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# SERVICE DATA SHEET

**318047205 (0104) Rev. A**

Electric and Dual-Fuel (Gas Cooktop with Electric Oven) appliance with ERC III Electronic Oven Control

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## NOTICE

This service data sheet is intended for use by persons having electrical and mechanical training and a level of knowledge of these subjects generally considered acceptable in the appliance repair trade. **The manufacturer cannot be responsible, nor assume any liability, for injury or damage of any kind arising from the use of this data sheet.**

## SAFE SERVICING PRACTICES

To avoid the possibility of personal injury and/or property damage, it is important that safe servicing practices be observed. The following are some, but not all, examples of such practices.

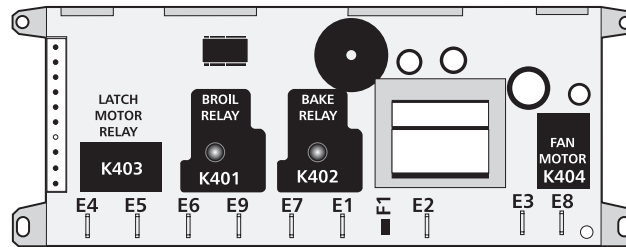
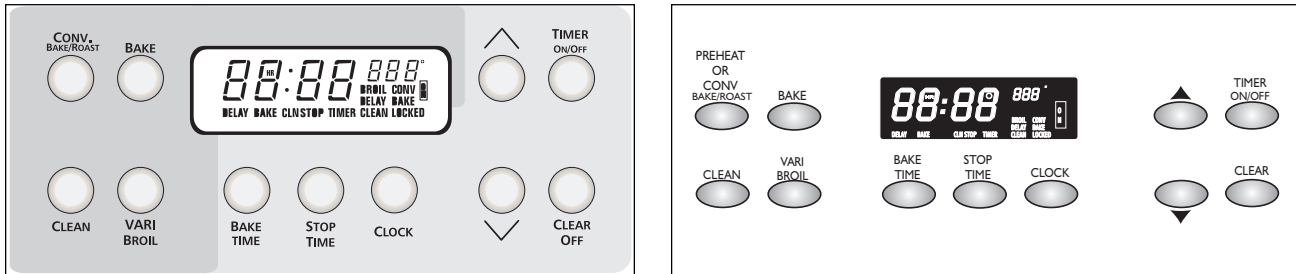
1. Do not attempt a product repair if you have any doubts as to your ability to complete it in a safe and satisfactory manner.
2. Before servicing or moving an appliance, remove power cord from electric outlet, remove fuse or trip circuit breaker to Off, and turn off gas supply.
3. Never interfere with the proper installation of any safety device.
4. USE ONLY REPLACEMENT PARTS SPECIFIED FOR THIS APPLIANCE. SUBSTITUTIONS MAY DEFEAT COMPLIANCE WITH SAFETY STANDARDS SET FOR HOME APPLIANCES.
5. GROUNDING: The standard color coding for safety ground wires is GREEN OR GREEN WITH YELLOW STRIPES. Ground leads are not to be used as current carrying conductors. IT IS EXTREMELY IMPORTANT THAT THE SERVICE TECHNICIAN REESTABLISH ALL SAFETY GROUNDS PRIOR TO COMPLETION OF SERVICE. FAILURE TO DO SO WILL CREATE A POTENTIAL HAZARD.
6. Prior to returning the product to service, ensure that:
  - All electric connections are correct and secure.
  - All electrical leads are properly dressed and secured away from sharp edges, high-temperature components, and moving parts.
  - All uninsulated electrical terminals, connectors, heaters, etc. are adequately spaced away from all metal parts and panels.
  - All safety grounds (both internal and external) are correctly and securely reassembled.
  - All panels are properly and securely reassembled.

## ERC III ELECTRONIC OVEN CONTROL

1. This self-cleaning controller offers Bake, Broil, Preheat or Convection Baking/Roasting modes, Timed and Delayed Baking and Cleaning functions.
2. Convection operates with a fan dedicated to convection and a convection element on some models.

**NOTE:** THE ERC III'S ARE NOT FIELD REPAIRABLE. ONLY TEMPERATURE SETTINGS CAN BE CHANGED. See Oven Calibration.

**NOTE:** Depending on model, the size and shape of touch pads may vary. (For example, elliptical instead of round). Some models may also have round push buttons instead of touch pads.



## CONVECTION MODE (some models)

The convection oven uses the addition of a fan and a convection element (some models) to heat and to move the air already in the oven. Moving the heated air helps to destratify the heat and cause uniform heat distribution. Cooking times can be reduced by as much as 30%. The air is drawn in through a fan shroud located on the rear wall of the oven. It is then discharged around the outer edges of this shroud. The air circulates around the food and then enters the shroud again. As with conventional electric ranges, there is still an oven vent which discharges through the rear or the sides of the cooktop.

To set the control in convection mode, follow these steps:

1. Press the **CONV. BAKE/ROAST** pad.
2. Enter the desired temperature on the keypad (setpoint).
3. Press the **START** pad.

The oven will automatically start and the fan will begin to run. To cancel the convection baking/roasting function, press the CANCEL pad.

**NOTE:** The fan runs continuously while in the convection mode. The fan will stop if the door is opened while convection baking/roasting. The heating element will continue to operate IF the door IS openED.

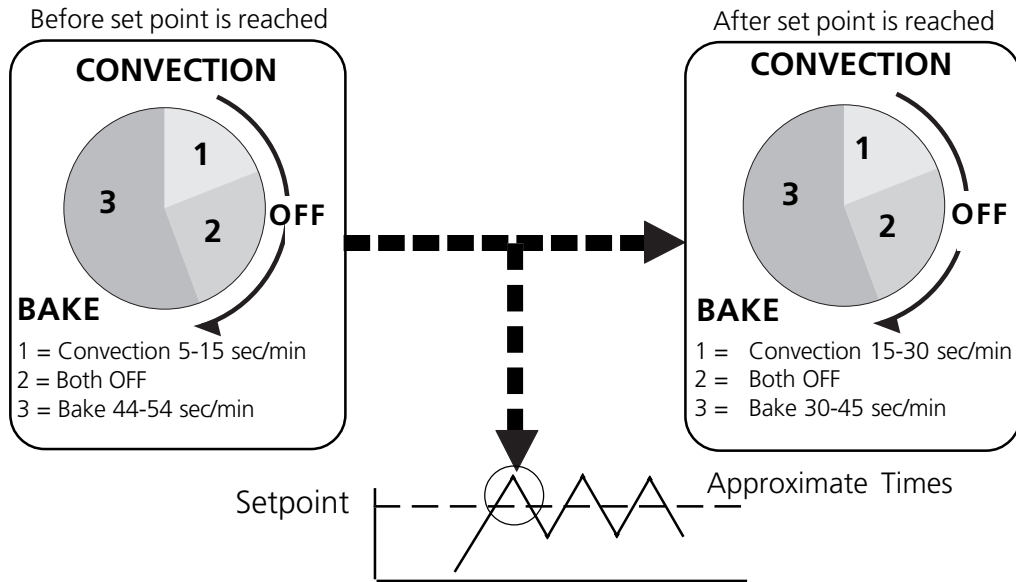
## CONVECTION MODE OVEN TEMPERATURE (some models)

Because heat is more evenly distributed in convection mode, foods can be cooked at lower temperatures. In order to allow the consumer to bake per their existing methods, there is a negative offset temperature of 25°F/13.5°C in the programming of the control. This means that when the consumer sets the control for 375°F/ 190°C , the actual oven temperature is cycling at 350°F/ 176°C.

## CONVECTION CYCLING WITH CONVECTION AND BAKE ELEMENTS (some models)

When the control is set to the convection bake/roast function, the fan immediately comes on. The oven then energizes the convection element for 5 to 15 seconds and switches to the bake element. This switching continues until the oven setpoint is reached. At this point the control modifies the timing for the bake and convection elements to achieve maximum performance.

For the first 15 to 30 seconds of every minute after the setpoint is reached, the convection element is energized. For a few seconds both elements are turned off. The bake element is then turned on for the remaining time of the minute. This cycle is repeated for the duration of the cooking period.



## PREHEAT (some models)

During a preheat mode, the oven uses the bake element to reach the ERCIII set point. The element uses full power when it's on. When the set point is reached, the preheat mode is converted in a normal bake mode.

## NORMAL BAKE

During a normal bake mode, the ERC III preheats the oven with the bake element. When the desired temperature is reached, the ERC III adds top heat by cycling the broil element on for 5 to 15 seconds per minute . The bake element is on for the remaining time of the minute. Both elements use full power when they are on but they are never on at the same time.

## CLEAN

During a cleaning process, the oven uses the bake element.

## CLEAN AND TIMED CLEAN

When these modes are called, the door locks right after start button is pushed.

## OVEN CALIBRATION

Set EOC for conventional bake at 350°F/177°C. Using a portable thermocouple, obtain an average oven temperature after a minimum of 5 cycles. Press CANCEL to end bake mode. Touch the BAKE pad. Set temperature to maximum (550°F/288°C). Quickly (within two seconds), press and hold the BAKE pad until the special two digit display appears. Release the BAKE pad.

**NOTE:** The display indicates the offset temperature from original factory setting. Original setting will read "00".

The temperature can now be adjusted up or down 35°F/21°C, in 5°F/3°C increments, by pressing the up or down arrow pad. Press the pad until the desired amount of offset appears in the display. A minus sign (-) will appear before the number to indicate the oven will be cooler by the displayed number of degrees.

**NOTE: Changing calibration effects both conventional and convection modes.**

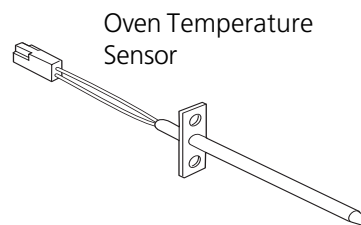
## ERC III ELECTRONIC OVEN CONTROL FAULT CODES

FAULT CODE	LIKELY FAILURE CONDITION/CAUSE	SUGGESTED CORRECTIVE ACTION
<b>F1</b>	Shorted keypad (more than 30 seconds).	Replace EOC.
	Control's internal checksum may have become corrupted.	Disconnect power, wait 30 seconds and reapply power. If fault returns upon power-up, replace EOC.
	Control has sensed a potential runaway oven condition. Control may have shorted relay, RTD sensor probe may have gone bad.	Check RTD sensor probe and replace if necessary. IF oven is overheating, disconnect power. If oven continues to overheat when the power is reapplied, replace EOC. Severe overheating may require the entire oven to be replaced, should damage be extensive.
	Door motor failure/jammed. Latch motor switch failure.	With the unit in either the fully locked or fully unlocked position, only one of the switches should be closed. If both switches are closed, replace the latch motor assembly or replace the control.

## ERC III ELECTRONIC OVEN CONTROL FAULT CODES (continued)

FAULT CODE	LIKELY FAILURE CONDITION/CAUSE	SUGGESTED CORRECTIVE ACTION
<b>F1</b>	Control software failure, or component failure (relay stuck).	Press CLEAR key. If CLEAR key does not eliminate problem, turn off power for 30 seconds, then turn on power.
	Safety thermostat opened, or cooling fan stalled.	Check wiring of Lock Motor, and Lock Switch A and B and Door Switch circuits. Look for stalled cooling fan, broken safety thermostat, shorts or opens.
	Wiring Problem.	Unplug J1, apply power (L1) directly to the Lock Motor; in the motor does not rotate, replace Lock Motor Assembly. Plug J1.
		Check Lock Switch A and B for proper operation (do they open and close, check with ohmmeter). The lock Motor may be powered as in above step to open and close Lock Switches. If the LockSwitches are defective, replace Motor Lock Assembly.
	If all above steps fail to correct situation, replace control.	
<b>F3</b>	Open RTD sensor probe/wiring problem (more than 15 seconds). Notes: - EOC may initially display an "FI", thinking a runaway condition exists. - An open sensor is above 3000 ohms. - A shorted sensor is below 700 ohms.	Check wiring in probe circuit for possible open condition. Check RTD resistance at room temperature (compare to probe resistance chart). If resistance does not match the chart, replace the RTD sensor probe.
	Shorted RTD sensor probe/wiring problem (more than 15 seconds). Note: - "F3" is displayed when oven is in active mode or when an attempt to enter an active mode is made.	Check wiring in probe circuit for possible short condition. Check RTD resistance at room temperature (compare to probe resistance chart). If resistance does not match the chart, replace the RTD sensor probe.

RTD SCALE		
Temp. °F	Temp. °C	Resistance (ohms)
32 ± 1.9	0.0 ± 1.1	1000 ± 4.0
75 ± 2.5	23.9 ± 1.4	1091 ± 5.3
250 ± 4.4	121.1 ± 2.4	1453 ± 8.9
350 ± 5.4	176.7 ± 3.0	1654 ± 10.8
450 ± 6.9	232.2 ± 3.8	1852 ± 13.5
550 ± 8.2	287.8 ± 4.6	2047 ± 15.8
650 ± 9.6	343.3 ± 5.3	2237 ± 18.5
900 ± 13.6	482.2 ± 7.6	2697 ± 24.4



## MOUNTING PLATE OVEN

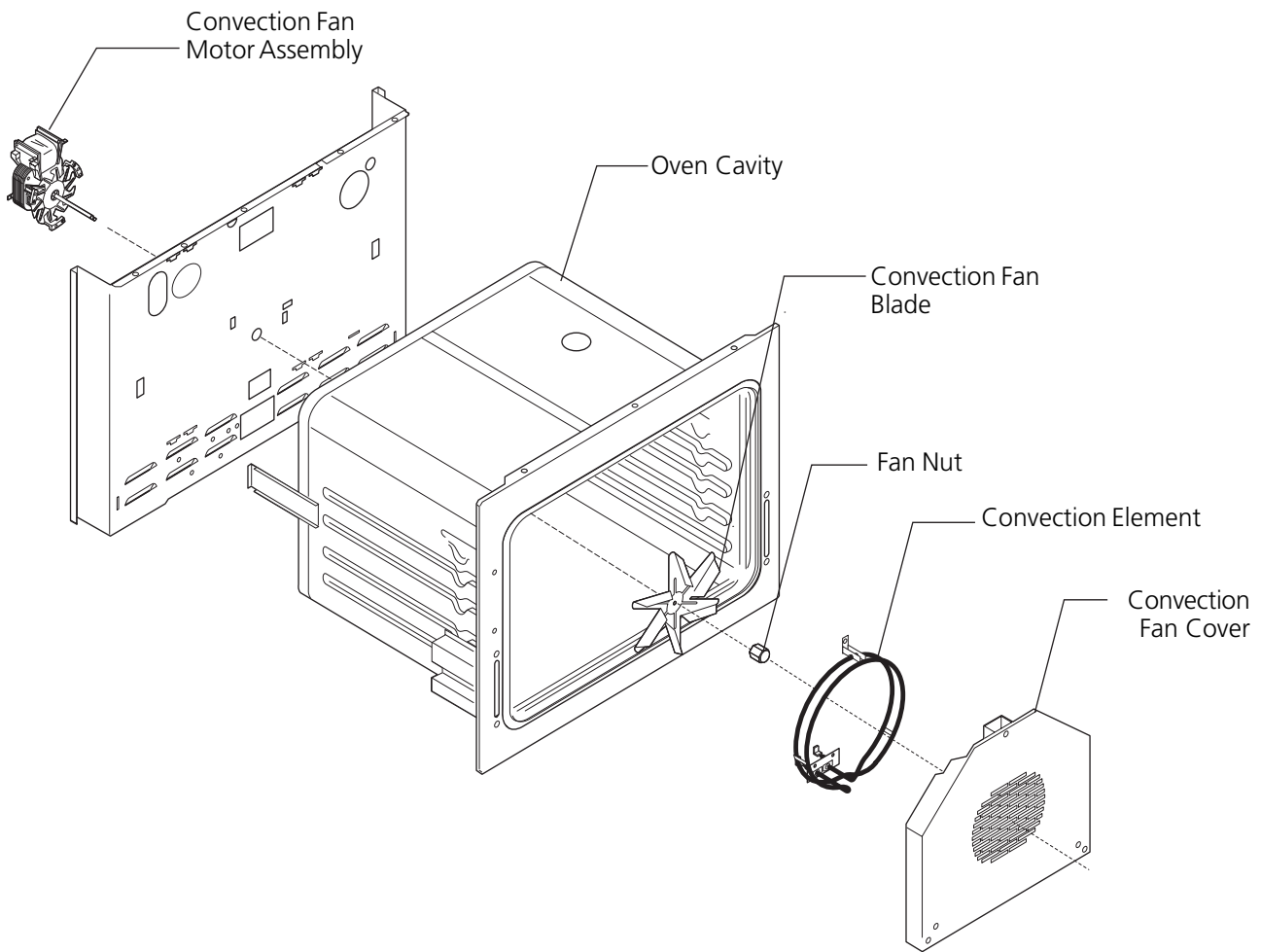
The fan motor on the rear of the unit is mounted to the main back with three screws. There is a mounting plate held in place between the main back (with 2 screws) and the rear oven wall (with 2 screws). Should it be necessary to replace the oven cavity, you must remove the 2 screws located inside the unit at the rear of the oven cavity.

## FAN RELAY

The fan motor runs continuously while in the convection mode unless the door is opened. If the fan does not operate, check the following:

- Display illuminated on the electronic control.
- Voltage output between terminals E9 and E8.
- 240 Volts available at fan motor.
- Fan motor coil resistance  $56.5 \text{ ohms} \pm 10\%$ .
- Voltage input to fan relay coil during convection bake with door closed.
- Door/lightswitch.

## EXPLODED VIEW OF CONVECTION SYSTEM (typical)

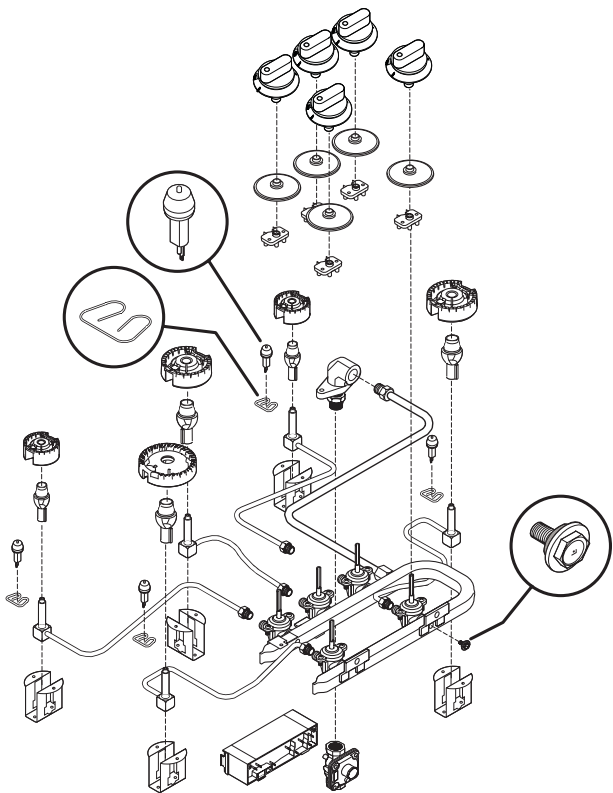


## GAS COOKTOP REMOVAL (Dual Fuel Models Only)

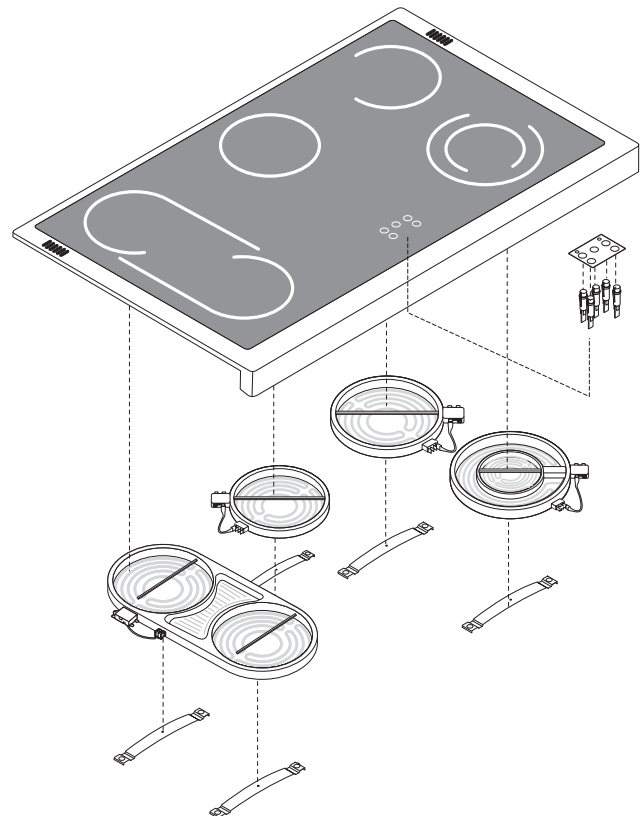
1. Shut off gas to range.
2. Disconnect power.
3. Remove gas supply line at the regulator. If necessary, move range out of the cabinet opening.
4. Remove grates, burner covers, knobs and seals.
5. Remove screws securing burner rings and remove rings. Inspect burners, loose screws, electrode, cleanliness, etc.
6. Remove left and right screws on each side of range securing panel top to body.  
Note: Screws are located 1/12" from console and 3 inches from back of range.
7. Remove machine screw on manifold side of range (2-3/4" from cooktop) securing manifold to cooktop.
8. Remove glass top and gasket.
9. To reassemble cooktop, reverse procedure.

## EXPLODED VIEW OF SURFACE COOKING SYSTEM

Dual Fuel Models

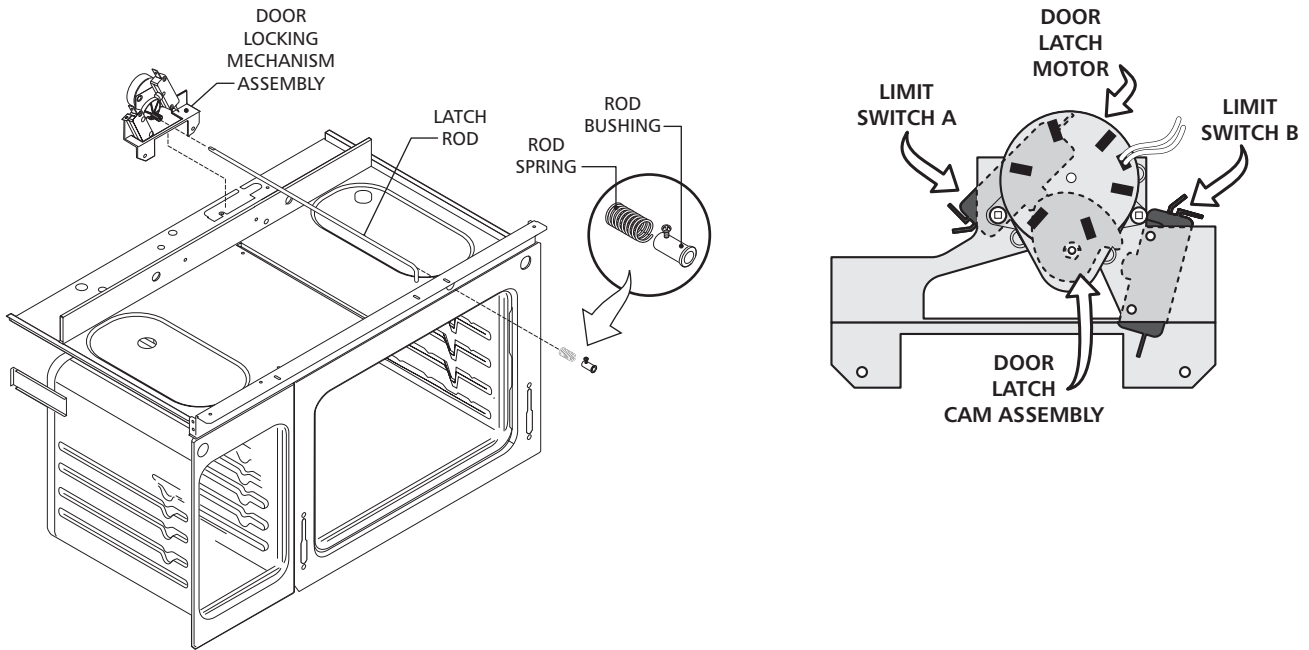


Electric Models



## DOOR LOCK MECHANISM

This appliance is equipped with an electronic oven control and has an auto locking door latch feature. When the self clean cycle is programmed, the door is locked by a motor operated latch system. The interior of oven does not need to heat up to 600°F before the door locks. However, until the temperature inside oven reaches 600°F, the self-clean program can be canceled and door will unlock immediately. After oven reaches temperatures over 600°F, the door will not unlock until temperature falls below 600°F.



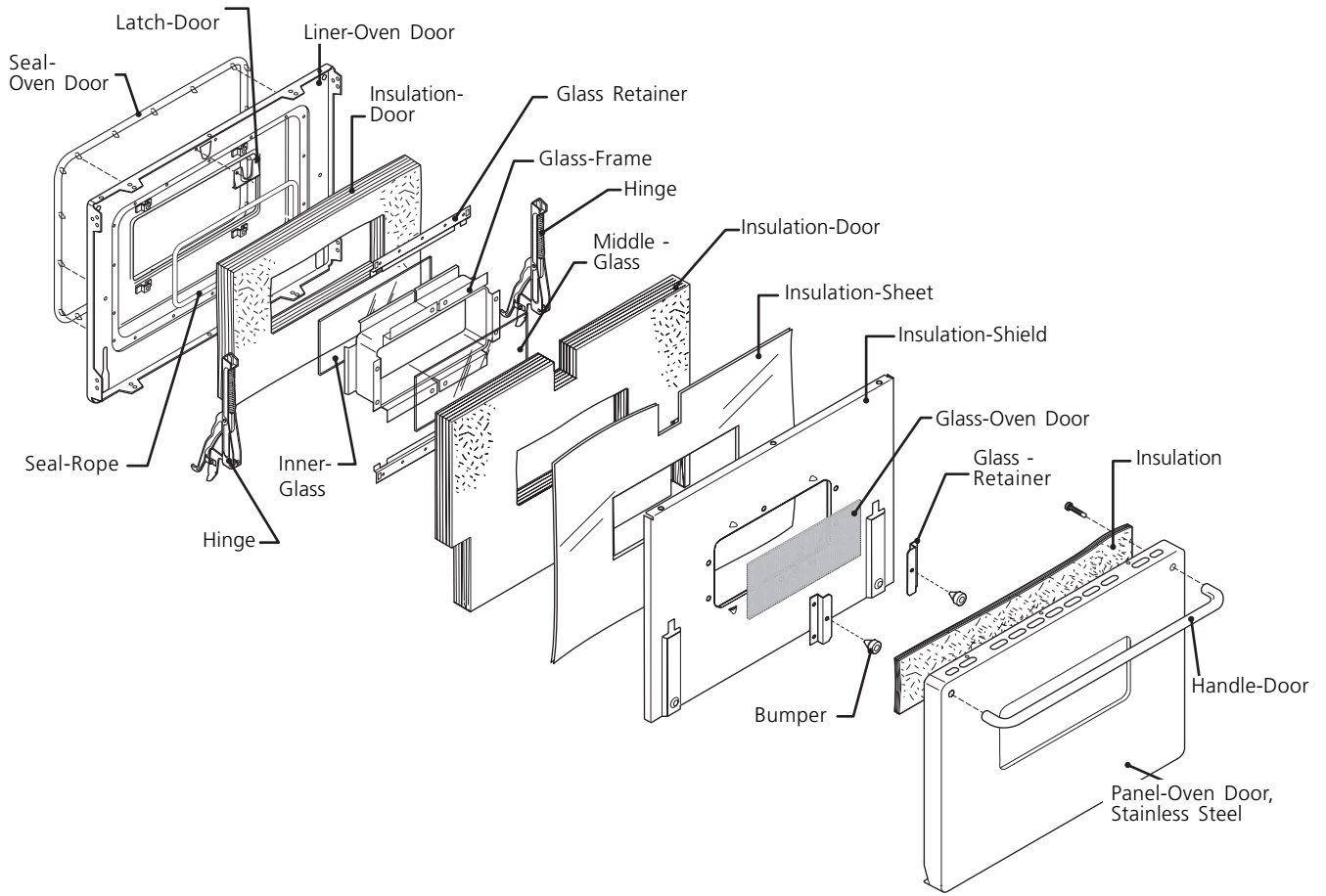
## OVEN DOOR REMOVAL AND REPLACEMENT



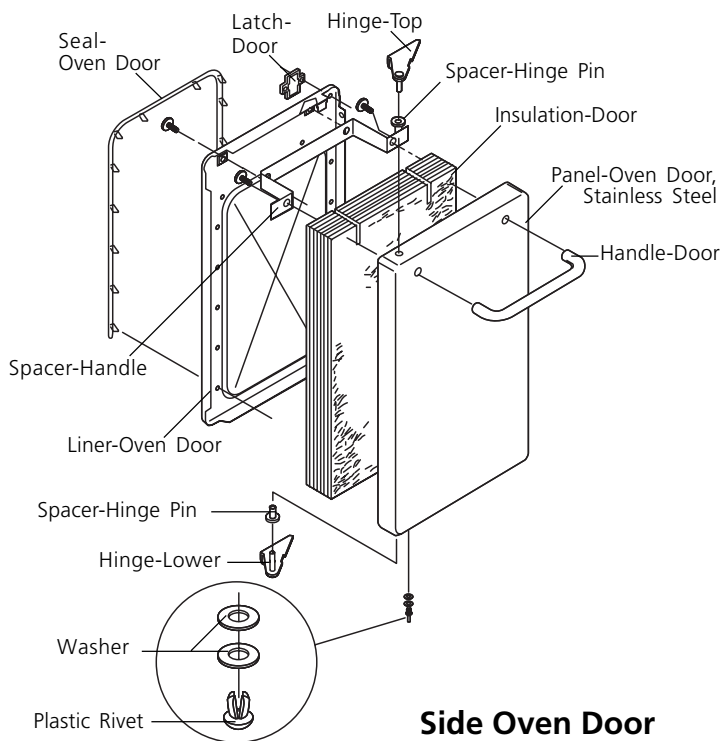
1. Disconnect range from electrical supply
2. Open door to fully opened position.
3. Pull up the lock located on each hinge support and engage it in the hook of the hinge lever. You may have to apply a little downward pressure on the door pull the locks fully over hoods.
4. Grasp door by sides, pull bottom of door up and toward you while rotating the top of door toward range to completely disengage the hinge levers.
5. To reinstall, reverse procedure. Make sure hinge supports are fully engaged before unlocking the hinge levers.



# STAINLESS STEEL DOORS



**Main Oven Door**



**Side Oven Door**

### CIRCUIT ANALYSIS MATRIX

	EOC Relays			Latch Switches		Door Switch	Convection Fan
	E9-E7 BA	E9-E6 BR	E4-E5 MDL	Lock Sw A or C-NC	Lock Sw B or C-NO	COM to NO	E2 - E8
Bake/ Time Bake	<b>X**</b>	<b>X**</b>		<b>X</b>			
Broil		<b>X</b>		<b>X</b>			
Convection	<b>X*</b>	<b>X*</b>		<b>X</b>			<b>X</b>
Clean	<b>X</b>				<b>X</b>	<b>X</b>	
Unlocked				<b>X</b>			
Locking			<b>X</b>			<b>X</b>	
Locked					<b>X</b>	<b>X</b>	
Unlocking			<b>X</b>			<b>X</b>	
Door Closed						<b>X</b>	

### ELECTRICAL RATING

<b>KW rating 240/208</b>	Main Oven	***Side Oven (40" ranges)
<b>Bake element Wattage</b>	3000W/2253W	1500W/1130W
<b>Broil element Wattage</b>	2750W/2065W	1500W/1130W
<b>*** Convection element Wattage</b>	2500W/1127W	N/A
<b>Total Kw Rating 240/208 Volts</b>	See serial plate	

X = Check Listed Circuits

Relay will operate in this condition only

\* Some models use bake and broil elements in convection mode. Others toggle an external relay and use E9 to E6 to energize a convection element.

\*\* Alternates between E9 to E7 and E9 to E6

\*\*\* Some models



