

SHARP SERVICE MANUAL

S11M442SMD249

CONVECTION MICROWAVE DRAWER MODEL



SMD2499FS

In the interest of user-safety the unit should be restored to its original condition and only parts identical to those specified should be used.

WARNING TO SERVICE PERSONNEL:

This service manual is intended for use by persons having electrical and mechanical training and a level of knowledge of these subjects generally considered acceptable in the appliance repair trade. SHARP ELECTRONICS CORPORATION cannot be responsible, nor assume any liability, for injury or damage of any kind arising from the use of this manual.

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SHARP ELECTRONICS CORPORATION

This document has been published to be used for after sales service only. The contents are subject to change without notice.

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 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.

BEFORE SERVICING

Before servicing an operative unit, perform a microwave emission check as per the Microwave Measurement Procedure outlined in this service manual.

If microwave emissions level is in excess of the specified limit, contact SHARP ELECTRONICS CORPORATION immediately @1-800-237-4277.

TO ACCESS INTERNET: <http://www.sharpusa.com/Support.aspx>

If the unit operates with the door open, service person should 1) tell the user not to operate the oven and 2) contact SHARP ELECTRONICS CORPORATION and Food and Drug Administration's Center for Devices and Radiological Health immediately.

Service personnel should inform SHARP ELECTRONICS CORPORATION of any certified unit found with emissions in excess of $4\text{mW}/\text{cm}^2$. The owner of the unit should be instructed not to use the unit until the oven has been brought into compliance.

WARNING TO SERVICE PERSONNEL


Microwave Oven units contain circuitry capable of producing very high voltage and current, contact with following parts may result in a severe, possibly fatal, electrical shock.

(Example)

High Voltage Capacitor, High Voltage Power Transformer, Magnetron, High Voltage Rectifier Assembly, High Voltage Harness, Heating Elements, etc..

Read the Service Manual carefully and follow all instructions.

Before Servicing

1. Disconnect the power supply cord , and then remove cabinet.
2. Open the drawer and keep it open.
3. Discharge high voltage capacitor.

**WARNING: RISK OF ELECTRIC SHOCK.
DISCHARGE THE HIGH-VOLTAGE
CAPACITOR BEFORE SERVICING.**

The high-voltage capacitor remains charged about 60 seconds after the oven has been switched off. Wait for 60 seconds and then short-circuit the connection of the high-voltage capacitor (that is the connecting lead of the high-voltage rectifier) against the chassis with the use of an insulated screwdriver.

Whenever troubleshooting is performed the power supply must be disconnected. It may, in some cases, be necessary to connect the power supply after the outer case has been removed, in this event:

1. Disconnect the power supply cord, and then remove necessary covers.
2. Open the drawer and keep it open.
3. Discharge high voltage capacitor.
4. Disconnect the leads to the primary of the power transformer.
5. Ensure that the leads remain isolated from other components and oven chassis by using insulation tape.
6. After that procedure, reconnect the power supply cord.

When the testing is completed,

1. Disconnect the power supply cord, and then remove covers.
2. Open the drawer and keep it open.
3. Discharge high voltage capacitor.
4. Reconnect the leads to the primary of the power transformer.
5. Reinstall the covers.
6. Reconnect the power supply cord.
7. Run the unit and check all functions.

After repairing

1. Reconnect all leads removed from components during testing.
2. Reinstall the covers.
3. Reconnect the power supply cord.
4. Run the oven and check all functions.

Microwave ovens should not be operated empty. To test for the presence of microwave energy within a cavity, place a cup of cold water on the oven tray, close the drawer and set the power to HIGH and set the microwave timer for two (2) minutes. When the two minutes has elapsed (timer at zero) carefully check that the water is now hot. If the water remains cold carry out **Before Servicing** procedure and re-examine the connections to the component being tested.

When all service work is completed and the oven is fully assembled, the microwave power output should be checked and a microwave leakage test should be carried out.

MICROWAVE MEASUREMENT PROCEDURE

A. Requirements:

- 1) Microwave leakage limit (Power density limit): The power density of microwave radiation emitted by a microwave oven should not exceed $1\text{mW}/\text{cm}^2$ at any point 5cm or more from the external surface of the oven, measured prior to acquisition by a purchaser, and thereafter (through the useful life of the oven), $5\text{mW}/\text{cm}^2$ at any point 5cm or more from the external surface of the oven.
- 2) Safety interlock switches:
Primary interlock relay switch shall prevent microwave radiation emission in excess of the requirement as above mentioned. Secondary interlock relay and door sensing switch shall prevent microwave radiation emission in excess of $5\text{mW}/\text{cm}^2$ at any point 5cm or more from the external surface of the oven.

B. Preparation for testing:

Before beginning the actual measurement of leakage, proceed as follows:

- 1) Make sure that the actual instrument is operating normally as specified in its instruction booklet.

Important:

Survey instruments that comply with the requirement for instrumentation as prescribed by the performance standard for microwave ovens, 21 CFR 1030.10(c)(3)(i), must be used for testing.

- 2) Place the load of 275 ± 15 ml (9.8 oz) of tap water initially at $20\pm 5^\circ\text{C}$ (68°F) in the center of the oven cavity.
The water container shall be a low form of 600 ml (20 oz) beaker with an inside diameter of approx. 8.5 cm (3-1/2 in.) and made of an electrically nonconductive material such as glass or plastic.
The placing of this standard load in the oven is important not only to protect the oven, but also to insure that any leakage is measured accurately.
- 3) Set the cooking control on Full Power Cooking Mode.
- 4) Close the drawer and select a cook cycle of several minutes. If the water begins to boil before the survey is completed, replace it with 275 ml of cool water.

C. Leakage test:

Closed-drawer leakage test (microwave measurement):

- 1) Grasp the probe of the survey instrument and hold it perpendicular to the gap between the drawer and the body of the oven.
- 2) Move the probe slowly, not faster than 1 in./sec. (2.5 cm/sec.) along the gap, watching for the maximum indication on the meter.
- 3) Check for leakage at the drawer screen, sheet metal seams and other accessible positions where the continuity of the metal has been breached (eg., around the switches, indicator, and vents).
While testing for leakage around the drawer, pull the drawer away from the front of the oven as far as is permitted by the closed latch assembly.
- 4) Measure carefully at the point of highest leakage and make sure that the highest leakage is no greater than $4\text{mW}/\text{cm}^2$, and that the primary interlock switch/secondary interlock relay does turn the oven OFF before any door movement.

NOTE: After servicing, record data on service invoice and microwave leakage report.

SERVICE MANUAL

SHARP

CONVECTION MICROWAVE DRAWER

SMD2499FS

FOREWORD

This Manual has been prepared to provide Sharp Electronics Corp. Service Personnel and Service Information for the **CONVECTION MICROWAVE DRAWER**.

It is recommended that service personnel carefully study the entire text of this manual so that they will be qualified to render satisfactory customer service.

Check the interlock switches and the door seal carefully. Special attention should be given to avoid electrical shock and microwave radiation hazard.

WARNING

Never operate the oven until the following points are ensured.

- (A) The door is tightly closed.
- (B) The door brackets and hinges are not defective.
- (C) The door packing is not damaged.
- (D) The door is not deformed or warped.
- (E) There is not any other visible damage with the oven.

Servicing and repair work must be carried out only by trained service personnel.

DANGER

Certain initial parts are intentionally not grounded and present a risk of electrical shock only during servicing. Service personnel - Do not contact the following parts while the appliance is energized; High Voltage Capacitor, Power Transformer, Magnetron, High Voltage Rectifier Assembly, High Voltage Harness; If provided, Vent Hood, Fan assembly, Cooling Fan Motor.

All the parts marked “**” on parts list are used at voltages more than 250V.

Removal of the outer wrap gives access to voltage above 250V.

All the parts marked “Δ” on parts list may cause undue microwave exposure, by themselves, or when they are damaged, loosened or removed.

**SHARP ELECTRONICS CORPORATION
100 PARAGON DRIVE
MONTVALE NJ 07645**

<http://www.sharpusa.com/>

CONVECTION MICROWAVE DRAWER SPECIFICATION

| ITEM | DESCRIPTION |
|--|---|
| Power Requirements | 120 Volts (USA) 14.2 Amperes (Microwave) / 13.0 Amperes (Convection) 60 Hertz / Single phase, 3 wire grounded |
| Microwave Power Output | 900 watts (IEC 705 Test Procedure) Operating frequency of 2450MHz |
| Power Consumption | Microwave - 1700 W Convection - 1560 W |
| Convection Power Output | 1450 Watts |
| Case Dimensions | Width 23 12/32" Height 19 20/32" Depth 22 8/32" |
| Cooking Cavity Dimensions (1.4 Cubic Feet) | Width 16 30/32" Height 8 24/32" Depth 16 22/32" |
| Control Complement | <p>Touch Control System Timer (0 - 99 min. 99 seconds) Microwave Power for Variable Cooking Repetition Rate;</p> <p>P-HI Full power throughout the cooking time P-90..... approx. 90% of Full Power P-80..... approx. 80% of Full Power P-70..... approx. 70% of Full Power P-60..... approx. 60% of Full Power P-50..... approx. 50% of Full Power P-40..... approx. 40% of Full Power P-30 approx. 30% of Full Power P-20..... approx. 20% of Full Power P-10..... approx. 10% of Full Power P-0..... No power throughout the cooking time</p> <p>Convection Operation TOP CONVECTION 1000 W GRILL CONVECTION..... 500 W x 3 - TTL 1500 W REAR..... 1500 W</p> <p>Convection: Bake/Warm, Roast, Grill/Toast, More Menus, Speed Cook, Air Fry</p> <p>Microwave: Popcorn, Reheat, Cook, More Menus, Defrost, Open/Close, Stop/Clear, Start/+30 sec, Power Level, Timer/Settings, Number Keys with Convection Temp settings.</p> |
| Oven Cavity Light | LED x 2 |
| Remote Start | Wi-Fi connect by way of "Sharp Kitchen" App. |
| Weight | 128 lbs |
| Safety Standard | UL Listed FCC Authorized DHHS Rules, CFR, Title 21, Chapter 1, Subchapter J |

GENERAL INFORMATION

GROUNDING INSTRUCTIONS

This oven is equipped with a three prong grounding plug. It must be plugged into a wall receptacle that is properly installed and grounded in accordance with the National Electrical Code and local codes and ordinances.

In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current.

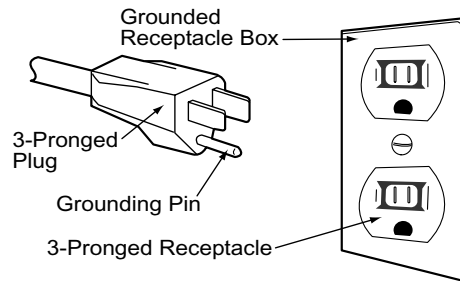
WARNING: Improper use of the grounding plug can result in a risk of electric shock.

Electrical Requirements

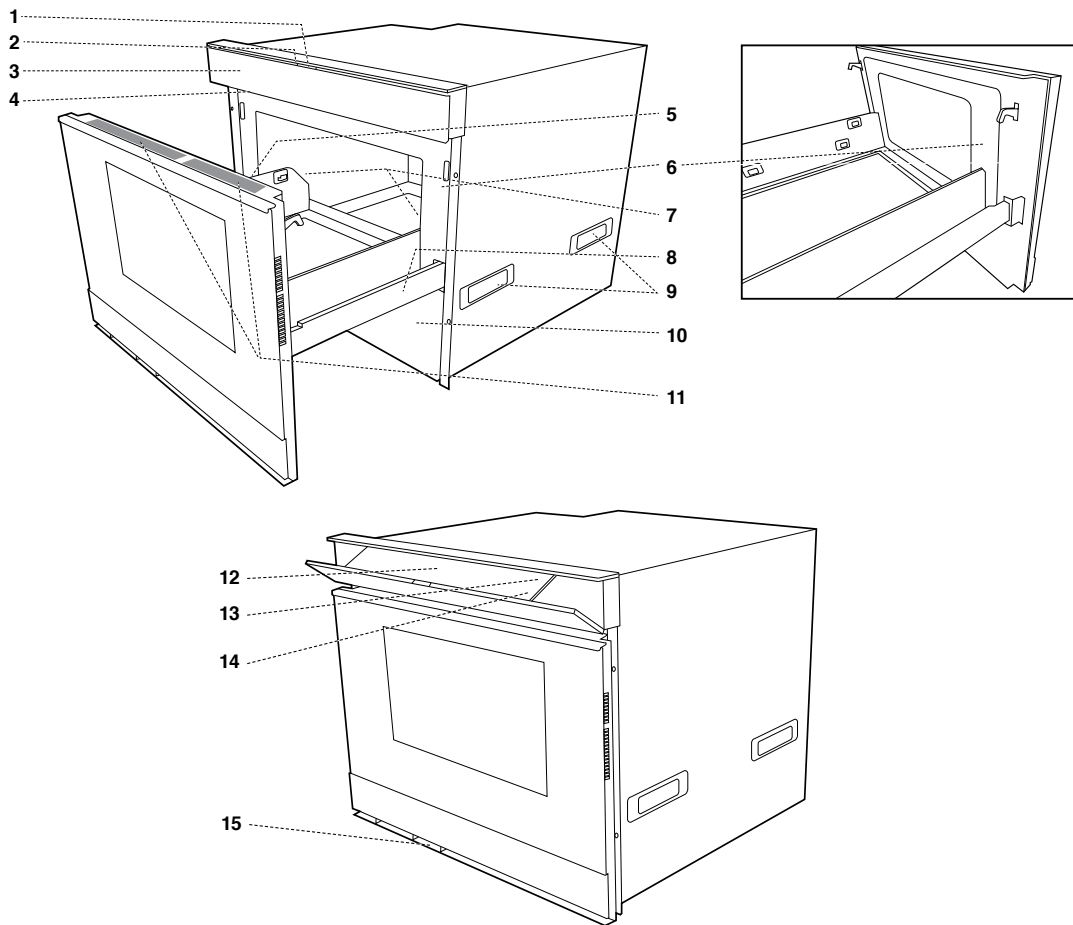
The electrical requirements are a 120 volt 60 Hz, AC only, 15 or 20 amp. fused electrical supply. It is recommended that a separate circuit serving only this appliance be provided. When installing this appliance, observe all applicable codes and ordinances.

Where a two-pronged wall-receptacle is encountered, it is the personal responsibility and obligation of the customer to contact a qualified electrician and have it replaced with a properly grounded three-pronged wall receptacle or have a grounding adapter properly grounded and polarized. If an extension cord must be used, it should be a 3-wire, 15 amp. or higher rated cord. Do not drape over a counter top or table where it can be pulled on by children or tripped over accidentally.

CAUTION: DO NOT UNDER ANY CIRCUMSTANCES CUT OR REMOVE THE ROUND GROUNDING PRONG FROM THIS PLUG. ALSO, "DO NOT USE AN EXTENSION CORD".

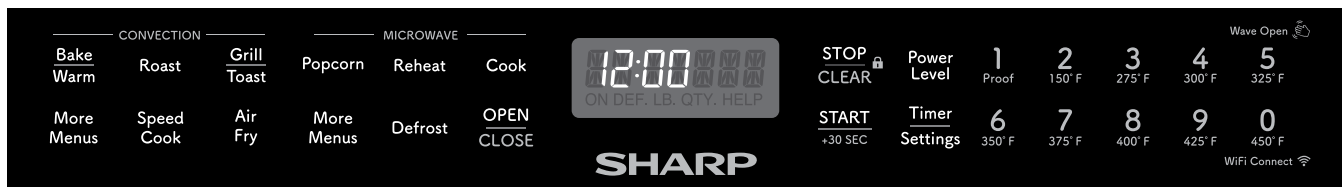


OVEN DIAGRAM



- | | |
|---|--------------------------------------|
| 1 Easy Wave Open indicator | 8 Convection Microwave Drawer guides |
| 2 Wi-Fi indicator | 9 Hand holes |
| 3 Hidden control panel door | 10 Vent |
| 4 Easy Wave Open sensor | 11 Menu labels |
| 5 Nameplate: Open the Convection Microwave Drawer fully. The label is located at the bottom left side of the oven face plate. | 12 Glass touch control |
| 6 Drawer sealing surfaces | 13 Easy Wave Open button |
| 7 Drawer lights | 14 Wi-Fi Connect button |
| | 15 Built-In flush mount |

KEY SHEET



NOTE:

The "START/+30 SEC" feature is disabled after 3 minutes when the oven is not in use. This feature is automatically enabled when the door is opened and closed.

OPERATION

DESCRIPTION OF OPERATING SEQUENCE

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

OFF CONDITION

Closing the door activates the door sensing switch and primary interlock switch. (In this condition, the monitor switch contacts are opened.)

When oven is plugged in, 120 volts A.C. is supplied to the control unit. (Figure O-1).

1. The display will show "ENJOY YOUR OVEN TOUCH CLEAR".

To set any program or set the clock, you must first touch the STOP/CLEAR pad. The display will clear, and ":" will appear.

NOTE: When the door is opened, the oven lamp comes on.

2. A signal is input to the control unit, energizing the coil of shut-off relay (RY-11 and RY-12). RY-11 and RY-12 contacts close, completing a circuit to the damper motor. The damper motor now operates moving the damper to the open position, thereby closing the contacts of the damper switch inputs a signal to the control unit. The coil of relay RY-11 and RY-12 is de-energized, opening its contacts, there by turning off the damper motor.

MICROWAVE COOKING CONDITION

Program desired cooking time Variable Cooking Control by touching the NUMBER pads and the power level pad.

When the START pad is touched, the following operations occur:

When the START pad is touched, the following operations occur:

1. The contacts of relays are closed, and components connected to the relays are turned on as follows.

| RELAY | CONNECTED COMPONENTS |
|-------|---|
| RY1 | High voltage transformer and all heating elements |
| RY2 | High voltage transformer |
| RY9 | Stirrer motor |
| RY10 | Fan motor |
| RY14 | MG Fan motor |

2. 120 volts A.C. is supplied to the primary winding of the power transformer and is converted to about 3 volts A.C. output on the filament winding, and approximately 2360 volts A.C. on the high voltage winding.
3. The filament winding voltage heats the magnetron filament and the H.V. winding voltage is sent to a voltage double circuit.
4. The microwave energy produced by the magnetron is channeled through the waveguide into the cavity feedbox, and then into the cavity where the food is placed to be cooked.
5. Upon completion of the cooking time, the power transformer, oven lamp, etc. are turned off, and the generation of microwave energy is stopped. The oven will revert to the OFF condition.

6. When the door is opened during a cook cycle, third door switch (only Canada model), monitor switch, door sensing switch, the secondary interlock relay and the primary interlock switch are activated with the following results.

The circuits to the stirrer motor and the high voltage components are de-energized, the oven lamp remains on, and the digital read-out displays the time remaining in the cook cycle when the door was opened.

7. The monitor switch is electrically monitoring the operation of the secondary interlock relay (RY1) and the primary interlock switch and is mechanically associated with the door so that it will function in the following sequence:

(1) When the door opens from a closed position, the door sensing switch and the primary interlock switch open their contacts, and then the monitor switch contacts close and then the third door switch (only Canada model) contacts open.

(2) When the door is closed from the open position, the monitor switch contacts open, and the third door switch (only Canada model) contacts close first, and then the contacts of the primary interlock switch and the door sensing switch close. If the secondary interlock relay (RY1) and the primary interlock switch fail with their contacts closed when the door is opened, the closing of the monitor switch contacts will form a short circuit through the monitor fuse, the secondary interlock relay (RY1) and the primary interlock switch, causing the monitor fuse to blow.

POWER LEVEL P-0 TO P-90 COOKING

When Variable Cooking Power is programmed, the 120 volts A.C. is supplied to the power transformer intermittently through the contacts of relay (RY-1). RY-1 is operated by the control unit within a varying time base. Microwave power operation is as follows:

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

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

HEATER (BAKE/ROAST/GRILL) COOKING CONDITION**"PREHEATING CONDITION"**

Program desired convection temperature by touching the BAKE/ROAST/GRILL pad and touch "1" key and the Temperature pad. Program desired cooking time by touching the Number pads.

(NON-PREHEATING COOKING: touch "2" key and the temperature pad, and cooking time by touching number key pads.)

When the START pad is touched, the following operations occur:

1. The coil of shut-off relays (RY10 and RY14) are energized, MG cooling fan motor and cooling fan motor are turned on. Top convection motor is turned on also. But power of this motor is DC24V. DC motor is not controlled by relay.
2. The coil of relay (RY11/RY12) is energized by the control unit. The damper is moved to the closed position, closing the damper switch contacts. The closing of the damper switch contacts sends a signal to the LSI on the control unit de-energizing the relay (RY11/RY12) and opening the circuit to the damper motor.
3. The coil of heater relay (RY1, RY3, RY4 and RY7) is energized by the control unit and the main supply voltage is applied to the heating element.
4. When the oven temperature reaches the selected preheat temperature, the following operations occur:
 - 4-1 The heater relay is de-energized by the control unit temperature circuit and top convection thermistor, opening the circuit to the heating element.
 - 4-2. The oven will continue to function for 20 minutes, turning the heater on and off, as needed to maintain the selected preheat temperature. The oven will shut down completely after 20 minutes.

HEATER (BAKE/ROAST/GRILL) COOKING CONDITION

When the preheat temperature is reached, a beep signal will sound indicating that the holding temperature has been reached in the oven cavity. Open the door and place the food to be cooked in the oven.

When the START pad is touched, the following operations occur:

1. The numbers on the digital read-out start to count down to zero.
2. The oven lamp, MG cooling fan motor, cooling fan motor and convection motor are energized.
3. Heater relay (Note1) is energized (if the cavity temperature is lower than the selected temperature) and the main supply voltage is applied to the heating element to return to the selected cooking temperature.
4. Upon completion of the cooking time, the audible signal will sound, and oven lamp and convection motor are de-energized. At the end of the convection cycle, if the cavity air temperature is above 248°F, the circuit to RY10/RY14 will be maintained (by the thermistor circuit) to continue operation of the cooling fan motor until the temperature drops below 221 F, at which time the relay will be de-energized, turning off the fan motor. However, as soon as the convection cycle has ended, turning off the top convection fan motor.

5. At the end of the convection cook cycle, shut-off relay (RY11/RY12) is energized turning on the damper motor. The damper is returned to the open position, opening the damper switch contacts which send a signal to the control unit, de-energizing shut-off relay (RY11/RY12).

Note 1

| | |
|-------|--------------------------------------|
| Bake | RY1, RY3, RY6 |
| Roast | RY1, RY3, RY4, RY7, or RY1, RY3, RY6 |
| Grill | RY1, RY3, RY5, RY8 |

SPEED COOKING CONDITION

Touch the Speed Cook pad first. And then program desired cooking mode by touching the Number pads.

SENSOR COOKING CONDITION

Using the SENSOR COOK function, the foods are cooked without figuring time, power level or quantity. When the oven senses enough steam from the food, it relays the information to its microprocessor which will calculate the remaining cooking time and power level needed for best results.

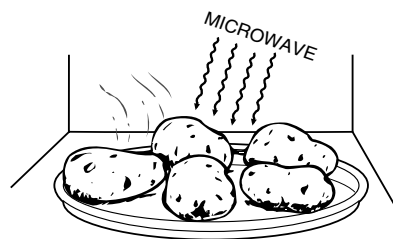
When the food is cooked, water vapor is developed. The sensor "senses" the vapor and its resistance increase gradually. When the resistance reaches the value set according to the menu, supplementary cooking is started.

The time of supplementary cooking is determined by experiment with each food category and inputted into the LSI. An example of how sensor works:

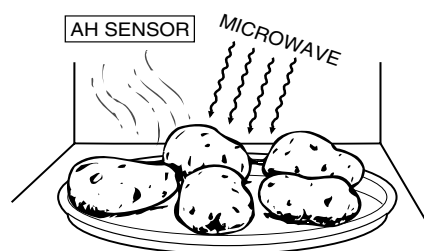
1. Potatoes at room temperature. Vapor is emitted very slowly.



2. Heat potatoes. Moisture and humidity are emitted rapidly. You can smell the aroma as it cooks.



3. Sensor detects moisture and humidity and calculates cooking time and variable power.



Cooking Sequence.

1. Touch SENSOR COOK pad.

NOTE:

The oven should not be operated on SENSOR COOK immediately after plugging in the unit.

Wait two minutes before cooking on SENSOR COOK.

2. Select desired Sensor setting.
3. Touch START pad.
The coil of shut-off relay (RY10, RY14) is energized, the MG fan motor and cooling fan motor are turned on, but the power transformer is not turned on.
4. After about 16 seconds, the cook relay (RY-1) is energized.
The power transformer is turned on, microwave energy is produced, and first stage is started.
The 16 seconds is the cooling time required to remove any vapor from the oven cavity and sensor.

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

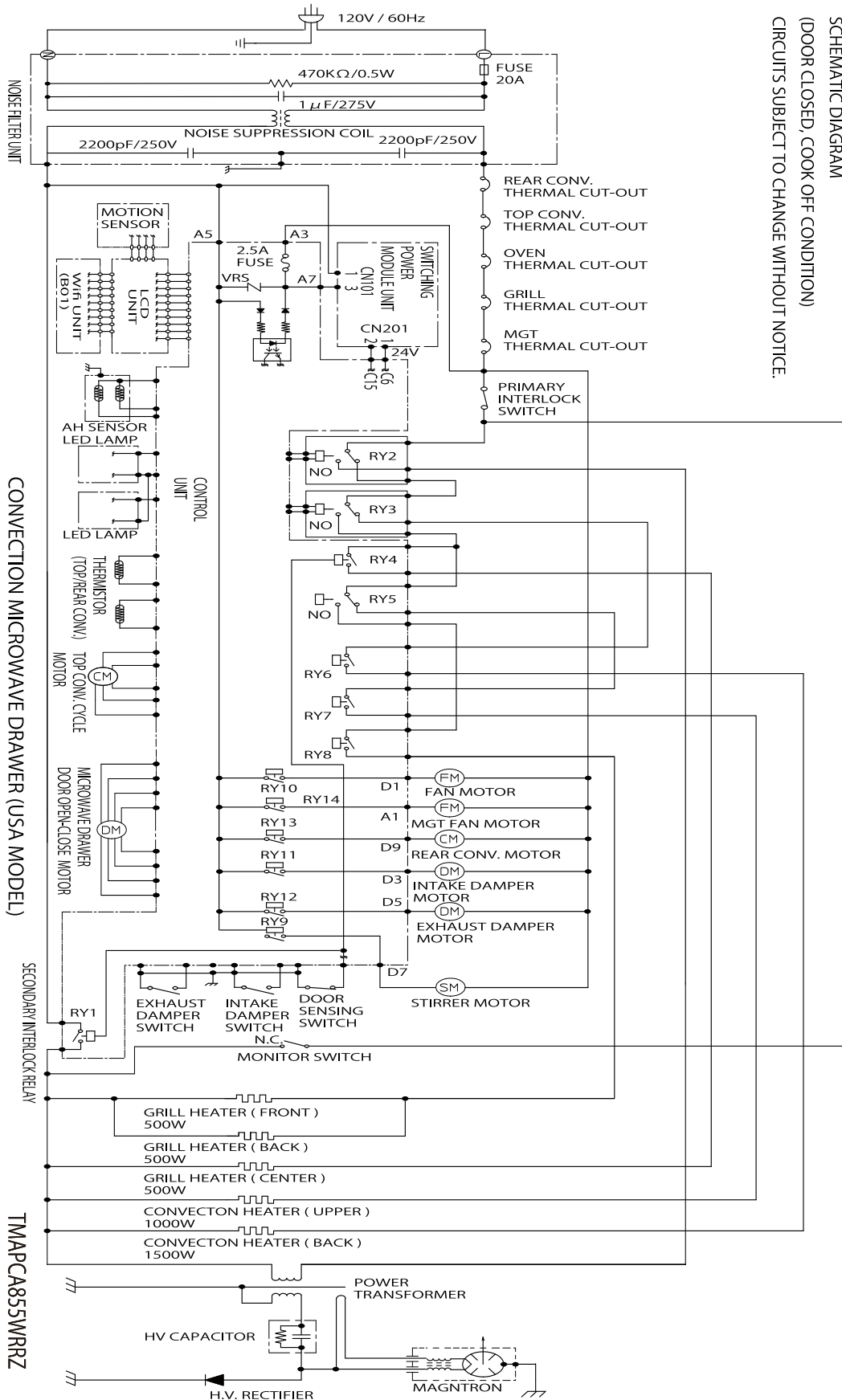
5. When the sensor detects the vapor emitted from the food, the display switches over to the remaining cooking time and the timer counts down to zero. At this time, the door may be opened to stir food, turn it or season, etc.
6. When the timer reaches zero, an audible signal sound.
The shut-off relay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

EASY WAVE OPEN

Below are criteria for wave sensor to open drawer.

1. Motion sensor function requires 2 consecutive hand waves.
2. Each hand wave must completely clear the motion sensor view.
3. The second hand wave must be less than 2 sec interval from the first hand wave.
4. The second hand wave must be more than 100ms interval from the first hand wave.
5. Duration of each hand wave in front of the sensor view must be less than 250ms.
6. The distance of hand should be less than 4 inches away from surface of door. The effective distance is reduced if skin color is darker. (For the best results, use the side of the hand with the lightest skin pigments/color)

SCHEMATIC (OFF CONDITION)



SCHEMATIC DIAGRAM
(DOOR CLOSED, COOK OFF CONDITION)
CIRCUITS SUBJECT TO CHANGE WITHOUT NOTICE.

REMOTE CONNECTION PROBLEMS

If the Convection Microwave Drawer is not working remotely, perform the following steps:

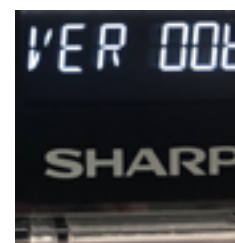
Verify that the Wi-Fi indicator light is solid Blue.

- 1) If there is no Blue light, then there is a connection problem.
- 2) Try **Step 1** below to see where the connection problem may be.
- 3) Refer to [Page 18 for Indicator Lens and Color Legend](#).



Fig 1

Example only



←
Test results
here

↑ Fig 2
Wi-Fi indicator light

←
Wave/Cooking
indicator light

STEP 1

Check the Wi-Fi Software to see where the problem may be.

Use the following Test Mode for error check procedure:

NOTE FOR TEST MODE: You have to press the #5 to advance to the next display screen check.

Press the following buttons:

Stop/Clear - Timer/Settings - Power Level (2 times) - Start/+30 SEC, then press the #5 key to advance to each display screen check. (Fig 1)

Each press of #5 key will show the below display in the LED screen when checking (Fig 2).

VER 021 —————> Version #

L : 03 (strong), 02 (Middle), 01 (Weak), 00 (out of Service)

R : 00000 (larger this value, the stronger between Wi-Fi adapter & router)

Flash between : 3 00 & 0

Flash between : 0 0 & 0000

Flash between : 3 00 & 4

} N/A

PC : 00000000 —————> If anything else besides all zero's - REPLACE WIRELESS ADAPTER PWB

WC : 00000000 —————> If anything else besides all zero's - ROUTER ERROR

CC : 00000000 —————> If anything else besides all zero's - CLOUD SERVER ERROR

NOTE: for PC, WC & CC, All ZERO'S EQUAL NO ERROR

STEP 2

Verify connection by performing the following steps:

1) Steps to reconnecting to the oven.

- a) Verify that the "Sharp Kitchen" App is still installed on the phone and/or tablet.
 - 1) Reinstall if missing and follow steps to connect to the Convection Microwave Drawer oven.
- b) Open the "Sharp Kitchen" App and verify that you see the Convection Microwave Drawer oven connection.
 - 1) Reconnect if you do not see the Convection Microwave Drawer oven
- c) Check the Wi-Fi modem status is ok and that there is internet connection.
 - 1) First check if there is internet connection.
 - 2) If there is internet connection, check and see if the phone or tablet is connected to the Wi-Fi. Also, verify that the correct Wi-Fi is connected.
 - 3) If you do not see the Wi-Fi, try reconnecting and if this fails, you may have to reboot the modem.
- d) Final steps to connect
 - 1) If all the above fails, completely uninstall the "Sharp Kitchen" App .
 - 2) Follow steps to connect per Quick Connect and/or Operation Manual.
 - 3) If you still cannot connect by following the steps above, the Wireless Adapter may be defective and will have to be replaced.
 - 4) **Before ordering the Wireless Adapter, contact Sharp Customer Service and explain why you are having to order a new Wireless Adapter due to non-connection using the "Sharp Kitchen" App.**

TROUBLESHOOTING GUIDE

Never touch any part in the circuit with your hand or an uninsulated tool while the power supply is connected.

When troubleshooting the microwave oven, it is helpful to follow the Sequence of Operation in performing the checks. Many of the possible causes of trouble will require that a specific test be performed. These tests are given a procedure letter (A ~ R) which will be found in the "Test Procedure" section ([starting on Page 15](#)).

IMPORTANT: If the oven becomes inoperative because of a blown monitor fuse, check the primary switch, and monitor switch, before replacing the monitor fuse. If the monitor fuse is replaced, the monitor switch must also be replaced.

IMPORTANT: Whenever troubleshooting is performed with the power supply cord disconnected. It may in, some cases, be necessary to connect the power supply cord after the outer case has been removed, in this event,

1. Disconnect the power supply cord, and then remove outer case.
2. Open the door and block it open.
3. Discharge high voltage capacitor.
4. Disconnect the leads to the primary of the power transformer.
5. Ensure that the leads remain isolated from other components and oven chassis by using insulation tape.
6. After that procedure, reconnect the power supply cord.

When the testing is completed

1. Disconnect the power supply cord, and then remove outer case.
2. Open the door and block it open.
3. Discharge high voltage capacitor.
4. Reconnect the leads to the primary of the power transformer.
5. Reinstall the outer case (cabinet).
6. Reconnect the power supply cord after the outer case is installed.
7. Run the oven and check all functions.

TEST PROCEDURES

| PROCEDURE LETTER | COMPONENT TEST |
|---------------------|----------------|
|---------------------|----------------|

A MAGNETRON ASSEMBLY TEST

HIGH VOLTAGES ARE PRESENT DURING THE COOK CYCLE, SO EXTREME CAUTION SHOULD BE OBSERVED.

DISCHARGE THE HIGH VOLTAGE CAPACITOR BEFORE TOUCHING ANY OVEN COMPONENTS OR WIRING.

To test for an open filament, isolate the magnetron from the high voltage circuit. A continuity check across the magnetron filament leads should indicate less than 1 ohm.

To test for a shorted magnetron, connect the ohmmeter leads between the magnetron filament leads and chassis ground. This test should indicate an infinite resistance. If there is little or no resistance the magnetron is grounded and must be replaced.

Power output of the magnetron can be measured by performing a water temperature rise test. This test should only be used if above tests do not indicate a faulty magnetron and there is no defect in the following components or wiring: silicon rectifier, high voltage capacitor and power transformer. This test will require a 16 ounce (453cc) measuring cup and an accurate mercury thermometer or thermocouple type temperature tester. For accurate results, the following procedure must be followed carefully:

1. Fill the measuring cup with 16 oz. (453cc) of tap water and measure the temperature of the water with a thermometer or thermocouple temperature tester. Stir the thermometer or thermocouple through the water until the temperature stabilizes. Record the temperature of the water.
2. Place the cup of water in the oven. Operate oven at POWER HI(HIGH) selecting more than 60 seconds cook time. Allow the water to heat for 60 seconds, measuring with a stop watch, second hand of a watch or the digital read-out countdown.
3. Remove the cup from the oven and again measure the temperature, making sure to stir the thermometer or thermocouple through the water until the maximum temperature is recorded.
4. Subtract the cold-water temperature from the hot water temperature. The normal result should be 22 to 43°F (12.2 to 23.8°C) rise in temperature. If the water temperatures are accurately measured and tested for the required time period the test results will indicate if the magnetron tube has low power output (low rise in water temperature) which would extend cooking time or high power output (high rise in water temperature) which would reduce cooking time. Because cooking time can be adjusted to compensate for power output, the magnetron tube assembly should be replaced only if the water temperature rise test indicates a power output well beyond the normal limits. The test is only accurate if the power supply line voltage is 117 volts and the oven cavity is clean.

B POWER TRANSFORMER TEST

DISCHARGE THE HIGH VOLTAGE CAPACITOR BEFORE TOUCHING ANY OVEN COMPONENTS OR WIRING.

Disconnect the primary input terminals and measure the resistance of the transformer with an ohmmeter. Check for continuity of the coils with an ohmmeter. On the R x 1 scale, the resistance of the primary coil should be less than 1 ohm and the resistance of the high voltage coil should be approximately 79.5 ohms; the resistance of the filament coil should be less than 1 ohm.

(HIGH VOLTAGES ARE PRESENT AT THE HIGH VOLTAGE TERMINAL, SO DO NOT ATTEMPT TO MEASURE THE FILAMENT AND HIGH VOLTAGE.)

C HIGH VOLTAGE RECTIFIER TEST

DISCHARGE THE HIGH VOLTAGE CAPACITOR BEFORE TOUCHING ANY OVEN COMPONENTS OR WIRING.

Isolate the rectifier from the circuit. Using the highest ohm scale of the meter, read the resistance across the terminals and observe, reverse the leads to the rectifier terminals and observe meter reading. If a short is indicated in both directions, or if an infinite resistance is read in both directions, the rectifier is probably defective and should be replaced.

TEST PROCEDURES

PROCEDURE
LETTER

COMPONENT TEST

D **SENSOR**

1. Make sure the Easy Wave Open (motion sensor function) is activated. When activated, the blue LED indicator light unit turns ON when drawer door is closed.
2. Check sensor lens for foreign material.
3. Check if the control panel door is defective and sagging down lower than normal when open, which could block the view of the sensor. Close the control panel door to ensure the control panel door is not blocking the sensor and test again.
4. Check the connector and harness to the sensor to ensure they are secured properly and not broken.
5. Check for electrical parameters in the table below. If those conditions are met, then the display unit is working properly.

| With Sensor Unplugged | EASY WAVE OPEN Activated or Not Activated |
|-----------------------------------|---|
| Connector pin connected to Sensor | [VDC] - Approx. |
| Pin # 4 to Case Ground | 1.1 - 1.5 V |
| Pin # 5 to Case Ground | 1.1 - 1.5 V |
| Pin # 6 to Case Ground | 1.1 - 1.5 V |
| Pin # 7 to Case Ground | 0 |

(NOTE: If the voltage is uncertain, change display unit)

6. Check for electrical parameters in the table below. If those conditions are met, then the sensor and display unit are working properly

| With Sensor plugged in | EASY WAVE OPEN Activated-With object in front of sensor |
|-----------------------------------|---|
| Connector pin connected to Sensor | [VDC] - Approx. |
| Pin # 4 to Case Ground | 4.65 VDC for 2 seconds and returns back to 1.46 VDC |
| Pin # 5 to Case Ground | 4.9 VDC for 2 seconds and returns back to 1.5 VDC |
| Pin # 6 to Case Ground | 4.89 VDC for 2 seconds and returns back to 1.5 VDC |
| Pin # 7 to Case Ground | 0 |

INDICATORS LENS AND COLOR LEGEND

| Indicators Lens and Color Legend | | | Comments |
|----------------------------------|-------------|---------------------|---|
| WiFi Status | Oven Status | | |
| WiFi Off | off | Wave Open Off | Oven on Stand By (out of the box) |
| WiFi On | off | Wave Open Off | Oven on Stand By - Not Cooking |
| WiFi Off | White | Wave Open On | Oven on Stand By - Not Cooking |
| WiFi On | White | Wave Open On | Oven on Stand By - Not Cooking |
| WiFi On | Green | Cooking | Microwave -Slow Flash - Sensor / On Full - Count Down |
| WiFi On | Magenta | Cooking | Convection -Slow Flash - Preheat / On Full - Count Down |
| WiFi On | Red | Cooking | Slow Flash - Stopped, Ready to Open |
| WiFi On | Yellow | Cooking | Slow Flash - Time is Paused |
| WiFi On | White | Remote Start Active | Flash every 5 second - Drawer opened...3 minute window to remote operate APP/Alexa (Microwave Mode Only) |

E HIGH VOLTAGE CAPACITOR TEST

DISCHARGE THE HIGH VOLTAGE CAPACITOR BEFORE TOUCHING ANY OVEN COMPONENTS OR WIRING.

If the capacitor is open, no high voltage will be available to the magnetron. Disconnect input leads and check for short or open between the terminals using an ohmmeter.

Checking with a high ohm scale, if the high voltage capacitor is normal, the meter will indicate continuity for a short time and should indicate approximately 10 MΩ once the capacitor is charged. If the above is not the case, check the capacitor with an ohmmeter to see if it is shorted between either of the terminals and case. If it is shorted, replace the capacitor.

F PRIMARY INTERLOCK SWITCH AND THIRD DOOR SWITCH TEST (CANADA MODELS ONLY)

Isolate the switch and connect the ohmmeter to the common (COM.) and normally open (NO) terminal of the switch. The meter should indicate an open circuit with the door open and a closed circuit with the door closed. If improper operation is indicated, replace the switch.

G SECONDARY INTERLOCK SYSTEM TEST**DOOR SENSING SWITCH**

Isolate the switch and connect the ohmmeter to the common (COM.) and normally open (NO) terminal of the switch. The meter should indicate an open circuit with the door open and a closed circuit with the door closed. If improper operation is indicated, replace the door sensing switch.

SECONDARY INTERLOCK RELAY

Disconnect two (2) wire leads from the tab terminal of the secondary interlock relay (RY1). Check the state of the relay contacts using a ohmmeter. The relay contacts should be open. If the relay contacts are closed, replace the circuit board entirely or the relay itself.

**PROCEDURE
LETTER**

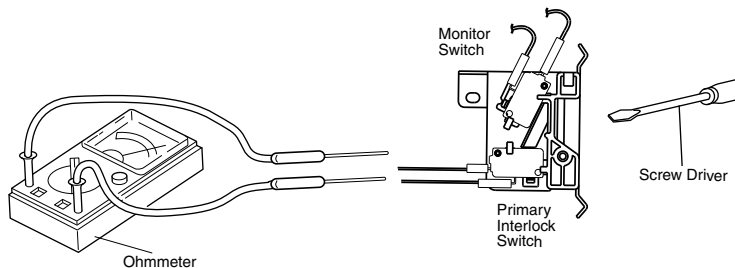
COMPONENT TEST

J

MONITOR SWITCH

Disconnect the oven from power supply.

Before performing this test, make sure that the primary interlock switch and the secondary interlock relay are operating properly, according to the above Test Procedures. Disconnect the wire lead from the monitor switch (NC) terminal. Check the monitor switch operation by using the ohmmeter as follows. When the door is open, the meter should indicate a closed circuit. When the monitor switch actuator is pushed by a screw driver through the lower latch hole on the front plate of the oven cavity with the door opened (in this condition the plunger of the monitor switch is pushed in), the meter should indicate an open circuit. If improper operation is indicated, the switch may be defective. After testing the monitor switch, re-connect the wire lead to the monitor switch (NC) terminal and check for continuity of monitor circuit.



K

THERMAL CUT OUT TEST

Disconnect the leads from the terminals of the thermal cut-out. Then using an ohmmeter, make a continuity test across the two terminals as described in the below.

Table: Thermal Cut-out Test

| Parts Name | Temperature of "ON" condition (closed circuit). (°C) | Temperature of "OFF" condition (open circuit). (°C) | Indication of ohmmeter (When room temperature is approx. 20°C.) |
|--|--|---|---|
| Top convection Thermal cut-out 210°C (On the top convection duct) | This is not resettable type | Above 210°C | Closed circuit |
| Rear convection Thermal cut-out 145°C (On the rear convection duct) | This is not resettable type | Above 145°C | Closed circuit |
| Grill Thermal cut-out 145°C (On the cavity top plate front) | This is not resettable type | Above 145°C | Closed circuit |
| Oven Thermal cut-out 125°C (On the exhaust duct) | This is not resettable type | Above 125°C | Closed circuit |
| MG Thermal cut-out 125°C (On the magnetron) | This is not resettable type | Above 125°C | Closed circuit |

If incorrect readings are obtained, replace the thermal cut-out.

An open circuit thermal cut-out (MG) indicates that the magnetron has overheated, this may be due to restricted ventilation, cooling fan failure.

An open circuit thermal cut-out (Grill) indicates that the oven cavity has overheated, this may be due to oven thermistor failure.

An open circuit thermal cut-out (Top convection) indicates that the top convection duct has overheated, this may be due to top convection motor failure or top convection thermistor.

An open circuit thermal cut-out (Rear convection) indicates that the rear convection duct has overheated, this may be due to rear convection motor failure or oven thermistor.

An open circuit thermal cut-out (Oven) indicates that the oven cavity has overheated, this may be due to ignition in the cooking chamber.

TEST PROCEDURES

| PROCEDURE LETTER | COMPONENT TEST |
|------------------|----------------|
|------------------|----------------|

L BLOWN MONITOR FUSE F20A

If the fuse 20A is blown when the door is opened, check the primary interlock switch secondary interlock relay and monitor switch.

If the monitor fuse (FUSE 20A) is blown by improper switch operation, the monitor fuse and monitor switch must be replaced even if the monitor switch operates normally

CAUTION: Only replace fuse with the correct value replacement.

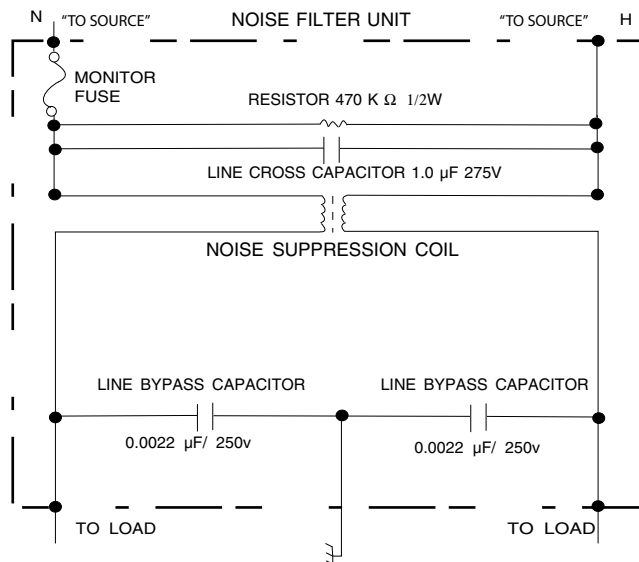
M NOISE FILTER TEST

Disconnect the leads from the terminals of the Noise Filter.
Using an ohmmeter, check between the terminals as described in the following table.

IF CORRECT READINGS ARE OBTAINED, REPLACE NOISE FILTER UNIT.

| | | |
|--------|----------|----------|
| L(min) | Cx ± 20% | Cy ± 20% |
| 1.0mH | 1.0µF | 0.0022µF |

| MEASURING POINTS | INDICATION OF OHMMETER |
|------------------------------|------------------------|
| Between N and L | Open circuit |
| Between terminal N and WHITE | Short circuit |
| Between terminal L and BLACK | Short circuit |



TEST PROCEDURES

| PROCEDURE LETTER | COMPONENT TEST |
|------------------|----------------|
|------------------|----------------|

N MOTOR WINDING TEST

Disconnect the leads from the motor. Using an ohmmeter, check the resistance between the two terminals as described in the table below.

Table: Resistance of Motor

| Motors | Resistance |
|-----------------------|------------------------------------|
| Antenna motor | Approximately 3.6 – 4.0 k Ω |
| Fan motor | Approximately 12 - 16 Ω |
| MG fan motor | Approximately 15 - 19 Ω |
| Rear Convection motor | Approximately 45 - 55 Ω |
| Top conv motor (DC) | Cannot check |
| Intake damper motor | Approximately 3.6 – 4.0 k Ω |
| Exhaust damper motor | Approximately 3.6 – 4.0 k Ω |

LIVE TEST FOR MOTOR WINDING

CAUTION: The following procedure requires the oven to be connected to the supply and should only be used if the relevant "cold" checks for the motor under test are inconclusive.

(without damper motor)

1. Unplug
2. Disconnect the leads from the primary of the high voltage transformer. Make sure that the leads remain isolated from other oven components and chassis (Use insulation tape if necessary.)
3. Connect the voltmeter, set to 220V AC, across the motor terminals. (Refer to the relevant motor test procedure or pictorial diagram for the correct terminal numbers.)
4. Arrange the meter in a position where it can be read during the test.
(Do not touch the meter, meter leads or oven circuitry while the oven is active.)
5. Close the oven door.
6. Plug
7. Set the power level to 0% and set the relevant timer for about three (3) minutes.
8. Note the reading on the meter and carefully observe the motor under test to see if it is turning.
9. Remove the test meter leads.
10. Reconnect the leads to the primary of the high voltage transformer.

(damper motor)

1. Unplug
2. Disconnect the leads from the primary of the high voltage transformer. Make sure that the leads remain isolated from other oven components and chassis (Use insulation tape if necessary.)
3. Connect the voltmeter, set to 220V AC, across the motor terminals. (Refer to the relevant motor test procedure or pictorial diagram for the correct terminal numbers.)
4. Arrange the meter in a position where it can be read during the test.
(Do not touch the meter, meter leads or oven circuitry while the oven is active.)
5. Close the oven door.
6. Plug
7. Note the reading on the meter and carefully observe the motor under test to see if it is turning.
8. Remove the test meter leads.
9. Reconnect the leads to the primary of the high voltage transformer.

If a reading of the line voltage was obtained (step 7) but the motor was not turning then it is faulty and should be replaced. If the meter indicated that the no supply was present then the winding to the motor should be checked for continuity or other circuit checks should be made, i.e. relays, switches.

TEST PROCEDURES

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LETTER

COMPONENT TEST

O TEST MODE (TOUCH KEY CHECK)

Touch
within
20 sec.

| OPERATION (PRESS) | DISPLAY |
|--|--|
| STOP/CLEAR | : |
| TIMER/SETTINGS POWER LEVEL POWER LEVEL START/+30SEC MORE MENUS (MICROWAVE) | (CLOCK SETTING MODE) 0000000 |
| TOUCH EACH KEY AFTER EACH KEY IS TOUCHED | VALUES WILL CHANGE AND YOU WILL HEAR A TONE KEY OK |
| STOP/CLEAR TO EXIT | : |

NOTE:
If you do not see "KEY OK" at the end of the test, you may have missed a key. Redo the test and listen for each key tone.

At the end of test and you do not see "KEY OK",
Key Sheet and/or Control Panel may be bad.

TEST PROCEDURES

PROCEDURE
LETTER

COMPONENT TEST

P

AH SENSOR TEST**Checking the sensor cooking condition****WARNING:** The oven should be fully assembled before following procedure.

- (1) The oven should be plugged in at least two minutes before sensor cooking.
- (2) Room temperature should not exceed 95°F (35°C).
- (3) The unit should not be installed in any area where heat and steam are generated. The unit should not be installed, for example, next to a conventional surface unit. Refer to the "INSTALLATION INSTRUCTIONS" of the operation manual.
- (4) Exhaust vents are provided on the front of the unit for proper cooling and air flow in the cavity. To permit adequate ventilation, be sure to install so as not to block these vents. There should be some space for air circulation.
- (5) Be sure the exterior of the cooking container and the interior of the oven are dry. Wipe off any moisture with a dry cloth or paper towel.
- (6) The Sensor works with food at normal storage temperature. For example, chicken pieces would be at refrigerator temperature and canned soup at room temperature.
- (7) Avoid using aerosol sprays or cleaning solvents near the oven while using Sensor settings. The sensor will detect the vapor given off by the spray and turn off before food is properly cooked.
- (8) If the sensor has not detected the vapor of the food, ERROR will appear, and the oven will shut off.

Water load cooking test**WARNING:** The oven should be fully assembled before following procedure.

Make sure the oven has been plugged in at least two minutes before checking sensor cook operation.

The cabinet should be installed, and screws tightened.

- (1) Fill approximately 200 milliliters (7.2 oz) of tap water in a 1000 milliliter measuring cup.
- (2) Place the container on the center of tray in the oven cavity.
- (3) Close the drawer.
- (4) Touch the TIMER/Setting pad once, the POWER LEVEL pad twice and the START pad once. And touch the number pad 1 once and the number pad 4 once. Now, the oven is in the sensor cooking condition, and "AH20" and "COOK" will appear in the display.
- (5) The oven will operate for the first 16 seconds, without generating microwave energy.

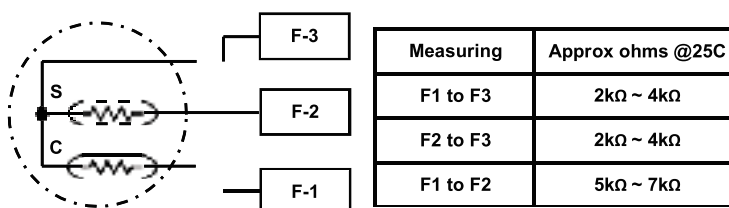
NOTE: ERROR will appear if the door is opened or STOP/CLEAR pad is touched during first stage of sensor cooking.

(6) After approximately 16 seconds, microwave energy is produced.
If ERROR is displayed or the oven does not turn off, replace the AH sensor, or check the control unit, refer to explanation below. If the oven stops after 5 minutes and no ERROR code is displayed, then the AH sensor is normal. Check other parts except the AH sensor.

TESTING METHOD FOR AH SENSOR

To determine if the sensor operation is defective, the simplest method is to replace it with a new re-placement sensor.

- (1) Disconnect the power supply cord, and follow **Drawer Disassembly Instructions**.
- (2) Discharge high voltage capacitor.
- (3) Remove the AH sensor.
- (4) Install the new AH sensor.
- (5) Reconnect all leads removed from components during testing.
- (6) Re-install the covers.
- (7) Reconnect the power supply cord after the covers are installed.
- (8) Reconnect the oven to the power supply and check the sensor cook operation as described above.



NORMAL RESISTANCE OF AH SENSOR

TEST PROCEDURES

PROCEDURE

COMPONENT TEST

LETTER

Q

RELAY TEST

Disconnect the power supply cord and follow **Drawer Disassembly Instructions**.

Open the door and block it open. Discharge high voltage capacitor. Disconnect the leads to the primary of the power transformer. Ensure that these leads remain isolated from other components and oven chassis by using insulation tape. After that procedure, re-connect the power supply cord.

Check voltage between Pin No 3 and Pin No 5 of the 7-pin connector (A) on the control unit with an A.C. voltmeter.

The meter should indicate rated voltage, if not check oven circuit.

RY1, RY3 and RY4 Relay Test

These relays are operated by D.C. voltage

Check voltage at the relay coil with a D.C. voltmeter during the microwave cooking operation or heater cooking operation.

DC. voltage indicated

Defective relay.

DC. voltage not indicated

Check diode which is connected to the relay coil. If diode is good, control unit is defective.

| RELAY SYMBOL | OPERATIONAL VOLTAGE | CONNECTED COMPONENTS |
|--------------|---------------------------|--|
| RY1 | Approx. 24.0V D.C. | High voltage transformer and all heating element |
| RY2 | Approx. 24.0V D.C. | High voltage transformer |
| RY3 | Approx. 24.0V D.C. | TOP CONVECTION HEATING ELEMENT |
| RY4 | Approx. 24.0V D.C. | GRILL HEATING ELEMENT (center) |
| RY5 | Approx. 24.0V D.C. | GRILL HEATING ELEMENT (front & back) |
| RY6 | Approx. 24.0V D.C. | REAR CONVECTION HEATING ELEMENT |
| RY7 | Approx. 24.0V D.C. | TOP CONVECTION HEATING ELEMENT |
| RY8 | Approx. 24.0V D.C. | GRILL HEATING ELEMENT (front & back) |
| RY9 | Approx. 24.0V D.C. | Stirrer motor |
| RY10 | Approx. 24.0V D.C. | Fan motor |
| RY11 | Approx. 24.0V D.C. | Intake damper motor |
| RY12 | Approx. 24.0V D.C. | Exhaust damper motor |
| RY13 | Approx. 24.0V D.C. | Rear convection motor |
| RY14 | Approx. 24.0V D.C. | MTG Fan motor |

R

HEATING ELEMENT TEST

1. Disconnect the power supply cord, and then remove **Top, Rear & Left outer case**.
2. Open the door and block it open.
3. Discharge high voltage capacitor.
4. Make sure the heating element is fully cooled and test as follows:
 - a. Disconnect wire leads from the heating element and measure the resistance with an ohmmeter. On the R x 1 scale, the resistance between the heating element terminals should be value as following table.
 - b. Disconnect wire leads from the heating element and measure the insulation resistance with 500V - 100M Ω insulation resistance meter. The insulation resistance between heating element terminal and cavity should be more than 0.5M Ω .
5. If the meter does not indicate above resistance, replace the heating element.
6. Reconnect all leads removed from components during testing.
7. Reinstall the outer case (cabinet).
8. Reconnect the power supply cord after the outer case is installed.
9. Run the oven and check all functions.

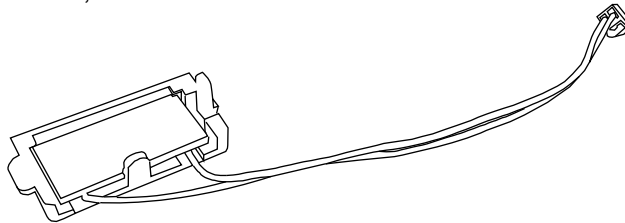
| | |
|---------------------------------|---|
| TOP CONVECTION HEATING ELEMENT | approximately 13 Ω ~ 15 Ω |
| REAR CONVECTION HEATING ELEMENT | approximately 8 Ω ~ 10 Ω |
| GRILL HEATING ELEMENT | approximately 26 Ω ~ 29 Ω |

TEST PROCEDURES

| PROCEDURE LETTER | COMPONENT TEST |
|---------------------|---|
| S | <p><u>Damper motor switch test</u></p> <ol style="list-style-type: none"> 1. Disconnect the power supply cord, and then remove outer case. 2. Open the door and block it open. 3. Discharge high voltage capacitor. 4. Disconnect the leads to the primary of the power transformer. 5. Ensure that the leads remain isolated from other components and oven chassis by using insulation tape. 6. Disconnect the wire leads from the switch terminals and connect ohmmeter leads to the common (COM.) and normally open (N.O.) terminals of the switch. <ol style="list-style-type: none"> 6-1. When switch actuator is pushed by the damper motor cam, the meter should be indicated a closed circuit. 6-2. When power cord is plugged into the wall receptacle, the damper motor operates, and damper cam will start to rotate. When the switch actuator is released, the meter should be indicated an open circuit. 7. If improper operation is indicated, replace the damper switch. 8. Disconnect the power supply cord, and then remove outer case. 9. Open the door and block it open. 10. Discharge high voltage capacitor. 11. Reconnect all leads removed from components during testing. 12. Re-install the outer case (cabinet). 13. Reconnect the power supply cord after the outer case is installed. 14. Run the oven and check all functions. |
| T | <p><u>THERMISTOR TEST (Oven and Top convection thermistor)</u></p> <ol style="list-style-type: none"> 1. Disconnect the power supply cord, and then remove outer case. 2. Open the door and block it open. 3. Discharge high voltage capacitor. 4. Disconnect thermistor connector. Measure the resistance of the thermistor with an ohmmeter. <p style="margin-left: 20px;">Connect the ohmmeter leads to thermistor connector Pin. Room Temperature Resistance 68°F(20°C) - 86°F(30°C) Approx. 360kΩ - 150KΩ</p> 5. If the meter does not indicate above resistance, replace the thermistor. 6. Reconnect all leads removed from components during testing. 7. Reinstall the outer case (cabinet). 8. Reconnect the power supply cord after the outer case is installed. 9. Run the oven and check all functions |

TEST PROCEDURES**PROCEDURE
LETTER****COMPONENT TEST****U****CAVITY LED LAMP**

1. Check for foreign material on cavity lamp hole and LED lens
2. When door is OPEN, check for approx. 24VDC across the connector terminal connected to LED with the LED unplugged. This confirms that the PSU unit DPWB-B696DRKZ is working.
3. Check the connector and harness to the LED lamp to ensure sure they are properly secured and not broken.
4. Checking if LED lamp is defective:
 - a. Open the outer case, unplug the LED lamp connection.
 - b. Use a diode function on the multimeter if available to check if the LED turns ON when the positive probe is connected to the positive terminal (white wire) of the LED and the negative probed is connected to the negative terminal (black wire) of the LED.
 - c. If the LED turns on (dimmer than normal), then the LED is working properly and the PSU unit (DPWB-B696DRKZ) is not working or the harness has a defective connection or connector.
 - d. If the LED does not turn on, then the LED is defective.



COMPONENT REPLACEMENT AND ADJUSTMENT PROCEDURE

WARNING AGAINST HIGH VOLTAGE:

Microwave ovens contain circuitry capable of producing very high voltage and current. Contact with the following parts may result in severe, possibly fatal, electric shock.

(Example)

High Voltage Capacitor, Power Transformer, Magnetron, High Voltage Rectifier Assembly, High Voltage Harness etc..

WARNING: To Avoid possible exposure to microwave energy, please follow the instructions below before servicing the oven.

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Disconnect the power supply cord. 2. Make sure that a definite "click" can be heard when the microwave oven drawer is unlatched. (Hold the drawer in a closed position with one hand, then pull the drawer open, this causes the latch leads to rise, it is then possible to hear a "click" as the drawer switches operate.) 3. Visually check the drawer and cavity face plate for damage (dents, cracks, signs of arcing etc.). | <ol style="list-style-type: none"> 1. Drawer does not close firmly. 2. Drawer latch hook is damaged. 3. The drawer gasket or seal is damaged. 4. The drawer is bent or warped. 5. There are defective parts in the drawer interlock system. 6. There are defective parts in the microwave generating and transmission assembly. 7. There is visible damage to the oven. |
|--|--|

Carry out any remedial work that is necessary before operating the oven.

Do not operate the oven if any of the following conditions exist:

Do not operate the oven:

1. Without the RF gasket (Magnetron).
2. If the wave guide or oven cavity are not intact.
3. If the drawer is not closed.

WARNING FOR WIRING

To prevent an electric shock, take the following precautions:

1. Before wiring:
 - 1) Disconnect the power supply cord.
 - 2) Open the drawer.
 - 3) Wait 60 seconds, then discharge the high voltage capacitor.
2. Don't let the wire leads touch to the following parts:
 - 1) High voltage parts:
Magnetron, High voltage transformer, High voltage capacitor and High voltage rectifier assembly.
 - 2) Hot parts:
Magnetron, High voltage transformer and Oven cavity.

CONVECTION MICROWAVE DRAWER DISASSEMBLY

WARNING: Follow all safety precautions as stated at the beginning of this Service Manual before proceeding!

1. Open the Drawer to access the **(4)** mounting screws holding the unit on to the wall or cabinet opening. **(Fig 1)**.
2. Close Drawer and carefully pull the unit out from opening and unplug the power supply cord. Place unit on a secured surface to work on.
3. Remove the **(2)** screws holding AC Cord Mounting Angle. Lift the mounting angle (with AC Cord attached) and unplug AC Cord from molex. **(Fig 2)**.
4. Depending on which component you need to service, decide which Outercase you want to remove.
5. There are **(4)** Outercase cabinet sides that can be removed. The amount of screws each Outercase has is as follows:
(8) Rear, **(12)** Top, **(13)** Left Side & **(11)** Right Outercase **(Fig 2)**.

Fig. 1

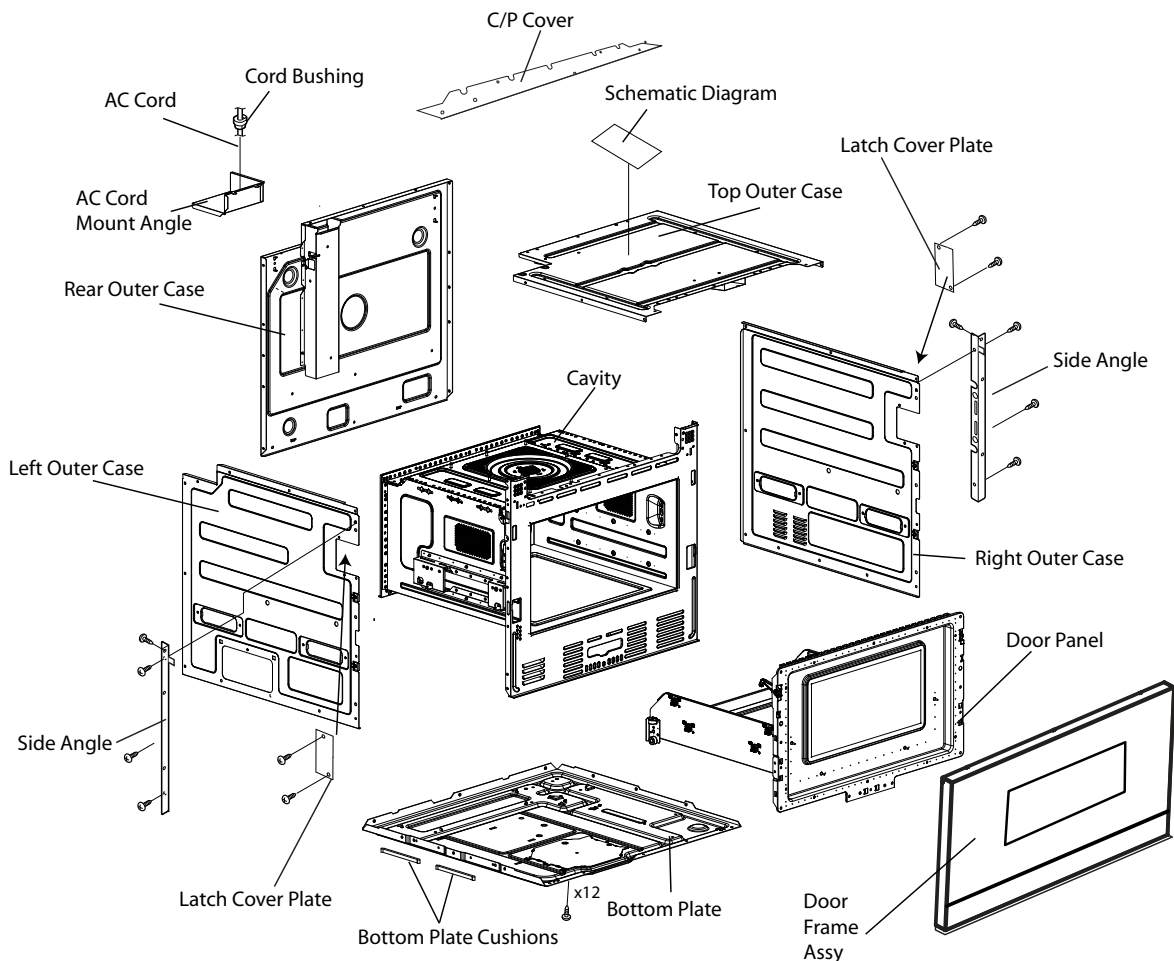
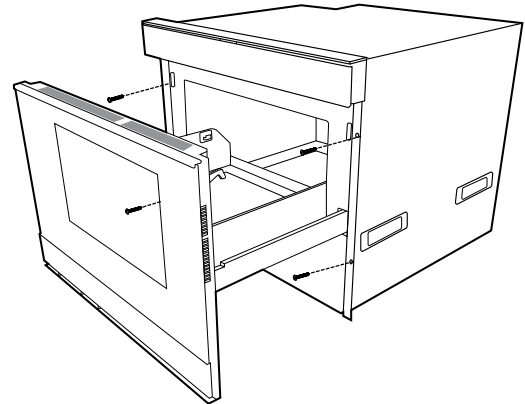


Fig. 2

NOTE: You now have access to all components of the Drawer.

CONTROL PANEL (C/P) REMOVAL

1. Remove the (6) screws from the right & left Side Angles.
2. Remove the (7) C/P Cover screws behind the Control panel (**Fig 3**)
3. Open the Cavity door
4. Remove (2) C/P screws from the black C/P Bracket under the C/P Cover (**Fig 4**).
5. Lift the Control Panel Assy up and pull away from the cavity.
6. Open the hidden C/P and unplug all molexes except for the IOT PWB (just take out the PWB along with the wire).

CPU REMOVAL

1. Lay C/P on a protected surface upside down and remove the (2) screws using the access holes in the C/P bracket (**Fig 5**).
2. Carefully lift off the CPU
3. Use reverse order to reinstall CPU and/or C/P

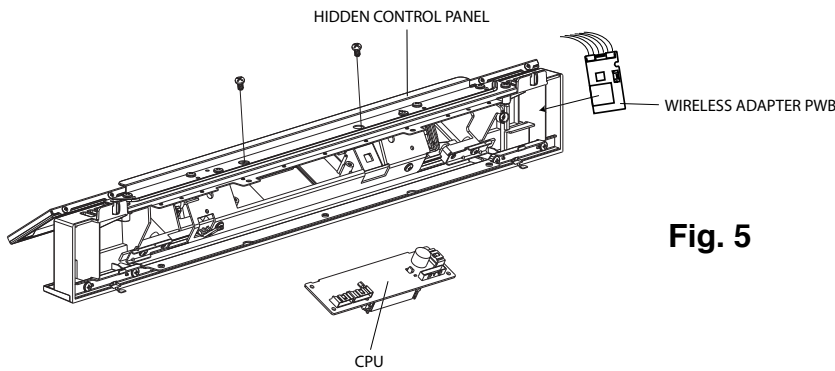


Fig. 5

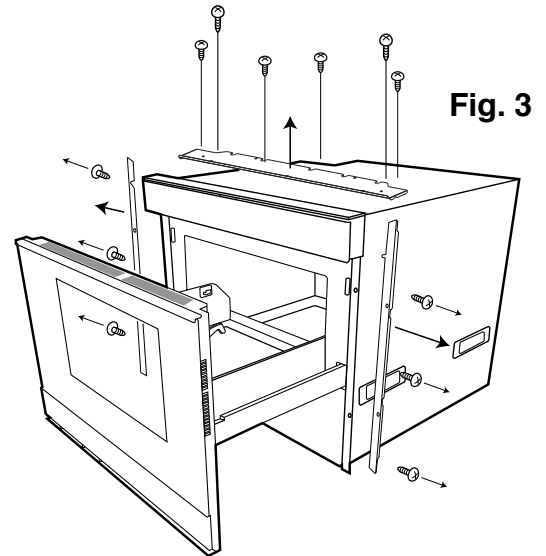


Fig. 3



C/P Bracket
Screws (2)

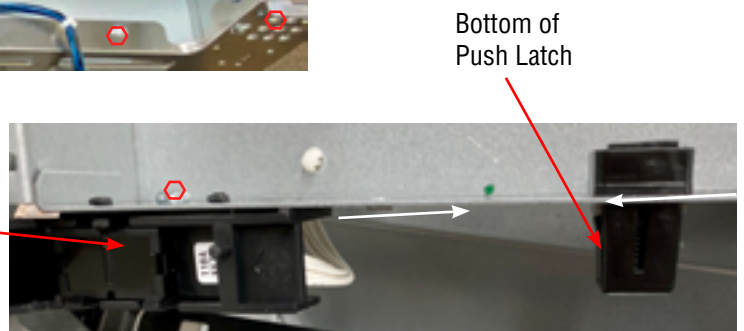
Fig. 4

PUSH LATCH & MOTION SENSOR ASSY REMOVAL

1. Follow C/P removal procedures.
2. Slightly open door.
3. Remove (8) screws holding the C/P Rear Cover to cavity (**Fig 6**).
4. Move both right & left chassis supports out and turn C/P rear cover upside down to have access to both Push Latch & Sensor Assy.
5. Squeeze each bottom side of push latch to remove and remove (1) screw holding Sensor Assy (**Fig 7**).
6. Use reverse order to reinstall.



Fig. 6



Sensor Assy

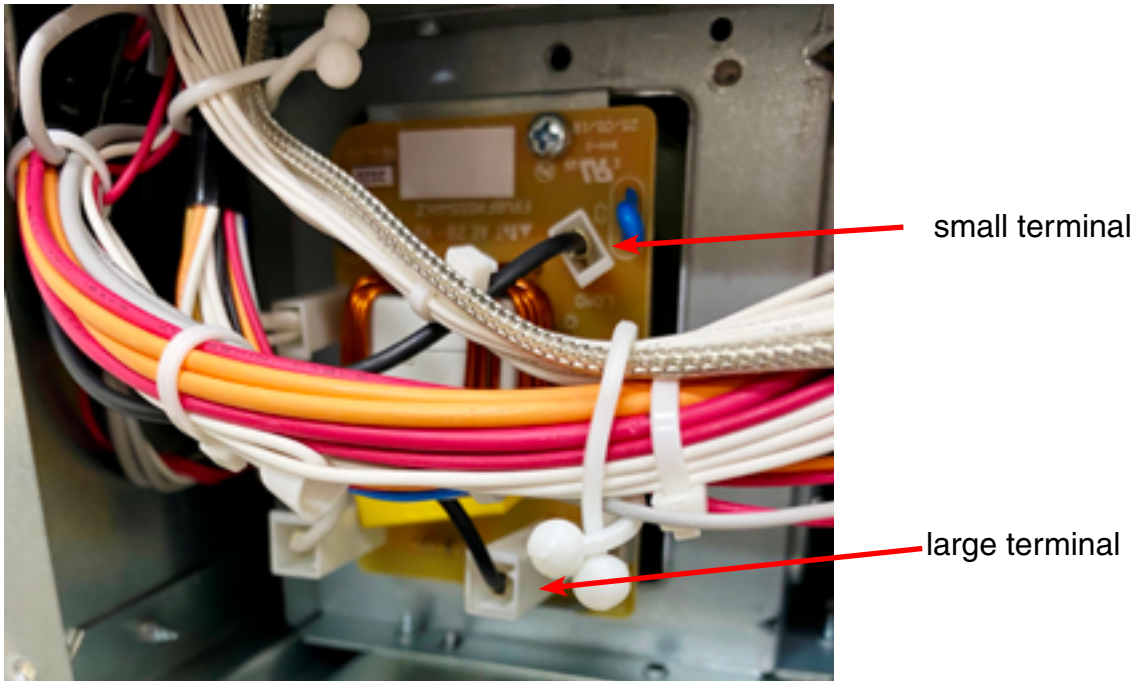
Bottom of
Push Latch

Fig. 7

NOISE FILTER BOARD REPLACEMENT

1. You will need to remove the left side Outercase (13) screws.
2. Un-hook all the terminals from the Noise Filter PWB (make note of wiring and molex size), then remove (1) screw from PWB. **(Fig 4)**
3. Pull Noise Filter loose and replace with new one.

Fig. 4



LED CAVITY LIGHTS REPLACEMENT

1. Remove either the right or left outercases.
2. If replacing complete LED Light Assy, release it from the tabs holding it & unhook molex connector.
3. If replacing just the LED light, release it from the holder and unhook the molex connection.
4. Proceed in reverse order to install new LED Light.

Fig. 5

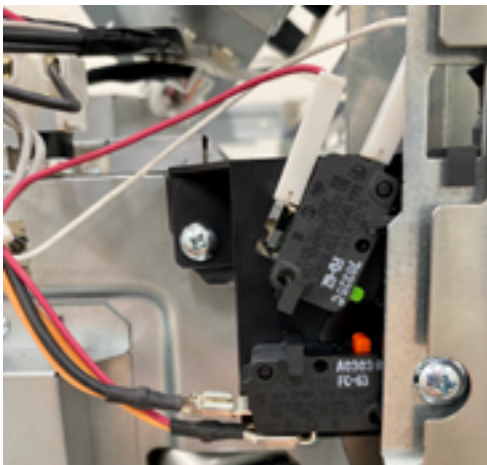


DOOR SENSING SWITCH, PRIMARY INTERLOCK SWITCH AND MONITOR SWITCH REMOVAL

1. Remove either the left or right O/C.
 2. Open the drawer and keep it open.
 3. To discharge the high voltage capacitor, wait for 60 seconds.
 4. Disconnect the wire leads of each switch.
 5. Remove the screw holding the latch hook to the oven flange.
 6. Remove the latch hook from the oven flange.
 7. Remove each switch from the latch hook by pushing the one (1) stopper tab holding each switch.
 8. Now, each switch is free.
1. Re-install each switch in its place. The primary interlock switch is in the lower position and the monitor switch is in the top position, located on the left side of the unit. The door sensing switch by itself on the right side of the unit.
 2. Re-connect wire leads to each switch. Refer to pictorial diagram.
 3. Secure the latch hooks with mounting screws to oven flange.
 4. Make sure that the monitor switch is operating properly and check continuity of the monitor circuit. Refer to chapter "Test Procedure" and "Adjustment procedure".

Re-install

Latch
Hook
Left



Latch
Hook
Right



DOOR SENSING SWITCH, PRIMARY INTERLOCK SWITCH AND MONITOR SWITCH ADJUSTMENT

1. Follow the Convection Microwave Drawer disassembly as previously stated
 2. Open the drawer and keep it open.
 3. To discharge the high voltage capacitor, wait for 60 seconds.
 4. If the door sensing switch, primary interlock switch and monitor switch do not operate properly due to a misadjustment, the following adjustment should be made.
 6. Loosen the screw holding latch hook to the oven cavity flange.
 7. With drawer closed, adjust latch hook by moving it back and forth, and up and down. In and out play of the door allowed by the upper and lower position of the latch hook should be less than 0.5mm. The vertical position of the latch hook should be adjusted so that the door sensing switch, primary interlock switch is activated with the drawer closed. The horizontal position of the latch hook should be adjusted so that the monitor switch and door sensing switch are activated with the drawer closed.
 8. Secure the screws with washers firmly.
 9. Check all of the switches operation.
- After adjustment, check the following.**
1. In and out play of door remains less than 0.5mm when in the latched position. First check upper position of latch hook, pushing and pulling upper portion of drawer toward the oven face. Then check lower portion of the latch hook, pushing and pulling lower portion of the door toward the oven face. Both results (play in the door) should be less than 0.5mm.
 2. The primary interlock switch interrupts the circuit before the door can be opened.
 3. Monitor switch contacts close when door is opened.
 4. Door sensing switch contacts open when door is opened.
 5. Reassemble the unit and check for microwave leakage around door with an approved microwave survey meter. (Refer to Microwave Measurement Procedure.)

DRAWER/SLIDE RAIL/CHOKE/DOOR FRAME & RACK GEAR REMOVAL

DOOR FRAME ASSY REMOVAL

1. Open the drawer and keep it open.
2. Remove (2) Drawer Support Covers (both sides) from Choke Cover as shown in **(Fig. D-1)**.
3. Carefully unsnap choke from Door Frame using a Putty Knife and/or similar tool. **(Fig. D-2)**
4. Remove (9) screws from holding the Door panel to the Door Frame. **(Fig. D-3)**
5. Release the tabs holding the Door Frame Assy to the Door panel assy. **(Fig. D-3)**

DOOR CHOKE AND PANEL REMOVAL

1. Follow "Door Frame Assy Removal".
2. Remove the screws from the left (2), right (2) & bottom Slide Rails (2). **(Fig. D-4)**
3. Unhook tabs holding the Slide Rails to the Door Panel Assy. **(Fig. D-4)**
4. You can now remove and replace the Choke and/or Door Panel Assy.

SLIDE RAILS, SUPPORT ANGLE & RACK GEAR REMOVAL

1. Remove either the right or left O/C.
2. Follow Door Frame and Panel removal.
3. For the right or left Slide Rails remove (2) screws from Slide Rail holder. **(Fig. D-5)**
4. Pull the Slide Rail back towards the rear to release through Faceplate slots. **Fig. D-5)**
5. To replace the Support Angles or Slide Rail, remove (2) screws and unclip Slide Rail to release. **(Fig. D-6)**
6. To replace Rack Gear, pull bottom Slide Rail out and release by moving the black lever to the right to release. Turn upside down and remove (3) screws. **Fig. D-7**
7. For the "**BOTTOM SLIDE RAIL/SUPPORT ANGLE**" removal, turn oven on its back to access screw holes in bottom cover. Push hole cover in and remove (2) screws holding the Slide Rail to cavity. **Fig. D-8**
8. Pull Slide Rail/Support Angel out.
9. Proceed in reverse order to reinstall.

To reassemble, just reverse the above order.

After reassembly, do the following.

- (A) Make sure that door sensing switch, primary interlock switch and monitor switch are operating properly. (Fig. D-9)**
- (B) An approved microwave survey meter should be used to assure compliance with proper microwave radiation emission limitation standards.**

After any servicing, make sure of the following :

1. Drawer latch heads smoothly catch latch hook through latch holes and that latch head goes through center of latch hole .
2. Deviation of door alignment from horizontal line of cavity face plate is to be less than 1.0mm.
3. Drawer is positioned with its face pressed toward cavity face plate.
4. Reassemble the unit and check for microwave leakage around drawer with an approved microwave survey meter. (Refer to Microwave Measurement Procedure.)

Fig. D-1



Fig. D-2



Fig. D-3

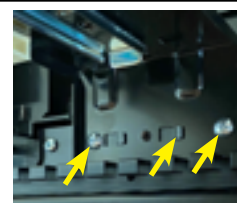


Fig. D-4

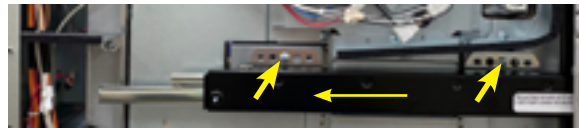


Fig. D-5



Fig. D-6

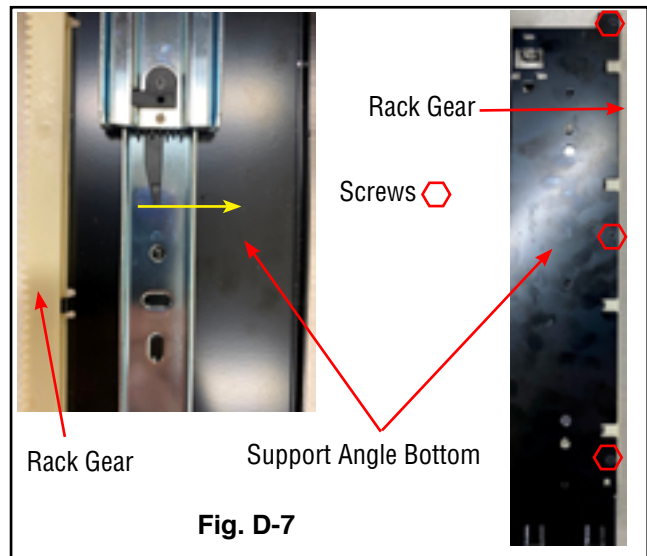


Fig. D-7

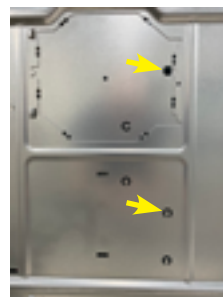


Fig. D-8



Fig. D-9

DOOR LATCH REMOVAL AND RACK STAY REPLACEMENT

1. Follow "DRAWER ASSEMBLY AND CHOKE REMOVAL" (steps 1-3)
2. At this point, you can change Latch Hooks/Springs without removing the Door Frame.
3. Unhook Latch Spring, then remove Latch Screw (**Fig. L-1**).
4. Proceed in reverse to reinstall.
5. Adjust switches after assembled back to the cavity.
6. If replacing the Rack Stay, insert Rack Stay, then insert the Rack Stay Holder with a twist until locked (**Fig. L-2**)



Fig. L-2

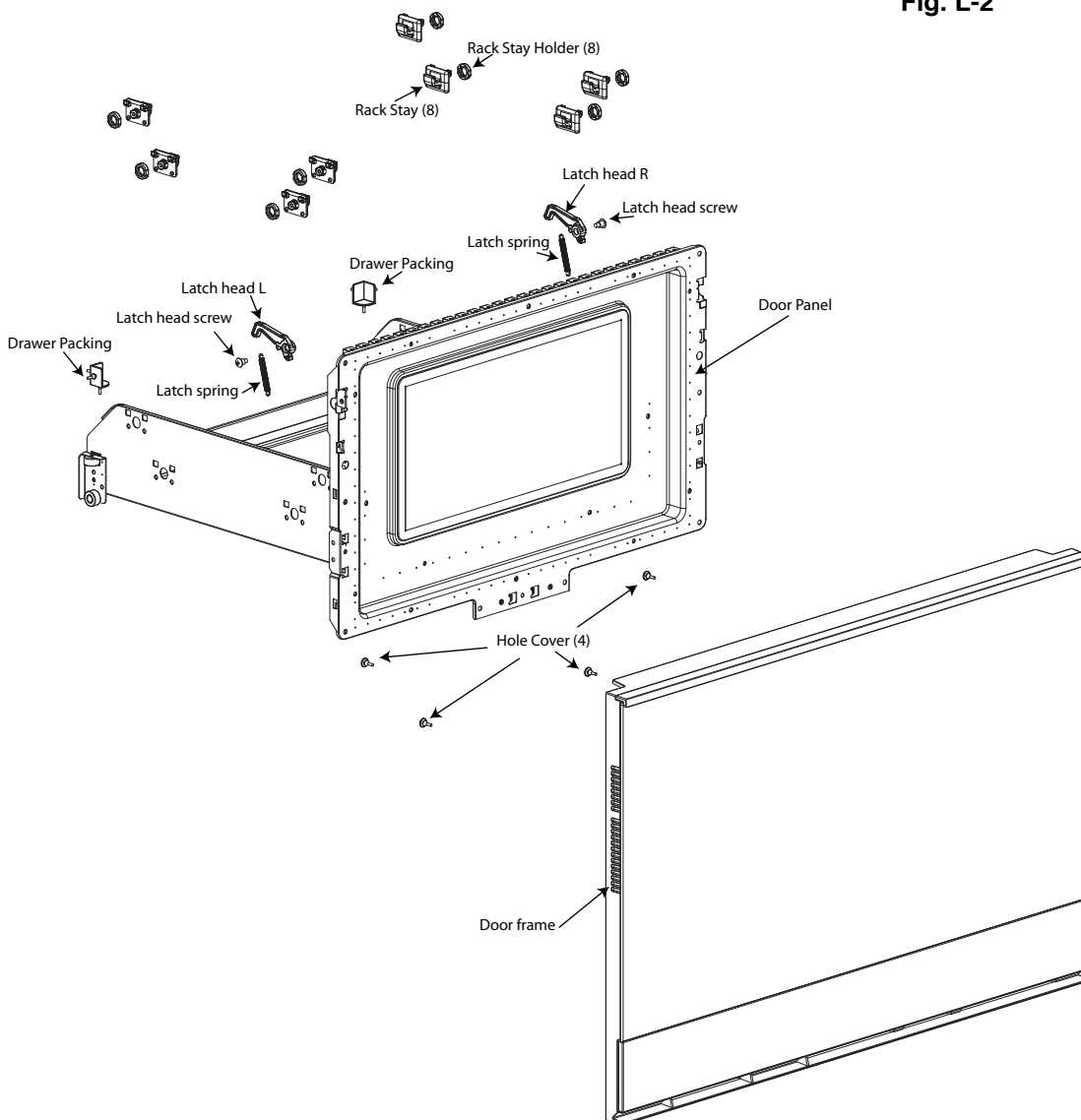


Fig. L-1

Note: The drawer on a convection microwave oven is designed to act as an electronic seal preventing the leakage of microwave energy from oven cavity during cook cycle. This function does not require that door be air-tight, moisture (condensation)-tight or light-tight. Therefore, occasional appearance of moisture, light or sensing of gentle warm air movement around oven drawer is not abnormal and do not of themselves indicate a leakage of microwave energy from oven cavity.

AUTO DRAWER GEAR REMOVAL / INSTALLATION

(This procedure can be performed without removing the outercase)

1. If you are just replacing the Auto drawer Gear, it will not be necessary to follow the "Convection Microwave Drawer Disassembly" as previously stated.
2. Turn the Drawer up on its back and knockout the Auto Drawer Gear hole cover (**Fig. G-1**).
3. Remove the (4) screws holding the auto drawer gear to the bottom cavity angle (**Fig. G-2**).
4. Unhook wiring connector to Auto Drawer Gear motor.
5. Disengage (pull) Auto Drawer Gear motor from rack gear.
6. The Auto Drawer Gear motor is now free.

Installation:

1. Proceed in reverse to reinstall the Auto Drawer Gear motor making sure that the gear teeth are engaged before tightening the screws.
2. After Auto drawer Gear is reinstalled, insert the hole cover in reverse order so that it can be secured with a XOTS740P08000 common screw. (**Fig. G-1**)

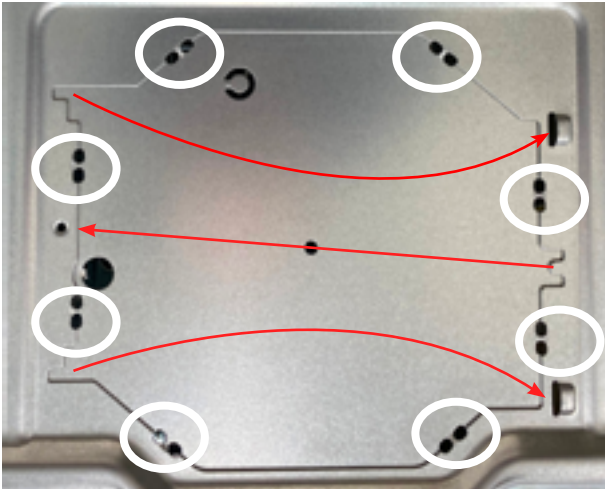


Fig. G-1



Fig. G-2

BOTTOM STIR MOTOR REMOVAL

1. Turn the Drawer up on its back.
2. There are two ways to remove Bottom Stir Motor.
 - a. Remove Left Outer case & use access holes (**Fig. G-4**)
 - b. Follow "Auto Drawer Gear Removal" (**Fig. G-1 & G-3**)
3. Unhook the (2) wires connected to the Stir Motor.
4. Bend access hole so that the bottom screw is visible.
5. Remove the (2) screws holding the Stir Motor and gently pull sideways (**Fig. G-3**).
6. Proceed in reverse to reinstall the new Stir Motor.

Fig. G-3

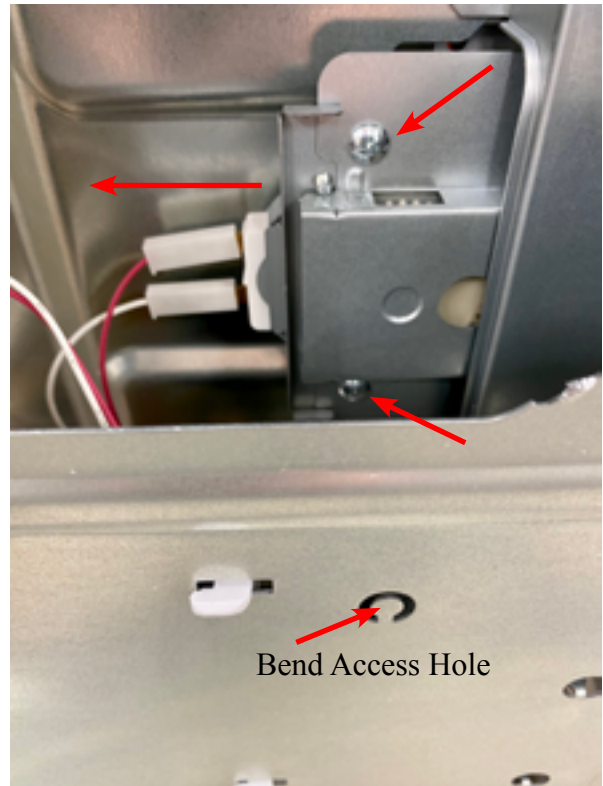
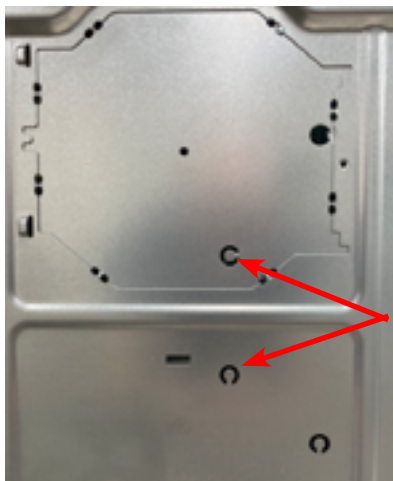


Fig. G-4



Bend Access Holes

Bend Access Hole

DAMPER MOTOR ASSY (SWITCH, MOTOR ASSY OR INTAKE DAMPER PACKING) REMOVAL

DAMPER SWITCH and/or MOTOR ASSY REMOVAL

1. Remove either left or right Outercase cabinet.
2. Remove (2) screws holding Damper Motor Assy (⚡) to Intake Duct Assy (Fig. D-1 & Fig. D-2).
3. Remove the wires and screw to replace the switch and/or motor.

INTAKE DAMPER PACKING REMOVAL

1. Follow "Damper Switch and/or Motor Assy Removal".
2. Remove the (4) screws holding the Intake Damper (⬠) from cavity. (Fig. D-1 & Fig. D-2).
3. Release the door pin and spring. Fig. D-3
4. Pull Damper Packing from door, then replace with new packing by pushing the rubber holders through the holes in the door.
5. Reverse procedures to reinstall.

RIGHT SIDE

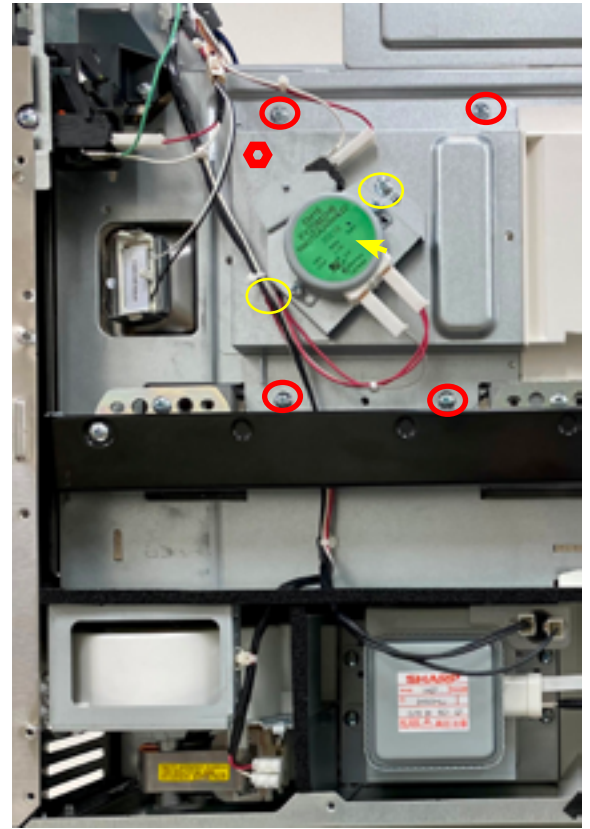


Fig. D-1

LEFT SIDE

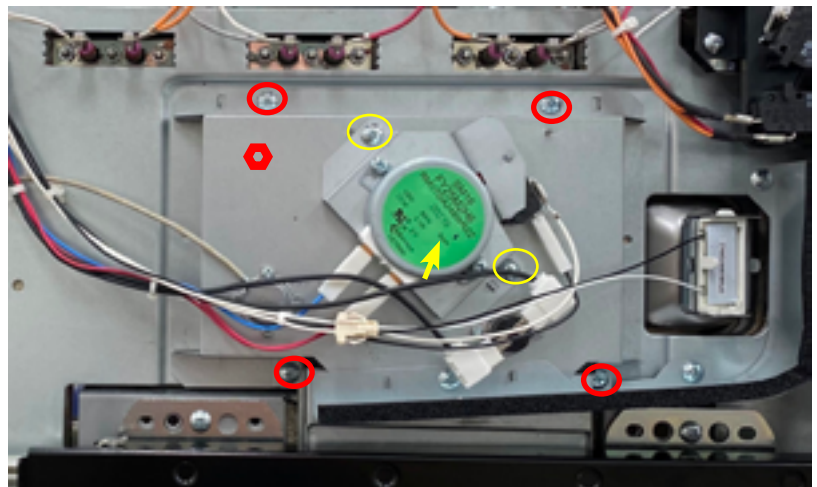


Fig. D-2

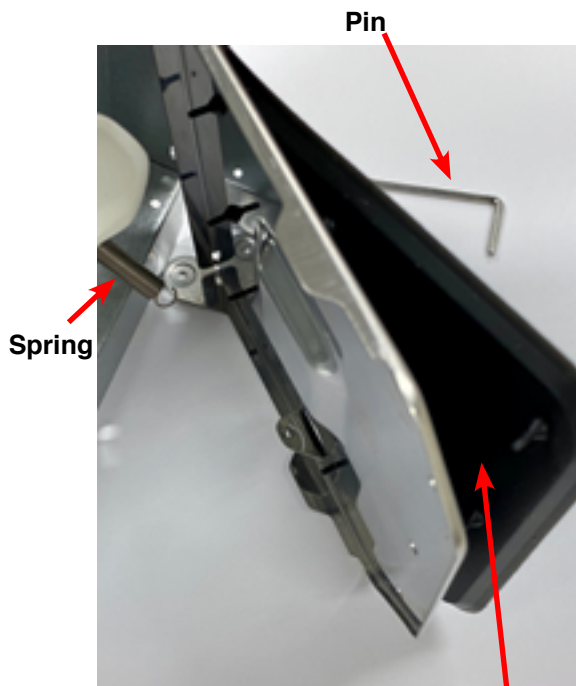


Fig. D-3

Intake Damper Packing

MAGNETRON AND FAN REMOVAL

MAGNETRON REMOVAL

1. Remove the right Outercase cabinet.
2. Unhook wires from the Magnetron Temp Fuse and Magnetron. (**Fig. M-1**).
3. Remove the (4) screws holding the Magnetron to the cavity and carefully pull out (**Fig. M-1**).
4. Remove the Temp Fuse and Thermal Angle (**Fig. M-2**).
5. Attach Temp Fuse and Thermal Angle to new Magnetron, then install (**be careful not to let the Mag antenna touch the waveguide cavity hole entrance**). Proceed to mount the Magnetron by evenly screwing in the 4 screws.

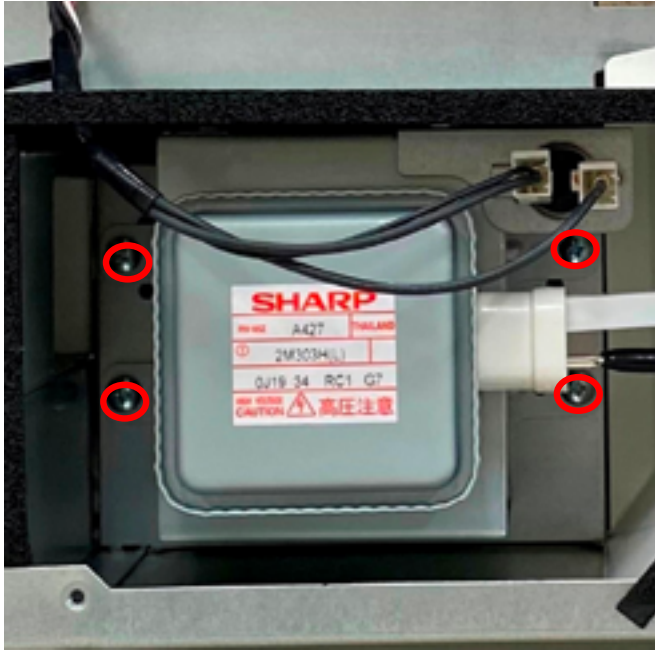


Fig. M-1

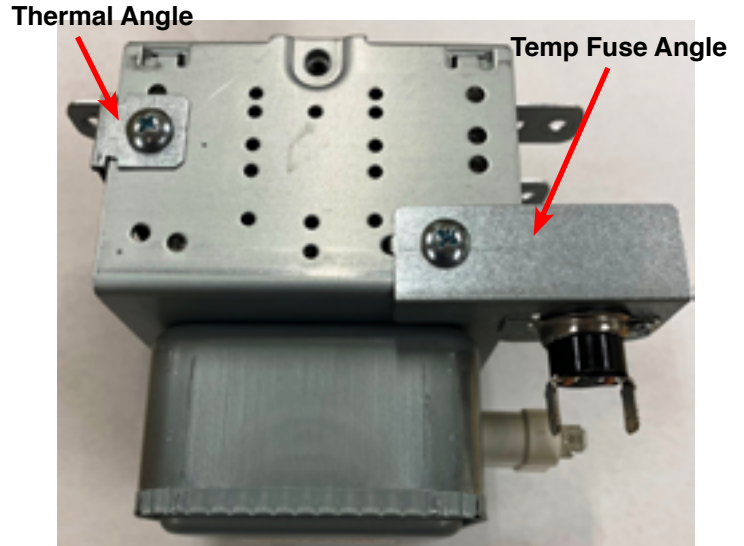


Fig. M-2

CAUTION:
WHEN REPLACING THE MAGNETRON
BE SURE THE R.F. GASKET IS IN
PLACE AND MOUNTING SCREWS
ARE TIGHT.

FAN MOTOR ASSY REMOVAL

1. Remove the right Outercase cabinet.
2. Unhook the Fan Motor Assy wires and remove the foam by the fan from the duct.
3. Remove (5) screws (↙) holding the Fan Motor Assy. **Fig. F-1**
4. Carefully pull the Fan Motor Assy out.
5. Reverse procedures to reinstall.

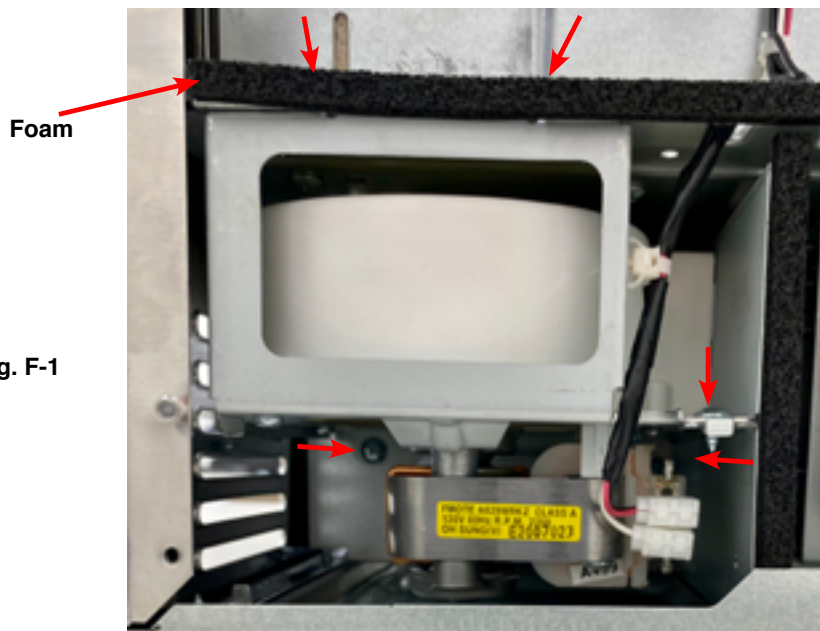


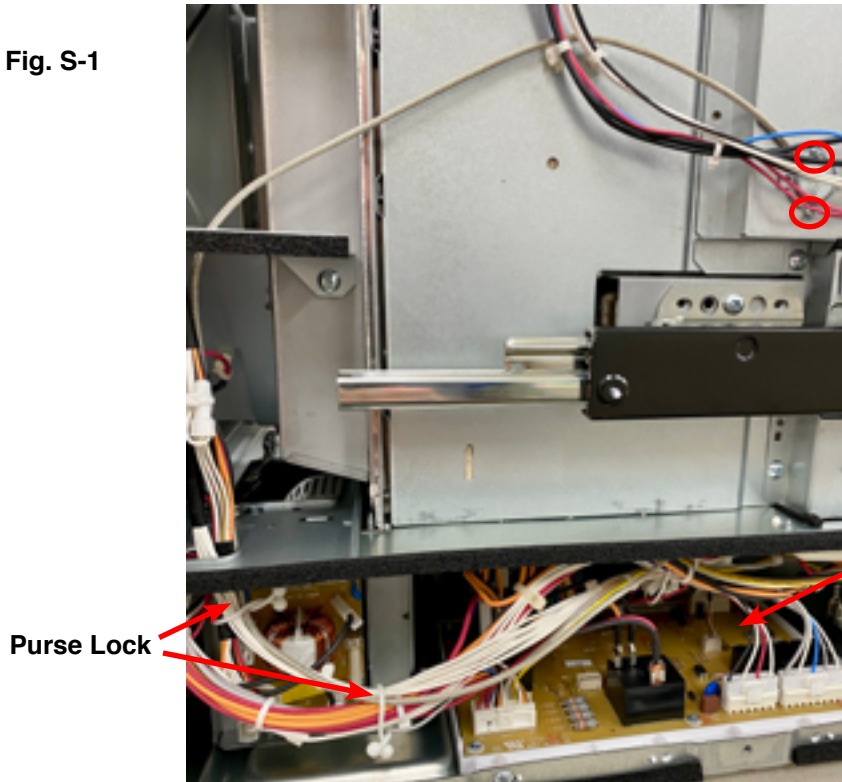
Fig. F-1

SENSOR ASSY AND PSU UNIT / POWER UNIT / RELAY REMOVAL

SENSOR ASSY REMOVAL

1. Remove the left Outercase cabinet.
2. Remove (2) screws holding Sensor Assy to Damper Assy (**Fig. S-1**).
3. Unlock Purse Locks holding the Sensor wire to harness.
4. Unhook Sensor connector to PSU Unit.
5. Replace with new Sensor Assy and reverse order to reinstall.

Fig. S-1



Sensor Assy connection

CAUTION:

The Noise Filter coil is very dangerous. Avoid touching and/or letting any wires touch it.

TRANSFORMER REMOVAL

1. Remove the Right & Rear Outercase cabinet.
2. Unplug the Magnetron & Capacitor wires from the Transformer.
3. There are two ways to remove the Transformer screws (2): (**Fig. T-1**)
 - a. You can use a 5/16 or 8mm socket wrench to remove screws.
 - b. Remove the (4) Duct screws and move the Duct out of the way to access the (2) Transformer screws (phillips screwdriver).
4. Install new Transformer in reverse order.



Fig. T-1

PSU UNIT/POWER UNIT/RELAY REMOVAL

1. Remove the left Outercase cabinet.
2. Remove (2) screws from Baseplate holding PSU Unit and push back to unhook tabs from the Baseplate. (Fig. P-1 & Fig. P-2).
3. Before pulling PSU Unit out, undo Purse Lock and unplug the Stirrer Motor and the Auto Drawer Gear Assy molex. Fig. P-3
4. Pull the whole plastic mold out holding the PSU and Power Units, plus two Relays (RY2/RY3).
5. Make note of wiring and replace whichever component that needs to be replaced. Fig. P-4

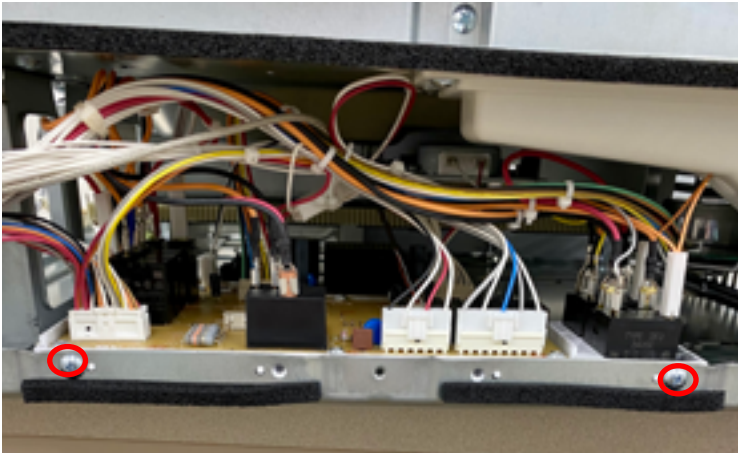


Fig. P-1

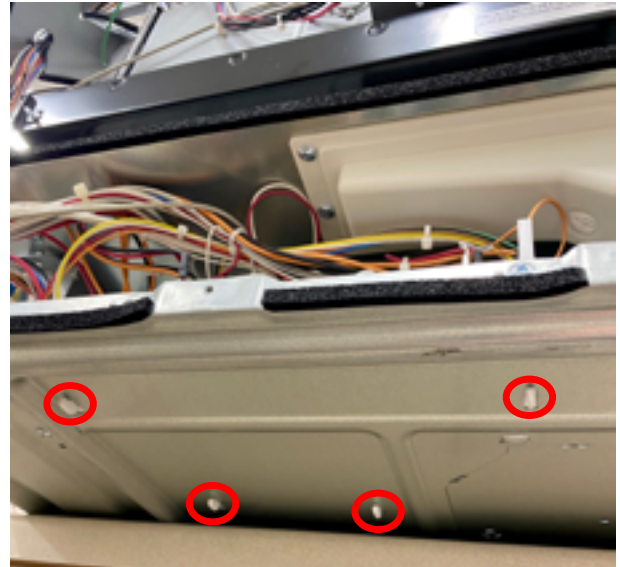


Fig. P-2

Auto Drawer Gear Assy Molex

Stirrer Motor Molex

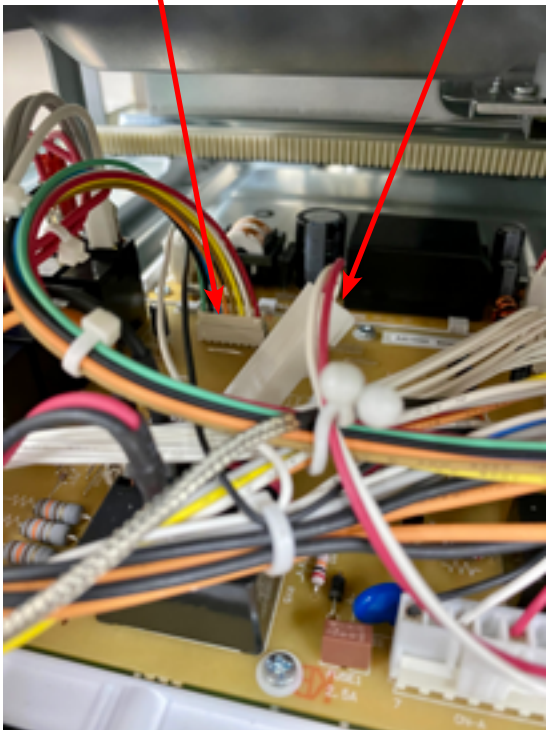
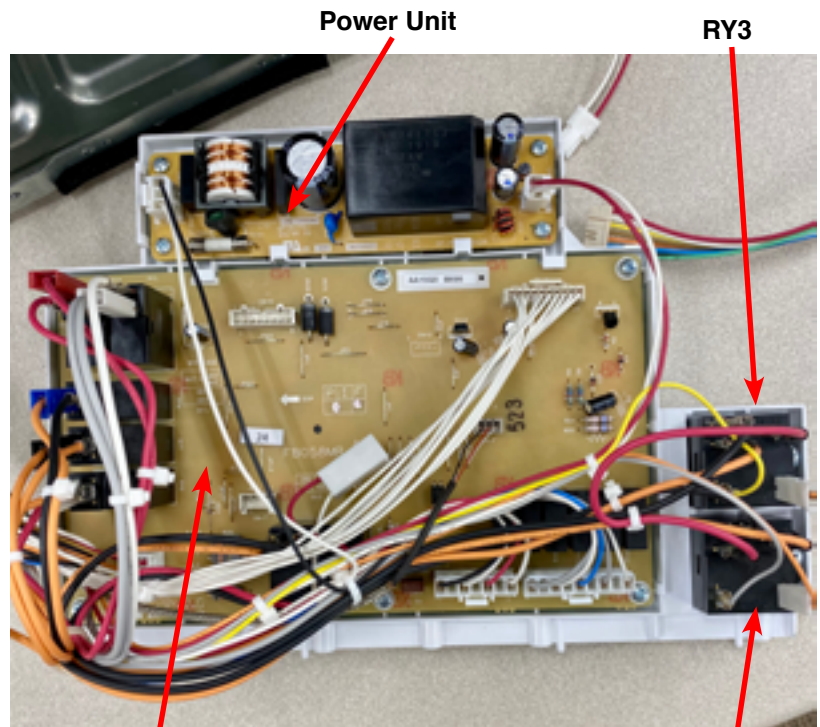


Fig. P-3



PSU Unit

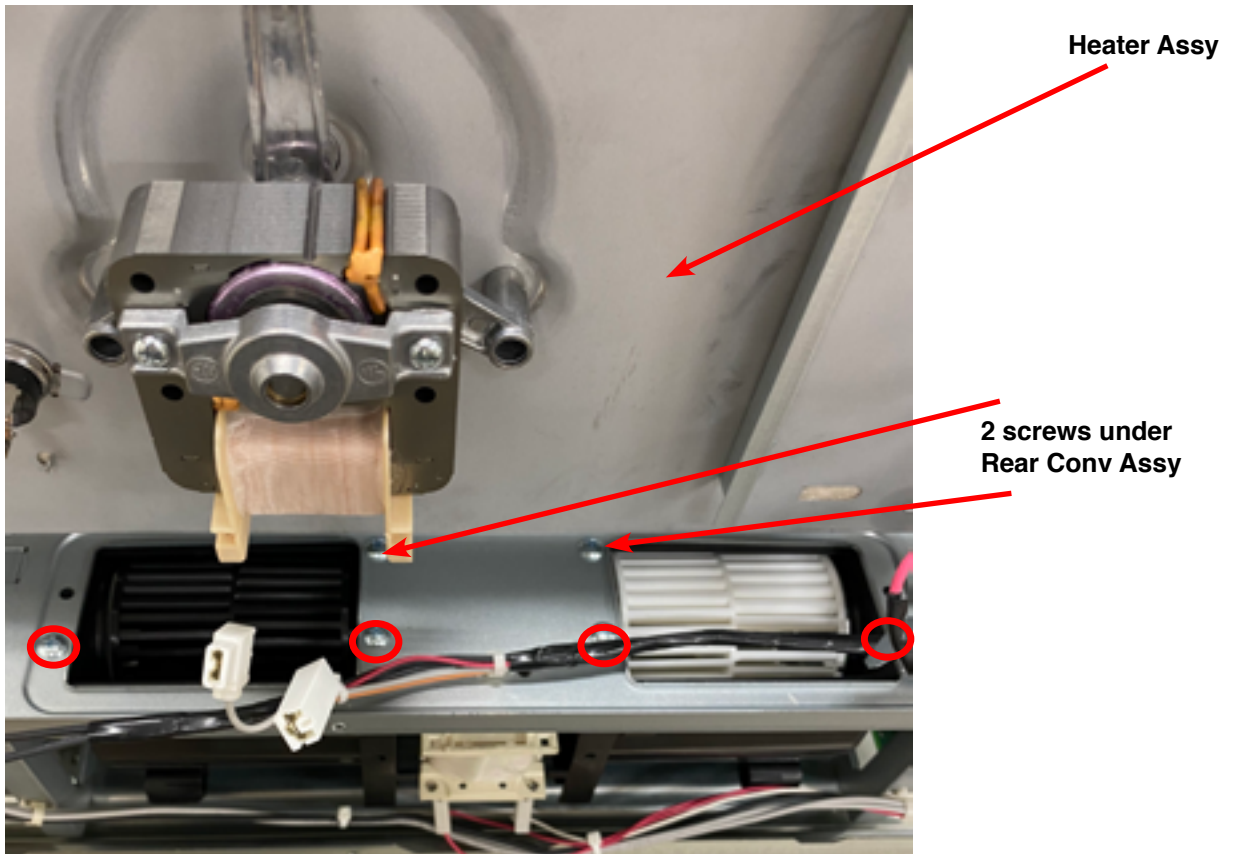
Fig. P-4

RY2

FAN MOTOR REMOVAL

1. Remove the Rear Outercase cabinet.
2. Unplug wires to Fan Motor.
3. There are two ways to remove the Fan Motor screws (6): **(Fig. F-1)**
 - a. Use an angled Phillips screw driver to remove (2) screws under the Rear Conv Assy, remove other (4) screws.
 - b. Remove the Rear Conv Assy, then proceed to remove the (6) screws holding the Fan Motor to duct.
4. Install new Fan Motor in reverse order.

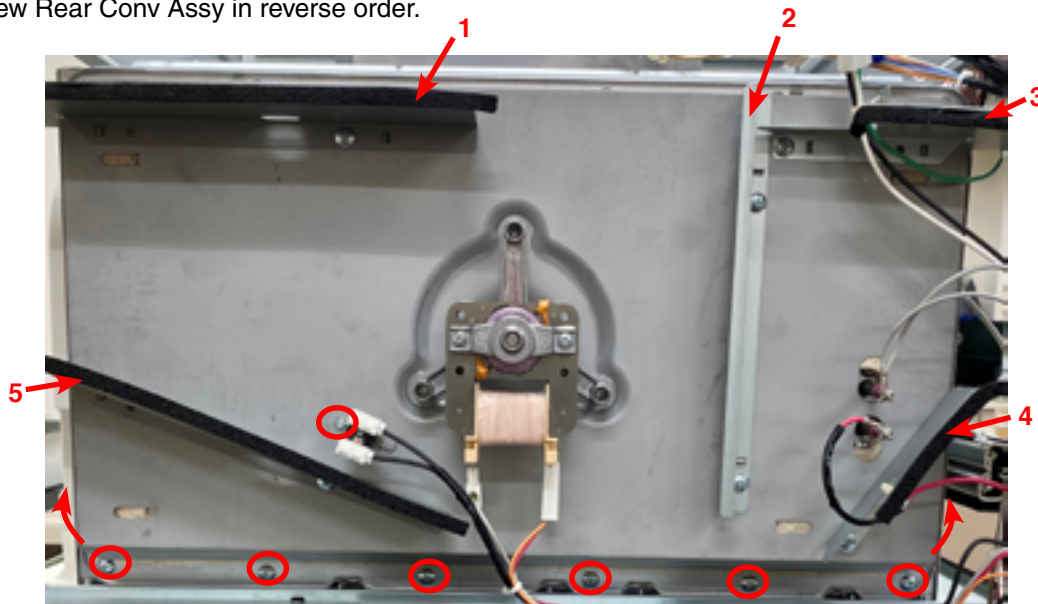
Fig. F-1



REAR CONVECTION ASSY AND THERMAL CUTOUT REMOVAL

1. Remove the Rear Outercase cabinet.
2. Unplug wires to Thermal Cutout and (1) screw if just removing Thermal Cutout. **(Fig. R-1)**
3. To proceed in removing Rear Conv Assy, unplug wires to Thermal Cutout, Conv Fan, & Heater Elements.
4. Remove (5) ducts attached to Rear Conv Assy. **(1,2,3,4,5)** **(Fig. R-1)**
5. Remove (18) screws holding Rear Conv Assy to cavity. **(Fig. R-1)**
6. Install new Rear Conv Assy in reverse order.

Fig. R-1



GRILL REMOVAL

1. Remove the left Outercase cabinet.
2. Unscrew the screws holding the wires to the defective Grill (**Fig. G-1**)
3. Remove the (3) nuts holding the Grill to the cavity using a 9/32 or 7mm deep socket.
4. Unhook the defective Grill and take out.
5. Reinstall replacement Grill in reverse order.



Fig. G-1

TOP CONVECTION ASSY REMOVAL

1. Remove the Top Outercase cabinet.
2. Remove the Left & Right Chassis Support (6) screws, Heat Cover Upper (3) screws, plus Thermal Cutout. (**Fig. T-1**)
3. Unhook all wires going to the Conv Assy.
4. Lift off Heat Cover Upper and insulation. (**Fig. T-1**)
5. Remove (8) nuts from around the outer edge of the Conv Assy using a 9/32 or 7mm deep socket. **Fig. T-2**
5. Reinstall replacement Top Convection Assy in reverse order.

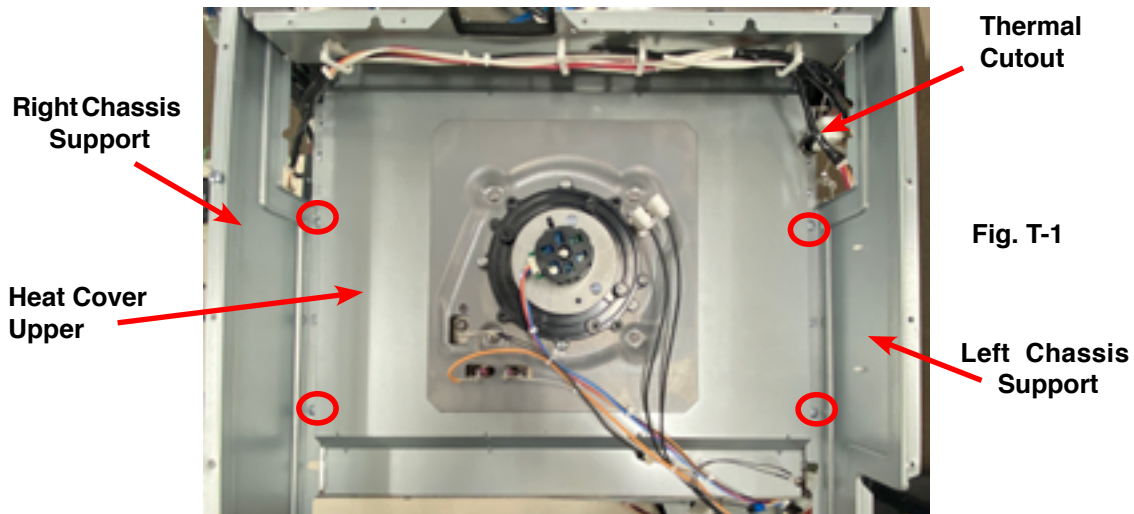


Fig. T-1

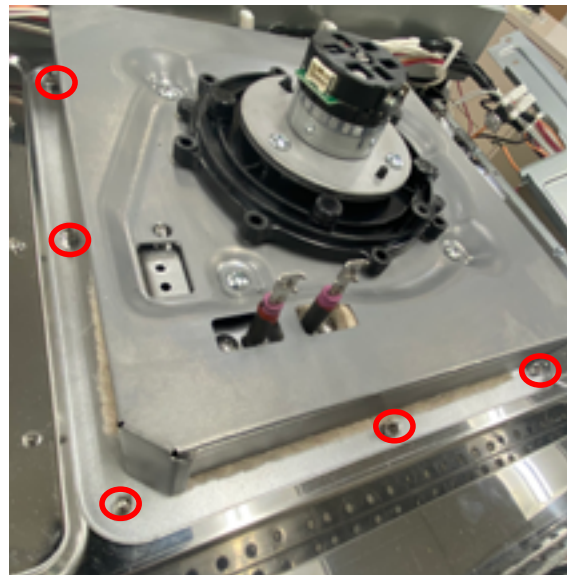
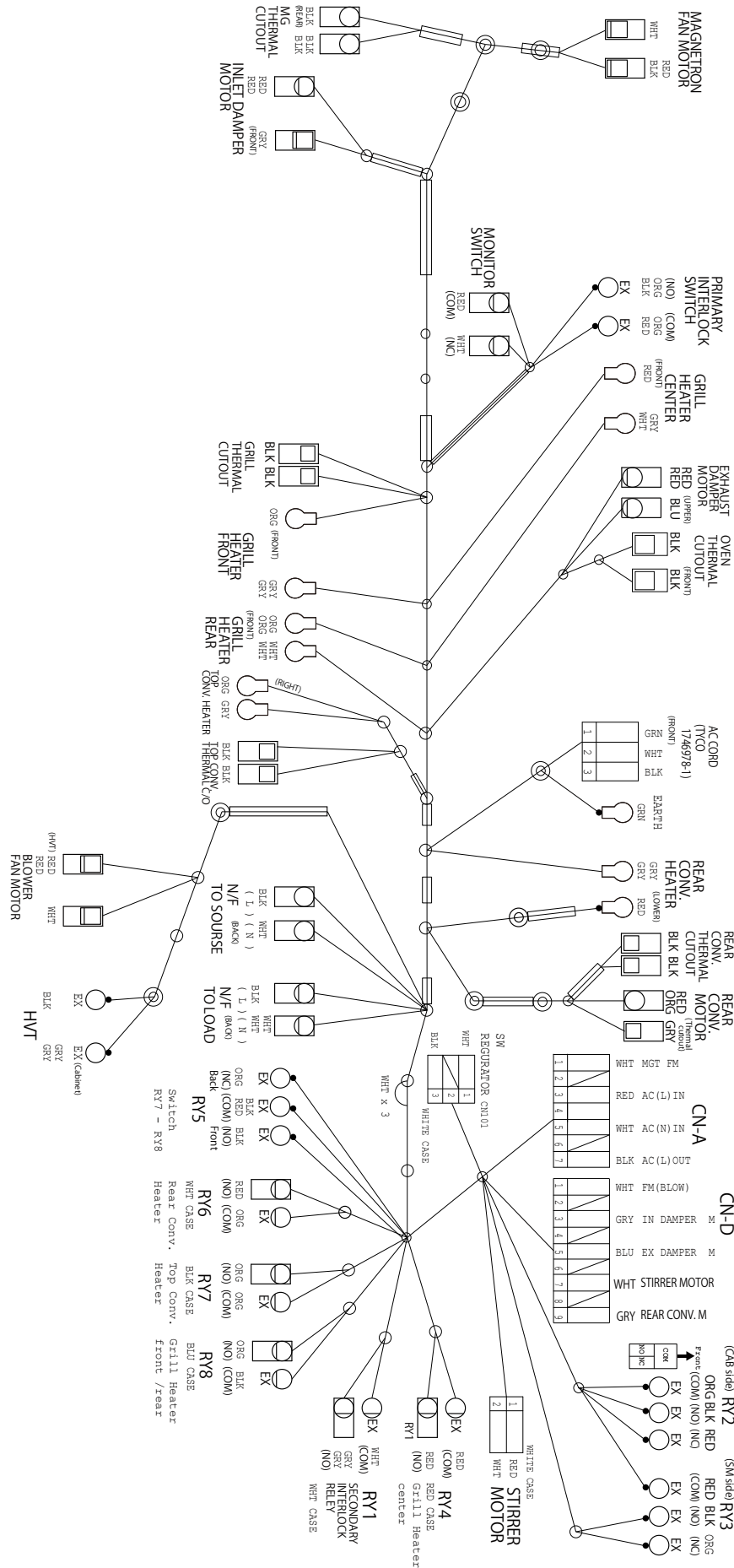
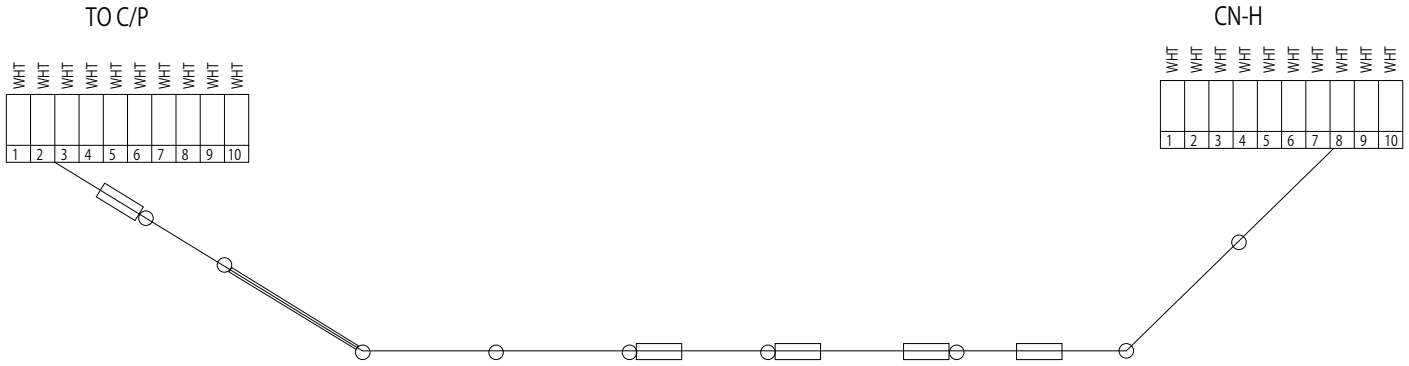


Fig. T-2

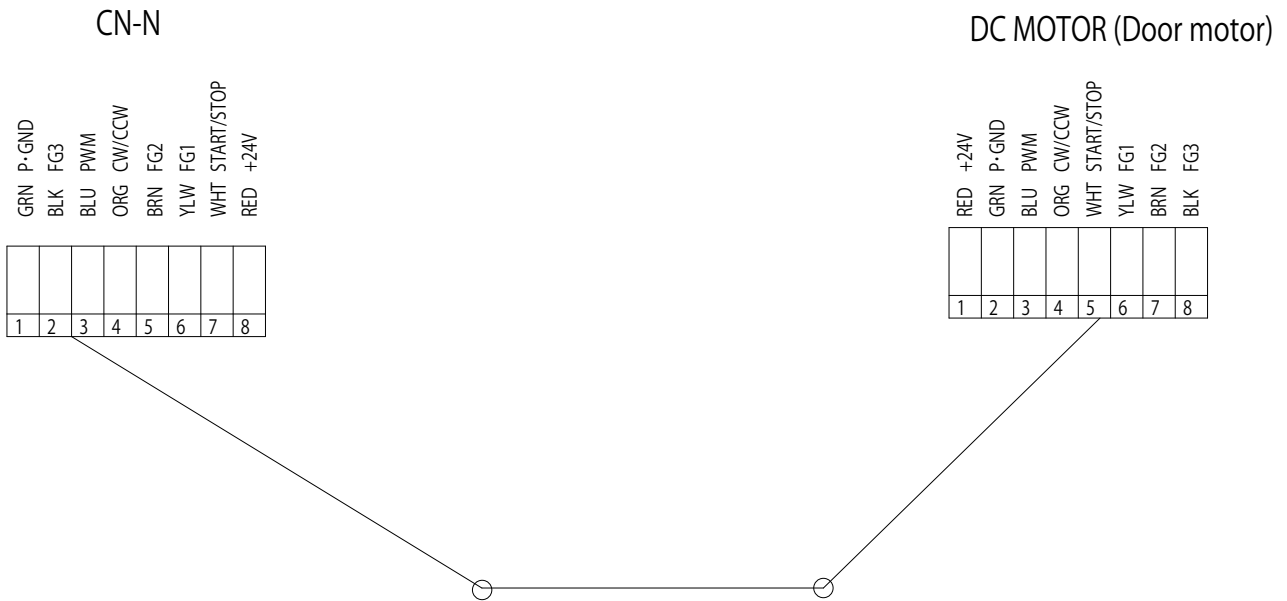
MAIN WIRE HARNESS



CPU HARNESS



MOTOR HARNESS



PARTS LIST

| REF. NO. | PART NO. | DESCRIPTION | Q'TY | CODE |
|-------------------------|----------------|-----------------------|------|------|
| ELECTRICAL PARTS | | | | |
| 1-1 | RC-QZA411WRZZ | HV CAPACITOR | 1 | AN |
| 1-2 | RH-DXA014WRZZ | H.V RECTIFIER | 1 | AF |
| 1-3 | DPWB-B696DRKZ | PSU UNIT | 1 | BF |
| 1-4 | RTRN-A861WRZZ | HV TRANSFORMER | 1 | BF |
| 1-5 | FMOTDA119WRKZ | TT MOTOR ASSY | 1 | AR |
| 1-6 | FANGTB020MRK2 | AUTO DRAWER GEAR ASSY | 1 | BG |
| 1-7 | FHLD-A033WRKZ | LED HOLDER ASSY | 2 | AG |
| 1-8 | RV-MZA427WRZZ | MAGNETRON | 1 | BM |
| 1-9 | FMOTEA629WRKZ | FAN MOTOR ASSY | 1 | BG |
| 1-10 | PHOK-A178WRFZ | LATCH HOOK R ASSY | 1 | AG |
| 1-11 | RTHM-A148WRZZ | THERMAL CUT OUT | 2 | AF |
| 1-12 | FDTCTA272WRKZ | SENSOR ASSY | 1 | AP |
| 1-13 | PHOK-A174WRFZ | LATCH HOOK L ASSY | 1 | AG |
| 1-14 | FPWBFA555WRKZ | NOISE FILTER UNIT | 1 | AQ |
| 1-15 | QFS-BA009WRE0 | FUSE 20A | 1 | AF |
| 1-16 | FMOTEA631WREZ | FAN MOTOR | 1 | BD |
| 1-17 | FH-HZA140WREZ | THERMISTOR | 2 | AL |
| 1-18 | QSW-MA168WRZZ | INTERLOCK SWITCH A | 3 | AE |
| 1-19 | LHLD-A420WRFZ | SENSOR HOLDER | 1 | AF |
| 1-20 | FACCD129WREZ | POWER SUPPLY CORD | 1 | AQ |
| 1-21 | DPWB-B383DRKZ1 | POWER UNIT | 1 | BA |
| 1-22 | RRLYDA060DRZZ | RELAY | 2 | AU |
| 1-23 | QSW-MA183WRZZ | INTERLOCK SWITCH | 1 | AH |
| 1-24 | QSW-MA169WRZZ | MONITOR SWITCH | 1 | AD |
| 1-25 | FPWB-B434DRKZ | WIRELESS ADAPTER | 1 | AY |
| 1-26 | RMOTEA547WRZZ | CONVECTION MOTOR | 1 | AW |
| 1-27 | RMOTEA557WRZZ | CYCLE MOTOR | 1 | AY |
| 1-28 | RTHM-A147WRZZ | THERMAL CUTOUT | 1 | AF |
| 1-29 | RSNSZA003DRZZ | SENSOR MODULE UNIT | 1 | AX |
| 1-30 | FDUC-A659WRKZ | REAR CONVECTION ASSY | 1 | BL |
| 1-31 | RMOTDA248WRZZ | TURNTABLE MOTOR | 3 | AH |
| 1-32 | FDUC-A663WRKZ | TOP CONVECTION ASSY | 1 | BQ |
| 1-33 | RHET-A516WRZZ | GRILL HEATER | 3 | AX |
| 1-34 | FW-VZA451DRZZ | WIFI HARNESS | 1 | AK |
| 1-35 | FW-VZA453DRZZ | SENSOR HARNESS | 1 | AG |
| 1-36 | FW-VZA458DRZZ | LED HARNESS | 1 | AC |
| 1-37 | FW-VZC655WREZ | MAIN HARNESS | 1 | BE |
| 1-38 | FW-VZC656WREZ | CONTROL HARNESS | 1 | AX |
| 1-39 | FW-VZC657WREZ | CPU HARNESS | 1 | AQ |
| 1-40 | FW-VZC658WREZ | MOTOR HARNESS | 1 | AH |
| 1-41 | FW-VZC660WREZ | TTM HARNESS | 1 | AE |
| 1-42 | RTHM-A146WRZZ | THERMAL CUTOUT | 2 | AH |
| 1-43 | RTHM-A157WRZZ | SH THERMOSTAT | 1 | AM |

CABINET PARTS

| | | | | |
|------|---------------|---------------------|---|----|
| 2-1 | FCABUB006WRYZ | TOP OUTER CASE | 1 | AZ |
| 2-2 | LANGQA830WRPZ | AC CORD MOUNT ANGLE | 1 | AM |
| 2-3 | LBShCA014WRE0 | CORD BUSHING | 1 | AB |
| 2-4 | FCABDA065WRYZ | REAR OUTER CASE | 1 | AA |
| 2-5 | GDAI-A567WRWZ | BOTTOM PLATE | 1 | AZ |
| 2-6 | GCABUB421WRWZ | LEFT OUTER CASE | 1 | AW |
| 2-7 | PCOVPA670WRPZ | LATCH COVER | 2 | AB |
| 2-8 | JHNDPA540WRFZ | CARRY HANDLE | 4 | AF |
| 2-9 | GCOVPA083WRWZ | CABINET COVER | 1 | AE |
| 2-10 | GCABUB423WRWZ | RIGHT OUTER CASE | 1 | AW |
| 2-11 | LANGTB439MRT0 | SIDE ANGLE RIGHT | 1 | AM |
| 2-12 | LANGTB438MRT0 | SIDE ANGLE LEFT | 1 | AM |
| 2-13 | LANGTB440MRP0 | C/P REAR ENCLOSURE | 1 | AH |

CONTROL PANEL PARTS

| | | | | |
|-----|---------------|---------------------|---|----|
| 3-1 | CPNLCC042MRK0 | CONTROL PANEL ASSY | 1 | BV |
| 3-2 | DPWBFB308MRU0 | DRAWER DISPLAY UNIT | 1 | BC |
| 3-3 | XEBS730P08XS0 | SCREW | 2 | AA |

| REF. NO. | PART NO. | DESCRIPTION | Q'TY | CODE |
|-------------------|---------------|------------------------|------|------|
| OVEN PARTS | | | | |
| 4-1 | DOVN-A865WRKZ | OVEN ASSY | 1 | N/A |
| 4-2 | PPAC-A224WREZ | INTAKE DAMPER PACKING | 1 | AG |
| 4-3 | PPAC-A225WREZ | EXHAUST DAMPER PACKING | 1 | AF |
| 4-4 | LANGTA622WRWZ | DRIVE GEAR MOUNT AG | 1 | AP |
| 4-5 | GCOVPA087WRWZ | FP-OC ENCLOSE COVER | 1 | AQ |
| 4-6 | LANG-A159WRWZ | REAR SEPARATE AG | 1 | AF |
| 4-7 | LANGQA956WRWZ | BLOWER MOTOR TO-AG | 1 | AS |
| 4-8 | LANGQA960WRPZ | MG THERMO TO AG | 1 | AE |
| 4-9 | LANGQA975WRWZ | MG REFLECTOR | 1 | AE |
| 4-10 | LANGTA614WRTZ | DOOR SUPPORT AG-L | 1 | AT |
| 4-11 | LANGTA616WRTZ | DOOR SUPPORT AG-R | 1 | AT |
| 4-12 | LANGTA617WRTZ | DOOR SUPPORT BOTTOM | 1 | AU |
| 4-13 | LANGTA619WRWZ | CHASSIS SUPPORT-L | 1 | AP |
| 4-14 | LANGTA621WRWZ | CHASSIS SUPPORT-R | 1 | AP |
| 4-15 | LANGTA636WRWZ | MG FAN MOUNT AG | 1 | AN |
| 4-16 | LANGTA642WRWZ | LED AIR GUIDE | 1 | AK |
| 4-17 | LBNDKA207WRWZ | HVC BAND | 1 | AG |
| 4-18 | MSLIFA007WREZ | SLIDE RAIL L | 1 | AZ |
| 4-19 | MSLIFA008WREZ | SLIDE RAIL R | 1 | AZ |
| 4-20 | MSLIFA013WREZ | SLIDE RAIL | 1 | AT |
| 4-21 | NGERRA001WRFZ | RACK GEAR | 1 | AL |
| 4-22 | PCLICA044WREZ | CANOE CLIP | 2 | AV |
| 4-23 | PDUC-B442WRWZ | BLOWER FAN DUCT | 1 | AT |
| 4-24 | PDUC-B450WRFZ | EXHAUST DUCT LOWER | 1 | AQ |
| 4-25 | PDUC-B462WRFZ | INTAKE DUCT LOWER | 1 | AM |
| 4-26 | PGIDHA081WRWZ | R-REAR AIR GUIDE-B | 1 | AG |
| 4-27 | PGIDHA083WRWZ | R-REAR AIR GUIDE-U | 1 | AH |
| 4-28 | PGIDHA085WRWZ | L-REAR AIR GUIDE-B | 1 | AF |
| 4-29 | PGIDHA087WRWZ | L-REAR AIR GUIDE-U | 1 | AH |
| 4-30 | PHOK-B032MRE0 | PUSH LATCH | 1 | AK |
| 4-31 | LANGTA628WRWZ | SLIDE MOUNT AG BOTTOM | 1 | AP |
| 4-32 | PCOVQA049WRWZ | HEAT COVER UPPER | 1 | AW |
| 4-33 | PFPF-A375WREZ | TOP CONV INSULATION | 1 | AP |
| 4-34 | LHLDWA010WRE0 | PURSE LOCK S | 1 | AA |
| 4-35 | LHLDWA073WREZ | PURSE LOCK L | 4 | AA |
| 4-36 | PDUC-B444WRWZ | EXHAUST DUCT M | 1 | AH |
| 4-37 | PDUC-B460WRFZ | INTAKE JOINT DUCT | 1 | AQ |
| 4-38 | PFPF-A369WREZ | HEAT INSULATION UPPER | 1 | AV |
| 4-39 | PFPF-A373WREZ | HEAT INSULATION SIDE | 2 | AD |
| 4-40 | LHLD-A417WRFZ | PSU HOLDER | 1 | AN |
| 4-41 | TLAB-B139MRR0 | MICROWAVE MENU LABEL | 1 | AE |
| 4-42 | LANGQA972WRWZ | LAMP GLASS COVER | 2 | AF |
| 4-43 | PGLSPB103WREZ | LAMP GLASS | 2 | AD |
| 4-44 | PPAC-A223WREZ | LAMP GLASS PACKING | 2 | AC |
| 4-45 | PGISHA078WREZ | HEATER SUPPORT | 3 | AD |
| 4-46 | MSPRCA184WREZ | THERMISTOR SPRING | 2 | AD |
| 4-47 | LHLDWA075WREZ | WIRE HOLDER | 6 | AA |

CUSHIONS

| | | | | |
|------|---------------|-----------|---|----|
| 5-1 | PCUS-A428WREZ | CUSHION-A | 2 | AB |
| 5-2 | PCUS-A429WREZ | CUSHION-B | 1 | AB |
| 5-3 | PCUS-A430WREZ | CUSHION-C | 1 | AB |
| 5-4 | PCUS-A431WREZ | CUSHION-D | 2 | AB |
| 5-5 | PCUS-A432WREZ | CUSHION-E | 1 | AB |
| 5-6 | PCUS-A433WREZ | CUSHION-F | 4 | AB |
| 5-7 | PCUS-A434WREZ | CUSHION-G | 1 | AB |
| 5-8 | PCUS-A436WREZ | CUSHION-I | 1 | AB |
| 5-9 | PCUS-A437WREZ | CUSHION-J | 1 | AB |
| 5-10 | PCUS-A438WREZ | CUSHION-K | 1 | AB |
| 5-11 | PCUS-A452WREZ | CUSHION-L | 1 | AB |
| 5-12 | PCUS-A453WREZ | CUSHION-M | 2 | AB |
| 5-13 | PCUS-A454WREZ | CUSHION-N | 2 | AB |

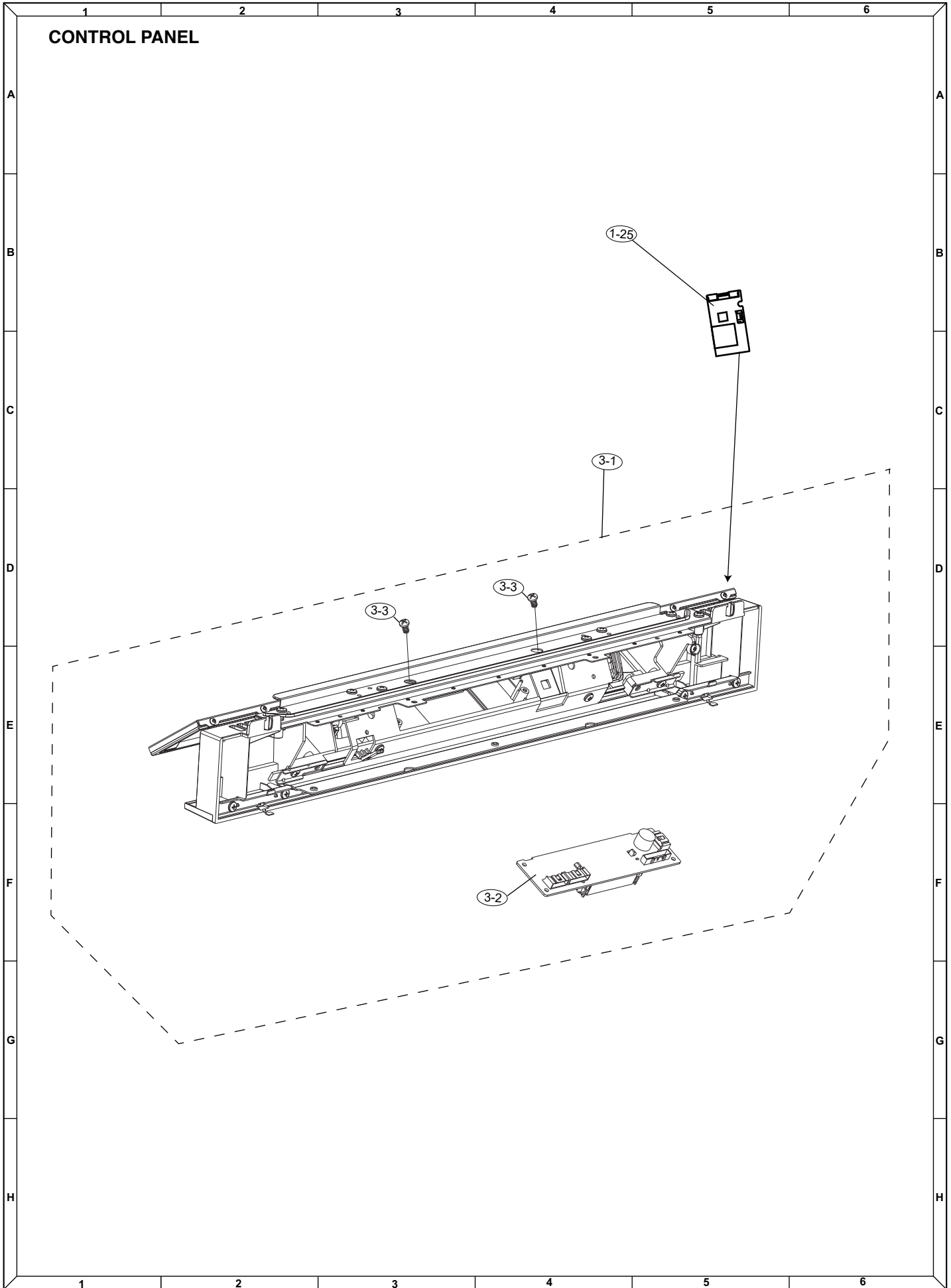
| REF. NO. | PART NO. | DESCRIPTION | Q'TY | CODE |
|-------------|---------------|------------------------|------|------|
| DOOR | | | | |
| 6-1 | DDORFB793WRKZ | DOOR ASSY | 1 | BG |
| 6-2 | PPACGA302WREZ | DRAWER PACKING | 2 | AD |
| 6-3 | LHLD-A419WRFZ | RACK STAY HOLDER | 8 | AC |
| 6-4 | LSTPPB072MRF0 | LATCH HEAD R | 1 | AD |
| 6-5 | LSTPPB073MRF0 | LATCH HEAD L | 1 | AD |
| 6-6 | LSTYPA008WRFZ | RACK STAY | 8 | AD |
| 6-7 | LX-HZB001MRE0 | SPECIAL SCREW | 2 | AB |
| 6-8 | MSPRTB035MRE0 | LATCH SPRING | 2 | AA |
| 6-9 | PPACGA300WRFZ | HOLE COVER | 4 | AC |
| 6-10 | FCOV-B601MRK0 | DOOR FRAME ASSY | 1 | BS |
| 6-11 | FCOVHB011MRK0 | CHOKE COVER ASSY | 1 | BB |
| 6-12 | GCOVHB090MRF0 | DOOR SUPPORT COVER | 1 | AE |
| 6-13 | TCAUAB059MRR0 | CONSUMER WARNING LABEL | 1 | AB |

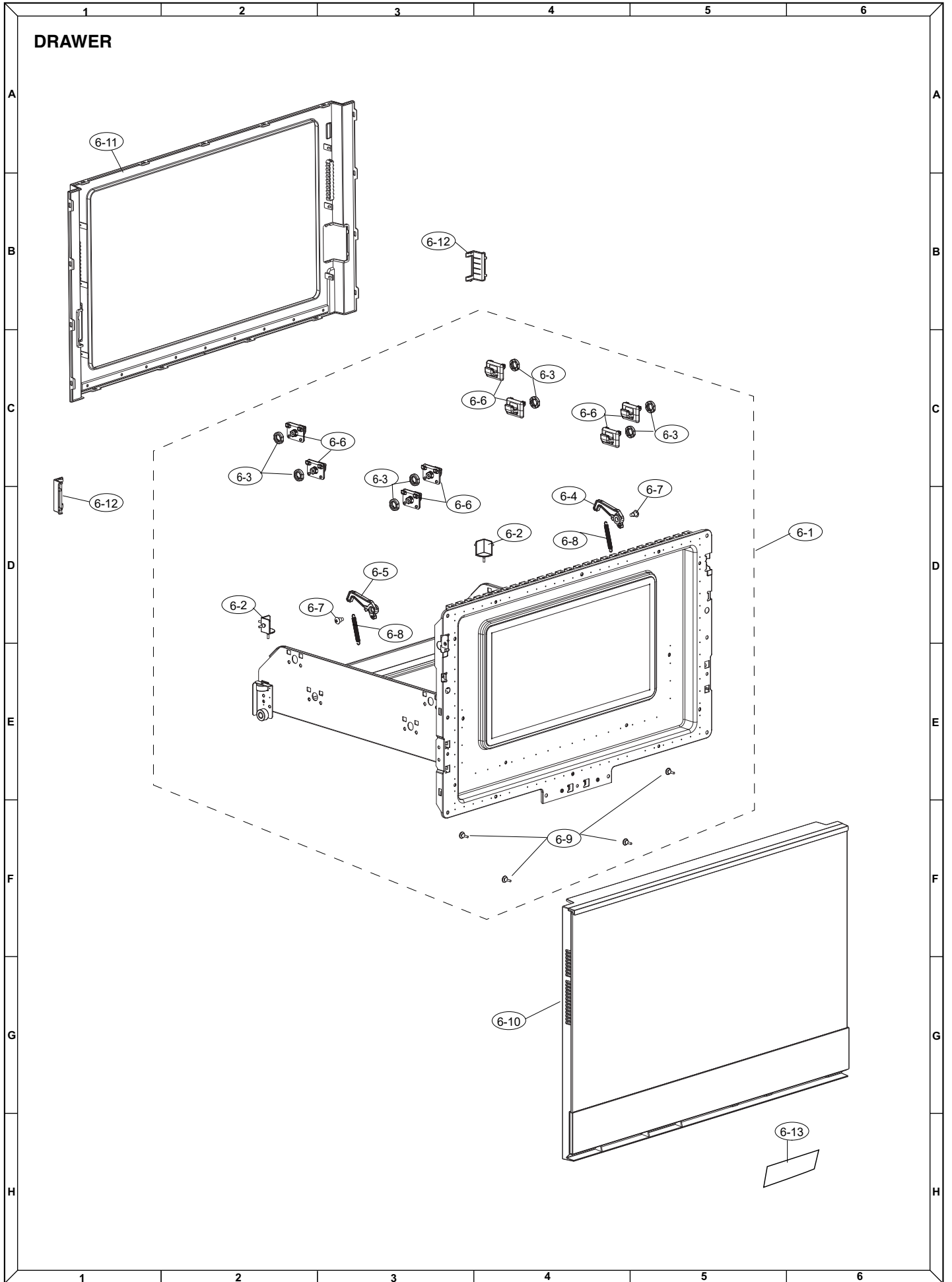
MISCELLANEOUS

| | | | | |
|------|---------------|---------------------------|---|----|
| 7-1 | CFZK-C073WRKZ | ACCESSORY ASSY | 1 | BL |
| 7-2 | PGLSPB105WREZ | COOKING TRAY | 1 | BA |
| 7-3 | UAMI-A193WREZ | RACK-L | 1 | AV |
| 7-4 | UAMI-A194WREZ | RACK-U | 1 | AV |
| 7-5 | TINSEB579MRR0 | OPERATION MANUAL | 1 | AK |
| 7-6 | TINSEB580MRR0 | INSTALLATION INSTRUCTIONS | 1 | AD |
| 7-7 | TLAB-B143MRR0 | CONV MENU LABEL | 1 | AE |
| 7-8 | TMAPCA855WRRZ | SCHEMATIC DIAGRAM | 1 | AB |
| 7-9 | TCAUAB050MRR0 | MONITOR CAUTION | 2 | AD |
| 7-10 | TCAUAA387WRRZ | DHHS GRD CAUTION | 1 | AD |
| 7-11 | TCAUHA412WRRZ | USER CAUTION LABEL | 1 | AA |
| 7-12 | LX-CZB073MRE0 | SCREWS | 4 | AA |

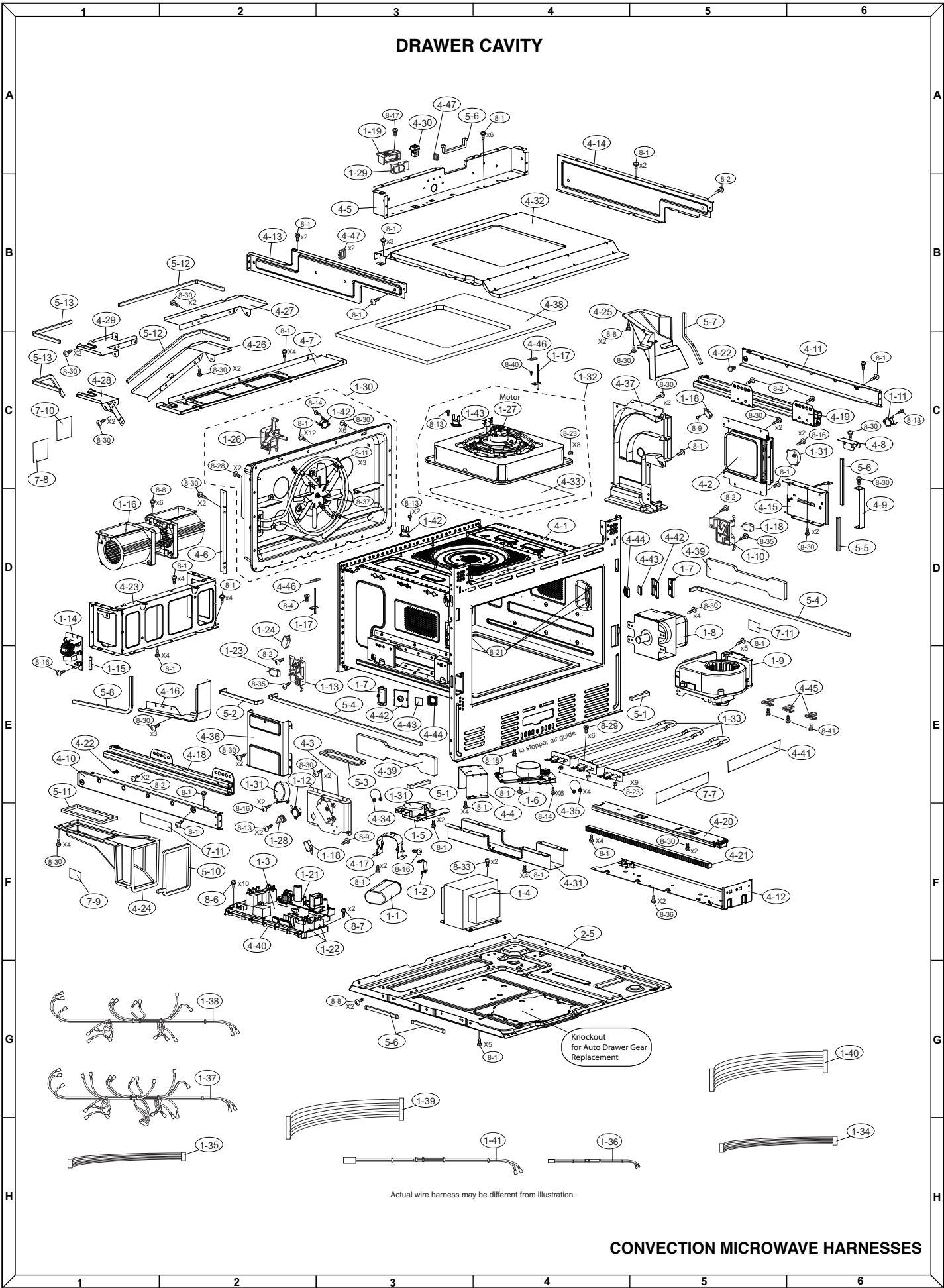
SCREWS, NUTS, AND WASHERS

| | | | | |
|------|---------------|-------|-----|----|
| 8-1 | XOTS740P08000 | SCREW | 125 | AA |
| 8-2 | XOTS740P12RV0 | SCREW | 7 | AB |
| 8-3 | XOTWW40P06000 | SCREW | 11 | AB |
| 8-4 | XOTWW40P08000 | SCREW | 19 | AA |
| 8-5 | XOTWW40P12000 | SCREW | 4 | AA |
| 8-6 | XEBS730P08000 | SCREW | 12 | AA |
| 8-7 | XETS740P08000 | SCREW | 2 | AA |
| 8-8 | XETS740P10000 | SCREW | 14 | AA |
| 8-9 | XCPS730P14000 | SCREW | 2 | AB |
| 8-10 | XCTS740P14000 | SCREW | 4 | AC |
| 8-11 | XBTWW50P08000 | SCREW | 3 | AG |
| 8-12 | XBTS740P08RV0 | SCREW | 1 | AA |
| 8-13 | XHPS730P06000 | SCREW | 9 | AA |
| 8-14 | XHPS740P06000 | SCREW | 7 | AA |
| 8-15 | XHPS740P08000 | SCREW | 10 | AA |
| 8-16 | XHPS740P08K00 | SCREW | 8 | AB |
| 8-17 | XEPS740P10000 | SCREW | 1 | AA |
| 8-18 | XHTS730P08000 | SCREW | 1 | AA |
| 8-19 | XHTS740P12000 | SCREW | 4 | AA |
| 8-20 | XHTS740P08RV0 | SCREW | 1 | AA |
| 8-21 | XHTWW40P06000 | SCREW | 4 | AF |
| 8-22 | XNEUW50-40000 | SCREW | 1 | AP |
| 8-23 | XNES740-32000 | SCREW | 17 | AB |
| 8-24 | XWHUW50-08000 | SCREW | 1 | AA |
| 8-25 | XWSUW50-13000 | SCREW | 1 | AF |
| 8-26 | XWSUW40-10000 | SCREW | 1 | AA |
| 8-27 | XWHUW48-15120 | SCREW | 2 | AA |
| 8-28 | LX-BZA143WREZ | SCREW | 4 | AD |
| 8-29 | LX-BZA144WREZ | SCREW | 10 | AD |
| 8-30 | LX-BZA148WREZ | SCREW | 61 | AD |
| 8-31 | LX-BZA153WREZ | SCREW | 8 | AB |
| 8-32 | LX-BZA163WREZ | SCREW | 3 | AF |
| 8-33 | LX-BZA164WREZ | SCREW | 2 | AK |
| 8-34 | LX-BZA217WREZ | SCREW | 2 | AB |
| 8-35 | LX-CZ0052WRE0 | SCREW | 2 | AE |
| 8-36 | LX-CZA084WREZ | SCREW | 3 | AA |
| 8-37 | LX-NZA002WRE0 | SCREW | 1 | AN |
| 8-38 | LX-NZB006MRE0 | SCREW | 2 | AA |
| 8-39 | LX-HZB001MRE0 | SCREW | 2 | AB |
| 8-40 | XOTWW40P08XU0 | SCREW | 2 | AA |
| 8-41 | XCTWW40P12000 | SCREW | 3 | AA |



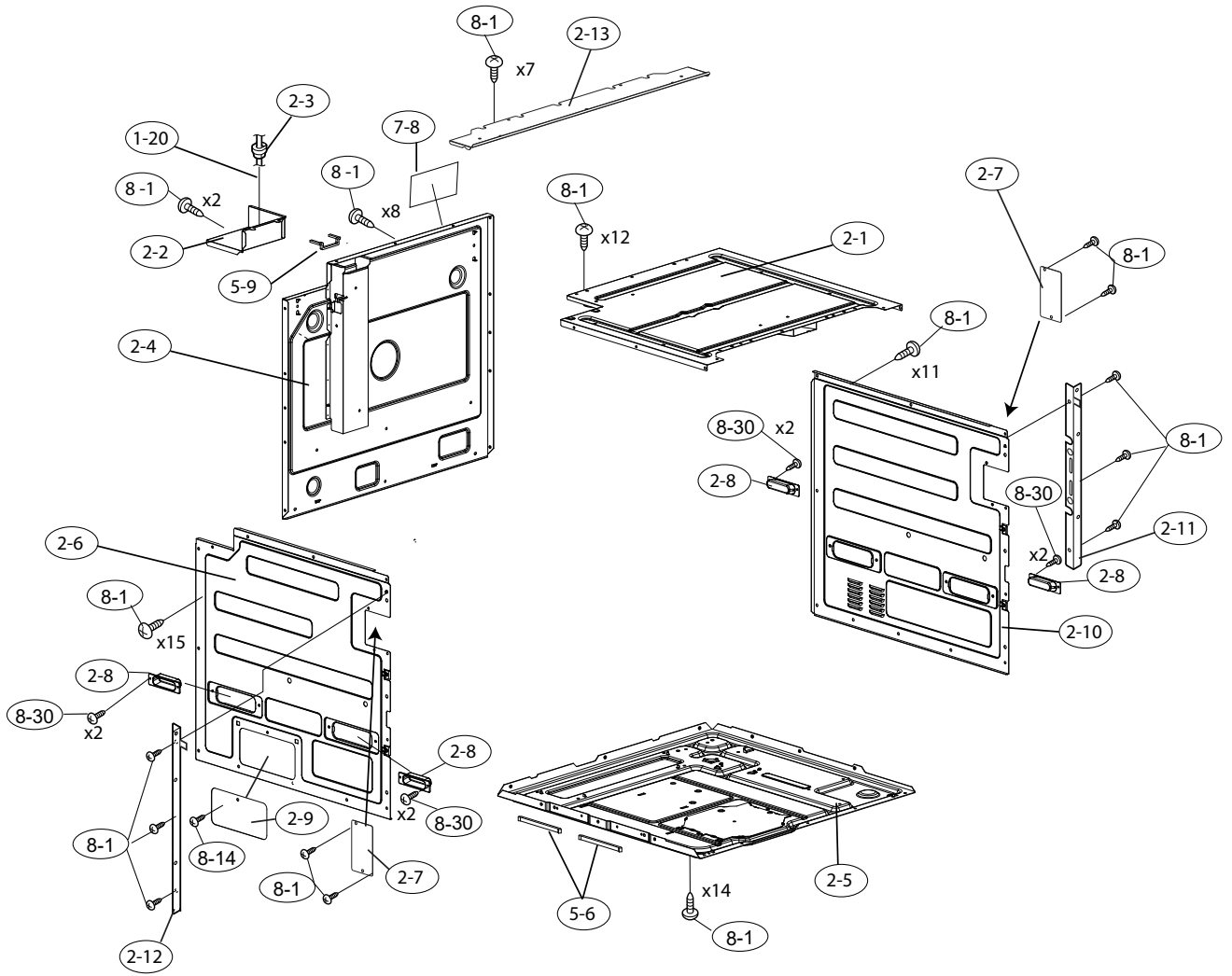


DRAWER CAVITY



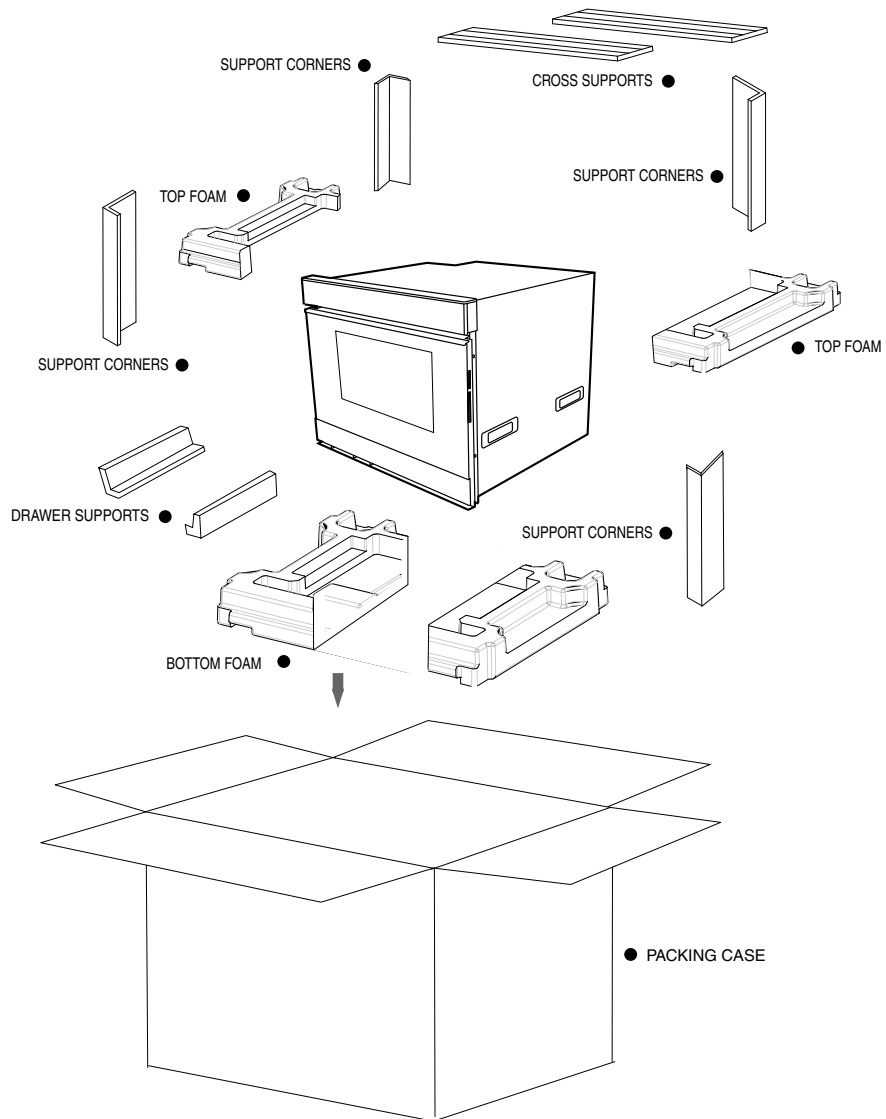
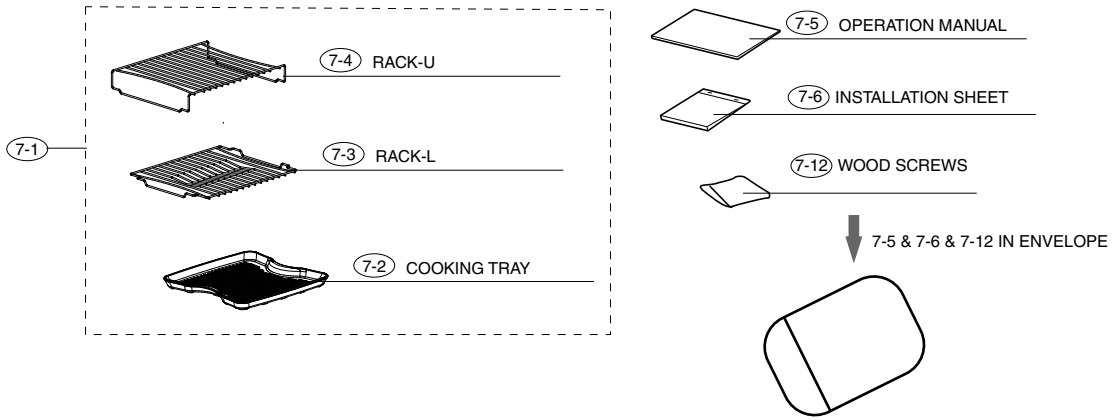
CONVECTION MICROWAVE HARNESES

DRAWER CABINET



PACKING PARTS

● Non-replaceable items



NOTES

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