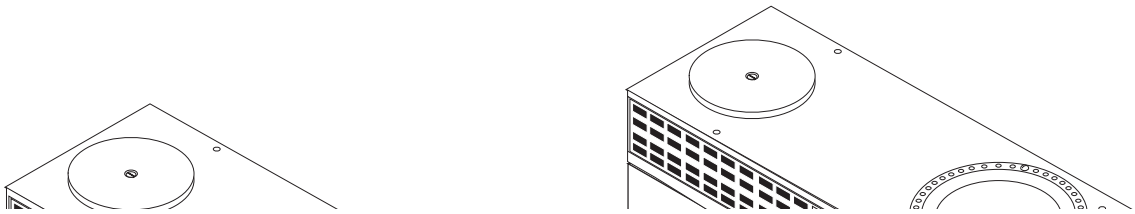
BUNN®

SL & SLF



DISCONTINUED VERSION

The information in this manual is no longer current.

DISCONTINUED VERSION

Parts listed in this catalog may no longer be available.



OPERATING & SERVICE MANUAL

BUNN-O-MATIC CORPORATION

POST OFFICE BOX 3227
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INTRODUCTION

This equipment will brew a half-gallon batch of coffee into an awaiting decanter at the press of a button. It has two individually controlled warmers to keep the beverage in the decanters at the right temperature. The model SLF will also dispense hot water on demand for other purposes. The brewer 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.

WARRANTY (cont.)

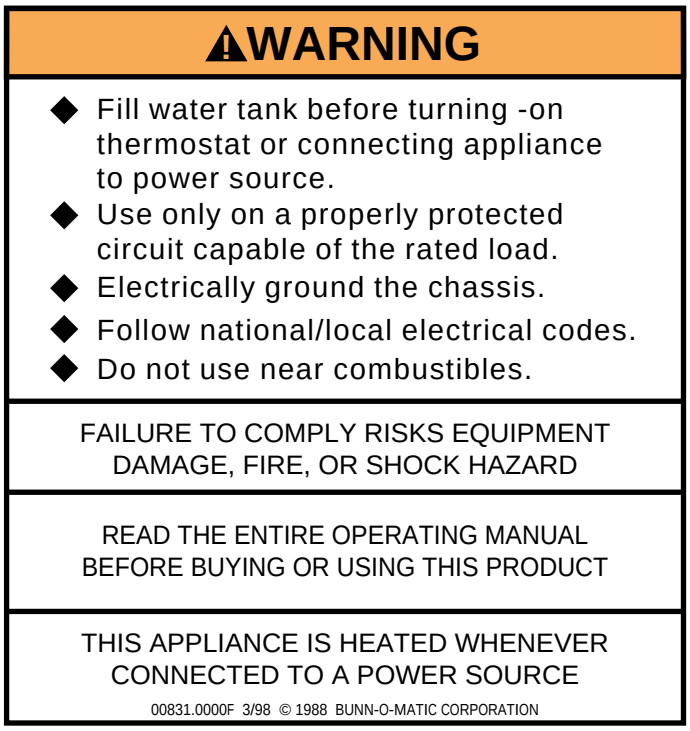
THE BUYER'S REMEDY AGAINST BUNN FOR THE BREACH OF ANY OBLIGATION ARISING OUT OF THE SALE OF THIS EQUIPMENT, WHETHER DERIVED FROM WARRANTY OR OTHERWISE, SHALL BE LIMITED, AS SPECIFIED HEREIN, TO REPAIR OR, AT BUNN'S SOLE OPTION, REPLACEMENT OR REFUND.

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.

USER NOTICES

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

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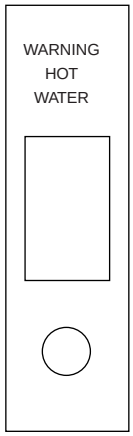
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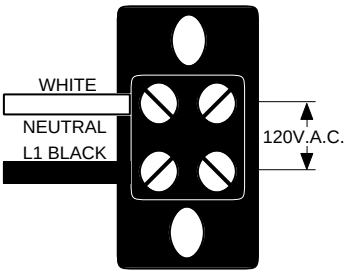
This equipment is to be installed to comply with the Basic Plumbing Code of the Building Officials and Code Administrators International, Inc. (BOCA) and the Food Service Sanitation Manual of the Food and Drug Administration (FDA).

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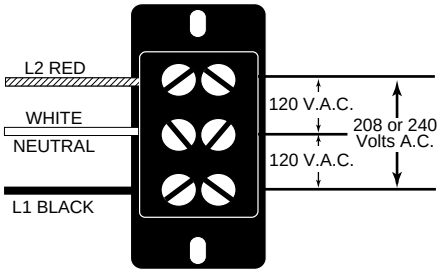
ELECTRICAL REQUIREMENTS

CAUTION - Do not connect the brewer to 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:



MODEL35 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 and rotate the control thermostat knob fully counterclockwise to the “OFF” position.
4. Remove the rear panel, feed the cord through the strain relief at the rear of the brewer, and connect it to the terminal block. Replace the rear panel.
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, make sure that 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 greater than 10 psi from a 1/2” 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 1/4" flare.

NOTE - Bunn-O-Matic recommends 1/4" copper tubing for installations of less than 25 feet from the 1/2" or larger supply line. A tight coil of copper tubing in the water line will facilitate moving the brewer to clean the counter top. 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. Make certain that the 1/4" female flare fitting on the short tube from the outlet of the water strainer is securely attached to the male bulkhead fitting on the brewer.
2. Flush the water line and securely attach it to the 1/4" flare fitting on the strainer.
3. Turn on the water supply.

INITIAL SETUP

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

1. Remove the front panel from the brewer.
2. Rotate the control thermostat knob fully counterclockwise to the "OFF" position and replace the panel.
3. Insert an empty funnel into the funnel rails.
4. Place a decanter containing a small amount of water on the warmer beneath the brew funnel.
5. Connect the brewer to the power source and place the On/Lower switch in the upper position.
6. Momentarily press the start switch. Approximately 64 ounces of water will flow into the brew tank. To fill the tank, it will be necessary to start two more brew cycles. Place the On/Lower switch in the lower position when water starts flowing form the funnel into the decanter.
7. Disconnect the brewer from the power source and remove the front panel.
8. Rotate the control thermostat knob fully clockwise to the "ON" position and replace the panel.
9. Connect the brewer to the power source and wait for the water in the tank to heat to the proper temperature. Some water will drip from the funnel during this time; this is due to expansion and should not occur thereafter.
10. Place an empty decanter under the funnel.
11. Place the On/Lower switch in the upper position and momentarily press the start switch. Empty the decanter after water has stopped flowing from the funnel and return it to the warmer.
12. Allow the water in the tank to reheat to the proper temperature.
13. Momentarily press the start switch. Check the water volume in the decanter after water has stopped flowing from the funnel. It should be 64 ounces.
14. If not, disconnect the brewer from the power source and remove the top lid.
15. Add or remove washers to the float on the level switch as required and replace the top lid. Adding washers increases the volume, removing washers decreases it.
16. Repeat steps 12-15 until the proper water volume is achieved.

17A. Model SL:

The brewer is now ready for use in accordance with the coffee brewing instructions on page 6.

17B. Model SLF:

Momentarily press the hot water dispense switch a few times to clear any air from the dispense lines.

18. Allow the tank to fully reheat.

19. Press the hot water switch to dispense exactly 20 ounces of hot water and immediately start a brew cycle into an empty graduated vessel.
20. Measure the brew water volume:
    if it is more than the amount measured in #16, remove the rear panel, turn the needle valve slightly clockwise, and replace the rear panel.
    If it is less than the amount measured in #16, remove the rear panel, turn the needle valve slightly counter-clockwise, and replace the rear panel.
21. Repeat steps 18-20 until the hot water refill rate is balanced with the dispense rate.

OPERATING CONTROLS

A. On/Lower Switch
Placing the switch in the upper position enables brewing and energizes the decanter warmer beneath the funnel.
Placing the switch in the lower position cuts power to the warmer beneath the brew funnel and stops the brew cycle. Stopping a brew cycle after it has been started will not stop the flow of water into the funnel until the tank syphons down to its proper level.

B. Top Warmer Switch
Placing the switch in the upper position energizes the top warmer.
Placing the switch in the lower position cuts power to the top warmer.

C. Start Switch
Momentarily pressing this switch initiates a brew cycle when the On/Lower switch is in the upper position.

D. Hot Water Dispense Switch (Model SLF only)
Placing the switch in the lower position dispenses hot water and at the same time refills the tank. Dispensing/refilling occurs for as long as the switch is held.

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.
3. Disconnect the brewer from the power source. Remove the sprayhead and insert the deliming spring (provided) all the way into the sprayhead tube. When inserted properly, no more than two inches of spring should be visible. Saw back and forth five or six times.

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.

COFFEE BREWING

1. Insert a BUNN® filter into the funnel .
2. Pour the fresh coffee 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 under the brew funnel.
5. Place the On/Lower switch in the upper position and momentarily press the start switch.
6. When brewing is completed, simply discard the grounds and filter.

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 electric components have 120 volt ac voltage on their terminals. Shorting of terminals or the application of external voltages may result in equipment failure.
- Intermittent operation of electronic equipment is unlikely. Component 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 unless disconnected from the power source. 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	(A) Connect the brewer to the power source. (B) Check the terminal block for the proper voltages. (C) Check circuit breaker/fuse.
Brew cycle will not start.	1. No water	Check plumbing and shut-off valves.
	2. Water Strainer	(A) Direction of flow arrow must be pointing towards brewer. (B) Remove the strainer and check for obstructions. Clear or replace.
	3. Water Level Switch and Overflow Safety Switch	Refer to Service - Water Level Switch and Overflow Safety Switch for testing procedures. See page 23.

(Added November, 1999)

TROUBLESHOOTING (cont.)

Problem	Probable Cause	Remedy
Brew cycle will not start. (cont.)	4. On/Lower Brew Station Warmer Switch	Refer to Service - On/Lower Brew Station Warmer Switch for testing procedures. See page 15.
	5. Start Switch	Refer to Service - Start Switch for testing procedures. See page 16.
	6. Relay	Refer to Service - Relay for testing procedures. See page 21.
	7. Solenoid Valve	Refer to Service - Solenoid Valve for testing procedures. See page 17.
Water flows into fill basin continuously (On/Lower brew station warmer switch "OFF").	1. Solenoid Valve	Refer to Service - Solenoid Valve for testing procedures. See page 17.
Water flows into fill basin continuously (On/Lower brew station warmer switch "ON").	1. Start Switch	Refer to Service - Start Switch for testing procedures. See page 16.
Water is not hot.	1. Limit Thermostat **CAUTION** Do not eliminate or bypass limit thermostat. Use only B.O.M. replacement part **#29329.1000**	Refer to Service - Limit Thermostat for testing procedures. See page 17.
	2. Control Thermostat	Refer to Service - Control Thermostat for testing procedures. See page 13.
	3. Tank Heater	Refer to Service - Tank Heater for testing procedures. See page 22.
Decanter warmer is not hot.	1. Warmer Switches	(A) The Warmer Switch(es) must be in the "ON" position for the warmer to operate. (B) Refer to Service - Warmer Switch(es) for testing procedures. See pages 15.
	2. Decanter Warmers	Refer to Service - Warmers for testing procedures. See pages 14.

(Added November, 1999)

TROUBLESHOOTING (cont.)

Problem	Probable Cause	Remedy
Spitting or unusual steaming from sprayhead.	1. Control Thermostat	Refer to Service - Control Thermostat for testing procedures. See page 13.
	2. 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.
Warmer plates too hot, solenoid coil smoking, or water in tank heats excessively fast.	1. Brewer wired to wrong voltage	Refer to Electrical Requirements - Page 4.
Inconsistent beverage level in decanter.	1. Improper water pressure	Check the operating water pressure to the brewer. It must be between 10 and 90 psi.
	2. Syphon system	Water should flow freely from the sprayhead and then stop abruptly. The brewer must be level from front-to-back to syphon properly.
	3. Hot water Dispense flow adjustment (SLF only)	Refer to Service - Hot Water Dispense Valve - Page 19 and Inlet Solenoid Valve - Page 20.
Dripping from sprayhead.	1. Syphon system	Water should flow freely from the sprayhead and then stop abruptly. The brewer must be level from front-to-back to syphon properly.
	2. Solenoid Valve	Refer to Service - Solenoid Valve for testing procedures. See page 17.

TROUBLESHOOTING (cont.)

Problem	Probable Cause	Remedy
No hot water dispensed from faucet (SLF only)	1. Hot Water Switch	Refer to Service - Hot Water Switch for testing procedures. See page 24.
	2. Hot Water Dispense Valve	Refer to Service - Hot Water Dispense Valve for testing procedures. See page 19.
	3. Inlet Solenoid Valve (Faucet)	Refer to Service - Inlet Solenoid Valve (faucet) for testing procedures. See page 20.
Beverage overflows decanter.	1. Beverage left in decanter	The brew cycle should be started only with an empty decanter under the funnel.
Weak beverage.	1. Type of paper filters	BUNN® paper filters should be used for proper extraction.
	2. Coffee	A sufficient quantity of fine or drip grind coffee should be used for proper extraction.
	3. Sprayhead	B.O.M. sprayhead **#01082.0000** 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 coffee leveled by gentle shaking.
	5. Water temperature	Place a funnel over an empty decanter on the warmer beneath the sprayhead. Place the On/Lower brew station warmer switch in the upper position, press the start switch, and check the water temperature immediately below the sprayhead with an accurate thermometer. The reading should not be less than 195° F. Adjust the control thermostat slightly clockwise to increase the water temperature.

TROUBLESHOOTING (cont.)

Problem	Probable Cause	Remedy
Brewer is making unusual noises.	1. Solenoid Valve	The nut on top of the solenoid valve must be tight or it will vibrate during operation.
	2. Plumbing lines	Plumbing lines should not rest 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. Install a regulator if necessary to lower the working pressure to approximately 50 psi.

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.

Component Access

WARNING - Disconnect the brewer from the power source before the removal of any panel or the replacement of any component.

The overflow safety switch, warmer switches, hot water dispense valve(SLF only) and start switch are located under the top cover or top warmer housing, FIG. 1, attached with four #6-32 slotted-head screws.

The solenoid valve, relay, control thermostat and terminal block are located in the trunk. Access is gained by removing the front access panel, FIG. 1 attached with four #8-32 slotted-head screws

The inlet solenoid valve (SLF only), limit thermostat, tank heater and tank "keep warm" heater are located on the tank assembly. Access is gained by removing the rear panel, FIG. 1 attached with four #8-32 slotted head screws.

WARNING - Inspection, testing, and repair of electrical equipment should be performed only by qualified service personnel. The brewer should be disconnected from the power source when servicing, except when electrical tests are required and the test procedure specifically states to connect the brewer to the power source.

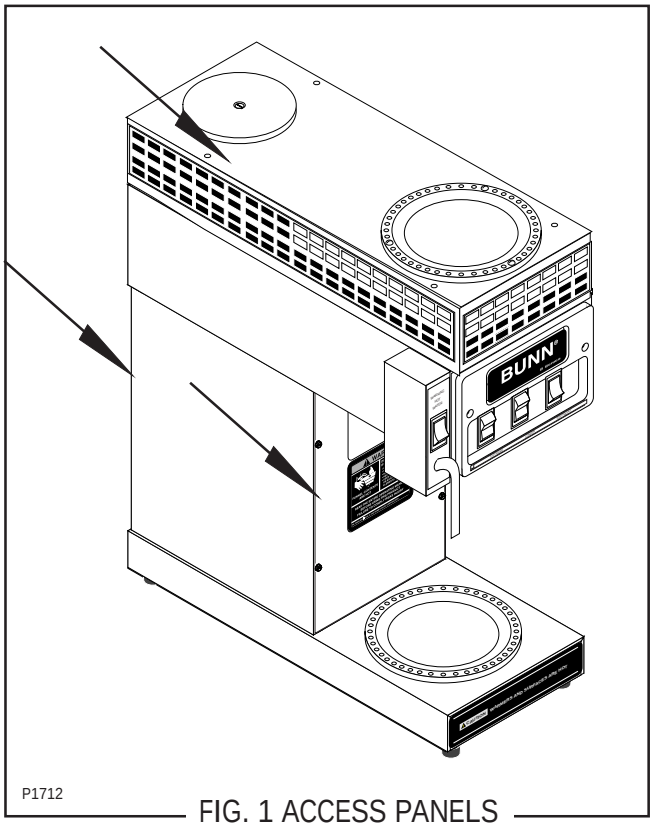


FIG. 1 ACCESS PANELS

Contents

Control Thermostat 13
Warmer(s) 14
Warmer Switch(es) 15
Start Switch 16
Limit Thermostat 17
Brew Solenoid Valve 17
Hot Water Dispense Valve(optional) 19
Inlet Solenoid Valve (faucet-optional) 20
Relay 21
Tank Heater 22
Overflow Safety Switch 23
Hot Water Switch (optional) 24
Replacement parts 25
Wiring Schematics 26

(Added November 1999)

SERVICE (cont.)

Control Thermostat

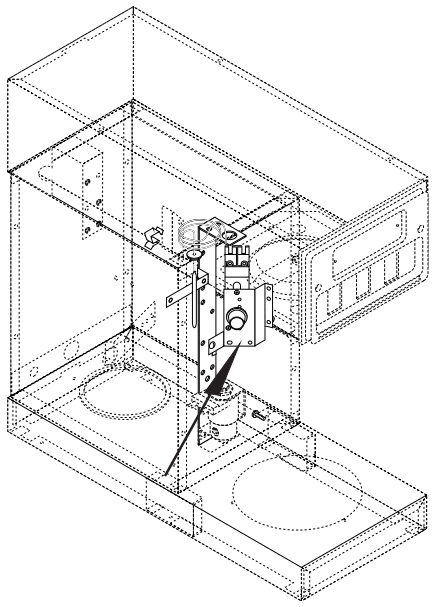


FIG. 2 CONTROL THERMOSTAT

Location:

The control thermostat is located inside the front access panel, FIG. 2.

To test the control thermostat, access will also be needed to the tank heater located in the bottom of the tank assembly.

Test Procedure:

1. Disconnect the brewer from the power source.
2. With a voltmeter, check the voltage across the blue/black wire on the control thermostat and the white wire on the tank heater. 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.
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 the brewer wiring harness.

4. With a voltmeter, check the voltage across the black wire terminal of the control thermostat and the white wire on the tank heater when the control thermostat is turned "ON" (fully clockwise). Connect the brewer to the power source. The indication must be as described in step 2. Voltage must not be indicated across these terminals when the thermostat is turned "OFF" (fully counterclockwise).
5. Disconnect the brewer from the power source.

If voltage is present as described, the control thermostat is operating properly.
If voltage is not present as described, replace the control thermostat.

Removal and Replacement:

1. Remove the front access panel from the brewer to gain access.
2. Remove both wires from the control thermostat terminals.
3. Remove the thermostat bulb by firmly pulling-up on the capillary tube at the tank lid. This will disengage the grommet from the tank lid.
4. Remove the two #8-32 screws holding the control thermostat to the bracket.
5. Fasten the new control thermostat to the component bracket.

NOTE - Make sure that the capillary tube is away from any electrical termination and is not kinked.

6. Slide the grommet to the red mark on the capillary tube.
7. Insert the bulb through the hole in the tank lid and press the grommet firmly and evenly so that the groove in the grommet fits into the tank lid.
8. Carefully bend the capillary tube so that the tube and bulb inside the tank are in a vertical position.
9. Refer to FIG. 3 when reconnecting the wires.
10. Readjust the control thermostat dial as required.

SERVICE (cont.)

Control Thermostat (cont.)

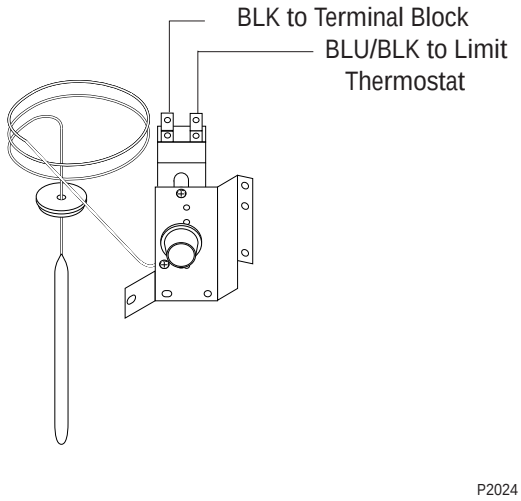


FIG. 3 THERMOSTAT WIRING

Warmer(s)

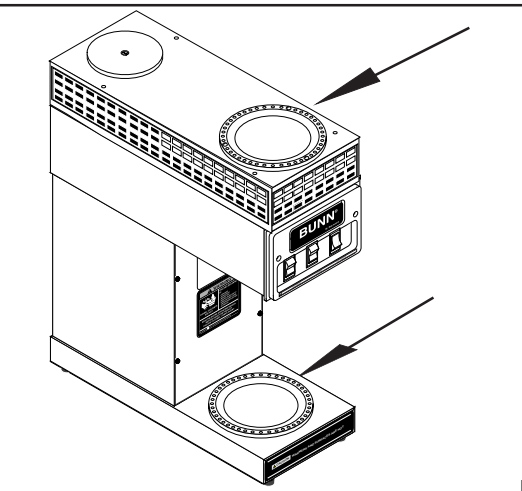


FIG. 4 WARMERS

Location:

One of the warmers is beneath the brew funnel and the other is on the top lid, FIG. 4.

Test Procedure:

1. Once the switch has been tested and switch failure has been eliminated, proceed as follows.
2. Disconnect the brewer from the power source and remove the #4-40 screws attaching the warmer being tested.
3. Lift the warmer assembly from the brewer and invert the warmer making the wire terminals accessible for testing.
4. Check for continuity from the switch to the white wire at the warmer element.

If continuity is present as described, proceed to #5.

5. Check for continuity from the wire terminal of the blue/black or violet wire to the warmer switch.

If continuity is present as described, proceed to #6.
If continuity is not present as described, refer to the Wiring Diagrams and check the brewer wiring harness.

6. Check for continuity across the two terminals on the warmer.

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

Removal and Replacement:

1. Remove the #4-40 slotted-head screws holding the warmer to the brewer
2. Lift the warmer assembly from the brewer.
3. Disconnect both wires from the warmer.
4. Refer to FIG. 5 when reconnecting the wires.
5. Place the new warmer into the brewer and securely attach it using the #4-40 screws.

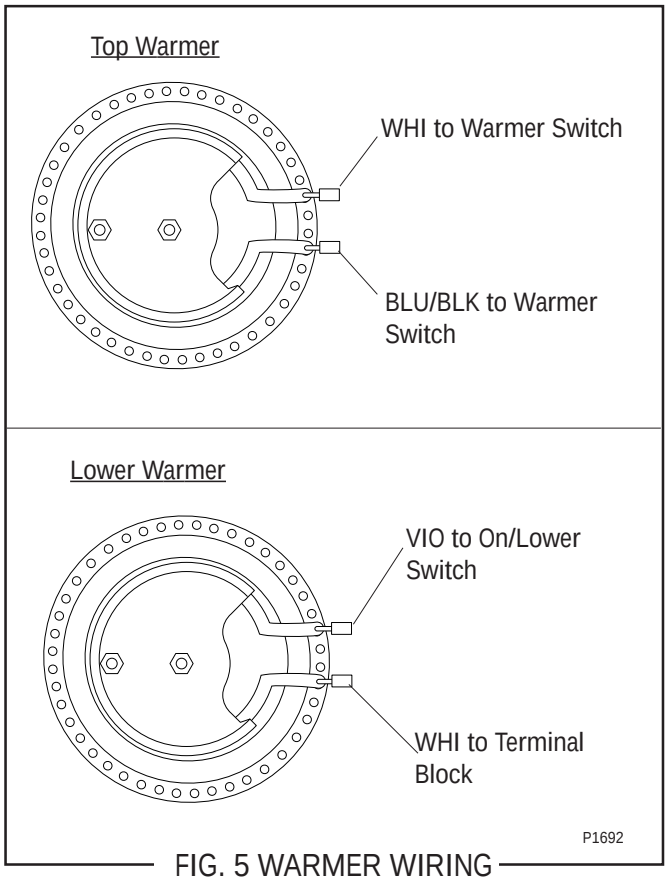


FIG. 5 WARMER WIRING

(Added November 1999)

SERVICE (cont.)

Warmer Switch(es)

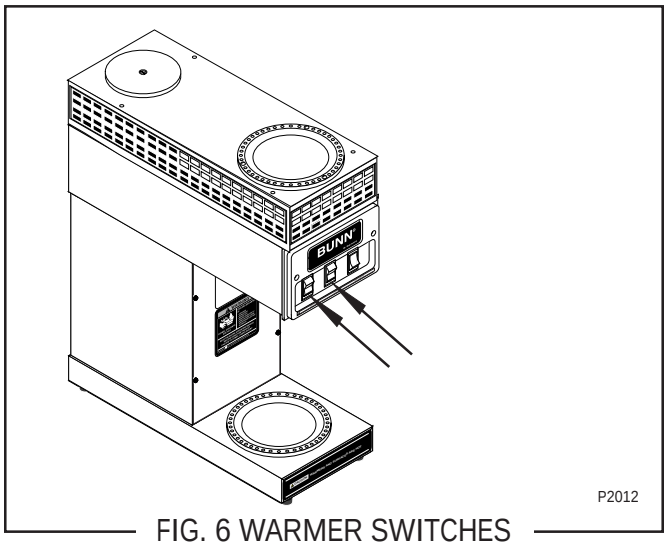


FIG. 6 WARMER SWITCHES

Location:

These switches are the two left switches on the switch panel, FIG 6.

Test Procedure:

1. Locate the switch terminal with black wires.
2. Check the voltage across this terminal and the terminal on the indicator lamp with white wire with a voltmeter. 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.
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 the brewer wiring harness.

4. With a voltmeter, check the voltage across the remaining switch terminal and the terminal on the indicator lamp with white wire when the switch is in the upper position. Connect the brewer to the power source. The indication must be as described in step 2. Voltage must not be present across these terminals in the lower position.
5. Disconnect the brewer from the power source.

If voltage is present as described the switch is operating properly.
If voltage is not present as described, replace the switch.

Removal and Replacement:

1. Compress the clips inside the housing and gently push the switch through the opening.
2. Remove the wires from the switch terminals.
3. Refer to FIG. 7 when reconnecting the wires.
4. Push the new switch firmly into the opening.

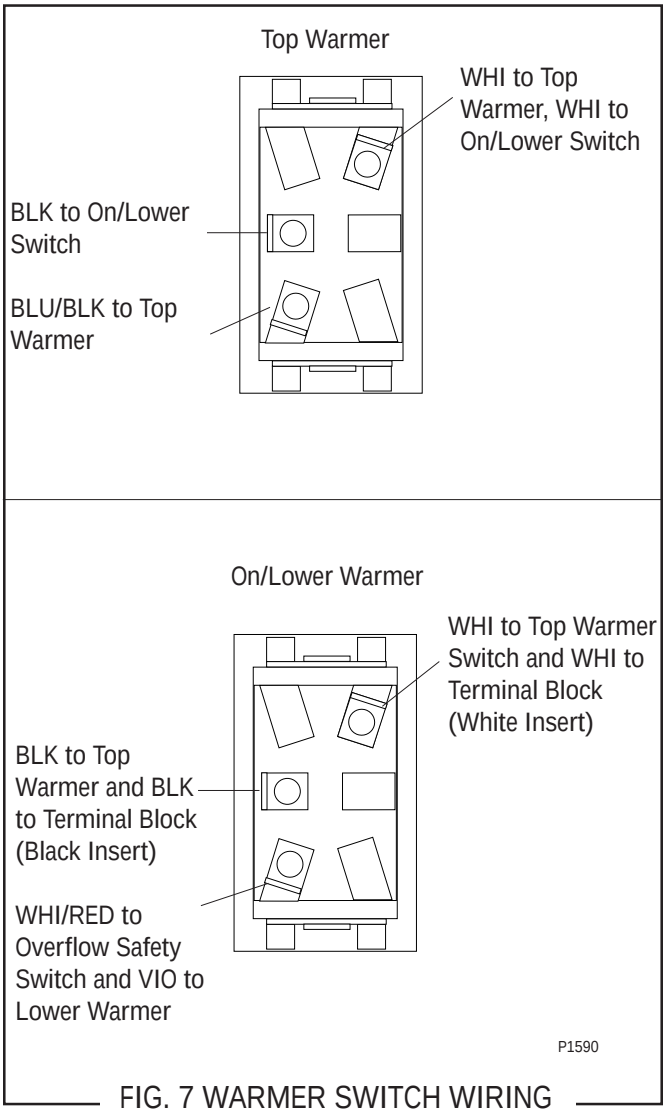


FIG. 7 WARMER SWITCH WIRING

(Added November 1999)

Start Switch

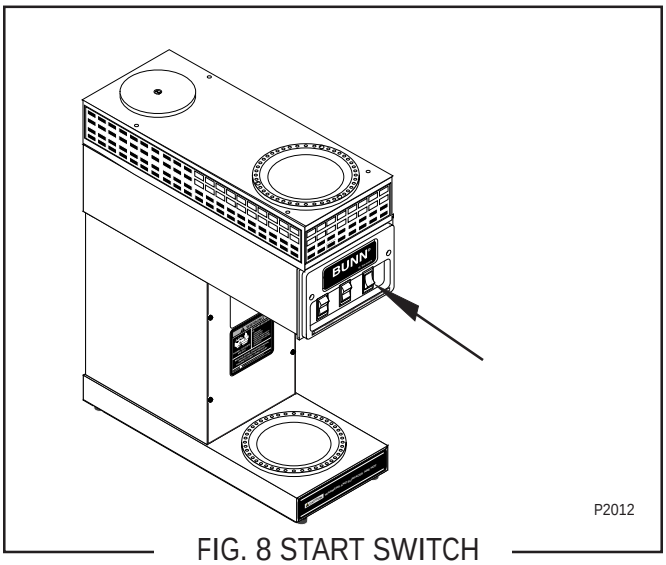


FIG. 8 START SWITCH

Location:

The start switch is located on the far right of the front switch panel , FIG 8.

Test Procedure:

1. Disconnect the brewer from the power source and remove the wires from both terminals of the start 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 housing and gently push the switch through the opening.
3. Push the new switch into the opening and spread the clips to hold the switch captive in the housing.
4. Refer to FIG. 9 when reconnecting the wires.

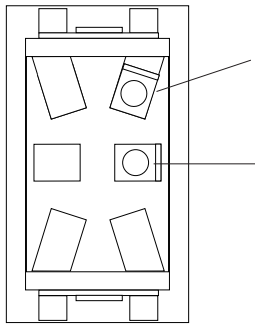


FIG. 9 START SWITCH WIRING

SERVICE (cont.)

Limit Thermostat

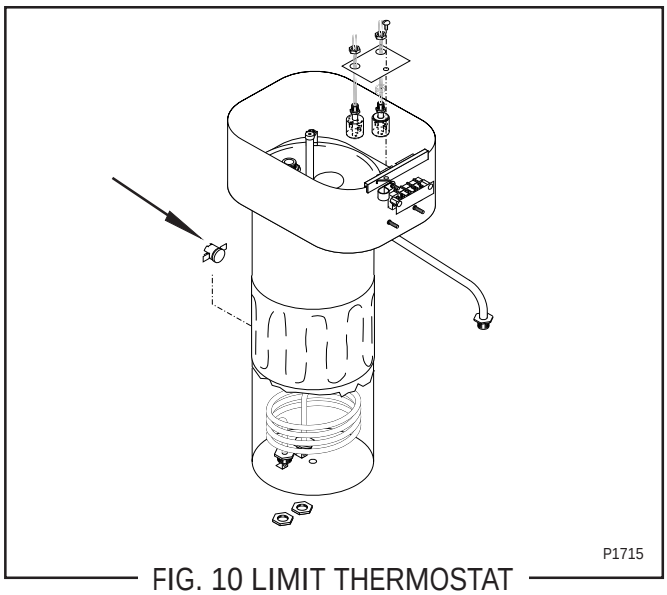


FIG. 10 LIMIT THERMOSTAT

Location:

The limit thermostat is located on the back of the tank assembly, FIG. 10.

Test Procedure:

1. Disconnect the brewer from the power source.
2. Check voltage across the black wire from the limit thermostat and the white wire on the tank heater terminal. 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.
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 the brewer wiring harness.

4. Check for continuity across the limit thermostat terminals.

If continuity is present as described, the limit thermostat is operating properly.
If continuity is not present as described, replace the limit thermostat.

Removal and Replacement:

1. Remove both wires from the limit thermostat terminals.
2. Carefully slide the limit thermostat out from under the retaining clip.
3. Carefully slide the new limit thermostat into the retaining clip.
4. Refer to FIG. 11 when reconnecting the wires.

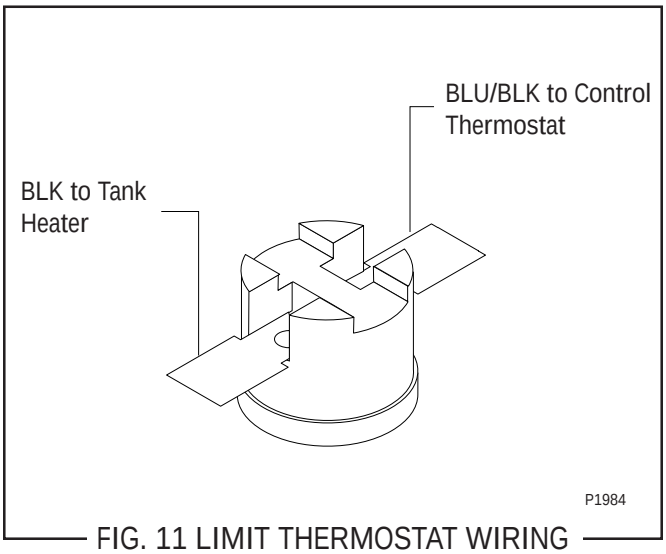


FIG. 11 LIMIT THERMOSTAT WIRING

Solenoid Valve

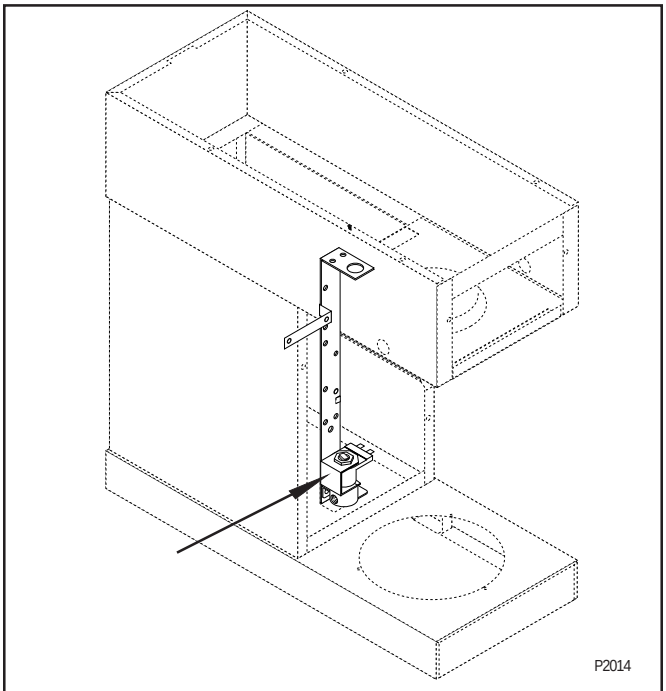


FIG. 12 SOLENOID VALVE

Location:

The solenoid valve is located inside the front access panel, near the bottom of the bracket, FIG. 12

(Added November 1999)

SERVICE (cont.)

Solenoid Valve(cont.)

Test Procedure:

1. With a voltmeter check the voltage across the white and the white/red wires when the On/Lower brew station warmer switch is in the upper position and the start switch is pressed to the lower position and released. 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,
2. Disconnect the brewer from the power source.

If voltage is present as described, proceed to #3.
If voltage is not present as described, refer to the Wiring Diagrams and check the brewer wiring harness.

3. Remove all wires from the coil. Check for continuity across the solenoid valve coil terminals.

If continuity is present as described, reconnect the white and the white/red wires and proceed to #4.
If continuity is not present as described, replace the solenoid valve.

4. Check the solenoid valve for coil action. Connect the brewer to the power source, place the On/Lower brew station warmer switch in the upper position, press and release the start switch. Listen carefully in the vicinity of the solenoid valve for a "clicking" sound as the coil magnet attracts and after lifting of the level float switch, repels the plunger.
5. Disconnect the brewer from the power source.

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

Removal and Replacement:

1. Disconnect the brewer from the power source.
2. Turn off the water supply to the brewer.
3. Remove the front access panel to gain access.
4. Disconnect all wires from the solenoid valve.
5. Disconnect the water lines to and from the solenoid valve.
6. Remove the two #8-32 screws which hold the solenoid valve and mounting bracket to the component bracket.
7. Lift out the solenoid valve and bracket. Remove the bracket from the solenoid valve and save to mount the new valve.
8. Securely install the new solenoid valve to the mounting bracket with two #10-32 screws. Check the direction of flow arrow on the valve. It must be pointing toward the tank inlet tube.
9. Securely attach the valve and bracket to the component bracket using the two #8-32 screws.
10. Securely fasten the water lines to and from the solenoid valve.
11. Refer to FIG. 13 when reconnecting the wires.

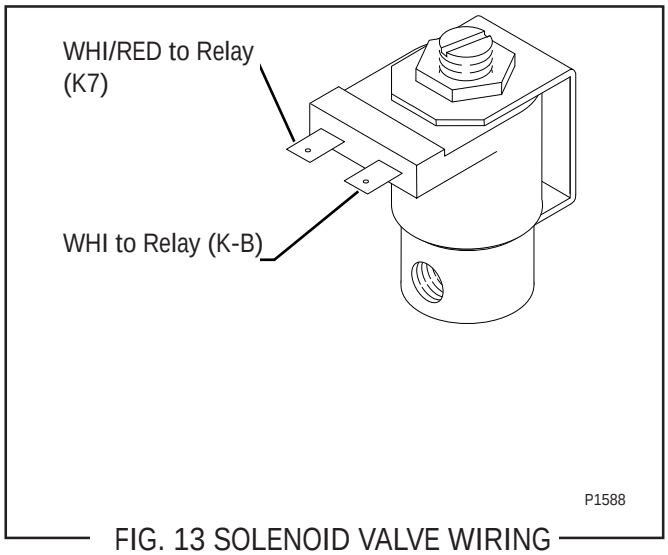


FIG. 13 SOLENOID VALVE WIRING

(Added November 1999)

SERVICE (cont.)

HOT WATER DISPENSE VALVE (OPTIONAL)

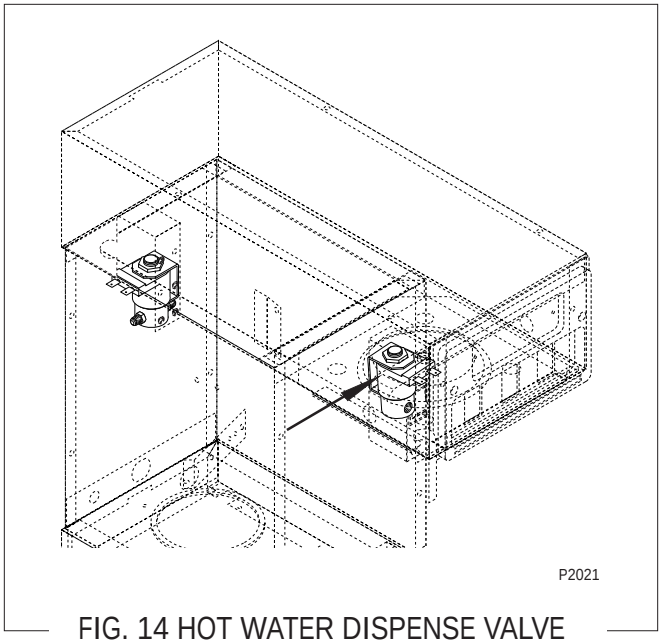


FIG. 14 HOT WATER DISPENSE VALVE

Location:

The hot water dispense valve is located under the top cover or top warmer housing and to the left of the switches, FIG. 14.

Test Procedure:

1. With a voltmeter check the voltage across the white and the white/violet wires when the hot water dispense switch is pressed to the lower position and held. 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.
2. Disconnect the brewer from the power source.

If voltage is present as described, proceed to #3.
If voltage is not present as described, refer to the Wiring Diagrams and check the brewer wiring harness.

3. Remove all wires from the coil. Check for continuity across the solenoid valve coil terminals.

If continuity is present as described, reconnect the white and the white/violet wires and proceed to #4.
If continuity is not present as described, replace the solenoid valve.

4. Check the solenoid valve for coil action. Connect the brewer to the power source, place the hot water dispense switch in the lower position and release. Listen carefully in the vicinity of the solenoid valve for a "clicking" sound as the coil magnet attracts and repels the plunger.
5. Disconnect the brewer from the power source.

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

Removal and Replacement:

1. Disconnect the brewer from the power source.
2. Turn off the water supply to the brewer.
3. Remove the top cover or top warmer housing to gain access.
4. Drain water from tank until level is below water outlet tube.
5. Disconnect the water lines to and from the solenoid valve.
6. Remove the two #8-32 screws which hold the solenoid valve and mounting bracket to the component bracket.
7. Lift out the solenoid valve and bracket. Remove the bracket from the solenoid valve and save to mount the new valve.
8. Securely install the new solenoid valve to the mounting bracket with two #10-32 screws. Check the direction of flow arrow on the valve. It must be pointing toward the dispense tube.
9. Securely attach the valve and bracket to the component bracket using the two #8-32 screws.
10. Securely fasten the water lines to and from the solenoid valve.
11. Refer to FIG. 15 when reconnecting the wires.

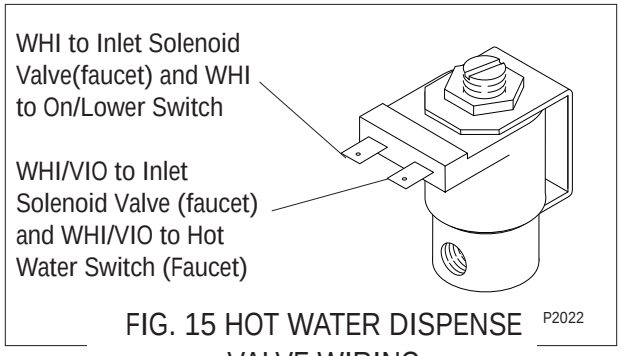


FIG. 15 HOT WATER DISPENSE VALVE WIRING

(Added November 1999)

SERVICE (cont.)

INLET SOLENOID VALVE (FAUCET - OPTIONAL)

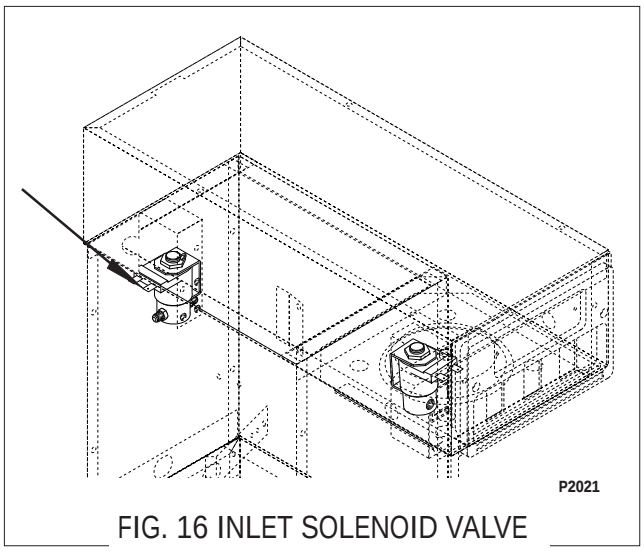


FIG. 16 INLET SOLENOID VALVE (FAUCET)

Location:

The Inlet Solenoid Valve (faucet) is located inside the rear access panel, FIG. 16.

Test Procedures:

1. With a voltmeter check the voltage across the white and the white/violet wires when the hot water dispense switch is pressed to the lower position and held. 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.
2. Disconnect the brewer from the power source.

If voltage is present as described, proceed to #3.
If voltage is not present as described, refer to the Wiring Diagrams and check the brewer wiring harness.

3. Remove all wires from the coil. Check for continuity across the solenoid valve coil terminals.

If continuity is present as described, reconnect the white and the white/violet wires and proceed to #4.
If continuity is not present as described, replace the solenoid valve.

4. Check the solenoid valve for coil action. Connect the brewer to the power source, place the hot water dispense switch in the lower position and release. Listen carefully in the vicinity of the solenoid valve for a “clicking” sound as the coil magnet attracts and repels the plunger.
5. Disconnect the brewer from the power source.

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

Removal and Replacement:

1. Disconnect the brewer from the power source.
2. Turn off the water supply to the brewer.
3. Remove the rear access panel to gain access.
4. Disconnect all wires from the solenoid valve.
5. Turn the needle valve handle clockwise to close the needle valve.
6. Disconnect the water lines to and from the solenoid valve.
7. Remove the two #8-32 screws which hold the solenoid valve and mounting bracket to the component bracket.
8. Lift out the solenoid valve and bracket. Remove the bracket from the solenoid valve and save to mount the new valve.
9. Securely install the new solenoid valve to the mounting bracket with two #10-32 screws. Check the direction of flow arrow on the valve. It must be pointing toward the needle valve.
10. Securely attach the valve and bracket to the component bracket using the two #8-32 screws.
11. Securely fasten the water lines to and from the solenoid valve.
12. Refer to FIG. 17 when reconnecting the wires.
13. Refer to Initial Set-Up for readjustment of the needle valve (steps 18-20).

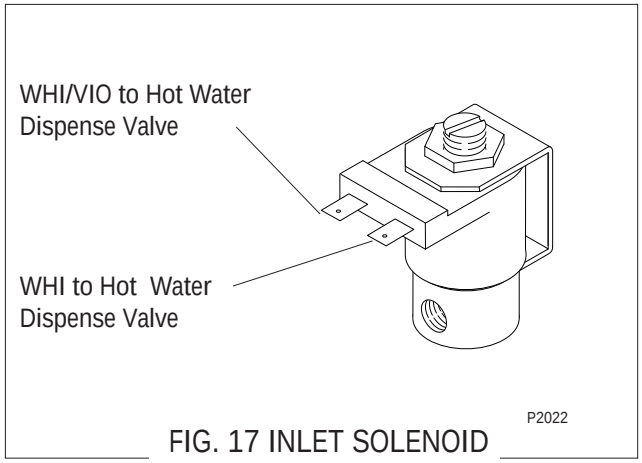


FIG. 17 INLET SOLENOID VALVE WIRING

(Added November 1999)

SERVICE (cont.)

Relay

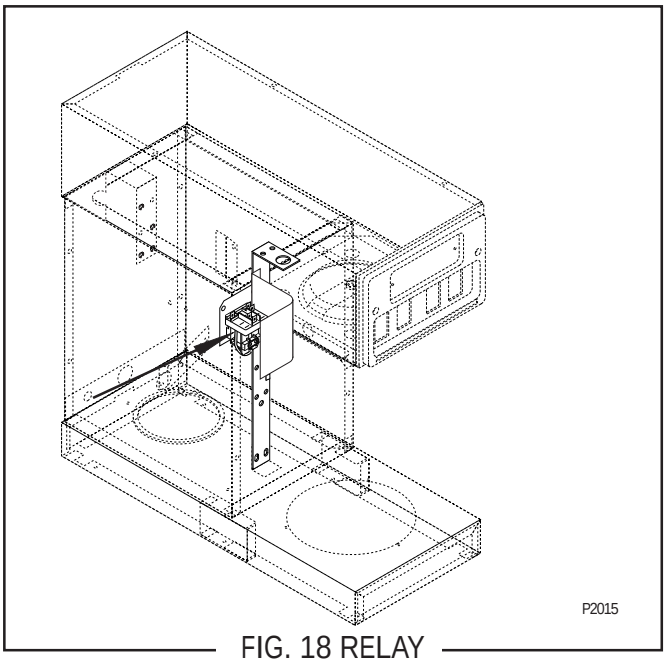


FIG. 18 RELAY

Location:

The relay is located inside the front access panel, near the top of the bracket, FIG. 18.

Test Procedure:

1. Disconnect the brewer from the power source.
2. Remove the brown/black wire from the "A" terminal and the white wire from the "B" terminal on the relay.
3. Check for continuity across the "A" and "B" teminals.

If continuity is present as described, reconnect the brown/black wires and white wires to the relay, FIG. 19, and proceed to #4.
If continuity is not present as described, replace the relay.

4. Remove the black wire from terminal 5 and the white/red wire from terminal 7 on the relay.
5. Check for continuity across terminals 5 and 7 by manually closing the relay contact. Continuity must be present when contact is released.

If continuity is present as described, reconnect the black and white/red wires to the relay, relay is operating properly.
If continuity is not present as described, replace the relay.

Removal and Replacement:

1. Disconnect the brewer from the power source.
2. Remove the top cover or top warmer housing.
3. Disconnect all wires from the relay.
4. Remove the two #8-32 screws attaching the relay and bracket assembly to the component bracket.
5. Remove the #6-32 screw attaching the relay to the bracket.
6. Securely attach the new relay to the bracket using the #6-32 screw.
7. Attach the new relay and bracket assembly to the component bracket using the two #8-32 screws.
8. Refer to FIG. 19 when reconnecting the wires.

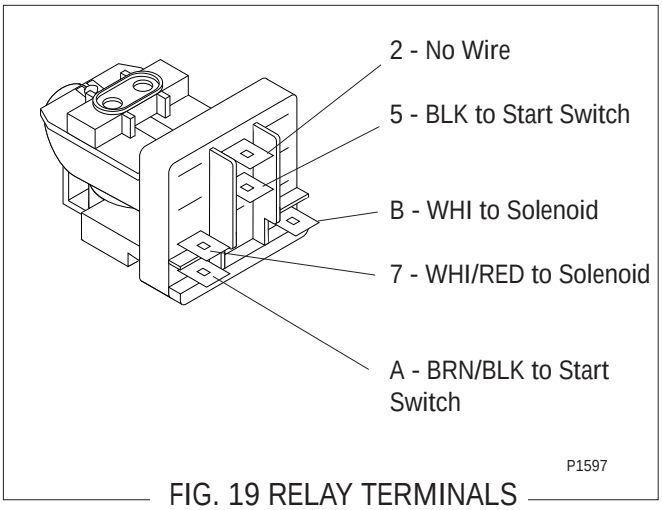


FIG. 19 RELAY TERMINALS

(Added November 1999)

SERVICE (cont.)

Tank Heater

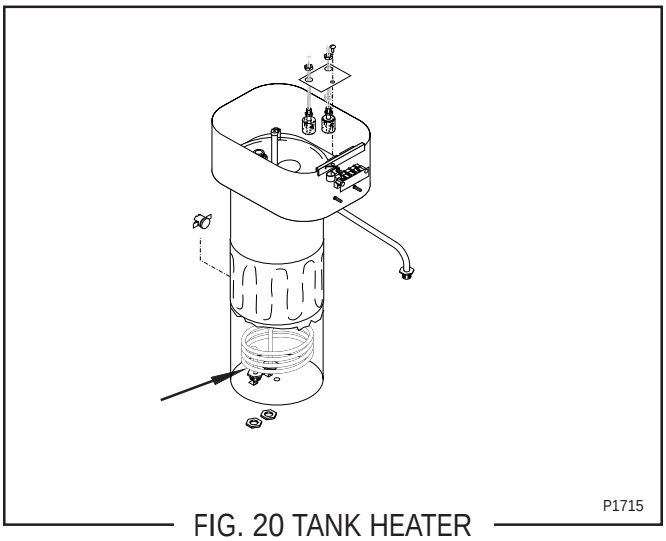


FIG. 20 TANK HEATER

Location:

The tank heater is located in the bottom of the tank assembly, FIG. 20.

Test Procedure:

1. Check the voltage across the black and white or red wires on the tank heater with a voltmeter when the control thermostat is turned "ON" (fully clockwise). Connect the brewer to the power source. The indication must be:
   a) 120 volts ac for two wire 120 volt models and three wire 120/240 volt models
   b) 240 volts ac for two wire 240 volt models.
2. Disconnect the brewer from the power source.

If voltage is present as described, proceed to #3.
If voltage is not present as described, refer to the Wiring Diagrams and check the brewer wiring harness.

3. Check for continuity across the terminals of the tank heater.

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 the heater for cracks in the sheath.

Removal and Replacement:

1. Disconnect the brewer from the power source.
2. Remove the top cover or top warmer housing and the rear access panel.
3. Disconnect the wires to the tank heater.
4. Gently pull the thermostat bulb with grommet out of the tank lid.
5. Disconnect and remove the fill basin tube.
6. Remove the four #8-32 nuts and hold-down brackets attaching the tank lid to the tank assembly and remove the tank lid and gasket.
7. Drain the water from the tank using a syphon or similar device.
8. Remove the two nuts securing the tank heater to the bottom of the tank and remove the tank heater.
9. Install a new tank heater with new washers and secure with two nuts. Nuts should be securely tightened to insure a proper seal.
10. Install the tank lid and gasket using the four hold-down brackets and #8-32 nuts.
11. Install the fill basin tube and tighten the nuts securely.
12. Slide the grommet to the red mark on the capillary tube.
13. Carefully bend the capillary tube so that the tube and bulb inside the tank are in a vertical position.
14. Insert the bulb through the hole in the tank lid and press the grommet firmly and evenly so that the groove in the grommet fits into the tank lid.
15. Refer to FIG. 21 when reconnecting the wires.
16. Refer to Initial Setup to refill the tank.

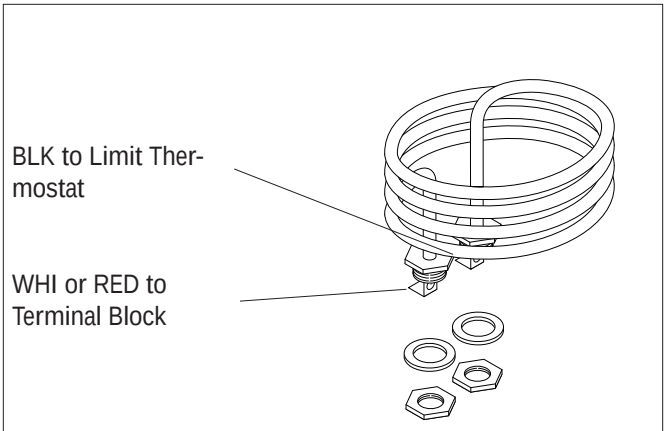
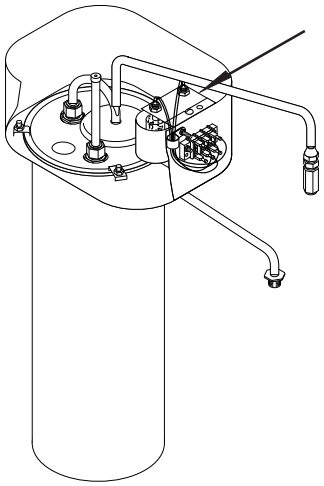


FIG. 21 TANK HEATER WIRING

(Added November 1999)

SERVICE (cont.)

Water Level and Overflow Safety Switch



P2016

FIG. 22 WATER LEVEL and OVERFLOW SAFETY SWITCHES

Location:

The water level and overflow safety switches are located under the top cover or top warmer housing and inside and front of the tank fill basin, FIG. 22.

Test Procedure:

1. Disconnect the brewer from the power source.
2. Remove the top cover or top warmer housing.
3. Remove the leads of the switch being tested from the connection block mounted on the front of the tank basin.
4. Check the voltage across the black lead of the connection block and the white lead on the solenoid coil with a voltmeter. Turn the On/Lower switch to the "ON" position and 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,
5. Disconnect the brewer from the power source.

If voltage is present as described, proceed to #6.
If voltage is not present as described, refer to the Wiring Diagrams and check the brewer wiring harness.

6. Check for continuity across the overflow switch red wires only until the plastic float is raised and check that continuity returns when the float is lowered again.
7. Check for continuity across the water level switch red wires only until the plastic float is raised and check that continuity returns when the float is lowered again.

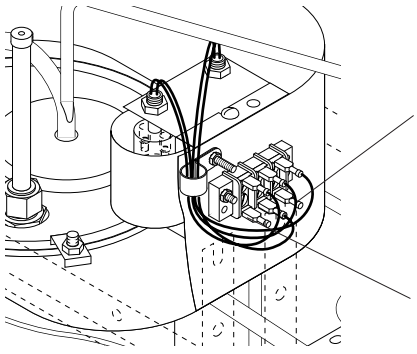
If continuity is present as described, reconnect the wires as shown in FIG. 23, the switches are operating properly.
If continuity is not present as described, replace the switch.

Removal and Replacement:

1. Disconnect the brewer from the power source.
2. Remove the top cover or top warmer housing.
3. Remove the wire leads connecting the water level and overflow switches to the connection block at the front of the tank and fill basin.
4. Disconnect the #8-32 screw and remove the entire switch assembly from the tank and fill basin.
5. Place the new switch assembly into the bracket, wires up.

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

6. Install the nuts over the wires and secure the switch to the mounting bracket. Do not over tighten.
7. Attach the entire switch assembly to the tank and fill basin using the #8-32 screw.
8. Add or remove washers to the float on the level switch as required. Adding washers increases the volume, removing washers decreases it.
9. Refer to FIG. 23 and the relative wiring diagram when reconnecting wires.



P1478

FIG. 23 WATER LEVEL and OVERFLOW SAFETY SWITCH WIRING

HOT WATER SWITCH(optional)

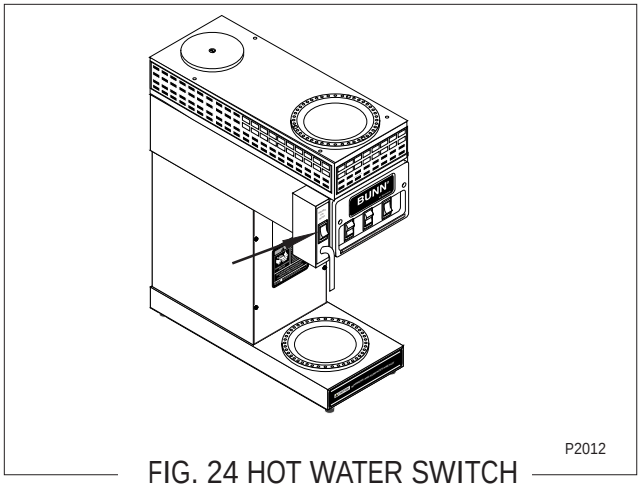


FIG. 24 HOT WATER SWITCH

Location:

The Hot Water Switch is located on the front of the machine to the left of the switch panel and above the faucet, FIG. 24.

Test Procedures:

1. Disconnect the brewer from the power source and remove the wires from both terminals of the hot water dispense 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 prseent as described, replace the switch.

Removal and Replacement:

1. Remove all wires from the switch terminals.
2. Compress the clips inside the housing and gently push the switch through the opening.
3. Push the new switch into the opening and spread the clips to hold the switch captive in the housing.
4. Refer to FIG. 25 when reconnecting the wires.

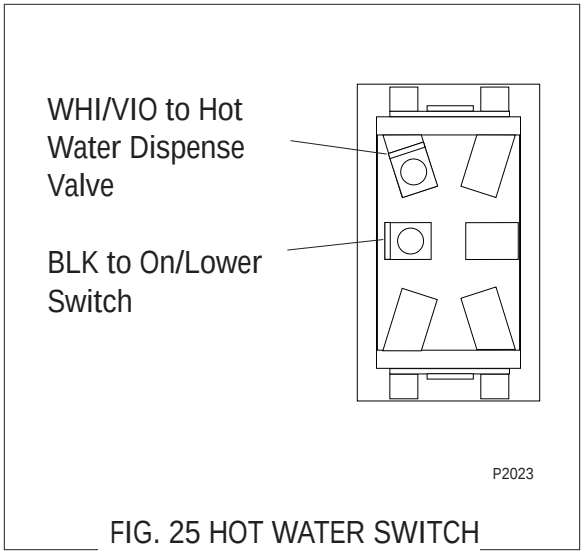


FIG. 25 HOT WATER SWITCH WIRING

(Added November 1999)

REPLACEMENT PARTS

05099.0000 ..... Airvent Tube
01171.0001 ..... Check Valve
13229.0000 ..... Decal, Front End-Cap Switch
02769.0000 ..... Decal, Surfaces Are Hot
01188.0000 ..... Deliming Spring
12753.0001 ..... Dispense Valve
13210.0000 ..... Fill Basin Anti-Syphon Tube
05106.0000 ..... Float Switch
20528.1330 ..... Flow Control (.33 gpm)(SLF)
04198.0000 ..... Foot (Set of 4)
02721.0000 ..... Front End-Cap
02750.0000 ..... Front End-Cap Back-up plate
20216.0000 ..... Funnel Assy, SST w/black
20216.0001 ..... Funnel Assy, SST w/orange
20583.0003 ..... Funnel Assy, black plastic
20583.0006 ..... Funnel Assy, orange plastic
29329.1000 ..... Limit Thermostat
00484.0001 ..... Needle Valve (SLF)
02753.0000 ..... On/Off Switch, Lighted
05082.0000 ..... Overflow Cup
02618.1000 ..... Relay
01085.0002 ..... Solenoid Valve
01066.0000 ..... Solenoid Valve Bonnet Wrench
01111.0000 ..... Solenoid Valve Repair Kit
01075.0000 ..... Sprayhead Fitting Nut
05031.0000 ..... Sprayhead Tube
01082.0000 ..... Sprayhead, 6-hole
02628.0000 ..... Switch, Black Momentary
12776.0000 ..... Switch, Red Momentary (SLF)
02713.0000 ..... Syphon Cup
02746.0000 ..... Syphon Cup Gasket
02745.0000 ..... Syphon Cup Nut
05039.0000 ..... Tank (Model SL)
05039.0002 ..... Tank (Model SLF)
02755.1000 ..... Tank Heater(1425W@120V)
02756.1000 ..... Tank Heater(1800W@120V)
05037.1000 ..... Tank Heater(3500W@240V)
00943.0000 ..... Tank Heater Gasket
00942.0000 ..... Tank Heater Nut
04626.0000 ..... Tank “Keep Warm” Heater
05078.0000 ..... Tank Lid
02747.0000 ..... Tank Lid Gasket
02775.0000 ..... Tank Lid Hold-Down Clamp
07038.0000 ..... Terminal Block (Model 35)
01106.0000 ..... Terminal Block (Models 15&20)
07073.0000 ..... Thermostat Grommet
04314.0001 ..... Thermostat
03652.0000 ..... Warmer Dish Assy w/heater
03656.0000 ..... Warmer Dish, Porcelain
01227.0000 ..... Warmer Element (100W short)
05212.0000 ..... Warmer Retainer Plate
23820.1000 ..... Water Strainer

SCHEMATIC WIRING DIAGRAM SL

