**SERVICE DATA SHEET**

Gas Ranges with ES 200/205/300 & 305 Electronic Oven Controls

**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 examples, but without limitation, of such practices:

1. Before servicing or moving an appliance remove power cord from electrical outlet, trip circuit breaker to OFF, or remove fuse.
2. Never interfer with the proper installation of any safety device.
3. **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 safety hazard.
4. 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.
   - 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.

**CONVERSION/SPREAD BAKE MODE (some models)**

The Speed Bake Mode uses the addition of a fan to move the heated air already in the oven. Moving the heated air helps to distribute 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 in 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 gas ranges, there is still an oven vent which discharges behind the top cooking surface.

To set the oven to Speed Bake mode, follow these steps:

1. Program the oven as you normally would for baking.
2. Release and re-engage the Conversion/Bake momentary rocker switch. The indicator light will glow, signifying that the Conversion/Bake mode has been activated.

The fan will not come on for the first six minutes, unless the center of the oven temperature is above 190°F when the Speed Bake mode is activated. This is to allow for clean combustion in the oven gas. Six minutes after the Speed Bake mode is activated, the fan will come on. The fan stays on when the oven door is closed and shuts off while the oven door is opened. The fan will continue to operate until baking is complete.

To cancel the Spread Bake function, press CANCEL or CLEAR on the oven control as you would to cancel any baking function.

**NOTE:** The Speed Bake mode will not work during a clean or broil cycle.

**FAN MOTOR** (Conversion/Bake models only)

The fan-motor is mounted in the main back on the back side of the range. It can be accessed by removing the wire shields.

**FAN BLADE** (Conversion/Bake models only)

The fan blade is mounted in the rear of the unit and has a "D" shaped mounting hole. Only minimum clearance exists between the oven back, fan blade, and fan shroud. Be careful not to bend the blade when removing or installing. Access to the fan blade is gained by removing the fan shroud located inside the oven and held in place by two screws. The fan blade is held in place with a .13 mm hex nut that has left handed threads. When removing this nut, gently hold the fan blade, and turn the nut clockwise. If the blade becomes deformed, it may be bent back into shape using a flat surface as a reference. A flat washer is located on the motor shaft between the snap ring on the shaft and the fan blade.

If the fan blade is bent and the motor vibrates, the noise made by the fan will be greater.

**FAN OPERATION** (Conversion/Bake models only)

The fan motor runs continuously (after the first six minutes, as defined above) while in Conversion/Speed Bake mode unless the door is opened. If the fan does not operate, check the following:

- Is the oven control in Bake mode?
- Is the Speed Bake indicator light glowing?
- Are 120 volts available at the fan motor?
- Is the fan motor coil resistance 35 ohms ±10%?
- Is the doorlight switch working properly?

**MOTOR MOUNTING BRACKET** (Conversion/Bake models only)

The fan motor on the rear of the range is mounted through the main back to a mounting bracket that is attached with three screws to the backside of the rear oven wall. Should it become necessary to replace this bracket, the main back must be removed to access the mounting screws.

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**ELECTRONIC OVEN CONTROL (REAR VIEW)**

**ELECTRONIC OVEN CONTROL FAULT CODE DESCRIPTIONS**

<table>
<thead>
<tr>
<th>Fault Code</th>
<th>Likely Failure Condition/Cause</th>
<th>Suggested Corrective Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>F10</td>
<td>Runaway Temperature.</td>
<td>1. (F10 only) Check RTD Sensor Probe &amp; 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.</td>
</tr>
<tr>
<td>F11</td>
<td>Shorted Keypad.</td>
<td>2. Never interfere with the proper installation of any safety device.</td>
</tr>
<tr>
<td>F12</td>
<td>Bad Micro Identification.</td>
<td>3. GROUNDING: The standard color coding for safety ground wires is <strong>GREEN OR GREEN WITH YELLOW STRIPES</strong>. 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 safety hazard.</td>
</tr>
</tbody>
</table>
| F13        | Bad EEPROM Identification/Checksum error. | 4. 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.
   - 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. |
| F30        | Open probe connection.        | 5. (F30 or F31) Check resistance at room temperature & compare to RTD Sensor resistance chart. |
| F31        | Shorted Probe connection.     | 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.
   - 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. |
| F90        | Maximum oven door unlock time exceeded. | 7. All situations above do not solve problem, replace EOC. |
| F100       | Maximum oven door unlock attempts exceeded. | 8. If situations above do not solve problem, replace EOC. |
| F101       | Maximum oven door open time exceeded. | 9. If situations above do not solve problem, replace EOC. |
| F102       | Maximum oven door lock time exceeded. | 10. If situations above do not solve problem, replace EOC. |
| F103       | Maximum oven door lock attempts exceeded. | 11. If situations above do not solve problem, replace EOC. |

**REMOVING AND REPLACING WARMER DRAWER (some models)**

1. **WARNING** - Electrical Shock Hazard can occur and result in serious injury or death. Disconnect appliance from electric power before cleaning and servicing the warmer drawer.

   **To Remove Warmer Drawer:**
   1. **CAUTION** - Turn power off before removing the warmer drawer.
   2. Open the drawer to the fully opened position.
   3. Locally glide lever on each side of drawer, pull up on the left glide lever and push down on the right glide lever (see Fig. 1).
   4. Pull the drawer away from the range.

   **To Replace Warmer Drawer:**
   1. Pull the bearing glides to the front of the chassis glide (see Fig. 2).
   2. Align the glide on each side of the drawer with the glide slots on the range.
   3. Push the drawer into the range until lever clicks (approximately 2”). Pull the drawer open again to seat bearing glides into position. If you do not hear the levers “click” or the bearing glides do not feel seated remove the drawer and repeat steps 1 thru 3. This will minimize possible damage to the bearing glides.

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**SERVICE INFORMATION ENCLOSED**

**WIRING DIAGRAMS AND SERVICE INFORMATION ENCLOSED REPLACE CONTENTS IN BAG**

P/N 316417605 (0409)

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**OVEN CALIBRATION**

Set the electronic oven control for normal baking at 350°F. Obtain an average oven temperature after a minimum of 5 cycles. Press CANCEL or CLEAR to end bake mode.

**TEMPERATURE ADJUSTMENT**

1. Set EOC to bake at 550°F.
2. Within 5 seconds of setting 550°F, press and hold the bake pad for approximately 15 seconds until a single beep is heard (longer may cause F11 shortly keypad alarm).
3. Calibration offset should appear in the display.
4. Use the slow keys to adjust the oven temperature up or down 25°F in 25°F increments.
5. Once the desired (-35° to 35°) offset has been applied, press CANCEL or CLEAR.

**Note:** Changing calibration affects both Speed Bake and normal bake modes. The adjustments made will not change the self-cleaning temperature.

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**IMPORTANT**

**DO NOT REMOVE THIS BAG OR DESTROY THE CONTENTS**

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**SERVICE INFORMATION ENCLOSED REPLACE CONTENTS IN BAG**

P/N 316417605 (0409)
**CIRCUIT ANALYSIS MATRIX**

<table>
<thead>
<tr>
<th>EOC Relays</th>
<th>L1 to Bake</th>
<th>L1 to Broil</th>
<th>L1 to Motor Door Latch</th>
<th>L1 to Speed Bake Fan</th>
<th>L1 to Speed Bake Indicator Light</th>
<th>Door Switch</th>
<th>Warmer Drawer Lock Switch (Motor Door Latch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bake/Time Bake</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed Bake</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broil</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Clean</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Locked</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unlocking</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Door Open</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Door Closed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Note: Circuits shown with all controls set to off. Oven door closed and unlocked.

**ELECTRONIC OVEN CONTROL (EOC) TROUBLESHOOTING GUIDE**

**START**

Is the oven installed correctly and receiving power (electricity or gas) from the utility connections?  

- **NO** Have product properly installed per installation instructions.

- **YES**

  Flashing time of day. Touch CANCEL/CLEAN or CLOCK pad. Did the display stop flashing?  
  - **NO** Replace EOC.
  - **YES**

  Has the range been in service for relatively short period of time?  
  - **NO** Check for loose connections or wiring.
  - **YES**

  Touch each of the control's function pads. Does the control respond accordingly and do the respective pad's LEDs light (if provided)? Can the display be changed using the Up or Down arrows?  
  - **NO** Replace EOC.
  - **YES**

  Did range function correctly upon initial usage?  
  - **NO** Refer to individual troubleshooting circuits for diagnosis.
  - **YES**

  Check wiring for loose or intermittent connections.

**E.O.C. CONTROL CONNECTIONS (P5)**

**TROUBLESHOOTING SCHEMATICS**

**BAKE CIRCUIT**

**BROIL CIRCUIT**

**CLEAN/LOCK MOTOR CIRCUIT**

**LIGHTING CIRCUIT**

**SURFACE SPARK CIRCUIT**

**WARMER DRAWER CIRCUIT**

**SPEED BAKE CIRCUIT**

*Note: Speed Bake models only*