Fast Track Trouble shooting

IMPORTANT SAFETY NOTICE – "For Technicians Only" This service data sheet is intended for use by persons having electrical, electronic, and mechanical experience and knowledge at a level generally considered acceptable in the appliance repair trade. Any attempt to repair a major appliance may result in personal injury and property damage. The manufacturer or seller cannot be responsible, nor assume any liability for injury or damage of any kind arising from the use of this data sheet.

Model: ME17H703

Publication # **Production Date: 06/07/14**

Bulletins:

Support Information:

HELP: 1-888-751-4086 (Tech Sup. – ASC/SSD)
1-866-894-0637 (Tech Sup. - FE/ME)
GSPN: http://gspn3.samsungcsportal.com/main.jsp
PLUS ONE: http://my.plus1solutions.net/clientPortals/samsung

!!!!! It is always recommended to discharge a microwave's capacitor prior to commencing any service

SERVICE TIPS

- If fuse is blown by the Monitor Switch, replace the PRIMARY , DOOR SENSING , MONITOR SWITCH & POWER RELAY
- Checking continuity of switches or transformer, make sure the power is OFF, and one of the lead wires is disconnected
- **High Voltage Warning**! Do not attempt to measure any of the voltages on the high voltage side

Error Code	Cause and conuntermeasure
-SE-	Key short error(10 sec.). Replace assy control panel or smart board.
E-11	Sensor open error. Check unplugged sensor, wiring or smart board. If necessary, replace sensor. If error code appears when starting sensor function, replace smart board.
E-12	Sensor short error. Check shorted sensor or smart board. If necessary, replace sensor. If error code appears when starting sensor function, replace smart board.

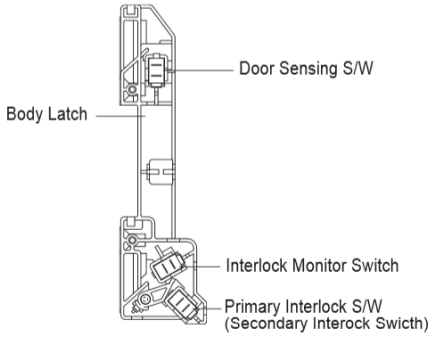
Magnetron Test

1. Continuity checks can indicate only an open filament or a shorted magnetron
2. Disconnect magnetron from the circuit
3. A continuity check across the magnetron terminals should read 1 ohm or less
4. A continuity check between each terminal and the case/ground should read open

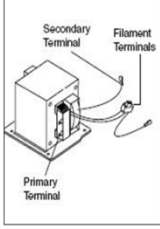
Interlock Switch Test

IMPORTANT! There is NO adjustment on the door switches

	Door Open	Door Closed
Primary Interlock switch	∞	0
Monitor switch(COM-NC)	0	∞
Monitor switch(COM-NO)	∞	0
Door Sensing S/W (Secondary Interlock S/W)	∞	0

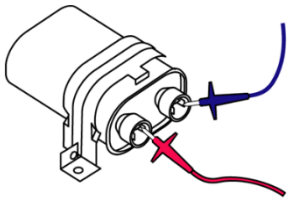


High Voltage Transformer Test

Components	Test	Results
Transformer 	1. Remove wire leads. 2. Measure resistance. (ohm meter scale: Rx1) ■ Primary winding ■ Secondary winding ■ Filament winding 3. Measure resistance. (ohm meter scale: Rx1000) ■ Primary winding to ground ■ Filament winding to ground	 Approx. 0.55 + 2% ohm. Approx. 159.5 + 2% ohm. 0 ohm. Normal: Infinite. Normal: Infinite.

High Voltage Capacitor Test

1. Check continuity of the capacitor with the meter set at the highest resistance scale.
2. Once the capacitor is charged, a normal capacitor shows continuity for a short time, and then indicates 9MΩ.
3. A shorted capacitor will show continuous continuity.
4. An open capacitor will show constant 9MΩ.
5. Resistance between each terminal and chassis should read infinite.



High Voltage Diode Test

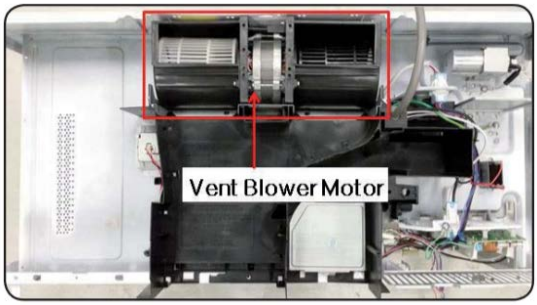
1. Isolate the diode from the circuit by disconnecting its leads.
2. With the ohm-meter set at the highest resistance scale, measure across the diode terminals. Reverse the meter leads and read the resistance. A meter with 6V, 9V or higher voltage batteries should be used to check the front-to back resistance of the diode (otherwise an infinite resistance may be read in both directions). The resistance of a normal diode will be infinite in one direction and several hundred KΩ in the other direction.

Main Relay & Power Control Relay Test

1. The relays are located on the PCB Ass'y. Isolate them from the main circuit by disconnecting the leads.
2. Operate the microwave oven with a water load in the oven. Set the power level to high.
3. Check continuity between terminals of the relays after the start pad is pressed.

Vent Exhaust/Blower Motor Test

The run capacitor is located behind the top grill above the control area. The capacitor is used for more torque and electrical phasing. Without the capacitor the blower might run but would be much slower

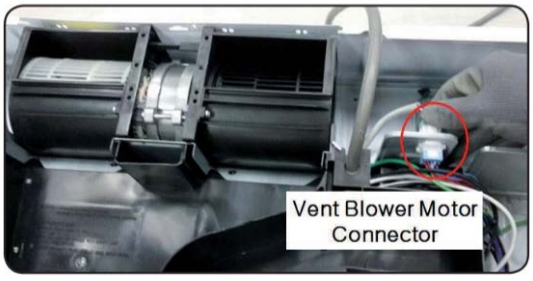


To Test Capacitor

1. Remove grill, discharge capacitor and disconnect one capacitor lead.
2. Make appropriate capacitor check (with analog meter needle should rise then fall, cap is charging then discharging).

To Test Blower Windings

1. Disconnect power and remove grill.
2. Open control panel and discharge capacitor.
3. Disconnent two wires to run capacitor. Continuity test across the two wires should be approximately 50 ohms of resistance. This test allows you to read across all three windings at the same time.



To Test TCO's (Thermal Cut Outs)

There are 4 different thermal cutouts in this unit with 4 different purposes. They are :

1. Oven thermal cutout (flame sensor), on cavity top.
2. Hood thermal cutout, inside control area on duct.
3. Bottom thermal cutout, on floor of control area.
4. Magnetron thermal cutout, on magnetron.

1. Oven Thermal Cut Out Open at 248F/120C non resettable - NORMALLY CLOSED

2. Hood Thermal Cut Out close at 158F/70C. Open at 104F/40C. Resettable - NORMALLY OPEN

3. Bottom Thermal Cut Out open at 248F/120C non resettable – NORMALLY CLOSED

4. Magnetron Term Cut out open at 302F/150C & close at 140F/60C. Resettable – NORMALLY CLOSED

Sensor Testing

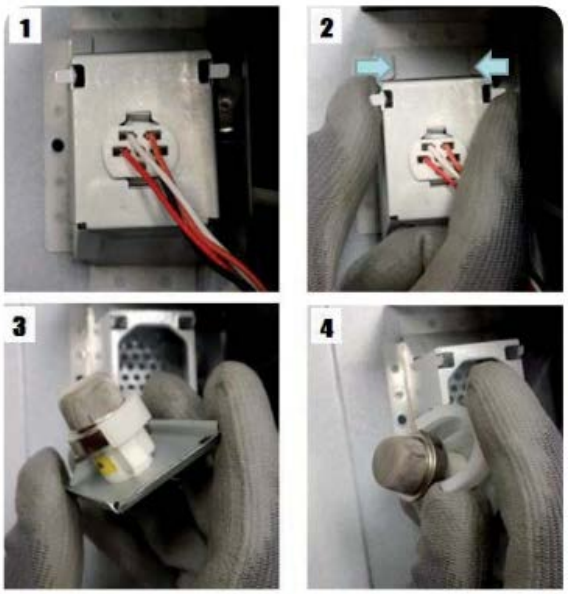
The Sensor Cooking Function uses a special gas sensor which detects both humidity(steam) and hydrocarbons(food odors) during the cooking process. Before conducting either of the sensor tests below, ensure the unit is plugged into a wall outlet for at least 5 minutes. If already plugged in, proceed. The sensor is a plug-in device located in the vent area at the top left hand corner of the cavity behind the grill.

SENSOR TEST (QUICK TEST)

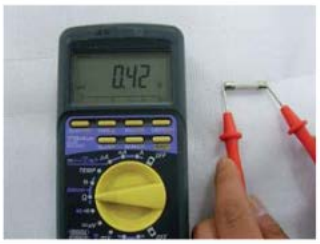
1. With 2 fingers touch and hold the following pads at the same time : Auto Defrost and Popcorn
2. Observe diagnostic number in display (Numbers approximate).
   - 15-185 (Normal-verify with "detection test")
   - 213 or Higher (Sensor failed to open, sensor unplugged, wiring or smart board.)
   - Less then 6 (shorted sensor, or smart board).

NOTE : Only heater terminals (H ; Black and Red leads) can be checked with ohmmeter(30Ω).

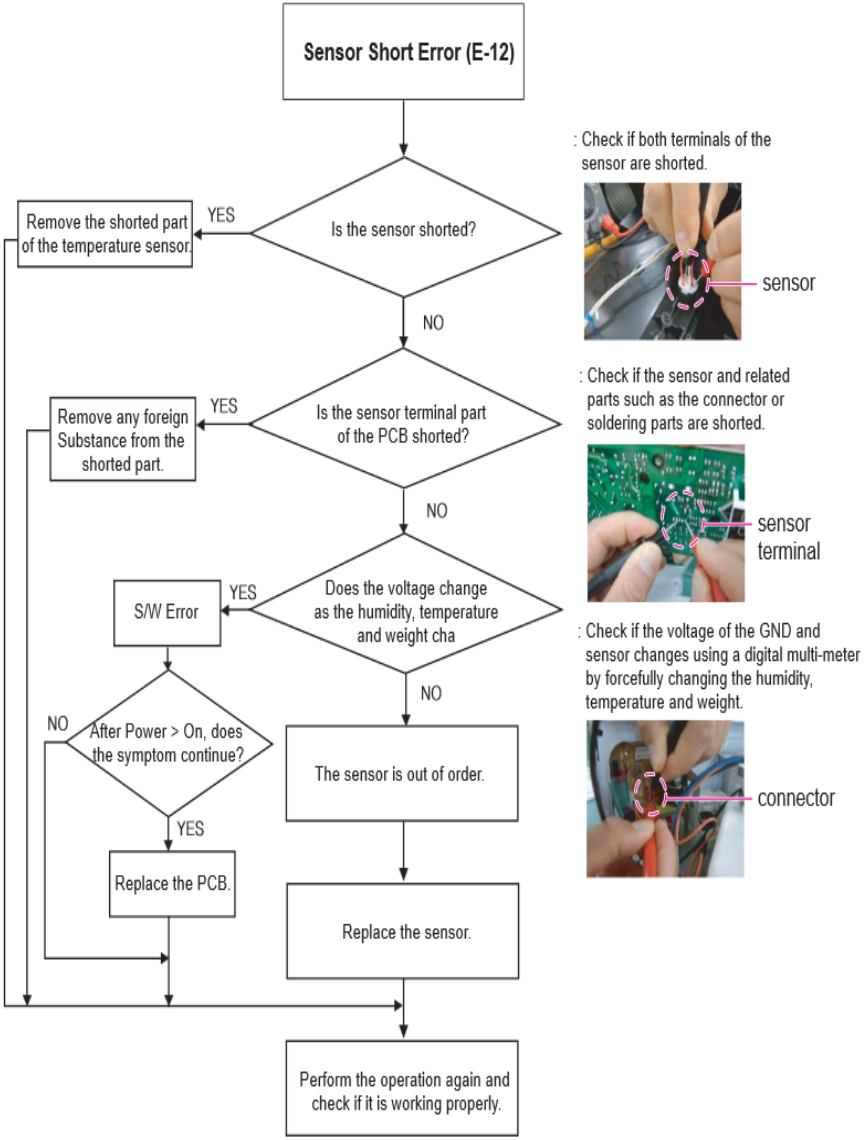
CAUTION : DO NOT ATTEMPT TO CHECK SENSOR TERMINALS (White and Orange leads).
♣ CAN DAMAGE SENSOR.

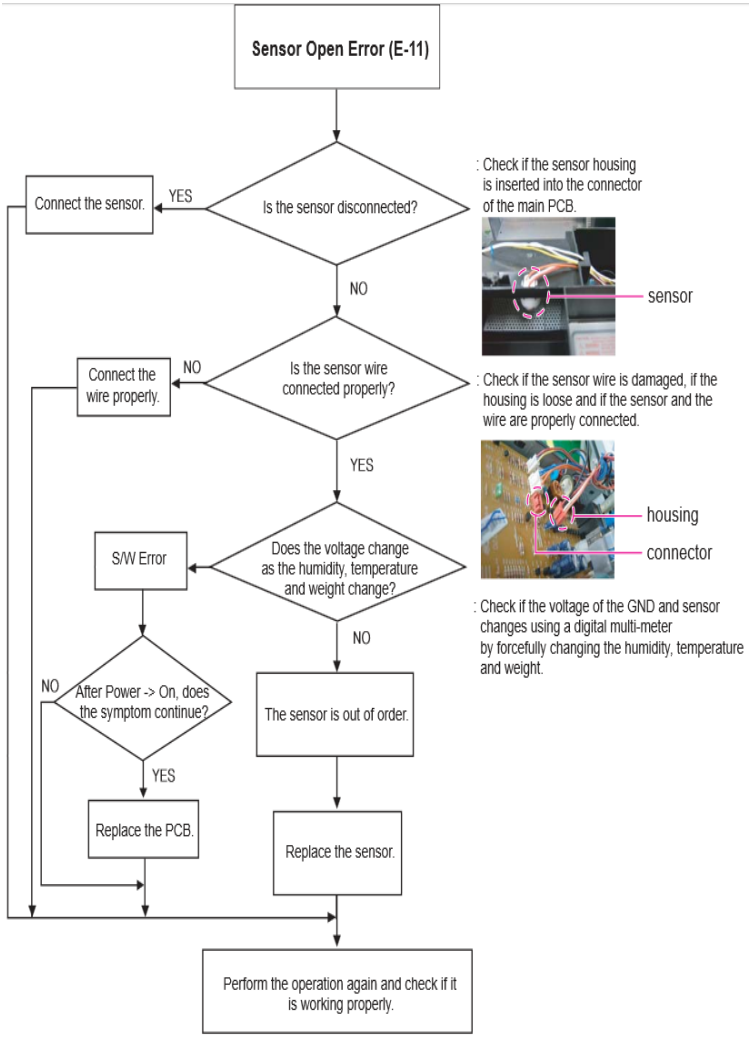


Trouble Shooting – Checking Parts

Parts	Photo	Good	No Good
Fuse		0.1 ~ 1 Ω	100 MΩ exceed
T.C.O		0.1 ~ 1 Ω	100 MΩ exceed
H.V Trans		1 ~ 9 Ω	100 MΩ exceed
Fan Motor		10 ~ 99 Ω	100 MΩ exceed

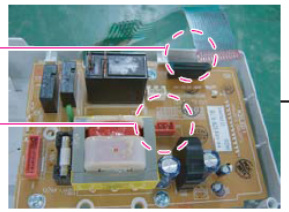
Trouble Shooting





Key Short Error (- SE -)

- Is the key not recognized at all?
  - YES → The membrane is defective. → Replace the Control Panel.
  - NO → Is the key recognized intermittently?
    - YES → The membrane is defective. → Replace the Control Panel.
    - NO → Is a specific key not recognized?
      - YES → The membrane is defective. → Replace the Control Panel.
      - NO → S/W Error → After Power > On, does the symptom continue?
        - NO → Perform the operation again and check if it is working properly.
        - YES → Replace the PCB. → Perform the operation again and check if it is working properly.

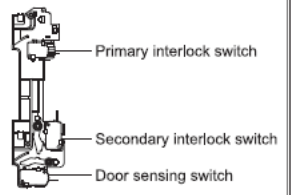


Oven does not operate.

*Inspection method

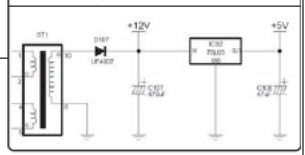
Caution
1. Be careful of high voltage circuits.
2. Discharge high voltage capacitor.

- Is Fuse OK?
  - NO → Is Primary interlock switch normal?
    - NO → Make sure to inspect the power relay after replacing primary interlock switch, secondary interlock switch and door sensing switch.

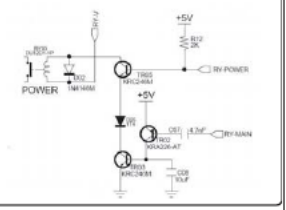


< Latch switch assembly >

    - YES → Is Power Relay normal?
      - NO → Replace Relay
  - YES → Is the magnetron TCO normal?
    - NO → Replace TCO
      - NO → Check a fan motor after replacing switch
    - YES → Is SMPS power supply circuit normal?
      - NO → Check power supply circuit
        - NO → Power supply circuit check point



      - YES → Is the IC01 output of PCB normal?
        - NO → Check the Relay control circuit
          - NO → Relay control circuit check point



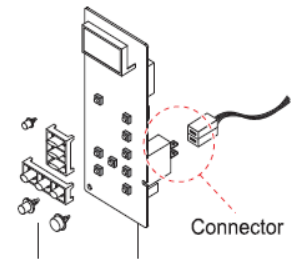
        - YES → Is high voltage diode normal?
          - Checking high voltagecircuits → Is high voltage diode normal?
            - NO → In case any of high voltage parts is damaged, check all parts related to high votlage.
            - YES → Is high voltage capacitor normal?
              - NO → In case any of high voltage parts is damaged, check all parts related to high votlage.
              - YES → Is magnetron normal?
                - NO → In case any of high voltage parts is damaged, check all parts related to high votlage.

Trouble Shooting

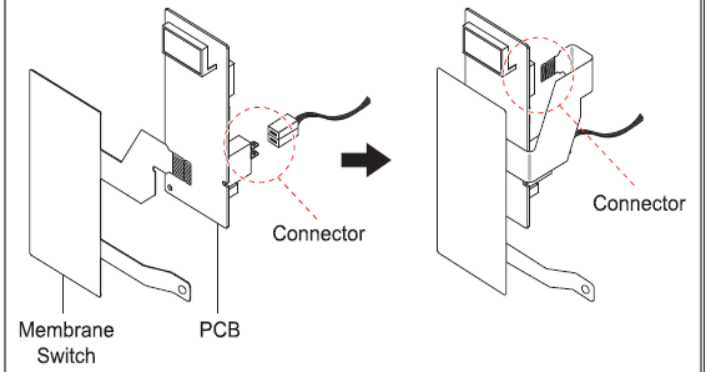
Buttons on the control panel do not work.

*Inspection method

Are button pressed in the correct order?
- NO → Refer to User Manual
- YES → Is the control panel connector normal?
  - NO → Tact type
  - YES → Replace PCB.



Membrane type

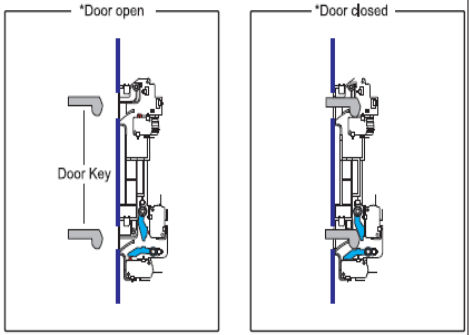


Food is not heated even though the oven works.

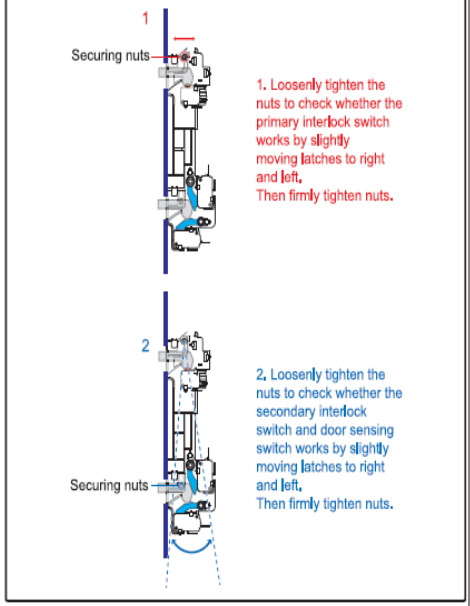
*Inspection method

Is the latch switch operating normally?
- NO → Method to control latch switch
- YES → Check high voltage circuits

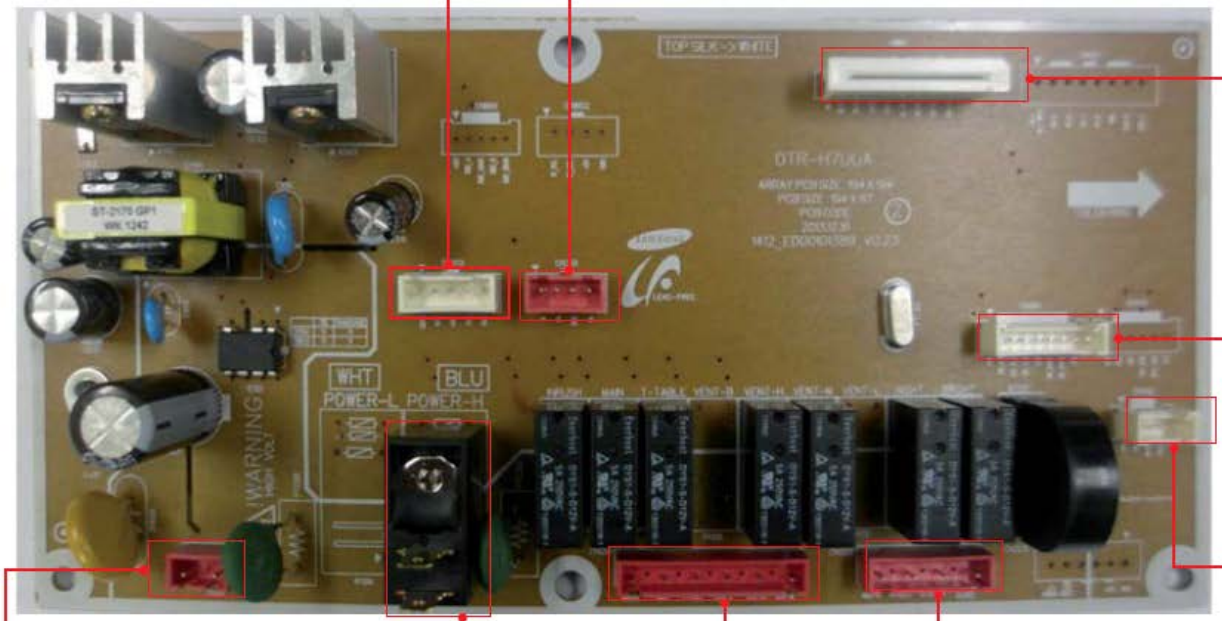
Refer to "Checking high voltage circuits" on the previous page.



Method to control latch switch



PCB Diagram



▶ CN401
1) DOOR SWITCH
2) NO PIN
3) +12V
4) TCO
5) GND

▶ CN301
1) GAS SENSOR(S1)
2) GAS SENSOR(S2)
3) GROUND
4) 5V

▶ CN104
1) KEY OUTPUT 1
2) KEY OUTPUT 2
3) KEY OUTPUT 3
4) KEY OUTPUT 4
5) KEY OUTPUT 5
6) KEY OUTPUT 6
7) KEY OUTPUT 7
8) KEY OUTPUT 8
9) KEY OUTPUT 9
10) KEY INPUT 1
11) KEY INPUT 2
12) KEY INPUT 3
13) KEY INPUT 4
14) KEY INPUT 5
15) KEY INPUT 6
16) KEY INPUT 7

▶ CN901
1) LED Display Control 1
2) LED Display Control 2
3) LED Display Control 3
4) LED Display Control 4
5) LED Display Control 5
6) LED Display Control 6
7) LED Display Control 7
8) LED Display Control 8

▶ CN102
(MICOM PROGRAM UPDATE)
1) POWER (+5V)
2) POWER (GND, 0V)
3) RESET
4) TOOL0

▶ RY203
1) HIGH POWER RELAY CONTACT-1
2) HIGH POWER RELAY CONTACT-2

▶ CN101
1) AC POWER (LIVE)
2) AC POWER (NEUTRAL)

▶ CN201
1) INRUSH
2) NO PIN
3) MAIN
4) NO PIN
5) T/TABLE
6) NO PIN
7) VENT BOOST
8) NO PIN
9) VENT HIGH
10) NO PIN
11) VENT MEDIUM

▶ CN202
1) VENT LOW
2) NO PIN
3) NO PIN
4) NO PIN
5) COOKTOP LAMP
6) NO PIN
7) COOKTOP LAMP SOURCE
(AC VOLTAGE)

SCHEMATIC DIAGRAM

WARNING

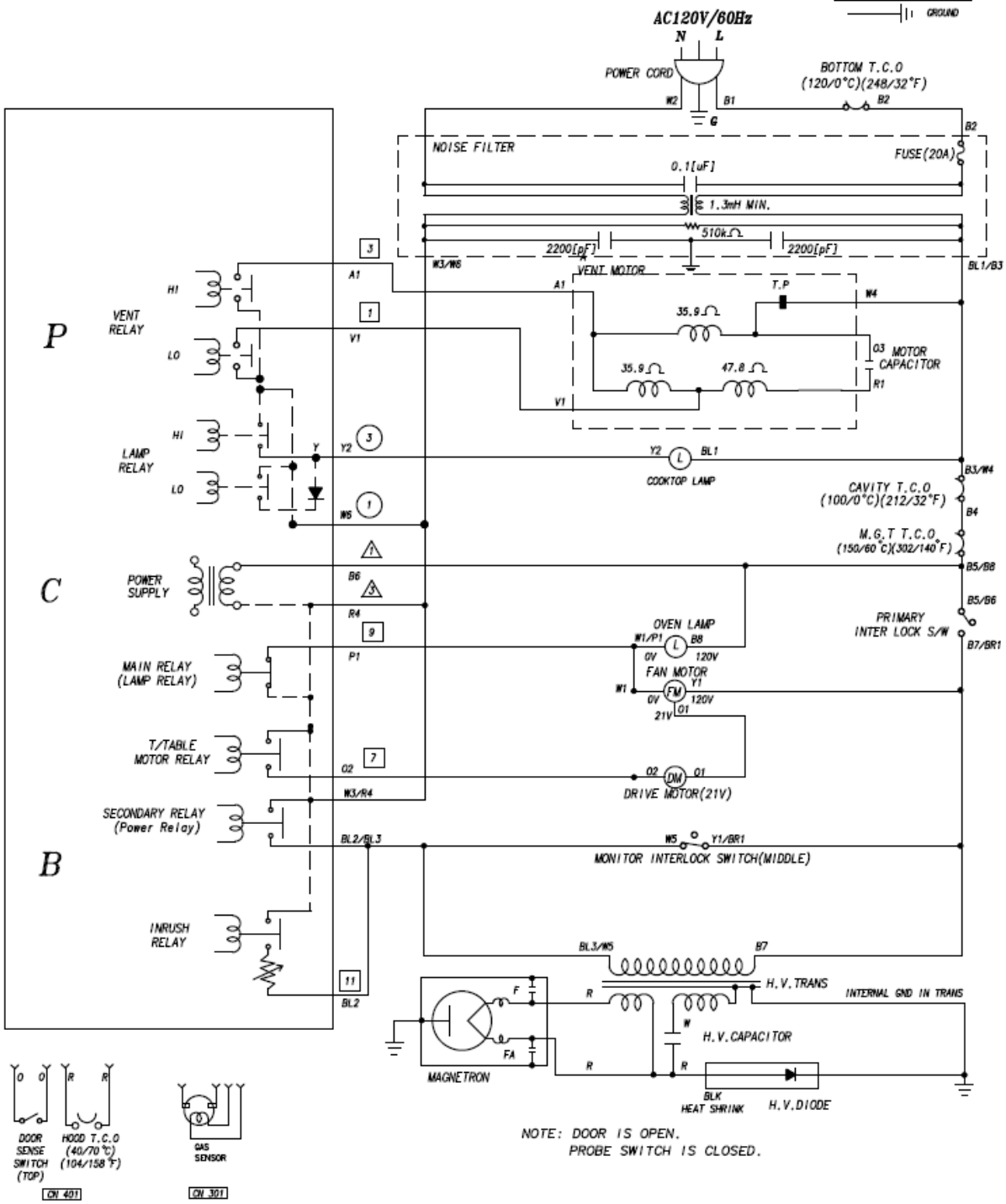
POWER MUST BE DISCONNECTED

BEFORE SERVICING THIS APPLIANCE

MODEL NO.: ME17H703SHS/AA

COLOR	SYMBOL
GRAY	GR
WHITE	W
BLACK	B
RED	R
BLUE	BL
ORANGE	O
YELLOW	Y
GREEN	G
PINK	P
AZURE	A
VIOLET	V
BROWN	BR

GROUND



NOTE: DOOR IS OPEN.
PROBE SWITCH IS CLOSED.