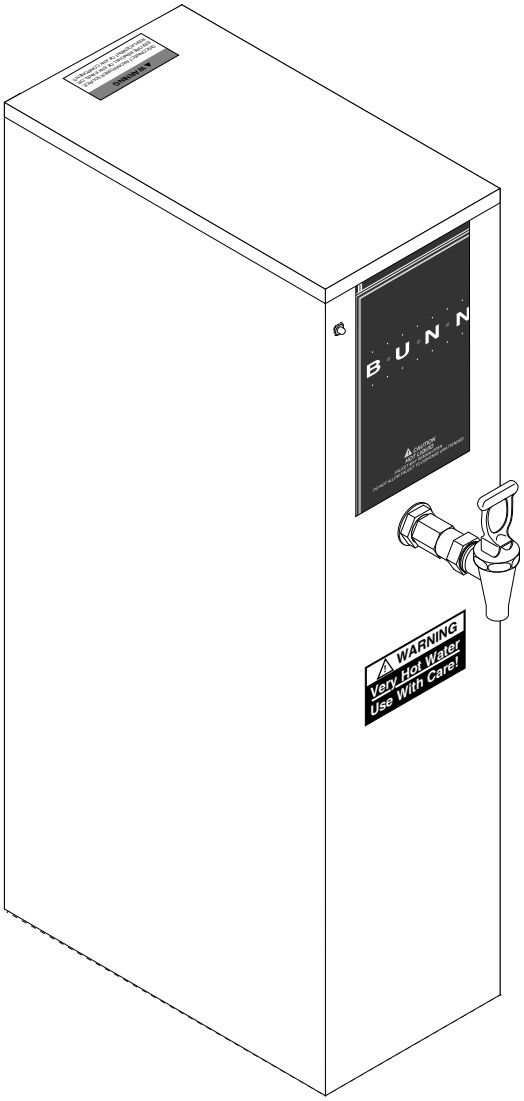
BUNN®

H5M



OPERATING & SERVICE MANUAL

BUNN-O-MATIC CORPORATION

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INTRODUCTION

This equipment heats and dispenses water on demand for beverages and cooking purposes. This equipment is for indoor use, either wall-mounted or 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.

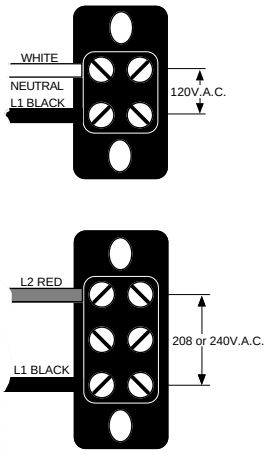
THE BUYER'S REMEDY AGAINST BUNN FOR THE BREACH OF ANY OBLIGATION ARISING OUT OF THE SALE OF THIS EQUIPMENT, WHETHER DERIVED FROM WARRANTY OR OTHERWISE, SHALL BE LIMITED, AS SPECIFIED HEREIN, TO REPAIR OR, AT BUNN'S SOLE OPTION, REPLACEMENT OR REFUND.

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 REQUIREMENTS

CAUTION - The dispenser must be disconnected from the power source until specified in *Initial Set-Up.*
The H5M dispenser requires 2-wire, grounded service rated 120, 208, or 240 volts ac, 20 amp, single phase.
The H5MA, 230V-CE dispenser requires 2-wire, grounded service rated 230 volts ac, 40 amp, single phase, 50/60Hz. *(Refer to the dispenser's dataplate for exact voltage requirement.)*

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 upper and lower rear panels. Turn the knob of the thermostat to the "OFF" position (fully counterclockwise).
4. Install a strain relief and the proper electrical wiring to the terminal block.
5. Connect the dispenser to the power source and verify the voltage at the terminal block before proceeding. Reinstall both rear panels.
6. If plumbing is to be hooked-up later be sure the dispenser is disconnected from the power source. If Plumbing has been hooked-up, the dispenser is ready for *Initial Set-Up*.

PLUMBING REQUIREMENTS

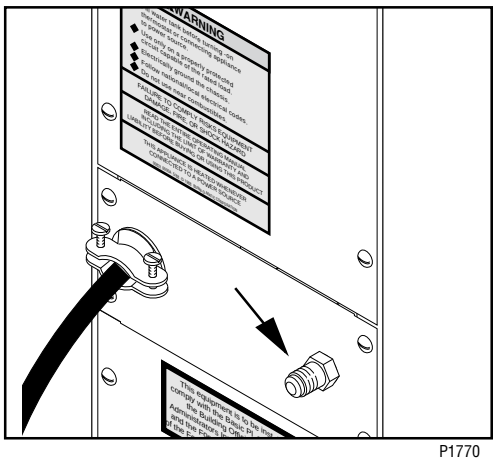
This dispenser must be connected to a **COLD WATER** system with operating pressure between 20 and 90 psi (138 and 620 kPa)from a ½" or larger supply line. A shut-off valve should be installed in the line before the dispenser. Install a regulator in the line when pressure is greater than 90 psi (620 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. At least 18 inches of an FDA approved flexible beverage tubing, such as reinforced braided polyethylene or silicone, before the dispenser will facilitate movement to clean the countertop. It can be purchased direct from Bunn-O-Matic (part number 00326-0000). Bunn-O-Matic does not recommend the use of a saddle valve to install the dispenser. 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 on the rear of the dispenser.
2. Turn-on the water supply.



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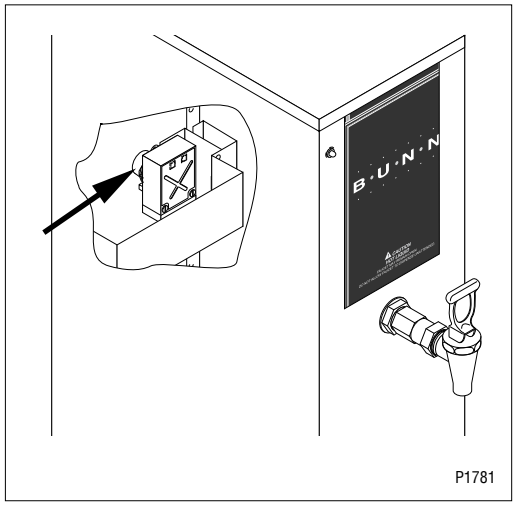
INITIAL SET-UP

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

1. Remove the upper rear panel and rotate the control thermostat knob fully counterclockwise to the “OFF” position and replace the panel.
2. Connect the dispenser to the power source and turn-on the water supply.
3. Water will automatically flow into the tank to the proper level and shut-off. This will take approximately 10 minutes.
4. Disconnect the dispenser from the power source, remove the upper rear panel and place the control thermostat knob fully clockwise to the “ON” position, and replace the panel.
5. Connect the dispenser to the power source and wait approximately twenty minutes for the water in the tank to heat.
6. On models with ready indicator, the indicator will glow when the proper water temperature for use is achieved.



DRAINING THE DISPENSER

CAUTION - The dispenser must be disconnected from the power source throughout these steps.

1. Disconnect the dispenser from the power source.
2. Shut-off and disconnect the incoming water supply
3. Remove the 4-40 screws at the sides of the top panel.
4. Gently remove one of the grommets from the tank lid.
5. Insert a tube to the bottom of the tank and syphon ALL of the water out. Bunn-O-Matic has a syphon assembly available (#12440.0000) for this purpose.

NOTE - The dispenser must be full using the INITIAL SET-UP steps before reconnecting to the power source.

CLEANING

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.

WALL MOUNTED INSTALLATION

If the dispenser is wall mounted, the bottom of the dispenser should be at the same height as a counter or table top. Use B.O.M. part #12542.0000 for side mounted Wall Bracket Kit or # 13125.0001 for front mounted Wall Bracket Kit .

SUPPORT FOR LARGE RECEPTACLES

CAUTION: If the dispenser is to be used with larger receptacles such as pitchers or pots, those receptacles must be adequately supported during dispensing of hot water to avoid spillage of very hot water. This support may be provided by a table or counter top, or use B.O.M. part #12599.0000 Shelf Kit

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 to avoid twists and kinks in the tubing.
- Make certain that all plumbing connections are sealed and electrical connections tight and isolated.
- This dispenser is heated at all times. Keep away from combustibles.

WARNING

- Exercise extreme caution when servicing electrical equipment.
- Disconnect the dispenser 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) Check the terminal block for the correct voltage. It should be: a.) 100 to 120 volts ac across the black and white terminals for 100 to 120 volt models, b.) 200 to 240 volts ac across the red and black terminals for 200 to 240 volt models c.) 230 volts ac across the red and black terminals for 230 volt models. (B) Check circuit breakers or fuses.
	2. Safety overflow switch	Refer to Service – safety overflow switch for testing procedures. See page 11.

TROUBLESHOOTING (cont.)

Problem	Probable Cause	Remedy
Automatic refill will not operate after drawing hot water.	1. No water	Check plumbing and shut-off valves.
	2. Water strainer/flow control	(A) Direction of flow arrow must be pointing towards dispenser. (B) Remove the strainer/flow control and check for obstructions. Clear or replace.
	3. Safety overflow switch	Refer to Service – safety overflow switch for testing procedures. See page 11.
	4. Liquid level system	Refer to Service – liquid level board for testing procedures. See page 15.
	5. Solenoid valve	Refer to Service – solenoid valve for testing procedures. See page 12.
Water flows into the tank continuously (Dispenser disconnected from power source).	1. Solenoid valve	Refer to Service – solenoid valve for testing procedures. See page 12.
Water flows into the tank continuously (Dispenser connected to power source).	1. Liquid level system	Refer to Service – liquid level board for testing procedures. See page 15.
Water is cold.	1. Control thermostat	Control thermostat must be in the "ON" position.
	2. Safety overflow switch	Refer to Service – safety overflow switch for testing procedures. See page 11.
	3. Limit thermostat	Refer to Service – limit thermostat for testing procedures. See page 10.

CAUTION – Do not eliminate or bypass limit thermostat. Use only B.O.M. replacement part #23717.0001.

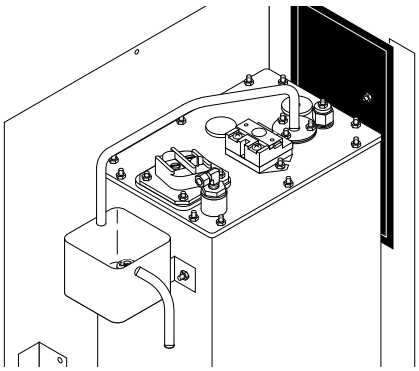
	4. Tank heater	Refer to Service – tank heater for testing procedures. See page 13.
	5. Temperature control	Refer to Service – control thermostat for testing procedures. See page 14.

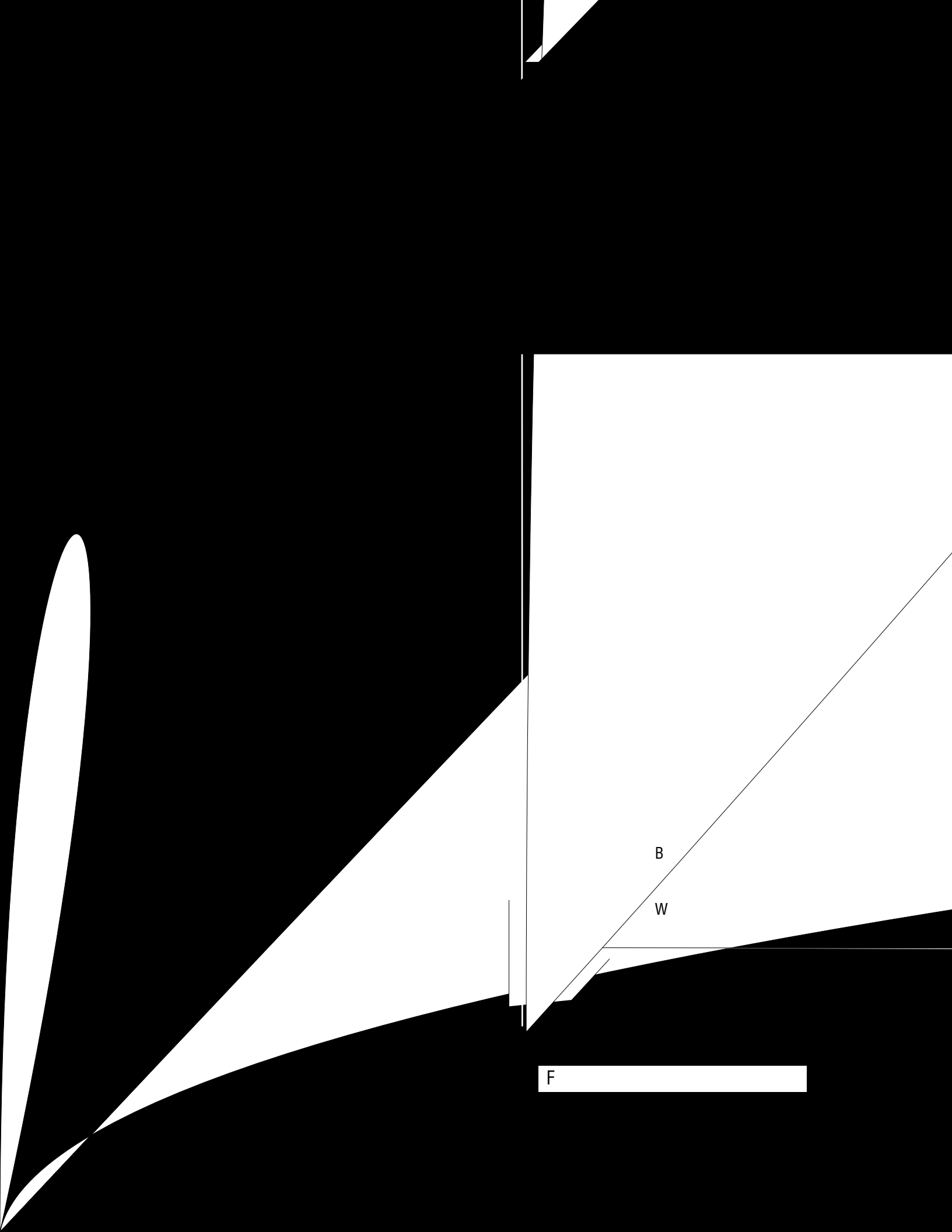
TROUBLESHOOTING (cont.)

Problem	Probable Cause	Remedy
Water boils continuously.	1. Temperature control	Refer to Service – control thermostat for testing procedures. See page 14.
	2. Lime build-up	Inspect the tank assembliy for excess lime deposits. Delime as required.

CAUTION – Tanks and tank components should be delimed reglarly depending on local water conditions. Excessive mineral build-up on stainless steel surfaces can initiate corrosive reactions resulting in serious leaks.

Dispenser 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 be resting on the counter top.
	3. Water supply	(A) The dispenser must be connected to a cold water line. (B) Water pressure to the dispenser 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).
Ready indicator will not light. (when temperature is within 4° of its selected setting.)	1. Temperature control	Refer to Service – control thermostat for testing procedures. See page 14.
	2. Ready Indicator LED	Replace the indicator LED.

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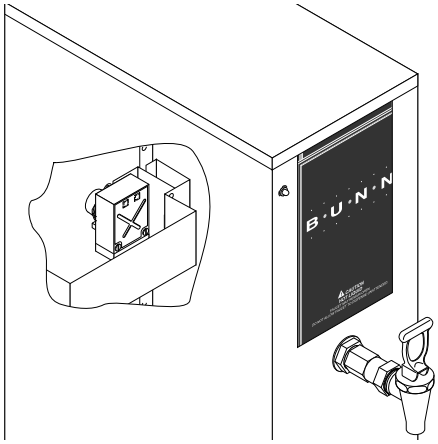
SERVICE (cont.)

Thermostat

Location: The mechanical thermostat is located inside the upper rear panel. To test the thermostat, access will also be needed to the terminal block located inside the bottom access panel.



Test Procedure:

1. Disconnect the dispenser from the power source.
2. Check the voltage across the black wire on the thermostat and the white or red wire at the terminal block with a voltmeter. Connect the dispenser to

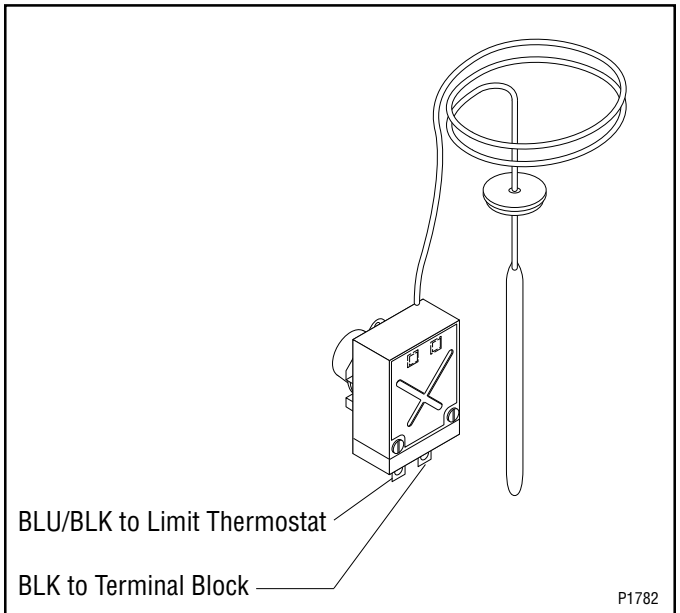


FIG. 10 THERMOSTAT WIRING

SERVICE (cont.)

Liquid Level Board

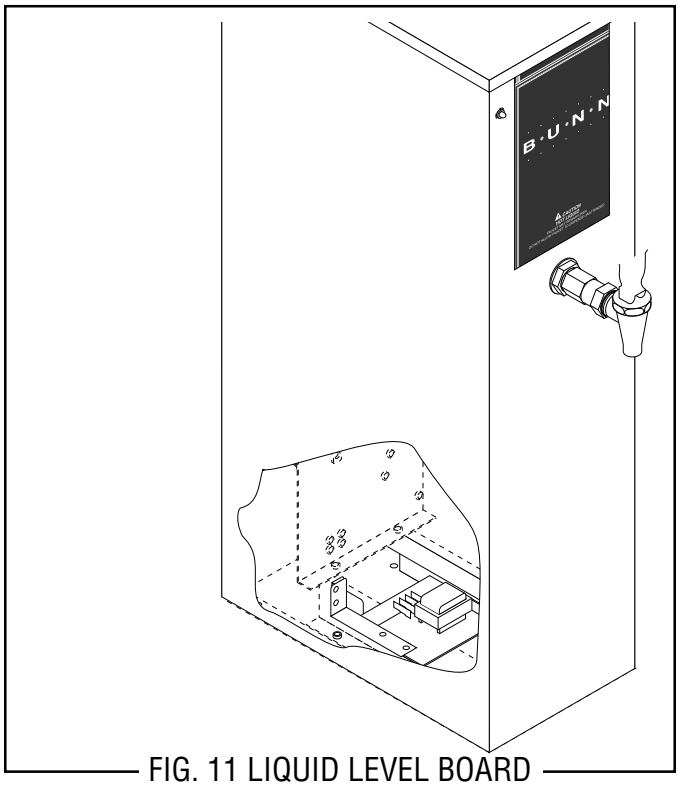


FIG. 11 LIQUID LEVEL BOARD

Location:
The liquid level board is located inside the lower panel.

Test Procedure:
1. Disconnect the dispenser from the power source.
2. Remove the blue wire from terminal 1 and the pink wire from terminal 4 of the circuit board.
3. Check the voltage across terminals 2 and 3 with a voltmeter. Connect the dispenser to the power source. Turn the thermostat knob to the "ON" position (fully clockwise). The indication must be:
   a.) 100 to 120 volts ac for 100 to 120 volt models,
   b.) 200 to 240 volts ac for 200 to 240 volt models,
   c.) 230 volts ac for 230 volt models.
4. Disconnect the dispenser 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 wiring harness.

Liquid Level Board (cont.)

15. Move the probe's flat end to the dispenser housing. The indication must be 0.
16. Move the probe's flat end away from the dispenser housing. The indication should again be:
    a.) 100 to 120 volts ac for 100 to 120 volt models,
    b.) 200 to 240 volts ac for 200 to 240 volt models,
    c.) 230 volts ac for 230 volt models.
17. Disconnect the dispenser 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.

Removal and Replacement:

1. Remove all wires from the level control board.
2. Remove two #8-32 screws holding level control board and mounting bracket to the component bracket.
3. Install the new level control board and mounting bracket to the component bracket.
4. Refer to FIG. 12 when reconnecting the wires.

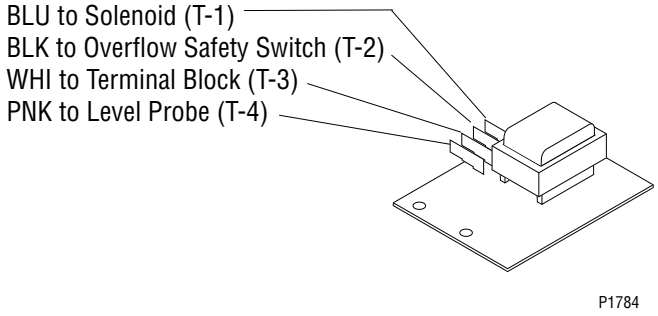


FIG. 12 LIQUID LEVEL BOARD WIRING

SERVICE (con

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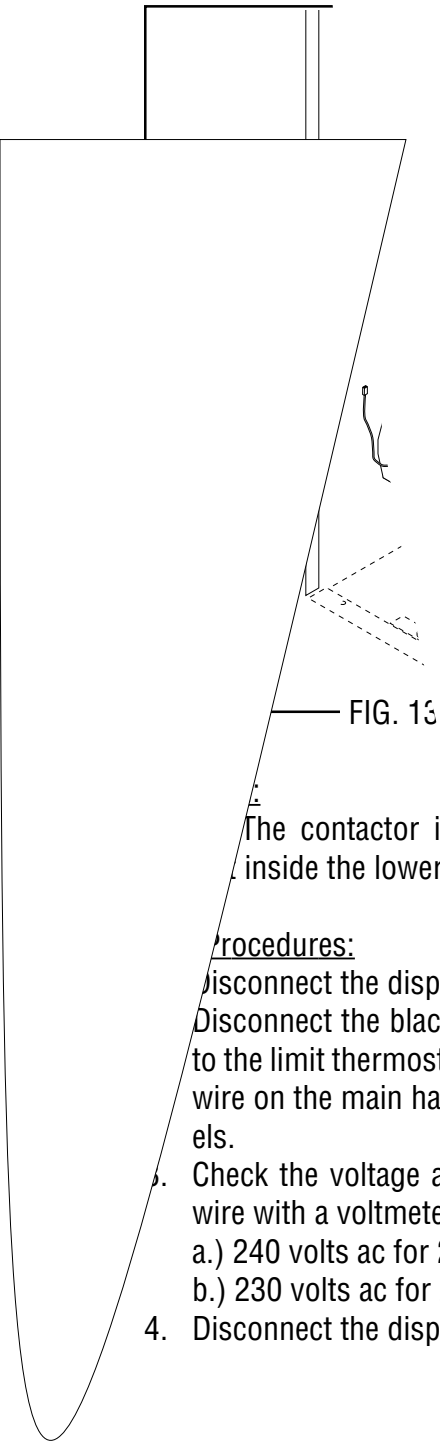

FIG. 13

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The contactor is
inside the lower re

rocedures:

isconnect the dispenser

Disconnect the black wire
to the limit thermostat and b
wire on the main harness on
els.

3. Check the voltage across the re
wire with a voltmeter. The indicatio
a.) 240 volts ac for 240 volt models,
b.) 230 volts ac for 230 volt models.
4. Disconnect the dispenser from the power s

SERVICE (cont.)

Contactor (cont.)

contactor.

Removal and Replacement:

1. Disconnect all the wires from the contactor.
2. Remove the two #8-32 screws securing the contactor to the contactor mounting bracket, remove contactor and protective shield. Discard contactor.
3. Install new contactor with shield between mounting bracket and contactor and secure with two #8-32 screws
4. Refer to Fig. 14 and reconnect the wires.

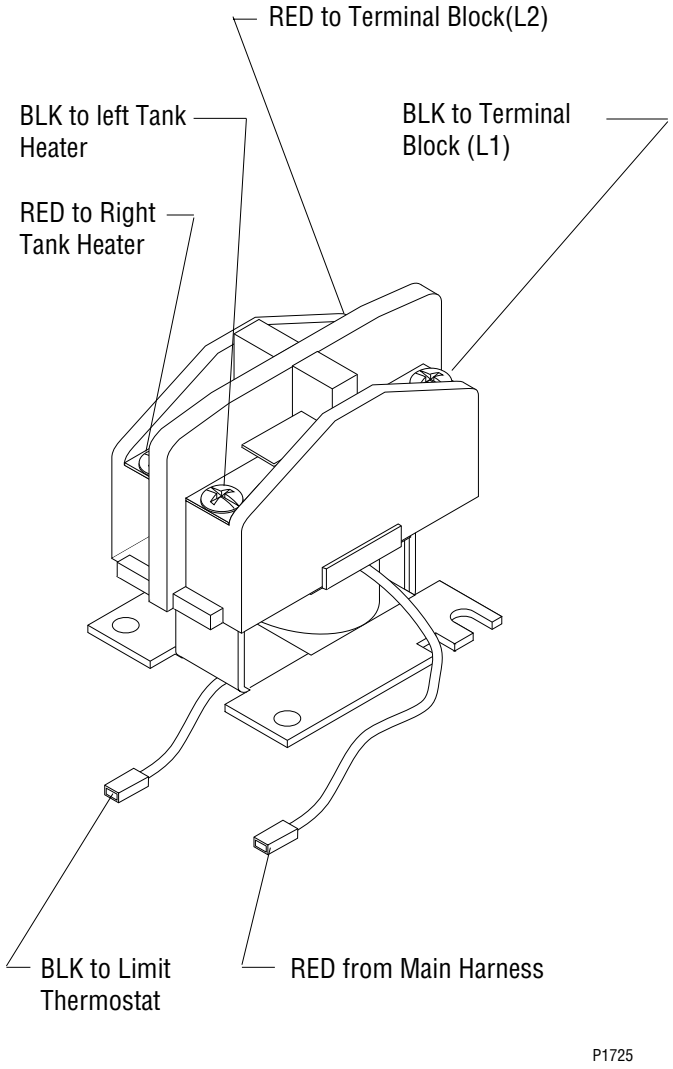
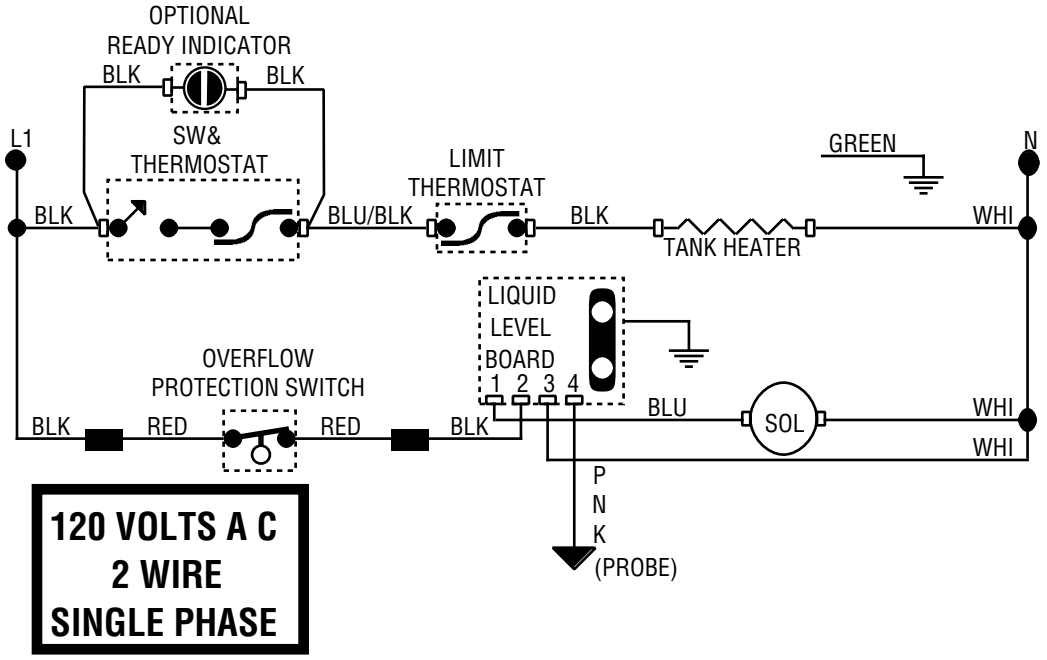


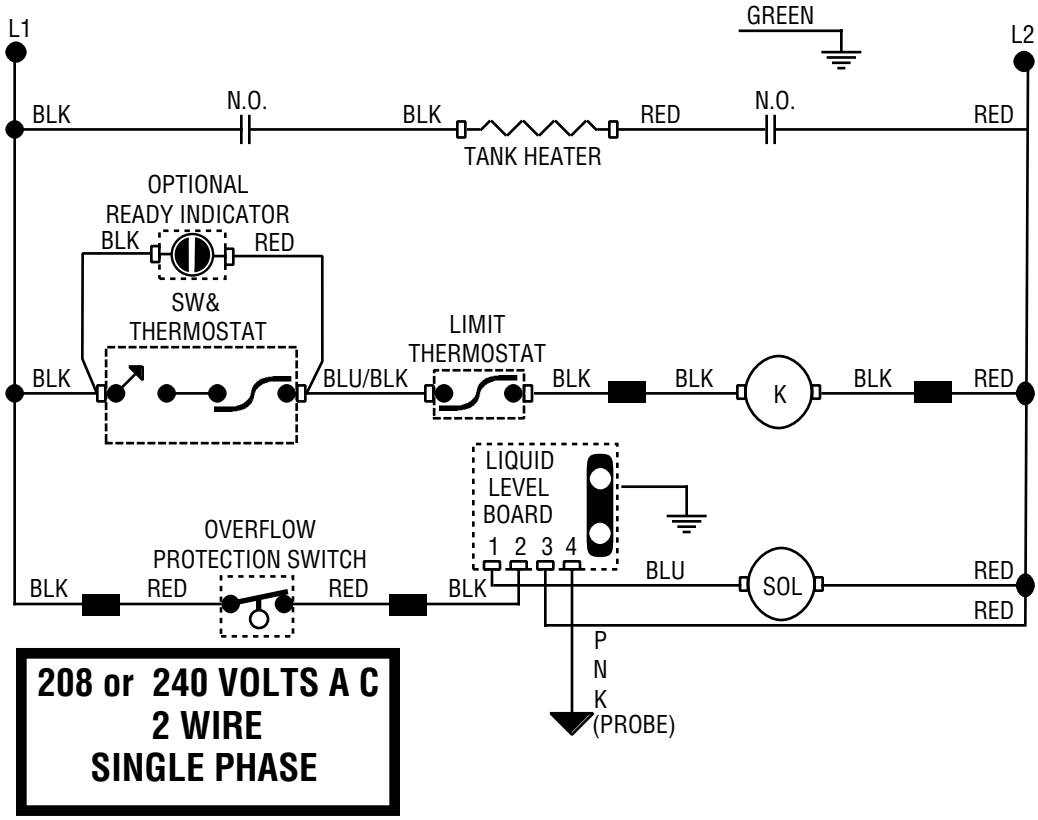
FIG.14 CONTACTOR WIRING

WIRING DIAGRAMS

SCHEMATIC WIRING DIAGRAM H5M



SCHEMATIC WIRING DIAGRAM H5M



WIRING DIAGRAMS

SCHEMATIC WIRING DIAGRAM H5MA, 230V CE