

**SEARS**

MODEL 721.60102000  
721.60109000

**DIVISION 20**

**BASIC FIELD MANUAL**  
**FOR**  
**MICROWAVE OVEN**

**MODEL 721.60102000**  
**721.60109000**

**March, 2000**

# CAUTION

## WARNING TO SERVICE TECHNICIANS

# PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING 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 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 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.
- Proper operation of the microwave ovens requires that the magnetron be assembled to the wave guide and cavity. Never operate the magnetron unless it is properly installed.
  - Be sure that the magnetron gasket is properly installed around the dome of the tube whenever installing the magnetron.
  - Routine service safety procedures should be exercised at all times.
  - Untrained personnel should not attempt service without a thorough review of the test procedures and safety information contained in this manual.

## FOREWORD

Read this Manual carefully. Failure to adhere to or observe the information in this Manual may result in exposing yourself to the Microwave Energy normally contained within the oven cavity.

### MODEL 721.60102000 721.60109000

#### MECHANICAL SERVICE INFORMATION

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## 1. ADJUSTMENT PROCEDURES

To avoid possible exposure to microwave energy leakage, adjust the door latches and interlock switches, using the following procedure.

### **ONLY AUTHORIZED SERVICE PERSONNEL SHOULD MAKE THIS ADJUSTMENT.**

The Interlock Monitor and Primary Interlock Switch acts as the final safety switch protecting the user from microwave energy. The terminals between "COM" and "NC" of the Interlock Monitor must close when the door is opened. After adjusting the Interlock Monitor Switch, make sure that it is correctly connected. See Figures 1-a and 1-b throughout this procedure.

### **CHECK THE DOOR LATCH AND SWITCH CLOSINGS.**

**NOTE:** The outer cover of the microwave oven is removed.

- (1) Set the microwave oven on its side so that you can see the latch board and the switches, as shown in Figure 1-a.
- (2) Close the door tightly and check gaps A and B to be sure they are no more than 1/64" (0.5 mm). See Figure 1-b for close-up view of gaps A and B (door latches). If all gaps are less than 1/64" (0.5 mm), adjustment of the latch board may not be necessary. Go to Steps 5 and 6 to check the sequence of the switches.

**NOTE:** To correct sequence of the Primary Interlock Switch, Secondary Interlock Switch and the Interlock Monitor Switch is very important.

If any gap is larger than 1/64" (0.5 mm), you will need to adjust the latch board-U, L. Go to step 3 and follow all steps in order.

### ADJUST THE LATCH AND SWITCH CLOSINGS

- (3) Loosen the two screws holding the plastic latch board as shown.
- (4) With the oven door closed tightly, move the latch board upward toward the top of the oven and/or away from the door latch until the gaps are less than 1/64" (0.5 mm).

Hold the latch board tightly in this position until you check the sequence of the switches in steps 5 and 6.

### TEST THE LATCH AND SWITCH SEQUENCE

- (5) Open the oven door slowly. Watch the door latch, the Primary Switch. Release Rod and Lever on the switches to make sure they are zero to the body of the switches in the following sequence:

- Primary Interlock Switch
- Secondary Interlock Switch
- Interlock Monitor Switch

Adjust the latch board until the switches operate in this sequence. See Steps 3 and 4.

- (6) Close the oven door slowly and be sure it is tightly closed. Watch the three switches to make sure they are zero to the body of the switches in the following sequence:

- Interlock Monitor Switch
- Primary Interlock Switch
- Secondary Interlock Switch

**NOTE:** The Interlock Monitor Switch is an added safety check on the Primary and Secondary Interlock Switches. If the Primary and Secondary Interlock Switches allow the oven to operate with the door open, the Monitor Switch will blow the fuse.

- (7) When you achieve the proper sequence of switches in Steps 5 and 6, tighten the latch board screws at that point.

### TEST THE MICROWAVE ENERGY LEAKAGE

- (8) Using a survey meter, make sure the microwave energy is below 5 mW/cm.sq.

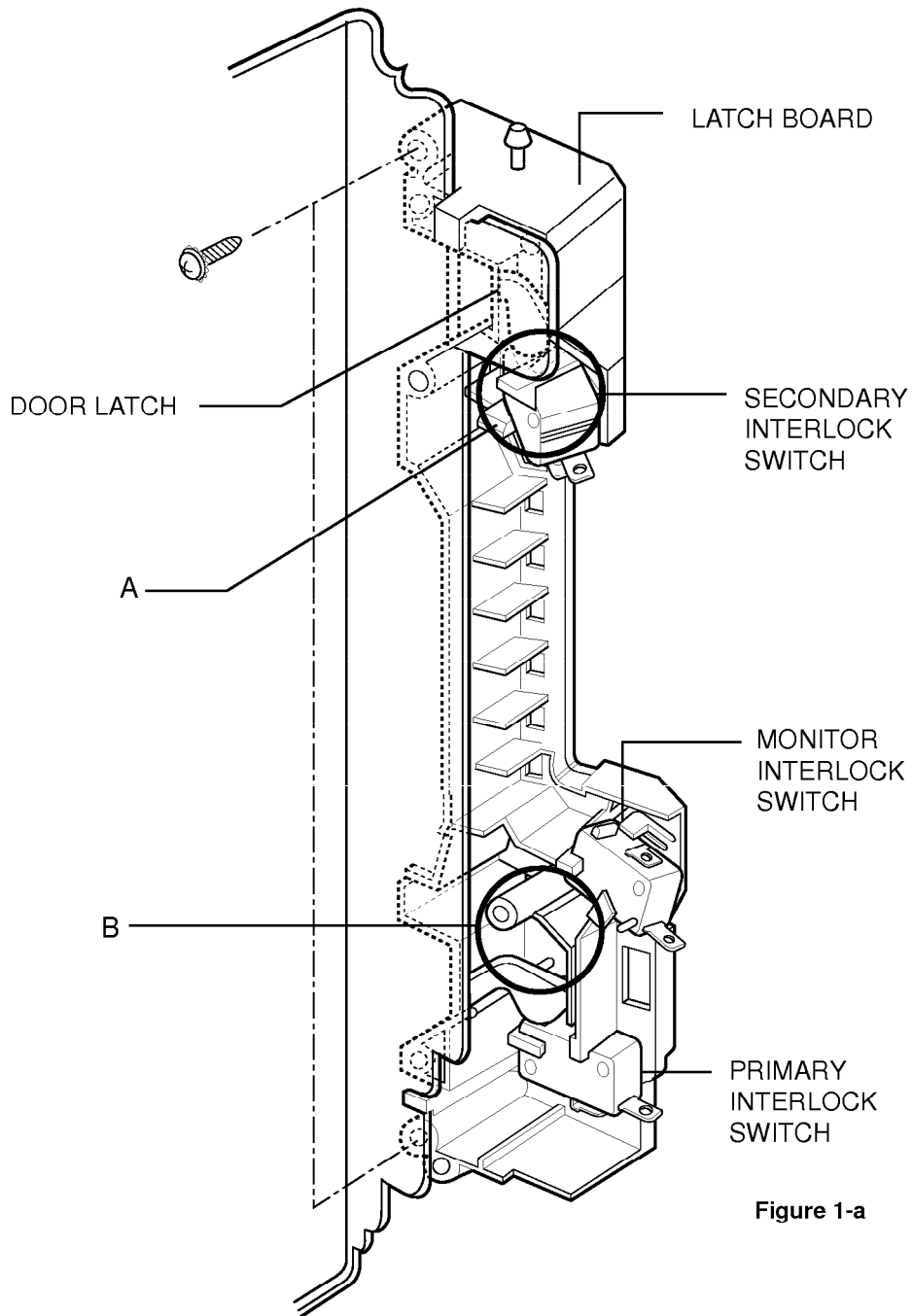


Figure 1-a

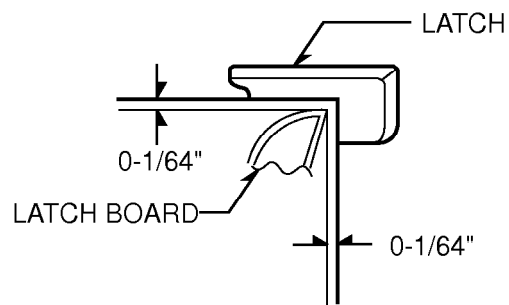


Figure 1-b

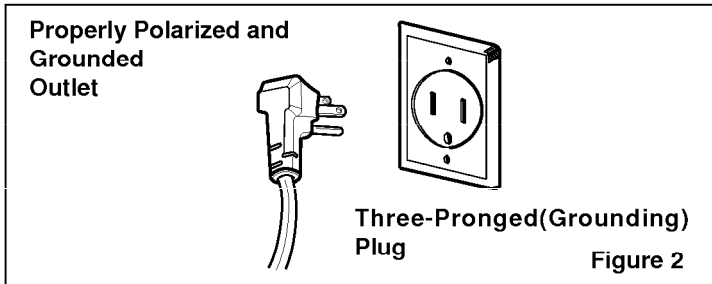
## 2. PRECAUTIONS ON INSTALLATION

(Figure 2)

- A. Plug the power supply cord into a 120 V AC, 60 Hz, single-phase power source with a capacity of at least 15 amperes.
- B. Since the unit weights about 26 lbs, be sure to place it on a sturdy and flat surface.
- C. Avoid placing the unit in a location where there is direct heat or splashing water.
- D. Place the unit as far away as possible from TV, radio, etc. to prevent interference.

### CAUTION

This unit is equipped with a 3-prong plug for your safety. If the wall outlet is a grounded 3-hole type, the unit will be grounded automatically.



## 3. GENERAL PRECAUTIONS IN USE

- A. Never operate the unit when it is empty. Operating the oven with no load may shorten the life of the magnetron. Whenever cooking dry foods (dried fish, bread, etc.) or a small amount of food, be sure to put a glass of water into the cooking compartment. The turntable tray may become hot after operating, be careful when touching it.
- B. Aluminum foil should be avoided because it will disrupt cooking and may cause arcing. However, small pieces may be used to cover some parts of food to slow the cooking. Any aluminum foil used should never be closer than 2.5 cm to any side wall of the oven.

## 4. TRIAL OPERATION

After installation, the following sequences and results should be checked carefully.

- A. Put a container filled with water (about 1 liter) into the oven, and close the door tightly.
- B. Touch the STOP/CLEAR and the COOK TIME keys. "0" appears in the display window.
- C. Set cooking time for 10 minutes by touching "1" and then "0" three times. "1000" appears in the display window.
- D. Touch the START key.  
Make sure the cavity light comes on. The unit will begin cooking and the display window will show the time counting down by seconds.
- E. After about 5 minutes, make sure the primary interlock switch, the secondary interlock switch and the interlock monitor and oven lamp switch operate properly by opening and closing the door several times. Touch the START key each time the door is closed.
- F. Continue operating the unit. Two short and a long beep sound signal is heard when the time is up. The unit will shut off automatically.
- G. Confirm the water is hot.
- H. Finally, measure the output power according to "POWER OUTPUT MEASUREMENT" on page 12.

## 5. FEATURES AND SPECIFICATIONS

- A. The safety systems incorporated in this model are:
  - (1) Primary interlock switch
  - (2) Secondary interlock switch
  - (3) Interlock monitor switch
  - (4) Choke system
  - (5) Magnetron thermostat
  - (6) Oven cavity thermostat  
(Note: This thermostat located on the oven cavity will open and stop the unit from operation only if a high temperature is reached, such as, a fire created by overcooking food.)
- B. Any one of 10 power output levels ranging 70W to 700W can be selected by the touch control and electronic computer system.
- C. Cooking time can be displayed on the digital readout.
- D. Three different cooking stages can be set. The oven remembers three cooking stages and changes from one cooking stage to another. This is made possible with the memory function of the microprocessor.

### SPECIFICATIONS

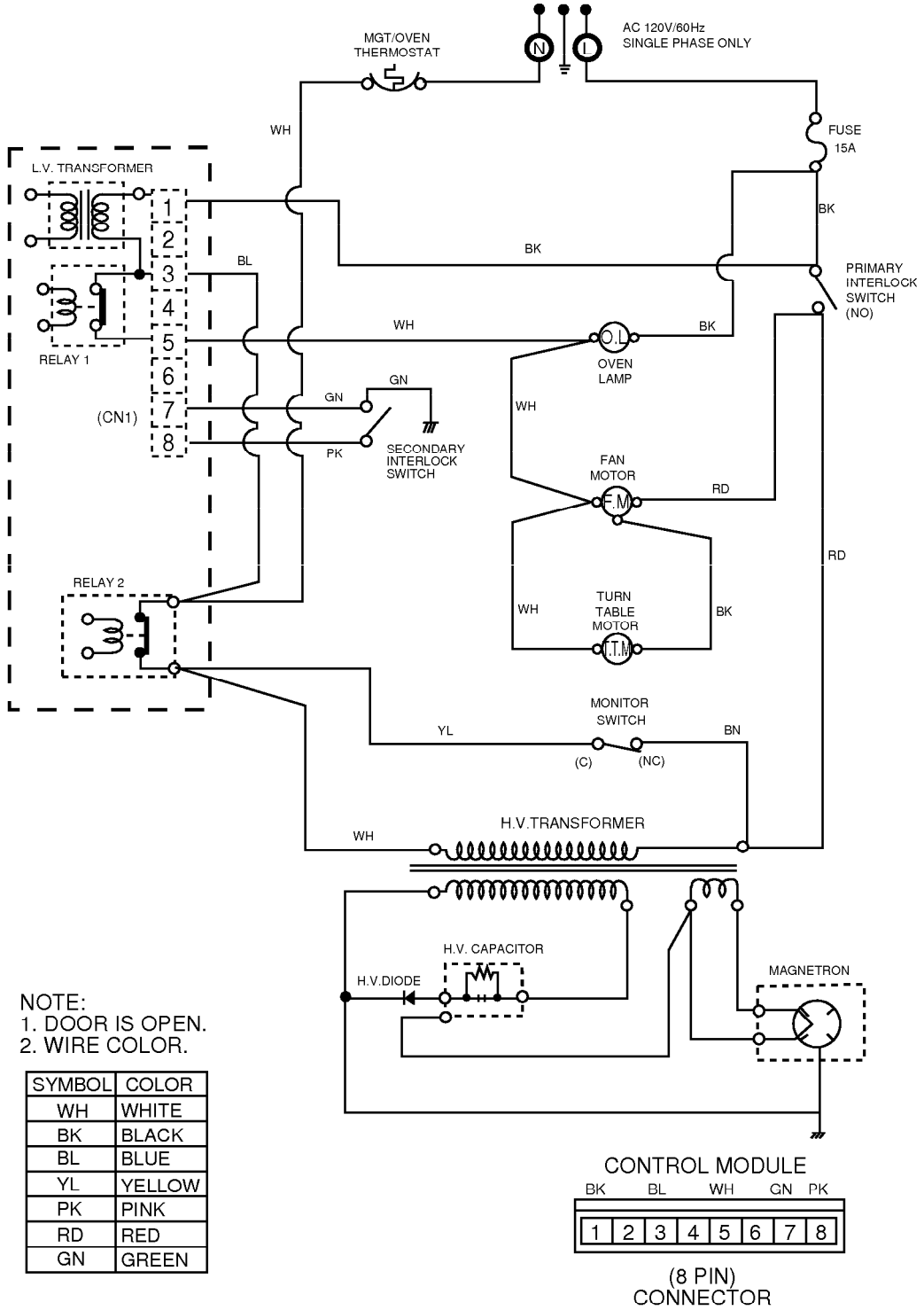
Rated Power Consumption .....	1050W maximum
Output .....	700W maximum (*IEC 705 Rating standard) Adjustable 70W through 700W, 10 steps
Frequency .....	2,450 MHz ± 50 MHz
Power Supply .....	120V ± 12V AC, 60Hz
Rated Current .....	9.3 Amp.
Magnetron Cooling .....	Forced Air Cooling
Microwave Stirring .....	Turntable
Rectification .....	Rectification Voltage Doubler Half-Wave
Door Sealing .....	Choke System
Safety Devices .....	Thermostat: Open at 90 °C ± 5 °C Open at 75 °C ± 5 °C Fuse(15A) Primary Interlock Switch Secondary Interlock Switch Interlock Monitor
Magnetron .....	2M213
High Voltage Capacitor .....	Capacitor: 0.76µF, 1.9KV Ac
High Voltage Diode .....	350mA, 9.0KV
Cavity Lamp .....	125V, 20W
Timer .....	Digital, up to 99 mm. 99 sec. (in each cooking stage)
Tray .....	Tempered Safety Glass
Overall Dimensions .....	19" (W) x 12 <sup>7</sup> / <sub>8</sub> " (D) x 11" (H)
Oven Cavity Size .....	11 <sup>3</sup> / <sub>4</sub> " (W) x 12 <sup>1</sup> / <sub>2</sub> " (D) x 7 <sup>5</sup> / <sub>8</sub> " (H)
Effective Capacity of Oven Cavity .....	0.7 Cu.ft.
Accessories .....	Use and Care Manual ,Turntable, Rotating Ring Assembly.

### SWITCH CHART

SWITCH MODE	PRIMARY INTERLOCK SWITCH	SECONDARY INTERLOCK SWITCH	INTERLOCK MONITOR SWITCH
CONDITIONS	COM NO	COM NO	COM NC
DOOR OPEN	∞	∞	0
DOOR CLOSED	0	0	∞

**NOTE:** Use the above switch chart with circuit diagram on page 6.

6. OVERALL CIRCUIT DIAGRAM  
A. SCHEMATIC DIAGRAM



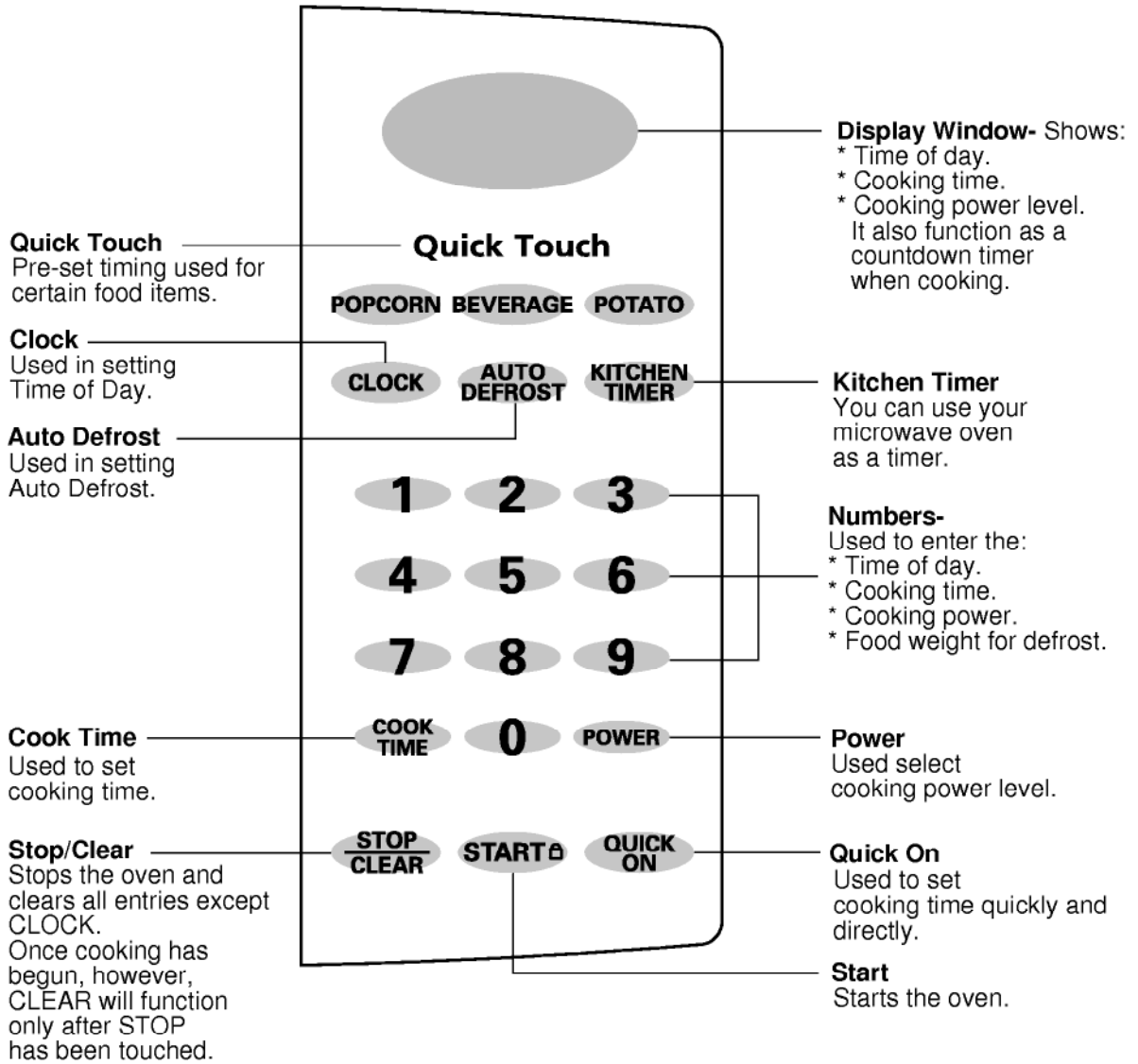


**B. MATRIX CIRCUIT FOR TOUCH KEY BOARD**

	1	2	3	4	5	6	7
8	POPCORN	N.C	N.C	POTATO	N.C	N.C	N.C
9	N.C	QUICK ON	BEVE-RAGE	N.C	N.C	N.C	N.C
10	N.C	N.C	STOP/CLEAR	START	8	9	0
11	1	2	3	4	5	6	7
12	POWER	COOK TIME	KITCHEN TIMER	CLOCK	AUTO DEFROST	N.C	N.C

**Figure 4**

**7. OPERATING PROCEDURES**  
**A. OVEN CONTROL PANEL**



**NOTE:** A "beep" sounds when you touch a "key" on the control panel, to indicate that you have entered a setting.

## B. PANEL INSTRUCTIONS (Figure 5)

The entire operation is done by simple touch control pads.

### (1) Display Window

Numbers and letters explained in Figure 5 are shown in the display window (Vacuum Fluorescent Tube).

- (a) The Time in six digits (12-hour indication): 00 Hour 00 Minute 00 Second.
- (b) Cooking Time of Day in four digits 00 Minutes 00 Seconds.
- (c) Power Control Level in two digits: P-00
- (d) Each Indicator Light shows which function is set and involved in the course of cooking by turning itself on. Indicator Lights automatically go out upon completion of cooking.

### (2) QUICK TOUCH COOKING key

Pre-set timing used for certain food item.

### (3) CLOCK Key

Used in setting Time of Day.

### (4) COOK TIME Key

The TIME key is used to set the cooking time. Touch the TIME key and then the number keys that correspond to the desired cooking time. The remaining time is continuously displayed during cooking.

### (5) STOP/CLEAR Key

Used to stop the oven or clear all entries except CLOCK.

### (6) AUTO DEFROST key (DEFROST MEAT, POULTRY & FISH)

Used in setting AUTO DEFROST.

### (7) KITCHEN TIMER Key

### (8) POWER Key

Used to select cooking power level.

### (9) QUICK ON Key

Used in setting cooking time quickly and directly.

### (10) START Key

Touch the START key after setting the desired cooking times etc. Also touch the START key to resume cooking after the cooking is temporarily stopped by opening the door. The key will not function unless the door is closed.

## C. EASY USE CHART

### (1) CLOCK

1. Touch STOP/CLEAR.
2. Touch CLOCK.
3. Touch numbers for correct time of day.
4. Touch CLOCK.

### (2) "HI-POWER" COOKING

1. Touch STOP/CLEAR.
2. Touch COOK TIME.
3. Touch numbers for desired cooking time.
4. Touch START.

### (3) "MULTI-STAGE" COOKING

1. Touch STOP/CLEAR.
2. Touch COOK TIME.
3. Touch numbers for cooking time.
4. Touch POWER.
5. Touch number for cooking power level.
6. Repeat steps 2-5 to set 2nd cooking stage.
7. Touch START.

### (4) CHILD LOCK

To set:

1. Touch STOP/CLEAR.
2. Touch "0" more than 2 seconds.

To cancel:

1. Touch STOP/CLEAR.
2. Touch "0" more than 2 seconds.

### (5) KITCHEN TIMER

1. Touch STOP/CLEAR.
2. Touch KITCHEN TIMER.
3. Touch correct numbers for time.
4. Touch START.

### (6) QUICK ON COOKING

1. Touch STOP/CLEAR.
2. Touch QUICK ON.
3. Touch number for desired minutes.

### (7) AUTO DEFROST

1. Touch STOP/CLEAR.
2. Touch AUTO DEFROST.  
Three different defrosting levels are provided.  
(MEAT, POULTRY, FISH)
3. Enter the weight of your food in decimal increments from 0.1 to 6.0 pounds.
4. Touch START
5. At beeping, turn food over by following the instructions in the manual.
6. After turning food over, touch START to resume defrosting.

### (8) QUICK TOUCH COOKING

1. Touch STOP/CLEAR.
2. Select one of categories, and then touch the key.  
**NOTE:** Do not leave oven unattended while popping corn.