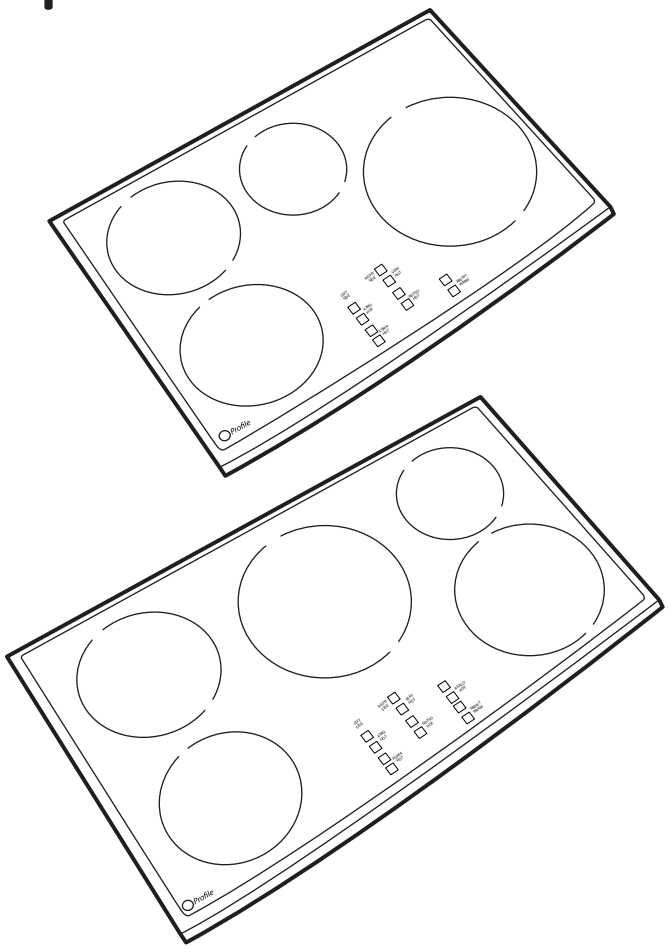
GE Consumer & Industrial

Technical Service Guide

April 2008

Profile and Monogram 30- and 36-in. Induction Cooktop

PHP900
PHP960
ZHU30
ZHU36



31-9164

GE Appliances
General Electric Company
Louisville, Kentucky 40225

IMPORTANT SAFETY NOTICE

The information in this service guide 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. The manufacturer or seller cannot be responsible for the interpretation of this information, nor can it assume any liability in connection with its use.

WARNING

To avoid personal injury, disconnect power before servicing this product. If electrical power is required for diagnosis or test purposes, disconnect the power immediately after performing the necessary checks.

RECONNECT ALL GROUNDING DEVICES

If grounding wires, screws, straps, clips, nuts, or washers used to complete a path to ground are removed for service, they must be returned to their original position and properly fastened.

GE Consumer & Industrial
Technical Service Guide

Table of Contents

Introduction

Introducing GE Profile and GE induction cooktops—offering fast, efficient cooking.

Induction cooktops provide unmatched cooking performance and flexibility. Induction technology heats only the pan and its contents and offers energy efficiency by reducing wasted heat when compared to radiant and gas cooktops.

The new Monogram and Profile, 30- and 36-in. Induction Cooktops have the following new features:

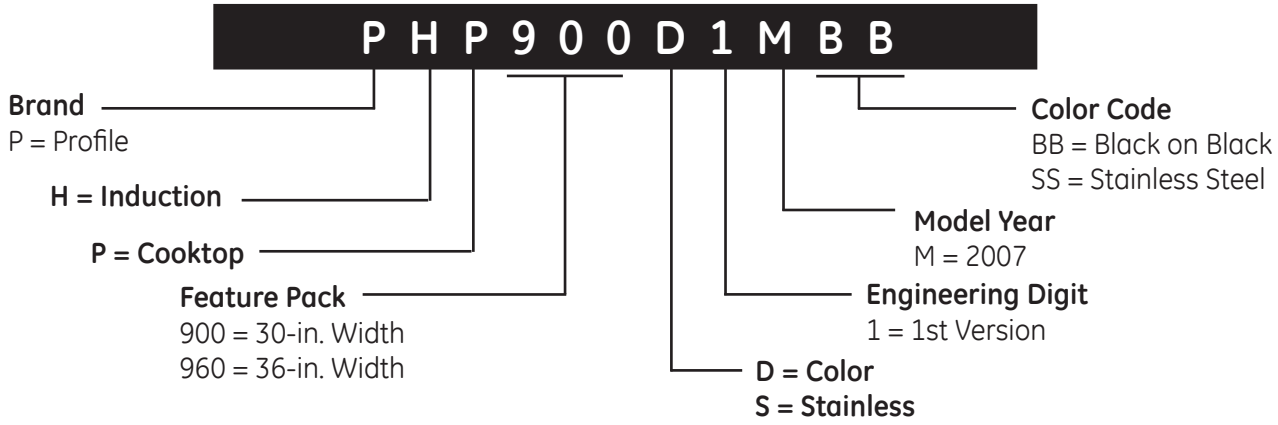
- **Innovative technology**—delivers the responsiveness of a gas cooktop.
- **Superior performance**—Induction technology heats only the pan and its contents, providing an incredibly fast boil time.
- **Remarkable versatility**—This induction cooktop offers the choice of 19 different power levels, including a 3700-watt, 11" element for large cookware (the highest wattage induction element in the industry*), warming capability, and a low-heat simmer setting for delicate sauces.
- **Cooler cooktop surface**—Since there is not a traditional thermal heating element, the induction cooktop stays cooler than conventional radiant cooktops.
- **Below cooktop venting**—that dissipates heat, permitting less depth to the burner box.
- **Easy cleanability**—Cooktop cleaning is easier since spills and splatters do not burn on the cooktop.
- **Distinguished appearance**—Sleek cooktop fits flush with the countertop, and is surrounded completely in full-frame stainless steel trim. This cooktop can be installed above a GE® or GE Profile™ wall oven.**

The four-burner models feature 1 ten-inch, 3700 W element, 2 seven-inch, 2500 W elements, and 1 six-inch 1800 W element. And with the 36-in. models, you get the addition of 1 eight-inch, 3200 W element.

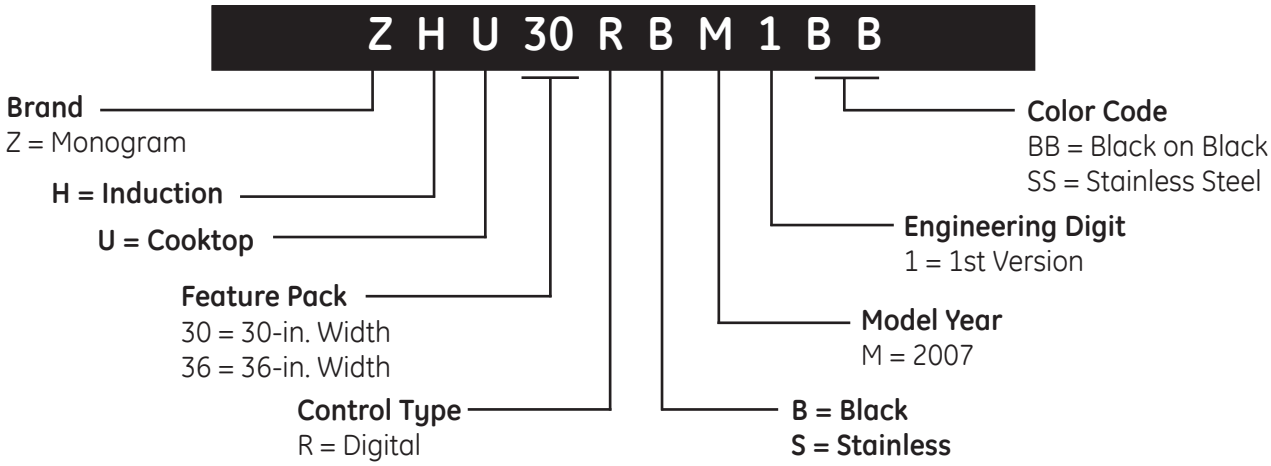
*Among leading manufacturer brands
**Not to be installed over wall ovens with Trivection® technology

Nomenclature

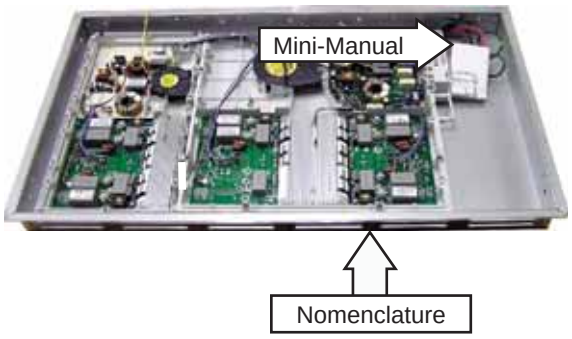
Profile Model Number



Monogram Model Number



PHP960 Model shown



The nomenclature plate is located under the cooktop.

The mini-manual is located inside the burner box and is accessed by removing the electrical cover on the bottom of the cooktop.

Serial Number

The first two numbers of the serial number identify the month and year of manufacture.

Example: *AR123456S = January, 2008*

A - JAN	2008 - **R**
D - FEB	2007 - M
F - MAR	2006 - L
G - APR	2005 - H
H - MAY	2004 - G
L - JUN	2003 - F
M - JUL	2002 - D
R - AUG	2001 - A
S - SEP	2000 - Z
T - OCT	1999 - V
V - NOV	1998 - T
Z - DEC	1997 - S

The letter designating the year repeats every 12 years.

Example:

T - 1974
T - 1986
T - 1998

Introduction to Induction Cooking

How Induction Cooking Works

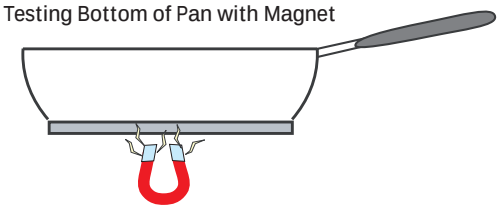
Induction cooking uses high frequency (20-50 K hz) magnetic energy to heat a ferrous metal pan when it is placed over the induction coil. The induction fields have no affect on non magnetic surfaces such as paper, plastic, or non ferrous metals like aluminum, or copper. Thermal sensors under the glass surface communicate with microprocessor controls for pan sensing and turn-down.

Part one: Coil produces electromagnetic energy

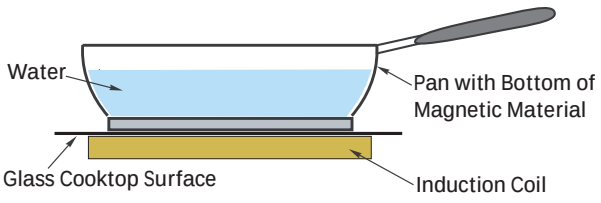
The first component needed is an induction coil or element. The induction coil generates the magnetic field needed for induction cooking.

Part two: Pan uses the energy to produce heat

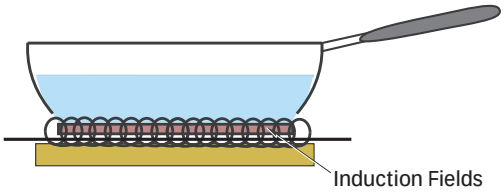
The second component is the ferromagnetic cooking pan with a bottom constructed of material that will attract a magnet. If a magnet will not stick to the bottom of the pan, it can not be used for induction cooking.



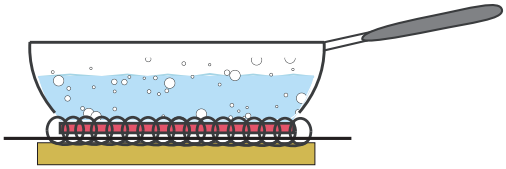
When the proper type of pan is placed over an energized induction coil, a field of magnetic waves will cause the bottom of the pan to heat.



Induction cooking is very efficient. The energy created by the induction coil is applied to only the bottom of the pan.



The contents of the pan are therefore heated more quickly than they would be if heated by a gas flame or a traditional radient heating element.



By heating only the bottom of the pan, the surrounding surface remains cooler than with traditional cooktops.

Features:

- *Easy cleanability*—Cooktop cleaning is easier since spills and splatters do not burn on the cooktop, which is about 500°F vs 1200°F for radiant.
- *Control and responsiveness equal to gas*—This induction cooktop give you instant control of the amount of heat added to the cookware.
- *Fast and Powerful*—providing an incredibly fast boil time. 3700 w, 8.5 min. to boil vs 12 to 14 min. for radiant and 14 to 16 min. for gas (18k BTU).
- *Efficient performance*—Induction technology heats only the pan and its contents, not the kitchen. Efficiency ratings are: Induction 83%, Radiant 72%, and gas 38%.

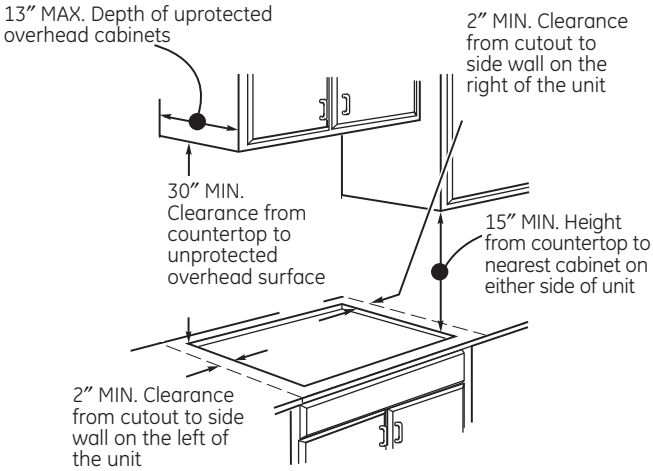
Note: There are no health risks associated with the use of this cooktop. The RF field from an induction element dies away to almost nothing at a distance of about one foot (30 centimeters). You will not receive even trivial radiation from an induction cooktop unless you spend a long time well within one foot of an operating element.

Installation

WARNING: Before beginning the installation, switch power off at the service panel and lock the service disconnecting means. When the service disconnecting means cannot be locked, securely fasten a warning tag to the service panel.

Note: The complete installation instructions are inclosed with the Use and Care Manual. Carefully read and follow these instructions.

The following minimum clearance dimensions must be maintained.



If a 30-in. clearance between the cooking surface and overhead combustible materials or metal cabinets cannot be maintained, a minimum clearance of 24-in. is required and the underside of the cabinets above the cooktop must be protected with not less than 1/4-in. insulating millboard covered with sheet metal not less than 0.0122-in. thick.

Grounding Specifications

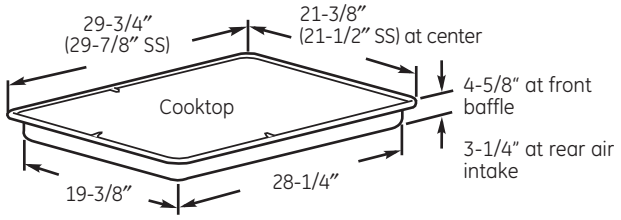
Ground Path Resistance	0.10Ω Max.
Insulation Resistance	205KΩ Min.

Overcurrent Protection

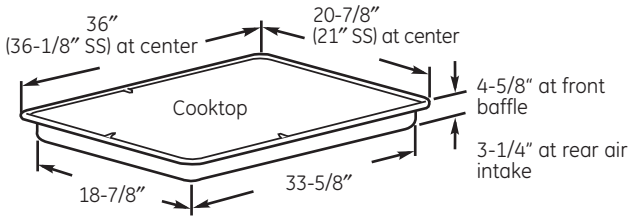
		Maximum Kilowatt Rating		
Size	**NEC Rating**	**208V**	**236V**	**240V**
30-in.	40 Amp	8.3	9.4	9.6
36-in.	50 Amp	10.4	11.8	12.0

The branch circuit load for one counter-mounted cooktop is the rating on the nomenclature plate.

Models PHP900 and ZHU30



Models PHP960 and ZHU36



Power Supply

The cooktop must be connected to a supply circuit of the proper voltage and frequency as specified on the rating plate. Wire size must conform to the National Electrical Code or the prevailing local code. The rating plate is located on the bottom of the burner box.

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.

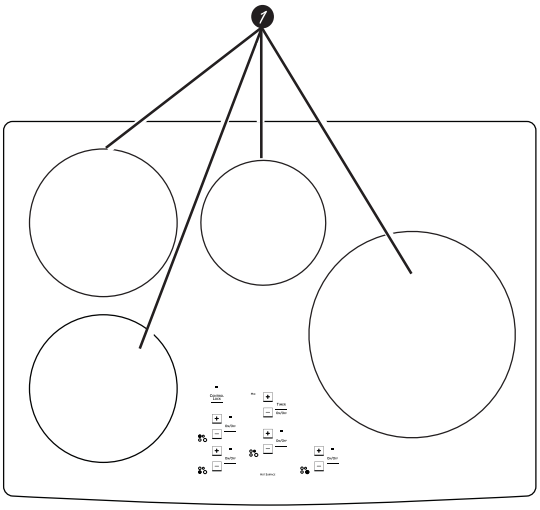
WARNING: Improper connection of aluminum house wiring to these copper leads can result in a serious problem. Use only connectors designed for joining copper to aluminum and follow the manufacturer's recommended procedure closely.

Ceramic Glass Cooktop

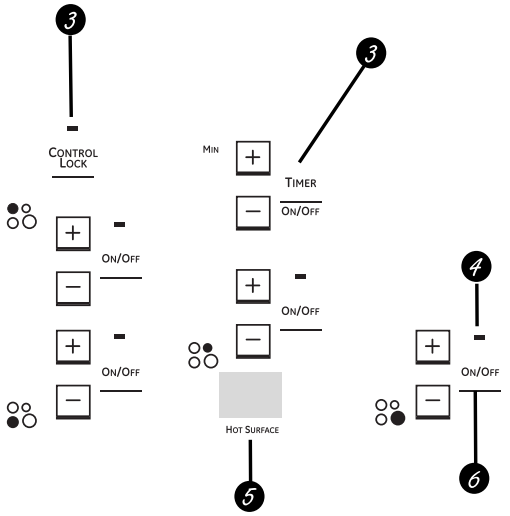
If the glass is damaged, it may be replaced as a separate part. The touch board and electronics are separate parts.

Features of your cooktop.

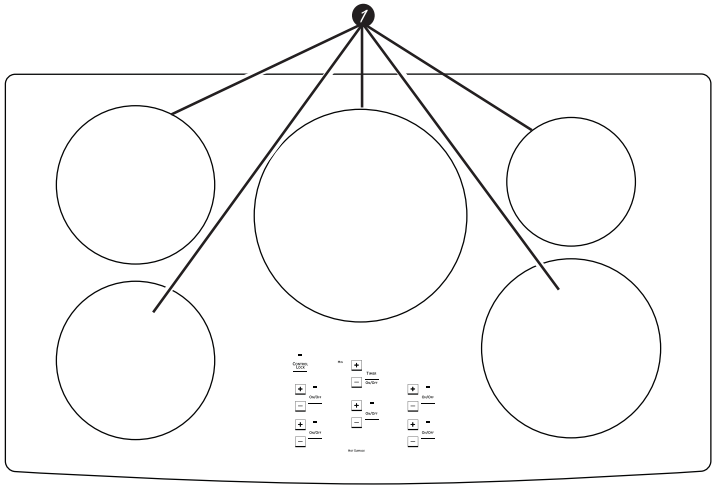
Throughout this manual, features and appearance may vary from your model.



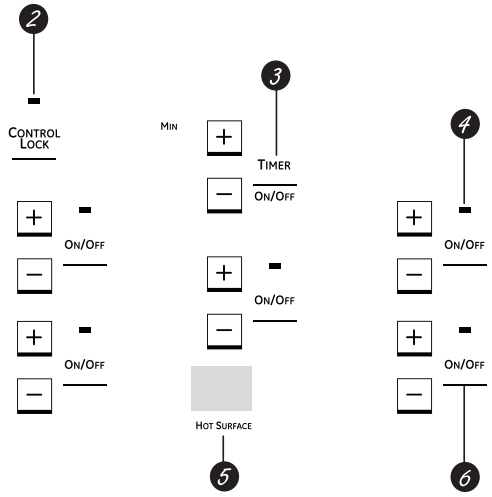
PHP900 30" Cooktops



NOTE: 30" models have cooking element location indicators next to each control.

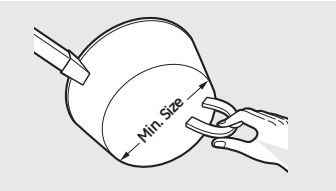


PHP960 36" Cooktops



	***Feature Index** (Features and appearances may vary.)*
1	Cooking Elements
2	Control Lock
3	Kitchen Timer
4	ON Indicator Light (one for each element)
5	Hot Surface Indicator Light Area
6	Cooking Element ON/OFF Control

How induction cooking works.



Use the minimum size pan for the element. The pan material is correct if a magnet sticks to the bottom.

The elements beneath the cooking surface produce a magnetic field that causes the electrons in the ferrous metal pan to vibrate and produce heat.

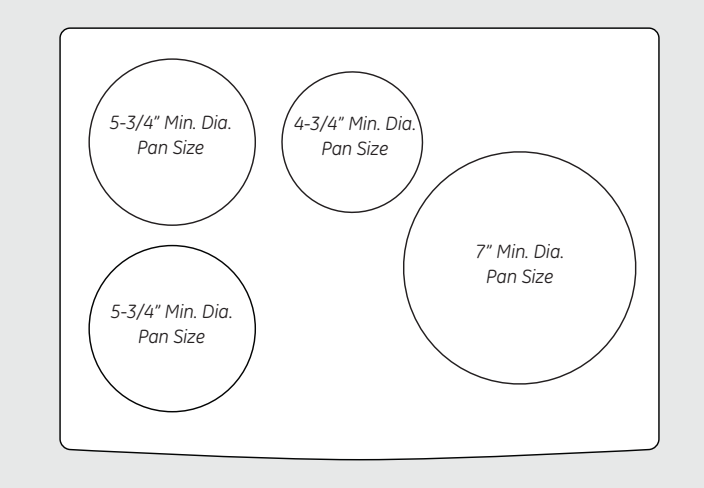
The cooking surface itself does not heat. Heat is produced in the cooking pan, and cannot be generated until a pan is placed on the cooking surface.

When the element is activated, the pan begins to heat immediately and in turn heats the contents of the pan.

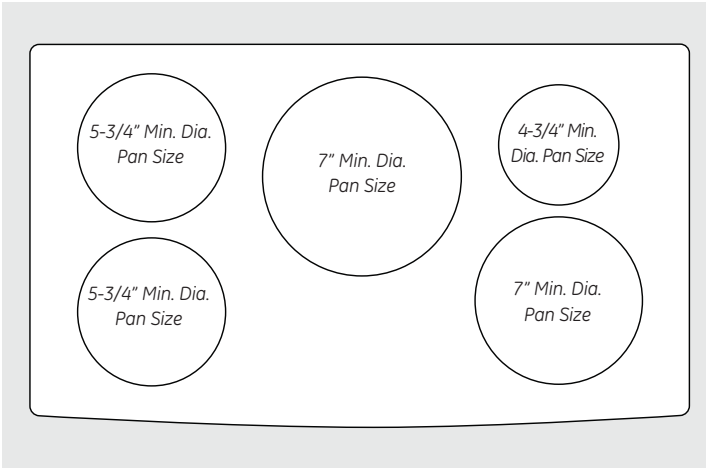
Magnetic induction cooking requires the use of cookware made of ferrous metals—metals to which magnets will stick, such as iron or steel.

Use pans that fit the element size. The pan must be large enough for the safety sensor to activate an element.

The cooktop will not start if a very small steel or iron utensil (less than the minimum size across the bottom) is placed on the cooking surface when the unit is turned on—items such as steel spatulas, cooking spoons, knives and other small utensils.



30" Wide Cooktop. Use the minimum size pan shown for each cooking element.



36" Wide Cooktop. Use the minimum size pan shown for each cooking element.

Using the correct size cookware

Each cooking element requires a MINIMUM pan size. If the pan is properly centered, and of the correct material, but is too small for the cooking element, the element cannot be activated. The display will flash "F" along with the power level selected.

Cookware larger than the element ring may be used; however, heat will only occur above the element.

For best results, the cookware must make FULL contact with the glass surface.

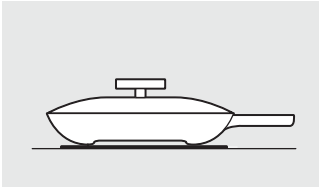
Do not allow the bottom of the pan or cookware to touch the surrounding metal cooktop trim or to overlap the cooktop controls.

For best performance, match the pan size to the element size. Using a smaller pot on a larger burner will generate less power at any given setting.

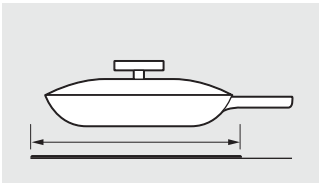
Choosing the correct cookware to use.

INCORRECT

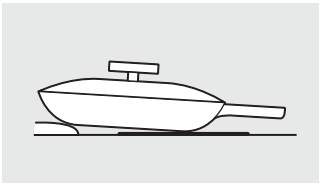
Cookware not centered on cooking element surface.



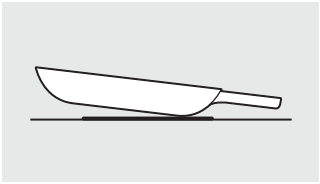
Curved or warped pan bottoms or sides.



Pan does not meet the minimum size required for the cooking element used.

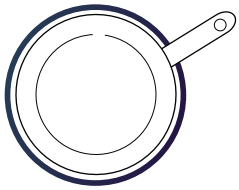


Pan bottom rests on cooktop trim or does not rest completely on the cooktop surface.

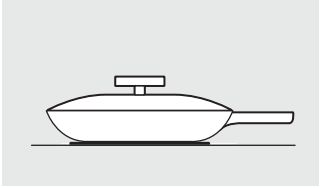


Heavy handle tilts pan.

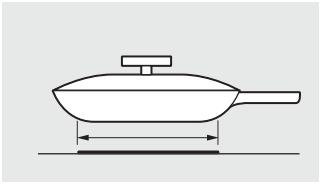
CORRECT



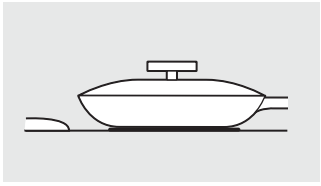
Cookware centered correctly on cooking element surface.



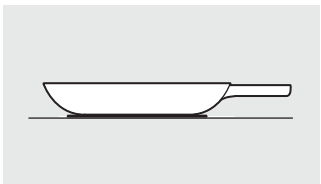
Flat pan bottom.



Pan size meets or exceeds the recommended minimum size for the cooking element used.



Pan bottom rests completely on the cooktop surface.



Pan is properly balanced.

Cookware recommendations

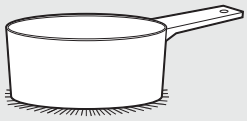
Cookware must fully contact the surface of the cooking element.

Use flat-bottomed pans sized to fit the cooking element and also to the amount of food being prepared.

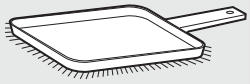
CAUTION:

- *The cooking elements may appear to be cool while turned ON and after they have been turned OFF. The glass surface may be HOT from residual heat transferred from the cookware and burns may occur.*
- *DO NOT TOUCH HOT COOKWARE or PANS directly with hands. Always use mitts or pot holders to protect hands from burns.*
- *DO NOT SLIDE cookware across the cooktop surface. Doing so may permanently damage the appearance of the ceramic cooktop.*

(*Continued next page*)



Use flat-bottomed pans.



Use a griddle.

Use a flat-bottomed wok.

Suitable Cookware

Use quality cookware with heavier bottoms for better heat distribution and even cooking results. Choose cookware made of magnetic stainless steel, enamel coated cast iron, enameled steel and combinations of these materials.

Some cookware is specifically identified by the manufacturer for use with induction cooktops. Use a magnet to test if the cookware will work.

Flat-bottomed pans give best results. Pans with rims or slight ridges can be used.

Round pans give best results. Pans with warped or curved bottoms will not heat evenly.

For wok cooking, use a flat-bottomed wok. Do not use a wok with a support ring.

Cookware "noise"

Slight sounds may be produced by different types of cookware. Heavier pans such as enameled cast iron produce less noise than a lighter weight multi-ply stainless steel pan. The size of the pan, and the amount of contents, can also contribute to the sound level.

When using adjacent elements that are set at certain power level settings, magnetic fields may interact and produce a low whistle or intermitted "hum". These noises can be reduced or eliminated by lowering or raising the power level settings of one or both of the elements. Pans that completely cover the element ring will produce less noise.

A low "humming" noise is normal particularly on high settings.

Do not place wet pans on the glass cooktop.

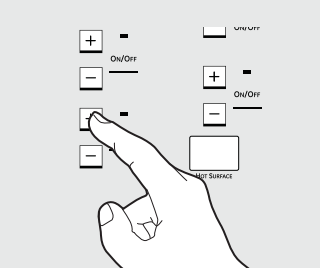
Do not use woks with support rings on the glass cooktop.

Use flat-bottomed woks on the glass cooktop.

For Best Results

- Do not place wet pans or lids on the cooking surface or induction rings.
- Do not place wet fingers on the glass cooktop. Wipe up spills on the controls with dry hands.
- Do not use woks with support rings. This type of wok will not heat on an induction element.
- Use only a flat-bottomed wok, available from many cookware manufacturers. The bottom of the wok should match the diameter of the induction ring to insure proper contact.
- Some special cooking procedures require specific cookware such as pressure cookers, deep-fat fryers, etc. Cookware with flat bottoms that match the size of the surface element being used will produce the best results.

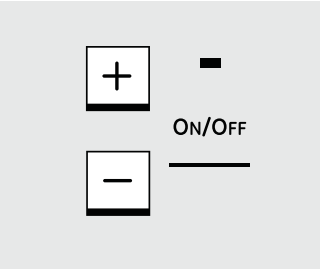
Setting the controls.



Using the Touch Control.

Touch the pad lightly with the flat part of your fingertip. Touch the center of the pad to ensure the cooktop response.

A "beep" sound can be heard with each touch to any pad.



Operating the Cooking Elements

Each of the cooking elements have separate ***ON/OFF*** pads and LED display.

Be sure to use cookware that meets the minimum pan size requirements.

To turn on a cooking element:

1. Place a pan with food onto the induction element. The pan size should match the indicator ring.
2. Touch the ***ON/OFF*** pad. "5" will flash in the display.
3. Touch the ***(+)*** or ***(-)*** pad to select power level and to activate the induction element. A sound will beep. The ***(+)*** or ***(-)*** pad must be pressed within 10 seconds to activate the element.

NOTE: You can also touch and hold the pad to scroll quickly to the desired setting.

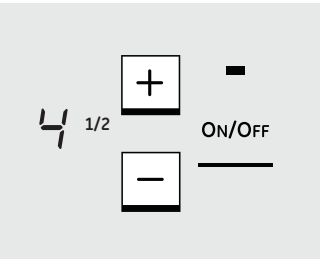
The induction circuit detects the pan and allows the element to be activated. Both the element ON indicator light and the cooktop HOT SURFACE light will illuminate. If no power level is selected within 10 seconds, the zone will be deactivated.

To turn the control to OFF, touch the ***ON/OFF*** pad. The induction element will be turned off and the display will be blank.

With an element control ON:

If a pan is removed or moved to off-center from the cooking ring, the control will flash "F" along with the power setting. After 30 seconds, the element will be deactivated and displays will turn off.

If the pan is placed back on the zone within 30 seconds, the flashing will stop and cooking will resume.



The power level with a fraction indicates the additional half-step setting.

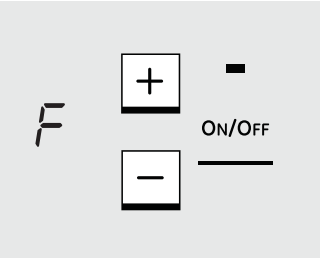
Power Level Settings

The cooktop offers 19 power levels, including a Boost setting. Power levels range from "L" to 9 in precise half-step increments. For example: 1, 1-1/2, 2, 2-1/2 and up to power level 9.

Power Level "L", the lowest setting, is recommended for "Keep Warm."

The power level increases one-half level with each touch.

Power level 9 is the highest normal power setting.

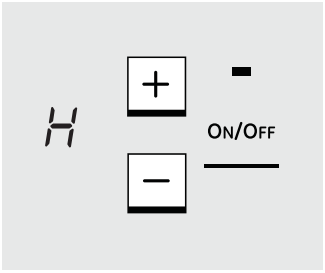


Flashing "F" in the Display

If a pan is removed or moved off-center from the cooking ring during the cooking process, the control will flash "F" along with the power setting. The flashing "F" indicates that the pan is no longer detected. After 30 seconds, the element will be deactivated and the display will turn off.

If the pan is returned to the surface element within 30 seconds, the flashing "F" will disappear and cooking will resume.

(*Continued next page*)



"H" indicates that the Boost power level has been selected for rapid cooking and boiling.

Boost Setting

Boost is the highest power level, designed for large quantity rapid cooking and boiling. Boost will operate for a maximum of 10 minutes. After 10 minutes, it will automatically revert to power level 9.

Boost may be repeated after the initial 10 minute cycle.

CAUTION: Do not leave a pot unattended while in the Boost Mode.

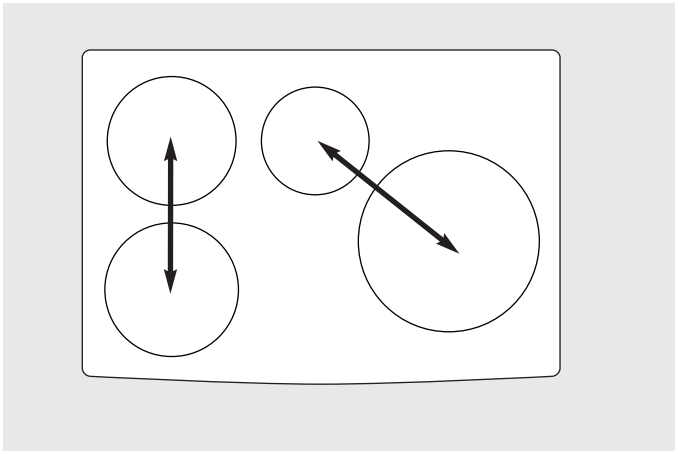
To start the Boost power setting:

1. Place a pan matching the size of the induction element over the selected indicator ring.
2. Touch the ***ON/OFF*** pad. "5" will flash in the display.
3. Touch and hold the ***(+)*** pad until the display reads "H."

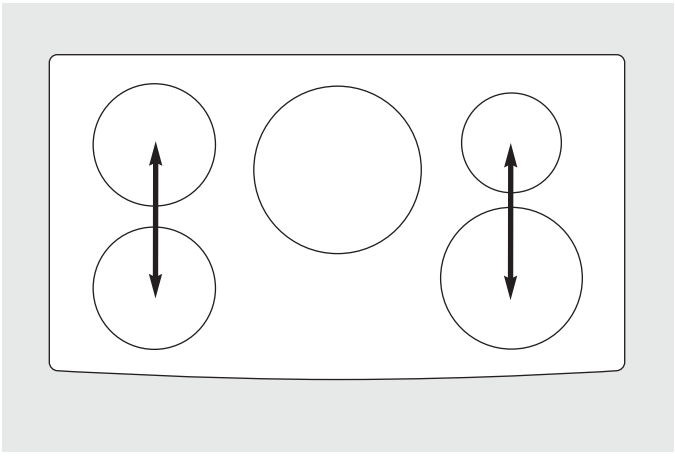
NOTE: If the pan is removed, the display will flash "F" alternating to "H". After 30 seconds, the elements will turn off automatically.

Sounds you may hear:

You may hear a slight "buzz" sound when cooking with the Boost or high mode. This is normal. The sound depends on the type of pot being used. Some pots will "buzz" louder depending on the material. A "buzz" sound may be heard if the pan contents are cold. As the pan heats, the sound will decrease. If the power level is reduced, the sound level will go down.



4 burner cooktops with right and left side (2) induction generators.



5 burner cooktops with right, left and center (3) induction generators.

Power Sharing

Four burner cooktops are divided into two separate heating zones. The right and left side cooking zones are powered by separate and independent induction generators. One generator controls 2 elements, or two cooking zones within a heating section share the power of one generator.

Five burner cooktops are divided into 3 zones. The right and left side have separate cooking zones and the large center element is another separate cooking zone.

Power Sharing is activated when both elements in the same cooking zone are activated and one element is set for Boost (H). The element that is not set for Boost will change to a lower power level. This is called Power Sharing. When Boost operation is complete (10 minutes), the other element may be reset to any power level. Both elements can operate simultaneously at normal power level settings of "L" to 9.

IMPORTANT NOTE FOR FOUR BURNER MODELS:

The elements on the right side share one generator. Both elements can operate at any non-Boost (level L to 9) power level at the same time. If the large front element is set for "H" or Boost, the smaller element at the right rear will be deactivated or turned off automatically. The smaller right rear element can be activated and set for any power level after the Boost operation of the larger element is completed (10 minutes).

(*Continued next page*)

CAUTION: *Do not warm food on the "L" power level for more than two hours.*

Using the "L" Low Setting

1. Place a pan with food onto the induction element. The pan size should match the indicator ring.
2. Touch the ***ON/OFF*** pad. "5" will flash in the display.
3. Touch the ***(-)*** pad until the display reads "L." A sound will beep.

Do not use plastic wrap to cover food. Plastic may melt onto the surface and be very difficult to remove.

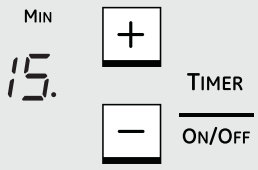
Use only cookware recommended for this cooktop.

The Low setting will keep hot, cooked food at serving temperature. Always start with hot food. Do not use to heat cold food.

Placing uncooked or cold food on surface element set for Low could result in food-borne illness.

For best results, all food set for Low should be covered with a lid or aluminum foil. Pastries or breads should be vented to allow moisture to escape.

Always use pot holders or oven mitts when removing food from the element set for Low as cookware and plates will be hot.



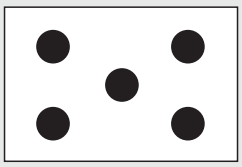
Using the Kitchen Timer

NOTE: Use the kitchen timer to measure cooking time or as a reminder. The kitchen timer does not control the cooking elements.

1. Touch the Timer ***ON/OFF*** pad.
2. Touch the ***(+)*** or ***(-)*** pad to choose the desired number of minutes. When the ***(+)*** or ***(-)*** pad is held for several seconds, the timer will increase or decrease at a faster rate. The timer will automatically start to count down the minutes you have selected within 5 seconds of the last entry. The display will show the minutes and a " **.** " will flash.
3. The timer displays minutes remaining until it reaches one minute. At one minute, the timer will beep and start counting down seconds.

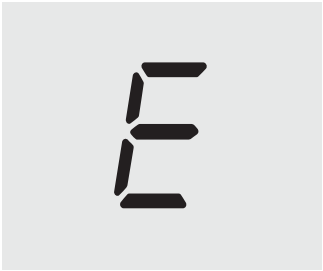
   With one minute remaining, the timer will beep every 10 seconds. When all time has counted down, the timer will signal a long beep and the display will become blank.

Touch the ***ON/OFF*** pad to turn the timer off at any time. Touch ***(+)*** or ***(-)*** to add or subtract to the set time.



Hot Surface Indicator Light

A ***HOT SURFACE*** indicator light (one for each cooking element) will glow immediately when any element is activated. The indicator light(s) glow when the glass surface is hot, and will remain on until the surface has cooled to a temperature that is safe to touch.



Error Alerts (Flashing "E"/"c" and "E" "o")

Error alerts indicate a temporary problem that may be corrected by the user.

Clear Keypad—If the display flashes ***"E"*** alternating to ***"c"***, the keypad is sensing continuous activation of one or more keypads. Clean or clear any obstructions on the keypad area. Obstructions may be water, food spills, a utensil or other objects.

To resume cooking, touch the ***ON/OFF*** pad, then select the power level.

Over Temperature—If the display flashes ***"E"*** alternating to ***"o"***, the cooktop sensor indicates that the induction element or electronics have overheated.

Overheating of the element is caused by placing an empty pan on the element and selecting a high power level. The element sensor detects very high temperatures (above normal cooking temperatures), turns off the power and displays the error. A second potential cause of this error is a lack of cooling air to the bottom of the cooktop, which can cause overheating of the electronics. If this situation occurs, make sure the air inlet below the cooktop is unobstructed.

Touch the ***ON/OFF*** pad and allow the cooktop to cool for 30 to 45 minutes before operation can begin again.

If either of these conditions persist, call for service.

IMPORTANT: If the ***"E"*** flashes alone, without alternating to a ***"c"*** or ***"o"***, a hardware error has occurred. Call for service.

Control Lock

IMPORTANT: As a convenience, you can lock the entire cooktop at any time when it is not in use or before cleaning. Locking the cooktop will prevent surface elements from being turned on accidentally.

To lock the cooktop:

Touch and hold the ***CONTROL LOCK*** pad ***for 5 seconds.***

A two-beep signal will sound, and the ***CONTROL LOCK*** light will glow, indicating that the cooktop is locked.

If the cooktop is locked while a surface element is in use, it will automatically turn off.

The ***CONTROL LOCK*** does not affect the timer. If Control Lock is set while the timer is counting down, it will continue to operate.

To unlock the cooktop:

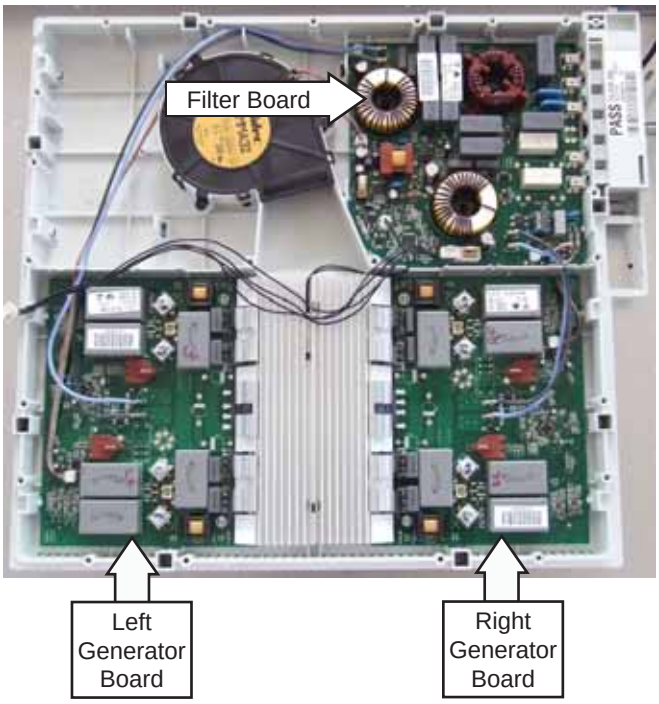
Touch and hold the ***CONTROL LOCK*** pad again ***for 5 seconds.*** A two-beep signal will sound, and the ***CONTROL LOCK*** light will go out, indicating that the cooktop is unlocked.

Operation Overview

Normal Operation:

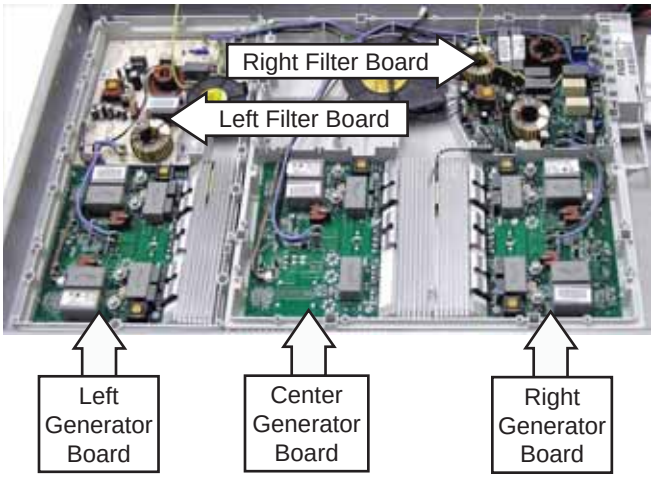
When activated by the touch board, a filter board supplies 240 VAC to 1 or 2 generator boards along with the LINbus (Logic) connections. Each generator board operates 1 or 2 elements.

The 30-in cooktops have 1 filter board that supplies voltage to 2 generator boards. The left generator board operates the 2 left-side elements. The right generator board operates the 2 right-side elements.

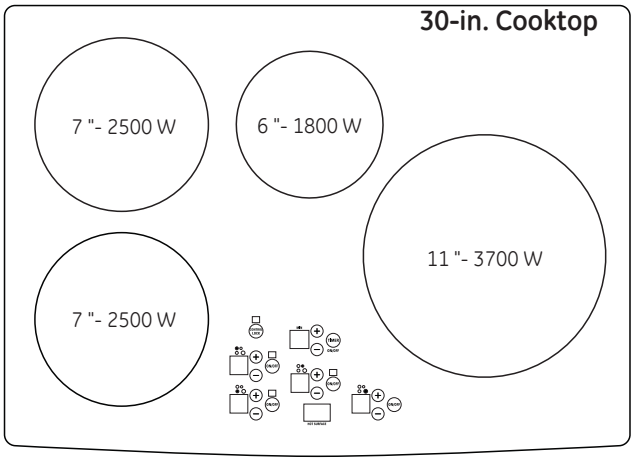


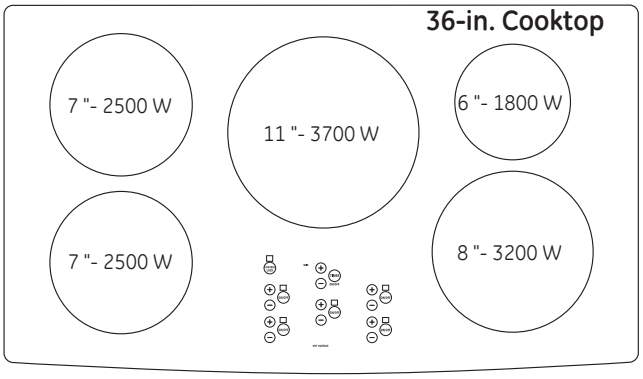
Generator board maximum output is 3700W. When using an element on high and a second element sharing the same generator board is then operated, the second element will receive priority. For example, if the first element was using 3700W when the second element was turned on, power on the first element will be reduced to a lower setting.

The 36-in. cooktops have 2 filter boards that supply voltage to 3 generator boards. The left filter board supplies voltage to the left generator board. The left generator board operates the 2 left-side elements. The right filter board supplies voltage to the center and right generator boards. The center generator board operates the center element and the right generator board operates the 2 right-side elements.



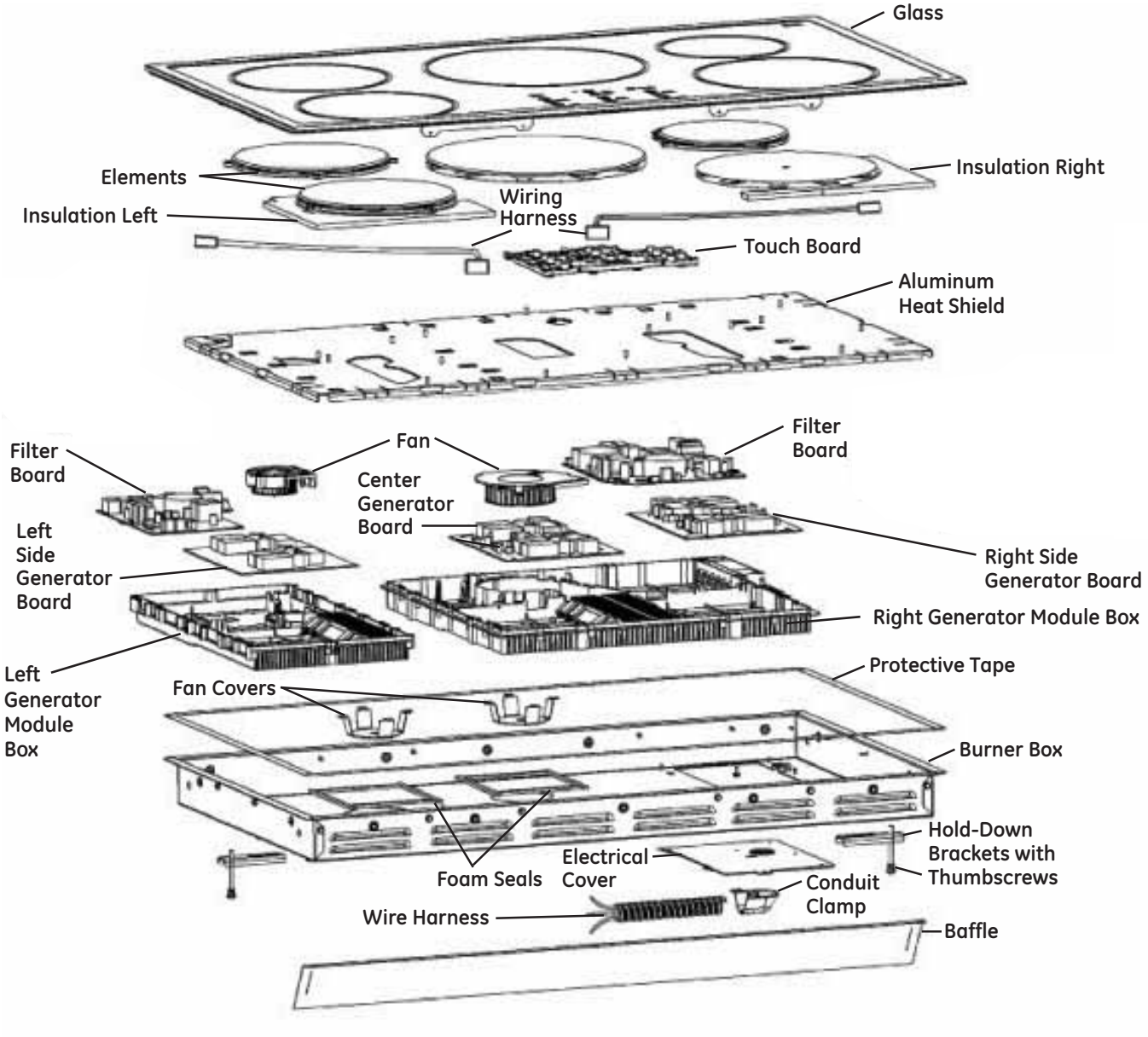
Element Size and Wattage





Component Locator Views

36-in. Models ZHU36 and PHP960



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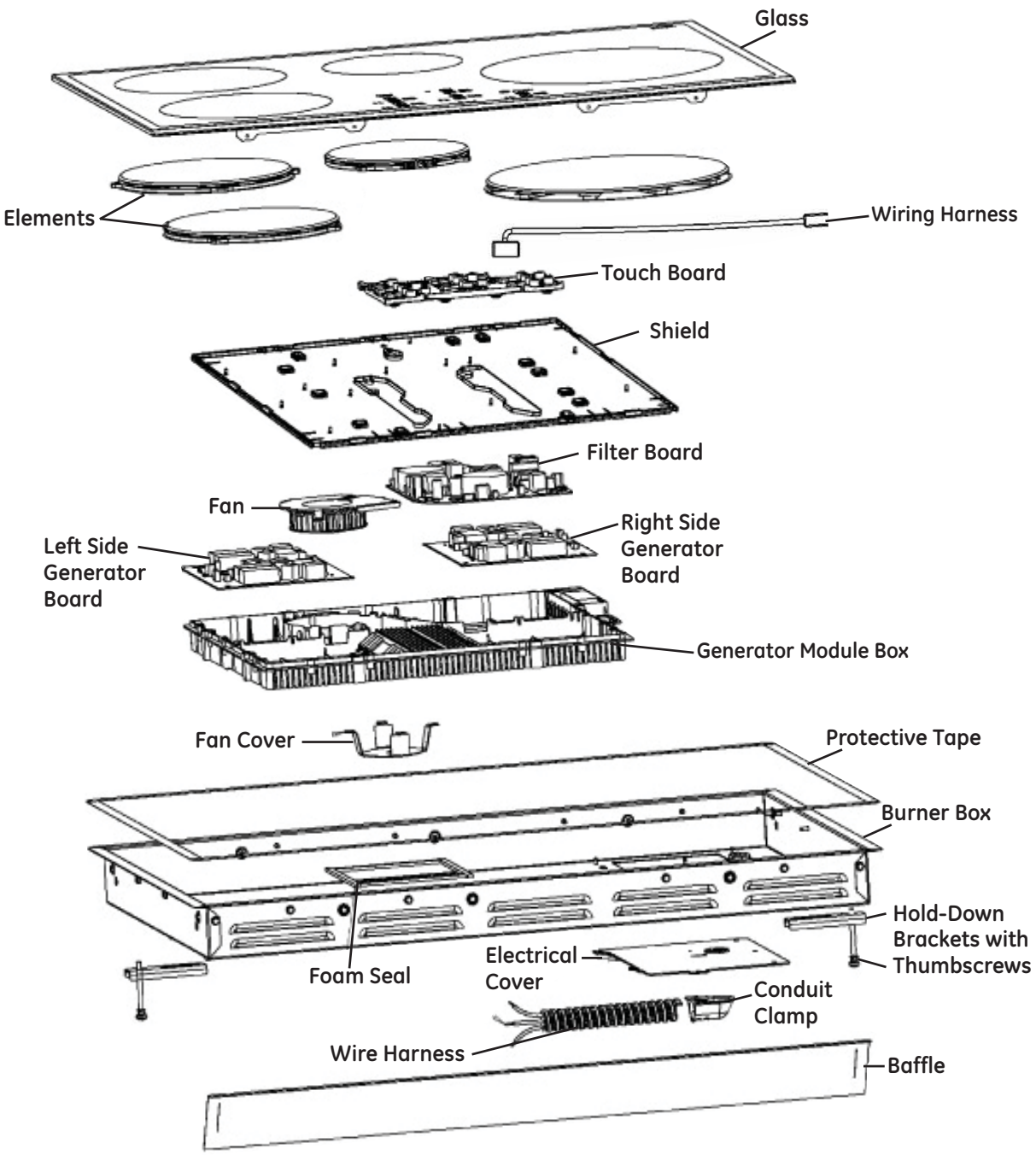
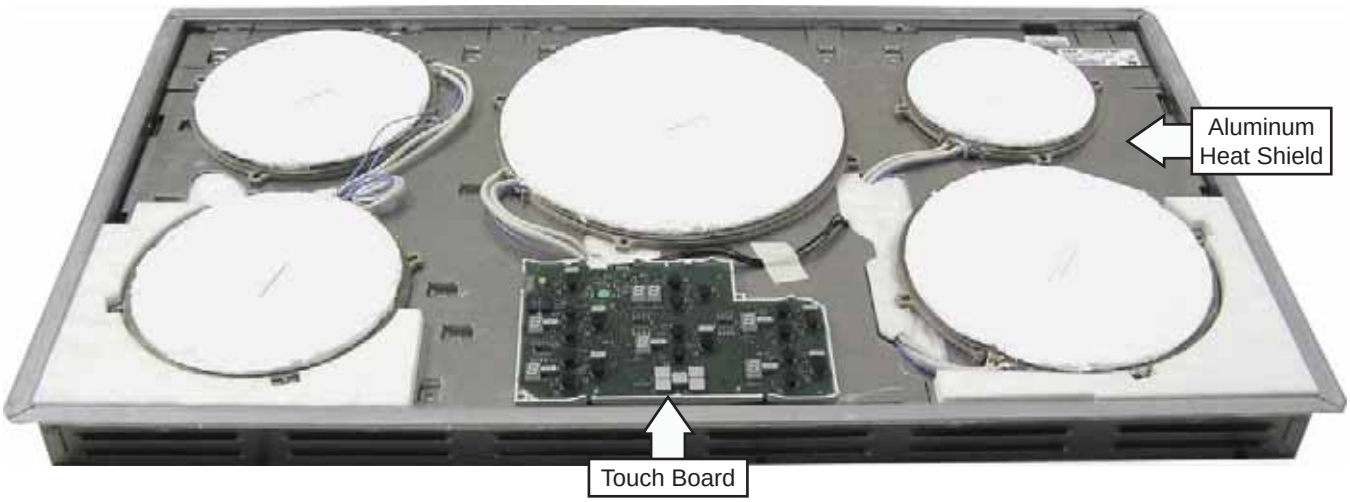
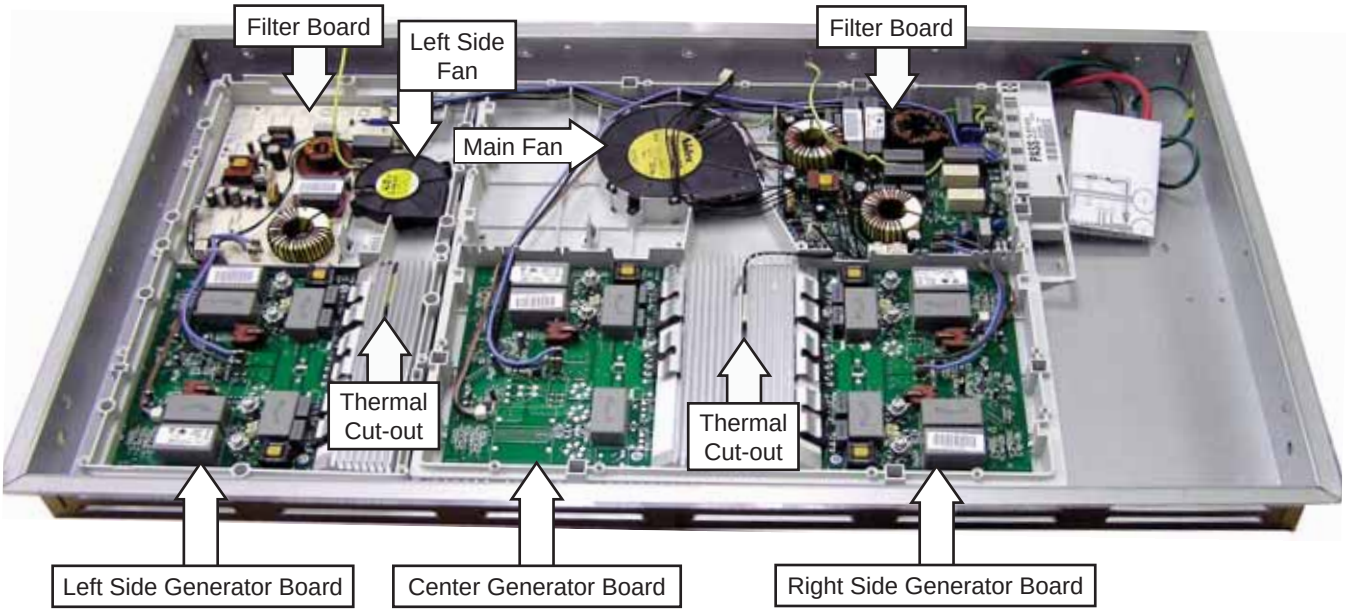
30-in. Models ZHU30 and PHP900







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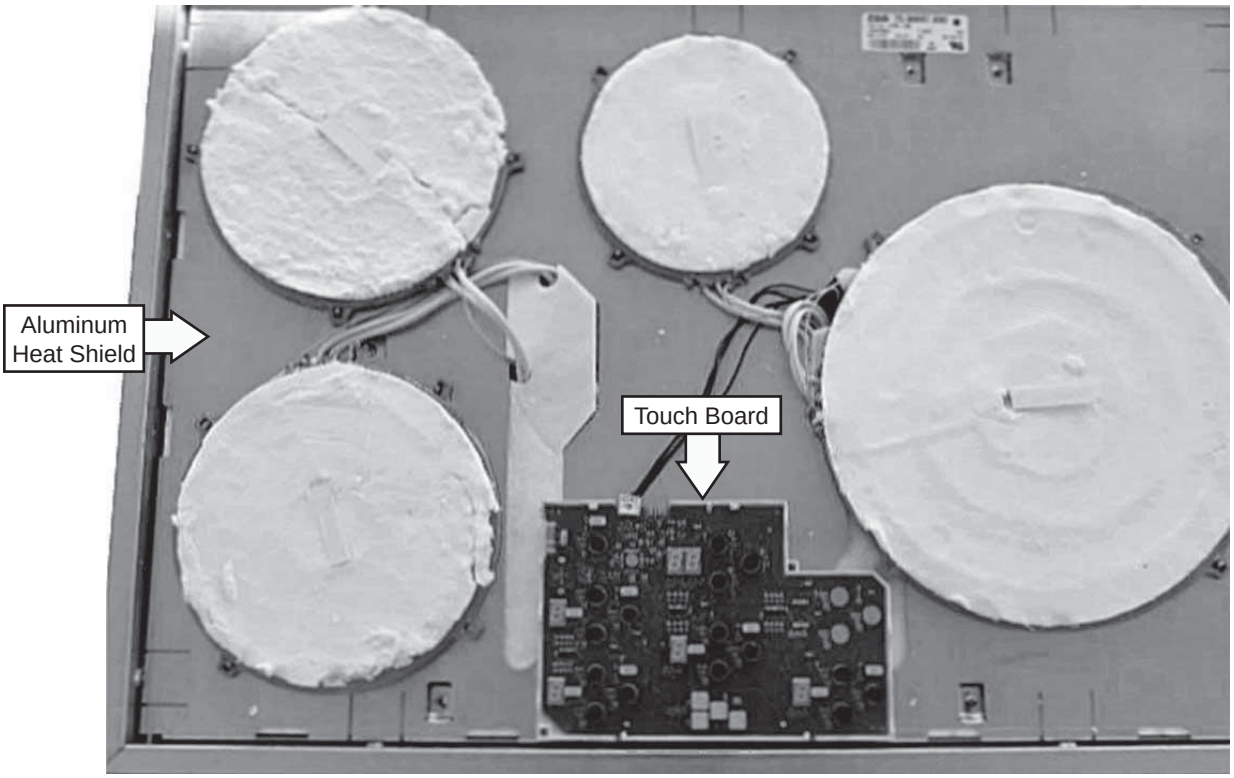
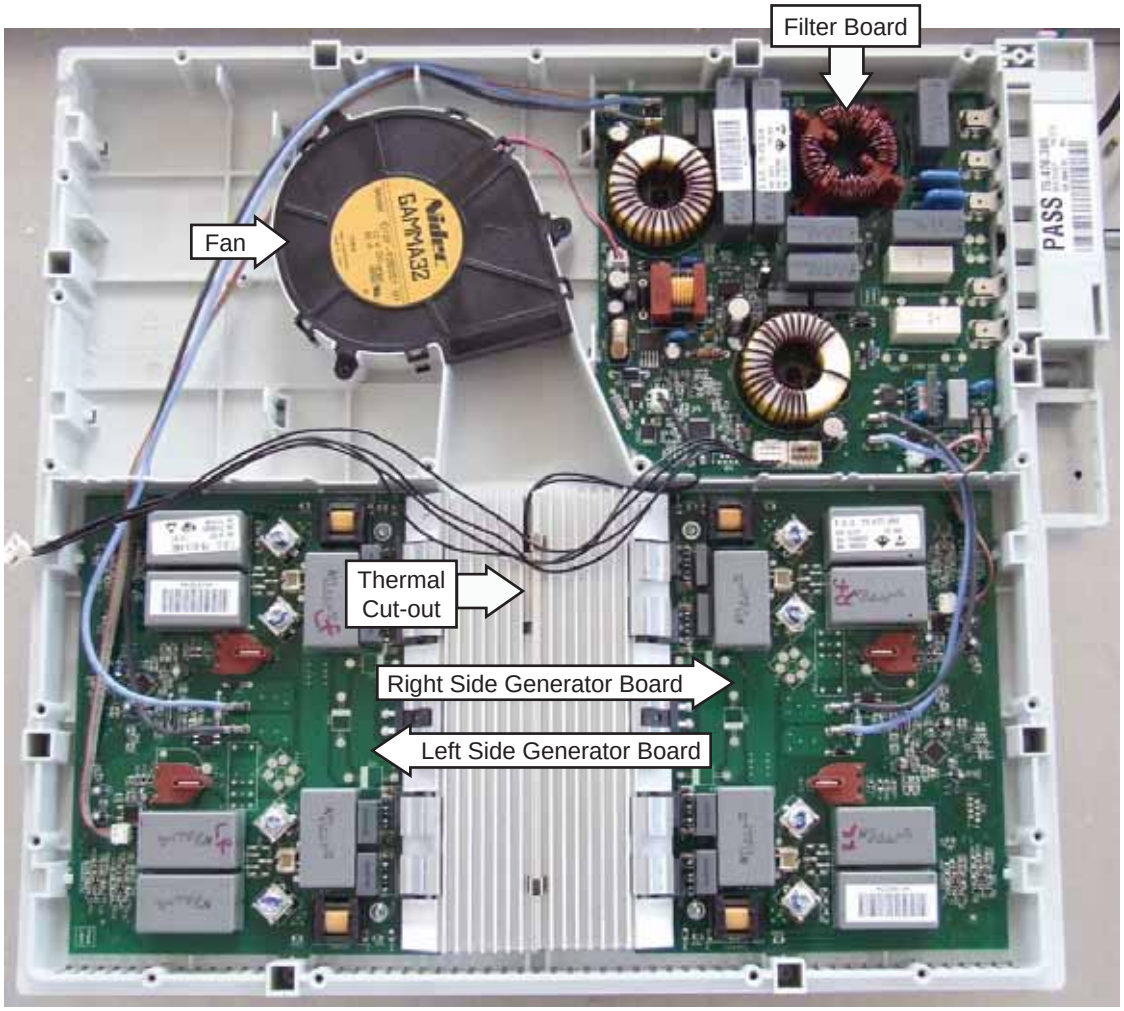
30-in. Models ZHU30 and PHP900





Cooktop Components

WARNING: Before servicing the cooktop, power must be removed from the cooktop by turning the power off at the circuit breaker.

WARNING: Sharp edges may be exposed when servicing. Use caution to avoid injury. Wear Kevlar gloves or equivalent protection.

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

- All components are accessible by removing the glass top.
- If the display/touch board is damaged, it can be replaced as a unit by removing the glass top and replacing the touch board. The touch board is located by pins and springs/foam tape on the back side of the board.
- If the power or filter boards are damaged, they can be replaced by removing the glass top, removing the elements, removing the touch board, and removing the aluminum heat shield and insulation. This will allow access to the electronics assemblies, and the board can be removed and replaced.

Appearance Defects

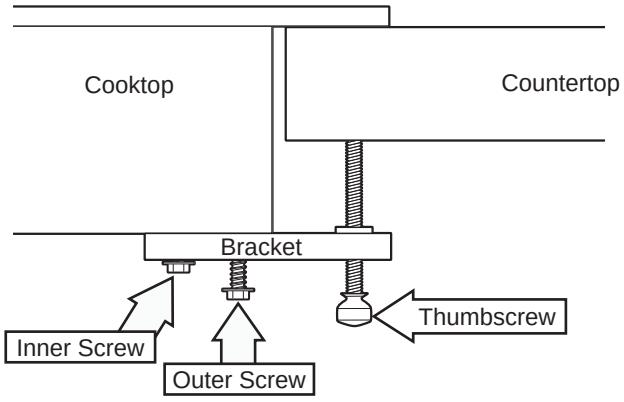
Scratches, marks, discoloration, stains, spots, etc. can be caused by food, cookware, utensils, cleaning solutions, or water. Before replacing the cooktop, use the cooktop cleaning procedure outlined in the Owner's Manual.

Cooktop Removal From Countertop

To remove the cooktop from the countertop:

Caution: The hold-down brackets, heat baffle (if installed), and screws on the bottom of the burner box can damage the countertop surface. Use care to protect the countertop appearance.

1. Open the cabinet door and remove each of the 2 thumbscrews that secure the cooktop to the bottom of the countertop.
2. Remove the outer hex-head screw from each hold-down bracket.
3. Loosen the inner hex-head screw from each hold-down bracket.



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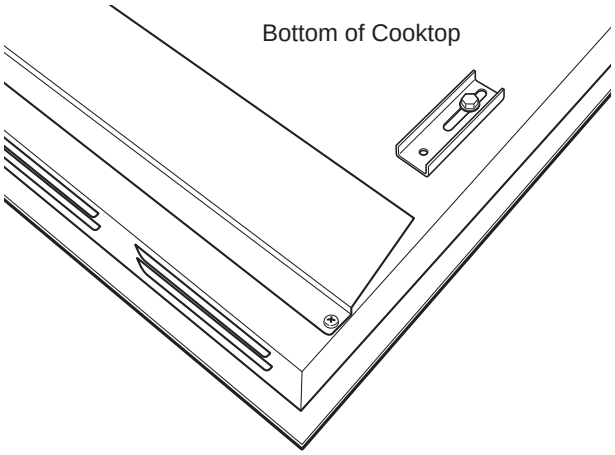
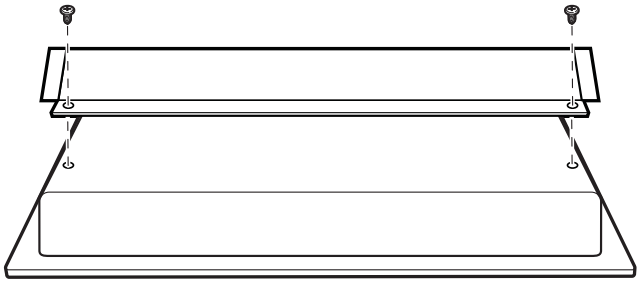
4. Turn the bracket inwards to avoid interference when lifting the cooktop from the countertop.



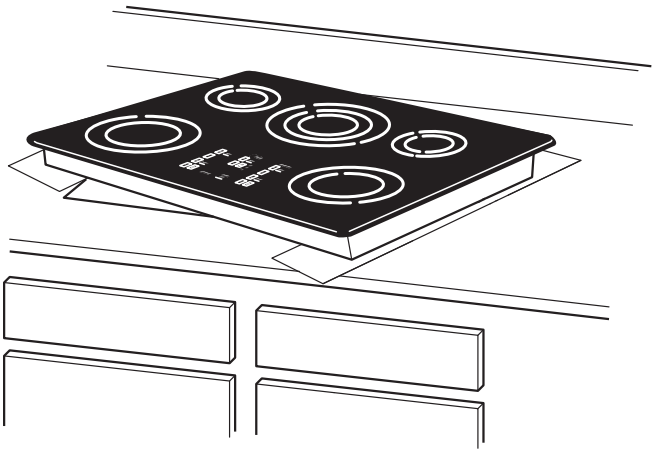
Note: In the following step a baffle is not installed if cooktop is installed over an oven.

5. Remove the two 1/4-in. hex-head screws and the baffle from the bottom of the cooktop.



Note: In the following step, it will be necessary to utilize 2 strips of wood or cardboard.

6. Push upward on the bottom of the burner box approximately 4 in. and rotate slightly left or right (to the best working advantage). Shim under the burner box with protective wood or cardboard as shown.



Glass Maintop

The glass maintop must be removed for element, sensor testing, and touch board replacement. The glass maintop is attached to the burner box with twelve 1/4-in hex-head screws (4 on the front, 4 on the back, and 2 on each side). After removing the screws, the glass maintop can then be lifted straight up and placed on a towel or padded surface.

30-in. Model

Elements

Each element consists of a coil and a sensor. The resistance value of the coil is less than 1Ω at room temperature. The resistance value of the sensor is 1000Ω at room temp (+or-10%). The sensor has a positive coefficient. As the temperature increases, the sensor's resistance increases. The sensor and coil are replaced as a complete assembly.

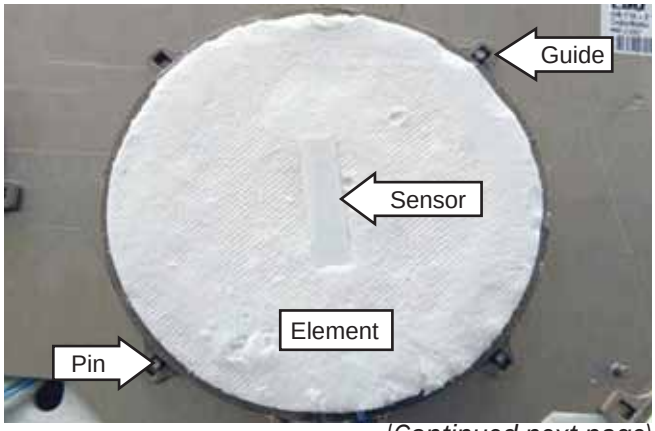
To remove heating elements:

1. Remove the glass maintop. (See *Glass Maintop*.)
2. Mark the alignment pins and guides for correct replacement.

Caution: To prevent damage to element insulation, care should be taken when handling an element.

Note: If some insulation should separate from the element, it can be placed back on the element in its original position. Do not use any adhesives.

3. Lift an element off the pins and carefully place it away from the wire entry.



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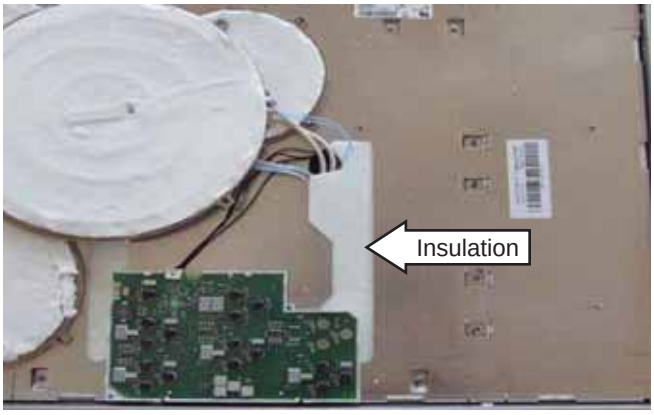
4. Lift and fold back the insulation from the wire entry in the heat shield.



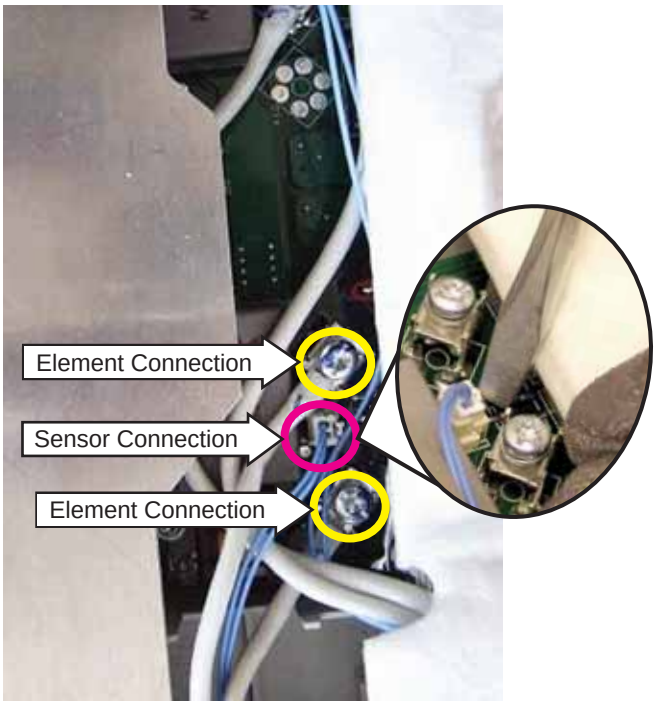
5. Note the routing of the element wires and loosen the two slotted T-25 Torx screws holding the element wires to the generator board.

Note

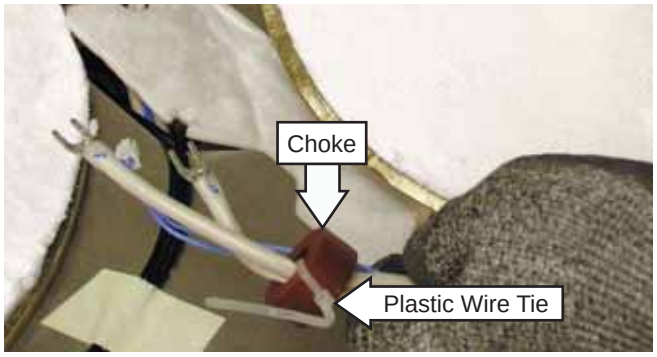
- The element wire terminals are forked and can be removed without completely removing the screws.
- The individual wires from each element have no polarity and can be connected to either of the screw posts for that specific element.

6. Use a flatblade screwdriver to press the lock tab inward, then lift the element sensor connector from the generator board.

7. Extract the element wiring from the wire entry in the heat shield.



Note: On 11- and 8-in. elements, the choke must be removed and transferred to the replacement element. The choke must be attached at the same location on the wires and secured with a plastic wire tie.



Touch Board

The touch board employes a capacitive touch system. When the glass keypad is touched, the circuit is completed and the touch board responds to the selection.

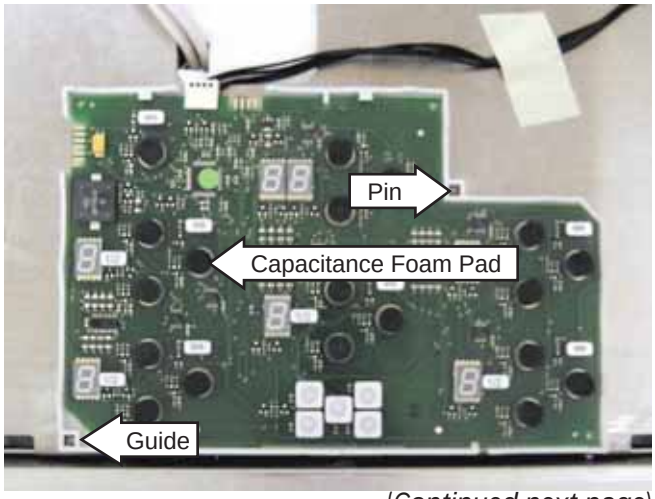
The touch board is positioned under the glass top. Springs attached to the bottom of the touch board and capacitance foam pads on top, provide precise touch sensitivity between the touch board and the cooktop glass.

To remove the touch board:

1. Remove the glass maintop. (See *Glass Maintop*.)

2. Note the location of the touch board wire harness, then disconnect the wire harness from the touch board.

Note: To insure proper positioning when replacing the touch board, be sure to engage pins in guides.



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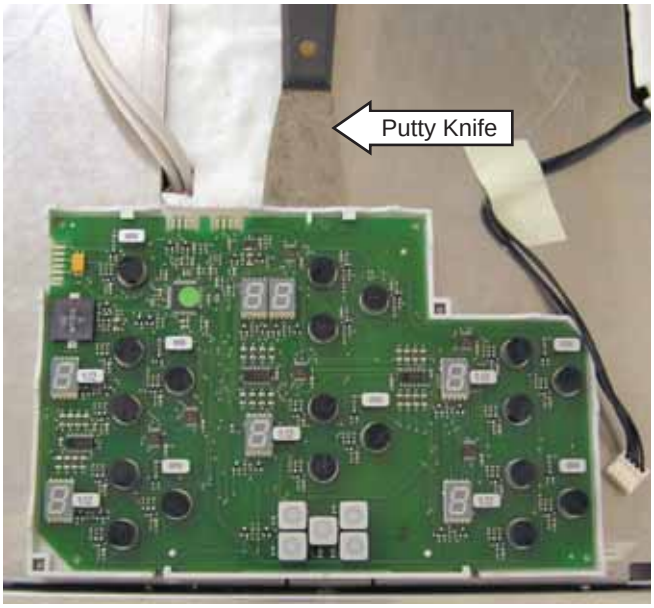
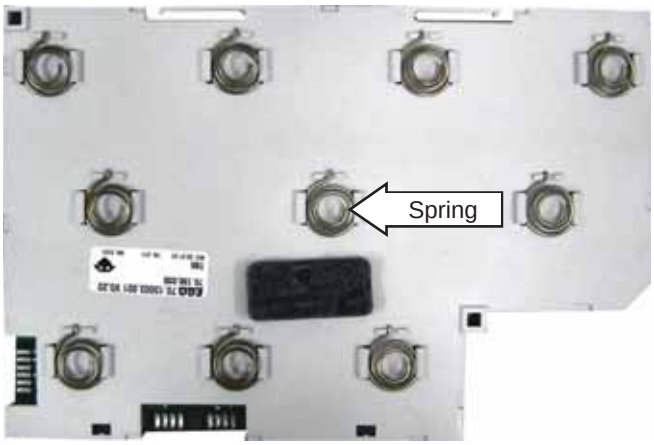
Note: The bottom of the touch board is attached to the heat shield with an adhesive foam cushion.

3. Raise the back of the touch board approximately 1 inch. Using a putty knife at a shallow angle, gently separate the foam spacer from the heat shield.

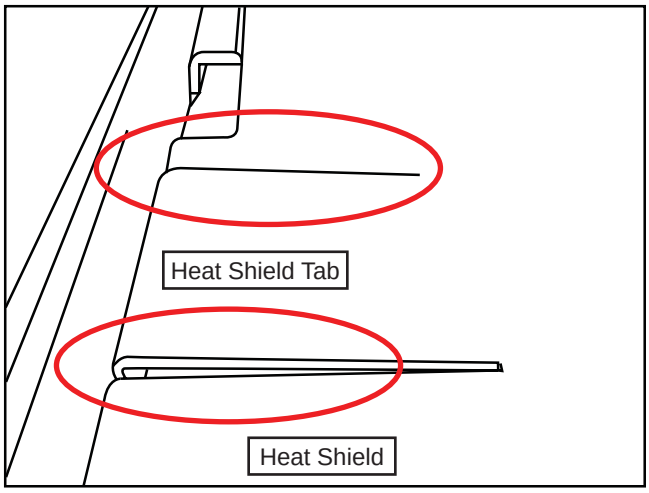


Note: Make sure all springs and capacitance foam pads are in place for precise touch sensitivity between the touch board and the cooktop glass.



Note: If one or more functions do not work and no apparent damage is present, the cause can be an excessive flat-bottom drop of the packaged unit during shipping/handling. The force of the drop can position the heat shield out of proper alignment to the heat shield mounting tabs. This would cause improper spacing between the underside of the glass top and the capacitive switches on the module, rendering the switches inoperative.

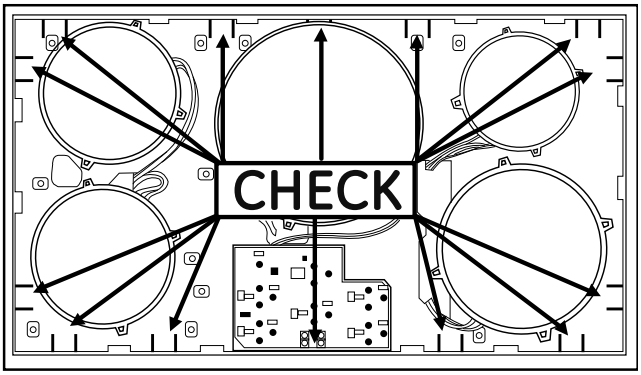
Result of Excessive Flat-bottom Drop



To correct a misaligned heat shield it is necessary to remove the glass top. (See *Glass Top*.)

There are 10 tabs on 30-in. models and 14 tabs on 36-in. models. All tabs are located along the perimeter of the heat shield.

Tab Locations- 30-in. Model



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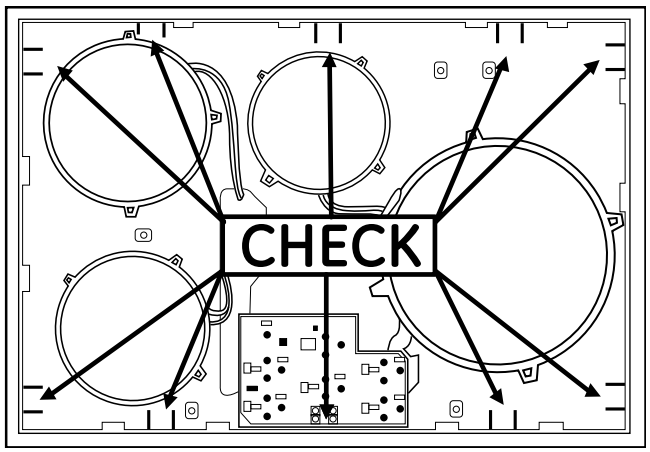
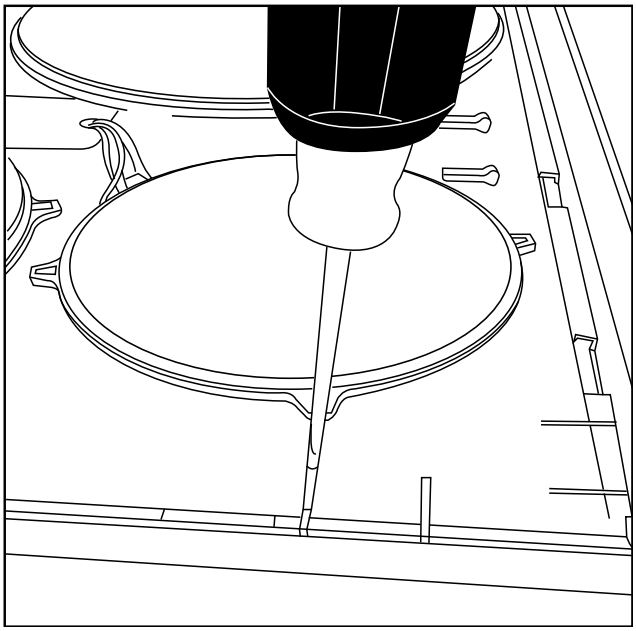
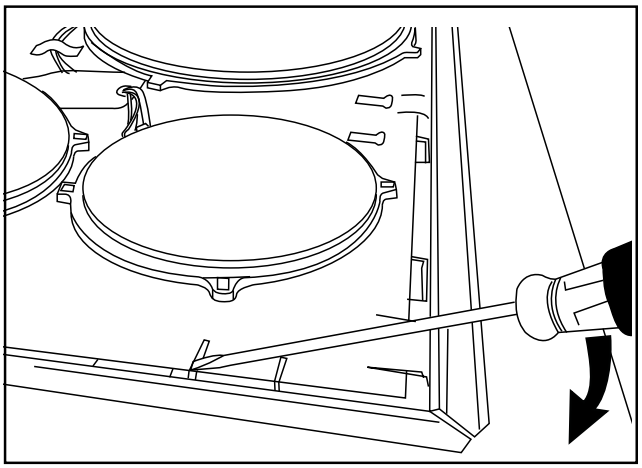
Tab Locations - 36-in. Model



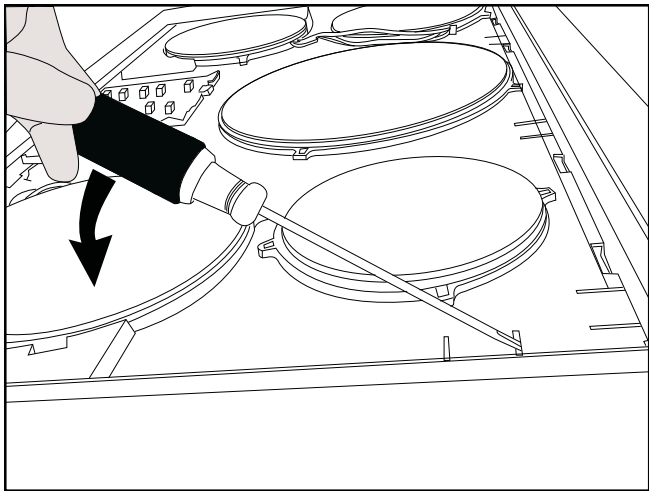
In the following illustrations, the heat shield is out of alignment due to an excessive flat-bottom drop of the cooktop. A large flat blade screwdriver can be inserted in the gap on the left-side of the tab.



The heat shield can be aligned with the tab by pushing down on the screwdriver and raising the heat shield even with the tab.

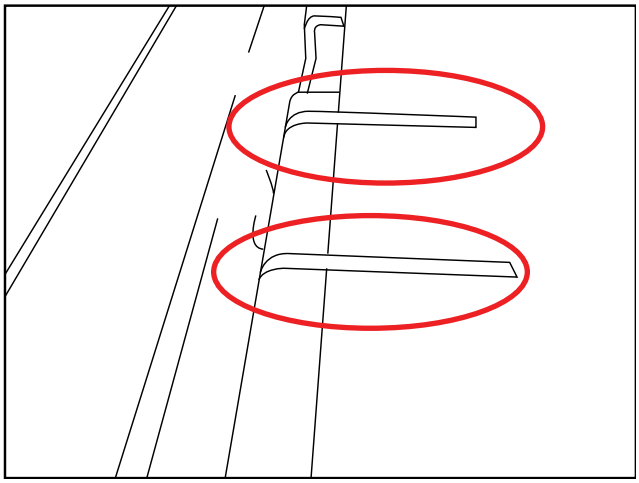


It may be necessary to insert the screwdriver in the right-side gap, push down on the screwdriver, and raise the heat shield even with the tab.



Inspect all tab-to-heat shield alignment areas. Repeat this alignment procedure on all tabs, if necessary.

Properly Aligned Heat Shield

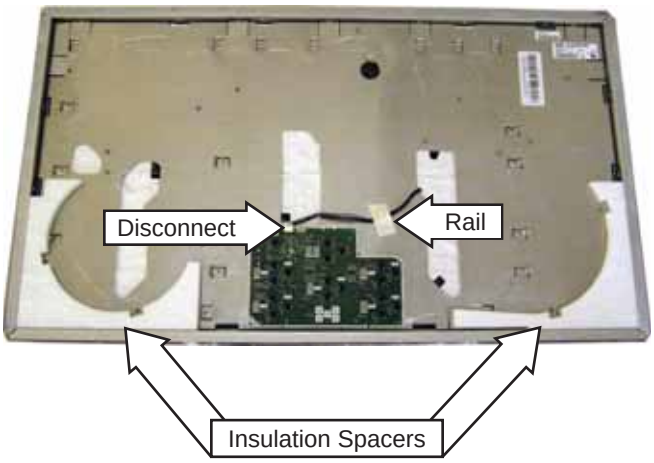


Heat Shield

To remove the heat shield:

1. Remove the elements. (See *Elements*.)
2. Lift and remove the left and right insulation spacers.
3. Disconnect the touch board wire harness and remove the tape that holds the harness to the heat shield.
4. Lift the insulation from the wire entry in the heat shield and tuck the touch board wire harness under the heat shield.

36-in. model shown

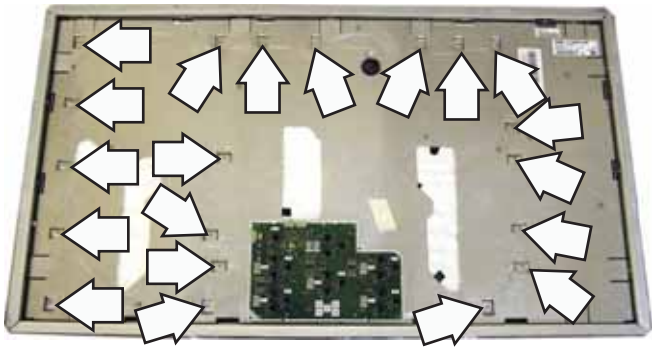


5. On 36-in. models, remove the fourteen 1/4-in. hex-head screws, (5 on the front, 5 on the back, and 2 on each side) from the outside of the burner box. (On 30-in models, remove the 10 1/4-in. hex-head screws, (3 in the front, 3 in the back, and 2 on each side) from the outside of the burner box.)

36-in. model shown

6. Remove the 20 Phillips-head screws from the top of the heat shield. (On 30-in. models, remove the 5 Phillips-head screws from the top of the heat shield.)

36-in. model shown



7. Raise the rear of the heat shield approximately 3 inches and disconnect the 2 ground wires from the bottom of the heat shield.

Rear view shown

8. Lift and remove the heat shield from the burner box.

Note

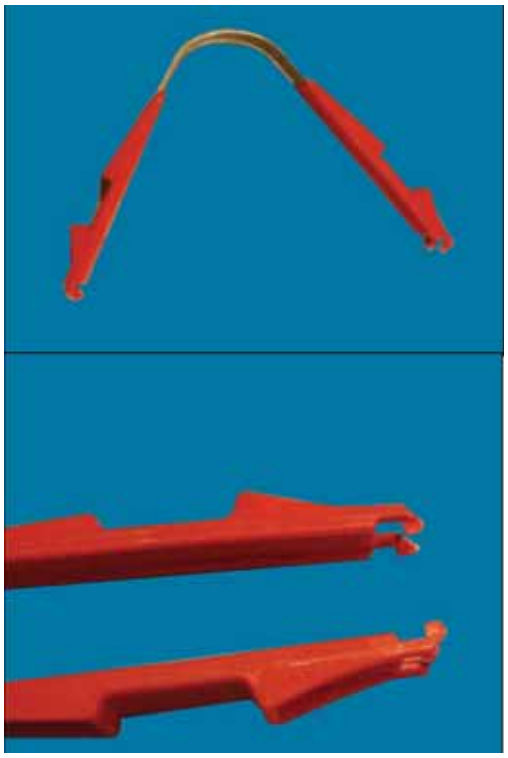
- The generator modules are not secured to the burner box. With the heat shield removed, generator modules can be accidentally moved out of position. To ensure proper alignment of the modules to the heat shield, it may be helpful to note and mark the position of the generator modules.
- If a generator module has shifted out of position, it may be helpful to drive one corner screw and then shift the generator module as necessary to align the other holes.

LINbus Connectors

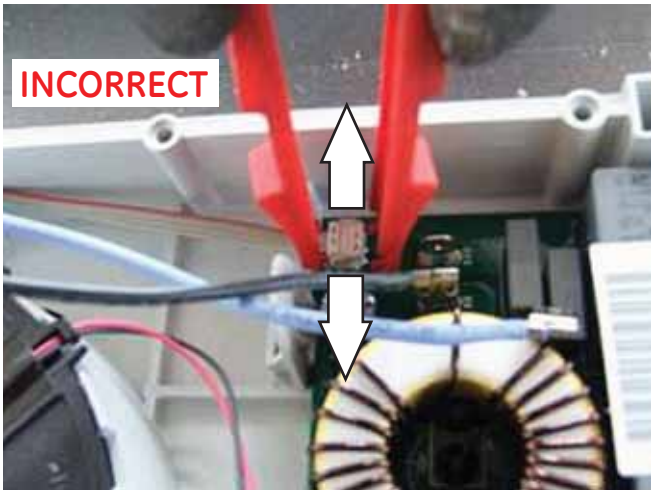
Caution: To prevent damage to LINbus (Local Interconnect Networkbus) connections, properly use (as shown below) a Molex 69008-1070 tool when removing LINbus connectors.

Note: A Molex 69008-1070 tool will be provided with any part that requires the LINbus connectors to be removed.

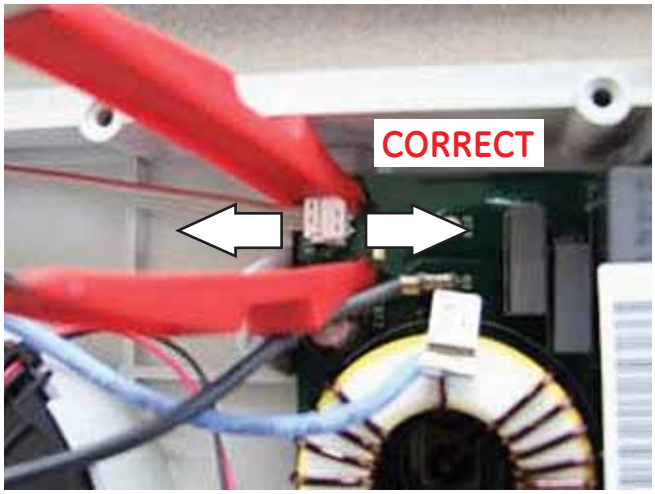
Molex 69008-1070 Tool



Do not use front-to-back motion to remove LINbus connector.

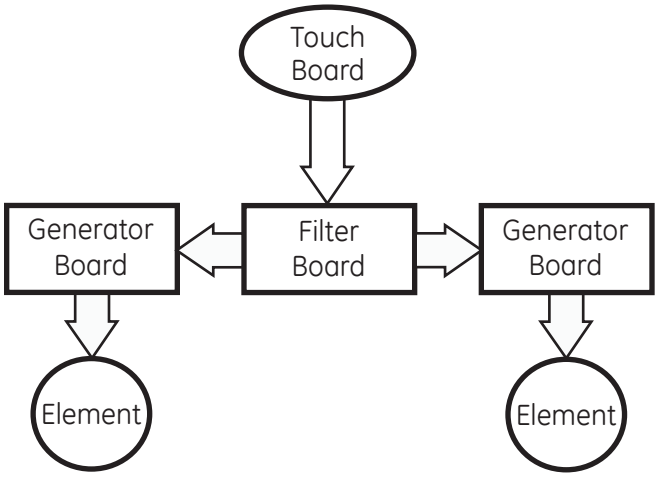


Correct way: Use side-to-side motion to remove the LINbus connector.



Note

- LINbus is a communication network comprised of a LIN master and one or more LIN slaves. In these cooktops, the filter board (right filter board on 36-in. models), acts as the LIN master while the generator boards and left filter board (on 36-in. models) are the LIN slaves.
- All of these components receive a signal to perform a specific task, but only the appropriate component will act on the message and respond accordingly. The component which acts on the specific task is based on programming. Since the LINbus signal is a digital control signal, special equipment, such as an oscilloscope, is required to measure it.



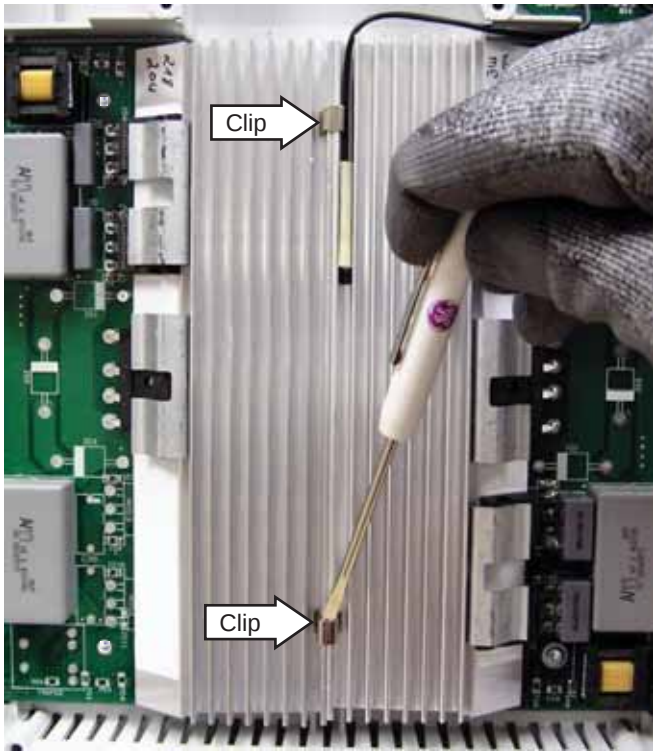
Generator Boards

To remove the generator boards:

1. Remove the heat shield. (See ***Heat Shield***.)

Note: The thermal cut-out on the right and left generator boards on the 30-in. model and on the center and right generator boards on the 36-in. models are joined together with 2 metal clips. The clips must be removed to replace either generator board.

2. If applicable, use a small flat blade screwdriver to pry up and remove the 2 thermal cut-out clips.



3. Mark the location of the black L1 and the blue L2 wires and disconnect both from the generator board.

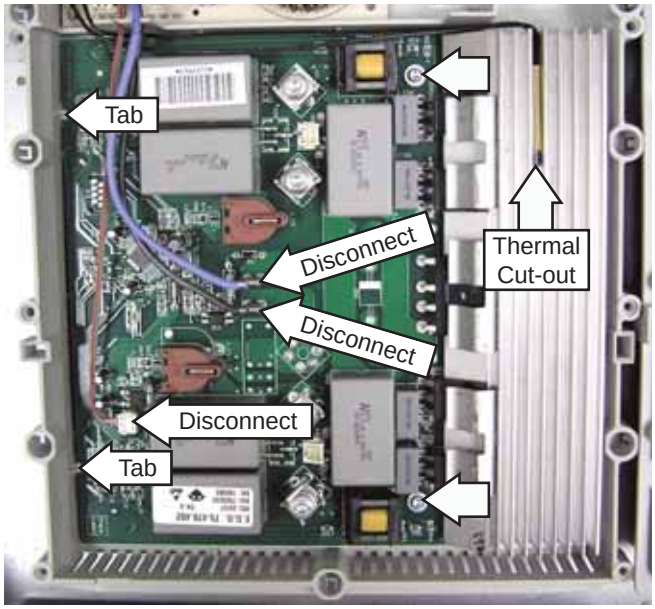
Note: When replacing the L1 and L2 wiring connecting the filter board to the generator board, connect that wiring in a matching configuration. For example, if the L1 output is connected to the bottom terminal on the filter board, it must be connected to the bottom terminal on the generator board.

4. Disconnect the LINbus connector. (See ***LINbus Connectors***.)

5. Note the position of the thermal cut-out and pull it out of the heat sink fins.

6. Remove the two T-15 Torx screws that hold the generator to the module base.

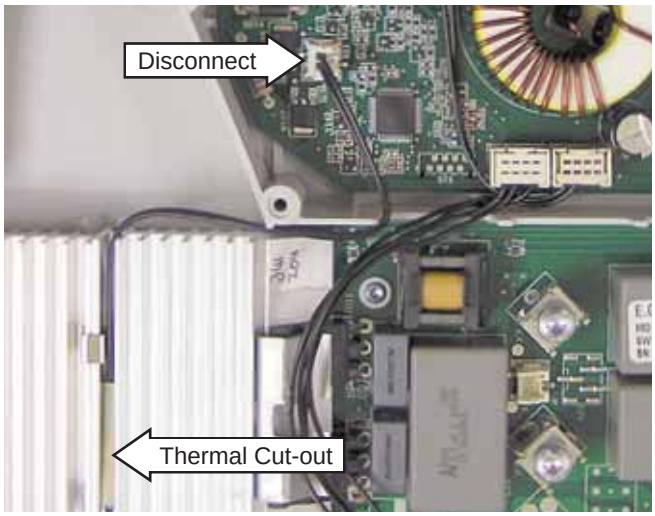
7. Lift the heat sink side and slide the generator board away from the 2 tabs on the module base.



Thermal Cut-out

The thermal cut-out is located between the fins of each generator board heat sink and is connected to the filter board with a wire harness. The location of the thermal cut-out allows it to sense an over-temperature condition of the generator board.

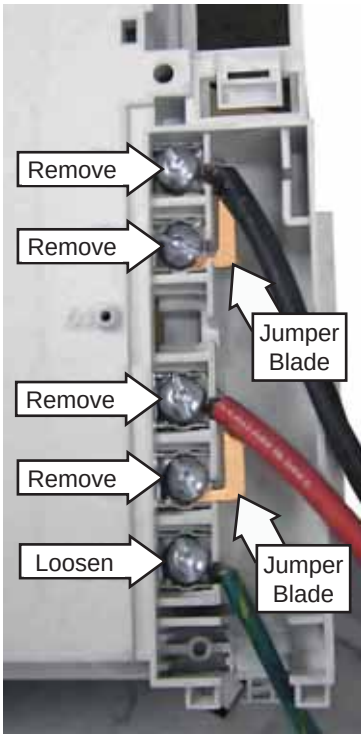
The thermal cut-out has a resistance value of less than 1 Ω and opens at approximately 250°F. An open thermal cut-out will stop operation of the cooktop. If the thermal cut-out is open, check for proper operation of the fan and possible vent obstructions.



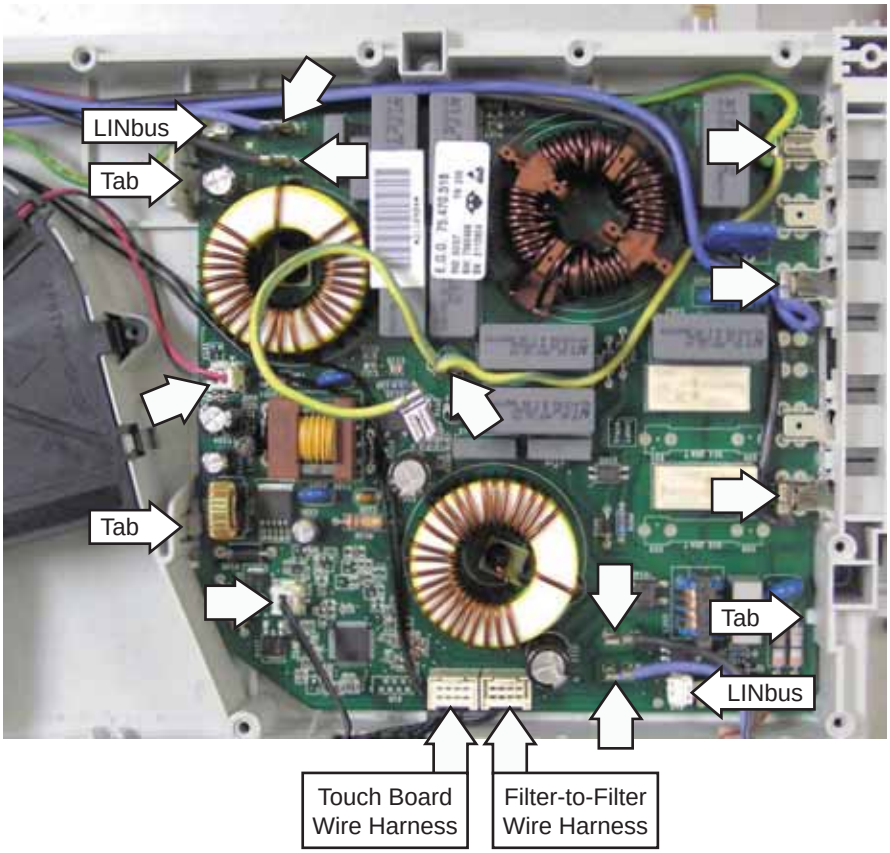
Filter Board

To remove the main filter board:

1. Remove the heat shield. (See ***Heat Shield***.)
2. Lift the front of the module and mark the location of the black, red, and green wires and the 2 jumper blades connected to the filter board power terminals.
3. Using a T-20 Torx or a flat blade screwdriver, remove the 4 screws, black and red wires, and the 2 jumper blades.
4. Loosen the ground wire screw and remove the ground wire from the filter board power terminal. Lower the module into the burner box.
5. Mark the location, then disconnect the black L1, blue L2, and ground wire connections on the filter board.
6. Disconnect the thermal cut-out, touch board, and fan motor wire harnesses.
7. On 36-in. models, disconnect the filter-to-filter wire harness.
8. Disconnect the LINbus connectors. (See ***LINbus Connectors***.)
9. Using a flat blade screwdriver, carefully press in the large 1 (30-in. model) or 2 (36-in model) tabs away from the filter board. Lift the filter board and pull the filter board away from the smaller tab on the module base.



Bottom of module shown



Arrows indicate disconnect locations

Note

- To remove the left side filter board on the 36-in. model, follow steps 1, and 5 through 9. The touch board wire harness is not connected to the left side filter board.
- The left side filter utilizes a non-replaceable fuse. Never attempt to replace the fuse. If the fuse is found to be open, replace both left side filter and generator boards.

Fans

The fan on the 30-in. model cools the left and right generator board heat sinks.

The 36-in. model utilizes 2 fans. The main fan cools the right and center generator board heat sinks. An additional fan cools the left side generator board heat sink.

Fans change speed based on heat. At low settings the fan may not operate. As heat increases, the fan will come on and increase in speed as heat increases. When the highest power level (Boost) is selected (indicated by ***H*** on the display), the fan automatically comes on.

A single wire harness is connected to each fan motor. All fans are operated by 12 VDC motors.

Caution: To prevent damage to fragile fan locking tabs, test fan before removing it from the module.

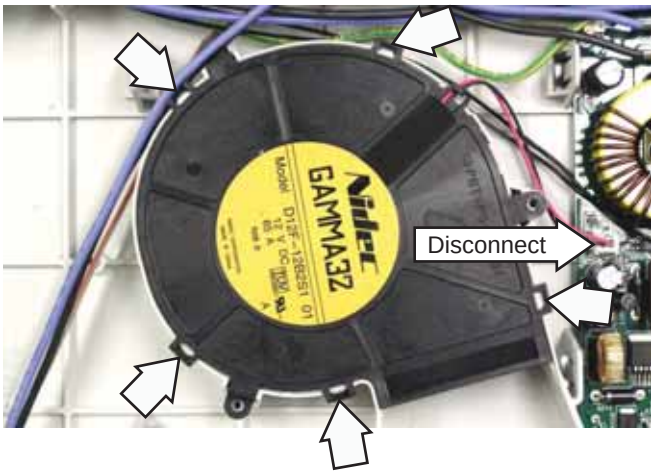
Note: When testing these fans:

• You cannot test with an ohmmeter.

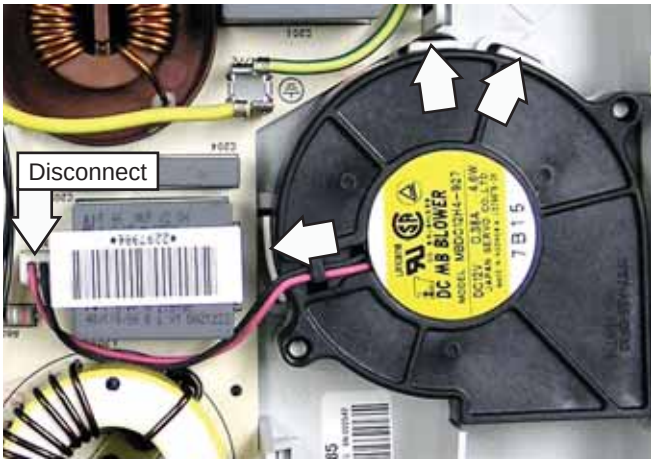
• Fan can be run for a short period of time using a 9-volt battery. Connect the negative (-) battery terminal to the black wire. Connect the positive (+) battery terminal to the white wire.

The fan for the 30-in. model and the main fan on the 36-in. model are attached to the module base with 5 tabs. On the 36-in. model the left side generator fan is attached to the module base with 3 locking tabs. It is necessary to remove the heat shield to access the fans. (See ***Heat Shield***.)

30-in. Model Fan and 36-in Model Main Fan



36-in. Model Left Side Fan



Failure Codes

The cooktop operates a self-diagnostic mode when power is applied. The touch board has error codes that can be utilized by the service technician in order to quickly identify failed or improper operation of certain cooktop components. To access failure codes, simultaneously press the ***TIMER ON/OFF*** and ***CONTROL LOCK*** pads for approximately 10 seconds. Error codes will blink in the window of the corresponding element. The replacement of the failed component will clear the error code.

Whenever a failure code is encountered and before attempting to replace any components:

1. Turn off the power supply for 30 seconds, then reset it to see if this clears the failure code.
2. Verify proper voltage and orientation of the power supply wiring connections.

FAULT	CAUSE	CORRECTIVE ACTION
Er31 (36-in. models only)	One filter board not configured to work with the other filter board.	Press and hold timer up key. Press and release RF on/off key. Press and release LF key. Release timer up key. Allow display to scroll horizontal bars and beep.
		Replace filter board.
Er47	Bad communication in the ribbon cable between touch board and filter board.	Visually check ribbon cable connection from touch board to filter board.
		Replace filter board.
Er39	Internal electronic failure on touch board	Replace touch board.
Er20	Internal electronic failure on touch board	Replace touch board.
Er22	Internal electronic failure on touch board	Replace touch board.
Ec	Touch board is perceiving water or food on keypanel.	Clean keypanel area. Replace touch board.
Eo	Rate of temperature increase is too fast or temperature at element is too high	Check if an empty pan is being heated.
		Check for obstruction in fan, wire connections to board.
		Check fan vents for air blockage. Replace element.

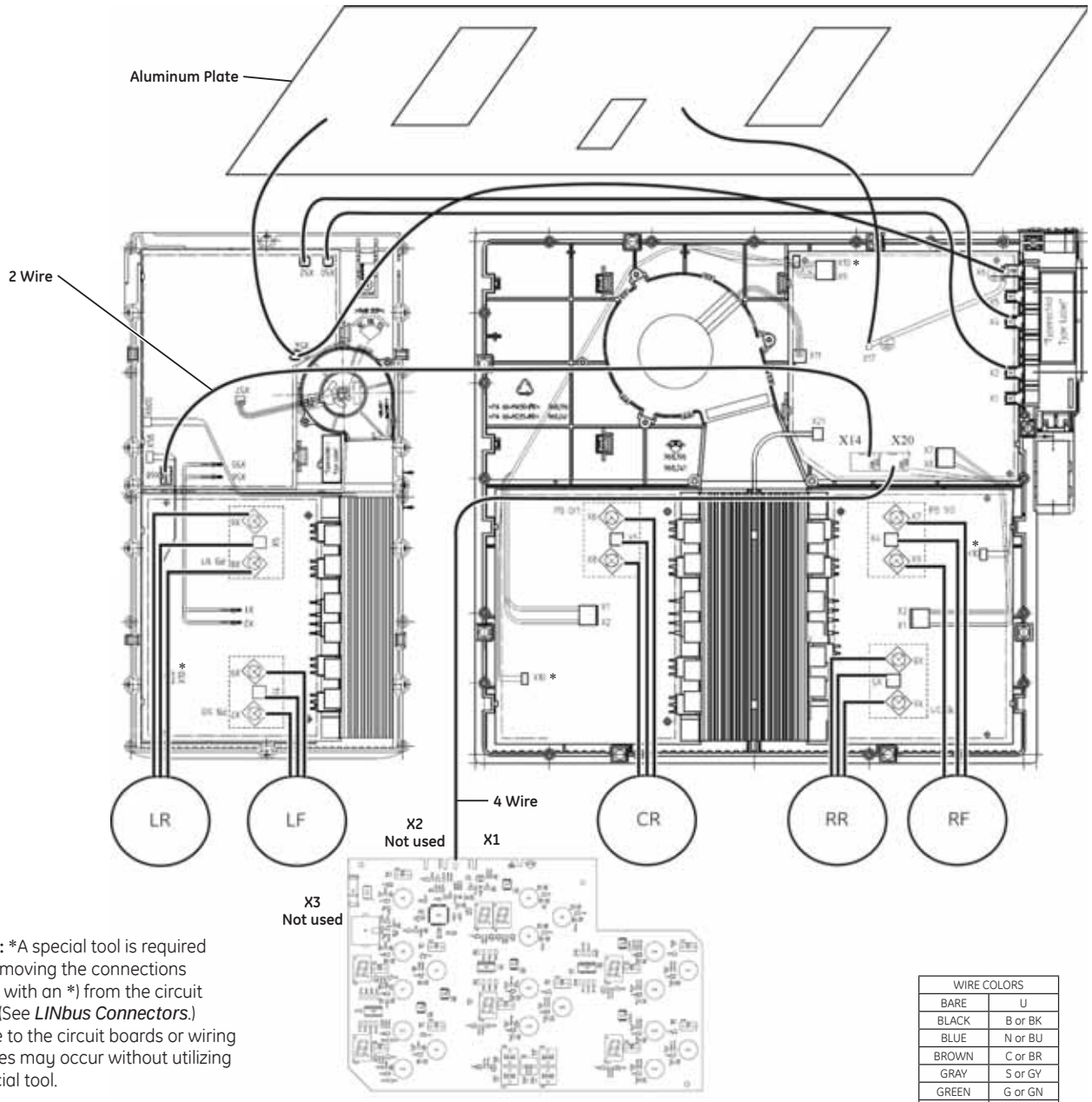
(*Continued next page*)

FAULT	CAUSE	CORRECTIVE ACTION
E5	Internal electronic failure on filter board	Check AC coming to home >208 VAC.
		Replace filter board.
E6	Internal electronic failure on generator board	Replace generator board.
E7	Unknown error in system	Visually check for loose wires/connections. Replace generator module.
E9	Rate of temperature increase is too fast or open sensor	Visually check sensor connection to generator board.
		Replace element.
		Replace generator board.
Element not hot enough/ element shuts down	Auto shut off activated	Refer to Owner's Manual—unit shuts down after 18 hours.
	Foreign object on keypanel area is activating touch board.	Clear obstruction from keypanel.
	Pan not detected.	Check pans for flat bottom.
	Pan not detected.	Check pans with magnet for steel content.
	Pan not detected.	Check pan size vs element size.
	Element turns off if pan is off burner more than 30 seconds.	Check if pan has been removed from element for more than 30 seconds.
Element changes cooking level	Internal temperature maintenance	Refer to Owner's Manual—element reduces from Boost to 9 after 10 minutes.
Fan not running	Fan doesn't run at low heat settings.	Fan changes speeds based on heat.
Display flashes, not heating	Pan not detected.	Check pans for flat bottom.
	Pan not detected.	Check pans with magnet for steel content.
	Pan not detected.	Check pan size vs element size.
	Element not connected, open connection.	Check connections on element wires.
Buzzing sound	Elements may make a "buzz" sound on boost and high.	Refer to Owner's Manual— element may make an audible sound when on high.

Schematics and Wiring Diagrams

WARNING: To prevent electrical shock, disconnect power to the cooktop prior to servicing.

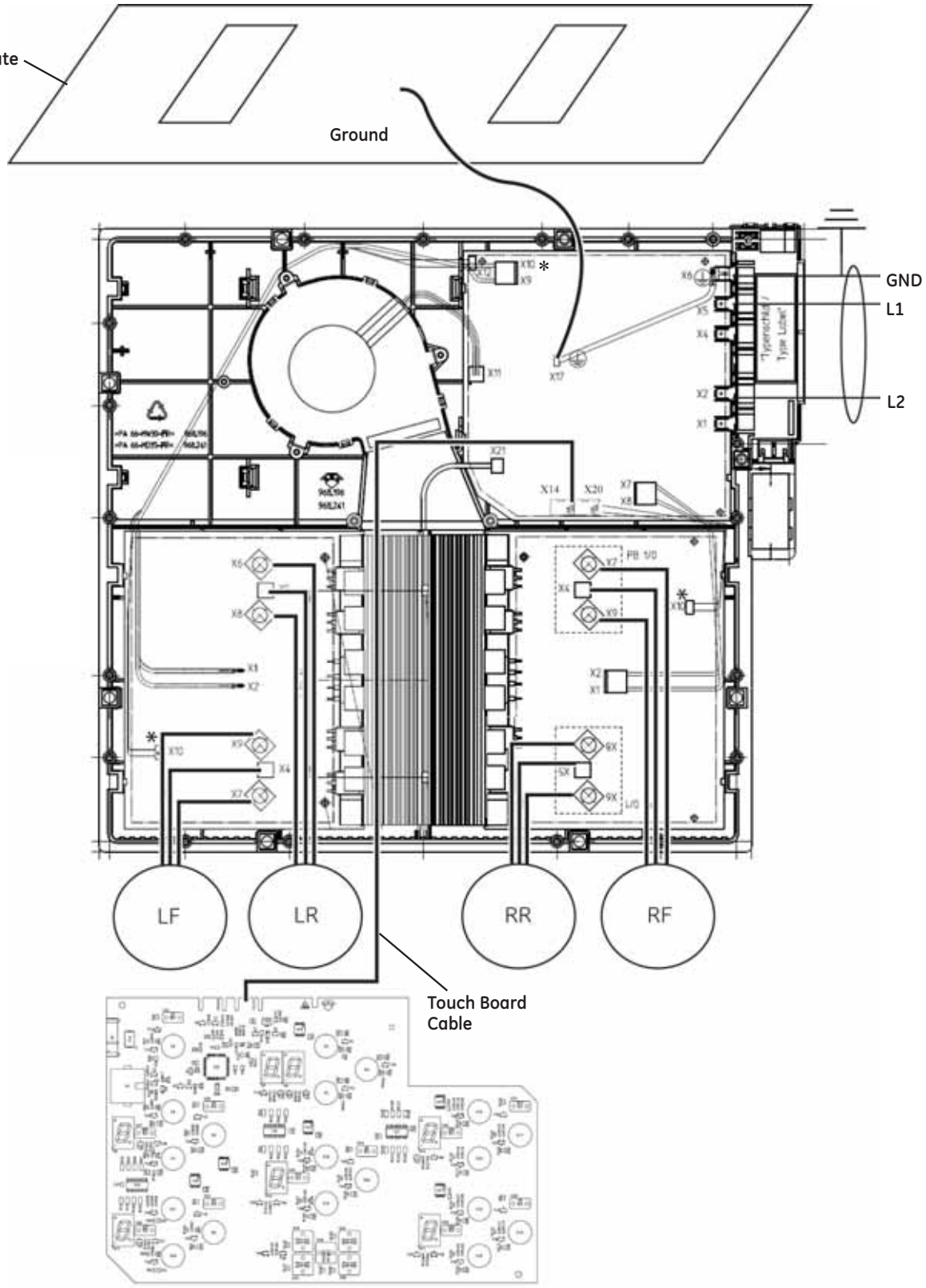
Model ZHU36 and PHP960



Caution: *A special tool is required when removing the connections (marked with an *) from the circuit boards. (See ***LINbus Connectors***.) Damage to the circuit boards or wiring harnesses may occur without utilizing the special tool.

WIRE COLORS	
BARE	U
BLACK	B or BK
BLUE	N or BU
BROWN	C or BR
GRAY	S or GY
GREEN	G or GN
ORANGE	O
RED	R
VIOLET	V
WHITE	W
YELLOW	Y

(*Continued Next Page*)



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BLUE	N or BU
BROWN	C or BR
GRAY	S or GY
GREEN	G or GN
ORANGE	O
RED	R
VIOLET	V
WHITE	W
YELLOW	Y

Warranty

All warranty service provided by our Factory Service Centers, or an authorized Customer Care® technician. To schedule service, on-line, visit us at ge.com, or call 800.GE.CARES (800.432.2737). (In Canada, call 1.800.561.3344.) Please have serial number and model number available when calling for service.

Staple your receipt here. Proof of the original purchase date is needed to obtain service under the warranty.

For The Period Of:	*GE Will Provide:*
One Year *From the date of the original purchase*	***Any part*** of the cooktop which fails due to a defect in materials or workmanship. During this ***limited one-year warranty,*** GE will also provide, ***free of charge,*** all labor and in-home service to replace the defective part.

What GE Will Not Cover:

- **Service trips to your home to teach you how to use the product.**
- **Improper installation, delivery or maintenance.**
- **Failure of the product if it is abused, misused, or used for other than the intended purpose or used commercially.**
- **Damage to the glass cooktop caused by use of cleaners other than the recommended cleaning creams and pads.**
- **Damage to the glass cooktop caused by hardened spills of sugary materials or melted plastic that are not cleaned according to the directions in the Owner's Manual.**
- **Replacement of house fuses or resetting of circuit breakers.**
- **Damage to the product caused by accident, fire, floods or acts of God.**
- **Incidental or consequential damage caused by possible defects with this appliance.**
- **Damage caused after delivery.**
- **Product not accessible to provide required service.**

EXCLUSION OF IMPLIED WARRANTIES—Your sole and exclusive remedy is product repair as provided in this Limited Warranty. Any implied warranties, including the implied warranties of merchantability or fitness for a particular purpose, are limited to one year or the shortest period allowed by law.

This warranty is extended to the original purchaser and any succeeding owner for products purchased for home use within the USA. If the product is located in an area where service by a GE Authorized Servicer is not available, you may be responsible for a trip charge or you may be required to bring the product to an Authorized GE Service location for service. In Alaska, the warranty excludes the cost of shipping or service calls to your home.

Some states do not allow the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. To know what your legal rights are, consult your local or state consumer affairs office or your state's Attorney General.

Warrantor in the USA: General Electric Company. Louisville, KY 40225

Warrantor in Canada: Mabe Canada Inc., Burlington, Ontario