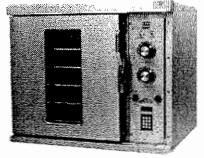


OVENS



# INSTRUCTIONS

## MODEL CN86 SERIES CONVECTION OVENS

ML-43729



WORLD HEADQUARTERS  
TROY, OHIO 45374

# INSTALLATION, OPERATION, AND CARE OF CN86 SERIES CONVECTION OVENS

## SAVE THESE INSTRUCTIONS

### GENERAL

The CN86 Series Convection Oven is a half-size model which features an electronic thermostat, digital timer, and five racks as standard equipment. Each oven is equipped with a 1/3 horsepower motor driving the convection fan and is available for 208 or 240 volt electrical service.

The oven may be used as a standard convection oven, as a cook and hold oven, or as a holding oven. The cook and hold feature allows the oven to cook for a preset amount of time using the timer and cooking thermostat (150-450°F). After the preset time expires, the oven becomes controlled by the hold thermostat (100-200°F) until the oven is turned off. This allows the product to continue to cook as the temperature of the oven gradually declines from the cooking temperature to the holding temperature. No energy is used during this period of time until the temperature at last declines below the minimum for the holding thermostat, and then the oven uses only enough energy to maintain the holding temperature. This process reduces moisture, vitamin, and nutrient losses and improves product flavor, color, and eye appeal.

The electronic timer is a solid state device with digital readout and 99-hour, 99-minute capacity. The timer operates like a countdown clock with the readout showing the number of hours and minutes of the preset cooking time remaining.

The Model CN86 is a single oven which is furnished with a set of four 4" adjustable chrome plated legs.

The Model CN862 consists of two single CN86 ovens, a set of four 16<sup>5</sup>/<sub>8</sub>" adjustable stainless steel legs, and a stack set for mounting one oven on top of the other.

The Model CN863 is a single CN86 oven furnished with a storage stand on four 6" adjustable stainless steel legs.

Accessories available for each oven include additional racks and removable non-stick or stainless steel liner kits. Installation instructions for accessories are included with the accessories.

### INSTALLATION


#### UNPACKING

DO NOT use the oven door handle to lift the oven off the skid; damage will result.

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

Prior to installation, test the electrical service to assure that it agrees with the specifications on the machine data plate, which is located in front of the control panel.

## LOCATION



This oven **MUST NOT** be connected directly to a ventilation system as this will cause uneven heating and greatly reduce its operating efficiency. If an outside flue connection is desired, install the oven under a suitable hood that will not result in a direct pull of air through the oven.

The oven door, which is reversible, is installed at the factory to open toward the left. If you want the door to open toward the right, contact your local Hobart-authorized Service Office, as this procedure should be performed by an authorized service person.

The oven must have a minimum clearance of  $\frac{1}{2}$ " on all sides.

The floor plan layout is shown on Page 4.

## ASSEMBLY — MODEL CN86

The leg set, which was packed inside the oven for shipment, must be installed. For access to the bottom of the oven, place the oven on its left side, being careful to avoid scratching the finish.

Thread the legs into the holes provided on the bottom of the oven and carefully raise the oven to its normal position. Turn the adjustable feet in or out to level the oven front-to-back and side-to-side.



## ASSEMBLY — MODEL CN862


Select the bottom oven and place it on its left side, being careful to avoid scratching the finish. Install the four legs, using the bolts and lockwashers provided.

Carefully raise this oven to its normal position and remove the two  $\frac{7}{16}$ " knockouts on each side of the top cover and the  $1\frac{3}{32}$ " knockout on the right side of the top cover. Turn the adjustable feet in or out to level the oven front-to-back and side-to-side.

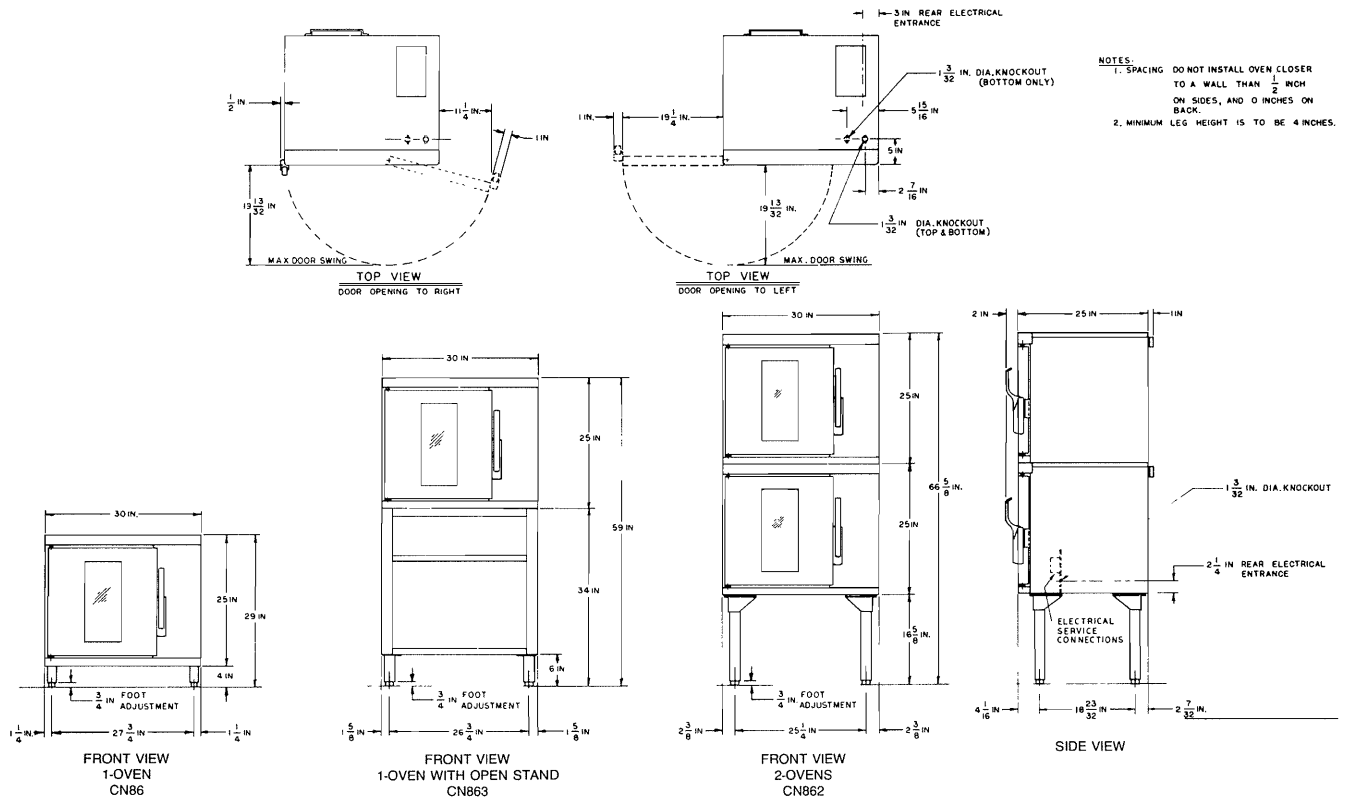
Place the top oven on its left side, being careful to avoid scratching the finish. Thread the two locating studs into the screw plates on the bottom of the oven and remove the  $1\frac{3}{32}$ " knockout that will line up with the one removed from the bottom oven. Carefully place this oven in position on top of the first oven.

## ASSEMBLY — MODEL CN863

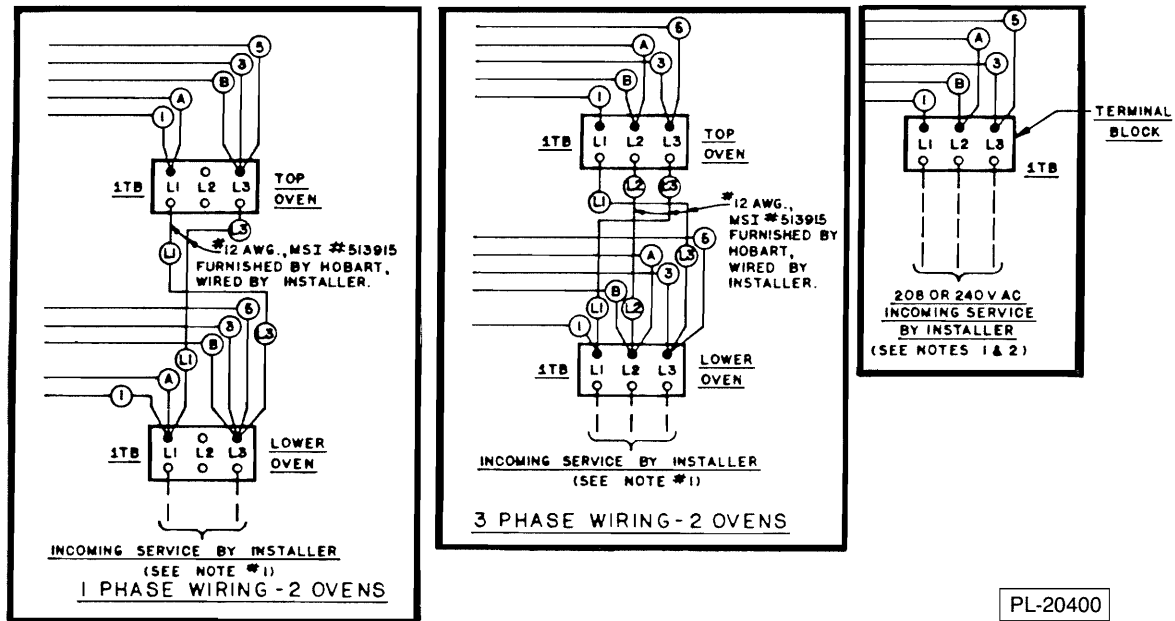
Place the stand on its back, being careful to avoid scratching the finish, and install the four legs, using the bolts and lockwashers provided. Raise the stand to its normal position and turn the adjustable feet in or out to level the stand front-to-back and side-to-side.



Place the oven on its left side, being careful to avoid scratching the finish, and install the two locating studs in the screw plates on the oven bottom. Carefully place the oven in position on the stand with the locating studs in the holes in the stand.



### FLOOR PLAN LAYOUT CN86 OVENS



PL-20400

### FIELD WIRING CONNECTIONS

#### NOTES:

1. Recommended individual branch circuit wire size to be copper wire sized in accordance with the NATIONAL ELECTRIC CODE.
2. Wiring shown for 3-phase. For single phase move lead A to L1 terminal and lead B to L3 terminal.

## ELECTRICAL CONNECTIONS

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

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

	TOTAL KW	3 PHASE LOADING (KW PER PHASE)			NOMINAL AMPS PER LINE WIRE							
					3 PHASE						1 PHASE	
					208V.			240V.			208V.	240V.
		L1-L2	L2-L3	L1-L3	L1	L2	L3	L1	L2	L3		
SINGLE OVEN	5.5	2.5	0.5	2.5	21.0	13.4	13.4	18.0	11.6	11.6	26.5	23.0
STACKED OVEN	11.0	3.0	3.0	5.0	33.6	25.0	33.6	29.1	21.6	29.1	53.0	46.0

Make electrical connections per the field wiring connections on Page 4. Knockouts are provided on the back and bottom of the oven for making conduit connections. Remove the screws and open the hinged front control panel for access to the terminal block.

Wire and required hardware for making connections between stacked ovens of Model CN862 are furnished in the leg-stack set.

## OPERATION

### BEFORE FIRST USE

Before the oven is used for the first time, it must be “burned in” to release any odors that might result from new oven lining.

Using a clean damp cloth, wipe the inside of the oven, including the racks.

Close the oven door, set the ON-OFF-COOLDOWN switch at ON, turn the COOK TEMPERATURE thermostat to 300°F, and allow the oven to cycle for 6 to 8 hours before turning the switch OFF. Smoke with an unpleasant odor will normally be given off.

The permalucent gray enamel, which is the standard finish on the back and sides of CN86 ovens, should be waxed to make future cleaning easier.

Wipe the painted surfaces to remove any dirt or dust that may have accumulated during shipment.

Apply a generous coat of wax or another hard glossy finish that will protect the painted surfaces.

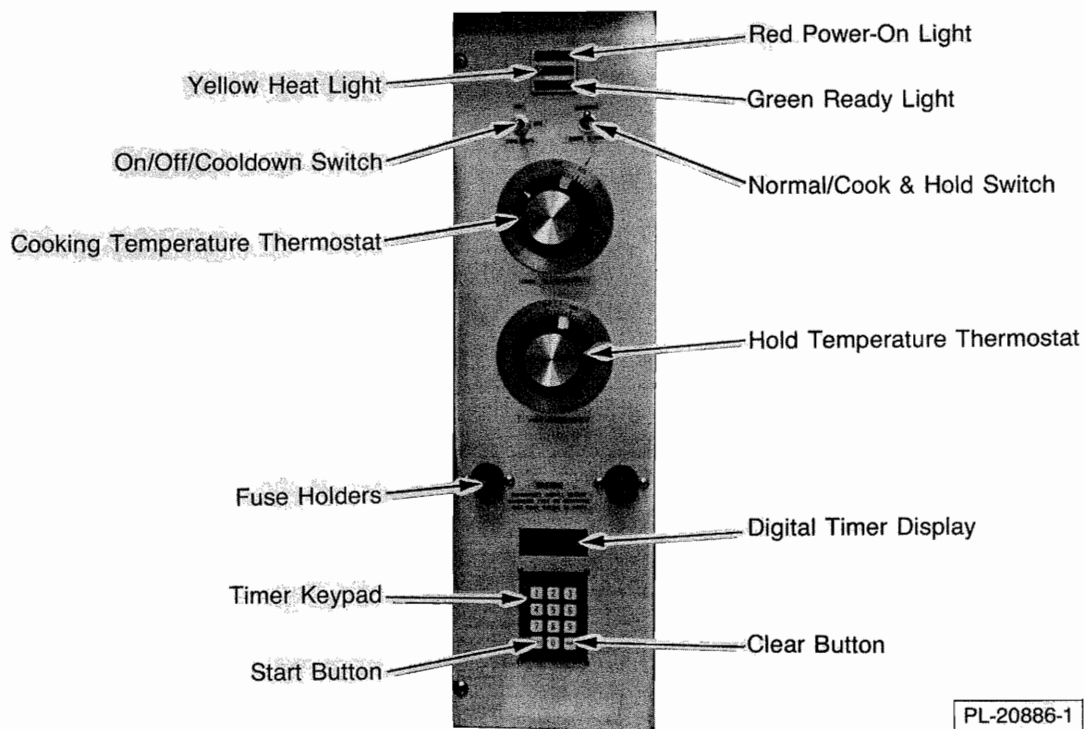


Fig. 1

## CONTROLS (Fig. 1)

**FUSE HOLDERS** — **WARNING:** DISCONNECT ELECTRICAL POWER SUPPLY AND PLACE A TAG AT THE DISCONNECT SWITCH INDICATING THAT YOU ARE WORKING ON THE CIRCUIT BEFORE REPLACING FUSES. Replace fuses with appropriate replacements as directed on control panel.

**ON-OFF-COOLDOWN SWITCH** — Controls power to the oven. The red POWER light is lit when this switch is on. With the switch in the COOLDOWN position, the fan motor will run with the door ajar to speed oven cooling at the end of the day.

**NORMAL/COOK & HOLD SWITCH** — NORMAL position selects control by the COOK TEMPERATURE THERMOSTAT. COOK & HOLD selects control by the COOK TEMPERATURE THERMOSTAT for the amount of time on the timer — then control transfers to the HOLD TEMPERATURE THERMOSTAT until the oven is turned off.

**COOK TEMPERATURE THERMOSTAT** — Controls the oven temperature when in the NORMAL operation or during the initial part of the COOK & HOLD operation. The yellow HEAT light is lit when either thermostat is calling for additional heat in the oven, the heating elements are energized, and heat is being produced in the oven.

**HOLD TEMPERATURE THERMOSTAT** — Sets the temperature for the HOLD phase of the COOK & HOLD operation. The green READY light comes on when the temperature in the oven declines to the HOLD TEMPERATURE setting. The HEAT light is lit when either thermostat is calling for additional heat in the oven, the heating elements are energized, and heat is being produced in the oven.

**DIGITAL TIMER** — A countdown timer which displays the remaining time for a cook cycle. Time is displayed in hours and minutes with a maximum of 99 hours, 99 minutes. At the completion of the cook cycle, it will automatically switch the oven to the hold cycle when in the COOK & HOLD mode of operation.

TIMER KEYPAD — To set the timer, press CLEAR, enter the HOURS and MINUTES of the cook period, and press START. The timer will display the setting and begin to count down. To enter a new setting, press CLEAR and begin again. After the timer counts down to zero, an alarm will sound for 30 seconds or until you push CLEAR. The timer does not turn off the oven. A flashing (:) indicates the counter is counting; a constant (:) indicates the counter is idle.

KEYBOARD — (0-9) — used to enter time period.

START — used to start countdown.

CLEAR — used to clear timer and reset it to 00:00.

RED POWER-ON LIGHT — Will be on whenever the ON-OFF-COOLDOWN switch is in either the ON or COOLDOWN position.

YELLOW HEAT LIGHT — When lit, indicates the thermostat in use at that time is calling for heat.

GREEN READY LIGHT — When lit, indicates that the cooking cycle is complete.

ELECTRICAL DOOR INTERLOCK — Turns off the blower and heating elements whenever the oven door is open. However, the COOLDOWN switch energizes the FAN only to cool the oven when the door is open.

## **PROPER UTENSILS**

The use of proper utensils can enhance oven operation. Medium- and light-weight pans are recommended since it is not economical to heat heavy pans to baking temperatures.

For baking operations, dull seasoned pans are recommended. Dull aluminum or tin baking sheets with shallow sides or no sides produce the most evenly browned products.

Meats should be roasted in the shallowest pan that is deep enough to hold all juices.

## **CONSERVING ENERGY**

Following are some tips for reducing energy consumption:

Turn off unused equipment

Use the COOK & HOLD mode of operation.

Adjust menu patterns and cooking/baking schedules for optimum equipment use.

Reduce thermostat settings in slack period since electric equipment heats up and recovers quickly.

Preheat only to required cooking temperature for specific food — not higher.

Do not open the oven door unless absolutely necessary. Use the window as much as possible to observe cooking progress.

Keep oven door opening clean and free of food particles. Any obstruction that prevents the door from closing completely will adversely affect oven efficiency.

## USING THE OVEN

### “NORMAL” COOKING MODE

#### Preheating

Close the oven door. Place the NORMAL/COOK & HOLD switch in the NORMAL position. Set the COOK TEMPERATURE thermostat to the desired temperature (see Fig. 2 for suggested temperatures). Turn the ON/OFF/COOLDOWN switch to the ON position. The red POWER light will come on, indicating that power to the oven is on, and the yellow HEAT light will be illuminated, indicating that the oven is heating.

The oven will preheat until the thermostat setting is reached and the yellow HEAT light shuts off.

The following table lists suggested cooking times and temperatures. These times, which will vary depending on initial product temperature, size, shape, etc., are approximate and should be adjusted to suit your operation.

### SUGGESTED TIMES AND TEMPERATURES FOR BAKING AND ROASTING

PRODUCT	TEMPERATURE (°F)	TIME (MINUTES)	NUMBER OF RACKS
<b>BREAD PRODUCTS</b>			
Hamburger Rolls	300	15	5
Bread - 1 Pound Loaves	325	34	3 (12 loaves)
Rolls	300	16	5 (60 rolls)
Baking Soda Biscuits	400	7	3
<b>PASTRIES</b>			
Sheet Cake (2½ lbs. per pan)	300	17	5
Frozen Fruit Pies (46 oz.)	350	50	5 (10 pies)
Frozen Fruit Pies (26 oz. 8" diam.)	350	40	5 (15 pies)
Sugar Cookies	300	15	5
Danish Rolls	350	12	5
Fruit Cakes	275	75	3
Cake — 1 Pound	300	19	5 (10 cakes)
<b>MEAT</b>			
Hamburger Patties (5 per lb.)(well done)	400	9-10	5 (55 patties)
Baked Stuffed Pork Chops	400	40	5
Roast Beef (10-lb. roasts)	250	2½-3 hrs.	2 (4 roasts)
<b>FISH</b>			
Fish Sticks	350	15	9
Lobster Tails	450	9	5
Halibut Steaks (Frozen 5 oz.)	350	20	5
Baked Shrimp (Stuffed)	400	7	5
<b>FOWL</b>			
Turkey, Rolled (18 lb. Rolls)	310	3¾ hrs.	1
Chicken (2½ lb. quartered)	350	30-35	5
Chicken (Breasts)	350	30	5
<b>OTHER</b>			
Melted Cheese Sandwiches	400	8	5
Idaho Potatoes (120 Count)	450	40	5
Macaroni & Cheese	350	30	5

Fig. 2

## Loading

While the oven is preheating, load product into suitable pans.

When the yellow HEAT light goes off, open the door and load the oven as quickly as possible to avoid unnecessary heat loss. Place pans in the center of the racks. Close the door.

## Cooking

When preheating is complete, select the cook time from the table (Fig. 2) and enter the time in hours and minutes by pushing the timer keyboard digits. See CONTROLS section for TIMER KEYPAD details.

Press START. The timer will display the setting and begin to count down. The colon (:) will flash during this countdown period. After the timer counts down to zero, an alarm will sound, indicating that the cooking time is complete. Push CLEAR or wait 30 seconds and the audible signal will shut off.

**The timer will not turn off the oven so it will be necessary to remove the product to prevent overcooking.**

## Unloading

When the product is done, open the door and unload the oven. Any spills should be wiped up as quickly as possible to prevent them from becoming stubborn stains.

## “COOK & HOLD” COOKING MODE

### Preheating

Close the oven door. Place the NORMAL/COOK & HOLD switch in the NORMAL position. Set the COOK TEMPERATURE thermostat to the desired temperature (see Fig. 2 for suggested temperatures). Turn the ON/OFF/COOLDOWN switch to the ON position. The red POWER light will come on, indicating that power to the oven is on, and the yellow HEAT light will be illuminated, indicating that the oven is heating.

The oven will preheat until the thermostat setting is reached and the yellow HEAT light shuts off.

Next, turn the NORMAL/COOK & HOLD switch to COOK & HOLD. Set the HOLD TEMPERATURE thermostat to the desired temperature. The suggested hold temperature for beef products is 140°F. Additional guidelines appear on Page 11.

### Loading

While the oven is preheating, load product into suitable pans.

When preheating is completed, open the door and load the oven as quickly as possible to avoid unnecessary heat loss. Place pans in the center of the racks. Close the door.

### Cooking

Select the cook time from the table (Fig. 2) and enter the time in hours and minutes by pushing the timer keyboard digits. See CONTROLS section for TIMER KEYPAD details.

Press START. The timer will display the setting and begin to count down. The colon (:) will flash during this countdown period. After the timer counts down to zero, an alarm will sound, indicating that the cooking time is complete. The alarm may be turned off by pressing CLEAR.

When in the COOK & HOLD operation, the oven cooks the product in two stages (see diagram in Fig. 3). Cooking progresses in the first stage with the heating elements maintaining the COOK TEMPERATURE setting for the length of time on the preset timer.

After the preset time is elapsed, the second stage begins. Cooking is completed using the stored energy in the oven while the temperature declines until the holding temperature is reached. **It is critical that you DO NOT OPEN THE DOORS during this stage of the cooking process.** While the temperature of the oven is declining, the temperature of the product is still increasing.

The green READY light comes on when the HOLD TEMPERATURE is reached. The product will be maintained at the HOLD TEMPERATURE until the oven is turned OFF. The product is ready to be served anytime after the READY light comes on.

**NOTE:** If the product is removed before the READY light comes on, it may not be fully cooked.

COOKING DIAGRAM — COOK & HOLD CONVECTION OVEN

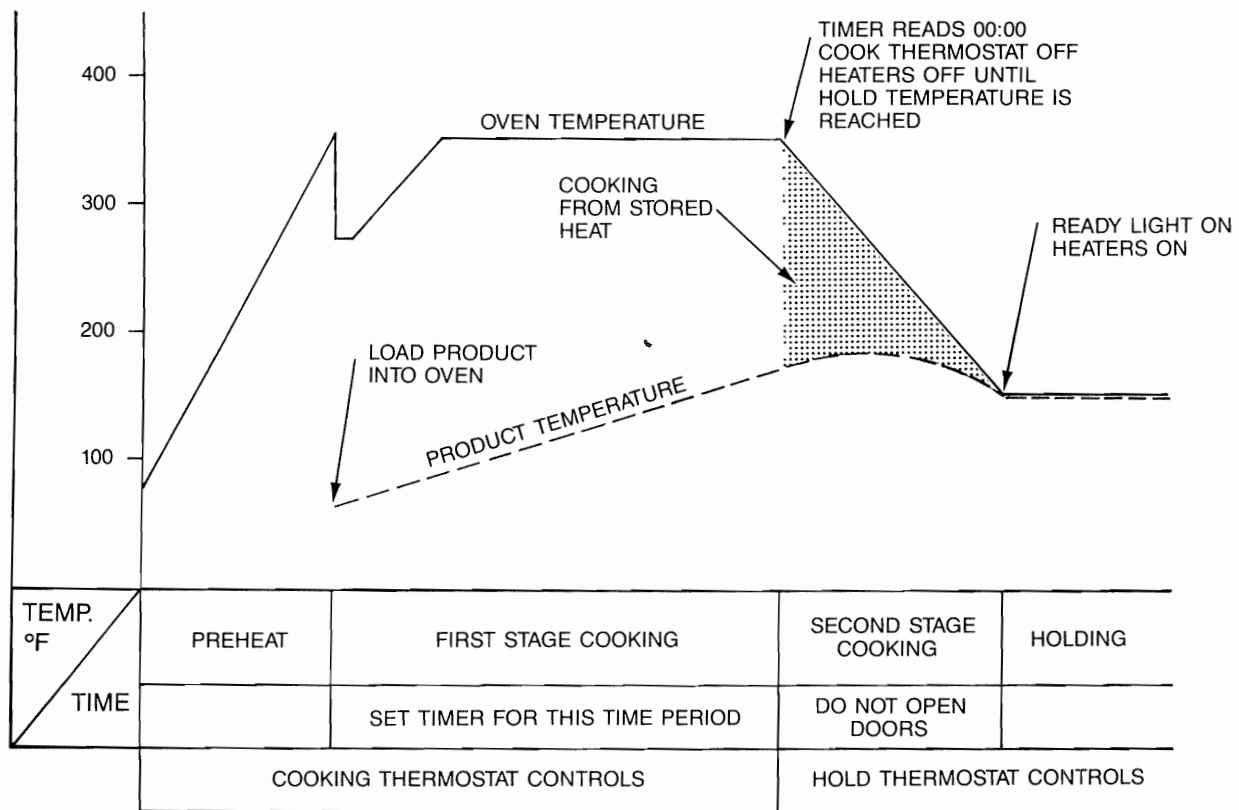


Fig. 3

### Unloading

When the product is done, open the door and unload the oven. Any spills should be wiped up as quickly as possible to prevent them from becoming stubborn stains.

The following 2 tables provide additional suggested cook and hold time and temperature guidelines.

## ROLLED BEEF ROASTS (Refrigerated — Not Frozen)

SET TIME* (THE TIMER SETTING)						
OVEN TEMPERATURE	200F		250F		300F	
DONENESS INTERNAL TEMP.	RARE 140F	MED. 160F	RARE 140F	MED. 160F	RARE 140F	MED. 160F
ROAST WT. (LBS.)	TIMER SETTING IN HOURS		TIMER SETTING IN HOURS		TIMER SETTING IN HOURS	
8	2¾	3¾	1¾	2¼	1½	1¾
9	3	4	2	2½	1½	2
10	3¼	4½	2¼	2¾	1¾	2
11	3½	4¾	2¼	3	1¾	2¼
12	3¾	5¾	2½	3¼	1¾	2½
13	4	5½	2¾	3½	2	2½
14	4¼	6	2¾	3¾	2	2¾
15	4½	6¼	3	3¾	2¼	2¾
16	4¾	6½	3	4	2¼	3
17	5	6¾	3¼	4¼	2½	3
18	5	7	3½	4½	2½	3¼
19	5¼	7½	3½	4½	2¾	3½
20	5½	7¾	3¾	4¾	2¾	3½
21	5¾	8	3¾	5	3	3¾
22	6	8¼	4	5	3	3¾
23	6¼	8½	4	5¼	3	4
24	6¼	9	4¼	5½	3¼	4
25	6½	9¼	4½	5¾	3¼	4¼
26	6¾	9½	4½	5¾	3½	4½
27	7	9¾	4½	6	3½	4½
28	7¼	10	4¾	6¼	3½	4½
29	7½	10¼	5	6½	3¾	4¾
30	7½	10½	5	6½	3¾	4¾
*Approximate additional time to allow before the READY and HEAT lights come ON.						
1 hour			1½ hours		2 hours	

To provide the same doneness when cooking several roasts at the same time, roasts should be the same size and the timer should be set for that size roast. You may choose to preheat at a higher temperature but be sure to reset the thermostat to the correct cooking temperature after loading the oven.

Fig. 4

## COOKING AND HOLDING OTHER FOODS

FOOD PRODUCT	QUANTITY	FOOD SIZING FOR COOKING TIMES SHOWN	COOK TEMP. °F.	COOK TIMES					FINAL INTERNAL TEMP. °F.	
				TIMER SETTING		PLUS	ADDITIONAL TIME TO ALLOW FOR SECOND STAGE COOKING	TOTAL COOK TIME		
				HR.	MIN.					HR.
Leg of Lamb	1 or more, all approximately the same size for simultaneous cooking	5-15 lbs	300F		20 min. per lb.	+	5 min. per lb.	=	25 min. per lb.	180F
Kentucky Country Ham	1 or more, all approximately the same size for simultaneous cooking	15-pound ham	300F	2 hrs.		+	2 hrs. 30 min.	=	4 hrs. 30 min.	155F
Turkey	1 or more, all approximately the same size for simultaneous cooking	12-pound turkey 14-pound turkey 16-pound turkey 18-pound turkey 20-pound turkey 22-pound turkey	250F	2 hrs.	5 min.	+	55 min.	=	3 hrs. 25 min.	190F
				2 hrs.	30 min.	+	55 min.	=	3 hrs. 50 min.	
				2 hrs.	55 min.	+	55 min.	=	4 hrs. 15 min.	
				3 hrs.	20 min.	+	55 min.	=	4 hrs. 35 min.	
				3 hrs.	40 min.	+	55 min.	=	4 hrs. 55 min.	
				4 hrs.		+	55 min.	=	4 hrs. 55 min.	
Chicken	1-12 chickens 18-24 chickens	each chicken 2-3 lbs.*	300F		30 min. 40 min.	+	10 min. 15 min.	=	40 min. 55 min.	180F
Duckling	1-5 ducks 6-10 ducks	each duckling 3.5-4 lbs.*	325F		55 min. 10 min.	+	15 min. 25 min.	=	1 hr. 10 min. 1 hr. 35 min.	200F

\* For other sizes, use table as guide only and vary times to determine best procedure for product size and load.

Fig. 5

# MAINTENANCE

## CLEANING

At the end of the day's operation:

Set the ON-OFF-COOLDOWN switch at COOLDOWN.

Leave the door ajar while the fan runs to cool the oven.

When the oven has cooled sufficiently, set the switch at OFF and clean the oven.

The outside of the oven should be cleaned daily by wiping with a clean damp cloth.

### Aluminized Oven Interior

When cleaning the interior of your Hobart oven, it is important to bear in mind that aluminum coating, though tightly adherent, is still a coating. To preserve the coating, and for ease of maintenance, clean daily when the oven is cold with a soft cloth dampened in mild detergent or soap and water. This will prevent food and dirt from "baking on" and frequently will be all the cleaning that is necessary.

Where soil resists soap-water cleaning, use a **"wooden tool" to loosen spillage from cold oven.** Follow with a non-etching cleaner which is specifically recommended for aluminized steel.

**DO NOT USE STEEL WOOL, WIRE BRUSHES, OR CAUSTIC SOLUTIONS SUCH AS LYE, SODA ASH, OR AMMONIA. NEVER POUR WATER OR USE A SOAKING WET RAG IN INTERIOR OF YOUR OVEN. DO NOT CLEAN HEATERS BECAUSE THEY ARE SELF-CLEANING.**

To remove hardened food spillage, sprinkle salt on hardened particles. Turn thermostat to high heat. Close oven door and allow oven to idle until spillage has carbonized (charred). Then brush or wipe surface clean.

### Optional Stainless Steel Oven Liner

In general, the principles detailed above for aluminized steel apply. Soap or detergent and water usually will take care of routine cleaning. Dry with a soft clean cloth.

For burned-on foods and grease which resist simple soap-water cleaning, an abrasive cleanser (scouring powder) mixed into a paste may be used. Apply with stainless steel wool or sponge, always rubbing with the "grain."

This treatment is equally effective for "heat tint" (slightly darkened areas caused by oxidation). Again, remember to rub in the direction of the polish lines. Rinse with clear water and dry with a soft cloth.

### Optional Non-Stick Oven Liner

In order to preserve the easy-care properties of your non-stick oven panels, frequent cleaning, dependent on oven usage, is recommended. Panels should be cleaned as soon as soil begins to turn brown. Do not use sharp instruments, abrasive materials, or oven cleaners on non-stick surface or you will void the warranty. Should surface be accidentally scratched, performance and cleanability features are not affected.

To clean non-stick panels, remove panels and wash thoroughly with hot soapy water using a sponge or web pad. Do not use harsh abrasives or steel wool-type pads. Rinse well and dry. Between these cleanings, everyday oven splatters can be easily sponged off with soapy sponge or cloth, rinsed, and dried. Do not use oven cleaners.