# **Service**

# **Electric Cooktops**

This manual replaces RS2420002 Rev. 4.

Service Manual for Amana®

This manual is to be used by qualified appliance technicians only. Amana does not assume any responsibility for property damage or personal injury for improper service procedures done by an unqualified person.



### **Important Information**

Pride and workmanship go into every product to provide our customers with quality products. It is possible however, that during its lifetime a product may require service. Products should be serviced only by a qualified service technician who is familiar with the safety procedures required in the repair and who is equipped with the proper tools, parts, testing instruments and the appropriate service manual. REVIEW ALL SERVICE INFORMATION IN THE APPROPRIATE SERVICE MANUAL BEFORE BEGINNING REPAIRS.

#### IMPORTANT NOTICES



If repairs are attempted by unqualified persons, dangerous conditions (such as exposure to electrical shock) may result. This may cause serious injury or death.



Amana will not be responsible for any injury or property damage arising from improper service or service procedures. If you perform service on your own product, you assume responsibility for any personal injury or property damage which may result.

To locate an authorized servicer, consult your telephone book or the dealer from whom you purchased this product. For further assistance, contact: 1 (800) 628-5782 first, if no answer call number listed below.

> CONSUMER AFFAIRS DEPT. AMANA APPLIANCES AMANA, IOWA 52204

OR 1 (800) 843-0304 CALL

If outside the United States contact:

**AMANA** 

ATTN: CONSUMER AFFAIRS DEPT.

2800 220th TRAIL

AMANA, IOWA 52204, USA Telephone: (319) 622-5511 Facsimile: (319) 622-2180 **TELEX: 4330076 AMANA** 

CABLE: "AMANA", AMANA, IOWA, USA

#### **RECOGNIZE SAFETY SYMBOLS, WORDS AND LABELS**



**DANGER** -Immediate hazards which WILL result in severe personal injury or

death.



WARNING - Hazards or unsafe practices which COULD result in severe personal

injury or death.

**CAUTION CAUTION** -Hazards or unsafe practices which COULD result in minor personal

injury or product or property damage.

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### Introduction

#### **General Information**

This manual provides complete instructions and suggestions for handling, installing and servicing Amana® gas cooktops. Directions, information, and warnings in this manual are developed from experience with, and careful testing of the product. If the unit is installed according to the manual, it will operate properly and will require minimal servicing. A unit in proper operating order ensures the consumer all the benefits provided by clean, modern electric cooking. This manual contains all the information needed by authorized Amana® service technicians to install and service Amana®, Caloric®, Modern Maid® gas cooktops. However, some parts need further explanation. Amana maintains a toll-free technical support line to answer questions from authorized service technicians. The number is 1-800-AMANA99.

#### **Model Identification and Ordering Replacement Parts**

Unit's model and manufacturing numbers are recorded on its rating label. Rating label is located on the bottom of sealed burner units. On open burner units, rating label is located under maintop. Lift cooktop from front edge to see rating label on top of burner box. Before ordering parts, write down the correct model and manufacturing numbers from rating label. This avoids incorrect shipments and delays. Please refer to parts catalog when ordering replacement parts.

#### Models and manufacturing numbers covered in this manual.

AK2H30	P1131546N	AK2T36W2	P1131594N W
AK2H30	P8597804S	AK2T36W2	P1143704N W
AK2H30*2	P1131559N	AK2T36W2	P1143708N W
AK2H30*3	P1131565N	AK2T36W2	P1143722N W
AK2H30*4	P1131578N	AK2T36E4	P1131594N E
AK2H30W3	P1131591N W	AK2T36E4	P1143704N E
AK2H30W3	P1143705N W	AK2T36E4	P1143722N E
AK2H30E4	P1131591N E	AKE30	P8597901S
AK2H30E4	P1143701N E	AKE30	P8597903S
AK2H30E4	P1143719N E	AKE30E2	P1155701S
AK2H300	P1156301S	AKE30E2	P1171901S
AK2H300	P1156302S	AKE30W2	P1155702S
AK2H30HR	P1119901S	AKE30W2	P1171902S
AK2H30HR	P1119911S	AKE35	P8597902S
AK2H35	P1131547N	AKE35	P8597904S
AK2H35	P8597805S	AKE35E2	P1155703S
AK2H35HR	P1119902S	AKE35E2	P1171903S
AK2H35HR	P1119912S	AKE35W2	P1155704S
AK2H36*2	P1131557N	AKE35W2	P1171904S
AK2H36*3	P1131566N	AKH30	P8597801S
AK2H36*4	P1131579N	AKH30HR	P1119903S
AK2H36W3	P1131592N W	AKH35	P8597802S
AK2H36W3	P1143720N W	AKH35HR	P1119904S
AK2H36E4	P1131592N E	AKT3000	P1131580N
AK2H36E4	P1143702N E	AKT3000*	P1131595N
AK2T30	P1165101S	AKT3000*	P1143725N
AK2T30	P1165103S	CAK2H30	P1131562N
AK2T30	P1172101S	CAK2H30*1	P1131568N
AK2T30	P1172102S	CAK2H30*1	P1131753N
AK2T30*	P1131560N	CAK2H30*2	P1131583N
AK2T30*2	P1131563N	CAK2H30W1	P1131596N W
AK2T30*4	P1131576N	CAK2H30E2	P1131596N E
AK2T30W2	P1131593N W	CAK2H30HR	P1119910S
AK2T30W2	P1143703N W	CAK2T30	P1131561N
AK2T30W2	P1143721N W	CAK2T30*1	P1131567N
AK2T30E4	P1131593N E	CAK2T30*1	P1131754N
AK2T30E4	P1143703N E	CAK2T30*2	P1131582N
AK2T30E4	P1143721N E	CAK2T30W1	P1131597N W
AK2T30*4	P1143707N	CAK2T30E2	P1131597N E
AK2T35	P1165102S	CAKE30	P8597905S
AK2T35	P1165104S	CAKE30E2	P1155705S
AK2T35	P1172103S	CAKE30E2	P1171905S
AK2T35	P1172104S	CAKE30W2	P1155706S
AK2T36*1	P1131558N	CAKE30W2	P1171906S
AK2T36*2	P1131564N	CAKH30	P8597803S
AK2T36*4	P1131577N	CAKH30HR	P1119909S

### Introduction

### **Amana Cooking Products Nomenclature**

Brand	Product Group	Product	Туре	Features	Color
A - Amana C - Caloric or Canadian if followed by A (Amana) N - International Z - Canadian	G - Gas Wall oven R - Electric Wall oven K - Cooktop CO - Convection Wall Oven O - Wall Oven	DG1- Downdraft Gas Cooktop, 1 pc Grate DH- Downdraft Electric Cooktop, Optional Halogen Cartridge DS- Gas or Electric Downdraft Slide- In Wall oven G- Gas on Glass Cooktop, Sealed Burners H- Halogen Smoothtop Wall oven, 1 Dual Element E- Electric	2H- Halogen Smoothtop Cooktop, 2 Halogen Elements, 1 Dual R- Electric Roughtop Wall oven, Heating Elements S- Gas Wall oven, Sealed Burners T- Radiant Smoothtop Wall oven 2T- Radiant Smoothtop Wall oven or Cooktop, 1 Dual Element	Wall oven Features- Variable Cooktop Width .30=30" .35=35" .36=36" .300=30" reduced depth (20-1/4") Wall Oven Width/Fuel .24SE2=24" Single Electric (2.9 cu. ft. oven), Soft Look Trim .27SE=27" Single Electric (3.3 cu. ft. oven) .27DG=27" Double Gas (Two 3.3 cu. ft. ovens) HR-Halo-Ring	No Designator-Ebony K-Chrome Top L-Almond LG-Almond, Glass Door W(1*)-White WW-White on White E(1*)-Ebony *Enhancements: Electric Variable Intensity System. Gas One Piece Grates

### 1996 Amana Cooking Products Nomenclature

Brand	Product	Fuel/Type	Configuration	Width	Feature	Series	Color
A - Amana	K - Cooktop	Electric	D - Double	20 - 20"	1 - Least	0	E - Ebony
C - Caloric	-	E - Electric	Cartridges	30 30"	2		K - Chrome
N - International		Downdraft	F - Fixed Cartridges	36 - 36"	3		L - Almond
Z - Canadian		H - Halogen	S - Single Cartridge		4		W - White
		R - Rough Top	G - Griddle		5		LL - Almond/Almond
		T - Radiant			6		SS - Stainless
		Gas			7		WW - White/White
		G - Gas Downdraft			8		
		L - Gas Glass			9 - Most		
		O - Open Burner					
		S - Sealed Burner					

### **Important Information**



#### General

- 1. The cooktop must be installed and/or repaired by an authorized installer or servicer.
- Never use the cooktop for warming or heating the room.
- 3. Do not store items on the cooktop. Items stored on the cooktop can become too hot and melt.
- 4. Wear proper apparel. Loose fitting or hanging garments should never be worn while using cooktop.
- 5. Do not repair or replace any part of the cooktop yourself unless it is recommended in this manual.
- 6. Flammable materials should not be stored near cooktop.
- 7. Use only dry potholders. Moist or damp potholders on hot surfaces may result in burns from steam. Do not let a potholder touch an element. Do not use a towel or a bulky cloth as a potholder.

#### **Surface Cooking**

- Use the proper pan size. Select utensils with flat bottoms large enough to cover the element. Undersized utensils will expose the element to direct contact with clothing.
- 2. Never leave surface units unattended. Boilovers can cause smoking and may ignite.
- To reduce risk of burns, ignition of flammable materials or spillage due to unintentional contact, utensil handles must be turned inward and not extend over adjacent surface.
- 4. Only certain types of glass, glass/ceramic, ceramic, earthware, or other glazed utensils are suitable for cooktop use. Unsuitable utensils may break due to the sudden temperature change.
- 5. Clean cooktop with caution. To avoid steam burns, do not use a wet sponge or cloth to wipe up spills on a hot cooking area.
- 6. Do not place aluminum foil or foods packaged in aluminum foil directly on element.



#### **Safety Procedures**

Due to the nature of cooking, fires can occur as a result of overcooking or excessive grease. Use the following procedures to extinguish a fire in the unlikely event one occurs.

#### **Surface Element Fires**

- Do not turn on the vent hood. The fan can spread the flames.
- 2. If it is safe to do so, turn the surface element to OFF. Turn off main electrical supply.
- 3. Smother the fire with nonflammable lid or use a Class "ABC" or "BC" fire extinguisher. Do not use water on a grease fire.

### Installation Instructions



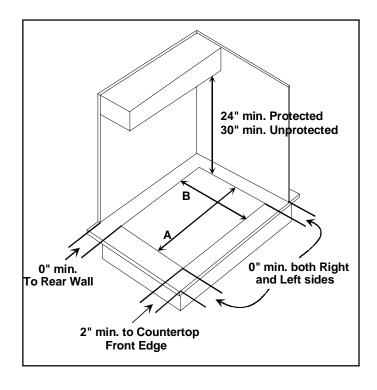
To avoid risk of property damage after unpacking the cooktop, handle it carefully and do not slide it across countertops.

#### **Installation Options**

Some models may be installed with the glass top either resting on the counter or recessed into the counter. Refer to the Installation Instruction booklet included with each model. Recessed installations require a countertop inlay kit, CFK1, available from the dealer. Installation instructions are included with the kit and in this section. The following instructions are for installing the cooktop with the glass top resting on the counter.

#### **Cabinet Cutout**

Cooktop dimensions vary among models and require different sized cabinet cutouts. However, the clearance requirements are the same for all models. The table lists the dimensions and cutout requirements for each model. Dimensions "A" and "B" are cutout dimensions. Dimensions "C" and "D" are the cooktops overall dimensions. Each cooktop model has a column in the table. Find the correct column for the model to be installed. Read down the column to find each models specific dimensions.



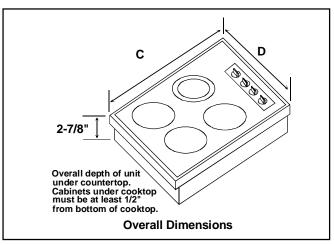
Model	AK2H300*	AK2H30 AK2H30 *2/*3/*4 AK2H30HR AK2T30 *1/*2/*4 AKH30 AKH30HR AKT3000	CAK2H30 */*1/*2/HR CAK2T30 */*1/*2 CAKH30 CAKH30HR	AK2H35HR AK2T35*	AKE30 *2 CAKE30 *2	AKE35 *2	AK2H35 AKH35 AKH35HR	AK2H36 *2/*3/*4 AK2T36 *1/*2/*4	AKE30 AKE30* CAKE30*	AKE35 AKE35 *
Α	28-7/8"	28-7/8"	28-7/8"	34-1/8"	28-7/8"	34-1/8"	34-1/8"	34-1/8"	28-7/8"	34-1/8"
В	19-9/16"	20-3/4"	20-3/4"	20-3/4"	20-3/4"	20-3/4"	20-3/4"	20-3/4"	20-3/4"	20-3/4"
С	29-9/16"	29-9/16"	29-9/16"	34-3/4"	29-5/8"	34-7/8"	34-3/4"	35-3/4"	30-1/8"	35-1/2"
D	20-1/4"	21-1/2"	21-1/2"	21-1/2"	21-1/2"	21-1/2"	21-1/2"	21-3/8"	21-3/8"	21-3/8"

#### **Minimum Clearances**

A minimum distance of 30 inches is required between the cooking surface and the bottom of an unprotected wood or metal cabinet.

If the cabinet bottom is protected, the minimum distance is only 24 inches. A protected cabinet is a wood or metal cabinet covered with not less than one of the following materials: 1/4 inch thick flame retardant millboard, No. 28 MSG sheet steel, .015 inch thick stainless steel, .024 inch thick aluminum or .020 inch thick copper.

Locate the junction box inside the cabinet a minimum of 9 inches below the cutout edge and 8 inches from the cutout's right side.



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### Installation Instructions



To avoid risk of serious burns or other personal injury by reaching over heated surface elements, avoid locating cabinet storage above surface units. If cabinet storage above the unit is to be provided, reduce risk by installing a range hood that projects horizontally a minimum of 5 inches beyond the bottom of the cabinets.

#### **Inlay Countertop Installation**

#### Models AK2T30/36E1/W1 and AK2H30/36E2/W2

Cooktop Inlay Kit includes:

- Template
- · Installation Instructions
- One tube of high temperature sealant, Dow Corning #732 RTV Sealant (other sealants not approved)
- 3/8 inch wide, one side foam tape
- 2 inch wide metal reflective tape

#### **Tools Required**

- 3/4 inch carbide tipped straight cutter router bit
- 1-1/2 hp router (minimum)



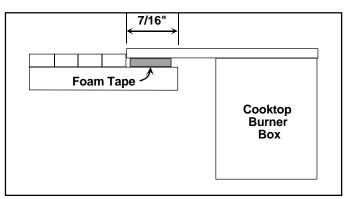
To avoid risk of property damage, the cutout must be made by a professional cabinet installer.

#### **Inlay Kit Installation Instructions**

- 1. Build jig for the cutout and router dimensions.
- 2. Set router guides to cut along solid line corresponding to cooktop burner box size.
- 3. Use the carbide tipped router bit to make the cutout.
  - 30" Cutout = 20-3/4" x 28-7/8"
  - 30" Router = 21-5/8" x 29-3/4"
  - 36" Cutout = 20-3/4" x 35-1/16"
  - 36" Router = 21-5/8" x 35-15/16"

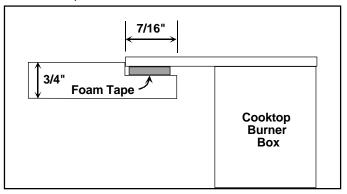
#### **Ceramic Tile Countertop**

4. Routing not recommended for ceramic tile countertops. If the tile is not in place, cut the opening as recommended. Then place tile 1/16 inch from the edge of the opening. If tile is already placed, cut it to the router dimension using a ceramic tile cutter.



#### **Laminate Countertop**

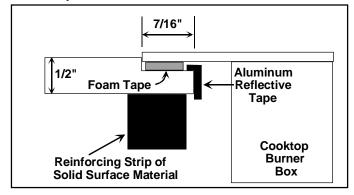
4. Route the edge of the cutout using a 3/4 inch diameter router bit set 9/32 inches deep. Use a laminate trimmer to route areas near the backsplash, if one is present.



#### **Solid Surface Countertop**

These surfaces would include those made by Corian<sup>®</sup>, Avonite<sup>®</sup>, Formica<sup>®</sup> and others.

4. Route the edge of the cutout using a 3/4 inch diameter router bit set 9/32 inches deep. Glue reinforcing strips of solid surface material underneath cutout perimeter. Allow strips to dry before installing the cooktop. For island or peninsula installations, glue reinforcing strips on all sides. For standard cabinet installations, glue reinforcing strips just on the sides. Standard countertops are supported in the front and rear by the cabinets.



5. Vacuum sawdust from cooktop opening.

### Installation Instructions

- Apply foam tape to the underside of the cooktop glass and flush with edge of the cooktop frame. The foam tape prevents sealant from seeping between the countertop and the underside of the cooktop. Service problems may arise if foam tape is not applied correctly.
- 7. Place metal reflective tape around the bottom inside edge of the cooktop cutout. This applies only to solid surface countertops.
- 8. Place cooktop in opening. The cooktop surface should be 1/16 inches higher than countertop surface. The 1/16 inch offset prevents hot cookware from coming in contact with the countertop surface.
- 9. Align cooktop in opening. There should be 1/16 inch clearance on all sides.
- 10. Using 3/4 inch masking tape, place a border around the edge of the cutout. This prevents sealant from sticking to the countertop.
- 11. Work in a well ventilated area when applying sealant. Apply the provided sealant into the 1/16 inch opening between the countertop and edge of cooktop, one side at a time. The sealant will begin to form a skin within 5 minutes. Wipe away excess sealant and smooth with a spatula or wet finger. Use only the sealant provided.
- 12. Do not touch sealant, move or use the cooktop for 24 hours. Protect the area from dust for at least 2 hours.
- 13. After 24 hours, clean up excess sealant on cooktop with razor blade and on countertop with a spatula.

#### **Connecting Electrical Supply**

Connect the lead wires from the cooktop conduit to the house feed wires inside the junction box. Connect red to red (120 VAC line), and black to black (120 VAC line). The neutral (if present) and ground wires are twisted together during manufacturing. One of the two following options should be used to ground the unit. Check local codes to determine which option should be used.

- **Option 1** Attach the cooktop ground wire (green or bare) to the junction box (if grounded) or a suitable ground.
- Option 2 Connect the cooktop ground wire (green or bare) to the house ground feed wire (green, bare, or white). If grounding through white wire, observe the following warning.



To avoid risk of personal injury or electrical shock do not ground through the neutral wire if the installation is in a mobile home or if local codes do not permit grounding through a neutral.

Improper connection of aluminum house wiring to the copper leads can result in property damage, personal injury or fire. Use only connectors designed for joining copper to aluminum and follow the manufactures recommended procedure closely.

#### **Place Cooktop in Cutout**

Apply the foam gasket to the glass tops bottom edge before placing cooktop into its cutout.

- 1. Turn cooktop upside down. Do not rest cooktop on its knobs. Take care not to scratch the countertop.
- 2. Cut foam gasket to length for each edge. Apply one foam gasket strip for each edge.
- 3. Pull liner off foam gasket. Apply gasket to glass approximately 1/8 inch from the edge.
- 4. After foam gasket is applied to all four edges, place cooktop in cutout.

#### **Checking for Proper Operation**

- 1. Connect electrical supply at main circuit breaker.
- 2. Check each element for proper operation.

#### Removing and Replacing Cooktop

- 1. Disconnect electrical supply at main circuit breaker.
- 2. Disconnect unit from junction box.
- 3. Lift cooktop out of opening.
- 4. Replace the cooktop by following the instructions listed in this section or according to the Installation Instructions booklet included with the unit.

### **Operating Instructions**

#### **Using the Cooktop**

• Use Proper Pan Size

Use cooking utensils with flat bottoms large enough to cover the flame. Correct-sized utensils improve cooking efficiency and promotes safety. Undersized utensils expose clothing and spillovers to direct flame.

- Never Leave Surface Units Unattended Boilovers can cause smoking or fire.
- · Glazed Cooking Utensils

Use glass, glass/ceramic, earthenware or other glazed utensils for cooking, although these products are not recommended on glass top cooktops. Sudden temperature changes may break some utensils and easily scratch cooktop if there are any imperfections in utensil bottom.

Turn Utensil Handles Inward
 A handle extending from the cooktop invites accidents.

#### **Cooking Utensils**

Utensils made of different materials react differently to cooking temperatures. The best results occur by matching cooking utensil and cooking style. The following list describes the cooking characteristics of various materials.

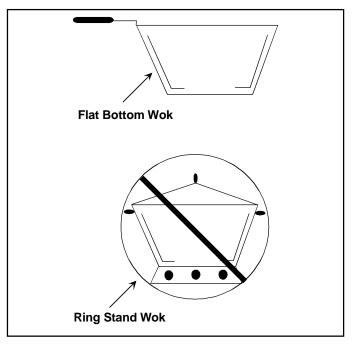
- Aluminum responds quickly to temperature changes. It responds best for frying, braising and roasting.
- Cast iron responds slowly to temperature changes. It responds best for long low heat cooking and pan frying.
- Stainless steel combined with another metal such as copper, responds better to temperature changes. Use stainless steel for soups, sauces, vegetables and general cooking.
- Copper, tin-lined utensils respond quickly to temperature changes. It is excellent for gourmet cooking, wine sauces and egg dishes.
- Utensil design is important. Select utensils with flat bottoms, straight sides, handle weight that does not tilt the pan, and pans that match the burner size. Do not use pans that exceed the diameter of the burner.

#### The following should not be used with cooktops.

- Glass/ceramic responds slowly to temperature changes. It responds best to long and slow heating of liquids.
- Enamelware is stain resistant porcelain over metal.
   The cooking time varies according to the base metal.
   Lower temperatures are usually recommended.

#### **Using a Wok**

Do not use a wok with a ring stand. A wok with a ring stand does not allow proper cooking. Use only a flat bottom wok.



#### **AKE Unit Description**

AKE model cooktops feature four solid, cast iron elements. The heating coils beneath the elements are embedded in a insulated material, which protects the heating coils from damage and wear. This construction increases the elements durability. These elements are controlled by push-to turn control knobs that permit an infinite number of settings.

Each element has a built-in temperature limiter. The limiter prevents the surface temperature of an element from rising above 880°F. This temperature limiter is indicated by a red dot in the center of each element. The element will not get red hot (a temperature of 1000°F is needed for the element to glow), although the dots color changes slightly when it is heated. A low surface temperature decreases the risk of warping and/or melting down cookware that has boiled dry.

**NOTE:** The red dot will fade over time as a result of use and cleaning. This will not affect the performance of the element.

The solid element has twice the surface area of a conventional coil element and cooks by conduction rather than radiant heat.

### **Operating Instructions**

# AKH, AK2H, CAK2H, and CAKH Unit Description

AKH and CAKH units feature one halogen element. AK2H units feature two Haloring® elements. Halogen elements reach cooking temperature quickly and provide an even heat. Both features improve cooking performance.

Halogen elements have two quartz halogen lamps which produce heat quickly and a glowing light when turned on. Halogen elements also use a resistance coil element. The coil element helps provide an even cooking heat. Haloring<sup>®</sup> elements feature a circular quartz halogen bulb and a resistance coil.

Non-halogen elements feature resistance coils designed to provide a quicker and brighter visual response than that of conventional coil elements. These elements in some models are star shaped.

AKH and CAKH cooktops feature push-to-turn control knobs. These knobs permit an infinite number of settings. The elements cycle off and on to maintain the desired setting. Indicator lights glow red to indicate which surface areas are operating. After the elements are turned off, the indicator lights remain on until the cooking surface areas reach a safe temperature. A temperature limiter on each element protects the glass/ceramic cooktop from damage caused by overheating.

On the AK2H\*2 and CAK2H\*2 models, the two control knobs for the halogen burners have 10 settings which produce four visible brightness levels. The lowest setting offers only 5.5% of the maximum setting for a true low simmer. The other two control knobs operate the radiant elements and are infinite switches. These models, the AKH and CAKH also have dual Radiant element and a Quick Star Radiant element.

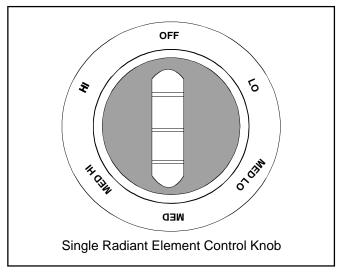
#### AKT, AK2T, and CAK2T Unit Description

AKT, AK2T, and CAK2T feature radiant heating elements. Three radiant elements and one dual radiant element are included with AK2T and CAK2T models. Dual radiant elements feature two burner sizes to match cooking utensils. Either a six or nine inch surface area can be selected by turning a single knob.

#### **Operating Surface Elements-All Models**

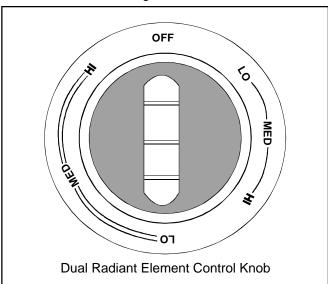
#### **Operating Single Radiant Element**

Push in and turn control knob to desired setting. The radiant element cycles on and off to maintain desired heat setting. Turn all controls to OFF when finished.



#### **Operating Dual Radiant Element**

The double lines between settings on the dual radiant element control knob indicate both the inner and outer element is being used. The single lines indicate that only the inner element is being used.



To operate the inner and outer element push in and turn the control knob to the double line settings. To operate only the inner element push in and turn the control knob to the single line settings. The dual radiant element will cycle on and off to maintain desired heat setting. When finished, turn control knob to OFF position.

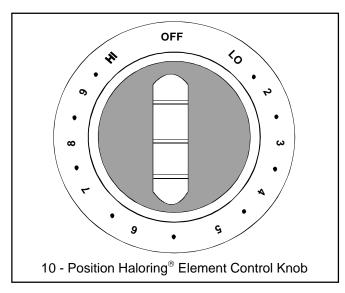
# **Operating Instructions**

#### **Operating Halogen Heater**

Operate the halogen heater element by pushing in the control knob and turning to desired setting. The control setting cycles the element on and off to maintain heat. Turn control knob to OFF position when finished.

#### **Operating 10-Position Halogen Element**

Push in and turn control knob to desired setting. There is a distinct click position for all 10 positions. The 10 position switch allows a precise constant amount of heat to radiant from the element. Therefore, the same heat setting can be repeated and maintained.



**NOTE:** The halogen element will not be illuminated at settings LO through 3. The higher the selected temperature, the brighter the illumination from the element.

The halogen element will not cycle unless it has been left at a high heat setting for an extended amount of time without a pan in place or if the pan has boiled dry.

Turn control to OFF position, when finished.

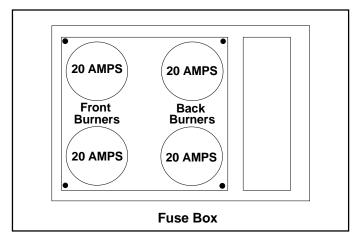
#### **Surface Element Hot Indicator Lights**

Some cooktops feature four surface element indicator lights, some feature just one. On single indicator models, the hot indicator light glows red when any of the surface elements are turned on. On multiple light models, the hot indicator light glows red when the corresponding element is turned on. For all models, the surface indicator light remains on until the surface element reaches a safe temperature.

The four hot indicator lights featured on some models are located in the center of the control panel. The hot indicator lights glow red when the corresponding element is turned on. The light remains on until the corresponding element has cooled.

# Changing Fuses–Canadian Models Before Date Code 2/96

The cooktop fuse box is located at the end of the power conduit. Turn the fuses counterclockwise to remove. Replacement fuses must have the same rating.



Units made after 2/96 do not have fuse box assembly.

#### Cleaning

Do not clean cooktop until it cools. Sudden temperature changes can crack the cooktop surface. Washing the cooktop with hot, soapy water after each use minimizes the need for heavy cleaning. To preserve the original appearance, rinse and wipe the surfaces dry after washing.

Wipe up marinades, fruit juices, vinegar and milk spills to avoid permanent stains. These materials contain acids and cause discoloration and permanent staining. DO NOT touch any portion of the cooktop when it is hot. Wait and wipe up spills after the cooktop is cool.

# Troubleshooting Procedures Cleaning Glass/ Ceramic Cooktop

Problem	Cause	To Prevent	To Remove
Brown streaks and spots.	Cleaning with a sponge or dishcloth that has been used for other kitchen cleaning tasks and may contain soil–laden detergent water.	Use Elco, Bon Ami, Soft Scrub, Cooktop Cleaning Creme or baking soda only with a clean, damp paper towel.	Use a light application of Elco, Bon Ami, Soft Scrub, Cooktop Cleaning Creme or baking soda with a clean, damp paper towel.
Blackened burned on spots.	Spatters or spillovers onto a hot cooking area.	Select correct heat settings and large enough cookware to eliminate boilovers and spatting. Whenever possible, wipe spatters and food spills as they occur. Use a spatter shield available in houseware departments and some supermarkets.	Use Elco, Bon Ami, Soft Scrub, Cooktop Cleaning Creme or baking soda with a damp paper towel to remove as much burn on as possible. Use Elco, Bon Ami, Soft Scrub, Cooktop Cleaning Creme or baking soda with non-impregnated plastic nylon pads such as SCRUFFY scouring brush,
	Accidental melting of plastic film, such as a bread bag or similar item.	Do not put plastic items on or near warm cooking areas.	TUFFY plastic meshball.  If burn–on persists, carefully scrape with a single edge razor blade. Hold blade so entire length of edge is on cooktop at a 30° angle. Use a blade holder.
Fine "brown/gray lines (tiny scratches or abrasions which have collected soil).	Coarse particles (salt, sand, sugar, or grit) caught between bottom of cookware and cooktop that are not removed before cooking. Using incorrect cleaning materials	In areas where there is an abundance of sand or dust, be sure to wipe cooktop each time before using.  Daily use of Elco, Bon Ami, Soft Scrub, Cooktop Cleaning Creme or baking soda.	Tiny scratches are not removable but can be minimized by continual use of Elco, Bon Ami, Soft Scrub, Cooktop Cleaning Creme or baking soda. Such scratches do not affect cooking performance.
Metal marking (gray or black marks).	Sliding or scraping metal utensils across cooktops.	Do not slide metal objects across cooktop.	Apply Cooktop Cleaning Creme, Bon Ami, Soft Scrub, or baking soda with a dampened paper towel to cooled surface.
Pitting or flaking.	Boilover of sugar syrup and adherence of sugar syrup to hot cooktop. This can cause pitting if not removed immediately.	Select correct heat settings and large enough cookware to eliminate boilovers and spattering. Watch sugar syrup carefully to avoid boilover.	Turn unit to LO: take several paper towels and carefully wipe hot cooktop immediately. Scrape off remainder of burn with a single edge razor blade. Use a blade holder.
Hard water spots.	In cooking, condensation often collects and drips from cookware covers removed during cooking. The minerals found in the water supply and acids in foods may spill on the surface and cause a gray deposit.  The layer is so thin it often seems to be in or under the cooking surface and cannot readily be felt.	Daily use of Elco, Bon Ami, Soft Scrub, Cooktop Cleaning Creme or baking soda applied with a damp paper towel will help keep the glass/ceramic surface free from hard water mineral deposits and food causing discoloration.	Mix a small quantity of Bon Ami with tap water to form a thick wet paste.  Apply this mixture to stained area. Scrub surface vigorously. If stain remains make a new paste and let it stand for thirty minutes. Then rescrub if necessary after stain is removed. Clean remaining paste away with damp paper towel.

#### **Power Supply**

If no part of the cooktop operates or only part of it operates, the cause may be a problem in the power supply.

- Verify supply circuit breakers or fuses are not tripped. Check rating.
- 2. Disconnect power source. Check terminals at terminal block for tightness.
- Verify cooktop service wires are properly connected.
   Be sure wires are in good condition. Check for continuity with an ohmmeter.

#### **Internal Wiring**

- 1. Disconnect power from cooktop.
- 2. Place one ohmmeter lead at terminal block. Place other lead at the line terminal of the non–functioning parts control. Meter should indicate continuity.

Use the appropriate wiring diagram to repeat this procedure from the output of the control to the next point until each wire section is checked. Often a visual check of the wiring will determine where a wiring fault is.

#### **Surface Control**

#### **Power Connection**

- 1. Refer to schematic diagrams for assistance in testing voltages in and out of control.
- 2. Connect a voltmeter to the element receptacle or the terminals H1 and H2 of the surface control.
- Turn control to LOW setting and allow it to cycle approximately two minutes. Time the OFF and ON cycle of the control and compare these to the following table.

SETTING	APPROXIMATE SECONDS		
TIME	ON	OFF	
LOW	3	20	
MED	5	7	
HIGH	Constant	0	

4. Replace the control if it is not cycling properly. Calibration is not possible.

A malfunction in the internal switching may fuse the cycling contacts. This causes the heating element to operate at full power on all control settings.

- 1. Disconnect power from cooktop.
- 2. Connect voltmeter test lead to H2 and L2 terminals.
- 3. Connect appliance to power source.
- Set control to MED. Meter should indicate 240 VAC volts. After 10 to 15 seconds, contacts should cycle open and indicate 0 VAC.

#### Infinite Switch Surface Controls

#### **Power Disconnected**

All controls may be checked for continuity using the schematic diagrams in this manual. When checking continuity of suspected control contacts, disconnect terminals to avoid false readings through other components.

The most common type of failures encountered with an infinite switch are given in subsequent paragraphs. Replace failed surface control.

The bimetal heater burns open which causes the cycling contacts to remain closed. The heating element would be on full power at all control settings.

- 1. Disconnect power from cooktop. Disconnect wire terminals from switch terminals H1 and H2.
- 2. Connect ohmmeter test leads to H1 and H2 terminals. The meter indicates no continuity if heater is open. The heater resistance should be approximately 15  $K\Omega$ .

The internal switching may fail causing the element or indicator light to be on constantly or not at all.

- 1. Disconnect power from cooktop.
- 2. Disconnect wire terminals from all switch terminals.
- Test the small halogen ring by connecting ohmmeter to L2 and H2. Set control to any setting. Meter should indicate continuity. Turn control OFF. Meter should indicate no continuity.
- 4. Test the large halogen by connecting ohmmeter leads to L1 and H2. Turn control to OFF. Meter should indicate no continuity.

#### **Functional Test**

 Apply power to cooktop. The halogen element should cycle according to the position of the switch as listed:

Position	% of "ON" time	
1	10%	
2	20%	
3	30%	
4	40%	
5	50%	
6	60%	
7	70%	
8	80%	
9	90%	
10	100%	

Approximate only, time varies between units.

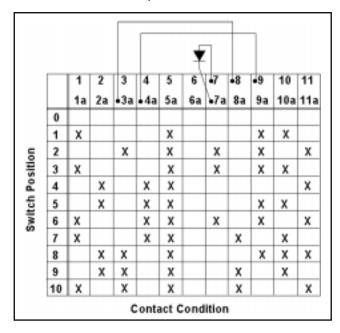
 After cooktop cycles for one minute, take ON/OFF readings over a five minute period to determine whether the switch is cycling properly. If the switch is not cycling properly with proper voltage applied, replace the switch.

NOTE: If the switch is not supplied with proper voltage (240 VAC), the cycling time will be affected. With less than 240 VAC, the cycling time will be longer. With more than 240 VAC, the cycling times will be shorter.

#### **Multi-Position Switch**

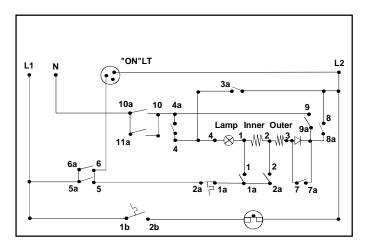
#### **Continuity Test**

- 1. Remove all wires connected to the control.
- 2. Turn control to OFF. Check for continuity between each contact (1–1a, 2–2a, 3–3a, ect.) except contacts 7–7a. If continuity is found between any contacts, the switch has failed and must be replaced.
- 3. There is a diode across contacts 7–7a. With the control turned to OFF, check continuity across this contact. Ohmmeter must be set at 10 K $\Omega$  setting to check diode measurement. There should be no continuity one direction and continuity the other direction. If this indication is not obtained, switch has failed and must be replaced.



- Use the matrix above to determine if the switch is closing the proper contacts at a particular setting. If switch does not match the matrix the switch has failed and must be replaced.
- 5. The switch thermostat is between terminals 5 and 1a, Replace the switch if an open exists between these terminals.

**NOTE:** The halogen element being controlled by the multi–position switch will vary in intensity and not cycle on and off unless the limiter switch opens.



Switch Schematic (Switch Off, Element at Room Temperature)

Switch Power	Lamp Brightness	Heater Power %	Power Output (Watts) 1200 1500 1800		
10	Full	100	1200	1500	1800
9	High	76	920	1145	1370
8	High	56	670	835	1000
7	Medium	41	495	620	740
6	Medium	30	360	450	540
5	Low	23	275	345	410
4	Low	16	190	240	290
3	Invisible	11	135	170	200
2	Invisible	8	100	125	150
1	Invisible	6	65	85	100

Haloring 10–Position Switch Operating Characteristics

#### **CAKH and AKH Units**

#### **Halogen Element Continuity Test**

- Disconnect power from cooktop. Connect ohmmeter leads to element assembly terminals. Note that the resistive element is in series with halogen tubes.
- 2. Check for continuity readings on the follow elements as indicated in the appropriate wiring diagram.

#### **Performance Test**

- Set meter to read at least 250 volts. Connect meter leads to element assembly tabs.
- 2. Connect cooktop to power supply.
- 3. Test element with no load (no pan on burner) turn corresponding surface control to HIGH.
- While element is heating, observe voltage and element. The halogen glass tubes should light up immediately. Voltage should indicate 240 VAC, if not replace element.
- 5. Using an infinite switch, after a delay of approximately one minute the high temperature limit switch will open and line voltage is turned off to the element. Voltage on meter will indicate 0. Observe two complete cycles before turning surface control to OFF position.

### **Halogen Element and Quick Star Elements**

#### **High Temperature Limit/Hot Light Switch**

- 1. The HTL switch should not open until the temperature of the glass tube reaches approximately 1200°F.
- 2. The hot light switch close's when temperature of the glass tube reaches approximately 145°F.
- 3. Do not attempt to adjust these switches. If they have failed, replace the switch.
- 4. If the glass tube or the heat sensitive wire is broken, replace the switch. Do not touch glass tube, residual skin oil can premature failure.

#### **Quick Star Elements-Power Disconnected**

#### **Small Element Continuity Test**

- 1. Disconnect power from cooktop. Connect ohmmeter leads to element terminals.
- 2. Meter should indicate continuity.

#### **Large Element Continuity Test**

- 1. Disconnect power from cooktop. Connect ohmmeter leads to element terminals.
- 2. Meter should indicate continuity.

#### **Quick Star Elements-Power Connected**

#### **Performance Test**

- 1. Set meter to measure at least 250 VAC. Connect meter leads to element tabs.
- 2. Connect cooktop to power source.
- Test element with no load (no pan on burner), turn corresponding surface control to HI. Voltage should indicate 240 VAC.
- 4. Element should glow after a few seconds. If it does not glow check element resistance or continuity to high limit/ hot light assembly.
- 5. While element is heating, observe voltage and element. Voltage should indicate 240 VAC.
- After a delay of approximately six minute (±30 seconds), the high limit switch will open its contacts and turn power off to the element. Observe two complete cycles prior to setting surface control to OFF position.

#### **AKE Units-Solid Disk Elements**

#### **Continuity Test-Power Disconnected**

 With power disconnected, connect meter leads to the element assembly terminals.

Large Element = indicates continuity Small Element = indicates continuity

2. If no continuity is measured replace element.

#### Performance Test-Power Connected

- 1. Set meter to measure at least 250 VAC. Connect meter leads to element tabs.
- 2. Connect cooktop to power source.
- Test element with no load (no pan on burner), turn corresponding surface control to HI. Voltage should indicate 240 VAC.
- 4. Element should heat after a few seconds, check element and thermal switch for continuity.
- After a delay of approximately six minute (±30 seconds), the elements internal limit switch drops power consumption to 500 watts. This protects the solid disk from being warped.
- 6. If the element is left on high with no load for approximately 30 minutes or more, the thermal switch will cycle on and off.

#### Indicator Lights and Diode Assembly– Some Models

#### **Power Connected**

- 1. Set meter to measure at least 250 VAC. Connect one meter lead to P of control and the other to L2.
- 2. Connect cooktop to power source. Turn on control.
- Meter should indicate 240 VAC. If it does not, replace control.
- If meter indicates 240 VAC and indicator does not light, move lead from P of control to terminal D of terminal block.
- If meter does not indicate any voltage, then the diode is an open circuit or a wire harness has a broken wire. Test diode and wire harness for continuity.
- 6. If a short exists in the diode, all indicator lights will come on when one control is turned on.
- 7. Replace diode or light assembly as required.

**NOTE:** Test diode, disconnect wires and connect meter on 10  $\rm K\Omega$  scale. Meter should indicate continuity with leads connected one direction and no continuity with leads in the reverse direction for a diode to be operating properly. If no continuity, diode is open. If continuity in both directions, diode is shorted. In either case, replace diode.

Problems	Halogen Elements	Quick Star Element	Solid Disk Element
Element burns out immediately after installation.	Improper wiring installation Hot Wired to Neutral terminal. Warranty is VOID.(SEE Installation Instructions.) NOTE: Possible damage to glass.	Improper wiring installation Hot Wired to Neutral terminal. Warranty is VOID.(SEE Installation Instructions.) NOTE: Possible damage to glass.	Improper wiring installation Hot Wired to Neutral terminal. Warranty is VOID.(SEE Installation Instructions.) NOTE: Possible damage to glass.
Element fails to heat; indicator light glows.	<ol> <li>Element is burned out or halogen tube is open.</li> <li>Failed limit switch.</li> <li>Failed infinite switch.</li> </ol>	<ol> <li>Element is burned out.</li> <li>Failed limit switch.</li> <li>Failed infinite switch.</li> </ol>	<ol> <li>Element is burned out.</li> <li>Failed limit switch.</li> <li>Failed infinite switch.</li> </ol>
Element too hot; no control of heat at any setting.	Runaway infinite switch or limit has welded contacts.	Failed infinite or limit has welded contacts.	Failed infinite or limit has welded contacts.
Element too hot on HI setting only.	Failed limit switch.	Failed limit switch.	Failed limit switch.
Erratic operation of surface elements.	Loose or broken wiring.	Loose or broken wiring.	Loose or broken wiring.
Indicator light remains on when control is turned OFF or does not light when control is turned ON.	Infinite switch or hot light switch fails:  NOTE: In case where light does not light, could be failed indicator light.	Infinite switch or hot light switch fails:  NOTE: In case where light does not light, could be failed indicator light.	Failed infinite switch or diodes to indicator light.  NOTE: In case where light does not light, could be failed indicator light.
Element making a humming noise.	Caused by a 60 Hz AC current passing through element winding. Normal occurrence does not affect performance.	Caused by a 60 Hz AC current passing through element winding. Normal occurrence does not affect performance.	Caused by a 60 Hz AC current passing through element winding. Normal occurrence does not affect performance.
Metal rim next to heating element gets excessively hot.	Does not apply	Does not apply	Installation void in element causing heat to escape to rim area or broken casting.     Normal temperature is approximately 200°F.
Runaway surface control.	Faulty infinite switch.     Improperly wired.	Faulty infinite switch.     Improperly wired.	Faulty infinite switch.     Improperly wired.
Poor performance when unit is installed.	Knobs on surface controls indicating incorrect setting. (knob set to HI control is actually set on LO.)     Improper wiring or switch installation.	Knobs on surface controls indicating incorrect setting. (knob set to HI control is actually set on LO.)     Improper wiring or switch installation.	Knobs on surface controls indicating incorrect setting. (knob set to HI control is actually set on LO.)      Improper wiring or switch installation.

Problems	Halogen Elements	Quick Star Element	Solid Disk Element
Broken glass– ceramic heater panel.	Replace heater panel. Check for runaway surface control, faulty limit switch that could have caused heater panel to break.	Replace heater panel. Check for runaway surface control, faulty limit switch that could have caused heater panel to break.	Replace heater panel. Check for runaway surface control, faulty limit switch that could have caused heater panel to break.
Stained glass- ceramic heater panel.	Try to remove stain by using Bon–Ami, Soft Scrub, Elco, Cooktop Cleaning Creme or baking soda.	Try to remove stain by using Bon–Ami, Soft Scrub, Elco, Cooktop Cleaning Creme or baking soda.	Try to remove stain by using Bon–Ami, Soft Scrub, Elco, Cooktop Cleaning Creme or baking soda.
Glass-ceramic heater is wavy or uneven.	Manufacturing process gives glass glass—ceramic heater panel a slight wave across surface. This IS NOT a defect.	Manufacturing process gives glass glass—ceramic heater panel a slight wave across surface. This IS NOT a defect.	Manufacturing process gives glass glass—ceramic heater panel a slight wave across surface. This IS NOT a defect.
Red spots or lines visible through glass–ceramic heater panel.	Glass-ceramic heater panels are slightly opaque. Element may transfer a glow through a panel. This IS NOT a defect in the unit and has no effect on performance.	Glass-ceramic heater panels are slightly opaque. Element may transfer a glow through a panel. This IS NOT a defect in the unit and has no effect on performance.	Does not apply.
Performance of surface element is poor.	See test Procedures.     Make sure pans are flat on bottom.	See test Procedures.     Make sure pans are flat on bottom.	See test Procedures.     Make sure pans are flat on bottom.
Multi–Position halogen heater performance poor.	<ol> <li>Improper wiring.</li> <li>Ground not connected.</li> <li>Switch failed.</li> <li>Heater or limiter failed.</li> </ol>	Does not apply.	Does not apply.

### **Disassembly Procedures**



To avoid electrical shock, personal injury, or death, disconnect power supply and remove cooktop from countertop before replacing any parts.

**NOTE:** Lay cooktop upside down on a soft cloth. Do not rest an inverted cooktop on the control knobs or shafts.

#### **AKE Models**

#### **Burner Replacement**

- 1. Remove access panel from back of cooktop.
- 2. Remove nut holding burner bracket to burner. Remove burner bracket.
- 3. Disconnect wiring. Burner, trim ring, ground ring, and gasket come out as a single assembly.
- 4. Replace element.
- 5. Reverse procedure to reassemble, verifying that trim ring, ground ring, and gasket are correctly placed.

#### **Element TCO Replacement**

- 1. Remove access panel from back of cooktop.
- 2. Remove nut holding burner bracket to burner. Remove burner bracket.
- 3. Disconnect wiring from TCO and remove nut.
- 4. Replace TCO.
- 5. Reverse procedure to reassemble.

#### **Indicator Light Replacement**

- 1. Remove access panel from back of cooktop.
- 2. Remove screws securing conduit plate and remove.
- Disconnect wiring from light assembly. Remove screws.
- 4. Replace indicator light assembly.
- 5. Reverse procedure to reassemble.

#### **AKH Models**

#### **Burner Replacement**

- 1. Remove access panel from back of cooktop.
- 2. Remove screws securing burner bracket in place.
- 3. Remove screws securing burner bracket.
- 4. Remove Burner and hold down spring.
- 5. Disconnect wiring.
- 6. Replace burner.
- 7. Reverse procedure to reassemble.

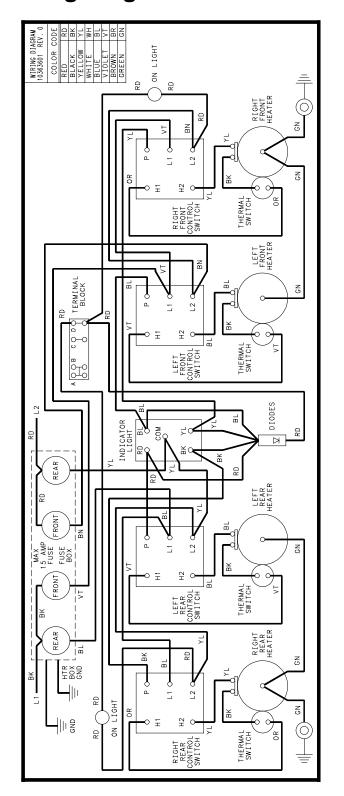
#### **Surface Control Replacement**

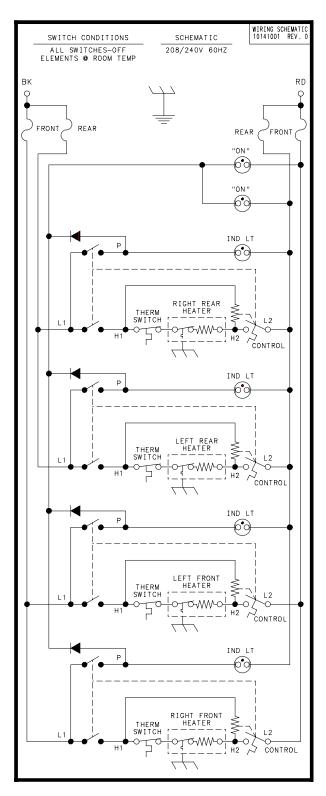
- 1. Remove knobs from surface control shaft.
- 2. Remove access panel from back of cooktop.
- Remove screws securing control mounting bracket. Remove bracket.
- 4. Replace control assembly.
- 5. Reverse procedure to reassemble.

#### **HI-Temp Limiter/Hot Light Switch**

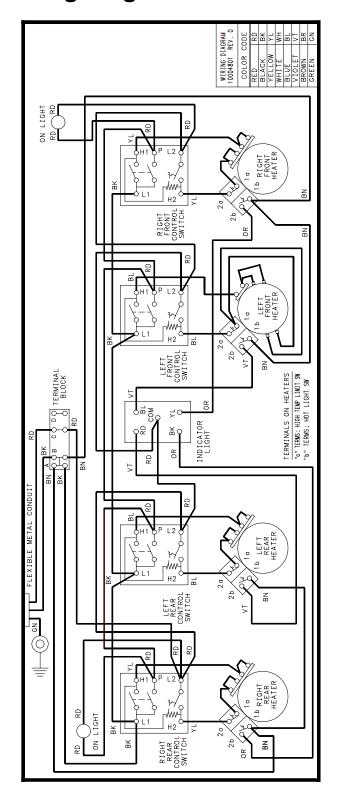
- 1. Remove access panel from back of cooktop.
- 2. Remove screws securing burner bracket in place.
- 3. Remove screws securing burner to bracket.
- 4. Remove burner and hold down spring.
- Disconnect wiring and remove screws securing hitemp limiter/hot light switch to burner. Slide out burner.
- 6. Replace limiter.
- 7. Reverse procedure to reassemble.

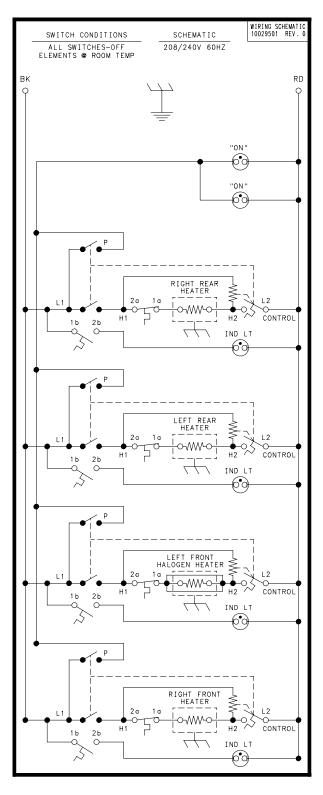
**NOTE:** Do not touch glass components with hands. A residue is left which can cause the component to fail.



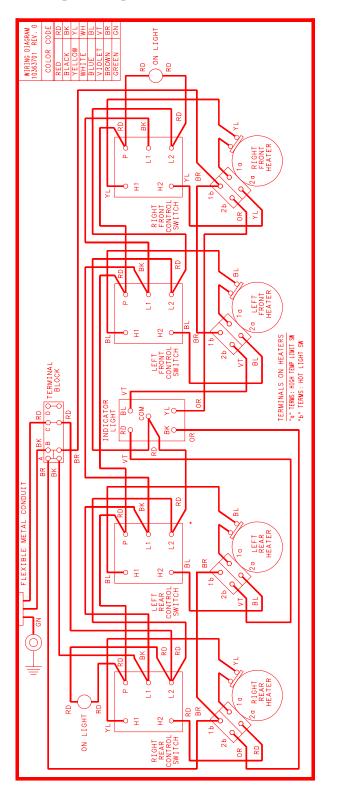


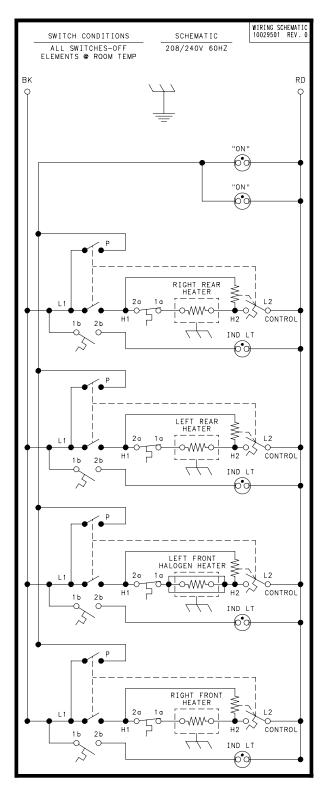
CAKE30W P8597905S



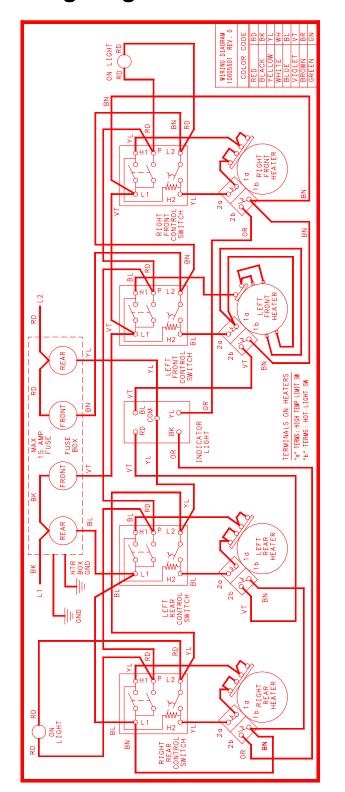


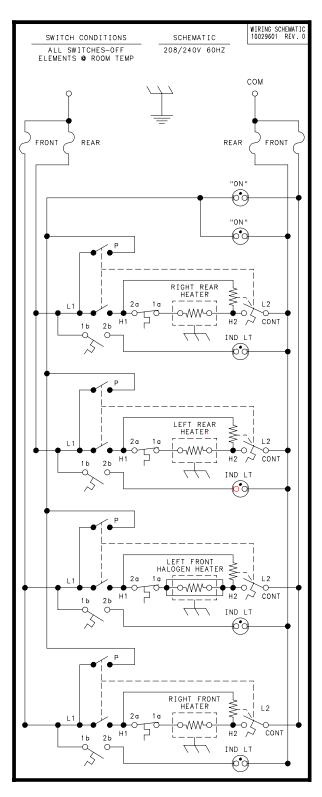
AKH30 P8597801S AKH35 P8597802S





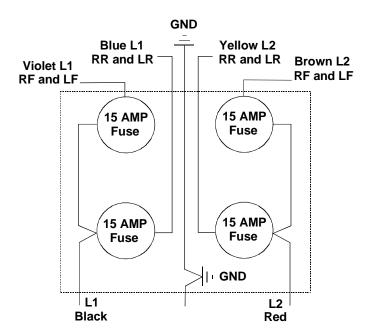
AKH35HR P1119903S, P1119904S





CAKH30 P8597803S

Power Connection for CAKH30 AND CAKH35

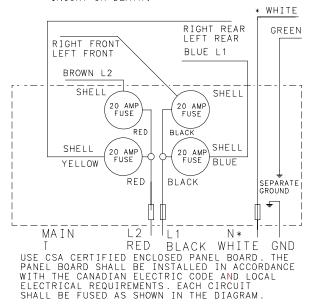


If Fuse Panel not supplied use CSA certified Enclosed Panel Board. Panel board shall be installed in accordance with the Canadian Electrical Code and Local Electrical requirements, each circuit shall be fused as shown in the diagram. Connect colored wires supplied with unit as shown in drawing above. Mount electric fuse circuit below cabinet cutout. A four foot length of conduit at rear center of cooktop is provided for electrical connection.

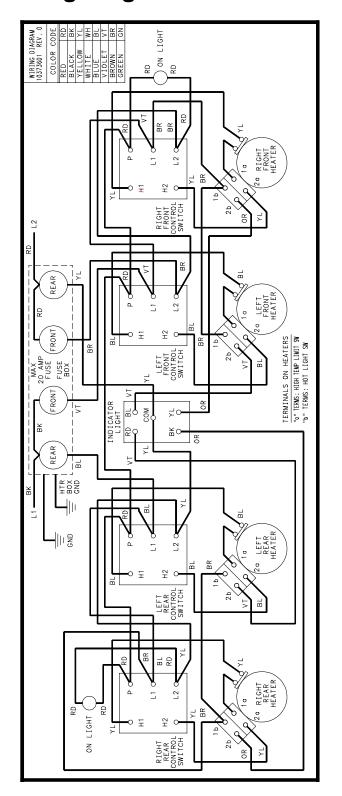
A separate supply ground connection is provided in fuse box.

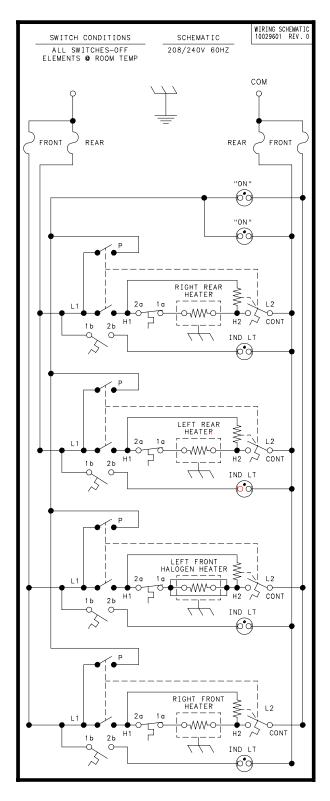
CAKH30 P8597803S

WARNING - ELECTRICAL SHOCK HAZARD - DISCONNECT POWER AT MAIN FUSE OR CIRCUIT BREAKER BEFORE SERVICING FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH.

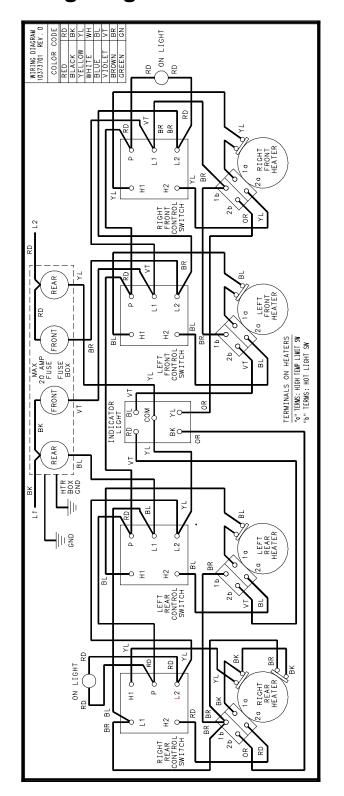


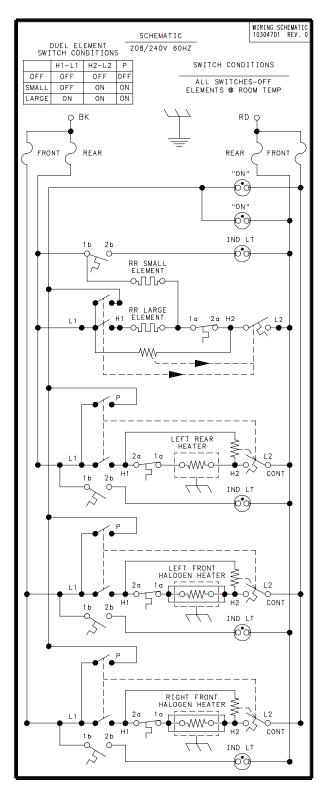
CAK2H30 P1131562N CAK2T30E P1131561N



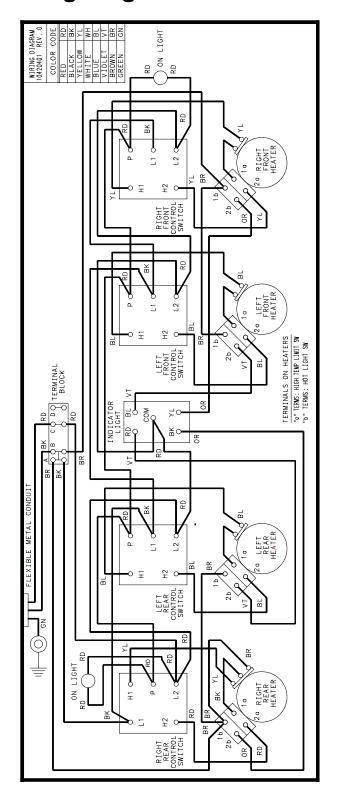


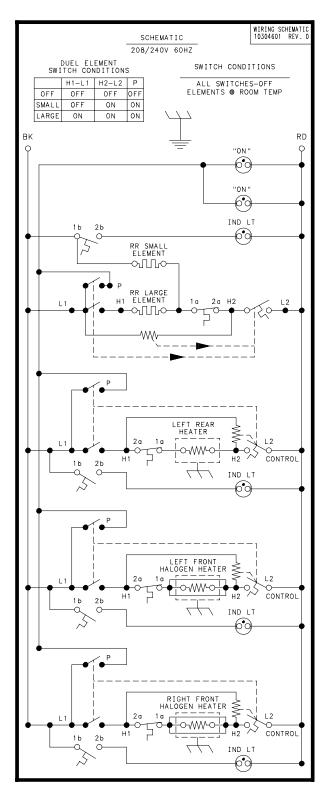
CAKH30HR P1119909S, P1171807S



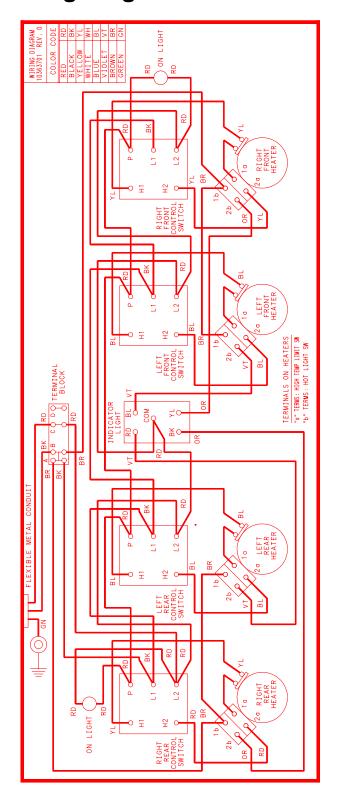


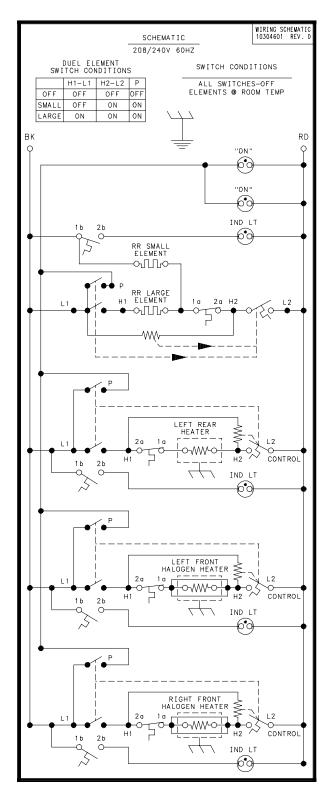
CAK2H30HR P1119910S, P1171808S



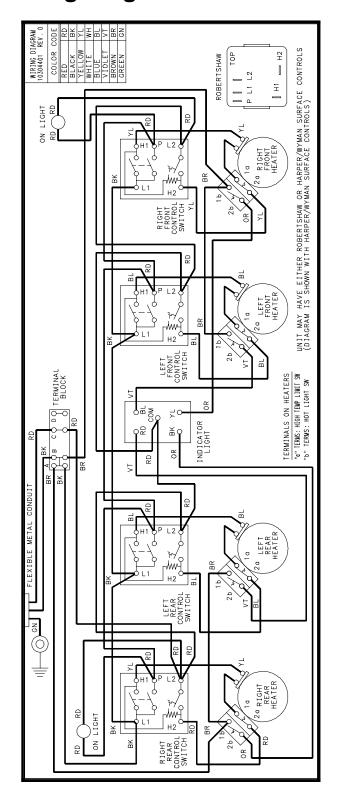


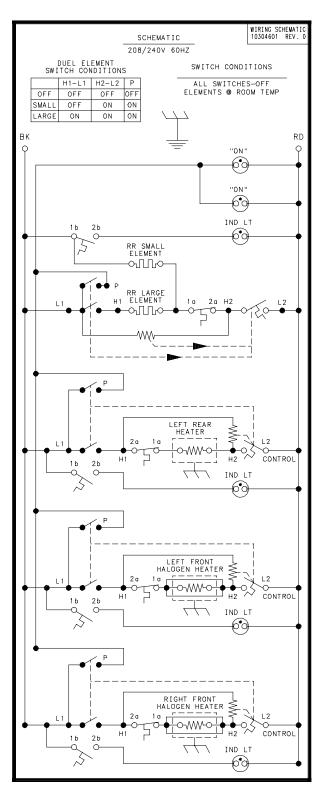
AK2H30HR P1119911S, P1119901S, P1171801S AK2H35HR P1119912S, P1119902S, P1171802S



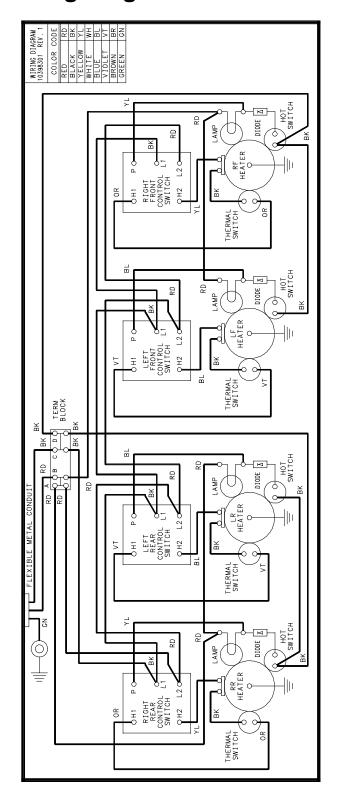


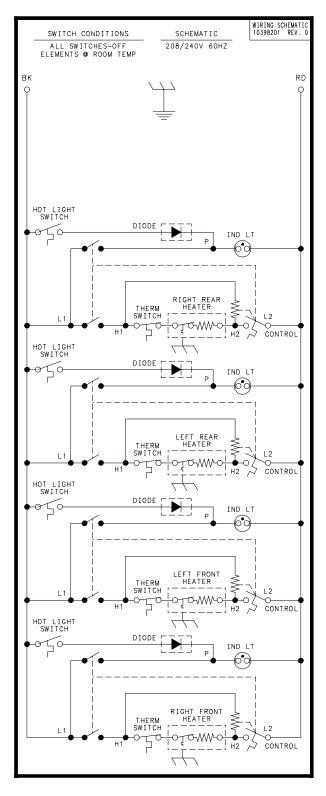
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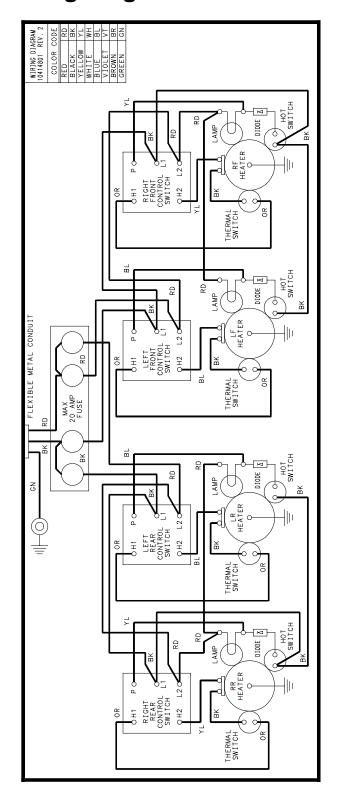


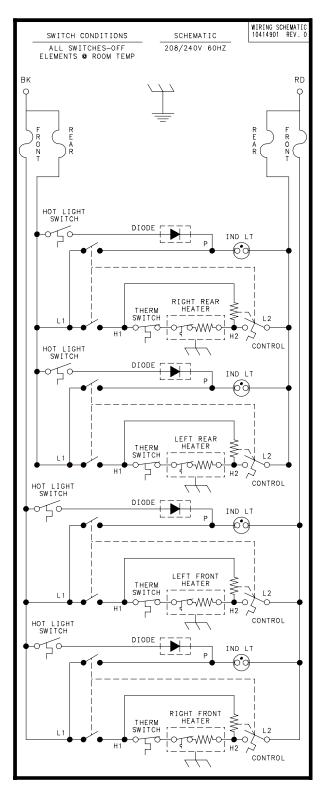
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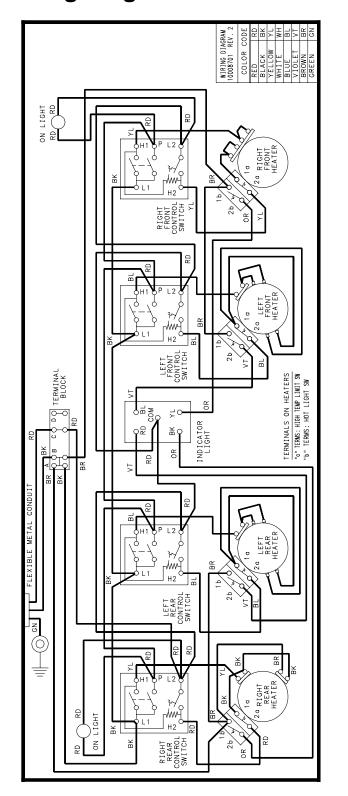


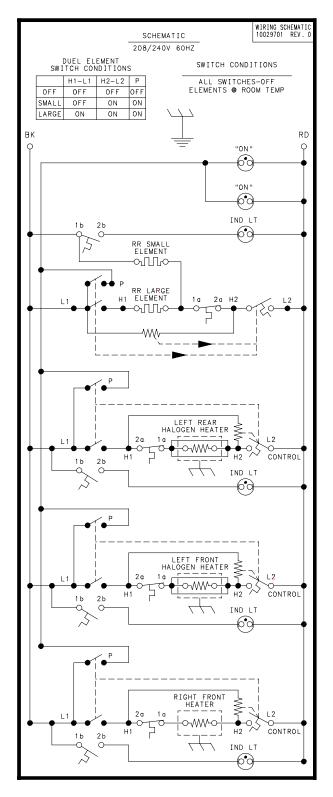
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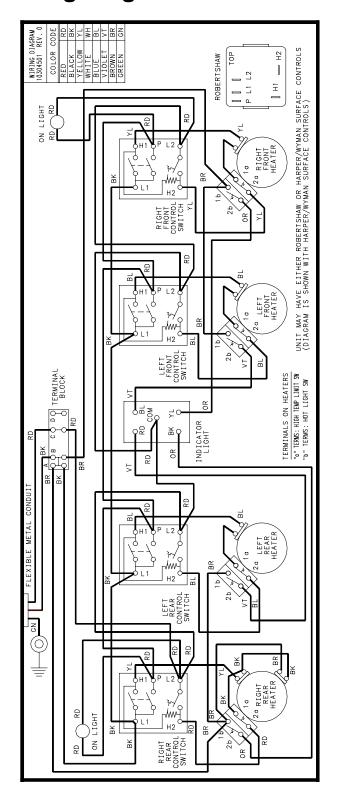


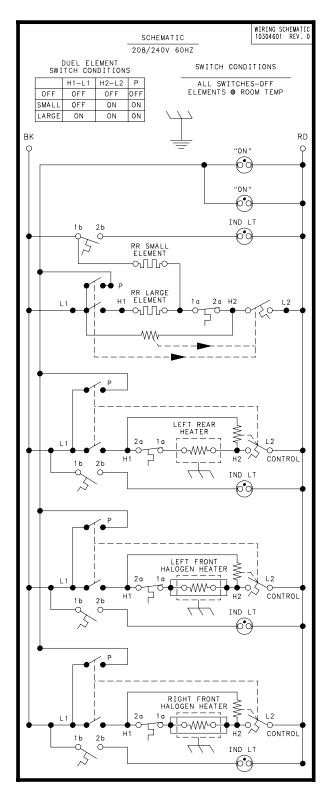
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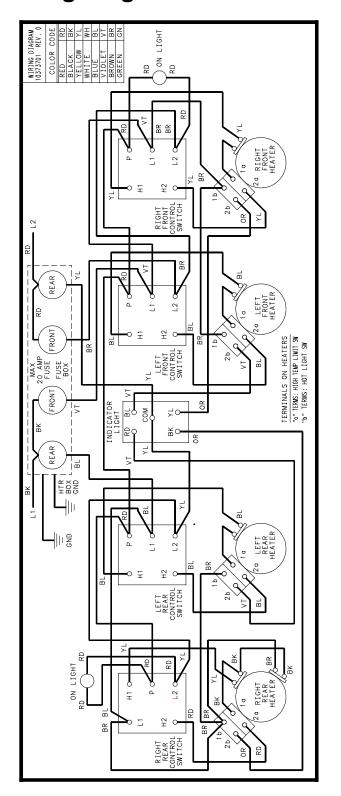


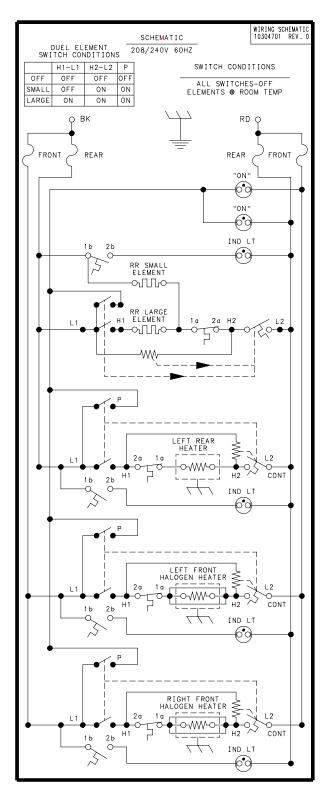
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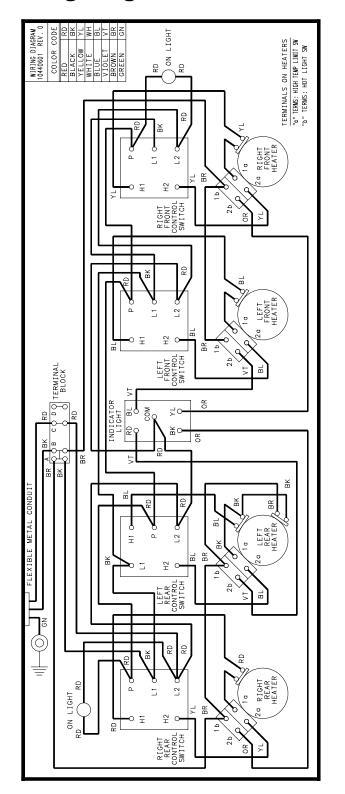


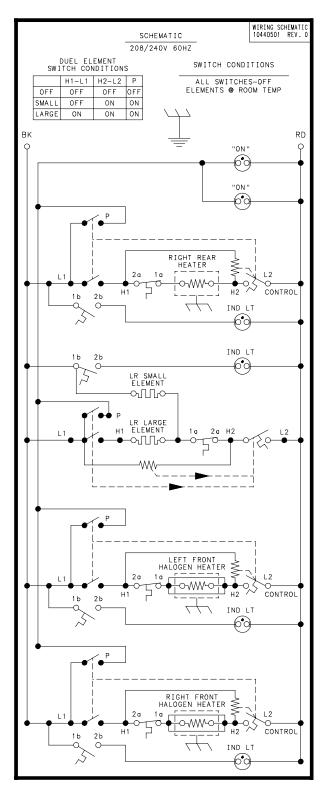
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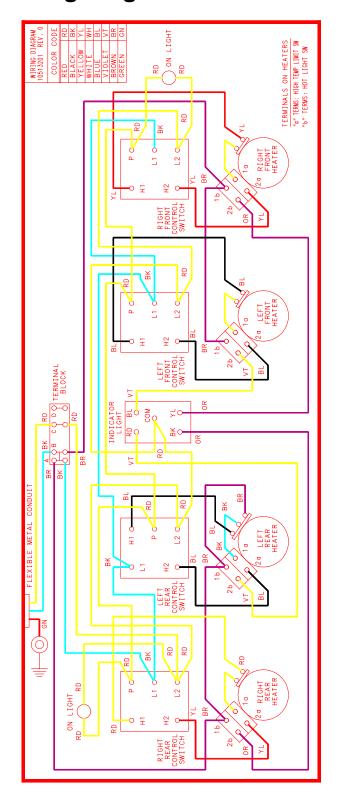


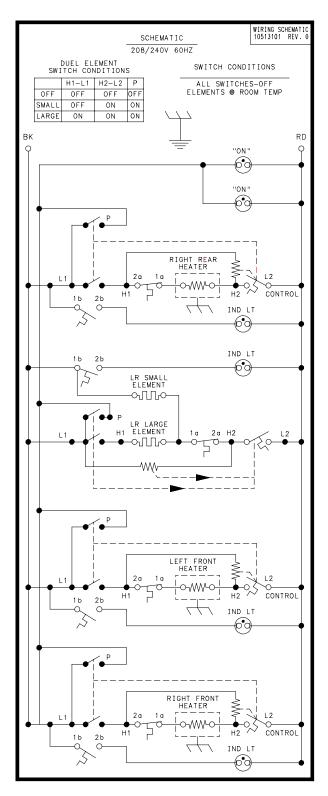
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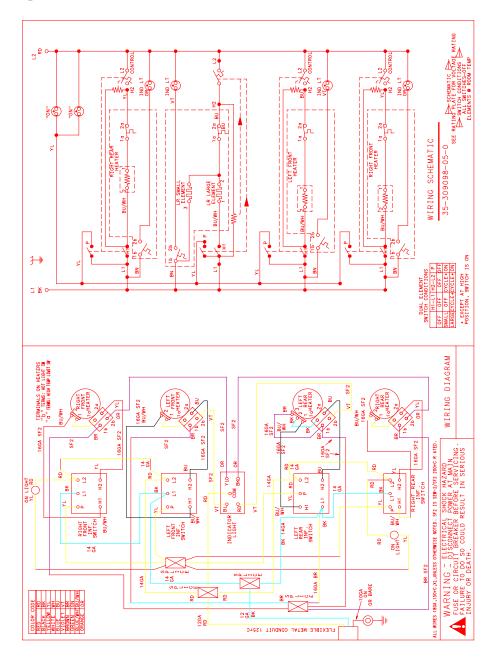
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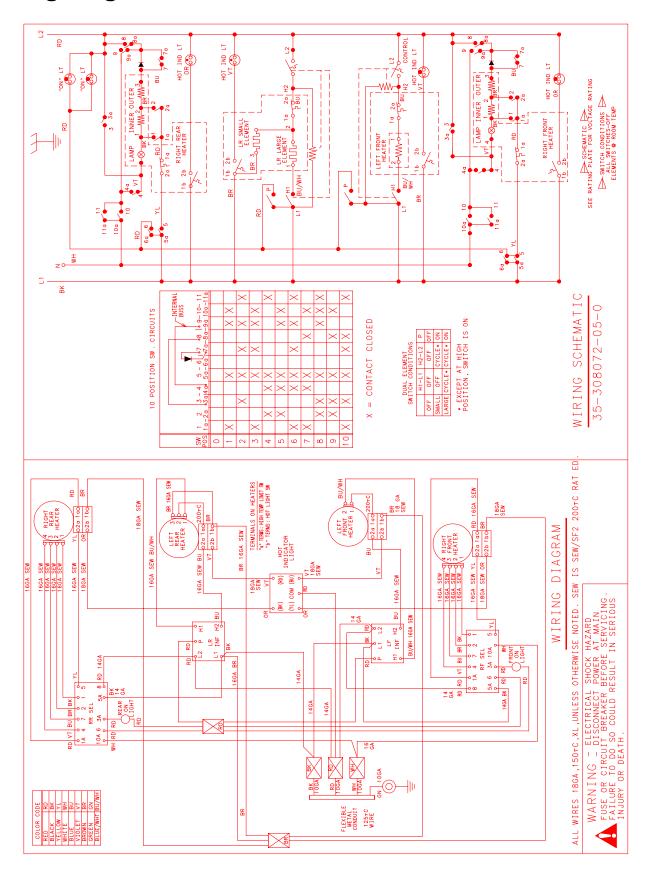
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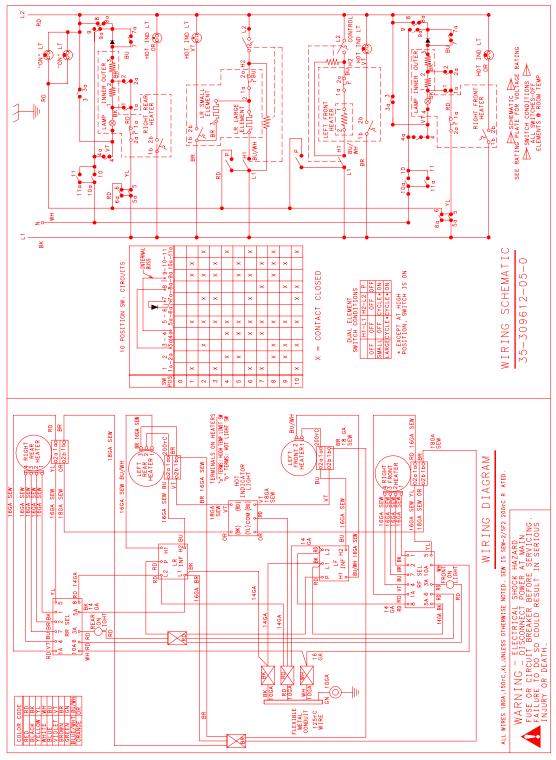
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AK2T36*1	P1131558N
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#### Up to Date Code 9404

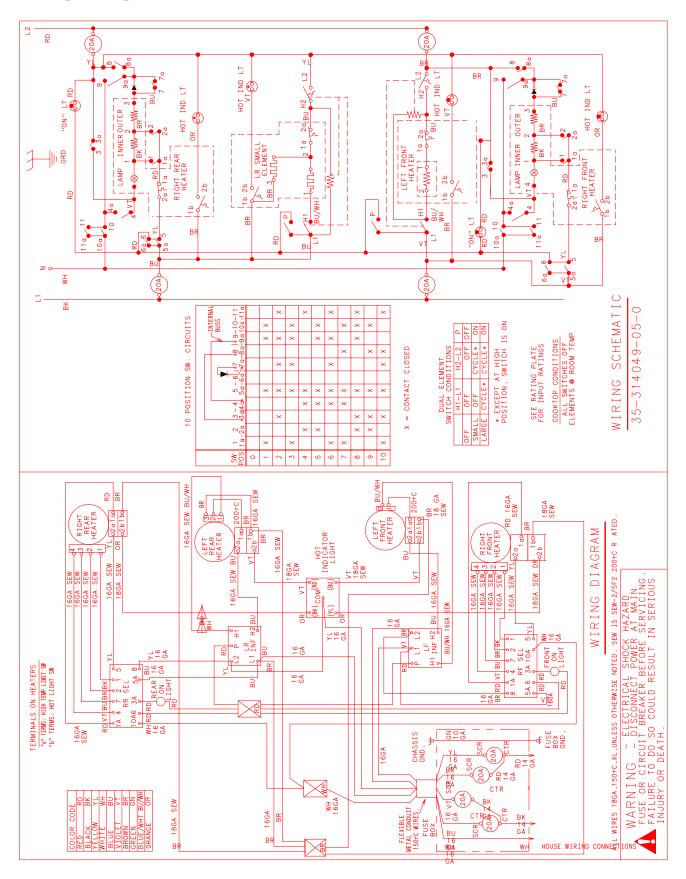
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AK2T30W	P1165103S, P1172103S
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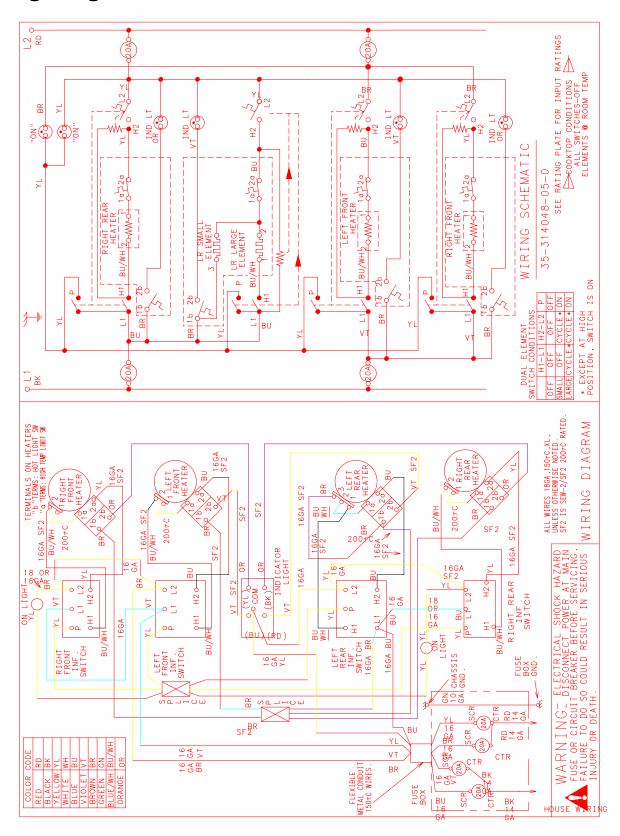


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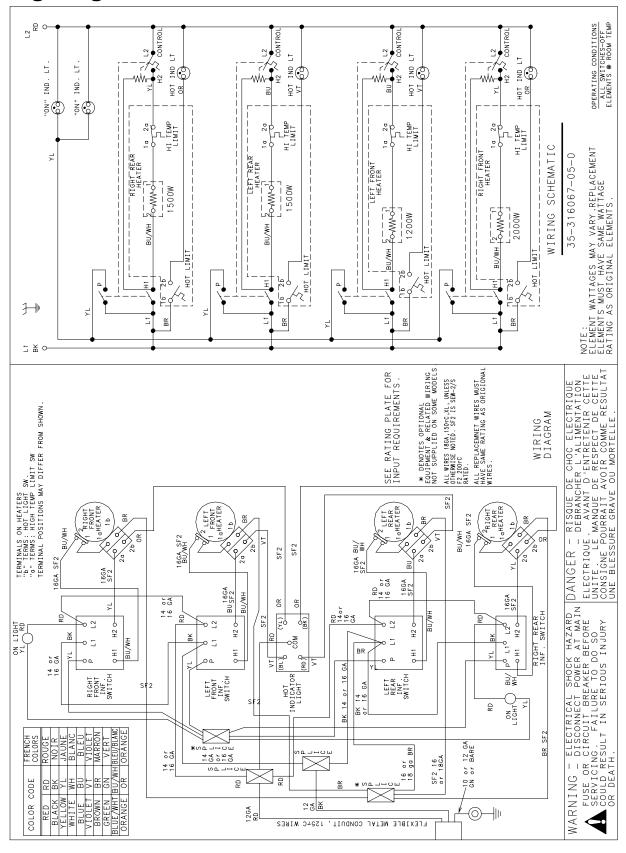


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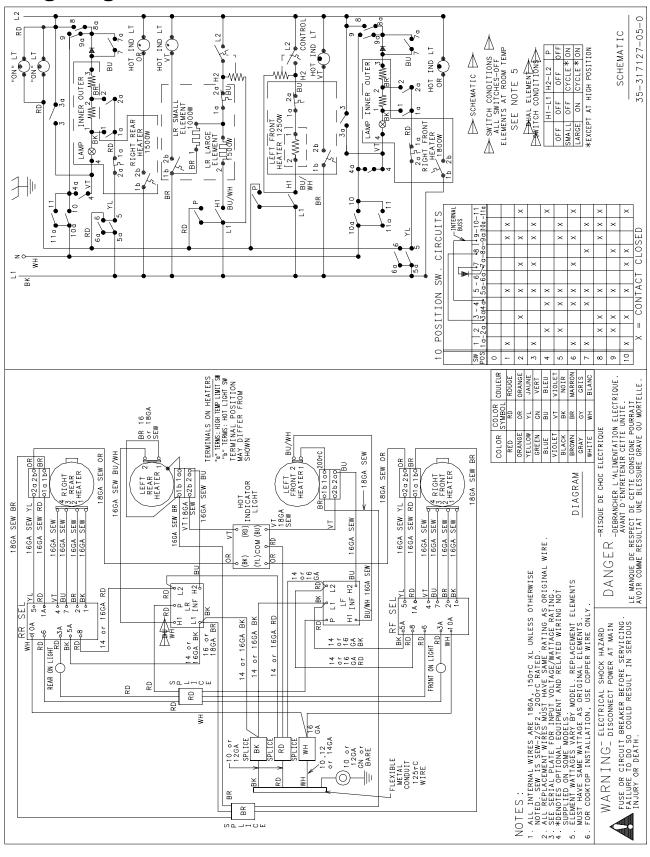
41



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AKT3000\* P1131580N AKT3000\* P1131595N AKT3000\* P1143725N



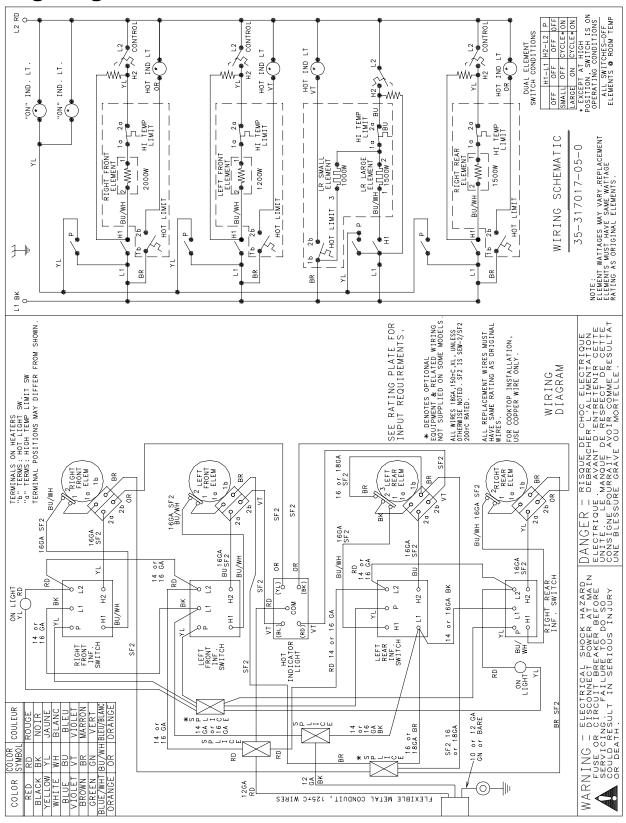
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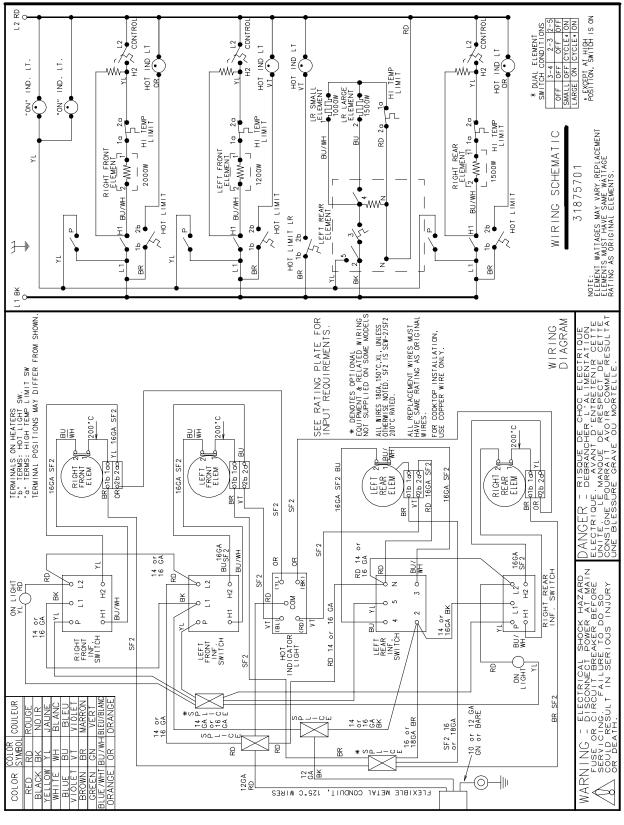
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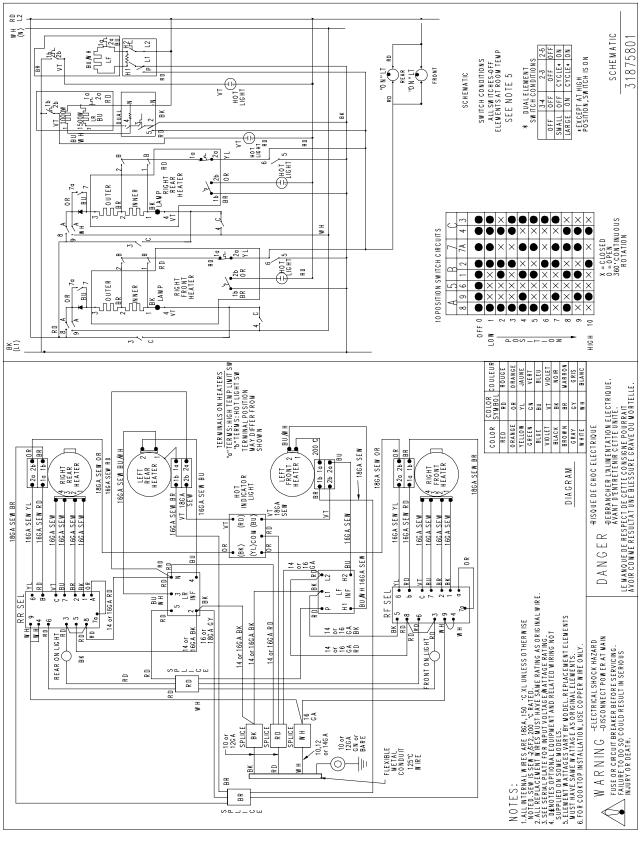
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