

INSTRUCTIONS

MODEL CVX21E ELECTRIC CONVECTION OVEN WITH TIMER CONTROLLED HUMIDIFICATION

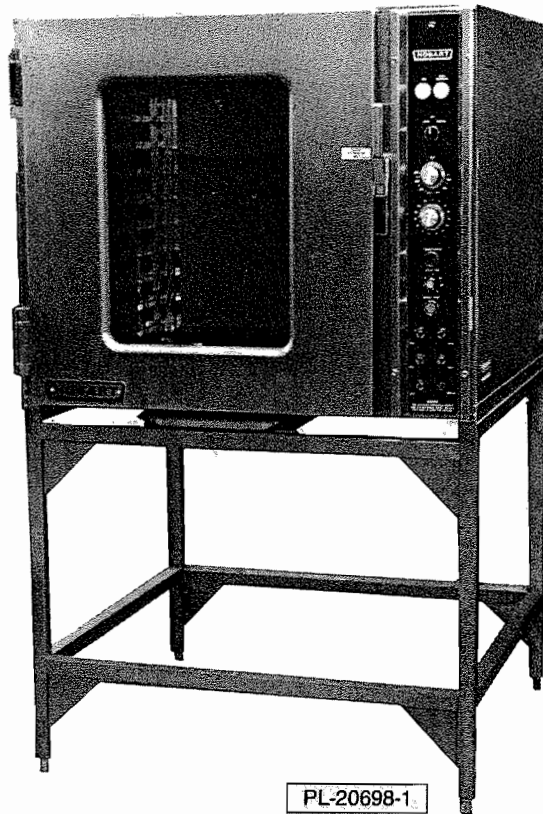
CVX21E ML-46171



WORLD HEADQUARTERS
TROY, OHIO 45374

Installation, Operation and Care of MODEL CVX21E ELECTRIC CONVECTION OVEN WITH TIMER CONTROLLED HUMIDIFICATION

SAVE THESE INSTRUCTIONS



GENERAL

The model CVX21E electric convection oven with timer controlled humidification is designed to provide cooking uniformity, maintain product weight and save time.

With the heating capacity available in this oven, you can eliminate lengthy preheating. Your oven will reach a cooking temperature of 350°F in minutes and you may quickly raise the temperature by several tens of degrees.

The uniform convection oven temperature allows cooking at lower temperatures than with a conventional oven eliminating burned fat while the humidification feature saves moisture content and improves product weight.

The large inspection window permits observation of your food without disturbing the cooking process.

UNPACKING

Immediately after unpacking, check the oven for possible shipping damage. If the oven is found to be damaged, save the packaging material and contact the carrier within 15 days of delivery.

INSTALLATION

Place the oven on adjustable feet in its permanent location. Allow clearances of at least 2" on the sides and 6" on the back for air circulation.

This oven may also be installed with casted stand accessory or it may be stacked on top of another model CVX21E using the stack kit accessory. Minimum clearances for either type installation still apply. Assembly instructions are provided with each accessory kit.

Adjust the legs to assure that the oven racks are level in the final installed position.

PLUMBING CONNECTION

WARNING: PLUMBING CONNECTIONS MUST COMPLY WITH APPLICABLE SANITARY, SAFETY AND PLUMBING CODES.

Connect the potable water supply line to the 1/4" NPT water connection on the oven. Supply pressure should be 10-30 psig (70-210 KPa).

To allow for regular oven movement during cleaning, some installations may use flexible tubing for the water supply connection. A shut-off valve should be installed in the water line ahead of the flexible tubing or other water supply connection.

The potable water supply should not exceed 5 grains/gallon (85.5 ppm) hardness and should be clear and free of sediment. Contact a water treatment company if your water supply does not meet these criteria.

ELECTRICAL CONNECTIONS

WARNING: ELECTRICAL AND GROUNDING CONNECTIONS MUST COMPLY WITH THE APPLICABLE PORTIONS OF THE NATIONAL ELECTRICAL CODE AND/OR OTHER LOCAL CODES.

- In the United States, comply with National Electrical Code, ANSI/NFPA No. 70-1987.
- In Canada, comply with Canadian Electrical Code, Part I, C22.1-1986.

WARNING: DISCONNECT ELECTRICAL POWER SUPPLY AND PLACE A TAG AT THE DISCONNECT SWITCH INDICATING THAT YOU ARE WORKING ON THE CIRCUIT.

Prior to installation, test the electrical service to be sure that it agrees with the specifications on the oven data plate located on the hinge side of the oven door. Comply with the wiring diagram located inside the back cover when making connections to the electrical supply lines.

ELECTRICAL DATA

Model	TOTAL KW	208-240V 3-PHASE LOADING			NOMINAL AMPERES PER LINE WIRE					
		KW PER PHASE			208V			240V		
		L1L2	L2L3	L1L3	L1	L2	L3	L1	L2	L3
		CVX21E	15.6	5.2	5.2	5.2	45	45	45	39

BRANCH CIRCUIT SIZE AND PROTECTION

VOLTS	HZ	PHASE	MINIMUM CIRCUIT AMPACITY	MAXIMUM TIME DELAY FUSE (SECONDS)	90°C COPPER WIRE SIZE
208	60	3	60	60	#6 AWG
240	60	3	60	60	#6 AWG

FAN ROTATION

If the fan does not rotate counterclockwise as you look inside the oven chamber with the filter removed. Fig. 1, correct the rotation using the following instructions:

1. **WARNING:** DISCONNECT ELECTRICAL POWER SUPPLY AND PLACE A TAG AT THE DISCONNECT SWITCH INDICATING THAT YOU ARE WORKING ON THE CIRCUIT.
2. Then interchange any two of the incoming power supply leads.
3. Reenergize and verify correct fan rotation.
4. Turn the oven off, and reassemble the grease filter, rack guides, and racks in the oven.

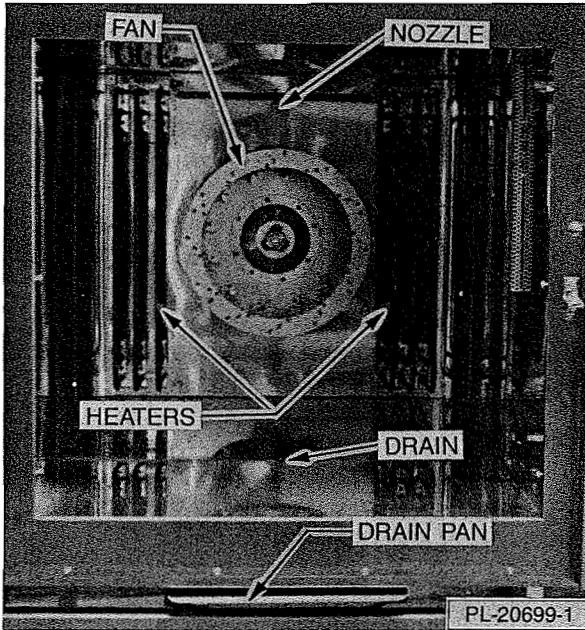


Fig. 1

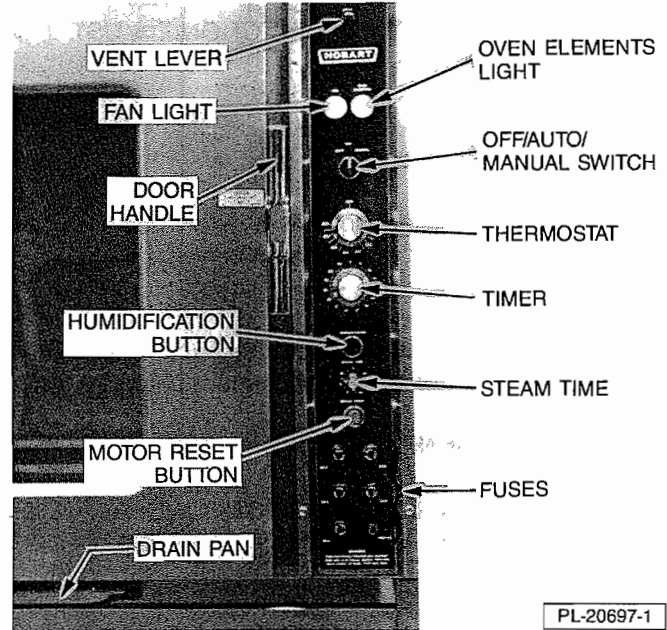


Fig. 2

OPERATION

BEFORE FIRST USE

Before using the convection oven for the first time, it must be "burned in" to release any odors that might result from heating the new surfaces in the oven.

- Using a clean damp cloth, wipe the inside of the oven including the racks.
- Wipe the outer surfaces to remove any dirt or film that may have accumulated during shipment.
- Be sure all electrical connections are properly made (3 wires plus ground) and that fan rotation is correct.
- Close the oven door. Set the thermostat to 300°F. Turn the Off/Auto/Manual switch to Manual. The oven should begin to operate.
- Allow the oven to operate at 300°F for 6-8 hours. Smoke with an unpleasant odor will normally be given off during this burn-in period.

CONTROLS

OFF/AUTO/MANUAL Switch — controls the oven thermostat and timer. When OFF, the oven heaters, fan and control circuits are not energized. To operate the oven you may choose either AUTO or MANUAL. AUTO will automatically operate the oven at the thermostat setting and will start the timer to countdown; when the timer finishes its countdown, a buzzer will sound. Selecting the MANUAL position controls the heating elements with the thermostat but the timer will not count down. In MANUAL Mode, to prevent the buzzer from sounding, set some time on the timer, however, it will not count down.

FAN Light — is lit when the oven is operating in either AUTO or MANUAL mode.

OVEN ELEMENTS Light — is lit when the oven heating elements are energized and heat is being produced in the oven.

THERMOSTAT — controls the temperature of the oven chamber when in either AUTO or MANUAL mode.

TIMER — counts down a preset time interval (0-112 minutes). The OFF/AUTO/MANUAL switch must be set on AUTO. At the end of the preset time, a buzzer will sound until additional time is set on the TIMER or the OFF/AUTO/MANUAL switch is turned OFF. If oven is still in AUTO and additional time is set on the timer, the thermostat continues to hold the temperature for any additional time interval. The buzzer will sound again when the time is up.

HUMIDIFICATION Button — starts the STEAM TIME interval which allows some water to spray onto a hot oven panel. The water flashes to steam on contact, providing a moist cooking environment.

STEAM TIME — controls the length of time water sprays into the oven (0-30 seconds). Spray starts when HUMIDIFICATION Button is pressed and stops after preset time has lapsed. Timer automatically resets to the same time interval to enable repeated activation by the HUMIDIFICATION button.

VENT Lever — controls the vent on the top of the oven which allows water vapor to escape from the oven. When the Vent lever is pushed in, Vent is closed. When the Vent lever is pulled out, vent is open. Close the vent to provide a moister baking environment; open the vent to provide a drier baking environment.

MOTOR RESET Button — resets the fan motor overload relay in the event that it has tripped.

DOOR INTERLOCK Switch — prevents the oven heating elements or fan from being energized if the door is ajar or open.

FUSES — protect oven electrical circuits during operation. Replace a blown fuse with identical type, rating and size as indicated on the control panel.

DRAIN PAN — excess water and cooking juices flow into drain pan. Empty as necessary to prevent overflow.

NOTE: Excessive use of HUMIDIFICATION or STEAM TIME controls may produce little additional steam and may fill the DRAIN PAN with water.

MANUAL OPERATION

1. With the thermostat dial in the OFF position, (fully counterclockwise), turn the switch to MANUAL. The FAN light and fan are energized.
2. Set the thermostat to the desired temperature. The OVEN ELEMENTS light remains ON while the heaters are producing heat in the oven. When the thermostat temperature is reached, the OVEN ELEMENTS light shuts off. Timer must have some time set on it to prevent buzzer sounding. In manual mode, timer will not countdown and will not provide "buzzer" alarm.
3. After the oven has preheated to the desired temperature, load the product into the oven.
4. Set the VENT control lever in open or closed position as desired for the product being cooked.
5. If a moist baking environment is desired, set STEAM TIME interval and press and release the HUMIDIFICATION button. When the injection is done, the timer automatically resets to allow repeat applications.

AUTOMATIC OPERATION

1. Set the OFF/AUTO/MANUAL switch to AUTO.
2. Set the THERMOSTAT to the desired temperature.
3. Set the desired cooking time on the TIMER dial.
4. Load the oven after the OVEN ELEMENTS light shuts off.
5. Set VENT control lever in open or closed position as desired for the product being cooked.
6. If a moist baking environment is desired, set STEAM TIME interval and press and release the HUMIDIFICATION button. When the injection is done, the timer automatically resets to allow repeat applications.
7. After the TIMER has counted down to the end of the preset cooking period, a buzzer will sound to alert you. The thermostat and fan will continue to operate as though the oven were on manual. To shut off the buzzer, you must either reset the timer to extend the cooking time, or turn the OFF/AUTO/MANUAL switch to OFF.

TO SHUT-OFF THE OVEN

1. Turn the OFF/AUTO/MANUAL switch to the OFF position.
2. Turn the THERMOSTAT to the OFF position.
3. Turn the TIMER to the OFF position.

CLEANING THE OVEN

Clean the outside of the oven daily with a clean damp cloth.

WARNING: DISCONNECT ELECTRICAL POWER SUPPLY AND PLACE A TAG AT THE DISCONNECT SWITCH INDICATING THAT YOU ARE WORKING ON THE CIRCUIT.

- Allow the oven to cool.
- Remove the tray guides and filter from the inside of the oven. Remove the drain pan and empty the liquids down the drain.
- Clean the tray guides, filter and drain pan by allowing them to soak in a sink with mild detergent and water for a few hours, then brush or clean in a dishwasher. Dry the filter, tray guides and drain pan with a soft cloth.
- Clean the walls with a product suitable for cleaning stainless steel food containers. Care must be used to prevent damage to the thermostat bulb and capillary tube located at the top right side as you face the oven. Clean around the drain hole on the oven floor and use a small diameter brush to swob out the drain if clogging is suspected.
- Remove mineral deposits from the inside of the oven using a sponge soaked in vinegar. Rinse with sponge soaked in water. The amount of mineral deposits that accumulate and the frequency of removal depends on local water conditions and your usage of the HUMIDIFICATION system.
- Reassemble in reverse order of disassembly.

NOTE: If the filter becomes clogged with grease, the operation of the oven and the uniformity of cooking can be seriously affected. Clean when necessary.

COOKING HINTS

This oven operates with very uniform heat distribution and it is best to select temperatures 20 to 30°F lower than you would use with a conventional oven. Food need not be coated with oil or fat. Arrange the food in the oven to allow free circulation of air and so it is not too close to the side walls.

ROASTING — food may be placed on racks in the oven or on broiler pans. Cooking with steam in the convection oven reduces char while helping to maintain product moisture content. You may increase the temperature at the start or end of the cooking cycle and produce the roast to your customer's taste.

GRATINS OR CASSEROLES — obtain an even, well-browned appearance by filling the dishes completely so the entire surface is exposed to the hot air circulating in the oven. Humidification may be added to reduce product moisture loss.

PASTRY — use appropriate baking pans. Although the oven heats up quickly, when cooking some kinds of pastries, such as pies, cheese tarts, etc., it is best to preheat the oven to 425°F for five to six minutes, then place the food in the oven and reduce the temperature if appropriate. Fruit pies (from scratch) are baked at 425°F until done. With custard pies, reduce heat after 10 minutes to 325°F to avoid overcooking or curdling.

FLAT DISHES — for best results when cooking flat dishes like cheese tarts, pizza, or sheet cakes, leave an empty space between racks to allow plenty of room for air circulation.

Since recipes and foods are subject to many variations and tastes, the guidelines regarding temperature settings, quantities of food, number of racks, and cooking times contained in this manual are *SUGGESTED ONLY*. You should experiment with your food products to determine the cooking temperatures and times that give you the best results, or consult with Hobart's Culinary Specialist in Troy, Ohio.

SUGGESTED COOK TIMES AND TEMPERATURES — MODEL CVX21E OVEN

PRODUCT	TEMPERATURE °F	COOK TIME (min.)	TOTAL STEAM TIME (seconds) *	NO. OF RACKS
Meats				
Hamburger Patties (5 per lb.)	400	8-10	60	10
Meat Loaf	325	40-45	60	3
Rolled Beef Roast (12-15 lbs.)	275	150-180	60	3
Bacon	400	5-7	—	10
Hot Dogs (10 - 1 lb.)	325	10-15	—	5
Baked Stuffed Pork Chop	375	25-30	60	5
Boned Veal Roast (15 lbs.)	300	190	60	2
Poultry				
Chicken Breast & Thigh	350	40	60	5
Chicken Back & Wing	350	35	60	5
Chicken (2½ lb. Quartered)	350	30	60	5
Turkey Rolled (18 lbs. Rolls)	310	225	60	3
Fish & Seafood				
Fish Sticks	335	16-18	—	10
Halibut Steaks, Cod Fish (Frozen 5 oz.)	350	20	60	5
Baked Stuffed Shrimp	400	6-7	60	5
Baked Stuffed Lobster (1½ lb.)	400	10	60	3
Cheese				
Macaroni & Cheese	350	30	—	5
Lasagna	260	90	—	3
Potatoes				
Idaho Potatoes (120 ct.)	400	45	—	5
Pies				
Frozen Fruit Pies (30-20 oz.)	350	30	—	6
Fruit Tarts (30-20 oz.)	355	30	—	5
Fruit Crisp	300	30	—	6
Breads				
Yeast Bread (40 - 1 lb. loaves)	350	30	—	6
	350	25	5	4
Biscuits	350	7	—	10
French Bread (1½ lb. loaves)	400	15	10	5
Yeast Rolls	325	25	—	5
Brown & Serve Rolls	350	15	—	5
Cakes & Cookies				
Sheet Cakes (6 lbs. Mixed Batter per pan)	320	20-25	—	5
Chocolate Cake	325	20	—	5
Brownies	350	15	—	5
Danish	325	20	—	5
Sugar Cookies	300	15	—	10
Chocolate Chip Cookies	350	12	—	10
Peanut Butter Cookies	325	10	—	10

* To maintain a moist environment in the oven throughout the baking process, you may apply the Humidification at equal intervals. If the STEAM TIME interval is set at 15 seconds and the total baking time is 40 minutes and the TOTAL STEAM TIME desired is 60 seconds, you would press the Humidification button once at the beginning, and once after 10 minutes, 20 minutes, and 30 minutes for a TOTAL STEAM TIME of 60 seconds. The operator must determine when to inject the moisture and how much.

MAINTENANCE

- The fan motor has sealed bearings and requires no additional lubrication.
- Clean the filter in front of the fan at least twice per month to control grease accumulation.
- The door hinges and mechanism requires occasional lubrication with mineral oil.

TROUBLESHOOTING

OVEN WILL NOT SWITCH ON — CONTROL PANEL LIGHTS ARE OFF . . .

- Check to see that the switch is in Manual or Auto position.
- Check whether the oven door is completely closed.
- Check the power supply. Circuit Breaker or Fused Disconnect Switch must be On and functional.
- Check fan filter for cleanliness. In extreme conditions, mineral deposits may be present. Clean fan filter. Motor overload protector may have tripped - press MOTOR RESET button.
- Turn power supply off at the circuit breaker or fused disconnect. Check Fuses F4, F5, and F6 on the oven control panel. If any fuses are blown, replace with same size, rating and type. Turn power supply back on.

OVEN ELEMENTS WILL NOT HEAT UP — FAN AND FAN LIGHT WILL SWITCH ON . . .

- Check to see that the oven THERMOSTAT is not turned off.
- Reset THERMOSTAT to a slightly higher temperature.

OVEN OPERATES FOR SEVERAL SECONDS, THEN STOPS. CONTROL PANEL LIGHTS WILL NOT REMAIN ON . . .

- Check fan filter for cleanliness. In extreme conditions, mineral deposits may be present. Clean fan filter. Turn power supply off at the circuit breaker or fused disconnect. Check Fuses F1, F2, and F3 on the oven control panel. If any fuses are blown, replace with same size, rating and type. Turn power supply back on. Motor overload protector may have tripped - press MOTOR RESET BUTTON.

FAN DOES NOT ROTATE, OVEN ELEMENTS PRODUCE HEAT, CONTROL PANEL LIGHTS ARE ON . . .

- Perform same check for OVEN OPERATES FOR SEVERAL SECONDS, THEN STOPS.

OVEN DOES NOT HEAT UP SUFFICIENTLY . . .

- Check the direction of rotation of the fan motor. It should rotate in the counterclockwise direction as you look inside the oven with the filter removed. Refer to Electrical Connections section of this manual for specifics.

OVEN NOT WORKING PROPERLY AFTER MAKING ABOVE CHECKS . . .

- Contact your local Hobart Service office.