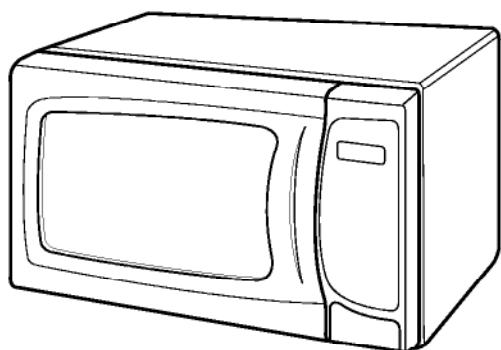


# MICROWAVE OVEN SERVICE MANUAL

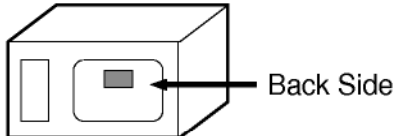
**MODEL: MS-193YD**

## CAUTION

BEFORE SERVICING THE UNIT, READ THE  
SAFETY PRECAUTIONS IN THIS MANUAL.

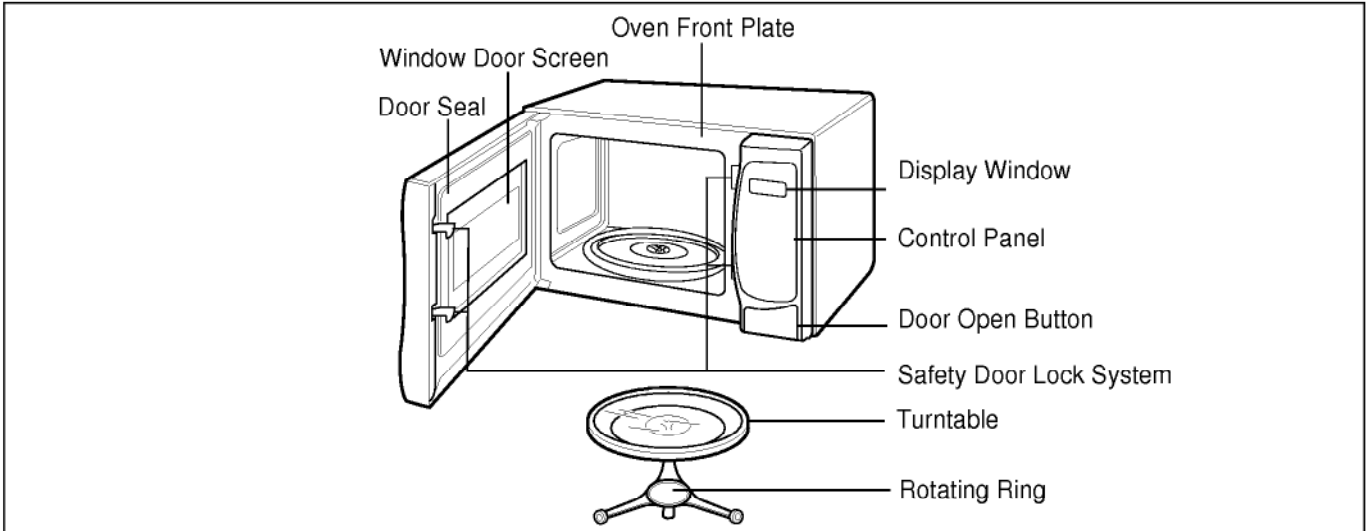


# SPECIFICATIONS

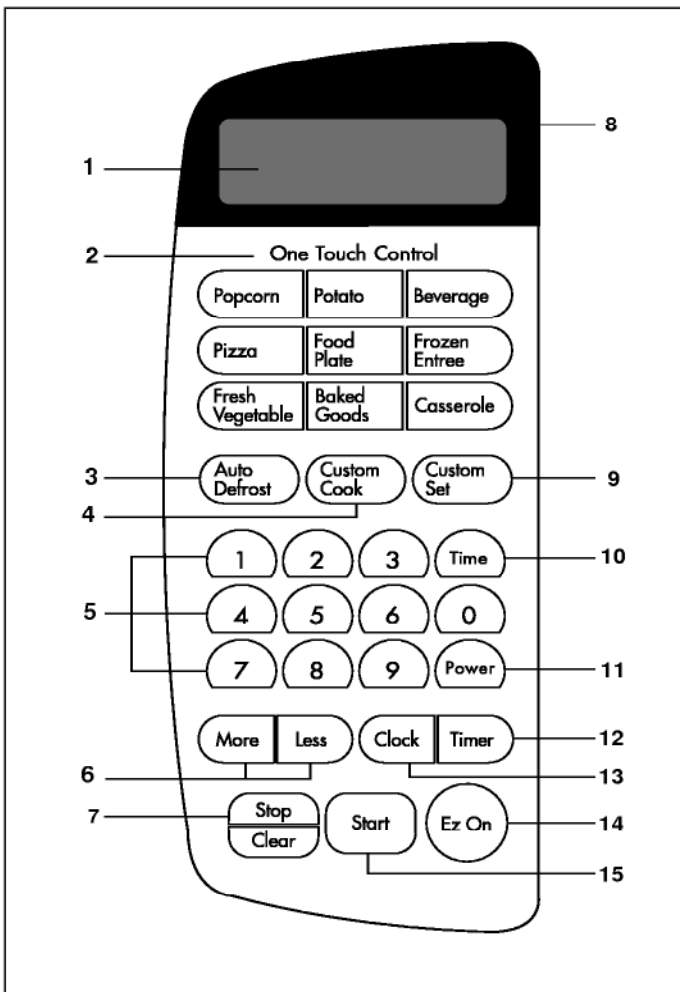
ITEM	DESCRIPTION
<b>MODEL</b>	<b>MS-193YD</b>
Power Requirement	120 Volts AC 60 Hz 1,500 Watts Single phase, 3 wire grounded
Power Output	1100 Watts full microwave power (IEC705)
Microwave Frequency	2,450 MHz
Magnetron	2M246, 2M248J
Timer	0 ~ 99 min. 99 sec.
Outside Dimensions	23 <sup>7</sup> / <sub>8</sub> " (W) x 13 <sup>9</sup> / <sub>16</sub> " (H) x 18 <sup>13</sup> / <sub>16</sub> " (D)
Cavity Dimensions	17 <sup>1</sup> / <sub>16</sub> " (W) x 10 <sup>3</sup> / <sub>8</sub> " (H) x 18 <sup>5</sup> / <sub>16</sub> " (D)
Net Weight	42 lbs (approx.)
Shipping weight	46 lbs (approx.)
Control Complement	Touch Control System Clock : 1:00 - 12:59 Microwave Power for Variable Cooking Power level HIGH -----Full power throughout the cooking time 9 (Saute) -----approx. 90% of Full power,   8 (Reheat) -----approx. 80% 7 (Med.-High)-----approx. 70%,                   6 (Medium) -----approx. 60% 5 (Med.-Low) -----approx. 50%,                 4 (Defrost) -----approx. 40% 3 (Low) -----approx. 30%,                        2 (Simmer)-----approx. 20% 1 (Warm)-----approx. 10%
Nameplate Location	
Accessories	Owner's manual & cooking guide Glass turntable Rotating ring
<p>This microwave oven is designed for household use only. It is not recommended for commercial purposes.</p>	

# OPERATING INSTRUCTIONS

## FEATURES



## CONTROL PANEL

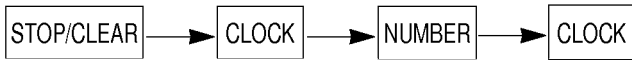


1. INDICATORS.
2. ONE TOUCH CONTROL: This menu has been pre programmed to cook food automatically by one touch.
3. AUTO DEFROST: This feature provides you with the best defrosting method for frozen foods.
4. CUSTOM COOK: This feature allows you to set and execute a frequently used single stage program.
5. NUMBER: These used to set for time of day, cooking time, power level, or defrost weight.
6. MORE / LESS: All of the one touch cook and TIMED COOK can be adjusted to cook food for a longer or shorter time.
  - MORE → Pressing MORE will add 10 seconds to the cooking time.
  - LESS → Pressing LESS will subtract 10 seconds of cooking time.
7. STOP/CLEAR: It used to stop oven and clear all entries except time of day.
8. DISPLAY WINDOW.
9. CUSTOM SET: You can select sound on/off, clock on/off, scroll speed, lbs/kg choice, language choice, demo on/off mode.
10. TIME: You can set the desired cook time.
11. POWER: You can select the desired power level for cooking.
12. TIMER: You can use the timer function of your oven for purpose other than cooking.
13. CLOCK: It is used to set the time of day.
14. EZ ON: You can extend cooking time in multiples of 1 minute by repeatedly touching this pad during cooking.
15. START: This feature allows oven to begin functioning.

# OPERATING SEQUENCE

The following is a description of component functions during oven operation.

## 1. SETTING THE CLOCK



ex.) To set 4:30, touch number key [4],[3], and [0].

NOTE: 1) This is a 12 hour clock.

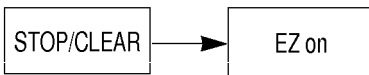
2) Clock will operate as long as power is applied to the oven.

## 2. CANCEL FUNCTION

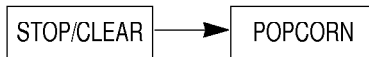
Touch the [STOP/CLEAR] pad whenever you need to cancel an entry or a function currently in use.

The display will return either to the last item entered or to the clock.

## 3. EZ ON

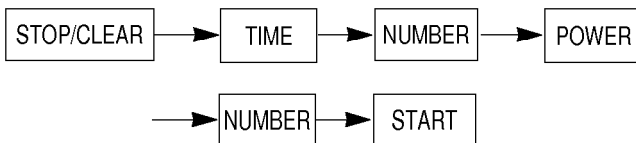


## 4. ONE TOUCH COOKING



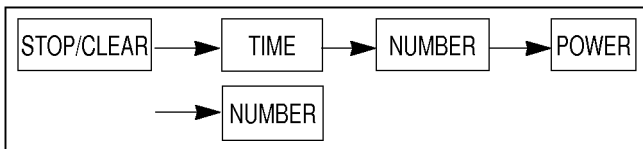
NOTE: Heat only 1 package at a time

## 5. TIME COOKING

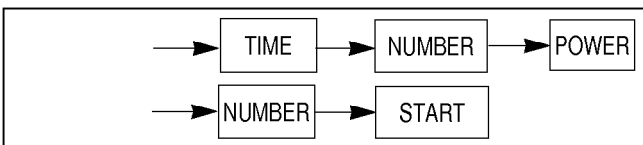


## 6. MULTI-STAGE COOKING

1ST STAGE



2ND STAGE



## 7. AUTO DEFROST COOKING



## 8. CHILD LOCK

This oven has a CHILD LOCK feature  
TO SET CHILD LOCK

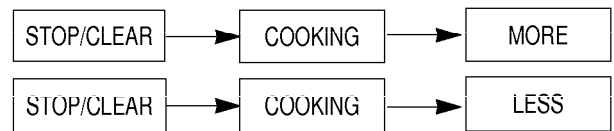
- Touch the [STOP/CLEAR] pad
- Touch and hold START pad → **LOCKED** appears on the display.

TO CANCEL CHILD LOCK

- Touch the [STOP/CLEAR] pad
- Touch and hold START pad → **LOCKED** disappears.

## 9. MORE / LESS

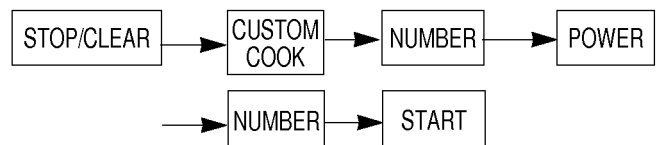
The cook time is adjustable by MORE pad or LESS pad



## 10. CUSTOM COOK

You can program the cook time and power level by using CUSTOM COOK pad.

ex) To set cook time 10 mine 30seconds, touch number key [1],[0],[3], and [0]



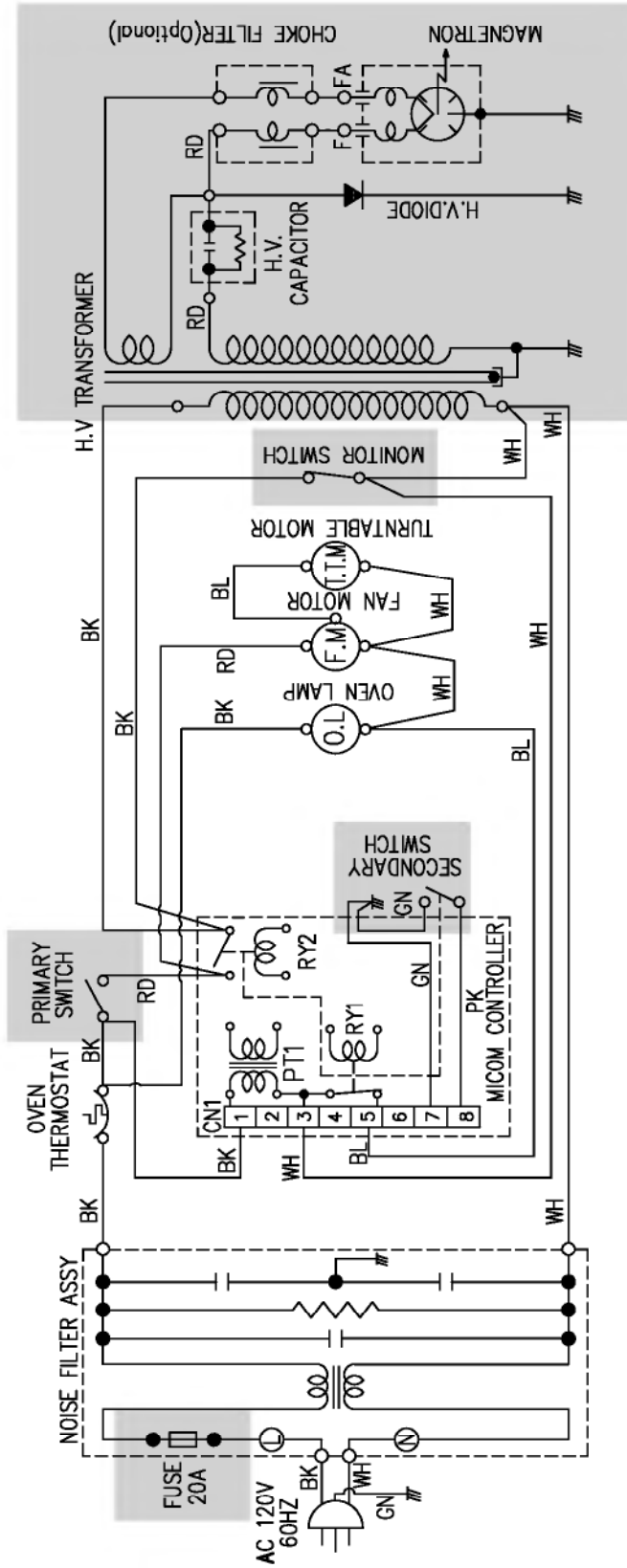
## 11. CUSTOM SET

You can program your microwave oven to turn the sound and clock on or off, adjust the scroll speed of the display, switch between pounds and kilograms, and demonstration on or off.

TOUCH KEYPAD	CHOICE
1	Sound On or Sound Off
2	Clock On or Clock Off
3	Slow, Normal or Fast scroll speed
4	Lbs or Kg
5	Demonstration * This function is not explained in the owner's manual.

NOTE: When the power cord is first plugged in the default settings are; Sound On, Clock On, Normal Speed, Lbs and Demo Off.

# SCHEMATIC DIAGRAM



\*\* NOTE : DOOR IS OPENED.

BK : BLACK	BL : BLUE	YL : YELLOW	RD : RED
WH : WHITE	PK : PINK	GN : GREEN	BN : BROWN

IMPORTANT SAFETY NOTE: THE SHADED AREAS ON THIS SCHEMATIC DIAGRAM INCORPORATE SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM MICROWAVE RADIATION, FIRE, ELECTRICAL SHOCK, AND HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURER'S SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SHADED AREAS OF THE SCHEMATIC DIAGRAM.

NOTICE: SINCE THIS IS BASIC SCHEMATIC DIAGRAM, THE VALUES OF COMPONENTS AND SOME PARTIAL CONNECTIONS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

# CIRCUIT DESCRIPTION

## GENERAL DETAILS

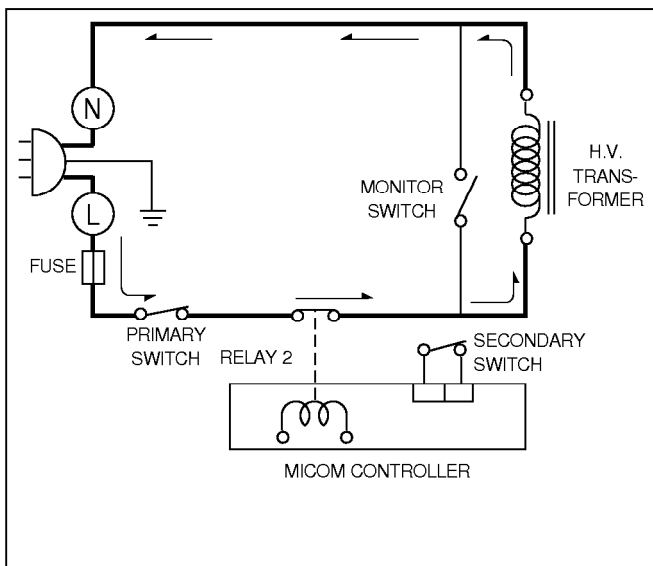
- The low voltage transformer supplies the necessary voltage to the micom controller when power cord is plugged in.
- When the door is closed, the primary switch is ON, the secondary switch is ON, and the monitor switch opens (contact COM and NO).

## WHEN SELECTING COOKING POWER LEVEL AND TIME

- The micom controller memorizes the function you set.
- The time you set appears in the display window.
- Each indicator light turns on to indicate that the stage has been set.

## WHEN TOUCHING THE START PAD

- The coil of the relay is energized by the micom controller.
- Power input is supplied to the high voltage transformer through the fuse to the primary switch and relay 2.
- Turntable rotates.



- The fan motor rotates and cools the magnetron by blowing the air (coming from the intake on the base-plate).
- The air is also directed into the oven to exhaust the vapor in the oven through the upper plate.
- Cooking time starts counting down.
- 3.3 volts AC is generated from the filament winding of the high voltage transformer. This 3.3 volts is applied to the magnetron to heat the magnetron filament through two noise-preventing choke coils.

- A high voltage of approximately 2100 volts AC is generated in the secondary of the high voltage transformer which is increased by the action of the high voltage diode and charging of the high voltage capacitor.
- The negative 4,000 Volts DC is applied to the filament of the magnetron.

## WHEN THE OVEN IS SET AT ANY LEVEL EXCEPT MAXIMUM.

- The micom controller controls the ON-OFF time of relay 2 by the applied signal to vary the average output power of microwave oven as POWER LEVEL. (refer to page 1-1)
- One complete cycle of relay 2 is 22 seconds.

## WHEN THE DOOR IS OPENED DURING COOKING

- Both the primary switch and relay 2 cut off the primary winding voltage of the high voltage transformer.
- ON-OFF of relay 2 is coupled electrically with opening and closing of the secondary switch.
- When the door is opened, the secondary switch is opened and when the door is closed, the secondary switch is closed.
- The cooking time stops counting down.
- Relay stops functioning.
- As the door is opened, if the contact of primary switch and relay2 and/or secondary switch fail to open, the fuse opens due to the large current surge caused by the monitor switch activation, which in turn stops magnetron oscillation.

