

MICROWAVE OVEN HOODS

IMPORTANT SAFETY NOTICE

THIS INFORMATION IS INTENDED FOR USE BY INDIVIDUALS POSSESSING ADEQUATE BACKGROUNDS IN ELECTRICAL, ELECTRONIC AND MECHANICAL EXPERIENCE. ANY ATTEMPT TO REPAIR A MAJOR APPLIANCE MAY RESULT IN PERSONAL INJURY AND PROPERTY DAMAGE. THE MANUFACTURER OR SELLER CANNOT BE RESPONSIBLE FOR THE INTERPRETATION OF THIS INFORMATION, NOR CAN IT ASSUME ANY LIABILITY IN CONNECTION WITH ITS USE.

DISCONNECT POWER BEFORE SERVICING. IMPORTANT-RECONNECT ALL GROUNDING DEVICES

ALL PARTS OF THIS APPLIANCE CAPABLE OF CONDUCTING ELECTRICAL CURRENT ARE GROUNDED. IF GROUNDING WIRES, SCREWS, STRAPS, CLIPS, NUTS OR WASHERS USED TO COMPLETE A PATH TO GROUND ARE REMOVED FOR SERVICE, THEY MUST BE RETURNED TO THEIR ORIGINAL POSITION AND PROPERLY FASTENED.

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY.

- A. IF OVEN IS OPERABLE, PERFORM MICROWAVE EMISSION CHECK PRIOR TO EXAMINING THE UNIT.
- B. DO NOT OPERATE OR ALLOW THE OVEN TO BE OPERATED WITH THE DOOR OPEN.
- C. IF THE OVEN OPERATES WITH THE DOOR OPEN:
1. INSTRUCT THE USER NOT TO OPERATE THE OVEN.
 2. CONTACT THE MANUFACTURER AND THE CENTER FOR DEVICES RADIOLOGICAL HEALTH IMMEDIATELY.
- D. CHECK THE FOLLOWING SAFETY ITEMS ON ALL MICROWAVE OVENS (MWOs) BEFORE ACTIVATING THE MAGNETRON.
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
- E. BEFORE TURNING ON MICROWAVE POWER FOR ANY SERVICE TEST OR INSPECTION WITHIN THE MICROWAVE GENERATING COMPARTMENTS, CHECK THE MAGNETRON, WAVE GUIDE AND CAVITY FOR PROPER ALIGNMENT, INTEGRITY AND CONNECTIONS.
- F. ANY DEFECTIVE OR MISADJUSTED COMPONENTS IN THE INTERLOCK MONITOR, DOOR SEAL AND MICROWAVE GENERATION AND TRANSMISSION SYSTEMS SHALL BE REPAIRED, REPLACED OR ADJUSTED BY PROCEDURE DESCRIBED IN THIS MANUAL BEFORE THE OVEN IS RELEASED TO THE OWNER.
- G. A MICROWAVE LEAKAGE CHECK TO VERIFY COMPLIANCE WITH THE FEDERAL PERFORMANCE STANDARD SHOULD BE PERFORMED ON EACH OVEN PRIOR TO RELEASE TO THE OWNER.

GROUNDING SPECIFICATIONS

Leakage Current 0.5 mA. (Max.)
Ground Path Resistance 0.14 ohm (Max.)

INSTALLATION REQUIREMENTS

ELECTRICAL
MWO Power 1050 Watts
Power Source 120 VAC, 60 Hz.
Line Current 14.8 Amps. (1650 Watts)
Over Current Protection 20 Amps*
* Requires 120 volt, 20 Amp. parallel, grounded separate circuit.
Working Voltage 108-132 VAC

MICROWAVE LEAKAGE TEST

1. Place 275 ml. water in 1000 ml. beaker (WB64x73).
2. Place beaker in center of oven glass.
3. Set meter to 2450 MHz scale.
4. Turn "on" for 5 minute test.
5. Hold probe perpendicular to surface being tested and scan surfaces at rate of one inch/sec.

Test the following areas:

- Entire perimeter of door and control panel
- Viewing surface of door window
- Exhaust vents

6. Maximum leakage 4 mW/cm²

NOTE: Maximum allowable leakage is 5 mW/cm²
4 mW/cm² is used to allow for measurement and meter accuracy.

Inform the manufacturer of any oven found to have emission in excess of 5 mW/cm². Make repairs to bring the unit into compliance at no cost to owner and try to determine cause. Instruct owner not to use oven until it has been brought into compliance.

⚠ WARNING

TO PREVENT ELECTRICAL SHOCK, USE EXTREME CAUTION WHEN DIAGNOSING OVEN WITH OUTER CASE REMOVED AND POWER "ON". THE HIGH VOLTAGE SECTION OF THE POWER SUPPLY, INCLUDING FILAMENT LEADS, HAVE THE POTENTIAL WITH RESPECT TO GROUND TO REACH 4000 VOLTS!

HIGH VOLTAGE CAPACITOR

The high voltage capacitor has an internal shunt resistor to automatically discharge the capacitor when the oven turns "off". Under normal operation the capacitor should fully discharge within 30 seconds.

⚠ WARNING

ALWAYS BE CERTAIN THE CAPACITOR IS DISCHARGED BEFORE SERVICING. DISCHARGE BY PLACING AN INSULATED HANDLE SCREW DRIVER BETWEEN THE DIODE CONNECTION AND OVEN CHASSIS GROUND.

PERFORMANCE TEST

1. Measure line voltage(loaded). This test is based on normal voltage variations of 108V to 132V. Low voltage will cause low output power and temperature rise.
2. Place WB64X73 beaker containing one liter of water (1000ml, 55°F~75°F) on turntable and record the starting water temperature with an accurate thermometer.

• TECHNICAL DATA SHEET •

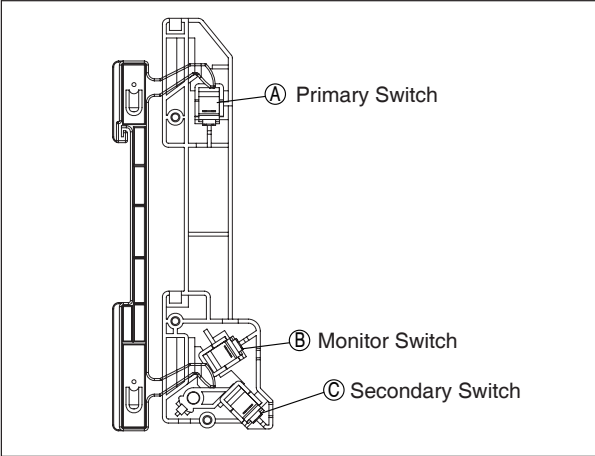
(DO NOT USE ANY OTHER LOAD OR DISH AS RESULT WILL VARY FROM STANDARD !)

3. Set at HIGH power for 2 minutes, and 3 sec.
4. Turn on the oven.
5. Record end water temperature. The minimum difference between the initial and ending temperature should be: 30°F @ 120 V.

INTERLOCKS (DOOR Latch Switches)

Interlocks are designed as follows:

Primary - Top switch operated by top latch pawl connected to line (L) leg.



HOW TO TEST INTERLOCKS

1. Disconnect power, open control panel, and discharge capacitor.
2. Check Continuity of Com and N.O.:

 - Door Closed - 0 Ω
 - Door Open - ∞ Ω

MONITOR SWITCH

The monitor switch B is located between the top and bottom interlocks. The monitor switch is operated indirectly by the bottom latch pawl.

HOW TO TEST MONITOR

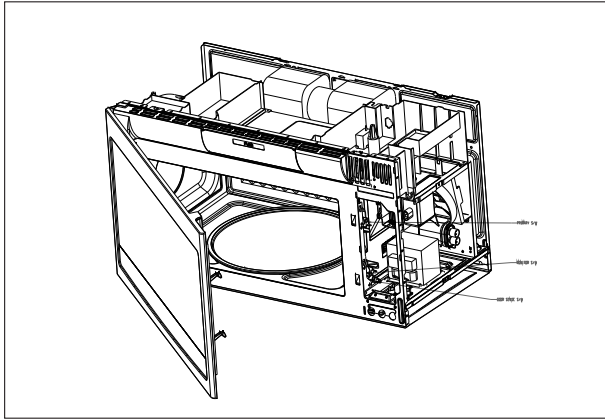
1. Disconnect power, open control panel, and discharge capacitor.
2. Disconnect monitor switch leads, and test at terminals:

 - Door Closed- ∞ Ω
 - Door Open - 0 Ω

3. Reconnect switch wiring.
4. Test Circuit Operation:

A) Connect temporary jumper across relay contacts and primary switch to simulate shorted switch contacts. Locate convenient connections in circuit to be certain COM and N.O. terminals are used.
B) Connect Ohm meter (low scale) across the two line terminals of appliance power cord. Continuity must show:
• Door Closed - Some Ω
• Door Open - 0 Ω
C) Remove 20 Amp. Fuse - Circuit must open (∞ Ohms). If not, check wiring of monitor and interlock circuits.
D) WARNING After test remove temporary jumper leads! from interlocks and relay. Reconnect monitor switch leads, replace fuse.
E) Replacement of any parts in monitor circuit requires repeating this entire test procedure.

IMPORTANT: Check for microwave leakage after replacing or adjusting door, Interlock switches or brackets.



MAIN FUSE

⚠ WARNING

WHEN 20 AMP. FUSE IS BLOWN DUE TO OPERATION OF THE MONITOR SWITCH, THE MONITOR SWITCH MUST BE REPLACE RELAYS AND/OR INTERLOCK SWITCHES WHEN CONTINUITY CHECK SHOWS CONTACTS SHORTED.

INTERLOCK REPLACEMENT:

The switch housing is adjustable for door fit and switch operation.

1. Disconnect power, open control panel, and discharge capacitor.
2. Loosen switch housing mounting screw at enlarged hole in vertical flange.
3. Adjust each switch housing for proper switch operation, and door fit. Retighten screws.
4. IMPORTANT - CHECK FOR MICROWAVE LEAKAGE AFTER ANY ADJUSTMENT.

IMPORTANT: CHECK FOR MICROWAVE LEAKAGE AFTER REPLACING OR ADJUSTING DOOR, INTERLOCK SWITHES OR BRACKETS.

⚠ CAUTION

When safety interlocks and monitor switches are repaired or replaced, check microwave leakage
• Perform microwave leakage check, if leakage does not exceed 4 mW/cm², it is performing properly.

AUTOMATIC FAN FEATURE

Exhaust fan may turn "ON" automatically during heavy surface heat loads. In this condition, the exhaust fan cannot be turned off manually, it will turn off automatically. The exhaust fan may stay on up to 15 mins after range and lower oven controls are turned off.

HOOD THERMOSTAT

Single pole thermostat mounted on R.H. side duct in control compartment .Contacts close at approx .158°F(70°C) .

BOTTOM THERMOSTAT

Single pole thermostat mounted on base plate. Contacts open at approx .248°F(120°C) .

DOOR ASSEMBLY

The door assembly is serviceable as an assembly or with parts.

1. Disconnect power and open the door.
2. Remove the hinge clip.
3. Remove the door.

⚠ WARNING

TO AVOID POSSIBLE ELECTRICAL SHOCK, NEVER TOUCH OR SERVICE THE HIGH VOLTAGE CIRCUIT WITHOUT DISCHARGING CAPACITOR BY SHORTING ACROSS ITS THERMINALS.

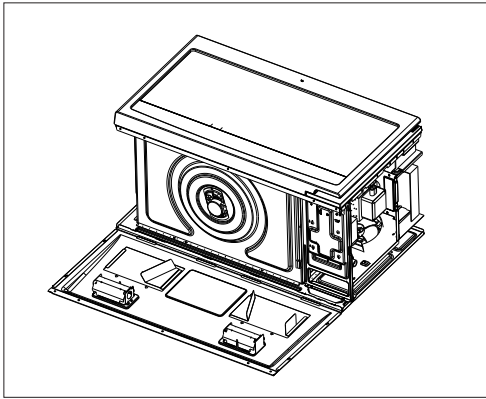
CAVITY THERMOSTAT CUTOUT (FLAME SENSOR)

The Cavity Thermal Cutout is located on the top side of the Oven Cavity beside exhaust duct with a temperature rating of 248°F (120°C). The cutout is tightly held to the top of the oven cavity by a spring clip.

NOTE: if cutout cannot be removed from clip, oven will have to be removed from installation and outer case removed.

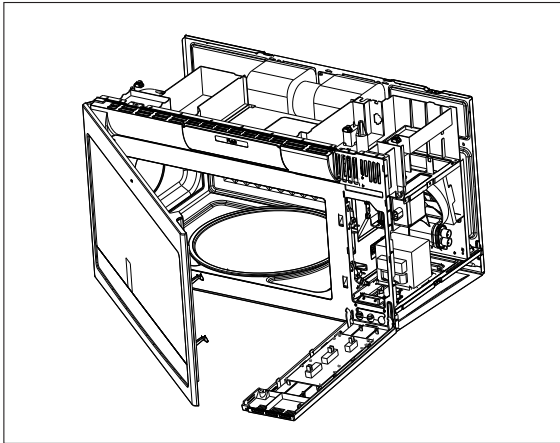
To Service Turntable (on/off) Motor

1. Disconnect power and remove bottom plate screws(9).
2. Remove bottom plate and disconnect the turntable motor wire.
3. Remove the turntable screws(2) and pull the turntable motor.



MAGNETRON, MAGNETRON FAN, VENT BLOWER, CAPACITOR, DIODE AND POWER TRANSFORMER

Oven must be removed from the wall to service.



REMOVING OVEN FROM WALL (2 PEOPLE REQUIRED)

Oven hooked on metal tabs at bottom of wall mounting plate and fastened to cabinet by top cabinet bolts (3).

⚠ CAUTION

Oven weighs about 71 lbs.

Requires 2 people for removal.

1. Disconnect Power Cord.
2. Remove top cabinet bolts (3).
3. Pull unit forward slowly, providing adequate support to prevent dropping units
4. Disconnect duct and remove damper assembly.
5. Drop unit during removal of last top cabinet bolt.

SMART BOARD:

The SMART BOARD contains the power relay, vent blower triac surface, light relays, and other components to perform the proper switching circuits. Several disconnect plugs are also located on the SMART BOARD:

CN2 - Door Sensing Connector
CN3 - Cavity LED
CN6 - Display board Connector
CN8 - Cooktop LED
CN100 - Main Relay, Vent Relay, Turntable Relay
CN150 - Humidity Sensor Connector

Connector	Pin	Voltage	Connector	Pin	Voltage
CN2	1	5V	CN100	1	120V
	2	5V		2	-
CN3	1	12V		3	N
	2	G		4	120V
CN6	1	5V		5	-
	2	5V		6	-
	3	5V		7	120V
	4	G		8	120V
	5	G		9	120V
CN8	1	12V		10	-
	2	12V	CN150	1	5V
	3	G		2	12V
	4	G		3	5V

ERROR MESSAGE

Display Signal:

- **KEYPAD SHORTED -- SERVCIE MAYBE NEEDED**
Description: Key panel shorted continuously for 60 seconds. Need replace the key membrane.
- **SENSOR ERROR -- SERVCIE MAYBE NEEDED**
Description: Humidity sensor error. Need replace the humidity sensor.
- **SENSOR ERROR -- CHECK FOOD AMOUNT--SEE PROBLEM SLOVER**
Description: The humidity sensor cannot detect the humidity from food. The food amount is too small or the food is covered. Press the cancel to clear the error message.
- **SENSOR ERROR**
Description: The Door may be opened during the sensor cook. Press Cancel pad to clear the error message.

CONTROL PERFORMANCE TEST

- Set Clock-Touch clock pad one time, enter time of day.
- Alternately, touch each function pad and enter time, power level or selection for the selected function.
- Touch CANCEL/OFF after each function test to clear that function.
- Repeat procedure for each function to exercise each pad.
- Control and display should respond to each entry.
- Display should revert to Time-Of-Day after each CANCEL/OFF. Refer results to Diagnostic Flow Chart.

KEY PANEL TEST

If necessary the key panel pads can be verified by a continuity test. For ease of handling the key panel should be removed and placed on a flat surface. Check continuity between connections at end of ribbon (Use high ohm scale).

This device complies with Part 18 of the FCC Rules.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.This equipment should be installed and operated with minimum distance 20cm between the radiator& your body.

SCHEMATIC DIAGRAM

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graph TD
    Start([START - VERIFY MWO POWER CORD PLUGGED INTO OUTLET]) --> DisplayLit{IS DISPLAY LIT?}
    DisplayLit -- NO --> OutletVoltage{VERIFY OUTLET VOLTAGE PRESENT}
    DisplayLit -- YES --> ProgramUnit[1. SET CLOCK (IF NEEDED)  
2. PLACE CUP OF WATER AND NEON LIGHT TESTER IN UNIT  
3. PROGRAM UNIT TO COOK]
    OutletVoltage -- NO --> BreakerReset[CHECK FUSE/CIRCUIT BREAKER - RESET BREAKER/REPLACE FUSE IF NEEDED]
    OutletVoltage -- YES --> Unplug[UNPLUG & DISASSEMBLE]
    Unplug --> FuseCheck{IS INTERNAL MWO 15A/20A FUSE OK?}
    FuseCheck -- YES --> PlugIn[PLUG IN UNIT]
    FuseCheck -- NO --> ServiceBreaker[INSTALL SERVICE BREAKER ACROSS FUSE HOLDER]
    PlugIn --> DisplayLit2{IS DISPLAY LIT?}
    DisplayLit2 -- YES --> ProgramUnit
    DisplayLit2 -- NO --> TripBeforeCook{SERVICE BREAKER TRIPPED BEFORE PROGRAMMING FOR COOK?}
    TripBeforeCook -- YES --> DisplayLit2
    TripBeforeCook -- NO --> VoltageAtSmps{HAVE VOLTAGE AT SMPS ON PCB?}
    VoltageAtSmps -- YES --> CheckTCO{CHECK TCO(s)}
    VoltageAtSmps -- NO --> CheckTCO
    CheckTCO -- OPEN --> ReplaceTCO[REPLACE TCO(s)]
    CheckTCO -- CLOSED --> CheckRepairWiring[CHECK/REPAIR TCO WIRING]
    ReplaceTCO --> CheckRepairWiring
    CheckRepairWiring --> AnyShorted{ANY SHORTED OR PINCHED WIRING?}
    AnyShorted -- YES --> Repair[REPAIR]
    AnyShorted -- NO --> Retest[RETEST & REASSEMBLE - END]
    Repair --> Retest
    Retest --> ReplacePCB[REPLACE PCB]
    Retest --> ReplaceHVT[REPLACE HVT]
    ReplacePCB --> About0V{ABOUT 0V}
    ReplaceHVT --> About0V
    About0V -- YES --> WiringHVT{WIRING TO HVT OK?}
    About0V -- NO --> Repair
    WiringHVT -- YES --> ProgramUnit
    WiringHVT -- NO --> Repair
    Repair --> Retest
    ProgramUnit --> PressStart[PRESS START]
    PressStart --> ServiceBreakerTrips{SERVICE BREAKER TRIPS?}
    ServiceBreakerTrips -- YES --> MonitorDoorSwitch{MONITOR DOOR SWITCH OK?}
    ServiceBreakerTrips -- NO --> WaterHeats{WATER HEATS / NEON TESTER LIGHTS?}
    MonitorDoorSwitch -- YES --> CheckResistanceHVC{CHECK RESISTANCE OF HVC - 2K OHM SCALE ON DVM}
    MonitorDoorSwitch -- NO --> ReferFront[REFER TO FRONT PAGE FOR MORE INFO]
    CheckResistanceHVC --> Resistance2K{RESISTANCE < 2K OHMS?}
    Resistance2K -- YES --> RepairReplace[REPAIR / REPLACE]
    Resistance2K -- NO --> HVCMiswired{HVC IS MISWIRED}
    RepairReplace --> ReplaceHVC[REPLACE HVC]
    HVCMiswired --> Repair
    ReplaceHVC --> Repair
    Repair --> Retest
    WaterHeats -- YES --> InstallClampMWO[INSTALL CLAMP ON AMMETER TO MWO'S INTERNAL FUSE LEAD]
    WaterHeats -- NO --> InstallClampMWO
    InstallClampMWO --> About5A{ABOUT 5A}
    About5A --> MagnetronLight{MAGNETRON BLOWER AND CAVITY LIGHT ON?}
    About5A --> CavLight{CAVITY LIGHT ONLY ON?}
    MagnetronLight -- YES --> PrimarySwitchOK{PRIMARY SWITCH OK?}
    MagnetronLight -- NO --> About120V{ABOUT 120V}
    CavLight -- YES --> ReplaceDoorSwitch[REPLACE PRIMARY DOOR SWITCH]
    CavLight -- NO --> About120V
    PrimarySwitchOK --> CheckVoltageRelay{CHECK VOLTAGE ACROSS POWER RELAY ON PCB (DOOR CLOSED, NO COOKING PROGRAMMED) - SHOULD GET ABOUT 120V}
    CheckVoltageRelay --> 120V{120V?}
    120V -- YES --> ProgramUnit
    120V -- NO --> WiringHVT
    About120V --> ProgramUnit
    ProgramUnit --> CMOOnly[CMO ONLY - IF AN OTR, GO TO "OTR START" BLOCK  
INSTALL CLAMP ON AMMETER TO A MAGNETRON LEAD]
    CMOOnly --> Less1A{< 1A}
    Less1A --> InfiniteOpen{INFINITE (OPEN)}
    Less1A --> SomeResistance{SOME RESISTANCE}
    InfiniteOpen --> CheckResistanceHVT[CHECK RESISTANCE OF SECONDARY SIDE OF HVT (SINGLE LEAD TO HVC)]
    SomeResistance --> CheckResistanceHVT
    CheckResistanceHVT --> 70to150{70 - 150 OHMS}
    CheckResistanceHVT --> Other{OTHER}
    70to150 --> HVTOK{HVT IS OK}
    Other --> ReplaceMagnetron[REPLACE MAGNETRON]
    HVTOK --> ReplaceMagnetron
    ReplaceMagnetron --> Retest
    OTRStart[OTR START  
1. UNPLUG UNIT  
2. DISCHARGE HVC  
3. SET DVM ON 2K OHM SCALE  
4. MEASURE HVD SIDE OF HVC TO GROUND] --> About8A{> 8A}
    About8A --> ReplaceMagnetron
    About8A --> Retest
  
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D

1. SET CLOCK (IF NEEDED)
2. PLACE CUP OF WATER AND NEON LIGHT TESTER IN UNIT
3. PROGRAM UNIT TO COOK

INTERMITTENT PROBLEM - CALL TAG TEAM FOR RESOLUTION

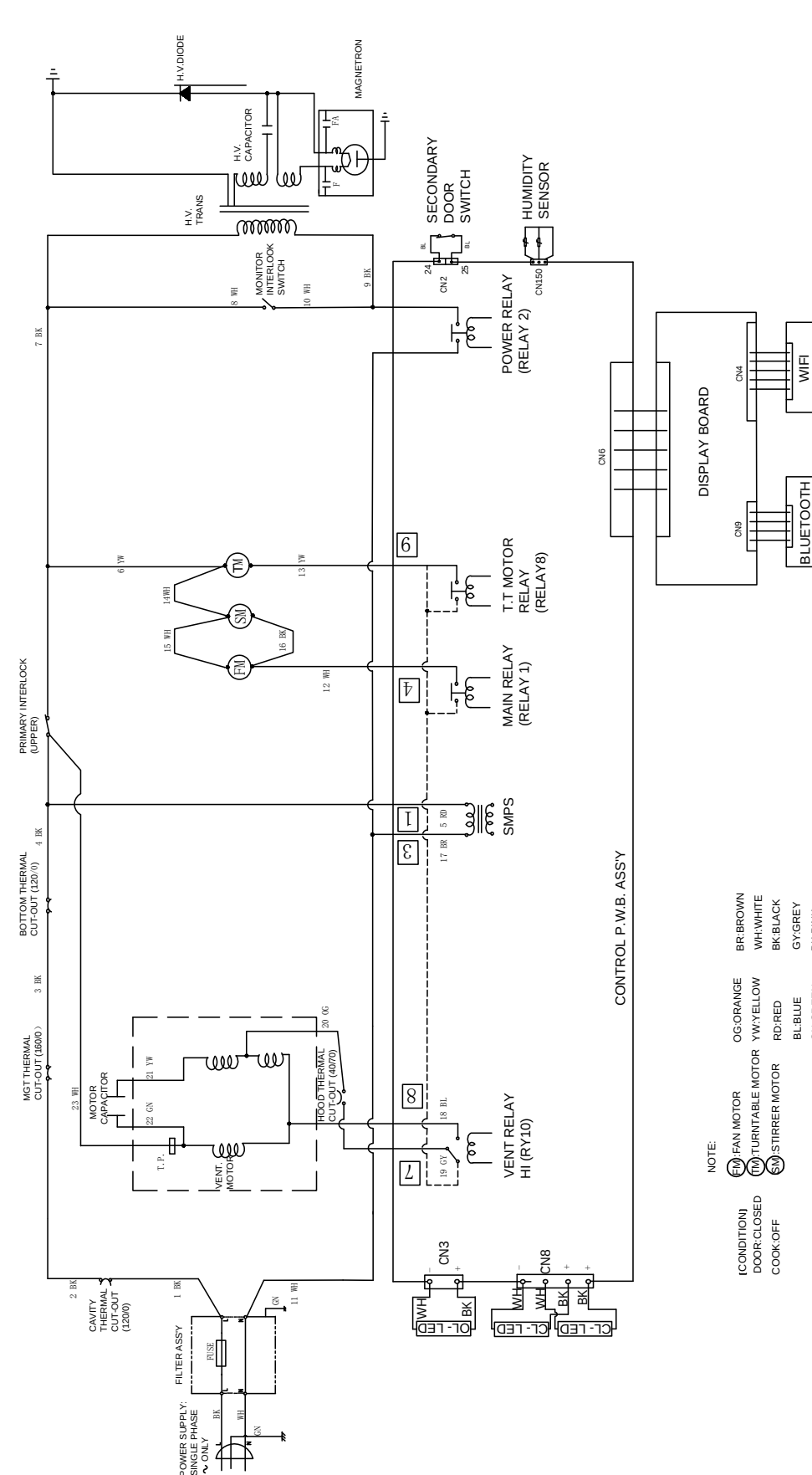
CIRCLE NODES: FOLLOW THE ARROWS - EXAMPLE:

THEN GO TO **A**

LEGEND:

- A** → RETEST & REASSEMBLE - END
- B** → REPLACE PCB
- C** → REPLACE HVT
- D** → 1. SET CLOCK (IF NEEDED)
2. PLACE CUP OF WATER AND NEON LIGHT TESTER IN UNIT
3. PROGRAM UNIT TO COOK

THIS IS A LEGEND - FIND THESE ON MAIN CHART



Parts name	Specification	Too tip poin	Parts name	Resistance
Cavity TCO	1200°C (2183/32 °F)	120±5°C (248±9 °F)	TCOS	≤ 30 m Ohm
Bottom TCO	1200°C (2183/32 °F)	120±5°C (248±9 °F)	Mag Cooling Fan	96.5 ± 5 Ohm
MGT TCO	1600°C (3200/32 °F)	160±5°C (320±9 °F)	Stirrer motor	3.15 ± 8% K Ohm
Hood TCO	70/40°C (158/104 °F)	70±5°C (158±9 °F)	Turntable motor	3.3 ± 8% K Ohm
			H V T Primary winding	0.297 ± 5% Ohm
			H V T Secondary winding	100 ± 5% Ohm
			Humidity sensor	2.0 ± 10% K Ohm
			Vent Fan Turbo	24.0 ± 10% Ohm
			Vent Fan Low	28.0 ± 10% Ohm

