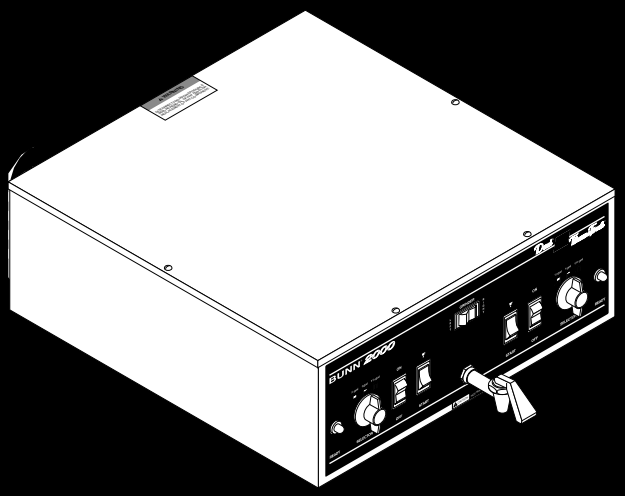

BUNN 2000

INTRODUCTION

This equipment will brew two half-gallon, gallon, or gallon and three forths batches of coffee into awaiting servers at the push of a button. The brewer is also equipped with a hot water faucet for allied beverage use and is designed to interface with a BUNN® Grinder. The brewer is specifically designed for use with BUNN® .5 gallon and 1.75 gallon servers. It is only for indoor use on a sturdy counter or shelf.

WARRANTY

Bunn-O-Matic Corp. ("Bunn") warrants the equipment manufactured by it to be commercially free from defects in material and workmanship existing at the time of manufacture and appearing within one year from the date of installation. In addition:

1.) Bunn warrants electronic circuit and/or control boards to be commercially free from defects in material and workmanship for two years from the date of installation.

2.) Bunn warrants the compressor on refrigeration equipment to be commercially free from defects in material and workmanship for two years from the date of installation.

3.) Bunn warrants that the grinding burrs on coffee grinding equipment will grind coffee to meet original factory screen sieve analysis for three years from date of installation or for 30,000 pounds of coffee, whichever comes first.

This warranty does not apply to any equipment, component or part that was not manufactured by Bunn or that, in Bunn's judgement, has been affected by misuse, neglect, alteration, improper installation or operation, improper maintenance or repair, damage or casualty.

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.

The Buyer shall give 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. If requested by Bunn, the Buyer shall ship the defective equipment prepaid to an authorized Bunn service location. If Bunn determines, in its sole discretion, that the equipment does not conform to the warranty, Bunn shall repair the equipment with no charge for parts during the warranty period and no charge for labor by a Bunn Authorized Service Representative during the warranty period. If Bunn determines that repair is not feasible, Bunn shall, at its sole option, 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, AS SPECIFIED HEREIN, TO REPAIR OR, AT BUNN'S SOLE OPTION, 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.

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 sprayheads.
   Models with electronic control assemblies:
   Place the tank heater switch at the top of the control assembly in the "OFF" position.
   Models with electro/mechanical thermostats:
   Rotate the control thermostat knob fully counterclockwise to the "OFF" position.
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

This brewer must be connected to a cold water system with operating pressure between 20 and 90 psi (138 and 620 kPa) 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 (620 kPa) to reduce it to 50 psi (345 kPa). The water inlet fitting is ¼" flare.

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 and securely attach it to the flare fitting or quick disconnect located on bottom of brewer.
2. Turn on the water supply.

INITIAL SET-UP

CAUTION – The brewer must be disconnected from the power source throughout the initial set-up, except when specified in the instructions.

NOTE: ECA Models Only -This brewer is equipped with a temperature sensor that indicates when to brew and, when selected, locks-out the start of a brew cycle until the water has heated to the optimum brewing temperature.

1. Remove the front panel beneath the sprayhead.
   Models with electronic control assemblies:
   Place the tank heater switch at the top of the control assembly in the "OFF" position.
   Models with electro/mechanical thermostats:
   Rotate the control thermostat knob fully counterclockwise to the "OFF" position.
2. Connect the brewer to the power source. Water will begin flowing into the tank.
3. When water stops flowing into the tank, remove the front panel and proceed as directed:
   Models with electronic control assemblies:
   Place the tank heater switch at the top of the control assembly in the "ON" position and replace the front panel.
   Models with electro/mechanical thermostats:
   Rotate the control thermostat knob fully clockwise to the "ON" position and replace the front panel.

INITIAL SET-UP (cont.)

4. Wait approximately twenty minutes for the water in the tank to heat to the proper temperature.
5. Place an empty server beneath either of the brew stations. Place its associated Selector switch in the desired position, the On/Off switch in the upper position and initiate a brew cycle.
6. Place the On/Off switch in the lower "OFF" position after water has stopped flowing from the funnel, and check the water volume in the server. It should be 64 oz (1/2 gallon), 128 oz (1 gallon), 224 oz (1-3/4 gallon) or adjust volume to your company specifications. On models with **Digital Timers**, refer to *Service* section for adjustments.
   NOTE: Brewer will not operate if the server size does not match the selected batch size.
7. (A) If not, disconnect the brewer from the power source, remove the front panel, and adjust the brew timer for that brew station as required. Replace the front panel, connect the brewer to the power source, allow the water to reheat, start, and measure another brew cycle.
   (B) If necessary adjust the needle valve to achieve desired water volume to be bypassed around the coffee filter in the funnel.
   NOTE: To increase the water bypass turn the needle valve counterclockwise, to decrease the water bypass turn the needle valve clockwise. An adjustment of the needle valve will require a timer adjustment for volume of 1 gallon and 1-3/4 gallon.
8. Repeat step 7 until the proper water volume is achieved.
9. Repeat steps 5 through 8 for the other brew station.
10. The brewer is now ready for use in accordance with the coffee brewing instructions.

OPERATING CONTROLS

BREW SELECTOR SWITCH

Placing the switch in the ½ Gal, 1 Gal, or 1-¾ Gal position selects the amount of coffee to be brewed in subsequent brew cycles. Repositioning this switch after a brew cycle has been initiated does not change the brew batch in progress.

ON/OFF SWITCH

Placing the switch in the unlighted lower position cuts power to the server sensor and stops brewing. Stopping a brew cycle after it has been started will not stop the flow of water from the funnel. Placing the switch in the lighted upper position supplies power to the server sensor and enables the brew circuit.

START SWITCH

Momentarily pressing and releasing this switch starts a brew cycle when the On/Off switch is in the lighted upper position.

GRINDER SELECTOR SWITCH

Pressing the right or left side of the switch selects the corresponding brew station to the grinder interface.

NOTE – The On/Off switch must be in the lighted upper position to initiate and complete a brew cycle.

COFFEE BREWING

1. Select the desired batch size.
2. Insert a BUNN® filter into the funnel.
3. Pour the proper amount of fresh ground coffee into the filter and level the bed of grounds by gently shaking.
4. Slide the funnel into the funnel rails.
5. Place an empty server under the funnel that matches the selected batch size.
6 Place the On/Off switch in the lighted upper position. Momentarily press and release the start switch.
7. 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.

NOTE – In hard water areas, this may need to be done daily. It will help prevent liming problems in the brewer and takes less than a minute.

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 - 240 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 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.
- Disconnect the brewer from the power source when servicing, except when electrical tests are specified.
- Follow recommended service procedures.
- Replace all protective shields or safety notices.

Problem	Probable Cause	Remedy
Equipment will not operate.	1. No power or incorrect voltage.	(A1) Check the terminal block for 120 volts across the red and white terminals and the black and white terminals on 120/208 or 120/240 volt brewers. (A2) Check the terminal block for 200 volts on "B Series" brewers or 240 volts on "A Series" brewers across the red and black terminals. (B) Check circuit breakers or fuses.
Brew cycle will not start.	1. Server	Make sure the server size agrees with the batch selection (.5 gallon = .5 gallon, 1.75 gallon = 1 & 1.75 gallon)
	2. No water	Check plumbing and shut-off valves

TROUBLESHOOTING (cont.)

Problem	Probable Cause	Remedy
Brew cycle will not start (cont.)	3. Water strainer/flow control (.750 GPM)	(A) Direction of flow arrow must be pointing towards brewer. (B) Remove the strainer/flow control and check for obstructions. Clear or replace.
	4. ON/OFF switch	Refer to *Service* - ON/OFF switch for testing procedures. See page 28
	5. Start switch	Refer to *Service* - Start switch for testing procedures. See page 34
	6. Timer	Refer to *Service* - Timer for testing procedures. See page 36 or 38
	7. Dispense Valve	Refer to *Service* - Dispense valve for testing procedures. See page 19
	8. Control Assembly (Electronic)	Refer to *Service* - Control assembly for testing procedures. See pages 20 thru 25
	9. Brew selector switch	Refer to *Service* - Brew selector switch for testing procedures. See page 14
	10. Server sensor	Refer to *Service* - Server sensor for testing procedures. See page 29
Automatic refill will not operate	1. No water	Check plumbing and shut-off valves.
	2. Water strainer/flow control (.750 GPM)	(A) Direction of flow arrow must be pointing towards brewer. (B) Remove the strainer/flow control and check for obstructions. Clear or replace.
	3. Solenoid Valve (Inlet)	Refer to *Service* - Solenoid valve for testing procedures. See page 33

TROUBLESHOOTING (cont.)

Problem	Probable Cause	Remedy
Automatic refill will not operate (cont.)	4. Overflow protection switch	Refer to *Service* - Overflow protection switch for testing procedures. See page 30
	5. (A) Level control board & level probe. (Electro/mechanical controlled)	Refer to *Service* - Level control board for testing procedures. See page 26
	(B) Electronic controls	Refer to *Service* - Electronic controls for testing procedures. See page 20 thru 25
Beverage level will not adjust (Selector switch in any position)	1. Brew Selector switch	Refer to *Service* - Selector switch for testing procedures. See page 14
Water flows into tank continuously .	1. Solenoid valve	Refer to *Service* - Solenoid valve for testing procedures. See page 33
	2. (A) Level control board and level probe (Electro/mechanical)	Refer to *Service* - Level control board for test procedures. See page 26
	(B) Control assembly (Electronic)	Refer to *Service* - Control assembly for testing procedures. See page 20 thru 25
	3. Overflow protection switch	Refer to *Service* - Overflow protection switch for testing procedures. See page 30
Water flows into tank continuously (ON/OFF switch "ON").	1. Timer	Refer to *Service* - Timer for testing procedures. See page 36 or 38
Water from tank is not hot	1. Limit thermostat **CAUTION -** Do not eliminate or bypass limit thermostat. Use only replacement part #23717.0001	Refer to *Service* -Limit thermostat for testing procedures. See page 27
	2. (A) Control Thermostat (Electro/mechanical	Refer to *Service* - Control Thermostat for testing procedures. See page 18

TROUBLESHOOTING (cont.)

Problem	Probable Cause	Remedy
Water from tank is not hot (cont.).	(B) Control assembly (Electronic)	Refer to *Service* - Control assembly for testing procedure. See page 20 thru 25
	3. Contactor (Brewers with Recovery booster)	Refer to *Service* - Contactor for testing procedures. See page 16
	4. Tank heaters	Refer to *Service* - Tank heaters for testing procedures. See page 35
	5. Triac assembly (Electronic)	Refer to *Service* - Triac assembly for testing procedures. See page 24
	6. Relay (Brewers with Recovery Booster)	Refer to *Service* - Relay for testing procedures. See page 31
Spitting or unusual steaming from sprayhead or airvents.	1. (A) Control thermostat (Electro/mechanical)	Refer to *Service* - Control thermostat for testing procedures. See page 18
	(B) Control assembly (Electronic)	Refer to *Service* - Control assembly for testing procedures. See page 20 thru 25
	2. Triac assembly (Electronic)	Refer to *Service* - Triac assembly for testing procedures. See page 24
	3. Lime build-up **CAUTION -** Tank and tank components should be delimed regularly depending on local water conditions. Excessive mineral build-up on stainless steel surfaces can initiate corrosive reactions resulting in serious leaks.	Inspect the tank assembly for excessive lime deposits. Delime as required.
Inconsistent beverage level in server.	1. Strainer/flow control (.750 GPM)	(A) Direction of flow arrow must be pointing towards the brewer. (B) Remove the strainer/flow control and check for obstructions. Clear or replace.

TROUBLESHOOTING (cont.)

Problem	Probable Cause	Remedy
Inconsistent beverage level in server. (cont.)	2. Improper water pressure	Check the operating water pressure to the brewer. It must be between 20 and 90 psi (138 and 620 kPa).
	3. Dispense valve	Refer to *Service* - Dispense valve for testing procedures. See page 19
	4. Bypass valve	Refer to *Initial Set-Up* on page 5 step #7. For test procedure see page 13.
Consistently high or low beverage level in server.	1. Timer adjustment	Adjust the timer as required to achieve the recommended volume for each brew cycle.
Dripping from sprayhead.	1. Dispense valve	Refer to *Service* - Dispense valve for testing procedures. See page 19
Water overflows filter.	1. Bypass valve	Refer to *Initial Set -Up* on page 5 step #7. For test procedures see page 13.
	2. Needle Valve	Refer to *Initial Set-Up* on Page 5 step #7.
	3. Type of paper filters	. BUNN® paper filters should be used for proper extraction.
	4. No sprayhead	Check sprayhead
Beverage overflows server	1. Beverage left in server	The brew cycle should be started only with an empty server under the funnel.
	2. Timer adjustment	Adjust the timer as required to achieve the recommended volume for each brew cycle. Refer to *Service* - Timer for testing procedures. See page 36 or 38
	3. Dispense valve	Refer to *Service* - Dispense valve for testing procedures. See page 19

TROUBLESHOOTING (cont.)

Problem	Probable Cause	Remedy
Weak beverage	1. Type of paper filters	BUNN® paper filters should be used for proper extraction.
	2. Coffee	A sufficient quantity of fresh drip or regular grind should be used for proper extraction.
	3. Sprayhead	B.O.M. sprayhead #01082.0002 should be used to properly wet the bed of ground coffee in the funnel.
	4. Funnel loading	The BUNN® paper filter should be centered in the funnel and the bed of ground coffee leveled by gentle shaking.
	5. Water temperature	Empty the server, remove its cover. Place empty funnel over the server entrance, with ON/OFF switch in the "ON" position press the start switch and release it. Check the water temperature immediately below the sprayhead with a thermometer. The reading should not be less than 195° F (76° C).
Brewer is making unusual noises.	1. Solenoid (Inlet)	The nut on back of the solenoid must be tight or it will vibrate during operation
	2. Plumbing lines	Plumbing lines should not be resting on the counter top.
	3. Water supply	(A) The brewer must be connected to a cold water line. (B) Water pressure to the brewer must not be higher than 90 psi (620 kPa). Install a regulator if necessary to lower the working pressure to approximately 50 psi (345 kPa).
	4. Tank Heaters	Remove and clean lime off tank heaters.
	5. Contactor	Check for low voltage

SERVICE

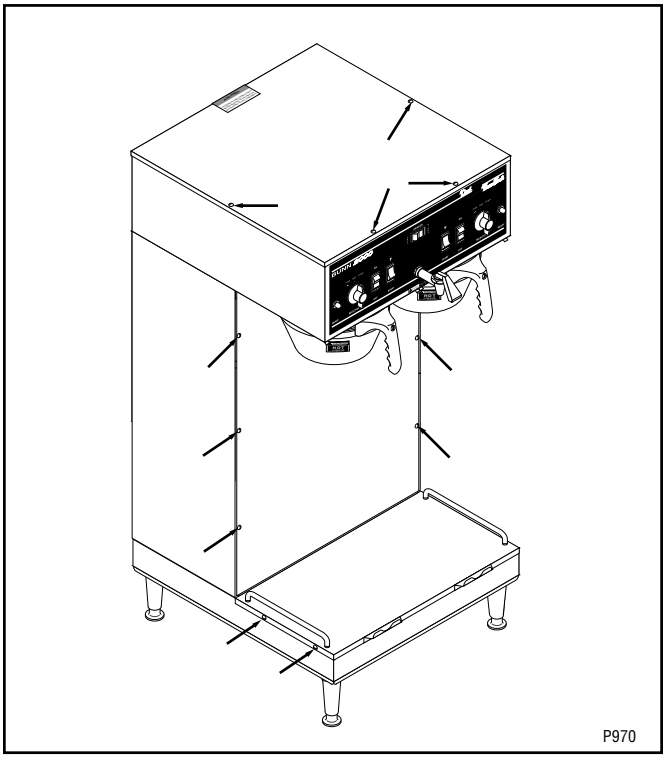
This section provides procedures for testing and replacing various major components used in this brewer should service become necessary. Refer to *Troubleshooting* for assistance in determining the cause of any problem.

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

WARNING - Unplug the brewer before the removal of any panel or the replacement of any component.

All components are accessible by the removal of the top cover, front inspection panel and server platform.



The top cover is attached with four #4-40 slotted head screws.

The front inspection panel is attached with seven #6-32 slotted head screws.

The sever platform is attached with four #6-32 slotted head screws.

Contents

Brew Selector Switch 14
Bypass Valve 13
Contactor Assembly 16
Control Thermostat 18
Dispense Valve 19
Electronic Control ..... 20 thru 25
Grinder Selector Switch 25
Level Control Board and Level Probe 26
Limit Thermostat 27
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Overflow Protection Switch 30
Relay 31
Server Sensor 29
Solenoid 33
Start Switch (Brew) 34
Tank Heaters 35
Timers 36,38
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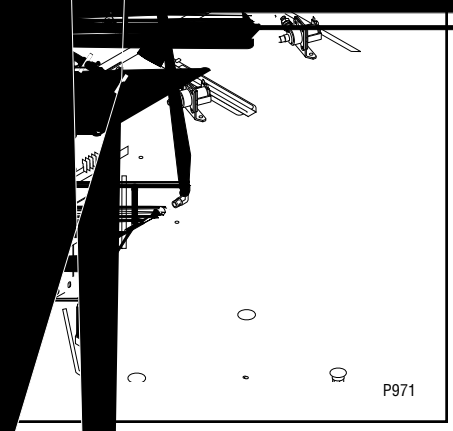


valves e located inside the right
enter fro of the hood.

res:

ect the brew from the power source and
3/4 gallon s ver under funnel.
nect the whit green wire and the white/
wire on the by ass valve.
CA MODELS O LY - Brewer must be at
rating temperatu to perform step #3 or brew-
k must be bypa sed. To bypass brew-lock
sconnect white/ora ge and brown/black for right
mer or orange and ed/black for left timer from
brew-lock of ECA an connect harness leads to-
gether.
Check the voltage ac oss the white/green and the white/violet wires wi h a voltmeter. Connect the brewer to the power source. With the "ON/OFF" switch in the "ON' position, the selector switch in the 1 or 1-3/4 gallon position press the start switch. The indication must be:

a.) 120 volts ac for three wire 120/208 volt models and three wire 120/240 volt models.
b.) 200 to 240 volts ac for two wire 200 or 240 volt models.

4. Disconnect the brewer from the power source.

If voltage is n

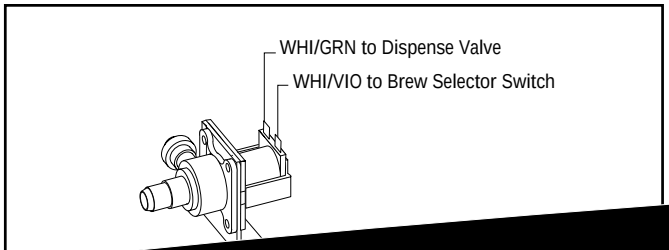
If continuity is not present as described, replace the bypass valve.

6. Check the bypass valve for coil action. Connect brewer to the power source. With the "ON/OFF" switch in the "ON" position press the start switch. Listen carefully in the vicinity of the by-pass valve for a "clicking" sound as the coil attracts and repels the plunger.

If the sound is heard as described, there may be a blockage in the water line before the bypass valve or the bypass valve may require inspection for wear and removal of waterborne particles.
If the sound is not heard as described, replace the bypass valve.

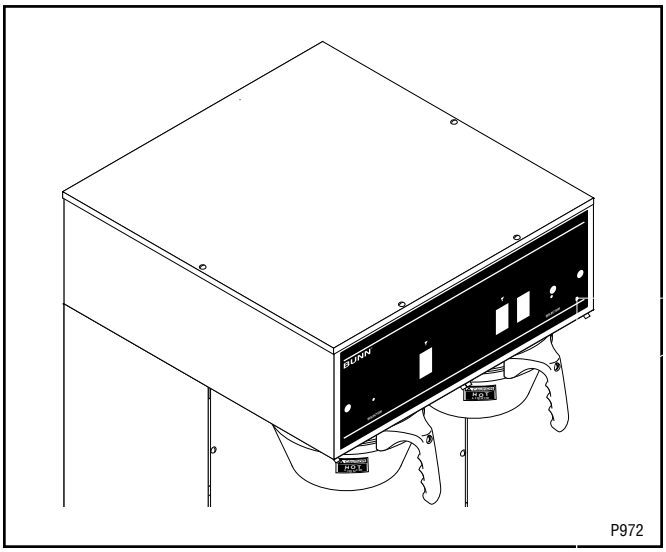
Removal and Replacement:

1. Remove the wires from the bypass valve.
2. Drain enough water from the tank so bypass valve is above the water line.
3. Remove water lines from bypass valve.
4. Remove the two nuts retaining the bypass valve inside the hood and remove bypass valve.
5. Remove hose barb fitting and attach to new by-pass valve.
6. Install new bypass valve with hose barb fitting.
7. Reconnect the water tubes and the wires to the bypass valve.
8. Refer to the illustration below when reconnecting the wires.



SERVICE (cont.)

BREW SELECTOR SWITCH



Location:

The brew selector switches are located in the front left and right side of the hood.

Test Procedure:

Timer: Left or Right

1. Disconnect the brewer from the power supply.
2. Separate the connector on the selector switch harness from the brew timer circuit board.
3. Carefully slide the plastic cover off of the connector from the switch harness.
4. Check for continuity across the pink and tan wires on the connector when the switch is in the 1/2 gallon position. Continuity must not be present in any other switch position.
5. Check for continuity across the pink wire and gray wire when the switch is in the 1 gallon position. Continuity must not be present in any other position.
6. Reattach the connector to the brew timer circuit board.

Grinder Interface: Left or Right:

7. Disconnect the gray and tan wires on the selector switch from the gray and tan wires on the interface socket.
8. Disconnect the pink wire on the selector switch from the grinder switch.
9. Check for continuity across the pink wire and tan wire on the selector switch when the switch is in the 1/2 gallon position. Continuity must not be present in any other position.
10. Check for continuity across the pink wire and gray wire on the selector switch when the switch is in the 1 gallon position. Continuity must not be present in any other position.
11. Reconnect the gray and tan wire on the selector switch to the gray and tan wires on the interface socket.
12. Reconnect the pink wire on the selector switch to the grinder switch.

Bypass Valve: Left or Right

13. Disconnect the white/violet on the selector switch from the bypass valve coil and disconnect the white/red from the dispense valve coil.
14. Check for continuity across the white/violet and the white/red wires when the selector is in the 1 gallon and 1-3/4 gallon position. Continuity must not be present in any other position.
15. Reconnect the white/violet to the bypass valve coil and white/red to the dispense valve coil.

Server Sensor: Left or Right

16. Disconnect the yellow, white/orange and the orange wires on the selector switch from the yellow, white/orange and orange wires of the brewer wiring harness.
17. Check for continuity across the white/orange and yellow wires on the selector switch when the switch is in the 1/2 gallon position. Continuity must not be present in any other position.
18. Check for continuity across the white/orange and orange wires of the selector switch when the switch is in the 1 gallon and 1-3/4 gallon position. Continuity must not be present in any other position.
19. Reconnect the yellow, white/orange and orange wires.

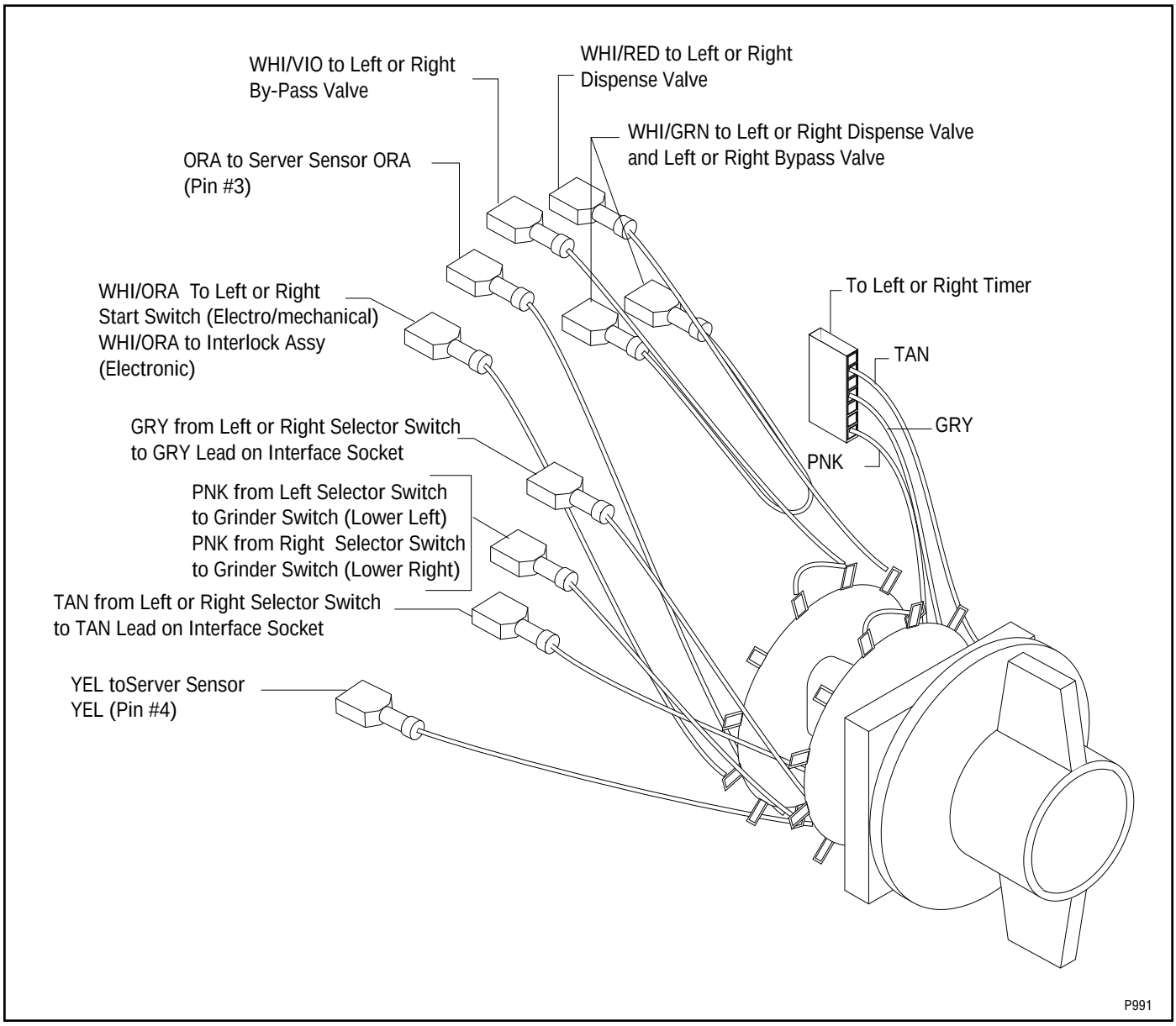
Removal and Replacement:

1. Disconnect the connector on the selector switch harness from the brewer timer circuit board.
2. Disconnect wires from the selector switch, interface socket, dispense valve, bypass valve and proximity sensor harness.
3. Loosen the set screw on the switch knob.
4. Remove the 9/16" nut and washer holding the switch to the hood.
5. Remove the switch.

SERVICE (cont.)

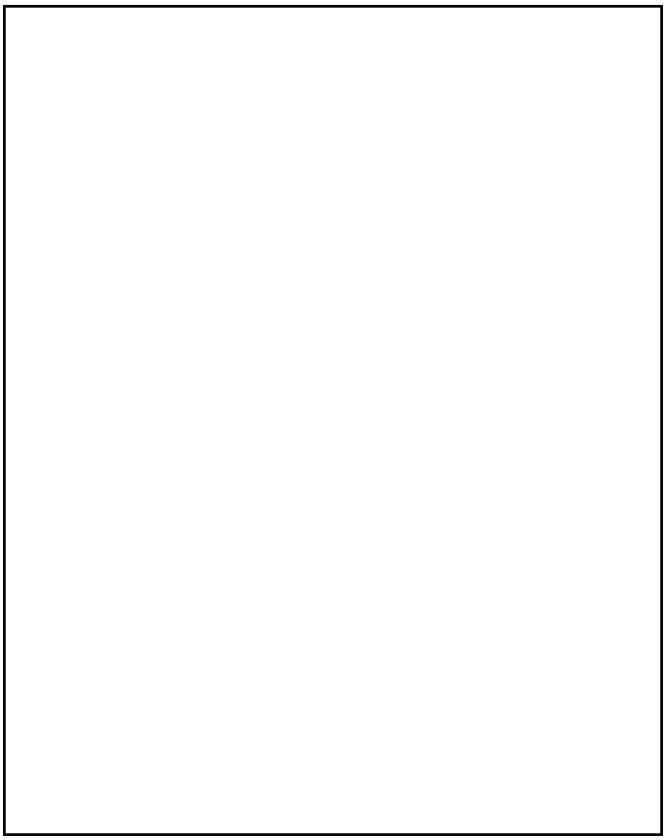
BREW SELECTOR SWITCH (cont.)

6. Install the new switch. The positioning tab must be in the hole in the hood for proper switch and knob alignment.
7. Install the knob so that the arrow points to the 1-3/4 gallon position when the switch is turned to the full right position.
8. Reattach the connector to the brew timer circuit board.
9. Refer to the illustration below when reconnecting the wires.



SERVICE (cont.)

CONTACTOR ASSEMBLY



Location:

The contactor assembly is located inside the hood just to the rear of the right dispense valve.

Test Procedures:

Mechanical Thermostat (Brewers with or without Recovery Booster)

1. Disconnect the brewer from the power source.
2. Disconnect the red wire of the two pole 200V or 240V terminal block or the white wire of the three

2Pe.o8 apnaa2u(24ger mnal bwer er))Tj TD-0.0402 ect tla blred wire of The contaccoil andight(Disconer))Tj

2.Pacross or the white wwer frome or

SERVICE (cont.)

CONTACTOR ASSEMBLY (cont.)

Test Procedures :

Electronic Control (Brewers w/Recovery Booster)

1. Disconnect the brewer from the power source.
2. Disconnect the gray wire from the black wire on the contactor coil and white /brown wire from the remaining black wire on the contactor coil.

NOTE: ECA MODELS ONLY - Brewer must be at operating temperature to perform step #3 or brew-lock must be bypassed. To bypass brew-lock disconnect white/orange and brown/black for right timer or orange and red/black for left timer from brew-lock of ECA and connect harness leads together.

3. Check the voltage across the gray wire and white/brown with a voltmeter with both "ON/OFF" switches in the "ON" position. Connect the brewer to the power source and press both start switches. The indication must be:
   a.) 120 volts ac for three wire 120/208 volt models and three wire 120/240 volt models.
   b.) 200 to 240 volts ac for two wire 200 or 240 volt models.
4. Disconnect the brewer from the power source.

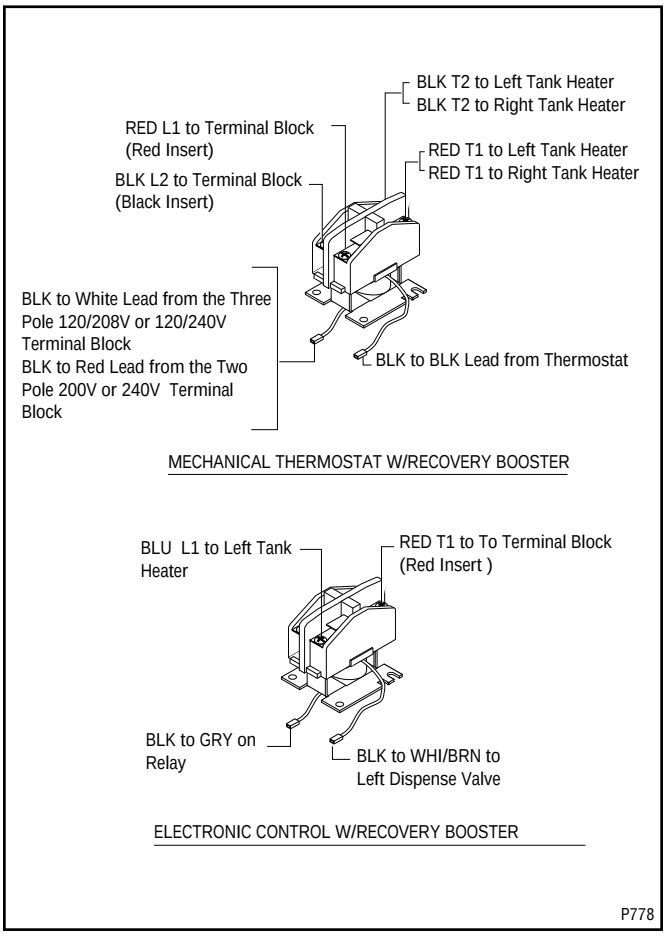
If voltage is present as described, proceed to #5.
If voltage is not present as described, refer to the wiring diagrams and check the brewer wiring harness.

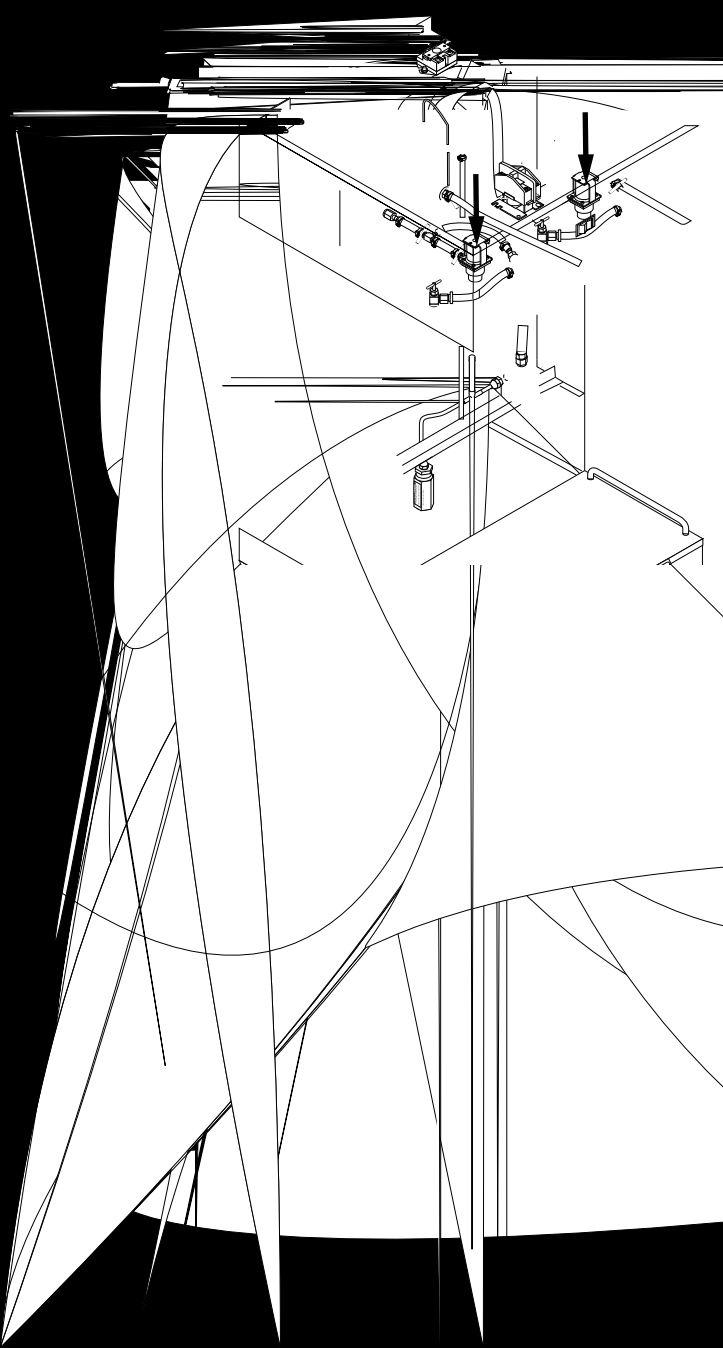
5. Disconnect the blue and red wires from the contactor terminals. Check for continuity across the terminals of the contactor by manually closing the contacts. Continuity must not be present when the contact is released.

If continuity is present as described, reconnect the blue and red wires to the contactor terminals. Connect one black lead from the contactor coil to the gray wire and the white/brown wire to the remaining black lead of the contactor coil. Reconnect brew-lock wires to interlock of the ECA if necessary. The contactor is operating properly.
If continuity is not present as described, replace the contactor.

Removal and Replacement:

1. Remove all wires from the contactor.
2. Remove the two #10-32 slotted head screw securing contactor to the inside of the hood.
3. Securely install the new contactor inside the hood.
4. Refer to the following illustration when reconnecting the wires.





5. Disconnect brewer from pow

If voltage is present as descri
proceed to #6.
If voltage is not present as de
wiring diagrams and check the b

6. Check for continuity across
   terminals.

If continuity is present as d
wires to the dispense val
sary and proceed to #7
If continuity is not pres
dispense valve.

7. Check the dispense
   the brewer to powe
   switch in the "ON" pos
   start switch. Listen ca
   dispense valve for a "c
   magnet attracts and rep
8. Disconnect the brewer fr

If the sound is heard as des
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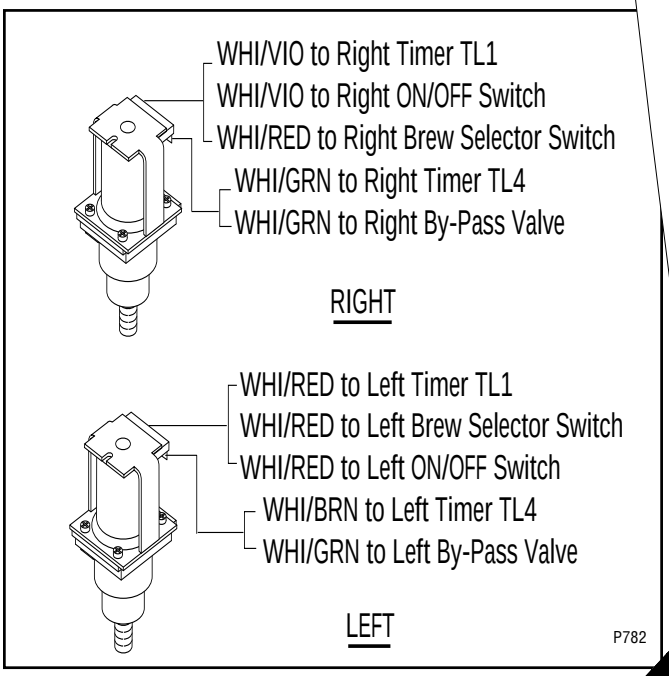
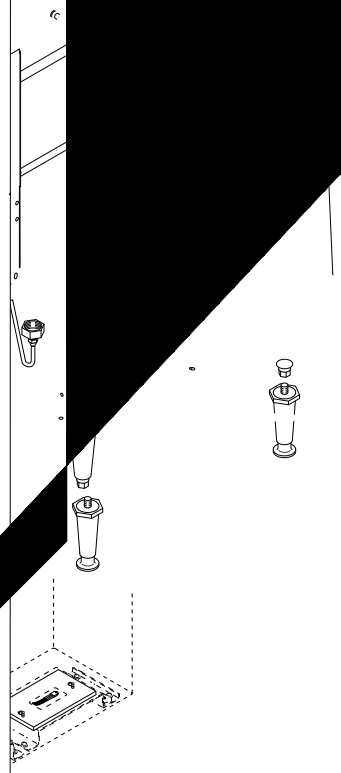
spect for wear, and remove wa
If the sound is not heard as d
dispense valve.

SERVICE (cont.)
DISPENSE VALVE (cont.)





ELECTRONIC CONTROL ASSEMBLY

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10. Recovery Booster Relay
11. Contactor Assembly
12. Bypass Valve
13. Ready Light
14. Solenoid Valve
15. LED
16. Temperature adjustment
17. Triac Assy
18. Server Sensor

SERVICE (cont.)

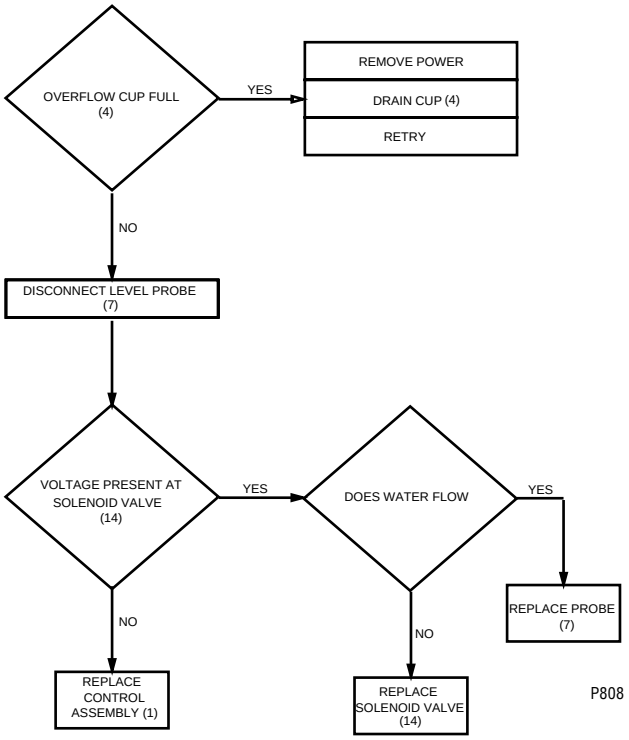
ELECTRONIC CONTROL ASSEMBLY (cont.)

BREW START- LOCK

The water must be heated to the preset temperature indicated by the glowing ready light before a brew cycle can be initiated.

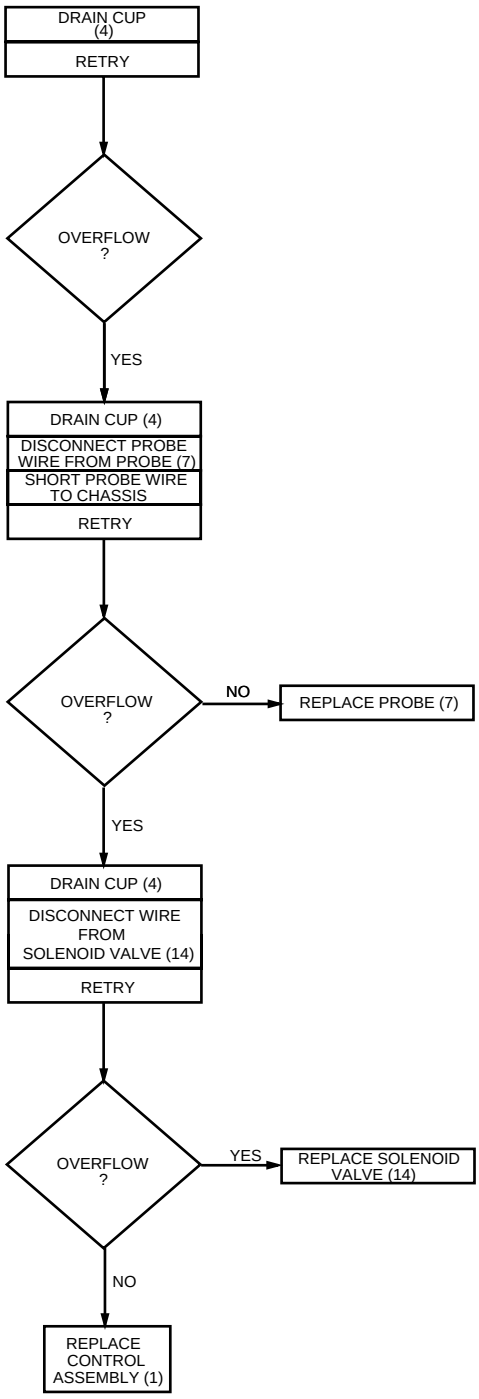
If the ready light goes out during a brew cycle, the cycle will continue until it is completed. You must wait until the ready light glows before starting another brew cycle.

PROBLEM:
LIQUID LEVEL CONTROL SYSTEM DOES NOT REFILL



P808

PROBLEM:
LIQUID LEVEL CONTROL OVERFLOWS



P809

Liquid Level Control Test Procedure:

1. Disconnect brewer from the power source.
2. Check the voltage across terminals 3 & 4 of the electronic control assembly (1) with a voltmeter. Connect brewer to power source. The indication must be:
   a.) 208 volts ac for three wire 120/208 volt models and 240 volts ac for three wire 120/240 volt models.
   b.) 200 to 240 volts ac for two wire 200 or 240 volt models.

SERVICE (cont.)

ELECTRONIC CONTROL ASSEMBLY (cont.)

3. Disconnect brewer from the power source.

If voltage was present as described, proceed to #4.
If voltage was not present as described, refer to the wiring diagrams and check the brewer wiring harness.

4. Remove the pink wire from terminal 5 of the electronic control assembly (1).
5. Check the voltage across terminals 1 & 4 of the electronic control assembly (1) with a voltmeter. Connect brewer to the power source. The indication must be:
   a.) 208 volts ac for three wire 120/208 volt models and 240 volts ac for three wire 120/240 volt models after a delay of approximately 1 second.
   b.) 200 to 240 volts ac for two wire 200 or 240 volt models after a delay of approximately 1 second.
6. Disconnect the brewer from the power source.

If voltage was present as described, the liquid level control system is operating properly, proceed to #7.
If voltage was not present as described, replace the electronic control assembly (1) and temperature sensor (8) in the tank lid.

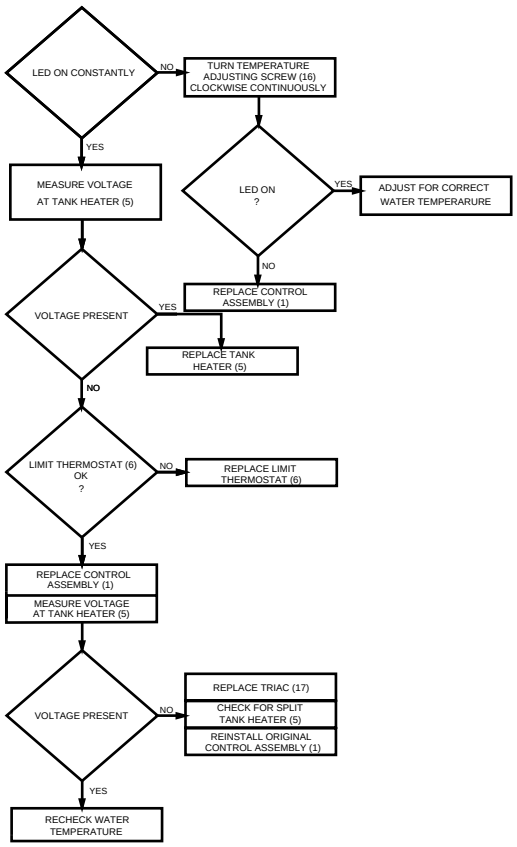
NOTE - each electronic control assembly is calibrated to a temperature sensor. Both components MUST be replaced as a set.

7. Reconnect the pink wire to terminal 5 of the electronic control assembly (1).
8. Remove the liquid level probe (7) from the tank lid, and inspect it for mineral deposits. Replace it if necessary. Keep the exposed ends of the probe away from any metal surface of the brewer.
9. Check the voltage across terminals 1 & 4 of the electronic control assembly (1) with a voltmeter. Connect the brewer to the power source. The indication must be:
   a.) 208 volts ac for three wire 120/208 volt models and 240 volts ac for three wire 120/240 volt models after a delay of approximately 1 second.
   b.) 200 to 240 volts ac for two wire 208 or 240 volt models after a delay of approximately 1 second.
10. Touch the screw head end of the probe to the brewer housing. The indication must be 0.
11. Move the probe away from the brewer housing. The indication must again be:
   a.) 208 volts ac for three wire 120/208 volt models and 240 volts ac for three wire 120/240 volt models after a delay of approximately 1 second.
   b.) 200 to 240 volts ac for two wire 200 or 240 volt models after a delay of approximately 1 second.
12. Disconnect the brewer from the power source.

If voltage was present as described, reinstall the probe, the sensing function of the system is operating properly.
If voltage was not present as described, check the pink probe wire and the green ground wire for continuity and/or replace the probe.

<u>Temperature Control Flow Charts</u>

PROBLEM:
WATER NOT HOT ENOUGH

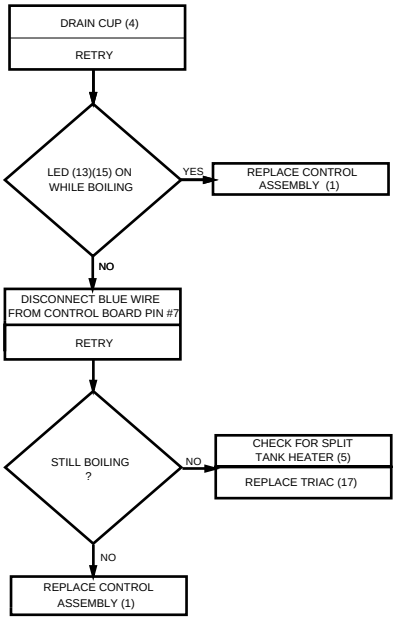


P810

SERVICE (cont.)

ELECTRONIC CONTROLS (cont.)

PROBLEM:
WATER BOILS



P811

Temperature Control Test Procedure

1. Disconnect the brewer from the power source.
2. Check the voltage across terminals 3 & 4 of the electronic control circuit board with a voltmeter. Connect the brewer to the power source. The indication must be:
   a.) 208 volts ac for three wire 120/208 volt models and 240 volts ac for three wire 120/240 volt models.
   b.) 200 to 240 volts ac for two wire 200 or 240 volt models.
3. Disconnect the brewer from the power source.

If voltage was present as described, proceed to #4.
If voltage was not present as described, refer to the wiring diagrams and check the brewer wiring harness.

4. Connect the brewer to the power source and place the tank heater switch in the "ON" position.
5. Observe the red indicator on the electronic control circuit board (15).
6. Disconnect the brewer from the power source.

If the indicator was on or blinking, the temperature sensor is operating properly, proceed to #7.
If the indicator was off, check the sensor connection on the electronic control circuit board and/or replace the temperature sensor (8) and the electronic control assembly (1).

NOTE - each temperature sensor is calibrated to an electronic control assembly. Both components MUST be replaced as a set.

7. Check the voltage across the tank heater (5) terminals with a voltmeter. Connect the brewer to the power source. The indication must be:
   a.) 208 volts for three wire 120/208 volt models and 240 volts for three wire 120/240 volt models while the red indicator on the circuit board is on or blinking.
   b.) 200 to 240 volts ac for two wire 200 or 240 volt models while the red indicator on the circuit board is on or blinking.
8. Disconnect the brewer from the power source.

If voltage was present as described, the temperature control of the system is operating properly.
If voltage was not present as described, contact Bunn-O-Matic to order an electronic control assembly (1), temperature sensor (8), and triac assembly (17) for revaluation and proceed to #9.

9. Replace the electronic control assembly (1) and temperature sensor (8).

NOTE - each electronic control assembly is calibrated to a temperature sensor. Both components MUST be replaced as a set.

10. Check the voltage across the tank heater terminals (5) with a voltmeter. Connect the brewer to the power source. The indication must be:
    a.) 208 volts ac for three wire 120/208 volt models and 240 volt ac for three wire 120/240 volt models while the red indicator on the circuit board is on or blinking.
    b.) 200 to 240 volts ac for two wire 200 or 240 volt models while the red indicator on the circuit board is on or blinking.
11. Disconnect the brewer from the power source.

If voltage was present as described, return the new triac assembly (17) to Bunn-O-Matic for credit. The temperature control of the system is operating properly.
If voltage was not present as described, reinstall your existing electronic control assembly (1) and temperature sensor (8), and proceed to #12.

12. Replace the triac assembly (17).

SERVICE (cont.)
ELECTRONIC CONTROL ASSEMBLY (cont.)

13. Check the voltage across the tank heater terminals (5) with a voltmeter. Connect the brewer to the power source. The indication must be:
    a.) 208 volts ac for three wire 120/208 volt models and 240 volts ac for three wire 120/240 volt models while the red indicator on the circuit board is on or blinking.
    b.) 200 to 240 volts ac for two wire 200 or 240 volt models while the red indicator on the circuit is on or blinking.
14. Disconnect the brewer from the power source.

If voltage was present as described, the temperature control of the system is operating properly. Return the new electronic control assembly (1) and temperature sensor (8) to Bunn-O-Matic for credit.

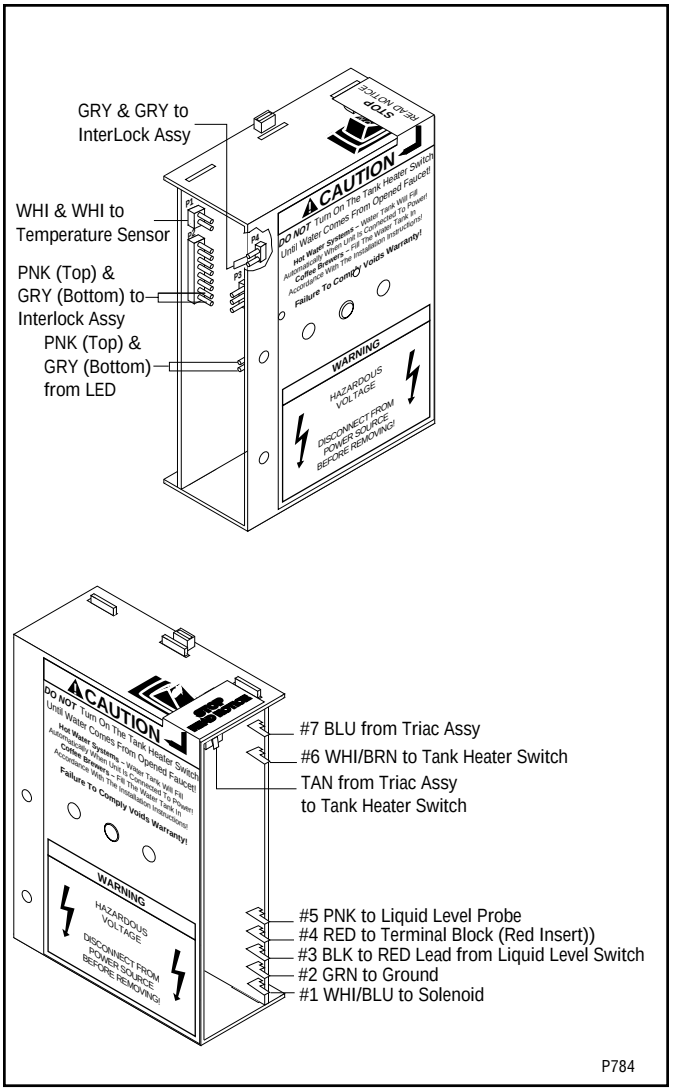
Electronic Controls Removal and Replacement

NOTE - each electronic control assembly is calibrated to a temperature sensor. Both components MUST be replaced as a set.

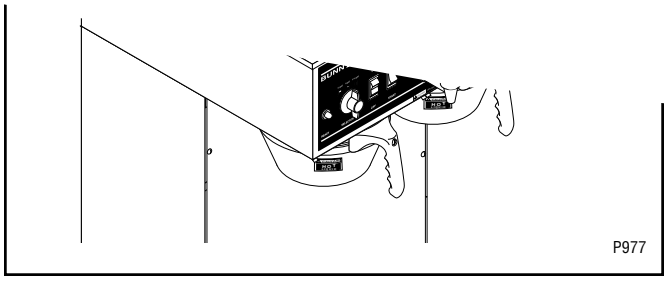
1. Remove all wires from the electronic control assembly terminals.
2. Remove the two 8-32 screws holding the electronic control assembly to the component bracket.
3. Disconnect the temperature sensor and ready indicator wires from the left side of the electronic control assembly board.
4. Remove the temperature sensor from the grommet in the tank lid.
5. Install the new temperature sensor into the grommet on the tank lid. Route the wires to the location of the new electronic control assembly.
6. Attach the temperature sensor and ready indicator wires to the electronic control assembly.
7. Fasten the new electronic control assembly to its bracket.
8. Reconnect the wires.
9. Refer to the following illustration when reconnecting the wires.
10. Review the initial set-up procedures and adjust the control as required for the desired temperature.

Triac Assembly Removal and Replacement

NOTE - each triac installation requires the use of an approved silicone heat sink compound. Bunn-O-Matic recommends the use of Dow Corning 340 compound or equivalent. It can be purchased direct from Bunn-O-Matic (part number M2522.0002).



1. Place the tank heater switch on the electronic control assembly in the “OFF” position.
2. Completely drain the tank.
3. Place a stryofoam or wood block between the center of the tank and the rear of the brewer.
4. Disconnect triac wires, white/violet from terminal block, blue from right tank heater, blue from electronic control and tan from tank heater switch.
5. Carefully set the brewer on its back.
6. Remove the two 2" dia hole plugs from the bottom cover.
7. Remove the four #10-32 keps nut securing tank to tank mounting bracket.
8. Remove the twelve #8-32 slotted head screws securing the bottom cover.
9. Remove the bottom cover with the four feet, the tank mounting brackets, triac/heat sink as an assembly.



P977

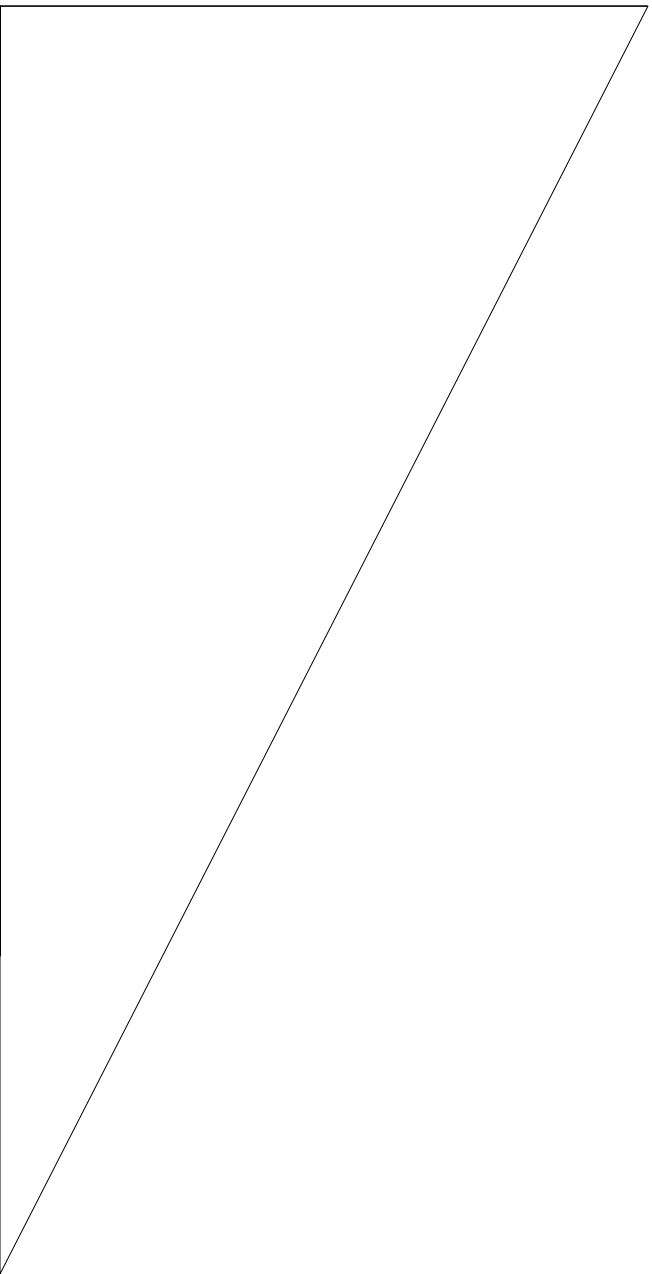
PNK to PNK Lead from Interface Socket

PNK to PNK Lead from
Left Brew Selector Switch

P787

Location:

Located in the



SERVICE (cont.)

LEVEL CONTROL BOARD AND LEVEL PROBE (Electro/mechanical only) (cont.)

els and three wire 120/240 volt models.

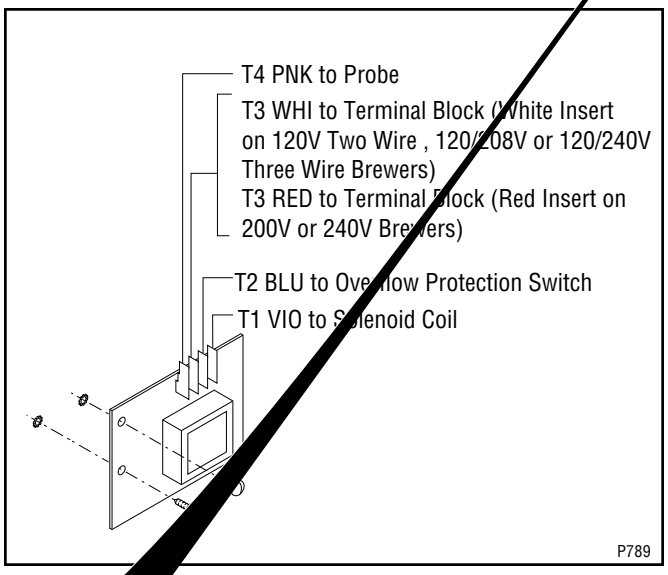
b.) 200 to 240 volts ac for two wire 200 or 240 volt models.

17. Disconnect the brewer from the power source.

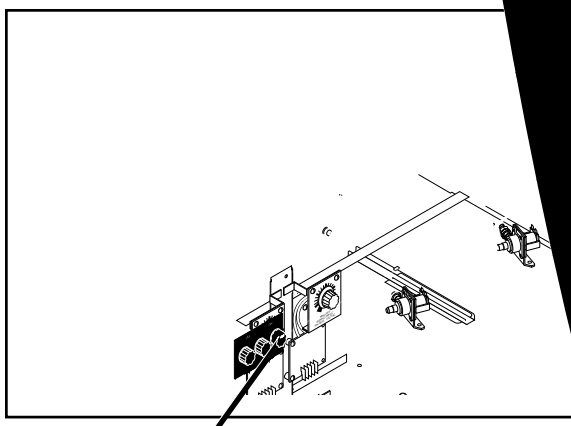
If voltage is present as described, reinstall the probe, the level control board and level probe are operating properly.
If voltage is not present as described, check the pink probe wire for continuity.

Removal and Replacement:

1. Remove all wires from the level control board.
2. Remove two #8-32 slotted head screws holding level control board to component bracket.
3. Install the new level control board to the component bracket. Make certain that the lockwashers are between the level control board and the component bracket.
4. Refer to the illustration below when reconnecting the wires.



LIMIT THERMOSTAT



Location:

The limit thermostat is located inside the h on the tank lid just to the left of the right tank hea

Test Procedure:

1. Disconnect the brewer from the power supply.
2. Disconnect the black wires from the limit thermostat.
3. Check continuity across the limit thermostat terminals with an ohm meter

If continuity is present as described, reconnect the black wires to the limit thermostat, the limit thermostat is operating properly.
If continuity is not present as described, press the reset button on the limit thermostat and repeat step #3. After repeating step #3 no continuity is shown, replace the limit thermostat.

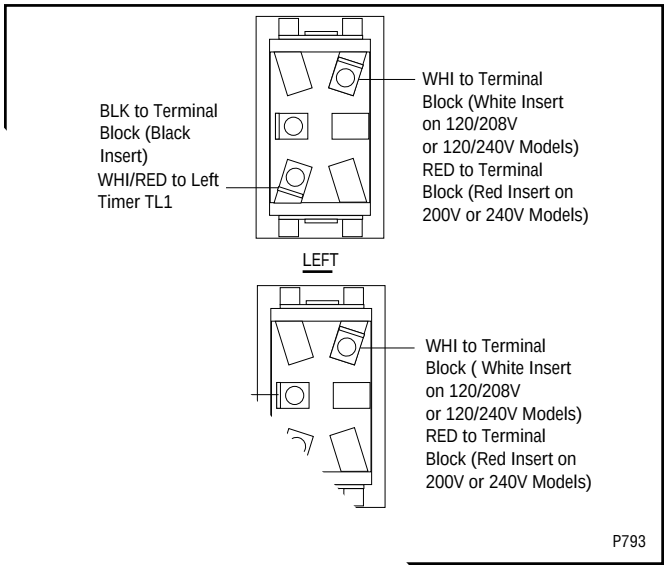
Removal and Replacement:

1. Remove all wires from the limit thermostat terminals.
2. Carefully remove the two #8-32 nuts securing the limit thermostat to tank lid and remove limit thermostat.
3. Carefully secure new limit thermostat to tank lid.
4. Refer to the illustrations below when reconnecting the wires.

SERVICE (cont.)

ON/OFF SWITCH

front
art
4. Refer to the illustration below when reconnecting the wires.



voltage is present as described, reconnect the white or the red 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 white/red wire on the left switch or the white/violet wire on the right switch from the lower left terminal.

SERVICE (cont.)

SERVER SENSOR (cont.)

3. Check for continuity across the overflow protection switch red wires only until the plastic float is raised and check that continuity returns when the plastic float is again lowered.

If continuity is present as described, reconnect the red wires to the blue wire from the thermostat or black wire from electronic control assembly and the black wire from terminal block.
If continuity is not present as described, replace the overflow protection switch.

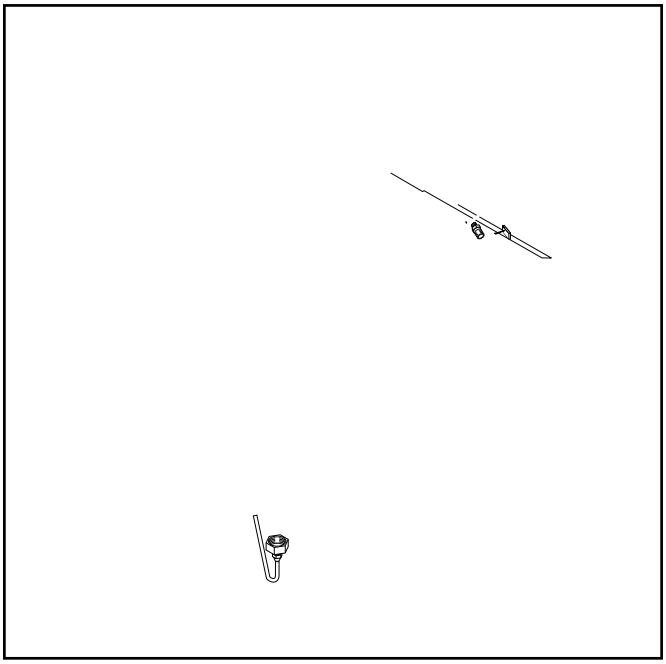
Removal and Replacement:

1. Disconnect the red leads from the overflow protection switch from the blue wire from the thermostat or black wire from electronic control assembly and the black wire from the terminal block.
2. Remove the nut beneath the copper overflow cup.
3. Remove the entire switch assembly from the cup.
4. Place the new switch assembly into the cup, wires first. Make sure that the gasket is in place around the threaded switch stem.

NOTE - The magnets must be at the top of float and there must be NO adjusting washers installed for the overflow protection switch to operate properly.

5. Install the nut beneath the copper overflow cup. Be sure not to overtighten.
6. Refer to the illustration below when reconnecting wires.

OVERFLOW PROTECTION SWITCH



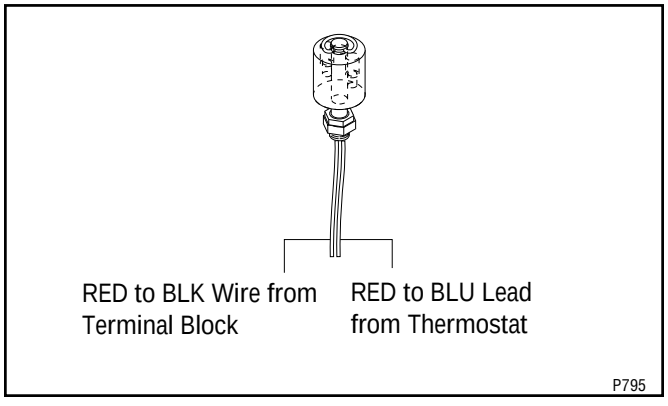
Location:

The overflow protection switch is located inside the hood on the center of the tank inside the copper overflow cup.

To test the overflow protection switch, access will also be needed to the level control board or electronic control assembly and terminal block.

Test Procedure:

1. Disconnect the brewer from the power source.
2. Remove the wire nuts connecting the red wires from the overflow protection switch to the black wire from the terminal block and blue wire from the thermostat or the black wire from the electronic control assembly.



SERVICE (cont.)
Relay (Brewers W/Recovery Booster) (cont.)

1. Disconnect brewer from the power source and place both selector switches in the 1/2 gallon position.
2. Locate the gray wire on terminal 7 and the white/green wire on terminal B of the relay.
3. Check the voltage across the gray and white/green wire with left and right "ON/OFF" switch in the "ON" position. Connect the brewer to the power source and press the left and right start switch. The indication must be:
   a.) 120 volts ac for three wire 120/208 volt models and three wire 120/240 volt models.
   b.) 200 to 240 volts ac for two wire 200 or 240 volt models.
4. Disconnect brewer from the power source.

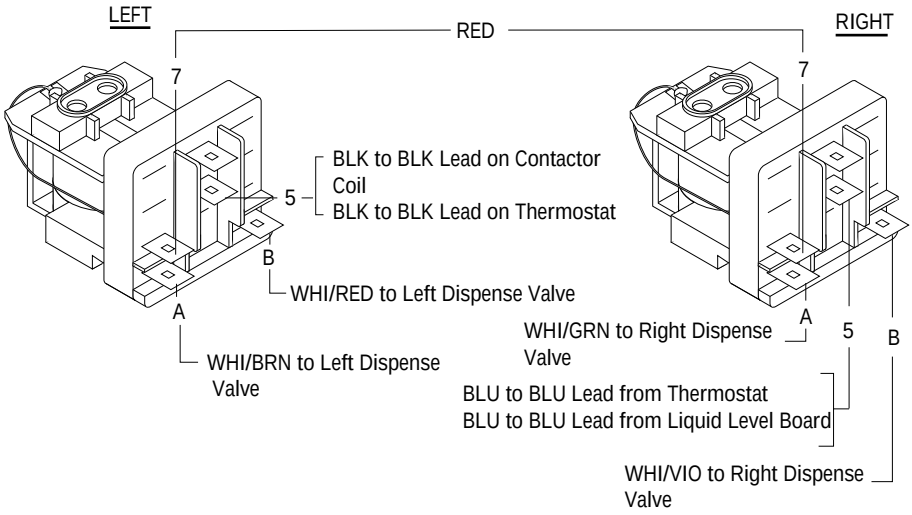
If voltage is present as described, proceed to #5.
If voltage is not present as described, refer to the wiring diagrams and the check brewer wiring harness.

5. Locate the white/red wire on the relay terminal 5 and the gray wire relay terminal 7.
6. Check for continuity across the relay terminals 5 and 7 by manually closing relay contact. Continuity must not be present when contact is released.

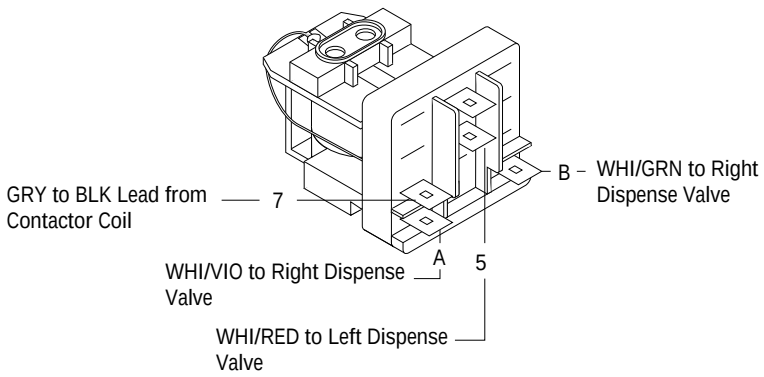
If continuity is present as described, reconnect the brew-lock if necessary, the relay is operating properly. If continuity is not present as described, replace the relay.

Removal and Replacement:

1. Remove all wires from relay terminals.
2. Remove the #8-32 slotted screw holding relay mounting bracket to the hood.
3. Remove the relay from the mounting bracket.
4. Securely install the new relay to the mounting bracket.
5. Install the relay mounting to the hood.
6. Refer to the illustration below when reconnecting the wires.

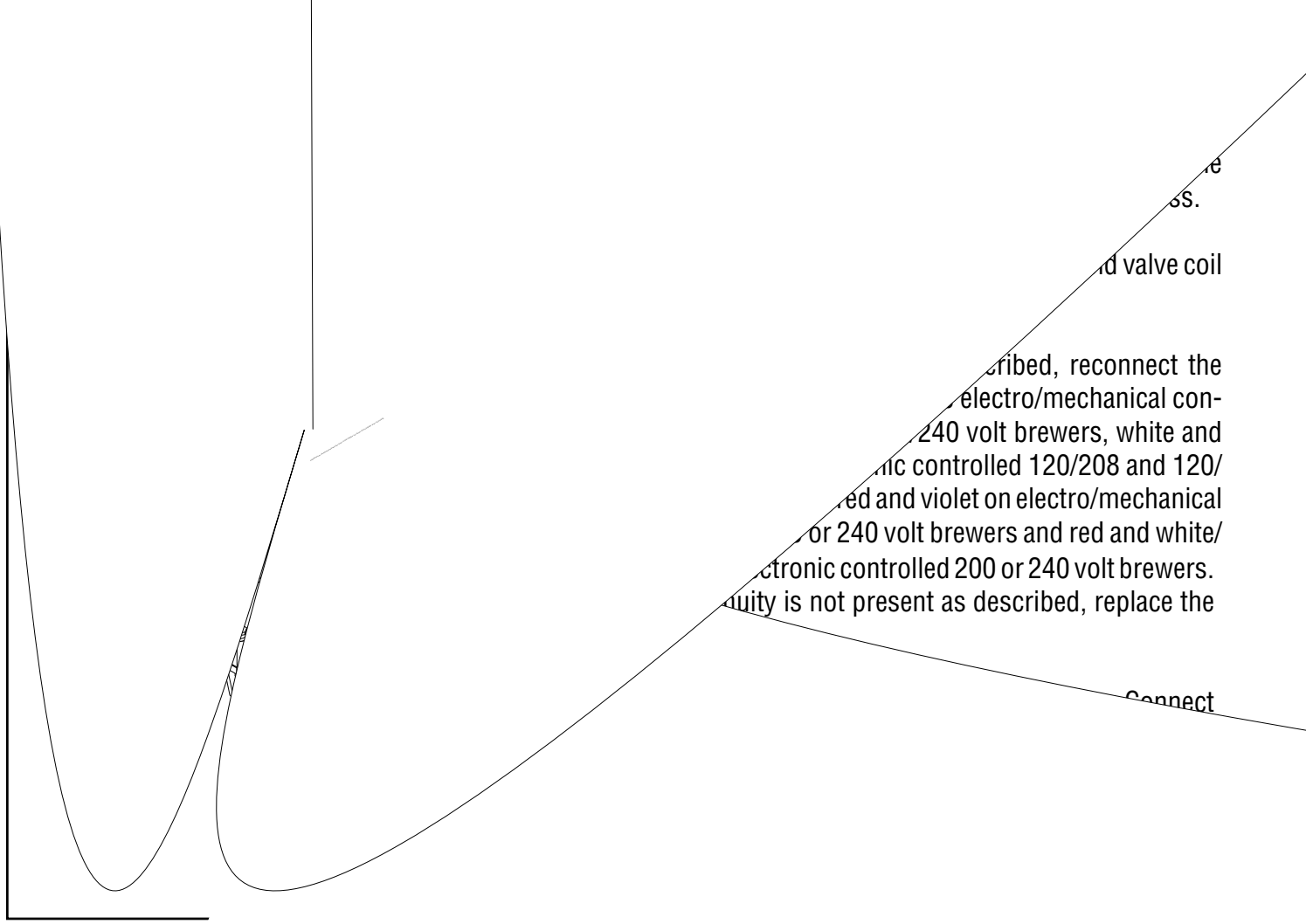


MECHANICAL THERMOSTAT W/RECOVERY BOOSTER



ELECTRONIC CONTROL W/RECOVERY BOOSTER

P797



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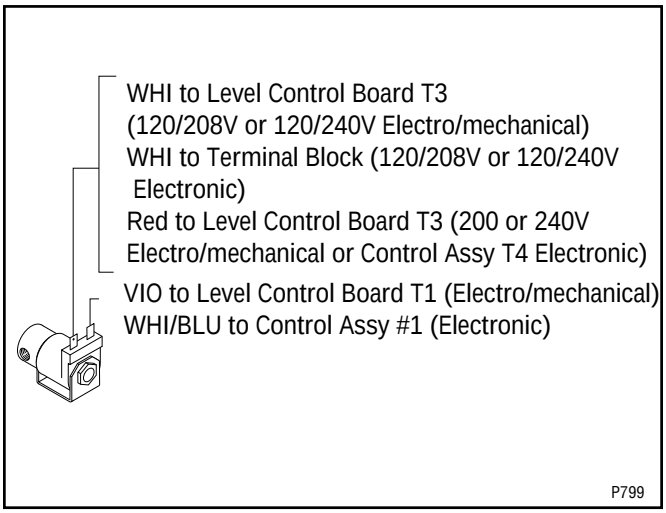
SERVICE (cont.)

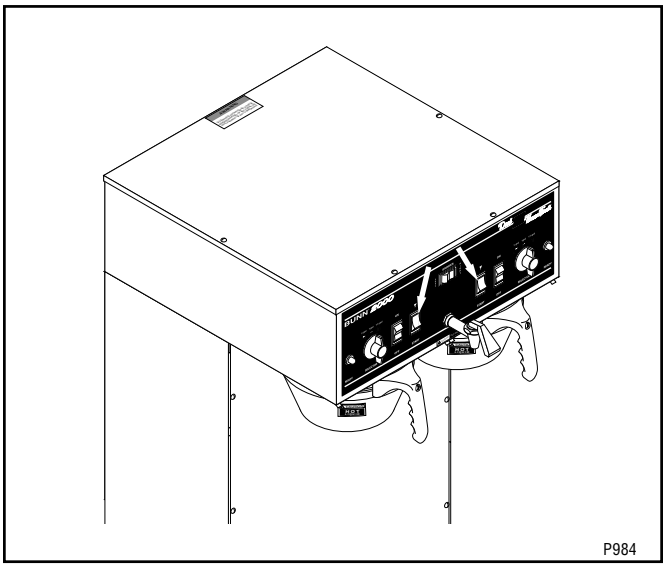
SOLENOID VALVE (Inlet) (cont.)

solenoid valve.

10. Refer to the illustration below when reconnecting the wires.



START SWITCHES



Location:

The momentary start switches are located in front of hood just left and right of center.

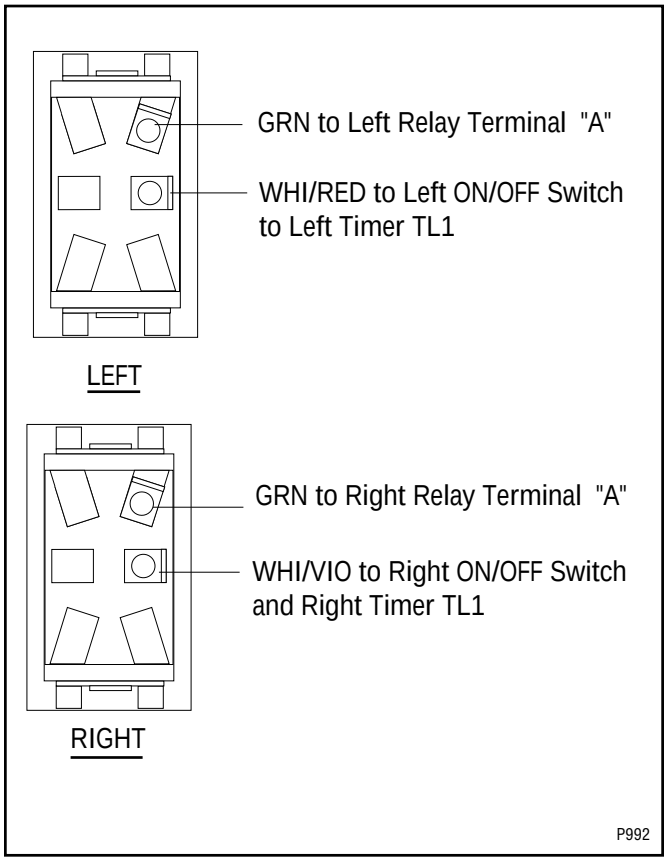
Test Procedure:

1. Disconnect the brewer from the power source and remove the wires from both terminals of the switch.
2. Check for continuity across the two terminals on the switch when it is held in the lower position. Continuity must not be present across these terminals in the upper position.

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

Removal and Replacement:

1. Remove all wires from the switch terminals.
2. Compress the clips inside the hood and gently push the switch through the opening.
3. Push the new switch into the opening and spread the clips to hold the switch in the hood.
4. Refer to the following illustration when reconnecting the wires.



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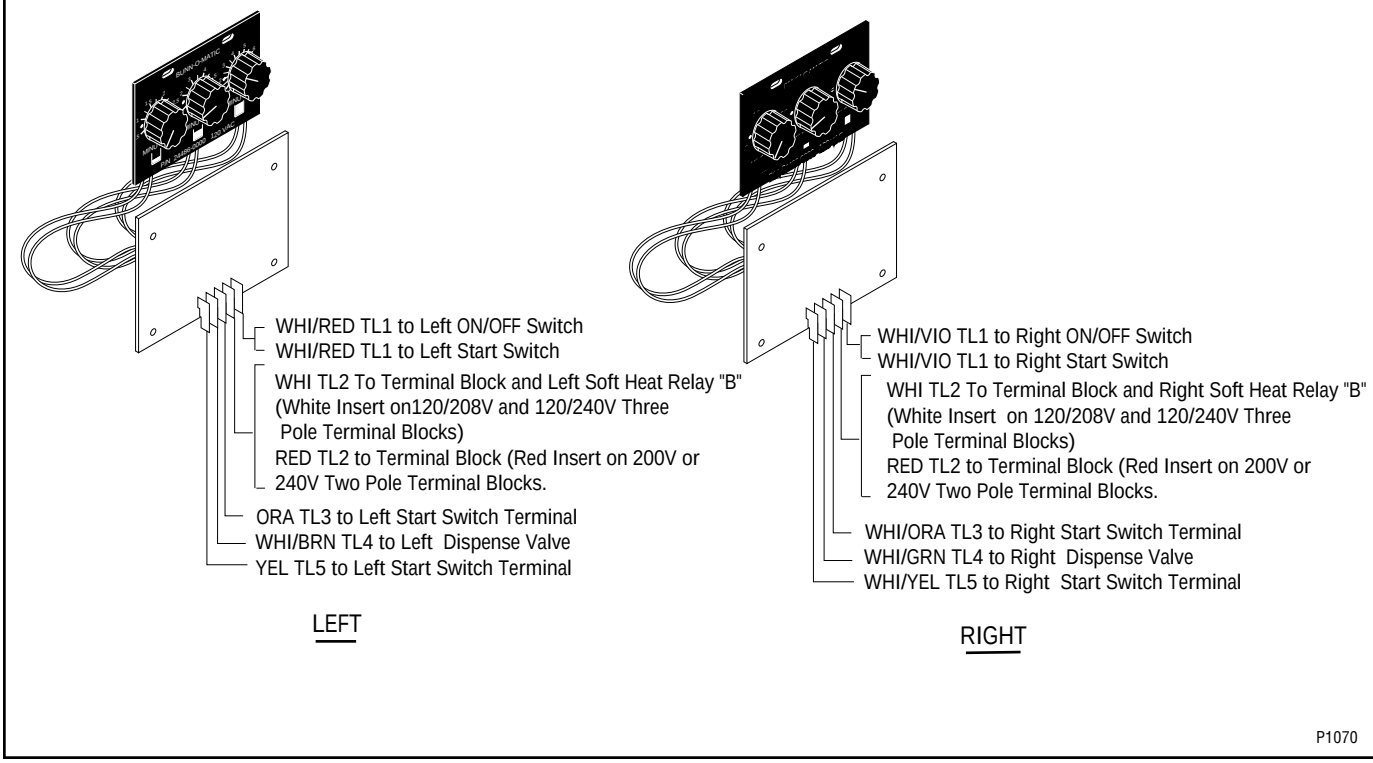
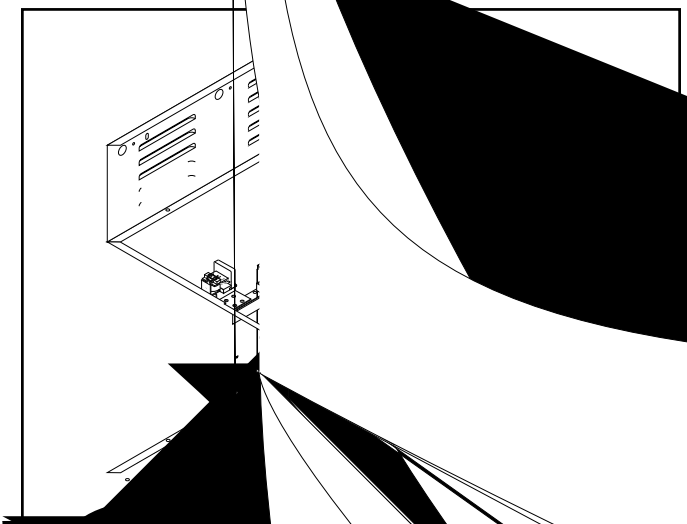
SERVICE (cont.)

Timers (Early Models)(cont.)



SERVICE (cont.)

TIMERS (Late Mo



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SERVICE (cont.)

TIMERS (Late Models)(cont.)

Timer Setting:

NOTE: Check that the brewer is connected to water supply, the tank is properly filled, and a funnel and server are in place, prior to setting or modifying volumes.

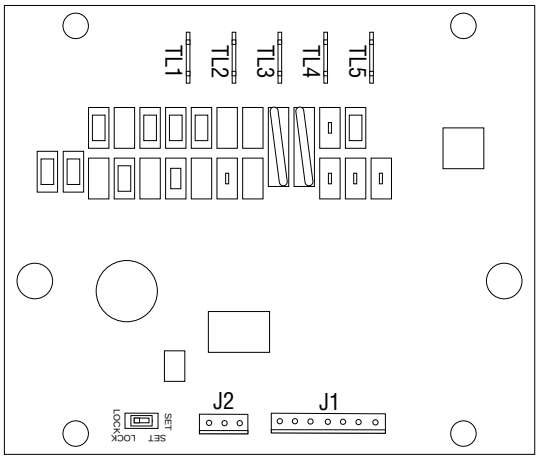
NOTE: All volume settings must be done with the sprayhead installed.

1. **Modifying brew volumes.** To modify a brew volume, first check that the SET/LOCK switch is in the "SET" position on the circuit board.

   To increase a brew volume, place the ON/OFF switch in the "ON" position, press and hold the START switch until three clicks are heard. Release the switch (Failure to release the switch within two seconds after the third click causes the volume setting to be aborted and previous volume setting will remain in memory) and press it again one or more times. Each time the switch is pressed, two seconds are added to the brew time period. Allow the brew cycle to finish in order to verify that the desired volume has been achieved.

   To decrease a brew volume, place the ON/OFF switch in the "ON" position, press and release the START switch once for every two-second interval to be removed from the total brew time period; then immediately press and hold down the START switch until three clicks are heard. Release the switch. (Failure to release the switch within two seconds after the third click causes the volume setting to be aborted and previous volume setting will remain in memory). Allow the brew cycle to finish in order to verify that the desired volume has been achieved.

2. **Setting brew volumes.** To set a brew volume, first check that the SET/LOCK switch is in the "SET" position on the circuit board. Place the ON/OFF switch in the "ON" position, press and hold the START switch until three distinct clicks are heard and then release the switch. (Failure to release the switch within two seconds after the third click causes the volume setting to be aborted and previous volume setting will remain in memory).



LEFT TIMER	RIGHT TIMER
YEL	WHI/YEL wire to TL5
WHI/BRN	WHI/GRN wire to TL4
PNK	PNK wire to TL3
WHI	WHI wire to TL2 (120V Two Pole, 120/208V or 120/240V Three Pole Terminal Block)
RED	RED wire to TL2 (200V or 240V Two Pole Terminal Block)
WHI/RED	WHI/VOI wire to TL1

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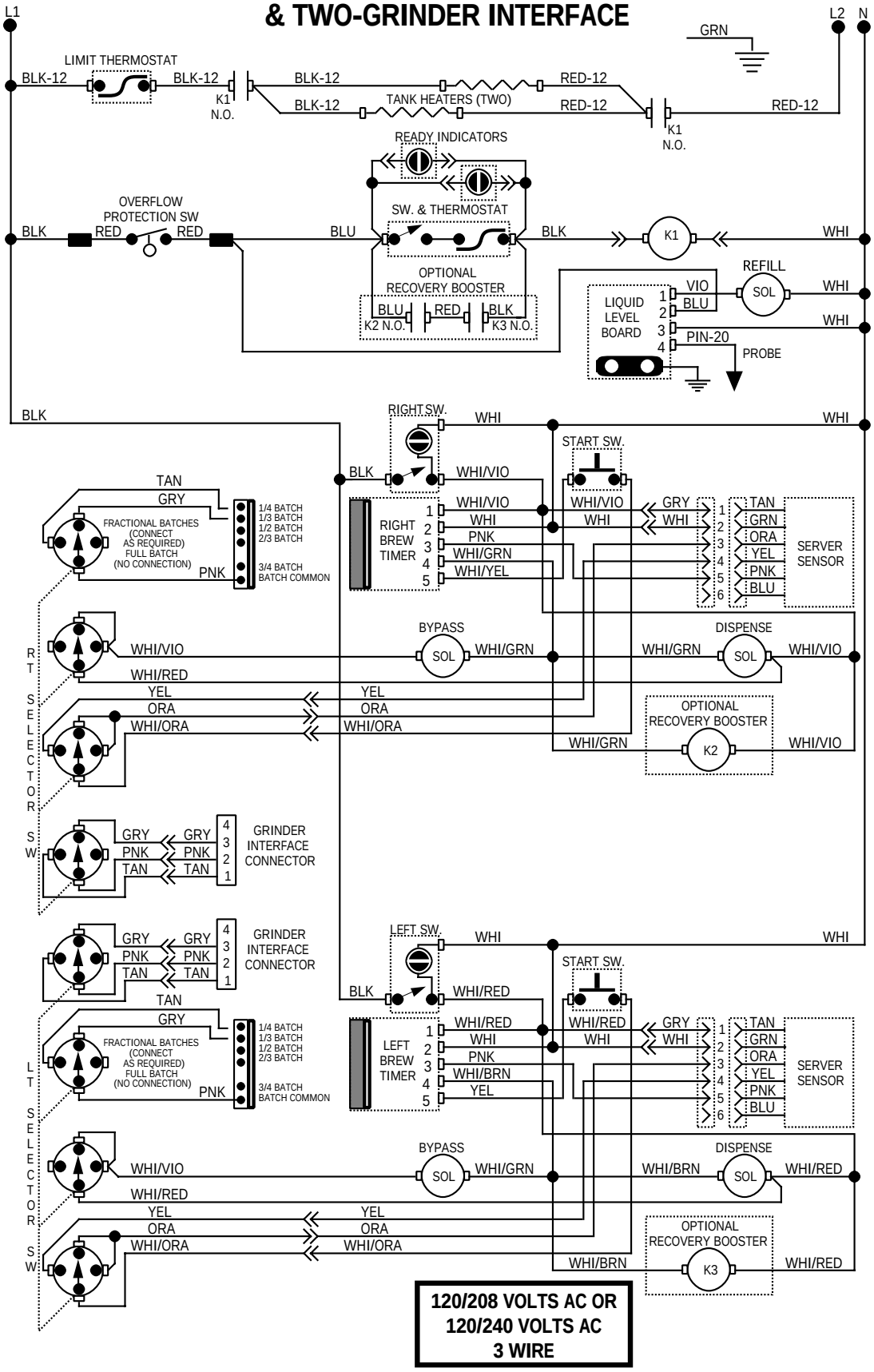
   View the level of the liquid being dispensed. When the desired level is reached, turn the ON/OFF switch to "OFF". **NOTE:** Several ounces of water will continue to syphon from the tank after turning the switch "OFF". The brewer remembers this volume and will continue to brew batches of this size until the volume setting procedure is repeated.

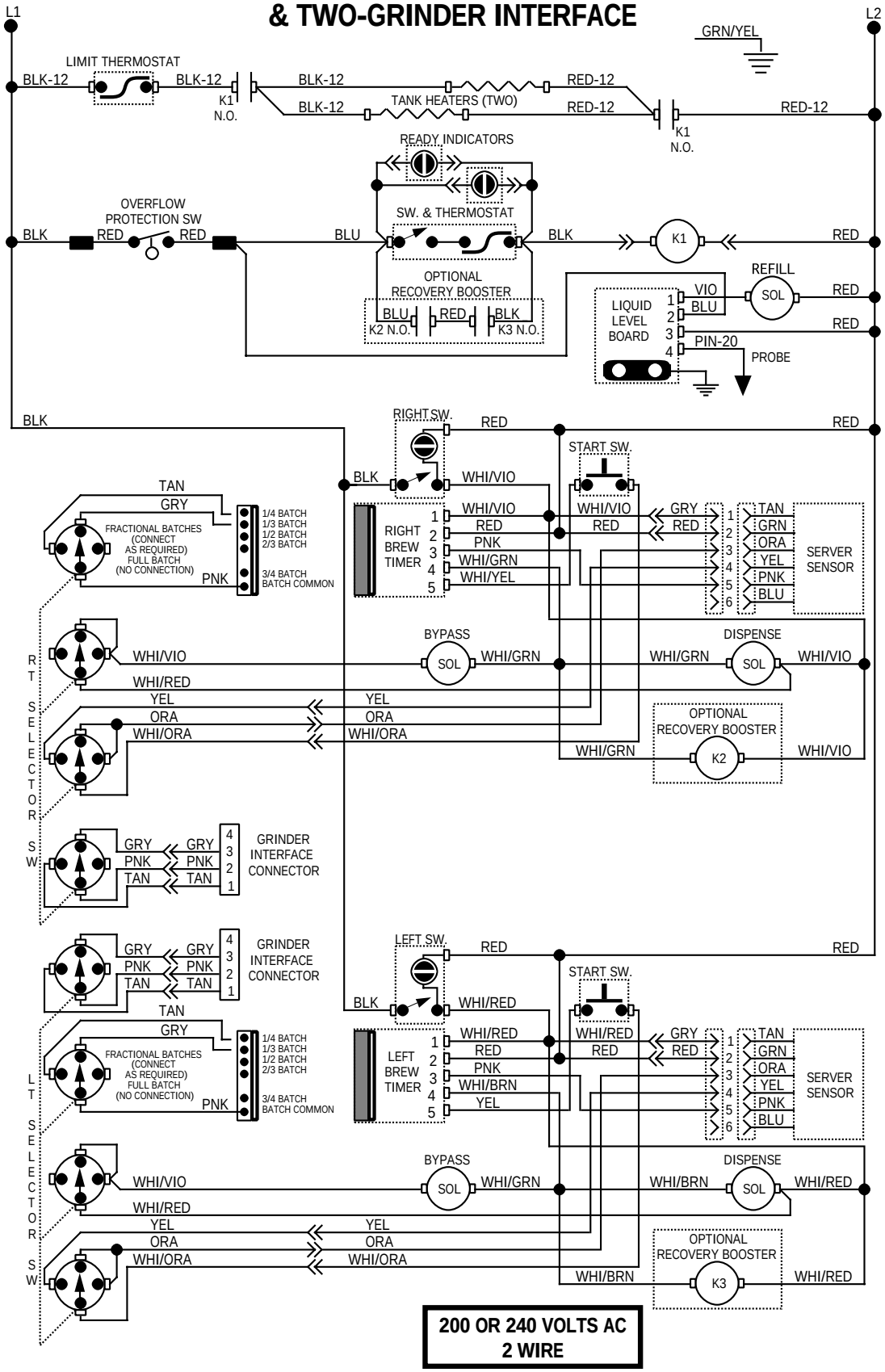
   NOTE: When brewing coffee, volumes will decrease due to absorption by the coffee grounds.

3. **Setting programming disable feature.** If it becomes necessary to prevent anyone from changing brew time once programmed, you can set the SET/LOCK switch to the "LOCK" position. This will prevent any further programming.

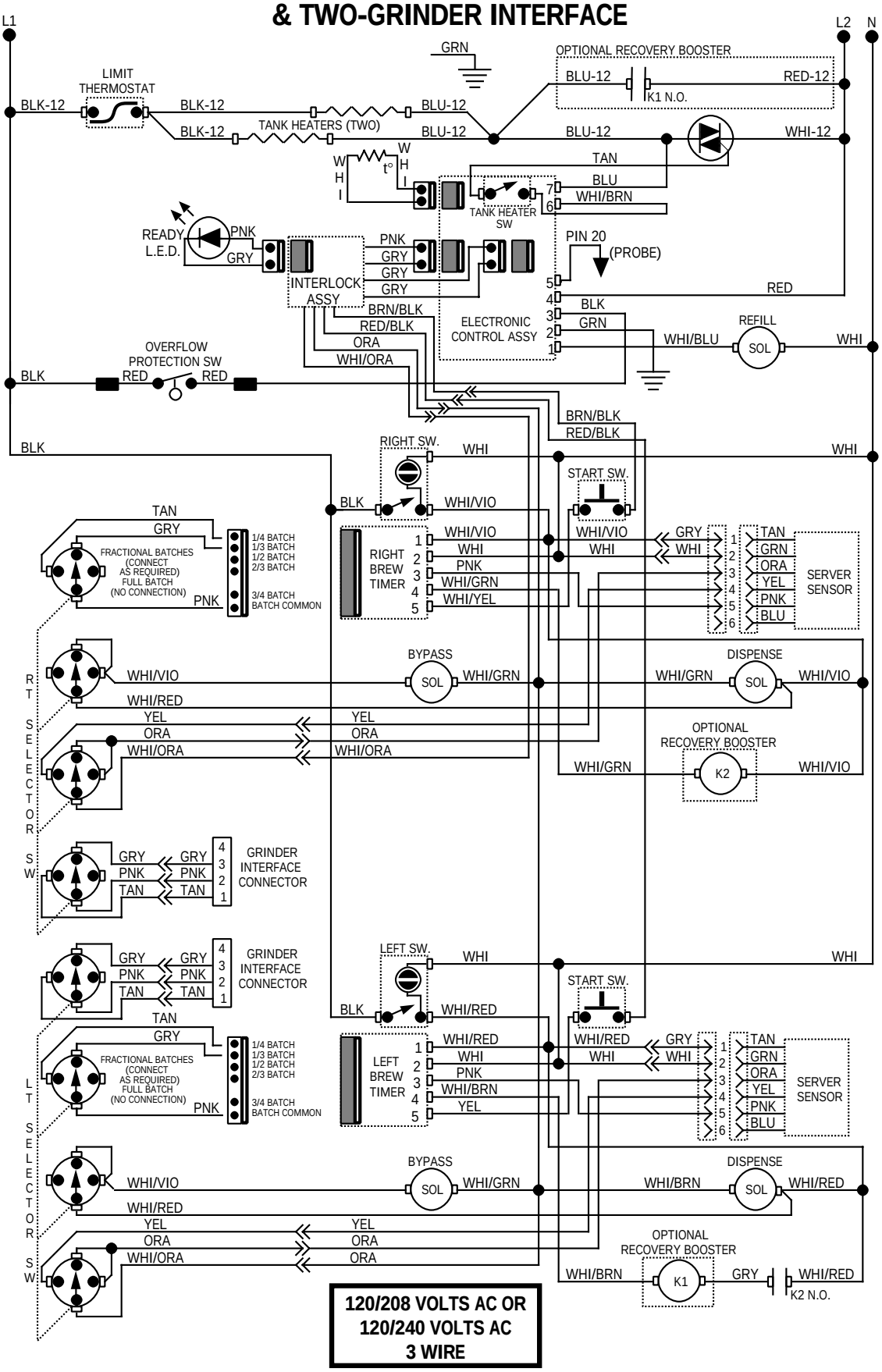
DUAL-TF BREWER W/SERVER SENSOR & TWO-GRINDER INTERFACE



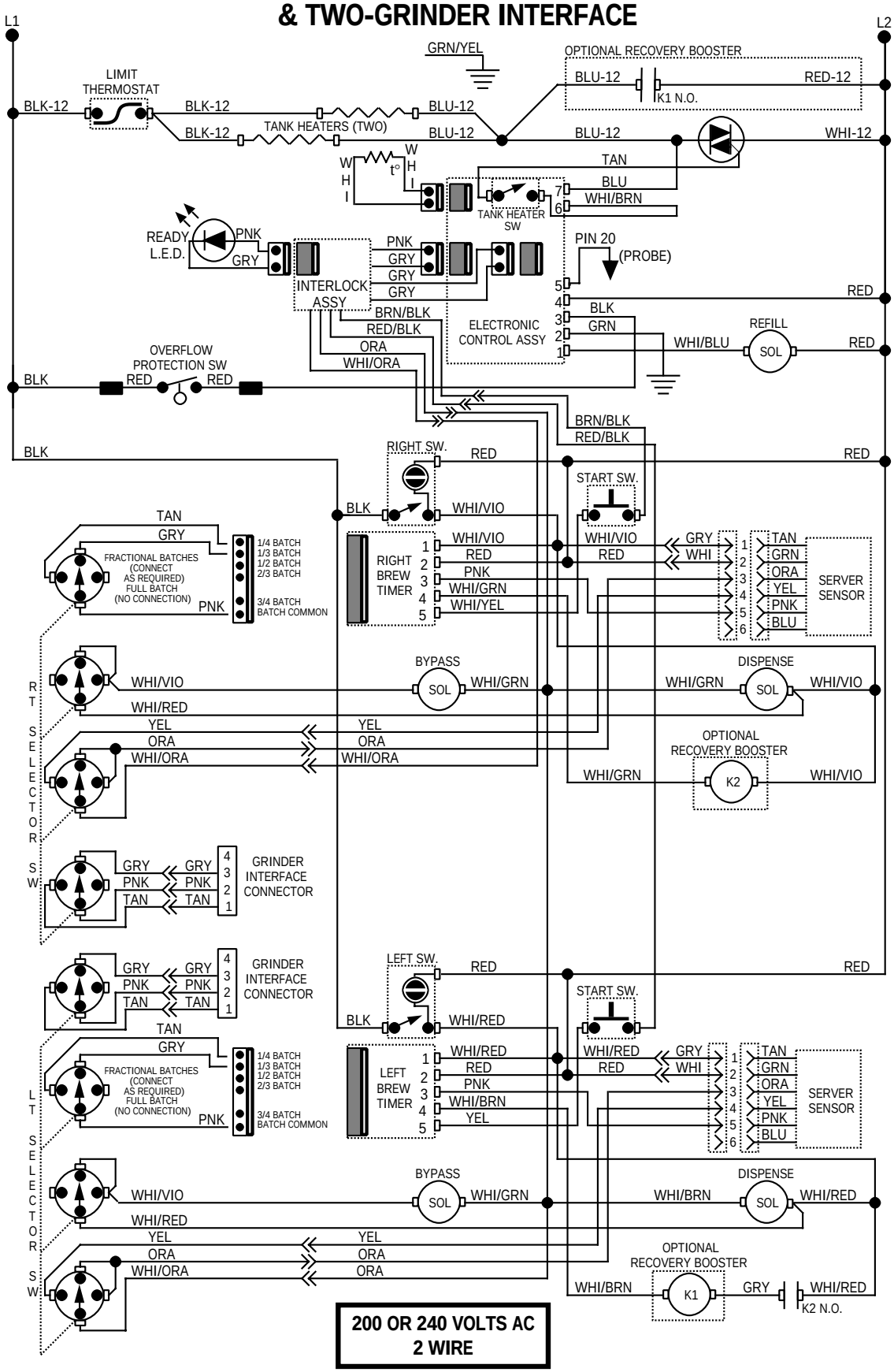
DUAL-ATF OR BTF BREWER W/SERVER SENSOR & TWO-GRINDER INTERFACE

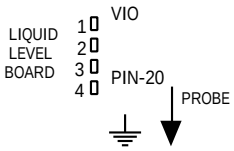


DUAL -TF BREWER ECA W/SERVER SENSOR & TWO-GRINDER INTERFACE



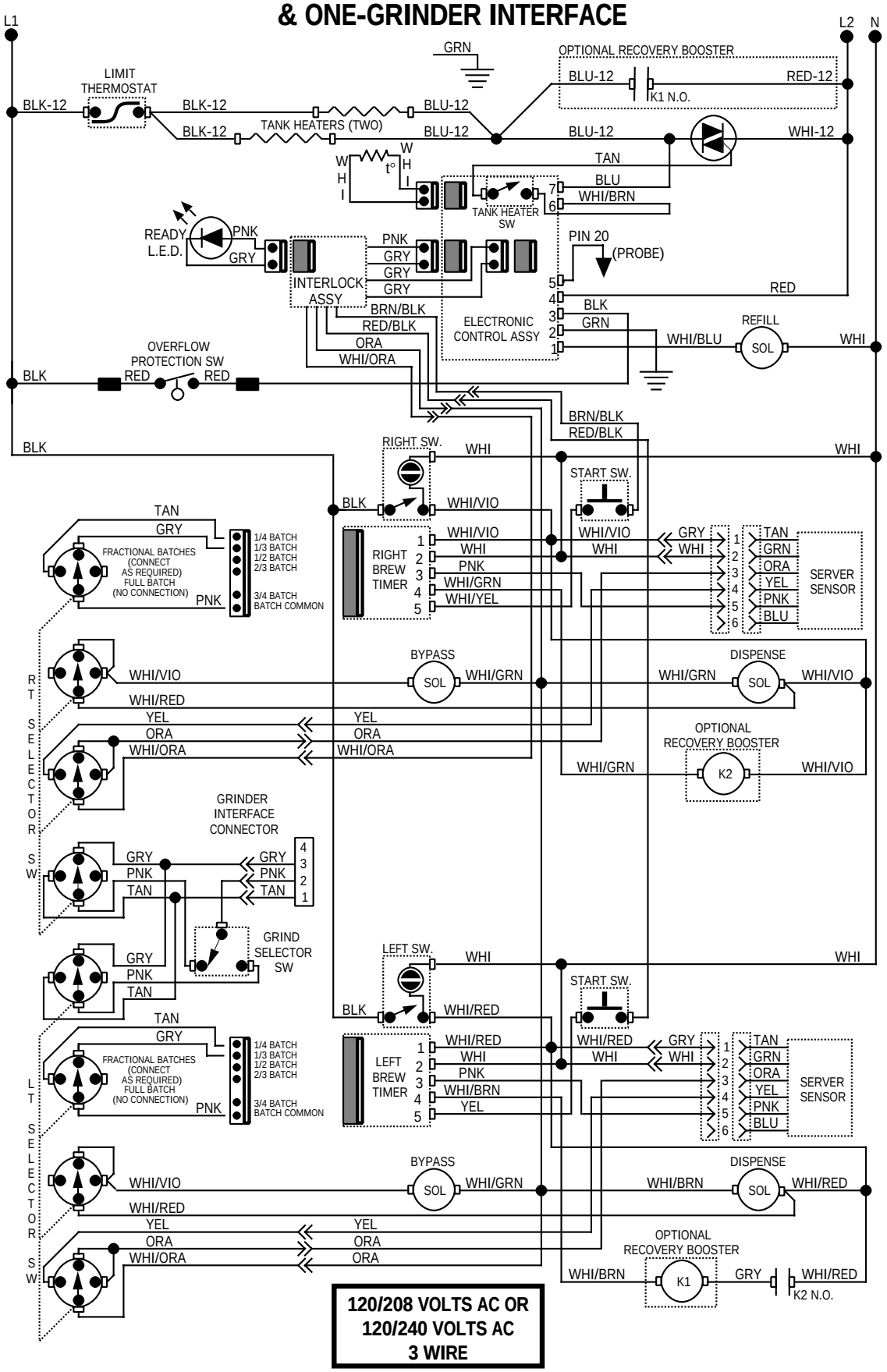
DUAL -ATF BREWER ECA W/SERVER SENSOR & TWO-GRINDER INTERFACE



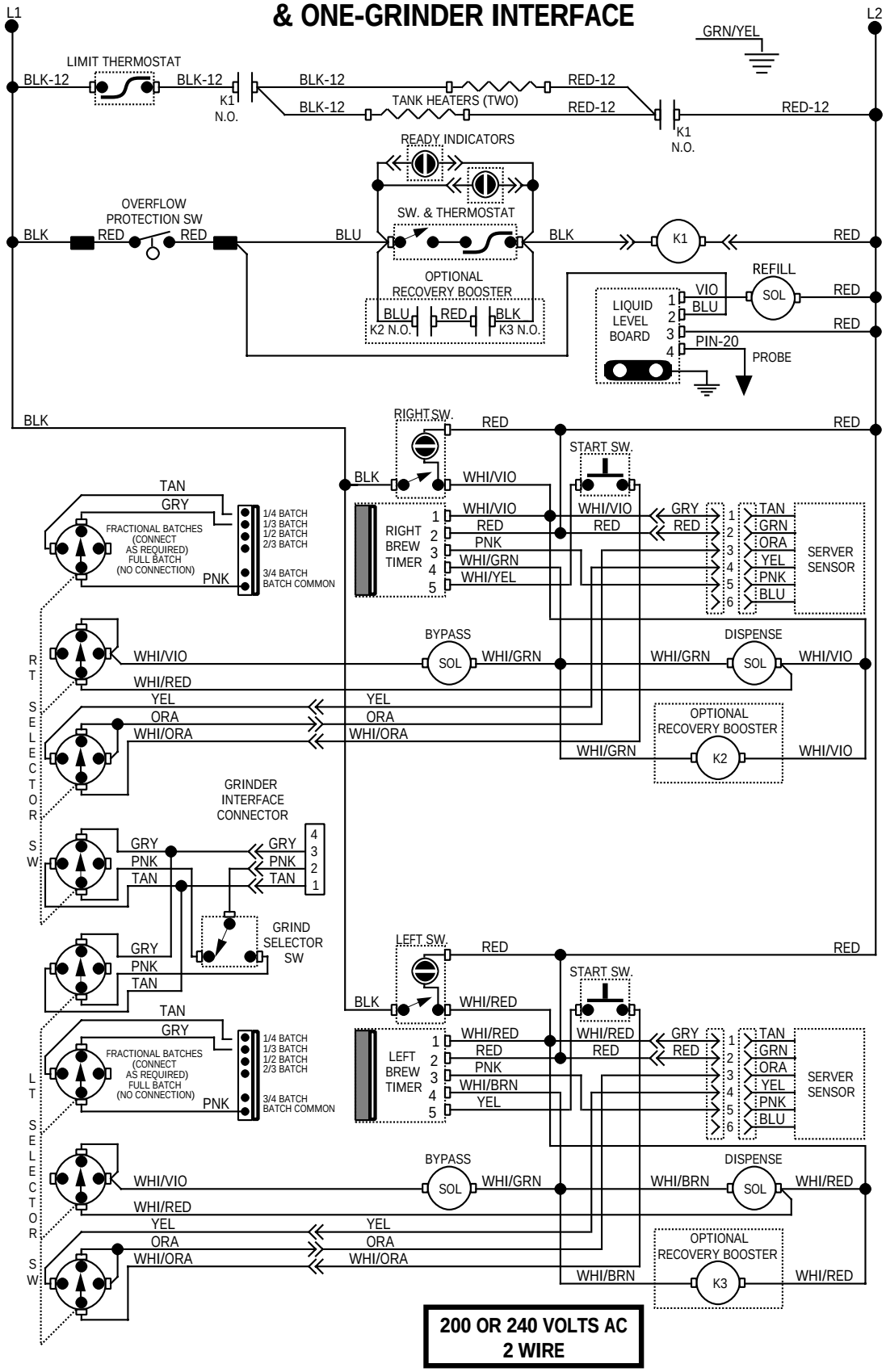


120/208 VOLTS AC OR
120/240 VOLTS AC
3 WIRE

DUAL -TF BREWER ECA W/SERVER SENSOR & ONE-GRINDER INTERFACE



DUAL-ATF OR BTF BREWER W/SERVER SENSOR & ONE-GRINDER INTERFACE



DUAL -ATF BREWER ECA W/SERVER SENSOR & ONE-GRINDER INTERFACE