INSTRUCTIONS

ELECTRIC COMBI OVENS
. . . with Programmable Controls

MODEL

HC10HEP	*ML-52451*
HC10FEP	*ML-52452*

HOBART
CORPORATION
WORLD HEADQUARTERS
701 S. RIDGE AVENUE
TROY, OHIO 45374-0001

FORM 19333 Rev. A (1-98)

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Table of Contents

GENERAL 4

INSTALLATION 4

UNPACKING 4
LOCATION 4
LEGS OR TABLE 4
LEVELING 4
ELECTRICAL CONNECTION 5
CHECK FAN ROTATION 5
PLUMBING CONNECTIONS 6
WATER SUPPLY 6
DRAIN CONNECTION 6
VENT HOOD 6

OPERATION 7

DOOR OPENING AND CLOSING 7
GREASE FILTER 7
LOADING THE OVEN 7
UNLOADING THE OVEN 7
MANUAL CONTROLS 8
BAKING (CONVECTION BAKING - HOT AIR) 10
CONVECTION BAKING APPLICATIONS 11
STEAMING 12
STEAMING APPLICATIONS 13
COMBI (CONVECTION BAKING WITH STEAMING) 14
COMBI APPLICATIONS 15
USING THE TEMPERATURE PROBE 16
TEMPERATURE PROBE APPLICATIONS 17
PROGRAMMABLE CONTROLS 18
COOK AND HOLD 20
COOK AND HOLD APPLICATIONS 21
PROGRAMMING MEMORY 22
EXAMPLE PROGRAM 23
RECALLING A PROGRAM FROM MEMORY 24
MENU CARD 25
CLEANING 26
DAILY CLEANING 26
COMPLETE CLEANING 26

MAINTENANCE 28

REMOVAL OF LIME SCALE DEPOSITS 28
SERVICE 28

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Installation, Operation, and Care of ELECTRIC COMBI CONVECTION & STEAM OVENS

KEEP THIS MANUAL

GENERAL

The Electric Combi Convection & Steam Ovens are single compartment ovens that provide convection heating and/or steaming in the cooking chamber. Humidification can be provided by the internal steam generator or by water injection (water vaporizes on contact with the hot oven interior).

The **E**lectric **C**ombi ovens are sized **10** high, either **F**ull or **H**alf depth, and include a **P**rogrammable control. The **bold** numbers and letters explain the model-number conventions.

The 10 high models can be installed on an optional table or on a suitable countertop using the optional legs. Trolleys can load or unload all racks in one motion, quickly and easily. The hose spray accessory can be installed near the oven to facilitate easy cleaning.

INSTALLATION

UNPACKING

Immediately after unpacking the oven, check 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.

Prior to installation, verify that the electrical service agrees with the specifications on the oven data plate.

LOCATION

Allow space for operating the oven. Do not obstruct the ventilation ports above the oven. Do not install the oven next to a major heat source, such as a griddle or fryer. To provide service access, allow 8" on the right side of the oven.

LEGS OR TABLE (Countertop Models)

If assembling legs, thread the legs into the threaded holes at the four corners of the oven. If assembling the oven on top of an optional table, insert four bolts from underneath at the four corners and tighten until secure. Assemble condensate drip-pan to bottom of oven, connect tube to drain.

LEVELING

Using a spirit level or pan of water in the bottom of the oven, adjust the leveling feet on the legs to level the oven front-to-back and side-to-side. After the drain is connected (page 6), check for level by pouring water onto the floor of the compartment. All water should drain through the drain opening.

ELECTRICAL CONNECTION

WARNING: ELECTRICAL AND GROUNDING CONNECTIONS MUST COMPLY WITH 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.

The wiring diagram is located on the inside surface of the right side panel as you face the oven. Use copper wire rated for at least 90°C for the connection.

ELECTRICAL DATA

Model	Volts / Hz / Phase	Minimum Circuit Ampacity Maximum Protective Device AMPS
HC10HEP	208 / 60 / 3	70
	240 / 60 / 3	60
	480 / 60 / 3	30
HC10FEP	208 / 60 / 3	100
	240 / 60 / 3	80
	480 / 60 / 3	40

Compiled in accordance with the National Electrical Code (ANSI/NFPA 70), 1993 Edition.

CHECK FAN ROTATION (All Three-Phase Models)

Remove the rack support and grease filter panel. If the fan does not rotate counterclockwise as you look inside the oven chamber, correct the rotation using the following procedure:

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

Interchange any two of the incoming power supply leads.

Reenergize and verify correct fan rotation.

Turn the oven off and reassemble grease filter panel and rack support.

PLUMBING CONNECTIONS

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

WATER SUPPLY

Connect the potable water supply to the external-threaded nylon inlet (3/4" NSHT - National Straight Hose Thread) located underneath the oven at the rear. Treat the nylon threads carefully so the connection does not leak. A manual shutoff valve must be provided convenient to the oven; this valve should be open when the oven is in operation. Water pressure should be between 7 and 87 psig.

The water supply should contain no more than 5.0 grains of hardness per gallon with pH from 6.5 to 8.0. This degree of hardness and pH can easily be obtained with the use of a properly maintained water softener.

Water supplies vary from one location to another. A local water treatment specialist should be consulted before installing any steam generating equipment.

Untreated water contains scale producing minerals which can precipitate onto the surfaces in the steam generator tank. Due to the temperatures in the tank, the minerals can bake onto the surfaces and components. This can result in early component failure and reduced product life.

Sensors in the steam generator tank use ions in the water to detect the water level. Do not use distilled (fully demineralized or de-ionized) water as this could provide a false reading to the sensors.

Strainers and filters will NOT remove minerals from the water.

Refer to REMOVAL OF LIME SCALE DEPOSITS, page 28.

DRAIN CONNECTION

CAUTION: In order to avoid any back pressure in the steam oven, do not connect solidly to any drain connection.

An adaptor collar is recommended for the machine drain connection, located underneath the oven at the rear. The drain line should be plumbed to an open gap-type drain and include a trap. Drain piping must have suitable pitch, have appropriate support along its length, and have no connection to other piping. The material used in the drain line should be heat resistant to at least 212°F. The open drain should be located between 3 and 5 feet away from the perimeter of the oven to reduce potential damage from moisture-corrosion.

VENT HOOD

Some local codes may require the Combi oven to be located under an exhaust hood. Information on the construction and installation of ventilating hoods may be obtained from *Vapor Removal from Cooking Equipment*, NFPA standard No. 96 (latest edition).

OPERATION

WARNING: THE OVEN AND ITS PARTS ARE HOT. USE CARE WHEN OPERATING, CLEANING OR SERVICING THE OVEN. THE COOKING COMPARTMENT CONTAINS LIVE STEAM. STAY CLEAR WHEN OPENING DOOR.

DOOR OPENING AND CLOSING

The oven door is equipped with an electrically powered lock. The oven is delivered with the door unlocked and can be opened by firmly pulling the door handle. Push the door until it connects with the latch but remains slightly open (Fig. 1). This is the position the door should be in when the oven is not in use. The door should also be in this position after cooking to allow steam to escape before fully opening the door. Push the handle until it is in line with the oven door. If power has been connected, the door will now lock automatically, sealing the oven chamber (Fig. 2).

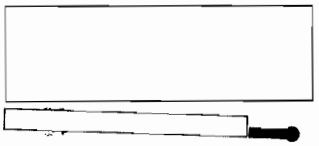


Fig. 1



Fig. 2

To release the door, rotate the handle 90 degrees. The door automatically releases to the 'latched and slightly opened' position. Allow a few seconds for steam to escape before pulling the door open (Fig. 3).

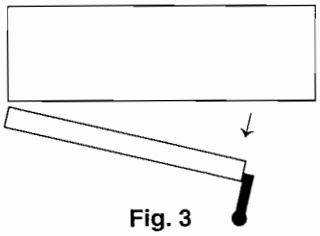


Fig. 3

NOTE: In the event of a power failure, the door may be opened by pulling the handle firmly towards you while firmly pressing against the front of the oven with the other hand.

GREASE FILTER

The grease filter in the rear of the oven chamber should be in place when roasting meat items but may be removed before baking items that do not produce grease-laden vapors. See Cleaning, page 26, for information on how to remove the grease filter.

LOADING THE OVEN

Open the door. Place the product to be cooked in suitable containers and slide into the racks or place the containers securely on shelves in the oven.

When loading a size 10 oven with the half-height trolley, the bottom frame of the rack should be secured by the rotary lock. Move the loaded trolley to the front of the open oven; secure the trolley to the oven by actuating the locking-clamp (or use your body to hold the trolley against the oven). Rotate the lock-knob to release the rack and carefully roll the loaded rack into the oven, making sure that the trolley does not separate from the oven during the transfer.

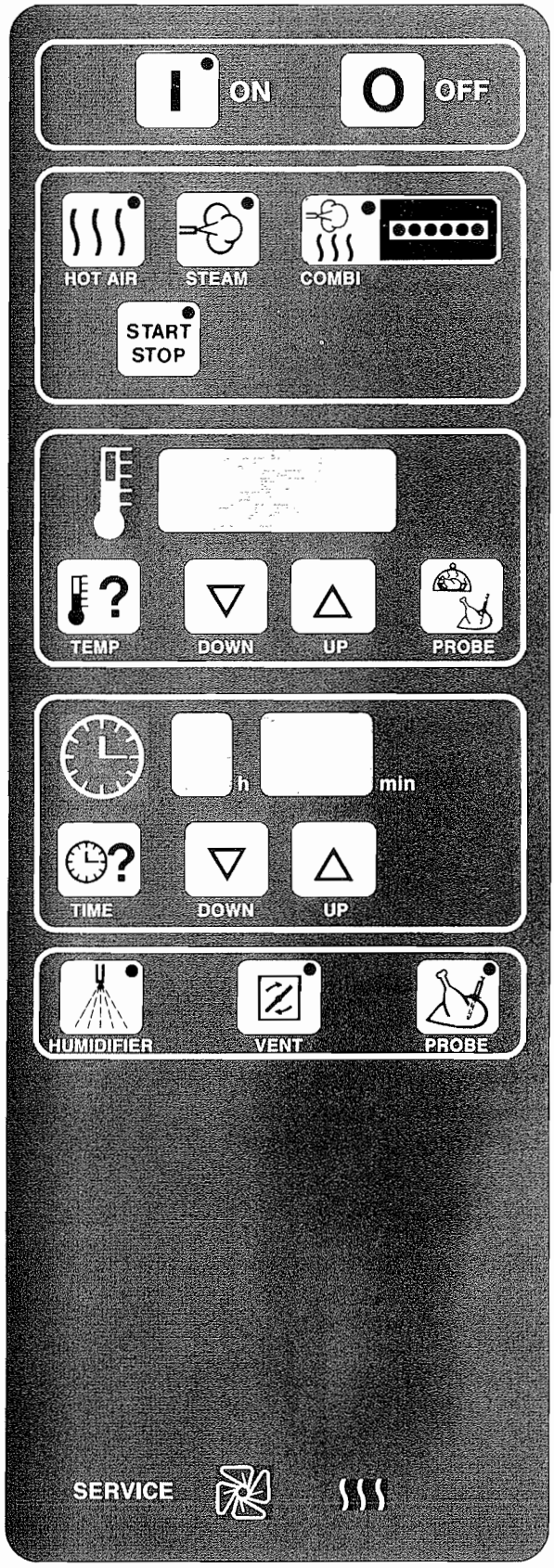
NOTE: When the roll-in trolley is not in use in the size 10 oven, make sure the insert retainer (delivered with the oven) is fitted under the fan baffle to prevent it from tilting when pans are being removed.

UNLOADING THE OVEN

Allow the door to be 'slightly-opened' for a few seconds to allow hot air and steam to escape. Stand behind the door. Open the door.

When unloading a size 10 oven, move the half-height trolley so the clamp locks the trolley to the front of the oven (or use your body to hold the trolley against the oven). Use mitts and carefully roll the hot rack onto the trolley platform, making sure that the trolley does not separate from the oven during the transfer. Rotate the knob to allow the rack to move completely to the front of the trolley; and rotate the knob back to lock the rack in place.

MANUAL CONTROLS



Main Power: On / Off

Mode Selection:
Convection / Steam / Convection and Steam

Start/Stop

Temperature Display

Inquire & Set:
Oven and/or Probe Temperature(s)

Time Display

Inquire & Set:
Cooking Time

Select Features:
Humidifier / Vent / Temperature Probe

Service Needed for: Fan / Power

MANUAL CONTROLS

Main Power: On / Off

ON — After an initial power-up sequence, the ON indicator light and the utility light inside the oven are lit. The actual oven temperature is shown in the Temperature display; – h – – min is in the Time display. The control will now accept other commands.

OFF — Shuts off the oven at the end of the day: Turns off the utility light inside the oven, opens the oven vent, and drains the steam generator tank (pump takes 3 minutes).

Mode Selection: Hot Air / Steam / Combi / Start Stop

HOT AIR — Heat and Fan are ON. Initial temperature setting is 302°F (range is 32 – 518°F).

STEAM — Steam and Fan are ON. Initial temperature setting is 212°F (range is 32 – 212°F).

COMBI — Heat, Fan, and Steam are ON. Initial temperature setting is 302°F (range is 212 – 518°F). The amount of steaming is determined by the number of times you press the Combi key (1 – 6), indicated by the row of lights.

START STOP — Starts or stops the cooking operation. First start fills the steam generator tank.

Temperature Display: Temp / Down / Up / Probe

TEMP — Changes the display from the Actual Oven Temperature to the Oven Temperature Setting, which can be increased or decreased using the Up or Down keys. The red dot indicates the heating elements are ON.

DOWN — Decreases the Temperature.

UP — Increases the Temperature.

PROBE — Changes the display from the Actual Oven Temperature to the Probe Temperature, which can be increased or decreased using the Up or Down keys.

Time Display: Time / Down / Up

TIME — Allows the cooking time to be set if the Temperature Probe has not been selected.

DOWN — Decreases the Cooking Time.

UP — Increases the Cooking Time.

Selectable Features: Humidifier / Vent / Probe

HUMIDIFIER — A trickle of water flows onto the oven floor and flashes to steam in the hot oven. The water flows (for a maximum of 2 seconds) while the key is being pressed.

VENT — Opens the oven vent and allows heat to escape from the oven.

PROBE — Inhibits the timer and allows the Probe Temperature to be set.

BAKING (Convection Baking – HOT AIR)

Convection Baking involves baking, browning, roasting, etc. without adding steam or moisture to the process. The hot air is fan-circulated to maintain even temperatures throughout the oven.

Automatic Convection Baking can be set up so the buzzer sounds when either the Cooking Time has elapsed or the Probe Temperature has been reached. Preheat the oven to the set temperature before loading product.

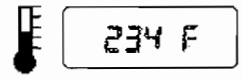
If you use the Temperature Probe, insert the probe near to the center of the product. Both the Probe and the Oven Temperatures must be set. You cannot set the Cooking Time if the Temperature Probe is in use.



Turn the oven ON.



Select Convection (HOT AIR) Mode.

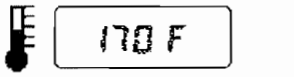


Press [?] and set the Oven Temperature (32 – 518°F).



Use Up or Down arrows to increase or decrease.

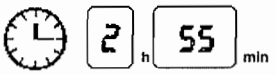
For AUTOMATIC OPERATION, set the Probe Temperature or the Cooking Time:



If using the probe, press [ ] and [ ]; then set the Probe Temperature.



Use Up or Down arrows to increase or decrease.



If not using the probe, you may press [?] and set the Cooking Time.



Use Up or Down arrows to increase or decrease.

Load the oven and close the door.



Press Start/Stop to begin. When complete, press Start/Stop to silence the buzzer.

CONVECTION BAKING APPLICATIONS – HOT AIR MODE

All Applications are suggested only — prove your own recipes and temperature / time settings.

Product	Preparation	Preheat Temp (°F)	Oven Temp (°F)	Time (minutes)
FISH				
Cod or Mullet, fresh	Season, Oil	390	350	10 - 12
Sea-frozen fish fillet	Thoroughly oil plate bottom and upper side of fish fillet. After baking, let stand for 2 minutes to avoid sticking and make portioning easier.	480	350	10 - 12
Sole, fresh	Season, Oil	425	350	10 - 12
Trout, fresh	Season, Oil	425	350	10 - 12
Trout, frozen	Season, Oil	425	350	15 - 22
Trout, breaded, fresh	Dip in flour, egg, breadcrumb mixture Grease pan thoroughly	480	435	15 - 20
PORK				
Pork Chop, fresh, sauteed	Season, Oil lightly	480	350	10 - 12
Pork Chop, frozen, sauteed	Oil lightly; Season after roasting	480	425	15
Pork Cutlet, fresh 4 - 5 oz	Dip in egg, breadcrumb batter, thoroughly oil the breaded surface of the cutlets, avoid leaving dry spots, lightly oil plate bottom.	480	425	10 - 12
Pork Cutlet, fresh, breaded	Oil both sides	425	350	10 - 12
Pork Loin Cutlet, fresh 4 - 5 oz	Do not season	480	425	6 - 8
Ham Steak, fresh	Season, Oil lightly	480	350	6 - 10
Pork Sausage, fresh	Oil lightly	480	425	8 - 10
Pork Steak, fresh	Season, Oil lightly	500	480	7
Pork Steak, frozen	Oil, Season after roasting process	500	425	10 - 12

Product	Preheat Temp (°F)	Oven Temp (°F)	Time (minutes)
PASTRY			
Puff Pastry	340	340	18 - 20
Danish Pastry	350	350	18 - 20
Flaky Pastry	340 - 350	340 - 350	16 - 18
Cake	350	350	8
Fruit Cake	320	320	55 - 65
Yeast Rolls with milk	390	390	10 - 12
Almond Pastry	350	350	10 - 12
Nut Pastry	350	350	10 - 12
Chocolate Pastry	350	350	10 - 12
Biscuit Pastry	350	350	10 - 12

STEAMING (Steam Mode only)

Steam cooking is used for stewing, poaching, and gentle cooking of products cooked in water. Steam flows without pressure into the oven. The fan circulates the steam to all parts of the oven.

Preheat the steam generator for 6 - 8 minutes if starting from cold.

Automatic Steaming can be set up so the buzzer sounds when either the Cooking Time has elapsed or the Probe Temperature has been reached. Preheat the oven to the set temperature before loading product.

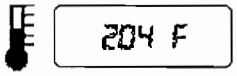
If you use the Temperature Probe, insert the probe near to the center of the product. Both the Probe and the Oven Temperatures must be set. You cannot set the Cooking Time if the Temperature Probe is in use.



Turn the oven ON.



Select Steam Mode.

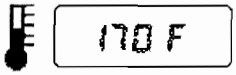


Press [?] and set the Oven Temperature (212°F Max for Steaming).



Use Up or Down arrows to increase or decrease.

For AUTOMATIC OPERATION, set the Probe Temperature or the Cooking Time:



If using the probe, press [ ] and [ ]; then set the Probe Temperature.



Use Up or Down arrows to increase or decrease.



If not using the probe, you may press [?] and set the Cooking Time.



Use Up or Down arrows to increase or decrease.

Load the oven and close the door.



Press Start/Stop to begin. When complete, press Start/Stop to silence the buzzer.

STEAMING APPLICATIONS

All Applications are suggested only — prove your own recipes and temperature / time settings.

Product	Preparation	Time (minutes)
VEGETABLES		
Asparagus, fresh	Sprinkle with lemon drops before cooking	12 - 15
Broccoli, fresh	Season after cooking	15 - 18
Brussels Sprouts, fresh or frozen	Season after cooking	15 - 18
Cabbage, white, sliced, fresh		15 - 18
Carrots, small, fresh or frozen	Season after cooking	18 - 20
Carrots, diced, fresh		15 - 18
Cauliflower, fresh or frozen	Season after cooking	15 - 18
Cauliflower, head, fresh	Sprinkle with lemon drops before cooking	18 - 20
Celery, slices or diced	Sprinkle with lemon drops before cooking	18 - 20
Corn, on-the-cob, fresh	Sprinkle with lemon drops before cooking	15 - 18
Eggplant		10
Green Beans, fresh or frozen	Season after cooking	18 - 20
Mushrooms, halved, quartered, or sliced	Sprinkle with lemon drops before cooking	8 - 10
Peas, frozen	Season after cooking	12 - 15
Potatoes	Soak in 10% salt water for 15 minutes before cooking; or, salt dry	30 - 35
Spinach, fresh		2 - 4
SIDE DISHES		
Dumplings, Meat Balls	Steam without added water	15 - 20
Pasta	Before cooking, cover with hot water and add some oil. Mix thoroughly once during the cooking process.	20 - 25
Rice	Add water to 150% of rice depth.	20 - 25
MEAT		
Brisket	Add seasoning and vegetables to the meat	90 - 120
Veal, fricassee	Add seasoning and vegetables to the meat	45 - 50
FISH & CRUSTACEANS		
Cod, Halibut, fresh or frozen	In serving size portions, 12 / pan	10 - 12
Crayfish Tails, frozen	Sprinkle with lemon drops and perhaps cover with fresh dill	12 - 15
Mussels	Add some wine	8 - 10
Salmon, fresh	Season with lemon	8 - 10

COMBI (Convection Baking with Steaming)

Combi Baking and Steaming is used for baking, roasting, or braising when steam needs to be added to the oven during a convection baking operation. The 'Percent Steam Time' can be varied by repeat pressing of the Combi key — see % Steam Time in the table below.

Preheat the steam generator if starting from cold: To preheat, operate in Steam mode for 6 - 8 minutes before going into Combi mode — steam generator heat is on 100% when operating in Steam mode.

Automatic Combination Cooking can be set up so the buzzer sounds when either the Cooking Time has elapsed or the Probe Temperature has been reached. Preheat the oven to the set temperature before loading product.

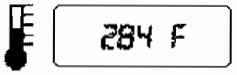
If you use the Temperature Probe, insert the probe near to the center of the product. Both the Probe and the Oven Temperatures must be set. You cannot set the Cooking Time if the Temperature Probe is in use.



Turn the oven ON.



Select Combi Mode and % Steam Time. *

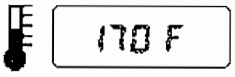


Press [?] and set the Oven Temperature (212 – 518°F).



Use Up or Down arrows to increase or decrease.

For AUTOMATIC OPERATION, set the Probe Temperature or the Cooking Time:



If using the probe, press [ ] and [ ]; then set the Probe Temperature.



Use Up or Down arrows to increase or decrease.



If not using the probe, you may press [?] and set the Cooking Time.



Use Up or Down arrows to increase or decrease.

Load the oven and close the door.



Press Start/Stop to begin. When complete, press Start/Stop to silence the buzzer.

* When selecting % Steam Time, press [ ] 1 to 6 times to obtain the desired percent.

Indicator Lights		% Steam Time	Seconds ON	Seconds OFF
•	Press once.	5%	5	95
••	Press twice.	10%	5	45
•••	Press three times.	20%	10	40
••••	Press four times.	30%	10	23
•••••	Press five times.	40%	10	15
••••••	Press six times.	50%	10	10

COMBI APPLICATIONS

All Applications are suggested only — prove your own recipes and temperature / time settings. Combi applications typically begin with a Steam Mode phase which automatically preheats the steam generator in readiness for a subsequent Combi Mode phase. Some applications contain a HOT AIR or Convection Mode phase. Combi Mode is seldom performed as a single phase cooking operation.

Product	Preparation	Phase 1	Phase 2	Phase 3	Total Time (minutes)
BEEF					
Boned & Rolled Roast Beef	Season, oil, add carrots, leaks, onions, and red wine	Steam 90 minutes	Combi 60 minutes 250 - 280 °F	–	150
Roast Beef	Season and oil lightly	Steam 20 minutes	Combi 15 minutes per pound 280 - 320 °F	Convection 10 minutes 360 - 390 °F	—
Roulades	Season, oil, and add red wine	Steam 30 minutes	Combi 40 minutes 280 - 320 °F	–	70
Braised Beef		Steam 90 minutes	Combi 55 minutes 320 °F	Convection 10 minutes 390 °F	155
Meat Loaf	Oil lightly in pan	Steam 10 minutes	Combi 55 minutes 350 °F	–	65
Stuffed Cabbage	Season, sprinkle with caraway and brown onions	Steam 45 minutes	Combi 20 minutes 350 °F	–	65
Veal, Brisket, stuffed	Season, oil lightly	Steam 15 - 20 minutes	Combi 60 - 70 minutes 290 °F	–	75 - 90
Veal, Roast Loin of	Season, oil lightly, add vegetables as basis of sauce	Steam 20 minutes	Combi 70 - 80 minutes 280 - 320 °F	–	90 - 100
PORK					
Pork Loin, Boneless	Add red wine	Steam 10 minutes	Combi 30 - 40 minutes 280 - 320 °F	–	40 - 50
Pork Pie or Meatloaf	Approximately 4 - 5 lb per aluminum pan	Steam 10 minutes	Combi 60 - 70 minutes 250 - 280 °F	–	70 - 80
Pork Sausage, coarse		Steam 5 - 6 minutes	Combi 5 - 6 minutes 350 °F	–	10 - 12
Pork Sausage, fine		Steam 5 minutes	Combi 5 - 7 minutes 390 °F	–	10 - 12
Stuffed Peppers	Place with the opening on the bottom	Steam 40 - 45 minutes	Combi 15 minutes 340 °F	–	55 - 60
POULTRY					
Chicken	Season	Steam 10 minutes	Combi 90 - 100 minutes 280 - 320 °F	–	100 - 110
Turkey or Goose	Season	Steam 10 minutes	Combi 100 - 110 minutes 280 - 320 °F	–	110 - 120

USING THE TEMPERATURE PROBE

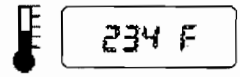
The Temperature Probe is kept in a metal bracket (holder) at the top of the oven when not in use. Remove the probe from its holder; the cable remains permanently connected to the top of the oven. Insert the pointed end of the probe so its tip is approximately in the middle of the product to be cooked. The probe cable is long enough to allow the product to be placed on one of the upper racks in the oven.



Turn the oven ON.



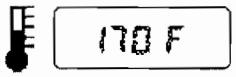
Select one of the cooking modes:
Convection, Steam, or Combi.
In *Combi* Mode, set the % Steam Time (refer to page 14).





Press [?] and set the Oven Temperature.

Use Up or Down arrows to increase or decrease.





Press [ ] and [ ]; and set the Probe Temperature.

Use Up or Down arrows to increase or decrease.

The Cooking Time does not need to be set; the oven will automatically shut itself off when the Probe Temperature is reached.

Load the oven. Insert the probe. Close the door.



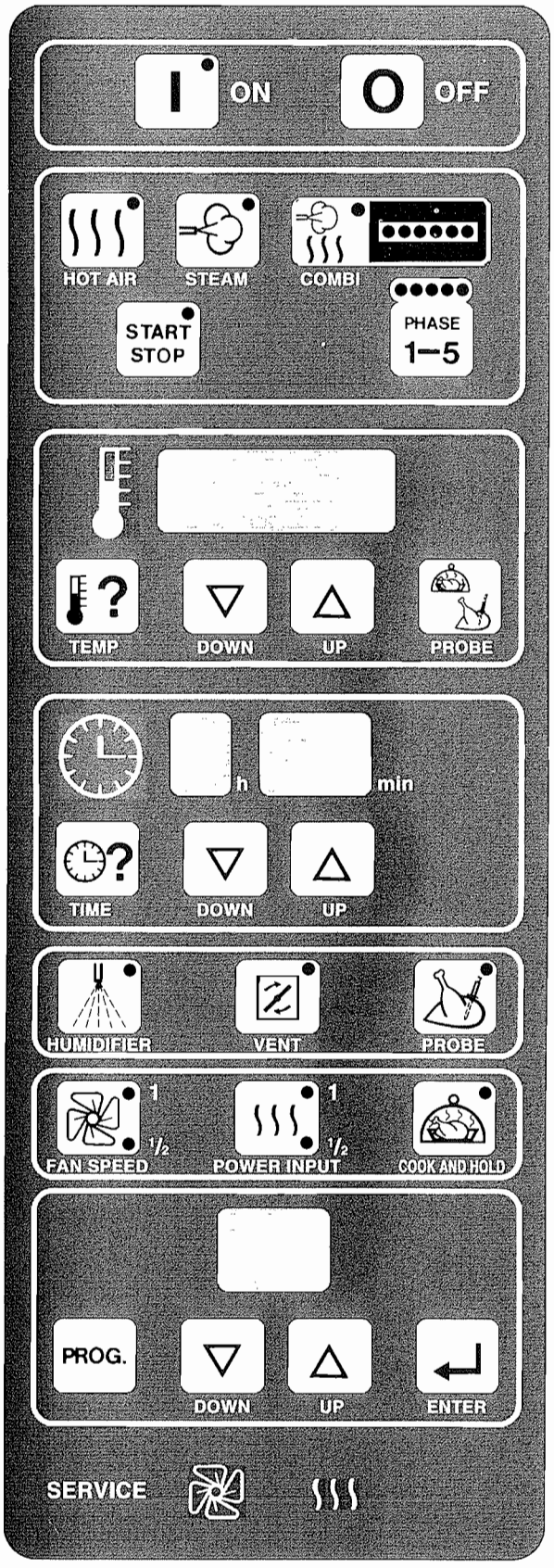
Press Start/Stop to begin. When complete, press Start/Stop to silence the buzzer.

TEMPERATURE PROBE APPLICATIONS

All Applications are suggested only — prove your own recipes and temperature / time settings.

	Recommended Final Probe Temperatures °F
Beef	
Rare	140
Medium	160
Well Done	170
Lamb	175 – 185
Pork	
Fresh	170
Smoked	140 – 170
Turkey	
Whole	185
Boneless	170
Veal	170

PROGRAMMABLE CONTROLS



Main Power: On / Off

Mode Selection:
Convection / Steam / Convection and Steam

Start/Stop Select Phase

Temperature Display

Inquire & Set:
Oven and/or Probe Temperature(s)

Time Display

Inquire & Set:
Cooking Time

Select Features:
Humidifier / Vent / Temperature Probe

Select:
Fan Speed / Power Input / Cook and Hold
1 = Full Speed or Full Power;
1/2 = Half Speed or Half Power

Program Number Display

Select Program

Service Needed for: Fan / Power

PROGRAMMABLE CONTROLS

Main Power: On / Off

ON — After an initial power-up sequence, the ON indicator light and the utility light inside the oven are lit. The actual oven temperature is shown in the Temperature display; – h – – min is in the Time display. The control will now accept commands.

OFF — Shuts off the oven at the end of the day: Turns off the utility light inside the oven, opens the oven vent, and drains the steam generator tank (pump takes 3 minutes).

Mode Selection: Hot Air / Steam / Combi / Start Stop / Phase 1–5

HOT AIR — Heat and Fan are ON. Initial temperature setting is 302°F (range is 32 – 518°F).

STEAM — Steam and Fan are ON. Initial temperature setting is 212°F (range is 32 – 212°F).

COMBI — Heat, Fan, and Steam are ON. Initial temperature setting is 302°F (range is 212 – 518°F). The amount of steaming is determined by the number of times you press the Combi key (1 – 6), indicated by the row of lights.

START STOP — Starts or stops the cooking operation. First start fills the steam generator tank.

PHASE 1-5 — Indicates the Phase of a numbered Program; steps through the Phases, displaying the cooking information for each phase, before or during a cooking operation.

Temperature and Time Displays: (Refer to Manual Controls, pages 8 – 9). Time remaining for ALL phases is normally displayed; if you press the Time key, the time remaining for the current phase will be displayed.

Selectable Features: Humidifier / Vent / Probe (Refer to Manual Controls, pages 8 – 9). **NOTE:** When the cooking phase changes from Hot Air to Steam, the Humidifier discharges automatically which provides steam while lowering the oven temperature.

Selectable Features: Fan Speed / Power Input / Cook and Hold

FAN SPEED — 1 = Full Speed; 1/2 = Half Speed.* This feature is programmable.

POWER INPUT — 1 = Full Power; 1/2 = Half Power.* This feature is programmable.

* **NOTE:** Fan Speed cannot be Half Speed if Power Input is on Full Power.

COOK AND HOLD — Allows a cooking phase followed by a second-phase Hold Temperature to be programmed.

Program Number Display: Prog. / Down / Up / Enter

PROG. — Accesses memory to allow programming. Initially displays Program 1 (range: 1 – 75).

DOWN — Decreases the Program Number.

UP — Increases the Program Number.

ENTER — Saves the entered cooking program (up to 5 Phases) under the Program Number. Programs that are properly saved will not be lost during a power outage or disconnection.

COOK AND HOLD

Cook and Hold is a two-stage cooking process available only on ovens equipped with Programmable Controls. The first stage is programmed similar to any other Convection, Steam, or Combi operation by selecting the mode and setting a cooking temperature and a cooking time (or temperature probe).

During the second or Hold phase of the cooking process, oven heat is allowed to dissipate slowly while the internal temperature of the product is still increasing. During Hold, power input and fan speed are automatically reduced to 1/2. The Hold Temperature is typically set at 140°F.



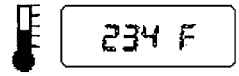
Turn the oven ON.



Select Cook and Hold.



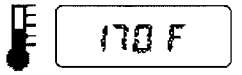
Select one of the cooking modes:
Convection, Steam, or Combi.
In *Combi* Mode, set the % Steam Time (refer to page 14).



Press [?] and set the Oven Temperature (first stage).



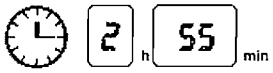
Use Up or Down arrows to increase or decrease.



If using the probe, press [ ] and [ ]; then set the Probe Temperature.



Use Up or Down arrows to increase or decrease.



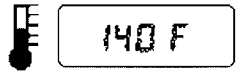
If not using the probe, press [?] and set the Cooking Time.



Use Up or Down arrows to increase or decrease.



Press the Phase key. The second Phase Light should be lit.



Press [?] and set the Hold Temperature (second stage).



Use Up or Down arrows to increase or decrease.

Load the oven. Insert the probe (optional). Close the door.



Press Start/Stop to begin.

COOK AND HOLD APPLICATIONS

All Applications are suggested only — prove your own recipes and temperature / time settings.

This two-stage process cooks roast beef or other products slowly and efficiently. During the first phase, the oven cooks at the Oven Temperature for a set amount of time or until a Probe Temperature is reached. When the first phase is complete, the oven heaters turn off and fan is at half speed. The roast continues to cook as the temperature declines to the Hold Temperature, (140°F for beef). The heaters then resume at half power, maintaining the "ready-to-serve" or Hold Temperature indefinitely. After unloading, the oven can be used for its next cooking task or shut off manually.

Cook And Hold — Rolled Beef Roasts – Refrigerated, Not Frozen						
Oven Temp °F	200 °F		250 °F		300 °F	
Doneness Final Internal Temp °F	Rare 140 °F	Med 160 °F	Rare 140 °F	Med 160 °F	Rare 140 °F	Med 160 °F
Weight (pounds)	Phase 1 Cooking Time (minutes)					
8	165	225	105	135	90	105
9	180	240	120	150	90	120
10	195	270	135	165	105	120
11	210	285	135	180	105	135
12	225	315	150	195	105	150
13	240	330	165	210	120	150
14	255	360	165	225	120	165
15	270	375	180	225	135	165
16	285	390	180	240	135	180
17	300	405	195	255	150	180
18	300	420	210	270	150	195
19	315	450	210	270	165	210
20	330	465	225	285	165	210
21	345	480	225	300	180	225
22	360	495	240	300	180	225
23	375	510	240	315	180	240
24	375	540	255	330	195	240
25	390	555	270	345	195	255
26	405	570	270	345	210	270
27	420	585	270	360	210	270
28	435	600	285	375	210	270
29	450	615	300	390	225	285
30	450	630	300	390	225	285
	Allow additional time (minutes) for the oven temperature to decline to the Hold Temperature (140 °F)					
	60 minutes		90 minutes		120 minutes	

Cook And Hold — Standing Rib Roast – Refrigerated, Not Frozen						
Oven Temp °F	200 °F		250 °F		300 °F	
Doneness Final Internal Temp °F	Rare 140 °F	Med 160 °F	Rare 140 °F	Med 160 °F	Rare 140 °F	Med 160 °F
Weight (pounds)	Phase 1 Cooking Time (minutes)					
8	135	195	90	120	75	90
9	150	210	90	120	75	90
10	150	210	105	135	75	90
11	165	225	105	135	90	105
12	165	240	105	150	90	105
13	180	240	120	150	90	105
14	180	255	120	150	90	105
15	180	255	120	165	90	120
16	195	270	120	165	105	120
17	195	285	135	165	105	120
18	210	285	135	180	105	120
19	210	300	135	180	105	135
20	210	300	150	180	105	135
21	225	300	150	195	105	135
22	225	315	150	195	120	150
23	240	330	150	195	120	150
24	240	330	165	210	120	150
25	240	330	165	210	120	150
26	240	345	165	210	120	150
27	255	345	165	210	120	165
28	255	360	180	225	120	165
29	270	360	180	225	135	165
30	270	360	180	225	135	165
	Allow additional time (minutes) for the oven temperature to decline to the Hold Temperature (140 °F)					
	60 minutes		90 minutes		120 minutes	

Cook And Hold — Other Foods						
	Quantity	Size	Oven Temp °F	Time (minutes)		Final Internal Temp °F
				Phase 1 Cook	Hold Additional	
Leg of Lamb	1 or more of same size	5 - 15 lb each	300	20 min / lb	5 min / lb	180
Smoked Ham, fully cooked	1 or more of same size	15 lb each	300	120 min	150 min	155
Chicken	1 - 12 of same size	2 - 3 lb each	300	30 min	10 min	180
	18 - 24 of same size	2 - 3 lb each		40 min	15 min	
Duckling	1 - 5 of same size	3.5 - 4 lb each	325	55 min	15 min	200
	6 - 10 of same size	3.5 - 4 lb each		70 min	25 min	
Turkey	1 or more of same size	12 lb each	250	125 min	55 min	190
		14 lb each		150 min		
		16 lb each		175 min		
		18 lb each		200 min		
		20 lb each		220 min		
		22 lb each		240 min		
White Potatoes, baked, in jackets	up to 50 pounds	120 count	400	30 min	15 min	200
	60 - 75 pounds			40 min		
	80 - 100 pounds			50 min		
	up to 50 pounds	80 count	400	40 min	15 min	200
	60 - 75 pounds			50 min		
	80 - 100 pounds			60 min		

PROGRAMMING MEMORY

The Programmable Control allows up to 75 Cooking Programs with up to 5 Phases in each program to be keyed-in and stored in Memory. Each program is accessed by its identifying number. Program numbers range from 1 – 75.

If the numbered Program has not been programmed (or is vacant), the Temperature displays the current temperature, the Time displays – h – – min, and no Mode or Phase indicator lights are lit.

If the Program has already been programmed, its values are recalled from memory and displayed. You can view all the programmed information by stepping through the phases using the phase button.

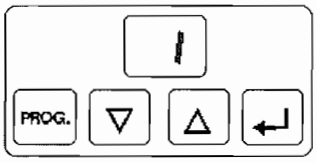
To **CREATE** a new program —

Select the cooking mode: Hot Air, Steam, or Combi.
If Combi, set % Steam Time.
Set the Oven Temperature.
Set either the Time or Probe Temperature.
Select Features (optional): Fan Speed (1 or $^1/_2$), Power Input (1 or $^1/_2$), or Vent (Open or Closed).

End of the 1st Phase. Press [PHASE 1–5] to shift to the next phase.

Repeat the above for as many of the 5 phases as are needed.

Press [START STOP] twice.



Press the [PROG.] key. The program number is displayed.

Use Up or Down arrows to increase or decrease until a vacant program number is found. Then press [↵] until a single beep is heard and the program is saved in memory.

To **DELETE** an existing program — Find the program number.

Press [↵] and hold it in for about 3 seconds until two beeps sound, indicating the program has been deleted.

To **CHANGE** an existing program — Find the program number.

Key in any temperature or time changes for each phase; press [PHASE 1–5] to shift to the next phase. The phase key allows all program information to be displayed. The red dot after the program number indicates that one or more changes have been made to the program. Press [START STOP] twice.

Then press [↵] and hold it in for about 3 seconds until two beeps sound, indicating the changed program has been saved.

EXAMPLE PROGRAM

This example shows how to program a three-phase process for cooking Roast Beef, 18 pounds per roast, and store it as program number 20.

The second item in the table on page 15 provides most of the information: For Combi time, Phase 2, 15 minutes-per-pound times 18 pounds-per-roast yields 270 minutes. We assumed that 20% Steam Time would be OK. We chose the average temperature when a temperature range was given. In this example, we will not use the temperature probe.

Phase 1	Phase 2	Phase 3
STEAM Mode 212 °F 20 minutes	COMBI Mode - 20% Steam Time 295 °F 4 hours and 30 minutes	CONVECTION (HOT AIR Mode) 375 °F 10 minutes

Turn the oven ON.

Phase 1 Select Steam Mode by pressing . The first light blinks on the phase button  to indicate you are programming Phase 1. Press : The Temperature displays 212°F and needs no adjustment. Press  and press  to increase or  to decrease until the Time displays [– h 20 min]. Press  to shift to Phase 2: The second indicator light begins to flash.

Phase 2 Select Combi Mode - 20% Steam Time by pressing  3 times. The first three indicator lights will be lit indicating 20% Steam Time. Press  and press  to increase or  to decrease until the Temperature displays 295°F. Press  and press  to increase or  to decrease until the Time displays [4 h 30 min]. Press  to shift to Phase 3: The third indicator light begins to flash.

Phase 3 Select Convection (HOT AIR) Mode by pressing . Press  and press  to increase or  to decrease until the Temperature displays 375°F. Press  and press  to increase or  to decrease until the Time displays [– h 10 min]. Press  twice.

Save Press the  key and press  to increase or  to decrease until the Program Number displays . Verify that this program number is vacant, or choose a different program number that is vacant. A vacant program displays the current temperature, blank Time [– h – – min], and no Mode or Phase indicator lights are lit. Then press  until one beep is heard and the program is saved in memory.

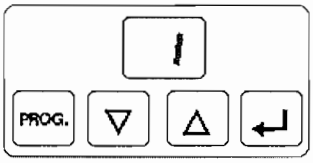
RECALLING A PROGRAM FROM MEMORY

Once a menu item has been programmed, it can be recalled, reviewed and used to cook food.

If the Program has already been programmed, its values are recalled from memory and displayed. You can view all the programmed information by stepping through the phases using the phase button.

To **RECALL** a program from memory —

Turn the oven on.



Press the PROG. key. The program number is displayed.

Use Up or Down arrows to increase or decrease until the program number you want is displayed.

Press PHASE 1–5 to step-through and verify all the programmed information.

Load the oven and insert the temperature probe, if needed.

Close the door.

Press START STOP once to start the cooking process.

The indicator lights show each successive phase of the cooking program as it is being performed.

When the last phase is finished, the buzzer will sound to alert you.

You may unload the oven when ready.

MENU CARD

PROGRAM NUMBER_____ Menu_____								
	Mode (Hot Air - Combi __% - Steam)	Cooking Temp. (°F)	Probe Temp. (°F)	Time (Hr. Min.)	Vent (Open - Closed)	Fan Speed (1 - 1/2)	Power Input (1 - 1/2)	Humidifier - manual
Phase 1								
Phase 2								
Phase 3								
Phase 4								
Phase 5								

PROGRAM NUMBER_____ Menu_____								
	Mode (Hot Air - Combi __% - Steam)	Cooking Temp. (°F)	Probe Temp. (°F)	Time (Hr. Min.)	Vent (Open - Closed)	Fan Speed (1 - 1/2)	Power Input (1 - 1/2)	Humidifier - manual
Phase 1								
Phase 2								
Phase 3								
Phase 4								
Phase 5								

PROGRAM NUMBER 20 Menu ROAST BEEF			18 pounds each - refrigerated at 40°F - set at room temperature 1 hour before roasting					
	Cooking Mode (Hot Air Combi __% Steam)	Cooking Temp. (°F)	Probe Temp. (°F)	Time (Hr. Min.)	Vent (Open - Closed)	Fan Speed (1 - 1/2)	Power Input (1 - 1/2)	Humidifier - manual
Phase 1	Steam	212 °F		20 Min.	Closed	1	1	none
Phase 2	Combi - 20%	295 °F		4 Hr. 30 Min.	Closed	1	1	none
Phase 3	Hot Air	375 °F		10 Min.	Closed	1	1	none
Phase 4								
Phase 5								

CLEANING

Daily Cleaning

Preheat the oven to 130°F and spray a mild detergent solution that does not contain chlorine on the inside surfaces of the oven. Allow the detergent solution to react for 15 minutes.

Operate the oven on Steam mode for 15 minutes. Allow the oven to cool; wipe the oven interior with a sponge and warm water. Dry the oven interior with a clean soft cloth.

DO NOT use abrasive products. DO NOT hose down.

Clean the exterior with a cloth or sponge and non-agressive, non-abrasive products.

Complete Cleaning

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

Remove the rack (Fig. 4). Remove the grease filter (Fig. 4) at the rear of the oven chamber by lifting up and out. Remove the fan baffle (Fig. 5) by lifting up and out. Remove the drip pan (Fig. 5) normally located under the grease filter and fan baffle. Wash the removed parts in a sink with warm soapy water, rinse with clear water, and dry with a clean dry cloth.

Clean all areas of the oven and all parts. Reinstall the parts in their original positions.

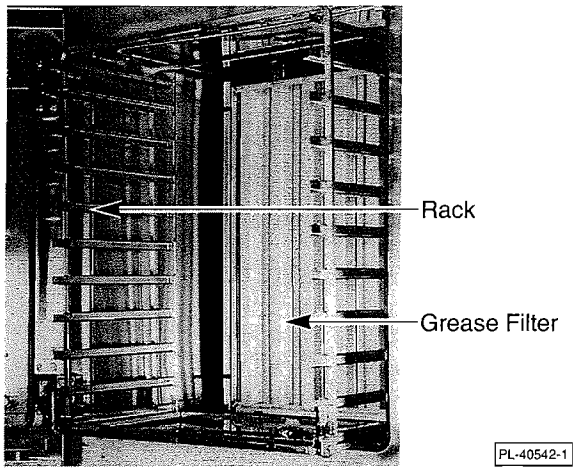


Fig. 4

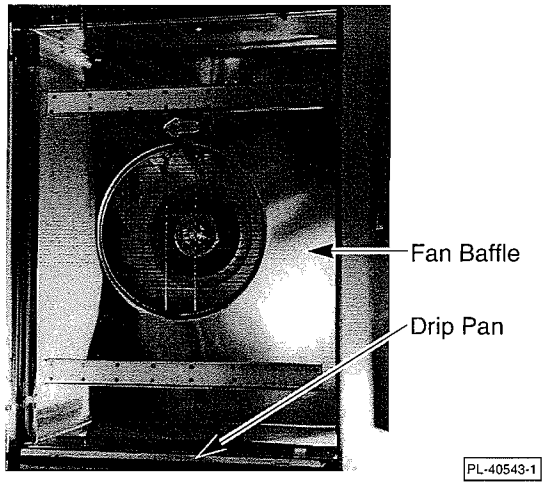


Fig. 5

If using the hose spray accessory to clean the oven interior, DISCONNECT ELECTRICAL POWER and avoid spraying near the controls.

DO NOT use steel wool or abrasive scouring pads as they will scratch and ruin the oven surfaces.

Sanitize the temperature probe. Return it to its home position in the bracket on the ceiling of the oven.

Complete Cleaning (continued)

The interior glass door (Fig. 6) can be opened to allow cleaning of both sides of the glass doors. With the door open, unscrew the left upper- and lower-thumbscrews on the inner glass door. When the screws are sufficiently loose, the inner glass door will swing open on the right side hinges. All four sides of the glass can be cleaned using a cloth and glass cleaner or warm soapy water and a clear water rinse. The area between, behind, and around the surfaces of the upper and lower hinges can be cleaned by holding both ends of a moist soapy cleaning cloth folded in a three inch wide strip and swabbing up and down; rinse and dry with clean wet or dry cloth in the same manner. When glass is clean, rotate the interior glass door against the door and re-tighten the left upper- and lower-thumbscrews by turning clockwise.

Wipe surfaces which touch the door gasket with a cloth or sponge and warm soapy water, rinse with warm clear water, and wipe with a dry cloth. **CAUTION: Do not allow the door gasket to come in contact with food oils, petroleum solvents, lubricants, or caustic cleaners.**

Remove the condensate gutter (Fig. 6) by removing the two screws that attach it to the bottom of the inside of the door frame. Save the screws. Use a downward rotating movement to remove the gutter; make sure the drain tube on the right clears the door. Wash and rinse the condensate gutter in a sink with warm soapy water and a clear water rinse, and dry with a clean dry cloth. To reinstall gutter: Insert drain tube into opening on right side; align screw holes using an upward rotating motion; and re-install and tighten screws.

Keep the cooking compartment drain (Fig. 6) working freely. After cooking grease producing foods, operate the oven with the compartment empty for 30 minutes at the end of the day, or pour 1/2 gallon of warm soapy water down the drain, followed by 1/2 gallon of warm clear water. The drain grating may be removed for cleaning on most models; replace it in its original position when done.

Leave the door slightly open when the oven is not in use to allow the inside to dry out.

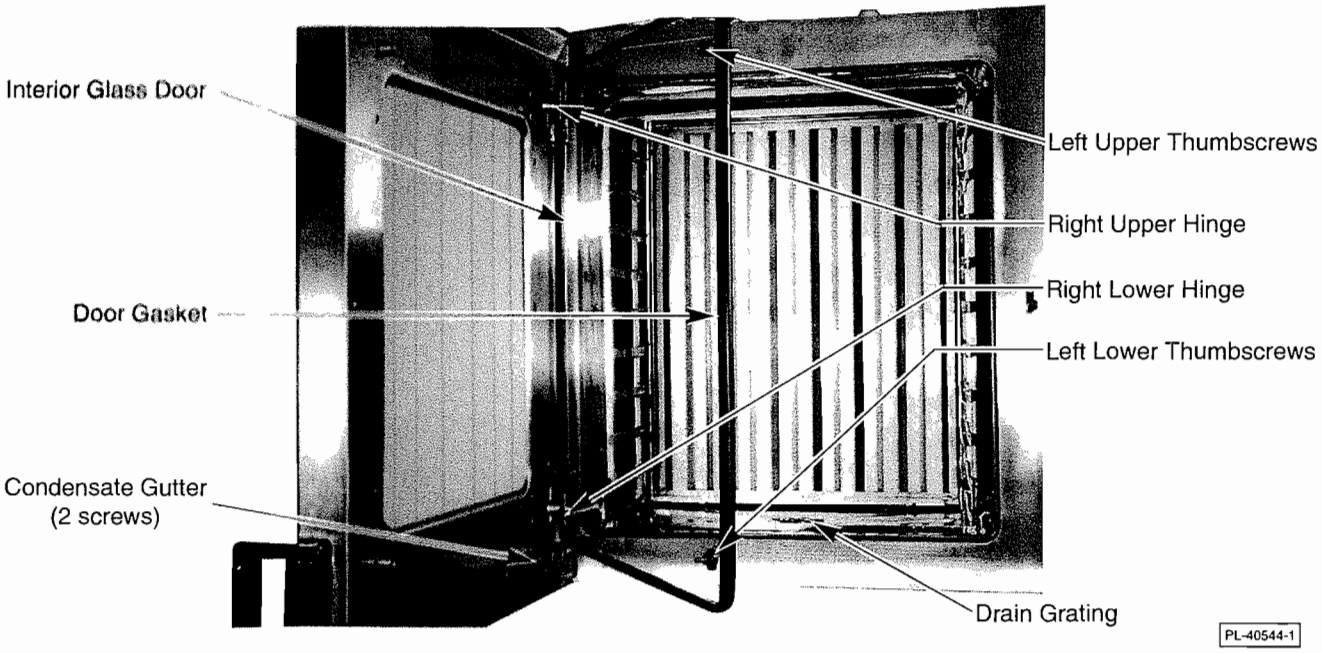


Fig. 6

MAINTENANCE

WARNING: THE OVEN AND ITS PARTS ARE HOT. USE CARE WHEN OPERATING, CLEANING OR SERVICING THE OVEN. THE COOKING COMPARTMENT CONTAINS LIVE STEAM. STAY CLEAR WHEN OPENING DOOR.

REMOVAL OF LIME SCALE DEPOSITS

About once a week, perform the following procedure to remove lime buildup in the steam generator:

Drain the boiler by pressing OFF. The boiler drain pump will operate for about 3 minutes.

Press ON. Using the funnel and flexible tube shipped with the oven, carefully pour white vinegar into the steam generator tank through the inlet-port inside the oven. Approximately 6 quarts of vinegar is required for size 6 ovens; 14 quarts is required for 10 and 20 size ovens. Allow the vinegar to set overnite; in the morning, press OFF and allow the drain pump to empty the tank.

Carefully flush the steam generator tank and the inside of the oven with fresh water.

Press ON. Operate the oven in Steaming mode for approximately 10 minutes.

Drain the boiler: Press OFF and allow the boiler drain pump to operate for about 3 minutes.

The oven is again ready for use.

SERVICE

Contact your local Hobart-authorized service office for any repairs or adjustments needed on this equipment.