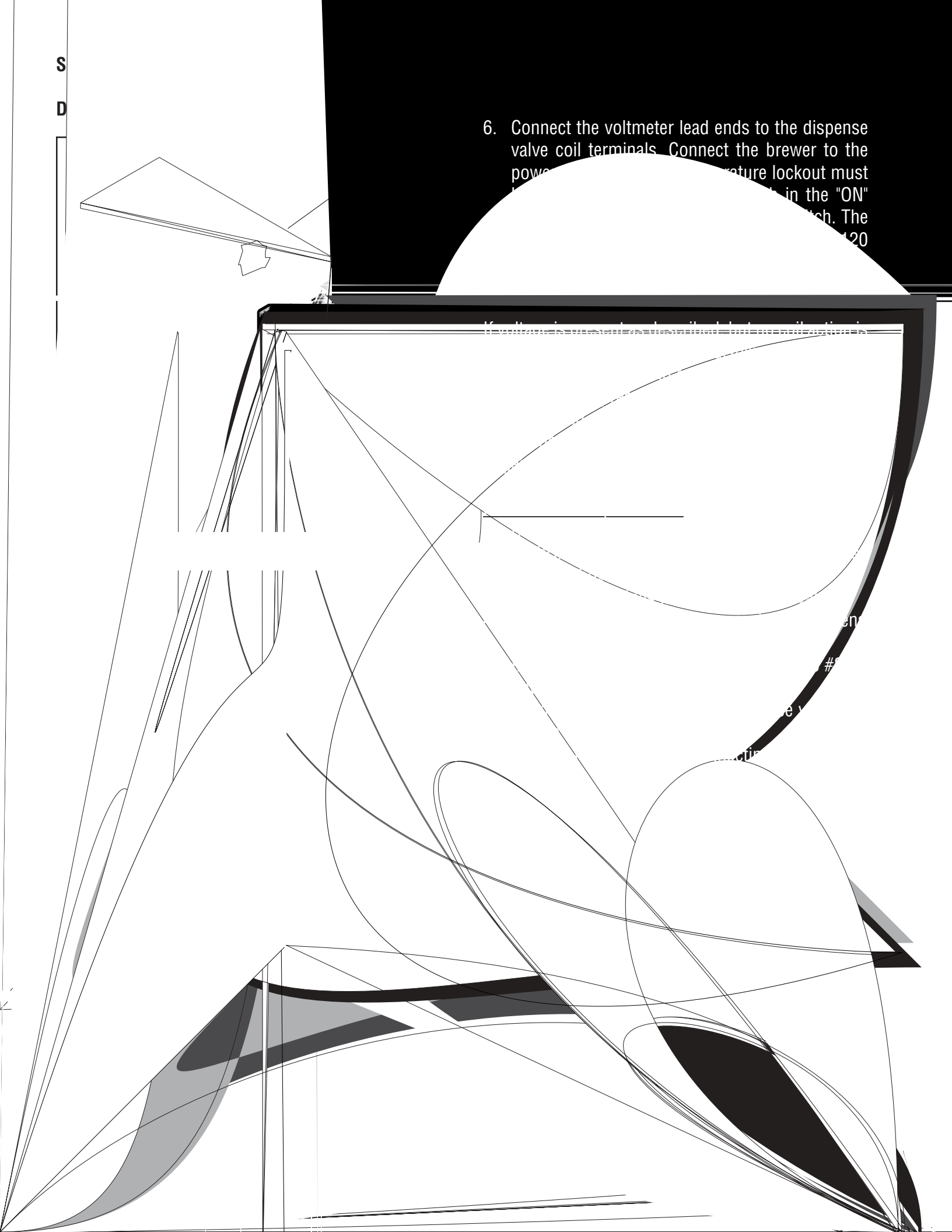
1. Remove the wires from the switch terminals.
2. Remove hose connected to faucet. Remove nut securing faucet to brewer and remove faucet assembly.
3. Remove four nuts securing front end cap to brewer and remove end cap.
4. Remove switch and replace with new switch.
5. Install front end cap and faucet assembly.
6. Refer to FIG. 6 when reconnecting the wires.

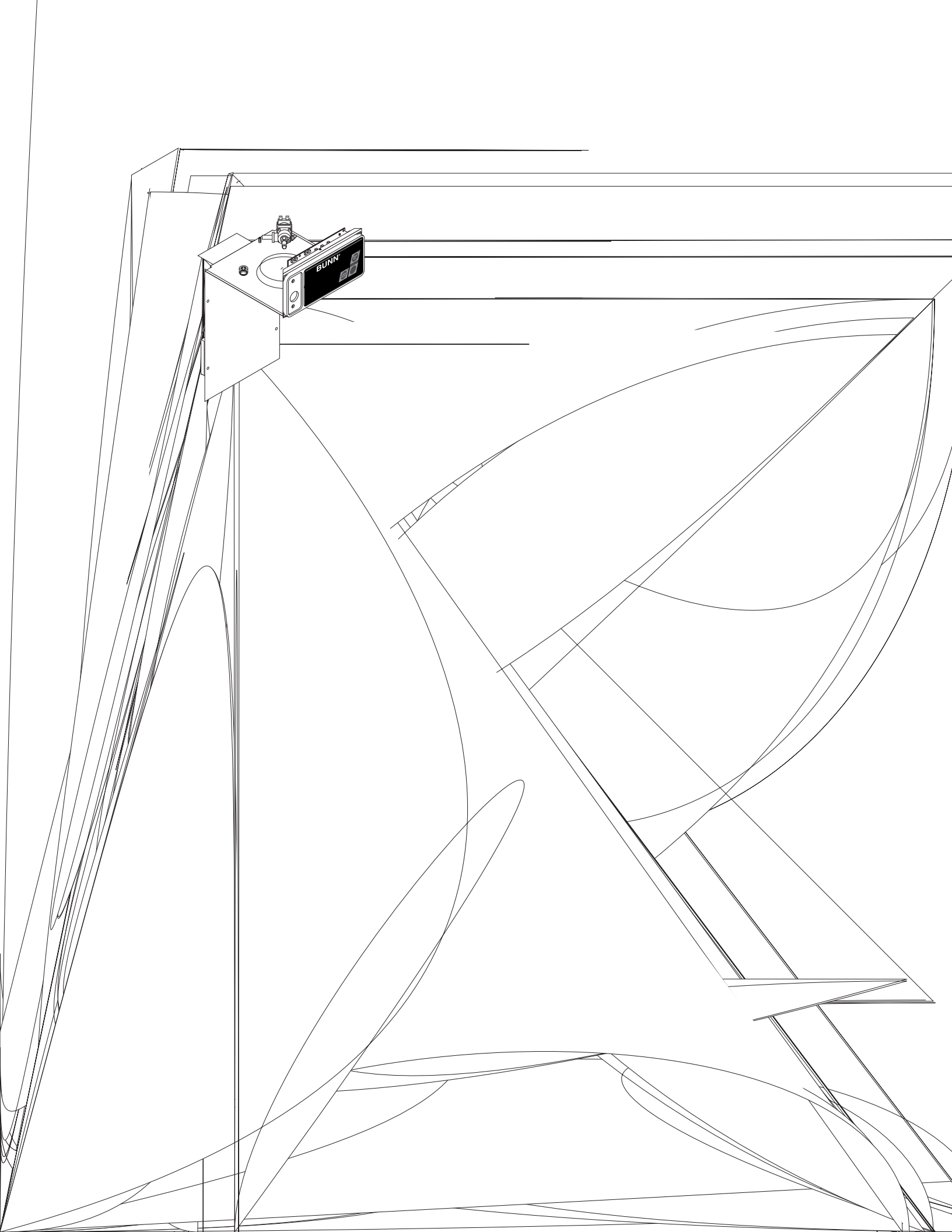




6. Connect the voltmeter lead ends to the dispense valve coil terminals. Connect the brewer to the power source. The temperature lockout must be in the "ON" position. The voltmeter should read 120.

S  
D





## SERVICE (cont.)

### TANK HEATER

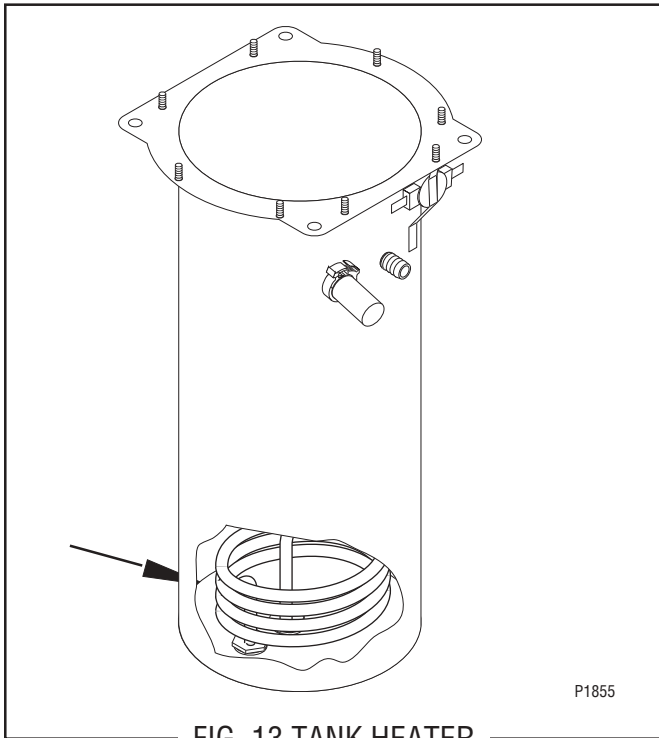


FIG. 13 TANK HEATER

#### Location:

The tank heater is located inside the tank and secured to the tank bottom.

#### Test Procedures:

1. Disconnect the brewer from the power supply.
2. With a voltmeter, check the voltage across the white or red wire from the terminal block and the black wire from the control board. Connect the brewer to the power source. The indication must be 120 volts ac for two wire 120 volt models or 240 volts ac for three wire 120/240 volt models.
3. Disconnect the brewer from the power source.

If voltage is present as described, proceed to #4

If voltage is not present as described, refer to the *Wiring Diagrams* and check wiring harness.

4. Disconnect the black wire and the white wire or red wire from the tank heater terminals.
5. Check for continuity across the tank heater terminals.

If continuity is present as described, reconnect the wires, the tank heater is operating properly. If continuity is not present as described, replace the tank heater.

**NOTE-** If the tank heater remains unable to heat, remove and inspect heater for cracks in the sheath.

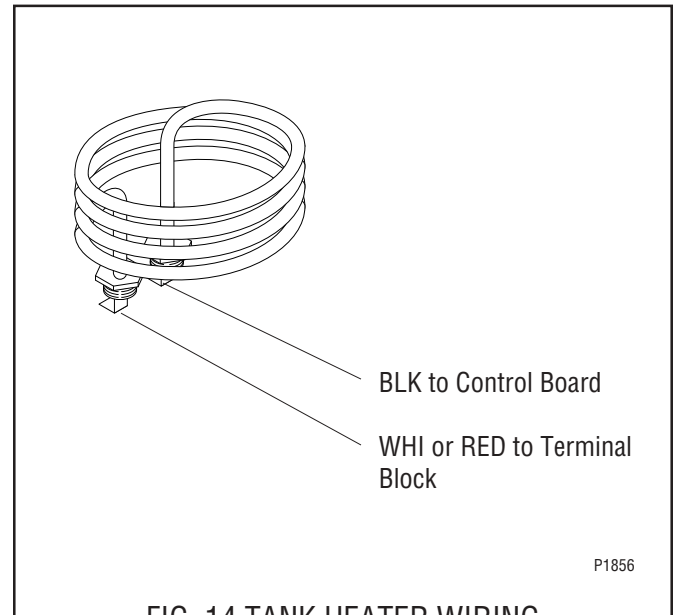
#### Removal and Replacement:

1. Remove the top cover or top warmer housing and front access panel as previously described.
2. Disconnect the vent hose from the top of the tank by pulling the elbow fitting from the grommet in the top of the tank lid.
3. Drain water from the tank.
4. Disconnect the water supply tube to the dispense valve from the side of the tank.
5. Disconnect the water supply tube to the solenoid valve from the bottom of the tank.
6. On brewers with faucet, disconnect the outlet water line to the faucet from the side of the tank.
7. Disconnect the temperature probe from the top of the tank by pulling the probe from the grommet in the top of the tank lid.
8. Disconnect the pink wire from the level probe.
9. Disconnect the green wire from the top of the tank.
10. Disconnect the limit thermostat from the side of the tank.
11. Disconnect the two white wires from the tank warmer blanket.
12. Disconnect the black wire and the white or red wire from the tank heater terminals.
13. Remove the four #8-32 nuts securing the tank to the mounting brackets and remove the tank assembly.
14. Remove the eight #8-32 nuts securing the tank lid to the tank.
15. Remove the two hex nuts securing the tank heater to the bottom of the tank. Remove tank heater with gaskets and discard.
16. Install new tank heater with gaskets to the bottom of the tank and secure with two hex nuts.
17. Install tank assembly onto mounting brackets and secure in place with four #8-32 nuts.

## SERVICE (cont.)

### TANK HEATER (Cont.)

18. Install tank lid and secure in place with eight #8-32 nuts.
19. Connect the two white wires of the tank warmer blanket.
20. Connect the limit thermostat to the front of the tank assembly.
21. Connect the green wire to the tank mounting bracket using #8-32 nut.
22. Connect the pink wire to the level probe.
23. Insert the temperature probe through the grommet in the tank lid.
24. Install the elbow fitting of the vent hose into the grommet in the tank lid.
25. On brewers with faucet, connect the outlet water line of the faucet to the side of the tank and secure with clamp.
26. Connect the water supply tube from the solenoid to the bottom of the tank and secure with clamp.
27. Connect the water supply tube from the dispense valve to the side of the tank and secure with clamp.
28. Refer to FIG. 14 when reconnecting the tank heater wires.
29. Install access panels and covers and refer to *Initial Set-up* for refill and operation.







## SERVICE (cont.)

### WARMER ELEMENT(S)

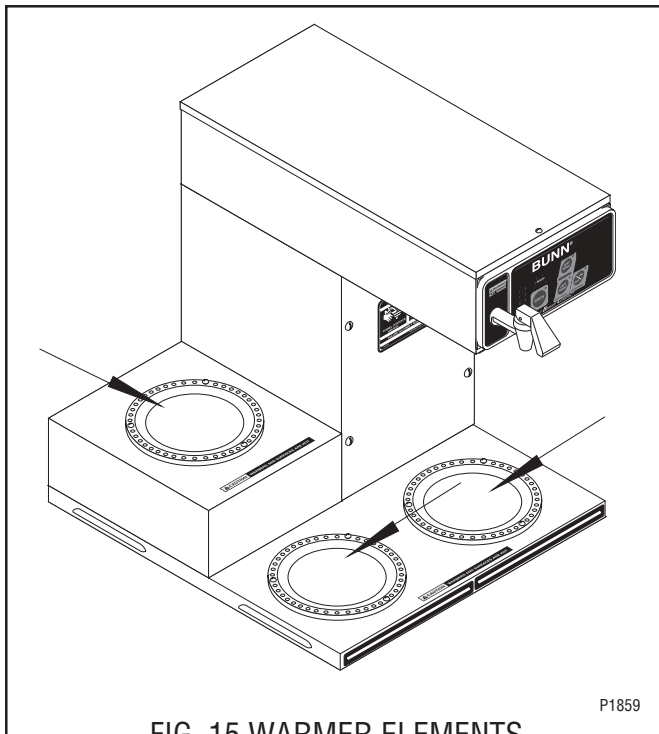


FIG. 15 WARMER ELEMENTS

#### Location:

The warmer element(s) is located under the warmer plate.

#### Test Procedures:

1. Disconnect the brewer from the power source.
2. Use the white wire from the terminal block and the other bottom wire on the "ON/OFF" switch.
3. With a voltmeter, check voltage across the two wires with the "ON/OFF" switch in the "ON" position. Connect the brewer to the power source. The indication must be 120 volts ac for two wire 120 volt models and three wire 120/240 volt models.
4. Disconnect the brewer from the power source.

If voltage is present as described, proceed to #5.  
If voltage is not present as described, refer to *Wiring Diagrams* and check brewer wiring harness.

5. Check the continuity across the two terminals on the warmer element.

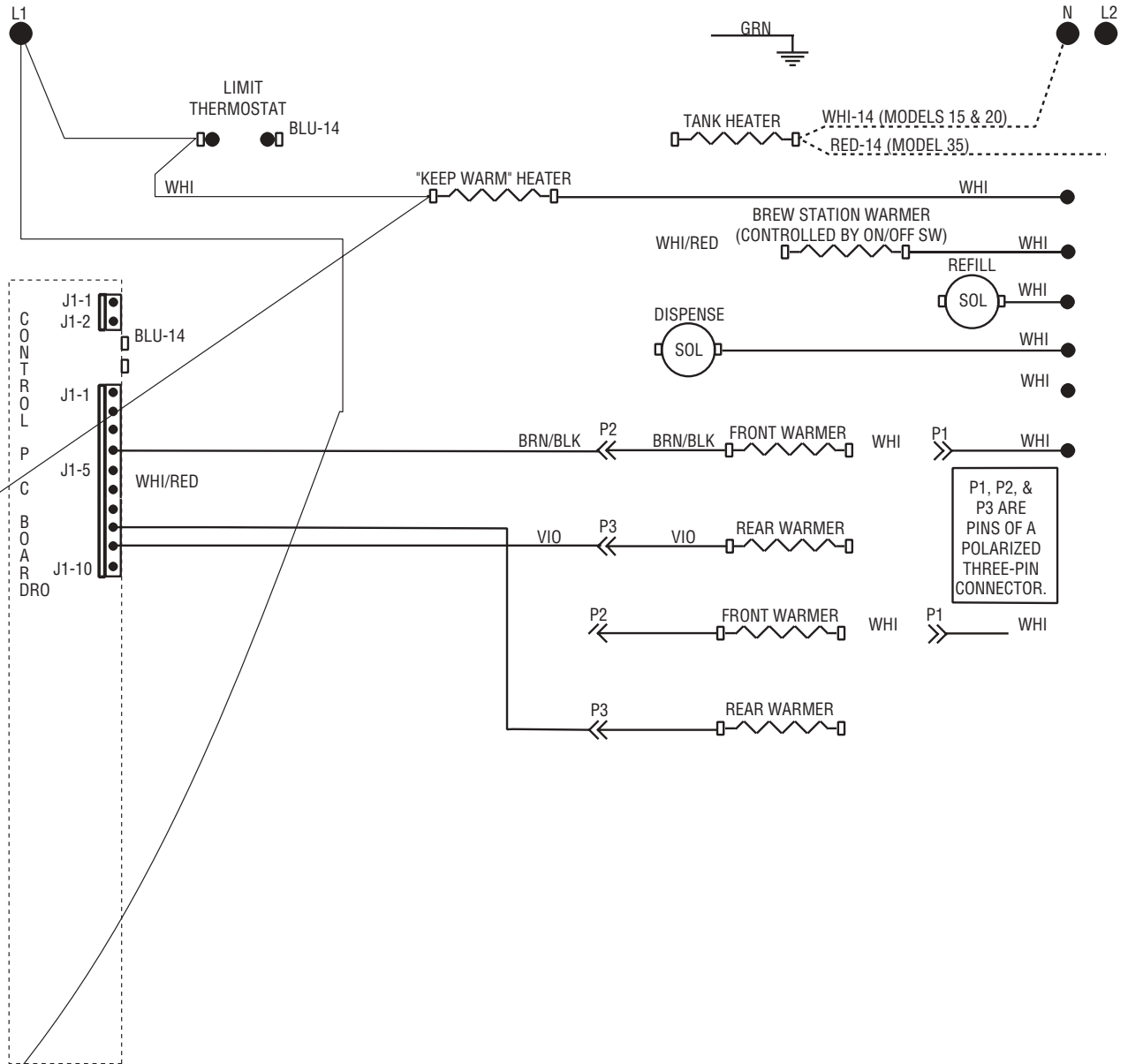
If continuity is present as described, reconnect the two wires to the warmer element.

If continuity is not present as described, replace the warmer element.

#### Removal and Replacement:

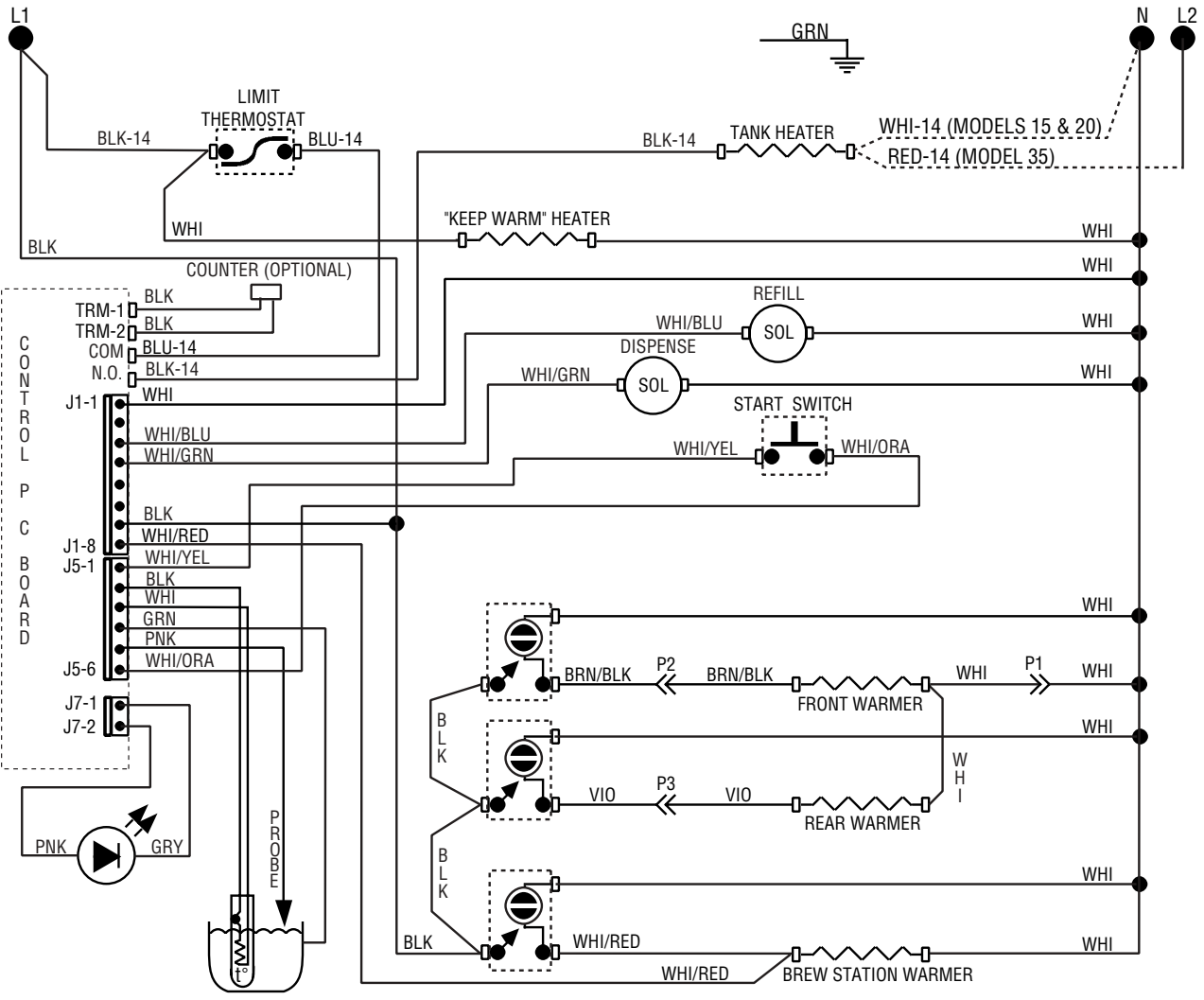
1. Remove the three #4-40 screws securing the warmer assembly to the brewer.
2. Lift the warmer assembly from the brewer.
3. Disconnect the two wires from the warmer element terminals.
4. Remove the two #8-32 nuts securing the warmer element to the warmer plate.
5. Securely install new warmer element.
6. Reconnect the two wires to warmer element terminals.
7. Securely install warmer assembly on the brewer.
8. Refer to the *Wiring Diagrams* when reconnecting the wires.

# SCHEMATIC WIRING DIAGRAM CDBC - 15, 20 & 35



29077.0000C 04/03 ©1998 BUNN-O-MATIC CORPORATION

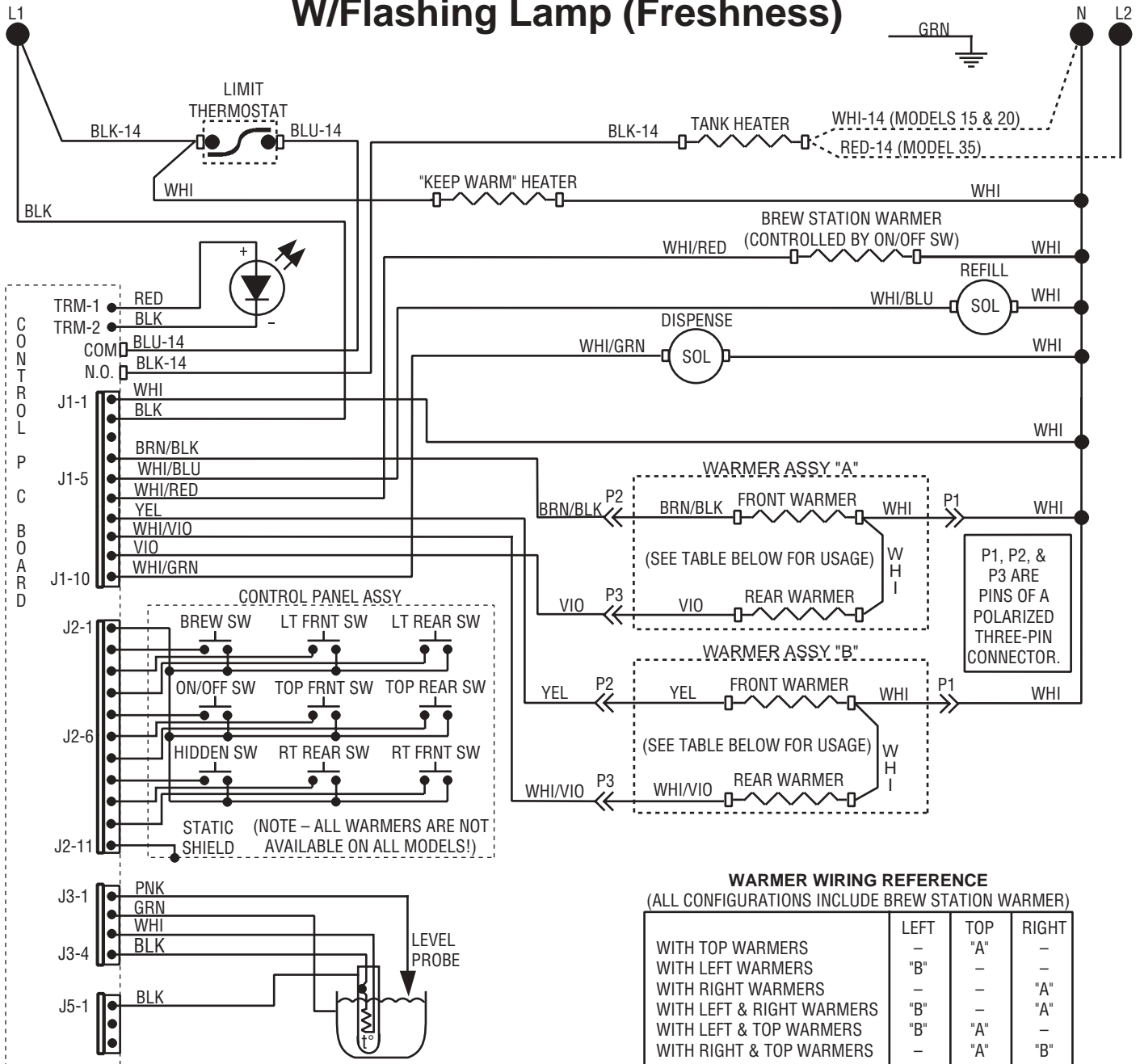
# SCHEMATIC WIRING DIAGRAM CEZ



P1, P2, & P3 ARE PINS OF A POLARIZED THREE-PIN CONNECTOR.

**120V AC 2 WIRE**  
**120/208V AC 3 WIRE**  
**120/240V AC 3 WIRE**  
**SINGLE PHASE**

# SCHEMATIC WIRING DIAGRAM CDBCP/CDBCPF - 15, 20 & 35 W/Flashing Lamp (Freshness)



**120V AC 2 WIRE  
120/208V AC 3 WIRE  
120/240V AC 3 WIRE  
SINGLE PHASE**

### WARMER WIRING REFERENCE (ALL CONFIGURATIONS INCLUDE BREW STATION WARMER)

	LEFT	TOP	RIGHT
WITH TOP WARMERS	-	"A"	-
WITH LEFT WARMERS	"B"	-	-
WITH RIGHT WARMERS	-	-	"A"
WITH LEFT & RIGHT WARMERS	"B"	-	"A"
WITH LEFT & TOP WARMERS	"B"	"A"	-
WITH RIGHT & TOP WARMERS	-	"A"	"B"