Service

Commercial Microwave Oven
50hz Compact Models
starting at Serial No. 1910000000

Service Manual



This manual is to be used by qualified service technicians only. ACP, Inc. does not assume any responsibility for property damage or personal injury for improper service procedures done by an unqualified person.

ACP INC.
Accelerated Cooking Products

16400045
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IMPORTANT SAFETY INSTRUCTIONS



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

Important Safety Information. Read before using this oven.
Keep these instructions for future reference.
If the oven changes ownership, be sure this guide accompanies oven.

For additional product documentation or more detailed operating instructions visit:
www.acpsolutions.com

CONTACT INFORMATION

Any questions or to locate an authorized ACP servicer, call ACP ComServ Service Support.

–**Inside** the U.S.A. or Canada, call toll-free 866-426-2621.
–**Outside** the U.S.A. and Canada, call 319-368-8120.
–**Email:** Commercialservice@acpsolutions.com.

Warranty service must be performed by an authorized ACP servicer. ACP also recommends contacting an authorized ACP servicer, or ACP ComServ Service Support if service is required after warranty expires.

PRECAUTIONS TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

A. **DO NOT** attempt to operate this oven with the door open since open door operation can result in harmful exposure to microwave energy. It is important not to defeat or tamper with the safety interlocks.
B. **DO NOT** place any object between the oven front face and the door or allow soil or cleaner residue to accumulate on sealing surfaces.
C. **DO NOT** operate the oven if it is damaged. It is particularly important that the oven door close properly and that there is no damage to the:
   1. door (bent)
   2. hinges and latches (broken or loosened)
   3. door seals and sealing surfaces.
D. The oven should not be adjusted or repaired by anyone except properly qualified service personnel.

⚠ CAUTION To avoid risk of personal injury or property damage, observe the following safety instructions:

General Use:

1. **Do not** use regular cooking thermometers in oven. Most cooking thermometers contain mercury and may cause an electrical arc, malfunction, or damage to oven.
2. Never use paper, plastic, or other combustible materials that are not intended for cooking.
3. When cooking with paper, plastic, or other combustible materials, follow manufacturer's recommendations on product use.
4. **Do not** use paper towels which contain nylon or other synthetic fibers. Heated synthetics could melt and cause paper to ignite.
5. To avoid surface deterioration, keep the oven in a clean condition. Infrequent cleaning could adversely affect the life of the appliance and possible result in a hazardous situation.
6. Clean oven regularly and remove any food deposits.

Heating Foods and Liquids:

7. Liquids such as water, coffee, or tea are able to be overheated beyond the boiling point without appearing to be boiling due to surface tension of the liquid. Visible bubbling or boiling when the container is removed from the microwave oven is not always present. THIS COULD RESULT IN VERY HOT LIQUIDS SUDDENLY BOILING OVER WHEN A SPOON OR OTHER UTENSIL IS INSERTED INTO THE LIQUID. To reduce the risk of injury to persons:
    - Do not overheat the liquid.
    - Stir the liquid both before and halfway through heating it.
    - Do not use straight-sided containers with narrow necks.
    - After heating, allow the container to stand in the microwave for a short time before removing it.

    b. Use extreme care when inserting a spoon or other utensil into the container.
8. **Do not** deep fat fry in oven. Fat could overheat and be hazardous to handle.
9. **Do not** cook or reheat eggs in shell or with an unbroken yolk using microwave energy. Pressure may build up and erupt. Pierce yolk with fork or knife before cooking.
10. Pierce skin of potatoes, tomatoes, and similar foods before cooking with microwave energy. When skin is pierced, steam escapes evenly.
11. **Do not** heat sealed containers or plastic bags in oven. Food or liquid could expand quickly and cause container or bag to break. Pierce or open container or bag before heating
12. **Do not** heat baby bottles in oven.
13. Baby food jars shall be open when heated and contents stirred or shaken before consumption, in order to avoid burns.
14. Never use oven to heat alcohol or food containing alcohol as it can more easily catch fire if overheated.

Additional Microwave Oven Safety Instructions:

15. **Do not** operate equipment without load or food in oven cavity.
16. Use only popcorn in packages designed and labeled for microwave use. **Popping time varies depending on oven wattage.** Do not continue to heat after popping has stopped. Popcorn will scorch or burn. Do not leave oven unattended.
17. **Do not** use metal utensils in oven.
18. An authorized servicer MUST inspect equipment annually. Record all inspections and repairs for future use.

OVEN SPECIFICATIONS

⚠ CAUTION

All safety information must be followed

⚠ WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect power to oven and discharge capacitor before servicing, unless testing requires power.

Models	DEC14E2*	DEC18E2*	DEC21E2*	MCHDC521*	DEC18M/MU	DEC18MC
Power Source						
Voltage AC	230	230	230	230	230	220
Amperage (single unit)	10	15	16	16	16A/13A	16
Frequency	50HZ	50HZ	50HZ	50HZ	50HZ	50HZ
Single phase, 3 wire grounded	Yes	Yes	Yes	Yes	Yes	Yes
Power Output						
Nominal microwave energy (IEC705)	1400W	1800W	2100W	2100W	1900W	2000W
Number of Magnetrons	2	2	2	2	2	2
Operating frequency	2450 MHz	2450 MHz	2450 MHz	2450 MHz	2450 MHz	2450 MHz
Power Consumption						
Cook condition microwave	2100W	2900W	3100W	3100W	2900W	3100W
Door Style	Window	Window	Window	Window or Solid	Window	Window
Dimensions						
Cabinet						
Width	419 cm (16.5 in)	419 cm (16.5 in)	419 cm (16.5 in)	419 cm (16.5 in)	419 cm (16.5 in)	419 cm (16.5 in)
Height	343 cm (13.5 in)	343 cm (13.5 in)	343 cm (13.5 in)	343 cm (13.5 in)	343 cm (13.5 in)	343 cm (13.5 in)
Depth (includes door handle)	549 cm (21.63 in)	549 cm (21.63 in)	549 cm (21.63 in)	549 cm (21.63 in)	549 cm (22.63 in)	549 cm (22.63 in)
Oven Interior						
Width	330 cm (13 in)	330 cm (13 in)	330 cm (13 in)	330 cm (13 in)	330 cm (13 in)	330 cm (13 in)
Height	171 cm (6.75 in)	171 cm (6.75 in)	171 cm (6.75 in)	171 cm (6.75 in)	171 cm (6.75 in)	171 cm (6.75 in)
Depth	305 cm (12 in)	305 cm (12 in)	305 cm (12 in)	305 cm (12 in)	305 cm (12 in)	305 cm (12 in)
Weight						
Crated	34 kg (74 lbs)	34 kg (74 lbs)	34 kg (74 lbs)	34 kg (74 lbs)	34 kg (74 lbs)	34 kg (74 lbs)
Uncrated	31 kg (68 lbs)	31 kg (68 lbs)	31 kg (68 lbs)	31 kg (68 lbs)	31 kg (68 lbs)	31 kg (68 lbs)

Installation

Unpacking Oven

- Inspect oven for damage such as dents in door or dents inside oven cavity.
- Report any dents or breakage to source of purchase immediately. Do not attempt to use oven if damaged.
- Remove all materials from oven interior.
- If oven has been stored in extremely cold area, wait a few hours before connecting power.

Radio Interference

Microwave operation may cause interference to radio, television, or similar. Reduce or eliminate interference by doing the following:

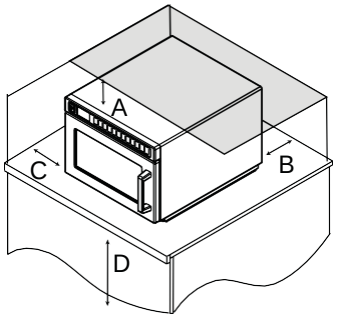
Clean door and sealing surfaces of oven according to instructions in “Care and Cleaning” section.

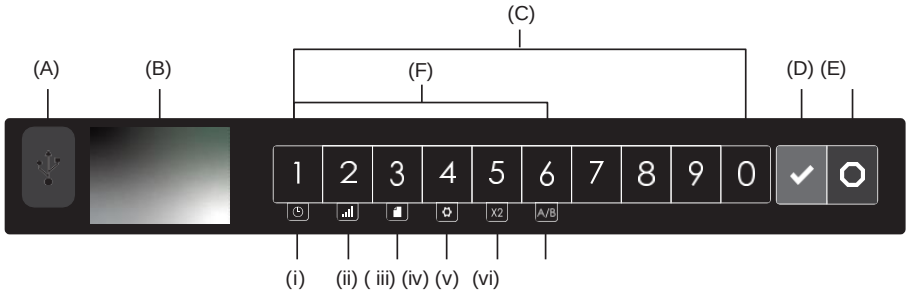
Place radio, television, wireless routers, etc. as far away as possible from oven.
Use a properly installed antenna on radio, television, etc. to obtain a stronger signal reception.

QUICK START GUIDE

Refer to Owner's Manual for Safety Statements. Complete Owner's Manual available online.

This document covers HDC*, MDC*, DEC*, MCHDC*, and CRC* models





OVEN CLEARANCES

A. Allow at least 2" (5.1 cm) of clearance around top of oven. Proper air flow around oven cools electrical components. With restricted air flow, oven may not operate properly and life of electrical parts is reduced.
B. ***General market models:*** There is not an installation clearance requirement for the back of the oven. ***HDC21RB2, MCHDC21, HDC21DQ only:*** Allow at least 1" (2.54 cm) of clearance around back of oven.
C. Allow at least 1" (2.54 cm) of clearance around sides of oven.
D. Install oven so oven bottom is at least 3 feet (91.5 cm) above floor.

CONTROL PANEL FEATURES

(A) **USB Port**
(B) **Display**
(C) **Number Keypads**
(D) **Start/ OK Keypad**
(E) **Stop/ Reset Keypad**
(F) **Secondary Function Keypads**
To activate, press and hold corresponding number keypad.
(i) ***Manual Time Entry Mode*** (keypad "1")
(ii) ***Power Level*** (keypad "2")
(iii) ***Programming Mode*** (keypad "3")
(iv) ***User Options*** (number keypad "4")
(v) ***X2 - Double Quantity Cooking*** (keypad "5")
(vi) ***Menu A/B*** (keypad "6")

Preset Program Keypads

To cook food using preprogrammed cooking sequences:

1. Open oven door, place food in oven, and close oven door.
2. Press desired number keypad(s).
3. Oven operates and time counts down.
4. At the end of the cooking cycle, the oven beeps. Carefully remove food from oven.

X2 - DOUBLE QUANTITY COOKING

1. Press and hold number keypad "5"/ X2 to toggle double quantity feature ON. "X2" appears at top center of screen when enabled.
2. Press desired number keypad(s). Display counts down cooking time for two quantities.

MENU A/B *(select models)*

Press and hold number keypad "6" to toggle between A and B menus.

So…how do I use it?

Manual Time Entry Mode

Time entry mode allows the user to manually enter cook time and power level, without changing the preset program keypads.

1. Open oven door, place food in oven, and close door.
2. Press and hold number keypad "1"/ TIME ENTRY.
3. Press number keypads to enter desired cook time.
4. Press and hold number keypad "2"/ POWER LEVEL to change power level.
   - Press number keypads to enter % microwave power ("1"=10%, "2"=20%,etc.) For 100% power level, press and hold number keypad "2"/ POWER LEVEL.
5. Press START/OK keypad to begin cooking.
6. At the end of the cooking cycle, the oven beeps. Carefully remove food from oven.

Programming Mode

1. Press and hold number keypad "3"/ PROGRAM.
2. Press number keypad(s) to open the desired program location.
3. **To edit name:** Press number keypad "0". Press number keypads to enter recipe name. Press START/OK keypad.
4. **To edit cook time** for *Stage One:* Press number keypad "1". Press number keypads to enter cook time. Press START/OK keypad.
5. **To edit power level** for *Stage One:* Press number keypad "5". Press number keypads to enter % microwave power ("1"=10%, "2"=20%,etc.). For 100% power level, press and hold number keypad "2"/ POWER LEVEL.
6. If stage cooking is desired, repeat steps 4-5 for each additional stage, substituting corresponding number keypads for each stage.
7. **To save and exit programming mode:** Press START/OK keypad.

Access and Modify User Options

There are several options you can change to customize the operation of the oven for your business. Options are shown below. **The factory setting is shown in bold type**.

1. Press and hold keypad number “4”/ USER OPTIONS.
   If prompted, enter the PIN Code and press START/OK keypad
2. Press the START/OK keypad to scroll through pages of user options
3. To access an individual user option, press the corresponding number keypad
   - To change the setting, press corresponding number keypad
   - To return to User Options Menu, press START or STOP/RESET
4. Press STOP/RESET keypad to exit User Options Menu

STANDARD DEFAULT PER MODEL (FACTORY SETTINGS IN BOLD)

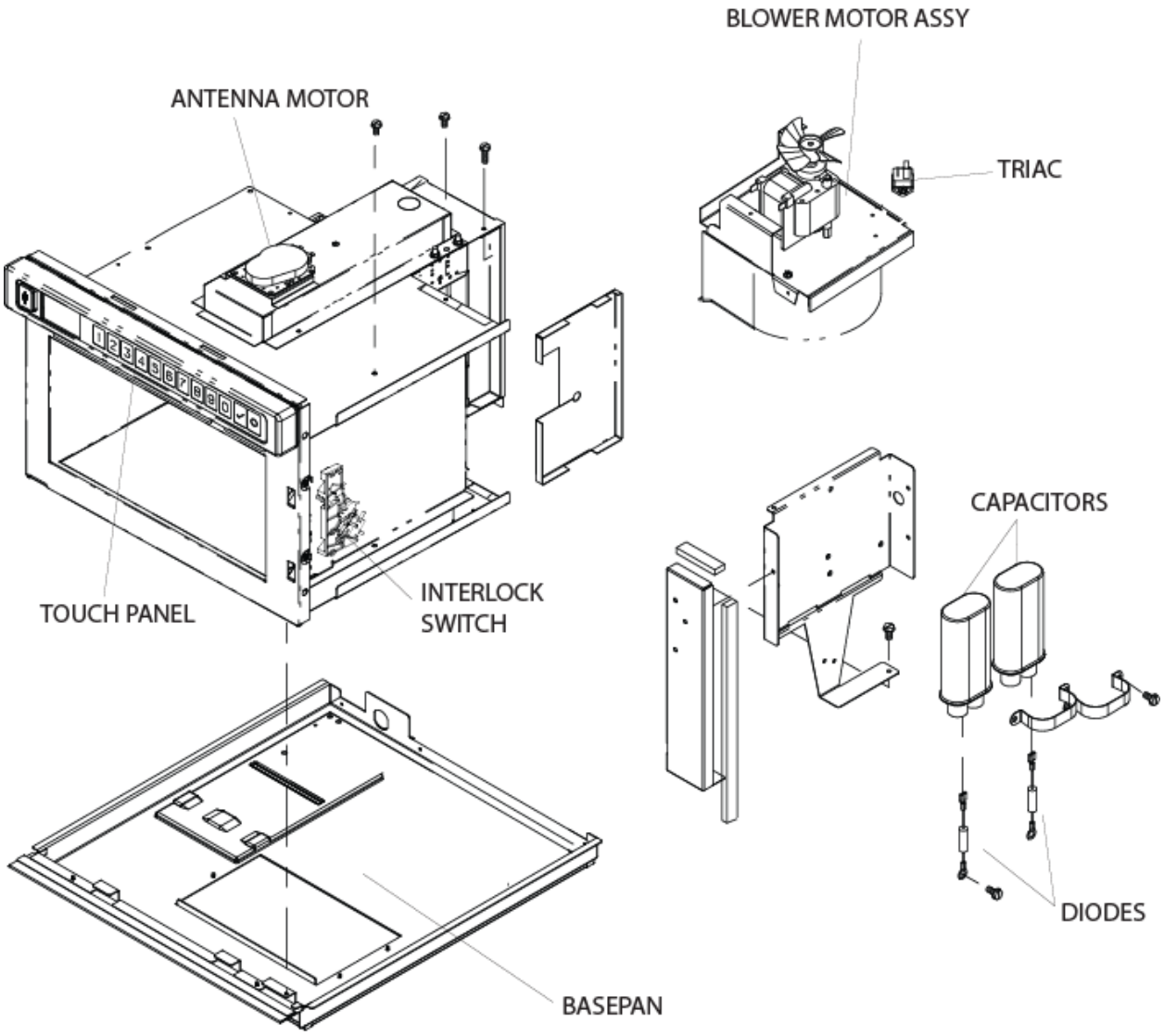
Factory setting may vary by model

SETTING	DISPLAYED OPTIONS	DESCRIPTION
End of Cycle Beep	**3 Seconds** Continuous Burst	**3 second continuous beep** Continuous beep until door is opened 5 beep bursts until door is open
Speaker Volume	Low **Medium** High	Sets volume to low **Sets volume to medium** Sets volume to high
Key Beep	**On** Off	**Allows beep when keypad is pressed** Prevents beep when keypad is pressed
Reset on Door Open	End Cook Cycle **Pause Cook Cycle**	Cancels heating time count down after door is opened during cycle. **Allows oven to resume heating time countdown after door is opened during cycle**
Digit Entry	**Single Digit** Double Digit Folders	**Allows 10 (0-9) preprogrammed items** Allows 100 (00-99) preprogrammed items Allows 10 folders (0-9), each with 10 preprogrammed items
Manual Programming	**On** Off	**Allows use of manual time entry and preprogrammed keypads** Allows use of preprogrammed keypads only
Time Entry	**On** Off	**Manual time entry/cooking allowed** Manual time entry/cooking not allowed
Maximum Cook Time	**10 minutes** 60 minutes	**Allows 10 minutes of heating time** Allows 60 minutes of heating time
Keypad Enable Window	15 seconds 30 seconds **1 minute** **2** minutes	15 seconds after oven door is opened, keyboard disabled 30 seconds after oven door is opened, keyboard disabled **1 minute after oven door is opened, keyboard disabled** 2 minutes after oven door is opened, keyboard disabled
On-the-Fly	**On** Off	**Allows pushing additional keypads to add or change time in the middle of a cook cycle** Disables pushing any additional keypads during a cook cycle
*Quantity Prompt**	On **Off**	Prompts the user for portion quantity multiplier (1-9) upon selecting a preset program **Allows user to cook individual portions and/or use X2 quantity multiplier feature**
*Default to Menu A or B**	**Menu A** Menu B	**Menu A displayed by default** Menu B displayed by default
PIN Code	**Off** On Set PIN Code	**PIN Code not required to access User Options** PIN Code required to access User Options PIN Code required. Create new 4 digit PIN Code
Language	Bengali, Chinese (Mandarin), Danish, Dutch, **English**, Filipino, French, German, Greek, Hindi, Italian, Japanese, Korean, Laotian, Norwegian, Polish, Portuguese, Romanian, Russian, Spanish, Swedish, Thai, Ukrainian, Vietnamese	
Load File	N/A	Detects USB flash drive and imports .xml format menu file

** Available on select models only (only displayed in User Options menu if factory option is enabled)*

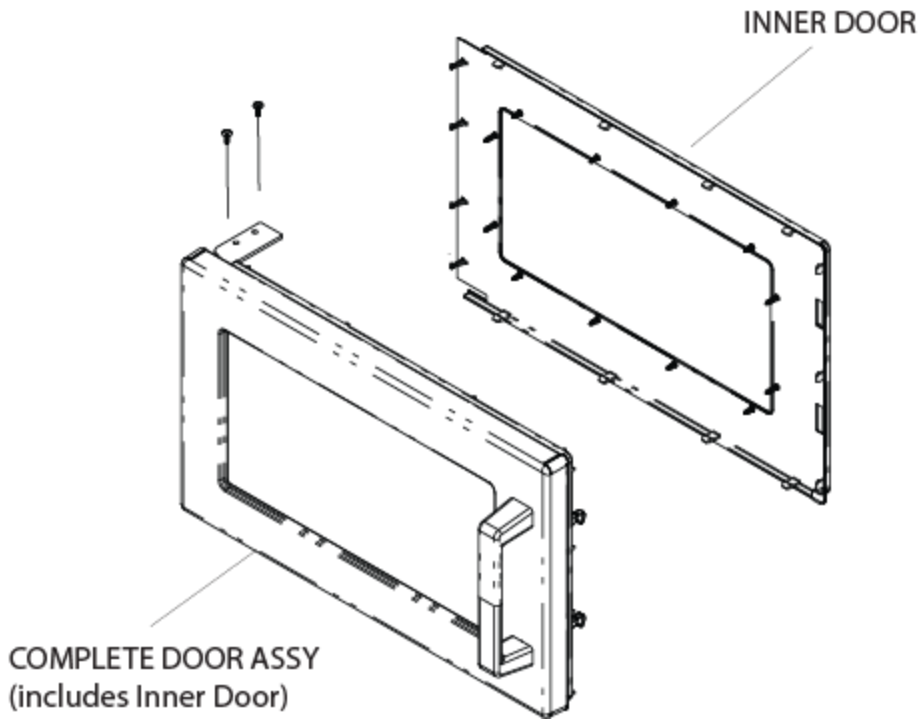
OVEN CONSTRUCTION

BLOWER, CAPACITOR, DIODE, INTERLOCK

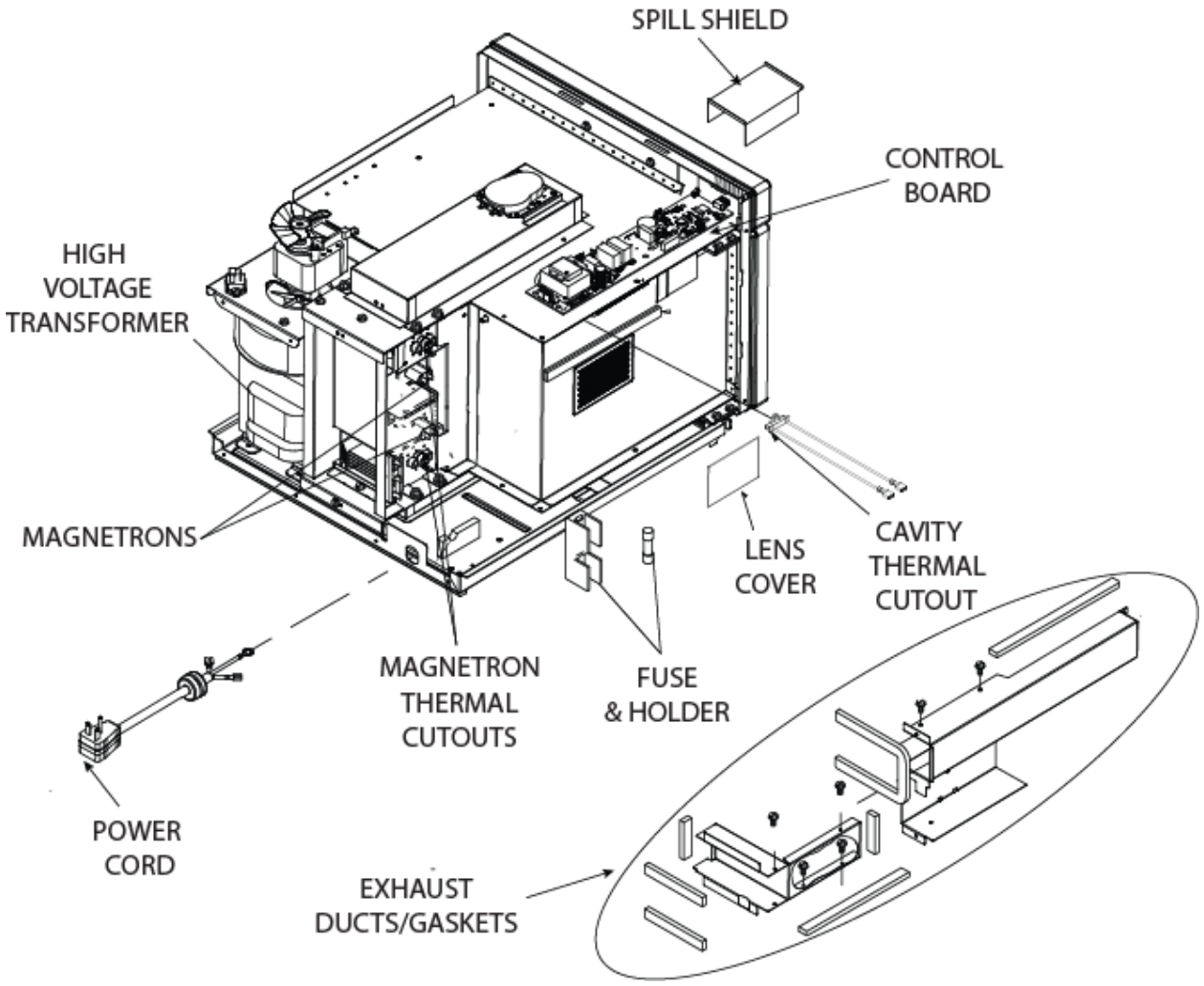


DOOR

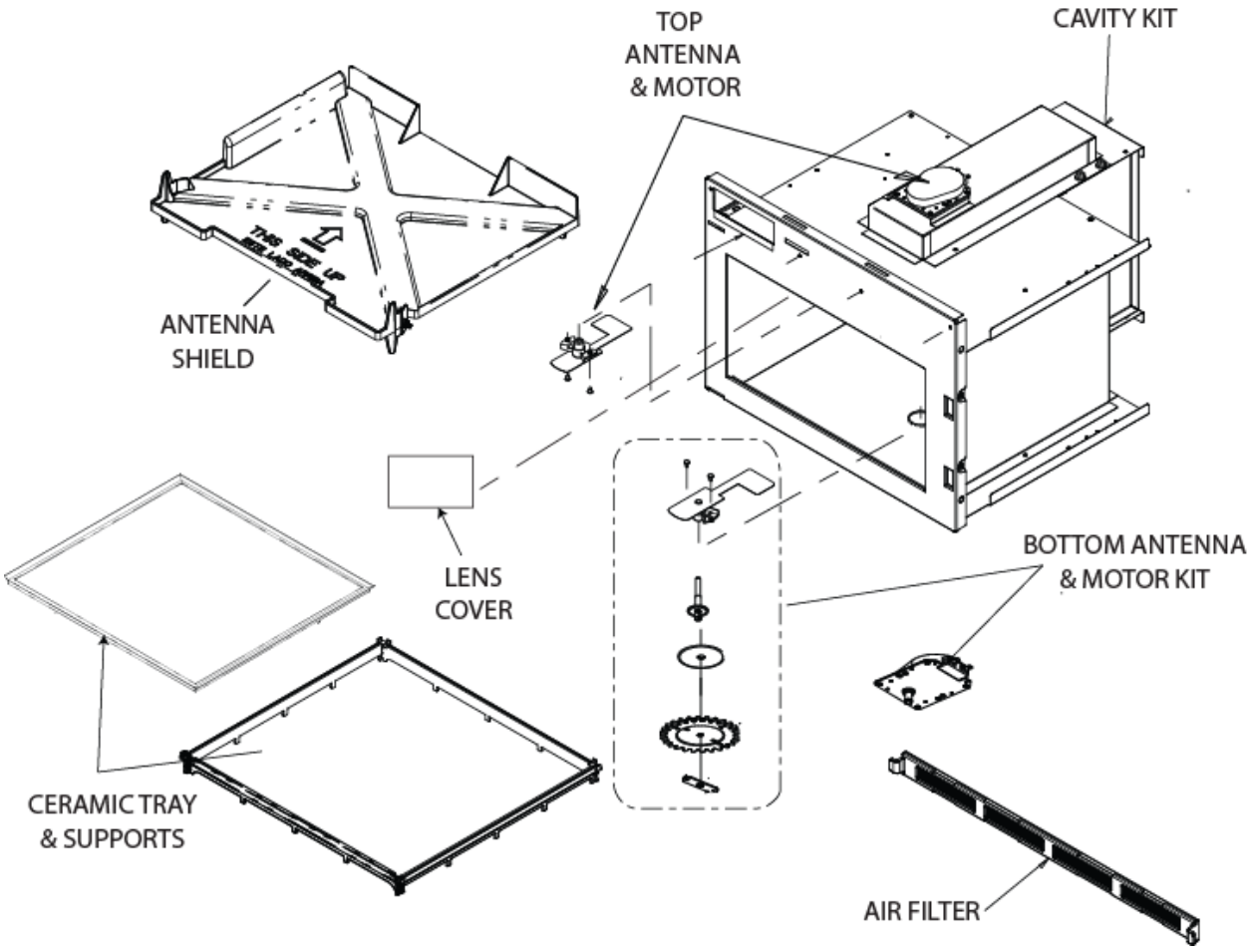
ONLY INNER DOOR OR COMPLETE DOOR AVAILABLE AS SERVICE PART



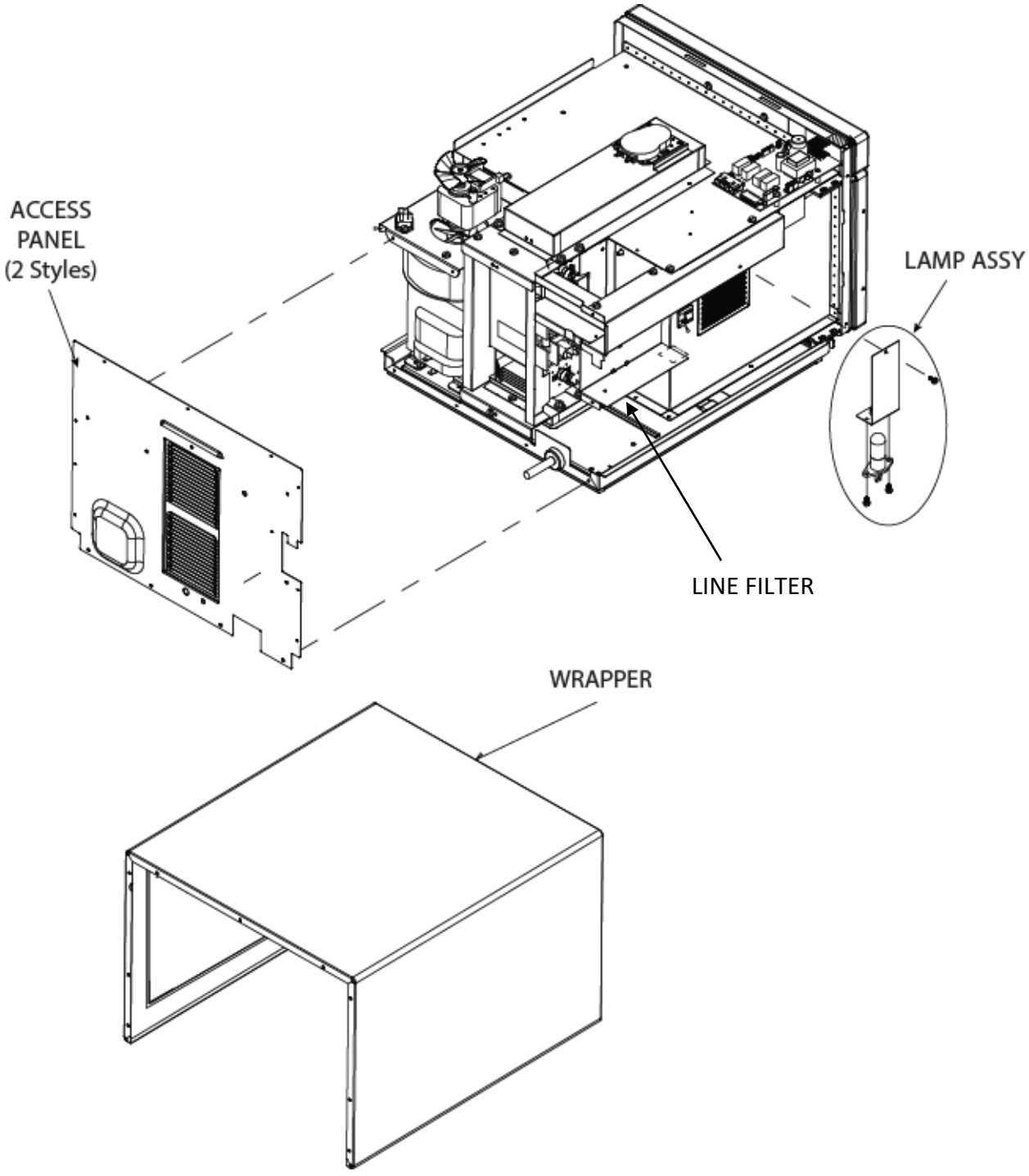
CONTROL BOARD, MAGNETRONS, DUCTS, FUSE



TRAY, CAVITY, ANTENNAS



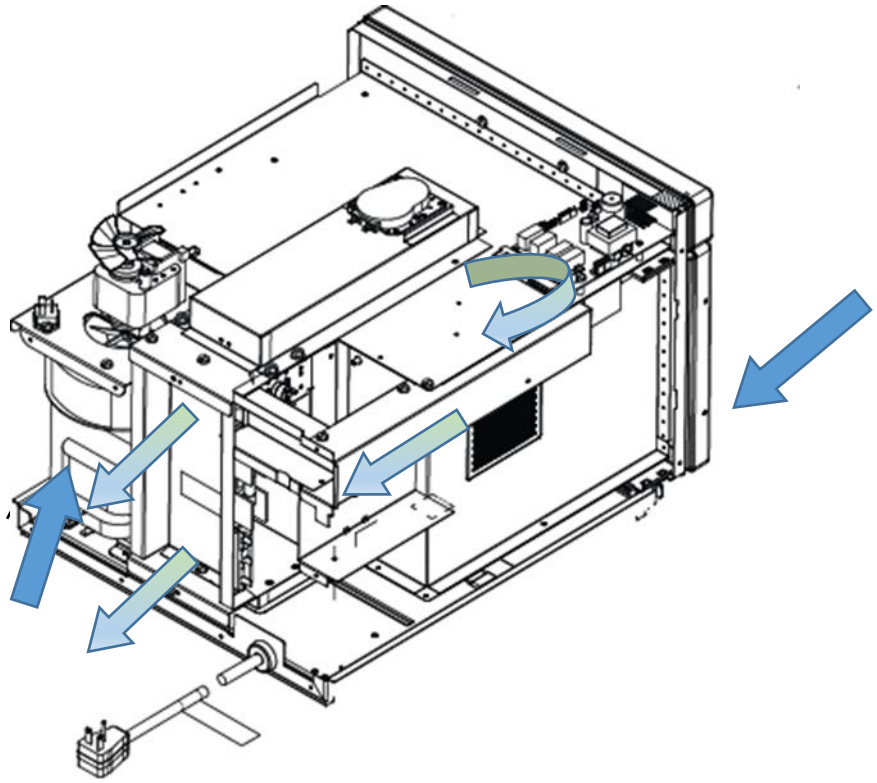
WRAPPER, ACCESS PANEL, LAMP



AIR FLOW

1. AIR ENTERS THROUGH FRONT FILTER

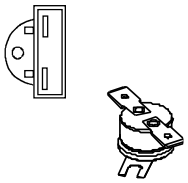
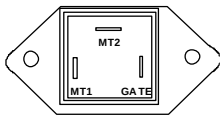
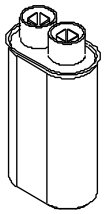
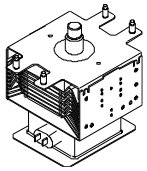
2. AIR IS DRAWN INTO BLOWER

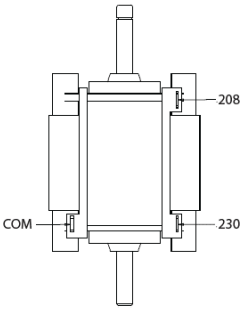
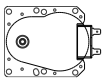
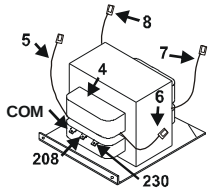
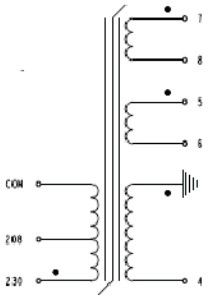
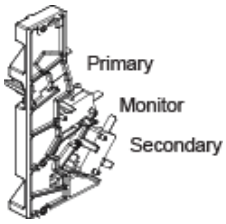


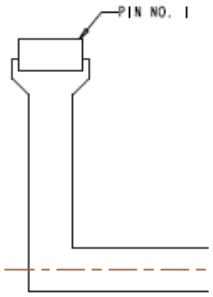
3. AIR PUSHED THROUGH MAGNETRONS

4. AIR PUSHED CAVITY AND EXITS THROUG CAVITY DUCTS

COMPONENT TESTING

Illustration	Component	Testing	Results
	Thermal Cutouts	Disconnect all wires from TCO. Measure resistance across terminals. Cavity Thermal Fuse..... Magnetron TCO	 Open at 104° C (219° F). Open at 138° C (280° F) and Closed at 82° C (180° F).
	Diodes	**Discharge Capacitors** Remove diode lead from capacitor and connect ohmmeter. Reverse leads for second test.	Infinite resistance should be measured in one direction and 50KΩ or more in the opposite direction. **NOTE:** Analog meter must contain a battery of 6 volts minimum.
	Triac	Disconnect wires to triac. Measure resistance from: MT1 to MT2 ..... MT1 to Gate..... MT2 to Gate..... All terminals to ground	**Caution - Do not operate oven with wire to terminal MT2 removed.** Infinite. Approximately 60 Ω or more. Infinite Infinite.
	Capacitor	**Discharge Capacitors** Remove wires from capacitor terminals and connect ohmmeter, set on highest resistance scale to terminals. Also check between each terminal and capacitor case.	 **Between Terminals:** Meter should momentarily deflect towards zero then return to over 5 MΩ. If no deflection occurs, or if continuous deflection occurs, replace capacitor. **Terminal to Case:** Infinite resistance. **ALWAYS USE CORRECT SIZE**
	Snubber Assembly	Disconnect wires to snubber. Measure resistance across terminals..	 Infinite.
	Magnetron	**Discharge Capacitors** Remove wires from magnetron and connect ohmmeter to terminals. Also check between each terminal and ground.	**Between Terminals:** Less than 1 Ω. Each terminal to ground measures Infinite resistance. **NOTE:** This test is not conclusive. If oven does not heat and all other components test good replace the magnetron and

			retest.
	Blower Motor	Remove all wires from motor. Measure resistance COM to 208 Measure resistance COM to 230 Measure resistance 208 to 230	 Approx 23Ω Approx 26Ω Approx 3Ω
	Stirrer Motor- 25RPM	Remove all wires from motor. Measure coil resistance	 Approximately 25k Ω.
	Transformer 	Discharge Capacitor Remove all wires from terminals, and measure resistance from: 230 to Common…… 208 to Common…… Terminal 5 to 6…….. Terminal 7 to 8…… Terminal 4 to Ground …….	 <1 Ω. n/a <1 Ω. <1Ω 38Ω ±10%
	Interlock Switch Assembly	Disconnect wires to switch. With door open measure resistance from: Primary – Terminals……. Monitor – Terminals……. Secondary – Terminals…… With door closed measure resistance from: Primary – Terminals……. Monitor – Terminals……. Secondary – Terminals……	 Open/Infinite Ω Closed/Continuity Open/Infinite Ω Closed/Continuity Open/Infinite Ω Closed/Continuity

	Touch Panel Assembly	Disconnected from Main Board 	**Pad** **Traces** 1 1 to 8 to 10 0-150Ω 2 1 to 7 to 10 0-150Ω 3 1 to 6 to 10 0-150Ω 4 1 to 5 to 10 0-150Ω 5 1 to 4 to 10 0-150Ω 6 1 to 3 to 10 0-150Ω 7 1 to 8 to 9 0-150Ω 8 1 to 7 to 9 0-150Ω 9 1 to 6 to 9 0-150Ω 0 1 to 5 to 9 0-150Ω Start 1 to 4 to 9 0-150Ω Stop 1 to 4 to 8 0-150Ω

SERVICE MODE

TO ACCESS THE SERVICE MODE:

- PRESS AND HOLD THE “7” PAD UNTIL THE PIN PROMPT IS DISPLAYED
- AT THE PIN PROMPT, ENTER 1,3,5,7 then 9 THEN SELECT FROM THE FOLLOWING:
    - 1 – USAGE

      This shows Door Cycles, Tube Cycles, and Tube Hours.
    - 2 - ERROR HISTORY

      This shows any Error Codes that have occurred
    - 3 - PIN CODE

      This reveals the 4 digit PIN code required for programming (if enabled)
    - 4 - VOLTAGE SWITCHING (not available on 120vac units)

      Allows selection of Forced 208, Sensing (Auto Sense), or Forced 230
    - 5 - EXPORT TO USB

      This option requires a USB be inserted. Files that contain USAGE, OPTIONS & ENGINEERING SETTINGS, MENU PROGRAMMING, and ERROR CODES will be downloaded.

  NOTE: Pressing the grey “stop” pad will navigate backwards.

FOR CONTROL BOARD REPLACEMENT

1. Disconnect Power and Remove the Oven's Wrapper
2. Disconnect J1, J11, J8, PK, VT (if), BU, RD, and the Touch Panel Membrane Connectors from the Control Board – **leave the small Display Connector installed otherwise it may be damaged.**

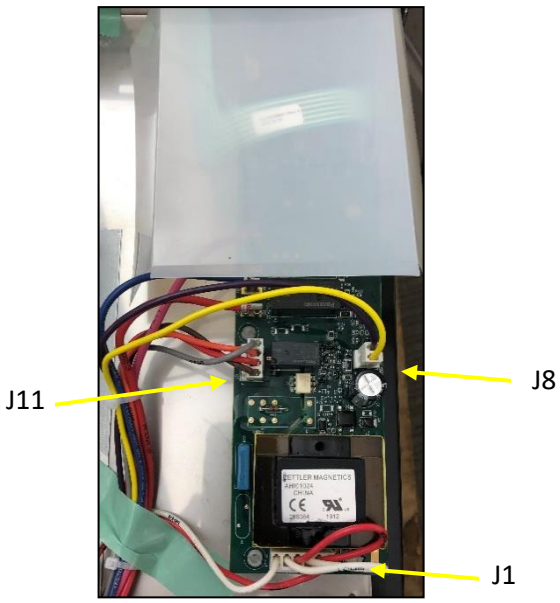


Figure 1

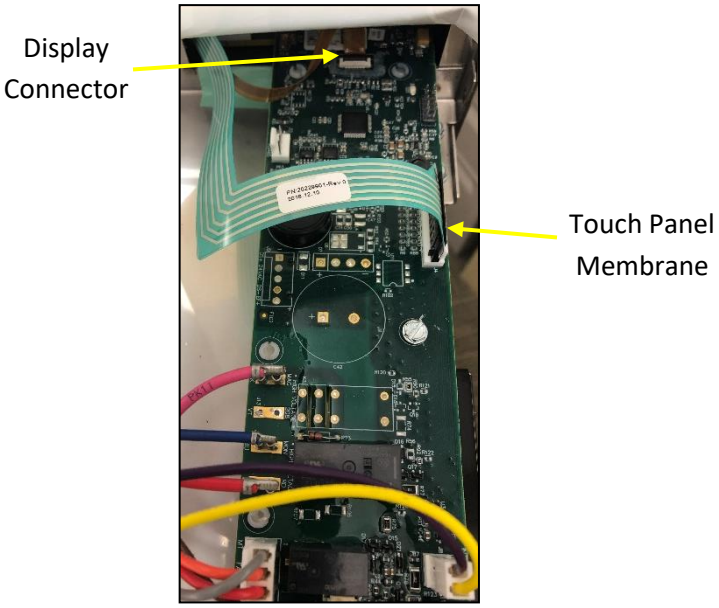
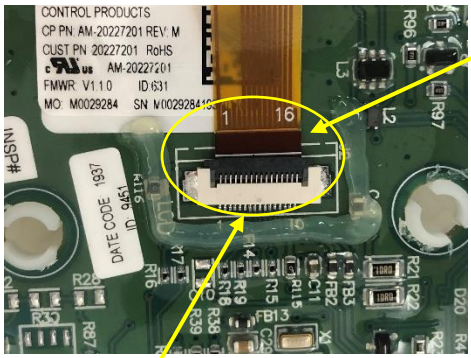


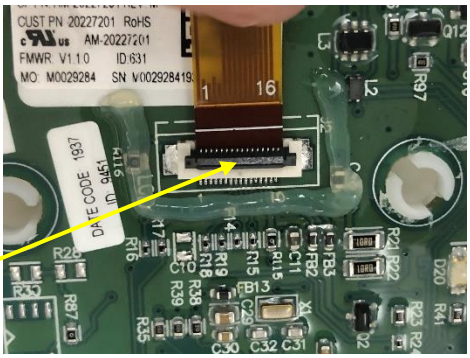
Figure 2

3. Loosen the Control Board's Mounting Screw and slide the board backwards being careful not to pull on the small Display Connector.

4. Lift the small, black Display Connector locking tab to release the Display Ribbon and slide the Display Ribbon out of the connector as shown in **Figure 3**



Closed



Lift to Open

Cover this area with Dielectric Grease

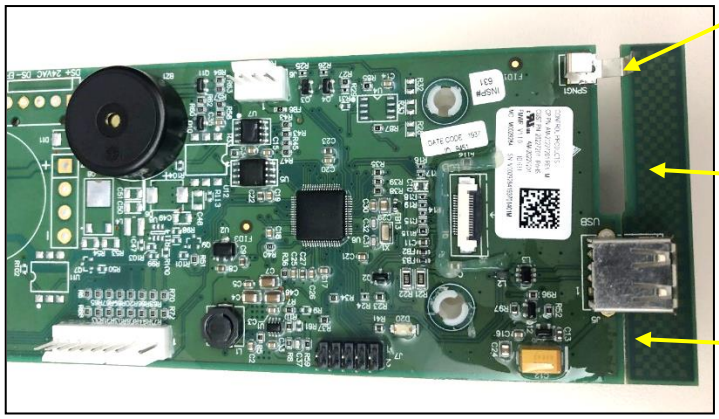


Bottom Side of Display Connector

Note: Solid side of connector faces up.

5. See **Figure 4**--Break protective strip (not USB port!) off new control board and place new Control Board in postion to reinstall the Display Connector.
6. Apply Dielectric Grease over connector in the area shown in **Figure 3** to protect the connection and terminals from moisture.

Figure 4



Grounding Clip

Break and Discard

Break here

7. Slide Control Board into position and ensure the Grounding Clip is making full contact with the Touch Panel Assembly as shown in **Figure 5**

Grounding Clip

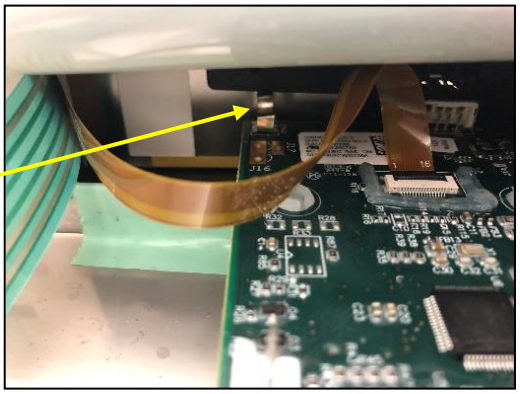


Figure 5

8. Reinstall Control Board Mounting Screw and reconnect Wiring and Connectors.

FOR TOUCH PANEL/DISPLAY REPLACEMENT ONLY

1. Disconnect Power and Remove the Oven's Wrapper
2. Disconnect J1 and the Touch Panel Membrane Connectors from the Control Board – **leave the small Display Connector installed otherwise it may be damaged. See Figure 1.**
3. Loosen the Control Board's Mounting Screw and slide the board backwards being careful not to pull on the small Display Connector.
4. Lift the small, black Display Connector locking tab to release the Display Ribbon and slide the Display Ribbon out of the connector as shown in **Figure 3**
5. Remove the 4 Touch Panel securing Screws and install the new Touch Panel/Display Assembly
6. Slide Control Board in position and reinstall the Display Connector.
7. Apply Dielectric Grease over connector as shown in **Figure 3**
8. Slide Control Board into position and ensure the Grounding Clip is making full contact with the Touch Panel Assembly as shown in **Figure 5**.
9. Reinstall Control Board Mounting Screw and reconnect Wiring and Connectors.

POWER OUTPUT TEST

All Amana and Menumaster microwave oven power outputs are rated using the IEC705 standards. Using the IEC705 test method requires precision measurements and equipment that is not practical to be performed in the field. Using the test shown below will indicate if the oven performance is satisfactory.

Test equipment required:

- 1000 ml test container and thermometer (Amana power test kit Fahrenheit / Menumaster power test kit Celsius).
- Digital watch / watch with a second hand for use on ovens with electromechanical timers.

Important Notes:

- Low line voltage will cause low temperature rise / power output.
- Ovens must be on a dedicated circuit, properly grounded, and polarized. Other equipment on the same circuit may cause a low temperature rise / power output.
- This test and results are not a true IEC705 test procedure and are only intended to provide servicers with an easy means of determining if the microwave oven cooking output is correct.

Procedure

1. Fill the test container to the 1000 ml line with cool tap water.

NOTE: Water temperature should be approximately 60° F / 16° C.

2. Using the thermometer, stir water for five to ten seconds; measure, and record the temperature (T1).
3. Place test container of water in the center of oven cavity and close door.
4. Heat the water for a 33-second full power cycle.

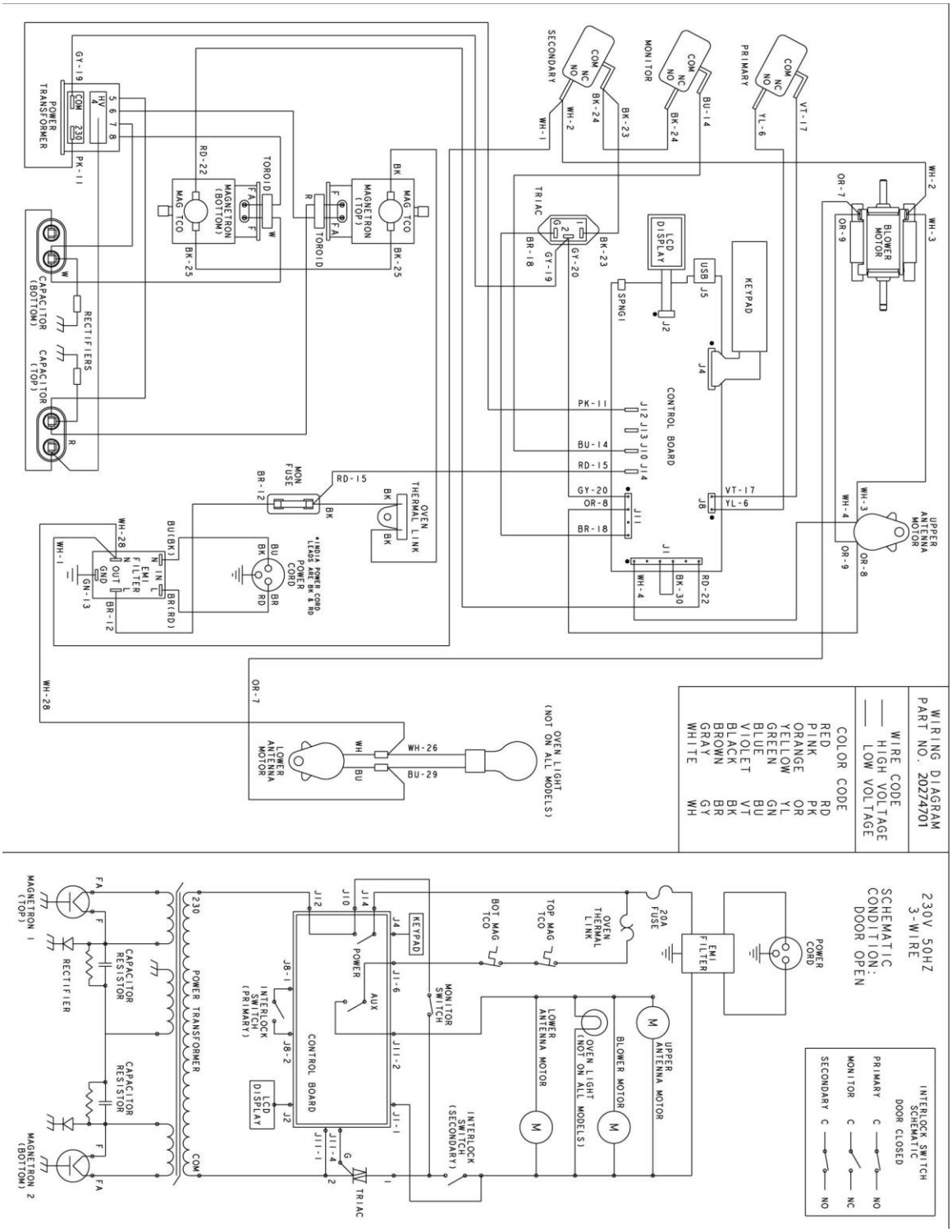
NOTE: Use a digital watch or a watch with a second hand for ovens with electromechanical timers.

1. At end of the cycle, remove test container. Using the thermometer, stir water for five to ten seconds and record temperature (T2).
2. Subtract the starting water temperature (T1), from the ending water temperature (T2) to obtain the temperature rise (ΔT).
3. If the temperature rise (ΔT) meets or exceeds the minimum, the test is complete. If the temperature rise (ΔT) fails to meet the minimum temperature rise, test the line voltage to verify it is correct. Then repeat steps 1-6 making sure to change the water. If the temperature rise (ΔT) fails to meet the minimum temperature rise again the oven will require service.

Minimum Temperature Rise at Thirty-Three (33) Seconds Run Time

ΔT (°F)	Cooking Power Output	ΔT (°F)	Cooking Power Output	ΔT (°C)	Cooking Power Output	ΔT (°C)	Cooking Power Output
10	1000	20	2000	5	1000	11	2000
11	1100	21	2100	5.5	1100	11.5	2100
12	1200	22	2200	6.5	1200	12	2200
14	1400	24	2400	7.5	1400	13	2400
17	1700	25	2500	9.5	1700	13.5	2500
18	1800	27	2700	10	1800	15	2700
19	1900	30	3000	10.5	1900	16.5	3000

WIRING AND SCHEMATIC DIAGRAMS



DEC18E2*	**P2007020M thru P2007024M**
DEC18M*	**P2007033M thru P7002036M**
DEC21E2*	**P2007026M & P2007038**
MCHDC521*	**P2007027M thru P2007029M**