

# **Maytag Appliances**

# **Electric Cook Tops Service Manual**

16010241 Issued 8/00

#### **General Safety Precautions**

Information contained in this manual is intended for use by a qualified service technician. The technician is required to be familiar with proper and safe procedures to be followed when repairing electric, gas, and microwave appliances. All tests and repairs are to be performed using proper tools and measuring devices designed for appliance diagnosis and repair. All component replacements should be made using only factory approved replacement parts.

Electrical shock and injury can result if service or repairs are attempted by an unqualified individual. **Improper disassembly, assembly or adjustments can create hazardous conditions**.

Even for a skilled technician, a risk of injury or electrical shock exists while performing service or repairs. Electrical injury can be serious or fatal. Extreme caution must taken when performing voltage checks on individual components of an appliance.

NOTE: Except as necessary to perform a particular step in servicing a product, the electrical <u>power supply should always be disconnected</u> when servicing a product.

To avoid possible injury, the appliance must be properly grounded. Never plug in or direct wire an appliance unless it is properly grounded in accordance with <u>all local and national codes</u>. See the installation instructions that originally accompanied the product for proper grounding procedures.

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#### Introduction

This manual is printed in a loose format and is divided into sections relating to a general group of components an/or service procedures. Each section is further subdivided to describe a particular component or service procedure.

The subdividing of the subject matter, plus the loose leaf form, will facilitate the updating of the manual as new or revised components are added or new models are introduced.

Each page of the manual will be identified in the lower, right or left hand corner, and as new or revised pages are published, the manual can easily be updated by following the filing instructions on the cover letter of the supplement.

This service manual is a valuable tool and care should be taken to keep it up-to-date by prompt and proper filing of subsequent pages as they are used.

#### Jenn-Air Models covered in this manual:

AO142	CVE3400
AO310	CVE3401
AO320	<b>CVE407</b>
CCE1401	CVE407*C
CCE3401	CVE4270
CCE3450	CVEX4100
CCE3451	CVEX4180
CCE3531	CVEX4270
CCE407	CVEX4370
CCE407*C	GO106
CCE9300*	GO206
CCS447	GO206-8
CCS447*C	

#### **General Safety Precautions**

Information contained in **this manual is intended for use by a qualified service technician**. The technician is required to be familiar with proper and safe procedures to be followed when repairing electric, gas, and microwave appliances. All tests and repairs are to be performed using proper tools and measuring devices designed for appliance diagnosis and repair. All component replacements should be made **using only factory approved replacement parts**.

Electrical shock and injury can result if service or repairs are attempted by an unqualified individual. **Improper disassembly, assembly or adjustments can create hazardous conditions.** 

Even for a skilled technician, a risk of injury or electrical shock exists while performing service or repairs. Electrical injury can be serious or fatal. Extreme caution must taken when performing voltage checks on individual components of an appliance.

NOTE: Except as necessary to perform a particular step in servicing a product, the electrical <u>power supply should always be disconnected</u> <u>when servicing a product.</u>

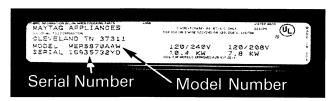
To avoid possible injury, the appliance must be properly grounded. Never plug in or direct wire an appliance unless it is properly grounded in accordance with <u>all local and national codes</u>. See the installation instructions that originally accompanied the product for proper grounding procedures.

In our continuing effort to improve the quality and performance of our cooking products, it may be necessary to make changes to the appliance without revising this manual.

The model and serial number can be found on the data plate located on the bottom of burner box or on the outside of plenum. The model number identifies features, sizes and engineering changes. The model number assist the technician in establishing the proper service procedures for the different variations of cooking products.

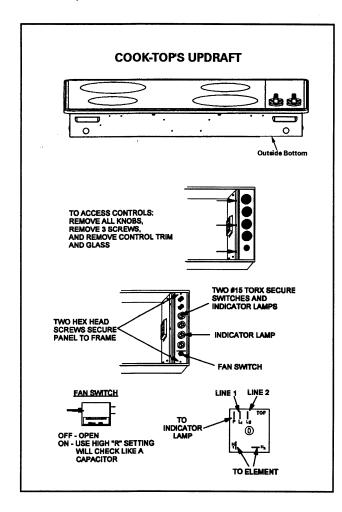
#### **Model / Serial Plate**

The Model/Serial plate is located at the bottom of the burner box on conventional non-downdraft models. Model/Serial plate is mounted on the ventilation chamber of downdraft models. The model number is very important to the technician for ordering parts both in and out of warranty. Always be sure to use the complete model number when ordering parts.



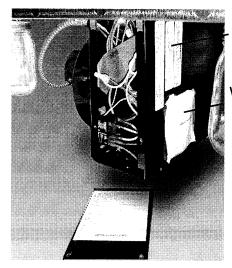
Serial plate enlarged and rotated to show detail. This information is important when calling tech support or ordering parts.

#### **Model/Serial Number Location**



#### Wiring Information

A wiring diagram/schematic is supplied with the unit. It is attached to the side of the ventilation chamber on the downdraft models; and attached to the bottom of the burner box on conventional non-downdraft models. Please return the diagram to its original storage compartment bag for future use.



Serial Plate

Wiring Diagram

#### **A** IMPORTANT

Wiring information in this manual was accurate at the time of manual production. Wiring information is subject to change at any time. Please refer to wiring information on the actual product for most current information.

#### Items packed with the product:

Many service calls are the result of the customer's lack of understanding as to the correct operation of the product. Several items are packed with the product to help avoid this situation. It sometimes becomes the servicer's obligation to explain the correct use and care of the appliance.

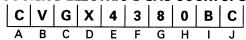
#### **A** IMPORTANT

Unique product information for specific models is found in the wiring and model specific information section of this manual.

16010241 Introduction vii

#### **Model Number Identification**

#### COOKING-ELECTRIC & GAS COOKTOPS



#### **PRODUCT TYPE**

Cooktop Electric

Conventional Cooktop Electric CCE Conventional Cooktop Gas CCG = Conventional Cooktop Solid CCR

CG Cooktop Gas CU Cooktop Updraft

CVE Conventional Ventilated Electric Conventional Ventilated Gas CVG

Grill Electric

#### PRODUCT VENTILATION TYPE

Conventional (Updraft) Ventilated (Downdraft)

#### PRODUCT FUEL/ELEMENT <u>c</u>

Ē Electric

G Gas D **Dual Fuel** 

LP Gas

#### PRODUCT STYLE

Expressions

#### E **SURFACE**

Coil/Atmospheric Burner

2 Disk/Sealed Burner

3 Ceran/Radiant/Halogen/Induction

4 Modular

#### **SURFACE**

<u>E</u> Coil/Atmospheric Burner w/Electronics

Disk/Sealed Burner w/Electronics 6

Ceran w/Electronics

Modular w/Electronics

#### **CONFIGURATION** E

Single Convertible 1 2 Double Convertible

3 Triple Convertible

4 Four Fixed Elements/Burners Five Fixed Elements/Burners

#### <u>G</u> **TYPE**

0 Coil/Disk/Radiant/Atmospheric Burners

1 Open (No Grill)

2 Sealed Burner

3 Radiant/Halogen

5 Induction/Radiant

6 Induction

Grill + Open

8 Grill + Open

#### **FUTURE UPGRADES, ETC.**

#### COLOR

Α Almond

В Black

Pro-Style™ Ρ

s Stainless

T **Textured** 

W White

#### **SUFFIX**

U.S. (Blank)

С Canada

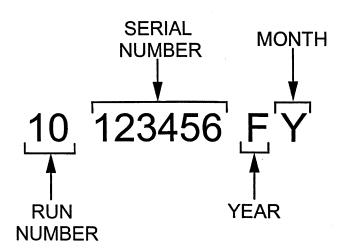
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Jenn-Air

208V

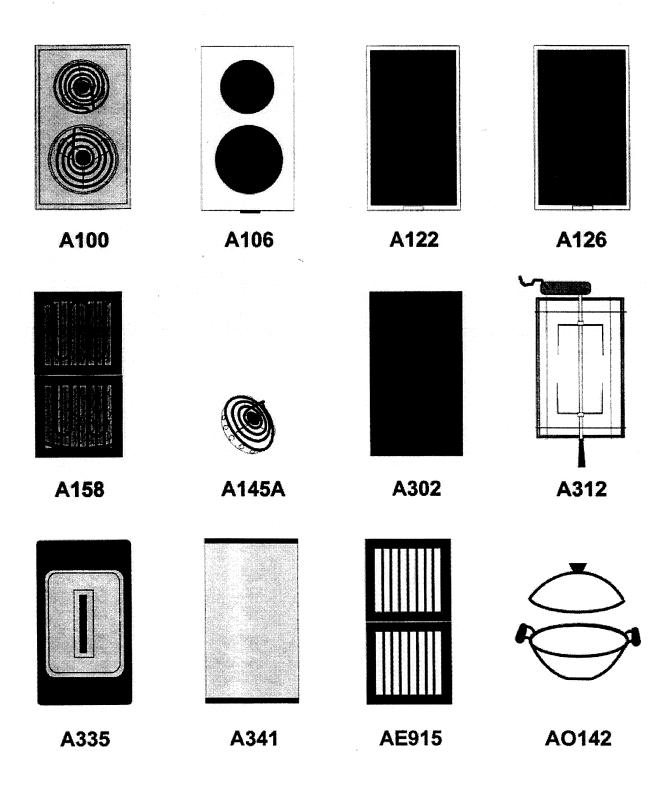
#### Serial Number Identification

The serial number is indirectly related to servicing the appliance, however is necessary when ordering replacement parts. Starting November 1, 1992, Jenn-Air/ Maytag began using a 10 digit serial number format. Prior to this an 8 digit serial number format was used. The first two digits denote the run number. The next 6 numbers represent the unit serial number. The seventh and eighth digit represents the year and month the unit was built. This number is also necessary for product information feedback to the manufacturer for quality improvements/adjustments.

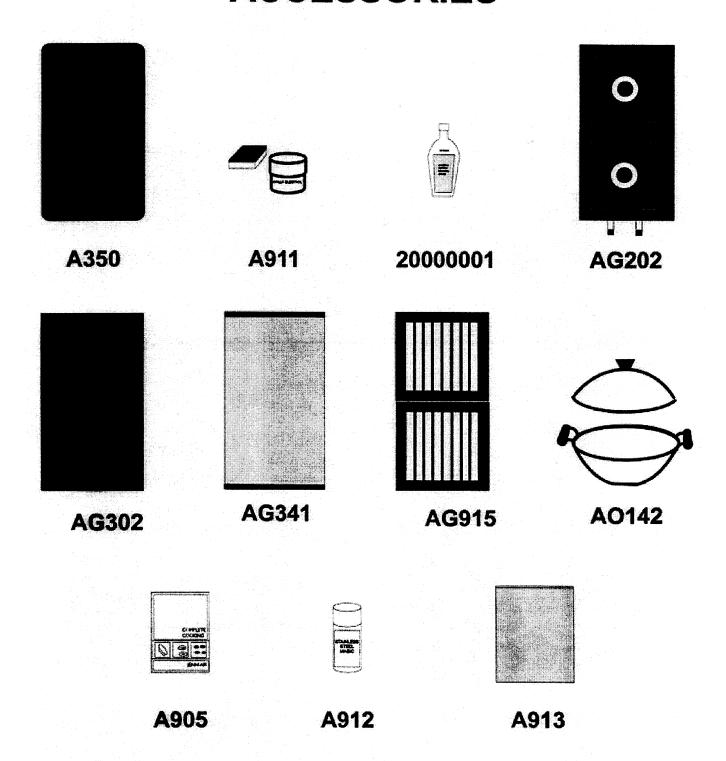


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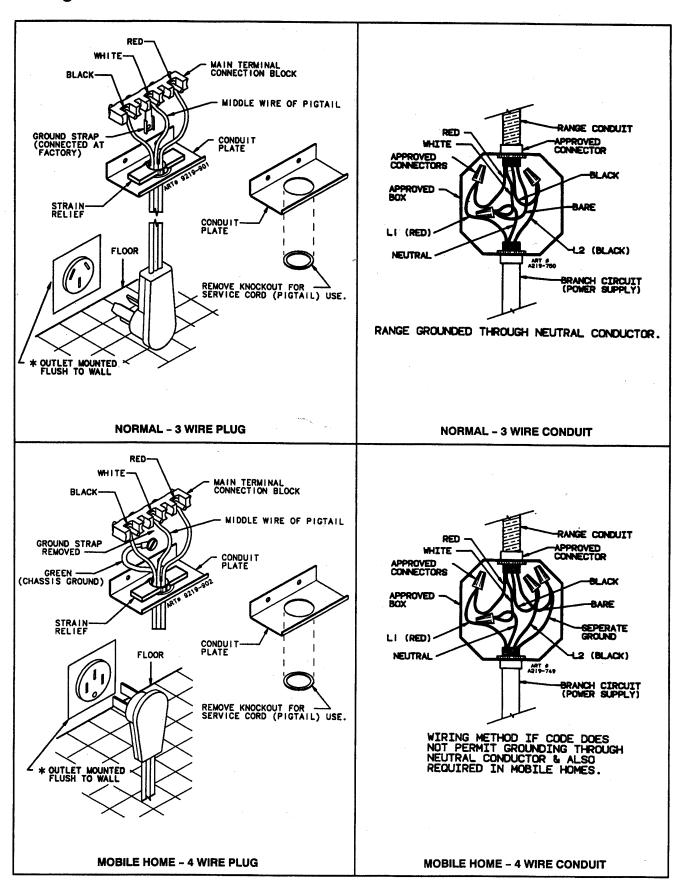
## **ACCESSORIES**



# **ACCESSORIES**



#### **Wiring Installation**



#### **Electrical Wiring Information**

The neutral of this unit is grounded to the frame through the solid copper grounding wire. If local conditions do not permit grounding of the neutral, untwist or disconnect the solid copper wire and connect the solid copper wire to ground in accordance with local codes. Connect the white neutral to the service neutral.

#### **Proper Electrical Supply**

You must provide an adequate electrical supply system as required for your cooktop. All wire connections must be in accordance with local codes and properly sulated. Check with local utility for governing electrical codes and ordinances. In the absence of local electrical codes, the National Electrical Code, NFPA No. 70, governing electric range installations must be followed. A copy of the National Electrical Code, NFPA No. 70, can be obtained by writing to:

National Fire Protection Association Batterymarch Park Quincy, Massachusetts 02269

A three-wire, single phase, A.C. 120/240 volt 60 cycle electrical system (properly circuit protected to meet Local Codes of NFPA No. 70) must be provided. Unit must be properly grounded in accordance with local wiring code. The chart below recommends the minimum circuit protector and wire size if the appliance is the only unit on the circuit. If smaller sizes of wire are used, the unit efficiency will be reduced and a fire hazard may be created. It is advisable that the electrical wiring and hookup be accomplished by a competent electrician.

	RECOMMENDED MINIMUM	
K.W. RATING ON SERIAL PLATE	CIRCUIT PROTECTION IN AMPERES	WIRE SIZE (AWG)
0 - 4.9	20	12
5.0 - 6.9	30	10
7.0 - 9.9	40	8
10.0 - 11.9	50	8
12.0 - 14.9	60	6

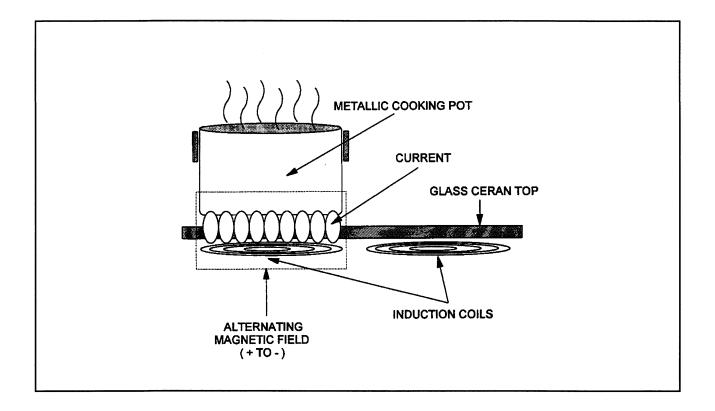
The non-vented units are provided with 1/2" (1.3 cm) flexible cable, 45" (114.3 cm) long with 6" (15.2 cm) wire leads at end, furnished and installed by manufacturer (connect to 240/120 volt electrical service). Cable is located at the center rear of the cooktop. Refer to owner's installation manual if needed.

#### **Proper Service Procedure**

When testing, removing, replacing component or components or performing service:

- 1. Disconnect the appliance from power source.
- Note the location of electrical wiring attachments and disassembly order for ease in reassembly.
- 3. Reassemble in the reverse order of removal unless specified otherwise.
- 4. Ensure that electrical connections are attached and secure.
- 5. Ensure that wiring is secured away from sharp edges and moving parts.
- 6. Do not bypass or disconnect any part or device designed into the appliance.
- 7. Ensure that ground wiring is connected and secure.
- 8. Ensure that access panels, covers, tape, and seals are installed.

#### **Principle of Induction**



The alternating current in the coil induces an alternating current in the cooking utensil. Due to the molecular resistance of the utensil, heat is produced by the utensil.

The induction unit provides a high frequency A.C. current (50-70KHZ depending on pan material). As this current flows through the coil, an alternating magnetic field is created.

When a utensil of magnetic material is brought into this oscillating magnetic field, current is induced (hence the name induction) through the utensil. The molecular resistance of the utensil causes heat to be generated by the utensil. The heat is then conducted to the food inside the utensil. The glass top does not produce any heat.

It gets warm due to the conduction of heat from the utensil. The power level of the coil is varied by a potentiometer; which controls the current level.

#### **Induction Warning**

Electric shock potential during disconnection of electrical supply wiring. There are capacitors within the unit that store an electrical charge at the time line power is disconnected.

Discharge the capacitors by first turning off power to the unit and then turn on both right side heating element switches. This procedure will discharge the capacitors immediately. Turn right side switches back to off for further servicing or reconnecting to line supply voltage.

#### **Section 1. General Troubleshooting**

#### **General Procedures**

This section is intended to assist you in diagnosing inoperative conditions which may develop in products manufactured by the Maytag corporation. Electrical testing is, for the most part, made with an appliance test meter and consists of checking for open or closed circuits. Mechanical checks are made through sight and sound, along with the use of a volt-wattmeter and clamp-on ammeter.

This information is intended for the technician who is familiar with the operation and construction of Maytag products.



#### **Electrical Component Testing**

One of the easiest means of testing electrical components is "continuity testing" with an appliance test meter.

Continuity is a complete or continuous path from one point in an electrical circuit to another. Continuity testing, as related to an electrical component, is the checking of a part for an "open" or "closed" circuit. A continuity check can be performed once the product being tested has been disconnected from its electrical supply and after appropriate wires have been removed from the terminals of the part being checked. Following manual activation of the part (if required) the probes of the test meter should be placed on the respective terminals. The readout from the test meter will indicate a completed (closed) circuit. Little or no value shown will indicate a

broken or (open) circuit and a possible inoperative part.

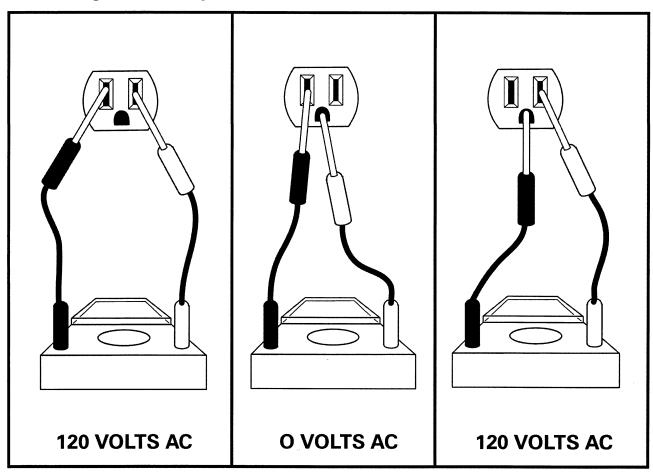
Continuity testing is a process of eliminating those electrical components used in a given function of the product, until the inoperative part is found. By reviewing the list of possible electrical problems, under a given condition, and then performing appropriate continuity checks on the parts involved, you should be able to locate the electrical component which is inoperative.

Electrical components fall into two general categories:

- 1. **Loads** Devices that **use** (consume) electricity. Examples would include fan motors, elements, lamps, solenoids etc.
- 2. Switches Devices that control the supply of electricity to the load or loads in a circuit. Examples include lid switches, timer contacts, selector switch and relay contacts. Continuity tests of "load" devises will show varying levels of resistance from very low for some transformer and motor windings to very high for some timer motors and components on electronic control boards. Usually it is more important to know if there is a path for current flow through a device (continuity) than to the exact resistance (ohms) of the device. Resistance values are included in this manual for your information.

For the most part, "loads" can be powered by using a motor test cord to confirm operation or failure. The motor test cord used in conjunction with a volt-watt meter will also show power required to operate the device. Continuity tests of switches will show virtually no resistance across closed contacts. Resistance even low values indicates burned or dirty contacts in a switch.

#### **Grounding and Polarity**



The above illustration shows a simple grounding and polarity check using a common appliance multimeter

#### IMPORTANT

Never alter or remove the grounding prong from the power cord. Use of grounding adapters is not recommended.

The receptacle used for all Maytag products operating on 120 VAC must be properly grounded and polarized.

The power cord used on the appliances is equipped with a three (3) prong polarized grounding plug for protection against shock hazard and should be plugged directly into a properly grounded and polarized receptacle.

It is the responsibility of the person installing the appliance to ensure it is adequately grounded and polarized at the point of installation. All local conditions and requirements must be taken into consideration.

In cases where only a two (2) prong receptacle is available, it is the personal responsibility of the customer to have it replaced with a properly grounded and polarized three (3) prong receptacle. All grounding and wiring should be done in accordance with national and local codes. *Use of adapters is not recommended by Maytag* unless the receptacle has been grounded through the center plate cover screw.

#### **Troubleshooting**

#### Problem with any Cartridge:

Condition Element too hot or not hot enough.	Possible Cause  1. Improper voltage.	<ul> <li>Correction</li> <li>Check voltage rating stamped on element against supply voltage at range. 5% (plus or minus) tolerance allowed.</li> </ul>
	<ol><li>Infinite switch may be locked on high or not cycling properly.</li></ol>	Replace switch.
	3. Mismatched range and cartridge combination.	<ul> <li>Check unit model number to assure compatibility with car- tridges.</li> </ul>
	4. Shunt clip missing from grill element.	• Replace.
Element does not heat.	Circuit breaker or fuse blown.	Replace as necessary.
	2. Inoperative infinite switch.	<ul> <li>Remove cartridge, turn infinite switch to high, check voltage at range receptacle.</li> </ul>
	3. Open element	<ul> <li>Replace element (element block in glass cartridges).</li> </ul>
	4. Open wiring.	<ul> <li>Check wiring continuity and replace wires as needed.</li> </ul>
	<ol> <li>Polarized plug(s)         between control panel         and cooktop module         not connected.</li> </ol>	Connect plugs.

#### **Problem with any Cartridge:**

#### **Condition**

Blower shuts off during operation or not exhausting properly.

#### **Possible Cause**

- Filter positioned incorrectly, or dirty.
- Duct system not in accordance with recommended specifications. (Warranty not applicable.)

#### Correction

- Position filter so that it lays against a channel angled inside the plenum chamber. Clean filter.
- Blower scroll reversed.
- Duct length too long.
- Improper duct size.
- Too many elbows.
- Excessive flex duct.
- · Joints not taped.
- Restriction in wall cap.
- · Restriction in duct run.
- Insufficient wall cap ground clearance.
- Motor foam seal missing.
- Improper transition.

NOTE: If alteration in the ducting system is required, advise customer of exact changes necessary and refer to installer.

### **Problem with any Cartridge:**

Condition Foods cook too slow.	Possible Cause  1. Thermal limiter cycling excessively.	<ul> <li>Correction</li> <li>Suggest using metal utensils with flat bottoms that will absorb surface heat.</li> </ul>
	2. Inoperative thermal limiter.	Replace thermal limiter.
Glass breakage.	<ol> <li>Overheating of glass; concave pan will trap heat. A large pan sitting on the cartridge rim will also trap heat.</li> </ol>	<ul> <li>Replace glass. Explain proper usage of utensils with flat bottoms.</li> </ul>
	2. Inoperative thermal limiter.	Replace thermal limiter.
Dirty glass.	Cooked on foods or residue; dust, carbon, grease, etc.	<ul> <li>Use Cook Top<sup>™</sup> cleaning cream to remove stains (20000001).</li> </ul>
Permanent stains.	<ol> <li>Permanent stains can be caused by using cleaners containing chlorine or by cooking with aluminum foil directly on cooktop surface.</li> </ol>	<ul> <li>Replace glass and advise on proper usage.</li> </ul>
Element too hot or not hot enough.	1. Improper voltage.	<ul> <li>Check voltage for element against supply voltage at range. 5% (+/-) tolerance allowed.</li> </ul>
	<ol><li>Infinite switch may be locked on high or not cycling properly.</li></ol>	Replace switch.
	3. Cycling on Thermal Limiter.	Check Thermal Limiter.     Replace if necessary.

#### **Problem with any Cartridge**

#### **Condition**

Element cycling on and off more than normal.

#### **Possible Cause**

- Utensil bottom not flat, or has irregularities such as corrugations.
- **Correction**
- Refer customer to Use and Care manual.

- Initial heating and cooking very slow.
- Utensil material is slow to conduct heat - such as cast iron.
- Refer customer to Use and Care manual.

#### **Downdraft Blower**

#### **Condition**

Blower will not operate.

#### Possible Cause

1. Connection from control unit to blower motor loose or apart.

#### **Correction**

· Check connection and wiring.

- Blower continues to operate after infinite switch is turned off.
- Problem with fan speed control, shunt circuit or relay contact.
- Replace speed control.
- Check shunt circuit relay contacts.
- 2. Fan switch in "ON" position.
- Position switch to "OFF".

#### **Troubleshooting Induction Cartridges**

Condition Circuit Breaker trips	Problem Disconnect power	Solution Discharge capacitors by turning on either right side element switch. Turn all switches to off. Measure resistance from neutral to L1 and neutral to L2 on disconnected power cable. Resistance should be above 50 K Ohms. (Symptom) If resistance is not higher than 50K, replace filter assembly.
Internal Unit Fuse	If open	Replace fuse.
Work coil	Open circuit	Check for broken wire lead. Repair.
No Power	Circuit breaker tripped Fuse to induction unit blownElement switches, micro switch	Check house supply breakers. Problem in induction mod- ule. Test switches.
Ticking sound	Pan sensing circuit	Normal. Try different cookware. Must be ferromagnetic material.
Different heat values from front to rear on induction units	Balance switch pots on left side of burner box	Balance outputs with watt meter or amp meter 1400 W., 11.6 Amps.
Interference with TV signal or radio	Ferrite coil cracked or broken on supply harness	Check ferrite coil, filter assy.
Cooks on high or low, no variable power	Potentiometer. Discharge capacitor before servicing	Perform ohm reading test.
Capacitor shorts	Discharge capacitor before servicing potentiometer	If fuses are open - problem within induction circuit work coils open or closed. Less than one ohm.
Doesn't cook as well as before	Check for air movement when ing out through knob openings at intake vents on front and reainside module. No fan operati	s. If not, check for obstruction ar of burner box. Fan running

Induction Power Switch of push to turn switch assembly - closes on rotation of the knob. Potentiometer portion of push to turn assembly - regulates power level to respective element of induction module.

NOTE: Potentiometer output plugs can be reversed. Care should be taken to ensure polarity of module to proper power control locations. Reversed system would be operation on high power only to both element locations.

Potentiometer Value 50K Ohms +/- 20%.

Temp. Limiter Induction Heating Elements: Protection from dry pan runaway, glass, and induction module. 500°F. limit. Ambient value 1M Ohm or greater.

Heating Element values: Amperage value of elements range from 10-12 amps. At 120 VAC input line to neutral. Balance pots located

behind label on left side of burner box. Available adjustment is approx. 115 watts per element. Balancing should be done on both element pots so element outputs closely match.

NOTE: Line to neutral inputs can vary, effecting burner balance.

Example: Neutral to L1 = 120V; Neutral to L2 = 110V. Balancing may not be possible within induction module. Contact an electrician to see if line voltage balancing is possible.

NOTE: When rotating the knob slowly, there should not be any erratic readings of the meter while observing the resistance changes noted previously. Erratic swings in resistance would indicate contacts within the pontentiometer are dirty. Change switch assembly.

#### **Test Equipment**

#### **Electrical Test Equipment**

The equipment required to service Maytag products depends largely upon the conditions you encounter. Locating a malfunction will often require the use of electrical testing equipment such as:

<b>Description</b>	Part Number
Analog Test Meter	2000005
Digital Test Meter	20001001
Clamp-On Ammeter	20000002
AC Voltage Sensor	20000081
Digital Multimeter	20001006
Digital Watt/Amp/Volt/ Ohm/Temp. Meter	20000019
Dwyer Air Meter	20000029

Analog Test Meter can be used to check for open or closed circuits, measure resistance, AC and DC volts, and temperature.



AC Voltage Sensor can be used to alert you if AC voltage is present so proper safety precautions can be observed. The tip of the sensor will glow bright red if voltage is between 110-600 volts AC.



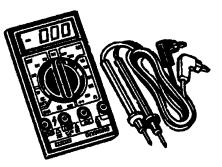
Clamp-On Ammeter can be used to detect shorts. Overloads on the circuit breaker or fuse can be traced to either the appliance or circuit breaker by checking the appliance current draw.



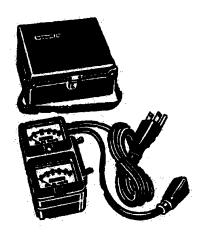
**Digital Test Meter** can be used to check for open or closed circuits, measure resistance, AC and DC volts, and temperature.



Digital Multimeter features easy-to-read LCD display and tilt stand. Reads AC voltage to 500V and DC voltage to 1000V, battery test, up to 10 amps and 2 megohms of resistance.



Digital Watt/Amp/Volt/Ohm/Temp. Meter measures power (wattage), AC/DC volts, AC/DC amps, temperature (C & F) Ohms resistance, continuity and capacitance. Features large LCD display w/backlight and analog bar graph to show tendencies.



**Dwyer Air Meter** is used to diagnose restricted vents. A precision air velocity and static pressure indicator based on the principle of the variable area flowmeter.

# DWYER

#### **Ventilation Test**

All downdraft models being produced today come with a test card insert in the user's material. (This drawing is not to size, for illustration only!) This test card is a quick way to test operation of the ventilation system. Although a part number is listed, it is not an individual part. The card is placed over the intake (with all accessories and air grille removed) and the blower started. If it falls in, the air velocity should be OK. This test is not a replacement for using proper instruments. It only provides installers with initial testing for those who do not have proper instruments. NOTE: Air filter must be in place to prevent card from going into the blower wheel!

#### FLOW TESTER This end of tester to be positioned over air intake. For Cooktop models use this side of lin For Range models use this side of line. How to use this tester to check your downdraft system: 1) Remove all cartridges, accessories and the air grille from unit. 2) Insure the air filter is in place. Align the edge of dotted line that corresponds to unit being tested with the edge of the intake on the left side of the unit near the center. (see diagram) Vir Intaka on Flow Tes 4) Turn on the downdraft system. If the card is pulled into the air intake your downdraft system is working properly. If the card is not pulled into the system see installation instructions for possible causes.

#### **Ducting**

Air movement is measured in two ways. CFM or FPM (cubic feet per minute) is the measurement of total air VOLUME and is also know as exhaust air. FPM (feet per minute) is the measurement of air VELOCITY. All testing of Jenn-Air downdrafts should be performed using FPM measurements. Use the following formula to determine the FPM: CFM = FPM X Free Area in square feet.

**Example:** 750 FPM X a register measure 12" by 12" (1 sq. foot) = 750 CFM (or CFM = Ak X Vk).

Downdraft ventilation is a high velocity system (750 - 1025 F. P. M.). It is designed to move air quickly and to hold grease, moisture and fumes in suspension as air moves through the ducting. Too little air movement means a smoke filled kitchen. Too much air movement means cooled off food and prolonged cooking times. The type of material used effects the performance. Inferior material can cause up to twice the amount of restriction.

If the system does not capture both cooking fumes and smoke while grilling; these are some ducting installation situations to check:

- 6" diameter round or 3 1/4" X 10" rectangular only, ducting of solid gauge galvanized or aluminum should be used. Except as follows: For Electric Models, 5" diameter round ducting may be used for venting straight out the back of the range and directly through the wall for 10 feet or less. For Gas Models with Electric Ovens, 5" diameter round must be used if the duct length is 10 feet or less.
- Distance between adjacent fittings should be at least 18". The farther the

better. Closer distance promotes turbulence which reduces airflow.

 Recommended Jenn-Air wall cap should be used. Make sure damper moves freely when ventilation system is operating.

If there is not an obvious improper installation, there may be a concealed problem such as a pinched joint, obstruction in the pipe, etc. <u>Installation is the responsibility of the installer</u> and questions should be addressed first by the installer. The installer should very carefully check the ducting installation instructions.

#### Restrictions

Restrictions in the ducting are one of the greatest causes for poor performance. Restrictions commonly cause the overload protector of the blower motor to open after 20 minutes of operation. Technicians need to be well versed and need to easily identify the many types of restrictions encountered.

One of the most common restrictions is when two elbows are connected back to back. This configuration causes turbulence in the air stream which carries far down the duct before it recovers. It is recommended that 2 1/2 times the outside diameter of duct be placed in between elbows to prevent this turbulence. Example - 6" duct X 2 1/2 = 15 inches between elbows.

- Handmade crimps are likely to cause restrictions. Improper crimps result in the reduction of inside diameter. Air flow should always come from the male side of connections.
- The reduction of duct size also causes restriction. Never go from a larger size duct to a smaller size.

• All transitions should be tapered. Do not use untapered elbows or transitions.

A service representative can measure the air velocity (FPM - feet per minute) at the grill surface to determine if it meets the requirement for the appliance (the FPM differs from grill-ranges and cooktop models). The grill-range model is rated at 60 feet of straight duct, low ranges is up to 30 feet - high range is 31 to 60 feet.

#### **Ventilation System**

The blower on all cooktops is the same physical design. The only differences are in its location, wiring, and single or two speed, depending on the model. The blower motor can be removed while the unit is installed.

Blower is mounted on the right side of the ventilation chamber on the Expressions Series.

Blower is mounted on the left side of the ventilation chamber on the Designer Line.

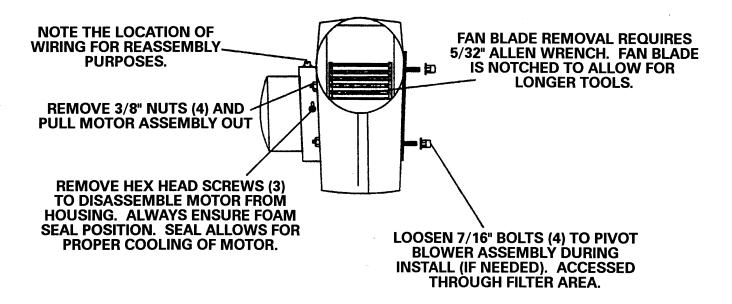
The wiring needs to be disconnected and the four 3/8" nuts removed. The blower can now be removed from the ventilation chamber. When grilling, the motor always defaults to high speed. On two speed models, one push on the fan button starts the ventilation motor on high, the second push switches the motor to low. There is a five second delay in switching from high to low. This protects the motor by allowing it to obtain momentum before using the slow speed winding.

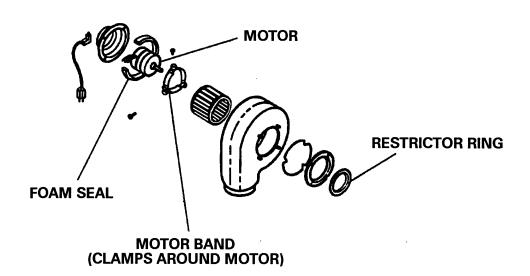
#### Model CVE3400 Only

The fan control is located at the front of the control panel. To operate the ventilation system manually, turn the fan control knob clockwise. The variable speed fan can be operated at an infinite number of settings.

#### **Restrictor Ring**

Modern blowers will come equipped with a restrictor ring. If the restrictor ring is left in place, the unit may be ducted up to 30 equivalent feet. If the restrictor ring is removed, up to 60 equivalent feet may be run. To remove the ring, remove power to the unit, depress the three spring tabs and remove the ring and spring clip. This may be accomplished without removing the product or blower from its installation. Do not remove restrictor ring for less than 30 equivalent feet. Doing so will cause blower noise and excessive air loss.





NOTE: Select models to have certain features.

#### **Section 2. General Component Access**

#### **Getting Started**

As a general rule, the appliance should ALWAYS be disconnected from power source and gas supply turned off before servicing appliance or replacing component parts. Failure to disconnect the power and turn off gas supply increases the likelihood that a servicing error or mistake will result in serious or fatal injuries.

This manual covers electric cooktop models. Broken down by series, models covered include the expressions collection, designer line, conventional and induction models. This will include the updraft and downdraft features.

For the most current specifications sheets, call Dimension Express from your fax machine at (702) 833-3600. Enter code #9018 for Jenn-Air products. You will receive information on how to use the system, along with the corresponding model code numbers.

In the text that follows, examples of common models (within the series) with the most varied features have been used. The other models use a very similar construction. The models not covered can be serviced using the same basic information.

#### **Canadian Models**

All circuit breakers are mounted to the plenum chamber wall, if not in a remotely located breaker box. Each is secured by one shaft nut. All thermal limiters are located underneath infinite switches in escutcheon area.

**Specifications:** 1 Phase, 30 Amp, 120 Volt circuit breaker.

#### **Cartridges**

Cooktop cartridges, either conventional coil, halogen, radiant or solid element, can be installed on either side of the range.

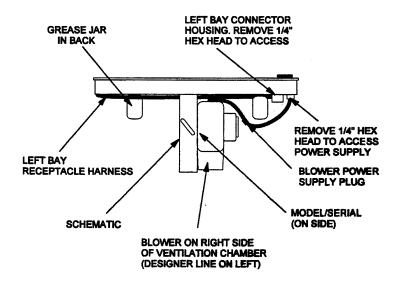
#### To remove cartridges:

- 1. Controls must be OFF and the cartridge should be cool.
- Lift up on the "tab" located on the cartridge until top of cartridge clears the opening on the range by about 2 inches. Lifting the cartridge too high while still engaged in the receptacle could damage the terminal plug.
- 3. To disengage terminal, hold cartridge by the sides and slide away from the terminal receptacle. Lift out when fully unplugged.

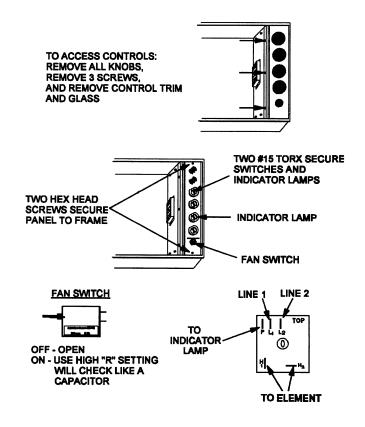
#### **Accessories**

All parts of the cartridges are replaceable. Schematics for cartridges differ from cartridge to cartridge. Older cartridges utilized four blades, while current ones utilize three, with one of the prongs being common to both elements. Older cartridges may be converted to the three blade style if the technician is familiar with wiring configurations. The old style cartridge used all four prongs to connect the two elements. The newer three prong cartridges have been in production for about 10 years. The shunt to the fourth prong on current cartridges is not used for the cooktop elements. The shunt to the fourth prong is used on the grille elements to bring the downdraft fan motor into the circuit automatically, whenever the infinite switch is turned on. This feature is not needed for the cooktop elements.

#### **EXPRESSIONS ELECTRIC**



ct-3d3



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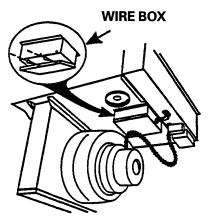
#### **CAUTION:**

Always make sure that electrical supply to range is disconnected before attempting service of electrical components. Handle parts with porcelain coatings carefully to avoid chipping.

Expressions are flush to counter designed and use a different construction compared to designer line products. A Perima-Vent system is used for the openings in the grill pan. Smoke is pulled from around the grilling surface in conjunction with the main grill opening. The Expressions series uses cartridges with side plug-ins versus the front/back plug-in used in the designer line

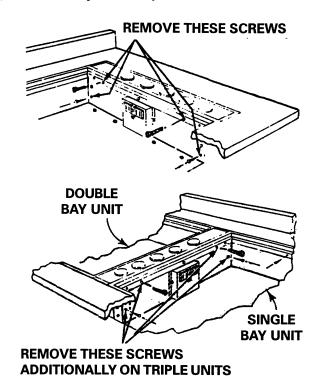
# Blower Motor/Wheel Assembly (Cooktop Module)

- 1. Disconnect power to range.
- 2. Remove Motor Receptacle Box located on the Control Box bottom by removing the (2) mounting screws. Plug the Motor Supply Plug into the Motor Receptacle and reinstall Motor Receptacle Box.



- 3. Remove four (4) nuts retaining blower motor assembly to fan scroll.
- 4. Remove assembly. All replaceable parts are now accessible.
- 5. To install, reverse procedure.

# Control Panel Components (Counter Top Mount)



- 1. Disconnect power to range.
- 2 Remove all cartridges, accessories, grill components and basin pan from bay(s) adjacent to the control area.
- 3. Remove knobs. This is done by gently pulling knobs upward. If knobs are difficult to remove, tuck a dishtowel under knob on at least two sides and pull on ends of towel to provide more leverage.
- 4. Remove four (4) screws attaching control panel to control box. In the case of a triple bay unit, screws must be removed from bay on either side of control box (see above illustrations).
- 5. Once proper screws are removed, the control switch plate may be lifted from the control box.

- Remove six (6) screws on both sides of switch plate that mount control panel top to switch plate.
- 7. In case of back lit controls, the same screws that mount the infinite switches also mount the light boxes.
- 8. Repair or replace necessary components and reassemble in reverse order.

#### **Infinite Switch**

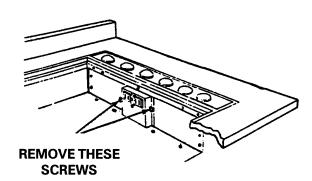
Voltage sensing switches have the resistor in parallel with the element. This allows for versatility in element choice, and the switches do not have to match the element.

#### **Grill Shunt**

The grill shunt circuit works similar to the designer line series (except without the relay). The grill shunt is located on the grill element.

# Grill Receptacles - Top Trim Assembly

- 1. Disconnect power to range.
- 2. Remove all cartridges, accessories, grills and basin pan.
- 3. To repair or replace grill receptacles: Remove two (2) screws securing receptacle bracket to burner box.
- Lift receptacle block and repair or replace making sure to pay close attention to wiring orientation (see following illustration) and wiring diagram.
- 5. Reassemble in reverse order.
- 6. To replace top trim: Remove unit from installation.
- 7. Remove control box.
- 8. Remove perimeter screws and replace trim in reverse order.
- 9. Reinstall cooktop.



#### **Updraft Models**

#### Main Top (Glass)

# Disconnect power to unit before servicing.

To gain access to the main top components:

- 1. Remove control knobs.
- 2. Lift cooktop from cabinet installation.
- 3. Remove (12), 1/4" hex head screws that secure the glass frame assembly to the burner box around the outside perimeter. Lift the glass frame assembly off the burner box and lay on a protected area.
- Make sure the rubber grommets are in position and undamaged before reinstalling.
- 5. Reverse procedure to reinstall.

#### **Element Access**

- 1. Follow steps 1-3 under main top access.
- Elements are held in place with two spring clips. To remove, apply pressure to one side of the element assembly and lift up on the opposite side to release element clip from element support mounting bracket.
- Spring clips may be removed from element by removing phillips head screw.
- 4. To replace limiter, remove two phillips head screws.

NOTE: On most models, the limiter is not a replaceable part. Check with parts distributor.

5. Reverse procedure to reinstall.

#### Infinite Switch Controls & Indicator Lights

- 1. Follow steps 1-3 under main top access.
- 2. Remove four 1/4" hex head screws securing switch and indicator light to mounting plate.
- 3. Remove two #15 torx head screws that secure the infinite switch to the mounting bracket. These same screws also secure the backlight switches. Ensure the backlight switch boxes are secured before reinstalling the main top.
- 4. Remove the wire terminals from the switch and transfer to replacement.
- 5. Squeeze tabs on indicator light and lift up to remove.
- 6. Reverse procedure to reinstall.

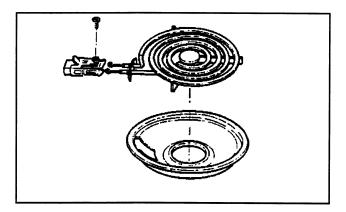
#### Wire Cable Assembly

- 1. Remove main top as described earlier.
- Remove two hex head screws securing the wire cable assembly to the burner box bottom. Remove grounding screw. Disconnect wiring.



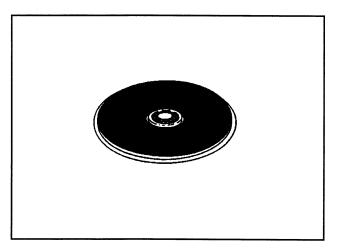
#### **Coil Elements**

Coil elements operate when 240 volts is supplied from the infinite control switch to the element. The element rest in a drip bowl. An opening in the drip bowl allows the terminal end of the element to plug into a surface element receptacle located beneath the main top and behind the drip bowl.



#### **Solid Disk Elements**

Solid disk elements are a combination of cast iron and heating element combined. The cast iron cover forms a heat transfer surface for the cooking utensil placed on the element. A heating coil is embedded in the cover to produce the heat. There are two types of solid element, temp sensor and standard.



#### **Control Panel Access (Select Models)**

The coil/solid disk element cooktops are comprised of two major structural components listed below. All other components are supported by, or attached to, these parts.

- Main Top Assembly
- Burner Box Bottom Assembly

# Repair or Replacement of any Internal Component:

- 1. Disconnect power and remove the cooktop from the counter.
- Remove the knobs and place cool cooktop upside down on a protected surface. (Placement should allow switch stems to protrude past the edge of the work area so that the unit lies flat.)
- Remove the six perimeter screws securing the burner box to the edge of the burner box.
- 4. Remove the ground screw from the back of burner box side of the unit.

NOTE: Five screws will remain in place as these attach the heat baffle. These need not be removed for access to controls, glass or elements.

5. Lift the bottom panel and disconnect the power supply leads from the terminal block located at the back center of the unit. The burner box bottom may now be removed.

#### **Elements (Automatic and Standard)**

 Remove burner box bottom cover (refer to steps under Repair or replacement of any internal component).

- 2. Automatic surface elements (temp sensor), may be removed by first disconnecting the spring loaded temp sensor from the center of the element. Remove sensor by pressing the two tabs located on the sensor together, this will release the sensor from the element. The temp sensor is connected to the automatic infinite control switch by a capillary tube.
- Infinite surface elements (standard), identified by a red dot in the center of the element does not contain the spring loaded temp sensor.
- 4. Remove the nut(s) w/washer from bolt(s) extending from element and push through from the other side.
- 5. Disconnect appropriate wires and remove element.
- 6. Reverse procedure to reassemble.

## **Infinite Switches and Surface Indicators**

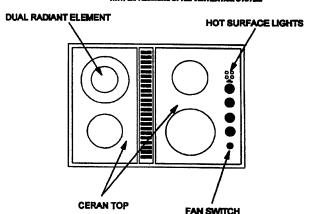
- Remove burner box cover (refer to steps under Repair or Replacement of any Internal Component).
- 2. Any of the four infinite switches may now be removed by removing the surface element knob and removing he nuts and washers that secure each switch. Push the switch up through the panel.
- 3. Also accessible are the indicator lights. Remove the wires from the terminals. Apply pressure to the tabs on each side of the light until it "snaps" through the mounting hole.
- 4. Reverse procedure for reassembly.

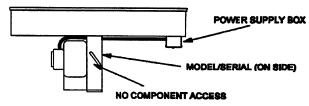
# **Designer Line (Downdraft)**

# **Unique Model CVE3400**

# **DESIGNER LINE ELECTRIC**

NODEL COVERED: CVEY40 - UNIQUE DEBIENER LINE, SUIDOTH TOP WITH EXPRESSIONS STYLE VEHTLATION SYSTEM





ct-3b

# **Downdraft Models (Unique)**

#### Main Top

# Disconnect power to unit before servicing.

To gain access to the main top components:

- 1. Remove control knobs.
- 2. Disconnect ducting.
- 3. Lift cooktop from cabinet installation.
- 4. Remove (12), 1/4" hex head screws securing the glass frame assembly to the burner box around the outside perimeter. Lift the glass frame assembly off the burner box and lay on a protected area.
- 5. Remove two phillips screws located inside the plenum air filter chamber.
- Make sure the rubber grommets are in position and undamaged before reinstalling.
- 7. Reverse procedure to reinstall.

#### **Element Access**

- 1. Follow steps 1-5 under main top access.
- Elements are held in place with two spring clips. To remove, apply pressure to one side of the element assembly and lift up on the opposite side to release element clip from element support mounting bracket.
- Spring clips may be removed from element by removing phillips head screw.
- 4. To replace limiter, remove two phillips head screws securing limiter to element.

NOTE: On most models, the limiter is not a replaceable part. Check with parts distributor.

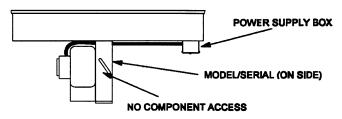
5. Reverse procedure to reinstall.

# Infinite Switch Controls & Indicator Lights

- 1. Follow steps 1-5 under main top access.
- Remove two 1/4" hex head screws securing switch and indicator light to mounting plate at top corners of burner box. Remove one hex head screw securing bottom of mounting bracket to burner box bottom.
- 3. Remove two #15 torx head screws that secure the infinite switch to the mounting bracket. These same screws also secure the backlight switches. Ensure the backlight switch boxes are secured before reinstalling the main top.
- Remove the wire terminals from the switch and transfer to replacement switch.
- 5. Squeeze tabs on backlight and slide out of bracket to remove.
- 6. Reverse procedure to reinstall.

#### Fan Relay

Access is gained to this area from underneath the unit. Remove one hex head screw from bottom of power supply box. Located inside is the schematic and fan relay.

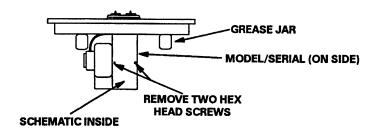


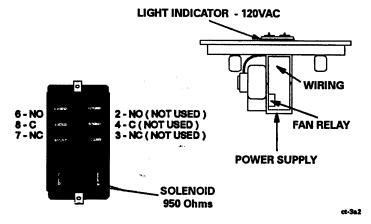
ct-3b1

2-8

# **Designer Line (Downdraft) Models**

#### **DESIGNER LINE ELECTRIC**





#### **FAN RELAY**

# **DESIGNER LINE ELECTRIC**

MODELS COVERED: CVE1400 - 4 POED COIL ELEMENTS 90104 - OUTDOOR WY 1 POED GRELL ELEMENT 90204 - OUTDOOR WY 2 POED GRELL ELEMENTS CVE4190 - 39" SINGLE BAY WY 2 POED COS. ELEMENTS CVE4270 - 30" DOUBLE BAY

# RECEPTACLE REMOVE TWO CROSS HEAD SCREWS TO ACCESS FAN AND INFINITE SCREWS TO REMOVE SWITCH RECEPTACLE REMOVE TWO TORX SCREWS TO REMOVE SWITCH TO INDICATOR

16010241

**LAMP** 

TO ELEMENT

#### **Main Top**

Disconnect power to the unit before servicing. Disconnect ducting if unit is to be removed from installation.

- 1. Remove the air grille, knobs, grill assembly, and cartridges.
- 2. Remove two screws securing the escutcheon to the plenum.
- 3. Lift out the escutcheon.
- 4. Remove 12 hex head screws securing the main top to the grill pan.
- 5. Lift up the top and remove the screw and nut securing the ground wire.
- 6. Remove the top.
- 7. Reverse the procedure to reinstall.

#### **Infinite Switches**

- 1. Remove air grille and switch knobs.
- Remove the two phillips head screws securing the escutcheon to the blower plenum.
- 3. Lift the escutcheon out.
- 4. Remove the two #15 torx screws securing the infinite switch to the escutcheon.
- 5. Remove the switch and wires.

NOTE: Take note of the switch orientation. On the bottom of the infinite switch "TOP" is labeled. When the switch is properly installed, "TOP" will be to the rear of the cooktop.

6. Reverse the procedure to reinstall.

#### Fan Switch

- 1. Follow steps 1-3 under infinite switches.
- 2. Remove the two 11/32" nuts securing the fan switch to the escutcheon.
- 3. Disconnect the wires and remove the fan switch.
- 4. Reverse the procedure to reinstall.

## **Indicator Light**

- 1. Follow steps 1-3 under infinite switches.
- 2. Remove the 11/32" nut located between the left and right infinite switch.
- 3. Disconnect wires and remove light assembly.
- 4. Reverse the procedure to reinstall.

#### **Grill Pan**

- 1. Follow steps 1-5 under main top.
- 2. Remove the two 1/4" hex head screws securing the pan to the burner box.
- Remove the three 1/4" hex head screws securing the terminal block to the grill pan.
- 4. Reverse the procedure to reinstall.

# Fan Relay

Based on installation, gain access to plenum assembly by opening cabinet or removing unit from countertop.

- 1. Remove two 1/4" hex head screws and slide the plate down and out.
- 2. Relays are mounted with two self tap-

ping phillips head screws on the left side of the plenum.

3. Reverse procedure to reinstall.

## **Blower Motor Assembly**

Gain access to the blower motor assembly from inside the plenum assembly.

- Remove four 7/16" nuts from inside the ventilation chamber securing the blower motor to the ventilation chamber.
- 2. Push the blower assembly out of the chamber.
- 3. Repair as necessary.
- 4. Reverse the procedure to reinstall.

NOTE: During reassembly, care must be taken to ensure that the motor band, foam seal, and fan blade are positioned properly.

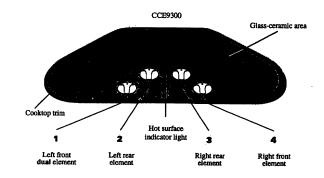
# Filter Replacement

Remove the air grille. Turn off ventilation system before removing. Turn filter retainer clip to remove filter. The filter is a permanent type. Filter should always be placed at an angle. Facing the front of the cooktop, the top of the filter should rest against the right side of the vent chamber at the bottom. If filter is flat against the fan wall, ventilation effectiveness is reduced.

#### **Grease Jars**

There are drains located in the grill pans that lead to the grease jars. Grease jars are located under the grill basin on the left and right sides of the unit. Unscrew to remove the jars from the lids. The lids are riveted on to the burner box bottom and can be accessed by removing the grill pans.

#### **CCE9300**



# To gain access to components:

Disconnect from electrical supply.

- 1. For component access, the cooktop must be removed from the countertop.
- 2. Remove six 3/8" nuts from the bottom of the burner box.
- Remove knobs from surface switches.
- 4. With burner box setting on a flat surface, lift the maintop up to separate glass and top from the burner box.

NOTE: do not lift maintop to high. Dam age to the surface indicator lights could occur.

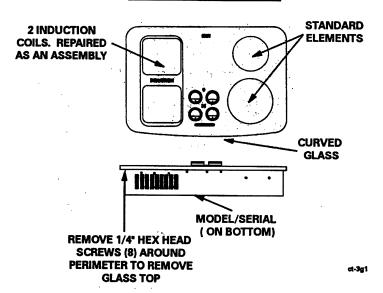
- Slide surface indicator lights away from the indicator lens that goes through the main top.
- All test procedures for the surface switches and radiant elements are the same as units previously covered in this manual.
- 7. Reverse the procedure for reassembly.

# **Induction - Conventional Electric**

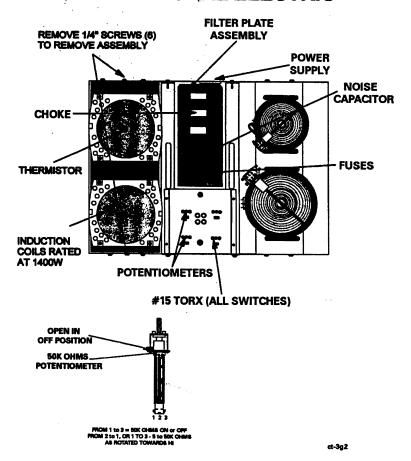
# **CONVENTIONAL ELECTRIC**

MODELS COVERED: CCB3401 - FRAMELISES GLASS, FOUR ELEMENT CCB3401 - FRAMELISES GLASS, 2 RADANT & 2 INDUCTION CCB3601 - FRAMELISES GLASS, 6 MLEMBOT (NOT COVERED - CCB1401 - BASIC FOUR COIL COOKTOP)

# **CCE3451 USED FOR EXAMPLE**



# **CONVENTIONAL ELECTRIC**



16010241

Section 2. General Component Access

#### Main Top - Induction Model

Disconnect from electric supply. Discharge capacitors from Induction unit by turning on right side element switches.

- 1. Remove unit from cabinet.
- 2. Remove knobs.
- 3. Remove eight 1/4" screws from top frame assembly around outside perimeter of burner box.
- 4. Lift and remove glass/frame assembly and lay on a protected area.
- 5. Reverse procedure to reinstall.

#### **Filter Assembly**

- 1. Remove top frame and glass assembly as described in main top access.
- 2. Remove screw and drill out rivets on filter frame assembly.
- 3. Disconnect wiring and transfer to new filter assembly.
- 4. Replace screw and install new rivets.
- 5. Reassembly glass frame assembly.

# Warning! Do not voltage test the induction unit with glass removed.

#### **Induction Module**

- 1. Disconnect potentiometer plugs.
- Disconnect red and black wires from module to fuse holders. Disconnect white and black wires from module to filter capacitor.

- 3. Remove 1/4" hex screws from front and rear of burner box to module.
- 4. Remove left side glass support.
- 5. Remove induction module.
- 6. Install new module and reverse procedure to mount and reconnect wiring.

#### **Control Switch Assembly**

Hot Light functions for radiant elements only. Indicator lights 120 VAC.

#### **Switch Plate**

- 1. Remove glass and top frame assembly as described in main top access.
- 2. Remove 4 1/4" hex screws, lift plate from right side approximately 3" and then slide plate to the right to allow wiring to induction power switches to clear support rail.
- 3. Reverse procedure to reassemble.

# **Induction Push to Turn Switch Assembly**

- 1. Remove glass and top frame assembly as described in main top access.
- 2. Remove switch plate assembly.
- 3. Remove 2 # 15 torx screws, disconnect wiring and replace switch assembly.
- 4. Reverse procedure to reassemble.

# **Induction Cartridge**

- 1. Remove glass and top frame assembly as described in main top access.
- 2. Remove six 1/4" hex head screws on the outside perimeter of burner box.

- 3. Remove the complete induction cartridge. This is a complete assembly and there are no repairable components.
- 4. Reverse the procedure to reinstall.

#### **Ceran Elements**

- 1. Remove glass and top frame assembly as described in main top access.
- The Ceran elements are located on the right side of the cooktop. They may be removed by lifting the element straight up when grasped on either side of the metal clips.
- 3. Reverse the procedure to reinstall.

## **Indicator Lights**

- 1. Remove glass and top frame assembly as described in main top access.
- 2. Remove four 1/4" hex head screws and the complete switch assembly with indicator lights may be removed.
- 3. To replace an indicator light, squeeze the tabs on either side of the light and press down through the switch bracket.
- 4. Reverse the procedure to reinstall.

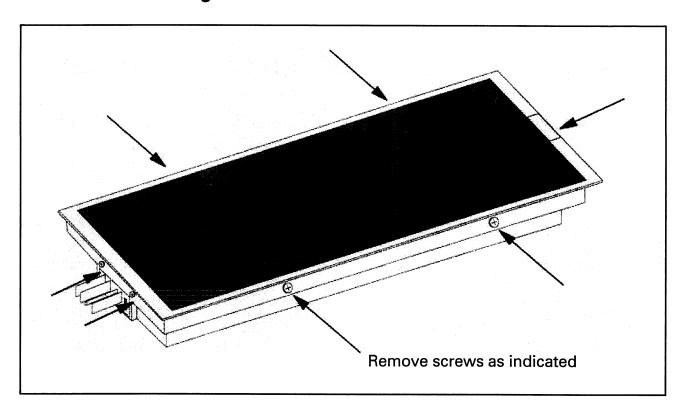
#### **Ceramic Radiant Elements**

Select models are equipped with Ceran radiant elements. Cooking areas are identified by patterns in the ceramic surface. The element consist of elements coil(s) contained in the element housing. Power to the element (240 volts) is provided and controlled by an electronic control There are three Ultra Quick-Start™ radiant elements and one Ultra Quick-Twin™ dual radiant element. The large elements are rated 2200 watts and the small elements are rated 1200 watts @ 240 volts. The dual element is rated 2400/1000 watts at 240 volts.

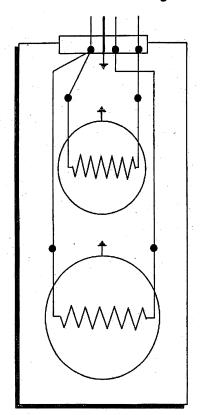
#### To replace elements:

- 1. Disconnect the appliance from power source before servicing.
- 2. Remove glass top assembly by removing eight (1/4") hex screws that secure the top. There are two hex screws on each side and four on the back.
- 3. Remove tinnerman clips securing element on element supports.
- 4. Disconnect wiring and replace.
- 5. Reverse procedure to reinstall.

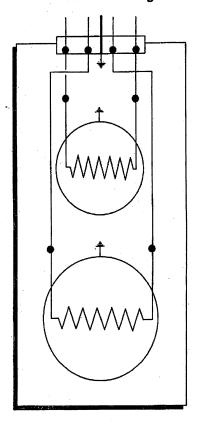
# **Conventional Cartridge Conversions**



New 3 Blade Cartridge



Old 4 Blade Cartridge



16010241

Section 2. General Component Access © 2000 Maytag Appliances Sales Company

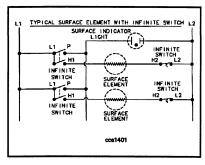
# **Section 3. General Component Testing**

# **Element Quick Reference Chart**

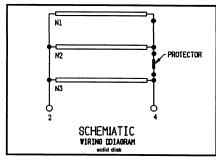
<u>Model</u>	Size	Watts	<u>Volts</u>	Cold Resistance	Qty. Used	Туре
CCE1401	Small	940/1250	208/240	44.7	2	Coil
	Large	1575/2100	208/240	26.6	2	Coil
CCE3401	Small	1200	240	46.6	2	Ceran
	Large	1000/2400	240	55.9/39.9	1	<b>Dual Ceran</b>
	Large	2200	240	25.4	1	Ceran
CCE3450	Small	1200	240	46.6	1	Ceran
	Large	2200	240	25.4	1	Ceran
CCE3451	Small	1200	240	46.6	1	Ceran
	Large	2200	240	25.4	1	Ceran
CCE3531	Small	1200	240	46.6	2	Ceran
	Small	1700	240	32.9	1	Ceran
	Large	2200	240	-	1	Halogen
	Large	1000/2400		55.9/39.9	1	Dual Ceran
CCE407	Small	939/1250	208/240	47.3/42.5	2	Coil (4T)
CCE407*C CVE407 CVE407*C	Large	1577/2100	208/240	28.1/25.3	2	Coil (5T)
CCE9300	Small	1200	240	46.6	2	Ceran
	Large	750/1450	240	74.6/38.6	1	Dual Ceran
	Large	2200	240	25.4	1	Ceran
CCS447	145mm	1500	240	33.8	1	Solid Disk
CCS447*C	145mm	2000	240	25.4	1	Solid Disk
	180mm	2000	240	25.4	1	Solid Disk
	220mm	3200	240	15.8	1	Solid Disk
CVE3400	Small	1200	240	46.6	2	Ceran
CVE3401	Large	750/1450	240	74.6/38.6	1	<b>Dual Ceran</b>
	Large	2200	240	25.4	1	Ceran
CVE4270	Grill	2100/2800	208/240	41.4/38.6	1	Grill Element
CVEX4100 CVEX4270 CVEX4370	Grill	2100/2800	208/240	38.9	1	Grill Element

# **Element Schematic Wiring Diagrams**

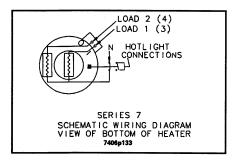
The following are typical element schematics that are reference in this manual. Please refer to wiring diagram for specific information.



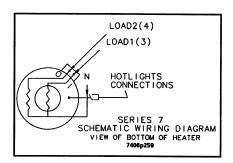
Coil



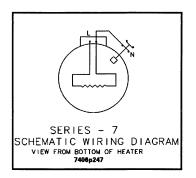
Solid Disk



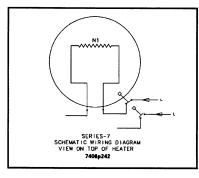
Ceran Dual Element 1000/2400 Watt



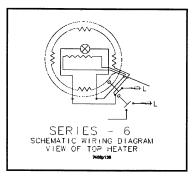
Ceran Dual Element750/1450 Watt



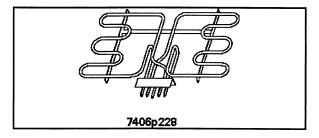
Ceran 1700 Watt w/Light



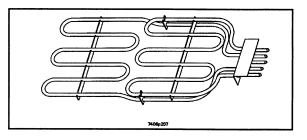
Ceran 1200 Watt w/Light



Halogen 2200 Watt w/Light



Expressions<sup>™</sup>
Grill Element 2100/2800 Watt



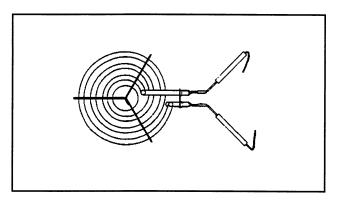
Conventional/Designer
Grill Element 2100/2800 Watt

# **Electrical Components**

#### **Coil Elements**

If a coil element is suspected of needing replacement, then exchange the same size elements on the unit and test operation. If the suspect element operates in a new location, then suspect connections at the surface element receptacle, wiring, infinite control switch and power of the original surface element circuit.

#### **To Check Continuity:**



Disconnect the appliance from power.
Connect an ohm meter to the terminals of the element. Continuity in the range of approximately 28 ohms for a large element should be indicated. Continuity in the range of approximately 48 ohms for a small element should be indicated.

#### **Solid Disk Elements**

When the element is first turned on, the element heats at full wattage (high) regardless of the heat setting selected until the utensil reaches the pre-selected heat setting. The temp sensor, through the automatic switch, automatically reduces the wattage (power applied to the element) to maintain the heat setting. The automatic switch then cycles power (voltage) on and off to the automatic element to offer a steady temperature for controlled cooking.

## **Automatic Element Continuity**

Disconnect the appliance from power. Remove wiring from the terminals of the automatic element. For a large automatic element, continuity in the range of approximately 50 ohms should be indicated when measuring between terminals 1 to 4 and 2 to 4. For a small automatic element, continuity should be indicated in the range of approximately 65 ohms when measuring between terminals 1 to 4 and 2 to 4.

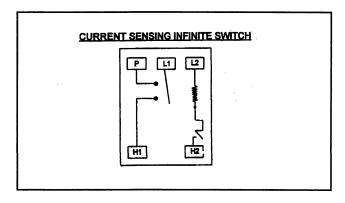
## **Automatic Switch Continuity**

Automatic switch continuity should be checked from a cold start (not previously operated). The knob setting should be turned to a position which is high enough to operate both snap switches on the automatic switch to the closed position.

- 1. Disconnect the appliance from power.
- 2. Remove wiring from terminals of the switch.
- 3. Continuity should be indicated for the following terminals when the switch is turned to a sufficient operation position: P1 to 1, P1 to 2, P2 to 4, S1 to S2.

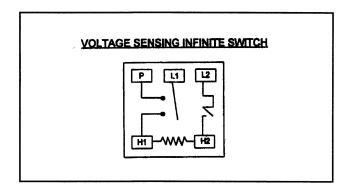
# **Infinite Switch Continuity**

- 1. Disconnect the appliance from power.
- 2. Remove wiring from switch terminals.
- 3. Continuity should be indicated for the following terminals when the switch is turned to an operating position:
- L1 to H1
- L1 to P
- Continuity should be indicated for terminals L2 and H2 when the switch has not been previously operated and the cycling thermostat of the switch is closed.



#### **Current Sensitive**

Current sensitive infinite control switches may be used to control the operating temperature of standard solid elements. A current sensitive infinite control switch is characterized by a resistive element which is connected in series between the L2 and H2 terminals. The resistive element causes the variable cycling thermostat connected between terminals L2 and H2 to operate. The heating element is in series with the resistive element.



# **Voltage Sensitive**

Voltage sensitive infinite control switches may be used to control the operating temperature of coil elements. A current sensitive infinite control switch is characterized by a circuit connected across the H1 and H2 terminals which contains a resistive element. The resistive element causes the variable cycling thermostat connected between terminals L2 and H2 to operate. The heating element is in parallel with the resistive element.

# Standard Solid Element Circuit Continuity Check

Circuit continuity should be checked with a cold element (not previously operated) to check all three heating conductors of the element. If checked after operation, the thermal protector may operate and an inaccurate indication may result.

- 1. Disconnect the appliance from power.
- 2. Remove the wire from terminal H1 of the infinite switch.
- 3. Connect an ohm meter to the removed wire and terminal H2 on the infinite switch.
- 4. Continuity in the range of approximately 25 ohms should be indicated for a large element. Continuity in the range of approximately 33 ohms for a small element should be indicated. If continuity in the above range is not indicated then continuity at the element, wiring, and if equipped, high limit switch continuity should be checked.

# Solid Element High Limit Switch

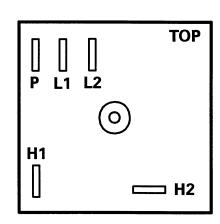
Solid elements mounted on a glass maintop are equipped with a high limit switch in each solid element circuit. The switch is attached to the heat baffle assembly beneath the glass maintop. The high limit switch is a normally closed automatic reset switch with an operating temperature in the range of approximately 410°F. Continuity should be indicated when the switch is below the operating temperature.

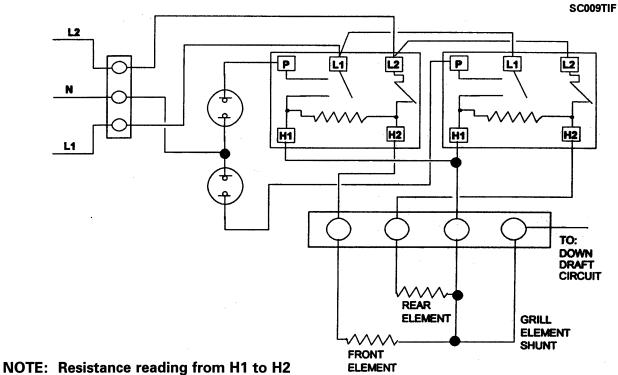
#### Infinite Switch

The infinite switch is the mechanical device used to supply voltage to a heating element. When set to the "Hi" position, the contacts from L1 and L2 are mechanically fixed to allow for 100% operation. In any position other than "Hi," the cycle rate is determined by the amount of spring tension exerted on the cycling contact. Wrapped around the contact arm is a heater that will create a bi-metal effect on the arm, causing the material to bend, thus

opening the contact. The closer the switch is set to the "Low" position, the less spring tension is exerted on the contact. The infinite switch used in these products is a voltage-sensing type. This means the heater wire that is wrapped around the cycling contact will be activated in any position other than "Off". This will cycle the contacts in the switch regardless of the presence of a heating load such as a surface element. See detail of switch on **chart below**.

Cycle Rate For 703650 Infinite Switch					
Setting	% On	Range			
Hi	100	100			
10	65	62-70			
9	50	48-53			
8	45	44-47			
7	42	39-43			
6	35	33-37			
5	31	28-32			
4	22	21-24			
3	19	16-20			
2	11	9-13			
Lo	6	4-8			
Off	0	0			





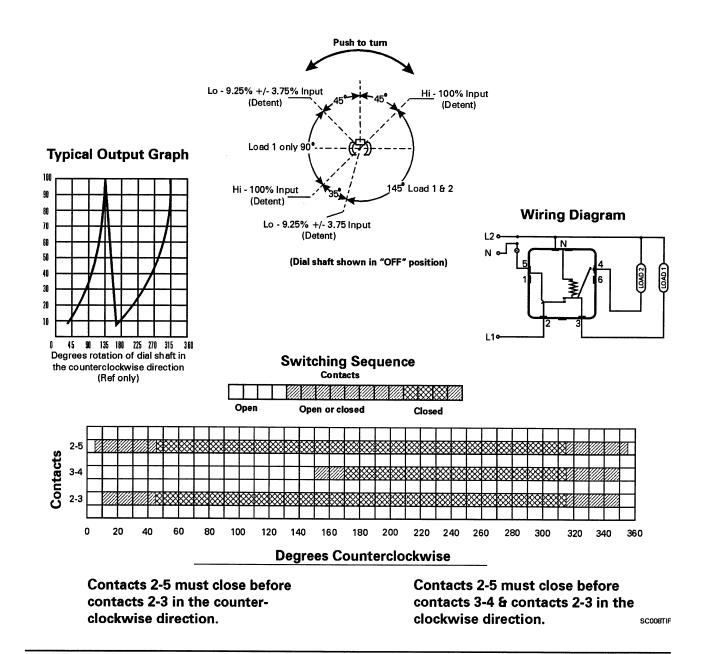
16010241

is 15.5 K +/- 10%

## **Dual Element Infinite Switch**

**Dual Element:** Consists of an inner coil and outer coil. The inner coil can be activated independently; however, when the outer coil is selected, the entire coil is supplied with voltage from the switch.

**Dual Element Switch:** Controls either an inner coil (high through low) or both the inner and outer coils of the element (high through low). **See chart for cycle rates and contact circuitry.** 



## **Surface Unit Switches (Some Models)**

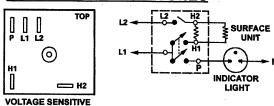
The infinite switch used in these type products is a voltage-sensing type. This means the heater wire that is wrapped

around the cycling contact will be activated in any position other than "Off." This will cycle the contacts in the switch regardless of the presence of a heating load such as a surface element.

## Electrical Ratings: 15 Amp @ 240 VAC

L1 = P 0.5 Amp @ 240 VAC L1 = H1 15 Amp @ 240 VAC L2 = H2 15 Amp @ 240 VAC

# **SURFACE UNIT SWITCHES**



# Infinite Switch Voltage Checks (All Models)

The infinite switch can be checked for practical operation by removing the cartridge or grill element from the receptacle. Check for voltage and cycling as indicated below.

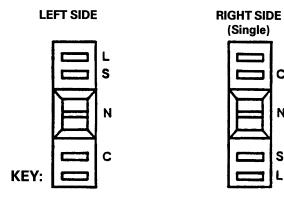
# **Grill Pan Receptacle**

Neutral/Ground

Large Element Small Element

Common

#### **Back of Unit**



VOLT METER SET TO VAC SCALE				
	S to C - or - L to C			
Infinite Switch on "HI"	220/240 VAC (no cycling)			
Infinite Switch Mid- Range	220/240 VAC (with cycling)			

#### **Air Grill Velocities**

#### - IMPORTANT -

This information is intended as a *guide* for use by a *qualified service technician only*. This guide was established using a proper measuring device indicating air movement in feet per minute (F. P. M.).

With vane anemometer placed on top of the air grill centered left to right and front to back, readings should be:

Minimum	Maximum	
800 F. P. M.	940 F. P. M.	

If air movement is significantly higher or lower, a ducting problem may exist. Ducting discrepancies should be referred to the installer.

#### **NOTE:**

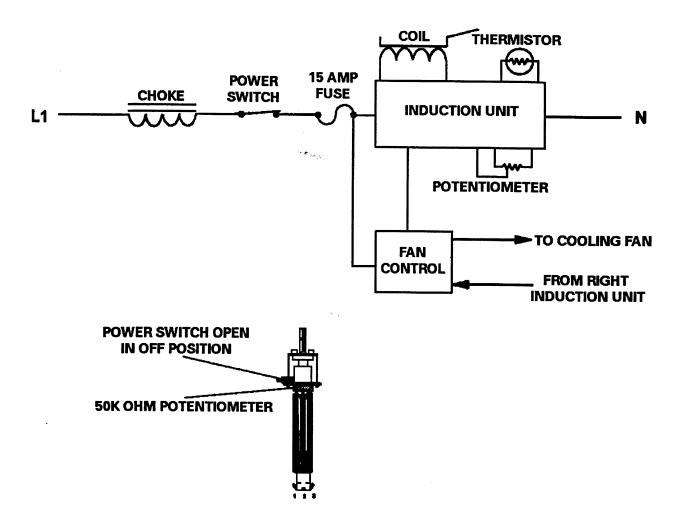
- 1. Above velocities are averages and can vary by plus or minus 5%.
- 2. All velocities were measured using a 6" diameter duct and Jenn-Air approved wall cap with a bacharach vane anemometers (model number 16-7002)
- 3. Velocities were taken with motors warmed up and burners off.

С

# **CONVENTIONAL ELECTRIC**

LADDER DIAGRAM - CCE3461

#### **INDUCTION CIRCUIT - LEFT FRONT**



FROM 1 TO 3 = 50K OHMS ON OR OFF FROM 2 TO 1, OR1 TO 3 - 5 TO 50K OHMS AS ROTATED TOWARDS HI

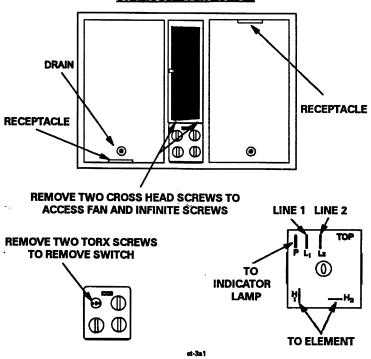
ct-3g5

# **Designer Line Electric (Down-Draft)**

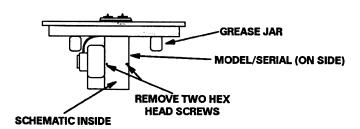
# **DESIGNER LINE ELECTRIC**

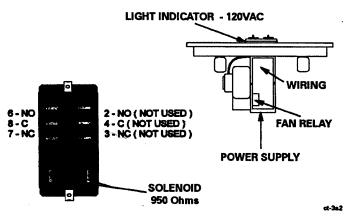
MODELS COMPRED: CVE1460 - 4 FIXED COL. ELEMENTS
GOOD - CUITDOOR WY 1 FIXED GRELL ELEMENT
GOOD - CUITDOOR WY 2 FIXED GRELL ELEMENTS
CVE1460 - 30" BINGLE BAY W 2 FIXED COL. ELEMENTS
CVEXTO - 30" DOUBLE BAY W

#### CVE4270 USED FOR EXAMPLE



# **DESIGNER LINE ELECTRIC**





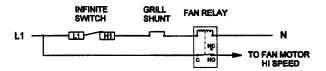
**FAN RELAY** 

# **Designer Line Down-Draft (Continued)**

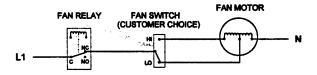
# **DESIGNER LINE ELECTRIC**

LADDER DIAGRAMS - CVE4270

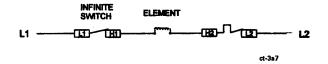
#### **GRILL SHUNT CIRCUIT**



#### **FAN MOTOR CIRCUIT**

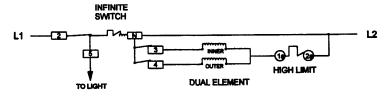


#### **ELEMENT CIRCUIT**



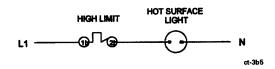
#### LADDER DIAGRAM - CVEHOO

#### **DUAL ELEMENT CIRCUIT**



NOTE: WHEN OUTER ELEMENT IS ON, INNER ELEMENT IS ON.

#### HOT SURFACE LIGHT CIRCUIT

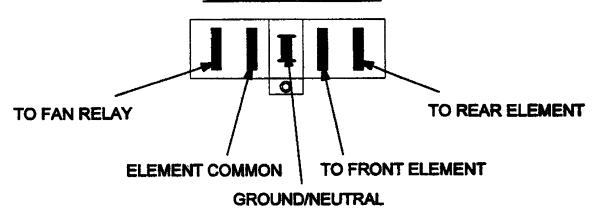


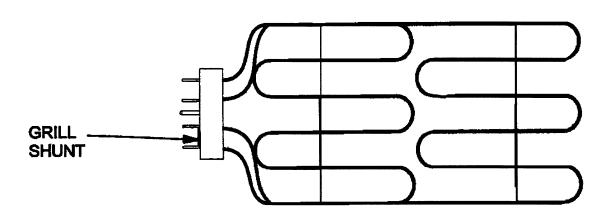
16010241

# **DESIGNER LINE ELECTRIC**

NOTE: THIS IS ONLY AN EXAMPLE.
PLEASE REFER TO SPECIFIC
PRODUCT'S SCHEMATIC.

#### TYPICAL RECEPTACLE

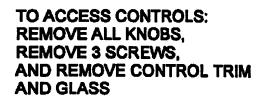


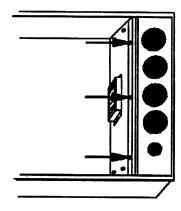


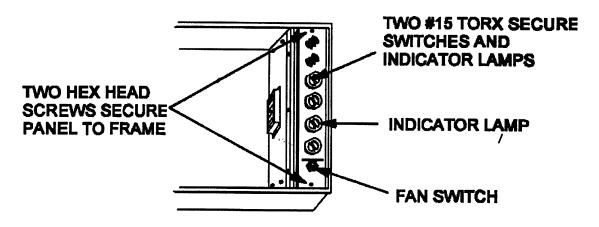
**ENERGY SAVER GRILL ELEMENT** 

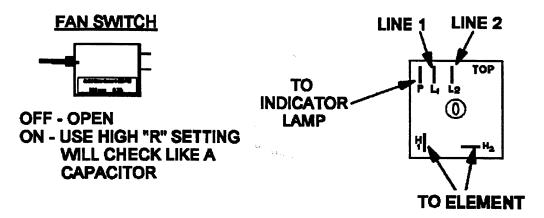
ct-3a3

# **EXPRESSIONS ELECTRIC**



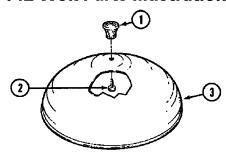






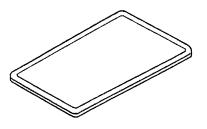
# Section 4. Wiring & Specific Model Information

# **AO142 Wok Parts Illustration**



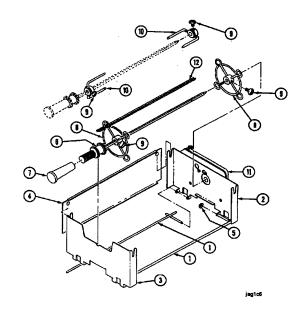
- 1. Knob, Wok Cover
- 2. Lockwasher, Split
- 3. Cover, Wok
- 4. Rack, Steamer
- 5. Paddle, Rice
- 6. Handle, Wok
- 7. Bracket, Mounting (RT)/(LT)
- 8. Bowl, Wok

# **AO310 Griddle Parts Illustration**

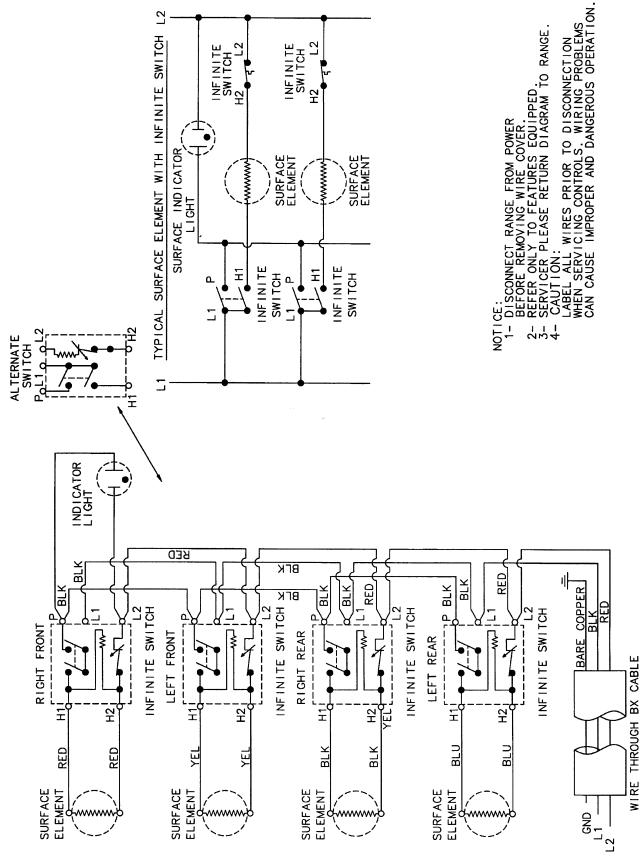


Griddle Terminal Block

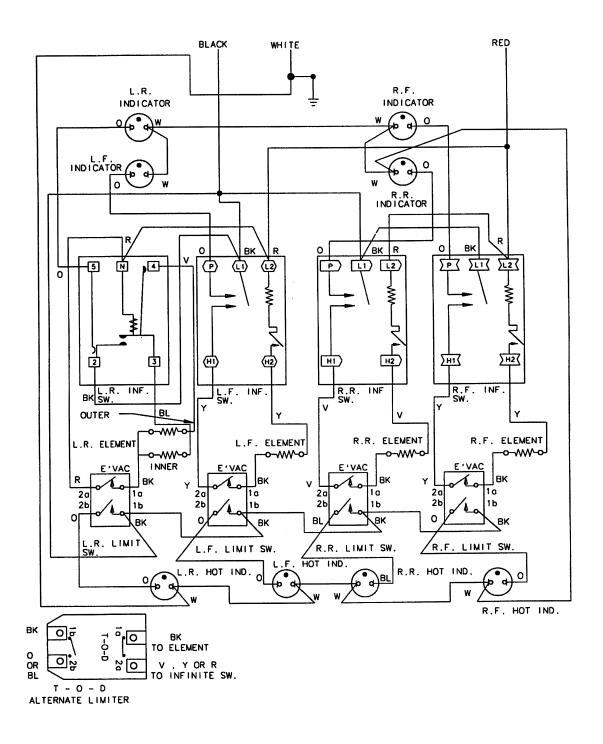
# **AO320 Rotis Parts Illustration**



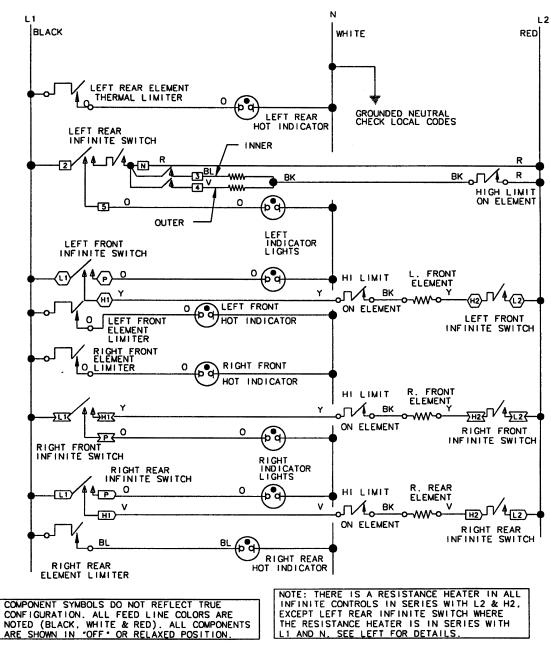
- 1. Support, Wire
- 2. Stand, Motor
- 3. Stand, Spit
- 4. Shield, Side
- 5. Retainer, Shaft
- 6. Spit
- 7. Handle, Spit
- 8. Ring, Locking
- 9. Screw, Thumb
- 10. Holder, Rotis Meat
- 11. Motor
- 12. Skewer, Shish



# CCE3401 Diagram

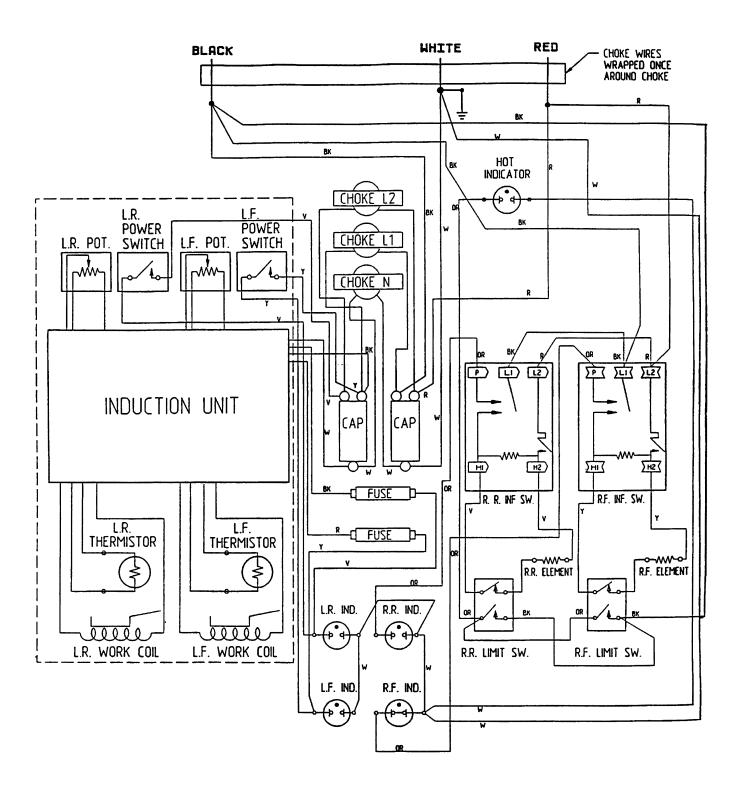


#### CCE3401 Schematic



SCHEMATIC

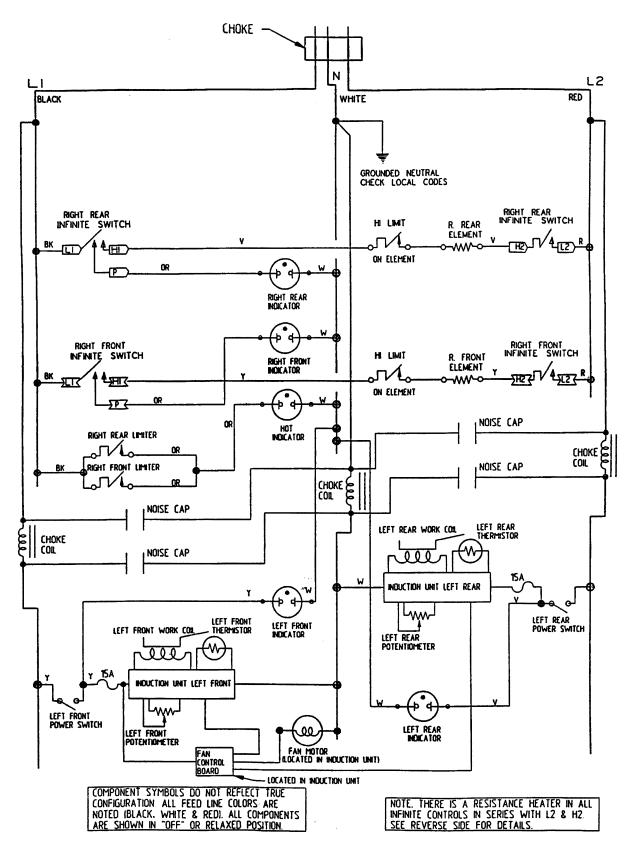
# CCE3450, CCE3451 Diagram





WIRING DIAGRAM 8104P301-60 WIRING DIAGRAM 8104P301-60

#### CCE3450 Schematic



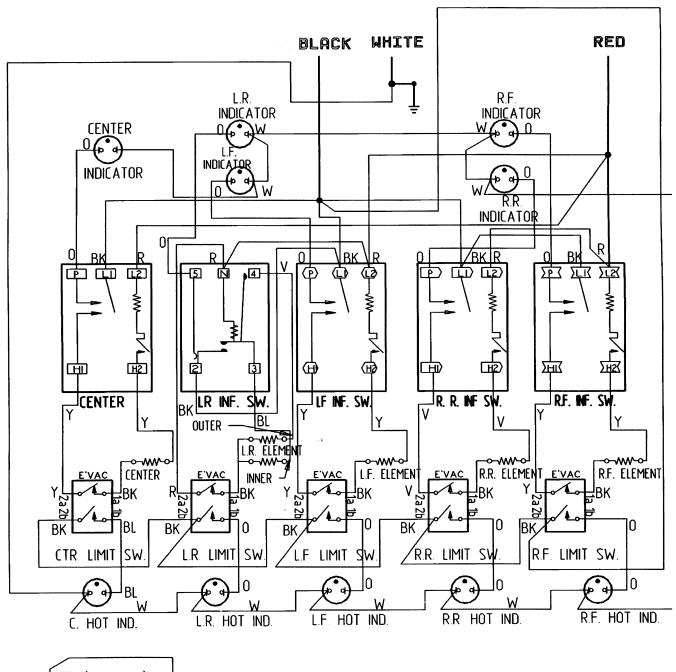
WIRING DIAGRAM 8104P301-60 WIRING DIAGRAM 8104P301-60

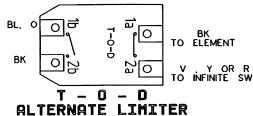
16010241

Section 4. Wiring & Specific Model Information

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# CCE3531 Diagram



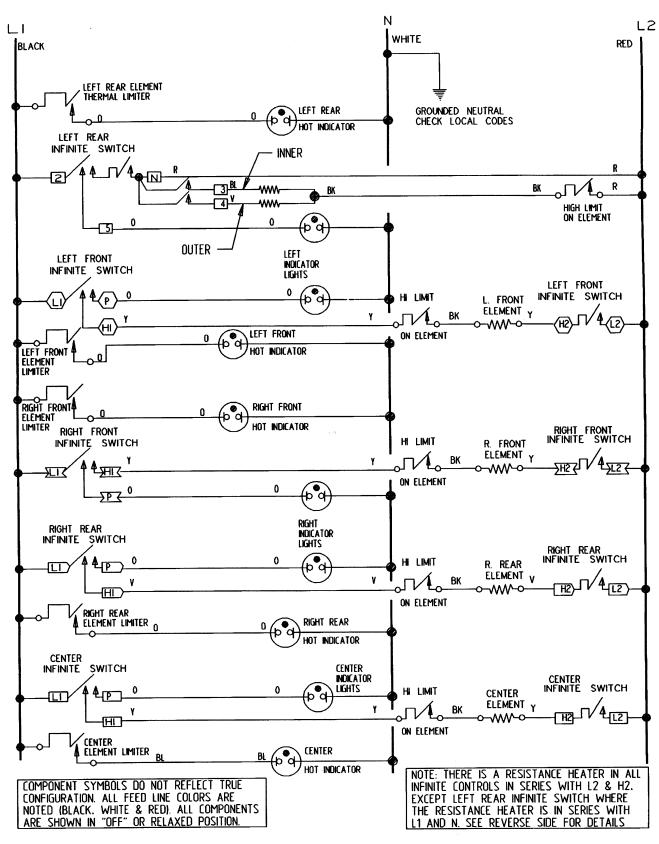


WIRING DIAGRAM 8104P300-60



WIRING DIAGRAM 8104P300-60

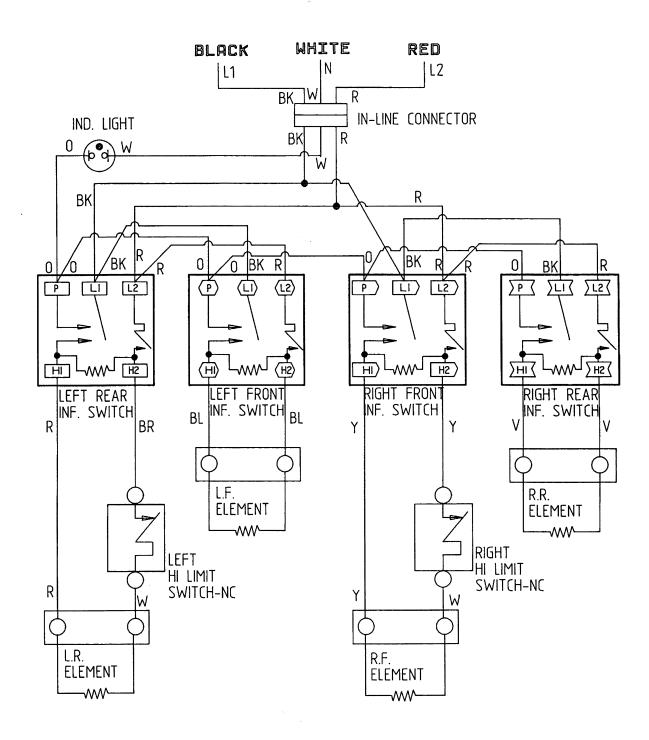
## CCE3531 Schematic



WIRING DIAGRAM 8104P300-60 WIRING DIAGRAM 8104P300-60

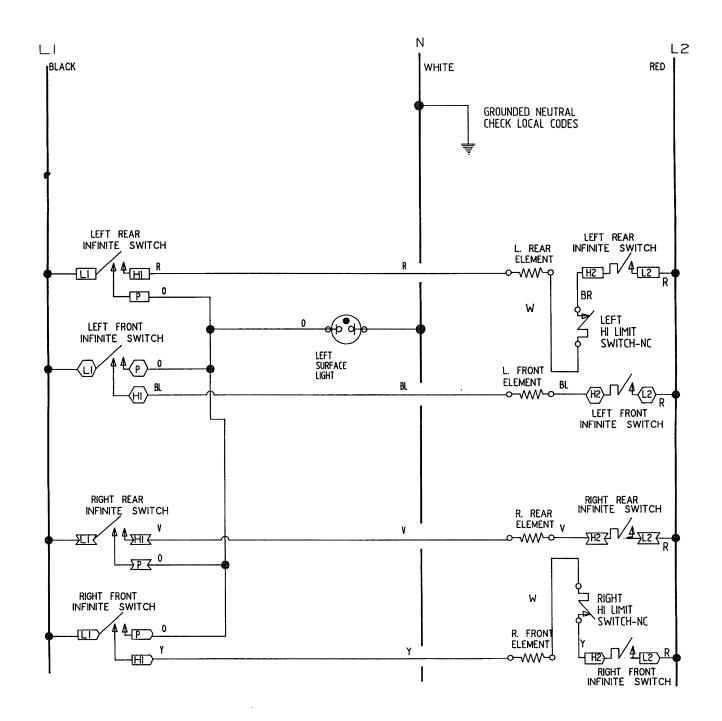
4-8

# CCE407 Diagram





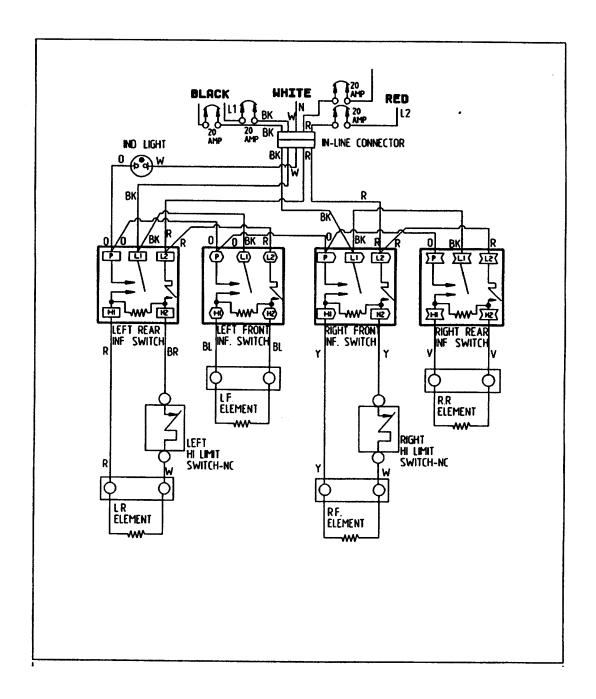
# **CCE407 Schematic**

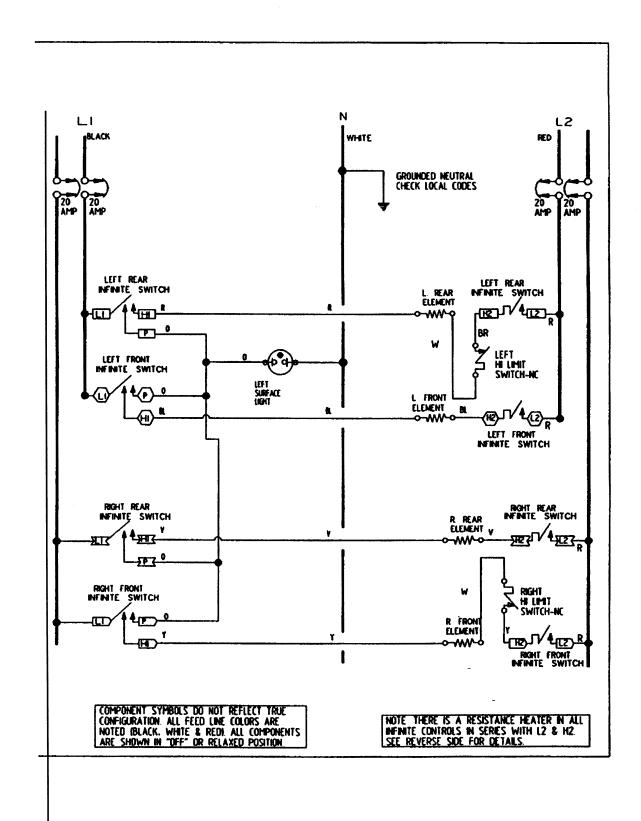


COMPONENT SYMBOLS DO NOT REFLECT TRUE CONFIGURATION. ALL FEED LINE COLORS ARE NOTED (BLACK. WHITE & RED). ALL COMPONENTS ARE SHOWN IN "OFF" OR RELAXED POSITION.

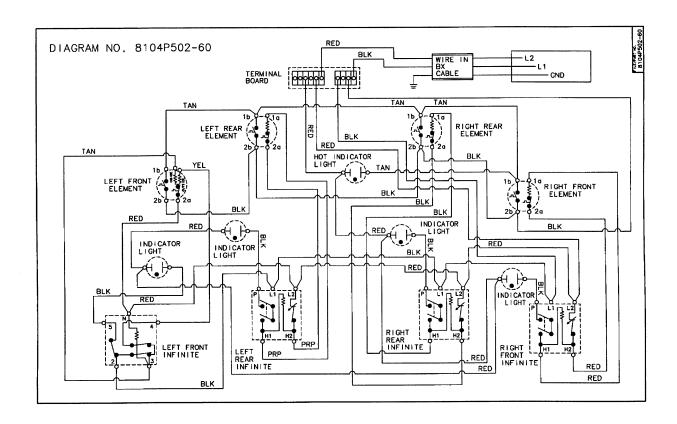
NOTE: THERE IS A RESISTANCE HEATER IN ALL INFINITE CONTROLS IN SERIES WITH L2 & H2. SEE REVERSE SIDE FOR DETAILS.

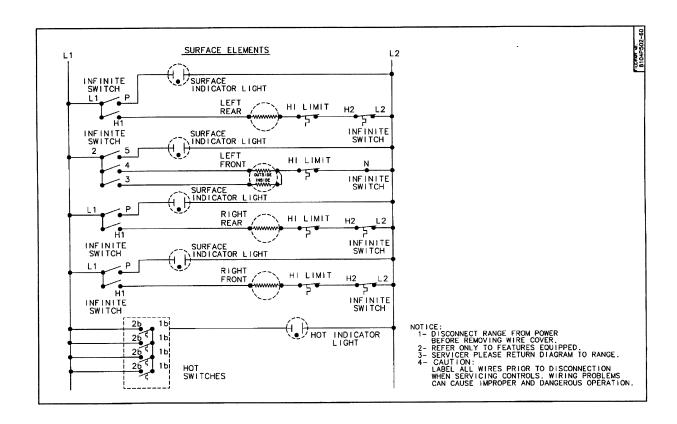
# CCE407\*C Diagram



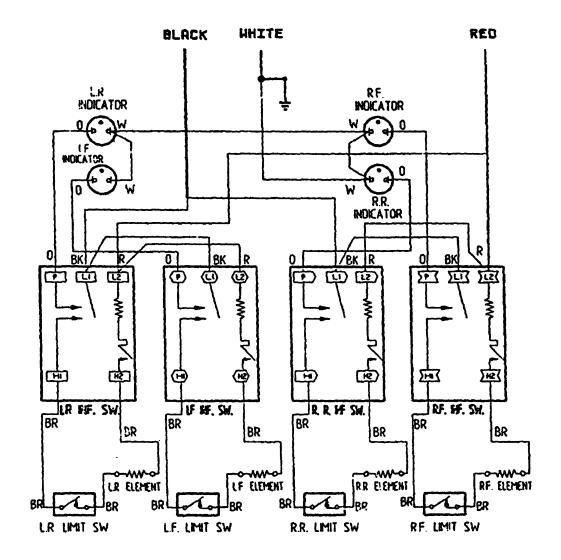


# CCE9300 Diagram/Schematic



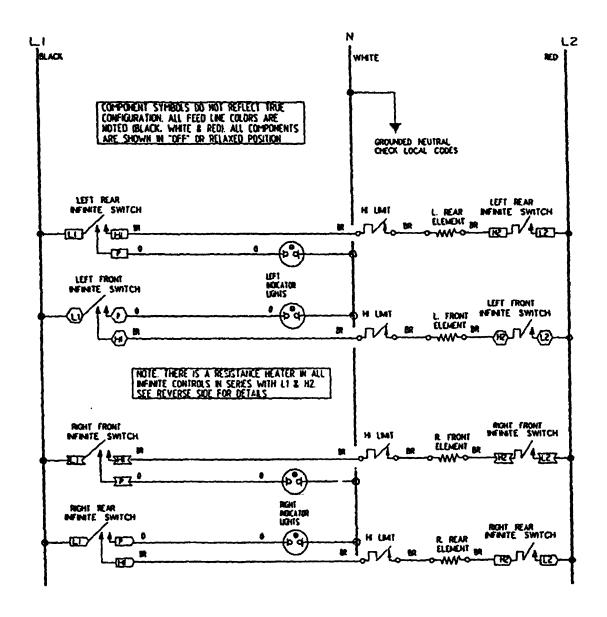


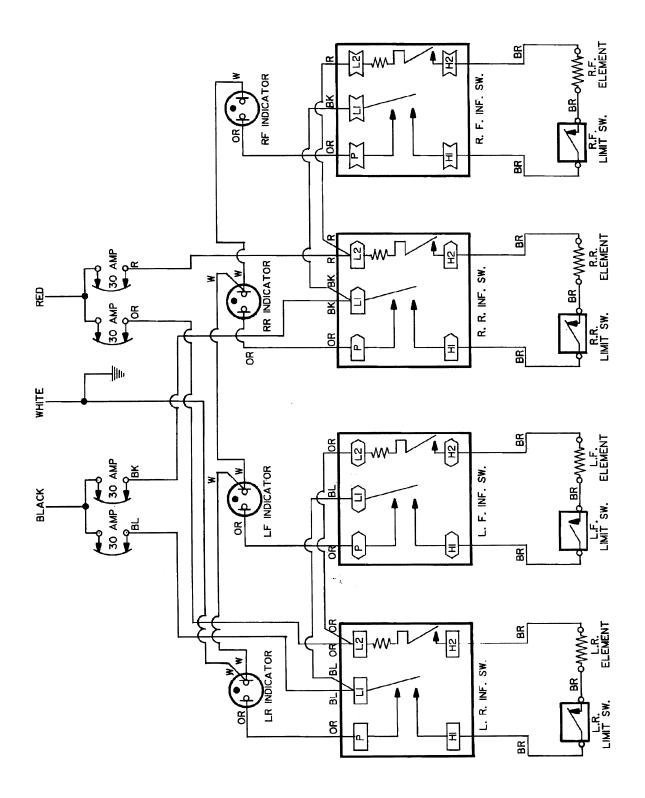
16010241



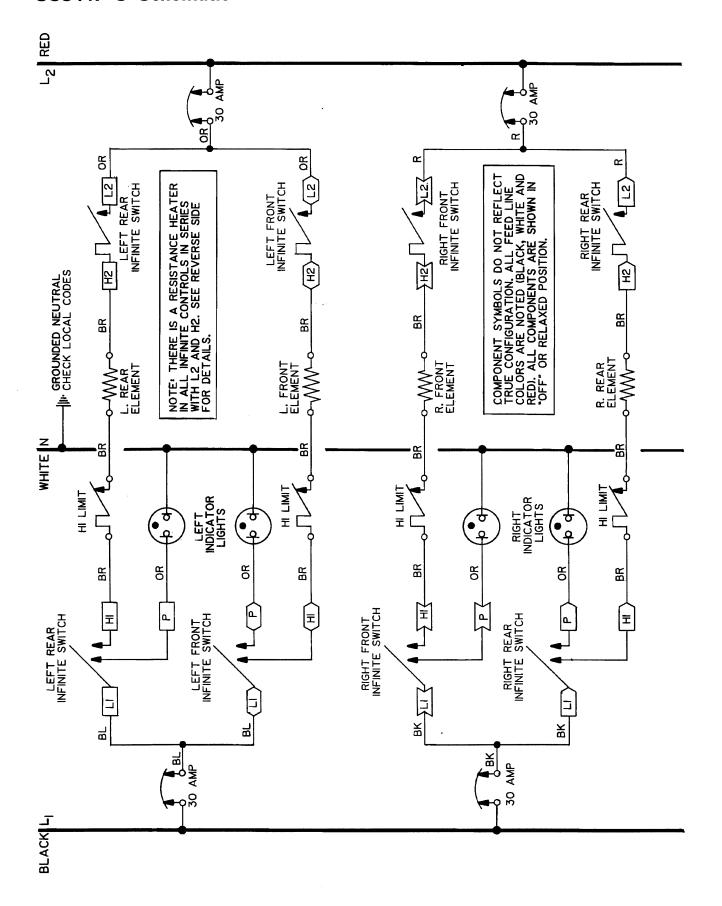


#### **CCS447 Schematic**



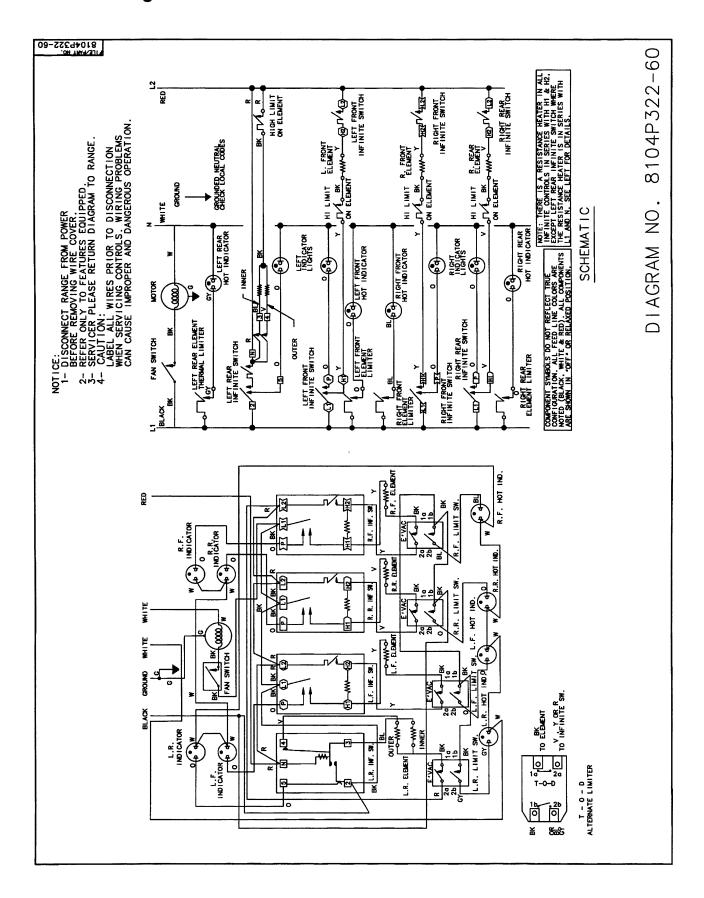


#### CCS447\*C Schematic

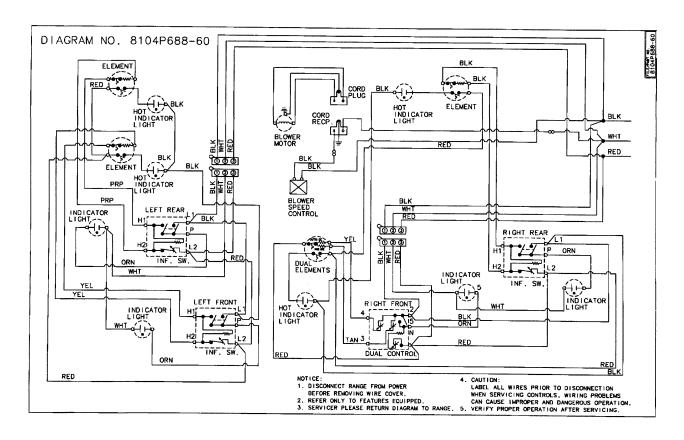


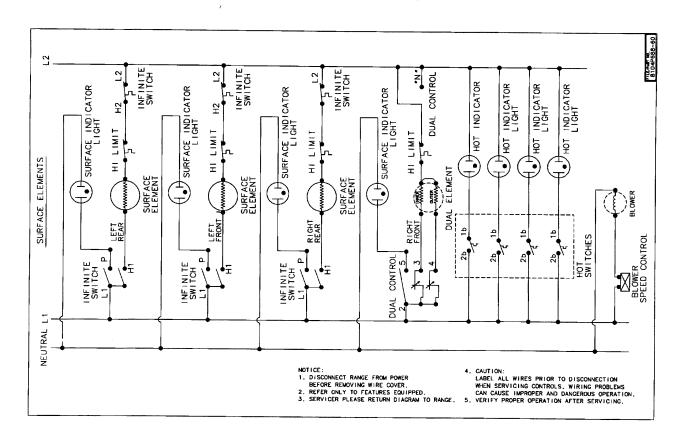
16010241

## CVE3400 Diagram/Schematic

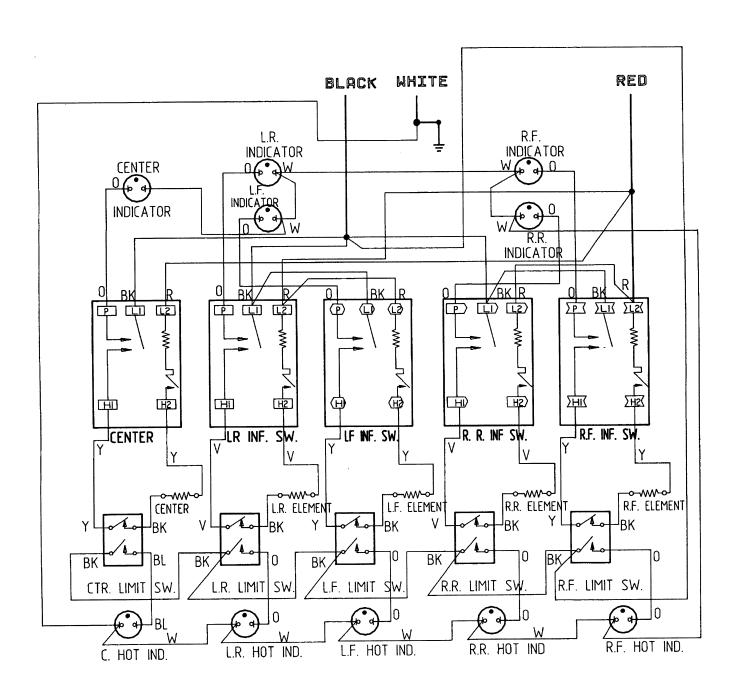


# CVE3401 Diagram/Schematic



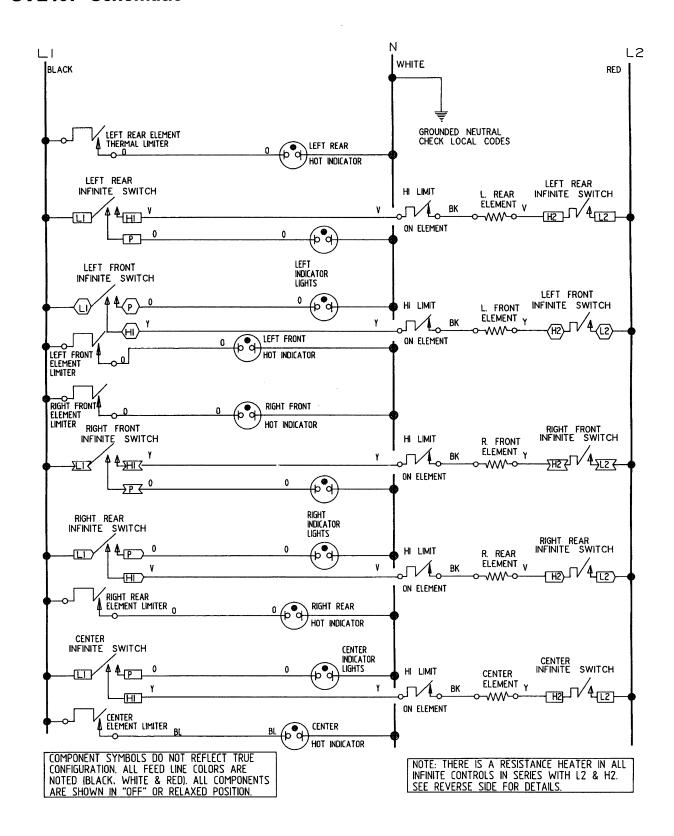


## CVE407 Diagram

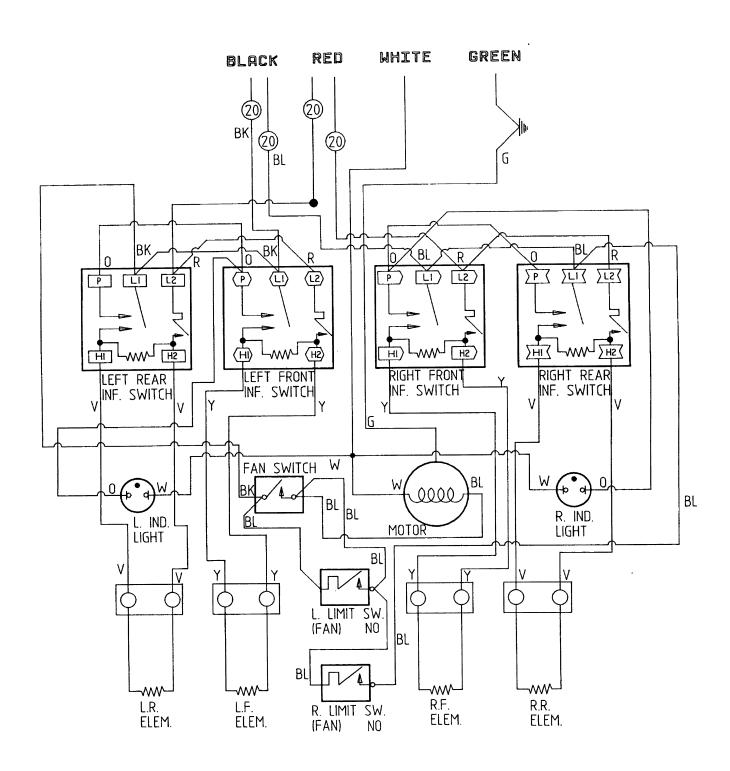




#### **CVE407 Schematic**

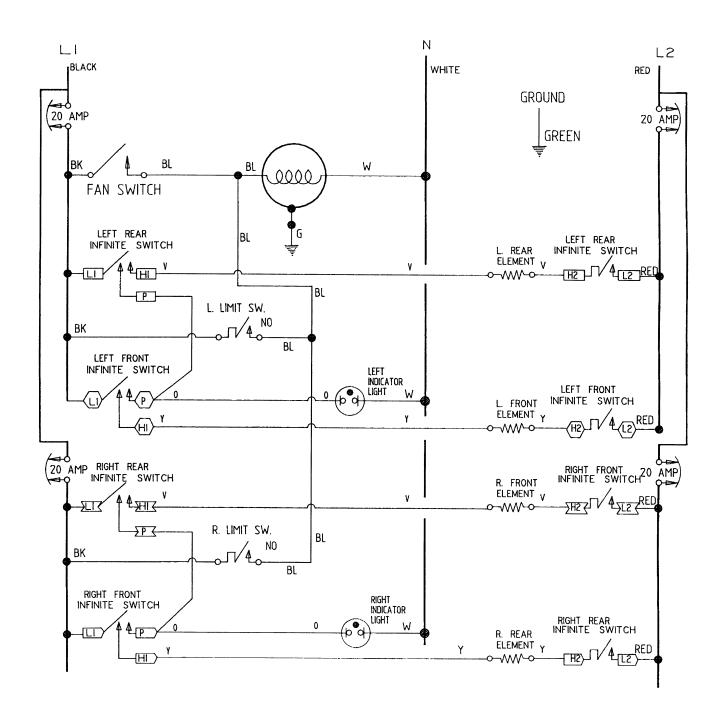


# CVE407\*C Diagram



#### WIRING DIAGRAM 207216C

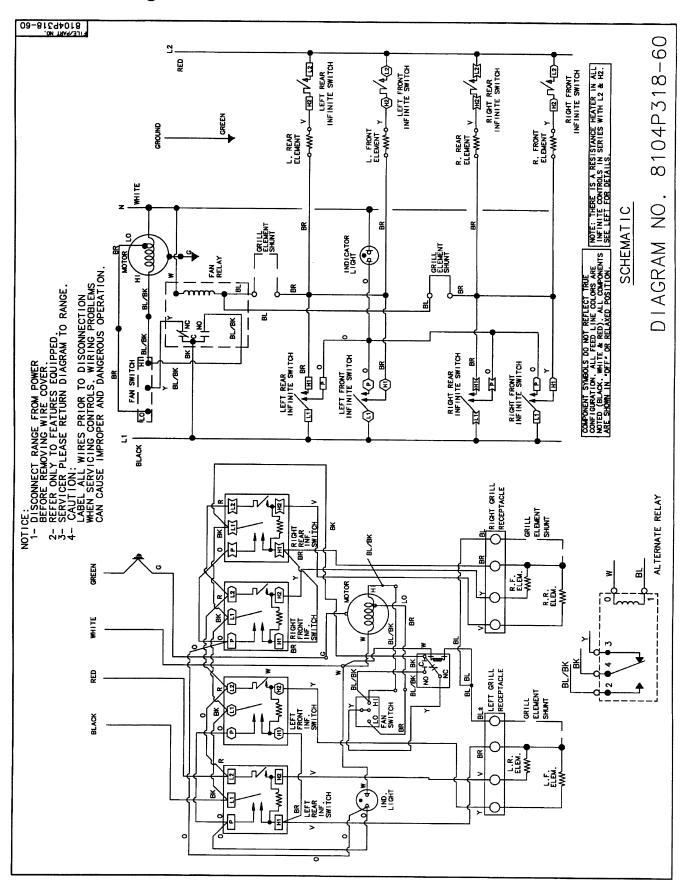
#### CVE407\*C Schematic



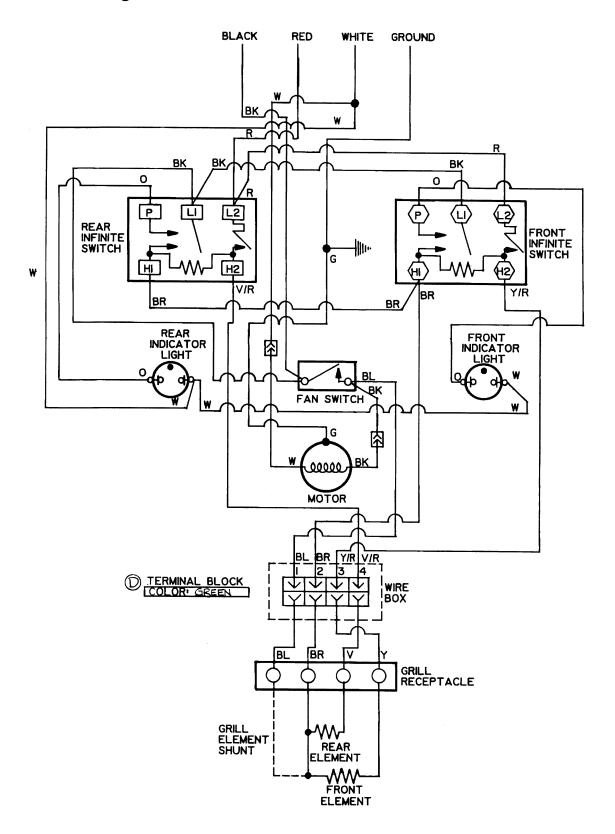
COMPONENT SYMBOLS DO NOT REFLECT TRUE CONFIGURATION. ALL FEED LINE COLORS ARE NOTED (BLACK, WHITE & RED). ALL COMPONENTS ARE SHOWN IN "OFF" OR RELAXED POSITION.

NOTE: THERE IS A RESISTANCE HEATER IN ALL INFINITE CONTROLS IN SERIES WITH L2 & H2. SEE REVERSE SIDE FOR DETAILS.

## CVE4270 Diagram/Schematic

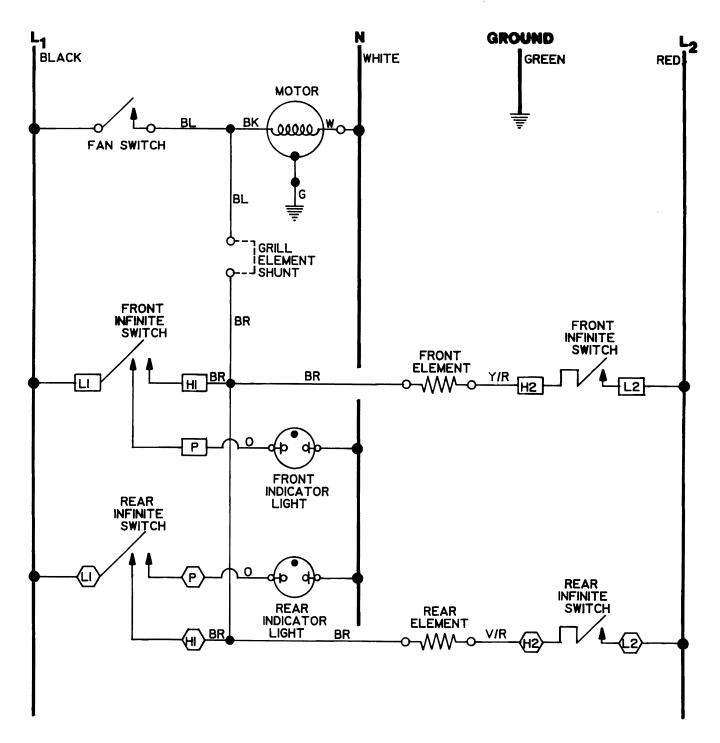


## CVEX4100 Diagram



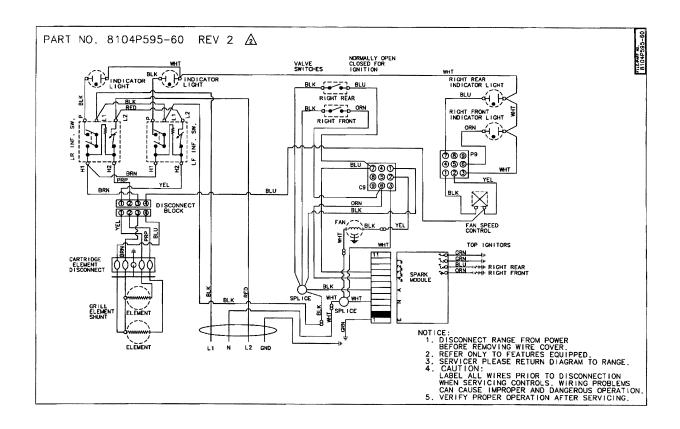


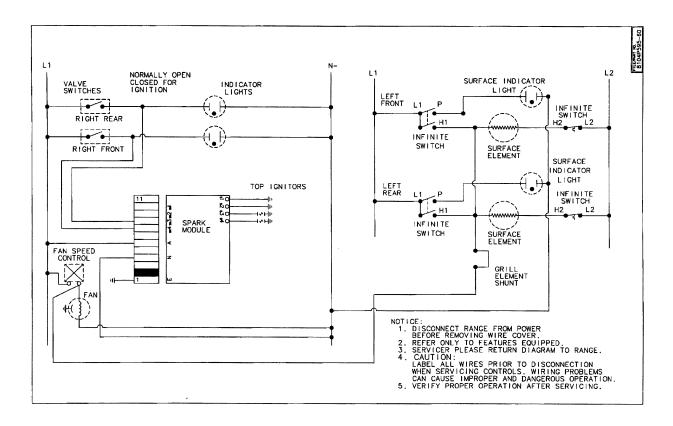
#### **CVEX4100 Schematic**



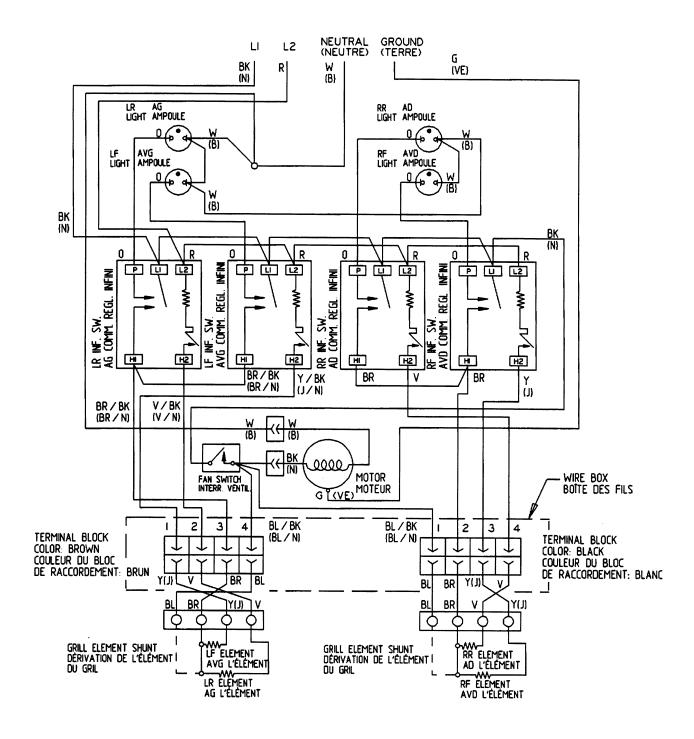
COMPONENT SYMBOLS DO NOT REFLECT TRUE CONFIGURATION. ALL FEED LINE COLORS ARE NOTED (BLACK & RED). ALL COMPONENTS SHOWN IN "OFF" OR RELAXED POSITION. NOTE: THERE IS A RESISTANCE HEATER IN ALL INFINITE CONTROLS BETWEEN HI & H2. SEE REVERSE SIDE FOR DETAILS.

## CVEX4180 Diagram/Schematic





#### CVEX4270 Diagram

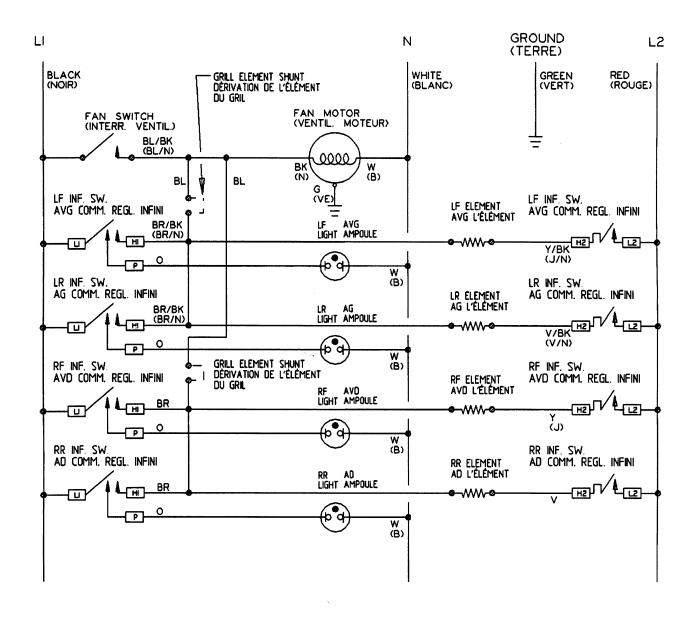




WIRING DIAGRAM 8104P320-60

WIRING DIAGRAM 8104P320-60

#### CVEX4270 Schematic

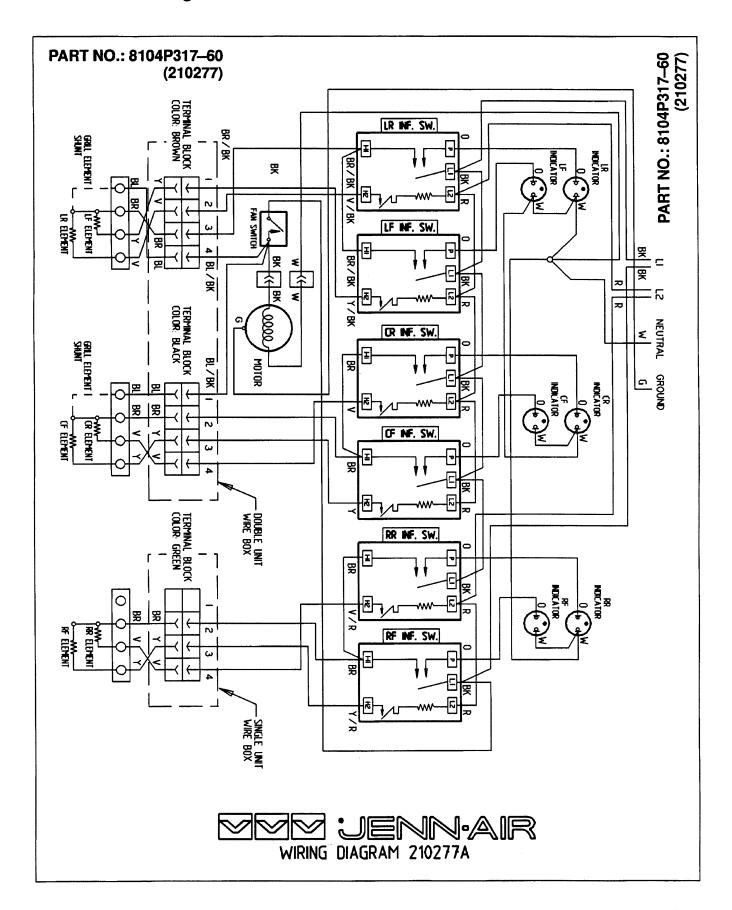


COMPONENT SYMBOLS DO NOT REFLECT TRUE CONFIGURATION ALL FEED LINE COLORS ARE NOTED (BLACK & RED). ALL COMPONENTS ARE SHOWN IN "OFF" OR RELAXED POSITION NOTE: THERE IS A RESISTANCE HEATER IN ALL INFINITE CONTROLS BETWEEN H1 AND H2. SEE REVERSE SIDE FOR DETAILS.

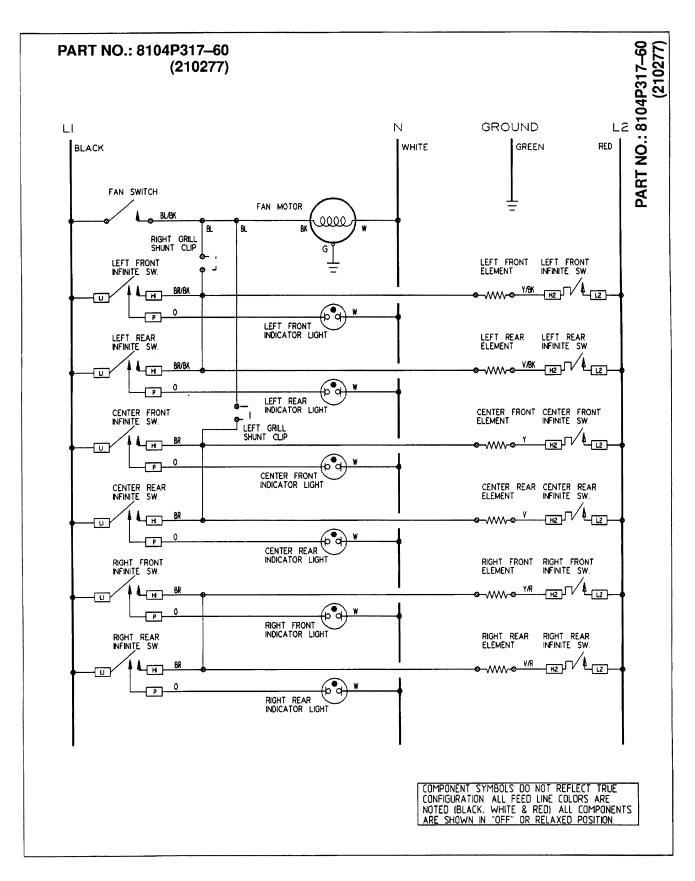
LES SYMBOLES DES DIVERS COMPOSANTS NE
REFLÉTENT PAS LA VÉRITABLE CONFIGURATION.
LES COULEURS DE TOUTES LES LIGNES D'ALIMENTATION
SONT CONFORMES AUX INDICATIONS (NOIR ET ROUGE).
TOUS LES COMPOSANTS SONT ILLUSTRÉS EN POSITION
DE FERMETURE (OFF) OU DE REPOS.
NOTE: IL Y A UN FIL RÉSISTANT CHAUFFANT DANS
TOUTES LES COMMANDES A RÉGLAGE INFINI ENTRE
H1 ET H2. VOIR LES DÉTAILS AU VERSO.

WIRING DIAGRAM 8104P320-60 WIRING DIAGRAM 8104P320-60

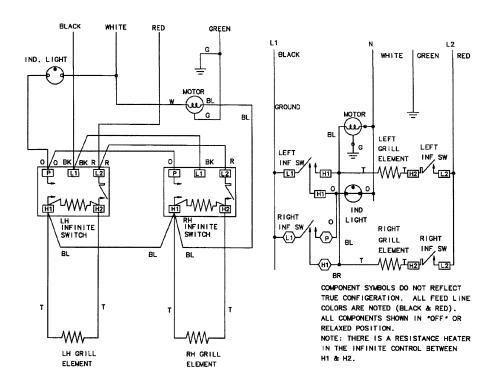
## CVEX4370 Diagram

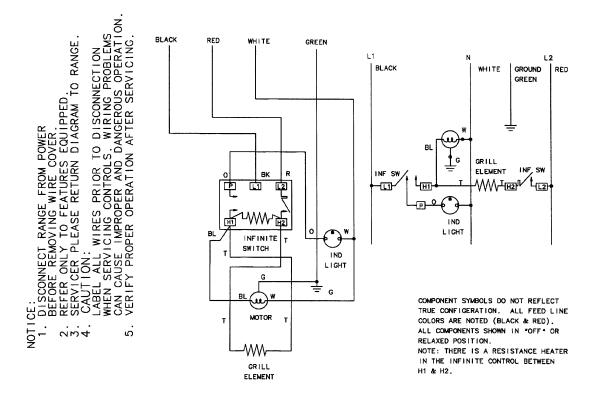


#### CVEX4370 Schematic



# GO106, GO206, GO206-C Diagram/Schematic





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