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OPERATION

GAS CONVECTION OVENS

OPERATION OF STANDARD MODELS

Models with Standard Controls operate much like a standard oven: you turn the oven ON and select a cooking temperature. Two additional controls are used to control the fan (as described below).

The timer is a reminder to you of when to remove food from the oven.

The timer does NOT control the temperature of the oven.

To cook, do the following:

1. Turn the oven ON using the Power Switch at the top of the control panel.
2. Select the desired fan speed using the Fan Speed switch. The appropriate fan speed (HI or LOW) depends on the type of food being cooked.
3. Switch the Fan Mode switch to COOK. The fan will run continuously when the oven doors are closed (the fan does not cycle on and off with the burners). (If this switch is set to COOL the only difference is that the fan will continue to run when the oven doors are open.)
4. Set the cooking temperature by turning the Cook Temperature Control until the indicator mark on the knob is pointed to the desired cooking temperature. The Heat On indicator will light when the burners are on, and will remain on while the oven preheats.
5. Wait until the Heat On indicator has come on and gone out three times. At that time the oven will have reached the set cooking temperature.
6. Open the oven doors, load the product into the oven, and close the doors.
7. You can use the Cook Timer as a reminder of when to remove the load from the oven. If so desired, turn the Cook Timer knob until the indicator mark points to the desired cooking time (up to 55 minutes). The timer knob will rotate counterclockwise as the timer runs down, indicating how much time remains. You can turn the knob while cooking to increase or decrease the remaining time. When the timer runs out, a buzzer will sound for a short time, then turn itself off. (To immediately silence the buzzer, turn the Cook Timer knob to the OFF position.) The timer is a reminder to you; **the timer does not control the oven.**

If you open the oven doors, the burners in cool mode will shut off until the doors are closed. However, the timer will continue running even if the doors are open.

For ovens that are equipped with an oven interior light, to turn on the light press and hold the switch located at the bottom of the control panel.

8. When the load has finished cooking, you can rapidly cool the load by opening the oven doors (which will shut off the burners) and switching the Fan Mode to COOL (which will cause the fan to run even though the doors are open). For the most rapid cooling, also switch the Fan Speed switch to HI.
9. When you are done cooking, turn the Cook Temperature control to the lowest setting (fully counterclockwise) and switch the Power Switch to OFF.

Figure 8

Control Panel of CYCLE/COOK and HOLD Models

Power Switch
Switch ON to use the oven, switch OFF when done using the oven.

Time Display
Displays time setting. Indicator lights indicate whether the numbers shown represent hours-and-minutes or minutes-and-seconds.

Temperature Display
Displays cook-temperature setting.

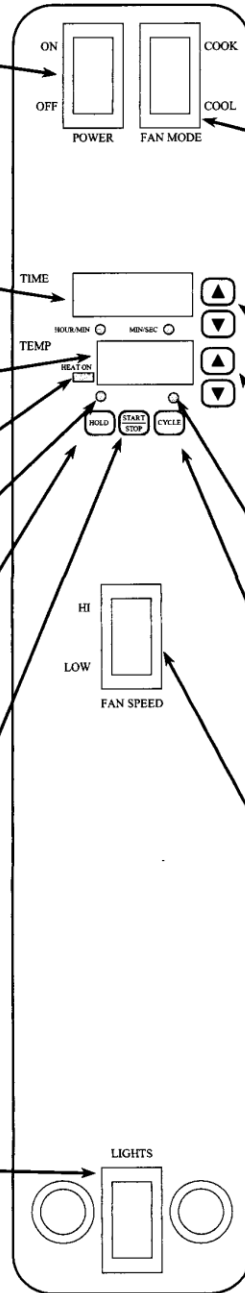
Heat-On Indicator
Indicator is lit when the burners are operating.

Hold Mode Indicator
Lights when Hold mode has been enabled.

Hold Mode Button
Press to toggle Hold Mode on or off. To set the Hold temperature, press and hold this button while adjusting the temperature.

Cook Start/Stop Button
Press to start a timed cook period whose duration is shown in the TIME window. During a timed cook period, the TIME window displays the remaining time. To stop cooking, press this button again.

Oven Interior Light Switch
On ovens equipped with an oven interior light, press to turn on the light. The light remains on for as long as the switch is held.



Fan Mode
In COOK mode, the fan runs except when the doors are open. The fan does NOT cycle with the operation of the burners. In COOL mode, the fan runs continuously even if the doors are open. Since the burners will not operate if the oven doors are open, to rapidly cool the oven after cooking is completed, open the doors and switch the fan mode to COOL.

Timer Adjustment Buttons
Press the up-arrow button to increase the time setting; press the down-arrow button to decrease the time setting.

Temperature Adjustment Buttons
Press the up-arrow button to increase the temperature setting; press the down-arrow button to decrease the temperature setting.

Fan Cycle Indicator
When on continuously the fan will run continuously. When flashing, fan will cycle on-and-off.

Fan Cycle Button
Press to select whether the fan runs continuously, or cycles on and off.

Fan Speed Switch
Use to select fan speed (HI or LOW). The appropriate speed is determined by the type of food being cooked.



TROUBLESHOOTING GUIDE

The left column of the following table lists symptoms that indicate a problem, while the center and right columns list the possible causes and appropriate corrective action. Note that the recommendations of this table assume that the wiring connections are good. When checking a component, always check the wiring attached to the component as well.

Symptom	Possible Cause	Check or Replace
Oven will not hold correct temperature.	Temperature probe not working.	Resistance across temperature probe leads at room temperature (70°F) should be approximately 1096 ohms.
	Temperature control not calling for heat.	When heat is required, there should be continuity between terminals 6 and 7 on temperature control.
	Undersized gas supply line	Oven requires 3/4" ID gas line.
	Low gas pressure.	Oven requires 7" manifold water column pressure for natural gas, 11" for propane.
	Inadequate or improper ventilation.	Check ventilation hood. Verify draw and make up air adjustment.
	Out of calibration.	Recalibrate temperature
Hot surface ignitor glows red but burners do not come on when thermostat calls for heat (cooking light is on).	No power to gas valve.	Check for 24V from ignition box to gas valve.
	Faulty main gas solenoid.	Replace gas valve.
	Faulty ignition module.	Replace ignition module.
	Manual shutoff valve closed	Open all shut-off valve.
	Manual valve on gas valve turned off.	Open manual valve on gas valve.
Hot surface ignitor not in front of rear end of burner.	Re-position hot surface ignitor to be in front of rear end of burner.	
Hot surface ignitor does not glow red.	No power to ignitor.	Check that voltage from ignitor module to ignitor is 24V. Ignitor draws approximately 3.35 amps at start as it heats up resistance goes down. Gas valve opens approximately 1.8 amps.
	Ignitor broken or cracked.	Should read continuity between leads on ignitor.
	No power to ignitor module.	Should be 24V from transformer to ignitor module.
	Check power to transformer.	Should be voltage stamped on serial plate. Check between 3 and 6 on terminal strip.
	Check blower motor. Motor should turn when power switch is turned on and temperature control calls for heat.	Motor has centrifugal switch. Motor must be turning before ignition circuit is energized. Power for motors come through contactors. Check contactors (one for high speed, one for low speed).
	Temperature control does not call for heat	Must read continuity between 6 and 7 on temperature control when calling for heat.
	No power out of power switch..	Check that unit power cord is plugged into power supply. Check switch for continuity when switch is closed.
First burner next to ignitor lights, but flame will not carry across to other burners	Burners not aligned.	Check burner carry over wings for proper mating.
	Burner and orifice out of alignment.	Orifice must inject gas down center of burner.
	Gas pressure to low.	Oven requires 7" manifold water column pressure for natural gas, 11" for propane.
	Burner orifices clogged.	Make sure burner orifices are clear.

Table continues on next page.



Symptom	Possible Cause	Check or Replace
Burners light but go out within a few seconds. (Ignitor will glow approximately 4 seconds. If burner does not ignite, ignition module will try 3 times and then lock out.)	Bad flame switch.	Check in series on micro amps. Minimum is 0.75 amps, no maximum.
	Bad gas valve.heat.	Check gas valve. Should be 24 volts from ignition module on wires 46 and 47.
Blower motor will not come on.	No incoming electric power.	Check incoming power.
	Loose wire connections.	Check wire connections.
	Bad contactors.	Contactors pull in and supply power to motor. Verify contactor pulling in.
	Motor bad.	If power is being supplied but motor will not turn, replace motor.
	Shut down switch.	All power except for motor supply come through shut down switch. Check for continuity.

BLOWER WHEEL REPLACEMENT

To replace the blower wheel, do the following:

1. Remove racks and rack guides.
2. Remove rear air baffle in front of blower wheel.
3. Loosen the two square heads on blower wheel hub.
4. Pull blower wheel from motor shaft. If blower wheel is difficult to pull off, use puller disk (available from Southbend Technical Service Department as part number 1179100).

CONTROL PANEL ACCESS AND SHUT-OFF SWITCH

To access the control panel components, remove the two thumbs screws at the top and bottom of the control panel and slide the control panel out (see 1ST picture on next page). A wiring diagram for the oven is located on the side of the control panel assembly. **When the control panel is slid out, all power to the control panel is cut off by a shut down switch that is located directly inside the opening and below the control panel** (see 2ND picture on next page). To re-energize the controls for troubleshooting, pull the plunger on the shut down switch up.

To fully remove Control Panel, disconnect temp probe wires and harness connectors prior to pulling up on slide release levers and removing.

