



INSTALLATION/OPERATION MANUAL  
Retain for Future Reference.



## GAS CONVECTION OVENS

ECO-G-10-M

ICO-G-10-M

ECO-G-10-E

ICO-G-10-E



|                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>FOR YOUR SAFETY:</b></p> <p><b>DO NOT STORE OR USE<br/>GASOLINE OR OTHER FLAMMABLE<br/>VAPORS AND LIQUIDS IN THE<br/>VICINITY OF THIS OR ANY<br/>OTHER APPLIANCE .</b></p> | <p><b>WARNING:</b></p> <p><b>IMPROPER INSTALLATION,<br/>ADJUSTMENT, ALTERATION, SERVICE,<br/>MAINTENANCE CAN CAUSE<br/>PROPERTY DAMAGE, INJURY OR<br/>DEATH. READ THE INSTALLATION,<br/>OPERATING AND MAINTENANCE<br/>INSTRUCTIONS THOROUGHLY<br/>BEFORE INSTALLING OR SERVICING<br/>THIS EQUIPMENT.</b></p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

PLEASE READ ALL SECTIONS OF THIS MANUAL.

THIS PRODUCT HAS BEEN CERTIFIED AS COMMERCIAL COOKING EQUIPMENT AND MUST BE INSTALLED BY PROFESSIONAL PERSONNEL AS SPECIFIED.

WE SUGGEST INSTALLATION, MAINTENANCE AND REPAIRS SHOULD BE PERFORMED BY YOUR LOCAL AUTHORIZED SERVICE AGENCY LISTED IN YOUR INFORMATION MANUAL PAMPHLET.

FACTORY SPECIFIED REPLACEMENT PARTS MUST BE USED TO MAINTAIN CERTIFICATION. USE OF "GENERIC" REPLACEMENT PARTS MAY CREATE A HAZARD AND VOID CERTIFICATION.

In the event you have any questions concerning the installation, use, care or service of this or any other GARLAND product, write or call our Product Service Department.

**NOTE:** Unit must be installed with no less than six (6") inches clearance from Combustible construction at both sides and at flue riser rear. Installation to Non-combustible construction is zero (0") inches clearance at both sides and six (6") inches from the flue riser at rear. The unit is suitable for installation on combustible floors.

**FOR YOUR SAFETY:** Post in a prominent location, instructions to be followed in the event the user smells gas. This information shall be obtained by consulting your local gas supplier.

Continuous product improvement is a Garland policy, therefore specifications and design are subject to change without notice.

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Garland Commercial Industries, Inc.  
Freeland, Pennsylvania 18224

Phone (717) 636-1000  
FAX: (717) 636-3903

P/N 1382622 R-6 (4/95)

Printed in the U.S.A.



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CONGRATULATIONS! You have just purchased the finest commercial cooking equipment available anywhere.

Like any other fine, precision built appliance, it should be given regular care and maintenance. Periodic inspections by your dealer or a qualified service agency is recommended. When corresponding with the factory or your local authorized factory service center regarding service problems or replacement parts, be sure to refer to the particular unit by the correct model number (including the prefix and suffix letters and numbers) and the warranty serial number. The rating plate affixed to the unit contains this information.

The models denoted with "M" are equipped with MANUAL controls, and those denote with "E" are equipped with ELECTRONIC controls.

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**WARNING:** This product contains chemicals known to the State of California to cause cancer and/or birth defects or other reproductive harm. \*Inhalation and servicing of this product could expose you to airborne particles of glasswool/ceramic fibers. Inhalation of airborne particles of glasswool/ceramic fibers is known to the State of California to cause cancer. Operation of this product could expose you to carbon monoxide if not adjusted properly. Inhalation of carbon monoxide is known to the State of California to cause birth defects or other reproductive harm.

**CUSTOMER NOTICE**

**OPTIONAL EXTENDED WARRANTY**

GARLAND, with a tradition of superior equipment quality and performance, offers you, our valued customer, an additional one year limited warranty beyond our standard one year coverage.

This additional coverage for parts and labor may be purchased on a new equipment order or up to 60 days after the equipment purchase. Please contact your Equipment Dealer or Maintenance & Repair Center (list enclosed) to take advantage of this exceptional offer.

Thank you for using GARLAND products. It is our pleasure to serve you.

MOTOR CARE

The motor on your convection oven is maintenance free since it is constructed with self-lubricating sealed ball bearings. It is designed to provide durable service when treated with ordinary care. We have a few suggestions to follow on the care of your motor. When the motor is operating, it cools itself internally by air entering at the rear of the motor case, provided proper clearance has been allowed.

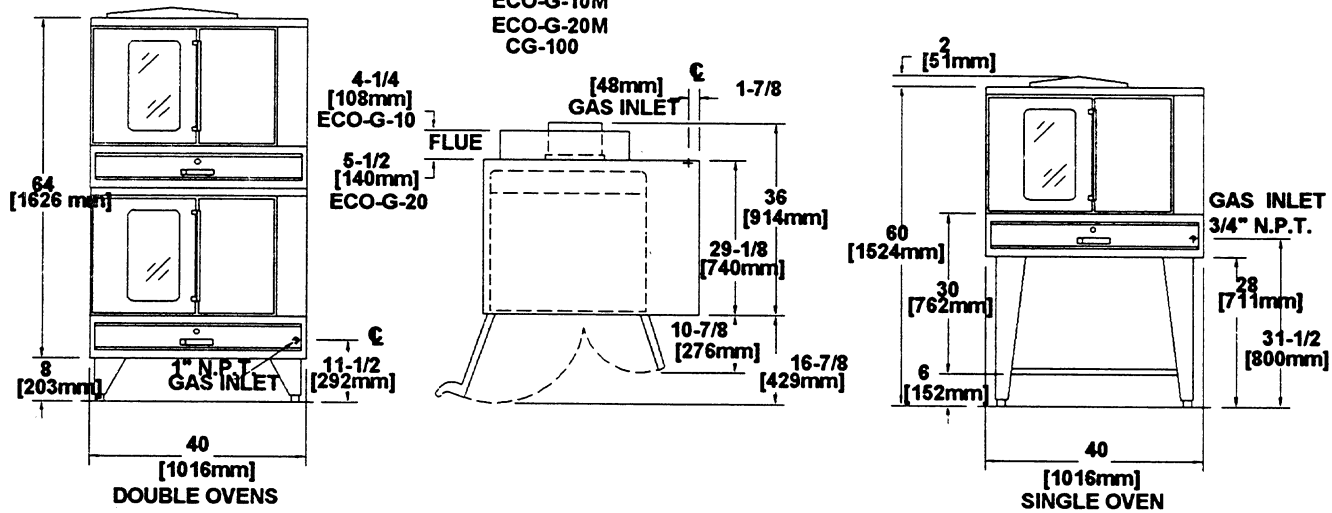
Since the blower wheel is in the oven cavity it is at the same temperature as the oven. If the motor is stopped while the oven is hot, the heat from the blower wheel is conducted down the shaft and into the armature of the motor. This action could shorten the life of the motor.

We recommend, at the end of the bake or roasting period, when the oven will be idle for any period of time or before shutting down completely, that the doors be left open, and by use of the cool-down position of the fan switch, the fan continues to run at least five minutes. The "Fan" should never be turned "Off" when the oven is "Hot".

DIMENSIONS AND SPECIFICATIONS [Dimensions: inches/mm]

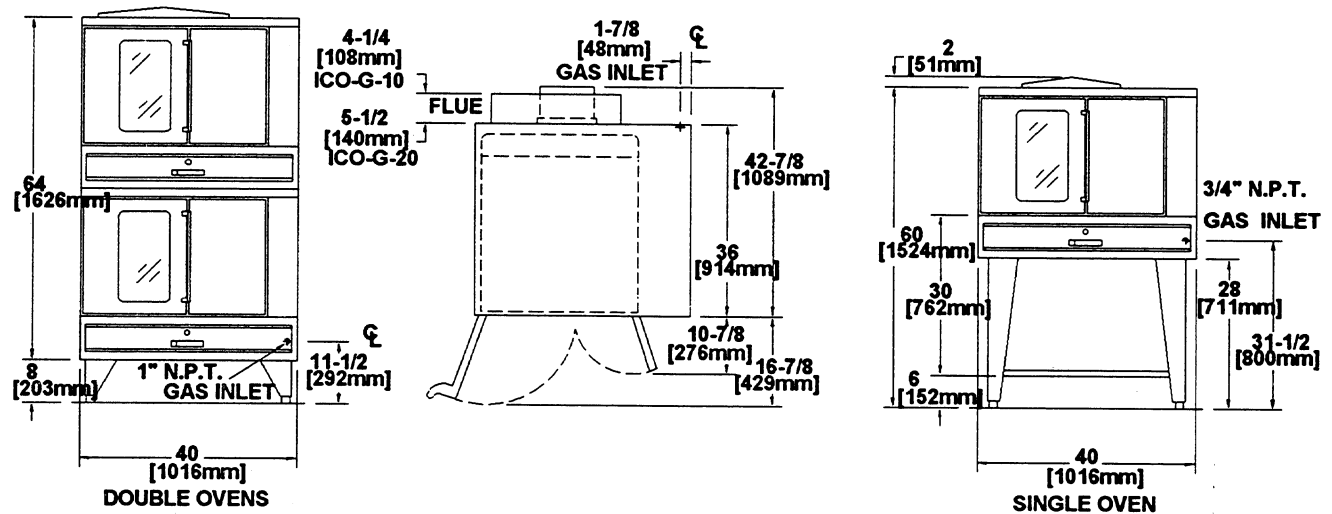
Product Name: Economy Convection Oven, Full Size, Gas

MODEL # ECO-G-10E  
ECO-G-20E  
ECO-G-10M  
ECO-G-20M  
CG-100



Product Name: Institutional Convection Oven, Full Size, Gas

MODEL # ICO-G-10E  
ICO-G-20E  
ICO-G-10M  
ICO-G-20M  
CG-100 D



Note: If unit is on casters, add 5 1/2" / 127 mm to overall height for single deck, deduct 1 1/2" / 38 mm from overall height for double deck.

| NATURAL GAS (Available for Propane) |                      | ELECTRIC 102 VAC SINGLE PHASE |                   |
|-------------------------------------|----------------------|-------------------------------|-------------------|
| SINGLE DECK                         | DOUBLE DECK          | SINGLE DECK                   | DOUBLE DECK       |
| 80,000 BTU/HR                       | 160,000 BTU/HR       | One 1/2 HP Motor              | Two 1/2 HP Motors |
| One 3/4" NPT gas inlet              | One 1" NPT gas inlet | @ 6.2 Amps                    | @ 6.2 Amps        |

Note: 2 speed motor, 1140 and 1725 RPM (60Hz). Note: 6 ft. line cord w/plug (NEMA #5-15P) supplied on each deck.

INTERIOR DIMENSIONS (per deck)

| W       | H            | D(ECONOMY)   | D(INSTITUTIONAL) |
|---------|--------------|--------------|------------------|
| 29 7/36 | 20 1/2 / 520 | 21 1/2 / 546 | 28 1/2 / 723     |

## INSTALLATION INSTRUCTIONS

### INSTALLATION NOTES:

**Combustible Wall Clearance\***      Side: 6.0" (153 mm)  
Rear: 6.0" (153 mm)

\* For reduced clearance refer to ANSI Z223.1/NFPA #54.

The importance of the proper installation of Commercial Gas Cooking Equipment cannot be over stressed. Proper performance of the equipment is dependent, in great part, on the compliance of the installation with the manufacturer's specifications. In addition, compliance with the National Fuel Code ANSI Z223.1-1988(NFPA No. 54) or the latest edition and/or local codes is required to assure safe and efficient operation.

**Before assembly and connection, check gas supply.**

- A. The type of gas for which the unit is equipped is stamped on the data plate located behind lower front panel. Connect a unit stamped "NAT" only to natural gas; connect those stamped "PRO" only to propane gas.
- B. If it is a new installation, have gas authorities check meter size and piping to assure that the unit is supplied with sufficient amount of gas pressure required to operate the unit.
- C. If it is additional or replacement equipment, have gas authorities check pressure to make certain that existing meter and piping will supply fuel at the unit with not more than 1/2" water column pressure drop.

**NOTE:** When checking pressure be sure that all other equipment on the same gas line is on. A pressure regulator is supplied with GARLAND Convection Ovens. Regulator is preset to deliver gas at pressure shown on the rating plate.

The appliance and its individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at pressures in excess of 1/2 PSIG (3.45 KPa).

The appliance must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressure equal to or less than 1/2 PSIG (3.45 KPa).

**NOTE:** In Canada, the installation shall be in accordance with CAN/CGA-B149.1 NATURAL GAS INSTALLATION CODE or CAN/CGA-B149.2 PROPANE GAS INSTALLATION CODE and local codes where applicable.

**NOTE:** Adequate clearance must be provided for servicing and proper operation.

## CLEANING

**NOTE:** Disconnect line cord from power supply before cleaning or servicing.

### Break-In Period

When oven is new, operate it for one hour at 450°F before you begin your normal cooking operation. After cooling, wipe the interior, including the racks, with a clean damp cloth.

## Exterior Cleaning

Establish a regular schedule. Any spills should be wiped off immediately.

1. Wipe exposed, cleanable surface when cool with a mild detergent and hot water. Stubborn residue spots may be removed with a light weight non-metallic scouring pad. Dry thoroughly with a clean cloth.
2. Stainless steel should be cleaned using a mild detergent, a soft cloth and hot water. If it is necessary to use a non-metallic scouring pad, always rub in the direction of the grain in the metal to prevent scratching. Use a water based stainless cleaner (Drackett Twinkle), if you want a high shine.
3. The control panel surface is easily cleaned with hot water, soap and a soft cloth. Do not use hard abrasives, solvent type materials or metallic scouring pads since these will scratch or cloud the surface.
4. Never spray the perforated areas or control panel with steam or water as this will allow moisture into the control cavity which could damage electrical components.

## Interior Cleaning

Establish a regular cleaning schedule or wipe off on the same day when spill overs occur.

1. Cool down oven.
2. Remove oven racks.
3. Lift rack guides on either side of oven off of holders, pull the top away from the cavity wall, when it's cleared the clips push down and remove. Racks and guides may be run through dishwasher while oven cavity is being cleaned.
4. Clean with soap and water using a non-metallic scouring pad, if necessary. If dirt and grease have accumulated, a mild ammonia solution or commercial oven cleaner such as Easy-Off or Dow may be used.
5. To reinstall reverse procedure. Place the bottom of the rack guide against the cavity wall. Keeping the top pulled away from the wall lift up. Push the top of the rack guide against the wall and push down locking it into place.

**Note:** Exercise caution in cleaning around the wires connection the temperature probe. These must not be pulled out or severed. Do not remove temperature probe cover.

**PROBLEMS/SOLUTIONS**

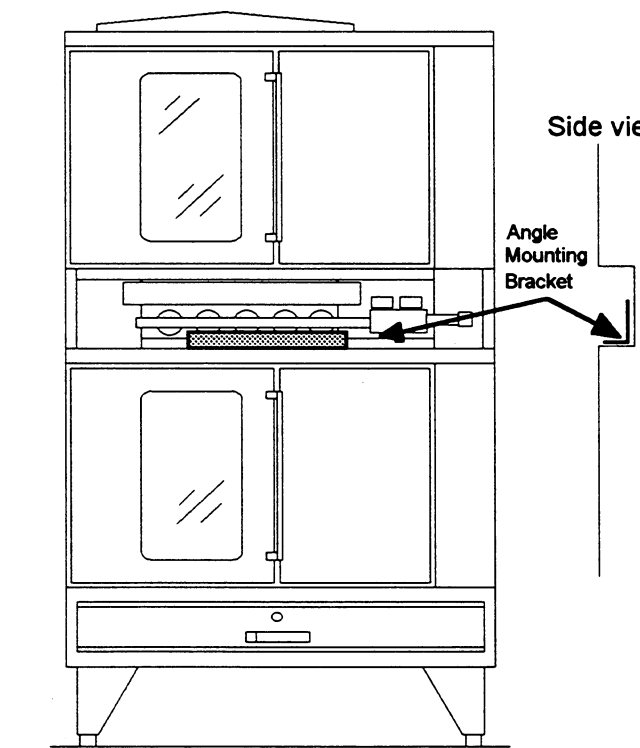
| <b><u>Problems</u></b>                                         | <b><u>Solutions</u></b>                                                                       |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| If cakes are dark on the sides and not done in the center..... | Lower oven temperature.                                                                       |
| If cakes edges are too brown.....                              | Reduce number of pans or lower oven temperature.                                              |
| If cakes have light outer color.....                           | Raise temperature.                                                                            |
| If cake settles slightly in the center.....                    | Bake longer or raise oven temperature slightly. Do not open doors too often for long periods. |
| If cake ripples.....                                           | Overloading pans or batter is too thin.                                                       |
| If cakes are too coarse.....                                   | Lower oven temperature.                                                                       |
| If pies have uneven color.....                                 | Reduce number of pies per rack or eliminate use of bake pans.                                 |
| If cupcakes crack on top.....                                  | Lower oven temperature.                                                                       |
| If meats are browned and not done in center                    | Lower temperature and roast longer.                                                           |
| If meats are well done and browned.....                        | Reduce time. Limit amount of moisture.                                                        |
| If meats develop hard crust.....                               | Reduce temperature or place pan of water in oven.                                             |
| If rolls have uneven color.....                                | Reduce number or size of pans.                                                                |

**INSTALLATION FOR OVENS EQUIPPED WITH CASTERS**

- A. The installation shall be made with a connector that complies with the Standard for Connectors for Moveable Gas Appliances, ANSI Z21.69-1987 (or the latest edition) and a quick disconnect device that complies with the Standard for Quick-Disconnect Devices for use with gas fuel, ANSI Z21.41-1989 (or latest edition).
- B. The front casters of the unit are equipped with brakes to limit the movement of the oven without depending on the connector and any quick-disconnect device or its associated piping to limit the appliance movement.
- C. The restraint can be attached to the unit near the gas inlet. If the restraint is disconnected, be sure to reconnect the restraint after the oven has been returned to its originally installed position.

**DOUBLE DECK MODELS - ICO/ECO-G-20M/E**

- A. Position insert in bottom leg opening and tap insert up into leg till it seats at collar. Attach eight inch (8") legs to lower oven section. Raise unit or lay on its left side (as shown on page 7). Place the front legs on the oven so as to line up with four (4) attaching bolt holes. Secure leg to oven frame using (4) 1/4 x 20 bolts and washers provided. Repeat at rear of unit.
- B. Remove combustion chamber front of top deck (located under oven doors). Raise top deck into place and line up body sides and back of the unit. Position mounting angle to line up with four attaching holes located in center of unit. You, the installer, must drill two holes in the main top of the bottom deck to secure the mounting angles. Secure mounting angle with four (4) metal screws provided. Fasten the rear of the two (2) units together, with mounting strips to line up four attaching holes located in the base of the top deck and the top of the lower deck.



Front view with top combustion cover removed.

C. The flue for the Convection Oven consists of three pieces. A Lower flue box and an upper flue box and a riser which connects the two flue boxes. Attach flue box over flue opening at the rear of the top unit with screws provided. Do the same for bottom units. A second angle bracket, (identical to the one used on the front), attaches the lower flue box to the back of the upper oven, as shown. Once complete install the flue riser as shown in diagram. (Drawing at right is shown with optional direct connectation with down draft diverter, see page 12 "Venting and Air Supply").

D. Assemble the stacking pipes provided in the Stacking Kit as shown. Check leveling of unit four (4) ways (by the oven rack inside the oven), and hook up gas feed line.

E. Plug the cord set of each unit into a 115 Volt power supply outlet.

F. Maintain clearance from combustibles.

**CAUTION:** DISCONNECT POWER SUPPLY BEFORE ATTEMPTING TO CLEAN OR SERVICE.

Each gas appliance shall be located with respect to building construction and other equipment so as to permit access to the appliance. Such access and clearance may be necessary for servicing and cleaning.

**POWER FAILURE**

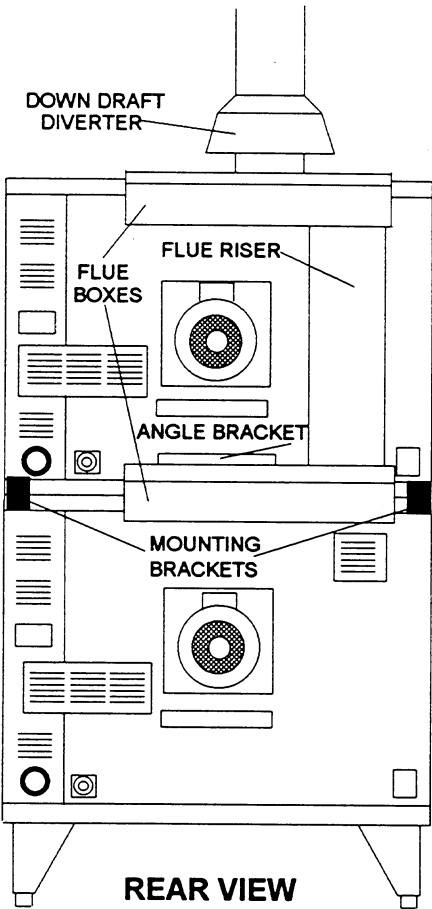
In the event of a power failure, no attempt should be made to operate this oven. This unit is gas operated but has electrical features, motor, electric thermostat and solenoid.

**IMPORTANT**

All gas burners and pilots need sufficient air to operate and large objects should not be placed in front of this oven, which would obstruct the air flow through the front.

Objects should not be placed on main top rear of oven while in use. This could obstruct the venting system of the units flue products.

**FOR YOUR SAFETY: KEEP YOUR APPLIANCE AREA FREE FROM COMBUSTIBLES.**



**USE GUIDE**

| USE GUIDE - CONVECTION OVEN WITH COOK'N HOLD FEATURES                                  |                 |                 |                  |                  |                  |                  |
|----------------------------------------------------------------------------------------|-----------------|-----------------|------------------|------------------|------------------|------------------|
| SET TIME (THE TIMER SETTING) FOR ROLLED BEEF ROAST (REFRIGERATED - <u>NOT FROZEN</u> ) |                 |                 |                  |                  |                  |                  |
| ROAST WT. LB.                                                                          | HOURS           |                 |                  |                  |                  |                  |
| DONENES                                                                                | RARE            | MED             | RARE             | MED              | RARE             | MED              |
| OVEN→<br>TEMP→                                                                         | 200°F<br>(98°C) | 200°F<br>(98°C) | 250°F<br>(122°C) | 250°F<br>(122°C) | 300°F<br>(150°C) | 300°F<br>(150°C) |
| 8                                                                                      | 2.50            | 3.50            | 1.50             | 2.00             | 1.25             | 1.50             |
| 9                                                                                      | 2.75            | 3.75            | 1.75             | 2.25             | 1.25             | 1.75             |
| 10                                                                                     | 3.00            | 4.25            | 2.00             | 2.50             | 1.50             | 1.75             |
| 11                                                                                     | 3.25            | 4.50            | 2.00             | 2.75             | 1.50             | 1.75             |
| 12                                                                                     | 3.50            | 5.00            | 2.25             | 3.00             | 1.50             | 2.00             |
| 13                                                                                     | 3.75            | 5.00            | 2.50             | 3.25             | 1.50             | 2.25             |
| 14                                                                                     | 4.00            | 5.75            | 2.50             | 3.50             | 1.75             | 2.50             |
| 15                                                                                     | 4.25            | 6.00            | 2.75             | 3.50             | 2.00             | 2.50             |
| 16                                                                                     | 4.50            | 6.25            | 2.75             | 3.75             | 2.00             | 2.75             |
| 17                                                                                     | 4.75            | 6.50            | 3.00             | 4.00             | 2.25             | 2.75             |
| 18                                                                                     | 4.75            | 6.75            | 3.25             | 4.25             | 2.25             | 3.00             |
| 19                                                                                     | 5.00            | 7.25            | 3.25             | 4.25             | 2.25             | 3.00             |
| 20                                                                                     | 5.25            | 7.50            | 3.50             | 4.50             | 2.50             | 3.25             |
| 21                                                                                     | 5.50            | 7.75            | 3.50             | 4.75             | 2.75             | 3.50             |
| 22                                                                                     | 5.75            | 7.75            | 3.50             | 4.75             | 2.75             | 3.50             |
| 23                                                                                     | 6.00            | 8.25            | 3.75             | 5.00             | 2.75             | 3.75             |
| 24                                                                                     | 6.00            | 8.75            | 3.75             | 5.00             | 2.75             | 3.75             |
| 25                                                                                     | 6.25            | 9.00            | 4.25             | 5.50             | 3.00             | 4.00             |
| 26                                                                                     | 6.50            | 9.25            | 4.25             | 5.50             | 3.25             | 4.25             |
| 27                                                                                     | 6.75            | 9.50            | 4.25             | 5.75             | 3.25             | 4.25             |
| 28                                                                                     | 7.00            | 9.75            | 4.50             | 6.00             | 3.25             | 4.25             |
| 29                                                                                     | 7.25            | 10.00           | 4.75             | 6.25             | 3.50             | 4.50             |
| 30                                                                                     | 7.25            | 10.25           | 4.75             | 6.25             | 3.50             | 4.50             |
| ALLOW TO THE ABOVE SET TIMES: (FLYWHEEL CYCLE)                                         |                 |                 |                  |                  |                  |                  |
| 1 HOUR                                                                                 |                 |                 | 1 1/2 HOUR       |                  | 2 HOURS          |                  |

**NOTE:** THE SUGGESTED TIMES AND TEMPERATURES MAY VARY CONSIDERABLY FROM THOSE SHOWN ABOVE. THEY ARE AFFECTED BY WEIGHT OF LOAD, TEMPERATURE OF THE PRODUCT, RECIPE AND TYPE OF PAN.



USE GUIDE

| PRODUCT                     | TEMPERATURE   | TIME       |
|-----------------------------|---------------|------------|
| Sheet Cakes (5 lb. ea.)     | 325°F (164°C) | 18 min.    |
| Soda Biscuits               | 400°F (207°C) | 6 min.     |
| Yeast Rolls                 | 325°F (164°C) | 20 min.    |
| Corn Bread                  | 350°F (197°C) | 20 min.    |
| Gingerbread                 | 300°F (151°C) | 18 min.    |
| Chocolate Cake              | 325°F (164°C) | 20 min.    |
| Chocolate Chip Cookies      | 375°F (193°C) | 8 min.     |
| Sugar Cookies               | 325°F (164°C) | 12 min.    |
| Yellow Cake                 | 325°F (164°C) | 15 min.    |
| Angel Food Cake             | 275°F (137°C) | 25 min.    |
| Brownies                    | 350°F (197°C) | 15 min.    |
| Apple Turnovers             | 350°F (197°C) | 25 min.    |
| Cream Puffs                 | 300°F (151°C) | 30 min.    |
| Apple Pie (fresh)           | 375°F (193°C) | 30 min.    |
| Pumpkin Pie                 | 275°F (137°C) | 35 min.    |
| Berry Pie (frozen)          | 350°F (197°C) | 35 min.    |
| Fruit Pie (frozen)          | 350°F (197°C) | 45 min.    |
| Pizza (individual frozen)   | 450°F (235°C) | 5 min.     |
| Macaroni and Cheese         | 350°F (197°C) | 30 min.    |
| Cheese Sandwiches (toasted) | 400°F (207°C) | 7 min.     |
| Hamburger Patties           | 400°F (207°C) | 8 min.     |
| Baked Potatoes (120 count)  | 400°F (207°C) | 55 min.    |
| Fish Sticks                 | 350°F (197°C) | 16 min.    |
| Stuffed Peppers             | 350°F (197°C) | 15 min.    |
| Chicken Parts               | 350°F (197°C) | 35-40 min. |
| Meatloaf                    | 325°F (164°C) | 40 min.    |
| Rolled Beef (20 lb. ea.)    | 300°F (151°C) | 4 hr.      |
| Prime Rib                   | 275°F (137°C) | 6 hr.      |
| Stuffed Pork Chops          | 375°F (193°C) | 25 min.    |
| Lamb Chops (loin)           | 375°F (193°C) | 12 min.    |
| Veal Roast (boned)          | 300°F (151°C) | 3 hr.      |

**NOTE:** THE SUGGESTED TIMES AND TEMPERATURES MAY VARY CONSIDERABLY FROM THOSE SHOWN ABOVE. THEY ARE AFFECTED BY WEIGHT OF LOAD, TEMPERATURE OF THE PRODUCT, RECIPE AND TYPE OF PAN.

INSTALLATION OF LEGS, STAND

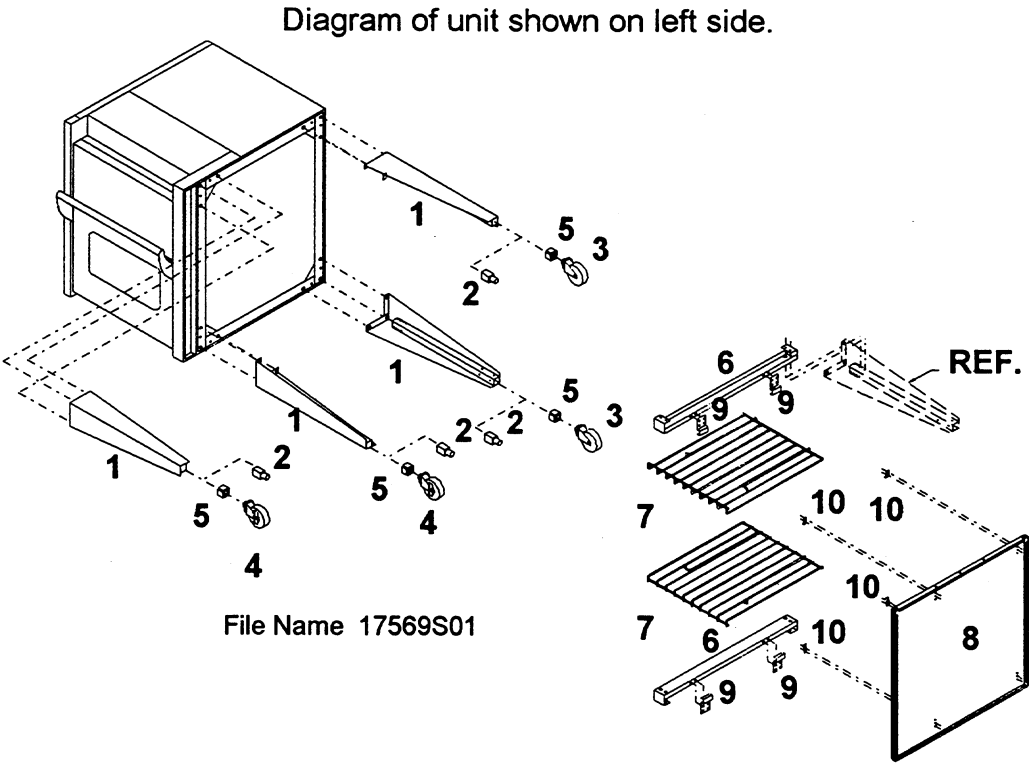
VERIFY ALL PARTS ARE PRESENT BEFORE BEGINNING ASSEMBLY

PARTS LIST

| ITEM # | QTY | DESCRIPTION                                             |
|--------|-----|---------------------------------------------------------|
| 1.     | 4   | LEGS                                                    |
| 2.     | 4   | SQUARE FOOT INSERTS (FOOT VERSION ONLY)                 |
| 3.     | 2   | HEAVY DUTY CASTERS WITHOUT BRAKES(CASTER VERSION ONLY)  |
| 4.     | 2   | HEAVY DUTY CASTERS WITH BRAKES(CASTER VERSION ONLY)     |
| 5.     | 4   | CASTER PAD ASSEMBLIES(CASTER VERSION ONLY)              |
| 6.     | 2   | OPEN STAND UPPER RACK SUPPORT (OPEN BASE VERSIONS ONLY) |
| 7.     | 2   | RACK GUIDES (OPEN BASE VERSIONS ONLY)                   |
| 8.     | 1   | OPEN STAND LOWER RACK SUPPORT                           |
| 9.     | 4   | RACK GUIDE CLIPS (TOP)                                  |
| 10.    | 4   | RACK GUIDE CLIPS (BOTTOM)                               |
|        | 1   | BAG OF HARDWARE                                         |
|        | 12  | 3/8" - 16 x 3/4" BOLTS                                  |
|        | 12  | 3/8" FLAT WASHERS                                       |
|        | 16  | 10-24 x 3/4" HEX HEAD MACHINE SCREWS                    |
|        | 16  | #10 SPLIT RING LOCK WASHERS                             |
|        | 16  | #10 - 24 HEX NUTS                                       |
|        | 28  | #10 x 3/4" TRUSS HEAD SHEET METAL SCREWS                |

TOOLS REQUIRED FOR ASSEMBLY

1. 9/16" Wrench  
2. 3/ 8" Wrench
3. 1" Wrench  
4. Phillips Head Screw Driver  
5. Hammer (Foot Version Only)



**ASSEMBLY INSTRUCTIONS FOR OPEN BASE**

- 1. Raise unit or lay it on its left side.
- 2. For foot versions take a hammer and lightly tap a square foot insert (2) into each leg.
- 3. For caster versions attach a caster pad assembly (5) to the bottom of each leg. Position caster pad (5) and drill four 11/64 diameter holes in leg and fasten caster pad to leg with #10 Phillips head sheet metal screws.
- 4. For caster versions screw the heavy duty casters with brake (4) into the front legs and the heavy duty casters without brakes (3) into the rear legs.
- 5. Attack each leg (1) with three 3/8" bolts and flat washers.
- 6. Mount right and left open stand upper rack support (6) to the front and rear legs using #10 Phillips head sheet metal screws.
- 7. Mount four rack clips (9) to the upper rack supports (6) with 10-24 bolts, nuts and lock washers. If the holes at the edge of the rack clip (9) are used it will accommodate 18" x 26" pans, if the holes in the center of the rack clip (9) are used it will accommodate oven racks.
- 8. Mount the open stand lower rack support (8) to the legs using #10 Phillips head sheet metal screws.
- 9. Place the rack guides (7) on the rack clips (9). Attach the bottom of each rack guide (7) to the lower rack support (8) with two lower rack clips (10) with 10-24 nuts, bolts and lock washers.
- 10. Make sure all bolts and screws are tight.
- 11. Stand the unit up.
- 12. Move the unit into its desired location.
- 13. Level the oven using a 1" wrench to adjust the feet or the casters.

**ASSEMBLY INSTRUCTIONS FOR STAND**

- 1. Raise unit or lay it on its left side.
- 2. For foot versions take a hammer and lightly tap a square foot insert (2) into each leg.
- 3. For caster versions attach a caster pad assembly (5) to the bottom of each leg. Position caster pad (5) and drill four 11/64" diameter holes in leg and fasten caster pad to leg with #10 Phillips head sheet metal screws.
- 4. For caster versions screw the heavy duty casters with brakes (4) into the front legs and the heavy duty casters without brakes (4) into the rear legs, (single deck only).
- 5. Attach each leg (1) with three 3/8" bolts and flat washers.
- 6. Make sure all bolts and screws are tight.
- 7. Stand the unit up.
- 8. Move the unit to its desired location.
- 9. Level the oven using a 1" wrench and adjust the feet or the casters.
- 12. Attach the rack guides to the upper rack supports using the remaining rack guide clips. Attach these clips using #10-24 x 3/4" PHILIPS head machine screws, #10-24 hex nuts.
- 13. Tighten all screws and nuts.
- 14. Stand the unit up.
- 15. Move the unit to its desired location.
- 16. Level the oven using a 1" wrench to adjust the feet or the casters.

**PERFORMANCE RECOMMENDATIONS**

Your GARLAND Convection Oven will give you the best quality product and service if you familiarize yourself with the following operation suggestions and information.

- 1. Preheat oven thoroughly (appx. 20 minutes) before use.
- 2. As a general rule, temperature should be reduced 25° to 50° from that used in a standard/conventional oven. Cooking time may also be shorter, so we suggest closely checking the first batch of each product prepared. Use the cooking chart as a guide.
- 3. Use the chart of suggested times and temperatures as a guide. These will vary depending upon such factors as size of load, temperature and mixture of product (particularly moisture) and density of product.
- 4. Keep a record of the times, temperature and load sizes you establish for various products. Once you have determined these, they will be similar for succeeding loads.
- 5. When practical, start cooking the lowest temperature product first and gradually work up to higher temperatures.
- 6. If you find that your previous temperature setting is more that 10° higher than needed for succeeding loads, use the cool down mode on the fan to reach the desired temperature before resetting thermostat.
- 7. When loading oven, work as quickly as possible to prevent loss of heat.
- 8. Oven will continue to heat even though the timer goes off. Product should be removed from the oven as soon as possible to avoid over cooking.
- 9. Center pans on racks and load each shelf evenly to allow for proper air circulation within the cavity.
- 10. When baking, weigh or measure the product in each pan to assure even cooking.
- 11. When cooking five pans, use rack positions 2,4,6,8, and 10, starting from the top.
- 12. Do not overload the oven. Five pans are suggested for most items, i.e., cakes, cookies, rolls, etc.: however, the maximum (10 pans) may be used for fish sticks, chicken nuggets and hamburgers. Cooking times will have to be adjusted.
- 13. Muffin pans should be placed in the oven back to front or with the short side of the pans facing the front. This results in the most evenly baked product.
- 14. When rethermalizing frozen casseroles, preheat the oven 100° over the suggested temperature: return to cooking temperature when the oven is loaded. This will help compensate for the introduction of a large frozen mass into the cavity.
- 15. Use pan extenders or two inch deep 18"x26" pans for batter type products which weigh more than eight pounds, i.e., Pineapple Upside Down Cake.
- 16. Never place anything directly on the bottom of the oven cavity. This obstructs the air flow and will cause uneven results.

**NOTE:** Moisture will escape around the doors when baking products with heavy moisture content, such as: chicken, potatoes, and etc.

All units have a controllable vent. The vent control is located at the inner front top of the oven cavity. Movement to the left will close the vent and movement to the right will open the vent. Keep vent closed during preheat.

The desired dryness or moisture of the finished product will dictate the setting of the vent.



## **PRESETTING COOK or ROAST/HOLD PROGRAMS**

(Refer to Control Panel on Previous Page)

**NOTE:** It is easier to program keys 11 with the door open and Mode Switch in the cook position. In this set-up, neither the fan nor the burners will operate.

1. Rotate key switch 11 to "Program" position.
2. Depress keypad 11 labeled "Roast" (for low fan speed) or "Cook" (for high fan speed) and Release.
3. Depress and Hold keypad 11 labeled "Pgm 1".
4. Rotate time select control 8 until desired cook or roast time is indicated by the time display digits 5 (up to 24 hours).
5. Rotate temperature select control 9 until desired cook or roast temperature is indicated by temperature display digits 6 (from 140° to 500°F.).
6. Release keypad 11 "Pgm 1."
7. To Set Hold Temperature (Note: Hold is not required unless desired as part of a cook or roast process): Depress keypad labeled 11 "HOLD" and release.
8. Depress and Hold keypad 11 label "Pgm. 1".
9. Rotate Temperature Select Control 9 until desired holding temperature is indicated by temperature display digits (from 140°F to 250°F.).

10. Release keypad 11 "Pgm. 1".
11. Program remaining locations Pgm. 2 through 6 in the same manner as steps "2" through "10" above.

## **OPERATION OF PROGRAM MODE**

**NOTE:** Key switch 11 must be in "RUN" position.

1. Depress desired program 10 (keypad "Pgm. 1" through "Pgm. 6"). **Note:** Time 5, Temperature 6 and Mode Display will now indicate pre-set values as programmed in step 2. Oven will preheat to indicated temperature and temperature display digits will stop flashing. At this point, oven is ready.
2. Load product and depress keypad labeled 11 "Start Timer". Time digits will stop flashing and colon 7 will blink indicating that the timer is counting down. When the cook or roast time has been elapsed and a hold temperature has been selected, 3 beeps will sound indicating the end of the specified cook or roast time.

The temperature display digits 5 will flash indicating the oven is ramping down to the selected hold temperature. Also at this time, if the Heat On Lamp is off, the motor will turn off. In the hold mode the motor is on only when the heat is on.

If no hold temperature was selected, a tone will sound at the end of the cook or roast cycle to alert the operator. This tone is continuous and may be canceled only by depressing the keypad 11 labeled "Cancel".

## **ASSEMBLY INSTRUCTIONS FOR DOUBLE DECK CASTERS**

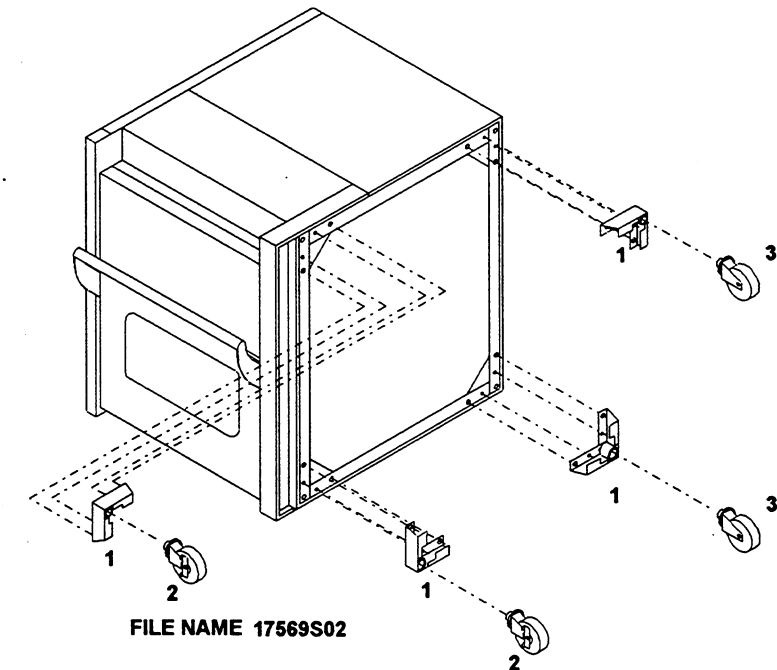
VERIFY ALL PARTS ARE PRESENT BEFORE BEGINNING ASSEMBLY

## **PARTS LIST**

| ITEM # | QTY | DESCRIPTION                        |
|--------|-----|------------------------------------|
| 1.     | 4   | CASTER PADS ASSEMBLY               |
| 2      | 2   | HEAVY DUTY CASTER WITHOUT BRAKE    |
| 3      | 2   | HEAVY DUTY CASTER WITH BRAKE       |
|        | 1   | BAG OF HARDWARE                    |
|        | 8   | 3/8" - 16 x 3/4" BOLTS             |
|        | 8   | 3/8" FLAT WASHER                   |
|        | 8   | 1/4" HEX TYPE B SHEET METAL SCREWS |
|        | 8   | SPLIT RING LOCK WASHERS            |

## **TOOLS REQUIRED FOR ASSEMBLY**

1. 9/16" Wrench
2. 3/8 " Wrench
3. 1" Wrench



## **ASSEMBLY INSTRUCTIONS FOR DOUBLE DECK CASTERS**

1. Raise unit or lay it on its left side.
2. Attach each caster pad (1) with two 3/8" bolts and flat washers and two 1/4" hex type "B" sheet metal screws and lock washers.
3. Screw the heavy duty casters with brakes (2) into the front casters pads and the heavy duty casters with out brakes (3) into the rear caster pads.
4. Make sure all bolts and screws are tight.
5. Stand the unit up.
6. Move the unit into its desired location.
7. Level the oven using a 1" wrench to adjust the casters.

**GAS CONNECTIONS**

The 1" NPT inlet at the rear must be considered in piping the gas supply for double stack units or ¾" NPT for individual (or single deck) connections. Undersized gas supply line(s) may restrict the gas supply and affect performance. If other gas appliances are supplied by the same supply line, the supply line must be sized to carry the combined volume without causing more than 1/2" pressure drop at the manifold of each appliance on the line at full rate.

**ELECTRICAL CONNECTIONS**

A 15 AMP service must be provided for each oven. For 115 VAC usage, a cord and plug (NEMA #5-15P) is provided but connection to the electrical service must comply with local codes; or in the absence of local codes, with the National Electrical Code, ANSI/NFPA No. 70-1990 (or the latest edition). Each oven is electrically equipped with a cord set with a three prong plug which fits all standard 115v three prong grounded receptacle.

Wiring diagrams are attached to the rear of the unit.

**WARNING: ELECTRICAL GROUNDING INSTRUCTIONS**

All ovens, when installed, must be electrically grounded in accordance with local codes, or in the absence of local codes with the National Electrical Code ANSI/NFPA 70-1990 (or the latest edition).

This appliance is equipped with a three-prong (grounding) plug for your protection against shock hazard and should be plugged directly into a properly grounded three-prong receptacle. DO NOT CUT OR REMOVE THE GROUNDING PRONG FROM THIS PLUG.

**VENTILATION AND AIR SUPPLY**

Proper ventilation is highly important for good operation. There are only two choices for properly fluing and oven, 1) canopy hood style or 2) direct venting. The ideal method of venting a GAS Convection Oven is through the use of a properly designed canopy which should extend 6" (150 mm) beyond all sides of the appliance and 6'6" (1950 mm) from the floor.

A strong exhaust fan will create a vacuum in the room, for an exhaust system vent to work properly, exhaust and make-up air must be balanced properly. For proper air balance contact your local H.V.A.C. contractor.

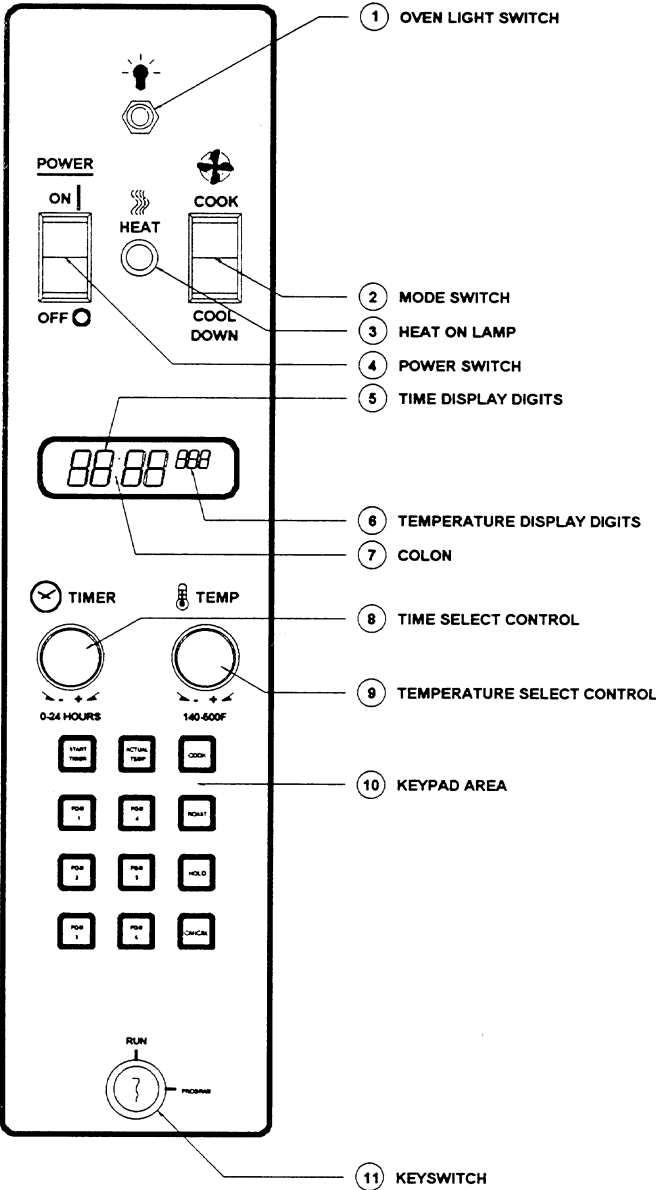
All gas burners and pilots need sufficient air to operate and large objects should not be placed in rear and bottom of this oven which would obstruct the air flow through the front.

**INSTALLATION OF A DIRECT FLUE**

When the installation of a canopy type exhaust hood is impossible the oven may be direct vented. Before direct venting check your local codes on ventilation, in the absense of local codes, refer to the National Fuel Code NFPA 54, ANSI Z223.1 (latest revision).

**12 BUTTON COOK & HOLD CONTROL**  
**MANUAL OPERATION**

1. Set power switch 4 to "ON" position. Set mode switch 2 to "COOK". Digital displays 5 & 6 should be lit.  
**NOTE:** Key switch 11 must be in "RUN" position.
2. Depress key pad 10 labeled "Roast" for low fan speed or "COOK" for high fan speed.
3. Rotate time select control 8 until desired time is displayed. Cook or roast time is indicated by the time digits (up to 24 hours).
4. Rotate temperature select control 9 until desired cook or roast temperature is indicated by temperature display digits (from 140° to 500°F.).
5. To set "HOLD" temperature (**NOTE:** Hold is not required unless desired as part of a cook or roast process): Depress key pad 10 labeled "HOLD".
6. Rotate temperature select control 9 until desired holding temperature is indicated by temperature display digits (from 140°F to 250°F.)
7. At this point, temperature display digits 6 will flash until oven reached temperature.



When temperature digits lock in steady; load product and depress "Start Timer" keypad 10. Colon 7 will now blink indicating timer is counting down.

When the cook or roast time has been elapsed and a hold temperature has been selected, 3 beeps will sound indicating the end of the specified cook or roast time. The temperature display digits 5 will flash indicating the oven is ramping down to the selected hold temperature. Also at this time, if the Heat On Lamp is off, the motor will turn off. In the hold mode the motor is on only when the heat is on. Once on the "Hold" mode the timer will begin counting up to let you know how long the oven has been in "Hold."

**NOTE:** In the manual mode of operation, time and/or temperature may be increased or decreased by rotating time or temperature select knobs as desired.

8. To cool oven cavity down, set mode switch 2 to "COOL" position and open oven door.

**ELECTRONIC CONTROLS**

1. Set Power/Mode switch 4 to the "COOK" position. Set the Fan Speed switch 2 to the desired fan speed.

NOTE: Digital display 5 & 6 should be illuminated and the oven fan on.

2. Rotate temperature knob 9 to obtain desired cooking temperature. The temperature digits 6 will now flash until internal oven temperature has reached the desired cooking temperature.

Allow the oven a minimum of 20 minutes preheat time.

The cooking temperature may be increased or decreased at any time by rotating the temperature knob 9. The temperature digits 6 will again flash until oven reaches new temperature.

3. To set timer rotate time knob 8 until desired cooking time is indicated on the timer display digits 5 will now flash indicating that timer is ready to be started.

To start timer depress timer start switch 10. Timer digits 5 will stop flashing and timer colon 7 will blink indicating the timer is counting down.

When the timer digits 5 reach 00:00 a tone will sound to alert the operator. The tone is continuous and must be canceled by depressing timer cancel switch 10.

The timer does not control oven; product must be removed by operator at time - 00:00 or oven switched off manually.

4. To cool down oven cavity, set Power/Mode switch 4 to COOL DOWN position and open doors.

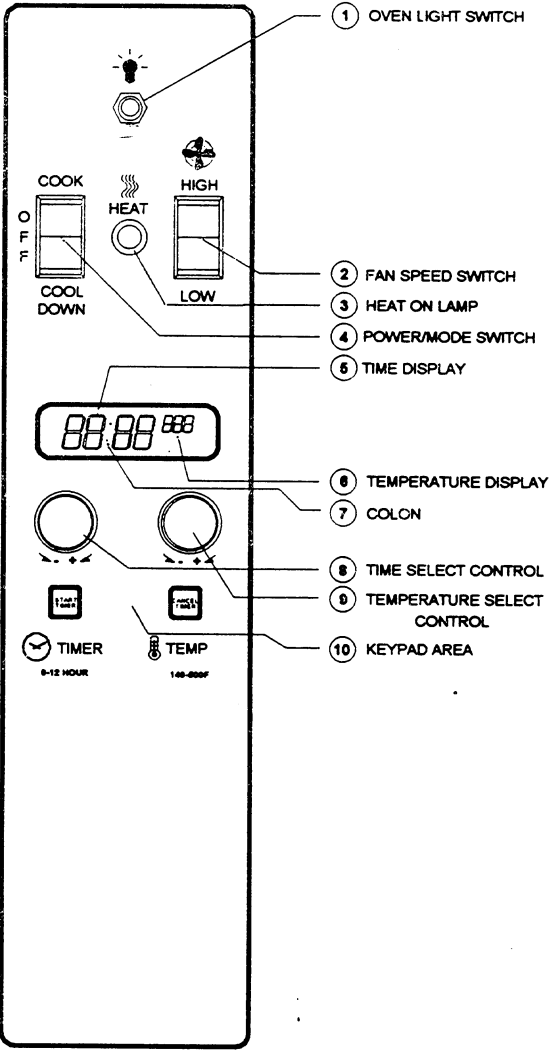
**PULSE FAN**

The fan in this convection oven may be programmed to cycle off, then back on every 30 seconds during operation.

1. Set the timer to 00:00.
2. Set the temperature to 000°.
3. Press and hold both the START and CANCEL keys at the same time.

The display will show either:  
"CYC" (fan pulses, or "cycles")  
OR  
"CON" (fan runs continuously)

4. If the fan operation on the display is not the desired one, turn the timer knob one click to change.



5. Press the CANCEL key.
6. Operate as normal. To change the fan back to its original setting, repeat steps 1 thru 5.

**ROAST & HOLD**

This oven may also be programmed to hold food at a specified temperature automatically after the set time has expired.

1. Set the timer to 00:00.
2. Set the temperature to 150°.
3. Press and hold both the START and CANCEL keys at the same time for five seconds. Time display will show HOLD.
4. Use the temperature select control to set the desired hold temperature (150° to 500°).
5. Press the CANCEL key.
6. Operate as normal. When set time runs out, an alarm will sound, then stop. The oven temperature will fall to the set hold temperature and stabilize, holding the food at that temperature until it is removed.
7. To return to "cook only" mode, repeat steps 1 thru 4, set a hold temperature of 000°, and press the CANCEL key.

If the unit is to be connected directly to a direct flue, it is necessary that a flue cap assembly and 8" (20cm) draft diverter (for double deck units) or a flue cap assembly and 6" (15cm) draft diverter (for single deck units) be installed to insure proper ventilation. (See Drawing on Page #6.)

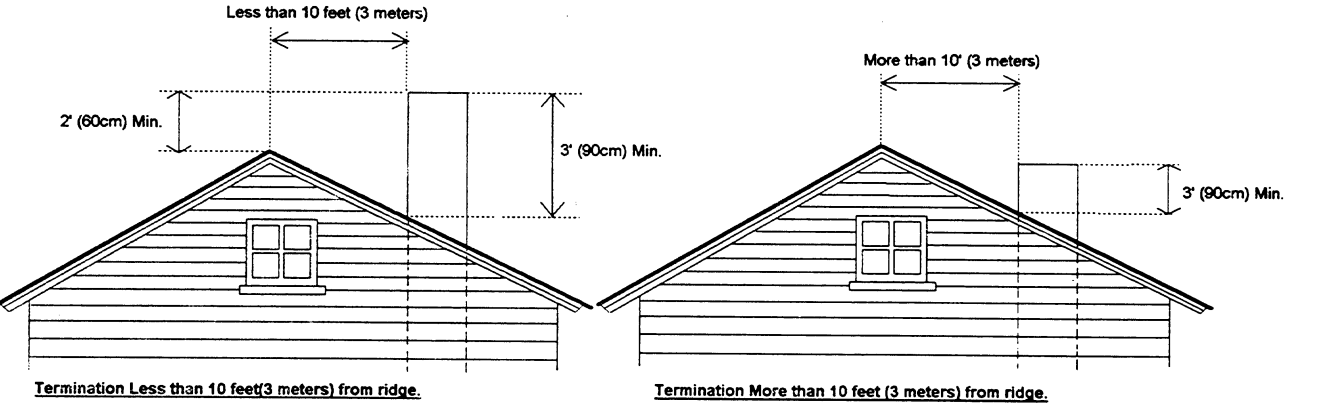
Direct venting as described above, should be positioned on the existing flue box and fastened with sheet metal screws provided. All parts described above are available from the manufacturer.

NOTE: Each oven has been factory tested and adjusted prior to shipment. It may be necessary to further adjust the oven as part of a proper installation. Such adjustments are the responsibility of the installer.

Adjustments are not considered defects in material and workmanship, and they are not covered under the original equipment warranty.

**DO NOT UNDERSIZE VENT PIPE!** This can cause resistance to flow and impede good venting. We suggest that if a horizontal run must be used it should rise no less than 1/4" (6.25mm) for each linear foot of run, and after a total of 180°'s of bends you should increase the size of stove pipe by two (2") inches. The flue should rise 2' (60cm) to 3' (90cm) above the roof line or 2' (60cm) to 3' (90cm) above any portion of a building within a horizontal distance of 10 (3 meters) feet.

The following diagram is only one example from the National Fuel Gas Code Book NFPA 54, ANSI Z223.1, 7.5.3:



TESTING AND LIGHTING INSTRUCTIONS

PILOT LIGHTING INSTRUCTIONS: MANUAL PILOT ONLY

- 1. Open combustion chamber door located directly under oven doors.
- 2. Depress and hold the red reset button located on the oven safety valve.
- 3. With a lighted taper, ignite the pilot which is located to the right of the burner package about 9" inward from the manifold.
- 4. Once the pilot ignites it is necessary to hold the red reset button until the pilot thermocouple is heated (appx. 1 min.).
- 5. Release the red button if the pilot does not stay lit, wait five minutes and repeat this procedure.

NOTE: During installation there will be air in the gas line, this air will have to bleed off before ignition can be established.

MODELS WITH INTERMITTENT ELECTRONIC IGNITION SYSTEMS & CONTROLS

- 1. Turn on main gas valve. Open the combustion chamber drop door and leak test all fittings and connections upstream from the service valve located on the redundant combination gas valve. Should any gas leaks be detected, turn OFF main gas valve, correct the problem and retest.
- 2. Open shutoff valve located on the redundant combination gas valve. Activate rocker switch on control panel to cook position. Adjust thermostat to desired temperature. Amber light on control panel will cycle with burner. The pilot and burner is now ignited by direct spark. Check all fittings again and correct any leaks and recheck.

NOTE: All electronic ignition systems are supplied with a redundant gas valve. Therefore, the unit is not supplied with an external pressure regulator.

NOTE: During installation there will be air in the gas line, this air will have to bleed off before ignition can be established. The electronic ignition system has a fifty second lock-out as a safety device on unit manufactured for PROPANE only. Therefore, several attempts may be required before pilot ignition is established, wait five minutes after each attempt.

FOR YOUR SAFETY: KEEP YOUR APPLIANCE AREA FREE FROM COMBUSTIBLES.

TO CONSERVE ENERGY

Do not waste energy by leaving controls at high temperature settings during idle periods. Lower settings will keep oven warm and ready for next use period. Reset controls as required for heavy load period.

OPERATING INSTRUCTIONS

EXPLANATION OF MANUAL CONTROLS

**Power/Mode Switch:** In the Cool Down position, the fan motor will run continuously with the oven door in the open position. In the Cook position the fan & heat will stop when the doors are opened. In the Off position, all power is off.

**Fan Speed Switch:** Controls the fan speed for various cooking recipes.

**Timer:** Turn timer clockwise to desired time. It will count down to zero and the buzzer will sound. The buzzer will continue until the dial is turned counterclockwise to the OFF position.

NOTE: Operation is the same for the five hour timer.

**Power On Lamp:** Illuminates when power switch is placed in "ON" position. When temperature is reached, the light goes out.

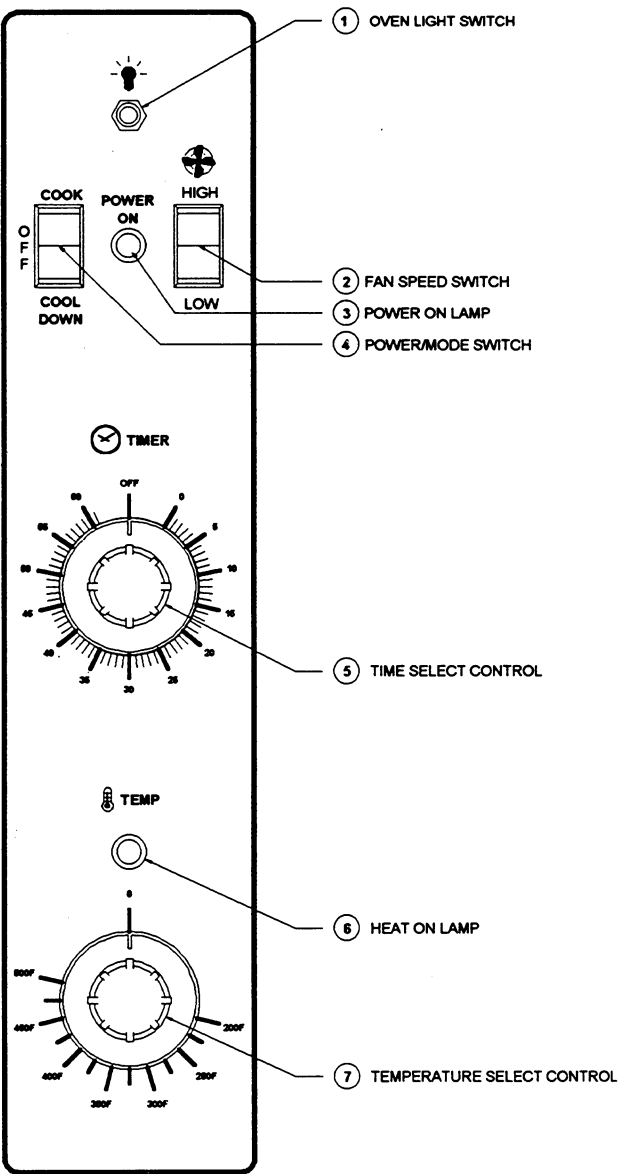
**Heat On Lamp:** Illuminates with the burners or as the thermostat cycles.

**Temperature Control:** The temperature indications are shown on the dial's surface. Turn the dial to desired temperature.

OPERATION OF MANUAL CONTROLS

NOTE: Standard ovens are equipped with electronic ignition & two (2) speed motors.

- 1. Set Power/Mode switch 4 to the COOK position. Set Fan Speed switch 2 to the desired fan speed.
- 2. Set temperature dial 7 to desired temperature setting.
- 3. Allow a minimum 20 minute preheat time. When desired temperature is reached, the illuminated (amber) 6 indicating light will go out.
- 4. Load oven, for best results; load bottom to top. Set timer if desired. \*See cooking chart for suggested times and temperatures.



AUTOMATIC COOL DOWN FEATURE

- 1. Turn temperature dial 7 to "OFF" position, set Power/Mode switch 4 to COOL DOWN position.
- 2. Open oven doors. Allow a minimum of 30 minutes for the oven temperature to be reached.
- 3. At the end of daily use, we recommend that the doors be left slightly open for complete cooling.

SHUT DOWN INSTRUCTIONS

- 1. Turn thermostat dial 7 to off position. Return Power/Mode switch 4 to off.
- 2. If the unit is to be shut down for an extended period of time, close the manual gas service valve (located behind the combustion chamber safety cover).