USER OPERATION

CONTROL LOCK

Control Lock feature prevents unwanted microwave oven operation.

TO LOCK:

1. Touch CONTROL LOCK, then touch START. 'LOCK ON' will appear on control panel display.

TO UNLOCK:

1. Touch CONTROL LOCK, then touch START. 'LOCK OFF' will appear on control panel display.

OPEN/CLOSE

To open or close drawer, touch OPEN/CLOSE. Do not push or pull drawer by hand, except in an emergency.

CLOCK

The clock must be set prior to use and after a power failure.

SETTING CLOCK:

- 1. Touch CLOCK.
- 2. Use the number pads to enter the time of day, then touch CLOCK.

TIMER

The Timer can be set for a maximum of 99 minutes and 99 seconds. Once a time is set, the countdown will appear on the control panel display. Oven will chime and 'END' will appear on display when complete.

SET TIMER:

- 1. Touch TIMER.
- 2. Use number pads to enter timer duration. Up to 99 minutes and 99 seconds.
- 3. Touch TIMER again to begin.
- 4. Touch STOP/CLEAR to cancel.

SETTINGS

The Settings feature allows the user to select individual preferences. Preferences must be reset after a power failure.

AUDIBLE SIGNAL:

An audible signal will chime with every touch and upon cook time and timer completion.

To Eliminate Audible signal:

- 1. Touch SETTINGS twice
- 2. Touch START. 'SOUND OFF' will appear on the control panel display.

To Restore Audible signal:

- 1. Touch SETTINGS twice.
- 2. Touch START. 'SOUND ON' will appear on the control panel display.

COOK TIME COMPLETION REMINDER:

Upon completion, microwave oven will chime every ten seconds for first minute; then every three minutes (for one hour) until STOP/CLEAR is touched.

To Eliminate Cook Time Completion Reminder:

- 1. Touch SETTINGS three times.
- 2. Touch START. 'REMIND SIGNAL OFF' will appear on control panel display.



To Restore Cook Time Completion Reminder:

- 1. Touch SETTINGS three times.
- 2. Touch START. 'REMIND SIGNAL ON' will appear on control panel display.

DEMONSTRATION MODE

Demonstration mode allows operation to be demonstrated without energizing the High Voltage circuit.

To enter Demonstration Mode:

- 1. Touch SETTINGS five times.
- 2. Touch START. 'DEMO ON' will appear on control panel display.

To exit Demonstration Mode:

- 1. Touch SETTINGS five times.
- 2. Touch START. 'DEMO OFF' will appear on control panel display.

MANUAL COOKING

POWER LEVEL

The microwave oven has ten preset power levels.

To cook manually at 100% Power:

- 1. Use number pads to enter desired cook time.
- 2. Touch START.
- 3. Oven will chime and 'END' will appear on control panel display when complete.

To cook manually at a Power level less than 100%:

1. Touch POWER LEVEL, then use number pads to select desired power level. Refer to chart below.

POWER LEVEL

POWER LEVEL 10	High	100%
POWER LEVEL, 9		90%
POWER LEVEL, 8		80%
POWER LEVEL, 7	Medium High	70%
POWER LEVEL, 6		60%
POWER LEVEL, 5	Medium	50%
POWER LEVEL, 4		40%
POWER LEVEL, 3	Medium Low/Defrost	30%
POWER LEVEL, 2		20%
POWER LEVEL, 1	Low	10%

MULTIPLE SEQUENCE COOKING

The microwave oven can be programmed for up to four automatic cooking sequences, switching from one power level to another automatically.

To use Multiple Sequence cooking (e.g. start at 100%, then switch to 50% Power):

- 1. Touch POWER LEVEL twice, then use number pads to enter desired cook time.
- 2. Touch POWER LEVEL, then touch 5, then use number pads to enter a second cook time.
- 3. Touch START.



AUTO START

The microwave oven can be programmed to begin cooking automatically at a designated time of day. The clock must be set to correct time for Auto Start to function properly.

To use Auto Start:

- 1. Touch SETTINGS four times.
- 2. Touch START.
- 3. Use number pads to enter start time.
- 4. Touch CLOCK.
- 5. Use number pads to enter cook time. Adjust power level if necessary.
- 6. Touch START.

ADD MINUTE

The add minute feature cooks for one minute at 100% by touching ADD MINUTE. Touch multiple times to increase cook time. Each touch increases time by one minute. This feature cannot be used with Sensor Cooking settings.

KEEP WARM

The keep warm feature will keep food warm for up to 90 minutes.

To use Keep Warm:

- 1. Touch KEEP WARM.
- 2. Use number pads to enter desired keep warm time.
- 3. Touch START.
- 4. Touch STOP/CLEAR to cancel.

POPCORN

The popcorn feature has two options. Follow directions on the control panel display to select desired option. Use only popcorn packaged for microwave ovens.

To use Popcorn:

- 1. Touch POPCORN once for regular size or twice for snack size packages.
- 2. Touch START.

MELT

The melt feature will melt butter or chocolate.

To use Melt:

- 1. Touch MELT.
- 2. For butter: Touch 1 once for 2 tablespoons or twice for 1/2 cup.
- 3. For chocolate: Touch 2 once for 1 cup or twice for 1 square.
- 4. Touch START.

SOFTEN

The soften feature will soften ice cream or cream cheese.

To use Soften:

- 1. Touch SOFTEN.
- 2. For ice cream: Touch 1 once for 1 pint or twice for 1/2 gallon.
- 3. For cream cheese: Touch 2 once for 3 ounces or twice for 8 ounces.
- 4. Touch START.



BEVERAGE

The beverage feature will reheat a beverage or prepare hot water for coffee or tea.

To use Beverage:

- 1. Touch BEVERAGE.
- 2. To reheat beverage: Touch 1 multiple times to select amount in 1/2 cup increments, up to 2 cups.
- 3. For hot water: Touch 2 multiple times to select amount in 1 cup increments, up to 6 cups.
- 4. Touch START.

SENSOR COOKING

WOLF GOURMET

The Wolf Gourmet feature detects moisture and humidity from food as it heats and automatically adjusts cook time and power level. Fresh vegetables and poultry have two options. Follow directions on the control panel display to select the desired option. See Use and Care Guide for specific modes.

To select Wolf Gourmet:

- 1. Touch WOLF GOURMET, then use number pads to select desired food (e.g. 5 for baked potatoes).
- 2. Touch START.

SENSOR REHEAT

The sensor reheat feature detects moisture and humidity from food as it reheats, and automatically adjusts cook time and power level.

To select Sensor Reheat:

- 1. Touch SENSOR REHEAT.
- 2. Touch START.

TIME ADJUSTMENT (sensor cooking settings)

The time adjustment feature increases or decreases cook time for sensor cooking settings.

To Adjust Time:

1. Touch POWER LEVEL once for 'MORE' or twice for 'LESS' time.

AUTO DEFROST

The auto defrost feature uses preset settings to defrost select food items. This is used for items listed in the Use and Care Guide. For items not listed in Auto Defrost Guide in Use and Care manual see Manual Defrost.

To select Auto Defrost:

- 1. Touch AUTO DEFROST, then use number pads to select desired food (e.g. 3 for boneless poultry).
- 2. Use number pads to enter weight.
- 3. Touch START. After a period of time, microwave oven will stop so food can be checked.
- 4. Open drawer and turn food over.
- 5. Repeat until defrost is complete.

MANUAL DEFROST

The manual defrost feature automatically defrosts at 30% power. Food should be turned throughout the process to ensure even defrosting. To defrost at another power level, refer to Power Level on page 3-3.

To use Manual Defrost:

- 1. Touch MANUAL DEFROST.
- 2. Use number pads to enter desired time.
- 3. Touch START.

DESCRIPTION OF OPERATING SEQUENCE

OFF CONDITION

Closing drawer activates door sensing switch and secondary interlock switch. (Monitor switch contacts are opened.) When oven is plugged in, 120 volts A.C. is supplied to power unit.

 Display will show flashing "Enjoy Your Drawer Touch Clear and Touch Clock". To set any program or set clock, you must first touch STOP/CLEAR pad. The display will clear, and ": " will appear.

COOKING CONDITION

Program desired cooking time by touching NUMBER pads. Program power level by touching POWER LEVEL pad and then a Number pad. When the START pad is touched, the following operations occur:

1. Contacts of relays are closed and components connected to relays are turned on as follows.

RELAY	CONNECTED COMPONENTS
RY-1	Oven lamp
RY-2	Power transformer
RY-3	Stirrer motor
RY-4	Fan motor

- 120 volts A.C. is supplied to primary winding of power transformer and is converted to about 3.3 volts A.C. output on the filament winding, and approximately 2370 volts A.C. on high voltage winding.
- Filament winding voltage heats magnetron filament and High Voltage winding sends voltage to voltage doubler circuit.
- 4. Microwave energy produced by magnetron is channelled through waveguide into cavity feedbox, and then into cavity where food is placed to be cooked.
- 5. Upon completion of cooking time, power transformer, oven lamp, etc. are turned off, and generation of microwave energy is stopped. Oven will revert to OFF condition.
- 6. When drawer is opened during a cook cycle, monitor switch, door sensing switch, secondary interlock switch, relay (RY1) and primary interlock relay are activated with following results. The circuits to the stir fan motor, cooling fan motor, and high voltage components are de-energized, oven lamp remains on, and digital read-out displays time still remaining in cook cycle when door was opened.
- 7. The monitor switch electrically monitors the operation of secondary interlock switch and secondary interlock relay and is mechanically associated with drawer so that it will function in following sequence.

- 8. When drawer opens from closed position, primary interlock relay (RY2) and secondary interlock switch open their contacts. Contacts of relay (RY1) remains closed. Then monitor switch contacts close.
- 9. When the drawer is closed from open position, monitor switch contacts open first. Then contacts of secondary interlock switch and door sensing switch close, and contacts of the relay (RY1) open.

If secondary interlock switch and primary interlock relay (RY2) fail with contacts closed when drawer is opened, closing of monitor switch contacts will form a short circuit through fuse, secondary interlock switch, relay (RY1) and secondary interlock relay (RY2), causing fuse to blow.

POWER LEVEL P-0 TO P-90 COOKING

When Variable Cooking Power is programmed, 120 volts A.C. is supplied to power transformer intermittently through contacts of relay (RY-2) which is operated by power unit within a 32 second time base. Microwave power operation is as follows:

VARI-MODE	ON TIME	OFF TIME
Power 10(P-HI)	32 sec.	0 sec.
(100% power)		
Power 9(P-90)	30 sec.	2 sec.
(approx. 90% power)		
Power 8(P-80)	26 sec.	6 sec.
(approx. 80% power)		
Power 7(P-70)	24 sec.	8 sec.
(approx. 70% power)		
Power 6(P-60)	22 sec.	10 sec.
(approx. 60% power)		
Power 5(P-50)	18 sec.	14 sec.
(approx. 50% power)		
Power 4(P-40)	16 sec.	16 sec.
(approx. 40% power)		
Power 3(P-30)	12 sec.	20 sec.
(approx. 30% power)		
Power 2(P-20)	8 sec.	24 sec.
(approx. 20% power)		
Power 1(P-10)	6 sec.	26 sec.
(approx. 10% power)		
Power 0(P-0)	0 sec.	32 sec.
(0% power)		

Note: ON/OFF time ratio does not correspond with percentage of microwave power, because approx. 2 seconds are needed for heating of magnetron filament.



SENSOR COOKING CONDITION

Using SENSOR function, food is cooked without figuring time, power level or quantity. When oven senses enough steam from the food, it relays information to its microprocessor which will calculate remaining cooking time and power level needed for best results. When food is cooked, water vapor is developed. Sensor "senses" vapor and its resistance increases gradually. When resistance reaches value set according to menu, supplementary cooking is started. The time of supplementary cooking is determined by experiment with each food category and inputted into LSI.

Note: LSI - This is a microcomputer, responsible for controlling the entire control unit.

Cooking Sequence:

1. Touch one of the SENSOR pads.

NOTE: The oven should not be operated on sensor immediately after plugging in unit. Wait two minutes before cooking on SENSOR.

- 2. Coil of shut-off relay (RY-1) is energized, but power transformer is not turned on.
- 3. After about 16 seconds, cook relay (RY-2) is energized. Power transformer is turned on, microwave energy is produced and first stage is started. 16 seconds is cooling time required to remove any vapor from oven cavity and sensor.

NOTE: During this first stage, do not open drawer or touch STOP/CLEAR pad.

- 4. When sensor detects vapor emitted from food, display switches over to remaining cooking time and timer counts down to zero. At this time, drawer may be opened to stir, turn or season food.
- When timer reaches zero, an audible signal sounds. Shut-off relay and cook relay are de-energized and power transformer, oven lamp, etc. are turned off.
- Opening drawer or touching the STOP/CLEAR pad, time of the day will reappear on display and oven will revert to an OFF condition. When timer reaches zero, an audible signal sounds.

Theory of Operation	MD24 and MD30