



INSTALLATION AND OPERATION MANUAL

GAS SINGLE AND DOUBLE OVENS RESTAURANT SERIES MODEL G280-2 MASTER SERIES M1R AND M2R



FOR YOUR SAFETY:
DO NOT STORE OR USE GASOLINE
OR OTHER FLAMMABLE VAPORS OR
LIQUIDS IN THE VICINITY OF
THIS OR ANY OTHER
APPLIANCE

WARNING:
IMPROPER INSTALLATION, ADJUSTMENT,
ALTERATION, SERVICE OR MAINTENANCE
CAN CAUSE PROPERTY DAMAGE, INJURY,
OR DEATH. READ THE INSTALLATION,
OPERATING AND MAINTENANCE
INSTRUCTIONS THOROUGHLY
BEFORE INSTALLING OR
SERVICING THIS EQUIPMENT

PLEASE READ ALL SECTIONS OF THIS MANUAL
AND RETAIN FOR FUTURE REFERENCE.

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

IN THE COMMONWEALTH OF MASSACHUSETTS
THIS PRODUCT MUST BE INSTALLED BY A
LICENSED PLUMBER OR GAS FITTER. APPROVAL
NUMBER: G-1-07-05-28

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.

Users are cautioned that maintenance and repairs must be performed by a Garland authorized service agent using genuine Garland replacement parts. Garland will have no obligation with respect to any product that has been improperly installed, adjusted, operated or not maintained in accordance with national and local codes or installation instructions provided with the product, or any product that has its serial number defaced, obliterated or removed, or which has been modified or repaired using unauthorized parts or by unauthorized service agents. For a list of authorized service agents, please refer to the Garland web site at <http://www.garland-group.com>. The information contained herein, (including design and parts specifications), may be superseded and is subject to change without notice.

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IMPORTANT INFORMATION

WARNING:

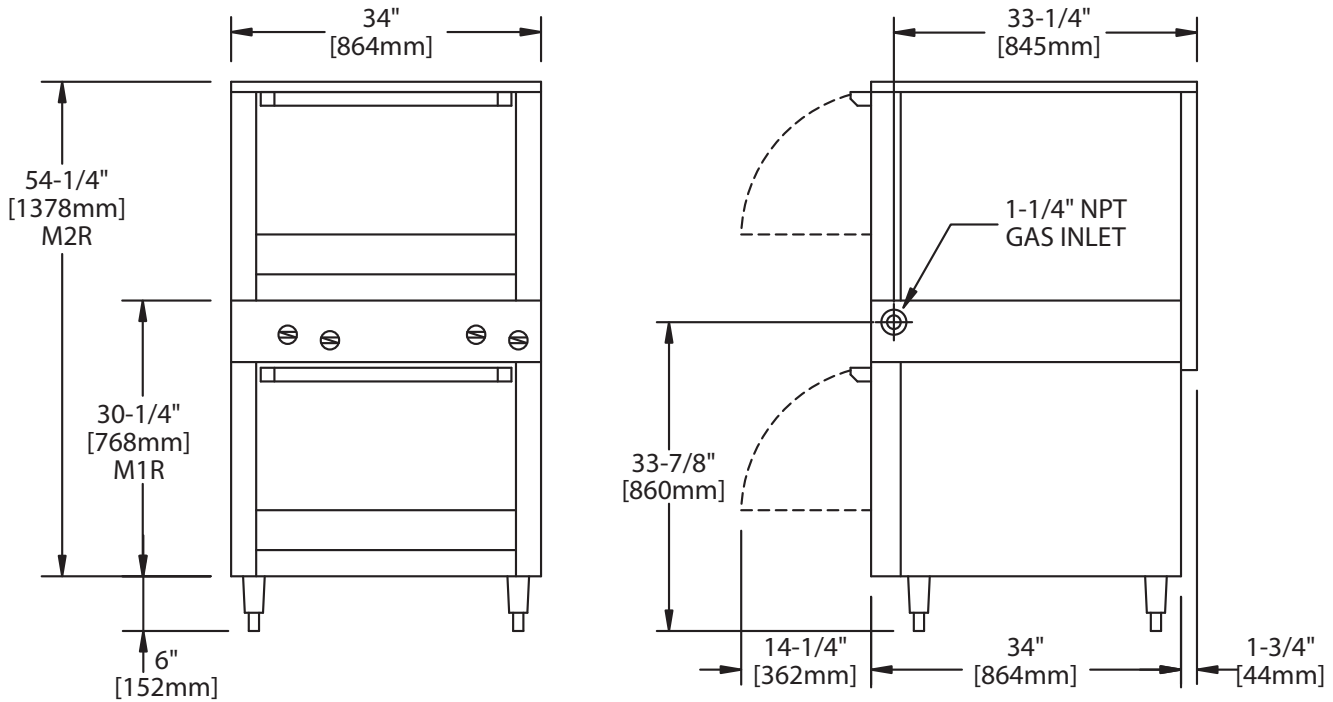
This product contains chemicals known to the state of california to cause cancer and/or birth defects or other reproductive harm. Installation and servicing of this product could expose you to airborne particles of glass wool/ceramic fibers. Inhalation of airborne particles of glass wool/ceramic fibers 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.

Keep appliance area free and clear of combustibles.

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DIMENSIONS AND SPECIFICATIONS, MODEL M1R, M2R



Product	Width: In(mm)	Depth: In(mm)	Height: In(mm) (w/ NSF Legs)	Height: In(mm) (w/o NSF Legs)	Oven Interior: in(mm)		
					Width	Depth	Height
M1R	34(864)	38(965)	36-3/8(924)	30-3/8(772)	26-1/4(667)	29(737)**	13-1/2(343)
M2R	34(864)	38(965)	60-3/8(1534)	54-3/8(1381)	26-1/2(667)	292(737)	20-1/2(519)

**RC oven is 25"(635mm) deep

INPUT-BTU/hr (Natural Gas)	M1R	kW Equivalent	M2R	kW Equivalent
Oven TOTAL	40,000	11.72	80,000	23.44
	40,000	11.72	80,000	23.44

RC=Range w/Convection Oven R=Range w/Oven S=Range w/Storage Base T=Modular Top

INSTALLATION NOTES			Shipping Wt: (Lb/Kg)
Combustible Wall Clearances ¹	Entry Clearances	Operating Pressure	
Sides: 6" (152mm) Back: 6" (152mm)	Crated: 39-1/4"(997mm) Uncrated: 34-1/4" (870mm)	Natural: 6 WC (15mbar) Propane: 10 WC (25mbar)	M1R 480/220 M2S 480/220

¹NOTE: Installation clearance reductions are applicable only where local codes permit.

Data applies only to North America.

Gas input ratings shown here are for installations up to 2,000 ft. (610m) above sea level.

Specify altitudes over 2,000 ft.

Electrical characteristics each RC oven: 1/3 HP motor, 120 VAC, single phase, 3.4 amps, 6 ft. (1.8m) power supply cord provided, 230 VAC export is direct connect, single phase, 50 Hz.

Commercial cooking equipment requires an adequate ventilation system. For additional information, refer to the National Fire Protection Association's standard NFPA96. (North America only).

Please specify gas type when ordering.

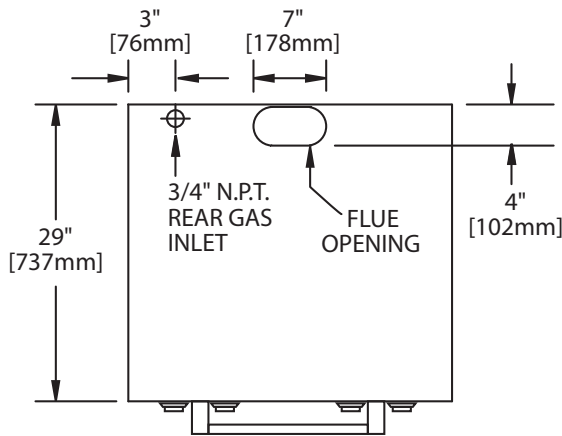
DIMENSIONS AND SPECIFICATIONS, MODEL G280-2

Oven Interior Dimensions			Installation Clearances		Entry Clearances		Shipping Wt.	
Height	Width	Depth	Sides	Rear	Crated	Uncrated	Lbs.	Kg
13-12" (343mm)	26-1/4" (667mm)	22" (559mm)	6" (152mm)	6" (152mm)	46" (1168mm)	34" (864mm)	535	243

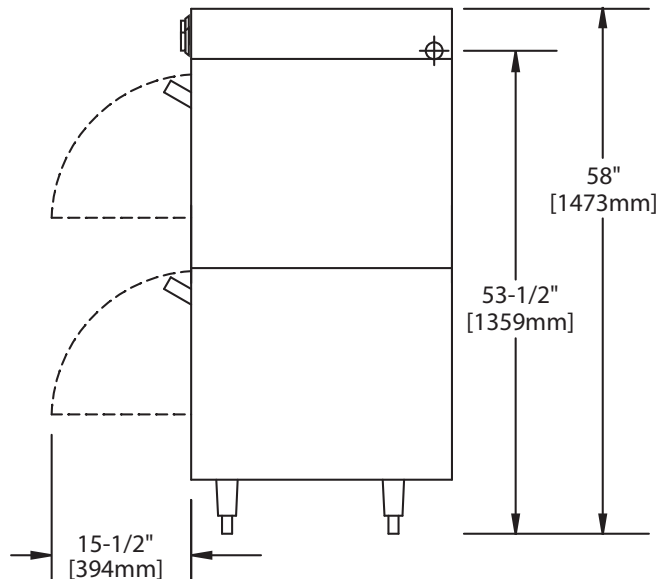
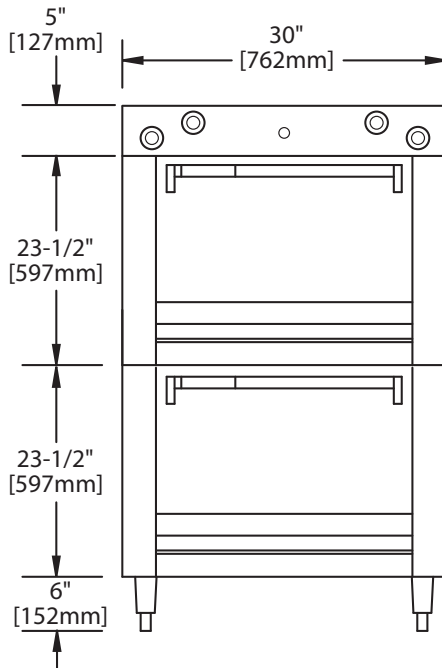
NOTE: Installation clearance reductions are applicable only where local codes permit.
This product is not approved for residential use.

Input Rating (Nat Gas)		Operating Pressure			
Oven (each)		Natural		Propane	
BTU	kW	"WC	mbar	"WC	mbar
30,000	8.78	4.5	11	10	25

Gas input ratings shown for installations up to 2000 ft., (610m), above sea level.
Please specify altitudes over 2000 ft.



Commercial cooking equipment requires an adequate ventilation system. For additional information, refer to the National Fire Protection Association's standard NFPA96..



SPECIFICATIONS

Model G280-2

Oven interior dimensions are 26¼" wide (667mm) x 22" deep x 13½" high (343mm), designed with embossed side liners to achieve the maximum in thermal convection action for uniform heat distribution and control. Oven sides, back, deck and door linings coated in porcelain enamel make clean-up easier and ensure long life. Burner compartment is lined with corrosion resistant steel. Heavy oven rack provided (one rack per oven standard), with adjustable in two positions. Oven input is 35,000 BTU's (10.25kW) per cavity. Individual on-off valve and 100% safety pilot system provided as standard equipment. Door springs and 100% safety pilot system are located out of heat zone and easily accessible for maintenance.

Models M1R and M2R

High capacity oven is 13½" high (343mm) x 26 ¼" wide (667mm) x 29" deep (737mm). Individual on-off valve, 100% safety pilot and one heavy duty rack are standard. Oven input is 40,000 BTU's (11.72kW) per cavity.

Exclusive heat flow over design eliminates, hot spots and gives consistently even oven temperatures. Oven sides, back, deck and door linings coated in porcelain enamel make clean-up easier and ensure long life. Door springs and 100% safety pilot system are located out of heat zone and easily accessible for maintenance.

INSTALLATION

Rating Plate

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.

We suggest installation, maintenance and repairs should be performed by your local authorized service agency listed in your information manual pamphlet.

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

This product must be installed by professional personnel as specified. Garland/U.S. Range products are not approved or authorized for home or residential use, but are intended for commercial applications only. Garland / U.S. Range will not provide service, warranty, maintenance or support of any kind other than in commercial applications.

Gas Supply

- A. The type of gas for which the unit is equipped is stamped on the data plate located behind the 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 the 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 to the unit with not more than ½" water column pressure drop.

NOTE: When checking gas pressure to be sure that all other equipment on the same gas line is on. A pressure regulator is supplied with model G280-2. A pressure regulator is not supplied as standard equipment with models M1R and M2R, however a 1-1/4" pressure regulator is sold as an option with the original purchase. If you would like to purchase a regulator after original purchase contact your equipment

INSTALLATION Continued

dealer. Installation must conform with the National Fuel Gas Code ANSI Z223.1-1988 or latest edition, NFPA No. 54- Latest Edition and National Electrical Code ANSI/NFPA 70-1990 or latest edition and/or local code to assure safe and efficient operation.

NOTE: The appliance and its individual shut-off valve (not supplied by manufacturer) must be disconnected from the gas supply piping system during any pressure testing of that system at pressures in excess of ½ PSIG (3.45 KP2). The appliance must be isolated from the gas supply piping system by closing its individual manual shut-off (not supplied by manufacturer) during any testing of the gas supply piping system at test pressures equal to or less than 1/2 PSIG (3.45 KP2).

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/CSA 6.16, Addenda Z21.69B-2006/CSA 6.16B-2006 (or latest edition), and a quick-disconnect device that complies with the Standard for Quick Disconnects for Use with Gas Fuel, ANSI Z21.41/CSA 6.9, Addenda Z21.41A-2005/CSA 6.16A-2005 (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. Please be aware, required restraint is attached to the bracket (which is located on the rear caster closes to the gas connection), and if disconnection of the restraint is necessary, be sure to reconnect the restraint after the oven has been returned to its originally installed position.

Installation for Ovens Equipped with Legs

Raise front of the unit and block. Do not lay unit on its back. Position leg insert into leg retainer opening and tap up until it seats at collar flange. Repeat at rear of unit making sure all four legs are adjusted to same height. Legs can be adjusted to overcome an uneven floor.

Ventilation and Air Supply

Proper ventilation is highly important for good operation. The ideal method of ventilating a range is the use of a properly designed canopy which should extend six inches (6") beyond all sides of the appliance and six feet (6') six inches (6") from the floor.

A strong exhaust fan will create a vacuum in the room for an exhaust system vent to work properly, replacement air must enter the room in which the vent is located.

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.

Assembly of Battery

This section pertains to Master Series models only.

All heavy duty batteried equipment is aligned and fitted at the factory, from left to right and must be installed in this order. There is a diagram provided with every heavy duty battery.

- A. All such units should be placed in their respective battery position. Detach valve panels to prevent damage, remove them from the area where the battery is being assembled.
- B. Level each unit (to the oven rack) by adjusting the six inch (6") legs (refer back to Item 1 for limitations), or where legs are not used, adjust level with shims. Readjust legs, if required.
- C. Connect units together by mating the unions at each end of the manifold. (Adjoining units must have matching unions, unless the union parts are of the same specifications, a leak proof connection cannot be assured.) Hand tighten unions at this point.
- D. The units should be fastened at the rear by inserting 5/16" bolts through the holes provided at the rear of the burner box sides. Be sure of proper unit alignment in the battery before final tightening of these bolts or unions. Improper tightening will cause the "fanning" or "bowing" of batteries units.

The final tightening of the union should be accomplished by using a suitable spanner wrench. If such a wrench is not available, the Garland union collar has special ridges, and a cold chisel can be driven against these ridges to properly seat and seal the union.

- E. The manifold of this unit or the manifold of which is a part of must be equipped with a certified pressure regulator suitable for battery application and adjustable for an outlet pressure at the manifold as specified on the rating plate.

INSTALLATION Continued

Pressure Regulators

1. Must have a maximum regulation capacity for the total connected load.
2. The pressure regulator(s) installed must be listed by a nationally recognized agency.
3. The pressure regulator(s) must have a pressure adjustment range to allow adjustment to the manifold pressure on the appliance rating plate.
4. Unless the manifold pressure on all connected appliances is the same, a separate pressure regulator must be supplied for each appliance(s) having differing manifold pressures.
5. Gas supply lines may be connected at right, left or both ends of a battery or at the tee connections on spreader plates. If five (5) or more units are placed in a battery, more than one (1) supply line should be used. A readily accessible, approved type of hand shut-off valve should be installed on each supply line.

WARNING: Local codes may require that the pressure regulator be externally vented. This will be supplied by others.

Testing

All fittings and pipe connections must be tested for leaks. Use approved gas leak detectors, soap solutions or equivalent, checking over and around the fittings and pipe connections. **DO NOT USE A FLAME!** Accessibility to all gas

lines and fittings require that valve panel(s) lower front panel(s), oven rack(s) be removed. It may be necessary to remove or at least raise and securely prop griddles, hot tops and top grates. All parts removed (including fasteners) should be stored safely for re-use.

1. Be sure that all valves and thermostats are in the 'off' position.
2. Turn on the main gas supply valve.
3. Leak test all valves and fittings as described in the procedure above. Correct any leaks required and recheck.
4. Light oven pilot.
5. The range is provided with an oven shut-off valve separate from the thermostat, turn this valve on and set the thermostat at 500°. If the range oven thermostat has an "off" position on the dial the thermostat is equipped with an internal, integral oven shut-off valve. Set this thermostat to 500°. In both cases, gas will now flow to the oven burner.
6. Leak test all valves, fittings, etc. as above. Correct any leaks and retest.
7. Shut off all range valves and set thermostat dials to 'off' or low position.

All units are tested and adjusted at the factory. However, burners and pilots should be checked at installation and adjusted if necessary.

OPERATION

Oven Lighting Procedure (All Models)

Lighting

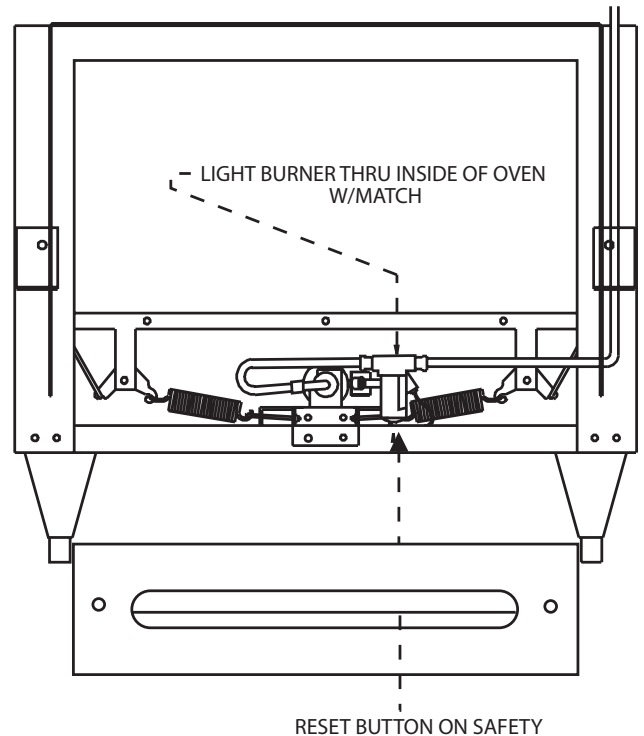
1. Remove oven bottoms.
2. Depress and hold reset button (red) extending through the louvered panel (beneath the oven door) while lighting the oven pilot. Continue to depress the reset button for 60 seconds. Release button. If pilot does not stay lit, repeat this procedure after 5 minutes.

Shut down

1. Turn all valves and thermostats to the off position.
2. If range is to be shut down for an extended period of time, close the in line gas valve.

Re-lighting

1. Shut all gas valves off.
2. Wait 5 minutes.
3. Repeat lighting instructions in section "A" above.



CLEANING AND MAINTENANCE

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

Painted Finishes

The oven should be permitted to cool down before cleaning exterior surfaces. 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.

NOTE: Many parts of the commercial range are raw steel, (i.e. springs, door hooks, etc.) and can react to moisture, forming rust. This occurrence is normal and not considered a factory defect. Clean with a stainless steel or fiber pad. A coating of salt free oil may be applied.

Stainless Steel Finishes

For routine cleaning just wash with a hot water and detergent solution. Wash just a small area at a time or the water will evaporate leaving the chemicals behind causing streaking.

Rinse the washed area with a clean sponge dipped in a sanitizing solution and wipe dry with a soft cloth before it can dry.

Use a paste (of water and a mild scouring powder) if you have to, but never rub against the grain. All stainless steel has been polished in one direction. Rub with the polished lines to preserve the original finish. Then thoroughly rinse as before. To prevent finger prints there are several stainless steel polishes on the market that leave an oily or waxy film. Do not use on surfaces that will be in contact with food.

CLEANING AND MAINTENANCE Continued

Stainless steel may discolor if overheated. These stains can usually be removed by vigorous rubbing with a scouring powder paste.

Use only stainless steel, wooded or plastic tools if necessary to scrape off heavy deposits of grease and oil. Do not use ordinary steel scrapers or knives as particles of the iron may become imbedded and rust. **STEEL WOOL SHOULD NEVER BE USED.** Either a typical bleach solution or hot water can be used to sanitize stainless steel with out harm.

Oven Interior (porcelain enamel)

NOTE: Disconnect line cord (if applicable) from power supply before cleaning or servicing.

1. Before cleaning oven interior, remove all oven racks and guides (if "RC" base). Oven racks and guides can be cleaned with a mild soap and warm water or run through dish washer.
2. The porcelain interior can be cleaned with oven cleaners such as "Easy-Off", or "Dow Oven Cleaner". Apply only when oven is cold.

Oven Interior, (optional continuous clean)

NOTE: Disconnect line cord (if applicable) from power supply before cleaning or servicing.

1. "Break-In Period" – When the oven is new, operate the oven for at least two hours at high heat, with the oven empty, before normal cooking operation. Continue preheating the oven for two hours prior to use during the first two weeks. During this break-in period, it is important that the oven surfaces be kept clean of excessive soiling due to spillage.

2. How to put "continuous cleaning" action to work: each day, after baking and roasting operations have ceased empty the oven, turn the temperature control up to high heat (500°). This high heat will accelerate the cleaning action and reduce the time required to effectively clean the oven. Usually the cleaning operation will take about 45 to 60 minutes.
3. Heavy Staining – When the oven appears soiled, due to heavy staining, we suggest pre-heating the empty oven each day for 1 or 2 hours (depending on the condition of the oven) for effective results. Also, ordinary household ammonia has proven to be effective in removing baked-on "soil" build-up and has the beneficial effect of keeping the microscopic "pores" of the coating open and free

To perform its cleaning action. An occasional light swabbing with household ammonia while the oven is at room temperature will prove extremely beneficial.

Abrasives should not be used – in order to maintain continuous cleaning action, it is very important to avoid the use of abrasive materials such as steel wool scouring pads, abrasives or sharp implements which can cause permanent damage to the surface coating. In addition oven cleaners such as "easy-Off" or "Dow Oven Cleaner" will clog the "pores" of the special coating and will retard the cleaning action.

4. Period "Tune-Up" – Although the oven appears clean, we recommend operating the oven at high heat for 2 hours approximately once each month. This will insure against build-up of solids in hard to see places and in the pores of the coating.

OVEN PILOT ADJUSTMENT

The oven pilot should be adjusted to stable flame 1" long with no yellow tips. This flame should envelope the thermocouple end for 3/8" to 1/2" and will cause

the thermocouple tip to glow a dull red. The oven pilot adjustment valve is found on the manifold behind the valve panel.

TROUBLE SHOOTING

Cakes are dark on the sides and not done in the center	Lower oven temperature
Cake edges are too brown	Reduce number of pans or lower temperature
Cakes have light outer color	Raise temperature
Cake settles slightly in the center	Bake longer or raise oven temperature slightly. Do not open doors to oven for long periods.
Cake ripples	Overloading pans or batter is too thin
Cakes are too coarse	Lower oven temperature.
Pies have uneven color	Reduce number of pies per rack or eliminate use of bake pans.
Cupcakes crack on top	Lower oven temperature.
Meats are browned and not done in the center	Lower oven temperature and roast longer.
Meats are well done and not browned	Raise temperature. Limit amount of moisture.
Meats develop hard crust	Reduce temperature or place pan of water in oven

 **Garland**[®]