NES/NEB Electric Cooktop Training Program



NES/NEB Training Program

- Features and Benefits
- Product Description
- Warranty

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- Installation
- Operation
- Disassembly
- Reassembly
- Wiring Diagram
- Service Tips

Features and Benefits

- UltraSpeedTM heating elements
- Digital display with residual heat indicator for each element
- Safety Auto-Lockout
- Can be installed over any Bosch oven
- Pot Sizing
- Beveled side edges (white/black versions)
- UL listed (U.S. & Canada)

Product Description

- UltraSpeed[™] heating elements heat up 65% faster
- Residual heat indicator for each element in digital display
- Seamless easy to clean glass (no holes for food to drip inside)
- Safety Auto-Lockout when magnetic knob removed
- Removable magnetic knob for easy cleaning & childproofing
- Beveled side edges allow pots to be slid onto cooktop (white/black)

- Pot sizing for dual elements
- Electronic controls
- Digital displays
- UL listed (U.S. & Canada) -- file # 212130

BOSCH

Warranty (1)

HIGHLIGHTS: Parts/labor (1) year from installation + parts (1-5) years from installation for elements, controls & glass. Replacement parts same as cooktop.

Electric Cooktop Warranty Statement Of Limited Warranty

The warranties provided by BSH Home Appliances ("Bosch") in this Statement of Limited Warranty apply only to the Bosch Electric Cooktops ("Cook Top") sold to you, the first using purchaser, provided that the Cook Top was purchased (1) for your use and not for resale and (2) in the United States or Canada and is located in the country of purchase. As used in this Statement of Limited Warranty, the term "Date of Installation" shall refer to the earlier of the date the Cook Top is installed or ten (10) business days after the date the Cook Top is sold to the first using purchaser. The warranties stated herein apply only to the first using purchaser and are not transferable.

Standard Limited Warranty

Bosch warrants that its Cook Top is free from defects in materials and workmanship for a period of twelve (12) months from the Date of Installation. During the warranty period, Bosch or its authorized service center will repair or replace, at its sole option, any part that proves to have been defective under conditions of normal use without charge. All removed parts and components shall become the property of Bosch, at Bosch's option. All replaced and/or repaired parts shall assume the identity of the original part for purposes of this warranty and this warranty shall not be extended with respect to such parts.

Extended Limited Warranty

Bosch further warrants that the electric heating elements and controls of the Cook Top and the ceramic glass of the Cook Top shall be free from defects in materials for a period of time beginning on the twelfth (12th) month from the Date of Installation and continuing until the sixtieth (60th) month from the Date of Installation ("extended warranty period"). During the extended warranty period, Bosch will replace any electric heating elements, controls, or ceramic glass of the Cook Top that proves to have been defective under normal conditions of use without charge, excluding any labor (including but not limited to labor charges incurred in the removal and reinstallation of any part), transportation, and/or shipping costs incurred in the performance of this extended warranty. All replaced parts covered under this paragraph shall assume the identity of the original for purposes of this extended warranty and this warranty shall not be extended with respect to such parts.

Warranty (2)

Other Conditions of the Limited Warranties

The warranties provided in this Statement of Limited Warranty exclude defects or damage resulting from (1) use of the Cook Top in other than its normal and customary manner (commercial use of the Cook Top shall not be deemed normal or customary), (2) misuse, abuse, accidents or neglect, (3) improper operation, maintenance, installation or unauthorized service, (4) adjustment or alteration or modification of any kind, (5) a failure to comply with applicable state, local, city, and county electrical and/or building codes, (6) spills of food or liquid, and (7) external forces such as floods, fires, acts of God or other circumstances beyond Bosch's control. Also excluded from this warranty are scratches and damages on external surfaces and exposed parts Cook Tops on which the serial numbers have been altered, defaced or removed.

To the extent allowed by law, this warranty sets out your exclusive remedies with respect to products covered by it, whether the claim arises in contract or tort (including strict liability and negligence) or otherwise. Bosch will not be liable for consequential or incidental damages, losses, or expenses. THIS WARRANTY IS IN LIEU OF ALL OTHER EXPRESS WARRANTIES. ANY WARRANTY IMPLIED BY LAW, WHETHER FOR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, SHALL BE EFFECTIVE ONLY FOR THE PERIOD THAT THIS EXPRESS WARRANTY IS EFFECTIVE. No attempt to alter, modify, or amend this warranty shall be effective unless authorized in writing by an officer of the Robert Bosch Corporation.

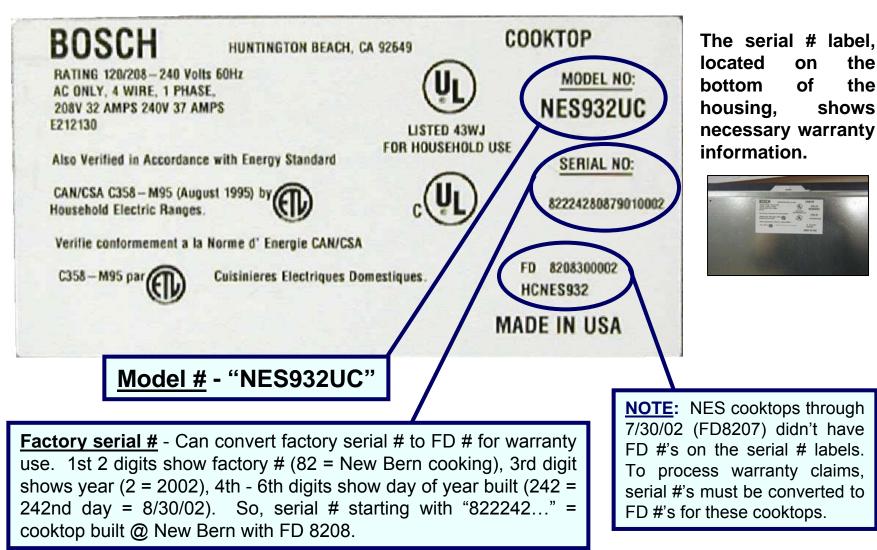
How to Obtain Warranty Service

To obtain warranty service for the Cook Top, you should contact the nearest Bosch authorized service center or BSH Home Appliances Corporation, Bosch, 5551 McFadden Avenue, Huntington Beach, CA 92649 or phone our Bosch Customer Service Telephone Line at: (800) 944-2904 (Monday through Friday 5:00 am to 5:00 pm PST).

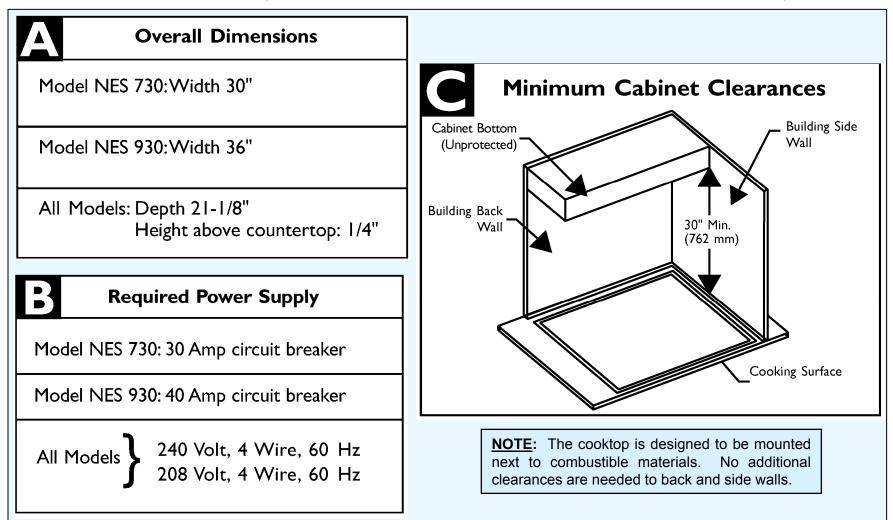
Notice To California Owners

If your Cook Top needs warranty service and there is no authorized Bosch service center reasonably close to you, you may notify the Bosch reseller from whom you purchased the Cook Top. If the Bosch reseller fails to repair or replace the defective parts, or partially refund your purchase price (where applicable), you may have the Cook Top repaired at any large appliance repair shop or center and you will be reimbursed for all reasonable expenses provided the costs are substantiated in writing and the worked performed is covered by this warranty. Bosch shall not reimburse any repair costs hereunder which exceed the depreciated value of the Cook Top.

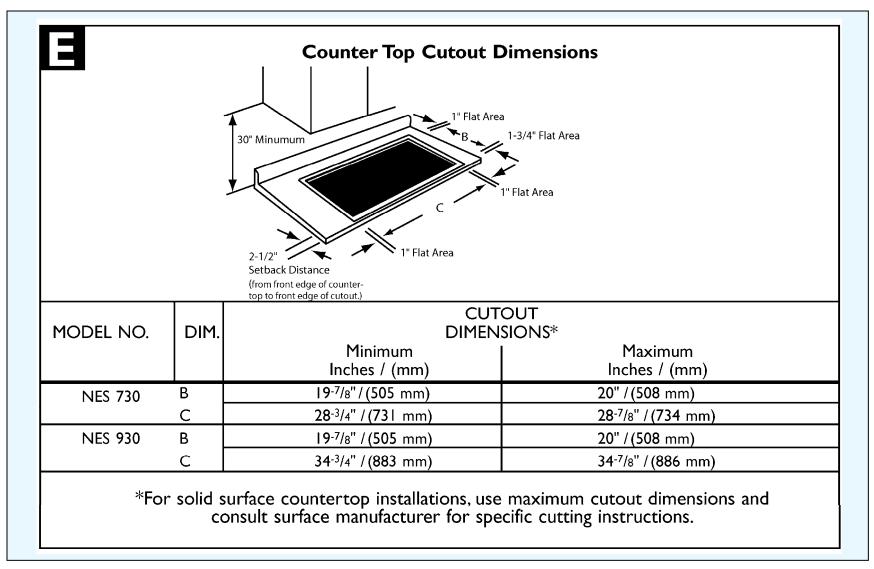
Warranty -- Serial # Label



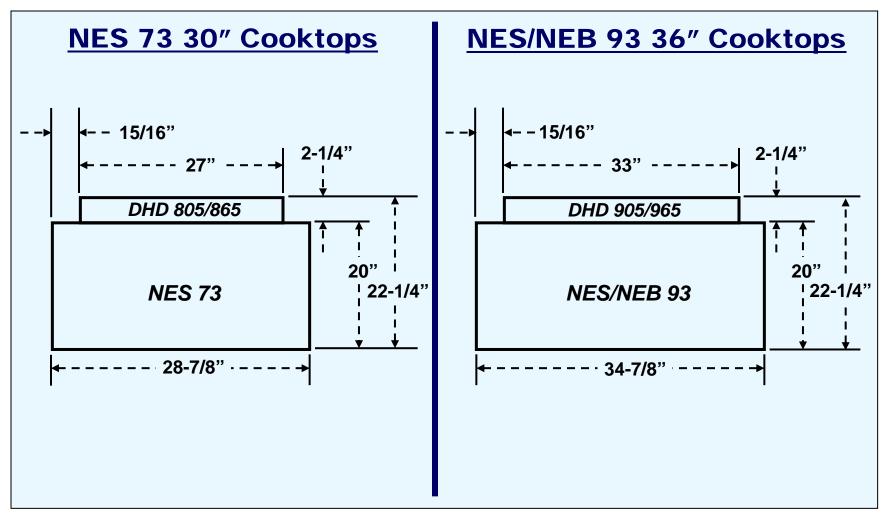
Installation -- Overall Dimensions, Ratings & Clearances (NEB93x same dimen. as NES 930)



Installation -- Cutout Dimensions



Installation -- Cutout Dimensions with **BOSCH** DHD Downdraft



Installation -- Electrical Supply & Basic Dimensions

Table of Contents

NOTE: The blocked letters, such as **A**, shown below, refer to illustrations on Pages 11-12. Match these to the related text pages.

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 IMPORTANT:
 Save these instructions for Local Electrical Inspector's use.

 INSTALLER:
 Please leave these Installation Instructions with this unit for the owner.

 OWNER:
 Please retain these instructions for future reference.

READ AND SAVE THESE INSTRUCTIONS

Α

В

OVERALL DIMENSIONS

JUNCTION BOX LOCATION

See Illustration **A**, Page 11. These dimensions are overall.

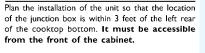
POWER SUPPLY

ELECTRICAL POWER CONNECTION FOR COOKTOP

Power Supply is dual rated: 240 Volts or 208 Volts, 4 wire, 60 Hz, with the following circuit breaker requirements: Model NES 730 at 30 Amps; Model NES 930 at 40 Amps

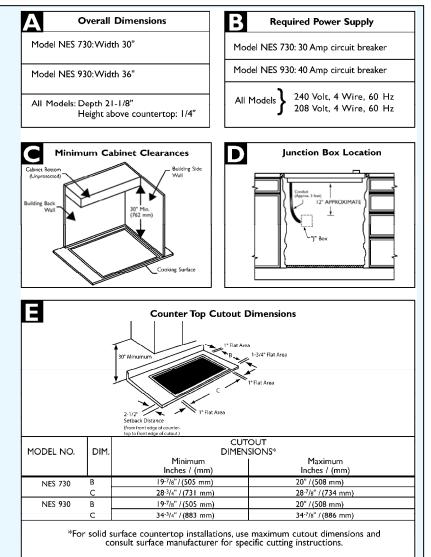
Connect only to a 4-wire 120/240 or 120/208 volt ac system. The neutral is required for the operation of this appliance and an independent ground is required.

Install a junction box (not supplied), below the counter top within 3 feet of flexible conduit (supplied) located at the left rear corner of the cooktop rough-in box.



NOTE: Be sure to follow all national & local codes.

D



Installation -- Cutout Dimensions & Cabinet Prep

Ε

F

G

CABINET PREPARATION AND CLEARANCES

CAUTION

To eliminate the risk of burns or fire by reaching over heated surface units, cabinet storage space located above the surface units should be avoided. If cabinet storage is to be provided, the risk can be reduced by installing a range hood that projects horizontally a minimum of 5 in. (127 mm) beyond the bottom of the cabinets. See **C**, Page 11.

This unit is designed for installation in the counter top with zero clearance to adjacent walls and projecting surfaces constructed of combustible materials. A 30inch minimum clearance is required between the top of the cooktop and the bottom of an unprotected cabinet. A 24-inch minimum distance is necessary when the bottom of the wood or metal cabinet is protected by not less than 1/4 inch of a flame retardant material covered with not less than No. 28 MSG sheet steel, 0.015-inch (0.4 mm) thick stainless steel, 0.024-inch (0.6 mm) aluminum, or 0.020-inch (0.5 mm) thick copper. Flame retardant materials bear the mark:

UNDERWRITERS LABORATORIES INC. CLASSIFIED MINERAL AND FIBER BOARDS SURFACE BURNING CHARACTERISTICS

Followed by the flame spread and smoke ratings, these designations are shown as "FHC (Flame Spread)/ (Smoke Developed)." Materials with "O" flame spread ratings are flame retardant. Local codes may allow other flame spread ratings.

The minimum horizontal clearance from the sides and back edge of the cooktop to the adjacent vertical combustible walls is zero inches.

<u>HINT</u>: Seal cooktop edges using foam tape supplied with cooktop.

COUNTERTOP CUTOUT DIMENSIONS

С

The cutout dimensions depend upon whether the installation is for replacement, new construction, or installation in a solid surface countertop material, such as SurelTM, Corian[®] etc. These materials require larger cutouts, use of heat reflective tape and rounded corners. Drawings **G** and **H** provide some guidelines only (see Page 12). Always consult the countertop manufacturer for specific installation instructions.

INSTALLING THE COOKTOP

A WARNING: TO AVOID ELECTRICAL SHOCK HAZARD, BEFORE INSTALLING THE COOKTOP, SWITCH POWER OFF AT THE SERVICE PANEL AND LOCK THE PANEL TO PREVENT THE POWER FROM BEING SWITCHED ON ACCIDENTALLY.

Seal with foam tape

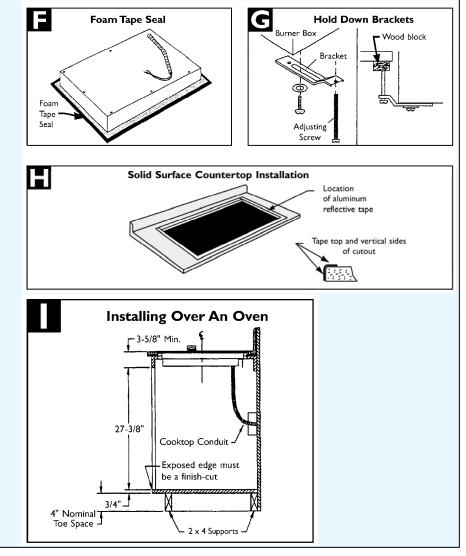
A foam tape is provided to seal the cooktop edges to countertops (see page 12). Turn cooktop upside down and apply tape approximately 1/16" from the glass edges. Use tape around the entire glass perimeter cut off excess where tape ends butt.

Secure Cooktop to countertop

The cooktop should be secured to the countertop using the hold-down brackets provided. Prior to inserting cooktop into cutout, turn cooktop upside down and attach brackets to the burner box using the washers and screws.

Place cooktop into cutout. Insert clamping screws into the brackets and secure cooktop to countertop.

Use a wood block to protect fragile countertop materials.



Installation -- Solid Surface Prep & Electrical Connections

| Always consult the countertop | I. Attach flexible conduit to the junction box. | | | | |
|---|--|---|--|--|--|
| manufacturer for specific instructions. Countertops made from natural (i.e. granite and marble) or SOLID SURFACE MATERIALS, such as | Connect the cooktop lead wires to the junction box supply wires in proper phase: | | | | |
| urell TM and Corian [®] , require special cutout reparation and installation procedures. Follow the uidelines below and on pp. 11-12 for preparing the utout. | For all models, connect black (LI) to black, red (L 2) to red, white wire to neutral and green wire to ground. | NOTE: <u>Cooktops must be</u> <u>grounded</u> to reduce the risk of shock | | | |
| nstall the cooktop as follows: . Round the cutout corners according to instructions from the countertop manufacturer. | NOTE: If the cooktop is installed and connected as specified above, it will be completely grounded in compliance with the National Electrical Code. | should any malfunctions occur. | | | |
| Apply heat reflective tape (such as Scotch[®] Aluminum Foil Tape #425 or #427) around the cutout so that it folds over the top and side surfaces. Be sure the tape extends beyond the outermost flange of the cooktop. All corners should also be covered with tape. | Remove everything from the cooktop surface and apply Cooktop Cleaning Creme (packaged with cooktop) as directed in Use & Care Manual, Page 9. Turn on power supply. | BEFORE CALLING FOR SERVICE | | | |
| Attach brackets to the burner box using washers and screws provided. Use a wooden block underneath the countertop before tightening the bracket screws. | 5. Test operation. NOTE: Your cooktop surface needs to be cleaned | | | | |
| 4. Center cooktop in the cutout to ensure adequate clearance between the burner box and countertop edge. (A light pencil mark along the center of front edge and side edge of cooktop and counter will aid in the positioning of the cooktop in the center.) | daily. Refer to the Use and Care section before using it for the first time. | | | | |
| 5. Trim excess aluminum tape from along the frame edges. BE CAREFUL not to scratch the countertop. | | Keep your invoice or escrow papers for warranty validation if service is needed. | | | |

CAUTION: Along with rest of instructions on pages 2-4, follow above instructions when installing onto granite, marble, Corian®, Surell[™] or other natural/solid material countertops. Heat reflective tape <u>must</u> be used.

Operation -- Controls



To select heating level, touch desired element, then twist knob.

pot sizing

Power

size

elements,

pots

element, then press pot sizing

key and then rotate knob to

desired heating level.

press

for

dual

desired

То





To turn off element, touch until "0" appears.

To keep food warm, touch element key, then touch *keep warm* key.

If panel lock came on (if magnetic knob was removed for > 10 seconds), replace knob, then push and hold down *panel lock* touch key until *panel lock* light goes out.



Operation -- Typical Displays





Residual Heat



Element On (showing heat level)



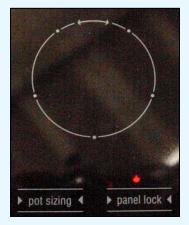
Low (keep warm)



Dual (Outer) Element On (showing heat level)



Element Off



Panel Lock On (when knob missing)

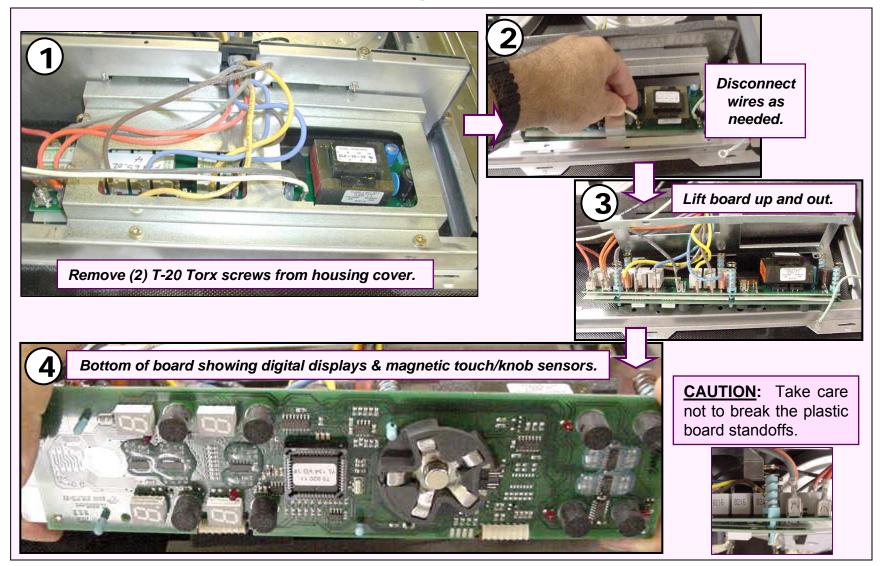
15

Disassembly -- Cooktop Access

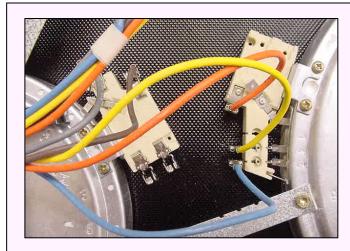


the bushings.

Disassembly -- Control Panel

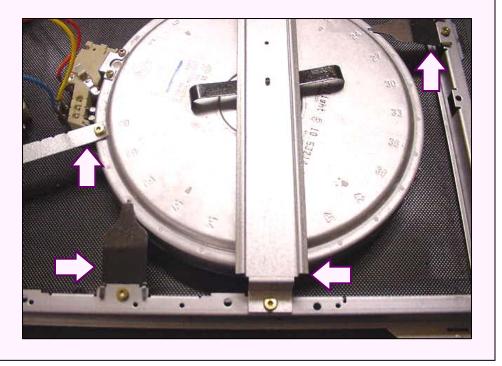


Disassembly -- Heating Elements



Disconnect element holddown rails, connecting strips and holddown brackets by removing T-20 Torx screws from them.

Disconnect wire harness from element.



Reassembly -- Control board (1)

The control board <u>must</u> be reassembled so 4 of the 6 *light blue* standoffs ("pins") engage the 4 holes in the metal plate glued to the Ceran glass maintop. If not, the magnetic knob & digital displays won't line up.

NOTE: The other 2 standoffs don't engage any holes in the plate.

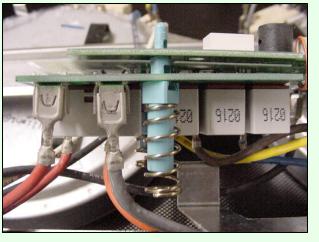


<u>CAUTION</u>: Don't force the standoffs in place (so they're not broken).

Reassembly -- Control Board (2)

Before mounting the control board, make sure each of the 6 *light blue* standoffs ("pins") are inserted properly into the component boards. The two boards should

be parallel.

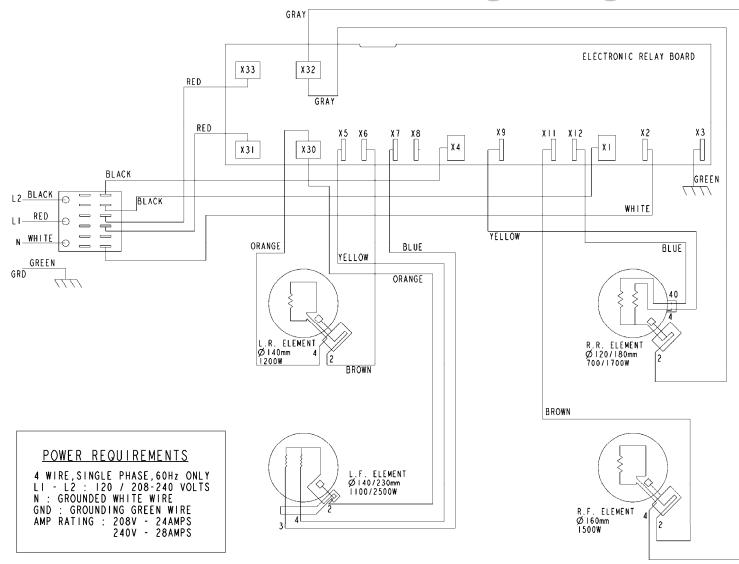


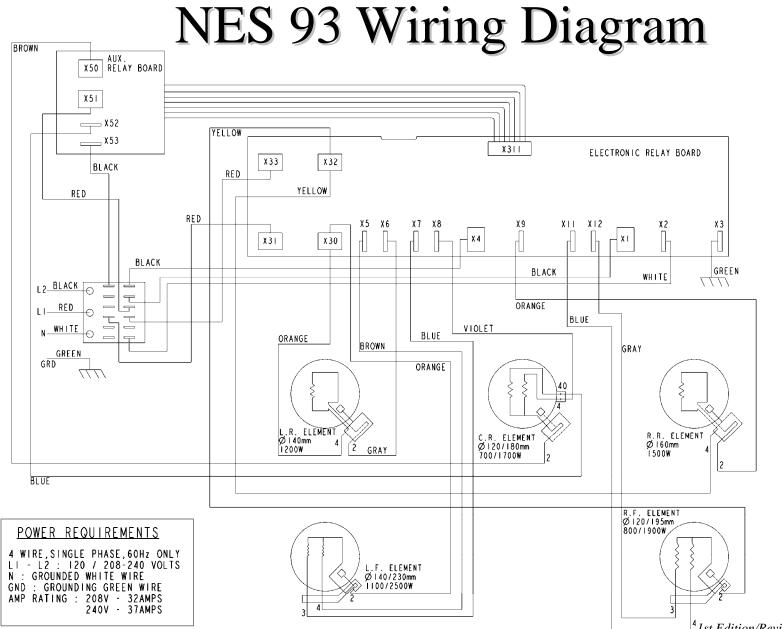
<u>HINT</u>: The screw bushings keep the cooktop housing away from the countertop and must be kept. Don't install the screws without the bushings.



...and that's all there is to taking apart the cooktops!

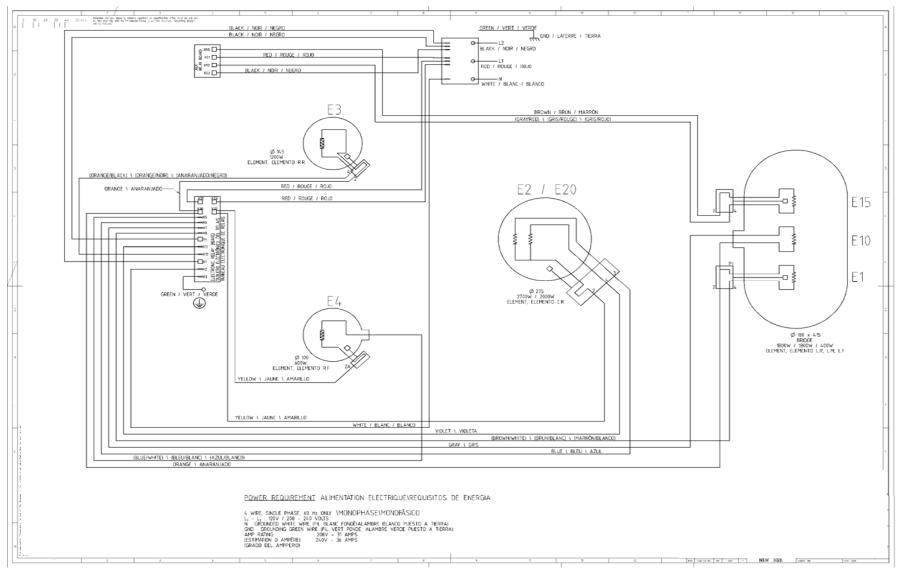
NES 73 Wiring Diagram





⁴1st Edition/Revision 1 (08/18/2005)

NEB Wiring Diagram

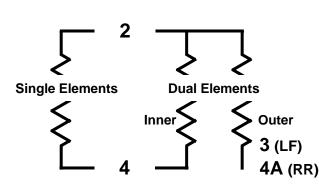


1st Edition/Revision 1 (08/18/2005)

NES 73 Strip Circuit Diagram --

Resistance Measurements

<u>Heating</u> <u>Elements</u>



| NES 73 | Terminals | | | | |
|---------------|---------------|---------------|---------------|---------------|----------------|
| Element | 2-4 | 2-3 | 2-4A | 3-4 | 4A-4 |
| LF | 49.7 Ω | 39.3 Ω | | 88.8 Ω | |
| RF | 37.4 Ω | | | | |
| LR | 45.6 Ω | | | | |
| RR | 80.2 Ω | | 57.8 Ω | | 137.4 Ω |

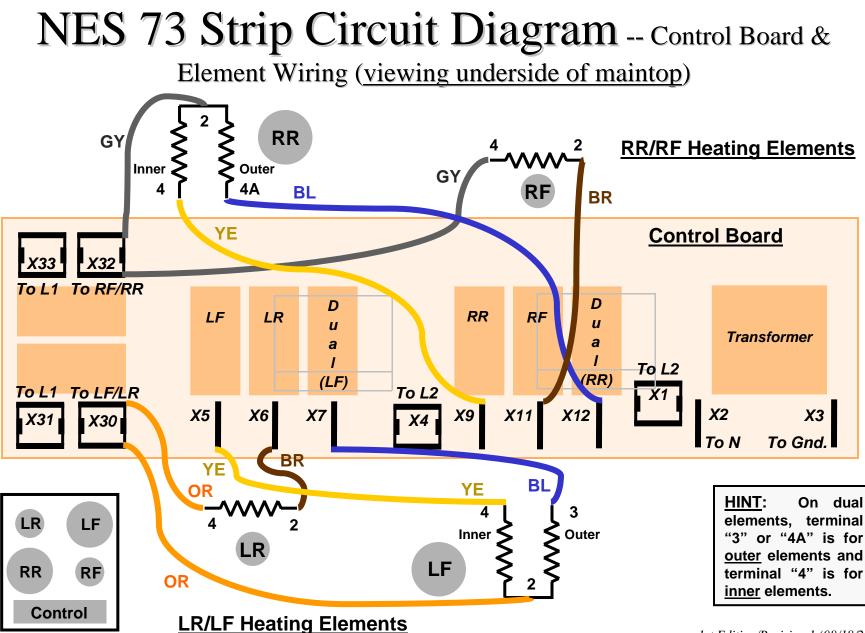


Typical element terminal markings

For dual elements, the terminal #''s are also stamped on the metal element housing.

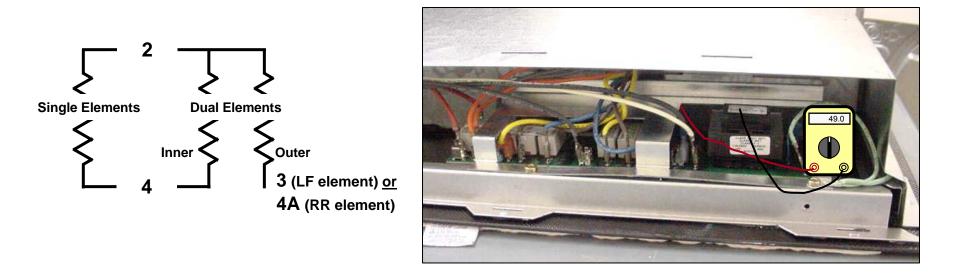


<u>HINT</u>: The right rear (RR) element on NES 73 cooktops & the center rear (CR) element on NES 93 cooktops have separate 4 & 4A terminals. All other elements have terminal 4 on the same terminal block as their other terminals.



NES 73 Strip Circuit Diagram --Quick Element Resistance Check at Control Board (1)

With the control side housing panel removed, quick resistance checks can be made across single or dual elements at the control board.



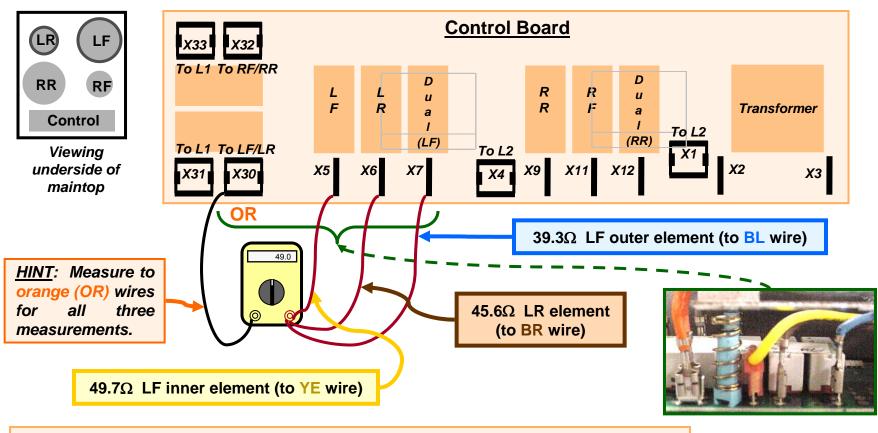
<u>HINT</u>: The two gray wires can be hard to reach with just the side panel removed. If necessary to measure RF & RR elements, remove entire housing and measure at elements.

WARNING! Disconnect cooktop before making any resistance measurements.

NES 73 Strip Circuit Diagram --

Quick Element Resistance Check at Control Board (2)

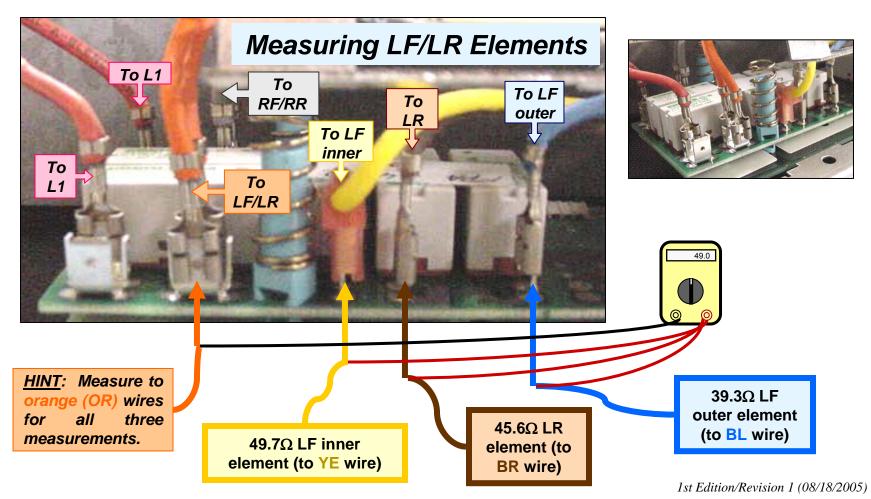
All resistances of LF/LR elements can be measured at the control board.



WARNING! Disconnect cooktop before making any resistance measurements.

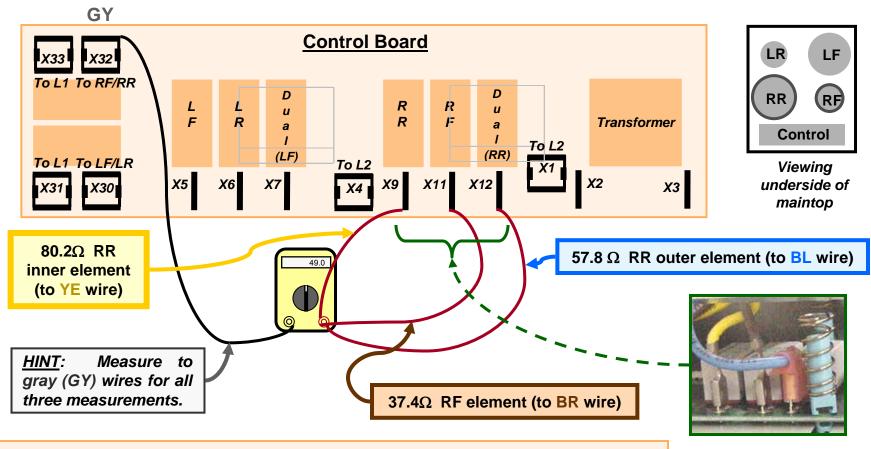
NES 73 Strip Circuit Diagram --Quick Element Resistance Check at Control Board (3)

Photos showing measuring LF/LR elements at the control board.



NES 73 Strip Circuit Diagram --Quick Element Resistance Check at Control Board (4)

All resistances of RF/RR elements can be measured at the control board.

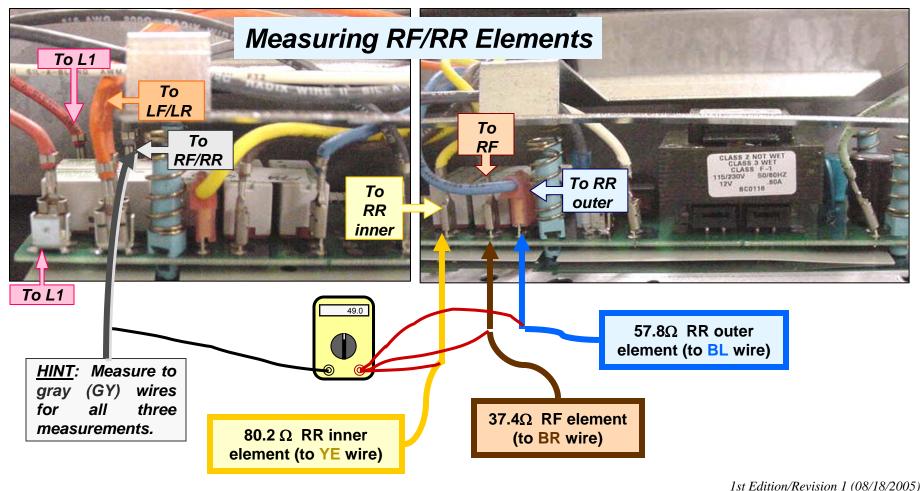


WARNING! Disconnect cooktop before making any resistance measurements.

NES 73 Strip Circuit Diagram --

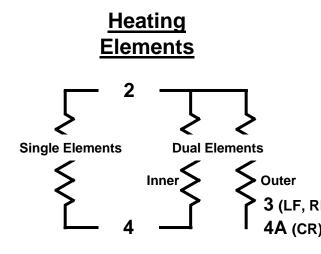
Quick Element Resistance Check at Control Board (5)

Photos showing measuring RF/RR elements at the control board.



NES 93 Strip Circuit Diagram --

Resistance Measurements



| | NES 93 | Terminals | | | | |
|----|---------|---------------|---------------|---------------|----------------|----------------|
| | Element | 2-4 | 2-3 | 2-4A | 3-4 | 4A-4 |
| | LF | 49.7 Ω | 39.3 Ω | | 88.8 Ω | |
| | RF | 70.5 Ω | 50.7 Ω | | 120.8 Ω | |
| | LR | 45.6 Ω | | | | |
| F) | CR | 80.2 Ω | | 57.8 Ω | | 137.4 Ω |
| | RR | 37.4 Ω | | | | |

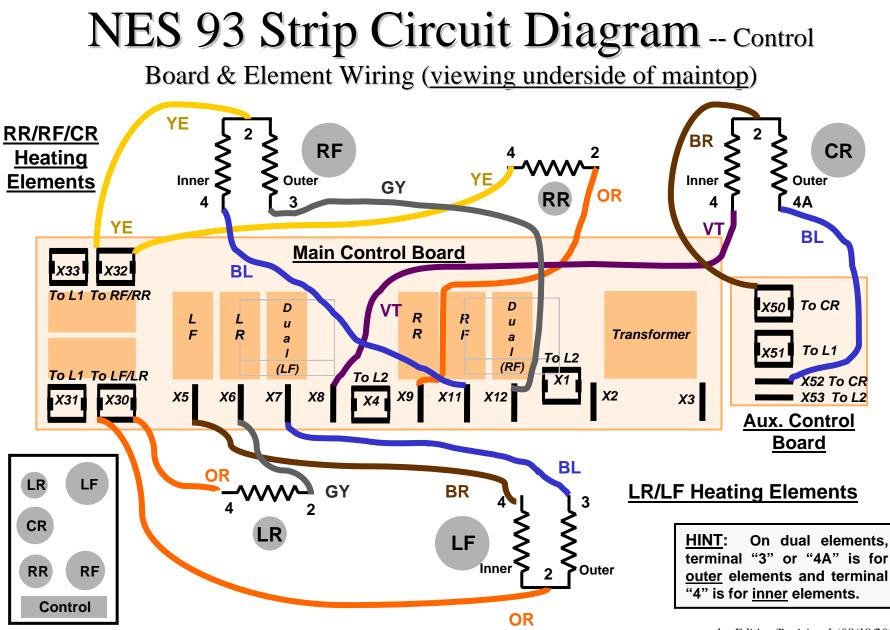


Typical element terminal markings

For dual elements, the terminal #"s are also stamped on the metal element housing.



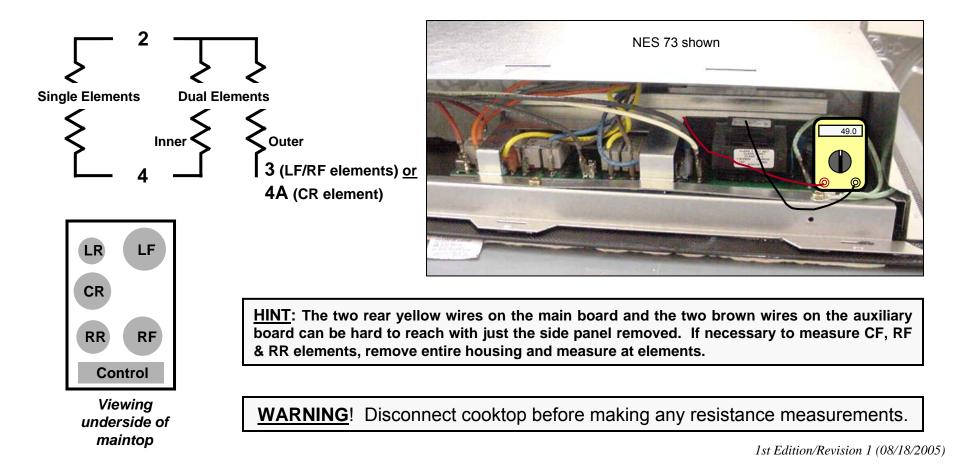
<u>HINT</u>: The right rear (RR) element on NES 73 cooktops & the center rear (CR) element on NES 93 cooktops have separate 4 & 4A terminals. All other elements have terminal 4 on the same terminal block as their other terminals.



Viewing underside of maintop

NES 93 Strip Circuit Diagram --Quick Element Resistance Check at Control Board (1)

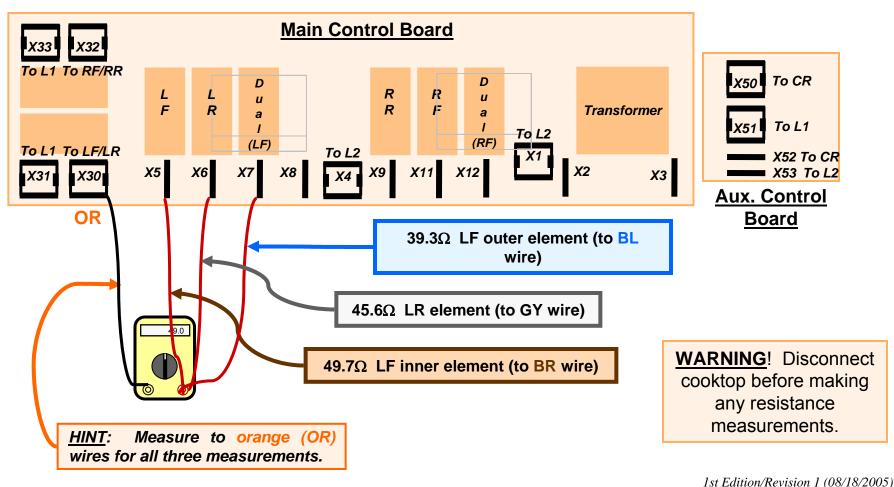
With the control side housing panel removed, quick resistance checks can be made across single or dual elements at the control board.



NES 93 Strip Circuit Diagram --

Quick Element Resistance Check at Control Board (2)

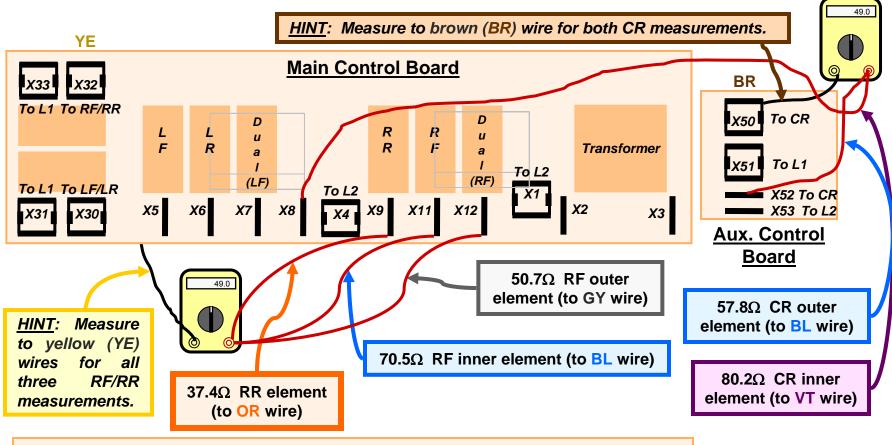
All resistances of LF/LR elements can be measured at the main control board.



NES 93 Strip Circuit Diagram --

Quick Element Resistance Check at Control Board (3)

All resistances of RF/RR/CR elements can be measured at the control boards.



WARNING! Disconnect cooktop before making any resistance measurements.



mTwist Error Codes

- ER 22 /*Keyboard */
- ER 35 /*Selection of Keys */
- ER 25 /*False connection of mains */
- ER 26 /*Relais supply voltage too high (off state of control) */
- ER 12 /* Mismatch of Relais port pin and software register */
- ER 13 /* Invalid EEPROM data */
- ER 23 /*PWM-frequency out of limit */
- ER 24 /*Wrong number of Relais */

NES 73/93 Service Tips -- Ratings

| Model | Rating | LF | LR | CR | RR | RF |
|---------------|-------------------------|-----------|------|-----------|-----------|-----------|
| | Wattage (W) | 1100/2500 | 1200 | | 700/1700 | 1500 |
| | Dimensions (mm) | 140/230 | 140 | | 120/180 | 160 |
| NES 73 | Dimensions (in.) | 5.5/9.0 | 5.5 | | 4.7 | 6.3 |
| | Resistance (Ω) | 49.7/39.3 | 45.6 | | 80.2/57.8 | 37.4 |
| | Same as NES 93 | LF | LR | | CR | RR |
| | Wattage (W) | 1100/2500 | 1200 | 700/1700 | 1500 | 800/1900 |
| | Dimensions (mm) | 140/230 | 140 | 120/180 | 160 | 120/195 |
| NES 93 | Dimensions (in.) | 5.5/9.0 | 5.5 | 4.7 | 6.3 | 4.7/7.6 |
| | Resistance (Ω) | 49.7/39.3 | 45.6 | 80.2/57.8 | 37.4 | 70.5/50.7 |
| | Same as NES 73 | LF | LR | RR | RF | |

- NES 73 rated 208-240 VAC, 30A, 6.9 kW, 60 Hz -- uses 28A @ 240 VAC & 24A @ 208 VAC.
- **NES 93** rated 208-240 VAC, 40A, 8.8 kW, 60 Hz -- uses 37A @ 240 VAC & 32A @ 208 VAC.

NES 73/93 Service Tips -- Troubleshooting

| Symptom | Problem | Solution |
|--------------|---------------------------|--|
| Panel lock | Magnetic knob has been | Replace magnetic knob, then press and hold |
| light is on. | removed or panel lock key | panel lock key until light goes out. |
| | has been pressed. | |
| Cooktop | Power is off or control | Check incoming power. If OK (240 VAC), |
| won't run at | board has failed. | then replace control board. |
| all. | | |
| Element | Element has failed. | Disconnect power and measure resistance at |
| won't heat. | | control board or element terminals (see |
| | | resistance charts). Replace faulty element. |
| Element | Wire harness is damaged | Check wire harness for continuity and to |
| won't heat. | or shorted. | ground (to check for shorts). Replace faulty |
| | | wire harness. |

WARNING! Disconnect cooktop before starting any repairs.