ELECTRONIC TOUCH CONTROL COOKTOP

IMPORTANT SAFETY NOTICE: This information is intended for use by individuals possessing adequate backgrounds of electrical, electronic and mechanical experience. Any attempt to repair a major appliance may result in personal injury and property damage. Neither the manufacturer nor the seller can be responsible for the interpretation of this information or assume any liability in connection with its use.

DISCONNECT POWER BEFORE SERVICING

WIRING

Built-in power leads are UL approved for connection to larger gauge household wiring. The insulation of these leads is rated at temperatures much higher than the temperature rating of household wiring. The current carrying capacity of a conductor is governed by the temperature rating of the insulation around the wire rather than the wire gauge alone.

WARNING: IMPROPER CONNECTION OF **ALUMINUM** HOUSE WIRING TO THESE COPPER LEADS CAN RESULT IN A SERIOUS PROBLEM. **USE ONLY CONNECTORS DESIGNED FOR JOINING COPPER TO ALUMINUM** AND FOLLOW THE MANUFACTURER'S RECOMMENDED PROCEDURE CLOSELY.

CERAMIC GLASS COOKTOP

The ceramic glass and touch board shall be supplied as a complete assembly.

Appearance Defects

Scratches, marks, discoloration, stains, spots, etc. can be caused by food, cookware, utensils, cleaning solutions or water.

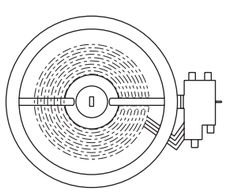
BEFORE replacing the COOKTOP, use the cooktop cleaning procedure outlines in the Owner's Manual using blue Scotch Brite® pads.

NOTE: When servicing the cooktop, care must be taken not to scratch or damage the glass.

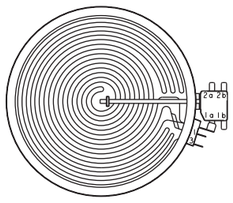
HEATING ELEMENT SYSTEMS

Radiant Heating Element Systems

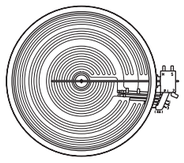
The radiant heating element consists of a ribbon-type resistance wire attached to the support insulation with molded ceramic walls in a corrosion-protected metal dish. The circular heating elements come in three sizes:



Single Element



Dual Element



Tri-Ring Element

DIGITAL CONTROL SYSTEM

The control system consists of three circuit boards: The Touch Board (permanently adhered to the ceramic glass panel) that senses user input, including Control Lockout, displays user settings, contains HOT lights and key touch beeper. It is the "Main" board for the system. The Drop Box contains the Relay Power Supply Module (RPSM) providing DC from switch mode power supply and most of the relays controlling the heating elements. Under the Touch Board is a Daughter Relay Module (DRM) with additional relay(s).

The Main Board communicates to the RPSM board via 12-volt serial bus. The RPSM communicates to the DRM via individual 5-volt and 12-volt DC levels.

There are no electronic sensors. There are traditional-style sensors in the Radiant Elements providing 1) over temperature protection cycling 2) HOT lamp input to the RPSM board.

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ELEMENT CONTROL

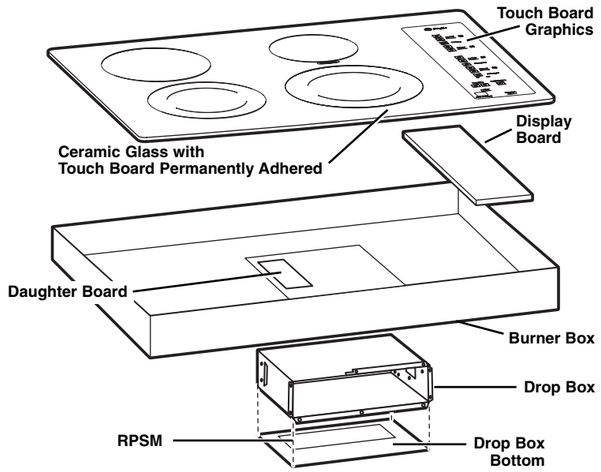
Each element has at least two relays. Both L1 and L2 are disconnected to the Radiant Elements during standby (except to the HOT lamp limiter switch). See Relay Table. The Setup relays remain constantly energized during burner use. The Cycle relays provide the duty cycling during non-HI settings. When on non-Hi levels, the burners' Cycle relay will cycle 3 times per minute.

When on Higher levels, some cycling of the element will occur due to the over-temperature limiter in the radiant element, which is in series with the relays.

DEMO MODE

When 120VAC is applied to the unit, the Touch board will operate normally, but the relays and elements are prevented from operating.

- If the Touch board is damaged, the entire Glass assembly must be replaced.
- If the RPSM is damaged, it can be accessed by removing the Drop Box



bottom that is under the cooktop. (POWER must be removed first.)

Diagnosing the Control

No individual components are replaceable on the boards. The RPSM and DRM are the only field-replaceable boards.

SERVICE CHECKS

Due to the simplicity of the system design, there are no F codes beneficial to help diagnostics. None of the boards use a nonvolatile memory (EEPROM) capable of storing F codes.

- DEAD UNIT: Turn off breaker, wait 30 seconds, breaker on. Proceed to "TESTS" below.

TESTS

- Display check: Turn burner on Level 8. All segments should light. Set 4 burners to 1, 2, 5 and 8. Check for proper digit displays. When power is first applied, all the segments light in a sequence. Check for consistent pattern, none missing or doubled up.
- HOT light check: The HOT lights are LEDs within the Touch board. They are commanded on via serial bus responses from the RPSM board to the Touch board. A HOT light glows from two sources: 1) Whenever a burner is activated, HOT is immediately on. 2) When the temperature on a Ribbon Heating Element exceeds ~150°F, its Limiter Switch closes, sending 240VAC to the RPSM input at J21 and causing the serial bus response.

  When the burner is cool to the touch and in standby, the HOT light should be off. When the burner is first activated, HOT should glow immediately. If a burner has been on for approx. 1 minute, then returned to standby, the HOT light should remain on until cool.
- Touch keys in general: Keys should respond to a grounded surface on the glass of .350 inch diameter, which is the model for a finger. Keys should not respond to a grounded surface less than .130 inch diameter. Water, etc. on the keys may cause them to not respond correctly because of unwanted ground coupling. However, the OFF function will respond regardless of contamination. If the contamination is severe enough to completely prevent touch key response, supervisory functions will turn off the burner. Removing the contamination should restore proper key operation, which could take up to 30 seconds.

  Moisture trapped between the glass and touch board will affect touch key performance. Glass assembly should be replaced.

  A gap between the touch board and glass will affect touch key performance. The glass assembly should be replaced.

TESTS (cont.)

- Burner Touch keys: In standby, only the ON/OFF keys (and LOCK) should respond. The +, – and Pan Size keys should not respond until after the ON/OFF key has been touched first.
- Control Lock key: When the control is locked, no key responds except the Control Lock Key. It must be continuously touched for 3 seconds to change the lock state.
- Burners: Each burner and zone is simply operated by selecting the ON and + keys. Listen for the relay clicking. If no click is heard in response to a burner turned on, there is likely a problem in the 5V/12V serial communication chain or power supply. Check voltages at J2 of Touch board according to the table. If the relay clicks, there is likely a problem with the line voltage circuits. See Ladder Diagram. Make voltage checks to the relay terminals with the drop box opened. DRM board controls only the Tri Ring Radiant Element.

TESTS (cont.)

- Nonenergized burner or ring: If the relay clicks when respective burner is selected on HI, then 240VAC is not getting to the element ribbon. Using a VAC meter, check AC voltage at RPSM or DRM Terminals to the Burner according to the Ladder Diagram.

  If boards are good, look for openings in the harness headers under the insulation, at Ribbon Element connections or on relay boards.
- Version display: When the power is first applied, after the display test sequence, the version number of the Touch board ROM code is momentarily shown in the display. Four digits are shown.

CONNECTOR TABLES

Connector	Use	Expected Voltage	Replace
TOUCH board			
J2-1	Serial communication (LIN) signal	Bi-directional 12VDC square wave. Measure ~3VAC with relays operating.	Touch board if 0V or 12V constant.
J2-2	SIGNAL GROUND	Black lead of voltmeter for J2 measurements.	–
J2-3	12VDC	Steady when power is on.	RPSM
J2-4	Relay enable	Approx. +3.5VDC steady when relays are on.	Touch board if 0V when any relay on.
J2-5	60hz square wave to touch board	Approx. +3.5VDC steady whenever power is applied.	RPSM if steady 0 or 5VDC.

Connector	Use	Expected Voltage	Replace
RPSM board			
J15-4	DRM relay common	+12VDC when any relay on.	RPSM
J15-5	DRM relay K7	+5VDC when relay on.	RPSM
J15-6	SIGNAL GROUND	Black lead of voltmeter for J15 measurements.	RPSM
J20-1	L1	240VAC to L2.	Check harness, breaker.
J20-2	L2	240VAC line to L1.	Check harness, breaker.
J17-1	12VDC	Steady when power is on.	RPSM
J17-2	LIN signal	Bi-directional 12VDC square waves. Measure ~3VAC with relays operating.	Touch board if 0V.
J17-3	SIGNAL GROUND	Black lead of voltmeter for J17 measurements.	–
J17-4	not used	–	–
J17-5	not used	–	–
J17-6	Relay enable	+3.5VDC steady when relays are on.	Touch board if 0V when any relay on.
J17-7	not used	–	–
J17-8	not used	–	–
J17-9	60 hz square wave to touch board	Approx. 3.5VDC whenever power is applied.	RPSM if steady 0 or 5VDC.

Connector	Use	Expected Voltage	Replace
DRM board			
J15-3	DRM Relay Common	+12VDC when any relay on.	RPSM
J15-5	SIGNAL GROUND	Black lead of voltmeter for J15 measurements.	RPSM
J15-6	DRM relay K7	+5VDC when relay on.	RPSM

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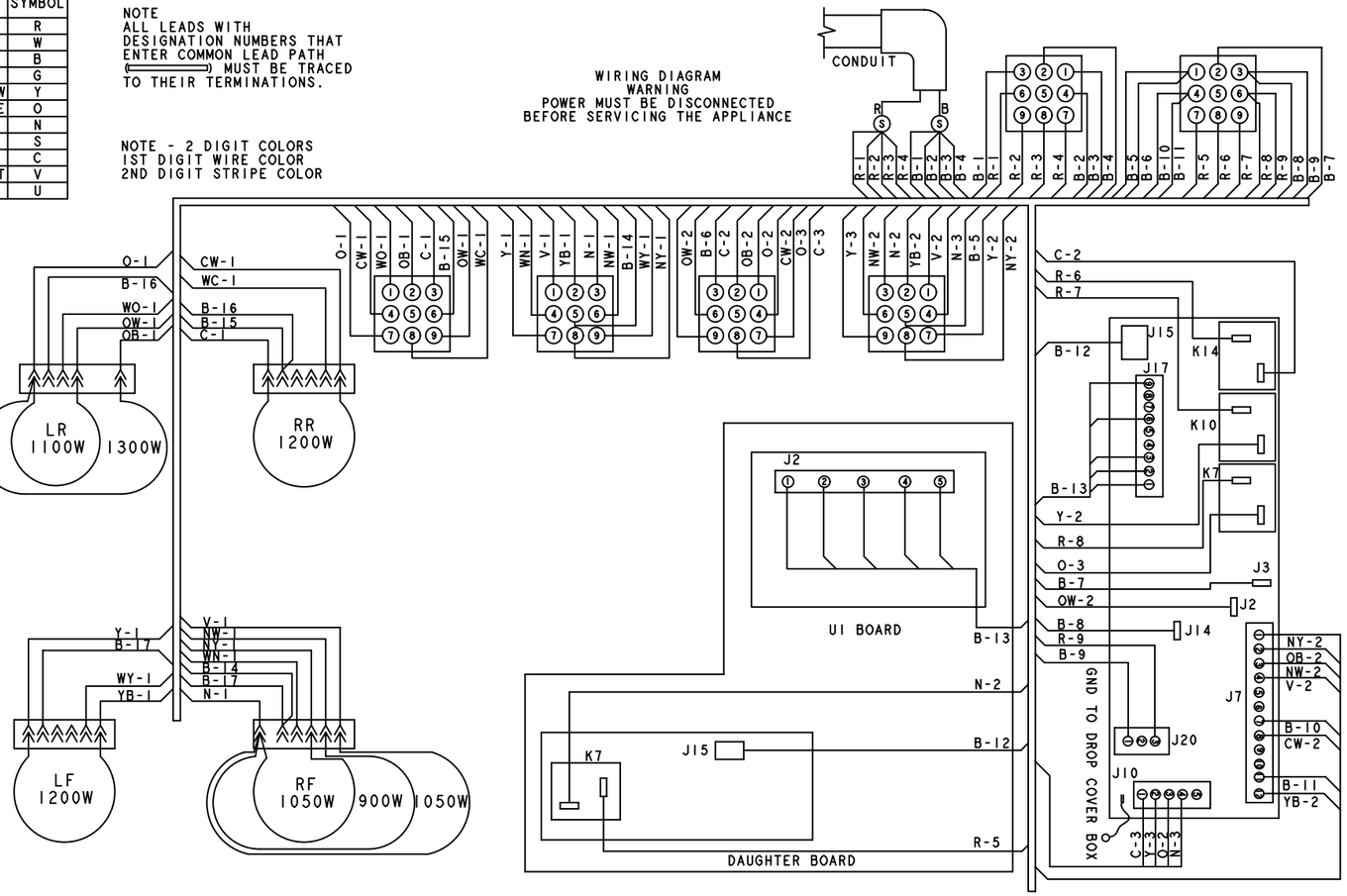
COLOR	SYMBOL
RED	R
WHITE	W
BLACK	B
GREEN	G
YELLOW	Y
ORANGE	O
BLUE	N
GRAY	S
BROWN	C
VIOLET	V
BARE	U

NOTE
ALL LEADS WITH DESIGNATION NUMBERS THAT ENTER COMMON LEAD PATH (═══) MUST BE TRACED TO THEIR TERMINATIONS.

NOTE - 2 DIGIT COLORS
1ST DIGIT WIRE COLOR
2ND DIGIT STRIPE COLOR

WIRING DIAGRAM
WARNING
POWER MUST BE DISCONNECTED
BEFORE SERVICING THE APPLIANCE



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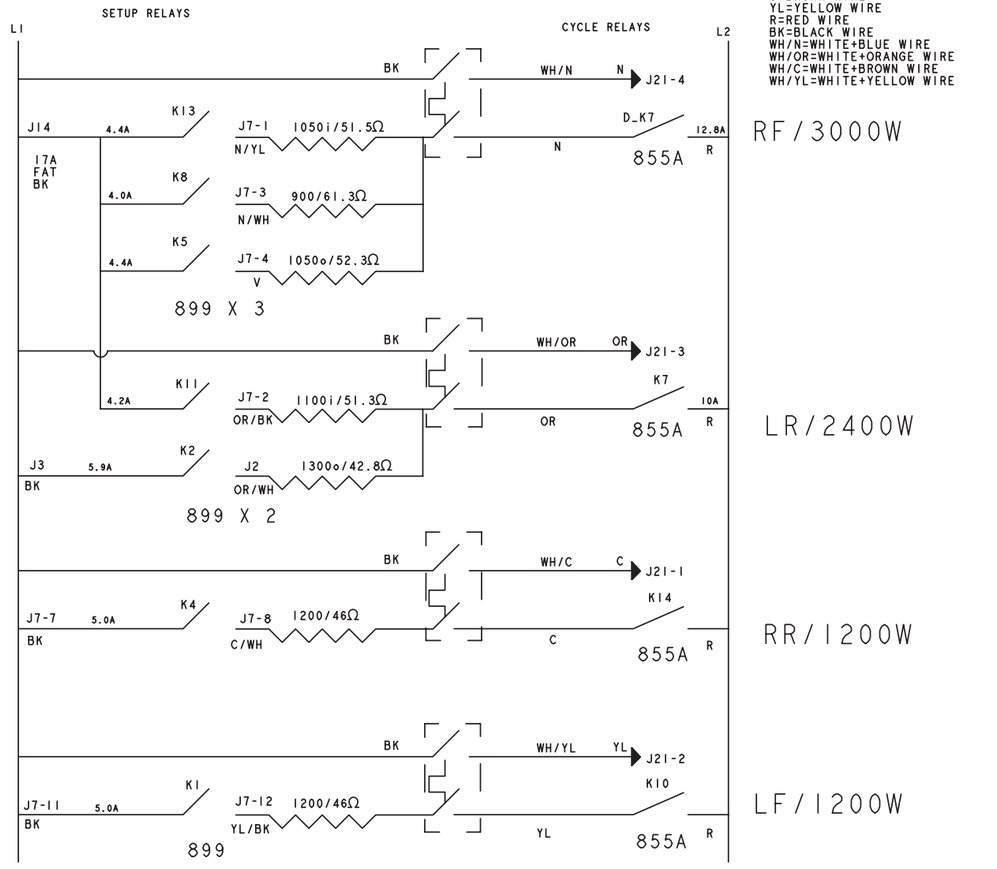

N/YL=BLUE+YELLOW WIRE
N/WH=BLUE+WHITE WIRE
V=PURPLE WIRE
OR/BK=ORANGE+BLACK WIRE
OR/WH=ORANGE+WHITE WIRE
C/WH=BROWN+WHITE WIRE
YL/BK=YELLOW+BLACK WIRE
N=BLUE WIRE
OR=ORANGE WIRE
C=BROWN WIRE
YL=YELLOW WIRE
R=RED WIRE
BK=BLACK WIRE
WH/N=WHITE+BLUE WIRE
WH/OR=WHITE+ORANGE WIRE
WH/C=WHITE+BROWN WIRE
WH/YL=WHITE+YELLOW WIRE

D_ INDICATES RELAYS AND TERMINALS ON DAUGHTER BOARD (DRM).
WHERE TERMINAL NUMBERS NOT SHOWN MEANS TERMINALS ARE ON TOP OF SHOWN RELAY.
"i", "o" MEANS INNER OR OUTER RING.

MODEL NUMBER
PP945

IMPORTANT
SERVICE INFORMATION
DO NOT DISCARD

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