



SERVICE HANDBOOK

MAJOR APPLIANCES

**ELECTRIC RANGE
and MICROWAVE
PRODUCTS**

1978 thru 1987



PREFACE

This HANDBOOK contains information and service procedures to assist the service technician in correcting conditions that are not always obvious. Service procedures considered obvious are intentionally omitted.

Using this information in this HANDBOOK in conjunction with the Mini-Manual, which is included with the appliance will provide comprehensive information on your model.

Location Of Mini-Manuals

All range models with mini-manual will have manual in same envelope with wiring label as outlined below:

<u>Range Type</u>	<u>Location</u>
F.S. Ranges	- Lower L.H. body panel (access through drawer area).
HI-Low Ranges	- Lower L.H. body panel (access through drawer area)
*Hi-Low Ranges (Microwave)	- Range manual in drawer area as above. - Microwave manual in control panel area.
*Built-In Ovens (Microwave)	- Control panel.
Drop-In Ranges	- Control panel area.
CMO	- Inside CMO case

*Two mini-manuals with product.

IMPORTANT SAFETY NOTICE

Major appliances are complex electromechanical devices. General Electric Company's Major Appliance Service Publications are intended for use by individuals possessing adequate backgrounds of electrical, electronic and mechanical experience. Any attempt to repair a major appliance may result in personal injury and property damage. General Electric Company cannot be responsible for the interpretation of its service publications, nor can it assume any liability in connection with their use.

SAFE SERVICING PRACTICES

To preclude the possibility of resultant personal injury *and/or property damage,** it is important that the safe servicing practices be observed. The following are examples, but without limitation, of such safe practices.

1. Before servicing, always disconnect the product from its electrical power source by removing the product's electrical plug from the wall receptacle, or by removing the fuse (or tripping the circuit breaker to OFF) in the branch circuit serving the product.

NOTE: If a specific diagnostic check requires electrical power be applied (e.i., a voltage or amperage measurement, etc.), reconnect electrical power only for the time required to such a check, and disconnect it immediately thereafter. During any such check, ensure no other conductive parts (pans, etc.) - or yourself - come in contact with any exposed current-carrying metal parts.

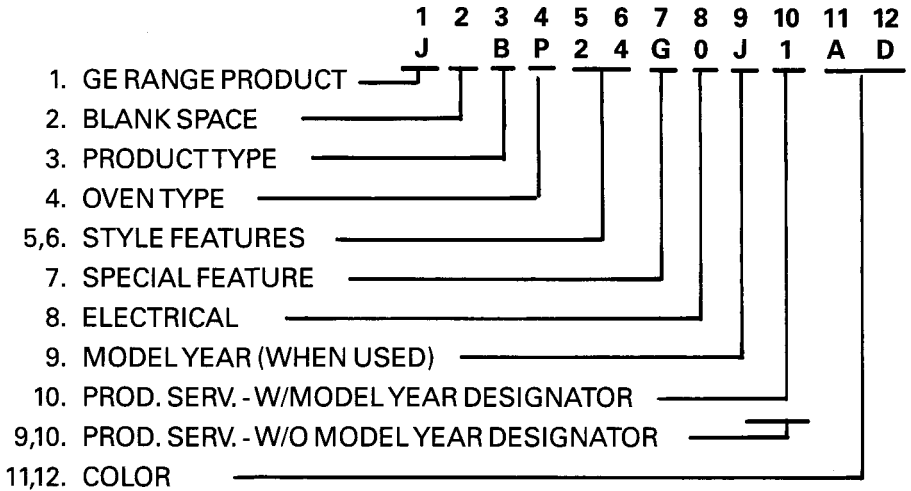
2. Never interfere with or bypass the proper operation of any feature, part or device engineered into the product.
3. If a replacement part is required, use the specified General Electric Company part, or an equivalent which will provide comparable performance.
4. Prior to reconnecting the electrical power source to the appliance, be sure that:
 - a) All electrical connections within the product are correctly and securely connected.
 - b) All electrical harness leads are properly dressed and secured away from sharp edges, high-temperature components (e.g., resistors, heaters, etc.) and moving parts.

- c) Any uninsulated current-carrying metal parts are secure and adequately spaced from all non-current carrying metal parts.
 - d) All electrical grounds - both internal and external to the product - are correctly and securely connected.
 - e) All panels and covers are properly and securely reassembled.
5. Read the SAFETY PRACTICES section in this Book for additional SAFE SERVICING PRACTICES.
6. Don't attempt a product repair if you have any doubts as to your ability to complete it in a safe and satisfactory manner.

*PERSONAL INJURY, in the form of electrical shock, burns, cuts or abrasions, etc., can occur spontaneously to the individual while attempting to repair or service the product; or may occur at a later time to any individual in the household who may come in contact with the product - unless safe servicing practices are observed.

**PROPERTY DAMAGE, resulting from fire, smoke, etc., can occur immediately or at a later time as a result of attempting to repair or service the product - unless safe servicing practices are observed.

GE BRAND RANGE MODEL NOMENCLATURE



EXPLANATION OF CODES

3. PRODUCTTYPE

- A - 21" Apartment Range
- B - 30" Freestanding Range
- C - 40" Freestanding Range
- D - 30" Drop-In
- E - Countertop Microwave Oven
- H - High Oven Range
- K - Built-In Oven Fitting 27" Cabinet
- M - Drop-In Range Fitting 27" Cabinet, or OMNI 5 CMO
- N - Recirculating Hood
- P - Surface Plate
- R - Built-In Oven Fitting 24" Cabinet
- S - Slide-In Range
- V - Ventilating Hoods
- X - Accessories

4. OVENTYPE

- S - Standard
- P - Pyrolytic Self-Clean
- V - Versatronic
- M - Microwave/Hood, or Spacemaker/CMO
- 1 - Sourced Microwave (CMO)
- Blank - Some Microwave CMO
- Also: Some deluxe 30" Ranges - 3,4,5,6
- Also: Width for surface plates and hoods - 3-30", 4-42", 6-36"
- C - Clean Look
- T - Microwave (CMO)

5,6. **SPECIFIC STYLE FEATURE LEVEL**

7. **MARKETING OR ENGINEERING SPECIAL FEATURE**

- B - Brushed Chrome (Pricing Code)
- G - Black Glass Door
- N - Non-Vented Attached Hood
- V - Vented Attached Hood
- Other numeric or alpha - microwave redesign
- Blank - No Special Feature

8. **ELECTRICAL INFORMATION**

- 0 - 120/240V, or Dual Rated (120/240V – 120/208V), 120V for CMO, MW Hoods, and Hoods
- 1 - 208V
- 2 - 240V with Pigtail
- 3 - 208V with Pigtail
- 4 - 240V, 2 Wire, 1 Phase, 50 Hz.
- 5 - 208V, 2 Wire, 1 Phase, 50 Hz.
- 6 - 240V Wall Oven With Plug
- 7 - 208V Wall Oven with Plug
- 8 - 120/240V, 3 Wire, 50 Hz.
- 9 - 120/240V, with Flex Cable

9. **MODEL YEAR (WHEN USED)**

- | | | | |
|----------|----------|----------|----------|
| T - 1976 | A - 1980 | F - 1984 | L - 1988 |
| V - 1977 | B - 1981 | H - 1985 | M - 1989 |
| W - 1978 | C - 1982 | J - 1986 | N - 1990 |
| Y - 1979 | D - 1983 | K - 1987 | |
- 0-9 (Numeric) – No Model Year

10. **PRODUCT SERVICE – WITH MODEL YEAR DESIGNATION**

9,10. **PRODUCT SERVICE – WITHOUT MODEL YEAR DESIGNATIONS**

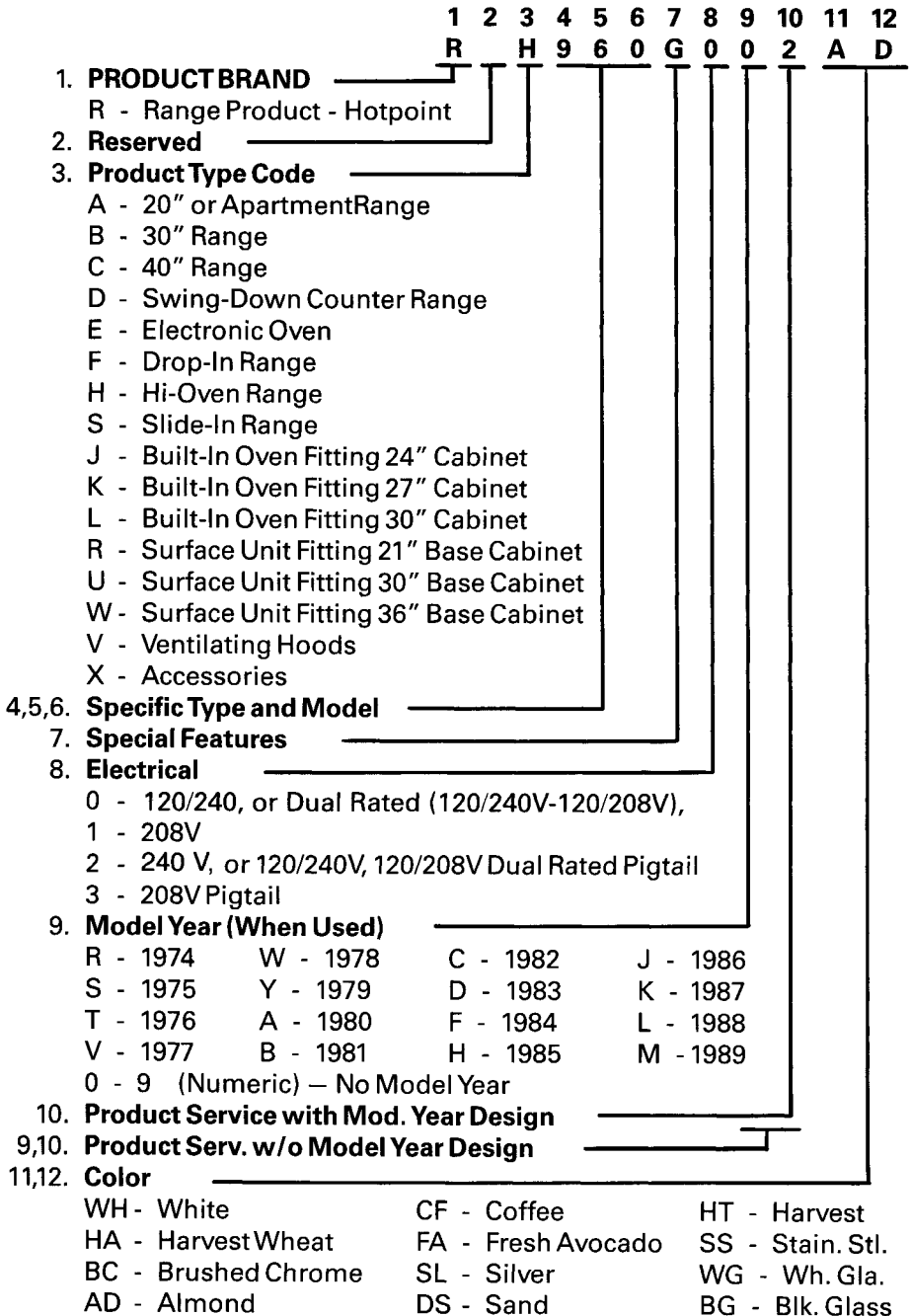
11,12. **COLOR**

- | | |
|---------------------|----------------------|
| WH - White | SS - Stainless Steel |
| HA - Harvest Wheat | WH - White Glass |
| AD - Almond | BG - Black Glass |
| CF - Coffee | HT - Harvest |
| FA - Fresh Avocado | |
| BC - Brushed Chrome | |
| SL - Silver | |
| DS - Sand | |

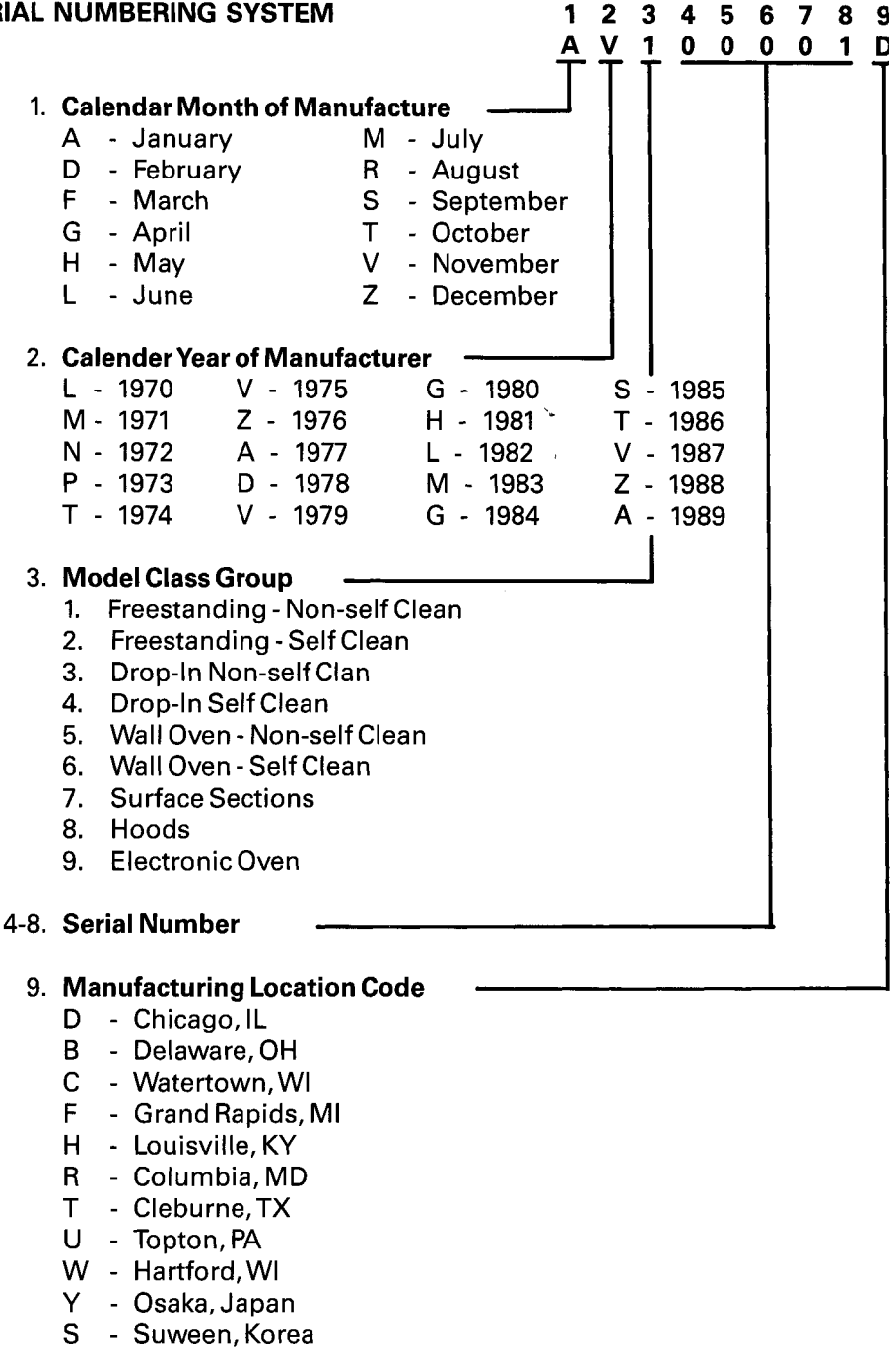
GE BRAND SERIAL NUMBERING SYSTEM

	1	2	3	4	5	6	7	8	9
	A	V	1	0	0	0	0	1	G
1. Calendar Month Of Manufacture	_____								
A - January	M - July								
D - February	R - August								
F - March	S - September								
G - April	T - October								
H - May	V - November								
L - June	Z - December								
2. Calendar Year Of Manufacture	_____								
V - 1975	D - 1978	H - 1981	R - 1984	V - 1987					
Z - 1976	F - 1979	L - 1982	S - 1985	Z - 1988					
A - 1977	G - 1980	M - 1983	T - 1986	A - 1989					
3. Model Class Group	_____								
1. Freestanding - (Non P-7)									
2. Freestanding - (P-7)									
3. Drop-In - (Non P-7)									
4. Drop-In - (P-7)									
5. Wall Oven - (Non P-7)									
6. Wall Oven - (P-7)									
7. Cooktops									
8. Hoods									
9. Electronic Oven									
4-8. Serial Number	_____								
This will be a five-digit number starting with 00001 for each model class group and running consecutively for the calendar year and is independent of the specific model or color that is being run as long as it is in the same model class.									
9. Manufacturing Location	_____								
A - Chicago, IL									
C - Watertown, WI									
E - Grand Rapids, MI									
G - Louisville, KY									
K - Hamilton, Canada									
M - Columbia, MD									
T - Cleburne, TX									
U - Topton, PA									
V - Orangeville, Canada									
W - Hartford, WI									
X - Osaka, Japan									
Z - Nara, Japan									

HOTPOINT BRAND RANGE MODEL NOMENCLATURE




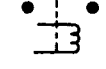



















**HOTPOINT BRAND
SERIAL NUMBERING SYSTEM**



SYMBOLS, ABBREVIATIONS AND COLOR CODES

SYMBOLS

BALLAST		POTENTIOMETER	
BUZZER		RELAY	
CAPACITOR		RESISTOR	
DIODE		SOLENOID OR MOTOR WINDING	
FUSE		SWITCH	
HEATING UNIT		THERMOSTAT	
LAMP - INCANDESCENT		TRANSFORMER	
LAMP - NEON		TRIAC	
MAGNETRON		WIRES CONNECTED	
MOTOR		WIRES CROSSING	
OVERLOAD			

ABBREVIATIONS

AUTOMATIC SURFACE UNIT - ASU	RELAY - RLY
BAKE - BK	SMOKE ELIMINATOR - SE
BROIL - BR	SURFACE UNIT - SU
CLEAN - CL	SWITCH - SW
DUAL RANGE THERMOSTAT - DRT	TIME BAKE - TB
HOT WIRE RELAY - HWR	TRANSFORMER - XFMR
MAGNETRON - MAG	VARIABLE - VAR
POWER - PWR	WINDING - WDG

COLOR CODE

BARE COPPER - X	ORANGE - O
BLACK - B	PINK - P
BROWN - C	RED - R
DARK BLUE - N	TAN - T
GRAY/SILVER - S	VIOLET/PURPLE - V
GREEN - G	WHITE - W
LT-BLUE/AQUA - A	YELLOW - Y

EXAMPLE: BR=BLACK WIRE WITH RED STRIPE

OR

HIGH TEMP WIRING WITH A HASH MARK SUCH AS NEUTRAL COLOR WITH RED HASH IS CODED AS A SOLID COLOR WIRE – R –

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CARE OF YOUR RANGE

Proper care and cleaning procedures are essential for a long and satisfactory life for your range. Included in this section are directions and Cleaning Charts for cleaning all parts of the range. When cleaning range manually, wearing of rubber gloves is recommended to protect the hands.

PORCELAIN ENAMEL FINISH

The porcelain enamel finish is essentially glass fused on steel at high temperature and is breakable if misused. This finish is acid resistant. However, any acid foods spilled (such as lemon or other citrus fruit juices, or mixtures containing tomato or vinegar) should be wiped up immediately. See chart for cleaning suggestions.

STAND-UP UNITS; REMOVABLE CHROME TRIM RING

Clean area under reflector pans frequently. Accumulated soils, especially grease, may catch fire. Stand-Up units are not plug-in units - do no attempt to remove them. They have a Stand-Up hinge and removable trim ring.

To clean area under Stand-Up unit, lift cool surface unit until it snaps into its raised position - it will stay there until you lower it. Lift off trim ring, remove reflector pan. If aluminum foil is used to line reflector pan, follow directions given in Use and Care Book. To prevent damage to the surface unit, **NEVER COVER** opening in reflector pan with foil. Wipe around edges of unit recess with damp

cloth or sponge, then replace clean reflector pan, then trim ring.

OVEN VENT DUCT

The oven is vented through a duct which is located under a rear surface unit. Clean this duct frequently. To remove duct, lift or remove the right rear surface unit, remove reflector pan, and lift out duct. To reposition, place solid part of duct over round opening under the cooktop. Then position hole in duct so it rests directly under round opening in reflector pan. Duct must be in correct position so moisture and vapors from oven can be vented during use.

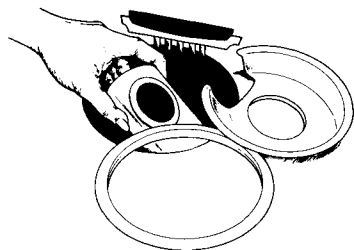


Figure 1

NEVER COVER HOLE in oven vent duct with aluminum foil or any other material. To do so prevents the oven vent from functioning properly during cooking or cleaning.

LEVELING THE RANGE

A leveling screw is located at each front corner of the base of the range. By removing the bottom drawer you can level the range to an uneven floor with the use of a nutdriver. Some models incorporate rear leveling screws.

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CLEANING UNDER THE RANGE

The area under the range of models equipped with a bottom drawer can be reached easily for cleaning by removing the bottom drawer. To remove, pull drawer out all the way, tilt up the front and remove it. To replace, insert glides at back of drawer beyond stop on range guides. Lift drawer if necessary to insert easily. Let front of drawer down, then push in to close.

ADJUSTING OVEN THERMOSTAT

When cooking a food for the first time in your new oven, use time given on recipe as a guide. Oven thermostat, over a period of years, may "drift" from the factory setting and differences in timing between an old and a new oven of 5 to 10 minutes are not unusual. Your new oven has been set correctly at the factory and is more apt to be accurate than the oven which it replaced. However, if you find that your food consistently browns too little or too much, you may make a simple adjustment in the thermostat (Oven Temp) knob.

PULL KNOB OFF OF SHAFT. NOTE EXISTING SETTING ON BACK OF KNOB BEFORE MAKING ANY ADJUSTMENT. FIG. 2.

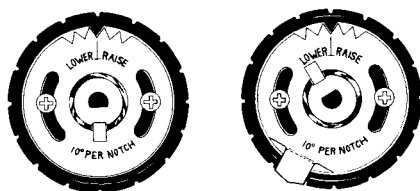


Figure 2

1. Hold knob firmly in one hand so pointer is at top (Figure 2).
2. With other hand, loosen 2 screws and move pointer one notch in the desired direction. Adjust pointer toward RAISE to increase temperature; toward LOWER to decrease temperature. Each notch changes oven temperature 10 degrees.
3. Return knob to range, match flat area on knob and shaft. Recheck oven performance before making an additional adjustment. It is important to return knobs to shafts from which they came.

LAMP REPLACEMENT

CAUTION: BEFORE REPLACING ANY LAMP, DISCONNECT ELECTRIC POWER TO RANGE AT THE MAIN FUSE OR CIRCUIT BREAKER PANEL. LET LAMP (OR BULB) AND LAMP COVER COOL COMPLETELY.

OVEN LAMP—SELF CLEANING OVEN (ON MODELS SO EQUIPPED)

- a. Remove only the three slotted screws in lamp cover; leave other screws in place; see diagram. Remove cover;

replace lamp with a 40-watt home appliance bulb.

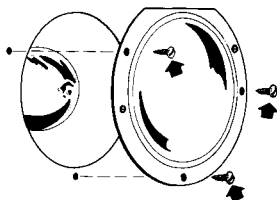


Figure 3

- b. Replace lamp cover, being certain to replace washers with the three screws.
- c. Connect electric power to range.

NEVER OPERATE THE CLEAN CYCLE OF THE SELF-CLEANING OVEN WITHOUT COVER IN PLACE.

OVEN LAMP - NON SELF-CLEANING OVEN (ALSO SOME SELF-CLEAN)

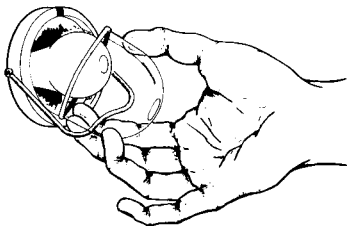


Figure 4

The oven lamp (bulb) is covered with a glass, removable cover which is held in place with a bail-shaped wire. Remove oven door, if desired, to reach cover easily.

1. **TO REMOVE**, hold hand under cover so it doesn't fall when released. With fingers of same hand, firmly push down wire bail until it clears cover. Lift off cover. **DO NOT REMOVE ANY SCREWS TO REMOVE THIS**

TYPE OF COVER.

2. Replace lamp with 40-watt home appliance bulb.
3. **TO REPLACE cover**, place it into groove of lamp receptacle. Lift wire bail up to center of cover until it snaps into place. When in place, wire holds cover firmly, but be certain wire bail is not below depression in center of cover.
4. Connect electric power to range.

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REMOVABLE OVEN DOOR NON SELF-CLEAN OVEN (Most Models)

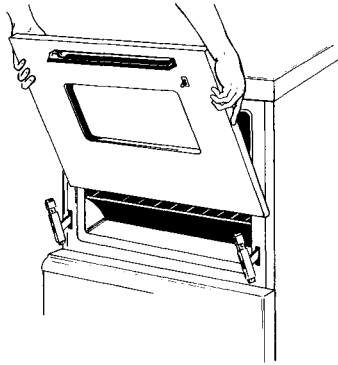


Figure 5

TO REMOVE door, open to BROIL position, or where you feel hinge catch slightly. Grasp door at sides; lift door up and away from hinges. (See note)

TO REPLACE, grasp door at sides. Line up door with hinges and push door firmly into place.

NOTE: Self-clean ovens — door fastened by 2 screws.

USE OF ALUMINUM FOIL

1. If desired, broiler pan may be lined with foil and broiler rack may be covered with foil for broiling. ALWAYS BE CERTAIN TO MOLD FOIL THOROUGHLY TO BROILER RACK, AND SLIT FOIL TO CONFORM WITH SLITS IN RACK. Broiler rack is designed to minimize smoking and spattering, and to keep drippings cool during broiling. Stopping fat and meat juices from draining to the broiler pan prevents rack from

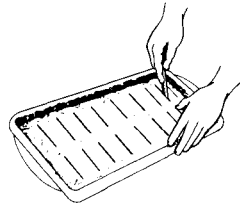


Figure 6

servicing its purpose, and may let juices become hot enough to catch fire.

2. DO NOT place a sheet of aluminum foil over broil unit or on shelf. To do so may result in improperly cooked foods, damage to oven finish, and increase in heat on outside surfaces of the range.
3. Non-Self Cleaning Oven Only: A sheet of aluminum foil may be used on floor of the oven under the bake unit, if desired. BE CERTAIN FOIL DOES NOT TOUCH BAKE UNIT. Aluminum foil used in this way may affect slightly the browning of some foods. Change foil when it becomes soiled.
4. Line reflector pans with aluminum foil, if desired, noting precaution under illustrations below.

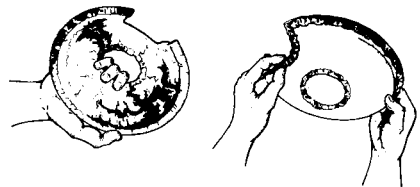


Figure 7

CAUTION: Reflector pans under surface units must be in place when cooking (a) so units operate as they were designed and (b) to prevent damage to the wiring.

PORCELAIN

Porcelain parts are coated with acid-resistant titanium porcelain enamel. Even though this finish is of the highest quality possible within commercial and practical standards, some small imperfections are inevitable. These small imperfections are inherent in all porcelain and will not increase in intensity with age. This means that the basic steel will remain protected and replacement of these parts should be avoided. Instead, offer the customer reassurance that if the slightly imperfect part changes in the affected area, the part will definitely be replaced at a later date free of charge.

The most common types of imperfections that occur during manufacture are explained below:

Dirt Specks

Every known precaution is taken to prevent these, but practically every piece of commercial porcelain will be found to have some dirt specks. Certain standards of quality have been established to keep this condition to a minimum, but it cannot be expected that anything other than a costly hand-made art object will be completely free of these specks.

Tearing

This defect is sometime referred to as "curling" or "crawling", because the edges of the enamel curl up and fuse in ridges.

As a rule, tearing of the enamel is caused either by too fine grinding of the enamel batch, heavy application of enamel, improper drying or any combination of

these factors.

Orange Peel

This describes the slightly wavy and rough condition of the surface of the porcelain which resembles the surface of an orange.

It is caused by the porcelain enamel not flowing out smoothly when the piece is fired and also somewhat by the application of the enamel. It is an appearance item only and does not affect the durability or quality of the finish.

Fish Scale

These are half-moon or fish scale appearing chips that are caused by some local condition or state of the base metal, rather than through a variance of the frit. Fish-scaling can appear under a variety of manufacturing circumstances and conditions. There is no basic cause, but several contributory ones.

The most serious type is delayed fish scale. This appears several days or weeks after completion of firing the parts.

Pin Holes and Blisters

These are caused by dirt particles or impurities in the porcelain enamel or metal. At certain stages in the firing operation, gases are given off and if the firing cycle is not sufficiently long, the gases remain trapped in the enamel coating resulting in pinholes and blisters

DAMAGE

Porcelain, being glass, is naturally subject

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to abuse and damage. Damaged porcelain varies in appearance, depending upon how the damage occurred. The following descriptions and pictures depict the various types of damage:

Tension Chip



Figure 8

When a porcelain part has been subjected to a tension stress (beyond the elastic limit), the porcelain will crack along nearly parallel lines.

Compression Chip

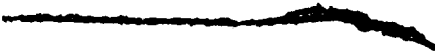


Figure 9 - Compression Chip

If a porcelain part has been subjected to a compression stress (beyond the elastic limit) the porcelain will chip off in spots.

Fracture - Impact

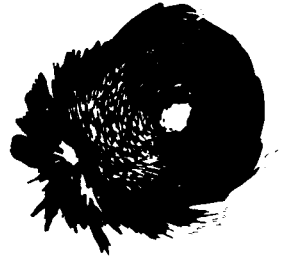


Figure 10 - Fracture Impact on Porcelain Side

If the finish is subjected to a heavy blow directly on the porcelain, it will chip out in a characteristic manner which can be identified by the presence of a small raised section or "eye" directly under the point of impact. (Figure 10)



Figure 11-Fracture - Impact of Underside

If struck from the underside, opposite the finish, the porcelain will crack in a star-like pattern. (Figure 11).

Crazing**Figure 12 - Crazing**

This is caused by thermal shock. If a localized porcelain area is heated and then suddenly cooled, strains will be created which will result in fine hairline cracks or fractures in the enamel as opposed to hairlines or tension chip. The Users Manual suggests that if the surface is hot, use a paper towel or dry cloth immediately to wipe up any spillage on the porcelain. Then, when the range is cool, clean the area thoroughly with soap and water.

Stains and Etchings

Titanium acid-resistant porcelain is used on all Ranges. This is acid-resistant - but remember - it is not acid proof.

Acid resisting porcelain will lessen the etching effect of acid, such as lemon juice, vinegar or milk, for a reasonable length of time. If wiped off immediately or within a few minutes, no visible results of etching will be detected. However, leaving acid stains overnight should be discouraged, since even acid resistant porcelain will be attacked after a prolonged period of exposure. Such an etching would leave a permanent injury.

Strong abrasive cleaners, if used repeatedly may scratch the finish and destroy the lustre.

The foregoing is a list of imperfections and damages that MIGHT occur in the finish of a Range; in actuality, most of them occur infrequently. The advantages of porcelain enamel as a finish for the range far outweigh the disadvantages - it is durable, life-long, easy to clean, colorfast, rust-resistant, corrosion-resistant, heatproof, waterproof, attractive and economical. Only after a considerable amount of research was this finish selected - and the selection of porcelain enamel as the finish for Ranges has resulted in a range that remains sparkling clean and beautiful for a lifetime.

CERAMIC COOKING PANEL

The glass cooking panel is a ceramic type material approximately 3/16" thick. The cooking panel is secured to the stainless steel trim frame by screws and clips extending through the heater box. A self-adhesive silicone gasket seals the edges of the cooking panel to the trim frame to prevent spills from entering the heater box area. All replacement panels will be furnished with the gasket attached.

Causes and preventions of stains, scratches, and discoloration of the cooking panel are listed in User Book. Cooking panels should not be replaced due to these conditions since any of them are a result of improper use.

The cooking panel may be broken by either impact or excessively high tem-

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perature. Impact failures generally may be identified by a star pattern at the point of impact with radial cracks extending from the impact point.

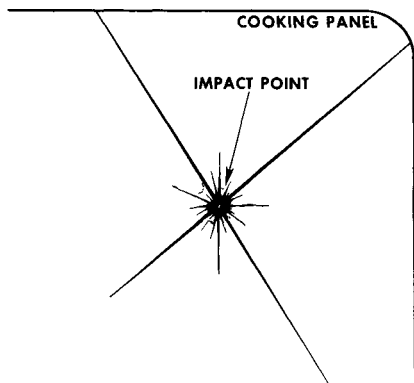


Figure 13 - Impact Failure

Thermal failures may be identified by having a crack that starts at the edge of the panel and extends to another edge. In addition, thermally produced cracks generally pass through or around a heating element location. IN CASES WHERE A THERMAL FAILURE HAS OCCURRED, ALL FOUR (4) HIGH TEMPERATURE CONTROLS MUST BE CHECKED FOR PROPER CALIBRATION WHEN REPLACEMENT PANEL IS INSTALLED. If your model is so equipped.

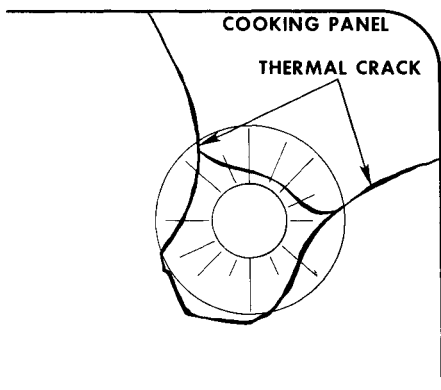


Figure 14 - Thermal Failure

ELECTRICAL INSTALLATION

Range and built-in cooking equipment are manufactured to standard electrical specifications:

1. For 120/240 volt, 3-wire, single phase AC supply. This was formerly called 115/230 volt or 118/236 volt supply.
2. Dual-rated, 120/208 volt and 120/240 volt. These ranges or built-in equipment will operate on either electrical source.

Units must be connected to a supply circuit of the proper voltage and frequency as specified on the rating plate.

RANGE BRANCH CIRCUIT OVERCURRENT PROTECTION

The charts below show the minimum fuse requirements specified by the National Electrical Code.

RANGES

NEC RATING	MAX. KILOWATT RATING	
	208V.	240V.
35 AMP	—	12.4
40 AMP	12.4	16.0
50 AMP	17.4	22.0

WALL MOUNTED OVENS OR COUNTER-MOUNTED COOKTOPS

NEC RATING	MAX. KILOWATT RATING	
	208V.	240V.
20 AMP	4.2	4.8
30 AMP	6.2	7.2
35 AMP	7.3	8.4
40 AMP	8.3	9.6
50 AMP	10.4	12.0

The branch circuit load for one wall-mounted oven or one counter-mounted cooktop is the rating on the nameplate of the appliance.

The branch circuit load for a counter-mounted cooktop and not more than two wall-mounted ovens—all supplied from a single branch circuit and located in the same room — shall be computed by adding the nameplate ratings of the individual appliances and treating this total as equivalent to one Range.

If cooktop is installed in conjunction with an oven, the red input lead of the cooktop and the red input lead of the oven should be connected to the same side of the incoming power at the distribution panel for the best current balance of total load.

Consult local authorities for any requirements differing between local codes and the National Electrical Code.

ALUMINUM HOUSE WIRING CAUTION

Range terminal blocks have been approved only for direct connection of copper house wiring. All built-in models with a flexible conduit are equipped with copper power leads.

Improper connection of aluminum hose wiring, to either, can result in a serious fire.

IF ALUMINUM HOUSE WIRING IS USED, A COPPER-TO-ALUMINUM SPLICE MUST BE USED, USING ONLY CONNECTORS DESIGNED, AND UNDERWRITER LABORATORIES APPROVED, FOR JOINING COPPER TO ALUMINUM. Be sure to follow the connector manufacturer's recommended procedure closely.

This means that Freestanding Ranges will require a length of copper building wire to each of the three terminals on the Range terminal block to accommodate the copper-to-aluminum connector.

Built-in power leads are U.L. approved for connection to larger gauge household wiring. The insulation of these leads is rated at temperatures much higher than the temperature rating of household wiring. The current carrying capacity of a conductor is governed by the temperature rating of the insulation around the wire rather than the wire gauge alone.

WARNING: IMPROPER CONNECTION OF ALUMINUM HOUSE WIRING TO THESE COPPER LEADS CAN RESULT IN A SERIOUS FIRE. USE ONLY CONNECTORS DESIGNED FOR JOINING COPPER TO ALUMINUM AND FOLLOW THE MANUFACTURER'S RECOMMENDED PROCEDURE CLOSELY.

GENERAL

RANGE DISPLAY LIGHTING INSTRUCTIONS

The following instructions are intended for use only by persons qualified to interpret electric range wiring diagrams and/or schematics. Strict adherence to these instructions is imperative to assure product safety, reliability and is the responsibility of any person wiring an electric range for display.

1. Procedure:

Determine the feature(s) of the range to be operated on the display (Fluorescent lamp, oven lamp(s), self-clean latch, etc.). Only 120-volt features should be considered.

2. Parts Required:

For any model range to be wired to display any of the above listed features, these minimum parts are required.

- A three-wire cord set connected to a properly wired three conductor grounded 120-volt outlet. An alternate to this would be a two-wire cord set plus a separate ground lead to a reliable (known) ground point in the display area.
- Two (2) insulated high temperature wire connectors per feature - WB1X371 wire nuts or equivalent high temperature connectors rated at 150C (302F) or higher.

3. Preparing Range for Display:

- Remove range wiring guards.
- Locate appropriate lead wires in range for the involved feature(s)

and cut leads near associated components.

Note: If more than one lead is connected to either terminal of an involved electrical component, the additional lead(s) must be disconnected from the component while the range is being displayed. Refer to range wiring diagram to check components that are not readily visible.

- Splice - connect display cord set to display feature per illustrations below. In each case, consult the wiring label of the specific range being wired.

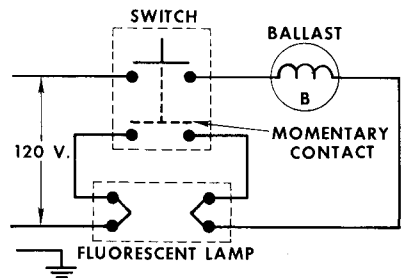


Figure 15

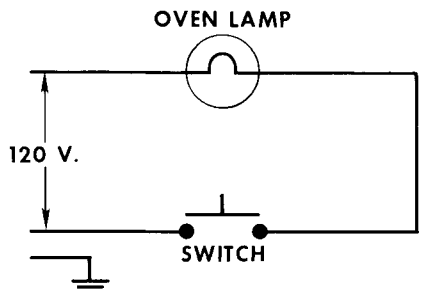


Figure 16

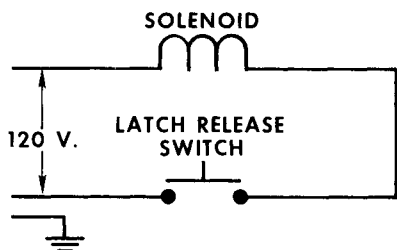


Figure 17

- d. Connect ground lead of cord set to nearest bare metal ground point in range of feature being displayed (sheet metal screw driven into range body, etc.).

CAUTION

DO NOT DISCONNECT RANGE GROUND STRAP TO RANGE INSTALLATION TERMINAL BLOCK.

- e. Provide adequate strain relief for cord set to range and avoid dressing any leads over sharp edges.
- f. Re-install range wiring guards.
- g. Perform display range safety check, as indicated in paragraph 4.

4. Safety Check for Display Range

- a. Connect VOM between range ground strap terminal or any bare metal surface of range and known ground connection.

NOTE: Known ground connection must be one that complies with existing local wiring code requirements.

- b. Measure AC voltage while opera-

ting all displayed features plus undisplayed features (oven operation, surface unit operation, etc.) Should measure zero (0) volts in all instances.

5. To Restore Displayed Range:

- a. Remove range wiring guards.
- b. Disconnect display cord set. Also remove separate ground lead if any had been used.
- c. Reconnect displayed features to range wiring using same high temperature connectors used for display. Refer to range diagram/schematic.
- d. Install range wiring guards.
- e. Perform post display safety check, as indicated in paragraph 6.

6. Safety Check After Restoring Display Range:

- a. Connect VOM between the middle terminal (neutral) of the range installation terminal block and bare metal parts of the range (trim parts, door handles and exposed screws). Should read less than one (1) ohm in all tests.

GROUNDING – PRIOR TO 1975

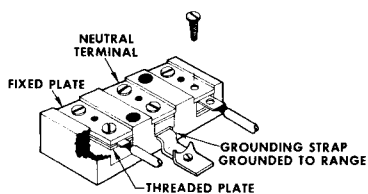


Figure 18 - Freestanding Range Terminal Blocks

GENERAL

All Ranges are shipped with the grounding strap connected to the Range frame with a screw. The National Electrical Code permits grounding of the neutral wire within the appliance at the option of local ruling.

In areas where local codes differ from the National Electrical Code on neutral grounding, disconnect the ground strap from the Range body and cut the strap from the terminal to prevent contact with the Range body.

To ground the Range according to local codes, connect an extra length of wire to the Range frame using the separate ground lug.

BUILT-IN EQUIPMENT

All built-in models are shipped from the factory with the neutral lead grounded to the appliance frame.

In areas where local electrical codes do not allow grounding of the neutral to the appliance, connect an external ground lead using the following procedures:

WALL OVENS

Louisville-built Wall Oven frames are grounded to the terminal block neutral inside the appliance. Remove the access plate at the front of the top cover. Remove the screw securing the ground wire or strap. Tape the ground wire or bend the strap to prevent contact with other metal parts. Then ground the appliance according to the local code. An additional grounding lug and green screw is located on the back of the Range.

BUILT-IN MODELS

INTEGRAL CONTROL MODELS ONLY

The Range frame is grounded to the terminal block neutral terminal inside the range. In areas where local codes differ from national electrical code on neutral grounding, the ground wire may be disconnected as follows: Remove the slotted hex head screw which connects a green wire to the upper left front corner of the range. Tape the end of the green wire lead to prevent contact with live terminals. Then ground the range according to local code, using the ground lug located on range back near conduit entrance.

BUILT-IN AMERICANA

These have a 44" length of 1/2 inch flexible conduit for the power supply connection. The appliance frame is grounded to the neutral by means of the green lead. In areas where local codes differ from National Electrical Code neutral grounding, disconnect green lead from white lead. Then ground appliance by green lead according to local code.

BUILT-IN COOKTOPS

INTEGRAL CONTROL MODELS ONLY

The cooktop is grounded to the neutral by means of a green lead or grounding lug. In areas where local codes differ from National Electrical Code on neutral grounding, disconnect the white lead from the green lead or grounding lug and connect it to the supply neutral. Then ground the cooktop according to the local code.

For grounding remote models, see hood installation instructions.

HOODS

Remote control hoods have the neutral lead grounded to the power supply connection box by the green (ground) lead.

For ungrounded neutral, disconnect white lead from green lead and connect it to the neutral supply lead. Ground appliance to green lead according to local code.

A ground lug is provided on all 120 volt hoods. It is recommended that the hood be grounded in accordance with Article 250, National Electrical Code, and local codes.

IN ALL CASES, INSTALLATION MUST CONFORM TO THE LOCAL ELECTRICAL CODE REQUIREMENTS.

THE COMPLETE APPLIANCE MUST BE GROUNDED AT ALL TIMES.

RATING PLATE LOCATION

21", 30", 40"
FREESTANDING
AND
AMERICANA Riveted to oven front and is located by opening oven door.

BUILT-IN
RANGES AND
WALL OVENS Riveted to oven front and is located by opening oven door.

BUILT-IN
COOKTOP
(Calrod Models)

Riveted inside box and located by raising surface unit and removing reflector pan.

CERAMIC TOP
MODELS

Label under knob or plate under cooktop box.

HOODS

Riveted to inside of hood shell. Some models require removal of filter.

**MICROWAVE
OVEN HOOD**

Plate on bottom left corner or label inside oven.

CMO

Plate on back, or label inside oven.

GENERAL

SITE OF MANUFACTURE

Certain service literature refers to "Chicago - Built", "Columbia - Built", or "Louisville - Built" models. The plant location is stamped in a corner of each rating plate and can be used to determine the manufacturing site. See Figure 20.

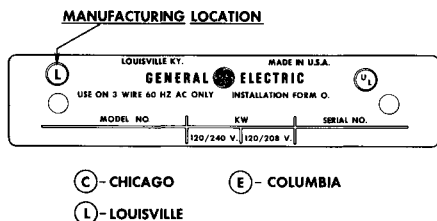


Figure 20 - Rating Plate Identifier for Manufacturing Location

BAKING PERFORMANCE

Satisfactory baking results depend upon many things; such as, proper door seal at top, proper door gap at bottom, oven calibration, food preparation, utensils, following recommended cooking directions, etc.

THINGS TO CHECK – RANGE

When oven baking complaints are received, the following checks should be made:

1. Check oven door seal at top.
2. Check oven door gap at bottom.
3. Check calibration of oven.
4. After oven is completely checked, review other possible reasons for poor baking results.

THINGS TO CHECK – CUSTOMER

A. LOW VOLUME OR FLAT CAKE

1. Over - or under - measure of liquid.
2. Underbeating or extreme overbeating.
3. Too large a pan.
4. Too low or too high oven temperature.
5. Improper placement of oven shelf or pans.
6. Mix stored under poor conditions, as in excessive heat or high humidity.
7. Omission of eggs.

B. FALLEN CAKE OR DIPPED IN CENTER

1. Underbaking - too low oven temperature and/or too short baking time.
2. Under - or-over measurement of liquid.
3. Too small pan- batter too deep.
4. Testing too soon for doneness.
5. Moving or jarring cake before sufficiently baked.

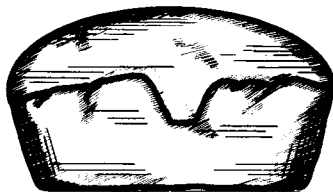


Figure 21-Fallen Cake or Dipped in Center

C. STICKY TOP CRUST

1. Underbaking - too low oven temperature and/or too short baking time.

2. Storing cake covered while still warm.
3. High humidity in air after cake is baked.
4. Overmeasurement of liquid.
5. Use of very sweet fruit juices for liquid.

D. HOLES AND TUNNELS IN THE CAKE

1. Too high oven temperature.
2. Improper placement of oven shelf or pans.
3. Underbeating or extreme overbeating.
4. Large air bubbles trapped in batter.
5. Uneven baking or overbaking which may be due to use of steel, glass or dark pans, which are uneven conductors of heat.

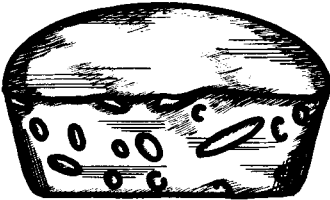


Figure 22 - Holes and Tunnels in Cake

E. SHRINKAGE (EXCESSIVE PULLING AWAY FROM SIDES OF PAN)

1. Overbaking - too high oven temperature and/or too long baking.
2. Pans too close together or too near oven walls.
3. Extreme overbeating.

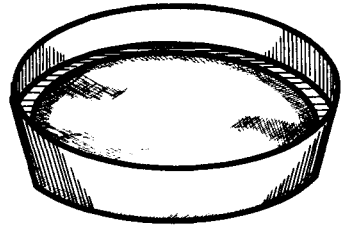


Figure 23 - Shrinkage

F. HUMPED CAKE OR PEAKED IN CENTER

1. Too high oven temperature.
2. Too small pan - batter too deep.
3. Uneven baking or overbaking which may be due to use of steel, glass, or dark pans.
4. Insufficient liquid.
5. Pans too close together or too close to oven walls.
6. Extreme overbeating.



Figure 24 - Humped Cake

G. UNEVEN LAYERS AND/OR UNEVEN BROWNING

1. Oven shelf or oven not level.
2. Pans too close together or too close to oven walls.
3. Uneven heat circulation.
4. Bent pans.
5. Poor oven door fit causing uneven

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heat distribution.

H. PALE TOP CRUST

1. Opening oven door too often.
2. Overmeasurement of liquid.
3. Too low oven temperature.
4. Too deep pan.
5. Extreme overbeating.

I. CRUMBLY OR DRY CAKE

1. Overbaking - too high oven temperature and/or too long baking time.
2. Undermeasurement of liquid.
3. Omission of eggs.

J. GUMMY OR DOUGHY EATING QUALITY

1. Underbaking - too low oven temperature and/or too short baking time.
2. Undermeasurement of liquid.
3. Underbeating.

K. STREAKS (UNEVEN HORIZONTAL GRAIN OR INFERIOR COLOR).

1. Underbeating.
2. Overmeasurement of liquid.
3. Underbaking - too low oven temperature and/or too short baking time.
4. Mix stored under poor conditions, as in high humidity.
5. Use of hot rather than cool water.

COMMON SENSE RULES FOR OVEN USAGE

DO NOT HEAT AN UNOPENED GLASS, METAL OR OTHER TYPE CONTAIN-

ER IN THE OVEN. BUILD-UP OF PRESSURE MAY CAUSE CONTAINER TO BURST AND CAUSE SERIOUS PERSONAL HARM OR DAMAGE THE RANGE.

DO NOT touch heating unit with potholders when handling shelves or food in oven. Coils may be hot even when they do not glow red. To pull out or push in shelf, place potholder at CENTER, protecting fingers on TOP of shelf and enough of potholder UNDER shelf to protect thumb.

ALWAYS be certain parts of oven are cool before touching them with hands unprotected by a potholder.

ALWAYS use dry potholder - not a moist one - nor a trailing cloth, to prevent burns from steam.

Pulling out shelf all the way is a convenience in lifting heavy foods. It is also a precaution against burns from touching hot surfaces of the door or oven walls.

ALWAYS let rush of heat or steam escape from heated oven -

- (a) before leaning into oven opening.
- (b) before removing or placing food in oven.

DO NOT use the oven to "take the chill off" surrounding area. Surfaces nearby might not withstand the resulting heat.

BROILING PERFORMANCE

Broiling is the cooking of foods by exposing them to intense radiant heat. Factors which influence or affect broiling

results, smoking and spattering are discussed below:

1. What are some of the facts which influence browning of meat during broiling?

a. The meat itself.

It is almost essential to have some fat in meat for best browning. The meats which contain no fat usually brown last. In some cases (for example-tenderlion steak), because the meat contains almost no fat, the browning is not very good, even though the steak is delicious. Frequently a butcher will wrap these steaks with bacon in an attempt to give the steak the fat which it lacks naturally.

b. Closeness of food to the unit.

Depending upon the thickness of the piece of meat or doneness desired it should be placed close or far away from the unit. In general, a piece of meat 1 - 2 inches thick should be placed farther away from the unit than meat one inch thick for the same doneness.

Also, meat of the same thickness but of variable doneness should have more or less heat. For example, if a 1-1/2 inch steak is to be cooked well done, it should not be placed as close to the broil unit as a steak of the same thickness which is to be cooked rare.

2. What are some of the factors which

influence smoking and spattering during broiling?

a. The broiler pan and rack.

The pan material and design is planned so the chrome-plated steel rack on top stays cool, and the slits allow fat to drain to the bottom so it doesn't spatter and smoke. If aluminum foil is used to cover chrome rack and no slits are cut for fat to drain away, liquid fat remains on rack, fat heats, smokes and spatters badly.

The broiler pan has been designed with the consumer in mind. Other metals heat rapidly and do not work well for broiling. If a home-maker uses a pan other than the broiler pan and rack, results may be disappointing.

b. The meat itself.

Fat cooks faster and spatters more than meat, because of its composition. When fat touches any hot surface, it is apt to decompose and smoke. So excess fat should be trimmed from meat, leaving enough on meat for flavor and to help browning.

c. Distance from the broil unit.

User's Manual instructions have been written with all factors in mind to keep smoking and spattering to a minimum during broiling. Letters on oven wall and listed in broiling chart in range User's

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Manual indicate where to position shelf for best browning while cooking inside of food to desired doneness. Placing food closer to top of oven increases smoking, spattering exterior browning of meat and the possibility of fats on foods catching fire.

3. How can I prevent the oven from becoming heavily soiled during broiling?

a. By using the correct broiler pan and rack. If foil covers the rack, slits should be made to let fat drain away.

b. By trimming excess fat from meat before broiling. Also, by scoring the fat on the edge of meat. Scoring is making shallow slashes in the fat, about 1 - 2 inches apart. Scoring will keep to a minimum the curling of a piece of meat. What happens is that a thin layer of fat and/or gristle contracts as it cooks and makes the meat curl. If the fat comes close to the broiler it heats faster and spatters more, causing a harder oven to clean, and more smoke than necessary in the kitchen.

c. By paying attention to User's Manual recommendations for distances of meat from the broil unit.

d. By using the times of the broiling chart as a guide only for broiling. Remember - no two pieces of meat are the same. The only accurate measure for internal doneness of meat is a meat thermometer.

BROWNING PERFORMANCE DUAL RATED OVENS

Some ovens are designed to operate on both 208 volts and 240 volts, as indicated on the nameplate.

In broiling some foods, if the browning is not satisfactory after following carefully the Use and Care instructions, use the following procedure:

1. Remove broiler pan and rack from oven.
2. Be certain shelf is in the position suggested on the Broil Chart for the food you are cooking.
3. Turn OVEN SET and OVEN TEMP control to BROIL.
4. Leave oven door ajar and preheat the broiler unit for 10 minutes.
5. Place food on the broiler rack in broiler pan and place on shelf in oven. Leave door ajar.
6. Follow directions for timing the first side, turning food over and timing the second side. BUT, for the second side, use the longest time given on the chart for your particular food type, thickness etc.

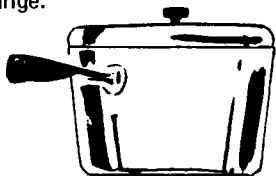
SURFACE UNIT PERFORMANCE

With the variety of surface cooking utensils available to the homemaker today perhaps a brief review of various utensil characteristics would be helpful in dealing with surface unit complaints. Medium-weight aluminum utensils head the list as the most desirable material for use with the electric range. These utensils rate star billing since they conduct and transfer heat evenly and respond quickly.

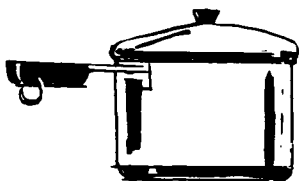
to temperature changes.

Utensils of other materials will give varying results, depending upon the quality of manufacture plus the natural properties of the material. Here is a general guide on the use of these utensils.

Aluminum - These utensils conduct and transfer heat evenly and respond quickly to temperature changes. For these reasons, medium heavy weight aluminum utensils are recommended for use with the electric range.



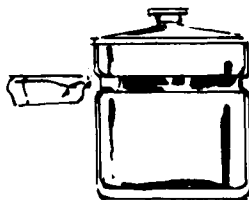
Stainless Steel - As this metal alone provides uneven heating patterns, it is generally combined with copper, aluminum or other metals for improved heat distribution. Generally, a somewhat lower temperature than suggested for aluminum will provide a more even heat pattern.



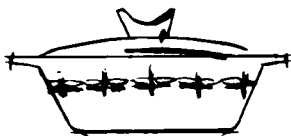
Cast Iron - Though this metal heats slowly, it retains the heat once it has reached the desired temperature. Use medium heat selections for best results. Porcelain enameled cast iron utensils also fall into this category.



Glass - Since glass utensils are subject to breakage with high heat and quick temperature changes, a wire trivet should be placed between the unit and the utensil to minimize this possibility. Trivets are available wherever glass utensils are sold.



Pyroceram® (heat-Proof Glass Ceramic)- These utensils heat and cool slowly. Generally, a somewhat lower temperature than suggested for aluminum will provide a more even heating pattern.



Enamel - These utensils are generally light weight porcelain enamel. They are generally not recommended for use with the range. Check with the manufacturer of the utensil before using.



®Registered Trademark of Corning Glass Works.

FOR BEST RESULT IN SURFACE COOKING

1. Use reflector pans under all surface units when cooking so that the unit operates properly.
2. Use utensils of a recommended material and weight, with flat bottoms,

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tight fitting covers.

3. Use small units for small pans, large units for large pans.
4. Use pans no larger than one inch beyond trim ring of unit.

Unusually large or warped utensils used on high heat setting, over a long period, will cause heat to build up. This may result in (1) cracking of porcelain enamel, (b) shortening the life of the surface unit, (c) discoloration of the trim ring.

COOKING GUIDE FOR USING HEATS

HIGH	Quick start for cooking; bring water to boil.
	Fast fry, pan broil; maintains fast boil on large amount of food.
LOW	Saute and brown; maintain slow boil on large amount of food.
	Cook after starting at HIGH; cook with little water in covered pan.
WARM	Steam rice, cereal; maintain serving temperature of most foods.

NOTE 1 At HIGH or 2, never leave food unattended. Boilovers cause smoking; greasy spillovers may catch fire.

NOTE 2 The lowest heat setting is somewhere between the "W" in the word warm and the word OFF.

AUTOMATIC SURFACE UNIT

The automatic surface unit controls the temperature of the cooking utensil to give the same type of automatic cooking that is experienced with a well-controlled skillet or saucepan.

For best results:

1. Use flat-bottomed, medium-weight aluminum utensils, in relation to size of unit in use. Use tight-fitting lid with foods which require a cover. Loose lids or no cover lengthen cooking time. Warped, concave or convex bottomed pans may not touch sensor in center of the unit; they should not be used, as sensor cannot control heat supplied to pan.
2. Utensil materials other than aluminum may require different heat setting and/or cooking time.
3. Use Minute Timer to time TOTAL cooking. Include time usually required to bring food to boil, switching heats etc. Do not judge cooking time by visible steaming only. Food will cool in covered utensils even though no steam may be apparent during the cooking process.
4. Automatic Unit Cooking Guide give suggested heat settings using medium weight aluminum utensils. As variables exist in foods and/or utensil, it may be necessary to choose different heat settings to suit your cooking needs.

AUTOMATIC GRIDDLE (on models so equipped)

The automatic Griddle has an easy-clean non-stick cooking surface. Avoid using utensils with sharp or rough points or edges. Do not cut foods on the griddle. If preferred, foods may be cooked without greasing griddle.

GRIDDLE USE

1. Place griddle on Automatic unit; move it back and forth until it falls into place over unit. The griddle is designed for easy positioning; it must be correctly placed to work properly.
2. Turn Automatic unit coil selector knob to GRIDDLE.
3. Select heat on Automatic unit control dial. Use settings listed on griddle or on chart. For griddle cooking, use heats between 200 - 500 . Other markings are for boiling operations and should not be used with GRIDDLE settings.
4. When cooking is finished, turn Automatic unit control dial to OFF.
5. Let griddle cool on range, or protect hands with heavy, dry potholder before handling. Wash in sudsy water to clean. Soak a few minutes if necessary to remove food stuck on surface. To avoid marring non-stick finish, store griddle upright, or store flat, but no other pans or utensils on top.

USAGE HABITS AFFECTING CALROD LIFE

Experience has shown that some household practices are detrimental to the life of Calrod heating units. Listed below are some of the items which fall into this category and should be discouraged when noticed in the home.

CONDITION

EFFECT

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Use of foil-lined reflector pan without center cut out (refer to use of aluminum foil.) 2. Non-flat bot-tomed utensils 3. Use of units as space heater. 4. High voltage 5. Grease build-up on under-side of unit. 6. Use of chlorine-type cleaning compounds. 7. Excessive spill-overs (salt solu-tions). 8. Oversized uten-sils (refer to proper utensils) | <p>Creates extremely high operating tem-perature of unit.</p> <p>Creates extremely high operating tem-perature of unit. Also leads to warping of coils.</p> <p>Same as 2.</p> <p>Same as 2.</p> <p>Leads to corrosion.</p> <p>Leads to corrosion.</p> <p>Leads to corrosion if allowed to remain on unit for extended period of time. Best to clean off as soon as possible.</p> <p>Not necessarily detri-mental to life of unit but will discolor trim rings.</p> |
|---|--|

ELECTRIC MEAT THERMOMETER

The Meat Thermometer is designed for perfect roasting of meats and poultry. It

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is particularly helpful in cooking these foods since it is difficult to determine doneness from external appearance. A buzzer will sound when roast is at degree of doneness you have set. To stop buzzer, turn pointer to Signal Off.

MEAT THERMOMETER USE

Insert the probe into the meat a minimum of three inches, getting the center of the mass of the aluminum tip - not the point - as close to the center of meat as possible. Do not allow the probe to contact bone, gristle or fat. It is imperative that the center, instead of the point, of the one-inch aluminum tip be placed in the center of the meat, or at a point where the temperature of the meat is to be measured. See Figure 24.

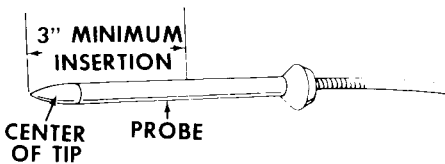


Figure 24 - Use of Meat Probe Assembly

Remove by grasping top of probe. Do not pull on flexible cable when removing Thermometer Probe from the meat or outlet at side of oven.

To clean Thermometer Probe, wipe with damp cloth. **Do not submerge in water, or wash in dishwasher.**

HINTS FOR USING MEAT THERMOMETER

1. It is important that not more than two inches of probe (excluding top) be exposed during roasting. If roast is very small in size, insert probe at an angle (or, for long thin roast, insert lengthwise) into center of thickest portion of meat. Point should not touch bone, fat or gristle.
2. For personal preferences of doneness, vary the setting within the suggested temperature area, for rare, medium, or well done.
3. **WHEN ROASTING FROZEN MEAT**, do not use thermometer until meat has thawed enough to allow inserting of probe without excessive force. Try to insert probe after about 1-½ - 2 hours roasting time. The probe is sturdy and will not break or bend readily. However, take care not to force probe too hard when placing it into the roast.
4. Do not use Electric Meat Thermometer when using Rotisserie
5. When roast has reached desired degree of doneness, unplug thermometer from side of oven first and then remove roast and thermometer from oven. The probe can then be removed

from the roast outside the oven.

- Cover is designed to move out of the way when using outlet and to swing down automatically to cover outlet when thermometer is not plugged in. Before cleaning oven automatically, be sure cover is over outlet.

ROTISSERIE

- Choose tender cuts of meat for use on rotisserie. Evenly shaped, compact food is most suitable. Poultry may be used on rotisserie if tied securely.
- When using a barbecue sauce, baste foods during last 20 to 30 minutes of cooking only.

To Baste: It is not necessary to stop the rotisserie or remove food from oven to baste with sauce. Just brush or baste food with sauce as it revolves. A long handled brush or baster makes this easy to do.

NOTE: Line broiler pan with aluminum foil when using pan for marinating, cooking with fruits, cooking heavily cured meats, or for basting food during cooking. Avoid spilling these materials on oven liner. If spilled, wipe immediately with dry cloth; then clean, when cool, with damp cloth.

- Times suggested on Rotisserie Guide should be used as a guide only since size, shape and amount of bone will cause time to vary.
- A regular meat thermometer can be used in many meats to register internal doneness. Insert thermometer into the thickest muscle. Be sure that thermometer does not touch the skewer or the frame. Revolve skewer by hand to check to see that ther-

mometer has sufficient clearance. It should not touch walls, top or oven door or pan.

- After rotisserie cooking is completed, allow meat to stand for 10 to 15 minutes for easier carving.

CERAMIC COOKTOP CLEANING

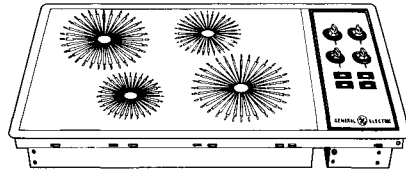


Figure 25

Before using the cooktop for the first time, clean it thoroughly to remove any dirt or dust from the packing material. Use a smooth cooktop cleaner/conditioner such as Soft Scrub brand and follow package directions.

NOTE: Another cleaner conditioner is catalog WB64X5020.

The cooking surfaces may get hot enough to cause spills and boilovers to stick. Spills and spatters wipe off with damp cloth or sponge. Heavier soil may be removed with warm, soapy water, the cooking unit cleaner/conditioner, or baking soda. Non-impregnated plastic pads may be used **gently** for really stubborn spots.

Avoid use of abrasive materials such as metal pads, cleansing powders and impregnated pads which may scratch the surface. Do not use harsh chemicals such as bleach or chemical oven cleaners.

GENERAL

Clean the cooktop regularly to avoid discoloration and stains from soil buildup. Wiping before each use will remove tiny, coarse particles of dust, sugar or salt that may cause scratches if caught between cooking unit and pan. Regular use of a good cooking unit cleaner/conditioner will build a coating to protect the surface from scratches and make it easier to clean.

CONTINUOUS CLEAN OVEN CARE

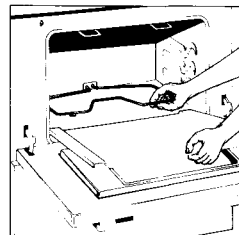
The top, bottom, sides, and back of the oven liner, and door inner liner on lower oven only are finished with a special coating which cannot be cleaned in the usual manner with soap, detergents, commercial oven cleaners, coarse abrasive pads or coarse brushes. Their use can/or the use of oven sprays will cause permanent damage.

The special coating is a porous ceramic material which is dark in color and feels slightly rough to the touch. If magnified, the surface would appear as peaks, valleys, and sub-surface "tunnels." This rough finish tends to prevent grease spatters from forming little beads or droplets which run down the side walls of a hard-surface oven liner leaving unsightly streaks that require hand cleaning. Instead, when spatter hits the porous finish it is dispersed and is partially absorbed. This dispersal action increases the exposure of oven soil to heated air, which results in oxidation of soil. This finish also reduces the visual effect of residual soil. It may not disappear completely and at some time after extended usage, stains may appear. See "To Clean Oven" to minimize this effect. The special coating works best on small amounts of spatter. It does not work well with larger spills, especially sugars, egg, or dairy mixtures. For this reason, the oven is equipped with a removable, washable, hard porcelain bottom panel which protects the porous finish on the bottom of the oven from spillovers. Avoid spills on inside surface of the oven door. The special oven liner finish is not used on oven shelves. Shelves are removable and can be taken to the sink for cleaning.

They clean easiest when soil is still moist, before it has carbonized or burned on. Also, they can be cleaned with abrasive and commercial oven cleaners. Follow the manufacturer's directions regarding use of gloves and eye protection when using oven cleaners. Also, these materials must be used with the parts outside the oven to avoid damage to the special coating.

TO CLEAN OVEN:

1. Let range parts get cool before handling. It is recommended that rubber gloves be worn when cleaning range parts manually.
2. Remove all cooking utensils including the broiler pan and rack.
3. Remove oven shelves and clean them manually with scouring pads or mild abrasive. To remove shelf, pull shelf out as far as it will go, lift up front until it clears the curve on the shelf support, then remove.
4. Remove excess spills and boilovers from bottom panel before removing panel from oven. This is to prevent excess liquids from spilling onto the porous finish. Then remove bottom panel and clean manually. (Before cleaning or removing the bottom panel, lift bake unit out of the way).



GENERAL

5. Clean oven window (on models so equipped). Use mild non-scratching cleanser and damp cloth. Avoid spilling water or cleaner on porous surface.
6. Soil visibility may be reduced by operating oven at 400° F. Close door, set oven switch to bake and oven temperature control to 400° F. Time for at least 4 hours. Repeated cycles may be necessary before improvement in appearance is apparent, particularly on oven door. For moderate to heavy soiling of oven door, use method described in item (7) below before running 400° F. cycle. The oven timer can be used to control the cycle automatically at a time convenient for you. Some slight smoking may occur, similar to that which may occur during other Time Bake cooking.

REMEMBER – DURING THE OPERATION OF THE OVEN, THE DOOR WINDOW AND OTHER INTERIOR RANGE SURFACES WILL GET HOT ENOUGH TO CAUSE BURNS. DO NOT TOUCH. LET THE RANGE COOL BEFORE REPLACING OVEN BOTTOM AND OVEN SHELVES IF THEY WERE REMOVED.

7. If a spillover or heavy soiling occurs on the porous surface, as soon as practical after the oven has cooled, remove as much of the soil as possible using a small amount of water and a stiff bristle nylon brush. When using water use it sparingly and change it frequently, keeping it as clean as possible and be sure to blot it up with paper towels, cloths, or sponges. Do not rub or scrub with paper towels, cloths or sponges, since these will leave unsightly lint on the oven finish. If water

leaves a white ring on the finish as it dries, apply water again and blot it with a clean sponge, starting at the edge of the ring and working toward the center.

Use care in removing and replacing bottom panel and shelves and in placing and removing dishes and food to avoid scratching, rubbing or otherwise damaging the porous finish on the oven walls and door.

Do not use soap, detergent, commercial oven cleaners, silicone oven sprays, coarse steel pads or coarse brushes on the porous surface. These products will spot, clog, and mar the porous surface and reduce its ability to work.

This information is also in the "Use and Care Book."

ENERGY CONSERVATION TIPS

A. Top Of The Range Cooking

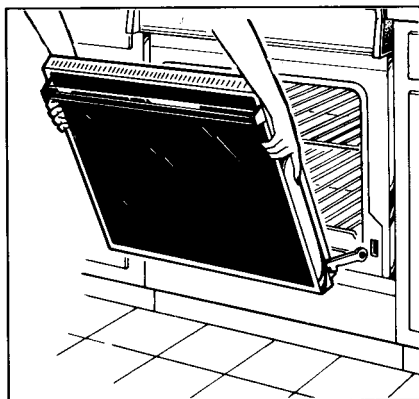
1. Use cooking utensils of medium weight aluminum, with tight-fitting covers and flat bottoms which completely cover the heated portion of the surface unit.
2. Cook fresh vegetables with a minimum amount of water in a covered pan.
3. "Keep an eye" on food when bringing them quickly to cooking temperatures at HIGH heat. When food reaches cooking temperature, reduce heat immediately to lowest setting that will keep it cooking.

4. Use residual heat with surface cooking whenever possible. For example, when cooking eggs in a shell bring water to boil, then turn to OFF position to complete the cooking.
 5. Always turn surface unit OFF before removing utensil.
 6. Use correct heat for each cooking task...high heats to start cooking, (if time allows, do not use HIGH heat to start) medium high - quick brownings, medium - slow frying, low - finish cooking most quantities, warm - double boiler heat, finish cooking, and special for small quantities.
 7. When boiling water for tea or coffee, heat only the amount needed. It is not economical to boil a container full of water for only one or two cups.
5. Cook complete oven meals instead of just one food item. Potatoes, other vegetables, and some desserts will cook together with a main-dish casserole, meat loaf, chicken or roast. Choose foods that cook at the same temperature in approximately the same time.
 6. Use residual heat in oven whenever possible to finish cooking casserole, oven meals, etc. Also, add rolls or precooked desserts to warm oven, using residual heat to warm them.

B. Oven Cooking

1. Preheat the oven only when necessary. Most foods will cook satisfactorily without preheating. If you find preheating is necessary, keep an eye on the indicator light, and put food in the oven promptly after the light goes out.
2. Always turn oven OFF before removing food.
3. During baking, avoid frequent door openings. Keep door open as short a time as possible when it is opened.
4. For self-cleaning oven, be sure to wipe up excess spillage before self-cleaning operation.

REMOVABLE OVEN DOOR (40" F.S. & 30" Drop-In)



To remove door, open to BROIL position (about 4 inches). Grasp door at sides near top; lift door up and pull out to clear notch in hinge support. Then pull door straight out.

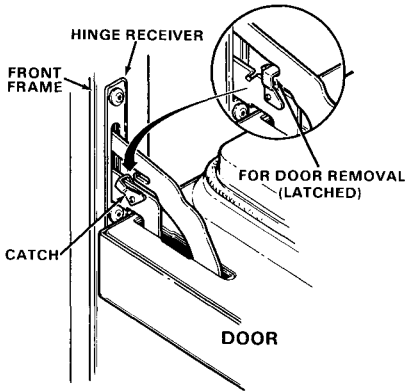
To replace, grasp door at sides near top. Line up hinge support on door with opening in oven frame. Lift and slide in until door passes the notch in the hinge support. After the notches slide past the opening in the oven frame, the door will snap into place.

GENERAL

REMOVABLE OVEN DOOR (Solid Surface Unit Models)

To remove door, open completely, press down lightly on door and slide hinge keepers forward on each hinge to lock the door open.

Grasp the door on both sides midway between the top and bottom. Close the door halfway (45°) and lift until the hinges disengage from the range body.



To replace, grasp door at sides. With the door at an angle as shown, locate the upper hinges in the two upper slots on the front face of the oven. Lower the door to the horizontal position allowing the lower hinge to engage. Press down lightly on door, returning the hinge keepers to the normal position and close the door. CAUTION: If the door is not horizontal, the hinges are not properly engaged. Lift the door off and reinstall it.

GROUNDING - AFTER 1975

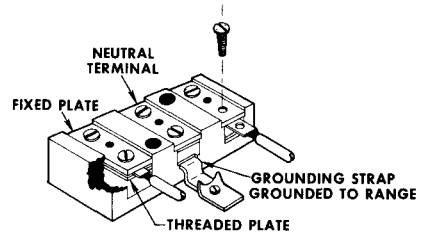
The National Electrical Code permits grounding of the neutral conductor on electric ranges. Most range products, therefore, are manufactured and shipped with the neutral conductor grounded to the frame. Ranges not shipped with a grounded neutral will have the neutral grounded at time of installation.

In areas where local codes differ from the National Electrical Codes on neutral grounding, the grounded neutral connection must be disconnected. The range frame must then be grounded by a separate ground wire.

Range neutral grounding methods vary by model types as follows:

FREE STANDING RANGES

The terminal block neutral terminal is connected to the range frame by a grounding strap.



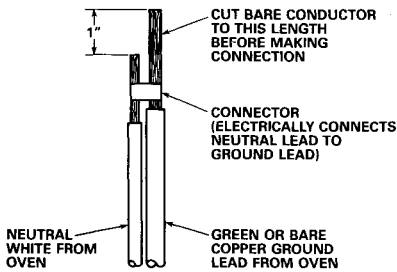
To disconnect neutral ground, and provide a separate ground:

1. Disconnect the ground strap from the frame and cut off strap to prevent contact with the frame.

2. Connect a separate ground lead to the ground lug on the frame in accordance with local codes.

WALL OVEN AND DROP-IN

Frame is grounded internally by a green or bare copper ground lead. The ground lead is externally connected to the range white neutral lead, either at time of manufacturer, or by the installer.



To disconnect neutral ground, and provide a separate ground:

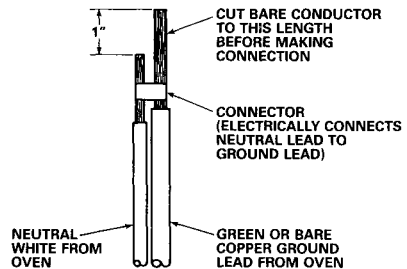
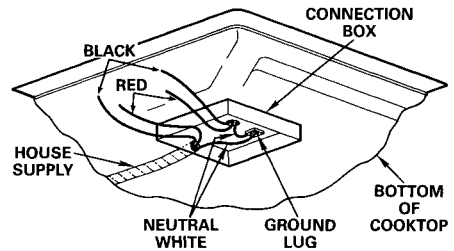
1. Open the connection between white neutral lead and grounding lead (green or bare copper) by cutting the leads on the oven side of connector, so the connector is removed from the leads.
2. Restrip the white neutral lead so that 5/8" of bare conductor is exposed, if the grounding lead is green (insulated), restrip so that 5/8" of bare conductor is exposed.
3. Connect the oven white neutral lead to branch circuit neutral (white or gray).
4. Attach the range grounding lead (green or bare copper) to the residence grounding conductor (green or bare copper).

BUILT-IN COOKTOPS

Controls in Cooktop

Cooktops are grounded in different ways depending on type:

- **2 Conductor & Ground** - Ground wire connects to lug in wiring box on bottom of cooktop (no neutral)
- **3 Conductor & Ground** - Cooktop white neutral lead is connected to ground lug in wiring box on bottom of cooktop; or neutral lead is connected to ground lead (bare or green) by a clamp at end of cooktop cable.



GENERAL

To disconnect neutral ground and provide a separate ground:

1. Disconnect white neutral lead from ground lug, or ground lead.
 2. Connect a separate ground lead to the ground lug, or ground lead.
- NOTE: For grounding remote control models, see Hoods.

HOODS

Remote control hoods have the neutral lead grounded to the power supply connection box by the green (ground) lead.

For ungrounded neutral, disconnect white lead from green lead and connect it to the neutral supply lead. Ground appliance to green lead according to local code.

A ground lug is provided on all 120 volt hoods. It is recommended that the hood be grounded in accordance with Article 250, National Electrical Code, and local codes.

IN ALL CASES, INSTALLATION MUST CONFORM TO THE LOCAL ELECTRICAL CODE REQUIREMENTS.

THE COMPLETE APPLIANCE MUST BE GROUNDED AT ALL TIMES.

SOLID SURFACE ELEMENTS

Using Cooktop The First Time

The solid elements have a protective coating which **MUST** be hardened

before using for the first time. To harden the coating, the elements should be heated, **without a pan**, for a short period of time.

- Heat at max. setting 3-5 minutes.

There will be smoke and odor...this is normal. It is **NON-TOXIC** and completely harmless.

IMPORTANT - Hardening the protective finish is necessary to help reduce rust.

NORMAL SOLID ELEMENT CHARACTERISTICS

- Must be on 240V power - 208V gives poor performance.
- **Trim Rings** and **sensors** will turn to "**Gold**" color with first use.
- Stainless steel cleanser will restore original color – until reheating.
- Do not glow red - even at max. setting.
- Slower heat-up than calrod type.
- Hold heat longer than calrod type.
- **Must absolutely use flat bottom pans.**

FLAT BOTTOM PANS - ABSOLUTE NECESSITY

Use of flat bottom pans is an absolute necessity in order to prevent unsatisfactory cooking performance.

Uneven bottom pans will cause the over-temperature limit switch inside the standard units to trip and reduce the unit wattage to a low level that will not provide the required heat.

NOTE:

Failure to maintain solid elements as directed will result in defacing the surface over a period of time primarily due to corrosion as the elements are made of cast iron construction.

CARE OF SOLID ELEMENTS

- Wash with damp cloth and dry.
- Keep dry (can turn unit "ON").
- Light coat of cooking oil after cleaning.
- Treat with special polish supplied with Cooktop.

Odor-During Oven Use

Odors emitting from a new range's oven should be considered normal. Often the odor will be described as a "burning" or "oily" smell. That is more intense when the oven is turned on. This condition is more likely to be noticed when using a new range that has the P-7 self clean feature as opposed to a model that has a standard oven. Self-cleaning ovens have a heavier blanket of insulation around the oven. During the production procedure, chemical solutions are used to aid in the installation of the insulation blanket and oven cavity. The odor caused by this solution will usually wear off in a very short time. To speed the process, the consumer may set-up a self-clean cycle lasting a minimum of 3 hours. The 3 hour self-clean will "break-in" the oven faster than normal baking routines.

****These odors are not harmful to any food that happens to be in or on the oven!**

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INSTALLATION AND APPLICATION	B3
PRODUCT SAFETY DEVICES	B2
SAFETY	B1
SERVICE PRACTICES	B8

SAFETY

Safety is a key word in all sections of the Range Department.

We believe it so important that we have devoted this special section on safety .

In order for the appliance to function properly, the factory makes a considerable effort to see that a safe appliance leaves the factory. However, it must be installed properly and used intelligently by the customer.

In spite of all the precautions which were designed into the range for safety reasons, we must depend on properly installed ranges and that the customer is aware of the proper use and care.

The information contained in this section is to remind our service personnel that the range is safe for use by the user, and that the user should be instructed to read the User's Manual, so that he or she will be able to operate the range intelligently and obtain optimum results.

SAFETY PRACTICES

PRODUCT SAFETY DEVICES

There are many devices on ranges which are designed to act as safety devices in order to protect the user. Listed below are the various safety devices together with the reason each device is incorporated in the range.

Smoke Eliminator

Eliminates most of the smoke and odor as a result of the soil being burned off inside the oven.

Latch Assembly

To lock the door during P-7 operation at high temperatures where ignition of the soil could take place with the in-rush of air due to oven door being opened.

Grounded Range Frame

The range frame must be grounded to protect the user from possible electric shock. This ground connection is either made by a ground strap connected to the neutral main terminal block on free-standing ranges or by a separate ground as may be required by some local codes.

Surface Unit Grounding

In all cases surface units are grounded and the ground must be maintained. In the case of Full Range Calrod replacement units, follow the installation instructions.

Temperature Limit Switch

Prevents runaway ovens on bake and time-back. Acts as sensor to defeat latch release circuit in P-7.

Component Grounding Fasteners

The fasteners utilized in this program may be recognized by the green color and serrated edges. The serrated edges penetrate painted or enameled surfaces providing a metal to metal contact. When servicing any components that utilize green fasteners for mounting, they should be remounted in the same manner to continue safe operation of the component.

INSTALLATION AND APPLICATION

Shock Hazard Due To Improper Installation

Grounding: The range frame must be grounded to protect the user from possible electric shock. The ground strap on the main terminal block is connected to the neutral leg at the factory on all free standing ranges. Follow instructions for all other grounding connections.

Neutral Lead - Lighting Display

The neutral lead (white Lead) is disconnected in accordance with lighting display instructions. This lead or leads must be reconnected by the installer together with the reconnection of the ground strap when the pigtail is assembled.

Installation - Built-ins Aluminum Wire

There is a tag at the connecting point of each built-in appliance cautioning the electrician to be sure a proper connection is made between aluminum and copper leads.

Installation - Free-Standing Aluminum Wire

There is a label at the main terminal block cautioning the electrician to be sure proper connections are made between aluminum and copper leads.

External Surface Temperatures (P-7)

A fan is used for cooling during the P-7 cycle to reduce external surface temperatures (on models as equipped).

SAFETY PRACTICES

Range Conversion - Voltage

General Electric does not recommend or condone conversions to different voltage supplies for two reasons:

1. Underwriter's Laboratory approval is violated.
2. If a 236 volt range converted to 208 volts was then moved and used on 236 volts, the life of the heating elements is greatly reduced. This could result in a rupture of the sheath.

Ranges must not be converted.

CUSTOMER USAGE PRACTICES

Household practices which should be followed

Non-flat utensils create extreme high operating temperature of unit with greatly shortened life. Also leads to distortion of coils.

Do not use the units as a space heater.

Do not operate on too high a voltage.

Do not let grease accumulate underneath unit.

Use of chlorine-type cleaning compounds lead to corrosion.

Wipe up excessive spill-overs.

Use of foil-lined reflector pan without center cutout creates extreme high operating temperature of the unit - also greases collect which can result in fire.

Mold aluminum foil when using on broiler pan rack to fit rack and slit

Household Practices - Cont.

at the openings to allow greases to drop into broiler pan.

Do not place a sheet of aluminum foil on a shelf. This may result in improperly cooked foods, damage to oven finish and an increase in heat on outside surfaces of the range.

Do not operate on high heat for long period of time. Do not leave the range area when any of the surface units is on high heat. Some utensil should always be on surface unit before turning on heat.

No commercial oven cleaner or oven liner protective coating should be used in or around any part of the self-cleaning oven.

For ranges used with ventilating hoods, see directions in your Users Manual for using the ventilating hood. Always keep the filter clean.

When using high cooking heats, do not operate the exhaust system unattended. Spillovers may become hot enough to ignite.

Glass utensils may break with sudden temperature change. Glass manufacturers recommend a wire grid when using glass on electric surface units. Use glass only on heat settings MED or 3, LO, or WM. (Grids can be obtained at a housewares section of most department stores).

Before handling hot grill allow to cool on range or protect with heavy pot holders before handling.

Always let initial rush of heat and/or steam disperse from a heated oven before placing or removing food.

SAFETY PRACTICES

Household Practices - Cont.

Always pull shelf all the way out to the stop position when placing or removing food. Use a dry pot holder - not a moist one or trailing cloth.

When using broiler pan and rack always place rack on pan so that the fat drips away from heat into broiler pan - otherwise juices may become hot enough to ignite.

When rotissing the thermostat is at the rotisserie setting which allows the broil unit to heat as well as the rotisserie motor to turn. Make certain that when inserting spit that no part of the body or pot holder touches the hot broil unit - particularly after having removed it for basting.

When cleaning the range manually, it is recommended that rubber gloves be worn to protect the hands.

Clean the area under the surface unit frequently. Accumulated soil, especially grease, may become hot enough to ignite.

When in use, the glass in lamps (light bulbs) becomes warm or hot enough to break if touched with a moist cleaning cloth. Allow the lamps to cool completely before cleaning around them, or replacing.

Do not remove or replace fuse with damp hands and do not operate or clean range without cover in place over fuse until power has been removed from range.

Household Practices - Cont.

The oven should not be used to “take the chill off” surrounding area. Adjacent surfaces may not withstand the resulting heat.

DO NOT heat an unopened glass or metal container of food in the oven. Build-up of pressure may cause the container to burst and cause serious personal harm or damage to the range.

SAFETY PRACTICES

Household Practices Cont.

Keep flammable liquids or items away from range area.

Do not let pot handles extend over edge of cooktop and within reach of children.

SERVICE PRACTICE

Shock Hazards

In all of our service literature we warn the serviceman to unplug the range or turn it off before servicing.

Use Proper Tools

Always use the correct tool for the job, and always use a tool that is in good condition. Worn tools such as wrenches, sockets, screw drivers are all causes of accidents.

Serviceman Check Out

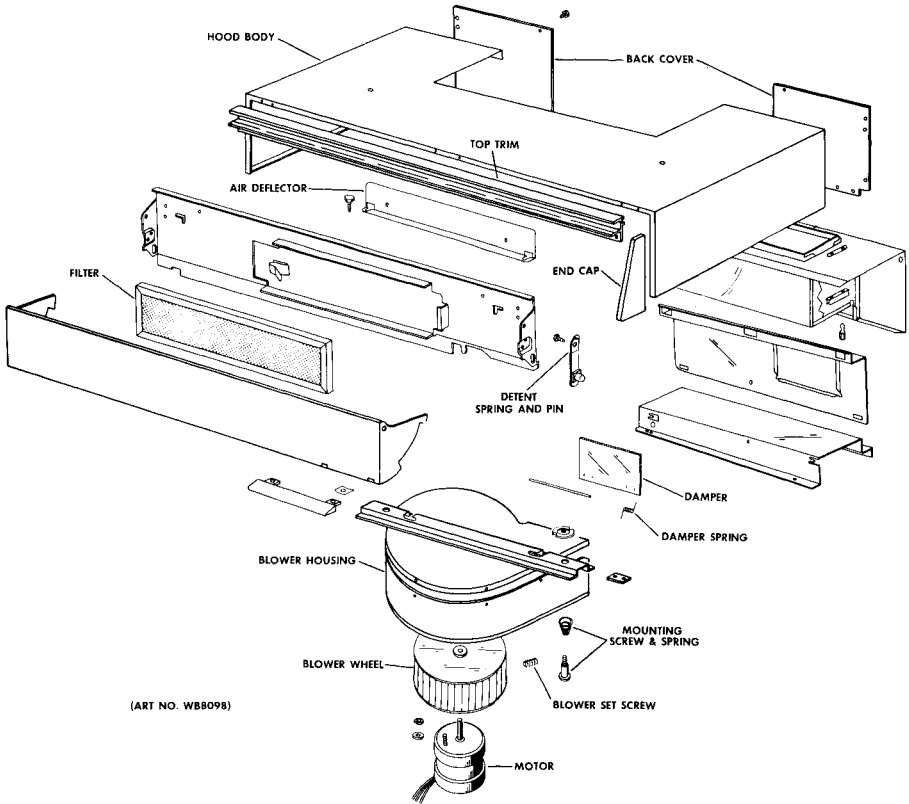
Don't use friction tape to cover connections.
Check fusing.
Check grounding to be certain range is properly grounded.
Do not leave jumpers on components.
Be certain to check operation of range and particularly component changed or repaired to see that it operates satisfactorily.

INDEX

THIS SECTION CONTAINS REPRESENTATIVE RANGE GROUPS AND TYPICAL ASSEMBLY VIEWS.

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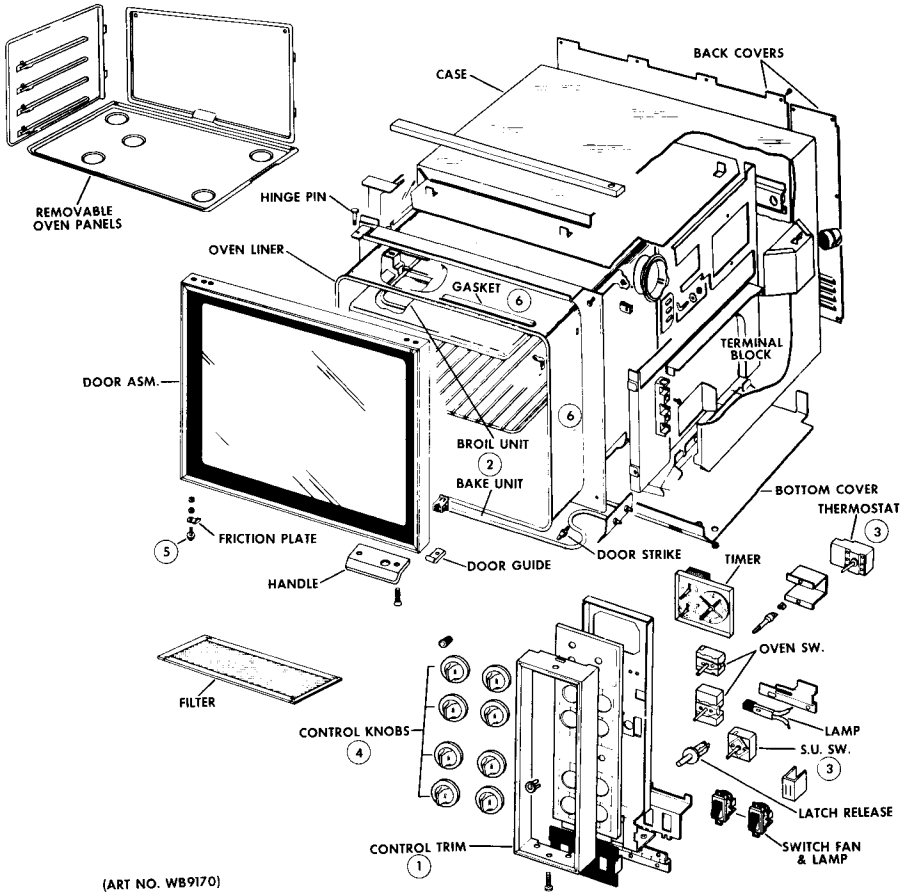
HOOD HI-LO MODELS



ADDITIONAL INFORMATION ON HOOD TYPES AND FEATURES IS CONTAINED IN THE ELECTRICAL COMPONENTS SECTION OF THIS BOOK.

DISASSEMBLY

UPPER OVEN - HI-LO MODELS



UPPER OVEN

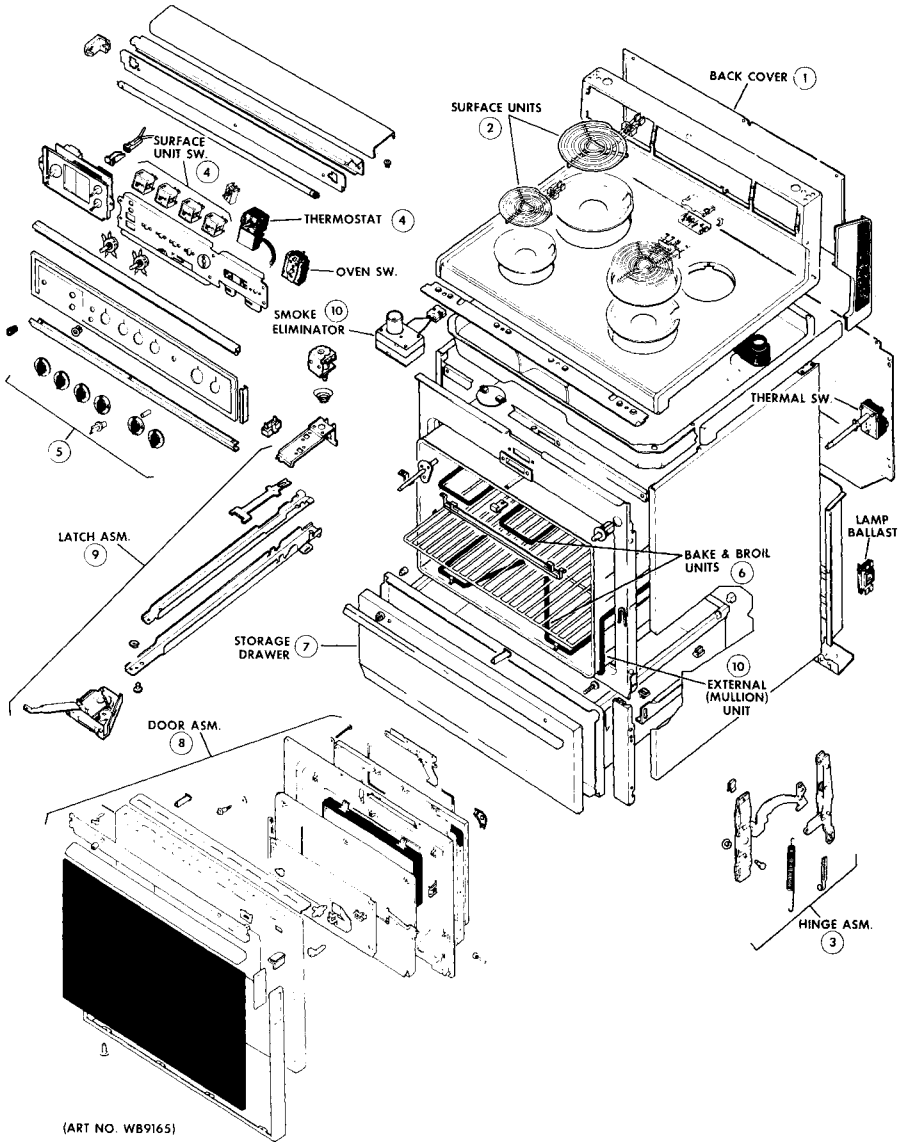
1. Remove Top and Bottom Control Trim Screws to Service Control Components.
2. Broil Unit and Bake Unit are Replaced from Inside Oven.
3. See "Electrical Components" Section and Mini-Manual for Test Procedure and Specifications.
4. See Mini-Manual for Temperature Knob Adjustment.
5. Remove Screw to Remove or Adjust Door - Some Models Have Adjust Provisions at the Top Hinge.
6. To Adjust/Replace Gasket Loosen Liner Mounting Screws.

COOKTOP AND LOWER OVEN

1. See Mini-Manual for Gasket Replacement.
2. See Mini-Manual for Adjustment Procedure.
3. Bake & Broil Units - Replace From Inside Oven.
4. Remove to Adjust Drawer Tracks, Level Front Legs and Adjust Oven Door Hinges.
5. Slide, Off Clips, Toward Rear, to Remove.
6. See Mini-Manual for Proper Repair or Adjustment. See "Electrical Components" Section "Wiring Repair" for Wire Repair Procedure.
7. The Cooktop is a One-Piece, Swept-Back Design and may be Removed from the Front Without Moving the Range.

DISASSEMBLY

30 INCH MODELS (COLUMBIA/LOUISVILLE)

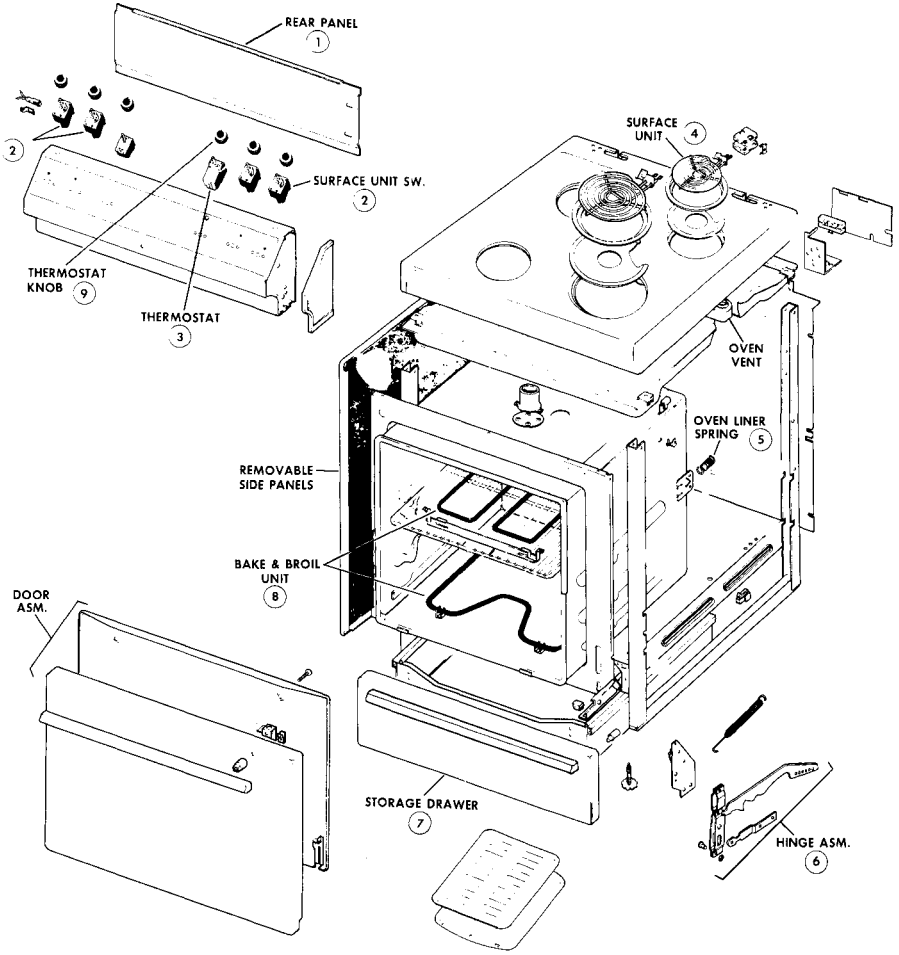


30 INCH MODELS

1. Remove Back Cover to Service Controls.
2. See Mini-Manual for Proper Repair or Adjustment.
See "Electrical Components" Section "Wiring Repair"
for Wire Repair Procedure.
3. See Mini-Manual for Adjustment Procedure.
4. See "Electrical Components" Section and Mini-Manual
for Test Procedure and Specifications.
5. See Mini-Manual for Temperature Knob Adjustment.
6. Bake and Broil Units are Replaced From Inside Oven.
7. Remove to Adjust Drawer Tracks, Level Front Legs, and
Adjust Oven Door Hinges.
8. See Mini-Manual for Gasket Replacement.
9. See "Self Clean" Section for Details. Parts Listed in
Mini-Manual.
10. See "Self Clean" Section for Details. Parts Listed in
Mini-Manual.

DISASSEMBLY

30 INCH MODELS (CHICAGO)



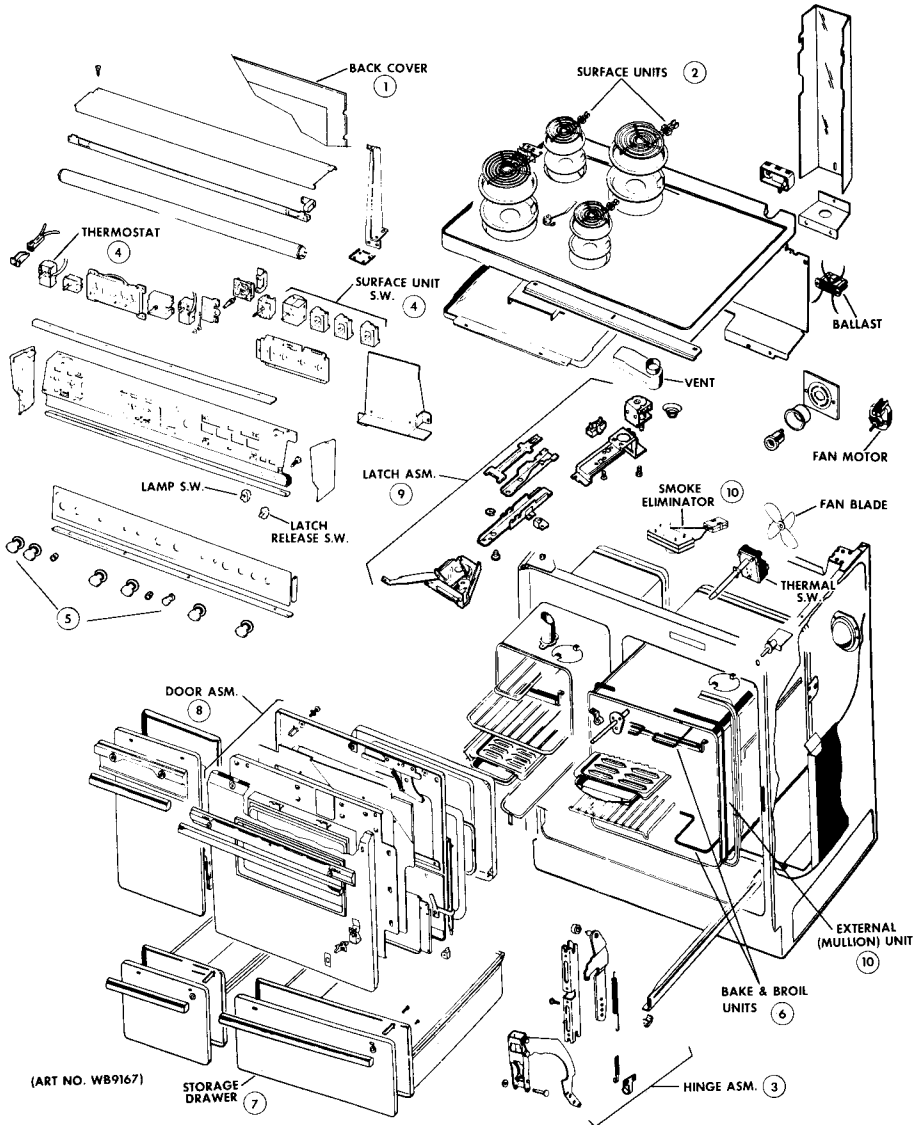
(ART NO. WB9163)

**30 INCH MODELS
(Chicago)**

1. Remove Rear Panel to Service Controls.
2. See Mini-Manual for Test Procedure and Specifications.
3. See "Electrical Components" Section and Mini-Manual for Test Procedure and Specifications.
4. See Mini-Manual for Proper Repair or Adjustment.
5. Spring Holds Oven Liner in Place. Release to Replace Oven Gasket. Or if Liner is Pryed Forward at Front Lip Use Caution to Avoid Marring Finish or Front Frame.
6. See Mini-Manual for Adjustment Procedure.
7. Remove to Adjust Drawer Tracks, Leveling Legs or Door Hinges.
8. Replaced From Inside Oven.
9. See Mini-Manual for Adjustment.

DISASSEMBLY

40 INCH MODELS (LOUISVILLE)

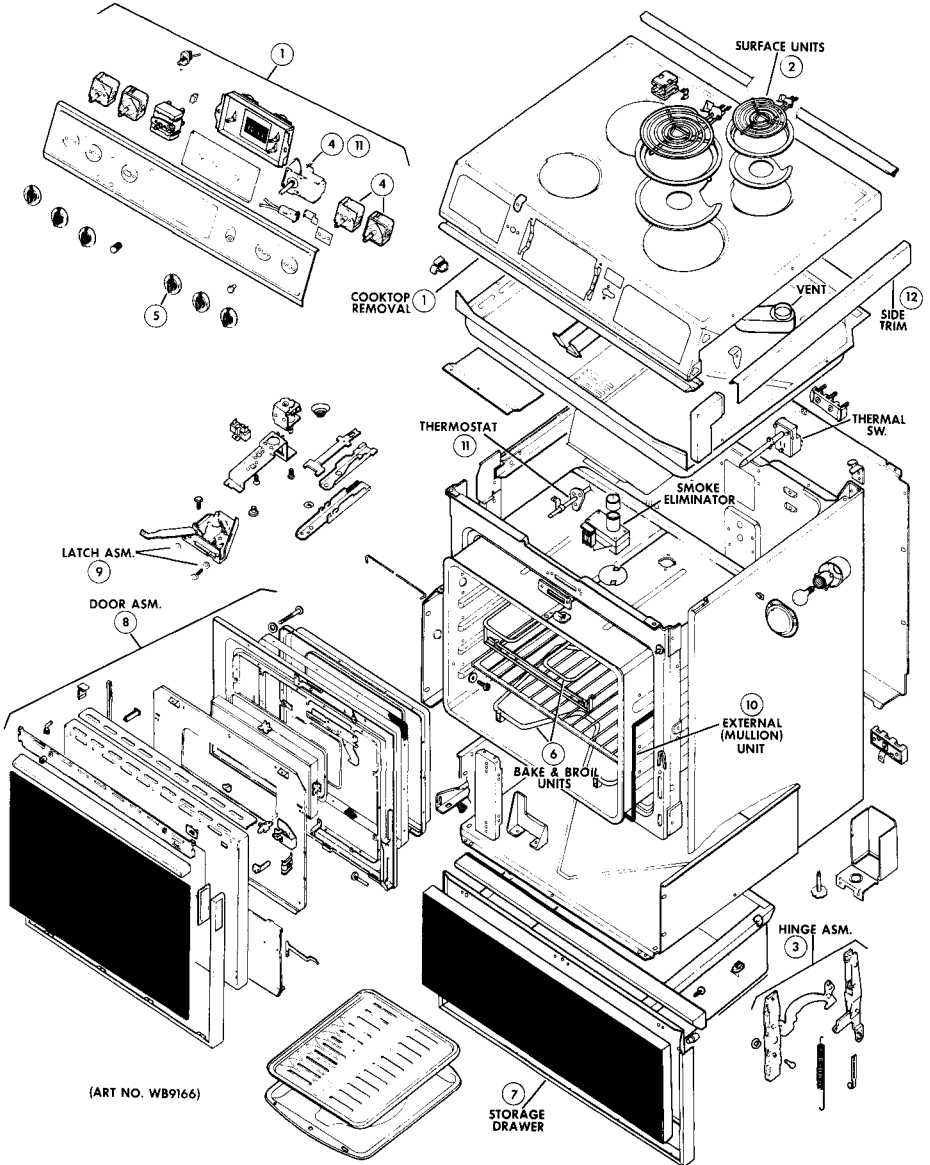


40 INCH MODELS

1. Remove Back Cover to Service Controls.
2. See Mini-Manual for Proper Repair or Adjustment.
See "Electrical Components" Section "Wiring Repair"
for Wire Repair Procedure.
3. See Mini-Manual for Adjustment Procedure.
4. See "Electrical Components" Section and Mini-Manual
for Test Procedure and Specifications.
5. See Mini-Manual for Temperature Knob Adjustment.
6. Bake and Broil Units are Replaced From Inside Oven.
7. Remove to Adjust Drawer Tracks, Level Front Legs, and
Adjust Oven Door Hinges.
8. See Mini-Manual for Gasket Replacement.
9. See "Self Clean" Section for Details. Parts Listed in
Mini-Manual.
10. See "Self Clean" Section for Details. Parts Listed in
Mini-Manual.

DISASSEMBLY

30 INCH SLIDE-IN

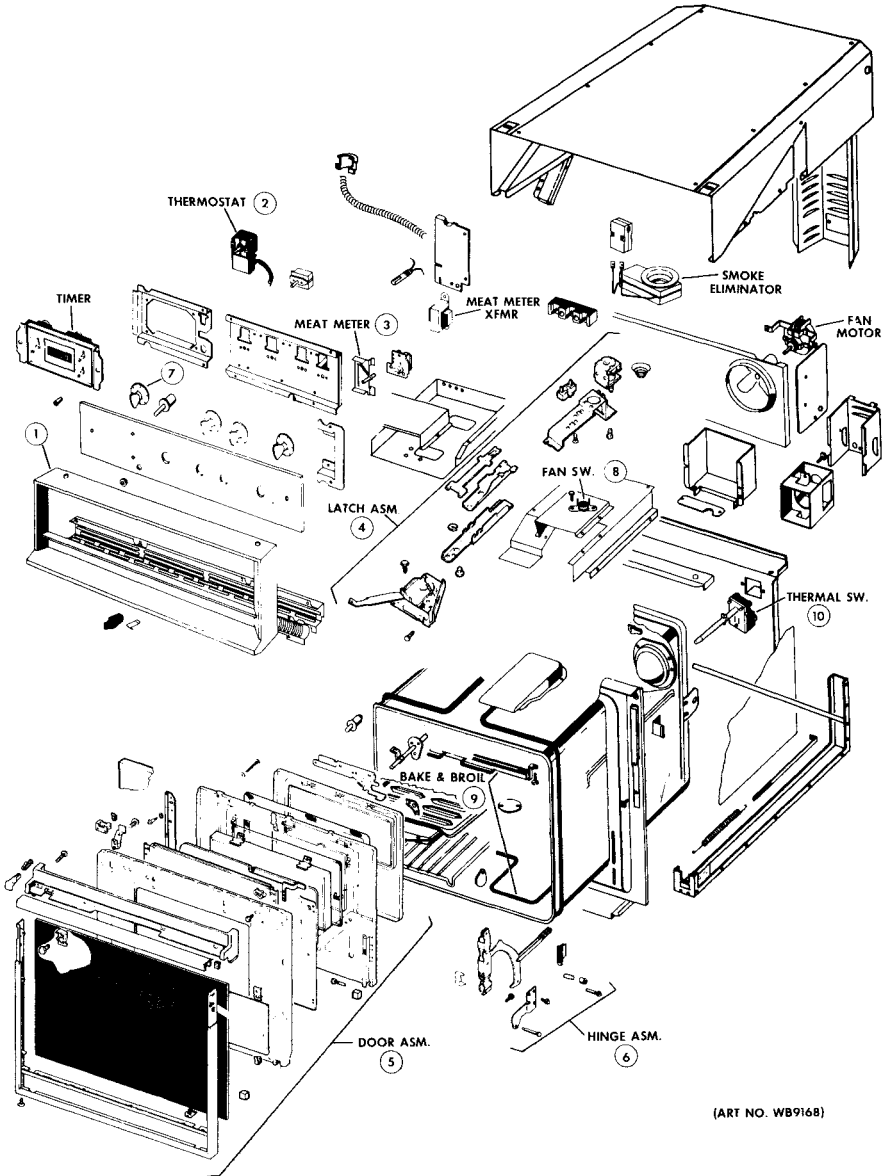


30 INCH SLIDE-IN

- 1 . Raise Cooktop to Service Controls. Open Oven Door and Remove Screws Under Front Lip of Cooktop, Pull Forward and Raise.
- 2 . See Mini-Manual for Proper Repair or Adjustment. See "Electric Components" Section - "Wiring Repair" for Wire Repair Procedure.
- 3 . See Mini-Manual for Adjustment Procedure.
- 4 . See "Electrical Components" Section and Mini-Manual for Test Procedure and Specifications.
- 5 . See Mini-Manual for Temperature Knob Adjustment.
- 6 . Bake and Broil Units are Replaced From Inside Oven.
- 7 . Remove to Adjust Drawer Tracks, Level Front Legs and Adjust Oven Door Hinges.
- 8 . See Mini-Manual for Gasket Replacement.
- 9 . See "Self Clean" Section for Details. Parts Listed in Mini-Manual. Do not Loose Spacers Between Latch Asm. and Front Frame When Removing Latch.
- 10 . See "Self Clean" Section for Details. Parts Listed in Mini-Manual.
- 11 . Thermostat may be Replaced by Raising Cooktop.
- 12 . Slide to Rear to Remove.

DISASSEMBLY

BUILT-IN OVEN UPPER OVEN



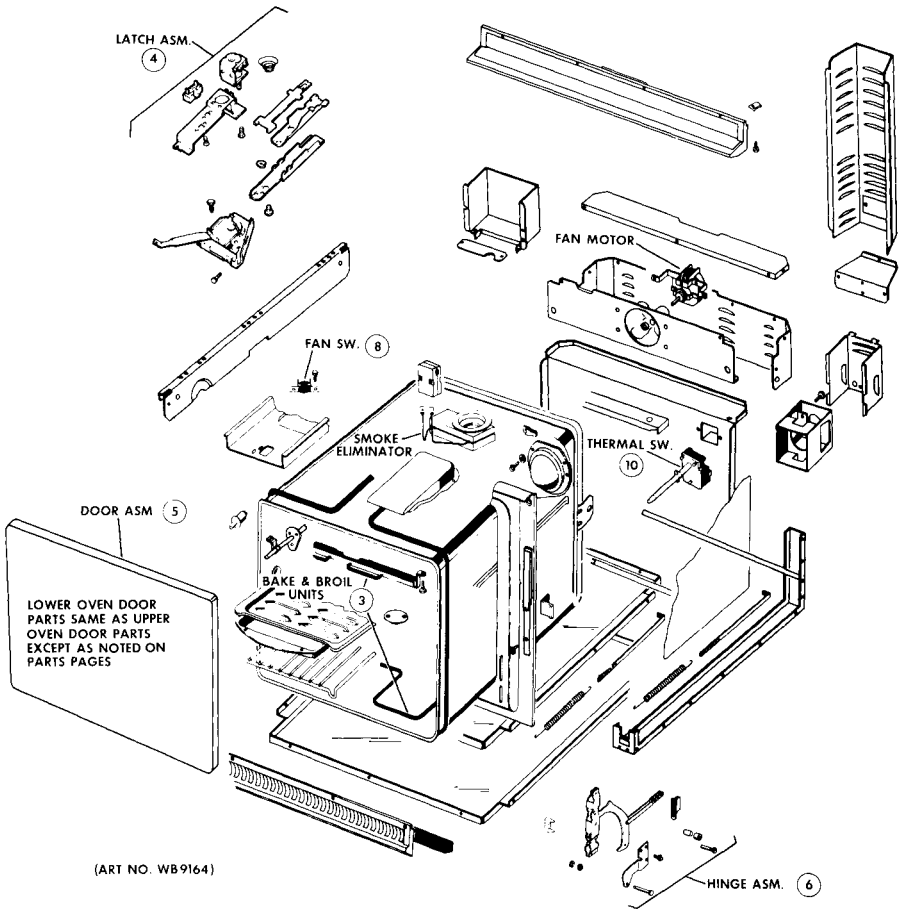
(ART NO. WB9168)

**BUILT-IN OVEN
UPPER OVEN**

- 1 . To Service Controls, Open Oven Door, Remove Screws from Bottom of Panel and Two at Top Corners. Place an Oven Rack in the Top Location, Pull Rack Out of Oven. This provides a Surface to Lay the Control Panel on While Servicing.
- 2 . See "Electrical Components" Section and Mini-Manual for Test Procedure and Specifications.
- 3 . See "Electrical Components" and "Test Equipment and Procedures" Sections for Details.
- 4 . See "Self Clean" Section for Details. Parts Listed in Mini-Manual.
- 5 . See Mini-Manual for Details and Gasket Replacement.
- 6 . See Mini-Manual for Adjustment Procedure.
- 7 . See Mini-Manual for Temperature Knob Adjustment.
- 8 . Insulation Packed Below the Mounting Plate Will Cause Premature Cycling. An Air Space Must be Provided Below the Plate.
- 9 . Bake and Broil Units are Serviced from Inside the Oven.
- 10 . See "Self Clean" Section for Details and Specifications.

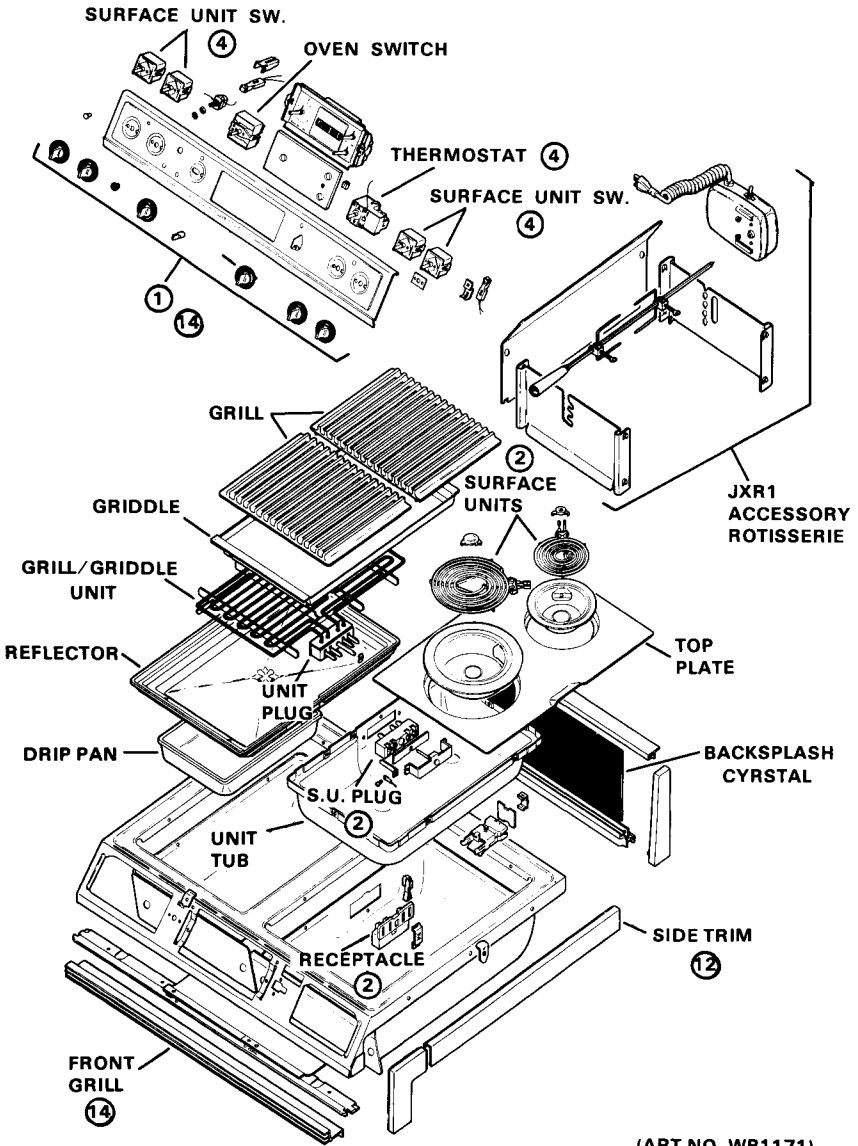
DISASSEMBLY

BUILT-IN OVEN LOWER OVEN



NOTE: See "Built-In Oven" Upper Oven for Explanation of Reference Numbers.

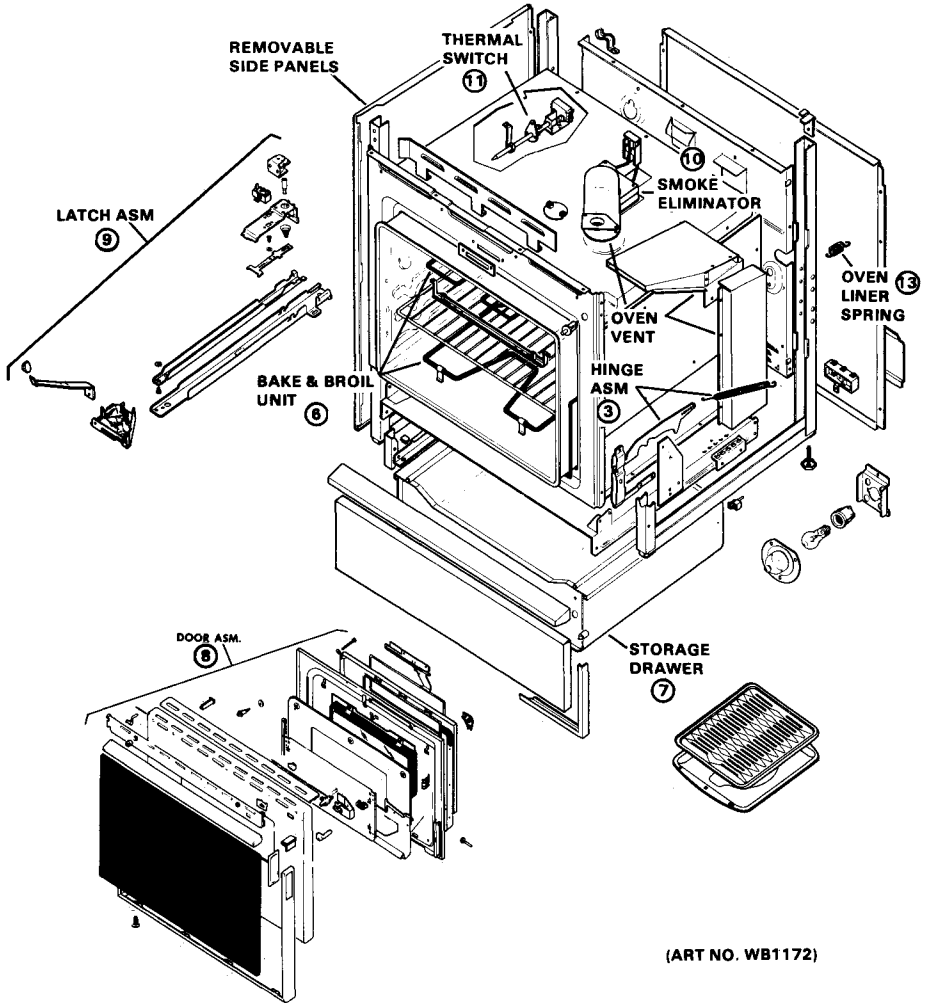
30 INCH GRILL/GRIDDLE



(ART NO. WB1171)

DISASSEMBLY

30 INCH GRILL/GRIDDLE

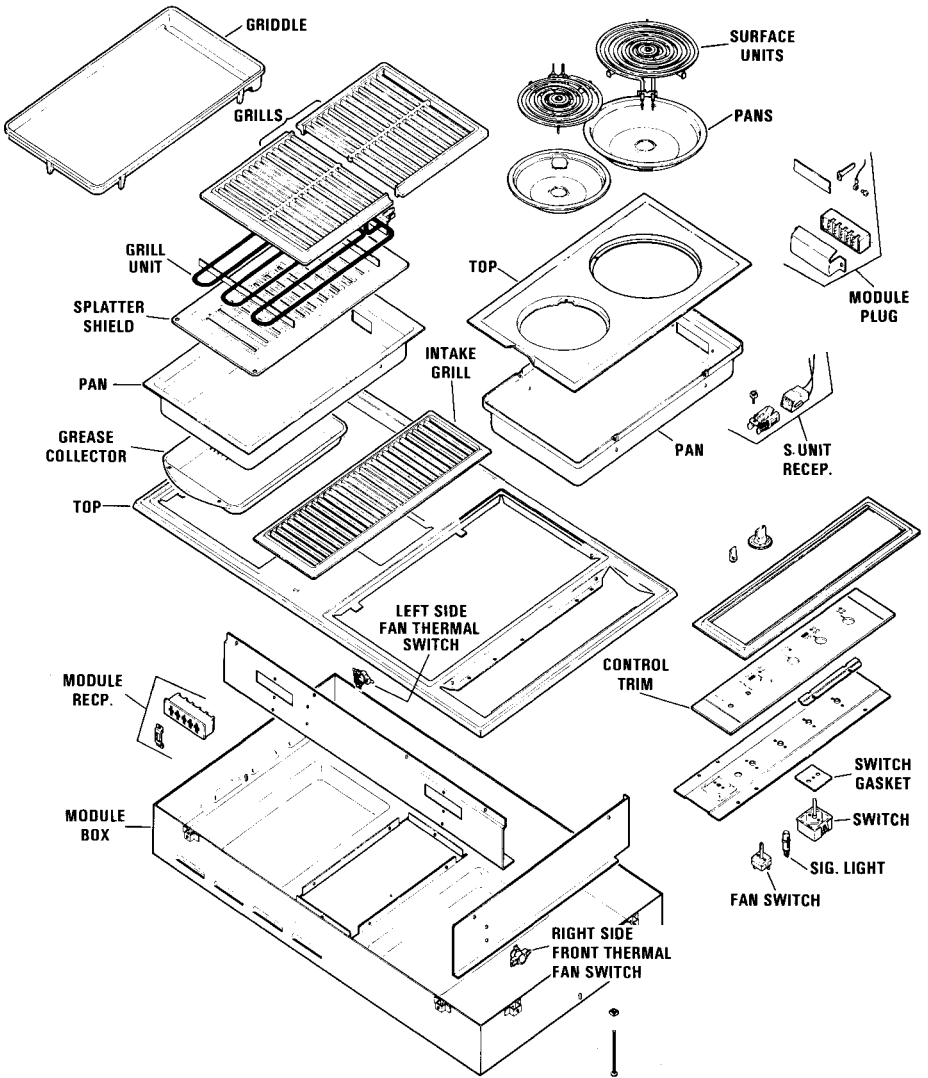


30 INCH GRILL/GRIDDLE

1. Raise Cooktop to Service Controls. Open oven door and remove screws Under front lip of Cooktop, pull forward and raise.
2. See Mini-Manual for proper repair or adjustment. See "Electric Components" Section - "Wiring Repair" for Wire Repair procedure.
3. See Mini-Manual for Adjustment Procedure.
4. See "Electrical Components" Section and Mini-Manual for Test Procedure and specifications.
5. See Mini-Manual for Temperature Knob Adjustment.
6. Bake and Broil Units are replaced from inside oven.
7. Remove to adjust Drawer Tracks, level front legs and adjust Oven Door Hinges.
8. See Mini-Manual for Gasket Replacement
9. See "Self Clean" Section for details. Parts listed in Mini-Manual. Do not loose Spacers between Latch Asm. and Front Frame when removing Latch.
10. See "Self Clean" Section for details. Parts listed in Mini-Manual.
11. Thermostat may be replaced by Raising Cooktop.
12. Slide to rear to remove.
13. Spring holds Oven Liner in place. Release to replace Oven Gasket. Or, if Liner is pryed forward at Front Lip, use caution to avoid marring finish of Front Frame.
14. Front Grill must be removed to raise Cooktop.

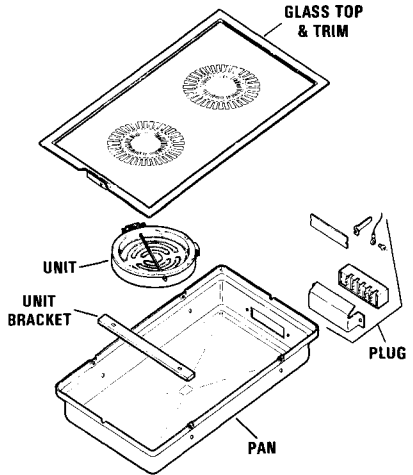
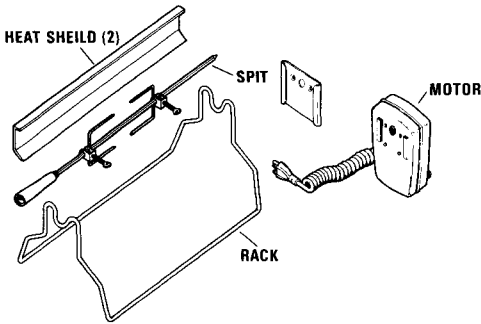
DISASSEMBLY

DOWNDRAFT COOKTOP

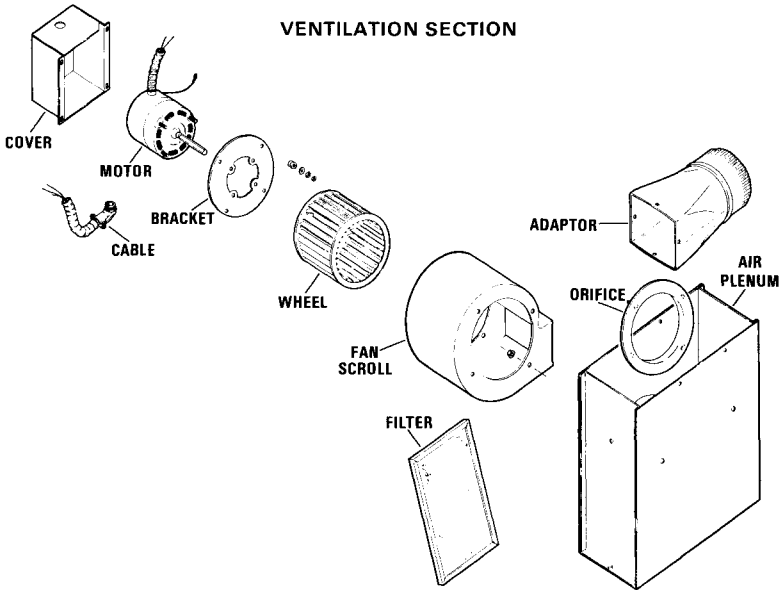


GLASS CERAMIC MODULE

ROTISSERIE PARTS

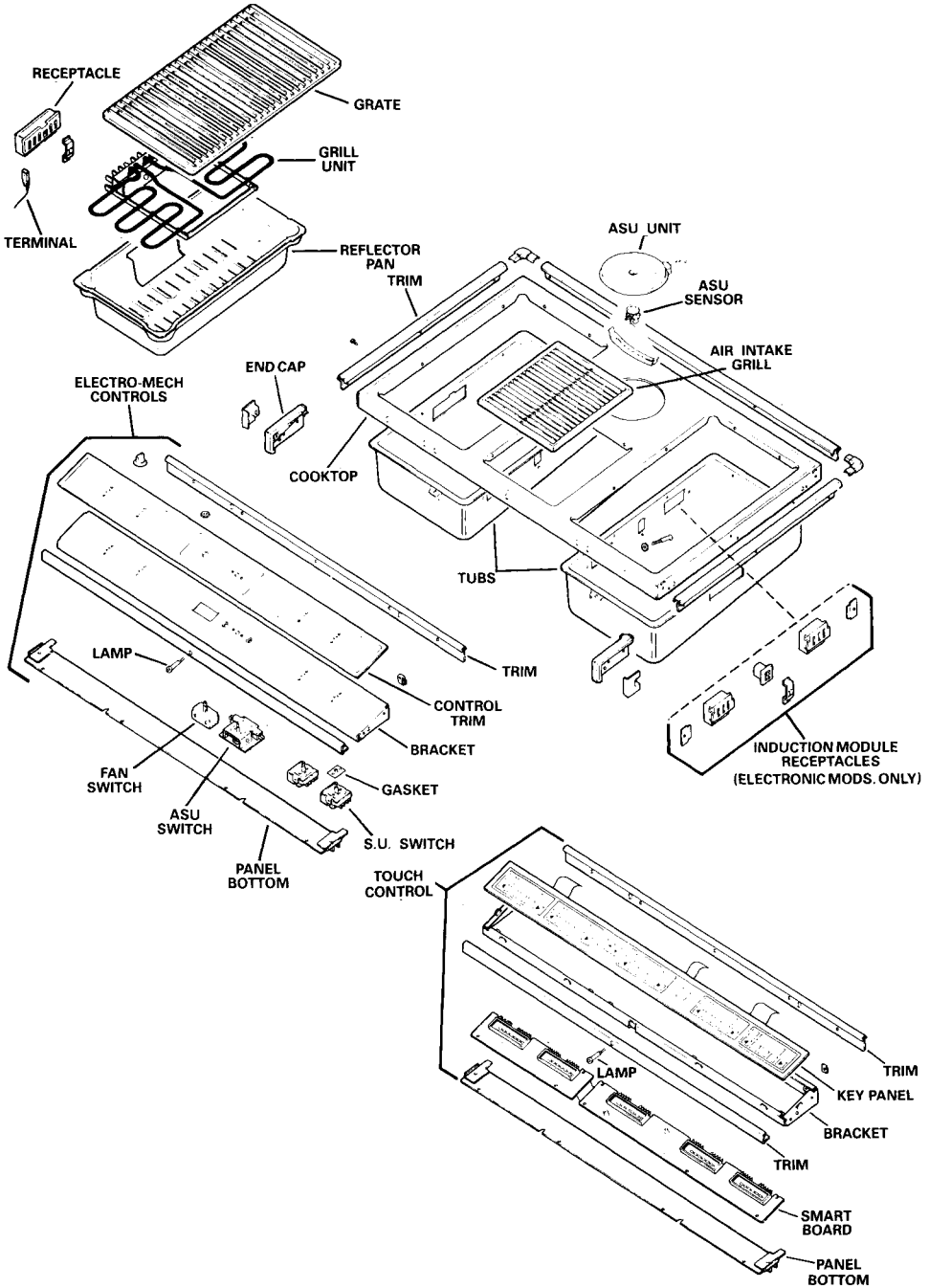


VENTILATION SECTION

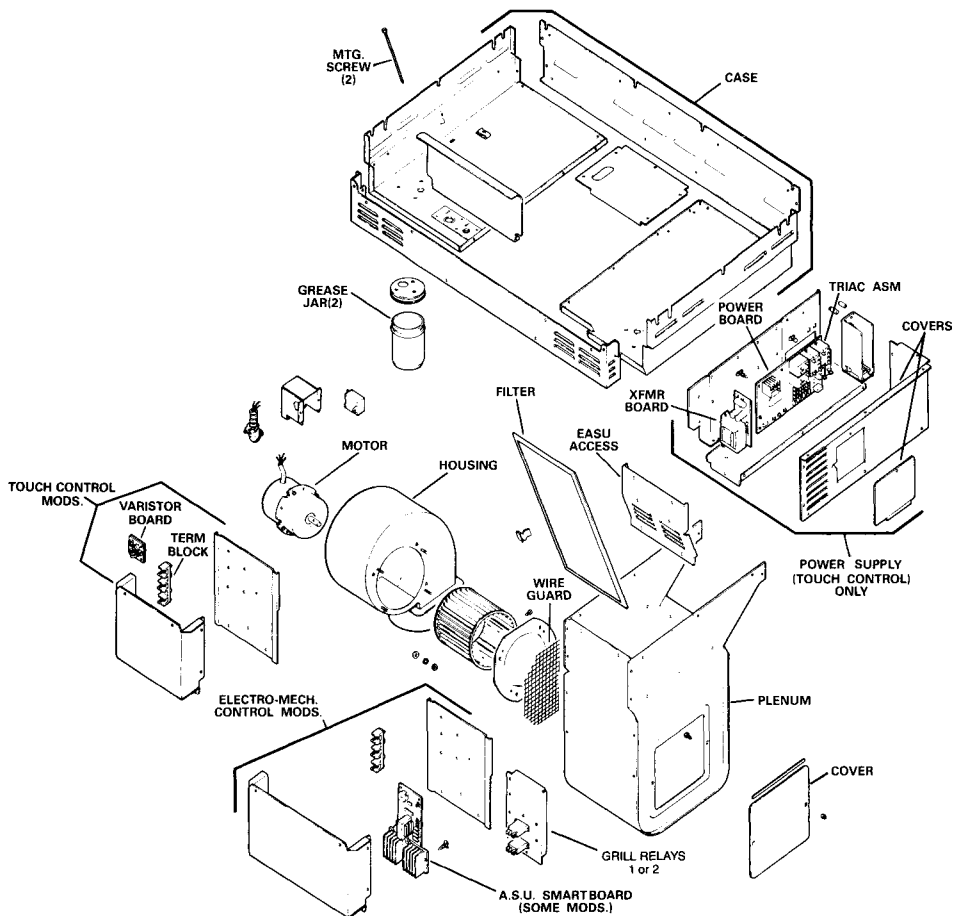


DISASSEMBLY

1987 DOWN DRAFT MODULAR COOKTOPS (CONTROL & TOP)



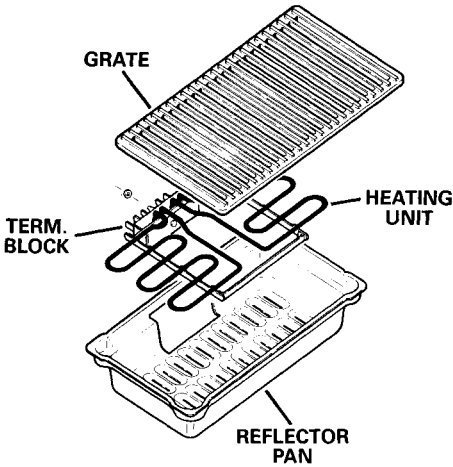
1987 DOWN DRAFT MODULAR COOKTOPS (CASE & BLOWER)



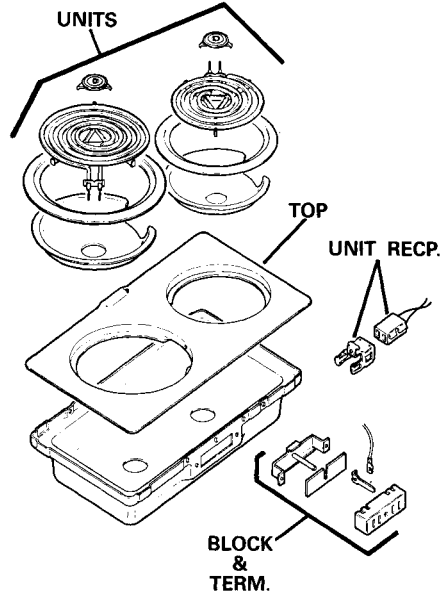
DISASSEMBLY

1987 DOWN DRAFT MODULAR COOKTOPS (ACCESSORY MODULES)

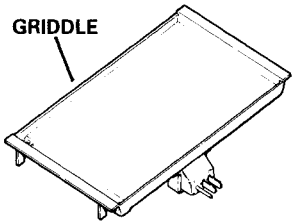
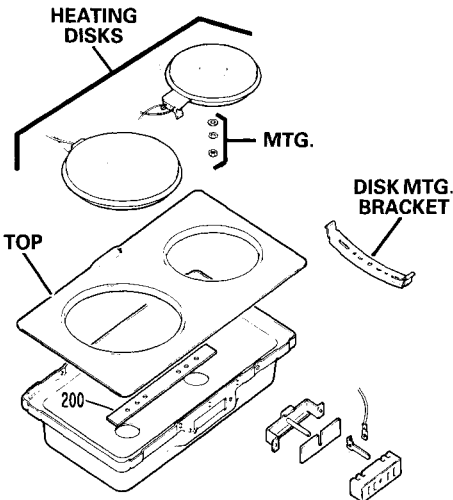
GRILL MODULE



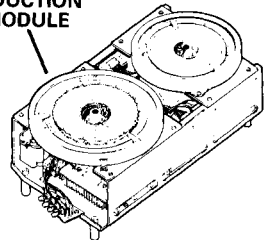
PLUG-IN UNIT MODULE



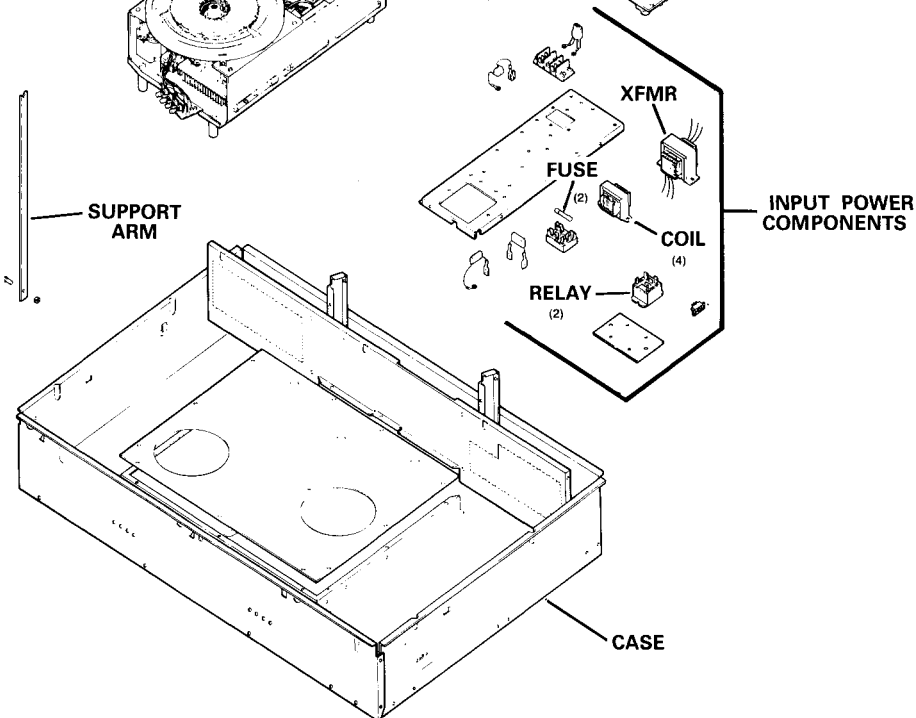
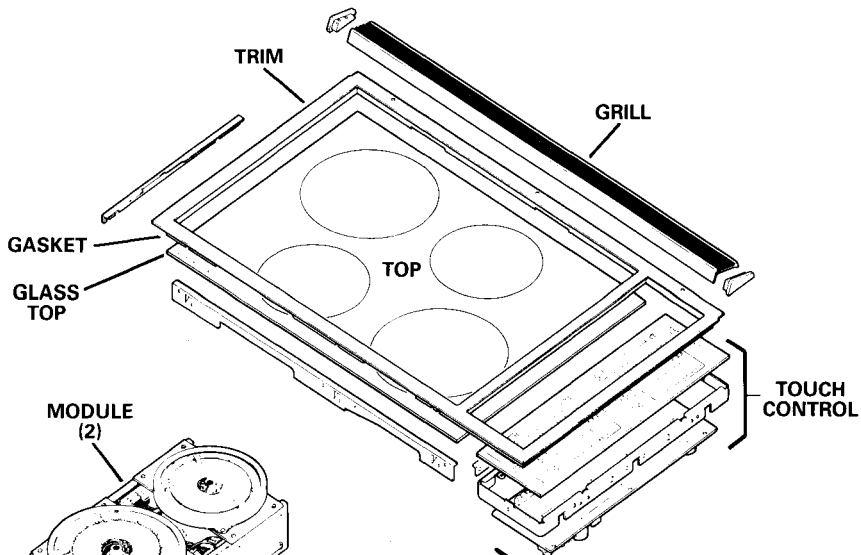
SOLID DISK MODULE



INDUCTION MODULE



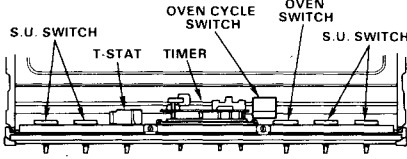
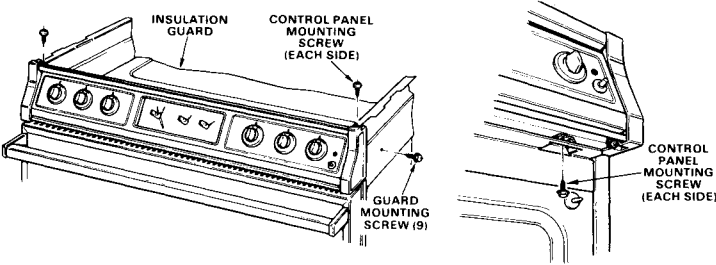
INDUCTION COOKTOP (JP688)



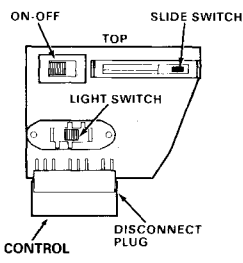
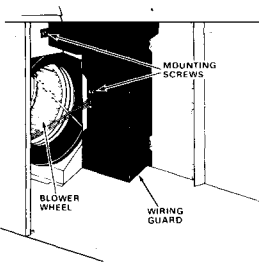
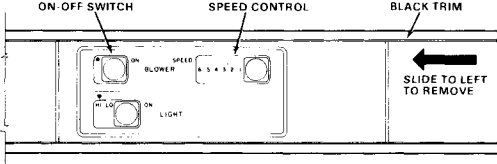
DISASSEMBLY

30 INCH DROP-IN

• LIFT-UP COOKTOP

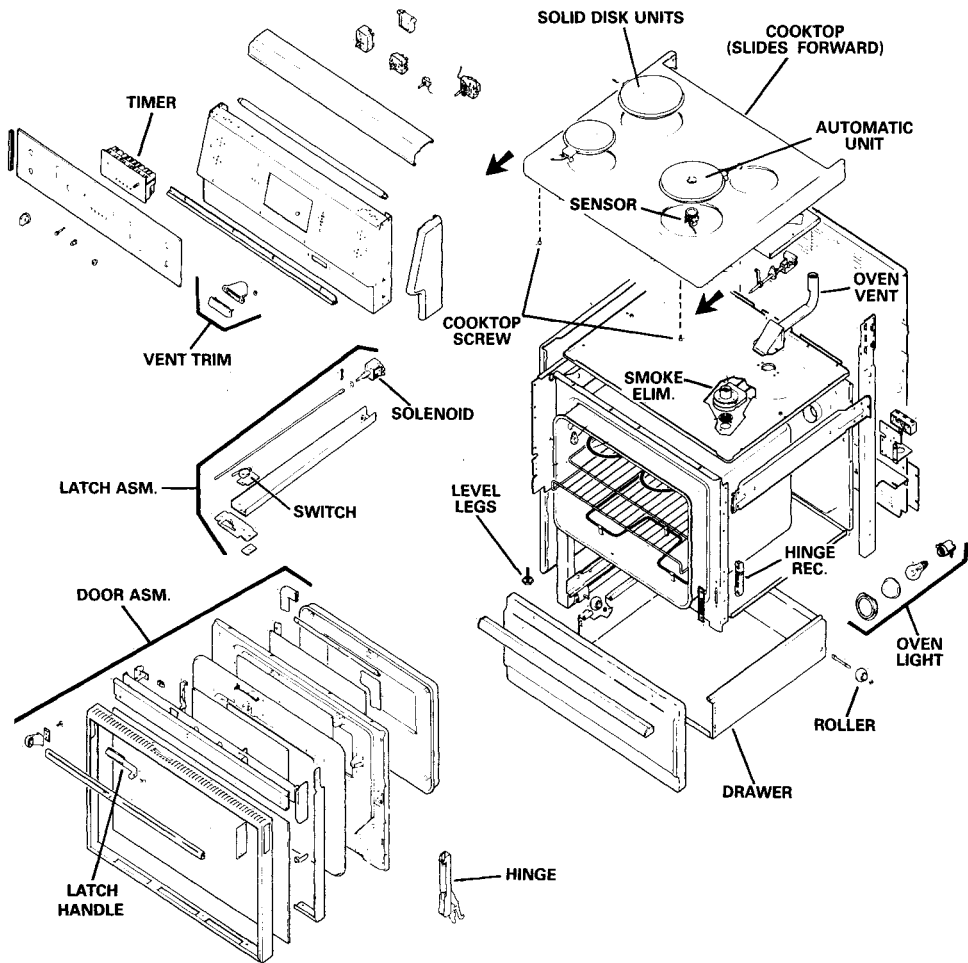


HOODS FOR GRILL/GRIDDLE RANGES (SLIDE CONTROLS)



1. SLIDE TRIM TO LEFT
2. REMOVE WIRING GUARD
3. REMOVE CONTROL

30 INCH MODELS
(SOLID DISKS)



ELECTRICAL COMPONENTS

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AUTOMATIC SURFACE UNIT ADJUSTMENT

To adjust the control for temperature calibration settings, proceed as follows:

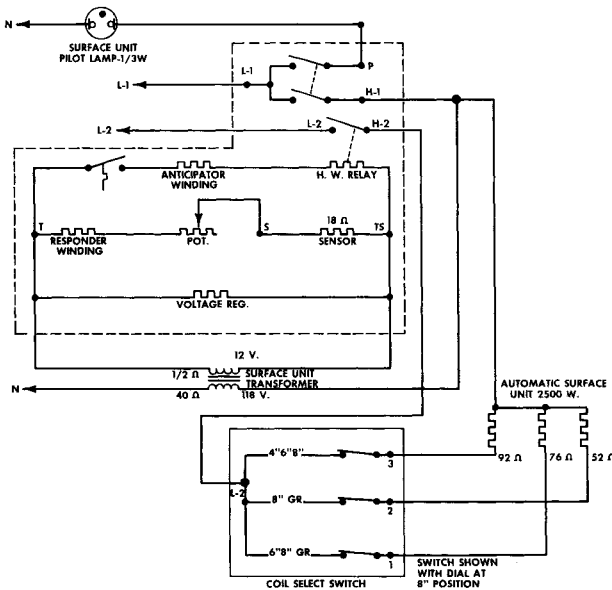
1. Place a pan containing one quart of water on the surface unit.
2. Set the control knob on 200° and selector switch to 8 inch.
3. Within a reasonable length of time, the water should come to a simmer but not go into a rolling boil.
4. If the water does not simmer, remove the control knob. An opening through the control panel makes accessible

the control adjusting screw. Each mark around the control adjusting screw is equal to 10° F. Turn the adjusting screw counterclockwise to increase the temperature. Move the screw slowly, observing the water on the unit until it holds a simmer.

5. If the water boils at the 200° setting, turn the adjusting screw clockwise to reduce the temperature.
6. Turn the control knob to 215°. The water should come to a rolling boil within a reasonable length of time.

Somewhere between 200° and 215°, control knob settings will be a low boil position. This position is normally found

to be the 212° setting. If the results of the test procedure described cannot be reached after adjusting the control, proceed with the electrical test procedure as described in the following paragraphs.



ELECTRICAL COMPONENTS

DIAGNOSIS

Refer to Schematic.

1. Make a visual check of wiring for loose terminals, broken leads, etc.
2. Remove sensor leads from responder (lead on "S" and "TS" terminals) and check continuity of sensor. Should be approximately 17.5 OHMS. (At room temperature).
 - A. If Proper Resistance - Replace leads and check calibration of responder.
 - B. If Leads Open, Shorted or Improper - Replace sensor and check calibration of responder.
3. Turn unit "ON" (all coils) for three seconds, then turn it "OFF". Heat should be felt on unit.
 - A. If Heat is Felt on All Coils - Check calibration of responder.
 - B. If No Heat Present - Proceed to Step 4.
 - C. If All Coils Do Not Heat - Proceed to Step 8. (NOTE: If four inch coil does not heat, fault is in range wiring or surface unit).
4. Turn unit "ON" and check transformer secondary voltage at "T" and "TS" terminals on responder. Should be about 12 Volts.
 - A. If Proper Voltage Present -Proceed to Step 5.
 - B. If No Voltage Present - Fault is in transformer or responder. Check transformer primary voltage at transformer connections. Should be 120 V. with responder "ON". If the 120V Present - Replace transformer. If No Voltage Present - Proceed to Step 5.
5. Check input voltage to responder ("L-1" and "L-2" terminals) should be 240V.
 - A. If Proper Voltage Present -Proceed to Step 6.
 - B. If Proper Voltage Not Present -Fault is in range or supply wiring.
6. Check output voltage of responder. Turn responder "ON" and measure voltage at terminals "H-1" and "H-2". Should be 240V.
 - A. If Proper Voltage Present -Proceed to Step 7.
 - B. If Voltage Not Present - Fault is in responder switch contacts. Replace responder and recalibrate
7. With responder "ON", check voltage to coil select switch. ("H-1" terminal on responder and "L" terminal on coil select switch.) Should be 240V
 - A. If Proper Voltage Present -Proceed to Step 8.

ELECTRICAL COMPONENTS

B. If No Voltage Present - Fault is in range wiring.

8. With responder "OFF" and coil select switch in eight inch position, check continuity from "L" to "1" and "L" to "4" terminals on coil select switch. Should be zero OHMS.

A. If Proper Continuity - Fault is in range wiring or surface unit.

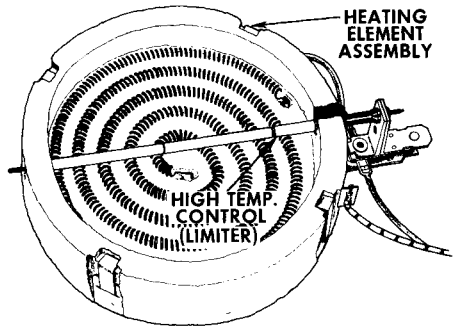
B. If Improper Resistance - Change coil select switch.

CERAMIC COOKTOP HEATING ELEMENTS

The four (4) heating assemblies are located under each of the sunburst designs on the cooking panel and are properly positioned by element retainer bars. The types of heating element assemblies are:

Type	Size	Wattage	Current
Large	9"	2000W@240VAC	8.2A
Medium	7½"	1500W@240VAC	6.3A
Small	6½"	1100W@120VAC	9.2A

The heating element assembly consists of a helix resistance wire heater semi-encased in an alumina silicate casting. Electrical connections to the helix are extended through the side of the casting by stainless steel strips which are welded to the external leads. Terminal end repairs may be made only at the switch end of the external lead. Repairs must be crimped and soldered.



Heating Element Assembly

All leads and their terminals within the heater box area are of the high temperature type materials and are considered non-repairable. If a heater lead fails, the heating element assembly must be replaced.

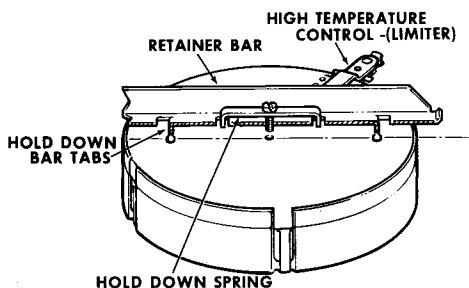
Care should be taken when handling heating element assemblies to avoid damage to the alumina silicate casting. The casting is fragile and will break when subjected to undue pressures. Do not install an assembly if there is a break or void in the heater casting.

HOW TO REPLACE ELEMENTS

1. Disconnect electrical power to cooktop.
2. Remove cooktop from installation and place upside down over opening in counter top. Do not allow cooktop to rest on infinite heat switch shafts.
3. Remove lower wiring guard from heater box and control box.
4. Loosen element hold down spring screws in element retainer bar.

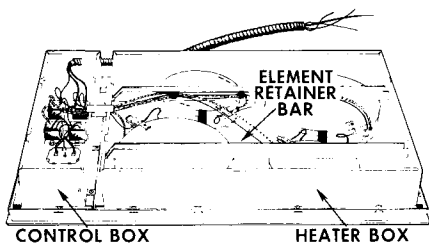
ELECTRICAL COMPONENTS

- Remove element retainer bar, one screw through end of heater box into retainer bar.



Element Hold Down System

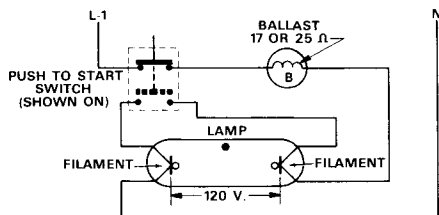
- Remove defective heating element.
- When connecting replacement element, check all leads for correct and tight connections.



Cooktop in Service Position- Wiring Guards Removed

FLOURESCENT LAMP

The flourescent lamp circuit shown below consists of a lamp, ballast, and double pole "push to start" switch.



The lamp contains a filament (heater) at each end of the tube. These are connected in series by the momentary contact in the push to start switch across 120V when the lamp is turned on. The heated filaments ionize the gas within the tube and current flow is established from one filament across the tube to the other filament. This current is limited by the ballast to a safe level for the tube being used. The circuit is maintained by the second (top) contacts in the push to start switch. The momentary contacts open de-energizing the filaments after the lamp has lit and the push to start switch is released.

The following table lists various tubes, specifications and the proper ballast.

CAT. NO.	WATTS	LENGTH	DIA.	BALLAST
F20T12/CW	20	24"	1-1/2"	2 Wire 25
F25T12/CW/33	25	33"	1-1/2"	2 Wire 25
F28T8/CW/4	19	28"	1"	2 Wire 25

LAMP TERMINALS AND RECEPTACLES

The terminals in the lamp receptacles must exert pressure on the lamp terminal pins. The space between the contacts should not exceed 1/2".

ELECTRICAL COMPONENTS

REMOTE CONTROL HOOD CABLE

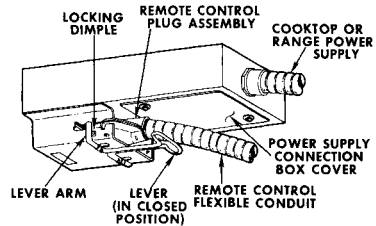
A remote control cable is used to supply voltage between the Hood and Surface unit. The cable has disconnect blocks at each end.

The Hood block is located inside the hood and is accessible from the bottom after removing the left filter and connector box cover. The cooktop block is accessible at the bottom rear of the cooktop box.

CABLE DISCONNECT BLOCK

The disconnect block is mounted to the electrical connection box by the disconnect lever and cover. To service the block or terminals:

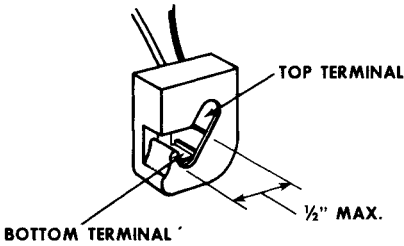
1. Disconnect power supply.
2. Disconnect cable by releasing handle.
3. Remove handle and cover by taking out two screws on right side of handle. Cover and handle can then be removed, exposing the block.



Disconnect Block Mounting

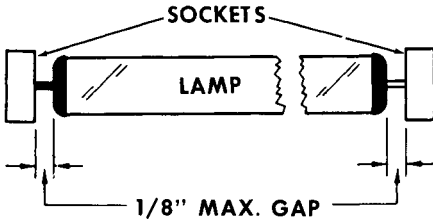
CONNECTOR CABLE

Cable pins and the units or switch loca-



The terminal pins in the lamp itself must be in the same plane to assure a positive simultaneous contact against the two terminals in each of the sockets.

With the lamp installed in the receptacles, the gap at each end should not exceed 1/8".

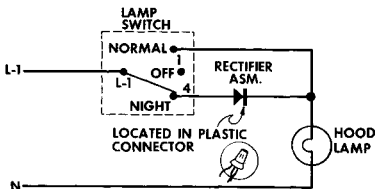


HOOD NIGHT LIGHT

Certain model hoods feature a "night-light" position on the lamp switch. This allows the user to select either full or half brilliance of the hood lamp.

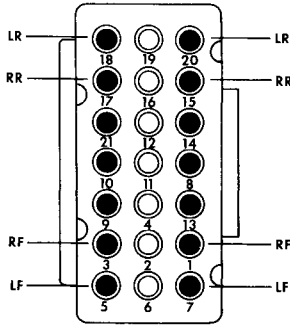
CIRCUIT

The night-light setting is simply a diode switched in series with the hood lamp, the lamp filament is then energized at half-wave voltage, lowering the light output.



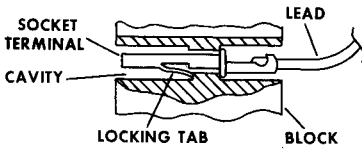
ELECTRICAL COMPONENTS

tions they connect are shown below.

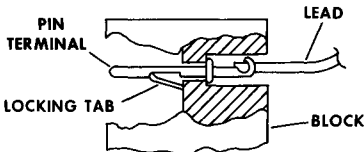


SERVICING TERMINALS

A locking tab on the small pin and socket type terminals is used to secure them in the socket cavity.



Socket Type Terminal (Female)



Pin Type Terminal (Male)

To remove a terminal, the locking tab must be depressed in order to push the terminal out of the cavity. A small thin blade pocket screwdriver or piece of wire bent back on itself (paper clip) will work nicely.

The tab on the pin (male) terminal is exposed and readily accessible. The tab on the socket (female) terminal is not exposed as it is down inside the cavity of the block. It can be located, however, as it is on the side of the terminal opposite the slot.

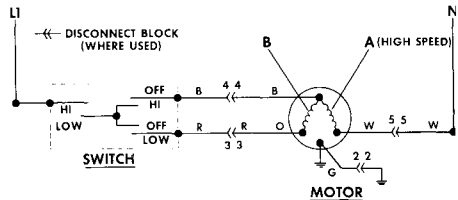
HOOD MOTORS

Two hood motor systems may be used. Some models feature a two-speed motor while others incorporate a solid state controlled, variable speed motor.

TWO SPEED MOTORS

Two-speed shaded-pole induction motors are used for hood blower or fan applications. All motors have built-in, automatic reset thermal protectors.

Shaft rotation on these shaded-pole motors is not reversible.



Only the main winding is energized for high speed. Low speed is obtained by switching the auxiliary winding in series with the main winding.

Always make certain fan blades or blower wheels are not reversed and rotate freely when replacing a hood motor.

VARIABLE SPEED MOTORS

Knob Control

This feature enables the customer to select a variety of blower speeds to suit the requirements for exhaust and sound levels.

The Speed Control is a solid state device which is matched to the electrical load ing characteristics of the blower motor It is connected in series with the motor.

ELECTRICAL COMPONENTS

Rotating the knob clockwise from the "OFF" position will turn the switch "ON" and energize the motor at 120V. Further rotation of the knob will gradually reduce the input voltage to approximately 75 volts.

SPECIFICATIONS

Typical operating characteristics of the "matched system" are:

Control Setting	Low	High
Control Volts	75	120
Motor Speed (RPM)	900	1550
Airflow (CFM)	120	280

SERVICING

- Remove the four (4) Phillips screws holding the control panel to the hood body. These screws are located inside the front of the hood, and are visible after removing the filters. The screws have one-inch diameter washers under the head.
- Pull the bottom of the control bezel out, and lift the control panel to disengage the top tabs from the hood.
- The control panel will swing down and can be held in servicing position by hooking the service tabs over the bottom flange of the hood body.

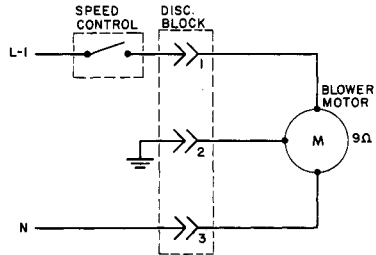
SERVICE CHECK

The speed control must be replaced as an assembly. Individual components on the board cannot be replaced.

Using a meter test lead or a short length of insulated wire with stripped ends,

jumper the white and black leads at their solder connections to the circuit board. The blower motor should run at high speed. If it does, replace the control.

If the motor does not run, the fault is in the wiring, motor disconnect block, or the blower motor.



INFINITE HEAT SWITCH — Except Built-in Ceramic Cooktops

Description

Infinite heat controls are used to regulate the wattage of surface units. The infinite heat control is essentially a timing device and its on-off time is not related to any temperature sensing element at the surface unit, such as the sensor head of the Automatic Surface unit.

The switch is provided with two specific detent positions - Off, and High. Between the High and Off setting the control provides an infinite range of heats. At the High detent setting, the surface unit is energized continuously.

The control may be rotated in either direction.

ELECTRICAL COMPONENTS

The control may be used with a single coil or multiple coil surface unit. In the latter case the multiple coils are connected in parallel to simulate a single coil. Heat will be uniformly distributed over the entire surface unit at all control settings.

LOCATION

Infinite control switches are mounted with two screws to the backsplash or control panel. These screws are accessible after removing the switch knob.

OPERATION

The control incorporates five spade terminals for lead wire connections, L1 and L2 represent the 240 Volt line connections while H1 and H2 represent the 240 Volt load connections. P is the connection for the pilot light.

Internally, the switch contains a bi-metal control which regulates the switch On-Off time. The bi-metal has a heater wrapped around it, which is energized and cycles simultaneously with the surface unit.

The bi-metal operates a set of cycling contacts between the L2 and H2 terminals. A cam controls the distance through which the bi-metal must travel to close the contacts. The cam position is determined by the knob setting.

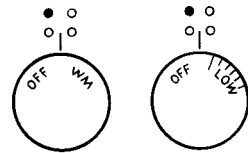
A manually (knob) controlled switch blade supports the contact for the connection between L1 and H1, and L1,P contacts. These contacts remain closed in every switch position except OFF.

The circuit to the surface unit is completed when the switch is set to any On position. The cam moves the manual switch blade and closes the circuit between the L1 and H1 contacts. The cam also forces out the cam follower and allows closing of the L2 and H2 contacts. This completes the circuit to unit and also to the control bi-metal heater.

As the heater heats the control bi-metal, the control bi-metal flexes until it pulls away from the contacts creating an open in the circuit. This disconnects the power to the bi-metal heater and also cuts off the power to the surface unit being controlled. As the bi-metal heater cools, the bi-metal will relax and start moving closer to the contacts until they close. This re-energizes the surface unit and also the bi-metal heater, and the cycle repeats.

SWITCH CALIBRATION TEST:

1. Clamp amp probe around one surface unit lead.
2. Set control to lowest setting (between OFF and WM or OFF and LOW) and allow switch to stabilize (3 cycles)



3. Compute percent on time of switch by timing the ON and OFF times of the cycling switch. Percent on time is found by dividing ON-time by total cycle time and multiplying by 100

Example: 3 seconds ON, 57 seconds OFF, 60 seconds total cycle time.

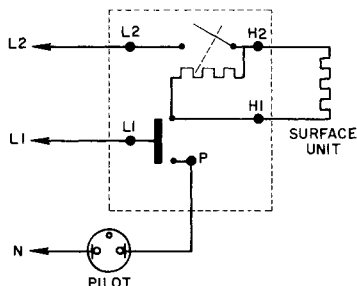
ELECTRICAL COMPONENTS

$3 \div 60 \times 100 = 5\%$ on-time.

4. Calibration limits: 6% or less on-time at lowest operating point of switch.

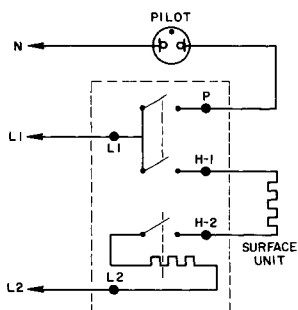
TYPES

VOLTAGE SENSITIVE



The heater in the voltage sensitive control is shunt (parallel) wired with the load.

CURRENT SENSITIVE



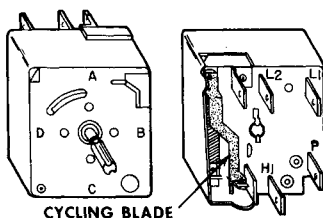
The heater in the current sensitive control is connected in series with the load. All of the load current flows through the bi-metal heater.

Heater design characteristics are determined by load current. These switches MUST be matched to a specific wattage unit.

The electrical load on the control affects its performance, since the bi-metal heater

operates in series with the load. It is therefore necessary to have a load connected to the control when checking its performance.

The design of the current sensitive infinite heat control is such that the cycling blade is exposed at the rear of the control. Care should be exercised when servicing this control so as not to distort the cycling blade. The wires should be dressed in such a manner that they do not come in contact or interfere with the operation of the blade.



Front and Rear View of Current Sensitive Infinite Heat Control

CONTROLS FOR DUAL RATED RANGES

Dual Rated Ranges can be installed on either 120/208 or 120/240 volt service. These ranges will be manufactured with both types of surface unit infinite controls: Voltage Sensitive and Current Sensitive.

The Voltage Sensitive Control will be rated and marked 240 volts. The rating and marking of the Current Sensitive Control will be based on the unit wattage at 250 volts.

Either type of control will operate satisfactorily on a 208 volt application. At any knob setting, from WARM up to HIGH, the cycling action of the control is

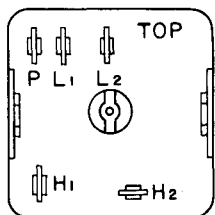
ELECTRICAL COMPONENTS

dependent upon the heating of the control bi-metal. With a 208 volt input, the control will have a longer "percent on time" and the heat delivered by the surface unit will be about the same as with a 240 volt input.

On HIGH knob setting, the unit is "locked on", and the Surface Unit wattage at 208 volts will be approximately 80% of the wattage at 240 volts.

Replacement controls for service will usually be the Voltage Sensitive type.

NOTE: The Voltage Sensitive Control must be mounted to the control panel with the word "TOP" facing up.



Terminal Orientation Voltage Sensitive Infinte Control

SERVICE NOTES

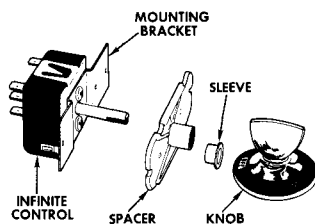
Use only the screws cataloged for the control when replacing it. Do not use a longer screw; this will bind the cam or cause an electrical short inside the control. Do not use a thread cutting screws to mount the switch. This can cause steel filings to drop inside the switch. The voltage-sensitive switch has a magnet in the mechanism to give a snap action to the contacts. Steel filings will be attracted to the magnet and cause an electrical failure inside the switch.

INFINITE HEAT SWITCH – Built-in Ceramic Cooktop Only

Two (2) types of voltage sensitive infinite heat switches are used. Switches used to control the small heating elements are rated at 120 VAC while those used to control the large heating elements are rated at 240 VAC. Both types have two (2) detented positions; OFF and HIGH with a continuous range of settings between OFF and HIGH. The two types are:

<u>Rating</u>	<u>Bi-Metal Heater</u>	<u>Controls</u>
240VAC, 15A	15,000 Ohms	Large Ele.
120VAC, 15A	4,000 Ohms	Small Ele.

The infinite heat switches are mounted to an auxiliary mounting bracket which is mounted to the main instrument bracket of the control panel. Each switch shaft is sealed to the control panel glass by a plastic spacer and sleeve extending through a rubber gasket. This seal arrangement is intended to prevent spills from entering the control panel box.



Switch Mounting Components

HOW TO REPLACE:

1. Disconnect electrical power to cooktop.
2. Remove knob and white plastic seal

ELECTRICAL COMPONENTS

from switch shaft.

3. Remove cooktop from installation and place upside down over opening in counter top. Do not allow cooktop to rest on infinite heat switch shafts.
4. Remove lower wiring guard from control box.
5. Remove two nuts securing switch and auxiliary mounting bracket.
6. Remove defective switch from auxiliary mounting bracket and install new switch.
7. When connecting replacement switch, check all leads for correct and tight connections.

SOLID STATE CONTROL MEAT THERMOMETER

How to Use

The skewer of the probe is inserted into the meat and the cable is plugged into the receptacle on the side of the oven inner.

The oven controls are set to BAKE and the proper oven temperature.

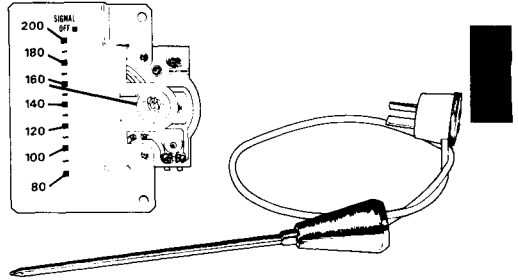
The pointer on the meat meter dial is turned to the temperature setting at which the meat will be done.

When the internal temperature of the meat reaches the pointer setting the buzzer will sound. To stop the buzzer turn the pointer to SIGNAL OFF.

During cooking, the internal temperature of the meat can be determined by turning the pointer down until the buzzer sounds.

SYSTEM COMPONENTS

1. Solid state circuit board with integral buzzer.
2. 120/12.8 volt transformer.
3. Meat probe 10 K Ω @ room temperature and 1 K Ω @ 212° F.
4. Meat probe receptacle.

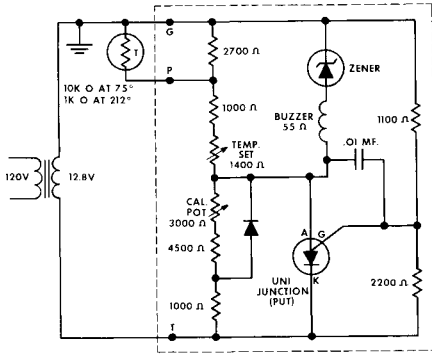


HOW IT WORKS

The solid state meat thermometer is a four (4) leg balanced bridge with a programmable unijunction transistor (PUT) as the balance detector.

A thermistor in the probe is used as a variable resistor to detect the meat temperature.

ELECTRICAL COMPONENTS



The 1.1K ohm and 2.2K ohm form two of the bridge's four legs and provide a reference voltage (VGK) for the PUT gate to cathode.

The 1.0K ohm, 4.5K ohm resistors, and the 0.3K ohm potentiometer form the third leg (anode to cathode) of the bridge. The potentiometer is used for factory and field calibration of the system.

A thermistor is used as a sensing device. It has a negative temperature coefficient, with room temperature resistance of 10,000 ohms and a hot resistance of 1,000 ohms at 212° F. The 2.7K ohm resistor provides padding for the thermistor, making it appear more linear to the circuit. The 1.0K ohm resistor limits the current through the PUT in event of a probe short circuit. The 0-1.4K ohm resistor is the SET potentiometer that is controlled by the customer.

During use, the customer selects a meat temperature indicative of desired doneness and sets the control accordingly. For example, setting the control to 160° F. results in a resistance of about 800 ohms for the SET rheostat. As the thermistor (probe tip in meat) heats up, its resis-

tance decreases. The resistance in this leg decreasing causes more of the total voltage to appear across the anode cathode (VAK) of the PUT. When VAK exceeds VGK by about 0.5 volts, the PUT fires.

The voltage VAK then drops to about 1/2 volt. When the PUT "fires", additional current is drawn through the thermistor. This has a latching effect as it self-heats the thermistor, causing its resistance to decrease still further. Since the PUT will fire close to the peak of the positive A.C input voltage, which is 18 volts, about 17 volts is present across the zener and buzzer. This exceeds the 9 volt reverse break-down voltage of the zener allowing current to flow through the buzzer coil.

When the negative half cycle of the A.C wave is present, the zener diode is forward biased and presents very little resistance to current. Current therefore flows through the 1.0 Kilohm resistor, diode and buzzer-zener leg. This current tends to demagnetize the buzzer and allows more efficient buzzer operation with respect to hysteresis. This current is not enough on its own to cause the buzzer to sound. It does, however, enhance buzzer performance when the PUT fires on the immediately preceding half cycle.

The .01 MF. capacitor is used to prevent false triggering of the PUT by line interference.

CALIBRATION PROCEDURE

The solid state control board has a factory calibration potentiometer, which can be used for field adjustment of the board.

NOTE: REPLACEMENT BOARDS MUST ALWAYS BE CALIBRATED USING THIS PROCEDURE.

TO CHECK THE SYSTEM FOR PROPER CALIBRATION:

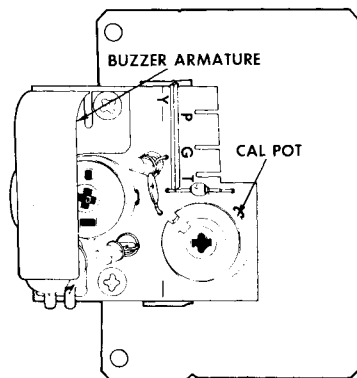
- 1. Insert a $2200\ \Omega$ 10% resistor into the meat probe receptacle contacts. (A $2200\ \Omega$ 10% resistor, color coded red-red-red-silver is available in most TV repair shops.)
- 2. Set oven switch to BAKE.
- 3. Slowly turn indicator pointer down to 155° . Buzzer must sound at $155 \pm 5^\circ$.

TO ADJUST THE BOARD:

Follow the preceding steps, setting the pointer to 155° .

Using a small screwdriver, turn the CAL rheostat clockwise until the buzzer sounds. Slowly turn the rheostat in the opposite direction until the buzzer stops. Repeat again, clockwise, for the buzzer signal to "trim" to the exact setting.

Signal loudness may be adjusted by carefully bending the buzzer arm with a pair of needle nose pliers.



Rear of Solid State Meat Thermometer Circuit Board.

SERVICE CHECKS

To Check the Meat Probe

Using a multimeter, read resistance between contacts on the probe plug. Should read $10,000\ \Omega$ @ 75° , $1,000\ \Omega$ @ 212° .

To Check the Board

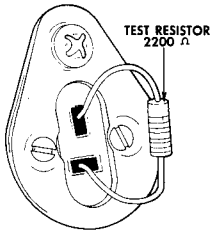
Voltage between "T" and "G" should be 12 Vac with oven switch at bake. Use $2,200\ \Omega$ test resistor for operation and calibration test.

To Check the Receptacle

Using a multimeter, read resistance from the vertical contact to range ground. Should read zero ohms.

Resistance from the horizontal contact to "P" on the circuit board should be zero ohms.

ELECTRICAL COMPONENTS



Meat Probe Receptacle With 2200 Ω Test Resistor

OVEN SWITCH - Non Self-Clean Models

There are three basic types of oven switches used on non self-clean models.

1. Three positions - Off, Bake, Broil
2. Four Positions - Off, Bake Timed, Bake, Broil
3. Five Position - Off, Bake, Timed Bake, Rotisserie, Broil

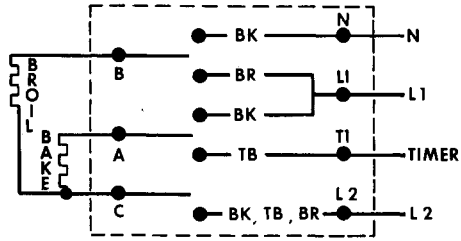
Consult the wiring diagram for specific connections.

LOCATION

All oven switches are located on the control panel or backsplash. They are mounted, from the front, by two screws. These screws are accessible after removing the switch knobs.

OVEN SWITCH CIRCUIT

A typical circuit diagram for a standard oven switch is shown next.



OVEN CIRCUIT DIAGNOSIS PROCEDURE

1. Turn oven switch to "BAKE" and check for heat (bake unit should glow red in 2 to 3 minutes).
 - a. If bake unit gets red - check oven thermostat calibration with oven tester.
 - b. No heat - proceed to Step 2.
 - c. Partial heat - proceed to Step 3.
2. Check input voltage at switch. Should be 240 volts between L1 and L2 and 120 volts between N and each of the L terminals.
 - a. Proper voltage not present - fault in range wiring (disconnect block on some models).
 - b. Voltages correct-proceed to Step 4
3. Check for burned or broken wires at unit and switch terminals.
 - a. Repair breaks.
 - b. Wiring good - proceed to Step 4.
4. Check switched output voltage. The switched output voltage locations as measured at the oven switch terminals

ELECTRICAL COMPONENTS

are shown on the wiring label for your particular range.

SERVICE NOTE — REPLACEMENT SWITCH WIRING AND TERMINAL INSPECTION

Before replacing an oven or surface unit switch, closely inspect the lead and quick-connect terminals for corrosion or thermal breakdown. Each terminal should be clean, and fit tightly on the switch spade.

Any terminal that does not meet these standards should be replaced. Should the wire be oxidized or show signs of over-temperature, it should be cut back before replacing the terminal. The entire lead assembly should be replaced if severe oxidation is evident.

Because of high electrical currents encountered in range operation, it is important that all wire splices and quick connects be soldered.

Following these instructions should eliminate unnecessary call-backs due to poor wiring connections.

OVEN SWITCH - Self-Clean Models

This is a rotary type switch.

There are two basic types used:

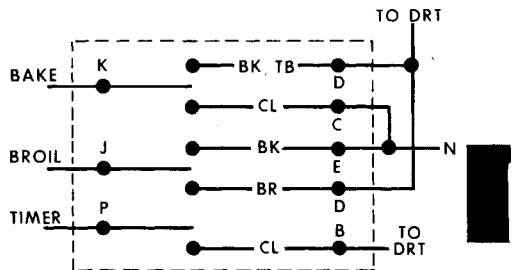
1. Five Position - Off, Bake, Time Bake, Clean and Broil.
2. Six Position - Off, Bake, Time Bake, Clean, Rotisserie, and Broil.

LOCATION

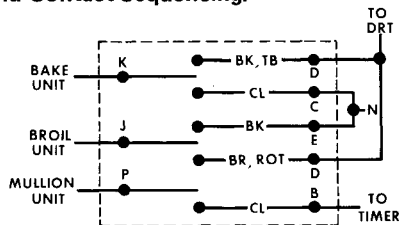
The oven switches are mounted to the backsplash or control panel with two screws. The screws are accessible after removing the switch knob.

OVEN SWITCH CIRCUIT

Consult the mini-manual for specific switch circuits. Typical switch circuits are shown below.



Five Position Oven Switch Schematic and Contact Sequencing.



Six Position Oven Switch Schematic

OVEN CONTROL — HYDRAULIC THERMOSTAT

Description

The thermostat is rated at 21 amperes at 125 to 250 volts. It is designed to control oven heat from 150° F. (WARM) to 500° F., plus a 550° F setting for broiling with a 575° F maximum. The thermostat

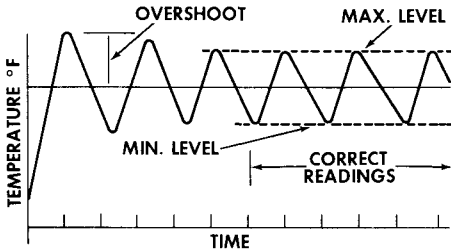
ELECTRICAL COMPONENTS

is designed for operation in any position.

OPERATION

The hydraulic control system provides remote sensing through a capillary tube in the oven and actuates a lever system in the thermostat which makes or breaks the circuit to the oven. The special fluid used in the hydraulic system has full stability (linearity) in its expansion-contraction characteristics and maintains this stability over the entire operating range.

In the initial heating of a cool oven, the air temperature rises rapidly and will go beyond the selected dial setting. This "overshoot" is normal and is typical of actual oven operation. Overshoot continues until absorption of heat by the oven contents and oven walls is approximately equal to that given off by the units to maintain the selected temperature.



Initial Overshoot and Amplitude After Stabilization.

Amplitude is the span between the "ON" and the "OFF" temperatures after stabilization. For example, stabilized readings of 320° (ON) and 380° (OFF) represents an amplitude of 60 degrees. See manual for specifications of thermostat.

The average air temperature is determined

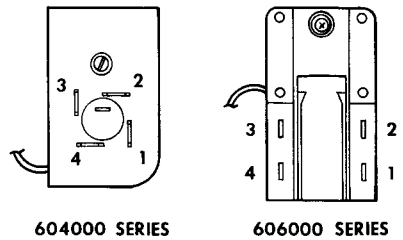
by identifying the midpoint between the stabilized "ON" and "OFF" temperatures. Breads, cakes, roasts, etc, assume and maintain a temperature equal to the average air temperature. They do not sense or assume peak or bottom temperatures.

NOTE: For proper use of oven testers consult "Test Equipment & Procedures"

TYPES OF HYDRAULIC THERMOSTATS

Two types of hydraulic thermostats are used as oven controls. They are identical in mechanical mounting, internal electrical circuitry and customer use.

Terminal orientation is different, but the two types are directly interchangeable, simply by removing leads and replacing them on like-for-like terminals.

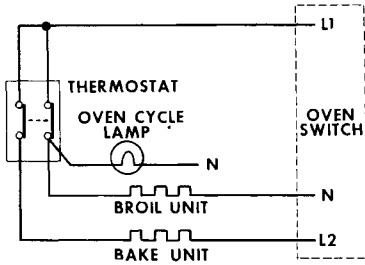


Outline Views of Hydraulic Thermostats Showing Terminal Orientation.

THERMOSTAT CIRCUITRY

Next is a simplified oven "BAKE" circuit through the thermostat. Both sides of the the line through the thermostat make and break simultaneously.

ELECTRICAL COMPONENTS



Schematic Oven "Bake" Circuit

TO MEASURE THE OVEN TEMPERATURE

It is absolutely necessary to use a thermocouple type oven testor to accurately measure oven temperature. No other type of thermometer can take its place.

NOTE: Before testing an oven to check thermostat calibration, inspect the thermostat capillary. It should be properly mounted in its clips and should not touch the wall of the oven liner.

1. Place rack in center position. Remove all utensils and other racks.
2. Clip unshielded thermocouple to center of rack. Run leads out bottom of door at hinge to preserve top seal.
3. Place oven tester on floor or chair next to range.
4. Turn oven switch to "BAKE", and set control to 375 degree setting.
5. Wait for the thermostat to cycle three (3) times before taking first reading. This will allow oven to preheat and stabilize in temperature.
5. After this waiting period, record the next three "ON" and "OFF" cycles

and compute the average temperature.
(See example below.)

(Example) OVEN TESTER READINGS (After Third Cycle)

	Average
Min. (ON)	370
	-385
Max. (OFF)	400
Min. (ON)	370
	-385 385° Final Avg
Max. (OFF)	400
Min. (ON)	370
	-385
Max. (OFF)	400

NOTE: The maximum temperature will occur about 30 seconds after cycling light goes out. The minimum temperature occurs at the time light comes on.

7. To be acceptable, the final average temperature should be the temperature stated on the mini-manual for your range.
8. Adjust temperature if necessary to fall within these limits.

ADJUSTING OVEN TEMPERATURE

All thermostat knobs are provided with indexing to allow thermostat adjustments.

The thermostat knob consists of a knob with a dial inserted in it. Assembled to the back of the knob is a keyplate with pointer and arrows to indicate adjustment for raising or lowering the average oven temperature. Adjustments are marked off in 10° F segments.

ELECTRICAL COMPONENTS



Thermostat Knob Adjustment

TO ADJUST KNOB

PULL KNOB OFF OF SHAFT. NOTE CURRENT SETTING ON BACK OF KNOB BEFORE MAKING ANY ADJUSTMENT. Move pointer in desired directions -one notch = 10° F. - and replace knob.

SERVICE NOTES

Thermostat Replacement

ALWAYS DISCONNECT POWER TO RANGE OR WALL OVEN BEFORE REPLACING THERMOSTAT.

Be sure capillary tube is dressed away from exposed electrical connections.

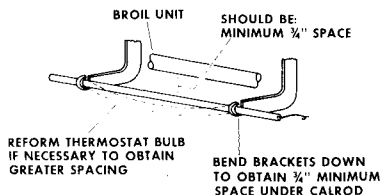
Use the capillary tube insulating sleeve if the original thermostat was so equipped.

Be sure all insulation is in its original position after the thermostat is installed.

THERMOSTAT CYCLES DURING BROIL

Under certain conditions, the oven thermostat may cycle during a broiling operation. No cycling should occur, however, during the first 20 - 25 minutes of cooking. In most cases, this will occur when the meat is being cooked on the second side and is, therefore, never noticed. In addition, the "OFF" cycle is of such short duration that the broil unit never really turns black and therefore, does not affect the performance.

Occasionally an oven may be found to cycle unusually early during Broil. This can happen if the distance between the thermostat bulb and the broil unit is closer than 3/4 inch. Where this condition is found the two thermostat bulb mounting brackets should be carefully bent down with a pair of pliers in order to obtain a minimum 3/4 inch space between the bulb and the unit.



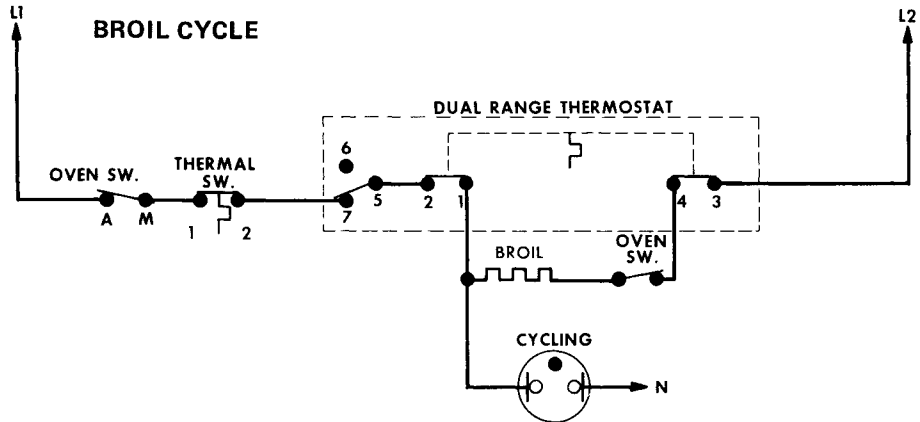
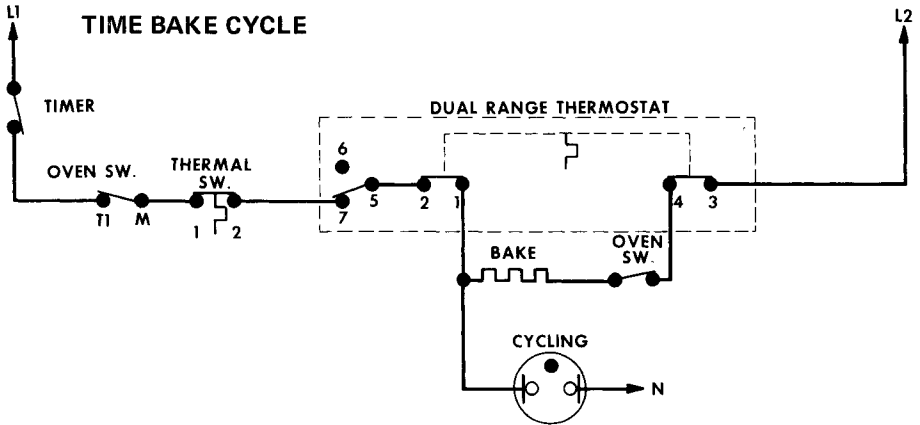
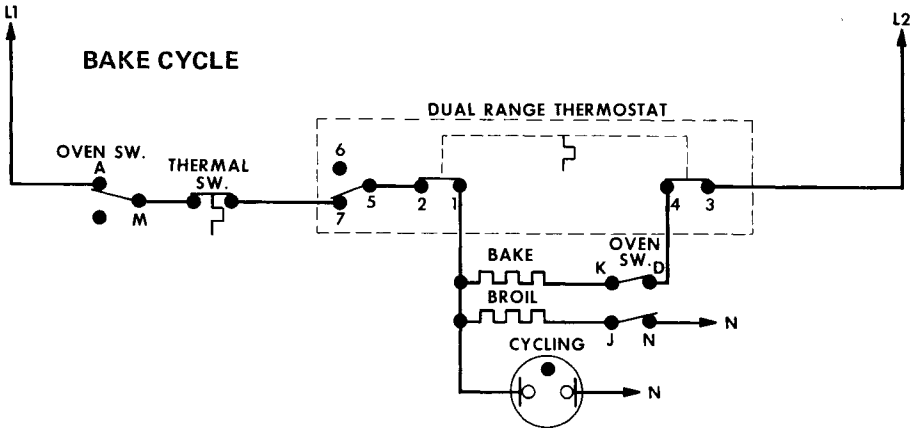
WARNING – CARE MUST BE TAKEN WHEN BENDING THE BRACKETS TO PREVENT CHIPPING THE PORCELAIN LINER.

In addition to bending the brackets, the thermostat bulb can also be reformed to obtain the necessary spacing.

ELECTRICAL COMPONENTS

OPERATIONS

Simplified schematics of typical bake, time bake, and broil circuitry are shown below. Consult the Mini-Manual with your range for specific diagrams.



ELECTRICAL COMPONENTS

CALROD SURFACE UNITS

DESCRIPTION

The heart of any Range is the heating unit, and thin-tube Calrod heating units are used throughout the entire Range line. Heat is generated by an electrical current passing through a resistance wire enclosed in a case, called the sheath, and insulated with magnesium oxide (MgO) between the sheath and the resistance wire.

The outside sheath is made of Incoloy[®], an alloy composed of iron, nickel and chrome. This material has the unique property of being able to withstand oxidation and deterioration at the high operating temperatures of Electric Range units.

The helix resistance wire is a nickel chrome alloy and is centered and packed in magnesium oxide which provides both excellent heat conduction and electrical insulation.

In Calrods, the heating wire extends only through the part of the unit which is flattened for contact with utensils. Long lead terminals carry current but do not heat that section of the unit which is bent down.

The coil support is made of stainless steel for strength and durability at high temperatures. Each coil, except the eight-single coil, is held at only one place to the spider, or support, allowing maximum contact with utensils and free expansion and contraction.

RATINGS

Surface units are produced in two sizes 6 inch and 8 inch. The wattage of surface units is stamped on the spider.

CLEANABILITY

Calrod surface units are self-cleaning in the sense that soil particles on the unit coils will dissipate themselves when the heating unit is energized and brought up to heat. The chrome trim rings around the units may be readily cleaned with a detergent washing solution. Burned-on food particles can be removed by use of a fine soap-filled steel wool pad.

SINGLE COIL

Single coil units are controlled by infinite heat controls. Where these controls are used, the entire surface unit cycles on and off at the full 240 volts. Total wattage input is determined by the setting of the control and may vary from approximately 5-1/2 percent of the total "on time" at the "Warm" setting, to 100 percent of the total "on time" at the "Hi" setting.

In some applications, two-coil units are controlled by infinite switches. Where this is done, the coils are paralleled with an external shunt across the terminals.

THREE COIL

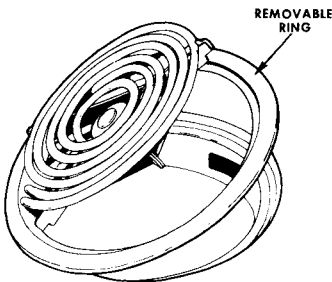
The three coil unit allows the user to select 4", 6" or 8" diameter heat patterns. The coils are cycled "Full-On" or "Full-Off" by an infinite control or Automatic Unit Responder.

SURFACE UNIT MOUNTING (HINGED UNITS)

The hinge mounting bracket on surface units may include provisions for "stand-up" operation of the unit for cleaning purposes. To remove a unit, loosen or remove the No. 8-32x1/2" Hex Head Screw. The mounting bracket is slotted, making it unnecessary to completely remove the screw.

COMPONENTS (HINGED UNITS)

The only components on surface units which are replaceable are the center trim, the terminal insulator blocks and the trim ring.

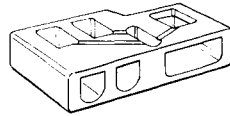


SURFACE UNIT MOUNTING (HINGED UNITS)

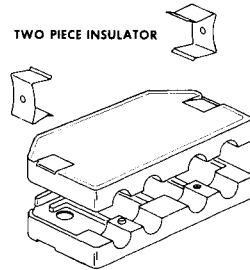
Most surface units require a one-piece terminal insulator but there are some units which use special two-piece insulators and insulator fasteners.

Range safety requires that insulators be in position on surface unit terminals any time the Range is operated.

ONE PIECE INSULATOR



TWO PIECE INSULATOR



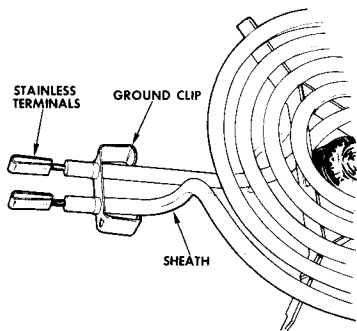
PLUG-IN SURFACE UNITS

Plug-in units can be completely removed from the Range to facilitate cleaning under the surface unit.

The plug-in unit is removed from the Range by lifting slightly and pulling straight from the receptacle. The receptacle hinge action will allow the unit to be raised approximately two inches on the side opposite the receptacle.

Grounding for the plug-in unit is accomplished by means of a ground clip, which is crimped to the unit sheath. When the unit is plugged into the receptacle, the ground clip contacts the receptacle bracket which is grounded to the rest of the unit. This establishes approximately one-fourth inch (1/4") before the unit terminals touch the spring contacts in the receptacle during plug-in.

ELECTRICAL COMPONENTS



The ground clip also maintains proper spacing and overall alignment of the electrical terminals plus being the mechanical "stop" when the unit is being plugged into the receptacle.

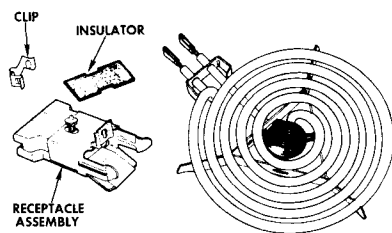
The electrical terminals on the unit are stainless steel springs folded into a "U" shape and welded to the unit cold end pins. These terminals should be straight and parallel and are not replaceable. If it becomes necessary to straighten the terminals, due to the unit being dropped or damaged, care should be taken to avoid damaging the ceramic seals in the ends of the unit sheath.

The plug-in unit receptacle assembly is mounted in the cooktop with one screw. The receptacle assembly can be serviced by removing the mounting screw and pulling the receptacle through the unit opening of the cooktop.

NOTE: THE RECEPTACLE MUST BE REPLACED AS A COMPLETE ASSEMBLY. DO NOT ATTEMPT TO REMOVE THE SEALED NUT OR DISASSEMBLE THE RECEPTACLE COMPONENTS.

A stainless steel spring clip, is used to hold an insulator board to the rear of the assembly, protecting the user from touching the electrical terminals when cleaning beneath the cooktop. This insulator should always be in place when service is completed.

Electrical connections to the receptacle are made by leads terminated in eyelet terminals and held by 1/4" x 8-32 hex head screws. The screws thread into the square nuts held by the contact springs inside the receptacle assembly. Field repair of these leads will be the same as that of other surface unit leads. Remove damaged terminal and strip the insulation and wrap the bare wire under the screw. A drop of solder at the tip of the wire will prevent the strands from separating.



Plug-In Unit Receptacle

ELECTRICAL COMPONENTS

'PLUG-IN SURFACE UNITS - FIELD REPAIR TO REDUCE "PLUG-IN", 'PULL-OUT" FORCE

Some plug-in surface units may be very difficult to unplug and insert into the unit receptacle.

Adjustment of the male terminals attached to the heating unit will improve this condition.

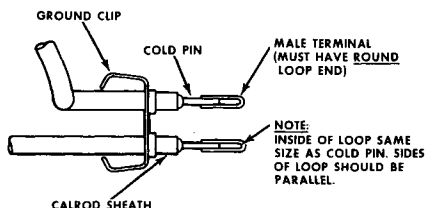
Below is a corrective repair to reduce the plug-in, pull-out force:

STEP 1

The male terminal should have parallel sides with no outward bow.

To straighten, squeeze the terminal with a pair of pliers until the opening of the loop is the same width as the cold pin.

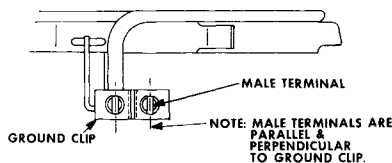
NOTE: Do not pinch ends of terminals and deform loop.



STEP 2

Make sure the male terminals are parallel, in a vertical plane, and perpendicular to the ground clip.

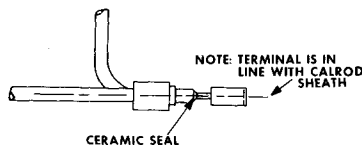
Use pliers to straighten if necessary.



STEP 3

Make sure male terminal is straight in a plane with the Calrod[®] sheath.

Use pliers to straighten. Be careful not to damage ceramic seal.



STEP 4

The center flange of the ground clip should be a 90° angle. The two flanges should not touch.

Use a pair of "long nose" pliers to bend flange 90°, if necessary.

CAUTION:

UNDER NO CONDITIONS ARE ANY ALTERATIONS TO BE MADE TO THE UNIT TERMINALS OR GROUND CLIP, OTHER THAN AS SPECIFIED ABOVE.

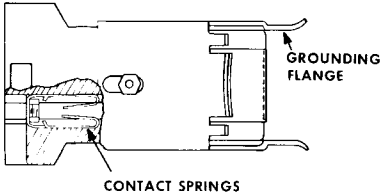
CAUTION:

UNDER NO CONDITIONS ARE THE CONTACT SPRINGS WITHIN THE RECEPTACLE ASSEMBLY TO BE ALTERED.

ELECTRICAL COMPONENTS

CAUTION:

UNDER NO CONDITIONS ARE THE "LEAD-IN" GROUNDING FLANGES OF THE RECEPTACLE BRACKET TO BE ALTERED.



WIRING REPAIRS

Correct wire repair procedures are essential in high current carrying circuits if repeat failures are to be prevented.

Hand crimping of terminals or connectors in the field is not recommended. Improperly crimped terminals - too loose or too tight - both result in heating at the crimp and subsequent repeat failures. Terminals which must be hand crimped should also be soldered.

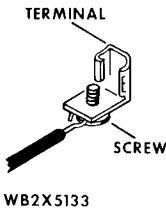


Fig. 1

LEADS BROKEN - (not burned)

Strip about 1/2 inch insulation from the lead. Twist the exposed strands together and solder. Form a "U" shaped loop around the terminal screw as show(Fig.1). Always loop the wire around the screw in the direction it tightens.

LEADS BURNED OFF

The most critical step in this type repair is to cut the lead back to a point where the wire is bright and shining before soldering and forming the loop. A dull appearance or oxide indicates the wire has been overheated. If this portion of the wire is not removed a high resistance connection is likely and a second failure is certain.

SPLICING LEADS

Due to high current circuitry and high operating temperatures ONLY high temperature wire nuts should be used. WB1X371 is one high temperature wire nut available.

PUSH-ON TERMINAL CONVERSION

The terminal shown in Figure 1 - WB2X5133 will allow you to make a lasting repair or conversion to push-on type terminals. REMEMBER - examine the spade to which this terminal is to be attached. If it is dull in appearance, indicating overheating, it should be burnished or cleaned to prevent a repeat failure.

Due to high operating temperatures, electrical tape should not be used on range wiring repair or splicing.

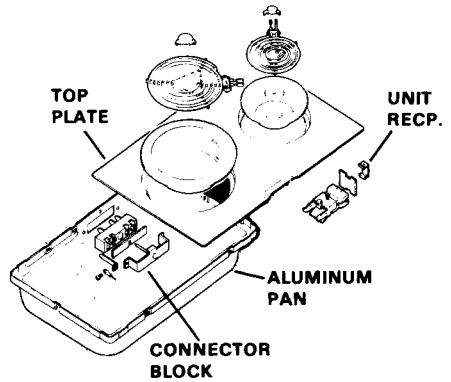
ELECTRICAL COMPONENTS

GRILL - GRIDDLE (Calrod Module)

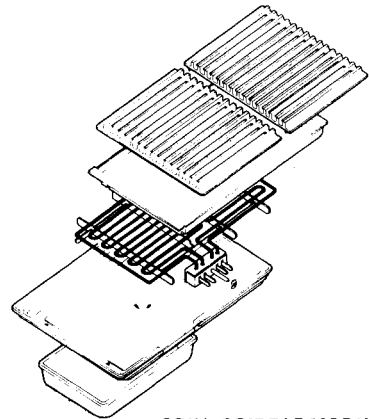
The Calrod Module or cartridge assembly consists of a bottom aluminum pan and a brushed chrome top plate. Attached to the top plate is one 8" plug-in unit receptacle and one 6". The plug-in surface units use one piece chrome ring pans. The bottom aluminum pan has two holes directly under the openings in the reflector pans. Their purpose is to allow cooling airflow into the cartridge assembly and also prevent build-up of spillovers in the pan.

The surface unit receptacles are electrically connected to a four terminal, plus ground pin, male connector block fastened to the side of the pan. A special wire lead with high temperature (200° C) insulation is required for this connection. Do not use any other lead than the one catalogued for replacement. (WB-18X5065)

To replace the male terminals, take out the two Phillips head screws holding the receptacle bracket to the aluminum pan. Pull the block assembly thru the 8" unit opening for terminal access. Note: **The two male terminals for the 6" unit are the ones located nearest the 6" unit opening and the 8" terminals are located nearest the 8" unit opening. The block assembly must be mounted with the lead opening toward the top plate.**



CALROD MODULE



GRILL-GRIDDLE MODULE

ELECTRICAL COMPONENTS

GRILL-GRIDDLE MODULE

The grill unit is a two coil assembly which plugs into the cooktop receptacle. Each coil is rated at 938 watts @ 240 volts (1875 W total). The coils are independently controlled by the front and rear infinite controls, allowing two different heats simultaneously for each half of the unit.

The unit is designed for two types of cooking, either contact grilling, using the two grill plates; or frying operations, using the Teflon® coated griddle.

ASSEMBLY

Stack up of the grill griddle heating unit for operation is as follows:

A black porcelain reflector pan is placed in the cooktop opening over the collector pan. This reflector is shaped to allow any grease drippings to flow down to the center of the reflector and through four small embossed holes into the collector pan located underneath. The holes are formed to prevent direct heat radiation from the grill unit to the collector pan and also to limit the amount of air flow through the reflector pan, reducing fire hazards.

The grill heating unit has supports which rest on the edges of the reflector pan when the unit is plugged into the cooktop receptacle.

Either the grate or griddle is then placed on top of the heating unit. A five to ten minute preheating of the grill or griddle is required for satis-

factory cooking results. If the range is operated on low power (voltage) foods may be lighter than expected and a longer preheat and grill time may be necessary for particular food types.

THE GRILL UNIT MUST BE USED ONLY WITH A HIGH AIR-FLOW VENTED HOOD TO CARRY AWAY SMOKE AND FUMES.

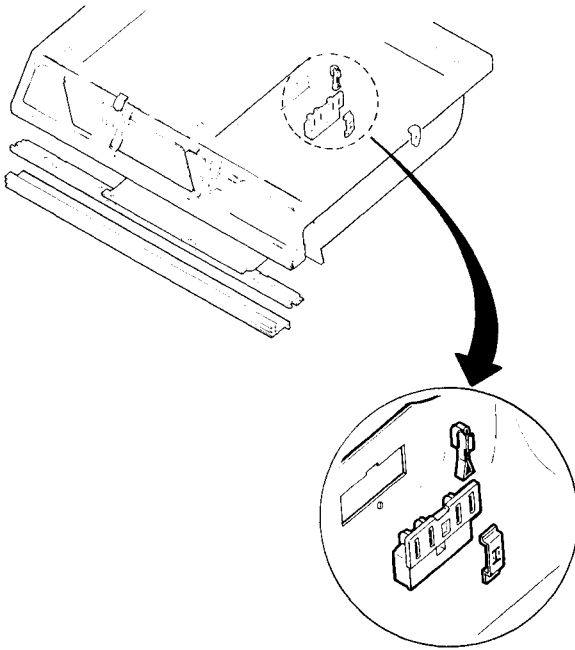
The grates should be oiled or sprayed with a non-stick vegetable spray before cooking.

After each use, accumulated grease should be removed from the collector pan to lessen smoking and odors. Grease build-up can also become a fire hazard.

COOKTOP

The cooktop receptacle block and terminals are replaceable as individual parts. Remove the screw and bracket securing the receptacle block to the cooktop tub. Pull block out of opening to expose the terminals.

All cooktop mounted controls and latch mechanism parts are serviced by raising the cooktop. After removing the front grill, take out the four screws holding the cooktop to the oven front frame. The cooktop then can be pulled forward and raised for access to the parts. Use care not to over stretch the electrical leads or thermostat capillary. Cooktop trim is serviced just like all slide-in appearance parts.

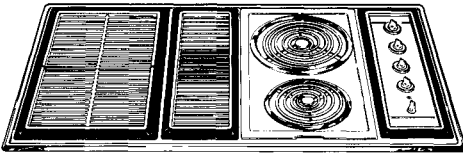


ELECTRICAL COMPONENTS

DOWN DRAFT GRILL-GRIDDLE BUILT-IN COOKTOP – JP676

The Down Draft Built-In Cooktop is a modular Grill-Griddle cooktop with a forced Air Down-Draft ventilating system.

The Cooktop is rated for 240 volt installation only - it is not Dual Rated.



The basic construction consists of a Cooktop Box Assembly with two (2) plug-in heating modules, and an exhaust blower box assembly at the bottom.

Four infinite heat surface unit switches and the exhaust fan switch are located along the right side. A master unit indicator light is also provided.

The exhaust system must be ducted to the outside of the home.

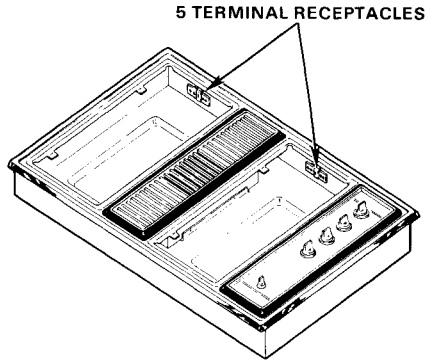
SPECIFICATIONS

- 240 volt installation only
- Rating - 7.0 KW
- Dimensions - 16½" H x 36" W x 21" D
- Counter cut-out - 34¾" x 20⅞"
- Venting:
 - Outside only
 - 300 CFM Fan
 - Min. 5" ducting

FEATURES

The cooktop is supplied with one (1) two-unit surface unit module and

one (1) Grill/Griddle module. The modules can be used on either side of the cooktop.



OPTIONAL ACCESSORIES

Several sales accessories are available for purchase as the user desires.

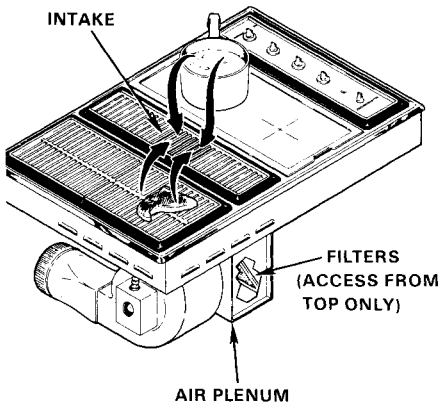
- JX36 - Surface Unit Module (2 units)
- JXG2 - Grill Module
- .03-6022 - Griddle (for grill module)
- JX56 - Glass-Ceramic Module
- JXR2 - Rotisserie

All modules are interchangeable and can be used in any combination on the **left** or **right** side. Each module plugs into a receptacle at the rear of the cooktop box.

VENT SYSTEM

When the fan is "on" - smoke, steam and cooking odors are drawn to the intake grill at the center of the cooktop. The vapors go into a large air plenum and exhaust through duct work to the outside. Two grease filters are provided inside the plenum under the intake grill. The filters simply rest diagonally in the plenum to cover the opening to the blower section.

ELECTRICAL COMPONENTS



SURFACE UNIT MODULE

The surface unit module contains two (2) plug-in units with chrome drip pans:

- ▶ 6-inch 1250 W @ 240V
- ▶ 8-inch 2100 W @ 240V

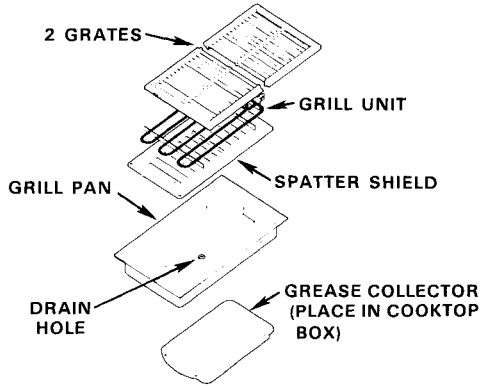
The surface unit module plugs into a 3-terminal receptacle at the rear of the cooktop (center terminal ground). A finger tab is provided at the front for module removal.

GRILL MODULE

The grill module consists of the following parts:

- ▶ 2-Grates (non-stick coated)
- ▶ Grill heating unit (2400 W. single coil)
- ▶ Spatter Shield (slotted)
- ▶ Grill Pan
- ▶ Grease Collector

GRILL MODULE PARTS



To Use:

1. Position grease collector at bottom of cooktop box. (recessed area)
2. Place grill pan in cooktop box over grease collector - hole in bottom of pan permits grease to drain into collector.
3. Place spatter shield in bottom of grill pan - prevents spatter and flash fires.
4. Plug in grill unit - NOTE: Unit has locating prong to insure correct ground connection.
5. Place grates over unit.
6. Turn unit "on" by right front or left front switch depending on which grill side is used.
7. Turn fan "on". (If forgotten - fan will turn "on" automatically when temp limit switch trips.)

GRILL TIPS

- Grill must be preheated before cooking - 5 minutes for most foods - 10 minutes for rare beef.
- A grill cooking chart is in Use and Care Book.
- Turn fan "on" during preheat and cooking.

ELECTRICAL COMPONENTS

- Remove grease from grease collector and grill parts after each use - reduces smoke and odor. Grase buildup can also be a fire hazard.
- Do not leave grill unattended while in use.
- Grates can be seasoned with cooking oil before first use - Preheat at high for 10 minutes with fan "on."

USE OF EXHAUST FAN

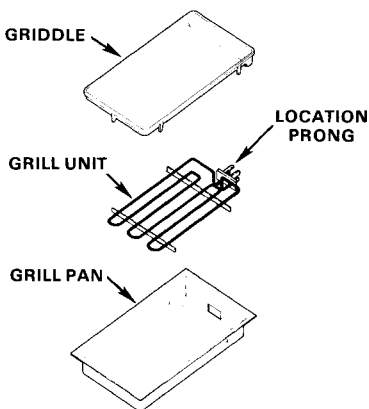
The exhaust fan can be used anytime, but it **should always** be used when the grill module is being used - removes smoke, etc. A separate switch is provided for the fan. If the fan is not turned "on" by the user, it will automatically turn "on" when the grill area gets hot.

GRIDDLE (Silverstone® Coated)

The non-stick coated griddle is designed to be used over the grill heating unit. **DO NOT USE OVER THE SURFACE UNITS.**

The griddle requires use the the **Grill Pan and Grill Unit Only**. The grease collector, spatter shield, and grates are not used.

GRIDDLE USE



To Use:

1. Remove parts not required and place the grill pan in the cooktop.
2. Insert the grill unit.
3. Place the griddle directly over the grill heating unit.
4. Turn unit "on" by right front or left front switch depending on grill location in cooktop.

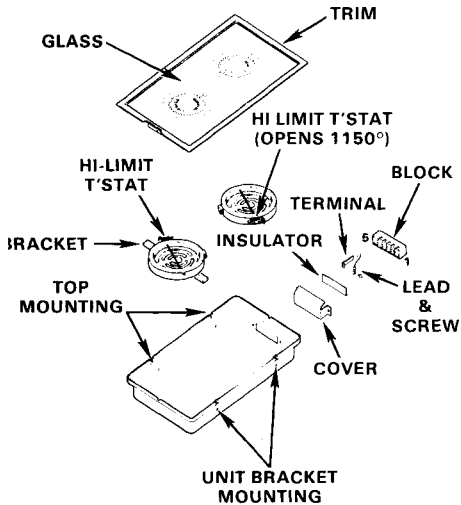
GRIDDLE TIPS

- Most foods require preheating griddle on high 5-10 minutes before cooking.
- Preheating longer than 10 minutes can damage griddle non-stick coating.
- A griddle cooking chart is in Use and Care Book.
- Griddle can be seasoned with cooking oil. Preheat at high for 10 minutes.
- Griddle non-stick coating can be damaged - avoid sharp utensils in use and storage.

GLASS CERAMIC MODULE - JX56

The JX56 Black Glass ceramic module is available **only** as a sales accessory.

The module has a **Black Glass** top and two (2) 6-inch 1200 watt heating elements. The module has the same type 5-terminal plug as the surface unit module can be used on either side of the cooktop.



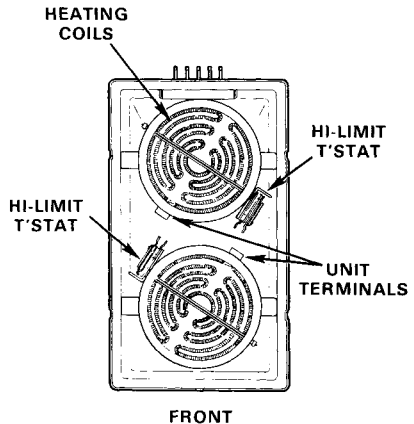
Each heating element contains a high-limit thermostat to limit the glass surface temperature. The thermostat is calibrated to open at 1150° glass temperature (protects glass in case of no load condition) **NOTE: The calibration is pre-set and no adjustment should be attempted.**

The heating element and high-limit thermostat are serviced as a complete assembly.

To Service the Module:

1. Remove module from cooktop.
2. Remove glass and trim assembly - 2 screws on each side near the trim.
NOTE: Glass top and trim are water sealed - and serviced as an assembly.
3. Heating elements are mounted to separate brackets fastened to the module box by 1 screw on each side. After removing the element and bracket assembly, the bracket can be removed from the element (2 screws).
4. When replacing heating elements - before attaching bracket to element, select hole locations on bottom of element to provide correct unit orientation after assembly as shown.

CORRECT UNIT AND T'STAT ORIENTATION



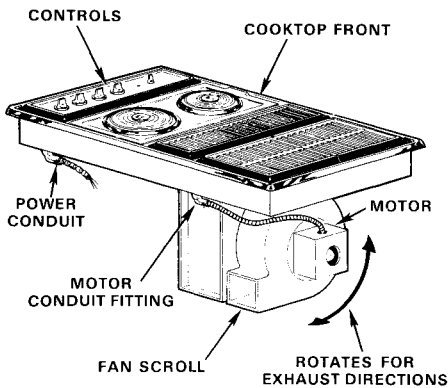
ELECTRICAL COMPONENTS

INSTALLATION

The cooktop requires a 34³/₄" x 20¹/₈" counter cutout for installation. A hold down bolt at each end fastens the cooktop to the underside of the counter.

EXHAUST DUCT

Proper venting is very important for satisfactory performance. The fan scroll can be rotated by hand to line up with duct for rear or bottom exhaust. The venting system is limited to 5" and 6" round, or 3¹/₄" x 10" rectangular duct.



The maximum equivalent duct length (straight plus fittings) is as follows:

<u>SYSTEM</u>	<u>TOTAL FEET</u>
5"	20 Feet
6"	26 Feet
3 ¹ / ₄ " x 10"	26 Feet

Some common fittings and their equivalent straight duct values are:

<u>FITTINGS</u>	<u>FEET OF DUCT</u>
5" Elbow	4
6" Elbow	5
5" - 6" Transition	1.5
5" - 3 ¹ / ₄ " x 10" Transition	5
Recessed Wall Caps	5

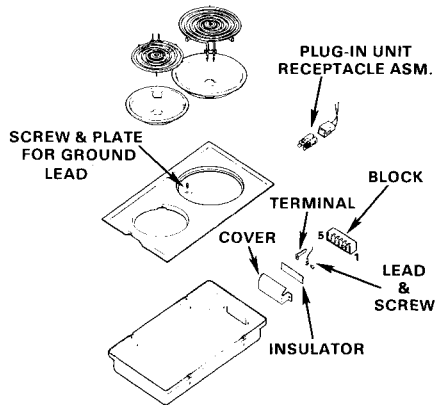
NOTE: If flex tubing is used:

Each foot 5" flex = 2¹/₂' metal duct.

Each foot 6" flex = 2' metal duct

MODULE PLUGS AND RECEPTACLES

The 5 terminal module plugs and receptacles are served by their ceramic blocks and individual terminals. The plug-in surface unit receptacles are serviced by a complete receptacle and lead assembly.



After removing the module from the cooktop, any connector can be serviced.

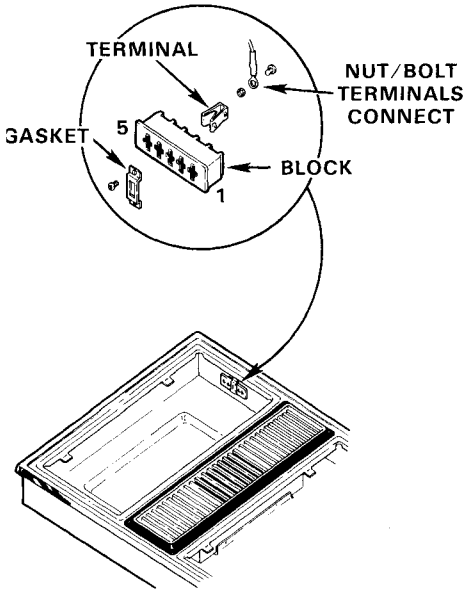
Module Plug - Can service through rear unit opening. On glass top module, the top must be removed. Plugs are mounted by 2 screws. an electrical insulator and metal cover houses the terminal connectors inside the module pan.

ELECTRICAL COMPONENTS

The switch bracket assembly can be serviced by removing 4 screws.

NOTE: Be certain the infinite heat switch gasket is always in place between the switch and the bracket. It serves as a liquid seal for the switch.

CONTROL SECTIONS



Plug-In Surface Unit Receptacle - Serviced with complete receptacle and lead assembly. Leads may be original length with ring terminal connection, or short leads.

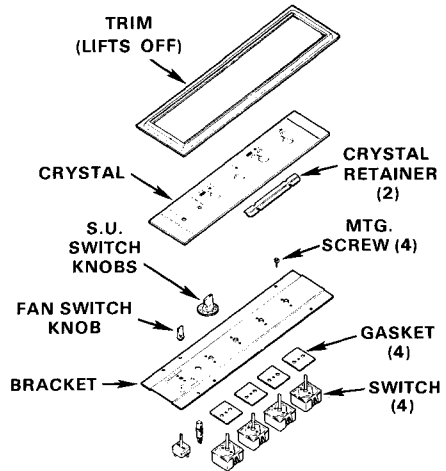
- a) If original type - make connection at module plug.
- b) If short leads - cut and splice. Wire nuts and shrink tubing are supplied with kit. Shrink tubing should be used over the wire nuts.

Module Receptacle - Remove mounting strap and pull receptacle into cooktop box area. Spring clip type terminals are used. Terminal must be squeezed at front end and pushed out rear of block. Wire connections are made with nut and bolt to terminal.

CONTROLS

All controls are located at the side of the cooktop. The control trim and crystal assembly lift off for easy cleaning and service - just remove the knobs.

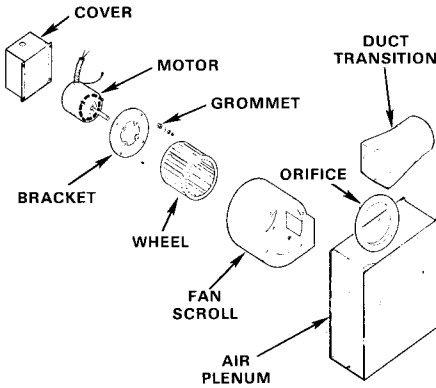
VB1341, WB1340



FAN MOTOR REPLACEMENT

1. Disconnect power. Remove cooktop assembly from counter and position for access to motor end.
2. Remove motor cover (4 screws). Remove motor assembly and remove wheel and mounting bracket.
3. Open control compartment and disconnect motor leads. Then disassemble motor conduit fitting at rear of cooktop Motor Conduit Fitting.

ELECTRICAL COMPONENTS

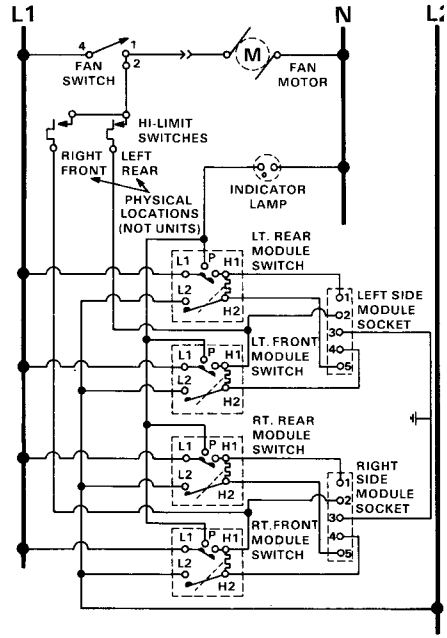


4. Pull 4-6 inches of old motor leads from control compartment through conduit hold and cut leads - will use later to tie and pull new leads.
5. Twist conduit out of motor bushing and remove motor.
6. Feed new motor leads through conduit. Tie to cut leads and pull through into control compartment. Untie and discard old leads.
7. Connect new leads and reassemble motor and rear conduit fittings.

CIRCUITRY

The circuit is simple and straightforward. All heating units are connected through the module sockets as follows:

Units	Terminals
● Front units (and grill) -	2 & 4
● Rear units -	1 & 5



Two separate "Temp Limit Switches" provide the automatic fan function one for the right side and one for the left side module use. The switches are normally open, and calibrated to close at 110° F. When a switch closes it by-passes the fan switch and turns the fan "on". As long as the limit switch is closed, the user fan switch has no control of the fan. In this case, the fan will turn "off" when the temp limit switch opens or when the grill unit switch is turned "off."

The **right side** limit switch is located in the control compartment near the front, and is accessible after removing the switch bracket assembly.

The **left side** limit switch is located in the wiring raceway behind the left module. To gain service access, the cooktop assembly must be removed from the installation, and the chrom top removed (14 screws around the inside edges.)

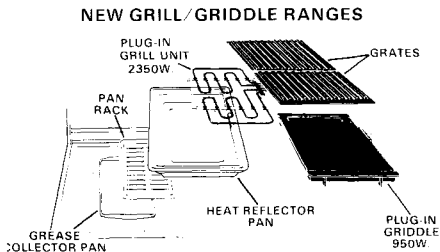
ELECTRICAL COMPONENTS

GRILL/GRIDDLE RANGES - 1984

The new Grill/Griddle Ranges have been redesigned to improve the performance of the grill and griddle operation.

In addition to the performance improvement, the body structure has also been changed to the same type used on all other current slide-in ranges.

All models come equipped with a two-unit surface unit module, grates, grill unit, heat reflector pan, grease collector pan and rack, and a griddle. Any module can be used on either side of the cooktop.



As noted by the model numbers, 240 volt and 208 volt models will be available.

WARNING

Since both 208 and 240 voltage models are available, be sure that the range power supply complies with the range voltage rating. Never use a 208 volt grill or griddle unit on a 240 volt range - the unit could erupt and cause injury, or generate excessive heat on controls, or create a possible fire hazard with grease.

VENTILATING HOOD

A high airflow ventilating hood is recommended to be used during operation of the grill to remove smoke.

HIGHER WATTAGE GRILL

The plug-in grill unit is a 2350 watt unit as compared to the previous 1875 watt unit. The unit consists of two (2) separate 1175 watt coils. The coils are independently controlled by the front and rear infinite controls, allowing different heats simultaneously for each half of the grill.

The heating unit **will glow red** on high heat to provide more intense radiant heat for improved cooking performance.

REFLECTOR PAN

A porcelain heat reflector pan, with an **open bottom**, is used to house the grill or griddle. The reflector pan is shaped to reflect heat back towards the food and to allow grease to flow through the open bottom into the grease collector pan rack. The reflector pan should be cleaned after use to prevent smoke and baked on grease. The pan is a snapfit in the cooktop opening.

GREASE COLLECTOR PAN AND RACK

The grease collector pan and rack rests in the well under the reflector pan. The collector pan should always be in place during use of the grill or griddle.

The rack should be used with the **grill** to reduce spatter and smoke, but

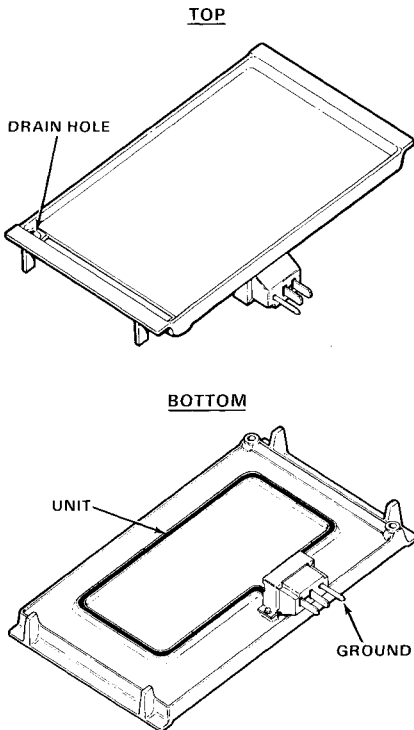
ELECTRICAL COMPONENTS

does not have to be used with the griddle.

PLUG-IN GRIDDLE

The new plug-in griddle has a self-contained single 950 watt heating unit cast in the bottom of the griddle.

The griddle is cast aluminum and contains a non-stick coating for ease of cleaning. A grease drain hole is located on each side of the griddle to drain the grease into the collector pan. The griddle can be fully submerged when washing, but **should not be put in dishwasher** — non-stick coating could be damaged. The griddle is controlled by the right front control for the right side location, and by the left rear control for the left side location.

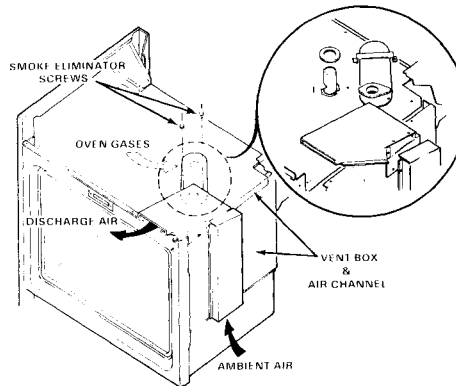


OVEN

The oven and all oven insulation are enclosed in a metal box. The box construction allows much more room for air circulation between the oven box and body.

Oven venting is accomplished by mixing ambient air from under the oven, by means of an air channel, with the oven gases inside a vent box, and then discharging the exhaust out the front grill under the cooktop — similar to previous grill/griddle range.

The vent body and vent box has been redesigned to permit gasket seals at the vent tube exit of the oven liner, and also between the vent body and vent box. This design improvement is to reduce the possibility of oven gases leaking by the system and fogging the timer crystal.



ELECTRICAL COMPONENTS

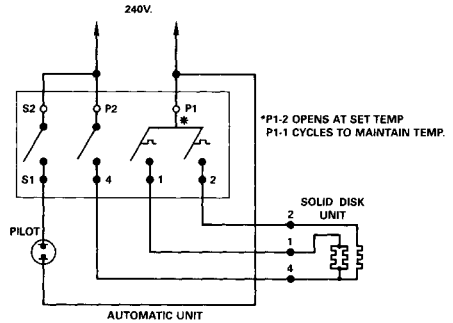
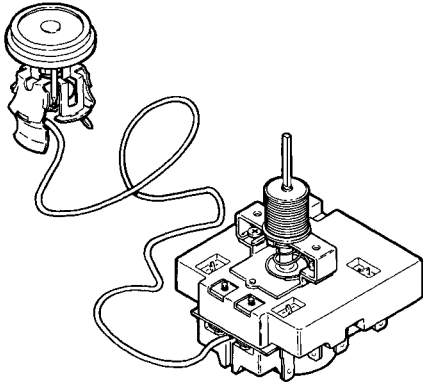
AUTOMATIC SURFACE UNIT SOLID DISK HYDRAULIC

The control terminals are marked as follows:

- P1 & P2 - 240 Volt Line
- P1 & 1 - Main cycling contact
- P1 & 2 - Minor cycling contact
- P2 & 4 - Fixed power contact
- S1 & S2 - Pilot light contact

When turned "ON", the control turns the unit "ON" at full power regardless of the setting. Slightly before the preset temperature is reached contacts P1-2 open and drops out one coil. When the temperature is reached, contacts P1-1 cycle the remaining coil(s) of the unit "OFF" and "ON" as needed to maintain the temperature.

The P1-2 contact will only close again if a colder food load is added or if the control is set to a higher setting, then the cycle would start over again.



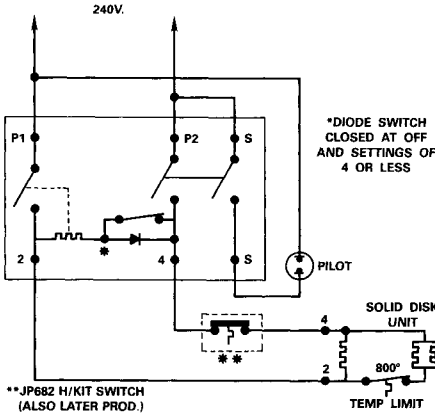
STANDARD INFINITE HEAT SWITCH SOLID DISK - RANGE

30" Free Standing Ranges use the standard voltage sensitive type infinite heat switch.

Built-In Cooktops use a special switch. The switch is similar, in operation, to other familiar infinite heat switches except for a built-in diode and shunt contact. A diode is connected in series with the switch heater, and a set of contacts across the diode.

The shunt contact is open at all switch settings above (4) and up to (max.). At these settings the diode is in series with the internal 5K OHM internal heater and insures a longer "on" time to provide cycling for the mid-scale and higher settings.

ELECTRICAL COMPONENTS



At setting (4) and below, the diode is shunted by the closed contact. This provides more power for the heater and increases sensitivity of the P1-2 cycling contact to insure a low percent "ON" time at the lower settings (Min = Apprx. 3-5%).

NOTE: The shunt contact is also closed when the infinite heat switch is in the "OFF" position.

The heater and diode can be diagnosed with an ohmmeter test at terminals 2 and 4:

SW. SETTINGS	RESISTANCE
OFF	Apprx. 5K Ohms (either polarity)
MIN to 4	Apprx. 5K Ohms (either polarity)
4+ to MAX	High Ohms One Polarity only*

***NOTE:** Digital meters require extremely high setting - (like 20 MEG OHM scale).

SOLID DISK UNITS

The solid disk heating units are made of heavy cast iron with the electrical element encased inside the casting. All 6-inch units are 1500 watts, and 8-inch are 2000 watts. Leads are attached by screws.

Solid elements take longer to boil water than the calrod type.

Typical Test - Flat Bottom Pan

- 1 qt. water 75° start temp.
- 240V line voltage
- Time to bring to boil:

6" Unit

5 - 6 Min.

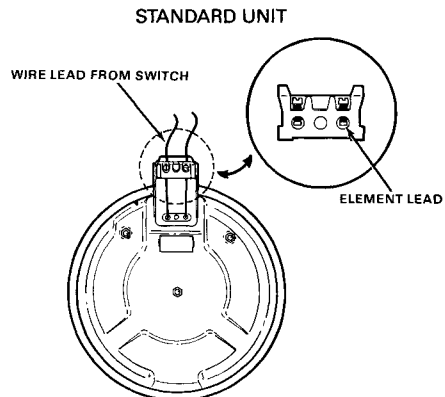
8" Unit

6 Min. +

STANDARD UNITS (Non-Sensi-Temp)

Standard units consist of three coils for 6-inch and 8-inch units. A temperature limit switch, also in the casting, protects the Cooktop and utensil from overtemperature damage (such as no load or pan boiling dry or very uneven utensil bottom).

The limit switch cuts two (2) of the three (3) coils "OFF" when the switch operates during a temperature overload condition. The switch is an automatic reset.



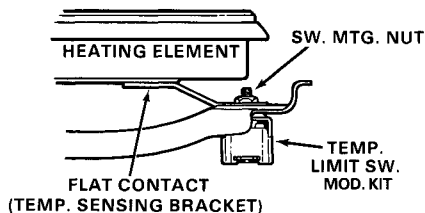
ELECTRICAL COMPONENTS

NOTE: Uneven bottom pans will cause the overtemperature limit switch inside the standard units to trip and reduce the unit wattage to a low level that will not provide the required heat.

JP682H1 BUILT-IN GLASS COOKTOP

Cooktop glass breakage can occur on some early JP682H1 models due to uneven pans.

A modification kit (WB 2X4552) is available for glass breakage problems. The kit consists of 4-special temp. limit switches & necessary hardware to install the external switches in the circuit.

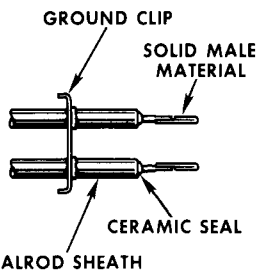


NOTE: External circuit limit switches used in production starting with JP682H3 model.

PLUG-IN SURFACE UNITS (1985 and Later)

The plug-in surface has solid terminals and a one-piece molded phenolic block receptacle with a snap-on mounting bracket.

Plug-in unit terminals should be straight and parallel for ease of insertion and removal. If terminals require straightening be careful not to damage ceramic seals.

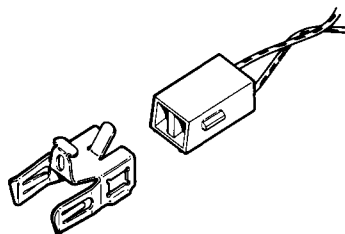


RECEPTACLE SERVICE

The receptacle is serviced as an assembly. The service part consists of the receptacle, two (2) short leads with pre-attached terminals, two (2) ceramic wire nuts, and a piece of shrink tubing.

Cut original leads close to receptacle and splice in new receptacle with ceramic wire nuts, cover wire nut connections with the shrink tubing.

IMPORTANT - Receptacle has molded ribs on the bottom side. Be certain to install in bracket with **ribs facing down** - receptacle will float freely.



Unit Not Sitting Flat

1. Check unit terminals for being straight and parallel.
2. Check receptacle for being mounted squarely to cooktop—not cocked.

ELECTRICAL COMPONENTS

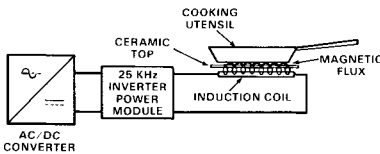
3. Raise rear of receptacle by removing unit and pushing rear of receptacle up toward cooktop as far as possible.
4. Insert unit and check for flatness seating.

INDUCTION COOKING

Induction cooking works by the use of magnetism. Each cooking area has a flat induction coil under a ceramic glass top.

The principle is much like a transformer, with the induction coil the primary winding, and the utensil being the secondary winding.

The cooking utensil is placed on the ceramic plate, just above the induction coil. High frequency currents are then induced, through the ceramic plate, into the cooking utensil by the strong alternating magnetic field. This produces high surface temperatures in the metal utensil, which provides the heat necessary to cook the food.



INDUCTION COOKING APPLIANCE

- FLAT COIL UNDER GLASS TOP
- INDUCED CURRENT PRODUCES HEAT IN UTENSIL
- MUST USE FERROUS (MAGNETIC) UTENSIL

Utensils

Since induction cooking works by magnetic induced current, all cooking utensils must be iron or steel (magnetic). Aluminum cannot be used.

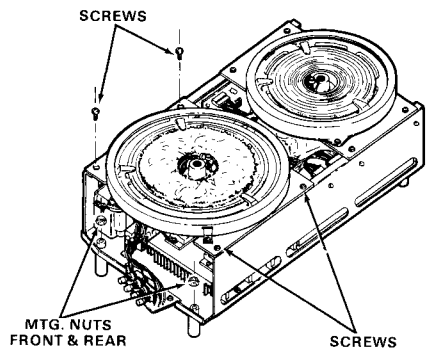
POWER MODULES

The power modules are located inside the Cooktop case. Each module contains a 6-inch and 8-inch heating coil, and all of the electronic components associated with the module.

Each heating unit has its own smart board, filter coil, capacitors, and power transistor. The modules also contain a low voltage transformer fan, and other miscellaneous parts.

Each module is serviced only as a **complete assembly**.

NOTE: On some early models the service mini-manual refers to replacement of some component within the module – this was changed later to module service only.



ELECTRICAL COMPONENTS

WARNING:

Disconnect all power before opening Cooktop for service. The power module chassis are electrically hot when power is connected.

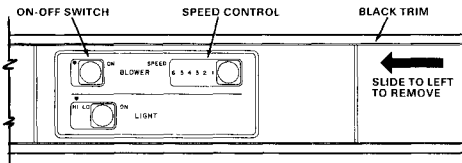
For service procedures and diagnostic flow chart, refer to mini-manual supplied with product.

VARIABLE SPEED HOOD MOTOR Slide Control

Speed control, on-off switch, and light switch are integrated on an electronic board.

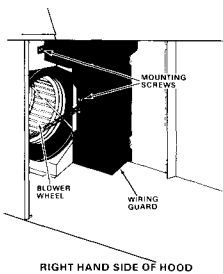
To Service

1. Slide control trim to left

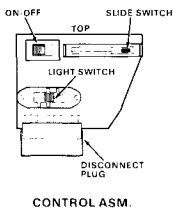


CONTROL PANEL

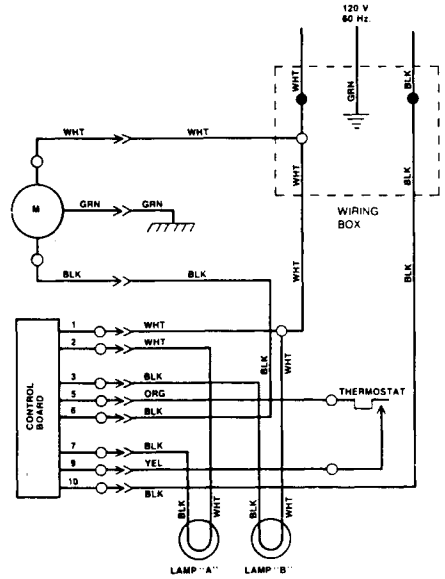
2. Remove wiring guard.



3. Remove control — 2 screws.



4. Service test — jumper pins 6 & 9 — motor should run at high speed. If it does, replace control.



NOTE: To replace auto fan thermostat, the fan motor must be removed.

DOOR TOGGLE SWITCH - BUILT-IN OVENS

The mechanical door toggle switch was eliminated on all Built-In Ranges, and replaced by a **push-button switch** on the backsplash or control panel. (Started 1986 J3 and later models.)

NOTE: The door operated light switch will still be used for automatic light operation when the door is opened and closed.

ELECTRICAL COMPONENTS

TEMP LIMIT SWITCH (U.L.)

A temp limit switch has been added to some standard ovens to meet a new U.L. (Underwriters' Laboratories) regulation regarding "BAKE" Run-a-way Protection (external temperature).

The types of ranges where the limit switch has been added are as follows - all standard ovens:

- Standard oven Built-In models
- Top oven of Hi-Low Ranges
- 21-inch Ranges
(All 1986 J2 and later models)

A thermal limit switch (same as used in self-clean ranges) is used in the above models, except for the Hi-Low Top Oven, which uses a thermal disk type switch. (Inside control area on insulation guard).

OVEN THERMOSTAT 30" Drop-In & Some 40" F.S.

The oven thermostats are the hydraulic type, but are not interchangeable with the standard thermostat used on other models.

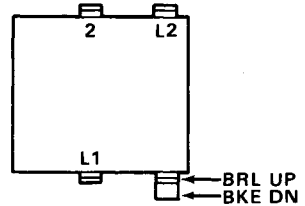
The thermostat for the 30" Drop-In and large oven on 40" free standing ranges, has only one set of contacts (2 unmarked terminals.)

STD. OVEN T'STAT.



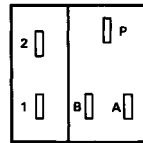
The thermostat for the small oven on 40" ranges is a combination select switch and thermostat. Two different thermostats have been used because of circuit changes.

LEFT OVEN
SW & T'STAT (SMALL)



EARLY PRODUCTION

LEFT OVEN
SW. & T'STAT (SMALL)



LATER PROD. "HI" & LATER

ADJUSTING OVEN TEMPERATURE (30" Drop-In & 40" F.S.)

Check oven calibration at 375° using an unshielded thermocouple. The normal temperature limits are as follows:



LARGE OVEN

375°F Bake
Normal average temp 355° – 395°F
Amplitude 40° – 80°F.

SMALL OVEN

375°F Bake
Normal average temp. 350° – 390°F
Amplitude 10° – 28°F

A calibration screw is provided in the end of the shaft. To change calibration, remove the knob and insert a small screwdriver (3/32" dia.). Hold the shaft firmly and turn the screw.

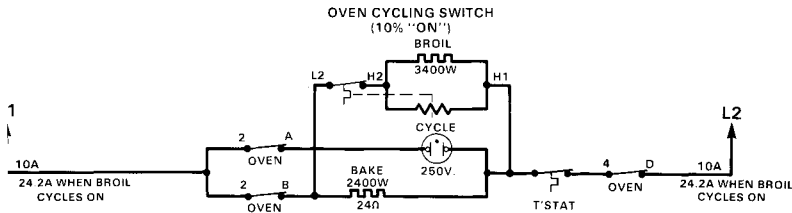
- ▶ Clockwise  to lower.
- ▶ Counter-clockwise  to raise.

Aprox. 1/8 turn = 10°F.

OVEN CYCLING SWITCH

On all 30" Drop-In, and late production 40" models (HI & Later); an oven cycling switch is used to provide top heat during "BAKE". The switch is an infinite heat switch without shaft) calibrated for a fixed 10% on-time. The switch is located in the control compartment and cannot be adjusted.

A typical circuit is shown below:



Due to the circuitry, when the ovens are used in the **Broil Mode**, the **Bake Unit** will also be **energized for a few seconds when the oven is first turned "ON."**

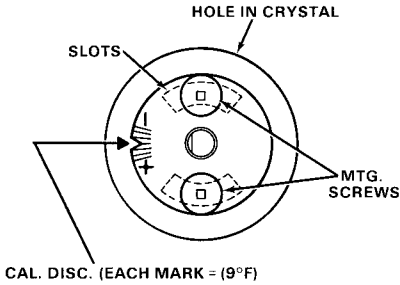
This is a **normal situation** which does not affect broiling but would be noticed by the user or service



ELECTRICAL COMPONENTS

OVEN THERMOSTAT (Solid Disk Ranges)

The hydraulic oven thermostat is mounted to the backguard panel with two screws. Two circular segments or slots in the panel allow the control to be rotated when the two screws are loosened.



An embossed point in the panel indicates center position. A circular calibration disc held in place by the two screws is marked off in 9°F segments.

Note current setting of control before making any adjustments.

After determining which way to rotate control, turn control knob to end of movement. Then loosen screws and gently rotate control one segment (or what is required), and retighten mounting screws.

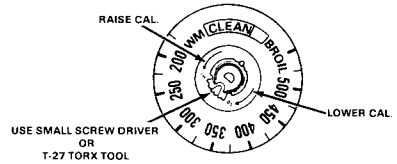
OVEN THERMOSTAT (Dials Behind Glass)

Bake Temperature Adjustment

1. Set knob at "CLEAN" — prevents shaft turning.

2. Remove knob to access notches on dial.
3. Move dial in desired direction each notch approx. 20°.

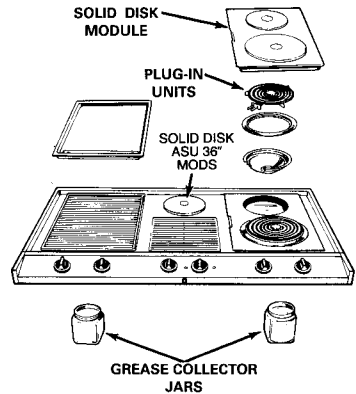
BAKE TEMP ADJUSTMENT



ACCESS THRU GLASS PANEL

1987 DOWNDRAFT COOKTOP (30" & 36")

The cooktops consist of various models in both 30" & 36" widths. Most models will accept (2) plug-in modules. Models are shipped with **grill module only**. Optional accessory modules, such as surface units, solid disk, griddle, and inductor modules, are available.



Electro-mechanical and Electronic Touch Control models are available. All controls are on panel across front.

ELECTRICAL COMPONENTS

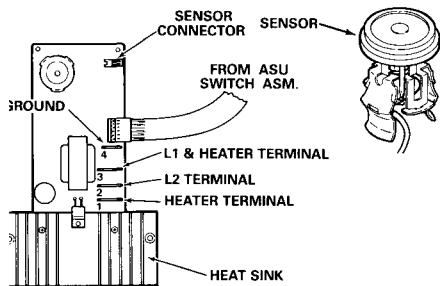
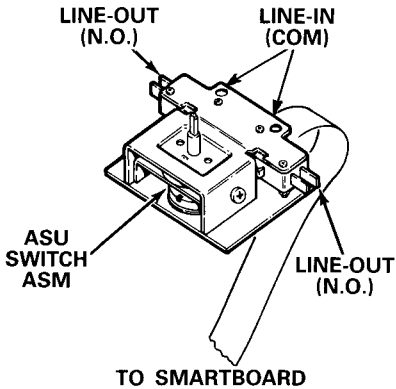
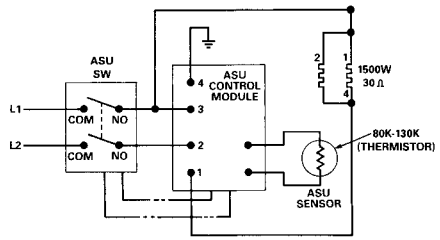
Refer to disassembly section and mini-manual for service details.

AUTOMATIC SURFACE UNIT Solid Disk – Switch/Smart Board

This automatic unit control system consists of the following:

- ▶ Solid Disk unit
- ▶ ASU Switch Asm. (Knob control)
- ▶ Smart Board Asm. (Control)
- ▶ Sensor (Thermistor)

The ASU Switch asm. consists of a knob operated potentiometer and micro-switches, mounted on a small circuit board. The 240V line input to the control is controlled by the switches. The sensor and ASU Switch Asm. plugs onto the Smart Board.



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INTRODUCTION

This feature is cleaning by heating the oven to a temperature of approximately 880°. The results are decomposition of oven soil. In the temperature range, between 700° and 880°, cleaning begins by initially removing moisture and then breaking down the hydrocarbons into smoke and gases. These by-products are further heated, as they pass through the oven vent system, by a smoke eliminator, which breaks down the smoke into a clear odorless gas which resembles a "heat" odor.

These relatively high oven temperatures are above the flash point, or burning point of oven greases, cooking oils, etc. and therefore, the cleaning process is controlled by limiting the amount of oxygen entering the oven. Although this oven cleaning is commonly referred to as "burning off the soil", the process is a controlled temperature / oxygen decomposition of oven soil. During cleaning, the time element is also considered based on the degree of soil, light - medium - or heavy.

Although the oven is capable of cleaning many times the normal soil load without a noticeable smoke odor, it is not an incinerator and for best results, the cleaning process should be performed frequently according to soil loads and approximate cleaning times as classified below:

- a. Oven alone, 2 hours for light soil, 2 to 3 hours or more for moderate to heavily soiled oven.

- b. Oven plus aluminum reflector pans, 2 to 3 hours of more, depending upon amount and type of soil.
- c. Oven plus removable panels from companion oven, 2 1/2 to 3 1/2 hours or more, depending on amount and type of soil.

The above cleaning times are based on soil evenly distributed throughout the oven. Whenever heavy spillovers occur, they should be wiped up to remove the bulk of soil from concentrating in one area of the oven. The type of soil present will also affect the cleaning time. Baked-on barbeque sauces are the most difficult to remove, with cooking oils, grease and fats being the easiest to remove.

At the end of the cleaning cycle, a light residue of white ash remains, which can be wiped out with a dry cloth.

BEFORE CLEANING

Before operating the self-clean oven, check for these things:

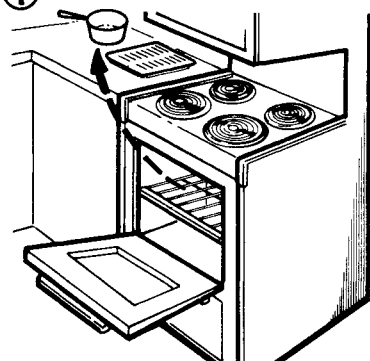
1. Clean spatters or spills on oven door outside gasket and area around oven opening. **NEVER USE COMMERCIAL OVEN CLEANER IN OR AROUND THE SELF CLEAN OVEN.**
2. TO PREVENT SMOKING:
 - a) Wipe up excess grease or boil-overs on oven bottom or reflector pans; remove foil from reflector pans, if it was used to line them.
 - b) Remove broiler pan and rack which came with the range and other cooking utensils.

SELF CLEAN OVEN

- c) Be certain cover over rotisserie outlet is in place.
- 3. Add companion oven panels and aluminum reflector pans, if desired.
- 4. Raise the window shield by lifting handles to fully raised position. Shield on window door must be up, so door can be latched. (Later models have no shield)

OPERATION (With Push Button Latch Switch)

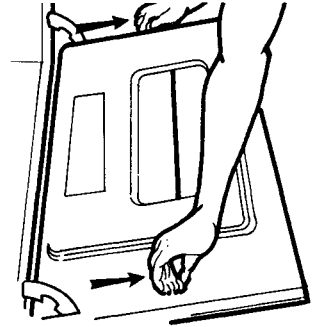
1 TO START SELF CLEAN OPERATION



REMOVE ALL COOKWARE/FOOD AND HEAVY SOIL DEPOSITS FROM OVEN.

IF YOU HAVE A WINDOW DOOR

2



**SLIDE WINDOW SHIELD IN DOOR TO THE FULLY CLOSED POSITION, THEN CLOSE DOOR.
(LATER MODELS HAVE NO SHIELD)**

3

KEEP DEPRESSED . . .

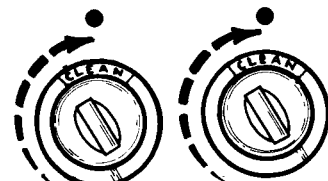
WHILE LATCHING . . .



PUSH AND HOLD LATCH RELEASE BUTTON WHILE SLIDING OVEN LATCH TO CLEAN.

4

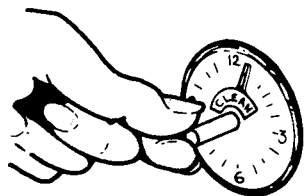
SET BOTH



TURN OVEN SET AND OVEN TEMP. KNOBS CLOCKWISE TO CLEAN

5

ON THE CLOCK



SET POINTER ON CLEAN DIAL AHEAD FROM PRESENT TIME OF DAY, 1½ HOURS FOR LIGHT SOIL TO 3 HOURS FOR HEAVY SOIL.

EXAMPLE: IF TIME OF DAY IS 9:30 SET CLEAN STOP DIAL TO 12:30 FOR A 3 HOUR CLEAN.

SELF CLEAN OVEN

CLEAN LIGHT SHOULD BE



WAIT!

THE OVEN IS CLEANING

WHEN THE CLEAN CYCLE HAS ENDED,
THE LOCK LIGHT GOES OFF.

- PUSH & HOLD LATCH RELEASE BUTTON WHILE SLIDING LATCH BACK TO "COOK".
- LOWER WINDOW SHIELD.
- TURN OVEN SET KNOB "OFF".

NOTE: CHECK START DIAL TO BE CERTAIN POINTER IS AT THE SAME TIME AS THE RANGE CLOCK. IF NOT, TURN START KNOB UNTIL IT POPS OUT AND CANNOT BE TURNED.

OVEN CLEANING LIGHT will glow when all steps have been set up properly.

LOCK LIGHT and fan (on models so equipped), come on when oven heats to temperatures where cleaning takes place. The light will stay on during cleaning time and until oven heat decreases in temperature again. DOOR AND WINDOW GET HOT DURING SELF-CLEAN CYCLE. DO NOT TOUCH.

WHEN LOCK LIGHT IS OFF, PUSH AND HOLD LATCH RELEASE BUTTON WHILE SLIDING LATCH LEFT TO COOK POSITION. (Lower window shield by pushing handles toward bottom of window.)

TURN OVEN SET KNOB TO OFF,
TURN OVEN TEMP KNOB TO LEFT
(COUNTER - CLOCKWISE) PAST
BROIL.

The Components Which Make up the
Self-Clean System Are:

OVEN SWITCH

In the clean position, energizes various portions of the self-clean circuitry.

DUAL RANGE THERMOSTAT - D.R.T.

In the clean position, controls oven temperature between 840° F-920° F. This temperature cannot be adjusted. If not within specifications, thermostat must be replaced.

TIMER - (CLOCK)

The clean/stop dial is advanced 1 1/2 to 3 hours which determines the length of the self-clean cycle.

THERMAL SWITCH

During bake or broil operation-performs as an over temperature control-opens L1 supply if temperature exceeds 620° F.

During the self clean cycle the thermal switch opens the door latch circuit preventing the door from being opened and turns on the lock lamp. On models so equipped it also turns on the clean fan.

SELF CLEAN OVEN

LATCH RELEASE SWITCH & SOLENOID

When energized, allows actuation of the door locking mechanism which in turn positions the latch switch(s) properly for self-clean operation.

SMOKE ELIMINATOR

Minimizes the amount of smoke and odors which would otherwise be vented into the room during the self-clean cycle.

BAKE & BROIL UNITS

Used to heat the oven during self-clean operation—some models do not use the bake unit—see mini-manual for your model.

MULLION OR EXTERNAL UNIT

Supplies additional heat around the oven liner at the front during cleaning.

CLEAN LIGHT

Indicates controls are set properly for self-clean cycle.

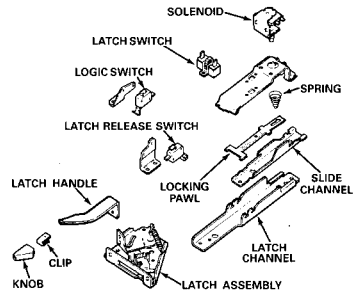
LOCK LIGHT

Indicates oven temperature has exceeded 550 ° F.

FAN

On models so equipped, during the locked door portion of the clean cycle, forces air upward through air channels reducing exterior surface temperatures.

LATCH AND LOCK ASSEMBLY



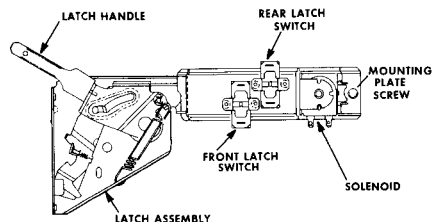
LATCH ASSEMBLY AND LATCH HANDLE

The primary function of this assembly is to lock the oven door in the closed position whenever the oven is set for CLEAN and the oven temperature is above 625 ° F. The latch assembly also moves the locking channel to actuate the latch switches.

NOTE: For Combination Ranges (with Microwave Feature)—also refer to Electrical Components Section under Microwave Ovens.

DOOR LATCH SOLENOID

The solenoid is mounted to the rear of the lock assembly. When the solenoid is energized by the latch release switch, it releases the locking pawl from the locking slide channel and allows the latch handle to be moved to either the COOK or CLEAN position.



Top View of Latch and Lock Assembly

SERVICING

Disconnect power to range.

Remove the mounting plate screw from the rear of the lock assembly. Lift the mounting plate and pull it to the rear of the assembly to release the tabs from the latch channel.

Turn the mounting plate over to gain access to the solenoid screws.

NOTE: For Combination Ranges (with Microwave Feature)—also refer to Electrical Components Section under Microwave Ovens.

LATCH SWITCH

The latch switch is a momentary type, pushbutton operated switch, with the normally closed contacts rated 21AMPS@ 240 VAC. Its function is to insure that the oven door is in the locked position before the oven units can be energized for CLEAN.

The latch switch(s) are fastened to the lock assembly mounting plate and are actuated by the locking slide channel.

Circuits for the dual range thermostat may require either one or two latch switches. In applications where only one latch switch is required, the switch will always be mounted in the rear location.

Schematics and wiring diagrams having two latch switches will refer to them as front latch switch and rear latch switch.

SERVICE CHECKS

With the latch handle in COOK.

Rear Latch Switch — Plunger Up, Contacts OPEN, $\infty \Omega$

Front Latch Switch — Plunger Down, Contacts CLOSED, 0Ω

With the latch handle in CLEAN.

Rear Latch Switch — Plunger Down, Contacts CLOSED, 0Ω

Front Latch Switch — Plunger Up, Contacts OPEN, $\infty \Omega$

TO REPLACE

Disconnect power to range.

Remove the mounting plate screw from the rear of the lock assembly. Lift the mounting plate and pull it to the rear of the assembly to release the tabs from the locking channel.

Turn the mounting plate over to gain access to the latch switch screws.

DUAL RANGE THERMOSTAT—D.R.T.

The dual range control is a diaphragm type, hydraulic thermostat which controls the normal span of oven temperatures from WARM (150° F) to BROIL (550° F) plus a precalibrated CLEAN temperature of 880° F.

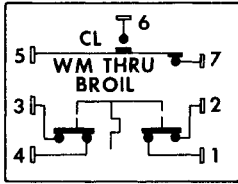
CAUTION

The hydraulic material contained within the sealed capillary/bulb assembly of this control is caustic. If any of this material is contacted by skin, first wipe area dry and wash with water.

Repeated bending or very sharp bends of the capillary/bulb should be avoided. If the assembly should be ruptured, a simple crimp made by pliers on each side of the rupture will adequately reseal the assembly for safe handling.

SELF CLEAN OVEN

Cycling contacts 1 to 2 and 3 to 4), for the heating unit circuit are snap action, double pole-single throw, and are rated at 21 AMPS 125/250 Volt A.C.

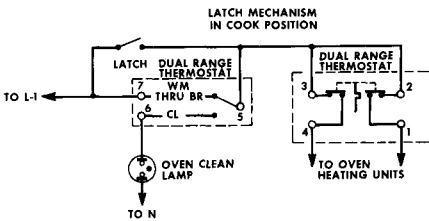


CONTACTS	
1 TO 2	CYCLING CONTACTS
3 TO 4	CYCLING CONTACTS
5 TO 6	LOGIC SWITCH
5 TO 7	LOGIC SWITCH

Dual Range Thermostat Schematic

The thermostat also contains a logic switch which is actuated by rotation of the control shaft. The purpose of the logic switch is to prevent oven operation above normal cooking temperatures without the door latch mechanism set for CLEAN.

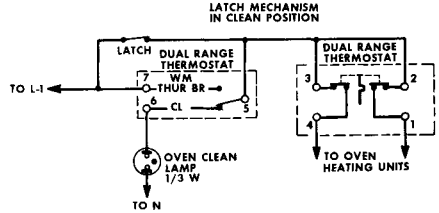
Contacts 5 to 7 of the logic switch are closed during all thermostat settings from WARM to BROIL completing the line circuit to the cycling contacts.



Dual Range Thermostat Cook Circuit

When the oven temperature knob is set in the CLEAN position, contacts 1 to 2 and 3 to 4 will cycle to maintain oven temperature at $880^{\circ}\text{F} \pm 40^{\circ}\text{F}$. Logic switch contacts 5 to 7 open, and contacts 5 to 6 close the CLEAN lamp circuit.

No voltage is available at the cycling contacts or the CLEAN lamp unless the latch mechanism is in the CLEAN position.



Dual Range Thermostat Clean Circuit

NOTE: For Combination Ranges (with Microwave Feature)—also refer to Electrical Components Section under Microwave Ovens.

TEMPERATURE SPECIFICATIONS

Consult mini-manual for specifications.

BAKE CALIBRATION

TO MEASURE THE OVEN TEMPERATURE

It is absolutely necessary to use a thermocouple type oven tester to accurately measure oven temperature. No other type of thermometer can take its place.

NOTE: Before testing an oven to check thermostat calibration, inspect the thermostat calibration, inspect the thermostat capillary. It should be properly mounted in its clips and should not touch the wall of the oven liner.

1. Place flat rack in center position. Remove all utensils and other racks.
2. Clip unshielded thermocouple to center of rack. Run leads out bottom of door at hinge to preserve top seal.

SELF CLEAN OVEN

3. Place oven tester on floor or chair next to range.
4. Turn oven switch to "BAKE", and set control knob to 375 degree setting.
5. Allow the thermostat to complete one cycle.
6. Refer to mini-manual for temperature specifications.

ADJUSTING BAKE TEMPERATURE

Oven temperature adjustment is accomplished by moving the indexing pointer on the rear of the thermostat knob. To increase oven temperature adjust toward LO or LOWER. Each notch changes the oven temperature 10^o F.

Any thermostat that cannot be adjusted within the acceptable limits should be replaced.

CHECKING CLEAN TEMPERATURE

TEMPERATURE TESTER PROCEDURE

Use a thermocouple type meter to measure the oven temperature during clean operation. Average stabilized temperature during clean operation. Average stabilized temperature should be between 840^o F and 920^o F.

THE CLEAN TEMPERATURE CANNOT BE ADJUSTED.

Replace the thermostat if the temperature is not within limits.

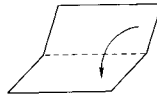
SELF-CLEAN OVEN "PELLET" TEST (WB64X5024)

NOTE: THIS PELLET IS NON-TOXIC BUT DUE TO ITS SIMILARITY TO CANDY SHOULD BE KEPT OUT OF THE REACH OF CHILDREN AND NOT TAKEN INTERNALLY.

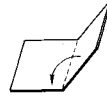
1. Remove all utensils, pans, and oven rack from oven.
2. Wipe up any excessive grease and soil from oven.
3. Place one oven rack in the oven at the lower (A) position.

NOTE: Some discoloration of oven rack is normal during a self-clean cycle.

4. Take a 12 inch long piece of household aluminum foil and fold in half. Fold in half two more times. This will result in a pad having eight layers of foil.



1st FOLD

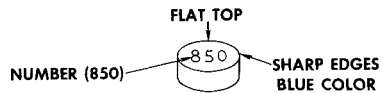


2nd FOLD



3rd FOLD

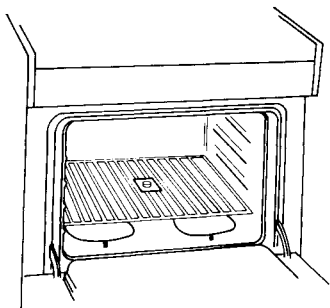
5. Place the test pellet on top of, and in the center of the foil pad. Note: Observe the shape of the test pellet.



It is a change in shape and color after the test that will verify your oven is heating to the required temperature for self-cleaning.

6. Place the foil pad and pellet in the center of the oven rack.

SELF CLEAN OVEN



7. Following the instructions for your oven, set the controls for a two hour clean cycle. (The clean and temp. light should be on). When the clean cycle is completed and oven has cooled - (lock light off), open the oven and observe the pellet.

Adequate clean temperature has occurred if:

Color is no longer blue -

AND

Top of pellet is no longer flat - appears rounded or puffed-up and number 850 cannot be seen.

OR

Pellet may have completely melted and lost its shape.

If the result of the pellet test indicates your oven is reaching proper clean temperature, refer to the suggestions below for possible causes which resulted in incomplete cleaning on a previous cycle.

Complete cleaning requires - proper temperature plus adequate time. The pellet test indicates temperature. The proper time must be determined by you and your judgement of the amount of soil. Therefore, the next time you clean your oven set the clock for a three (3) hour clean cycle. On subsequent clean cycles

you may elect to adjust clean times to match the amount of soil - 1-1/2 hours for light soil - to 3 hours for heavy soil.

Use of chemical cleaners in your self-clean oven is not recommended. Use of these cleaners will result in a black spot or streaks which must be removed by hand using a soap filled scouring pad, following by thorough rinsing with clean water. These spots cannot be removed automatically.

TO REPLACE (OVENS WITHOUT MICROWAVE FEATURE)

Replacement of the dual range thermostat requires both front and rear servicing techniques.

General installation instructions are packaged with the replacement thermostats.

CAUTION

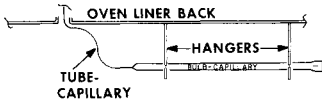
The hydraulic material contained within the sealed capillary/bulb assembly of this control is caustic. If any of this material is contacted by skin, first wipe area dry and wash with water.

Repeated bending or very sharp bends of the capillary/bulb should be avoided. If the assembly should be ruptured, a simple crimp made by pliers on each side of the rupture will adequately reseal the assembly for safe handling.

1. Remove power to range.
2. Remove screws mounting thermostat to control panel. Some models have the thermostat mounted to a stand-off bracket to provide electrical clearances. Do not discard bracket.

SELF CLEAN OVEN

3. Remove screws from thermal switch mounting plate inside top left area of oven liner. Slide plate forward.
4. Remove capillary bulb from hangers on inside of oven liner.



5. Remove back cover from range.
6. Carefully pull thermostat capillary from oven.
7. Transfer any insulating sleeving from old control capillary bulb to new control.
8. Install new control observing the precautions that follow:
 - a. The capillary bulb is to be kept straight and centered in its hangers.
 - b. Make no sharp bends in the tube (less than 1/4" radius) and keep length of tube in oven cavity to a minimum.
 - c. The capillary tube as it exits from the oven cavity is to be trapped between the gasket and cover plate. Use new gasket if necessary.
 - d. Excess capillary tube is to be coiled as far away from oven cavity as possible. Keep coil away from exposed electrical terminations.

To Replace (Ovens with Microwave Feature)

NOTE: For Combination Ranges (with Microwave Feature)—also refer to Electrical Components Section under Microwave Ovens.

THERMAL SWITCH DESCRIPTION

The thermal switch is a rod and tube type, differential expansion device. The rod extends down through the center of the tube with one end mechanically connected to the switch contacts and the other end welded to the tip of the tube. As the oven heats the tube expands in length more than the rod, actuating the mechanical linkage to the switching contacts.

FUNCTION

The thermal switch performs three basic functions:

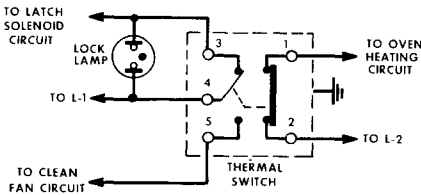
1. Opens circuit to latch solenoid whenever oven temperature is higher than 550 ° F.

The lock lamp also lights to indicate that the latch circuit is disabled.

2. Energizes the clean fan circuit on models so equipped temperature is higher than 530 ° F, and the oven switch is set at CLEAN.
3. Opens the line input to the oven heating units during normal oven operation, whenever the oven temperature is in excess of 620 ° F.

SELF CLEAN OVEN

CIRCUIT



Thermal Switch Basic Electrical Circuit

Contract Operating Temperatures:

- 1 to 2 620 °F
- 3 to 4 550 °F
- 4 to 5 530 °F

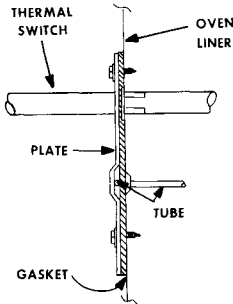
Note that during temperature rise, contacts 4-5 make before contacts 3-4 break; on oven cool down contacts 3-4 make before contacts 4-5 break.

Contacts 1 to 2 are rated 21 AMPS @ 240 VOLT, and contacts 3-4-5 are rated 1 AMP @ 120 VOLTS.

NOTE: For Combination Ranges (with Microwave Feature)—also refer to Electrical Components Section under Microwave Ovens.

TO REPLACE

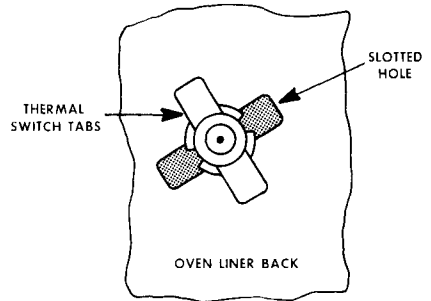
1. Disconnect power to range.
2. Take out the three screws to loosen the thermal switch mounting plate inside the oven.



3. Remove back cover from range.
4. Rotate thermal switch 90° in either direction to allow tabs to be pulled through the slots in oven liner back.
5. Pull thermal switch completely out of liner.
6. Insert new thermal switch into liner. Use a piece of tape or wire to hold rear of switch in position while completing the installation from front of liner.

BE CAREFUL NOT TO BEND THERMAL SWITCH TUBE!

7. Inside oven liner, replace mounting plate gasket, if necessary. Be sure thermostat capillary is dressed through gasket.
8. Slip mounting plate over tube of switch.
9. Insert tip of tube through hanger at top of oven.



10. Pull tube tabs through slots in oven liner back and rotate switch 90° to seat tabs in emboss.
11. Securely fasten mounting plate to liner.

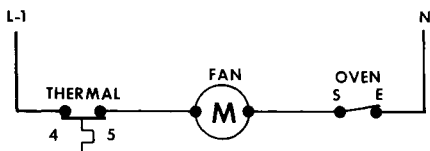
12. Attach leads to correct terminals on rear of switch.

13. Be sure thermostat capillary is dressed away from the thermal switch electrical contacts.

FAN ASSEMBLY

OPERATION

A fan is used, on some models during the "locked door" part of the clean cycle, to force cool air from the floor level into a plenum located between the drawer and lower oven insulation guard. The air is then directed upward through air channels and exits out the top of the range. This forced air is used to cool exterior surfaces and range components.



Fan Circuit During Clean

The fan motor is located at the lower rear of the range. It is accessible after removing the louvered fan cover.

FAN THERMAL SWITCH DESCRIPTION

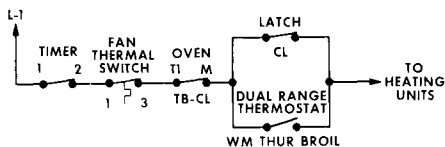
The fan thermal switch is used to protect range components and prevent excessive surface temperatures in event of a fan failure during CLEAN.

The switch has normally closed contacts with a rating of 25 AMP @ 120/240 VAC.

Opening temperature of the switch is 240 °F with an automatic reset of 180 °F ± 20 °F. Oven temperature at opening is approximately 825 °F.

CIRCUIT

The fan thermal switch is in the L-1 leg of the heating unit circuit during CLEAN and TIME BAKE operation. This is the reason for the 25 AMP rating of the contacts.



Fan Thermal Switch Circuit Shown in CLEAN Operation

SERVICING

The fan thermal switch is located in front of the fan.

The resistance between contacts 1 to 3 should read 0 whenever the switch temperature is below 240 °F.

OVEN HEATING UNITS

Three Calrod® Units are used in self-clean ovens:

Bake Unit – Lower

Broil Unit – Upper

External/Mullion Unit – Concealed around front flange of liner.

Both the bake and broil units are mounted to the oven liner from the front.

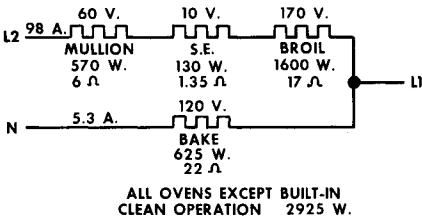
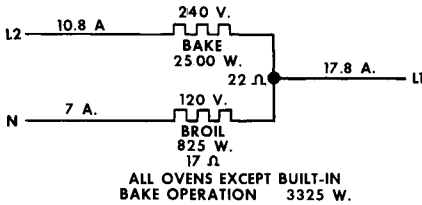
The mullion, or external, unit is a special unit which wraps around all or part of the front lip of the oven liner. The unit is trapped between the liner flange and oven front on some models. Other models utilize special retainer clamps to

SELF CLEAN OVEN

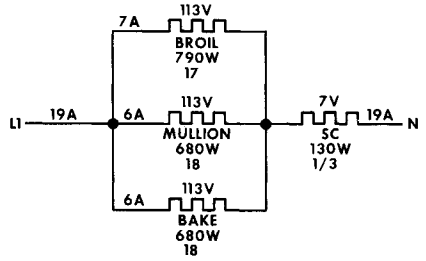
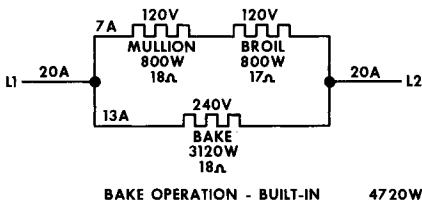
hold the mullion against the liner. The cold ends of the mullion extend back and out the rear of the range. A smoke eliminator-SE-is used to prevent excessive smoke in the room during self-clean operation.

CIRCUITS – 1978 TO 1983

Typical bake and clean circuits are shown below. Note that all electrical values are only nominal of the representative circuit. Consult the mini-manual with your range for specific circuits.



Self Clean Oven Circuit



CLEAN OPERATION - BUILT-IN 2280W

UNIT SERVICING

Bake and broil units are front servicing. They may be replaced by removing the mounting plate screws, which also acts as a method of grounding the unit to the oven liner, and pulling the unit and lead wires forward to expose the terminals screws.

Before installing the new unit, inspect the leads and terminals to be sure they are free of corrosion or oxidation. When installing the terminals screws, be sure not to bend the terminals of the new unit.

If the lead terminal should break off, do not attempt to hand-crimp a new terminal for replacement. Instead, strip back the lead insulation about 1/2 inch, solder the wire strands together, form a "U"-shaped loop around the terminal screw, and tighten securely. The wire loop under the screws should not overlap. Always loop the wire around the screw in the direction it tightens. See "Wiring Repairs" section D.

When replacing a burnt section of wire lead, it is recommended to use 14 GA Hi-Temp insulated wire. Always solder splice joints when replacement leads are required.

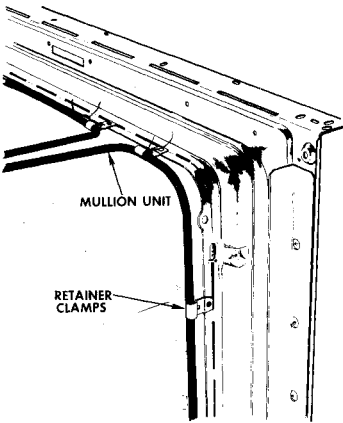
SELF CLEAN OVEN

Mullion unit replacement requires pulling the oven liner to gain access to the mullion, and to insure proper seating of the mullion sheath to the oven liner.

MULLION UNIT UNITIZED FRONT FRAME

This model is recognized by a one-piece, brushed chrome front frame. There is no breaker frame or "horsecollar".

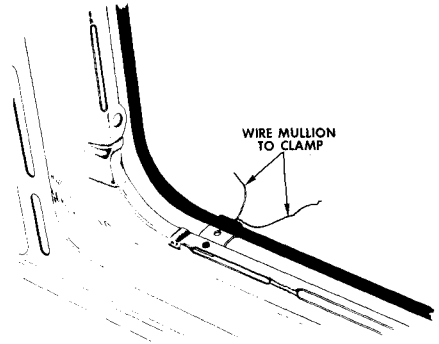
The mullion unit is located away from the front frame to prevent discoloration of the brushed chrome. The unit is held in position against the oven liner with retaining clamps.



SERVICING

When replacing the mullion unit or oven liner, twist a small gauge wire around the unit and retaining clamp.

This will hold the mullion in its proper location when installing the oven liner.



SMOKE ELIMINATOR

A smoke elimination device is located in the oven vent system to handle smoke removal during the cleaning process.

Because of the high temperatures during "clean", the smoke eliminator is needed to consume the smoke from the soil which is burned off inside the oven. It will handle normal amounts of smoke, but can be overloaded if extremely large amounts of grease or soil is present. Therefore, utensils, or large piles of soil must first be removed before cleaning the oven.

In general, the operation of any smoke eliminator is such that the end result is the conversion of food soils to CO_2 and H_2O (vapor). This is accomplished by a chemical reaction partially inside the oven, by adding heat plus oxygen, and finally inside the smoke eliminator assembly, by a catalyst plus heat. The catalyst is a coated screen mounted over the heater wire.

Food soils in the oven are carbohydrates. In the presence of heat inside the oven, this basically breaks down into water, carbon monoxide, carbon and oxygen. Then inside the smoke eliminator assembly, the presence of the oxidation

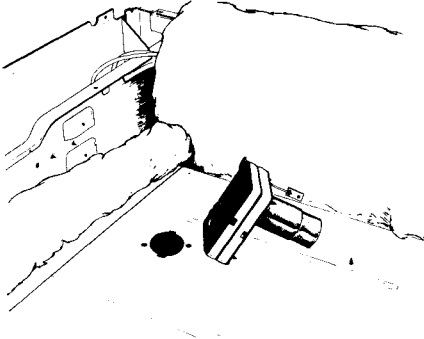
SELF CLEAN OVEN

catalyst plus heat, the chemical reaction is completed to exhaust carbon dioxide and water in vapor form in harmless amounts.

CONSTRUCTION – ELECTRIC SMOKE ELIMINATOR

Consists of a heater wire encased in a ceramic block assembly. It is connected in the line that feeds power to the Calrod oven units. All of the line current, therefore, flows through the smoke eliminator heater.

Nominal resistance of the smoke eliminator is 1/3 ohm.



SERVICING – ELECTRIC SMOKE ELIMINATOR

FREE STANDING AND AMERICANA MODELS

1. Remove cooktop.

After removing the cooktop and top insulation guard, the smoke eliminator assembly, the mounting screws must be removed from inside the top of the oven liner. A gasket is placed between the top of the oven liner and the smoke eliminator housing. The two electrical terminals for the smoke eliminator are located in the insulator blocks on the end of the smoke eliminator.

WALL OVENS

The smoke eliminator is front serviceable in the single oven models and in the upper oven of the double oven models.

The service procedure for these models is:

1. Place control panel in service position.
2. Remove the four (4) screws that mount the insulation guard over the vent and smoke eliminator.
3. Disconnect the leads to the fan thermal switch and the smoke eliminator.
4. Remove the insulation guard.
5. The smoke eliminator then can be removed after removing the two (2) screws that mount it to the top inside of the oven liner.

27" DROP-IN OVENS

Remove cooktop.

After removing the cooktop and top insulation guard, the smoke eliminator assembly is accessible. To release the smoke eliminator assembly, the mounting screws must be removed from inside the top of the oven liner.

PROCEDURE FOR MANUAL TRIPPING OF LATCH MECHANISM

THE PROBLEM

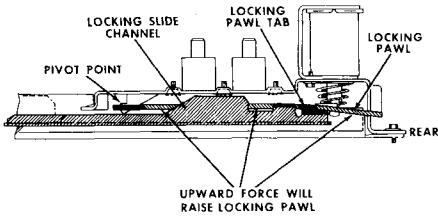
Certain screws which must be removed for latch mechanism servicing are completely hidden when the oven door is closed.

Below is a method for manually tripping the latch mechanism in case a failure occurs in the solenoid circuit when the oven door is locked.

TECHNIQUE

The object is to raise the locking pawl tab far enough so it will not interfere with the step on the locking slide channel. This will allow the slide channel to be moved toward the rear as the latch handle is moved to the COOK position.

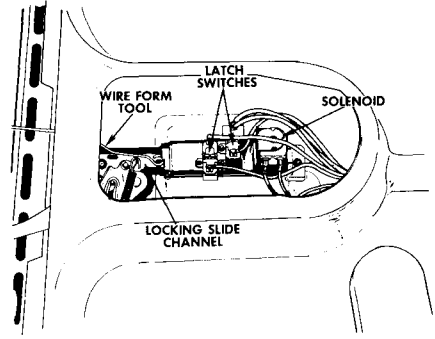
The locking pawl can be raised by applying upward force anywhere rear of the pivot point.



Locking Parts of Latch Mechanism

40" RANGES AND 30" LOUISVILLE BUILT

Note: To determine whether a 30" range is Louisville built or Columbia built, inspect the cooktop box (birdbath). The Louisville models do not have an access hole over the latch mechanism enclosure. The Columbia manufactured ranges do have an opening over the latch.



Latch Enclosure Opening in Columbia Built Ranges

The locking pawl used on long latch mechanisms (40" ranges and 30" Louisville built ranges) is accessible from the rear of the range after removing the back covers. This mechanism can be manually tripped.

Shieldless Door

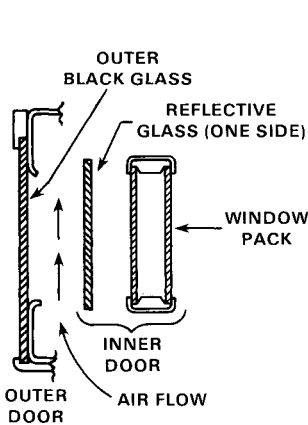
Starting with "D" model ranges, the metal window shield is eliminated from all self-clean window model ranges except 40" models. The door construction remains basically the same except for the use of tempered glass with a special **reflective coating of tin oxide**. The coating reflects heat back into the oven, and maintains normal temperature of the external surface.

Depending on model type, the reflective glass is used in different ways:

30-INCH BLACK GLASS DOORS

A separate piece of glass, **coated on one side**, is used in front of the regular window pack. The remainder of the door is unchanged.

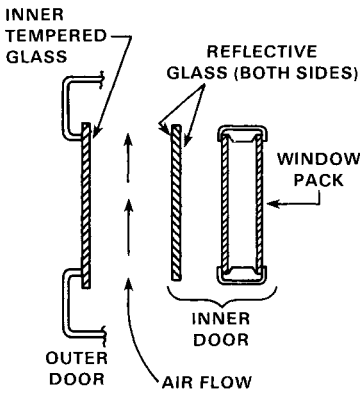
SELF CLEAN OVEN



30" BLACK GLASS DOORS

30-INCH PORCELAIN DOORS

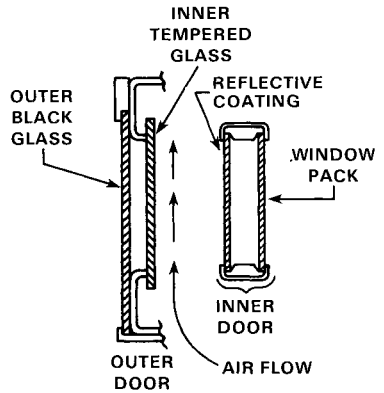
A separate piece of glass, coated on both sides, is used in front of the window pack. In addition, the outer door glass has a black cross-hatch design for appearance.



30" PORCELAIN DOORS

BUILT-IN BLACK GLASS DOORS

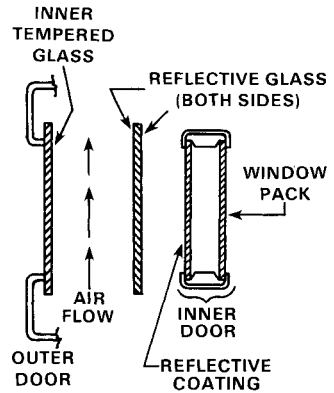
The reflective coating is on the outside glass of the window pack.



BUILT-IN BLACK GLASS DOORS

BUILT-IN PORCELAIN DOORS

A separate piece of glass, coated on both sides, and coated window pack is used. The outer door glass has a black cross-hatch design.



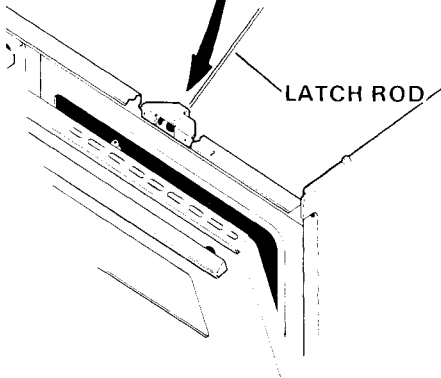
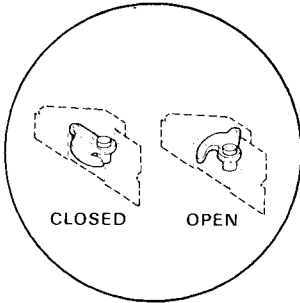
BUILT-IN PORCELAIN DOORS

Service replacement of the separate reflective glass will be standardized to the glass with coating on both sides. It can be identified by a gray stripe across the bottom edge which is visible with the door open. The single coated side has no strips. Plain and reflective window packs will be serviced like-for-like.

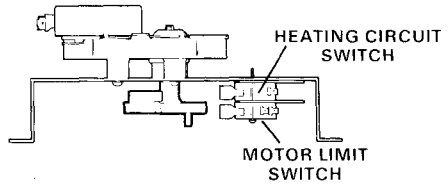
NOTE: Reflective glass can also be identified with ohmmeter. (The tin oxide coating is conductive)

MOTOR DRIVEN LATCH- 40" RANGE & 30" DROP-IN

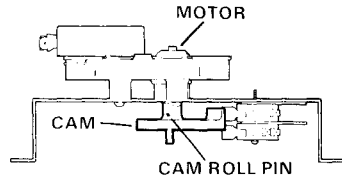
The latch system consists of a **Roller Strike** mounted in the door and a **Hook Shape Latch** mounted to the front frame under the cooktop.



The latch is operated by a **Connecting Rod** which is attached to a **Motor and Cam Assembly** at the rear of the range under the cooktop. The cam of the motor connects the rod and also operates two (2) switches mounted in the motor bracket. The motor rotates the cam 1/2 revolution for both latching and unlatching.



OPEN



LOCKED

The **Top Switch** is part of the BAKE unit circuit, and the Clean Light circuit during clean.

The **Bottom Switch** is a motor limit switch which turns the motor "OFF" at the proper time for both latching and unlatching.

The high part of the cam operates the switches at "Latch-Up". Then at "unlatch" the cam rotates another 1/2 revolution to reset the switches to their normal position. The bottom switch (motor limit) operates last by the lower part of the cam, to shut the motor "OFF".

MOTOR SERVICE

1. Disconnect Range power.
2. Pry off rod fastener at cam (use screwdriver), and disengage rod.
3. Disconnect motor and switch wiring — mark for reconnection.

SELF-CLEAN OVEN

4. Remove motor and bracket assembly.
5. Remove cam from motor shaft (requires 1/16 - 3/32 drive pin to remove roll pin).
6. Remove motor mounting screws.
7. **NOTE:** At reassembly — use channel locks to install rod fastener.

LATCH SERVICE

1. Pry off the rod fastener at the latch (use screwdriver), and disengage the rod.
2. Remove the latch assembly from the body (two screws) and pry off the pin fastener holding the hook latch.

LATCH ROLLER STRIKE

The roller strike is mounted to the door liner from the inside. To service the strike, the door must be disassembled.

CATALYTIC SMOKE ELIMINATOR

A non-electric "catalytic" smoke eliminator started used in production as follows:

- **Free Standing 10/83**
- **Built-In (J3 Mods) 10/86**

The new smoke eliminator consists of a catalytic coated ceramic core located inside the oven vent tube. The core has a honeycomb construction which provides a large reactive catalytic surface for the oven vent gases to pass through.

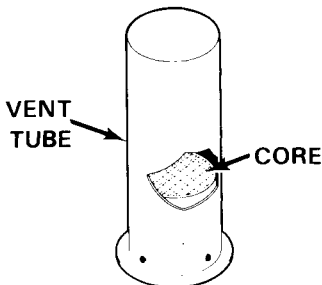
The catalytic core (in vent tube) is located over a section of the broil unit which provides the required heat to operate the catalyst at 300° - 400° F. At this temperature the smoke and oven gases react with the catalytic surface and are reduced to water and carbon dioxide.

The catalyst is non-toxic and is relatively inactive during normal cooking operations.

The catalytic smoke eliminator can handle a larger soil load than the previous electric type, therefore, the performance is considerably better, and with essentially no parts to fail.

SERVICE

The catalytic core is captured inside the oven vent tube by formed dimples. The vent tube must be removed from inside the oven to service. **The tube is mounted by two (2) screws.**

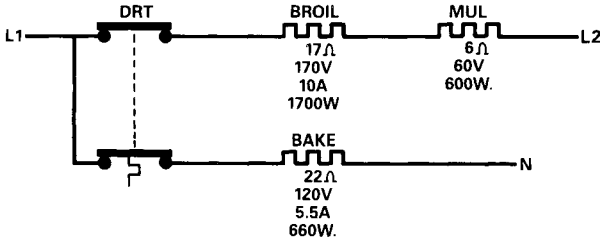


SELF-CLEAN OVEN

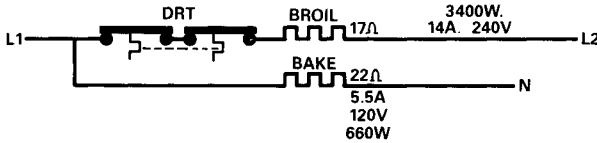
CLEAN CIRCUITS — 1984 TO 1987

Heating units, such as BAKE, BROIL, Mullion (Mul), and Electric Smoke eliminator (S.E.), have been used in various combinations for clean circuits.

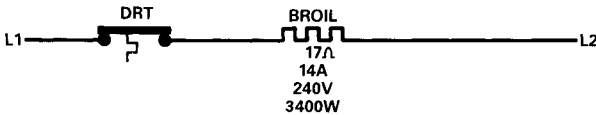
Typical types of Clean Circuits (by components used) are shown below. Consult the Mini-Manual with the range for specific circuits.



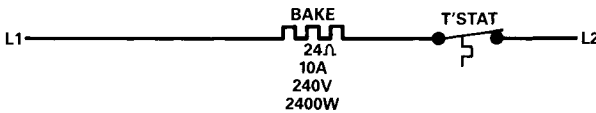
FREE STANDING RANGES (BAKE, BROIL, & MUL. UNIT)



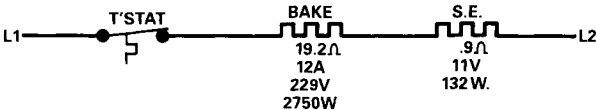
FREE STANDING RANGES (BAKE & BROIL UNIT)



BUILT-IN OVENS (BROIL UNIT ONLY)



30" DROP-IN & SOME 40" F.S. (BAKE UNIT ONLY)

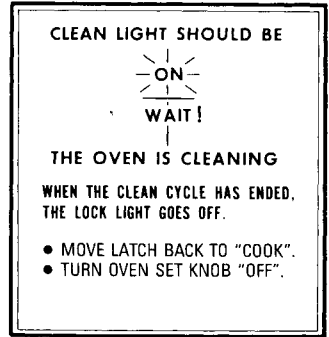
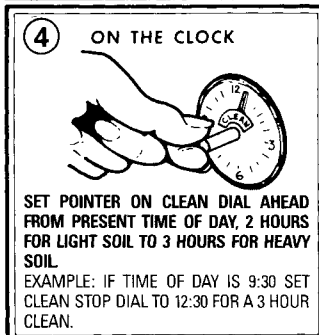
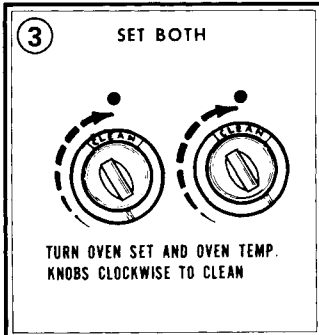
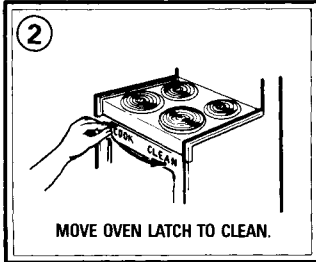
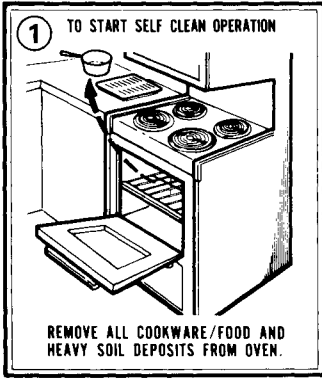


FREE STANDING - SOLID DISK MODELS (BAKE, & SMOKE ELIM.)

SELF-CLEAN OVEN

OPERATION

(No Push Button Latch Switch)



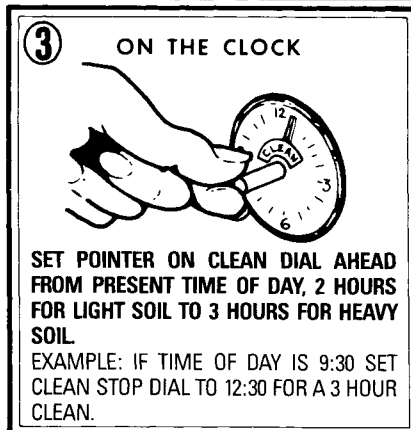
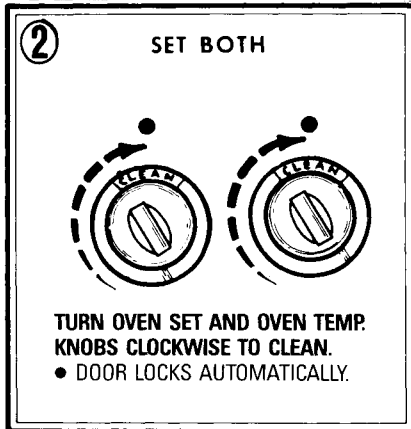
NOTE: CHECK START DIAL TO BE CERTAIN POINTER IS AT THE SAME TIME AS THE RANGE CLOCK. IF NOT, TURN START KNOB UNTIL IT POPS OUT AND CANNOT BE TURNED.

OVEN CLEANING LIGHT will glow when all steps have been set up properly.

LOCK LIGHT and fan (on models so equipped), come on when oven heats to temperatures where cleaning takes place. The light will stay on during cleaning time and until oven heat decreases in temperature again. DOOR AND WINDOW GET HOT DURING SELF-CLEAN CYCLE DO NOT TOUCH.

OPERATION

(30" DROP-IN & SOME 40" F.S.)



CLEAN LIGHT SHOULD BE



THE OVEN IS CLEANING

WHEN THE CLEAN CYCLE HAS ENDED, THE LOCK LIGHT GOES OFF.

- TURN OVEN SET KNOB "OFF".
- DOOR UNLOCKS.

NOTE: CHECK START DIAL TO BE CERTAIN POINTER IS AT THE SAME TIME AS THE RANGE CLOCK. IF NOT, TURN START KNOB UNTIL IT POPS OUT AND CANNOT BE TURNED.

OVEN CLEANING LIGHT will glow when all steps have been set up properly.

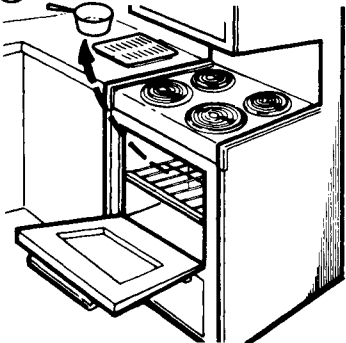
LOCK LIGHT comes on when oven heats to temperature where cleaning takes place. The light will stay on during cleaning time and until oven heat decreases in temperature again. DOOR AND WINDOW GET HOT DURING SELF-CLEAN CYCLE. DO NOT TOUCH.

SELF-CLEAN OVEN

OPERATION

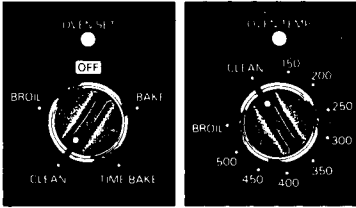
(Solid Disk & Std. Timer)

1 TO START SELF CLEAN OPERATION



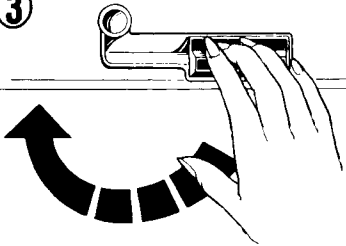
REMOVE ALL COOKWARE/FOOD AND HEAVY SOIL DEPOSITS FROM OVEN.

2 SET BOTH



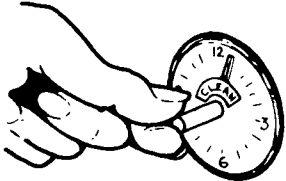
TURN OVEN SET AND OVEN TEMP. KNOBS TO CLEAN.

3



ROTATE LATCH HANDLE TO LOCK POSITION.

4 ON THE CLOCK



SET POINTER ON CLEAN DIAL AHEAD FROM PRESENT TIME OF DAY, 2 HOURS FOR LIGHT SOIL TO 3 HOURS FOR HEAVY SOIL.
EXAMPLE: IF TIME OF DAY IS 9:30 SET CLEAN STOP DIAL TO 12:30 FOR A 3 HOUR CLEAN.

CYCLE LIGHT SHOULD BE



THE OVEN IS CLEANING

WHEN THE CLEAN CYCLE HAS ENDED, THE LOCK LIGHT GOES OFF.

- ROTATE LATCH HANDLE TO ORIGINAL POSITION.
- TURN OVEN SET KNOB "OFF".

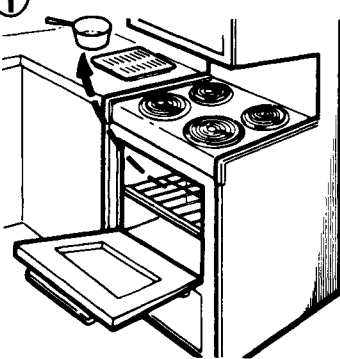
NOTE: CHECK START DIAL TO BE CERTAIN POINTER IS AT THE SAME TIME AS THE RANGE CLOCK. IF NOT, TURN START KNOB UNTIL IT POPS OUT AND CANNOT BE TURNED.

OVEN CYCLE LIGHT will cycle "on" and "off" during cleaning.

LOCK LIGHT comes on when oven heats to temperatures where cleaning takes place. The light will stay on during cleaning time and until oven heat decreases in temperature again. **DOOR AND WINDOW GET HOT DURING SELF-CLEAN CYCLE DO NOT TOUCH.**

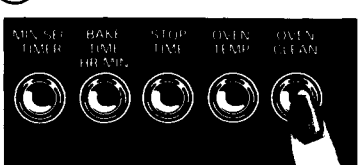
OPERATION
(Solid Disk & Electronic Timer)

1 TO START SELF CLEAN OPERATION



REMOVE ALL COOKWARE/FOOD AND HEAVY SOIL DEPOSITS FROM OVEN.

2



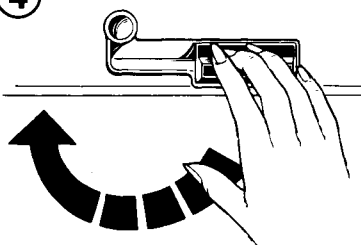
PUSH OVEN CLEAN BUTTON
(C 3:00 DISPLAYED FOR 3 HR. FIXED CYCLE)

3



TURN OVEN SET TO CLEAN
LATCH SOLENOID BUZZES

4

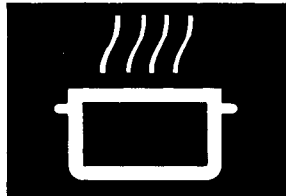


ROTATE LATCH HANDLE TO LOCK POSITION

LATCH SOLENOID STOPS BUZZING

5

ABOUT 30 MINUTES LATER
COOKPOT SYMBOL IS DISPLAYED



WAIT!

THE DOOR IS LOCKED AND OVEN IS CLEANING

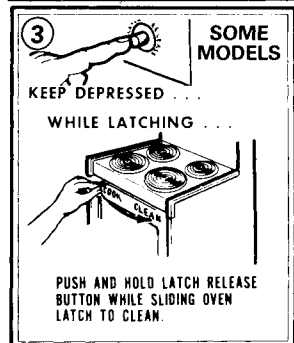
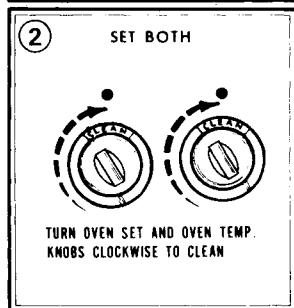
THE **COOK POT** SYMBOL STAYS ON DURING CLEANING TIME AND UNTIL OVEN HEAT DECREASES IN TEMPERATURE AGAIN.

DOOR AND WINDOW GET HOT DURING **SELF-CLEAN CYCLE - DO NOT TOUCH**

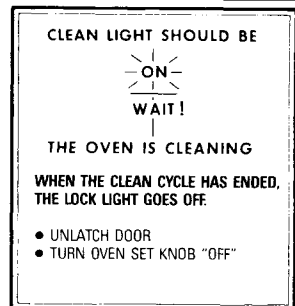
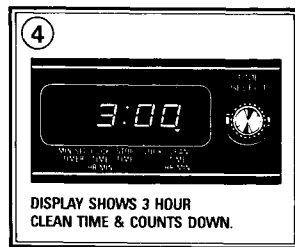
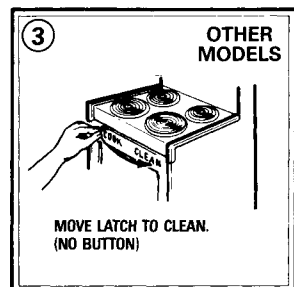
SELF-CLEAN OVEN

OPERATION

(Electronic Timer)



OR



NOTE: CHECK START DIAL TO BE CERTAIN POINTER IS AT THE SAME TIME AS THE RANGE CLOCK. IF NOT, TURN START KNOB UNTIL IT POPS OUT AND CANNOT BE TURNED.

OVEN CLEANING LIGHT will glow when all steps have been set up properly.

LOCK LIGHT and fan (on models so equipped), come on when oven heats to temperatures where cleaning takes place. The light will stay on during cleaning time and until oven heat decreases in temperature again. DOOR AND WINDOW GET HOT DURING SELF-CLEAN CYCLE DO NOT TOUCH.

MULLION UNIT – ELIMINATED

The external mullion unit was eliminated from self-clean ranges as follows:

- Free Standing (various mods.) 7/85
- Built-In (J3 mods.) 10/86

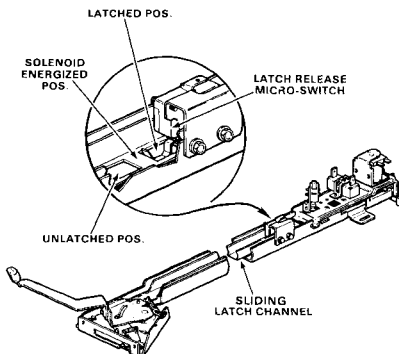
All clean circuits were changed as a result of eliminating the mullion unit. Refer to Mini-Manual for specific circuits.

LATCH RELEASE SWITCH (Micro Switch Type)

The self-clean pushbutton latch release was eliminated and replaced by a micro switch on the latch.

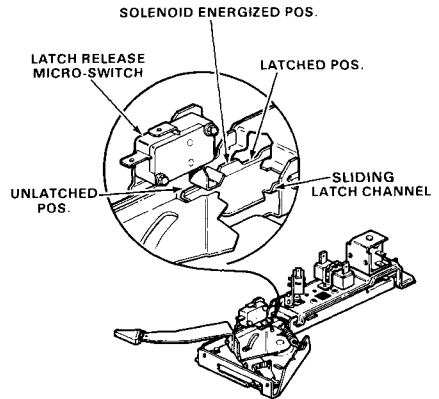
Elimination of the pushbutton switch simplifies user setup procedure for the clean cycle. It eliminates one step and should also reduced the possibility of bent handles.

The new design latch actuates the micro switch just as the latch handle is moved. This closes the switch contacts and completes the circuit to the solenoid. After the handle is in the fully latched position, the switch opens and de-energizes the solenoid. The same is true for unlatching the door.



Actuation of the switch is accomplished by a "step" and "void" section of a slide bar or channel in the latch assembly.

- **On 30-inch Ranges (long mech),** the microswitch is located toward the rear of the latch bar - and serviced from the rear.
- **On Built-In Ovens (short mech),** the switch is located in front of the latch bar right on the side of the latch body - serviced from the front.



LATCH AND LOCK ASSEMBLY - SOLID DISK RANGES

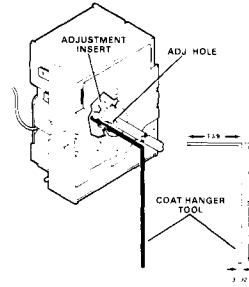
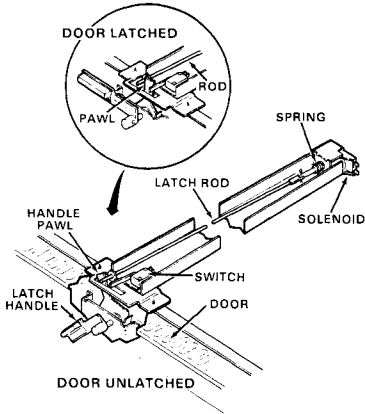
The latch assembly consists of a solenoid operated spring and latch rod assembly located under the cooktop. A latch handle and pawl is located inside the door.

When the oven switch is set at **clean** the solenoid is energized and pulls the latch rod to the rear, allowing the latch pawl to pass by the end of the rod and actuate the latch interlock switch. This de-energizes the solenoid and allows the spring loaded rod to come for-

SELF-CLEAN OVEN

ward and mechanically locking the latch pawl.

To service the latch assembly, the cooktop must be removed.



2. While firmly holding the adjustment rod in place, slowly rotate the knob just enough to feel the rod enter a slot of the adjustment insert.
3. Note the temperature setting on the knob. Firmly hold the rod to lock the adjustment insert, and rotate the knob the number of degrees above or below the knob setting to compensate for the differences in average oven temperature at 375° setting.

Example: If average tested temperature is 425°, rotate the knob to a setting 50° above the original setting. (In other words match the knob to the tested temperature.).

OVEN TEMPERATURE CONTROL (40" Range & 30" Drop-In)

The self-clean thermostat can be calibrated for **Bake Temperature Only**. Check oven at 375°F using unshielded thermocouple.

The normal average temperature limits are 355° – 395°F with an amplitude of 40° – 80°F.

To Change Bake Calibration

1. Remove knob and insert "L" shape adjustment rod into adjustment clearance hole next to shaft. Replace the knob.

NOTE: Adjustment rod can be made from metal coat hanger.

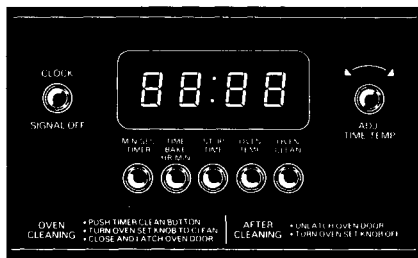
CLEAN TEMPERATURE

The clean temperature is calibrated at 845° – 895°F. There is no provision for recalibration. Thermostats outside these limits should be replaced.

SELF-CLEAN OVEN

ELECTRONIC TIMER - BORG (Solid Disk Ranges)

The Electronic Timer has push buttons to select min. timer, oven cook time, stop time, temperature, and clean modes. The timer uses a 15 ohm oven sensor to measure oven temp.



TIMER DIAGNOSTICS

Display SE-0 – Open Sensor
Display SE-1 – Shorted Sensor

NOTE: After sensor service, push “Temp Button” **twice** within 1 second to clear diagnostic mode.

OVEN CALIBRATION

1. Check oven temp at 350°. Average or mean temp limits are +30° and -10°F. (see chart)
 - A) In Limits – Cust. Ed.
 - B) Out of Limits – Check Sensor

Sensor Test

2. Push and hold **Min. Timer** and **Stop Time** buttons for 12 seconds. Sensor resistance will be displayed (see chart).

CHART

OVEN TEMP	MEAN TEMP	SENSOR OHMS	MAX OFF SET TEMP
350°	+30°-10°	29-33	24°-25°

- A) Sensor in Limits – **Change oven calibration**
- B) Sensor out of Limits – Replace sensor

NOTE: Sensor approx. 15 ohms at room temp.

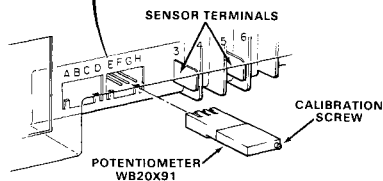
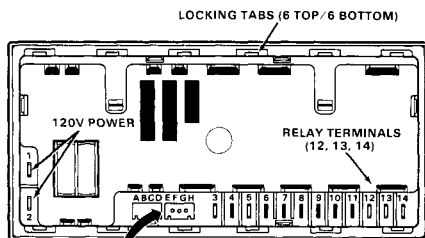
Too Calibrate Oven Temp

1. Plug WB20X91 calibration Pot. into timer.
2. Push and hold **Temp Button** for 12 seconds – **OFFSET Temp. will be displayed.**
3. Set desired Offset with cal. screw on Pot. while holding **Temp Button** – Max. Offset is $\pm 7\%$ (24° - 25° @ 350°)

NOTE: CCW = +Cal. CW = -Cal.

4. Leave Cal. Pot. in timer.
5. Push clock button to clear Cal. mode.

TIMER REAR VIEW



To Remove Timer

1. Remove all knobs from back splash.

SELF-CLEAN OVEN

2. Raise top trim and release glass fasteners at both ends of glass – remove glass.
3. From rear of Range, push timer through bracket by releasing 6 plastic tabs at top and bottom of timer.

ELECTRONIC TIMER - MOTOROLA

The timer has a vacuum fluorescent display and two (2) controls:

- Program Select (Pushbutton)
- Timer Select (Rotary)

Program Select

Pushing in on the program select button lights up an indicator chevron to indicate mode selected. Each **“push” of the button advances the timer to the next mode and lighted chevron.**

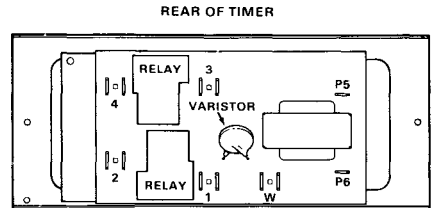
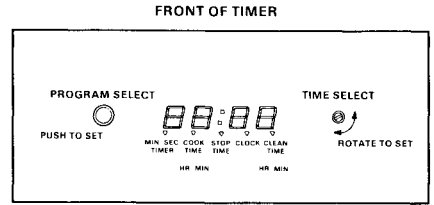
The chevron reads from left to right: MIN/SEC. TIMER, COOKTIME, STOP TIME, CLOCK SET, CLEAN TIME.

Timer Select

The timer select rotary control is used to set the times desired for the mode selected.

Self contained relays on the back of the timer perform the same circuit switching function as provided by timer contacts on standard electrical range times.

NOTE: The clock must be set to time of day for any timing function to work.



- 120 VOLTS SUPPLY AT 1 & W
- LATCH LOGIC SWITCH CONNECTS TO P5 & P6
- VARISTOR CAN BE SERVICED - WB27X5230

CLEAN LOGIC SWITCH

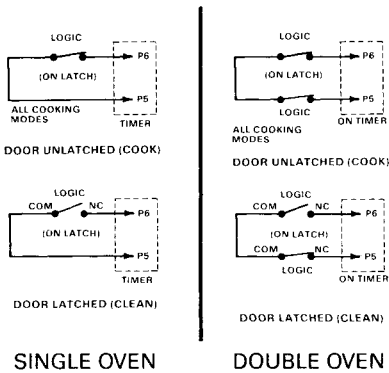
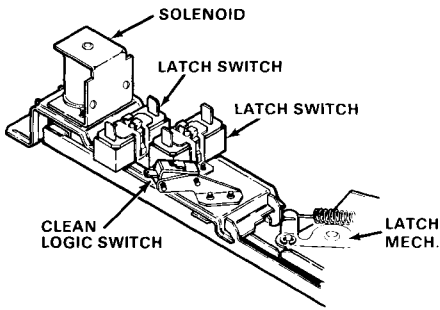
The switch is located on, and operated by the self-clean door latch. Its purpose is to connect the timer for **cooking programs** or the **clean program** – by position of the door latch.

When the door is unlatched (Cook Mode), the logic switch is **closed** and connects P5 & P6 on the timer.

When the door is latched (Clear Mode), the logic switch is **open** – this automatically programs the timer for the clean mode. (3 hr cycle).

NOTE: The double oven wall over has 2 latches and therefore 2 switches. The switches are connected in series with the timer terminals.

When one oven is in clean cycle, you can cook in other oven, but not time cook. In addition both ovens **cannot** be cleaned at the same time.



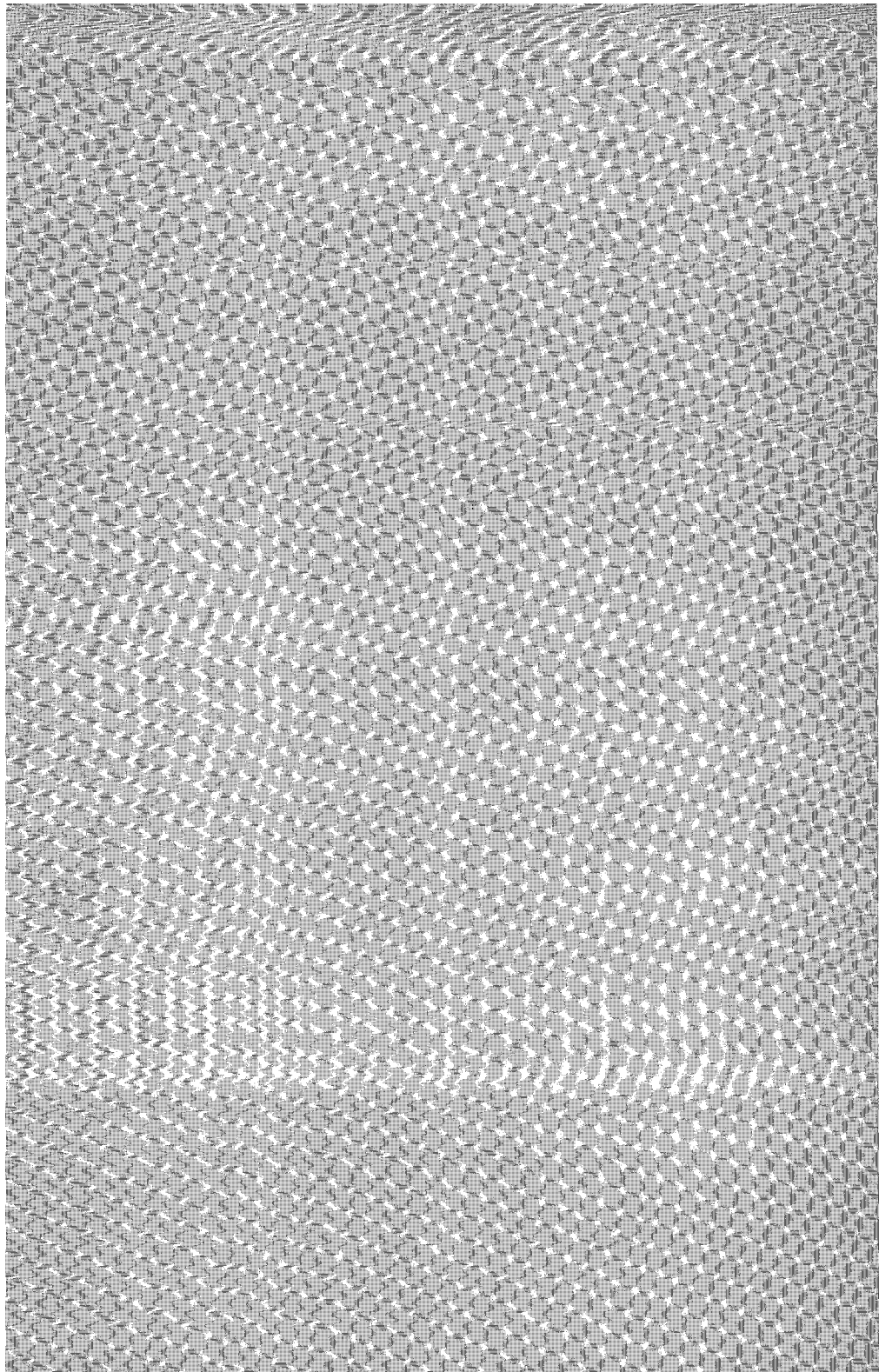
ODOR – DURING OVEN USE

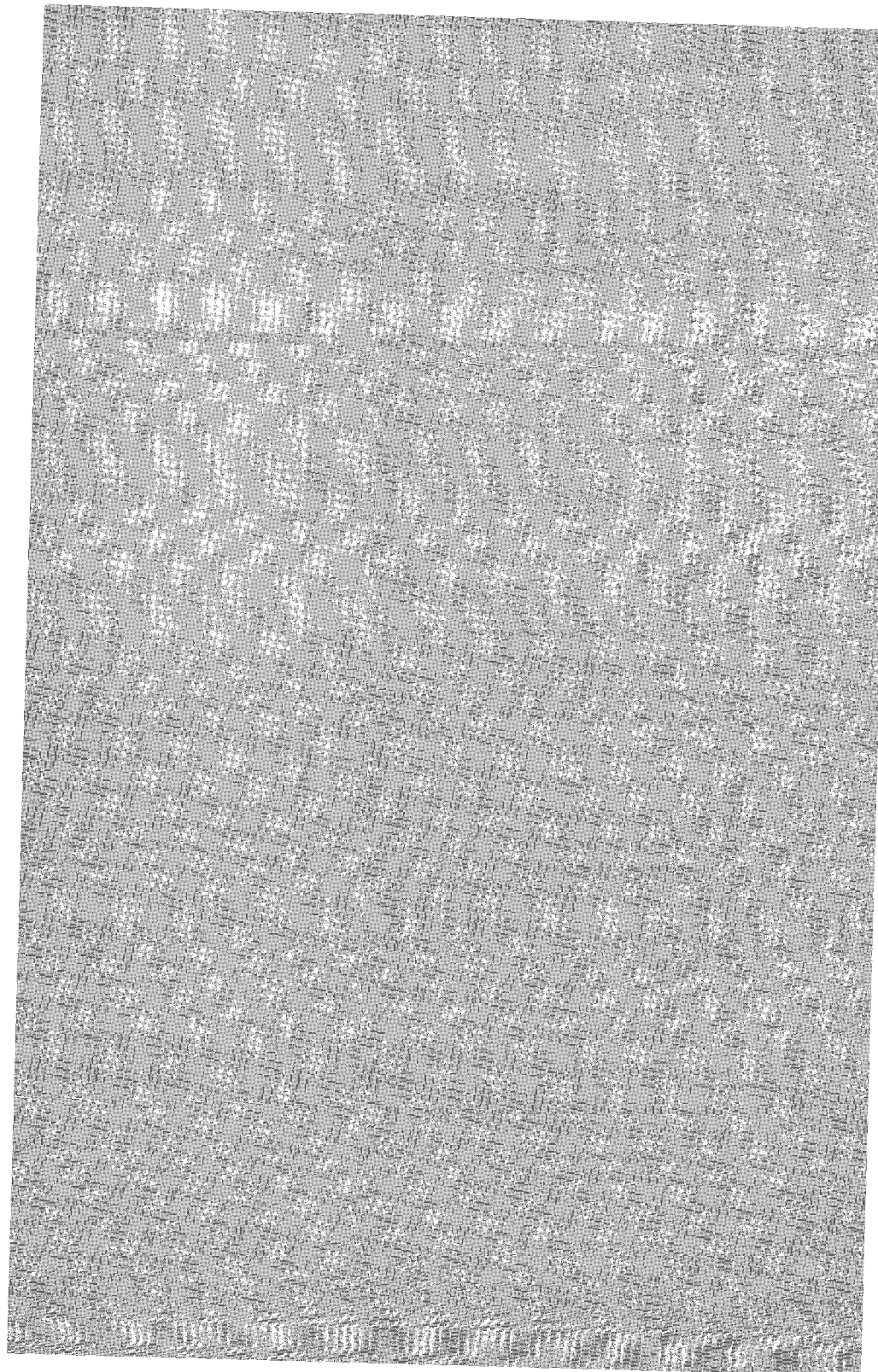
Odors emitting from a new range's oven should be considered normal. Often the odor will be described as a "burning" or "oily" smell that is more intense when the oven is turned on. This condition is more likely to be noticed when using a new range that has the P-7 self clean feature as opposed to a model that has a standard oven. Self-cleaning ovens have a heavier blanket of insulation around the oven. During the production procedure, chemical solutions are used to aid in the installation of the insulation blanket and oven cavity. The odor caused by this solution will usually wear off in a very short time. To speed the process, the consumer may set-up a self-clean cycle lasting a minimum of 3 hours. The 3 hour self-clean will "break-in" the oven faster than normal baking routines.

SERVICE TIPS

If the timer intermittently goes into the "clean" mode during cooking mode use, look for a problem associated with the "clean logic switch" (loose connection or open switch problem) not the timer. The timer cannot get into the clean mode unless the logic switch circuit is open.

**These odors are not harmful to any food that happens to be in or on the oven!





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PRECAUTIONS TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

- A. DO NOT OPERATE OR ALLOW THE OVEN TO BE OPERATED WITH THE DOOR OPEN.
- B. MAKE THE FOLLOWING SAFETY CHECKS ON ALL OVENS TO BE SERVICED BEFORE ACTIVATING THE MAGNETRON OR OTHER MICROWAVE SOURCE, AND MAKE REPAIRS AS NECESSARY.
 - 1. INTERLOCK OPERATION
 - 2. PROPER DOOR CLOSING
 - 3. SEAL AND SEALING SURFACES (ARCING, WEAR, AND OTHER DAMAGE)
 - 4. DAMAGE TO OR LOOSENING OF HINGES AND LATCHES
 - 5. EVIDENCE OF DROPPING OR ABUSE
- C. BEFORE TURNING ON MICROWAVE POWER FOR ANY SERVICE TEST OR INSPECTION WITHIN THE MICROWAVE GENERATING COMPARTMENTS, CHECK THE MAGNETRON, WAVE GUIDE OR TRANSMISSION LINE, AND CAVITY FOR PROPER ALIGNMENT, INTEGRITY, AND CONNECTIONS.

D. ANY DEFECTIVE OR MISADJUSTED COMPONENTS IN THE INTERLOCK, MONITOR, DOOR SEAL, AND MICROWAVE GENERATION AND TRANSMISSION SYSTEMS SHALL BE REPAIRED, REPLACED, OR ADJUSTED BY PROCEDURES DESCRIBED IN THIS MANUAL BEFORE THE OVEN IS RELEASED TO THE OWNER.

E. A MICROWAVE LEAKAGE CHECK TO VERIFY COMPLIANCE WITH THE FEDERAL PERFORMANCE STANDARD SHOULD BE PERFORMED ON EACH OVEN PRIOR TO RELEASE TO THE OWNER.

MICROWAVE LEAKAGE METERS

INSTRUMENTATION SPECIFICATIONS ARE SPECIFIED BY THE BRH AS PART OF THE FEDERAL REGULATIONS PERTAINING TO MAXIMUM ALLOWABLE MICROWAVE LEAKAGE.

INSTRUMENTS KNOWN TO MEET THE SPECIFICATIONS ARE AS FOLLOWS:

<u>MANUFACTURER</u>	<u>MODEL</u>
HOLADAY	1501
HOLADAY	1600
HOLADAY	1700
HOLADAY	1800
NARDA	8100B
NARDA	8200
SIMSON	380

GENERAL

COMPARISON OF MICROWAVE & CONVENTIONAL COOKING

Range Top. On the range top, heat from the surface unit transfers through the pan to the bottom of the food. Stirring the food while it cooks brings heated portions to the top and prevents scorching. Covering the pan holds in steam and speeds cooking. Rearranging or turning foods over helps them cook evenly. Because the bottom of the pan is hot, fried or griddled foods become crisp or crusty.

Conventional Oven. In a conventional oven, the heating units heat the air inside the oven. The oven may be preheated until the air reaches the proper cooking temperature. Heat from this hot dry air enters the food through its exterior surfaces, and gradually spreads

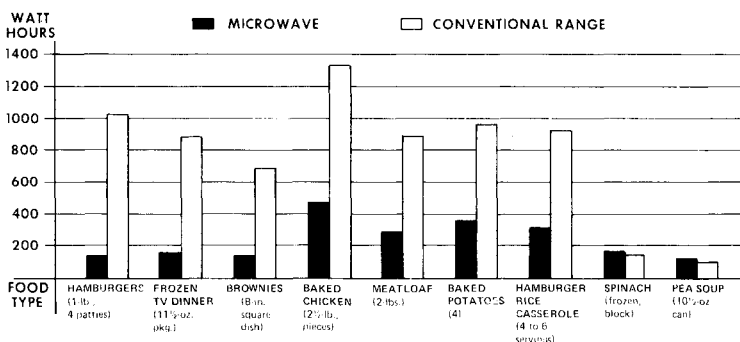
to the interior through conduction. The process is usually slow, so by the time the center is done, the surfaces have become dry and crusty.

Microwave Oven. Microwaves penetrate 3/4 to 1-1/4 in. through all food surfaces; top, bottom and sides. At this depth they are absorbed by moisture, sugar or fat molecules, which begin to cook. Heat is then conducted into the center and out to the surfaces. The food cooks by internal heat, not by contact with hot air or a hot pan. Because microwaves penetrate foods and cook them below the surface, cooking is faster for most foods, but the surface remains moist, not dry and crusty. Occasionally, the surface is the last place to cook.

COMPARISON OF MICROWAVE & CONVENTIONAL ENERGY CONSUMPTION

Microwaving can save energy and reduce electric bills, but savings depend on what, and how much you cook. Some foods make efficient use of microwave energy. Others, such as popcorn, use less energy when cooked conventionally.

The amount of food cooked affects energy consumption, too. Four baked potatoes require 61% less energy when microwaved, but about 12 potatoes bake more efficiently in a conventional oven. Greatest savings result when heating medium or small quantities of dense foods.



COOKING TECHNIQUES - MICROWAVING

Many of the techniques used in microwaving are the same ones you use in conventional cooking. Most of them either speed cooking or promote even heating. While the techniques may be familiar, their application may be somewhat different because of the unique way in which microwave energy cooks.

Turning Over. In range top cooking you turn over foods such as hamburgers, so both sides can directly contact hot pan. When microwaving, turning is often needed during defrosting, or when cooking foods such as hamburgers without a cover, or from frozen state.

Rearranging. In conventional cooking, you reposition foods in the pan, especially when there are several layers. When microwaving, you also rearrange foods part way through the cooking period.

Stirring. In range-top cooking, you stir foods up from the bottom to help them heat evenly. When microwaving, you stir cooked portions from the outside to the center. Foods which require constant stirring conventionally will need only occasional stirring.

Arranging on Oven Shelf. In conventional baking, you position foods, such as tomatoes or potatoes, so that hot air can flow around them. When microwaving, you arrange foods in a ring so that all sides are exposed to microwave energy.

Standing Time. In conventional cooking, foods such as roasts or cakes are allowed to stand to finish cooking or set. Standing time is especially important in microwave cooking. Note that the microwaved cake is not placed on a cooling rack.

Shielding. In a conventional oven you shield turkey breasts to prevent over-browning. When defrosting you use strips of foil to shield thin parts, which would cook before larger parts were defrosted.

Arranging in Dish. When microwaving, arrange foods with the thickest portions to the outside of the dish. This enables them to cook through without overcooking the thinner areas. Arrange foods of equal size in a ring, leaving the center empty.

Covering. In both conventional and microwave cooking, covers hold in moisture and speed heating. Conventionally, partial covering allows excess steam to escape. Venting plastic wrap or covering with wax paper serves the same purpose when microwaving.

Rotating. Repositioning a dish in the oven helps food cook evenly. To rotate 1/2 turn, turn the dish until the side which was to the back of the oven is to the front. To rotate 1/4 turn, turn the dish until the side which was to the back of the oven is to the side.

GENERAL

Baked Potatoes Demonstrate Several Techniques.

Prick potatoes in several places to allow steam to escape.

Arrange potatoes in a ring so that all sides can be exposed to equal amounts of microwave energy.

Turn Over and rearrange potatoes half way through cooking.

COVERING TECHNIQUES FOR RETAINING MOISTURE IN FOODS

Porous Cover, such as paper towel or napkin, allows steam to escape while it promotes even heating and prevents spatters. Use to cover bacon, sandwiches and some vegetable custards.

Tight Cover of plastic wrap holds in steam as well as heat. Turning back one edge as a vent allows excess steam to escape, so wrap will not split during cooking. Vegetables and fish should be steamed.

Cooking Bags should not be used with meats or other foods which must be turned over during microwaving. It is necessary to slash the bag for venting and the juices would run out when the food was turned over.

Light Cover of wax paper holds in heat for faster cooking without steaming food. It is frequently used to cover some fruits and meats, such as chicken, hamburgers or roasts, which do not need steam to tenderize them.

Utensil Cover can be used instead of plastic wrap when you are microwaving vegetables, saucy casseroles and meats which require moisture and steam to tenderize them.

Freezer Bags hold moisture in foods and serve as both cooking utensil and cover. Pierce the top of the bag with a knife to vent. Package leftovers in single portions for easy-to-heat home-made frozen entrees.

FACTORS WHICH AFFECT COOKING

Several factors which influence timing and results in conventional cooking are exaggerated by microwave speed. From conventional cooking you are familiar with the idea that more food takes more time. Two cups of water take longer to boil than one. Size of foods is important, too. Cut up potatoes cook faster than whole ones. These differences are more apparent in microwaving, since energy penetrates and turns to heat directly in the food.

Piece Size. In both conventional and microwave cooking, small pieces cook faster than large ones. Pieces which are similar in size and shape cook more evenly.

Density of Food. In both conventional and microwave cooking, dense foods, such as a potato, take longer to cook or heat than light, porous foods, such as a piece of cake, bread or roll.

Starting Temperature. Foods taken from the refrigerator take longer to cook than

foods at room temperature. Timings in our recipes are based on the temperatures at which you normally store the foods.

Quantity of Food. In both types of cooking, small amounts usually take less time than large ones. This is most apparent in microwave cooking, where time is directly related to the number of servings.

Shape of Food. In both types of cooking, thin areas cook faster than thick ones. This can be controlled in microwaving by placing thick pieces to the outside edge with thin pieces to the center.

Boiling. Microwaves exaggerate boiling in milk-based foods. A temperature probe turns off the oven before foods boil over. Use a lower power setting and watch carefully when not using a probe.

Round Shapes. Since microwaves penetrate foods to about 1-in. from top, bottom and sides, round shapes and rings cook more evenly. Corners receive more energy and may overcook. This may also happen conventionally.

Height in Oven. In both types of cooking, areas which are closest to the source of heat or energy cook faster. For even microwaving, turn over or shield vulnerable foods which are higher than 3 inches.

Prick Foods to Release Pressure. Steam builds up pressure in foods which are tightly covered by a skin or membrane. Prick potatoes (as you do conventionally) egg yolks and chicken livers to pre-

vent bursting.

Bury Vulnerable Foods. Foods which attract microwave energy, such as cheese or meat, should, when possible be buried in sauce or other ingredients. In conventional stewing or pot roasting, meat not covered with liquid dries out.

SOME FOODS DO NOT MICROWAVE WELL

No single appliance does everything well, and your microwave oven is no exception. Some things should not be done, either because results are not satisfactory, or because conventional cooking is more efficient.

Eggs in Shells and shelled boiled eggs can burst.

Pancakes do not crust, however, they reheat well.

Popcorn, except for that which is labeled "microwave popcorn", is too dry to attract microwave energy.

Canning requires prolonged high temperatures.

Deep Fat frying could cause burns.

Bottles with narrow necks may shatter if heated.

Large food loads, such as a 25-lb. turkey or a dozen potatoes cook more efficiently in a conventional oven.

GENERAL

CARE

WALLS, FLOOR AND PLASTIC COVER

Because there is little heat except in the food, or sometimes in the utensils, spills and spatters are easy to remove. Some spatter can be removed with a paper towel, others may require a damp cloth. Remove greasy spatters with a sudsy cloth, then rinse, and dry. **Do not use abrasive cleansers on oven walls.** Under no circumstances should you attempt to remove the cover over the "stirrer" at the top of the oven for cleaning. **NEVER USE A COMMERCIAL OVEN CLEANER ON ANY PART OF YOUR MICROWAVE OVEN.**

DOOR-INSIDE

Glass — wipe up spatters daily, wash when soiled with a minimum of sudsy warm water. Rinse thoroughly and dry. Metal and Plastic Parts on Door — to assure a tight seal around door, this area must be wiped frequently with a damp cloth to remove all soil. A build up of soil could result in leakage of microwave energy from the oven. **DO NOT USE ABRASIVES, SUCH AS CLEANING POWDERS OR STEEL AND PLASTIC PADS. THEY WILL MAR THE SURFACE OF THESE PARTS. ALSO, ALL CLEANING MATERIALS USED ON THE DOOR PARTS MUST BE THOROUGHLY RINSED OFF.**

Special note when using Brown 'N Sear Dish:

If grease is present, high heat generated on bottom of a Brown 'n Sear dish may cause the grease to burn onto the oven floor. This may be removed with a cleanser such as Bon Ami® brand cleanser.

After using Bon Ami® brand cleanser, rinse and dry thoroughly, following instructions on can. Do not use Bon Ami® brand cleanser on the painted surfaces such as the walls. It may scratch the paint.

AUTOMATIC TEMPERATURE PROBE

Probe is sturdy, but care should be taken in handling. Do not twist or bend; avoid dropping temperature probe.

Clean as soon after using as possible. To clean, wipe with sudsy cloth, then rub lightly with plastic scouring ball if necessary. Rinse and dry. **Cable end (part which is inserted into oven receptacle) is not immersible.**

DO NOT USE TEMPERATURE PROBE IN OVEN UNLESS IT IS INSERTED INTO FOOD, AND TIME/TEMP SWITCH IS AT TEMP.

EXTERIOR

The outside surface is a baked-on paint or wood vinyl case covering. Clean frequently with soap and water, or for vinyl, a household cleaning product designed to clean vinyl (check label on cleaning product) then rinse and dry. Outer pane of window is plastic. Clean with a damp cloth to wipe clean.

If dust accumulation becomes a problem, wipe surface of the outer pane with a weak solution of liquid dishpan detergent (2 teaspoons detergent per quart of water). **USE SPECIAL CAUTION NOT TO SCRATCH THIS SURFACE.**

Chrome trim is best wiped with a damp towel or cloth, then wiped immediately with a dry towel. Cleaned daily this way, chrome will stay shiny and spot-free.

RATING PLATE

The rating plate contains the model number, serial number and electrical rating of the appliance. The location of the plate varies by type of oven:

COUNTERTOP MODELS (CMO) — Inside oven on side wall, or on rear outside of case

HI-LOW MODELS — Open self-clean oven door - on frame above door, or inside microwave oven on side wall.

WALL OVEN (SELF-CLEAN/CMO) — Open self-clean oven door - on frame above door, or inside microwave oven on side wall.

BUILT-IN CMO — Inside oven on side wall, or on rear outside of case.

SPACEMAKER (WALL/CABINET MOUNTED) — Bottom lower left corner of case, or inside oven on side wall.

COMBINATION RANGE — Open self-clean oven door - on frame above door.

NORMAL SIGHTS & SOUNDS

1. Steam or vapor escaping from around the door.
2. Light reflection around door or outer case.
3. Dull thumping sound while cooking at power levels other than high.
4. Flickering light, under low voltage conditions.

TV-Radio Interference

Some TV and radio interference might be noticed while operating the microwave oven. It is similar to the interference caused by other small appliances such as vacuum cleaners, mixers, etc. It does not indicate a problem with your oven.

Microwaving Tips
Dish Test

- Make sure all cookware used in your microwave oven is suitable for microwaving.

If you are unsure, use this dish test: Measure 1 cup water in a glass cup. Place in oven on or beside dish. Microwave 1-1½ minutes at HIGH. If water becomes hot, dish is microwave safe. If dish heats, it should not be used for microwaving.

GENERAL

Automatic Cooking – Auto Cook Feature

The "Auto Cook" feature provides an automatic Cooking cycle by use of an electronic "sensor," which senses humidity (steam) or hydrocarbon, (food odors) during the cooking process. This feature automatically adjusts the cooking time and power level to various types, and amounts of food, by use of a one digit code.

Auto Cook Sensor

Two basic types of sensors are in use:

1. Humidity – detects humidity only.
2. Gas – detects humidity & hydrocarbons

Proper performance of either sensor system depends on detection of the steam or hydrocarbons escaping from the food as it cooks.

Cooking Technique Humidity Sensor

Operation of the pure humidity sensor dictates that all foods must be covered with utensil lid or plastic wrap. This allows the sensor to detect a sudden change in humidity (steam burst) during the cooking process, when the steam pressure is released from under the cover or wrap.

Once the sensor detects the humidity change, depending on the food program code being used, the oven either shuts off or continues to cook for an automatic predetermined time and power level.

Covering the food "too loose" or "too tight" can cause early or late detection, and can result in under cooked or over cooked food.

Cooking Technique Gas Sensor

Operation of the gas sensor is very similar to the pure humidity type, except most foods do not have to be covered during cooking. Since the sensor detects hydrocarbons (food odors) as well as humidity, covers are only suggested to be used to prevent spatter or for steamed foods.

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PRECAUTIONS TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

- A. DO NOT OPERATE OR ALLOW THE OVEN TO BE OPERATED WITH THE DOOR OPEN.
- B. MAKE THE FOLLOWING SAFETY CHECKS ON ALL OVENS TO BE SERVICED BEFORE ACTIVATING THE MAGNETRON OR OTHER MICROWAVE SOURCE, AND MAKE REPAIRS AS NECESSARY.
 - 1. INTERLOCK OPERATION
 - 2. PROPER DOOR CLOSING
 - 3. SEAL AND SEALING SURFACES (ARCING, WEAR, AND OTHER DAMAGE)
 - 4. DAMAGE TO OR LOOSENING OF HINGES AND LATCHES
 - 5. EVIDENCE OF DROPPING OR ABUSE
- C. BEFORE TURNING ON MICROWAVE POWER FOR ANY SERVICE TEST OR INSPECTION WITHIN THE MICROWAVE GENERATING COMPARTMENTS, CHECK THE MAGNETRON, WAVE GUIDE OR TRANSMISSION LINE, AND CAVITY FOR PROPER ALIGNMENT, INTEGRITY, AND CONNECTIONS.

- D. ANY DEFECTIVE OR MISADJUSTED COMPONENTS IN THE INTERLOCK, MONITOR, DOOR SEAL, AND MICROWAVE GENERATION AND TRANSMISSION SYSTEMS SHALL BE REPAIRED, REPLACED, OR ADJUSTED BY PROCEDURES DESCRIBED IN THIS MANUAL BEFORE THE OVEN IS RELEASED TO THE OWNER.
- E. A MICROWAVE LEAKAGE CHECK TO VERIFY COMPLIANCE WITH THE FEDERAL PERFORMANCE STANDARD SHOULD BE PERFORMED ON EACH OVEN PRIOR TO RELEASE TO THE OWNER.

MICROWAVE LEAKAGE TEST

A microwave leakage test must be performed any time a door is removed, replaced, disassembled, or adjusted for any reason.

THE MAXIMUM LEAKAGE ALLOWED IS 5MW/CM²

WHEN REPLACING THE MAGNETRON, BE CERTAIN THE R.F GASKET IS IN PLACE AND MOUNTING NUTS ARE TIGHTENED SECURELY TO WAVE-GUIDE. FAILURE TO DO SO CAN RESULT IN HAZARDOUS LEVELS OF MICROWAVE LEAKAGE.

SAFETY

CUSTOMER USER PRACTICES

Installation - CMO

Countertop microwave ovens (CMO) should be located to place the front surface of the door three-inches or more back from the countertop edge to avoid accidental tipping of the appliance in normal use.

Safety Tips During Microwave Cooking

- 1. Cooking utensils may become hot** because of heat transferred from the heated food. This is especially true if plastic wrap has been covering the top and handles of the utensil. Pot holders may be needed to handle the utensil.
- 2. Sometimes, the oven shelf can become too hot to touch.** Be careful touching the shelf during and after cooking.
- 3. Don't heat unopened food containers in the oven.** Pressure building up can cause the container to burst, resulting in injury.
- 4. Don't defrost frozen liquids** - especially carbonated ones—in the oven. Even if the container is opened, pressure can build up. This can cause the container to burst, resulting in injury.
- 5. Don't overcook food excessively.** Food dries out, and can even ignite in some cases.
- 6. If food should ever ignite: Keep the oven door closed. Turn off the power immediately:** disconnect power cord or shut off power at the fuse circuit breaker panel.
- 7. Remove the temperature sensor from the oven when not using it to cook with.** If you leave the sensor inside the oven, without inserting it in food or liquid, and turn on microwave energy, it can create electrical arcing in the oven, and damage oven walls.
- 8. Remove wire twist-ties** on paper and plastic bags before placing in oven. Twist-ties sometimes cause bag to heat, and may cause fire.
- 9. Boiled eggs (in or out of shell) are not recommended** for microwave cooking. Pressure can build up inside egg yolk and may cause it to burst, resulting in injury.
- 10. Do not pop popcorn in your microwave oven** unless in a special microwave popcorn accessory or unless you use popcorn labeled for use in microwave ovens.
- 11. Use metal only as directed in cookbook.** Metal strips as used on meat roasts are helpful in cooking food when used as directed. Metal trays may be used for TV dinners. However, when using metal in the microwave oven, **keep metal at least 1-inch away from sides of microwave oven.**
- 12. Do not operate the oven while empty.** If by accident the oven should run empty a minute or two, no harm is done. However try to avoid operating the oven empty at all times—it saves energy and prolongs life of the oven.

PREFERRED METHOD

ELECTRICALElectrical Safety Responsibilities

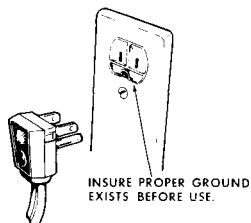
These products are designed, engineered, manufactured and tested in adherence to the requirements of established safety codes, standards and specifications. One important segment of this effort deals with the potential hazards of electrical shock during both service and use of the electrical products involved.

The service technicians responsibility must include the safety of the product. It is very important that the technician:

- (1) honor all built-in safety features and other safety related requirements of the product.
- (2) be continually alert for defeated or non-honored safety features or safety requirements.
- (3) be immediately responsive to all recognized safety hazards and reported incidents of electrical shock.

Grounding - CMOFor Personal Safety, This Appliance Must Be Properly Grounded.

The power cord of this appliance is equipped with a three-prong (grounding) plug which mates with a standard three-prong (grounding) wall receptacle to minimize the possibility of electric shock hazard from this appliance. The customer should have the wall receptacle and circuit checked by a qualified electrician to make sure the receptacle is properly grounded.



Where a standard two-prong wall receptacle is encountered, it is the personal responsibility and obligation of the customer to have it replaced with a properly grounded three-prong wall receptacle.

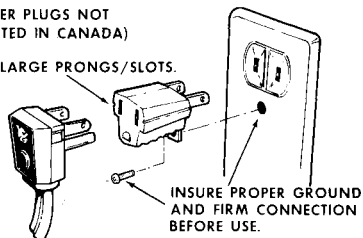
DO NOT, UNDER ANY CIRCUMSTANCES, CUT OR REMOVE THE THIRD (GROUND) PRONG FROM THE POWER CORD.

A. USAGE SITUATIONS WHERE APPLIANCE'S POWER CORD WILL BE DISCONNECTED INFREQUENTLY

TEMPORARY METHOD

(ADAPTER PLUGS NOT PERMITTED IN CANADA)

ALIGN LARGE PRONGS/SLOTS.



Because of potential safety hazards under certain conditions, we strongly recommend against the use of an adapter plug. However, if you still elect to use an adapter, where local codes permit, a **TEMPORARY CONNECTION** may be made to a properly grounded two-prong wall receptacles by the use of a UL listed adapter which is available at most local hardware stores. The larger slot in the adapter must be aligned with the larger slot in the wall receptacle to provide proper polarity in the connection of the power cord.

SAFETY

CAUTION: Attaching the adapter ground terminal to the wall receptacle cover screw does not ground the appliance unless the cover screw is metal, and not insulated, and the wall receptacle is grounded through the house wiring. The customer should have the circuit checked by a qualified electrician to make sure the receptacle is properly grounded. When disconnecting the power cord from the adapter, always hold the adapter with one hand. If this is not done, the adapter ground terminal is very likely to break with repeated use. Should this happen. **DO NOT USE** the appliance until a proper ground has again been established.

B. USAGE SITUATIONS WHERE APPLIANCE'S POWER CORD WILL BE DISCONNECTED FREQUENTLY.

Do not use an adapter plug in these situations because frequent disconnecting of the power cord places undue strain on the adapter and leads to eventual failure of the adapter ground terminal. The customer should have the two-prong wall receptacle replaced with a three-prong (grounding) receptacle by a qualified electrician before using the appliance.

USE OF EXTENSION CORDS - CMO

Because of potential safety hazards under certain conditions we strongly recommend against the use of an extension cord. However, if you still elect to use an extension cord, it is absolutely necessary that it be a UL listed 3-wire grounding type appliance extension cord and that the current carrying rating of the cord in amperes be equal to or greater than the branch circuit size shown on the rating nameplate of this appliance. Such exten-

sion cords are obtainable through your local service organization.

U.S. Government Standard Certification

GE & HP microwave ovens comply with the code of federal regulations as administered by the Bureau of Radiological Health (BRH), under the Department of Health and Human Services (DHHS).

As part of compliance with the federal law, the following statement appears on the oven rating plate or label.

"This product complies with DHHS rules 21 CFR Sub Chapter J."

These microwave ovens are also listed with the Underwriter's Laboratories, Inc.

SAFETY DEVICES**Electrical Interlocks & Monitor**

All microwave ovens have at least two safety switches (electrical interlocks). When the door is open the electrical circuit to the microwave generator is disconnected and microwave energy cannot be produced. In addition, another safety device called a monitor switch is used to insure proper operation of the two safety interlocks. In the event of failure of both safety interlocks the monitor blows an internal oven fuse and disables the oven until it is serviced.

(See Electrical Component Section, and mini-manual with oven for operation and testing).

Internal Fuse

A 15 AMP. line fuse, located within the component compartment, disables and protects the oven in case of short circuit failures. The fuse is also an integral part of the interlocks and monitor circuit (See Interlocks).

When a fuse is found blown, be certain to check the interlocks and monitor circuit, as well as for component short circuits.

Varistor (Touch Control Models)

A metal oxide varistor is electrically connected across the 120 volt input, down-stream of the 15 amp fuse, but ahead of all other electrical components. Its purpose is to prevent voltage transients or spikes from damaging the sensitive electronic parts in the control panel.

A varistor is a voltage sensitive resistor which has a very high impedance when across a 120 vac line. When a high voltage spike appears across the line, the varistor impedance immediately drops to almost zero ohms and the varistor absorbs the energy of the spike.

The varistor is located at the output side of the 15 amp fuse holder on a power control module, or on the smart board.

Whenever changing a defective control panel, visually check the varistor. Replace if heat discolored, or if a hole is burnt through the encapsulation.

A shorted varistor will result in repeated blowing of the 15 amp fuse.

Note: Some varistors are replaceable (see Mini-Manual).

Thermal Fuse (Used on some Touch Control Models)

The thermal fuse is an encapsulated fuseable link. It does not automatically reset and must be replaced if open.

The purpose of the thermal fuse is to shut off power to the oven in event of an overtemperature condition inside the cavity.

The fuse (if used) is usually located on the outer top of the oven cavity.

SAFETY

SERVICE PRACTICES

Discharge High Voltage Capacitor

The microwave oven power supply is a source of high voltage (approx. 4000 v.d.c.). Extreme caution must be taken at all times when servicing the oven. Since the outer case must be removed, or the control panel opened, to service any component, the following safety precautions should be observed in order to prevent injury due to hazardous electrical shock:

1. Unplug oven or disconnect electrical power.
2. **Discharge high voltage capacitor** by shorting across its terminals with an insulated plastic handle screwdriver.
3. Perform as much service as possible with power disconnected. Where power must be applied for circuit diagnosis, be aware of electrically "Hot" components and follow recommended test procedures outlined in "Electrical Components" Section and mini-manual with product.
3. Check plastic stirrer cover for proper installation inside oven.
4. Make physical check of door for build up of soil on door seals, or any possible damage. Check door fit and adjustment according to instructions for model being serviced.
5. Check interlocks and monitor circuit according to instructions in "INTERLOCKS", and "MONITOR" section and mini-manual, for model being serviced.

Safety Checks After Service

In the interest of good service, and for maximum safety to the user, the following safety checks should be performed upon the conclusion of any service of this appliance.

1. Check electric cord and plug. Advise user if improperly grounded wall receptacle is being used, such as a non-grounded adapter.
2. Check cord grounding lead to frame. Check for connection and continuity between ground terminal on plug and oven frame.

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This section contains only representative family groups and typical assembly views. Not every model can be shown.

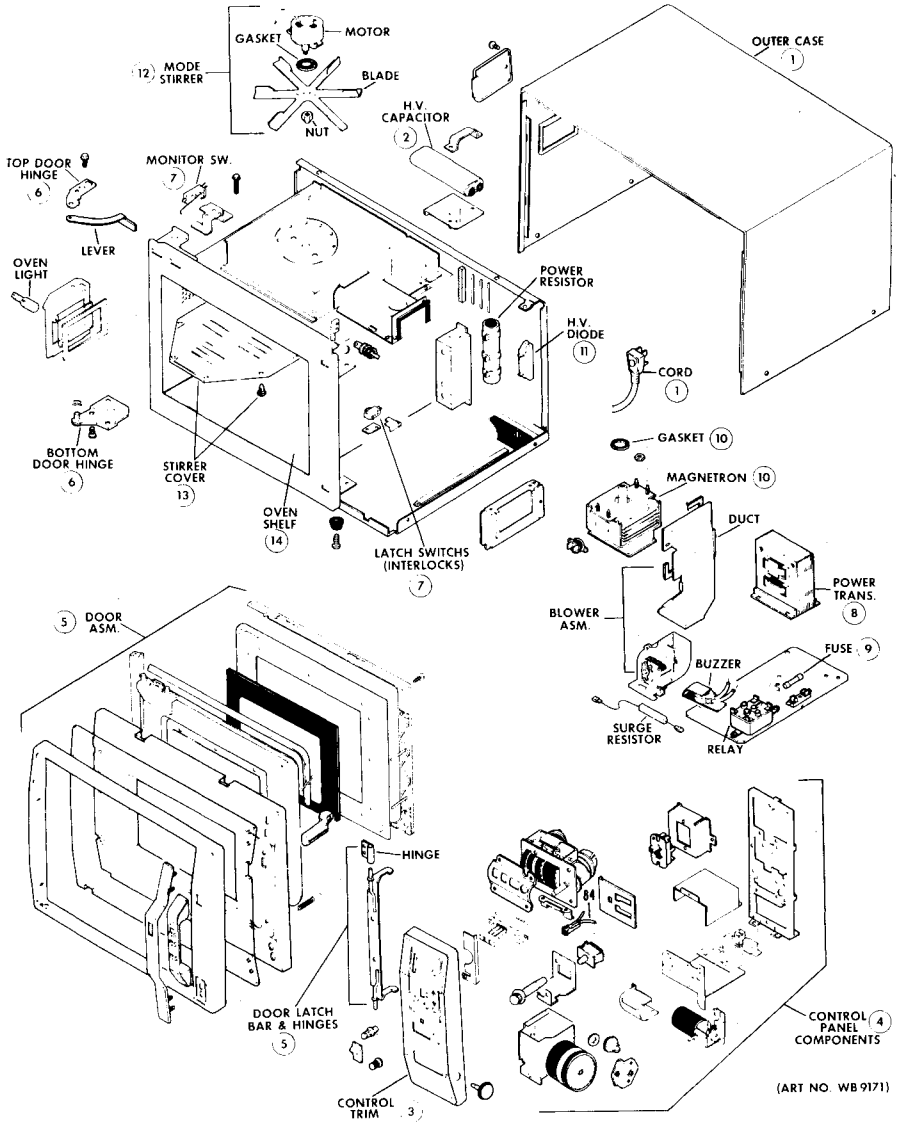
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DISASSEMBLY

COUNTERTOP OVENS (CMO) ELECTRO-MECH. CONTROLS (1.3 CU.FT. OVENS 1977-1982)



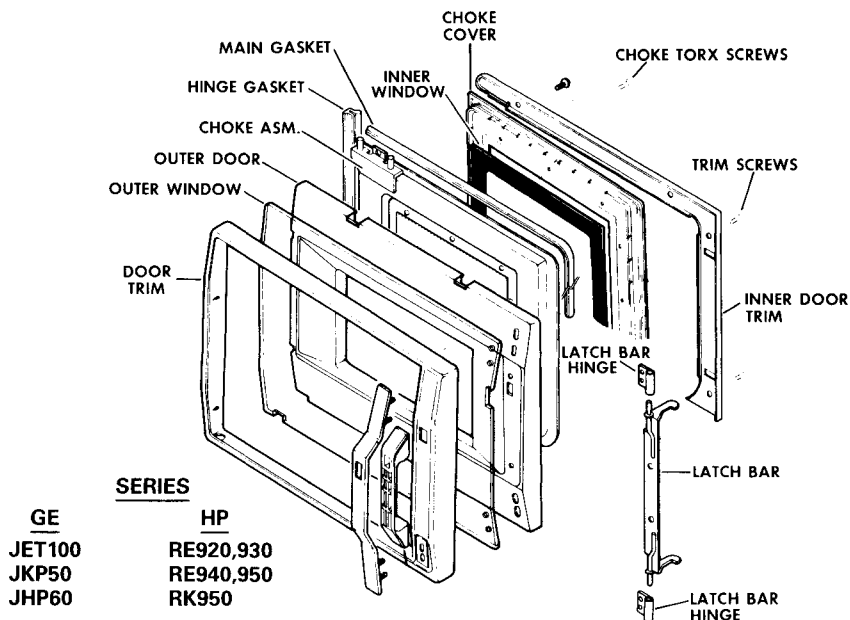
COUNTERTOP OVENS (CMO)

ELECT-MECH. CONTROLS

- 1 SERVICE ACCESS TO ALL COMPONENTS. UNPLUG POWER CORD AND REMOVE SIDE AND REAR SCREWS. SLIDE CASE TO REAR, AND DISCHARGE CAPACITOR.
- 2 H.V. CAPACITOR SHOULD ALWAYS BE DISCHARGED BEFORE SERVICE. SEE ELECTRICAL COMPONENT SECTION AND MINI-MANUAL FOR DETAILS.
- 3 REMOVE TO SERVICE COMPONENTS – ONE SCREW AT TOP AND TWO AT BOTTOM.
- 4 SEE ELECTRICAL COMPONENT SECTION AND MINI-MANUAL FOR DETAILS.
- 5 LATCH BAR HINGES MUST BE INSTALLED WITH CLOSED LOOP TOWARDS HANDLE. MUST MAKE MICROWAVE LEAKAGE TEST WHEN DOOR IS SERVICED. SEE TEST PROCEDURES SECTION AND MINI-MANUAL FOR INSTRUCTIONS.
- 6 ADJUST TOP HINGE FOR DOOR ALIGNMENT TO CONTROL PANEL. SEE MINI-MANUAL FOR DETAILS.
- 7 MUST CHECK FOR OPERATION AFTER SERVICE. SEE MINI-MANUAL FOR DETAILS.
- 8 UNPLUG OVEN AND DISCHARGE CAPACITOR BEFORE SERVICE. NEED LONG (14"-15") 5/16" NUT DRIVER FOR INSIDE MOUNTING SCREWS.
- 9 USE ONLY WB27X7 FUSE. CHECK INTERLOCKS AND MONITOR – SEE MINI-MANUAL.
- 10 FOUR NUT MOUNTING. SPECIAL WIRE MESH R.F. GASKET USED ON OUTPUT STUB.
- 11 OBSERVE POLARITY – GREEN GROUND LEAD CONNECTS TO  TERMINAL.
- 12 MUST REMOVE OUTER CASE AND STIRRER COVER. MUST USE GASKET.
- 13 REMOVE SNAP FASTENERS INSIDE OVEN – CAN USE KNIFE BLADE.
- 14 SHELF SEALED WITH RTV SEALANT – MUST BE CUT OUT, OR CAN SEAL REPLACEMENT SHELF OVER ORIGINAL – SEE INSTRUCTIONS WITH REPLACEMENT SHELF.

DISASSEMBLY

TYPICAL MICROWAVE OVEN DOOR 1.3 CU.FT. OVENS ONLY – 1977-1982



CONSTRUCTION

- METAL CHOKE ASSEMBLY IS PRIMARY MICROWAVE DOOR SEAL.
- PLASTIC CHOKE COVER SNAPS-ON CHOKE ASM.
- CHOKE ASM FASTENED TO PLASTIC OUTER DOOR WITH TORX T-20 SCREWS – SEVERAL AROUND WINDOW – ONE AT TOP HINGE AREA.
- LATCH BAR FASTENED TO OUTER DOOR – OPERATES LATCH INTERLOCKS.

TO REMOVE DOOR GASKETS

1. REMOVE INNER DOOR TRIM.
2. SLIDE OFF MAIN DOOR GASKET.
3. HINGE SIDE GASKET SEALED TO CHOKE ASM – REMOVE CHOKE.

TO REMOVE LATCH BAR

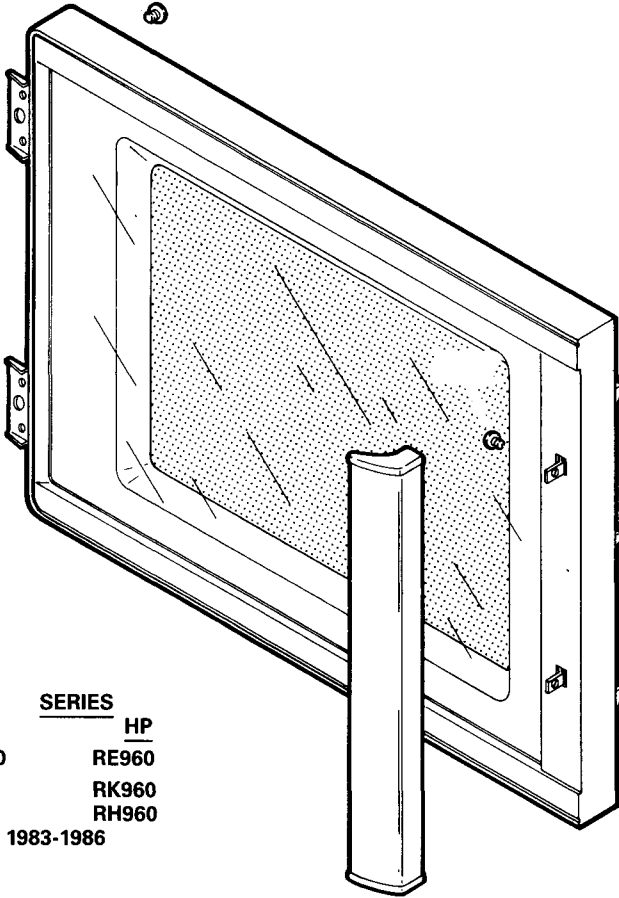
1. REMOVE INNER DOOR TRIM.
2. REMOVE LATCH BAR HINGE SCREWS.
3. NOTE CORRECT POSITION OF HINGES – CLOSED LOOP MUST FACE OUTSIDE OF DOOR.

TO REMOVE CHOKE ASM

1. REMOVE DOOR ASM. – BOTTOM HINGE PLATE ONLY.
2. REMOVE INNER DOOR TRIM.
3. REMOVE ALL CHOKE TORX SCREWS.

MICROWAVE LEAKAGE TEST – A MICROWAVE LEAKAGE TEST MUST BE PERFORMED ANYTIME A DOOR IS REMOVED, REPLACED, DISASSEMBLED OR ADJUSTED FOR ANY REASON.

TYPICAL MICROWAVE OVEN DOOR
1.4 cu ft. MODELS ONLY

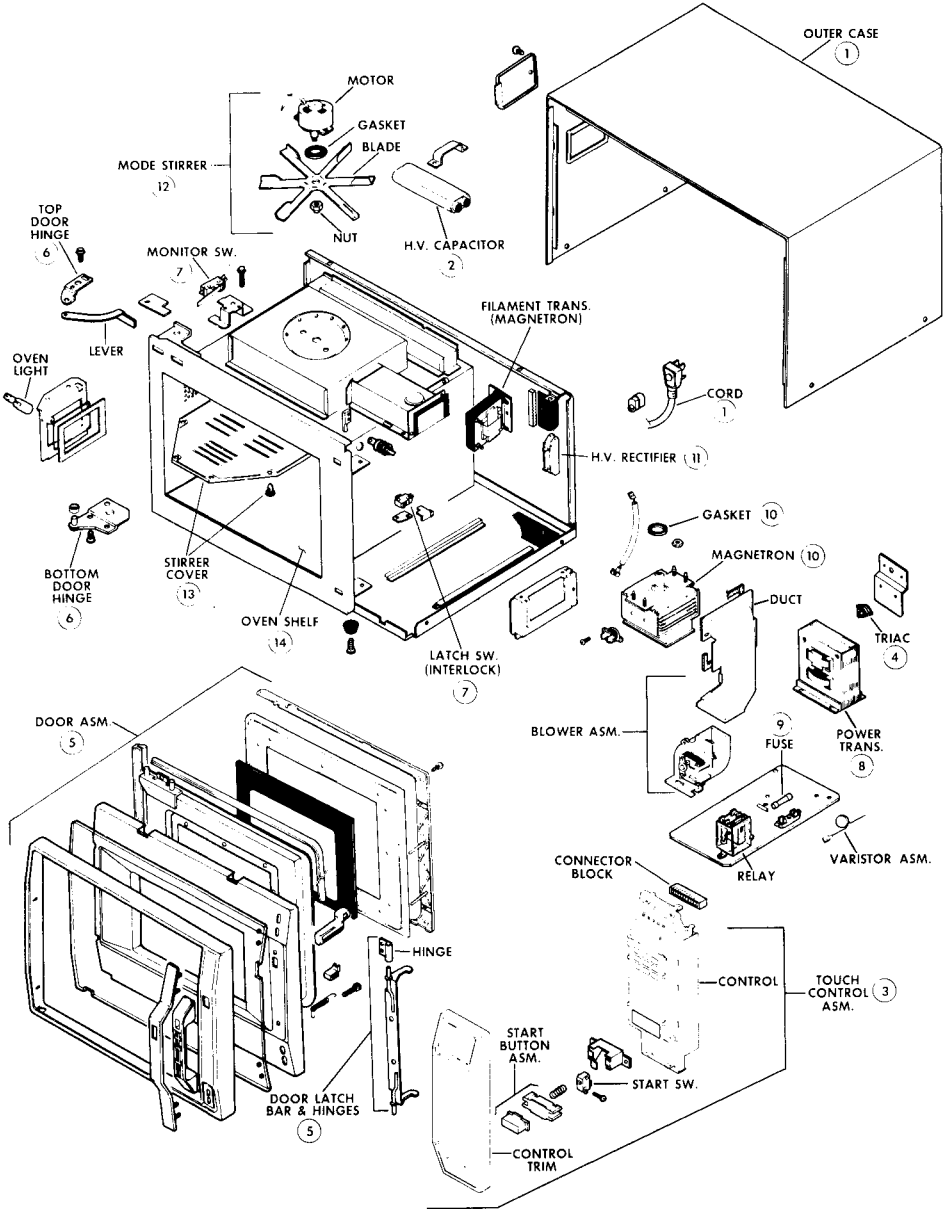


<u>GE</u>	<u>SERIES</u>	<u>HP</u>
JET200		RE960
JKP60		RK960
JHP60		RH960
1983-1986		


- ▶ SERVICED ONLY AS COMPLETE DOOR - OPEN DOOR & REMOVE HINGE SCREW (DO NOT HAVE TO REMOVE CASE)
- ▶ CAN TRANSFER HANDLE
- ▶ DO NOT ATTEMPT TO DISASSEMBLE DOOR

DISASSEMBLY

COUNTERTOP OVENS (CMO) TOUCH CONTROLS (1.3 CU.FT. OVENS — 1977-1982)

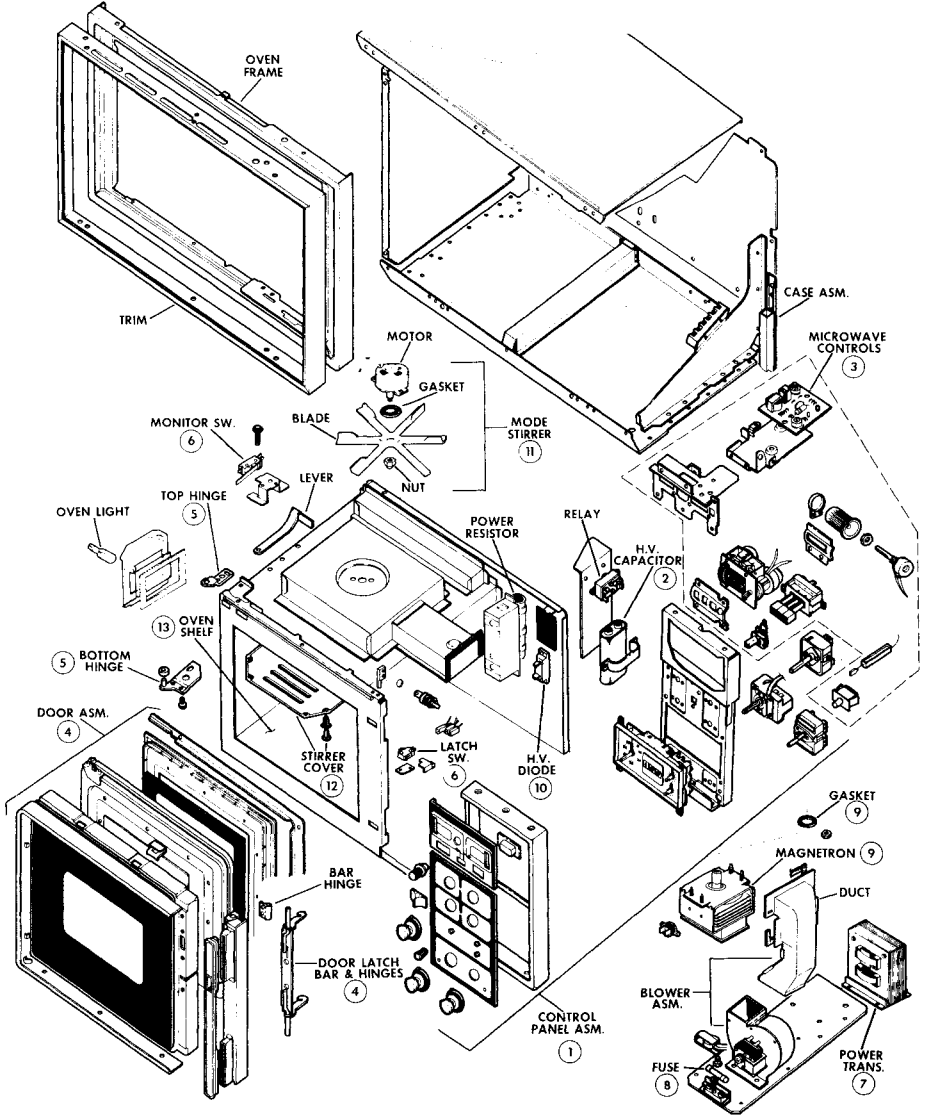


COUNTERTOP OVENS (CMO)**TOUCH CONTROLS**


- 1 SERVICE ACCESS TO ALL COMPONENTS. UNPLUG POWER CORD AND REMOVE SIDE AND REAR SCREWS. SLIDE CASE TO REAR, AND DISCHARGE CAPACITOR.
- 2 H.V. CAPACITOR SHOULD ALWAYS BE DISCHARGED BEFORE SERVICE. SEE ELECTRICAL COMPONENT SECTION AND MINI-MANUAL FOR DETAILS.
- 3 SEE INSTRUCTIONS THIS SECTION OR MINI-MANUAL/DATA SHEET FOR REPLACEMENT PROCEDURE.
- 4 SEE ELECTRICAL COMPONENT SECTION AND MINI-MANUAL FOR DETAILS.
- 5 LATCH BAR HINGES MUST BE INSTALLED WITH CLOSED LOOP TOWARDS HANDLE. MUST MAKE MICROWAVE LEAKAGE CHECK WHEN DOOR IS SERVICED. SEE TEST PROCEDURES SECTION AND MINI-MANUAL FOR INSTRUCTIONS.
- 6 ADJUST TOP HINGE FOR DOOR ALIGNMENT TO CONTROL PANEL. SEE MINI-MANUAL FOR DETAILS.
- 7 MUST CHECK FOR OPERATION AFTER SERVICE. SEE MINI-MANUAL FOR DETAILS.
- 8 UNPLUG OVEN AND DISCHARGE CAPACITOR BEFORE SERVICE. NEED LONG (14"-15") 5/16" NUT DRIVER FOR INSIDE MOUNTING SCREWS.
- 9 USE ONLY WB27X7 FUSE. CHECK INTERLOCKS AND MONITOR – SEE MINI-MANUAL.
- 10 FOUR NUT MOUNTING. SPECIAL WIRE MESH R.F. GASKET USED ON OUTPUT STUB.
- 11 OBSERVE POLARITY – GREEN GROUND LEAD CONNECTS TO  TERMINAL.
- 12 MUST REMOVE OUTER CASE AND STIRRER COVER. MUST USE GASKET.
- 13 REMOVE SNAP FASTENERS INSIDE OVEN – CAN USE KNIFE BLADE.
- 14 SHELF SEALED WITH RTV SEALANT – MUST BE CUT OUT, OR CAN SEAL REPLACEMENT SHELF OVER ORIGINAL – SEE INSTRUCTIONS WITH REPLACEMENT SHELF.

DISASSEMBLY

HI-LOW COOKING CENTER ELECTRO-MECH CONTROLS 1977-1982



**HI—LOW COOKING CENTER
TOUCH CONTROLS**

1. CONTROL PANEL HINGES DOWN FOR SERVICE. SEE SERVICE ACCESS TO COMPONENTS — THIS SECTION.
2. H.V. CAPACITOR SHOULD ALWAYS BE DISCHARGED BEFORE SERVICE. SEE ELECTRICAL COMPONENT SECTION AND MINI-MANUAL/DATA SHEET FOR DETAILS.
3. MICROWAVE CONTROLS CAN BE REMOVED AS ASSEMBLY (4 SCREWS). SEE ELECTRICAL COMPONENT SECTION AND MINI-MANUAL FOR TEST PROCEDURES.
4. LATCH BAR HINGES MUST BE INSTALLED WITH CLOSED LOOP TOWARDS HANDLE. MUST MAKE MICROWAVE LEAKAGE TEST WHEN DOOR IS SERVICED. SEE TEST PROCEDURES SECTION AND MINI-MANUAL FOR DETAILS.
5. ADJUST TOP HINGE FOR DOOR ALIGNMENT TO CONTROL PANEL. SEE MINI-MANUAL FOR DETAILS.
6. PULL CHASSIS PARTIALLY FOR ACCESS. SEE SERVICE ACCESS TO COMPONENTS — THIS SECTION. MUST CHECK FOR OPERATION AFTER SERVICE . SEE MINI-MANUAL FOR DETAILS.
7. DISCONNECT OVEN POWER AND DISCHARGE CAPACITOR BEFORE SERVICE.
8. USE ONLY WB27X7 FUSE. CHECK INTERLOCKS AND MONITOR — SEE MINI-MANUAL.
9. FOUR NUT MOUNTING. SPECIAL WIRE MECH R.F. GASKET USED ON OUTPUT STUB.
10. OBSERVE POLARITY — GREEN GROUND LEAD CONNECTS TO  TERMINAL.
11. REMOVE STIRRER COVER AND PULL CHASSIS PARTIALLY FOR ACCESS. SEE SERVICE ACCESS TO COMPONENTS — THIS SECTION.
12. REMOVE SNAP FASTENERS INSIDE OVEN — CAN USE KNIFE BLADE.
13. SHELF SEALED WITH RTV SEALANT — MUST BE CUT OUT, OR CAN SEAL REPLACEMENT SHELF OVER ORIGINAL — SEE INSTRUCTIONS WITH REPLACEMENT SHELF.

DISASSEMBLY

SERVICE ACCESS TO COMPONENTS HI-LOW RANGES – 1977-1982

CONTROL PANEL

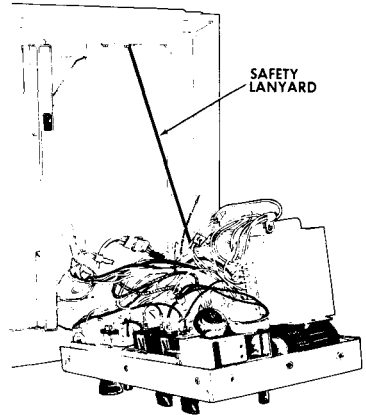
The control panel hinges down for front service of controls and access to other components.

CAUTION

TO AVOID ELECTRICAL SHOCK: DISCONNECT THE POWER TO THE APPLIANCE BEFORE SERVICING. FOR THOSE CHECKS REQUIRING THE USE OF ELECTRICAL POWER, EXTREME CARE SHOULD BE EXERCISED. DISCHARGE HIGH VOLTAGE CAPACITOR BEFORE CHECKING OR SERVICING ANY MICROWAVE COMPONENT. RESPECT HIGH VOLTAGE.

To Service Control Panel

1. Remove center Phillips head screw at top of control panel trim.
2. Pull out top of control panel and lift up to disengage bottom tab on trim from slot in flange on oven picture frame.
3. Insert servicing hinge clip (located on R.H. bottom of control panel) into "tee" slot on oven picture frame flange.
4. Allow control panel assembly to hinge down and be held in horizontal position by the service safety lanyard.



REMOVAL OF MICROWAVE CHASSIS

Troubleshooting or servicing some microwave components may require partial dismantling or complete removal of the microwave oven chassis.

1. Remove (5) screws from front frame – (3) top rear screws and (2) bottom rear screws.
2. Chassis can then be pulled out partially and moved in any direction for access to most components.
3. All microwave controls (top of control) can be removed as an assembly. (4 screws).

NOTE: WHEN REINSTALLING THE CONTROL BRACKET, BE VERY CAREFUL NOT TO SCRATCH THE PLASTIC CRYSTAL WITH THE SWITCH BUTTONS OR CONTROL SHAFTS.

4. Unplugging white power disconnect block will isolate entire microwave circuit from rest of range circuit.

5. For complete chassis removal: feed remainder of control panel back through picture frame opening and carefully rest panel on cooktop.

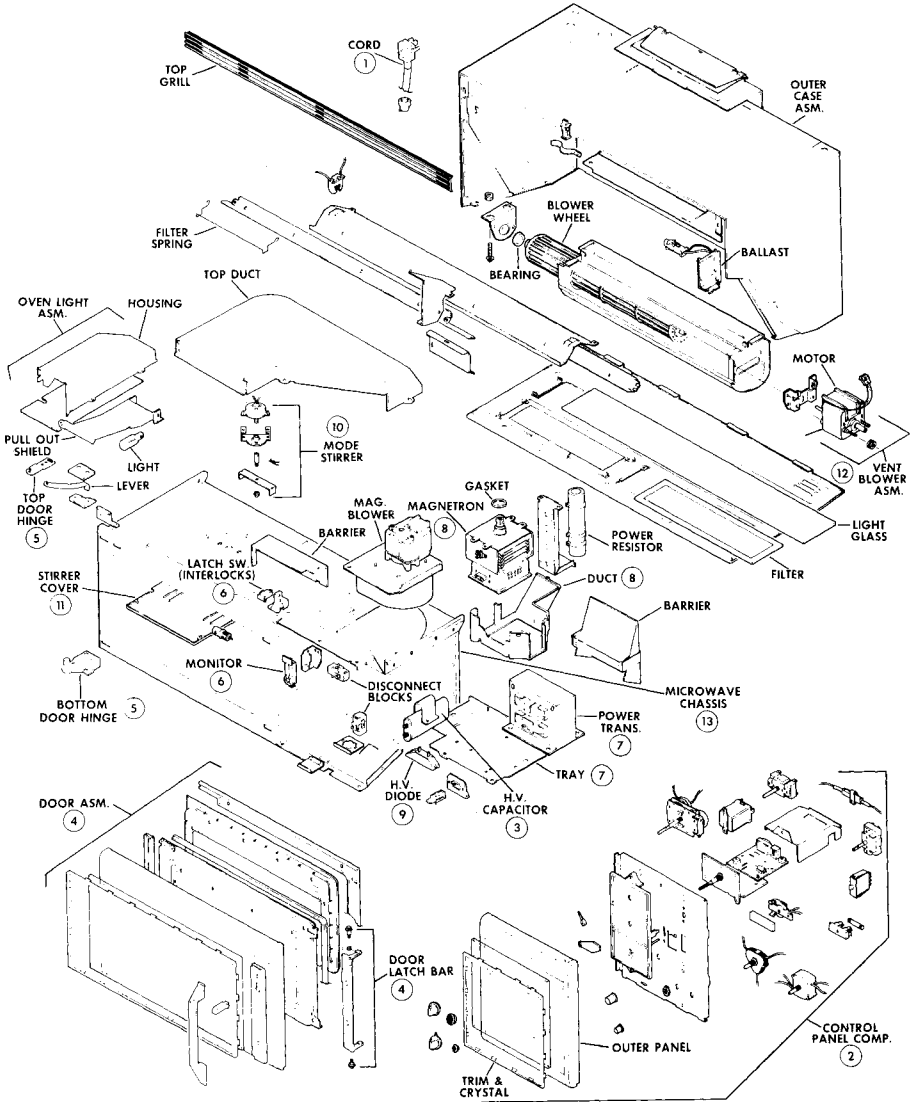
USE CAUTION NOT TO OVERSTRESS THE THERMOSTAT CAPILLARY OR THE CONTROL TERMINALS AND WIRING.

Complete chassis can then be removed.



DISASSEMBLY

SPACEMAKER (ELECTRO-MECH CONTROLS) 1979-1985




SERIES

GE
JVM40,50,60,70

HP
RVM40,50,60

**SPACEMAKER
ELECTRO-MECH CONTROLS**

1. UNPLUG POWER CORD BEFORE SERVICING COMPONENTS.
2. CONTROL PANEL HINGES DOWN FOR SERVICE. SEE SERVICE ACCESS TO COMPONENTS — THIS SECTION.
3. H.V. CAPACITOR SHOULD ALWAYS BE DISCHARGED BEFORE SERVICE. SEE ELECTRICAL COMPONENT SECTION AND MINI-MANUAL FOR DETAILS.
4. MUST MAKE MICROWAVE LEAKAGE TEST WHEN DOOR IS SERVICED.
5. ADJUST TOP HINGE FOR DOOR ALIGNMENT. SEE MINI-MANUAL FOR DETAILS.
6. MUST CHECK FOR OPERATION AFTER SERVICE. SEE MINI-MANUAL FOR DETAILS.
7. POWER TRAY MUST BE REMOVED TO SERVICE TRANSFORMER. SEE MINI-MANUAL FOR DETAILS.
8. MAGNETRON AND DUCT REMOVE AS ASSEMBLY. FOUR NUT MOUNTING. SPECIAL WIRE MESH R.F. GASKET USED ON OUTPUT STUB.
9. OBSERVE POLARITY — GREEN GROUND LEAD CONNECTS TO  TERMINAL.
0. REMOVE MICROWAVE CHASSIS AND STIRRER COVER.
 1. REMOVE SNAP FASTENERS INSIDE OVEN — CAN USE KNIFE BLADE.
 2. REMOVES AS COMPLETE ASSEMBLY. SEE MINI-MANUAL FOR DETAILS.
 3. REMOVE COMPLETE CHASSIS FOR SOME SERVICE. SEE MINI-MANUAL AND SERVICE ACCESS TO COMPONENTS — THIS SERVICE.

DISASSEMBLY

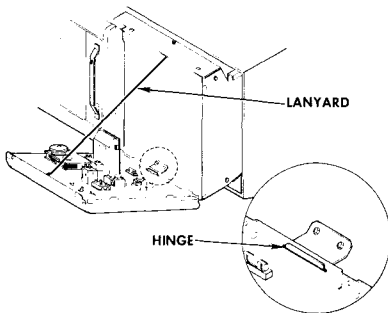
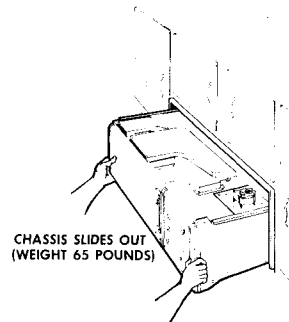
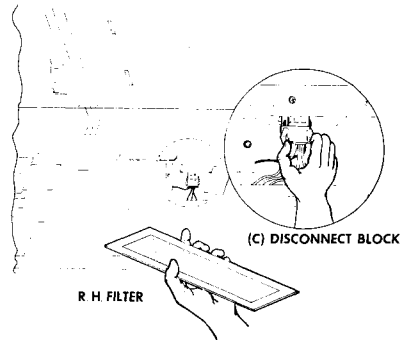
SERVICE ACCESS TO COMPONENTS

Control Panel

The control panel hinges down for front servicing.

1. Remove three (3) shouldered screws from front edge of bottom cover.
2. Remove R.H. filter and remove disconnect block access cover plate (only).
3. Remove top grill (one screw at each end).
4. Slide microwave chassis forward about 1-2 inches.
5. Remove two (2) screws from top and bottom edge of control panel (hold panel to prevent falling).
6. Lift control panel out and engage bottom of panel (slot) over bracket (tab) to form a hinge. A wire lanyard holds the panel in a fully opened position.
7. Discharge capacitor.

3. Grasp chassis at each end and slide out (65 pounds). Place on floor on protective pad.



MICROWAVE CHASSIS REMOVAL

1. Disconnect "C" block through filter opening.
2. Remove grill at top and (3) shouldered screws at bottom.

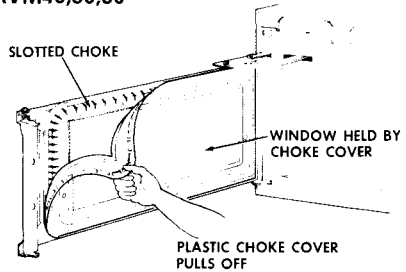
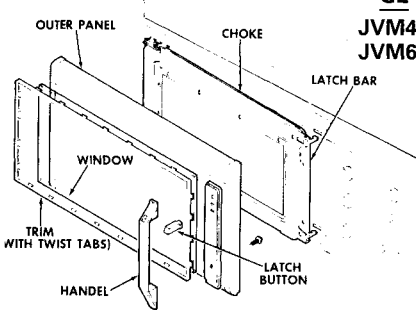
SPACEMAKER DOOR
SERIES

GE

HP

**JVM40,50
JVM60,70**

RVM40,50,60



CONSTRUCTION

- METAL CHOKE IS PRIMARY MICROWAVE DOOR SEAL.
- PLASTIC CHOKE COVER SNAPS-ON CHOKE ASM.
- CHOKE ASM FASTENED TO PLASTIC OUTER DOOR WITH TORX T-20 SCREWS.
- LATCH BAR FASTENED TO CHOKE ASM – OPERATES LATCH INTERLOCKS.

TO REPLACE GASKET, LATCH BAR OR OUTER DOOR

1. REMOVE INNER DOOR "HORSE SHOE" TRIM—4 SCREWS.
2. MAIN GASKET PULLS OFF (HINGE SIDE REQUIRES FURTHER DISASSEMBLY).
3. REMOVE ALL TORX SCREWS AROUND INNER WINDOW.
4. OUTER DOOR LIFTS OFF – HINGE GASKET AND LATCH BAR ACCESSIBLE.

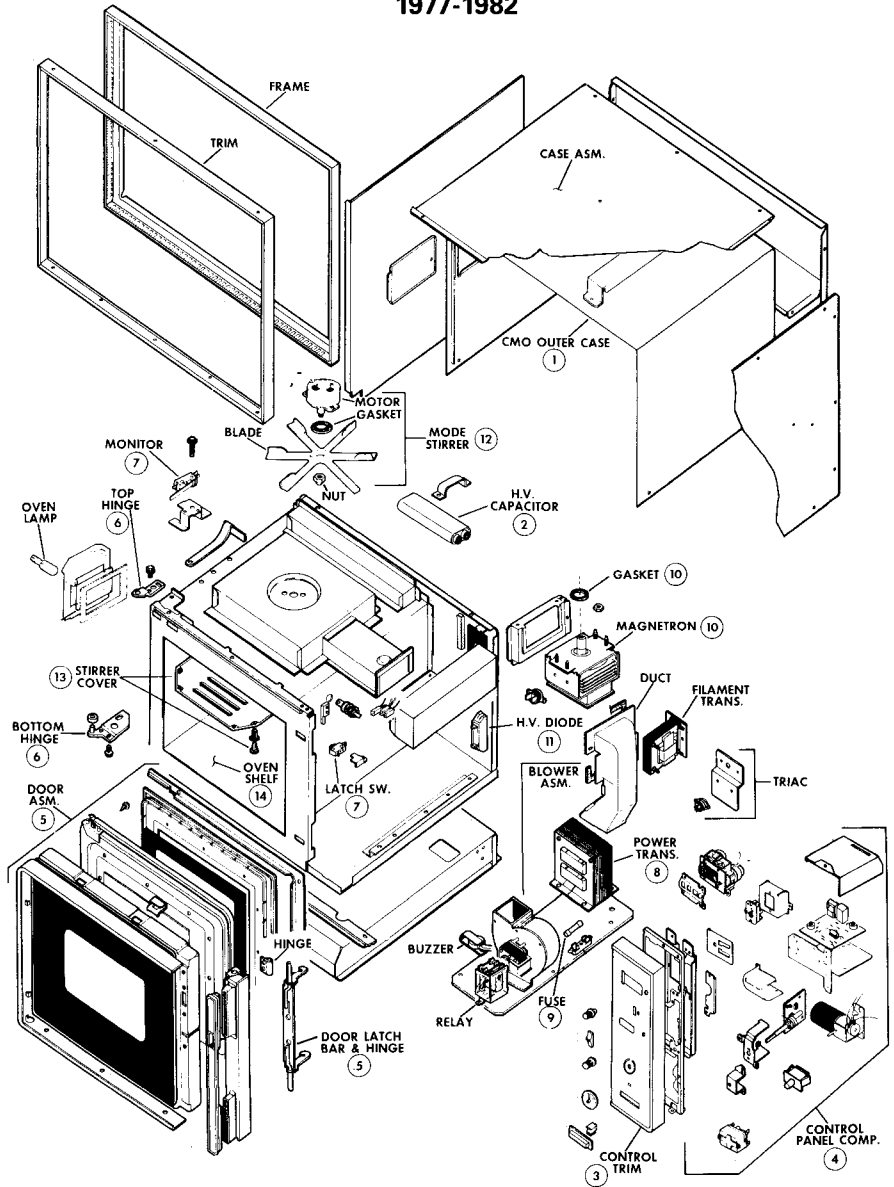
TO REMOVE CHOKE ASM OR COMPLETE DOOR ASM

1. SLIDE MICROWAVE CHASSIS OUT 1 – 2".
2. REMOVE TOP AND BOTTOM HINGE PLATES – LIFT OFF DOOR.
3. REMOVE INNER TRIM AND ALL TORX SCREWS.

MICROWAVE LEAKAGE TEST – A MICROWAVE LEAKAGE TEST MUST BE PERFORMED ANYTIME A DOOR IS REMOVED, REPLACED, DISASSEMBLED, OR ADJUSTED FOR ANY REASON.

DISASSEMBLY

WALL OVEN COOKING CENTER (ELECTRO-MECH CONTROLS) 1977-1982



**WALL OVEN COOKING CENTER
ELECTRO-MECH CONTROLS**

1. OVEN MUST BE REMOVED FROM BUILT-IN ASSEMBLY FOR ALL SERVICE. SEE SERVICE ACCESS TO COMPONENTS — THIS SECTION.
2. H.V. CAPACITOR SHOULD ALWAYS BE DISCHARGED BEFORE SERVICE. SEE ELECTRICAL COMPONENT SECTION AND MINI-MANUAL FOR DETAILS.
3. REMOVE TO SERVICE COMPONENTS — ONE SCREW AT TOP AND TWO AT BOTTOM.
4. SEE ELECTRICAL COMPONENT SECTION AND MINI-MANUAL FOR DETAILS.
5. LATCH BAR HINGES MUST BE INSTALLED WITH CLOSED LOOP TOWARDS HANDLE. MUST MAKE MICROWAVE LEAKAGE TEST WHEN DOOR IS SERVICED. SEE TEST PROCEDURES SECTION AND MINI-MANUAL FOR DETAILS.
6. ADJUST TOP HINGE FOR DOOR ALIGNMENT TO CONTROL PANEL. SEE MINI-MANUAL FOR DETAILS.
7. MUST CHECK FOR OPERATION AFTER SERVICE. SEE MINI-MANUAL FOR DETAILS.
8. UNPLUG OVEN AND DISCHARGE CAPACITOR BEFORE SERVICE. NEED LONG (14" - 15") 5/16" NUT DRIVE FOR INSIDE MOUNTING SCREWS.
9. USE ONLY WR27X7 FUSE. CHECK INTERLOCKS AND MONITOR — SEE MINI-MANUAL.
10. FOUR NUT MOUNTING. SPECIAL WIRE MESH R.F. GASKET USED ON OUTPUT STUB.
11. OBSERVE POLARITY — GREEN GROUND LEAD CONNECTS TO ➔+ TERMINAL.
12. MUST REMOVE OUTER CASE AND STIRRER COVER. MUST USE GASKET.
13. REMOVE SNAP FASTENERS INSIDE OVEN — CAN USE KNIFE BLADE.
14. SHELF SEALED WITH RTV SEALANT — MUST BE CUT OR CAN SEAL REPLACEMENT SHELF OVER ORIGINAL — SEE INSTRUCTIONS WITH REPLACEMENT SHELF.

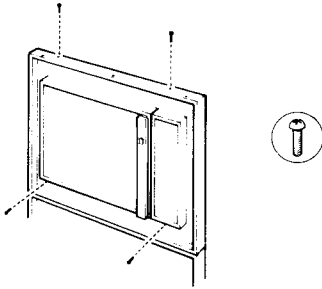
DISASSEMBLY

BUILT-IN MICROWAVE 1977-1982

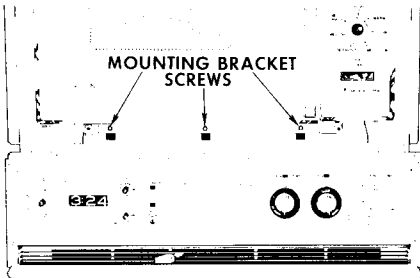
The entire microwave oven must be removed from the built-in assembly for servicing.

To Remove

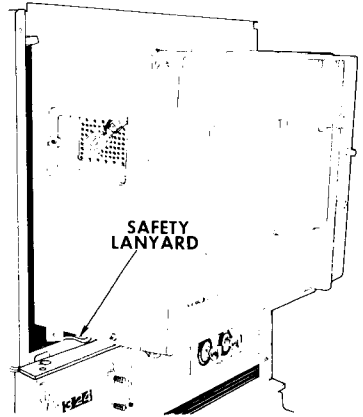
1. Take out four screws from outer frame. Carefully slide frame forward until it clears the microwave oven.



2. Take out three screws from microwave oven mounting bracket.
3. Disconnect power to range and unplug microwave oven cord from receptacle.



4. Slide microwave oven out to lanyard stop. Remove screw securing lanyard to oven.



5. Lift oven out of cabinet and place on floor or work surface. Caution: Use protective service cloth under oven to prevent mounting bracket from scratching surface.
6. All other service is same as countertop ovens.

MODELS

GE

JKP80
JKP97
JKM92
JX65
JX90

HP

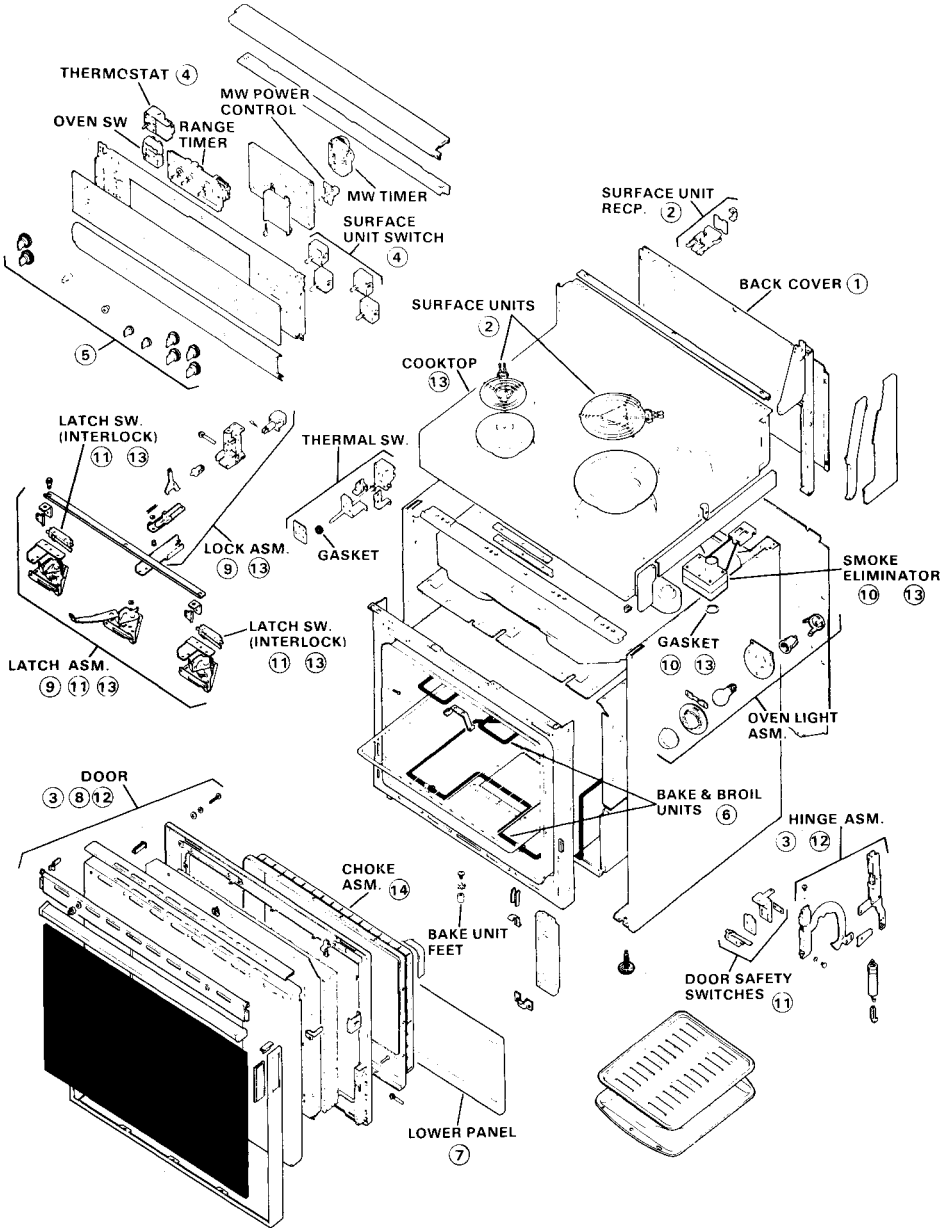
RK932
RK960
RX66

LEFT BLANK INTENTIONALLY



DISASSEMBLY

JBV42 COMBINATION RANGE

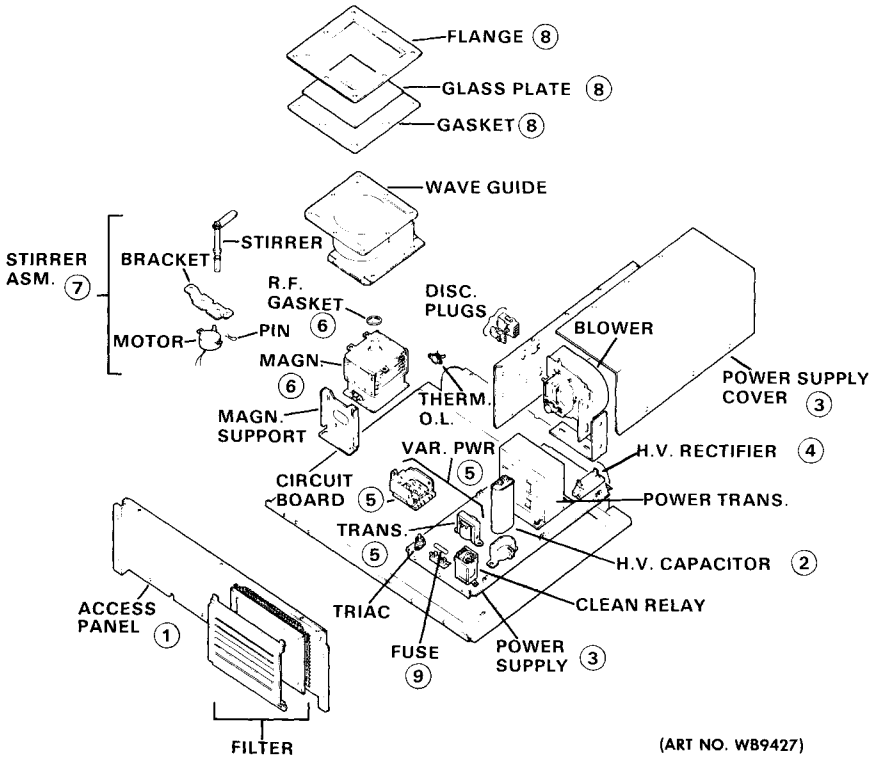


JBV42 COMBINATION RANGE

1. Remove Back Cover to Service Controls.
2. See Mini-Manual for Proper Repair or Adjustment.
See "Electrical Components" Section "Wiring Repair" for Wire Repair Procedure.
3. See Mini-Manual for Adjustment Procedure.
4. See "Electrical Components" Section and Mini-Manual for Test Procedure and Specifications.
5. See Mini-Manual for Temperature Knob Adjustment.
6. Bake and Broil Units are Replaced From Inside Oven.
7. Remove to Adjust Drawer Tracks, Level Front Legs, and Adjust Oven Door Hinges.
8. See Mini-Manual for Gasket Replacement.
9. See "Self Clean" Section for Details. Parts Listed in Mini-Manual.
10. See "Self Clean" Section for Details. Parts Listed in Mini-Manual.
11. Electrical Interlocks and Safety Switches must be checked for operation after service. See Mini-Manual for details.
12. Must make microwave leakage test when door is serviced. See Test Procedures Section and Mini-Manual for details.
13. Cooktop must be raised to Service Latches, Interlocks, Lock Asm., and Smoke Eliminator. See Cooktop Service — this Section.
14. Do not bend slotted tabs. Could affect Microwave Leakage.

DISASSEMBLY

MAGNETRON & POWER SUPPLY PARTS JBV42



**JBV42 COMBINATION RANGE
MAGNETRON & POWER SUPPLY PARTS**

1. Remove access panel to Service Components. See access to Components - this Section.
2. H.V. Capacitor should always be discharged before service. See Electrical Component Section and Mini-Manual for details.
3. Remove power supply box to Service Components. See access to Components - this section.
4. Observe Polarity - Green ground lead connects to $\rightarrow \oplus$ terminal.
5. Variable power auto-transformer connections not physically polarized. Reversed connections can burn up control board or transformer. See electrical component section and Mini-Manual for test procedures.
6. Four nut mounting. Special wire mesh R.F. gasket used on output stub. See electrical component section and Mini-Manual for Service Procedures.
7. Remove glass plate to service. Stirrer blade and shaft serviced as 1-Piece assembly. See Electrical Component section for details.
8. Glass plate covers waveguide in oven floor. Special gasket used as heat and liquid seal. Replace gasket if torn.
9. Use only WB27X7 Fuse. Check interlocks and monitor. See Mini-Manual.

DISASSEMBLY

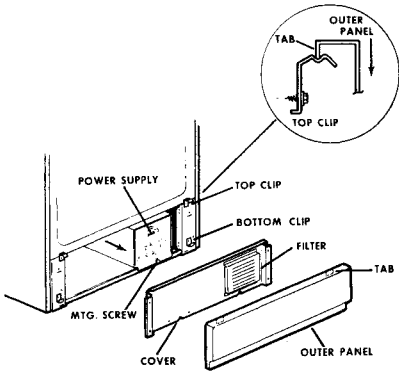
SERVICE ACCESS TO COMPONENTS — (COMBINATION RANGE)

POWER SUPPLY COMPARTMENT

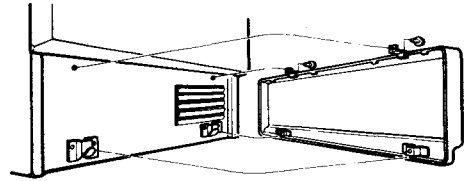
All power supply components are contained in a metal compartment (box) located under the range on the R.H. side behind the lower panel.

- Blower
- Rectifier
- Power Transformer
- Capacitor
- Triac
- Fuse
- Clean Relay
- Variable Power Control Board
- Variable Power Control Transformer
- Two Disconnect Plugs

The power compartment is fastened by (1) screw at the front and a tab/slot fastener at the rear. A metal cover and filter assembly covers the entire open area at the bottom of the range behind the lower panel. (Later models have no filter)



(EARLY MODS.)



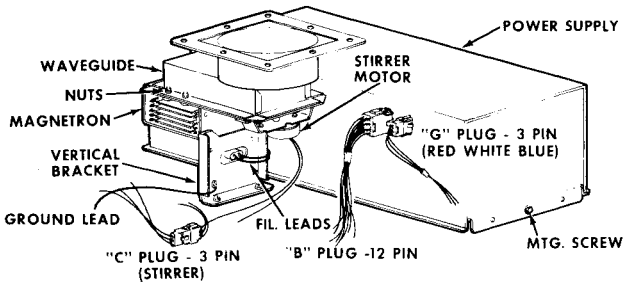
(LATER MODS.)

WARNING: For customer safety panel must be in place to avoid accidental access to electrical components through exposed air louvers.

TO REMOVE THE POWER SUPPLY

1. Remove the lower panel, push down and snap off. (Later models have screw-on or fixed panel)
2. Remove the flat metal cover/filter (11 screws).
3. CAUTION: DISCHARGE CAPACITOR BEFORE FURTHER DISASSEMBLY.
4. Disconnect the magnetron filament leads.
5. Unplug the (2) disconnect plugs. ("B" & "G")
6. Remove the front mounting screw.
7. Power supply slides out.

NOTE: Disassembly of most components requires removal of the ONE PIECE top and R.H. side cover. Screws are located on the top, side, and rear.



COOKTOP SERVICE POSITION (COMBINATION RANGE)

The cooktop/backsplash assembly can be raised as an assembly for service to components located under the cooktop. This would include:

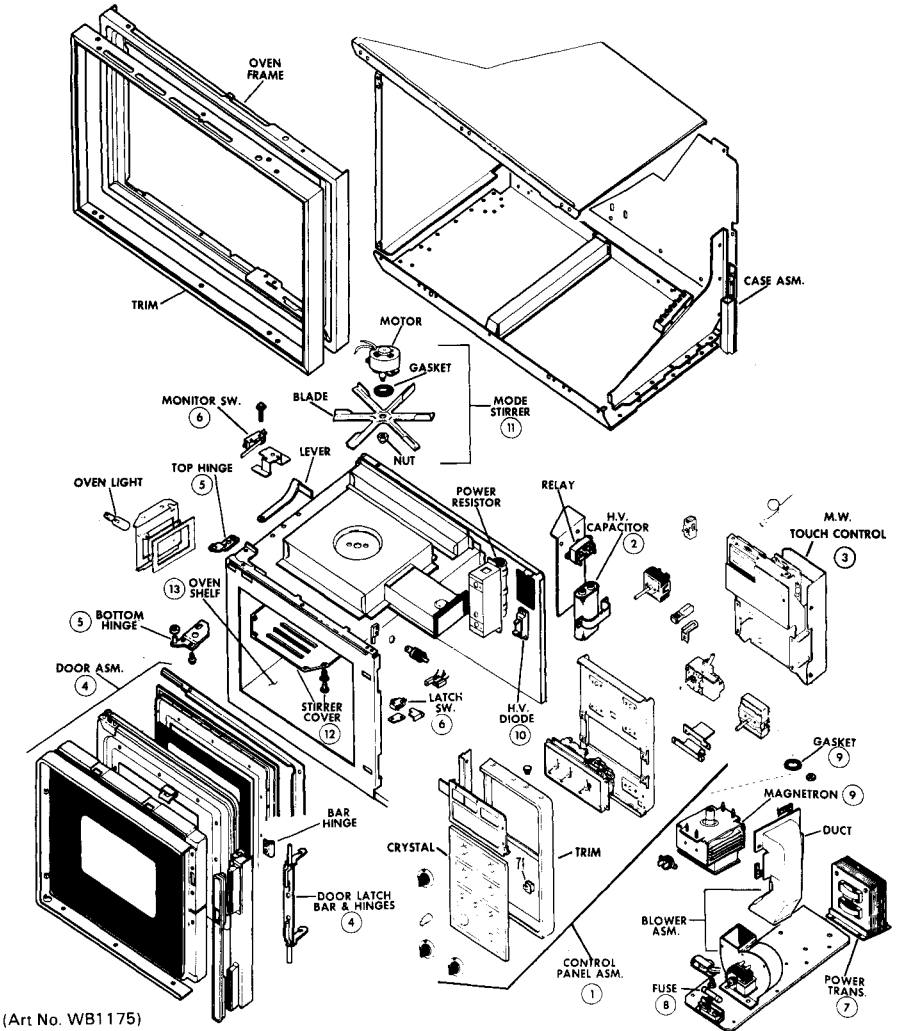
- Latches
- Latch Switches
- Lock Assembly
- Smoke Eliminator
- Oven Liner (access to insulation)

TO RAISE COOKTOP:


1. Move range from wall.
2. Disconnect range power.
3. Remove rear wiring guards.
4. Remove top three (3) screws in backsplash posts (below cooktop).
5. Remove rear row of screws under cooktop at front.
6. Lift rear corners of cooktop slightly and place piece of duct tape on body edges to protect paint finish.
7. Raise cooktop/backsplash assembly and tilt up at front. (prop up with something).

DISASSEMBLY

HI—LOW COOKING CENTER (TOUCH CONTROLS) 1977-1982

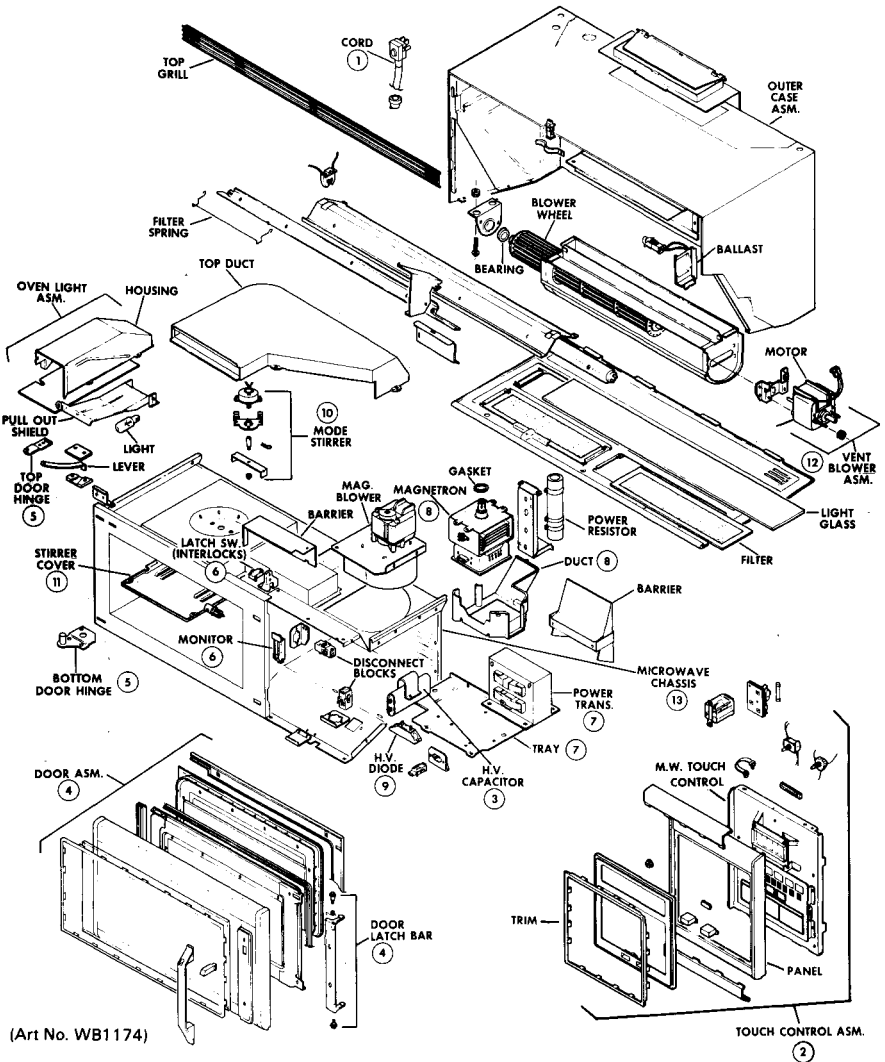


**HI—LOW COOKING CENTER
(TOUCH CONTROLS)**

1. CONTROL PANEL HINGES DOWN FOR SERVICE. SEE SERVICE ACCESS TO COMPONENTS — THIS SECTION.
2. H.V. CAPACITOR SHOULD ALWAYS BE DISCHARGED BEFORE SERVICE. SEE ELECTRICAL COMPONENT SECTION AND MINI-MANUAL/DATA SHEET FOR DETAILS.
3. MICROWAVE CONTROLS CAN BE REMOVED AS ASSEMBLY (4 SCREWS). SEE ELECTRICAL COMPONENT SECTION AND MINI-MANUAL FOR TEST PROCEDURES.
4. LATCH BAR HINGES MUST BE INSTALLED WITH CLOSED LOOP TOWARDS HANDLE. MUST MAKE MICROWAVE LEAKAGE TEST WHEN DOOR IS SERVICED. SEE TEST PROCEDURES SECTION AND MINI-MANUAL FOR DETAILS.
5. ADJUST TOP HINGE FOR DOOR ALIGNMENT TO CONTROL PANEL. SEE MINI-MANUAL FOR DETAILS.
6. PULL CHASSIS PARTIALLY FOR ACCESS. SEE SERVICE ACCESS TO COMPONENTS — THIS SECTION. MUST CHECK FOR OPERATION AFTER SERVICE . SEE MINI-MANUAL FOR DETAILS.
7. DISCONNECT OVEN POWER AND DISCHARGE CAPACITOR BEFORE SERVICE.
8. USE ONLY WB27X7 FUSE. CHECK INTERLOCKS AND MONITOR — SEE MINI-MANUAL.
9. FOUR NUT MOUNTING. SPECIAL WIRE MECH R.F. GASKET USED ON OUTPUT STUB.
10. OBSERVE POLARITY — GREEN GROUND LEAD CONNECTS TO  TERMINAL.
11. REMOVE STIRRER COVER AND PULL CHASSIS PARTIALLY FOR ACCESS. SEE SERVICE ACCESS TO COMPONENTS — THIS SECTION.
12. REMOVE SNAP FASTENERS INSIDE OVEN — CAN USE KNIFE BLADE.
13. SHELF SEALED WITH RTV SEALANT — MUST BE CUT OUT, OR CAN SEAL REPLACEMENT SHELF OVER ORIGINAL — SEE INSTRUCTIONS WITH REPLACEMENT SHELF.

DISASSEMBLY

SPACEMAKER (TOUCH CONTROLS) 1979-1985



SERIES


GE

JVM 40, 50,
60, 70

HP

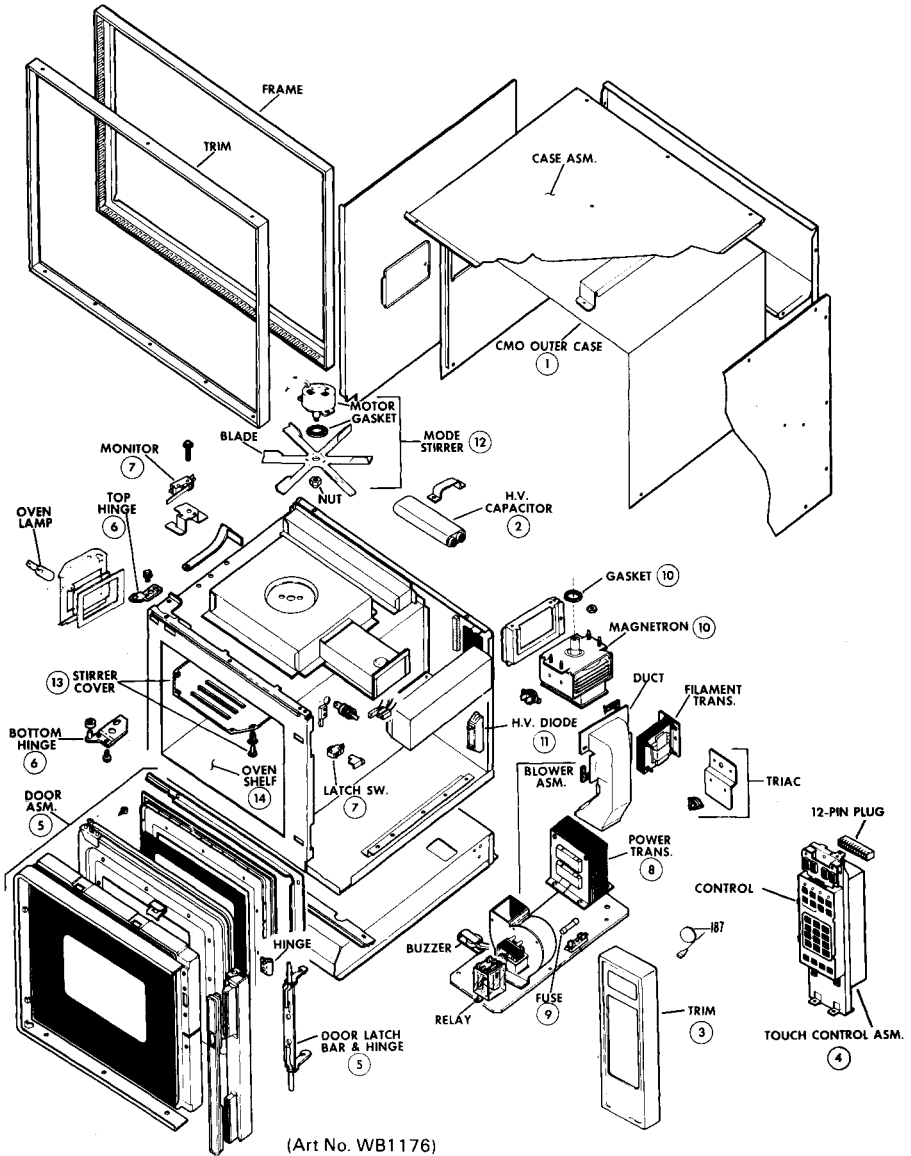
RVM 40, 50, 60

SPACEMAKER (TOUCH CONTROLS)


1. UNPLUG POWER CORD BEFORE SERVICING COMPONENTS.
2. CONTROL PANEL HINGES DOWN FOR SERVICE. SEE SERVICE ACCESS TO COMPONENTS — THIS SECTION.
3. H.V. CAPACITOR SHOULD ALWAYS BE DISCHARGED BEFORE SERVICE. SEE ELECTRICAL COMPONENT SECTION AND MINI-MANUAL FOR DETAILS.
4. MUST MAKE MICROWAVE LEAKAGE TEST WHEN DOOR IS SERVICED.
5. ADJUST TOP HINGE FOR DOOR ALIGNMENT. SEE MINI-MANUAL FOR DETAILS.
6. MUST CHECK FOR OPERATION AFTER SERVICE. SEE MINI-MANUAL FOR DETAILS.
7. POWER TRAY MUST BE REMOVED TO SERVICE TRANSFORMER. SEE MINI-MANUAL FOR DETAILS.
8. MAGNETRON AND DUCT REMOVE AS ASSEMBLY. FOUR NUT MOUNTING. SPECIAL WIRE MESH R.F. GASKET USED ON OUTPUT STUB.
9. OBSERVE POLARITY — GREEN GROUND LEAD CONNECTS TO  TERMINAL.
0. REMOVE MICROWAVE CHASSIS AND STIRRER COVER.
 1. REMOVE SNAP FASTENERS INSIDE OVEN — CAN USE KNIFE BLADE.
 2. REMOVES AS COMPLETE ASSEMBLY. SEE MINI-MANUAL FOR DETAILS.
 3. REMOVE COMPLETE CHASSIS FOR SOME SERVICE. SEE MINI-MANUAL AND SERVICE ACCESS TO COMPONENTS — THIS SERVICE.

DISASSEMBLY

WALL OVEN COOKING CENTER (TOUCH CONTROLS) 1977-1982

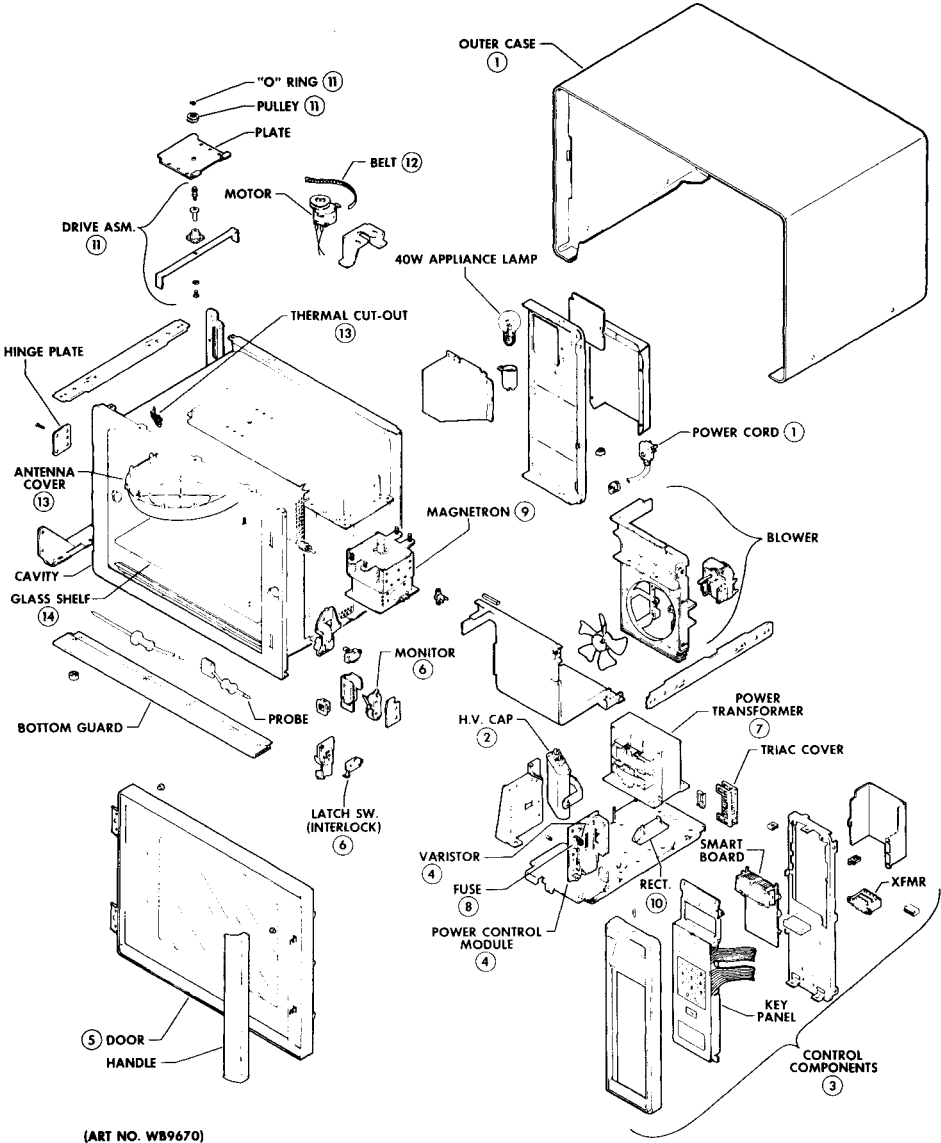


WALL OVEN COOKING CENTER (TOUCH CONTROLS)

1. OVEN MUST BE REMOVED FROM BUILT-IN ASSEMBLY FOR ALL SERVICE. SEE SERVICE ACCESS TO COMPONENTS — THIS SECTION.
2. H.V. CAPACITOR SHOULD ALWAYS BE DISCHARGED BEFORE SERVICE. SEE ELECTRICAL COMPONENT SECTION AND MINI-MANUAL FOR DETAILS.
3. REMOVE TO SERVICE COMPONENTS — ONE SCREW AT TOP AND TWO AT BOTTOM.
4. SEE ELECTRICAL COMPONENT SECTION AND MINI-MANUAL FOR DETAILS.
5. LATCH BAR HINGES MUST BE INSTALLED WITH CLOSED LOOP TOWARDS HANDLE. MUST MAKE MICROWAVE LEAKAGE TEST WHEN DOOR IS SERVICED. SEE TEST PROCEDURES SECTION AND MINI-MANUAL FOR DETAILS.
6. ADJUST TOP HINGE FOR DOOR ALIGNMENT TO CONTROL PANEL. SEE MINI-MANUAL FOR DETAILS.
7. MUST CHECK FOR OPERATION AFTER SERVICE. SEE MINI-MANUAL FOR DETAILS.
8. UNPLUG OVEN AND DISCHARGE CAPACITOR BEFORE SERVICE. NEED LONG (14" - 15") 5/16" NUT DRIVE FOR INSIDE MOUNTING SCREWS.
9. USE ONLY WR27X7 FUSE. CHECK INTERLOCKS AND MONITOR — SEE MINI-MANUAL.
0. FOUR NUT MOUNTING. SPECIAL WIRE MESH R.F. GASKET USED ON OUTPUT STUB.
1. OBSERVE POLARITY — GREEN GROUND LEAD CONNECTS TO  TERMINAL.
2. MUST REMOVE OUTER CASE AND STIRRER COVER. MUST USE GASKET.
3. REMOVE SNAP FASTENERS INSIDE OVEN — CAN USE KNIFE BLADE.
4. SHELF SEALED WITH RTV SEALANT — MUST BE CUT OR CAN SEAL REPLACEMENT SHELF OVER ORIGINAL — SEE INSTRUCTIONS WITH REPLACEMENT SHELF.

DISASSEMBLY

COUNTERTOP OVENS (CMO) 1.4 cu. ft. OVEN 1983-1986 (JET 200/RE960 SERIES)



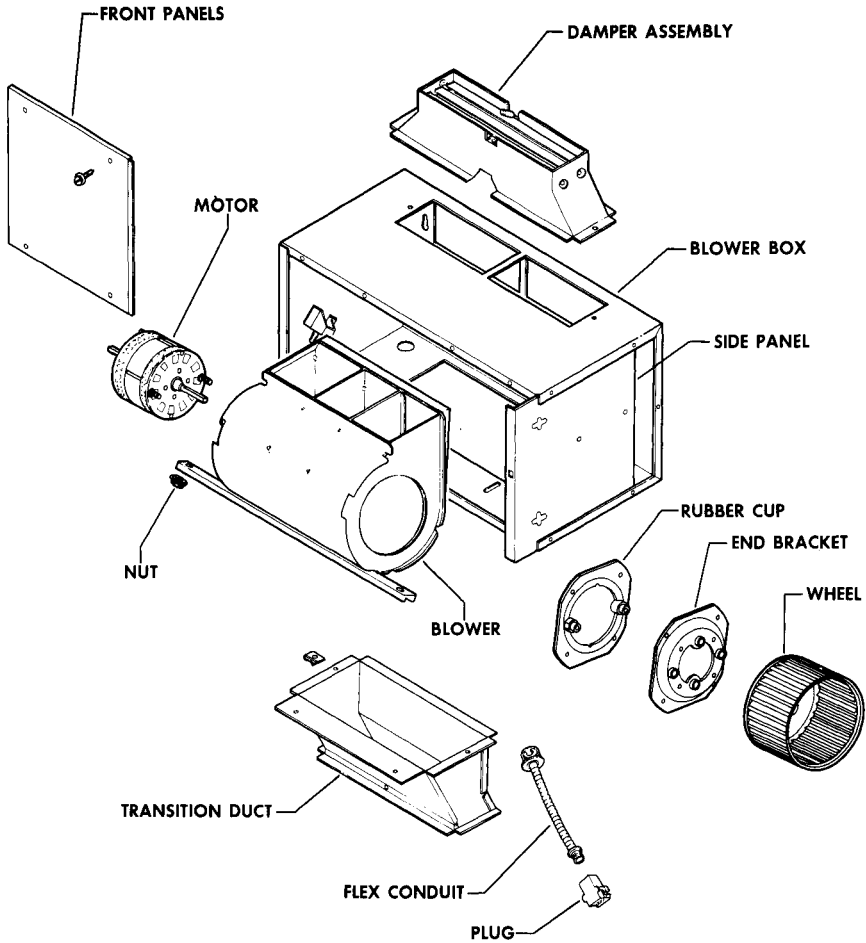
**COUNTERTOP OVENS (CMO)
(1.4 cu ft. OVENS)**

- 1. SERVICE ACCESS TO ALL COMPONENTS. UNPLUG POWER CORD AND REMOVE SIDE AND REAR SCREWS. SLIDE CASE TO REAR, AND DISCHARGE CAPACITOR.**
- 2. H.V. CAPACITOR SHOULD ALWAYS BE DISCHARGED BEFORE SERVICE. SEE ELECTRICAL COMPONENT SECTION AND MINI-MANUAL FOR DETAILS.**
- 3. SEE INSTRUCTIONS THIS SECTION OR MINI-MANUAL/DATA SHEET FOR REPLACEMENT PROCEDURE.**
- 4. SEE ELECTRICAL COMPONENT SECTION AND MINI-MANUAL FOR DETAILS.**
- 5. SERVICED AS COMPLETE DOOR ONLY (TRANSFER HANDLE) REMOVE DOOR ONLY AT HINGE MOUNTING — DO NOT DISASSEMBLE DOOR. MUST MAKE MICROWAVE LEAKAGE CHECK WHEN DOOR IS SERVICED. SEE TEST PROCEDURES SECTION AND MINI-MANUAL FOR INSTRUCTIONS.**
- 6. DO NOT ADJUST INTERLOCKS. MUST CHECK FOR OPERATION AFTER SERVICE. SEE MINI-MANUAL FOR DETAILS.**
- 7. UNPLUG OVEN & DISCHARGE CAPACITOR BEFORE SERVICE. TAB/SLOT MTG. FOR INSIDE SCREWS — OUTSIDE MTG. SCREWS ONLY.**
- 8. USE ONLY WB27X7 FUSE. CHECK INTERLOCKS & MONITOR — SEE MINI-MANUAL.**
- 9. FOUR MOUNTING NUTS — MUST BE TIGHT. SPECIAL WIRE MESH R.F. GASKET USED ON OUTPUT STUB.**
- 10. OBSERVE POLARITY — GREEN GROUND LEAD CONNECTS TO TERMINAL.**
- 11. MUST REMOVE OUTER CASE AND ANTENNA COVER TO SERVICE. REMOVE DRIVE ASSEMBLY AS AN ASSEMBLY — 1/4 TURN UNLOCKS AND LOCKS IN PLACE. SEE ELECTRICAL COMPONENTS SECTION FOR DETAILS.**

DISASSEMBLY

12. MODELS WITH MOTOR-BELT MUST BE LOOSE (SOME MODELS USE AIR DRIVE) – SEE MINI-MANUAL FOR DETAILS.
13. SNAP-FIT MOUNTING. SQUEESE COVER SIDES TO REMOVE – NOTE: SOME EARLY PRODUCTION USED PAL-NUTS (MUST REMOVE OUTER CASE).
14. GLASS SHELF SEALED WITH RTV SEALANT – MUST BE CUT OUT TO REMOVE GLASS. SEE INSTRUCTIONS WITH REPLACEMENT SHELF.
15. FOR OVER-HEATED OVEN PROTECTION – ONE SHOT DEVICE.

**JVM72 SPACEMAKER BLOWER
(OVER GRILL/GRIFFLE MODS.)**

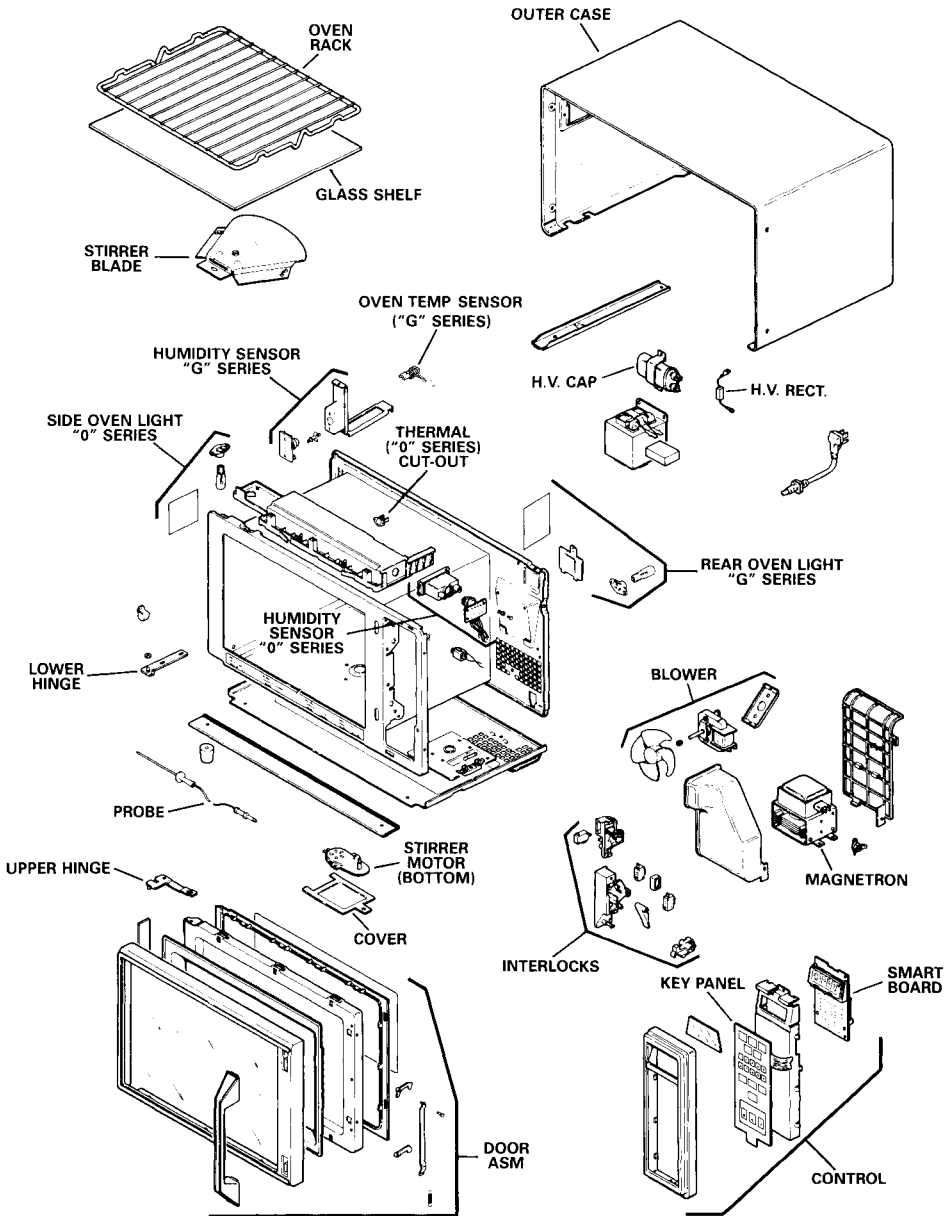


(ART NO. WB9669)

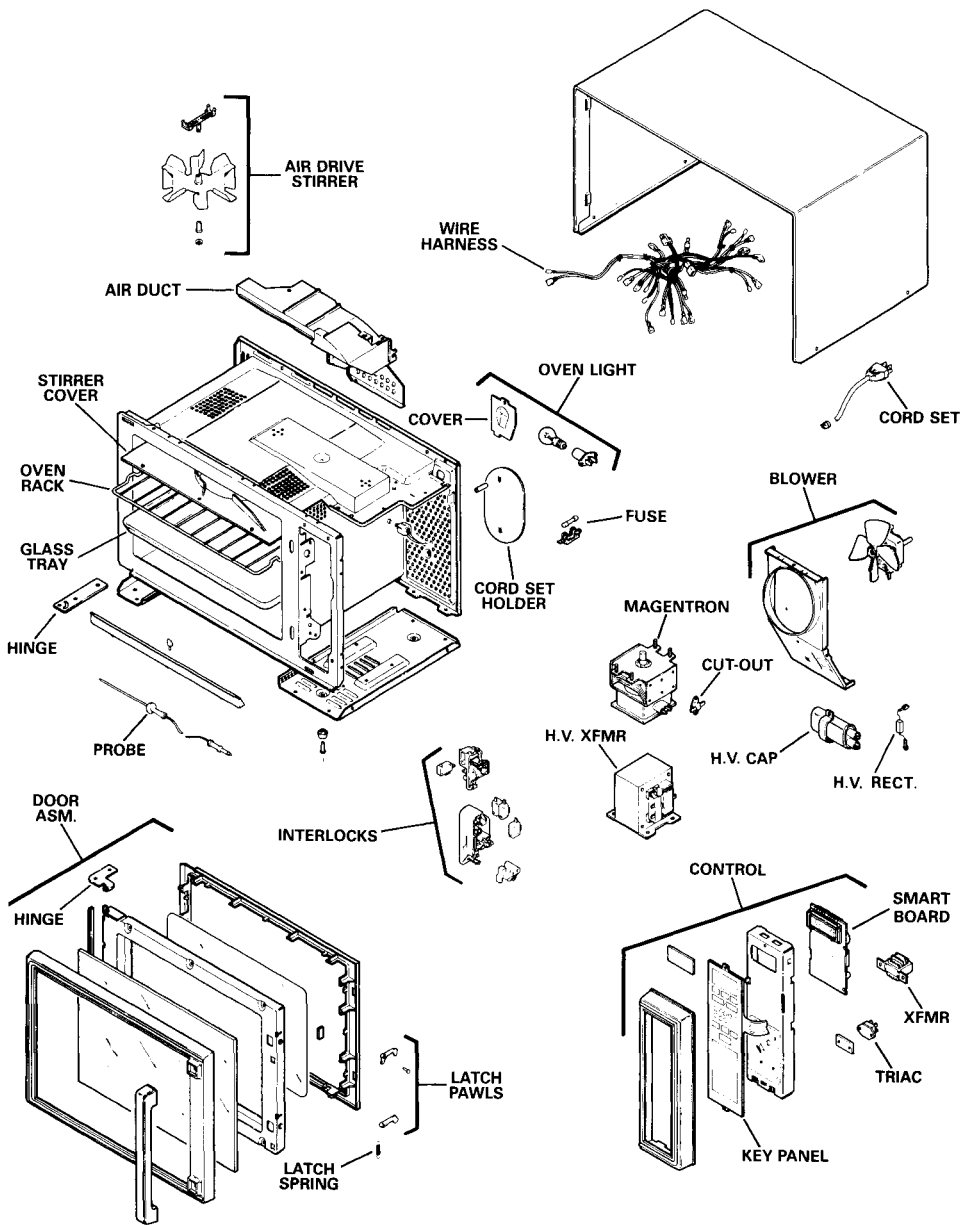
- Mounts inside cabinet above spacemaker.
- Remove front panels for access. R.H. side panel also removable.
- Remove blower for service — mounted by two (2) nuts.

DISASSEMBLY

JE1400 SERIES CMO'S

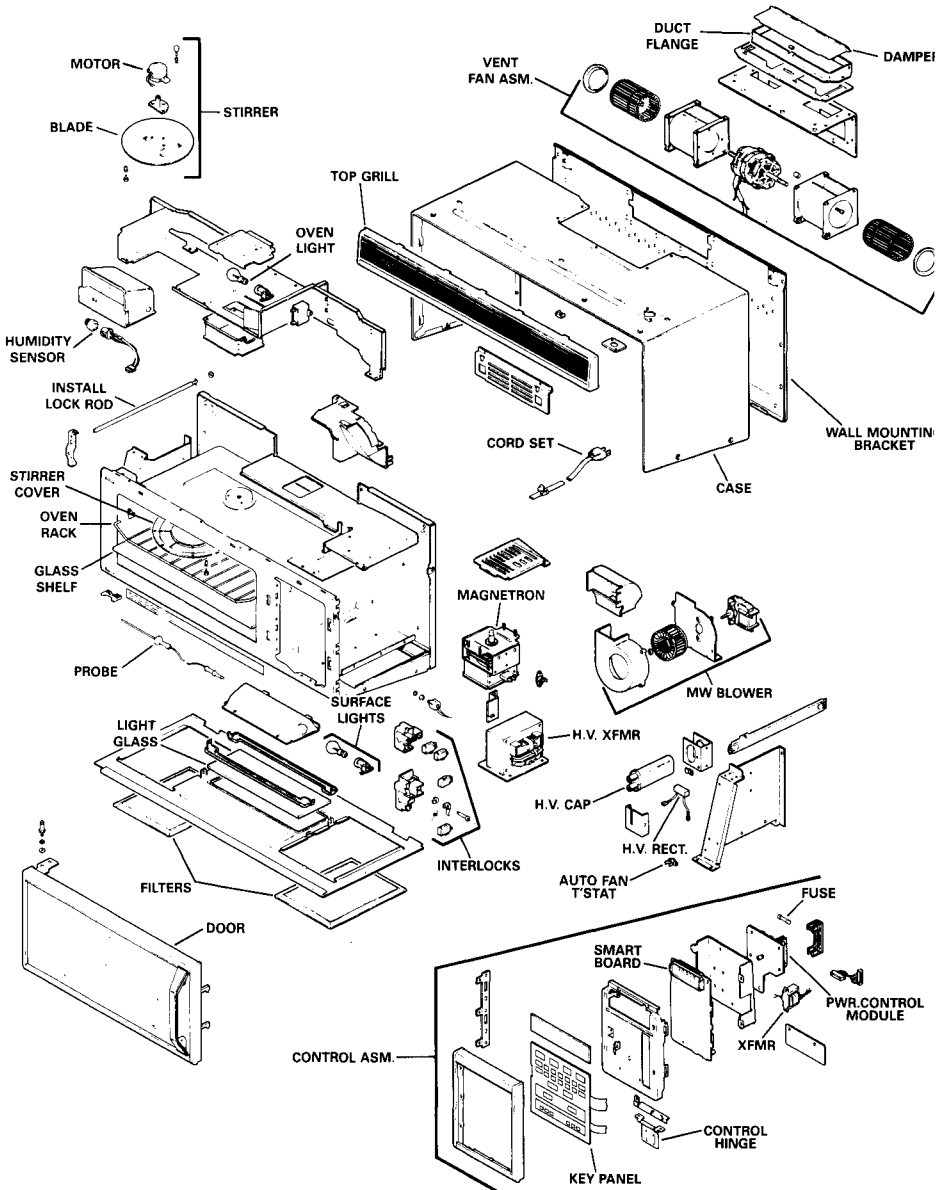


RE1400 SERIES CMO'S



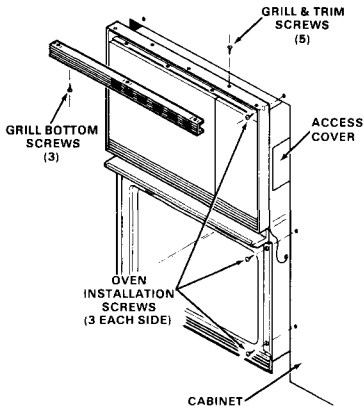
DISASSEMBLY

JVM/RVM100 SERIES SPACEMAKERS "0" SERIES

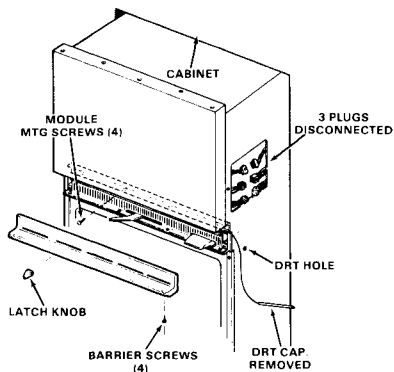


**WALL OVEN COOK CENTERS
MW MODULE REMOVAL
(1983-1987 MODELS)**

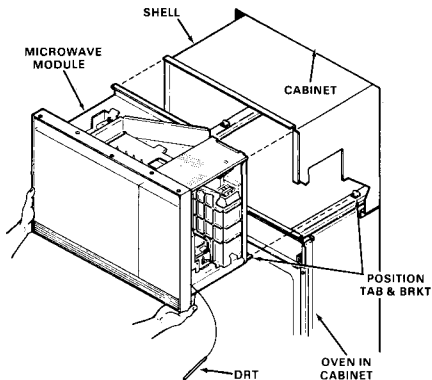
1. Remove top grill and installation screws.
2. Slide oven part way out.



3. Remove access cover and disconnect plugs.
4. Remove latch knob and barrier.
5. Remove module mtg. screw.
6. Remove DRT Cap. tube.



7. Slide module out.

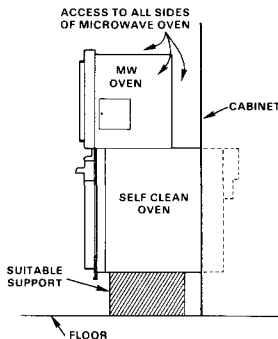


Alternate Microwave Oven Service Access

An alternate method of microwave oven service access is **partial removal** of the complete oven product. This can be accomplished by sliding the oven assembly out of the wall cabinet to expose the entire microwave oven.

WARNING - SOME SUITABLE SUPPORT MUST BE USED AT THE BOTTOM TO PREVENT THE OVEN ASSEMBLY FROM TIPPING AND FALLING OUT OF THE CABINET.

With the oven assembly in this position, all sides of the microwave oven are accessible for any service.

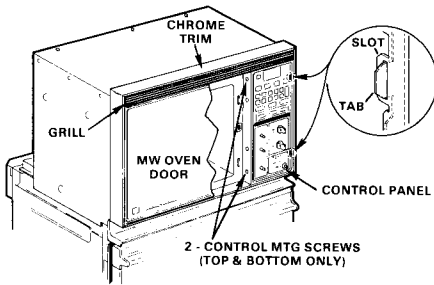


DISASSEMBLY

WALL OVEN & HIGH-LOW COOK CENTERS CONTROL SERVICE (1983-1987)

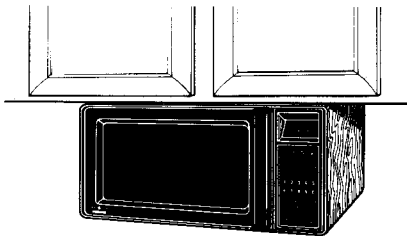
Control Panel hinges open for service:

1. Open door and remove top and bottom control screws.
2. Slide control to left. Control will hinge open.



CABINET MOUNTED OVENS

Some CMO's are mounted to the bottom of a wall cabinet.



● ALL JEM MODELS CAN BE CABINET MOUNTED

Basically there are **two types** of mounting methods. **In both cases two (2) metal mounting plates will be used inside the cabinet** located at the bottom. Mounting bolts are placed down through the plates and cabinet bottom, and fasten into "keyhole slotted" mounting brackets (one type), or directly into oven case (second type).

REMOVAL FOR SERVICE

When removing the oven from the cabinet for service, it is important to identify which mounting method was used to prevent dropping the oven.

CAUTION: Provide suitable support under oven before loosening or removing mounting screws for service.

Glass Shelf Removal (Bottom Feed Stirrer)

The cavity glass shelf, with attached gasket, seals in the bottom of the cavity.

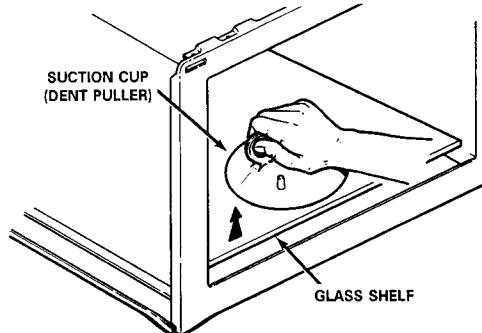
This design is used on the following models:

- CMO
- JET322
- JET342
- JET343
- JEM "F" & "G" Series

- WALL OVEN & HI-LOW COOK CENTERS "K" Series

The cavity has a hole in the side below the shelf for insertion of a screw driver to pry up the shelf for removal. However, due to the **wall oven** and **Hi-Low** range construction, the hole is not convenient or very accessible.

An alternate and easy shelf removal technique is by use of a **large suction cup** (WX5X1921). Place suction cup at front corners to lift shelf.



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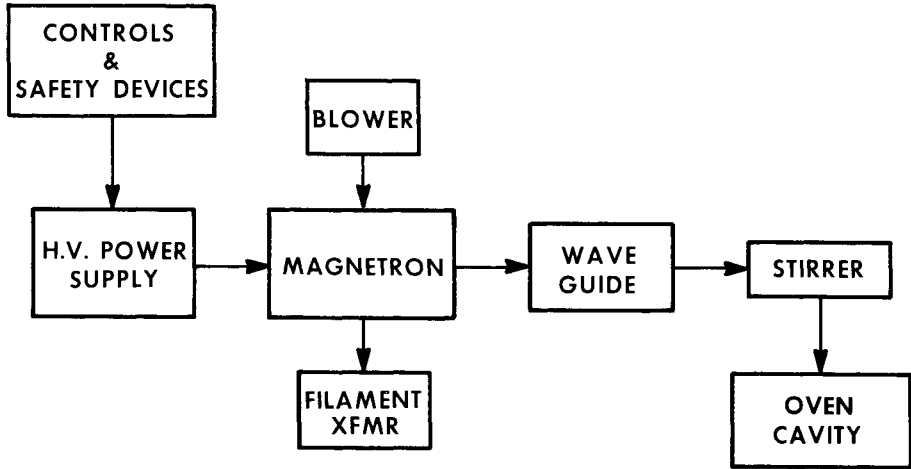
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BASIC MICROWAVE OVEN OPERATION

The following block diagram very basically outlines the type of components and systems necessary to cook food by microwave energy.



Magnetron

The magnetron is the heart of the system. It is an electronic vacuum tube which generates high frequency microwave energy. (2450 MHz) The energy is broadcast (like a radio station), through a sealed metal wave guide, into the metal oven cavity. A blower is used to air cool the magnetron.

H.V. Power Supply

In order for the magnetron to work, it requires a high voltage power supply – about 4000 volts D.C. The power supply consists of a high voltage transformer, a capacitor, and a diode. Since the magnetron is a vacuum tube, it also requires a filament transformer to heat its filament. This can be a separate transformer or part of the H.V. power transformer.

Oven Cavity

A sealed metal oven cavity is used to cook the food, once inside the oven, the microwaves bounce off the metal walls until they are absorbed by the food. As the micro-

ELECTRICAL COMPONENTS

waves penetrate the food it vibrates the molecules and creates heat which cooks the food. A motor driven metal stirrer blade (like a fan) is located at the top of the oven cavity to help distribution of the microwaves for more even heating of the food.

Controls and Safety Devices

The oven is turned "on" and "off" during normal operation by the use various types of controls. This includes timers for time cooking, and solid state temperature control systems for temperature cooking.

Various safety devices, such as, door electrical interlocks, relays, and fuse insure that the oven cannot operate with the door open. A special door seal (choke) is also used to contain the microwave energy inside the oven during normal operation.

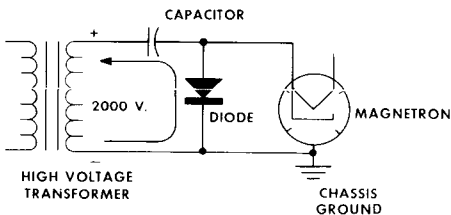
4. V. POWER SUPPLY COMPONENTS

Typical Operation

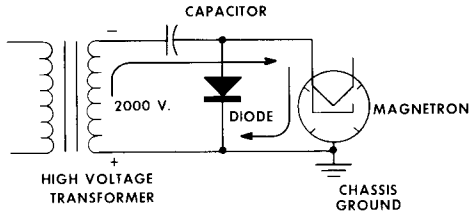
The magnetron requires a high D.C. voltage source (approx. 4000 V.D.C.) for operation. This voltage is supplied by a half-wave voltage doubler circuit consisting of a HIGH VOLTAGE CAPACITOR, and a DIODE.

The 2000 volt secondary winding of the transformer is connected to the capacitor and diode. The capacitor increases the voltage to about 3600 volts, due to its peak voltage charging capabilities. The diode voltage, and the resultant half-wave D.C. voltage is applied to the magnetron. The negative (-) output from the D.C. circuit is connected to the filament of the magnetron. The positive (+) output is connected to the plate of the magnetron, which is grounded to the chassis.

The diode is therefore connected with opposite polarity from the magnetron in order that the capacitor will charge through the diode during one-half cycle and will discharge through the magnetron on the alternate half-cycle. On the discharge cycle, the capacitor aids the transformer voltage, thereby providing the voltage doubling action.



CAPACITOR CHARGES



TUBE CONDUCTS

MAGNETRON

The typical magnetron specifications are as follows:

Frequency (f)	2450 MHZ
Plate (Anode) Voltage	4.0 KV
Plate Current	300 MA
Filament Voltage	3.3 VAC
Filament Current	13 AMPS
Nominal Power	580 WATTS*

*Varies by oven cavity size

The magnetron mounts to a waveguide and is aircooled by a blower.

A thermal overload is mounted to the side of the magnetron to detect proper air flow over the tube. If the blower is not working, the overload will open and shut off the oven-see schematic.

Two types of overloads have been used – Automatic Reset & No-Reset. The Automatic Reset Type will cycle every few minutes until the thermal problem is corrected. The No-Reset Type will only “trip” once, and then must be replaced.

ELECTRICAL COMPONENTS

The filament connects are quick-connect, push-on terminals at the bottom of the magnetron.

WARNING

HIGH VOLTAGE PRESENT AT FILAMENT LEADS, NEVER TOUCH OR SERVICE MAGNETRON EXCEPT AS SPECIFIED UNDER TEST INSTRUCTIONS.

How to Test

FOR COMPLETE MAGNETRON DIAGNOSIS, REFER TO "PERFORMANCE TEST" AND SPECIAL "MAGNETRON DIAGNOSIS". Continuity checks can only indicate an open filament or shorted magnetron-type failures. To diagnose for an open filament or shorted magnetron:

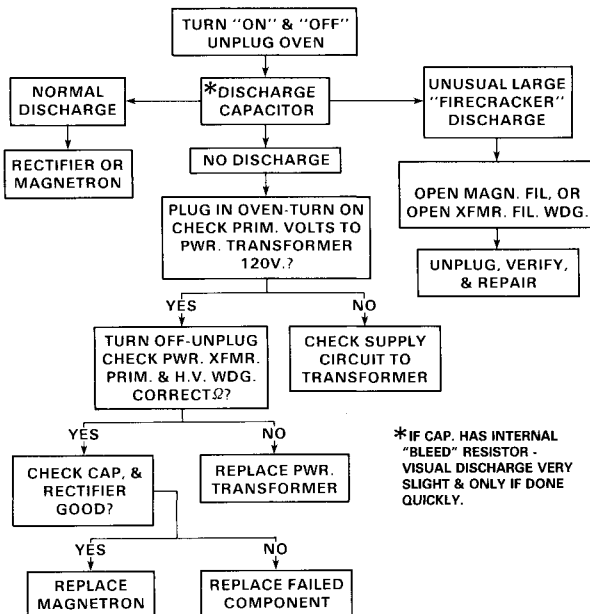
1. Unplug oven and remove outer case.
2. Discharge high voltage capacitor.
3. Isolate magnetron by disconnecting filament leads.

4. A normal continuity check across magnetron filament terminals should indicate less than one OHM.
5. A normal continuity check between terminals and chassis ground should indicate an infinite resistance. Little or no resistance indicates a grounded tube.

MAGNETRON DIAGNOSIS

When the oven is "ON", and little or no heat is produced the trouble is either in the high voltage circuit or the magnetron circuit. In order to diagnose the problem, the following simple test procedure should be followed:

TO PREVENT ELECTRICAL SHOCK, USE EXTREME CAUTION WHEN DIAGNOSING OVEN WITH OUTER CASE REMOVED AND POWER "ON". THE HIGH VOLTAGE SECTION OF THE POWER SUPPLY, INCLUDING FILAMENT LEADS IS - 4000 VOLTS POTENTIAL WITH RESPECT TO GROUND.



WARNING

WHEN REPLACING THE MAGNETRON, BE CERTAIN THE R.F. GASKET IS IN PLACE, AND MOUNTING SCREWS ARE TIGHTENED SECURELY TO WAVEGUIDE. FAILURE TO DO SO CAN RESULT IN HAZARDOUS LEVELS OF MICRO-WAVE LEAKAGE.

POWER TRANSFORMER (MODELS WITHOUT SEPARATE FIL. TRANS)

The power transformer is a combination high voltage and filament transformer wound on the same frame. It consists of three (3) windings: 120 Volt A.C. Primary, 3.3 Volt A.C. Filament, 2000 Volt AC High Voltage.

The 3.3 Volts is connected to the filament of the magnetron and results in a filament current of about 11 - 13 AMPS. The 2000 Volt High Voltage winding is connected to a half-wave rectified voltage doubler circuit which provides the proper D.C. Power supply for the magnetron.

The transformer terminals are marked on the frame of the transformer in the vicinity of their physical location. One of the high voltage terminals is grounded to the oven frame by a green ground lead. The other high voltage terminal is one of two taps. (Hi-7 or Low-6) Only one tap is used, usually, the high voltage tap.

WARNING

NEVER TOUCH OR SERVICE THE TRANSFORMER WITHOUT UNPLUGGING OVEN AND DISCHARGING HIGH VOLTAGE CAPACITOR, TO AVOID POSSIBLE ELECTRICAL SHOCK.

How to Test:

1. Unplug oven and remove outer case.
2. Discharge high voltage capacitor.
3. Remove connections from transformer terminals and check continuity. Refer to oven schematic for resistance values.

WARNING

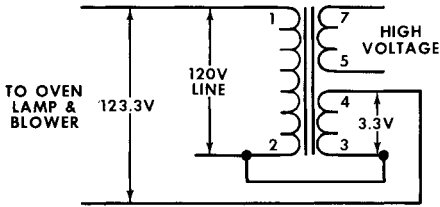
ONE LEAD OF FILAMENT WINDING IS COMMON WITH HIGH VOLTAGE CAPACITOR LEAD. ALWAYS CONNECT VOLT METER LEADS BEFORE TURNING POWER "ON", TO AVOID POSSIBLE ELECTRICAL SHOCK. DO NOT TOUCH METER DURING TEST.

POWER TRANSFORMER (MODELS WITH SEPARATE FIL. TRANS.)

The power transformer is the same transformer described under models without Sep. Fil. Trans. Its connection in the circuit is different, however, due to the use of a separate magnetron filament transformer.

The primary and filament windings of the power transformer are connected in phase to supply boost voltage to the oven lamp and blower. This is done to reduce lamp flicker and variations in blower sound during variable power when the triac fires.

ELECTRICAL COMPONENTS



POWER TRANSFORMER (VARIABLE POWER MODELS)

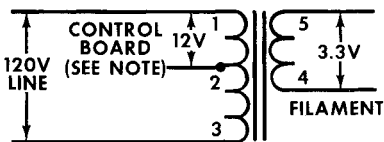
See oven schematic and mini-manual for exact connections, resistance values, and test procedures.

FILAMENT TRANSFORMER

(Some Variable Power and Touch Control Models)

A separate filament transformer is used in some systems. The transformer is energized whenever the oven controls are set for a cooking function. It does not cycle, like the power transformer, thus keeping the magnetron filament hot, prolonging the life of the magnetron.

On variable power models, the primary of the filament is tapped to supply 12 vac to the control board. This 12 v. tap is not used on touch control models.



FILAMENT TRANSFORMER
(VARIABLE POWER MODELS)

NOTE: Original equipment transformer for touch control models does not have the No. 2 12 v. tap lead. When servicing touch control models with the tapped transformer, cut the No. 2 lead about 2 inches from coil and insulate with tape or crimp on connector.

See oven schematic and mini-manual for resistance values and test procedures.

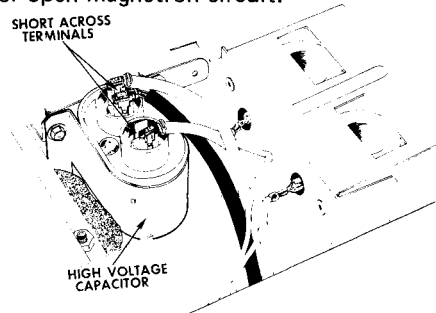
CAPACITOR

A 2500 Volt A.C. capacitor is used along with the diode in the voltage doubler circuit. The capacitor is mounted, by two screws, to the top of the case.

WARNING

NEVER TOUCH OR SERVICE THE HIGH VOLTAGE CIRCUIT WITHOUT DISCHARGING CAPACITOR BY SHORTING ACROSS ITS TERMINALS TO AVOID POSSIBLE ELECTRICAL SHOCK.

NOTE: If unusual large discharge occurs (like firecracker), look for open diode or open magnetron circuit.



If the capacitor fails open, no high voltage will be available for the magnetron. A shorted capacitor should cause the house circuit fuse, or appliance fuse to blow.

HOW TO TEST:

1. Unplug oven and remove outer case.
2. Discharge capacitor.
3. Check continuity of capacitor with meter on highest OHM scale.
4. A normal capacitor will show continuity for a short time, and then indicate open once the capacitor is charged.

5. A shorted capacitor will show continuous continuity (and blow fuse during operation). An open capacitor will show open or infinite resistance.

H. V. DIODE

A single large diode is used in the half-wave voltage doubler circuit to rectify the high voltage to D.C. The diode is located near the transformer.

WARNING

NEVER TOUCH OR SERVICE THE DIODE WITHOUT DISCHARGING CAPACITOR BY SHORTING ACROSS ITS TERMINALS, TO AVOID POSSIBLE ELECTRICAL SHOCK.

All connections are quick-connect or push-on terminals.

HOW TO TEST: (WITH ANALOG METERS)

1. Unplug oven and remove outer case.
2. Discharge high voltage capacitor.
3. Isolate diode from circuit by disconnecting leads.
4. Using the RX 10K OHM scale on meter, check resistance between (+) and (-) terminals on diode. Then reverse meter leads and check in both directions.


A normal reading will indicate a reading in one direction only.

5. If a short is indicated in both directions, or if an infinite resistance is read in both directions, the diode should be replaced. (Be certain to use RX 10K OHM scale - it will not read on lower scale).

HOW TO REPLACE:

1. Unplug oven and remove outer case.
2. Discharge high voltage capacitor.
3. Disconnect leads from diode.
4. Remove two mounting screws from diode.

CAUTION

NOTE POSITION (POLARITY) OF DIODE FOR CORRECT CONNECTION WHEN REASSEMBLED. THE GREEN GROUND LEAD CONNECTS TO THE  TERMINAL OF DIODE.

POWER LEVEL CONTROL

Power level is accomplished by different methods depending on the model and system used. Models are produced with 1, 2, 3, 4, 10, and variable power systems.

Single (1) Power System

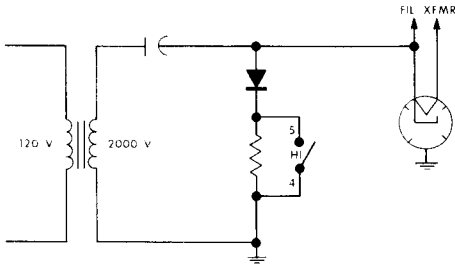
The magnetron is operated at full voltage of the power supply. No feature is provided to select any power level except high (100% power) therefore all cooking/warming functions are accomplished at full power.

2 And 3 Power Systems

On models with 2 or 3 power level features, the user selects the power level desired, according to the recipe, by use of a power select switch on the control panel. On 2-power models the switch is a rocker-type two-position (high-low). The switch works in conjunction with a 1200 Ohm power resistor connected in series with the diode in power supply circuit.

ELECTRICAL COMPONENTS

Typical 2-power level circuit:

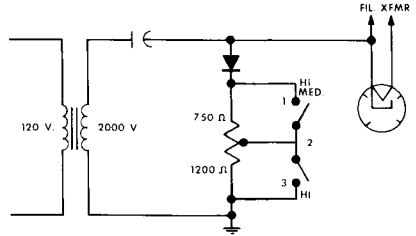


The resistor reduces the charge on the H_v capacitor and therefore reduces the operating voltage and power output of the magnetron.

On 3-power level models, a 3-button push-button or rotary switch is provided to select power level. Switches are marked High, Med, and Low. The switch works in conjunction with either two separate power resistors (1200 ohms and 750 ohms) or one 1950 ohm resistor tapped to provide the two resistor values. In either case the select switch contacts shunt the resistors in high power, and connects the resistors in med and low power.

- HIGH (100%) — Resistors are shunted. (Not Used).
- MED (70%) — 1200 ohm connected.
- LOW (50%) — 1200 and 750 ohms (series).

Typical 3-power level circuit:



(Refer to oven schematic and wiring diagram for connection and lead color)

NOTE: Any time a power select switch fails, check power resistor continuity also. An open power resistor can cause switch to fail during med and low power operations.

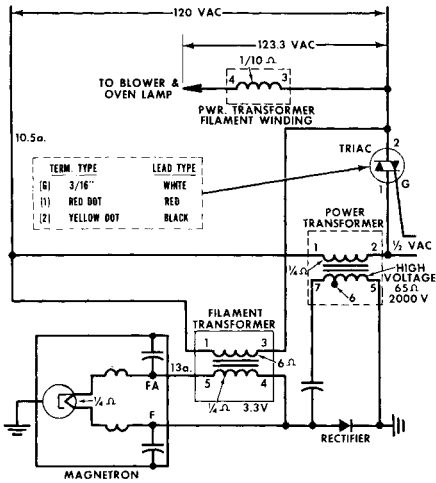
4 And 10 Power System (Touch Control)

This power level system is provided only on touch control models. The different power levels are controlled by the triac gate signal which energizes the power transformer. The gate signal is a pre-programmed output of the control panel. Cycling the gate signal will therefore cycle the power transformer high voltage winding, which turns the magnetron "on" and "off".

At high power selection the 1/2 volt gate signal is constant and power is therefore 100%.

At all other power level selections the control pulses the gate signal every 1.7 seconds (approx. every 100 A.C. cycles). The various power levels are obtained by the gate signal "on time" during the 1.7 second duty cycle.

ELECTRICAL COMPONENTS



Refer to oven schematic and mini-manual for test procedures.

VARIABLE POWER SYSTEM

The variable power system uses a solid state control board and a triac to cycle the power transformer which turns the magnetron "on" and "off". The triac is turned "on" and "off" by a 3/4 V.D.C. gate signal from the solid state control board. The control dial is marked with 10 settings with each number equivalent to approximately 10% "on" time or power.

At high power (10) the 3/4 volt gate signal is constant and power is therefore 100%. At all other power levels the gate signal from the control board pulses the triac at a specific rate (duty cycle). The various power levels are obtained by the gate signal "on time" during the duty cycle. See Variable Power Controls (this section) for types used.

STIRRER (SPACEMAKER - COUNTER SAVER)

The Spacemaker Stirrer motor mounts to a bracket on top of the cavity. A dielectric material shaft extension connects to the motor end of the shaft and extends into the cavity. The shaft extension is fastened to the motor shaft by a hair pin type clip, above the cavity. The stirrer blade connects to the other end of the shaft extension by a nut, inside the cavity.

To service the motor the microwave oven chassis must first be removed from the shell. The flat air duct across the top of the chassis must also be removed.

To Replace the Motor (Chassis removed)

- Remove Stirrer Cover.
- Remove two motor screws only.
- Pull out shaft pin & remove motor.
- Line up shaft with new motor & install pin.
- Mount Motor & Stirrer Cover.

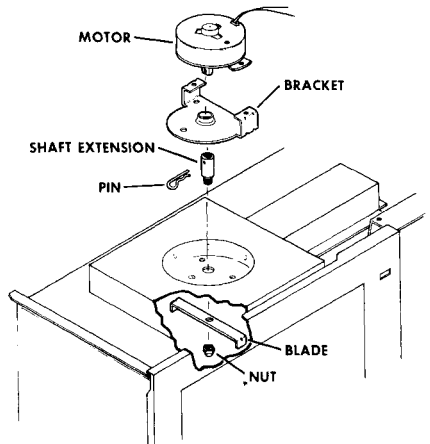
SPACEMAKER

MODELS

- JVM46 - OVER ELECTRIC RANGES ONLY
- JVM46 - OVER ELECTRIC DR GAS
- JVM55 - TOUCH CONTROL - OVER ELECTRIC DR GAS

JVM46 CHANGES

- NEW STIRRER ASSEMBLY & MOUNTING
- STIRRER MOTOR THERMAL OVERLOAD - ELIMINATED
- POWER DISTRIBUTION PLATE - ELIMINATED



ELECTRICAL COMPONENTS

STIRRER — ROTATING ANTENNA (COMBINATION RANGE)

The stirrer of rotating antenna motor is mounted to the wave guide in front of the magnetron. The shaft and blade assembly connects to the motor shaft by a hair pin type clip. A short blade fastens to the shaft with screw.

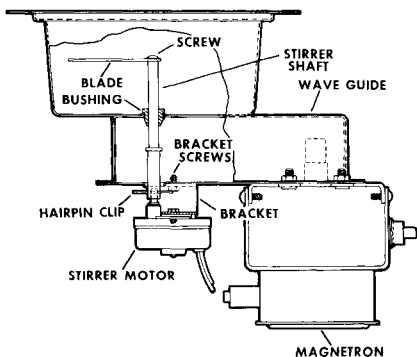
TO SERVICE THE SHAFT AND BLADE ASSEMBLY:

1. Remove the ceramic plate from the floor of the oven.
2. Pull the hair pin clip at the motor shaft (under range).
3. Pry the shaft bushing loose in the wave guide and lift out the shaft and blade assembly. It is replaced as an assembly. **CAUTION:** Be certain shaft bushing is fully seated in wave guide during reassembly.

TO SERVICE THE MOTOR

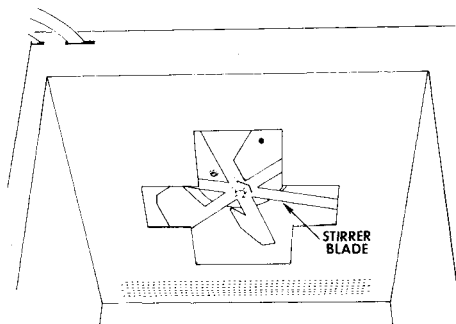
1. Remove the motor and bracket assembly mounting screws from the bottom of the wave guide.
2. Motor assembly will drop down for ample clearance to pull hair pin clip from shaft.
3. Transfer bracket to new motor, install hair pin clip, and mounting screws last.

NOTE: If shaft is accidentally pushed all the way up into wave guide before reassembly, the ceramic plate inside the oven must be removed to locate the shaft.



STIRRER (CMO—HI—LOW—WALL OVENS)

A uniform heating pattern is made possible by a motor-driven stirrer blade at the top of the oven cavity. During normal operation, this area is covered with a plastic shield or cover.



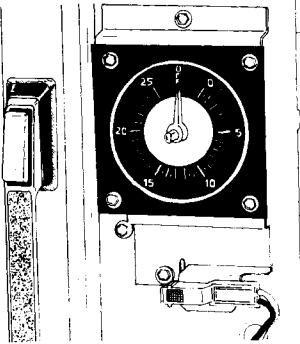
The six-bladed fan reflects the micro-waves in all directions as they enter the oven cavity through the wave-guide.

The stirrer blade is driven by a motor mounted in the top of the oven.

The stirrer cover is fastened with plastic 2-piece fasteners. The cover can be removed by snapping out the "button" inner fastener inside the oven.

When servicing the stirrer, make certain the blade is in place properly and the nut tight. Bent blades can cause arcing to the top of the cavity, and can lead to a stalled motor. Failure of the motor and uneven cooking can result.

TIMER — 25 MINUTE TYPE



The timer is a single speed, 25-minute timer assembly, consisting of the motor and switch assembly. The timer is mounted to the instrument bracket, from the front, by two screws. The control panel trim and outer case must be removed to service the timer.

The normally open (N.O.) switch is an 20 amp, 125 volt switch enclosed in the timer and actuated or closed when the timer is set. When the timer returns to "O" position, the timer contacts open, and a 120-volt buzzer sounds until timer is turned to off.

The timer can control cooking times from 0 to 25 minutes. The dial is marked in one (1)-minute intervals over the full 25-minute span. In addition, it is sub-divided into 30 second intervals.

When setting the timer for less than 5 minutes, turn the pointer past the 5

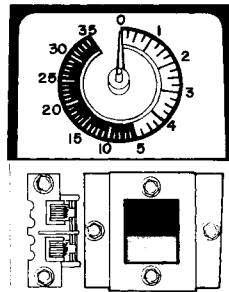
minute mark and back to the desired time setting - insures better accuracy.

The contacts are enclosed inside the timer body and have push-on terminals (1-2). The buzzer contacts are (1-3). The timer coil has integral leads and are not marked.

How To Test

1. Unplug oven and remove outer case.
2. Discharge high voltage capacitor.
3. Remove coil leads and check continuity-normal resistance is approximately 2450 OHMS.
4. Check contacts (1-2) - should have direct continuity when timer is set. Should read OPEN when timer is "OFF".
5. Check buzzer contacts (1-3) - should have continuity at end of timed cycle.

TIMER — 35 MINUTE TYPE



The timer is a 35-minute, two-speed timer, with a bell which will ring when the motor times out. The timer is mounted to the instrument bracket, from the front, by two screws. The control panel trim and outer case must be removed to service the timer.

ELECTRICAL COMPONENTS

The normally open (N.O.) switch is a 25-amp, 240-volt switch mounted integral with the timer, and cannot be serviced separately.

The timer uses a split scale timer face which has the first 5 minutes spread out over one-half of the dial and subdivided into 15-second intervals. The remaining 30 minutes is divided into 1-minute intervals and is spread out over the other half of the dial.

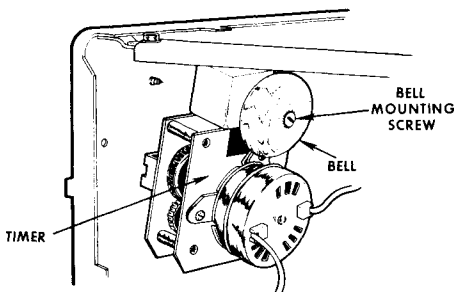
How To Test

1. Unplug oven and remove outer case.
2. Discharge capacitor.
3. Remove coil leads and check continuity - should be approximately 2600 OHMS.
4. Check contacts of switch - should have continuity with timer set. Should read open when the timer is off.

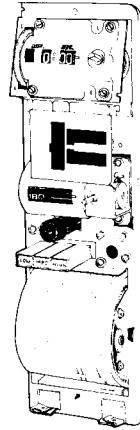
Bell Loudness Adjustment

Loosen bell mounting screw slightly and rotate bell to position which provides the desired sound. Retighten screw.

Do not replace timers for "weak bell" complaints.



DIGITAL TIMERS



A digital read out timer is located at the top of the control panel and is used for all TIME COOKING MODES.

The timer can be set up to 59 minutes and 59 seconds. A thumb wheel to the left of the timer sets increments of 10 minutes. A knob to right of the timer sets minutes and seconds.

To set the minute/second knob, grasp knob and push in while setting desired time. The timer can be reset anytime during cooking if needed.

The timer switch is a 15 amp switch mounted integral with the timer, and cannot be serviced separately.

How To Test

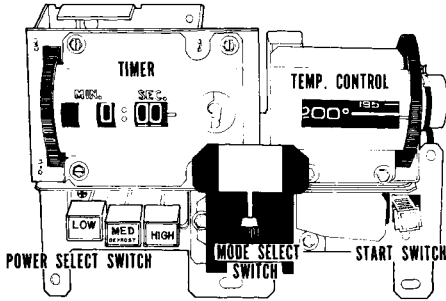
1. Unplug oven, remove outer case, and discharge capacitor.
2. Remove coil leads and check continuity—should be approximately 1140 ohms.
3. Check contacts of switch - COM. to N.O. Contacts should have continuity with timer set. Should be open when timer is off. (N.C. contact not used).

How To Replace — CMO/Wall Oven

After removal of outer case and control panel trim, the timer is accessible for removal by taking out 3 mounting screws. Note: Lower mounting bracket and black mask must be transferred to new timer.

How To Replace — High Low Models

1. Lower control panel to service position.
2. Remove microwave control bracket assembly from panel. (4 screws).



3. Remove timer from control assembly. Transfer black mask to new timer.

SURGE AND POWER RELAY

A surge relay is connected to the start circuit in the line side of the primary of the power transformer to provide surge suppression at "Turn On" of the oven. (See Oven Schematic).

The initial current spike or surge is limited by a 5 ohm, 10 watt resistor connected across the relay contacts. The contacts close a few milliseconds after initial power is connected to the relay, and shunts out the 5 ohm resistor.

The surge suppression feature eliminates nuisance blowing of the 15 amp fuse or tripping of the house circuit breaker.

Burned out surge resistors indicate a stuck open relay or stuck closed monitor switch. Refer to oven schematic for circuit.

START SWITCH

A push-to-start momentary switch is used on some models to start oven operation. It is a DPDT switch used in conjunction with the power relay and surge resistor. Initial "Turn On" current is through the surge resistor and start switch for surge suppression. With the relay energized, the resistor and start switch are shunted out of the circuit.

INTERLOCKS (1.3 cu. ft. Ovens) (Non-Touch Control Models)

Two interlocks and a monitor circuit are used to insure that the magnetron cannot be energized with the door open.

The Two Interlocks Are:

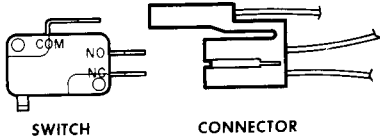
1. Primary concealed interlock — Top door latch switch.
2. Secondary concealed interlock — Bottom latch switch.

Door Latch Switches

The primary and secondary interlocks are the two door latch switches located at the top and bottom of the oven front frame. The switches are operated by separate latch levers in the oven door.

ELECTRICAL COMPONENTS

When the door is fully closed, the levers depress the latch switch plungers closing the contacts required to complete the power input circuit to the oven. The circuit is broken (by depressing the latch button on the door handle) before the door can move.



No adjustment of switches is available. Refer to mini-manual for test procedures.

INTERLOCKS (1.3 cu ft. Ovens) (Touch Control Models)

The primary concealed interlock is a latch switch located at the top of the oven front frame, and operated by the top latch lever in the oven door.

The secondary interlock consists of two sets of contacts: (a) the bottom door latch switch, operated by the lower latch lever, and (b) contacts # 6 - #9 of the power relay.

Refer to mini-manual for procedure.

MONITOR SWITCH

A monitor switch circuit is provided to back up the interlocks.

The function of the monitor switch is to "monitor" the primary and secondary interlocks (latch switch) and prevent a "power on" condition with the door open. In case of a failure of both interlocks, the monitor closes, as the door is opened, and creates a short circuit across the 120 volt line which blows the 15 amp fuse. This requires service and repair of the oven before it can be operated again.

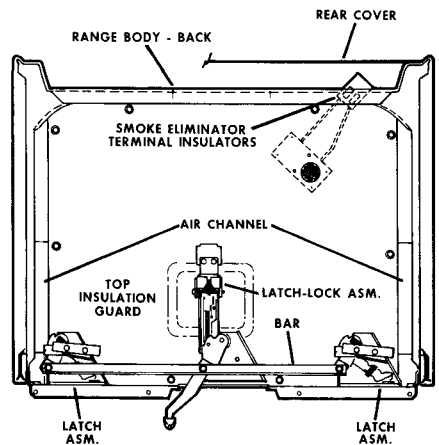
Important

At any time this switch is serviced for any reason, the monitor circuit must be tested.

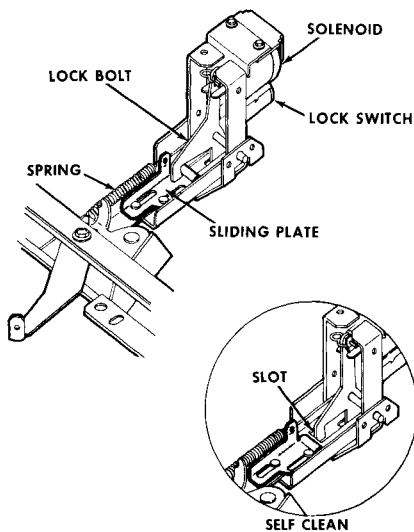
Refer to mini-manual for location and test procedures.

DOOR LATCH AND LOCK ASSEMBLY (COMBINATION RANGE)

Two standard self-clean mechanical latches are used—one at each top corner location. A third latch (without lock fingers) is located at the center and serves as an operator for the two latches and lock assembly. All are mechanically ganged together by a tie bar which operates the latches in unison as the lever is moved. The primary and secondary microwave interlocks are also operated by the latches.



ELECTRICAL COMPONENTS



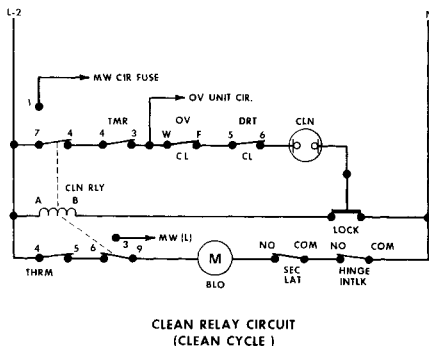
The lock assembly is an older design with a MODIFICATION which requires use of the clean lock switch (latch release switch), ONLY for the self-clean operation. For microwave use, the latches are independent of the latch solenoid.

The modification consists of a spring loaded sliding plate which controls the position of the lock bolt attached to the solenoid plunger. When the solenoid IS NOT energized, the lock bolt rests on and retains the sliding plate which covers the slotted opening in the lock bar. This permits latching and unlatching without use of the solenoid.

For self-clean, the latch release switch is pressed as the latches are operated. The energized solenoid plunger raises the lock bolt and releases the spring loaded sliding plate. The spring pulls the plate forward and allows the lock bolt to drop into the slot when the switch is re-

leased. This mechanically locks latch movement until the solenoid is energized again.

During self-clean, the lock bolt also activates the lock switch which controls a CLEAN RELAY in the MW power supply. The relay insures that microwave power is not "on" during self-clean.



SAFETY INTERLOCKS (COMBINATION RANGE)

The electrical interlock system consists of two (2) latch switches under the cooktop, a hinge switch, (concealed interlock) and a monitor.

LATCH SWITCHES

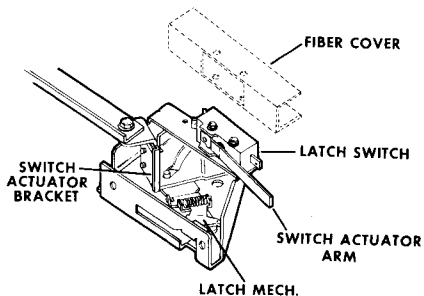
The two latch switches are operated by two separate latches under the cooktop:

Primary Interlock—right hand latch switch

Secondary Interlock—left hand latch switch

The primary interlock is connected in the line side of the microwave oven circuit, and the secondary interlock is in the neutral side. Both switches are electrically closed when the door is latched, and open when the door is unlatched. Switch actuation is by a small bracket on the latch mech.

ELECTRICAL COMPONENTS



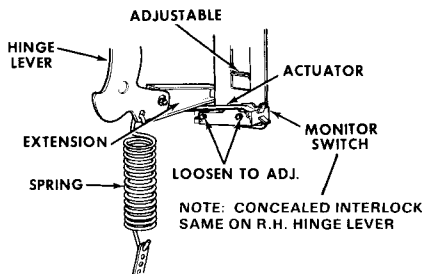
NOTE: No adjustment of latch switches is available. Refer to Mini-Manual for Test Procedure.

CONCEALED INTERLOCK AND MONITOR SWITCH

A separate hinge switch is located at each hinge lever. The switches are designated as follows:

- Concealed Interlock—R.H. hinge lever
- Monitor Switch — L.H. hinge lever

THE CONCEALED INTERLOCK, operated by the R.H. hinge lever, is connected in series with the secondary interlock (L.H. latch switch) in the neutral (N) leg of the microwave circuit. The switch functions as a back-up interlock and oven light switch. A 3-pin disconnect plug (3) serves the switch wiring.



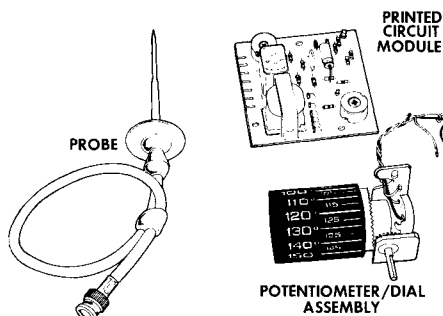
IMPORTANT: AT ANY TIME THE SWITCHES ARE SERVICED FOR ANY REASON, THE MONITOR CIRCUIT MUST BE TESTED.

NOTE: Refer to Mini-Manual for Adjustments & Test Procedure.

TEMPERATURE CONTROL

The temperature control system consists of five (5) basic component assemblies: (The 3 major components are shown here).

1. Temperature probe.
2. Receptacle - (For probe)
3. Control potentiometer/dial assembly
4. Alarm- (Buzzer)
5. Printed circuit control board module



Temperature Probe

The temperature probe is the sensor which detects or measures the food internal temperature. The sensor is a thermist swaged in the tip of the stainless steel tube. The swaged end is grounded to the metal tube. The other end of the thermistor is connected to a lead assembly which is the center conductor at the end of the cable connection.

The circular disk next to the handle is a microwave reflector for the handle. The disk is aluminum and may discolor with use. It can be cleaned with soap and water or a S.O.S. type pad.

The probe should be inserted into the food up to the juncture point whenever possible (or at least 1-inch into food). The plastic clip fastened to the cable should be positioned to loop the cable to control the length and to provide more stability of the probe in the food (helps prevent probe slipping out of food).

Probes are either twist-lock or telephone jack type.

The cold resistance of the probe, at 70°F, is approximately 60,000 ohms.

Receptacle
The probe receptacle is mounted in the side wall of the oven cavity and held in place by a lock nut. The probe and receptacle is grounded to the cavity wall.

Twist-Lock—Lead under Locknut.

Telephone Jack—Lead to "S" terminal.

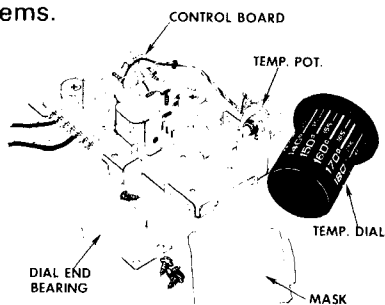
The green ground lead is connected to terminal "G" on the circuit board. The center conductor of the probe and receptacle is a blue lead and connects to terminal "P" on the circuit board.

NOTE: A poor ground connection to the cavity wall can cause the cable connector and receptacle to get very hot. If this type of problem is encountered, remove the receptacle and scrap or polish the painted surface where the ground lead plate is fastened to give a positive ground path to metal.

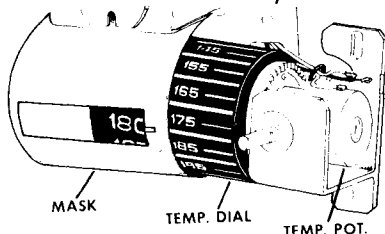
Potentiometer And Dial Assembly

Setting a selected temperature on the temperature dial operates a potentiometer which is connected to the dial by a nylon gear assembly. Three leads from the potentiometer are connected to the circuit board at terminals, "H", "J", "I".

If the assembly has a "thumb" wheel operated dial, and a dial end bearing, the parts are serviced as individual items.



If the assembly has a knob operated dial and gear and gear assembly, it is serviced as one assembly.



The potentiometer has a resistance value of 10,000 OHMS. Refer to manual for test procedure.

ELECTRICAL COMPONENTS

Printed Circuit Module

The heart of the temperature control system is the printed circuit module which contains several solid state components, low voltage power transformer, switching relay, and two calibration potentiometers.

Since the circuit board works in conjunction with the control potentiometer and the probe, all connections are made on the circuit board. The three leads from the control potentiometer are located near the center of the circuit board; all other connections are made at the edge of the board. Each connection is marked by a letter and is referenced as follows:

ELECTRICAL COMPONENTS

<u>Terminals</u>	<u>Reference</u>	
H	Control potentiometer	} Temp Dial Assembly
I	Control potentiometer	
J	Control potentiometer	
P	Probe	} Probe Leads
G	Ground	
R	Relay	} Switching Relay
A	Alarm	
O } C }	Line Input	
N	Neutral Input	

It should be noted that the switching relay contacts (C-R) are utilized for both Time and Temp modes of cooking to supply voltage for the power relay coil.

During the Temperature Mode when the food reaches the preset internal temperature, the circuit board turns "ON" the switching relay and the contacts switch from (C-R) to (C-A). This de-energizes the power relay which turns the oven "OFF", and provides a circuit to the buzzer alarm. The alarm continues to sound until the door is opened.

Service to the printed circuit board is limited to Calibration or Replacement of the complete module.

TEMPERATURE CALIBRATION TEST

The temperature calibration test involves two (2) calibration points on the temperature dial.

120^o Setting
180^o Setting

Equipment required: Accurate thermometer One (1) cup of tap water (coffee cup)

This calibration test must be used anytime the calibration is in question, and after replacement of any system component such as the probe, control potentiometer/dial assembly or circuit board.

1. Place cup of water in oven with probe connected and inserted in the water. Set the TIME - TEMP switch to TEMP.
2. Select high power.
3. Set the temperature dial to the 120^o setting and push the START button:

A) When oven turns off - stir water with thermometer and repeat cycle by pushing START button. Oven should turn off again in a few seconds. Repeat this procedure until oven turns off as soon as START button is pushed. Water temperature will be stabilized

ELECTRICAL COMPONENTS

B) Measure water temp. with thermometer. Should be $120^{\circ} \pm 5^{\circ}$.

4. If calibration within specification-proceed to step 5.

A) If not to specification-Unplug oven, remove outer case, discharge capacitor and remove circuit board cover.

B) Adjust REAR calibration potentiometer on circuit board:

CW to decrease temperature

CCW to increase temperature

$1/8$ turn = 10°

C) Repeat water test until calibration within specification.

i. Set temperature dial to 180 setting and continue water test, using same stirring technique as before.

A) Measure water temperature when stabilized. Should be $180^{\circ} \pm 5^{\circ}$.

B) If adjustment necessary, adjust front calibration potentiometer on circuit board:

CW to increase temperature

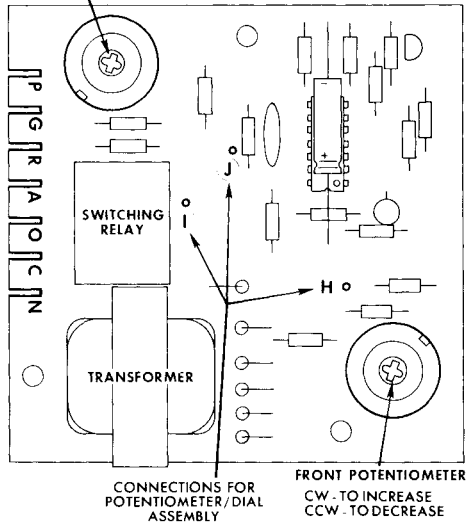
CCW to decrease temperature

$1/8$ turn = 10°

C) Repeat test until calibration within specification.

4. Reassemble circuit board cover and outer case.

REAR POTENTIOMETER
CW - TO DECREASE
CCW - TO INCREASE



TOUCH CONTROLS

Description

Touch controls are produced with various features, styles, and functions.

The touch control system performs automatic cooking programming and all cooking functions for the microwave oven. Most cooking functions must be programmed by the user, however, some functions are pre-programmed in the control system. The user enters the desired cooking functions by touching the proper pads on the control panel. Each entry made will be recognized by an audible "beep" to let you know that information has been accepted.

In addition, indicator lights and a digital readout display at the top of the control panel, shows you what information has been entered and what the oven is doing.

ELECTRICAL COMPONENTS

The most important and influencing factor about the oven for both the customer and the service technician is the knowledge of "how to use it".

It is anticipated that "customer education" will be the largest single cause for service. It is therefore absolutely necessary that all service personnel understand how to use the oven, in order that they know what the oven can do ... and what it cannot do.

Servicing

Some early production touch controls were originally serviced as a complete control assembly, and later serviced with parts or the control. See index – "Touch Control – Control Assembly and Parts".

VARIABLE POWER CONTROL

(MODELS WITH FILAMENT TRANSFORMER)

The solid state control operates on a 12 VAC supply from a tap on the primary winding of the filament transformer. The control cycles the power transformer "on" and "off", by means of a triac, at all settings except high. A pulsating sound is normal at all settings other than high.

The control dial is marked with 10 settings, each number equivalent to approximately 10% "on time". For example:

10	High	100% "on"
7	Med High	70% "on"
5	Med	50% "on"
3	Low/Def	30% "on"
1	Warm	*17% "on"

*Lowest setting on control dial.

Control Board

The control board is located on the back of the control panel. A potentiometer is soldered to the control board. The pot shaft is turned by the user to select the desired power level. At "high", a switch in the pot is turned "on" to insure full power. All other power levels are determined by the wiper location inside the pot.

The control board has five (5) terminal connections. Their functions are:

- B-C 12 vac input for solid state components
- B-D 120 vac input, used for synchronization of gate trigger, eliminating current surge.
- D-A Across Triac to insure positive shut off
- E-B 3/4 VDA Triac gate trigger (when firing and "E" lead connected) 13 VDC (when firing and lead disconnected).

Triac

A Triac is used as the switching device to turn the power transformer "on" and "off", cycling the magnetron. The Triac receives its gate signal (3/4 VDC) from the control board. Refer to Mini-Manual for test procedure.

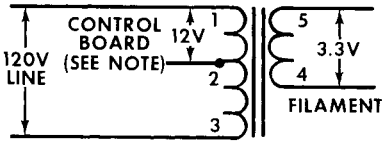
Filament Transformer

A separate filament transformer is used in the system. The transformer is energized whenever the oven controls are set for cooking function. It does not cycle, like the power transformer, thus keeping the magnetron filament hot, prolonging the life of the magnetron.

ELECTRICAL COMPONENTS

The primary of the filament is tapped to supply 12 vac to the control board.

Winding	Terminals	Volts	Res.
Primary	1-3	120	6 Ω
Control Board	1-2	12	3/4 Ω
Filament	4-5	3.3	1/4 Ω



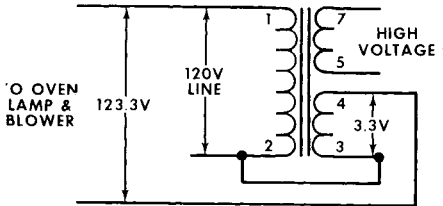
FILAMENT TRANSFORMER
(VARIABLE POWER MODELS)

Power Transformer

The primary and filament windings of the power transformer are connected in phase to supply boost voltage to the oven lamp and blower, whenever the Triac fires. This is done to reduce lamp flicker and variations in blower sound during variable power.

Winding	Terminals	Volts	Res.
Primary	1-2	120	1/4 Ω
Filament	3-4	3.3	1/10 Ω
High Voltage	5-7	2000	77 Ω

The No. # 5 terminal is grounded to oven frame with a green ground lead.



POWER TRANSFORMER (VARIABLE POWER MODELS)

Testing

Voltage checks at the control board and resistance checks of the Triac are normal troubleshooting procedures.

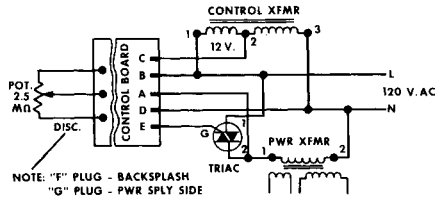
A quick check for "full on", (no variable power), is to remove the gate lead "E" from the board. Turn oven on.

Results	Check for:
Oven On	Shorted Triac 1-2
Oven Off	Leads reversed 1-2, or, failed control board.

VARIABLE POWER CONTROL (MODELS WITH AUTOTRANSFORMER)

The variable power control feature is essentially the same as the variable power control used on models with filament transformer.

The main difference is a 120V/12V Autotransformer is used to power the control. In addition, the control duty cycle (or cycle time) is 15 seconds in place of a 1.5 sec. duty cycle. A long duty cycle is used since the magnetron filament as well as power is cycled ON & OFF. NO SEPARATE FILAMENT TRANSFORMER IS USED. Pulsating noise of power transformer and blower is normal when control cycles (will change pitch).



NOTE: "F" PLUG - BACKSPLASH
"G" PLUG - PWR SPLY SIDE

BOARD TEST

B - C	12 VAC (XFMR)
B - D	120 VAC (LINE)
D - A	120 VAC (FIRING)
E - B	3/4 VDC GATE (FIRING)

TRIAC TEST

G - 1	0 Ω
G - 2	$\infty \Omega$
1 - 2	$\infty \Omega$

ELECTRICAL COMPONENTS

CONTROL BOARD TEST POINTS

TEST:

TERM. FUNCTION

B—C	12 VAC control power
B—D	120 VAC line
D—A	120 VAC power XFMR (when triac "on")
E—B	*3/4 VDC triac gate (when firing and (E) lead connected)
E—B	*13 VDC (when firing and (E) lead disconnected)

*Voltage E-B will be pulsating (15 sec.) at variable power levels.

NOTE: If control board passes above test, board and transformer are good.

TRIAC

The triac is the same terminal type used on previous microwave ovens.

Gate (G) 3/16" terminal
Cathode (1) 1/4" terminal (red dot)
Anode (2) 1/4" term.(yellow dot)

NOTE: A quick test for "FULL ON" (NO VARIABLE POWER) problems can be made by removing the gate lead at "E" on control board.

RESULTS CHECK FOR

Oven On	Shorted triac 1-2
Oven Off	Failed board or leads

TO TEST TRIAC

1. Discharge capacitor
2. Isolate terminals or leads
3. Set meter to highest(RX10K)scale
4. Normal readings:

G-1	0 Ω
G-2	$\infty \Omega$
1-2	$\infty \Omega$

CONTROL TRANSFORMER

CAUTION: AUTOTRANSFORMER CONNECTIONS ARE NOT PHYSICALLY POLARIZED. REVERSED WIRING WILL BURN OUT CONTROL BOARD OR TRANSFORMER.

TRIAC

(TOUCH CONTROL MODELS)

A triac is used as the switching device to turn the power transformer "on and off" cycling the magnetron.

The Triac receives its gate signal between pins 4-5 of the control panel. When the gate has the 1/2 vac signal from the control, the Triac conducts through terminal 1 and 2, completing the neutral input to the power transformer.

The Triac is mounted on an aluminum heat sink located on the back of the control compartment, behind the power transformer.

<u>TERM. TYPE</u>	<u>LEAD TYPE</u>
(G) 3/16" (Small)	White
(1) Red Dot	Red
(2) Yellow Dot	Black

ELECTRICAL COMPONENTS

HOW TO TEST

1. Disconnect power to oven.
2. Discharge high voltage capacitor.
3. Set meter to RX10K scale.
4. Normal readings are:

G-1	0	Ω
G-2	∞	Ω
1-2	∞	Ω

CLEAN RELAY (COMBINATION RANGE)

A DPDT 120 V relay is used to control the **LINE VOLTAGE** for either the microwave or self clean circuitry. Both circuits cannot be energized at the same time. The relay has two sets of contacts. One switches the line input and the other provides **BLOWER OPERATION** in both modes. The relay is located at the front of the power supply.

CLEAN CIRCUIT

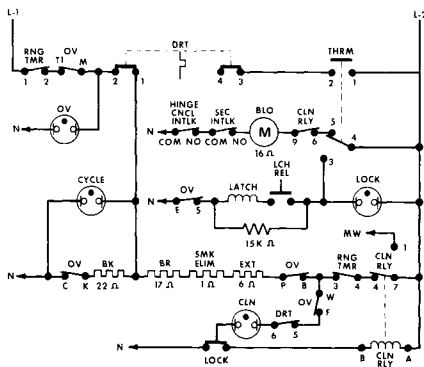
The clean circuit is essentially the same as the self-cleaning ranges with a few exceptions.

▶ **CLEAN RELAY** — The relay is energized through the lock switch. The microwave circuit (L2) power is broken by relay contact (7) which opens (7-1) and closes (7-4). This drops out the microwave circuit and connects (L2) power to the oven units and clean light.

▶ **MW BLOWER** — The microwave blower is used as the self-clean fan to reduce component and external temperatures. The blower is connected through the clean relay contacts (9-6) and the interlocks when the thermal switch closes (4-5) at lock-up temperature.

LOCK LIGHT 15K OHM RESISTOR

— The lock light is energized through a 15K ohm resistor when the thermal switch closes (4-5) at lock-up temperature.

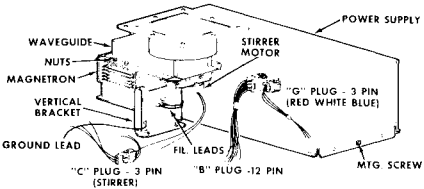
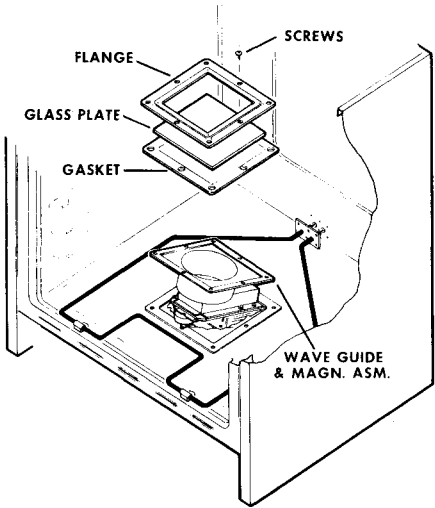


WAVEGUIDE ASSEMBLY (COMBINATION RANGE)

The wave guide mounts in a large square opening at the bottom of the oven liner and is covered with a ceramic plate. The magnetron and stirrer motor is suspended from the bottom of the wave guide. The stirrer blade and shaft extension is located inside the top area of the wave guide under the ceramic plate. A solid square fiber gasket is located under the plate and acts as a liquid seal. The entire assembly is fastened by a flange and eight (8) screws.

Removal of the wave guide should normally only be necessary to replace the wave guide itself or the oven liner. The magnetron can be removed from under the range or it can be placed by removing the wave guide and magnetron as an assembly.

ELECTRICAL COMPONENTS



REMOVAL OF WAVE GUIDE/MAGNETRON THROUGH OVEN FLOOR

1. Disconnect range power.
2. Open power supply compartment and discharge capacitor.
3. Disconnect magnetron filament leads, unplug disconnect at power supply, and remove power supply.
4. Unplug stirrer "C" disconnect.
5. Remove vertical bracket in front of magnetron. (4 screws) Note: Leave green ground lead attached.
6. Remove bake unit (6) screws and pull unit forward to clear ceramic plate in bottom of oven.
7. Remove ceramic plate flange (8 screws).

8. Lift out ceramic plate and gasket. NOTE: GASKET MUST BE KEPT INTACT – IF NOT MUST USE NEW ONE. (LIQUID SEAL)
9. Carefully lift wave guide and magnetron assembly up through opening in bottom of oven. (Tilt up at front end for clearance at rear).
10. Assembly can then be placed on floor for further disassembly as necessary.

REASSEMBLY

WARNING

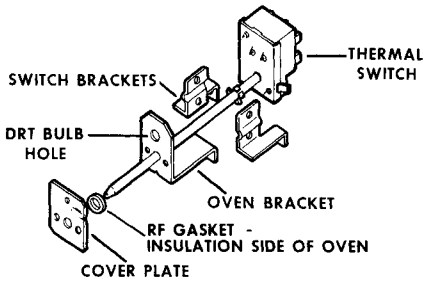
When replacing the magnetron, be certain the R.F. gasket is in place and mounting nuts are tightened securely to wave guide. Failure to do so can result in hazardous levels of microwave leakage.

1. Carefully guide assembly (tilted rear first) down through oven.
2. Inspect gasket before using. Must be intact with no holes, tears, etc. If not intact, use new gasket.
3. Center gasket in place and insert ceramic plate. Firmly press plate down to form gasket into recess of wave guide.
4. Replace flange with (4) center screws first, then corner screws. ALL SCREWS MUST BE TIGHT.
5. Reassembly all other parts.

CONVENTIONAL OVEN TEMPERATURE CONTROLS (COMBINATION RANGE)

The conventional oven controls consist of the dual range thermostat (DRT) and thermal switch. These are the same type components used on other self-clean ranges but differ a little bit in their mounting due to microwave power considerations.

ELECTRICAL COMPONENTS



- Note position of 2-piece mounting bracket (clamped to switch bulb). Remove bracket and transfer to new switch in same position.

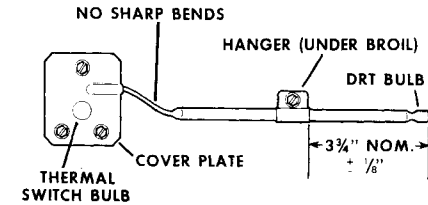
- Install switch and transfer wiring.

DUAL RANGE THERMOSTAT (DRT)

The DRT bulb and capillary enters the oven through a hole in the thermal switch oven bracket and a hole in the oven liner. The bulb is positioned on the rear oven wall by a HANGER under the broil unit. The bulb location in the hanger is very important. To prevent microwave energy "load in", THE TIP OF THE BULB MUST BE 3-3/4" + 1/8" FROM THE END OF THE HANGER. This is very important since "load in" could cause arcing and rupture of the DRT bulb.

DRT REPLACEMENT

- Remove capillary hanger at rear of oven liner under broil unit.
- Remove capillary cover plate at top left corner of oven liner.
- Remove range rear cover.
- Feed capillary out hole at thermal switch.
- Remove DRT mounting screws behind knob.
- Transfer wiring to new DRT and mount.
- Carefully shape capillary (near bulb) to similar shape as original. Caution: Make no sharp bends.
- Insert capillary into oven and install through hanger. HANGER MUST BE MOUNTED WITH "LOOPED" END DOWN.



THERMAL SWITCH

The thermal switch performs the same functions that it does on other self-clean ranges — provides bake run-a-way protection, and insures lock-up during the clean cycle.

THE THERMAL SWITCH BULB is clamped by two switch brackets fastened with screws. The switch brackets are then screwed to an oven bracket which is mounted to the oven liner by the cover plate screws inside the oven. The thermal switch bulb passes through clearance holes in the oven bracket, liner, and cover plate.

THERMAL SWITCH REPLACEMENT

- Remove range gear cover.
- Remove green ground lead from switch case.
- Remove (2) switch mounting —bottom of switch.
- Slide thermal switch out.

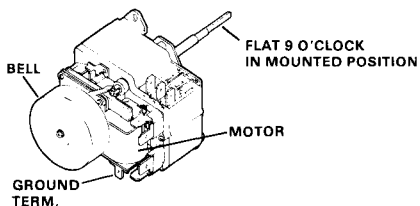
ELECTRICAL COMPONENTS

CAUTION: Dimension of bulb extension beyond hanger is very important. Should be 3-3/4" Nom. + 1/8".

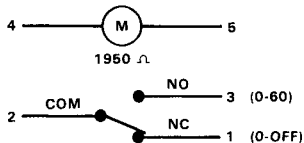
9. Install cover plate and mounting screws. Note: A small pocket screwdriver or rod inserted through one of the rear bracket mounting holes helps position the DRT to line up cover plate holes with bracket holes while starting screws. NOTE: Capillary must be located in cover plate groove.

TIMER - 60 MINUTE DIAL TYPE

The 60 Minute Dial or Pointer Type is a two-speed timer with Bell Alarm.



The timer has a split scale with the first 10 minutes spread over more than half of the scale.

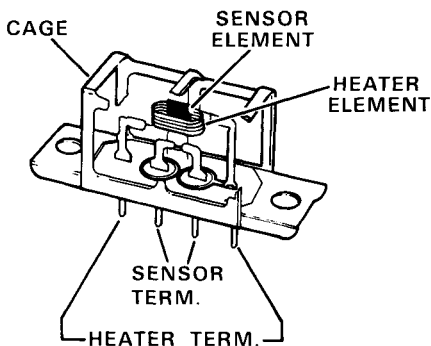


AUTO COOK - HUMIDITY SENSOR CAGE TYPE

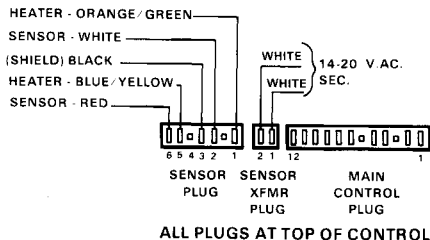
Microwave Ovens with "Auto Cook" Function uses a Humidity Sensor to detect the food "Steam Burst" to control the automatic cooking program.

It consists of a sensor element (detector) and a heater element constructed in a small metal cage. Each element has 2 terminals which extend through an insulator base at the bottom of the case. The two inside terminals connect to the sensor element and the outside terminals connect to the heater.

HUMIDITY SENSOR (LOCATED IN OVEN VENT)



A wiring harness with a 6-pin plug connects the sensor to the control. The two sensor element leads are encased with a metal shield and plastic tube with the shield connected to pin-3 of the plug. The shield prevents electrical noise in the sensor circuit.



ALL PLUGS AT TOP OF CONTROL

ELECTRICAL COMPONENTS

Sensor Test

1. Unplug Sensor
2. Test resistance of heater and sensor elements:

- Heater - Approx. 6 Ohms (RX1 Scale)
- Sensor - Extremely high (RX10K Scale)

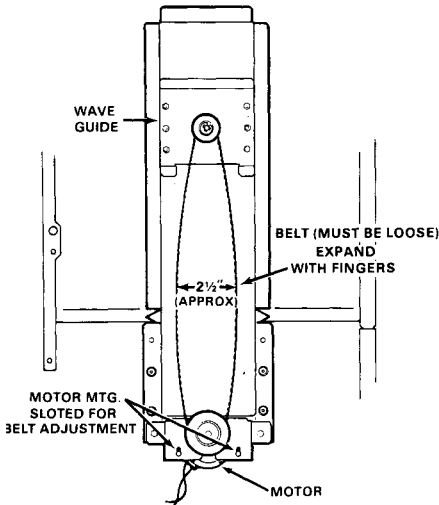
Note - Breathe on sensor - Resistance drops rapidly.

(See Mini-Manual for related system tests)

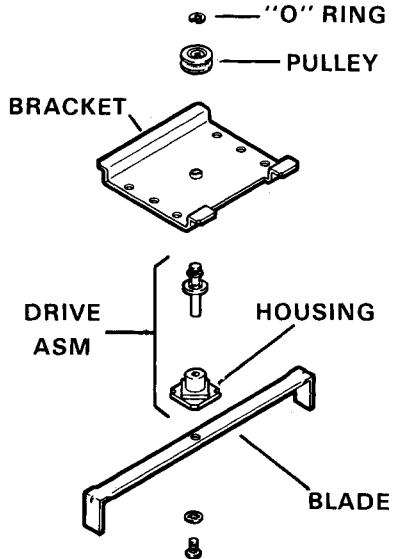
Mode Stirrer/Rotating Antenna (1.4 cu ft. Ovens)

The mode stirrer is **belt driven** by a motor located at the right end of the top waveguide. The motor bracket is slotted for belt adjustment. When properly adjusted, the belt will be **very loose**. Position the motor so that the belt can be expanded about 2½ inches at the center area. The stirrer is rated at 56 RPM-CW(top). Note: The motor and pulley is supplied only as an assembly.

MODE STIRRER — BELT DRIVEN
(TOP VIEW OF STIRRER AREA)



The stirrer blade drive assembly consists of a plastic **housing**, **drive shaft**, and **small pulley**. The blade fastens to the shaft by a screw and lock-washer. Do not remove blade - damage to drive assembly may result. A large plastic **stirrer cover**, with molded tabs, **snap-fits** to the top of the cavity. Press in the side of the cover at the tab locations to unsnap.

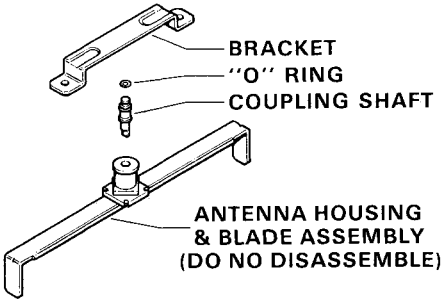


(LATER PRODUCTION)

The drive assembly consists of an antenna housing and blade assembly and a coupling shaft (different than original production). The later design will be supplied for all service, and will consist of the following parts (with instruction sheet):

- 1-Antenna & Blade Assembly (pre-assembled)-Do Not Disassemble
- 1-Coupling Shaft
- 1-"O" Ring
- 1-Bracket

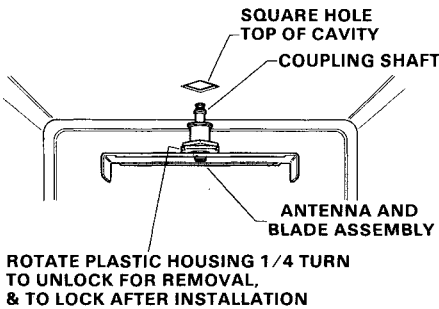
ELECTRICAL COMPONENTS



The bracket mounts over the small pulley on top of the oven after assembly—prevents coupling shaft from lifting out of antenna housing during shipment and operation.

To remove either type assembly:

1. Unplug oven. Remove outer case. Discharge capacitor.
2. Remove "O" ring from top of small pulley shaft, and lift off pulley. (Some models may have bracket over pulley).
3. Remove plastic antenna cover inside cavity.
4. Using fingers or channel locks, rotate plastic antenna housing 45° (1/4 turn) in top of cavity. Pull assembly into cavity.

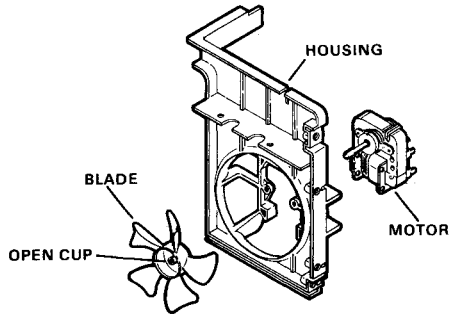


MAGNETRON FAN (1.4 cu ft. Oven)

The fan is located behind the magnetron, mounted to a plastic housing. Looking from the front of the oven the

blade, turns counterclockwise (CCW). To service the fan motor or blade, the fan and housing must be removed as an assembly (5-screws) then the blade pulls off. The motor is fastened to the plastic housing by two nuts & bolts.

Correct orientation of the blade is with the "open cup" hub of the blade facing the magnetron.



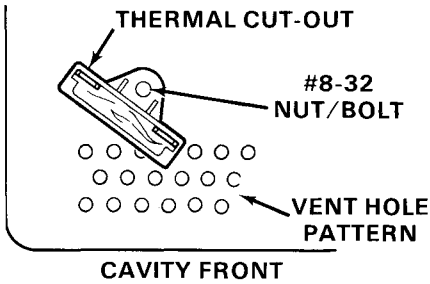
THERMAL CUT-OUT (JET 200 & RE900 SERIES)

A thermal cut-out is provided to automatically shut off the oven in case of an over-heated cavity. The device is located on top of the cavity at the left front corner area.

The cut-out is a one-shot device (opens at 212°)-**does not reset**. It is electrically connected at series with the control transformer primary circuit (smart board models), or in pwr. relay coil circuit (conventional models).

The thermal cut-out will be mounted with a self-locator pin, and rivet or nut/bolt. The service part will mount with nut/bolt. **The device must be tight against the outside surface of the cavity to insure proper sensing of cavity temperature.**

ELECTRICAL COMPONENTS



Power Control Module

PRIOR 1984

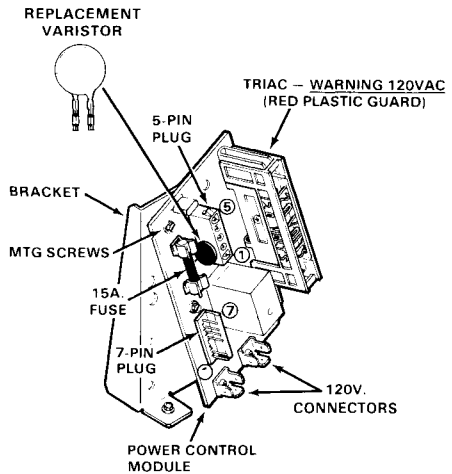
Some electronic controls (touch & /PAC) interface with the oven by a new **common PC board** called - **power control module (PCM)**. It is located "on" or "behind" the control panel depending on the model type.

The power control module contains the following components:

- ▶ Power Relay
- ▶ Triac
- ▶ Fuse
- ▶ Varistor
- ▶ Gate generator circuit*-formerly part of smartboard *Opto-coupler & snubber network.

The PCM also contains two (2) connector plugs:

- ▶ 7-Pin Plug - connects to smartboard
- ▶ 5-Pin Plug-connects to oven circuit



Advantages of PCM

- Open triac fails PCM-not the smartboard
- Centralizes oven wiring
- Common part for all electronic controls
- Throw-a-way, **except:**
-fuse & varistor are field replaceable.

Note: Varistor is soldered in PCM but can be replaced without unsoldering or re-soldering.

1. Clip the (2) varistor leads close to varistor body.
2. Service varistor has attached push-on terminals - just connect replacement to "exposed cut-leads".

Any other failure on the PCM requires replacement of PCM.

The **power relays** on the PCM are 15 VDC relays controlled by the smartboard. The relays are designated as K1 & K2. The K1 relay (small) services as a latching relay to keep the relays energized when they should be (latches around start circuit of smartboard).

ELECTRICAL COMPONENTS

The K2 relay (large) controls the line voltage circuit of the oven. It is also part of the secondary interlock on touch control models.

The **triac** is a new type triac soldered in the PCM. It has a large rectangular heat sink covered with a red plastic guard. The **heat sink is anode 2** of the triac and is normally at **neutral (N) potential**. **If the house wiring were reversed polarity, the triac heat sink would be at line (L) potential - since this is not totally uncommon, a red plastic guard (marked 120 volts) covers the triac for technician safety.**

Note: Above voltage checks can be used as "quick check" only - if any plug voltage not normal, refer to diagnosis flow chart in mini-manual.

Normal PCM Voltages

With the oven programmed and running - **normal voltages** at the two (2) PCM plugs are as follows:

7-Pin Plug

Pins	Volts	Comments
1-2	1 VDC	Steady (Pwr. 10)-cycles "-off" other pwrs.
5-7	12-20 VDC	
6-7	12-20 VDC	
4-5	0 VDC	
4-6	0 VDC	

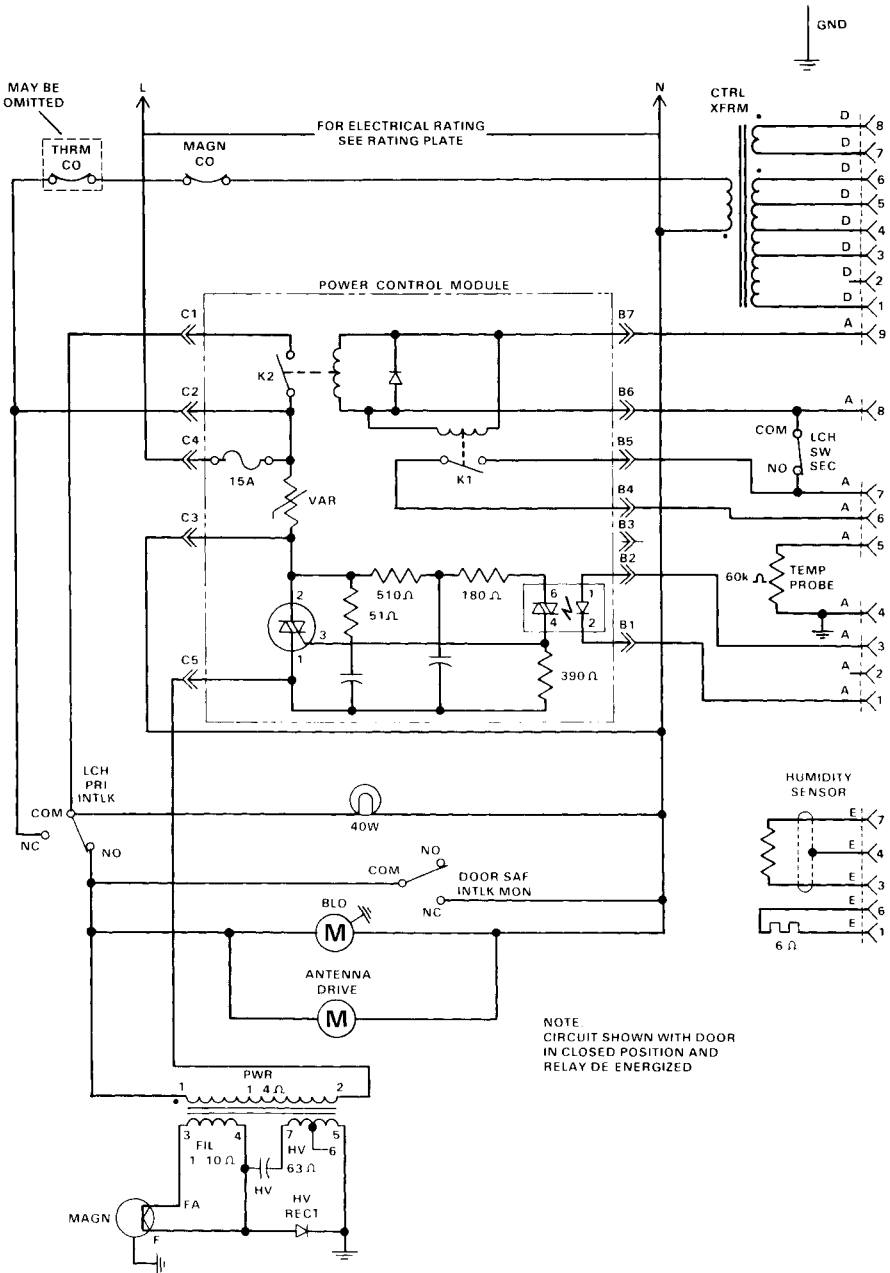
(If 7-pin plug voltage normal - verifies smartboard OK)

5-Pin Plug

Pins	Volt	Comments
1-2	0 VAC	
2-3	120 VAC	
3-4	120 VAC	
3-5	0 VAC	Steady (Pwr. 10)-cycle 0 & 120V. at other pwr. levels

ELECTRICAL COMPONENTS

HERE IS TYPICAL TOUCH CONTROL OVEN CIRCUIT USING THE POWER CONTROL MODULE:



ELECTRICAL COMPONENTS

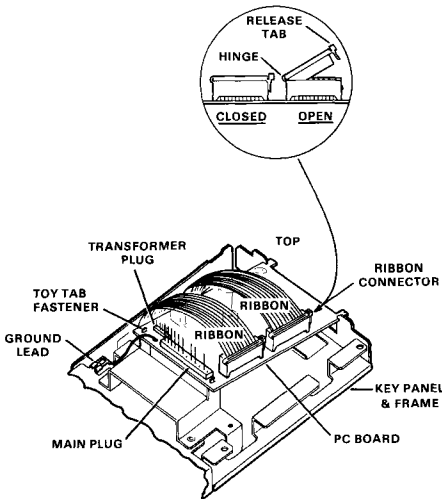
TOUCH CONTROLS (Modular Service)

Some touch control systems are serviced by individual modules instead of a complete control. The modules include:

- Smart Board
- Key Panel
- Control Transformer
- Power Control Module (where used)

The Smart Board fastens to the back of the control panel by positioning tabs at the top, and "TOY" twist tabs at the bottom. The key panel ribbon connects to the Smart Board by plastic connectors. Key panels have one (1) or two (2) ribbons depending on the control system. A typical control is shown:

PC BOARD & KEY PANEL ASSEMBLY



Several different control systems are used, and individual modules are not interchangeable. (See Mini-Manual for details of testing and service.)

INTERLOCKS (1.4 cu.ft. Ovens) (Prior to August 1984)

- Top latch switch (secondary)*
- Bottom latch switch (primary)
- Monitor - door prong actuated

*Touch control models also use K2 relay (power control module) as part of secondary interlock system.

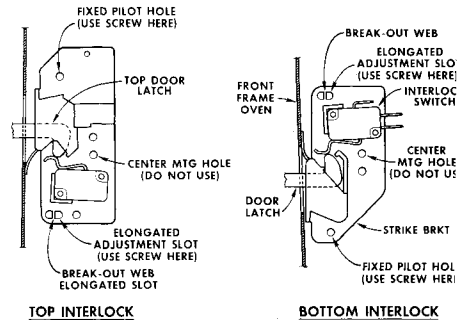
Latch Switch Replacement

The top and bottom latch switches are mounted to a plastic strike by a locator pin and one screw. Remove only the switch.

Latch Switch Adjustment

Latch switch brackets are slotted at one end for "in-out" door adjustment. Locate mounting screws as shown.

Check for microwave leakage after adjustment.



MICROWAVE LEAKAGE TEST

A microwave leakage test must be performed anytime a door is removed, replaced, disassembled, or adjusted for any reason.

THE MAXIMUM LEAKAGE ALLOWED IS 5MW/CM².

ELECTRICAL COMPONENTS

Refer to Mini-Manual for test and service details.

VPAC CONTROLS

The VPAC control is a solid state electronic control system which controls variable power, and temperature functions. VPAC is derived from "Variable Power Auto Chef". (Previous controls with variable power and auto chef features used two separate PC boards).

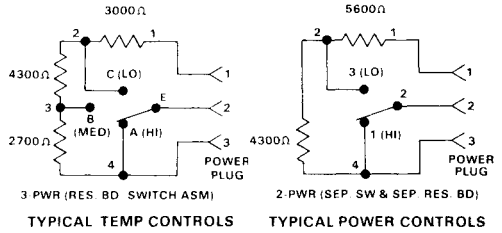
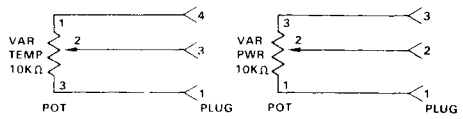
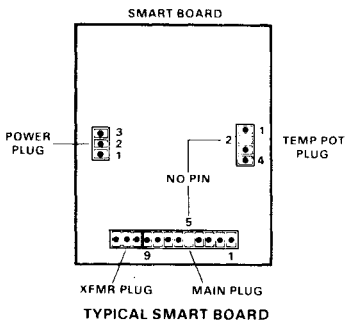
The VPAC control combines these features on one smart board. The user controls are electro-mechanical (Timer, Dials, Switches)

The smart board is powered by a separate low voltage transformer.

Separate plugs on the smart board connect the temperature and power control components. Depending on models, these control components can be:

- ▶ Temperature Potentiometer (Pot.)
- ▶ Power Pot—Variable Pwr Mods.
- ▶ Switch & Resistors—Fixed Pwr Mods.

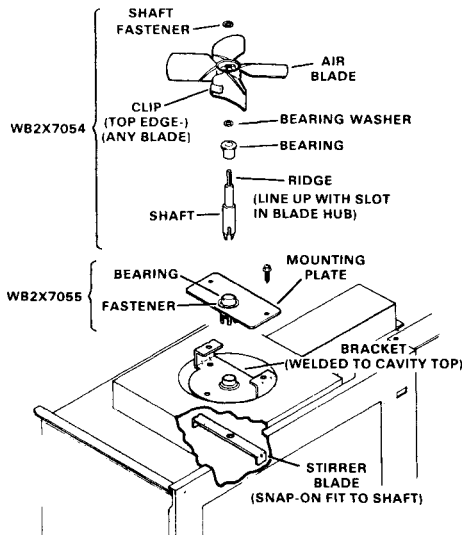
A typical VPAC control system is as follows:



Different VPAC control systems have been used and parts are not interchangeable. Refer to Mini-Manual for details of testing and service.

STIRRER—AIR DRIVEN (SPACE-MAKERS)

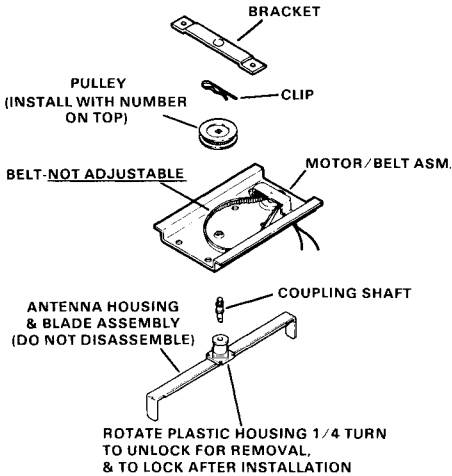
Mode Stirrer is air driven—no electric motor is used. Part of magnetron blower air is directed through top plastic duct and drives air blade on top of stirrer assembly.



ELECTRICAL COMPONENTS

MODULAR ROTATING ANTENNA

The modular motor assembly consists of one-piece motor, belt, and bracket assembly which must be serviced as an assembly. **The belt is not adjustable or replaceable by itself.**



TO REPLACE THE MOTOR ASSEMBLY:

1. Remove top bracket and lift out pulley assembly. (Do not have to disassemble clip from pulley.)
2. Remove motor assembly.
3. Mount new motor and install pulley, making certain belt is engaged. Rotate pulley to insure shaft engages in antenna housing.
4. Verify that blade turns freely - can use "neon power" light. "Flickering" light (blade turning) - "Steady" light (blade not turning).

CAUTION:

If blade not turning, damage to glass shelf may result.

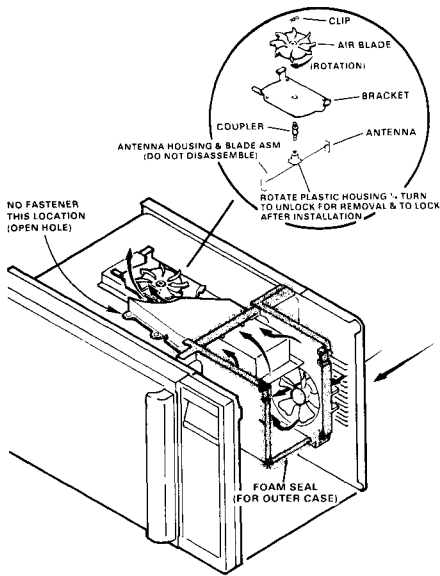
TO REPLACE HOUSING AND BLADE ASSEMBLY:

The housing and blade assembly must be replaced as a one-piece assembly. **Do not attempt to remove the blade by itself.**

1. Remove plastic antenna cover - must access from top and bottom as most covers have fasteners on top side.
2. From inside the cavity, grasp the plastic housing with fingers or channel locks and rotate 1/4-turn to unlock and remove.
3. Install new housing and blade assembly in similar manner. Insert through square hole and rotate 1/4-turn to lock in place.
4. Rotate blade to engage with coupling shaft. Check operation to be certain blade turns freely.

STIRRER/ROTATING ANTENNA 1.4 Cu.Ft. Ovens (Air Drive)

The antenna is air drive—no electric motor or belt is used. The magnetron blower directs air flow through a flat plastic duct on top of the cavity and drives an air blade which is connected to the antenna inside the cavity.



The outer case provides the main air duct closure on the side and top of the blower housing around the magnetron; therefore the **air blade will not turn with the outer case removed.**

CAUTION: If oven is operated with case off, **spin air blade by hand** every few minutes, or **make cardboard closure** and tape in place over blower housing to insure antenna rotation — **prevents hot spot shelf damage and arcing damage.**

STIRRER — .5 OVENS (Air Drive)

The stirrer assembly consists of a **metal blade, plastic shaft, spacer/bearing, and blade fastener.**

The plastic shaft has a threaded stud and 2 locator pins on the end that insert up through the top of the cavity. This stud also goes through a hole in the top plastic air duct. A metal nut holds the assembly together.

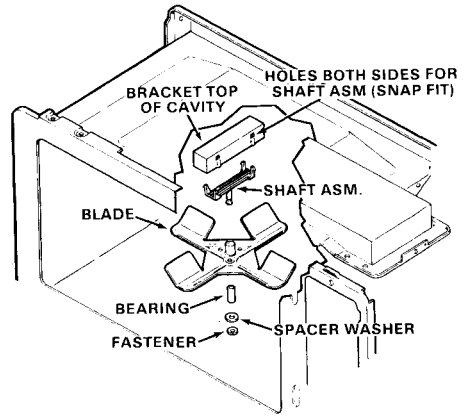
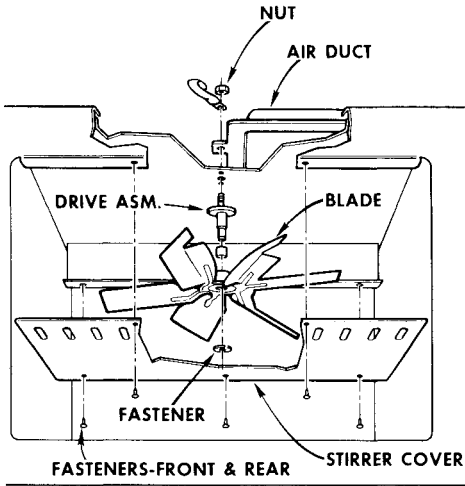
To Remove Stirrer:

1. Unplug the oven, remove case, and discharge capacitor.
2. Remove flat plastic stirrer cover in top of cavity — plastic pin fasteners at front and rear.
3. Remove shaft nut at end of plastic duct on top.
4. Shaft and blade assembly will lift out. Remove blade fastener to separate blade and shaft.

NOTE: Do not lose plastic spacer/bearing from blade hub. Blade should be installed with hub down.

CAUTION: During reassembly be certain shaft locator pins are inserted in the cavity holes. Install nut by hand before tightening with tool to avoid crossthreading and breakage of shaft — **Do Not Over Torque.**

ELECTRICAL COMPONENTS



STIRRER/ROTATING ANTENNA SNAP-IN SHAFT (AIR DRIVE)

The stirrer is air driven. The magnetron blower directs air into the top of the cavity through a plastic duct at the front. The air flow rotates the stirrer blade inside the oven.

To Service The Stirrer:

1. Remove stirrer cover inside oven at the top — carefully pry out the plastic fasteners to remove.
2. The stirrer assembly is fastened in a metal bracket by snap-in plastic tabs — 2 tabs at front and rear. Push in the tabs with a small screwdriver and stirrer assembly will drop out.

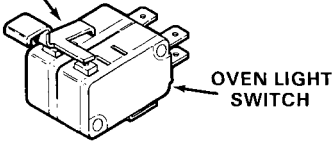
INTERLOCKS (After August 1984) (1.4 CMO's and Spacemakers)

A new interlock system is used on all **Touch Control CMO's** and **Touch Control Spacemakers** manufactured after August 1984.

The new interlocks are necessary to conform to a new UL regulation which goes into effect in late 1984 for 120-volt microwave ovens. **Interlocks must be located in both sides of the line**, and circuitry must be such that **no single component or wiring failure** can render interlocks inoperable with normal or reversed line polarity. (Wall ovens and Hi-Low ovens are not affected since they have less chance of being mis-polarized in house wiring.)

ELECTRICAL COMPONENTS

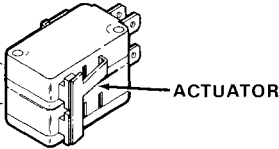
PRIMARY INTERLOCK



CMO TOP LATCH SWITCH

SECONDARY INTLK

OVEN LIGHT SWITCH



LOWER SPACEMAKER SWITCHES

SPACEMAKER

- **Primary** — Top single key switch operated by **top latch pawl**.
- **Secondary** - Top switch of **two-switch assembly** operated by **bottom latch pawl**. **NOTE:** Other switch is oven light switch only.)

INTERLOCKS — PUSH BUTTON START — (.5 Ovens)

The two interlocks and the monitor switch are mounted to a plastic latch body on the handle side of the cavity. **From top to bottom the switches are as follows:**

- Monitor
- Secondary Interlock
- Primary Interlock

Interlocks Will Be Designated As Follows:

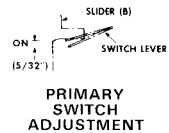
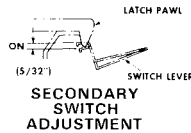
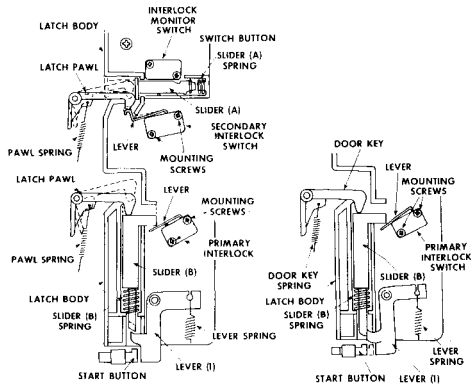
- **Primary** - Latch switch in neutral (N) circuit.
- **Secondary** - Consists of two (2) sets or contacts:
 - Latch Switch in control circuit
 - K2 Relay on PCM (line) circuit

The physical locations of interlocks are as follows:

CMO

- **Primary** - Cavity side switch of **two-switch assembly** operated by **top latch pawl**. (**NOTE:** Other outside switch is oven light switch only.)
- **Secondary** - Bottom single switch operated by **bottom latch pawl**, and K2 relay on PCM.

INTERLOCKS



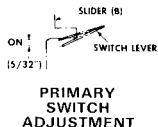
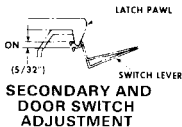
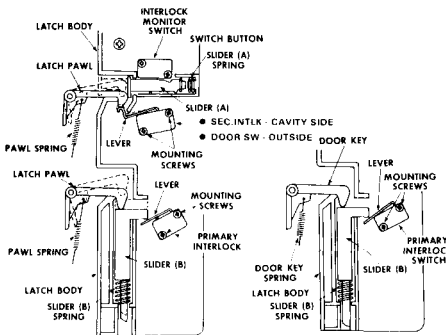
ELECTRICAL COMPONENTS

INTERLOCKS — TOUCH MODELS (.5 Ovens)

Two interlocks, a door sense switch and the monitor switch are mounted to a plastic latch body on the handle side of the cavity. **From top to bottom the switches are as follows:**

- Monitor
- Secondary Interlock — Next to Cavity
- Door Sense — Outside of Secondary Interlock
- Primary Interlock

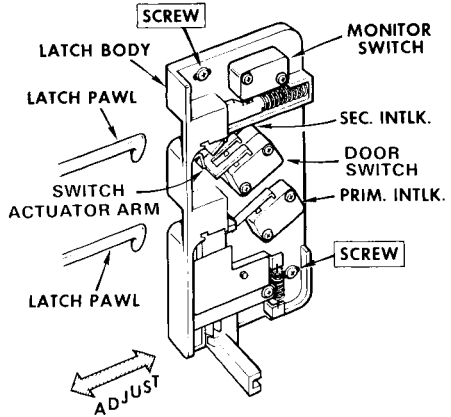
INTERLOCKS



WB1409

ADJUSTMENT

Loosen latch body screws and move body in or out.



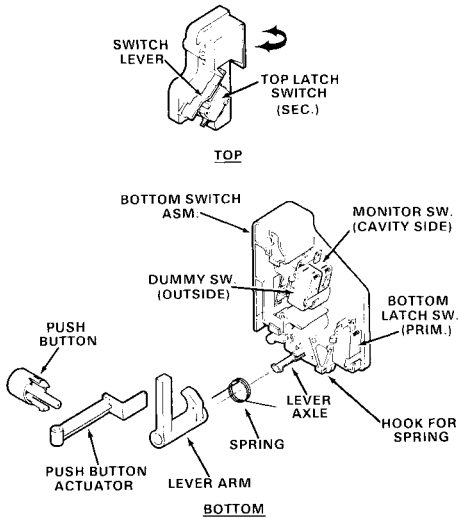
INTERLOCKS - SPACEMAKER II BUTTON START (O & E SERIES)

The interlock system is the same as the Touch Control Models except there is no door switch used. In its place is a "dummy" switch body to facilitate mounting of the monitor switch.

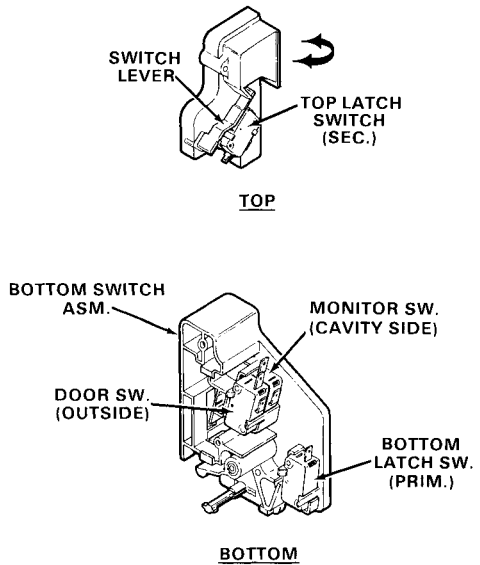
- **Primary** - Bottom single switch operated by bottom latch pawl.
- **Secondary** - Top single switch operated by top latch pawl.
- **Monitor** - Cavity side switch next to "dummy" switch in two switch assembly.

NOTE: When testing switch continuity, remember the door must be closed and the start button pushed in order to activate the interlocks — other than for the start button — the interlock test and service procedure is identical to the Touch Control Models.

E/M CONTROLS (Example JEM10)



TOUCH CONTROL (Example JEM21)



INTERLOCKS — SPACEMAKER II (Touch Control)

The interlock system consists of the following switches:

- **Primary Interlock** - Bottom single latch switch operated by bottom latch pawl — connected in neutral (N) side of circuit.
- **Secondary Interlock** - Top single latch switch operated by top latch pawl — connected in line (L) side of circuit.
- **Monitor Switch** - Cavity Side switch of two (2) switch assembly operated by bottom latch pawl. The monitor switch is connected across the 120 volt line and blows the 15 amp fuse if both the top and bottom latch switches fail closed.
- **Door Switch** - Outside switch of two (2) switch assembly next to monitor switch — switch is connected in control smart board circuit to sense door position.

- **Top Assembly** - Contains **Top Latch** switch only.

To Adjust: Loosen assembly 2 mounting screws (top is slotted) Move assembly front-to-rear for tight door fit at top.

- **Bottom Assembly** - Contains **Bottom Latch Switch**, **Monitor Switch**, and **Door Switch**.

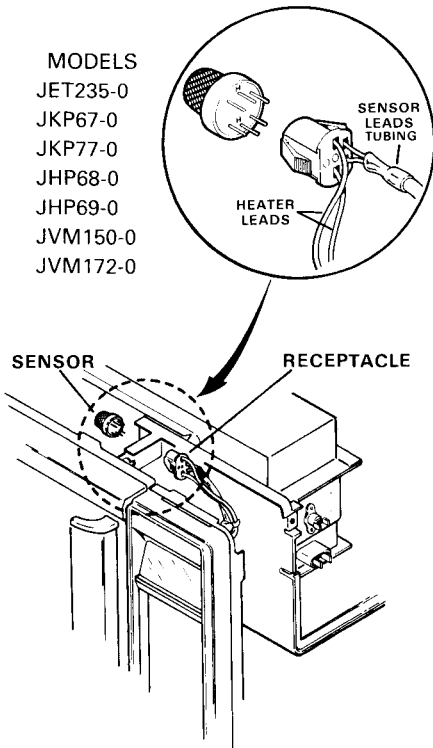
To Adjust: Loosen assembly 2 mounting screws (bottom is slotted). Move assembly front to rear for tight door fit at bottom.

Check door operation and all interlock operation after any adjustment.

ELECTRICAL COMPONENTS

AUTO COOK HUMIDITY/GAS SENSOR

The Auto Cook function uses a special gas sensor which detects both **humidity (steam)** and **hydrocarbons (food odors)** during the cooking process. The sensor is a plug-in device located in the vent area at the top front right hand corner of the cavity.

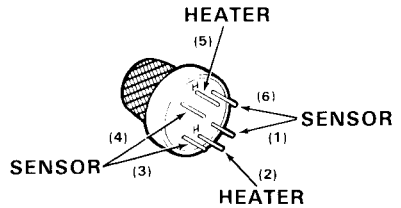


(JVM Mods) TIME COOK 1 TIME COOK 2 DEFROST

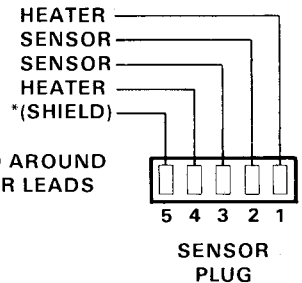
2. Observe diagnostic number in display (numbers approximate)
 - 9-220 (Normal - verify with "detection test")
 - 248 or Higher (Sensor failed open, sensor unplugged, wiring or smart board)
 - Less than 5 (shorted sensor, or smart board)

NOTE: Only heater terminals (H) can be checked with ohmmeter (30).

CAUTION: DO NOT ATTEMPT TO CHECK SENSOR TERMINALS (CAN DAMAGE SENSOR)



GAS
SENSOR



AUTO COOK DIAGNOSTIC TEST (QUICK TEST)

1. With 3 fingers touch and hold the following pads at the same time: (all mods except JVM)

**TIME COOK MANUAL
DEFROST and MIN/SEC TIMER**

ELECTRICAL COMPONENTS

SENSOR DETECTION TEST

1. Place small amount of water (about ¼ cup) in right front corner of oven.
2. Program **AUTO COOK 2 START**.
3. (All mods except JVM) Simultaneously touch **TIME COOK MANUAL DEFROST** and **MIN/SEC TIMER** and observe diagnostic numbers in the display – they will change.

(JVM Models)

Simultaneously touch **TIME COOK 1 TIME COOK 2** and **DEFROST**

4. Remember the **HIGHEST NUMBER** and the number at the time of **HUMIDITY DETECTION** (Control "Beeps")
5. The number of "detection" should be approximately 75% of the **HIGHEST NUMBER**. Example: If high no. = 160, then low no. should be approx. 120 (160 x .75 = 120)

NOTE: As long as detection **DOES OCCUR** and is approx. 75% of high number, (plus or minus a few numbers) the sensor system is working normally.

POWER CONTROL MODULE (PCM) (August 1984)

The PCM is a circuit board containing the 15A fuse, varistor, 1 or 2 (depending on model) 15VDC Relays, a triac, resistors, and 2 connector plugs. One plug has **5-pins** and one has **7-pins**. The PCM connects between the control and oven components, and provides all "ON" - "OFF" switching functions.

The 2 connectors on the edge of the board are marked **T1** and **T2**. **NOTE:** T1 should contain only **white or gray leads**.

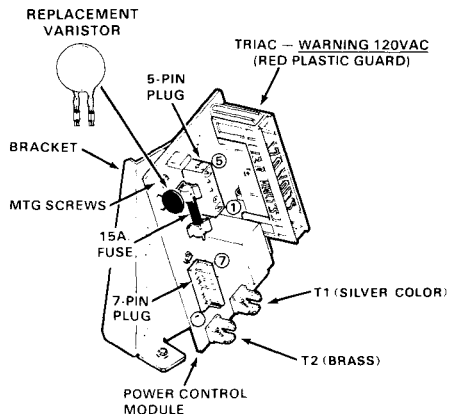
CAUTION: The triac can be electrically hot (120 VAC) and has a special red plastic guard to prevent accidental contact – **Do Not Remove The Guard**.

All diagnosis testing can be conducted at the 2-disconnect plugs. The PCM is serviced as a one-piece assembly, except for the **fuse** and **varistor**.

NOTE: Service replacement PCM boards will contain 2-Relays – for standardization to service all new and older models.

VARISTOR REPLACEMENT

1. Clip old varistor wires at red varistor body (leaving two short leads).
2. Replacement varistor has push-on terminals connected.
3. Plug new varistor on the cut leads. Check for tightness.



NOTE: T1 TERMINAL MUST HAVE ALL WHITE OR GRAY LEADS

ELECTRICAL COMPONENTS

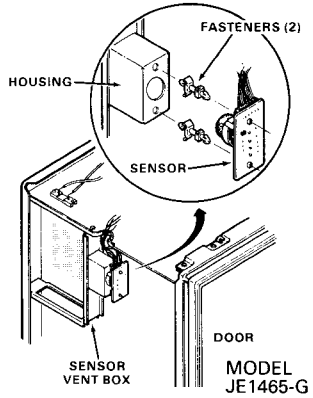
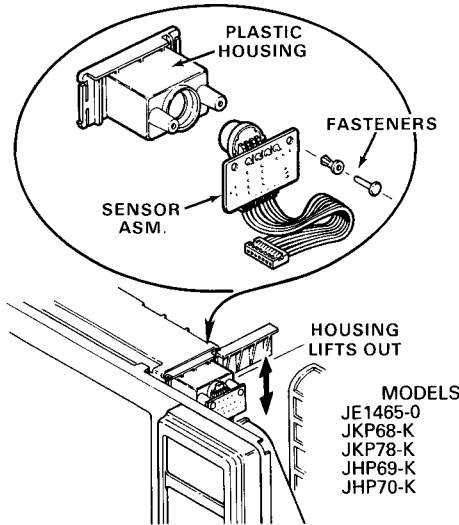
AUTO COOK HUMIDITY SENSOR CIRCUIT BOARD/RIBBON TYPE

Two different designs have been used. Both operate by humidity detection. (See operation description on page F-8 of General Section)

The sensor is located in the oven vent at the top or on the side of the oven, depending on design and model.

Both types consist of a sensor, circuit board, and ribbon assembly. The board ASM. fastens to the vent housing by plastic fasteners. The ribbon plugs into a connector on the Control Smart Board.

Self diagnostics are provided in the control but are different for various models. (Refer to mini-manual for diagnostic procedures.)



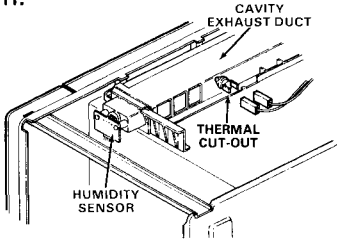
OVEN THERMAL CUTOUT (JE1400-0 SERIES)

A thermal cutout is mounted on the oven cavity exhaust plastic duct on top of the cavity. Its purpose is to automatically shut off the oven in case the cavity overheats for any reason.

The device is connected in series with the control low voltage transformer on touch control models; and in the neutral leg on electric/mechanical control models.

ELECTRICAL COMPONENTS

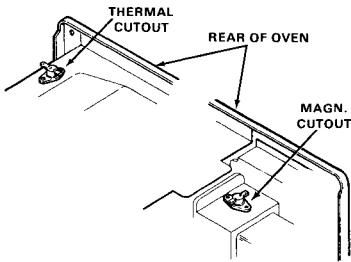
The cutout will reset after cool-down.



OVEN THERMAL CUTOUT (SOME JEM MODELS)

A thermal cutout is mounted on top of the oven cavity at the left side of the cavity. Its purpose is to automatically shut off the oven in case the cavity overheats for any reason.

The opening temperature is 221°F (105°C) and will reset after cool-down.



OVEN TEMP SENSOR (JE1400 & JEM G SERIES)

An oven temp sensor (thermistor) is mounted on top of the oven cavity at the left side. Its purpose is to automatically shut off the oven in case the cavity overheats for any reason.

The thermistor will operate at 257°F (125°C).

The device is connected to the control board on touch control models. When the thermistor exceeds its temperature it will turn off the power

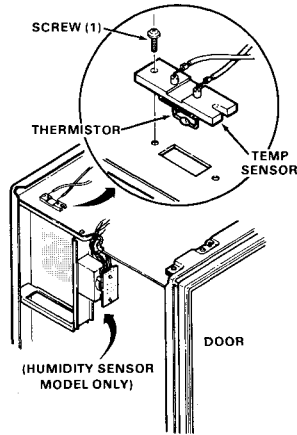
to oven cavity and display will go to reset mode.

The control can be reset after cool-down.

Thermistor Resistance Valve

30K - 120K at 10°C - 30°C (50°F - 86°F)

Note: Thermistor is not in circuit during the first 2 minutes of any program mode.



OVEN TEMP SENSOR (JMT 19 & JMT20 Models)

A thermistor type oven sensor tracks the oven temperature. The sensor is located at the top rear of the oven under metal shields. The sensor is mounted to the oven by two (2) screws.

The sensor connects to the smart board through the "C" connector at pins 1 & 2. Unplug connector to continuity test. The normal resistance at room temperature is extremely high - use highest Ohms scale.

To replace the sensor, the metal shields must be removed. Twist tabs and screws fasten the shields.

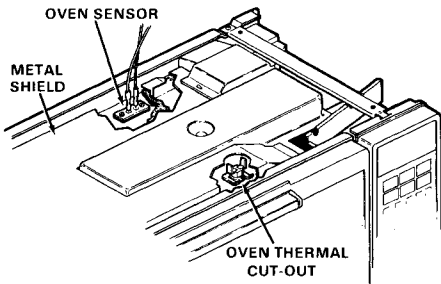
ELECTRICAL COMPONENTS

OVEN THERMAL CUTOUT JMT Models

A thermal cut-out protects the oven in case of over-heating for any reason (such as fire.)

The cut-out is located at the top front of the oven and is accessible through a large hole in the metal shield.

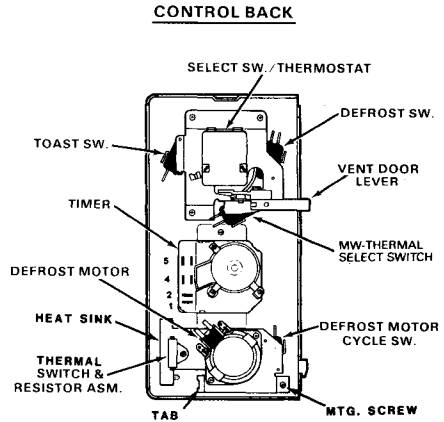
To remove - slide out from mounting fingers.



SELECT SWITCH & THERMOSTAT JMT10 & JMT11 Models

The Select Switch/Thermostat assembly consists of hydraulic type oven thermostat (with capillary tube) and 3 separate micro switches. Each switch sets up the proper circuit for the 3 functions: (See Oven Schematic)

- Toast Switch
- Defrost Switch
- MW - Thermal Select Switch



The switches and the thermostat are serviced as separate components. The switches are operated by a cam in the thermostat assembly.

A vent door lever, also part of the thermostat, operates the vent door on side of the cavity. The lever inserts through a square hole in the spring-loaded vent door, and opens the vent at microwave settings and closes the vent for all other settings. The vent door must be open in microwave to allow air flow through the cavity.

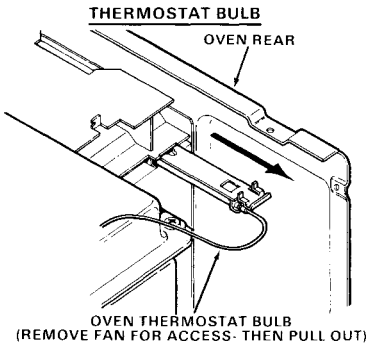
The capillary tube of the thermostat extends to the rear of the oven and is fastened to a bracket inserted into the oven vent area at the top rear corner of the cavity.

To Replace The Thermostat

1. Remove the Control Panel.
2. Remove 4 Thermostat Mtg. Screws.

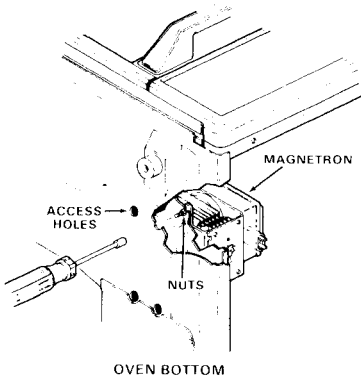
3. Remove the Magnetron Fan Motor Assembly.
4. Slide the Thermostat Cap. Tube out.
5. Remove the 3 Micro Switches from the Thermostat.

NOTE: When reinstalling the Control Assembly back on oven, be certain to set knob at "Thermal Oven" position to allow vent door lever to be inserted in door opening.



MAGNETRON SERVICE JE1400 - 0 Series

The magnetron is mounted to the bottom of the component compartment on top of the bottom feed wave guide. The 4 mounting nuts are accessible through clearance holes in the bottom of the case.

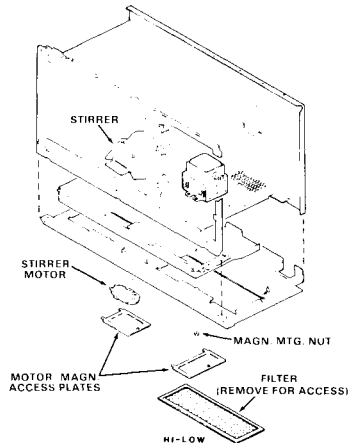
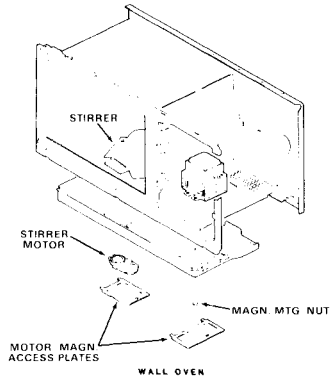


MAGNETRON SERVICE Cook Centers - Bottom Feed

The magnetron is mounted to the bottom of the component compartment on top of the bottom feed wave guide. The 4 mounting nuts are accessible through an access plate on the bottom of the case:

- **Wall Ovens** - The microwave module must be removed to get to the access cover.
- **Hi-Low Ranges** - The access cover is accessible by removing the right hand filter.

In all models the magnetron is removed through the control panel area after the nuts are removed.

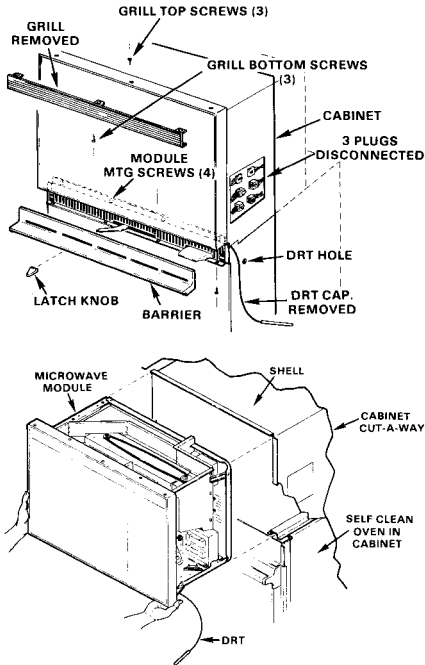


ELECTRICAL COMPONENTS

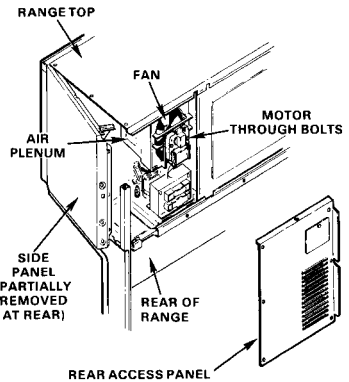
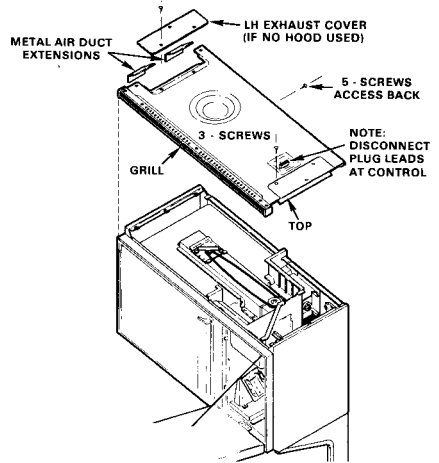
MAGNETRON SERVICE Cook Centers - Top Feed

The magnetron is mounted to the top feed wave guide.

- **WALL OVENS** - The microwave module or complete oven must be removed for access to the magnetron.



- **HI-LOW RANGES** - The top panel and side panel must be removed for access to the magnetron.



STIRRER/ROTATING ANTENNA JVM100 Spacemaker Series

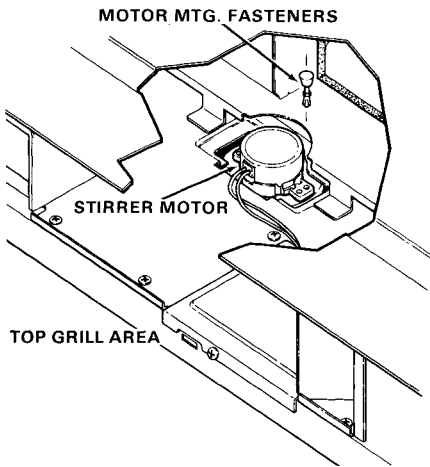
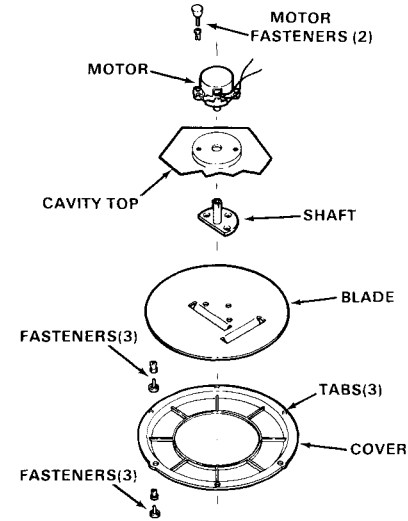
To Service the Stirrer Blade:

1. Remove stirrer cover at top of cavity. Three (3) Push-In plastic fasteners near the front, and three (3) tabs around rear of cover.
2. Insert screwdriver in blade slot next to shaft and pull off blade assembly — **DO NOT BEND BLADE.**

CAUTION: NEVER OPERATE THE OVEN WITH THE STIRRER REMOVED. THE MAGNETRON CAN OVERHEAT AND BE DAMAGED.

To Service Stirrer Motor

1. Disconnect power, remove stirrer cover and blade.
2. Remove grille.
2. Pry out motor plastic fasteners with screwdriver and needle nose pliers.
1. Disconnect motor plug.

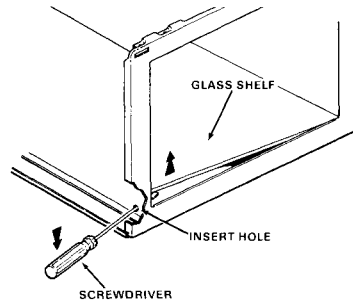
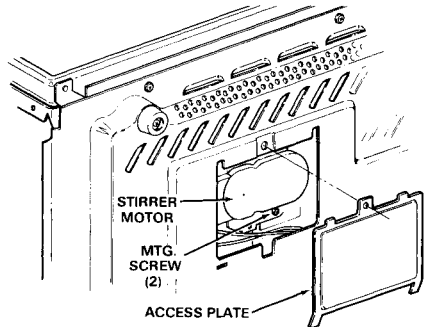


STIRRER/ROTATING ANTENNA CMO - Bottom Feed

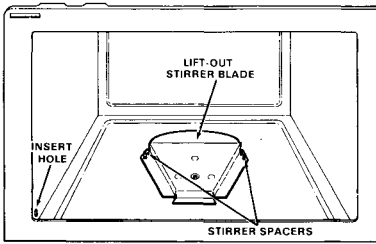
The stirrer blade is located inside the cavity under the glass shelf. The motor is outside the oven and accessible through a removable bottom cover.

The glass shelf and seal assembly can be removed by inserting a screw driver through the hole in cavity side near the bottom door hinge. Gently pry the shelf up until it can be lifted out of the cavity or up high enough to lift out blade.

NOTE: When installing the glass shelf, place the front edge in place first and then gently push the rear shelf down in place. Front edge must seat behind cavity lip, and rear must seat on formed emboss supports. The gasket must seal all around the shelf.

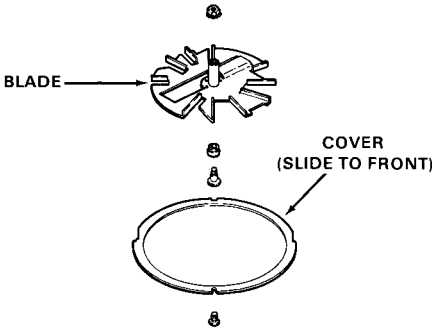


ELECTRICAL COMPONENTS



STIRRER/ROTATING ANTENNA JMT Models

The stirrer is air driven. The cooling fan directs air into the top of the cavity through a duct at the rear.



To Service The Stirrer:

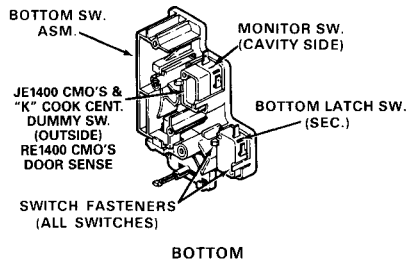
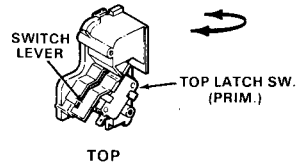
1. Remove outer case.
2. Remove the stirrer cover front mounting screw and slide cover to front.
3. The stirrer assembly is fastened by a screw and nut - the nut is at the top of the cavity.

INTERLOCKS

JE & RE1400 CMO'S & "K" Cook Centers

The Interlock System consists of the following switches.

- **Primary Interlock** - Top single latch switch operated by latch pawl, and connected to control smart board. The door must be closed before the smart board can energize the power relay.
- **Secondary Interlock** - Lower single latch switch operated by lower latch pawl - connected in neutral side of circuit.
- **Monitor Switch** - Cavity side switch of two (2) switch assembly operated by bottom latch pawl. The monitor switch is connected across the 120 volt line and blows the 15 amp fuse if both the top and bottom latch switches fail closed.



Refer to mini-manual for test procedure.

Both assemblies are adjustable to provide a tight door fit without play.

ELECTRICAL COMPONENTS

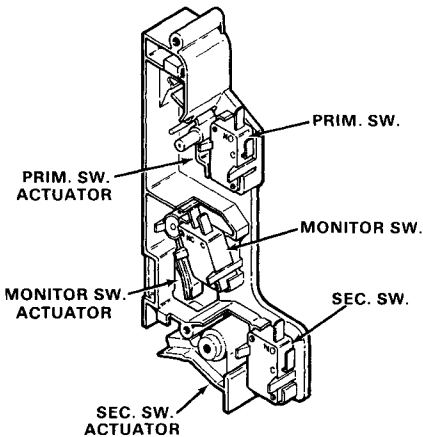
IMPORTANT - Check microwave leakage after any adjustment.

INTERLOCKS IE1400-G Series

The Interlock System consists of the following switches:

- **Primary Interlock** - Top single latch switch operated by latch pawl, and connected to control smart board. The door must be closed before the smart board can energize the power relay.
- **Secondary Interlock** - Lower single latch switch operated by lower latch pawl - connected in neutral side of circuit.

Monitor Switch - Center switch operated by bottom latch pawl. The monitor switch is connected across the 120 volt line and blows the 15 amp fuse if both the top and bottom latch switches fail closed.



Refer to Mini-manual for test procedure. The switch housing is adjustable to provide a tight door fit without play.

IMPORTANT - Check microwave leakage after any adjustment.

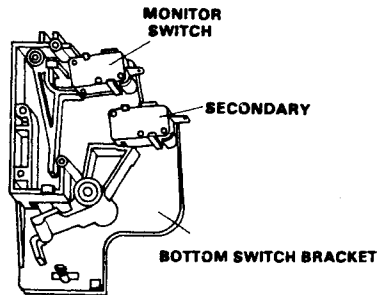
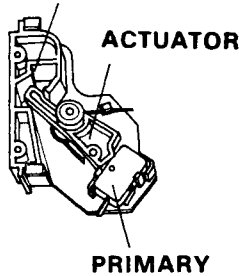
INTERLOCKS JET322 & JET342

There are three (3) interlocks:

- Primary - top latch switch
- Secondary - bottom lower switch
- Monitor - bottom upper switch

Top and bottom switches are mounted to plastic switch housings. The housings are adjustable front-to-rear to adjust for a tight door fit.

TOP SWITCH BRACKET



Refer to Mini-manual for test procedures. The switch housings are adjustable to provide a tight door fit.

ELECTRICAL COMPONENTS

IMPORTANT - Check microwave leakage after any adjustment.

INTERLOCKS

JET320 & JET340

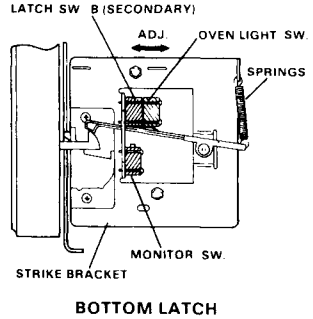
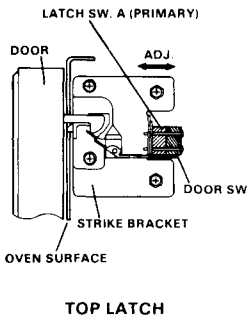
Interlocks are **part** of the **latch switches** operated by the **top and bottom door latch levers**. **Five (5)** switches are located in this area – **three (3)** are classified as **safety interlocks**:

- Primary Interlock - top front switch (A)
- Secondary Interlock - bottom front switch (B)
- Monitor Switch - bottom single switch

NOTE: The remaining two (2) switches are:

- Door Switch (Top Rear) - door sense switch for control - **must be closed to start**.
- Oven Light Switch (Bottom Rear)

All switches and the latch strikes are mounted to an adjustable metal bracket. Slotted holes in the bracket allow **front-to-rear adjustment to insure a tight door fit** (no play).



Refer to Mini-manual for test procedure.

Check microwave leakage after an adjustment.

INTERLOCKS

JEM600 & REM2/4 "F"

Two interlocks, a door sense switch and the monitor switch are mounted to 2 separate plastic latch bodies on the handle side of the cavity. From top to bottom the switches are as follows:

- Primary Interlock
- Monitor
- Door Sense - Outside of Bottom Assembly
- Secondary Interlock - Cavity side of bottom assembly

The Primary Interlock is mounted to the top latch body and is actuated by a "Living Hinge" plastic lever which is operated by the top latch pawl.

The Monitor, Door Sense, and Secondary Interlocks are mounted to separate lower latch body. All switches are actuated by spring loaded plastic levers.

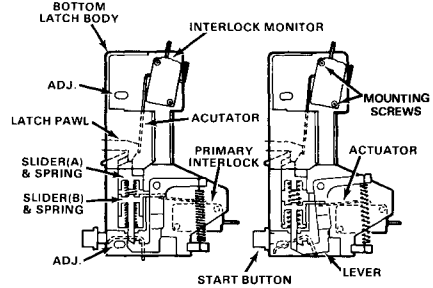
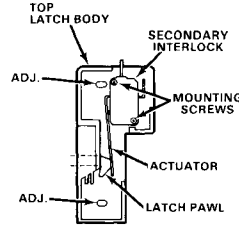
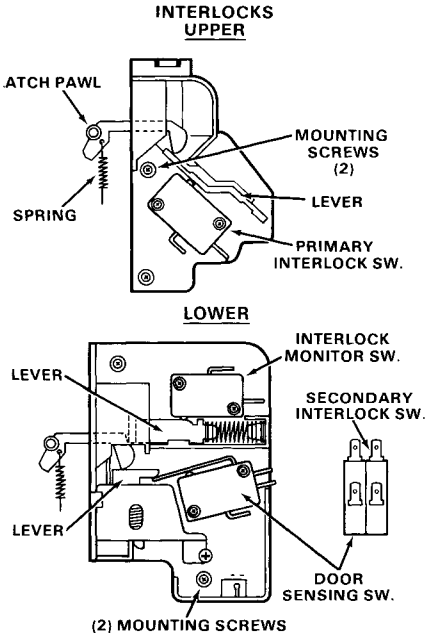
ELECTRICAL COMPONENTS

Monitor

Top switch mounted on the lower latch body, and operated by the bottom latch pawl.

Primary

Bottom switch mounted on the lower latch body, and operated by spring loaded sliders and the lower latch pawl - line side.



Refer to Mini-manual for test procedures.

Both switch assemblies are adjustable to provide a tight door fit.

IMPORTANT - Check microwave leakage after any adjustment.

INTERLOCKS RE83

The interlocks are mounted to two separate latch switch brackets. From top to bottom the interlocks are as follows:

Secondary

Top switch mounted to top latch body, and actuated by the top latch pawl - neutral side.

Refer to Mini-Manual for test procedures. Both switch assemblies are adjustable for door fit.

IMPORTANT - Check microwave leakage after any adjustment.

INTERLOCKS RE86

The interlocks are mounted to two (2) separate latch bodies.

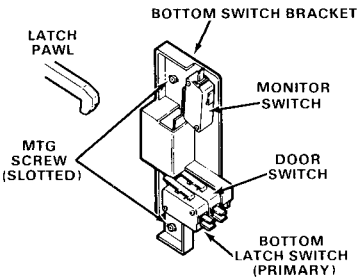
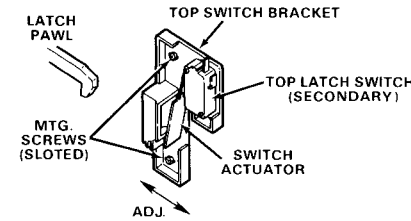
The top **secondary** interlock is mounted to the top latch body and is operated by the door top latch pawl.

ELECTRICAL COMPONENTS

The **monitor** switch, bottom (primary) interlock, and door latch switch are mounted to the bottom latch body, and are all operated by the door bottom latch pawl.

The **primary** interlock and door logic switch is a two-switch assembly with a single switch activator. The **door logic switch** senses door position and prevents the smart board from energizing the power relay if the door is open.

Both latch bodies are adjustable for door fit at the latch side. Loosen the latch body mounting screws and move the latch body front or rear to adjust as needed.



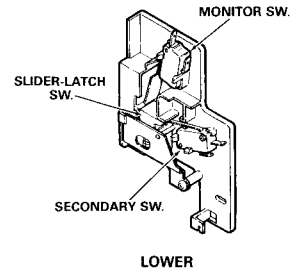
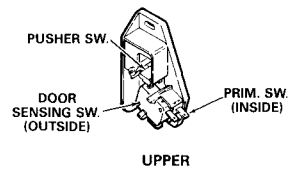
Refer to Mini-manual for test procedures. Both switch assemblies are adjustable for door fit.

IMPORTANT - Check microwave leakage after any adjustment.

INTERLOCKS JE1000/RE1000 Series

The Interlock System consists of the following switches:

- **Primary Interlock** - Top inside switch of two operated by top latch pawl connected in line side of circuit.
- **Door Sense Switch** - Outside switch of two (2) switch assembly operated by top latch pawl. The door sense switch connects to the Smart Board - the switch must be open (door closed) before the Smart Board will energize the power relay.
- **Secondary Interlock** - Lower single latch switch operated by lower latch pawl connected to neutral side of circuit.
- **Monitor Switch** - Switch assembly operated by bottom latch pawl. The monitor switch is connected across the 120 volt line and blows the 15 amp fuse if both the top and bottom latch switches fail closed.



ELECTRICAL COMPONENTS

Refer to Mini-manual for test procedures. Both switch assemblies are adjustable for door fit.

IMPORTANT - Check microwave leakage after any adjustment.

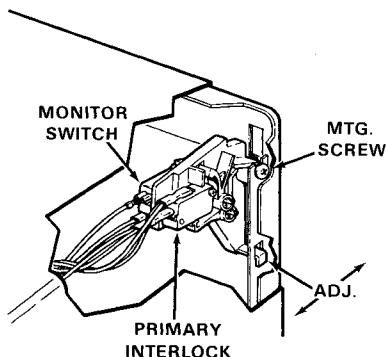
INTERLOCKS

JMT19 & JMT20

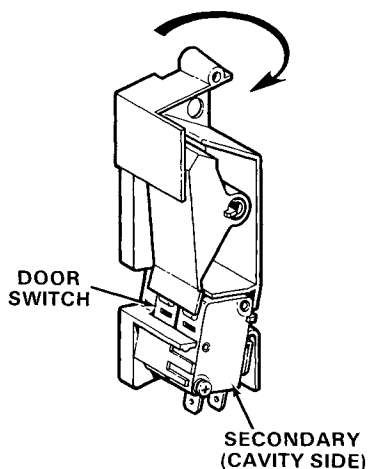
The interlock system consists of the following switches:

- **Primary Interlock** - Outside switch of two switch assembly operated by **left** side latch pawl.
- **Monitor Switch** - Cavity side switch of two switch assembly operated by **left** side latch pawl.
- **Door Switch** - Outside switch of two assembly operated by **right** side latch pawl.
- **Secondary Interlock** - Cavity side switch of two switch assembly operated by the **right** side latch pawl.

L.H. INTERLOCK ASM.



R.H. INTERLOCK
(ROTATED 180°)



Refer to Mini-manual for test procedures. Both switch assemblies are adjustable for door fit.

IMPORTANT - Check microwave leakage after any adjustment.

INTERLOCKS

JEM "F" and "G" Series

The interlock system consists of the following switches:

- **Primary Interlock** - Top single latch switch operated by latch pawl, and connected in neutral circuit. Power relay "B" contacts connected in the **Line Side** serves as an interlock in that leg. The door must be closed before the smart board can energize power relay "B". (Refer to oven schematic)
- **Secondary Interlock** - Lower single latch switch operated by lower latch pawl - connected to the control circuit. This serves as a door sense switch to operate power relay "A" when the door opens for oven light. It also

ELECTRICAL COMPONENTS

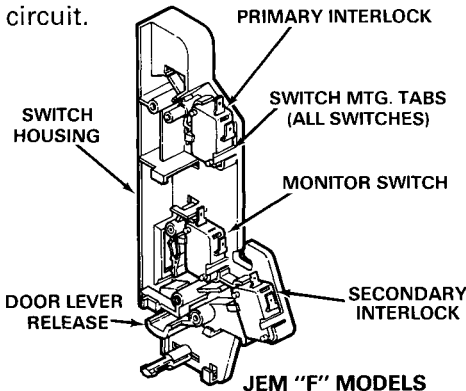
energizes power relay "A" and "B" when the oven is "on".

- **Monitor Switch** - Center switch operated by bottom latch pawl. The monitor switch is connected across the 120 volt line and blows the 15 amp fuse if both the top and bottom latch switches fail closed, or if the top switch and power relay "B" contacts fail close.

The lamp is controlled by power relay (A). The relay is energized by the smart board when the door is open, and during a cooking operation.

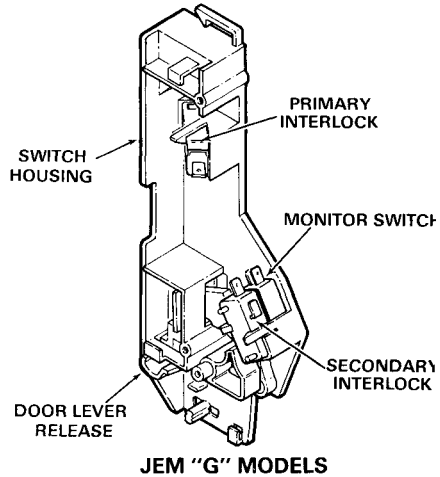
The bottom interlock senses door position for the control smart board. The switch opens when the door is open, and any time the switch is open the smart board energizes **power relay (A) only** - this turns oven light "on".

During a cooking operation the smart board also energizes power relay (A), but also power relay (B) for microwave power. Power relay (B) contacts are in the line side of the circuit.



Refer to Mini-manual for test procedures. The switch housings are adjustable for door fit.

IMPORTANT - Check microwave leakage after any adjustment.



INTERLOCKS

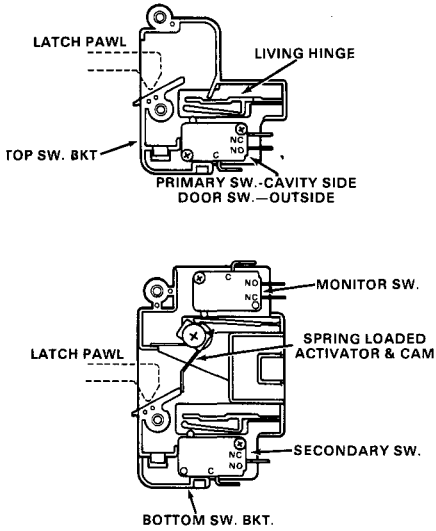
JEM800 & RFM "F" Series JVM100/RVM100 Series

Interlocks are as follows:

- **Primary** - Cavity side switch of top two switch assembly operated by top latch pawl - connected in line (L) side.
- **Door sense** - Outside switch - connected to smart board.
- **Secondary** - Bottom switch operated by bottom latch pawl - connected in neutral (N) leg.
- **Monitor** - Located between top and bottom interlocks - switch operated indirectly by bottom latch pawl.

ELECTRICAL COMPONENTS

pawl. The pawl operates a metal lever which operates a plastic cam, which in turn, activates the switch.



JEM800 Series **JE40 Series**
REM "F" Series **RE40 Series**
JE89
JVM100 Series
RVM100 Series

Refer to Mini-manual for test procedures. Both switch housings are adjustable for door fit.

IMPORTANT - Check microwave leakage after any adjustment.

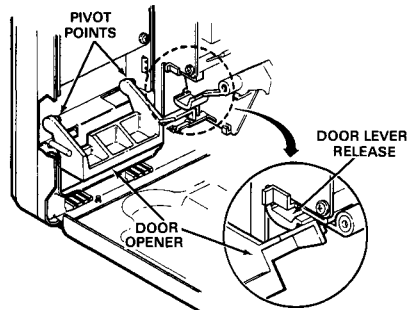
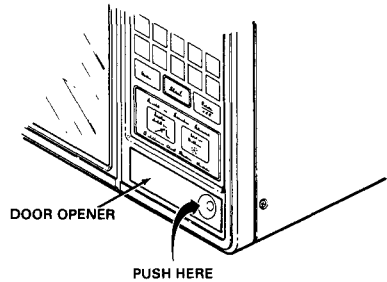
DOOR OPENER

A plastic rectangular "Push Type" door opener is located under the control panel on some models.

To open the door, push the opener with your finger at the round indentation on the right hand side.

The door opener button actuates a plastic opener assembly which pivots on the rear of the control panel. An extended arm of the opener pushes a door release lever, mounted under interlocks, which actuates the door latch pawls to push the door open.

All door opener parts can be serviced as separate parts.



POWER CONTROL HI/Defrost Motor

The Power Control is a motor driven cam and switch assembly with 2 positions - **HIGH** and **LOW/DEFROST**.

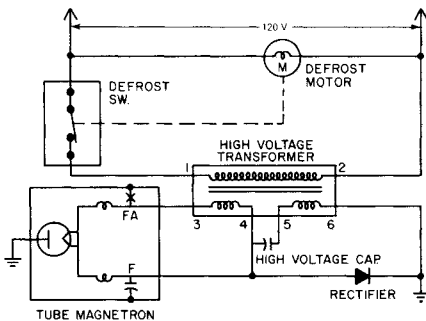
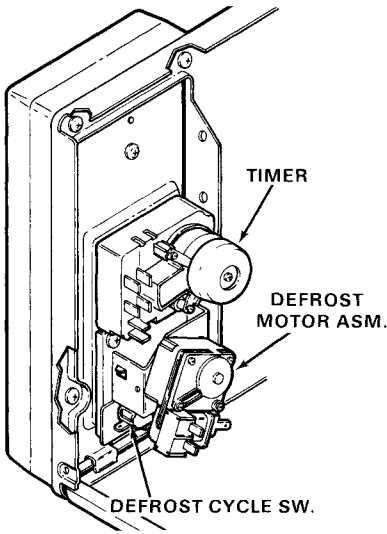
The Defrost Motor is energized anytime the oven is "ON", but only affects the circuit in the defrost mode.

ELECTRICAL COMPONENTS

The Defrost Cycle Switch is connected in series with the Power Transformer Primary Winding.

- **High Power** – The Defrost Cycle Switch is mechanically locked closed 100% of time (High Power).
- **Low/Defrost** – The Defrost Cycle Switch is cycled 50% "ON" and 50% "OFF" by a motor driven cam – this provides approximately 50% power (250 watts) for defrost.

The Defrost Control and the Cycle Switch can be serviced as separate parts.

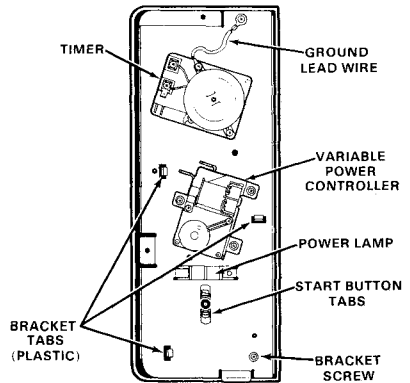


JE40 Series
RE40 Series
RE83

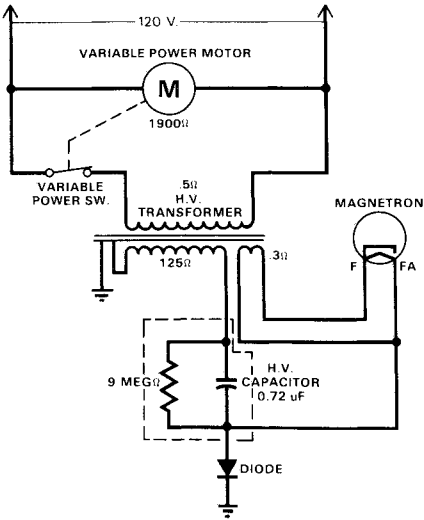
VARIABLE POWER CONTROL JEM MODELS – "O" SERIES

The vari-power controller controls the ON-OFF time of the vari-power switch to vary the output power of the microwave oven from "warm" to "high." The vari-power controller consists of vari-power motor, vari-power switch and the combination of gears, cam and actuator lever which are linked together to the vari-power motor shaft. One complete cycle of the vari-power controller is 30 seconds, in which the vari-power switch is turned "on" or "off" by the cam rotation in the 30 second period.

By controlling the timing of the vari-power switch "on" period, the 120 VAC supplied to the high voltage transformer is interrupted intermittently so that the average output power of the microwave oven is varied.



ELECTRICAL COMPONENTS



ELECTRICAL COMPONENTS

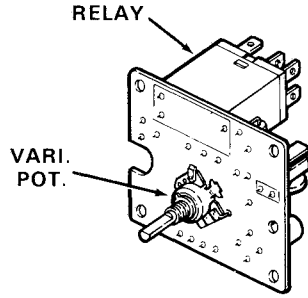
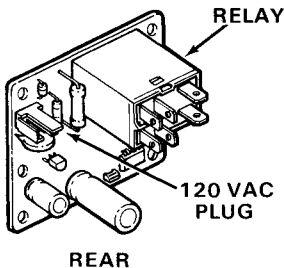
VARIABLE POWER CONTROL JEM MODELS – "F" & "G" SERIES

The variable power control is a small solid state board with a dial operated potentiometer, and relay – all mounted to the board as a one piece assembly.

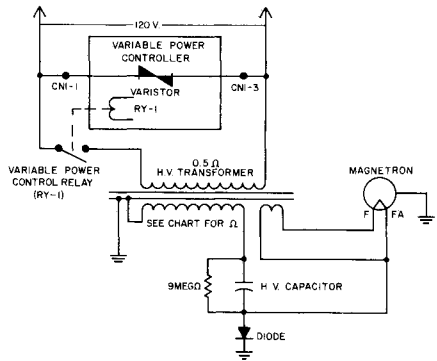
The user dial is variable in settings of 1-10.

The power control is powered by a 2-pin 120 VAC input plug and operates the relay contacts which are connected in series with primary winding of the magnetron power transformer.

The control has a 22 second duty cycle. Each setting from 1-10 are in **approximately 10%** "on-time" steps.



FRONT
VARIABLE POWER CONTROL



POWER CONTROL MODULE JVM/RVM 100 – "O" SERIES

<u>MODELS</u>
JVM130-01
JVM140-01
JVM150-01
JVM172-01
RVM120-01

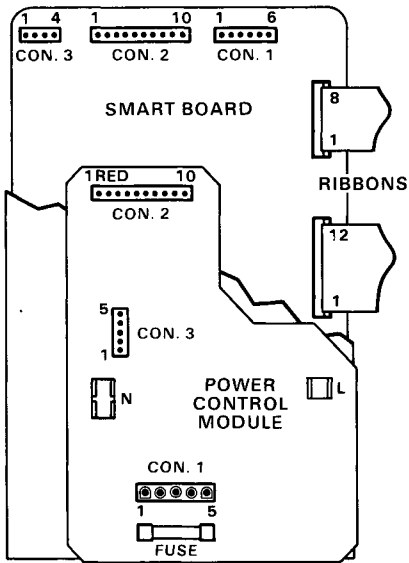
A power control module circuit board is used to service as an electrical interface between the control and the oven.

The power control module (PCM) is located on the back of the control panel assembly on top of the key panel and control smart board.

ELECTRICAL COMPONENTS

The PCM contains the 15 amp fuse, power relay, vent blower and surface light relays, triac, and other components to perform the proper switching circuits. Several disconnect plugs are also located on the PCM:

Many diagnostic circuit tests can be made at the disconnect plugs. (Refer to diagnosis flow chart and simplified schematic in Mini-Manual).



CONTROL SMART BOARD JVM/RVM 100 – "O" SERIES

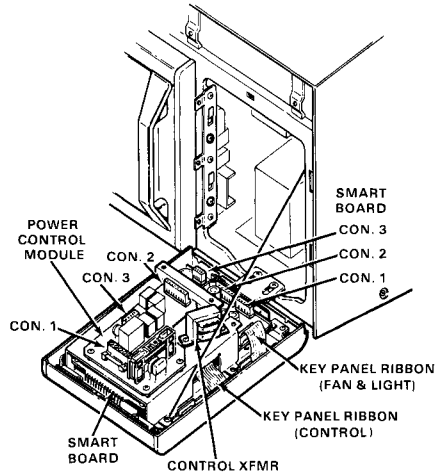
The control smart board is located on the control panel under the power control module.

The smart board has 3 disconnect plugs across the bottom and 2 ribbon connectors on the side.

The disconnect plugs are as follows:

- Con. 1 – 6 Pin Plug for control transformer
- Con. 2 – 10 Pin Plug to power control module.
- Con. 3 – 4 Pin Plug for probe & door sense switch

The disconnect plugs can be used for diagnostic circuit tests (See Flow Chart and simplified schematic in Mini-Manual).



VENT BLOWER JVM/RVM 100 – "O" SERIES

The blower is a two-speed (HI-LO) capacitor run blower assembly located on top of the spacemaker on touch control models. The blower is operated by low voltage relays located on the power control module. On the RVM110 model the blower is operated by push-button switches.

The blower motor has three (3) windings which can be continuity test from the front by removing the top grill and opening the control panel.

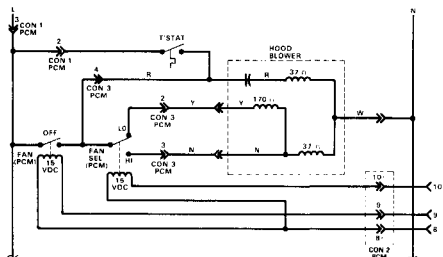
TO TEST CAPACITOR

Check continuity (high Ohms scale) across capacitor terminals. Meter should indicate a charge.

TO TEST BLOWER – TOUCH CONTROL

Continuity test motor windings through Con 3 Harness Plug and white lead terminal (N) on PCM:

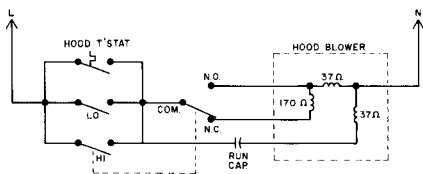
- Pin 3 to (N) – Approx. 37 Ohms
- Pin 2 to 3 – Approx. 170 Ohms
- Pin 2 to (N) – Approx. 207 Ohms
- Cap. Red Lead to (N) – Approx. 37 Ohms



TOUCH CONTROL MODS

TO TEST BLOWER – RVM110-01

Continuity test motor windings at push-button switch on control panel.

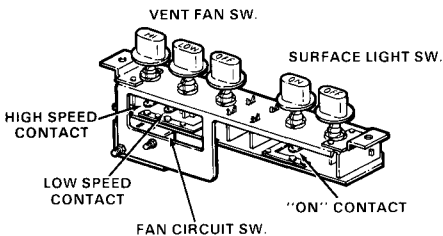


RVM110-01

FAN AND LIGHT SWITCHES – RVM110-01

The vent fan and surface light pushbutton switches are located at the bottom of the control.

The buttons operate a spring-loaded mechanical actuator and contact assembly. Switch contacts inside the mechanical assembly operate the **high** and **low** speed circuit, and the surface light "ON-OFF" function. In addition, a separate micro-switch is mounted to the assembly bracket as part of the fan speed switching circuit. (see schematic)



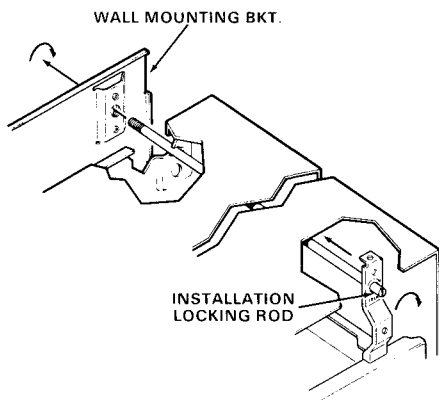
SPACEMAKER MOUNTING JVM/RVM 100 – "O" SERIES

Oven is fastened to wall mounting **plate** and to cabinet. Oven is hooked on metal tabs at bottom of **plate** and at the top by special threaded locking rods.

CAUTION: – Requires 2 people

Oven weighs 85 pounds. Support with suitable object before starting removal.

1. Disconnect plug, remove top cabinet bolts, and remove top grill.
2. Hold oven against wall while unscrewing both locking rods until loose.
3. Carefully swing top of oven away from wall and lift from bottom hinge-type tabs.
4. **CAUTION** – When installing, be certain to hook bottom tabs and swing up to wall. Hold firmly while screwing in lock rods until tight.



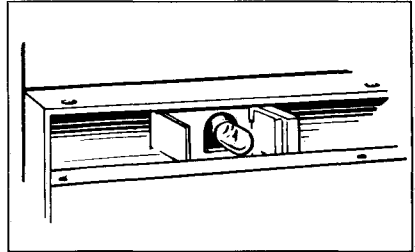
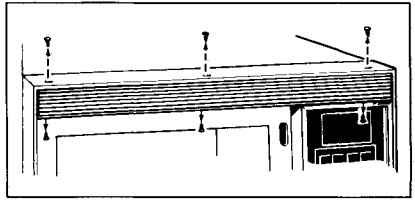
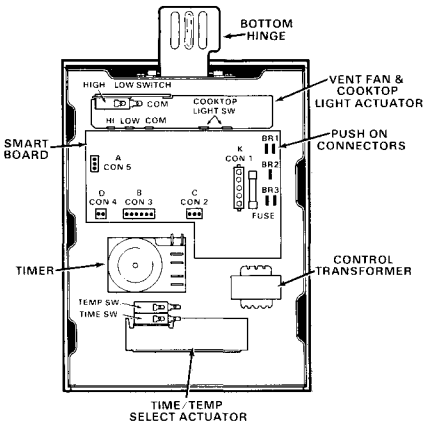
ELECTRICAL COMPONENTS

TIME/TEMP SELECT SWITCHES

RVM110-01 COUNTERSAVER

Separate **TIME** and **TEMP** select pushbuttons are located at the top of the control. The buttons operate a spring-loaded mechanical actuator, which in turn actuates two (2) micro-switches mounted to the mechanical actuator. The control module sets up the selected **TIME** or **TEMP** mode depending on the switch position.

CONTROL PANEL - SERVICE POSITION



HI-LOW

1. Remove hood flipper and filter.
2. Lamp is located under cover. Using a stubby blade screw driver or 1/4" nut driver, remove the cover screw.
3. Lift cover for access to lamp.

NOTE: Original Lamp sealed with silicone for shipment.

TEMP CONTROL AND VARIABLE POWER CONTROL – RVM110

The **TEMP** and **Variable Power** controls are both 10K ohm potentiometers (pot.) which plug into separate disconnect plugs on the control module.

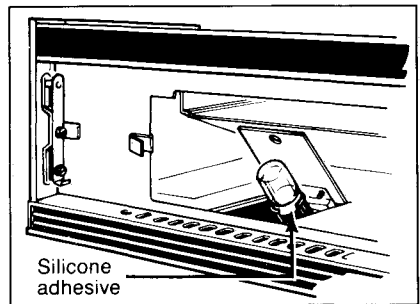
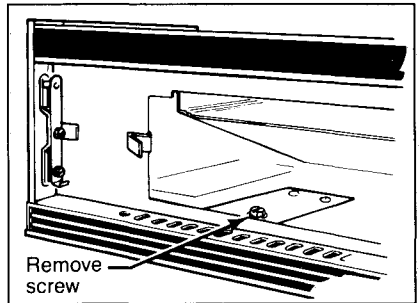
Service Note:

An open or disconnected pot. will cause maximum power, or maximum temperature operation regardless of knob setting.

OVEN LAMP REMOVAL "K" SERIES COOK CENTERS WALL OVENS

1. Remove top grill - 3 screws at top and bottom.
2. Remove lamp and replace with same 20 watt type.

NOTE: Original lamp sealed with silicone for shipment.



TOUCH CONTROLS - CONTROL ASSEMBLY AND PARTS

Touch Controls were originally serviced only with a complete control assembly for microwave oven models manufactured from 1979-1982.

Service history and failure analysis later indicated the need to make key panels and smart boards available for certain models, as well as the complete control.

Two different families of controls are involved.

- **Key panel was major failure** – key panel and complete control assembly is available for this group.
- **Key panel or smart board was major failure** – key panel, smart board, and complete control assembly is available for this group.

For the first group of models listed below, once the original control has failed – **replace the key panel first**. If the control is still inoperative, replace the complete control:

(NOTE: complete detailed instructions are packed with key panel)

<u>MODEL</u>	<u>KEY PANEL</u>	<u>CONTROL ASSEMBLY</u>
JET105Y1,2,3	WB27X5350	WB27X5138
JET105Y4, A1	WB27X5350	WB27X5167
JET106A1	WB27X5347	WB27X5141
JET106A2	WB27X5347	WB27X5157
JET111Y1,2,3	WB27X5347	WB27X5141
JET112A1,2	WB27X5349	WB27X5158
JVM55001,2,3,4,5	WB27X5346	WB27X5145
JVM57001	WB27X5347	WB27X5161
JVM57002,3	WB27X5347	WB27X5166
RE942Y1,2,3	WB27X5345	WB27X5134
RE942Y4	WB27X5345	WB27X5169
RE943A1	WB27X5348	WB27X5139
RE943A2	WB27X5348	WB27X5156
RE945Y1,2,3	WB27X5348	WB27X5139
RE945Y4	WB27X5348	WB27X5156

ELECTRICAL COMPONENTS

For the next group of models listed below, the key panel or the smart board should be replaced first, depending on the original type of key panel ribbon design:

- If key panel **ribbon** is single strip with contacts on one side-replace **key panel first** – if control is still inoperative, replace control.
- If key panel **ribbon** is two strips, one over the other, with contacts on both sides, replace **smart board first**. If control is still inoperative, replace the control.
(NOTE: Complete detail instructions are packed with key panel and smart board)

<u>MODEL</u>	<u>KEY PANEL</u>	<u>SMARTBOARD</u>	<u>CONTROL ASSEMBLY</u>
JET130A1	WB27X5294	WB27X5299	WB27X5150
JHP65G-01,02	WB27X5298	WB27X5299	WB27X5207
JHP75G-01,02	WB27X5298	WB27X5299	WB27X5207
JKP65G-01,02,03,06	WB27X5294	WB27X5299	WB27X5153
JVM60-01,02,03	WB27X5296	WB27X5299	WB27X5148
JX65-01,02	WB27X5294	WB27X5299	WB27X5153
RE952A1	WB27X5295	WB27X5299	WB27X5151
RVM54-01,02,03	WB27X5297	WB27X5299	WB27X5162

STIRRER/ROTATING ANTENNA COOK CENTERS – BOTTOM FEED

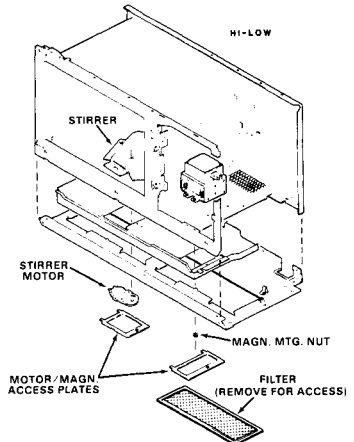
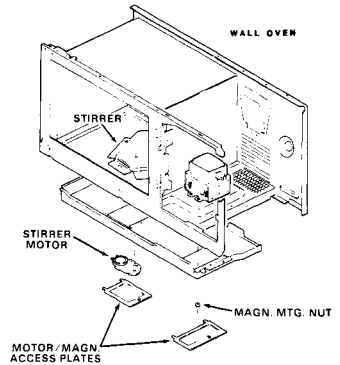
The antenna motor is mounted at the bottom of the microwave module and is serviced the same as the magnetron:

- **Wall Ovens** - Remove the microwave module and service through a bottom access cover on the left side under the glass shelf.
- **Hi-Low Ranges** - Remove the left hand filter and service through an access cover.

NOTE: When servicing the motor the glass shelf must be removed also to service the blade.

Antenna Blade

The antenna blade is located under the glass shelf at the bottom of the cavity. To service the blade the shelf must be removed.



TEST EQUIPMENT AND PROCEDURES

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TEST EQUIPMENT AND PROCEDURES

OVEN TEMPERATURE TESTERS

A good thermocouple type oven tester should be used. Such as WX5X267 or equivalent.

The tester should not be placed on the range top or other warm surface when readings are being taken. The testers should be used with the thermocouple lead removed from the aluminum shield, if provided; this will provide correct amplitude response of the tester when comparisons are made to data supplied in the mini-manual.

OVEN TESTERS ARE DELICATE INSTRUMENTS AND SHOULD BE HANDLED WITH CARE. DO NOT ATTEMPT TO CUT OFF AND RETWIST THE THERMOCOUPLE ENDS OR MAKE ANY ADJUSTMENTS, OTHER THAN THOSE SPECIFIED IN THE INSTRUCTIONS.

TESTING AND CALIBRATION

Accuracy is extremely important in checking oven temperature, therefore, testing and calibration of the oven tester should be done regularly. The recommended method to use when checking an oven tester is as follows:

- A. Melt a small quantity of 60/40 Rosin core solder (about 1/2" diameter) on a sheet of flame proof material. NOTE: A surface unit insulator block is also a convenient holder for molten solder.
- B. Insert the thermocouple junction in the solder while in the liquid state. Remove source of heat and observe needle on meter while solder cools. The needle will remain steady for a few seconds while solder solidifies.

- C. The solder will solidify at a temperature of about 350°. Repeat test for accuracy, clean solder from thermocouple.

AUTOMATIC SURFACE UNIT TEST (King/Seeley, Responder)

Responder calibration may be tested by two different methods:

- Water Temperature Test
- Dry Pan Test

Water Temperature Test

1. Place a saucepan containing one quart of water on the unit. Flat bottom, medium weight aluminum is necessary.
2. Set control to 200°F. and selector to 8-inch.
3. Within a reasonable length of time the water should simmer but not go into a rolling boil.
4. Turn the control to 215°F. The water should come to a rolling boil.

IF THESE REACTIONS ARE NOT OBSERVED, remove the control knob. An opening allows access to an adjusting screw. Adjustment is 10°F. per mark. Clockwise to reduce temp. and counterclockwise to increase temp. Adjust in the proper direction to obtain the conditions in steps 3 and 4.

TEST EQUIPMENT AND PROCEDURES

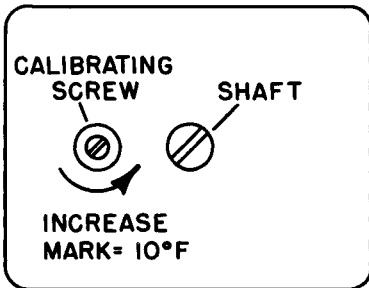
If these conditions cannot be obtained, refer to "Electrical Components" Automatic Unit Diagnosis.

Dry Pan Test

1. Place empty utensil on Sensi-Temp-unit.
2. Place tip of oven tester thermocouple leads in utensil over sensor. Hold firmly in place with wooden or textolite rod.
3. Set the responder dial to "LOW BOIL" and the selector switch to eight (8) inch position.
4. The dry pan temperature should be between 214°F. and 245°F. (Allow about 5 – 6 minutes, after initial overshoot, for temperature to stabilize.)

The adjustment for calibration of the Sensi-Temp responders is a small screw located in the face of the responder adjacent to the shaft. The calibration screw becomes visible after removing the responder knob.

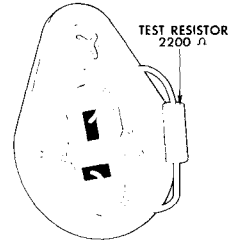
5. Adjust calibration screw as needed.



MEAT THERMOMETER

To check the System For Proper Calibration:

1. Insert a 2000Ω 10% resistor into the meat probe receptacle contacts. (A 2200Ω 10% resistor, color coded red-red-red-silver is available in most TV repair shops)

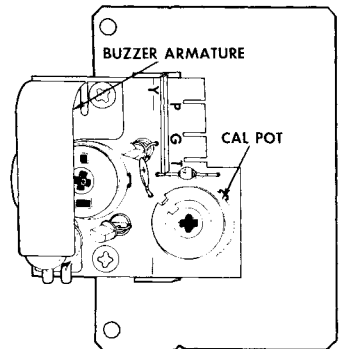


2. Set oven switch to Bake.
3. Slowly turn indicator pointer down to 155°F. Buzzer must sound at $155 \pm 5^\circ$.

To Adjust The Board

Follow the preceding step, setting the pointer to 155°F.

Using a small screwdriver, turn the CAL rheostat clockwise until the buzzer sounds. Slowly turn the rheostat in the opposite direction until the buzzer stops. Repeat again clockwise, for the buzzer signal, to "trim" to the exact setting.



TEST EQUIPMENT AND PROCEDURES

NOTE: REPLACEMENT BOARDS MUST BE CALIBRATED USING THIS PROCEDURE.

For circuit diagnosis see "Electrical Components" section of this book.

SELF CLEAN TEST

See Section "E" for quick, self-clean pellet test. Observe the condition of the soil within the oven. One of the three following soil patterns should exist.

1. Soft and Brown – Refer to mini-manual for your model for diagnosis procedure.
2. Dark Brown and Hard – Refer to mini-manual for your model for diagnosis procedure.
3. Incomplete cleaning – (some soil has been removed.) This could be caused by inadequate clean cycle time or heavy soil loads. If either of these is suspected, reset oven for another clean cycle.

Insufficient clean temperature could also be the cause of incomplete cleaning.

TO CHECK

1. Latch door, set oven controls and timer for a clean cycle. The CLEAN light should be ON. If not, refer to clean circuit in mini-manual.
2. If clean light is on – wait approx. one minute, open oven door and check front edge of oven liner at bottom for heat – mullion unit is operating. NOTE: Some models do not have mullion unit - refer to range circuit. Check bake and

broil units for heat. CAUTION: Units will be HOT to touch. If all units are not heating, refer to Clean Circuit in mini-manual.

4. When oven temperature reached 600°F. the lock light should be **ON**. On models so equipped the fan should also be ON. If not, terminate test and refer to mini-manual for diagnosis procedure. LOCK LIGHT ON - oven temperature should increase to between 840°F - 920°F.

Replace the thermostat if temperature is not within these limits.

THE CLEAN TEMPERATURE CANNOT BE ADJUSTED.

CAUTION: The fluid within the thermostat bulb is CAUSTIC. If accidentally broken and fluid contacts skin - wipe dry immediately and flush area with water. Crimp broken tube with pliers to prevent further leakage.

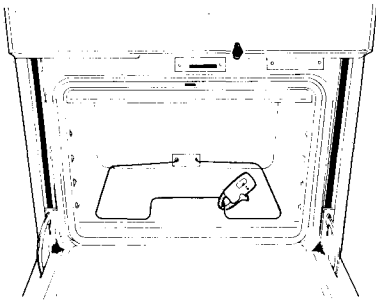
Installation instructions are packed with replacement thermostats.

OVEN UNITS – Amprobe Test

Current checks of oven bake and broil units are easily made with a clamp-on amprobe.

1. Clamp the amprobe around the unit to be tested – **DO NOT** allow the amprobe pick-up to touch the unit as damage to the tester could be caused by heat. Momentarily operate the unit, observe the current reading, and turn the unit OFF.

TEST EQUIPMENT AND PROCEDURES



Compare the reading obtained to the values given in the mini-manual or compute the current from the WATTAGE given on the wiring diagram.

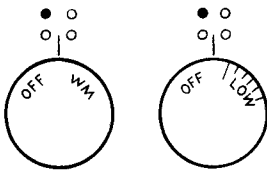
Ex: Wattage \div Voltage = Current
 $3410 \div 240V = 14.2$ Amps.

SURFACE UNIT CONTROLS

Amprobe Test

Switch Calibration Test:

1. Clamp amprobe around one surface unit lead.
2. Set control to lowest heat setting between OFF and WM or OFF and LOW) and allow switch to stabilize (3 cycles).



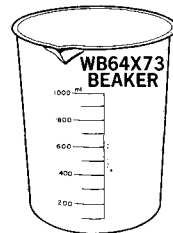
3. Compute percent-on time of switch by timing the ON and OFF times of the cycling switch. Percent-on time is found by dividing ON-time by total cycle time and multiplying by 100.

Example: 3 seconds ON, 57 seconds OFF, 60 seconds total cycle time. $3 \div 60 \times 100 = 5\%$ on-time.

4. Calibration limits: 6% or less on-time at lowest operating point of switch.

MICROWAVE POWER STANDARD TEST LOAD

The standard test load is one liter (1000 ml.) water with a starting temperature of 59° - 75° in a 1000 ml. beaker (WB64X73). (DO NOT USE ANY OTHER LOAD OR DISH AS RESULTS WILL VARY FROM STANDARD).



PERFORMANCE TEST (ALL OVENS EXCEPT JBV42 COMBINATION RANGE)

1. Measure line voltage (loaded). This test is based on normal voltage variations of 105V or 130V. Low voltage will affect power and temperature rise.
2. Place WB64X73 beaker containing exactly one liter (1000 ml.) 59° - 75° water in center of shelf. Record the starting water temperature with an accurate glass thermometer.
3. Set at HIGH (power) - set timer past 2-minute mark.
4. Turn oven "ON" and time for exactly two minutes.
5. At end of two-minute period record the water temperature. The difference between the starting and ending temperature is the temperature rise.

TEST EQUIPMENT AND PROCEDURES

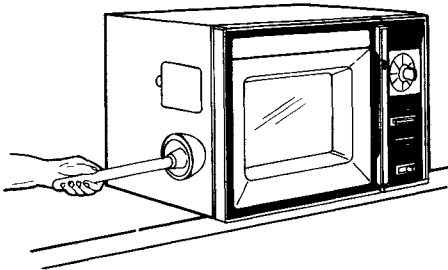
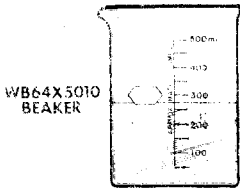
The normal temperature rise varies by model – refer to mini-manual for specifications.

NOTE: To increase temperature rise (power) slightly;

1. Discharge high voltage capacitor.
2. Use high voltage tap on transformer if not already being used.

MICROWAVE LEAKAGE TEST (ALL OVENS EXCEPT COMBINATION RANGE)

1. Place 275 ml. water in 600 ml. beaker (WB64X5010).
2. Place beaker in center of oven shelf.
3. Set meter to 2450 MHz scale.
4. Turn oven "on" for 5 minute test.
5. Hold probe perpendicular to surface being tested and scan surfaces at rate of one inches/sec. Test following areas:
 - Entire perimeter of door and control panel.
 - Viewing surface of door window.
 - Exhaust vents.
6. Maximum allowable leakage 5MW/CM².
7. Record data on service invoice.



PERFORMANCE TEST (JBV42 COMBINATION RANGE)

1. Measure line voltage (loaded). This test is based on normal voltage variations of 210V to 260V. Low voltage will affect power and temperature rise.
2. Place **12 bar shelf on "A" position** – remove 19 bar shelf. Note: This shelf and shelf position provides maximum power for standard test load.
3. Place WB64X73 beaker containing exactly one liter (1000 ml. 59° – 75° water in center of shelf. Record the starting water temperature with an accurate glass thermometer.
4. Set at high (power) – set timer past 2 minute mark.
5. Turn oven "on" and time for exactly two minutes.
6. At end of two minute period, record the water temperature. The difference between the starting and ending temperature is the temperature rise.

Depending on line voltage, the normal temperature rise should be:

Line Volts	Normal Temperature Rise
210V	25°F. Min.
240V (Norm.)	28°F. – 31.5°F.

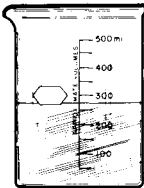
NOTE: To increase temperature rise (power) slightly:

1. Discharge high voltage capacitor.
2. Use high voltage tap on transformer if not already being used.

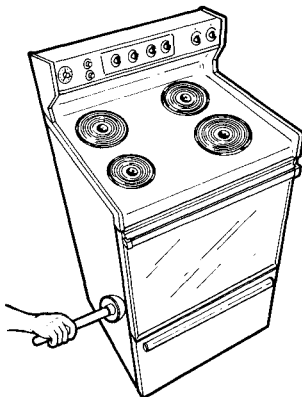
TEST EQUIPMENT AND PROCEDURES

MICROWAVE LEAKAGE TEST (JBV42 COMBINATION RANGE)

1. Place 275 ml. water in 600 ml. beaker (WR64X5010).
2. Place beaker in center of 19-bar oven shelf "B" position. (Remove 12-bar shelf).
3. Set meter to 2450 MHz scale.
4. Turn oven "on" for 5 minute test.
5. Hold probe perpendicular to surface being tested and scan surfaces at rate of one inch/sec. Test following areas:
 - Entire perimeter of door and control panel.
 - Oven vent – R.R. Unit
6. Maximum allowable leakage 5MW/CM .
7. Record data on service invoice.

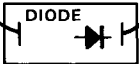
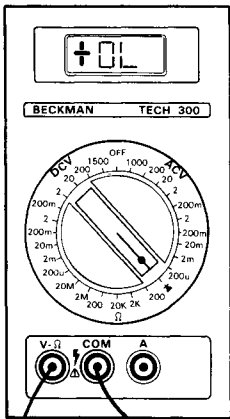


WB64X5010
Beaker



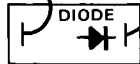
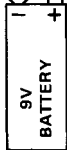
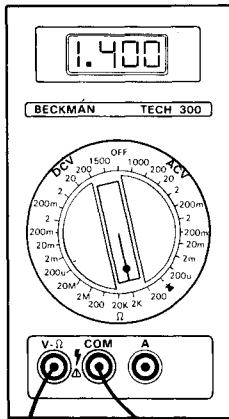
TESTING H.V. DIODES WITH DIGITAL METERS

#1 SHORT TEST
RANGE = \leftarrow



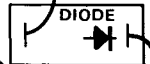
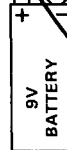
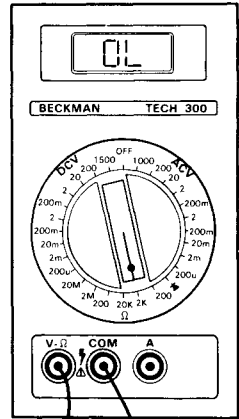
SHOULD READ "+OL"
OR "INFINITY" ANY OTHER
READING = SHORTED
REPLACE DIODE

#2 FORWARD BIAS
RANGE = 2K



READ APPROX.
"1.400"

REVERSE BIAS
RANGE = 2K



READ "OL"

NOTE: READING MAY VARY WITH OTHER BRAND METERS.

IMPORTANT — METER MUST HAVE AT LEAST 5.2 VDC AT PROBES AT DIODE TEST SETTING. IF NOT, TEST WILL NOT WORK.

TEST EQUIPMENT AND PROCEDURES

MICROWAVE LEAKAGE METERS

Instrumentation specifications are specified by the BRH as part of the Federal Regulations pertaining to maximum allowable microwave leakage.

Instruments known to meet the specifications are as follows:

Manufacturer	Model
Holiday	1501
Holiday	1600
Holiday	1700
Holiday	1800
Narda	8100B
Narda	8200
Simson	380

In ovens which have a stirrer (rotating antenna) the neon test light flickers as the stirrer blade rotates. If the light does not flicker, it indicates the stirrer is not operating.

(Note: Some ovens may not have a stirrer. For that oven design, a non-flickering light is normal.

15 AMP TEST CIRCUIT

Breaker – WX5X406

A 15 Amp test circuit breaker, with clip-on leads, is available for use in diagnosis of a microwave oven 15 Amp fuse blowing problem – eliminates the repeated use of 15 Amp-fuses during diagnosis.

To use: Clip circuit breaker leads to fuse holder terminals. After service is complete, remove the circuit breaker and install the microwave oven 15 Amp fuse.

POWER TEST NEON LIGHT

WX5X407

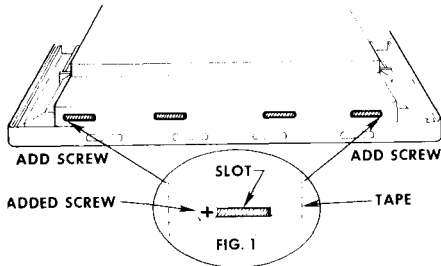
The “Power Test” neon light consists of four neon emitters molded inside a solid plastic bar. When placed inside the microwave cavity, the neon lights glow when microwave power is present. **Always operate an oven with a load – food or a cup of water – never empty.**

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OVEN DOOR ADJUST

When adjustment is necessary to Non-self clean oven doors, the addition of two screws (WB1X5364), as shown below, will increase the rigidity of the door assembly. REMOVE DOOR AND LAY ON A FLAT SURFACE loosen upper door screws, square door to flat surface and tighten screws.

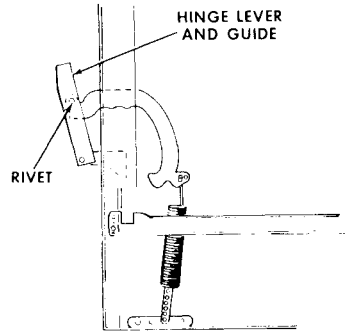


1. Place a piece of tape over the two slots, inboard of the hinges, where screws are to be installed. This will prevent possible injury from flying porcelain chips when driving screws Fig. 1.
2. Drive one WB1X5364 screw in the outboard end of each slot, as shown above. A #1 phillips driver is best for this screw. Drive screw until the head seats on the bottom of the outer door panel. There will normally be a slight gap between the screw head and the door liner bottom.
3. Remove two pieces of tape and reinstall door.
4. Check door seal and alignment.

NOTE: Some doors may already have two holes in the bottom flange. If so, install the screws in these holes following the procedure above. In the near future these screws will be factory installed. WB1X5364 screws are supplied in packs of 12 pieces. This screw has a better appearance than the WB1X5364 screw previously announced.

HINGE RIVET REPAIR

The Type 6 Hinge System uses a rivet to attach the hinge lever to the guide assembly.



A broken rivet does not require replacement of the hinge assembly.

FIELD REPAIR PROCEDURE

1. Remove broken rivet.
2. Enlarge rivet hole using a No. 11 drill.
3. Reassemble the hinge lever to the guide using (1) WB2X5682 pin and secure with (1) WB2X5681 "E" ring.

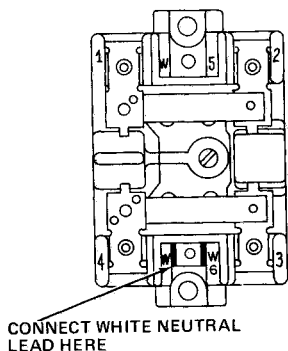
These repair parts are stocked - 12 pieces per package.

FIELD CORRECTIONS

TIMER WIRING

Replacement timers have double contacts. When replacing an original equipment single contact timer with a double contact type the following wiring instructions should be observed.

1. The white, neutral, lead which was connected to terminal #4 on the old timer connects to terminal W or W6 on the new timer.
2. All other leads are connected to the same numbered terminal as on the original timer.



CONTINUOUS LOUD VIBRATION NOISE - TOUCH MODELS WITH SEPARATE TRIACS

Field reports indicate some complaints of "continuous loud thumping and vibration noise" during operation of touch control microwave ovens on high power. (This should not be confused with the normal low level dull thump sometimes heard on power levels other than high.)

The loud noise problem is caused by a malfunction of the triac, or timing of the gate signal output of the control panel. This results in the power transformer becoming very noisy due to high current surges and strong magnetic fields. The noise is then transmitted throughout the oven cavity.

There is no easy way to determine if the fault is in the triac or the control. Replace the triac first, then the control if necessary.

NOTE: In order to save time and parts, temporarily connect the triac (unmounted) for a quick test operation, if problem still persists, install the original triac and replace the control. If the triac corrects the problem, mount it permanently. Remember, if a control is replaced fill out a defective parts tag and attach to control.

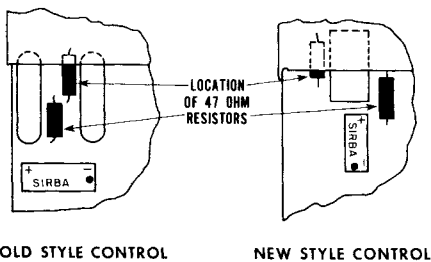
OPEN TRIAC CAUSES TOUCH CONTROL FAILURES

The CMO Touch Control panel can fail as a result of an open WB-27X5085 triac in the oven circuit. When this occurs two 40-ohm resistors in the top left corner area of the control circuit board will be visually burned; scorched, or destroyed.

Before installing and energizing a new control panel, make a visual inspection of the failed control printed circuit board for evidence of these damaged resistors.

If the resistors are found to be burned, the WB27X5085 triac must be replaced also, to avoid failing the new control panel. Triac wiring connection should also be checked.

This visual inspection can be made easily by removing the metal access cover (one screw) on the back of the control. The resistors are located in the top left corner area of the opening.



POWER SELECT SWITCH FAILS - POWER RESISTOR MODELS

Power Select Switches on microwave ovens can fail due to a failed (open) power resistor.

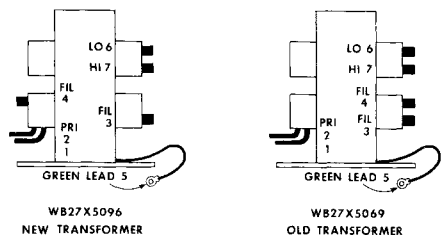
When replacing a failed push-button or rotary type power select switch (usually 3-power level) always check the power resistor, and replace if necessary, to prevent the possibility of failing the new replacement switch.

The power resistor is a 3-terminal (center tapped-type) located next to the cavity at the rear of the component compartment.

A normal power resistor will read approximately 1950 OHMS between the two end terminals. Any open resistor should be replaced.

REPLACEMENT POWER TRANSFORMER APPEARS DIFFERENT

The WB27X5096 power transformer is used in place of the older WB27X5069. The two transformers are the same except for the location of the filament terminals 3 & 4. Wiring connections are marked on both type transformers and should be connected like-for-like terminals.



FIELD CORRECTIONS

TOUCH CONTROL TIMER COUNTS DOWN WITH DOOR OPEN

The Digital Display "Time Countdown" on time-cook functions of touch control CMO's should Stop and Hold countdown when the oven door is opened for an interrupted cycle.

When a touch control is found to continue "countdown" during a time cook function with the door open, the problem is a stuck closed secondary interlock (bottom). Do Not change the control panel - it is not at fault.

It should be pointed out that even with this type of secondary interlock failure, Microwave Power will be "OFF" when the door is opened.

TOUCH CONTROL CLOCK LOSING TIME

The clock function of touch control countertop microwave ovens is synchronized to the 60 Hz power line and therefore normally should not gain or lose time.

If a complaint of "lost time" is encountered and can be verified, the control should be replaced as it will eventually fail in other functions as well.

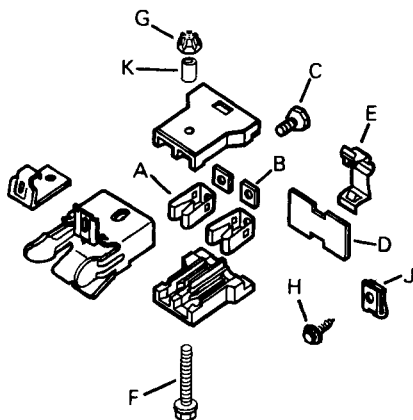
PLUG-IN CONTACT KIT FOR WB17X5051 RECEPTACLE

Plug-in surface unit receptacles with failed contacts can be repaired instead of replacing the complete receptacle.

A package of spring contacts and other parts require to repair the receptacle is now available...ORDER WB5X5026 CONTACT KIT.

Parts included in kit are:

- (A) 2 - Spring Contacts
- (B) 2 - Square Nuts
- (C) 2 - Terminal Screws
- (D) 1 - Insulator
- (E) 1 - Insulator Clip
- (F) 1 - Screw - Receptacle Asm.
- (G) 1 - Lock Nut
- (H) 1 - 1/4" Hex-Head, 3/8" Long Receptacle Mounting Screw (WZ4X345)
- (J) 1 - Speed Nut for Receptacle Mounting Hole in Cooktop (WB1X528)



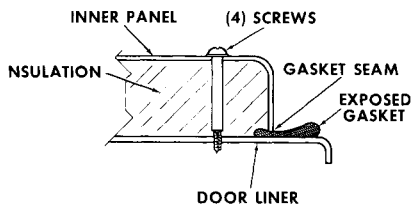
FIELD CORRECTION

etailed instructions are included with kit and must be followed carefully. NOTE: The ceramic insulator locks are not included.

availability of this kit provides the customer a choice of repair, or replacement of complete plug-in receptacle (VB17X5051), when only the contacts are bad.

ELF CLEAN DOOR — EASY WASKET SERVICE

The new design oven door is being used on some 30-inch Free Standing self-heating ranges. These doors can be recognized by the presence of 4 Phillips-head screws at the corner locations of the small inner door panel.



The new design permits easy door gasket replacement or adjustment by simply loosening the 4 screws. In addition, the inner pannel can be replaced by removing the screws. In other case, service can be provided with the door "on" or "off" the range.

ASBESTOS FREE WIRE

Asbestos-free insulation wire has been used in range products since January 1980.

One type used in high current and/or high temperature applications, such as Calrod® heating units, can be readily recognized by its "soft insulation" characteristics and color stripes.

Because of the "soft" characteristics, extra care must be taken during service to avoid pinching or trapping leads.....which could create a technician shock hazard or short circuit problem.

Make sure you are familiar with this type wiring. Be certain to exercise proper lead dress during service by following original routing patterns, and utilizing all wiring retainers originally used on the range.

STIRRER MOTORS CAN TURN EITHER DIRECTION

Do not replace stirrer motors because they are observed to run clockwise sometimes and counter-clockwise at other times.

Current design stirrer motors may rotate in either direction. This DOES NOT indicate a problem with the motor and DOES NOT affect microwave energy distribution.

Do not replace stirrer motor for this normal condition.

FIELD CORRECTION

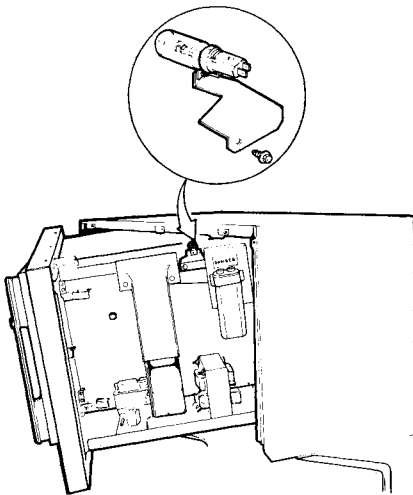
OVEN LAMP REPLACEMENT REAR LOCATION

The oven lamp is located at the oven rear on some Microwave Ovens.

SERVICE TO OVEN LAMP

CMO And Wall Ovens - Access through a lamp cover on rear of outer case – must remove microwave module on wall ovens.

High-Low Models - A lamp and bracket assembly is mounted to the exhaust duct with one screw - behind the magnetron. To gain line-of-sight service access to the bracket screw, the complete microwave chassis must first be pulled out partially, rotated, and balanced against the outer case, as is done for other component service. The lamp assembly can then be lifted out for lamp replacement.



TOUCH CONTROL "DUMB" MODE

Sometimes a new microwave oven touch control can go into a "DUMB" mode the first time it is programmed for use.

A "Dumb" mode can be recognized by the following conditions:

- Display very erratic - may display confusing information
- Keyboard is locked out - will not accept any other inputs.
- Touching clear-off does not clear the program or condition

This is a characteristic of the microprocessor, caused by initial internal normal arcing of the magnetron, and does not necessarily mean the control has failed.

TO CORRECT:

A "DUMB" MODE CAN BE CLEARED ONLY BY DISCONNECTING POWER TO THE APPLIANCE FOR 5 - 10 SECONDS. THEN RECONNECT. (Can be done at the plug or house fuse/circuit breaker).

Once the control is "cleared", the condition should not reoccur.

Important

Do not replace control unless "Dumb" mode cannot be cleared above procedure.

FIELD CORRECTION

DOOR COMPLAINTS

Door complaints on microwave ovens can be corrected by installing a new filler trim with rubber bumpers.

ORDER:

- 7X6685 - Spacemaker™/Counter Saver™
- 7X5642 - Only for Hotpoint CMO Models without Chrome Door Trim
- 7X5643 - All other GE/HP CMO, Wall Oven, Hi-Low Models with Chrome Door Trim

NOTE:

- 7X5642 - Handle Side-Mtg. Holes & Bumpers All in line.
- 7X5643 - Handle Side-Mtg. Holes & Bumper Not in line.

Rubber bumpers compensate for normal door gap and provide a solid, tight feeling door. The filler trim is attached on the oven side of the door and is fastened with Phillips-head screws. (REMEMBER MICROWAVE LEAKAGE TEST SHOULD BE MADE AT COMPLETION OF SERVICE.

On current production models, replace the rubber bumpers.

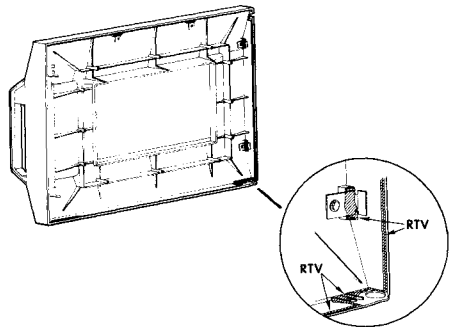
MOISTURE INSIDE CMO DOORS 1980-1982 MODELS

Moisture inside CMO type microwave oven doors can be corrected by the following procedure:

Parts Required:

- WB2X6474 Gasket Material
- RTV (Supply Locally)

1. Remove oven door by removing bottom hinge.
2. Remove choke and inner glass assembly.
3. Install new gasket over existing gasket on inner glass - leave no voids.
4. Apply RTV to joint between plastic door and outer trim assembly - seal around entire door.
5. Also apply RTV in openings at all 4 mounting clip locations in plastic door - 2 at top and 2 at bottom.
6. Reassemble door on oven.
7. Make microwave leakage test.



FIELD CORRECTION

MOISTURE INSIDE SPACE-MAKER DOORS

A kit of foam pads and gaskets is available to correct complaints of "moisture in the door" on some JVM/RVM model microwave ovens.

(Does not apply to JVH/RVM 100 Series)

Parts Required:

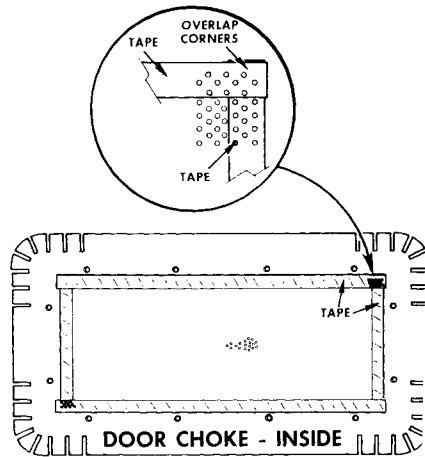
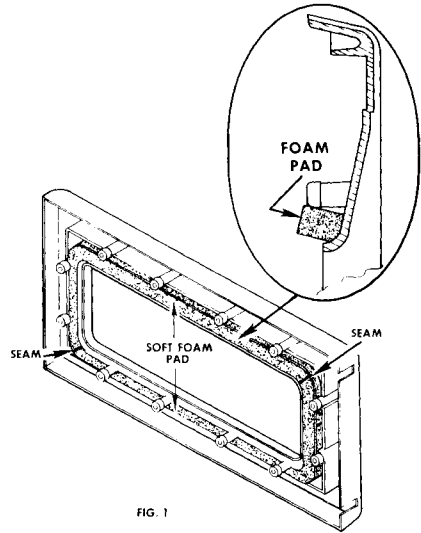
- WB2X6927 - Gasket Kit
- Black Vinyl Electrical Tape - Supply Locally

1. Remove outer door panel. Involves removal of plastic filler trim, and choke Torx screws around inner window.
2. Place outer door panel on flat surface and insert the two (2) long soft foam pads (mastic side down) in the plastic channel area around the window opening of the door. Pad will protrude above window opening (See Fig. 1).
3. Carefully remove plastic choke cover and inner window.

- a. Using black vinyl electrical tape (supply locally) cover first 3 rows of hole pattern on cavity side of door choke. Cover top, sides, and bottom-overlap at corners (See Fig. 2). Inner window will seal against tape.

- b. Remove thin gasket seal from inner window and replace with new gaskets supplied. Gasket must be located at edge of glass and extend around entire perimeter.

4. Clean windows and reassembly door.
5. Make microwave leakage test.



FIELD CORRECTION

SPACEMAKER BLOWER NOISE KIT - WB2X7021

The Spacemaker Blower Noise Kit is not a "cure all" but will correct most noise problems related to back pressure and rattling noise.

Kit Contents:

2 - Pieces Shrink Tube

3 - 18 5/8" Long Pads

1 - Instruction Sheet

Does not apply to JVH/RVM 100 Series)

Preliminary Instructions

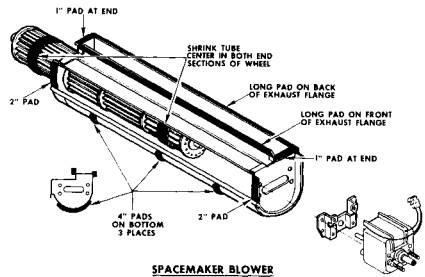
1. Check duct size - must be 3/4" x 10" rectangular or min. 6" round.
2. Check Spacemaker damper - must not stick (to inspect - disconnect duct at Spacemaker or remove Spacemaker from mounting).
3. If round duct used - must have min. 4" length of rectangular duct between hood and transition adapter (prevents damper sticking in transition adapter).
4. If JX80 recirculating filter kit in use - hood damper must be removed.

Note: Above preliminary instructions are part of initial product installation instructions. Deficiencies must be correct by installer/owner - this kit may not correct those deficiencies.

Kit Instructions

Remove blower assembly from Spacemaker.

2. Spin blower wheel several times and inspect for balance and concentric alignment - replace damaged parts as necessary.
3. Remove blower wheel and install shrink tube in center of each end section as shown. Shrink with heat gun or blow dryer (skin tight on wheel).
4. Replace or add pads to blower housing as shown.
5. Reinstall and test.
6. If any rattling or humming noises remain - remove chassis and tighten all mounting screws in chassis RH panel and shell mounting.



RANGE BODY DISCOLORED AT FRONT - STANDARD & CONTINUOUS CLEAN MODELS

Discoloring and staining on front of range body has been found to be caused by excessive bottom oven door gap. This condition creates a "chimney" effect of the air flow around the outside of the oven liner gasket. Steam and vapor deposits on the range front give the appearance of the range being scorched.

FIELD CORRECTIONS

Corrections:

1. Stains can be removed from painted range surface with Bon-Ami[®].
2. Replace oven liner gasket with a WB2X1522 gasket. The replacement gasket should be dressed down to the door hinge lever on each side. Cut off excess gasket.
3. Adjust oven door hinge for best alignment and seal. Set bottom oven door gap at 1/32" to 1/8".

FOGGING - CMO CONTROL PANELS

Some CMO control panel trims may not fit flush against the cavity. This can permit oven steam and moisture to be pulled into the control panel at the handle side of the door - causes "fogging" of display or crystal area.

Correction:

1. Remove control assembly from face of cavity front.
2. Apply WB2X6474 gasket to rear edges of control trim to form seal between control assembly and cavity front when control is mounted. **Door handle side is most vulnerable area.**

Note: For appearance purposes do not let edge of gasket extend out beyond control trim.

THUMPING SOUND - VPAC CONTROLS

A slight "thumping" sound may be heard (every 15 seconds) on high power VPAC microwave oven models:

GE

JET 92
JVM 48
JKP 55

HP

RE 932
RVM 44
RK 955

THIS IS A NORMAL CONDITION AND DOES NOT INDICATE A FAULT WITH THE CONTROL - DO NOT REPLACE THE CONTROL P.C. BOARD OR OTHER COMPONENTS FOR THIS COMPLAINT.

The noise, if noticeable, is very short in duration (1-2 cycles), and is produced every 15 seconds when the gate signal triggers the triac.

There is no loss of power in the oven and can be demonstrated to the customer, if necessary, by placing your service power detector neon light in the oven next to a cup of water. The neon light will not show any interruption of power except possibly in cases of low line voltage (110V or less).

SPACEMAKER BLOWER - SLOW STARTING

During cold weather, Spacemaker magnetron blower motors may start slow and take several seconds to get up to normal speed.

This is a normal condition due to cold air falling through the duct work and lowering the temperature in the component area.

Advise the customer this is a normal condition and does not affect the oven or blower life.

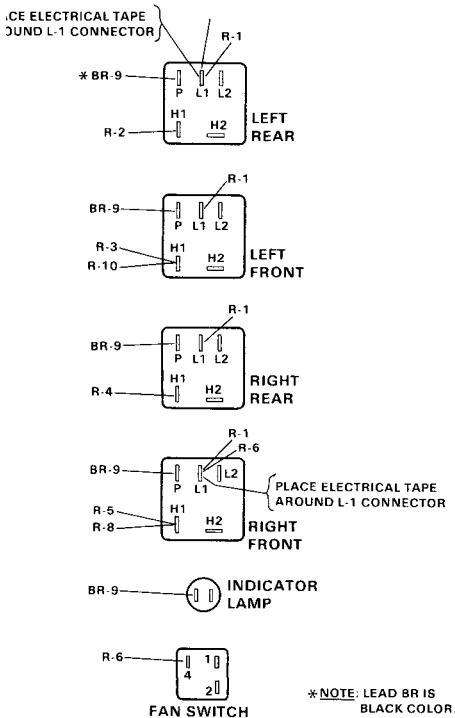
DO NOT REPLACE THE MAGNETRON BLOWER.

TRILL/GRIDDLE COOKTOP – WITCH WIRING

Some cooktop models JP676, S/N prefix AM, DM, were shipped with incorrectly wired surface unit switches. Although the cooktop will operate, the switch life is greatly reduced.

Inspect the switch wiring whenever servicing one of these models. IF A LEAD IS CONNECTED TO THE P TERMINAL OF THE SWITCH THE WIRING IS INCORRECT AND MUST BE MODIFIED.

The correct wiring is shown below:



MAGNETRON FILAMENT LEAD FUSIBLE LINK

When a "No Power" problem has been traced to the high voltage section, be sure to check continuity of the H.V. Voltage Transformer Filament leads...One may have a fusible link.

The purpose of the fusible link is to protect the H.V. Transformer in case of a shorted magnetron tube filament...if the link is blown, the fault is the Magnetron...not the Transformer.

NOTE: The fusible link lead can be identified by a section of the lead with a "bump" covered with shrink tubing...or fiberglass sleeve.

Refer to parts catalog for replacement filament leads.

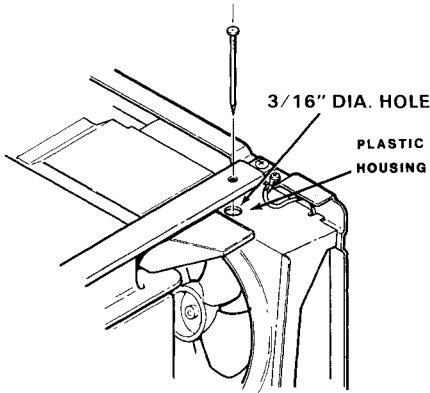
MAGNETRON THERMAL PROTECTOR OPEN - JMT OVENS

An open thermal protector can be caused by using screws that are too long when mounting the ovens under their cabinets. The long screw extends into the M/W Oven too far and deforms the Mag Blower Housing. This in turn stalls the Mag Blower Blade allowing the Mag to over heat. Usually the housing becomes permanently deformed and must be replaced.

The new Housing should have a 3/16" dia. hole in line with the top brace mounting hole, to provide clearance for the long screw – if not:

FIELD CORRECTIONS

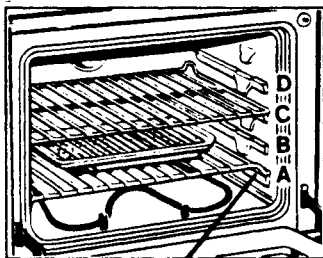
1. Using front to rear brace as a template and a nail or other type pin, locate center for hole to be drilled in plastic blower housing.
2. Remove rear mounting screw from brace and swing brace away.
3. Drill 3/16" hole in air duct.
4. Re-assemble brace.



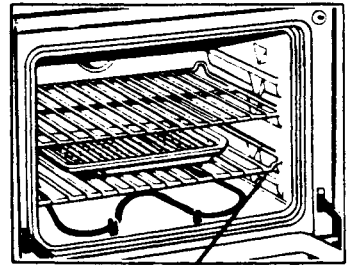
OFF-SET RACK FALLING IN 40" RANGE

Some 40-inch ranges have a straight rack and an Off-Set Rack. The Off-Set Rack is designed to provide finger clearance between the rack and the oven door liner when the rack is used in the bottom or "A" positions.

If the Off-Set Rack is installed upside-down, it can fall off the shelf supports with a light food load.



CORRECT



WRONG

DIRT INSIDE TIMER GLASS

A washer is used over each of the three (3) timer shafts on **Slide-In-Type Ranges** to help prevent dirt collecting inside the timer glass. The Slide-In ranges are most vulnerable due to the sloped control panel.

The washer can be used as a field fix on any Range with a "Dirt In Timer Glass Problem".

ORDER...WB1X5727 (contains 3 washers).

MICROWAVE CAVITY PAINT

Touch-up paint for microwave oven cavities is available as a service part.

Ovens Made In USA

WB64X5009 – Spray

WB64X5021 – Pencil

"K" Model Cook Centers – CMO's Made in Japan/Korea

WB64X5022 – Spray

OVEN GLASS SHELF-SEALED TYP

The glass shelf on some microwave ovens is sealed with RTV-102 silicon rubber sealant. Replacement shelves for these models include the sealer and detail instructions for shelf installation. Refer to parts catalog for correct shelf part number.

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GENERAL  ELECTRIC

PUB. NO. 31-300-7

