International Commercial Microwave—Technical Information

230/240 V, 50 Hz Models

RFS518TS P2001004M CRFS518TS P2001013M

- Due to possibility of personal injury or property damage, always contact an authorized technician for servicing or repair of this unit.
- Refer to Service Manual for installation, operating, testing, troubleshooting, and disassembly instruction.

⚠ CAUTION

All safety information must be followed as provided in Service Manual.

⚠ WARNING

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

Models	CRFS518TS		RFS518TS	
Power Source				
Voltage AC	230 VAC		230 VAC	
Amperage (Single Unit)	12 A		12 A	
Frequency	50 Hz		50 Hz	
Single Phase, 3 wire grounded	X		X	
Plug	JIS 8303		CEE 7/7 Schuko; 16 A	
Power Output				
Nominal microwave energy (IEC705)	1800 Watts		1800 Watts	
Minimum temperature rise (ΔT)	18ºF / 10ºC		18ºF / 10ºC	
Operating Frequency	2450 MHz		2450 MHz	
Power Consumption				
Cook Condition Microwave	2,600 Watts / 13 Amps		2,600 Watts / 13 Amps	
Dimensions				
Cabinet				
Width	21 3/4"	55 cm	21 3/4"	55 cm
Height	14 1/4"	36.2 cm	14 1/4"	36.2 cm
Depth	20 1/4"	51.4 cm	20 1/4"	51.4 cm
Oven Interior				
Width	14 1/4"	36.2 cm	14 1/4"	36.2 cm
Height	9"	22.6 cm	9"	22.6 cm
Depth	16 3/8"	41.6 cm	16 3/8"	41.6 cm
Weight				
Crated	71 lbs.	32 kg	71 lbs.	32 kg
Uncrated	64 lbs.	29 kg	64 lbs.	29 kg

Component Testing Procedures

⚠ WARNING

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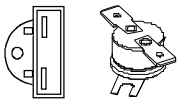
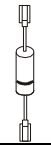
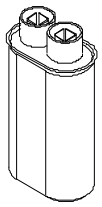
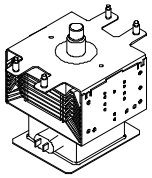
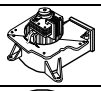
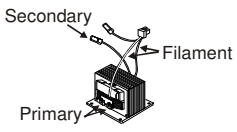
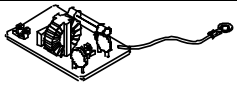
Illustration	Component	Testing	Results
	Thermal cutout	Disconnect all wires from TCO. Measure resistance across terminals. Cavity TCO ..... Magnetron TCO	 Closed at 32°F (0°C) and Opens at 230°F (110°C) Closed at 140°F (60°C) and Opens at 320°F (160°C)
	Diode	**Discharge Capacitor** Remove diode lead from capacitor and connect ohmmeter. Reverse leads for second test.	Infinite resistance should be measured in one direction and 50KΩ or more in the opposite direction. **NOTE:** Ohmmeter must contain a battery of 6 volts minimum.
	Circuit Protector	**Discharge Capacitor** Remove diode lead from capacitor and connect ohmmeter. Reverse leads for second test.	Infinite resistance should be measured in one direction and 50KΩ or more in the opposite direction. **NOTE:** Ohmmeter must contain a battery of 6 volts minimum.
	Capacitor	**Discharge Capacitor** Remove wires from capacitor terminals and connect ohmmeter, set on highest resistance scale to terminals. Also check between each terminal and capacitor case.	 Between Terminals: Meter should momentarily deflect towards zero then return to over 5 MΩ. If no deflection occurs, or if continuous deflection occurs, replace capacitor. Terminal to Case: Infinite resistance
	Magnetron	**Discharge Capacitor** Remove wires from magnetron and connect ohmmeter to terminals. Also check between each terminal and ground.	Between Terminals: Less than 1 Ω Each terminal to ground measures Infinite resistance. **Note:** This test is not conclusive. If oven does not heat and all other components test good replace the magnetron and retest.
	Blower motor	Remove all wires from motor. Measure resistance across coil.....	 Approximately 40 – 44 Ω
	Stirrer motor	Remove all wires from motor. Measure resistance across terminals....	 Approximately 12.8 – 13.5 KΩ
	Transformer	**Discharge Capacitor** Remove all wires from terminals. Measure resistance from: Primary..... Filament..... Secondary to Ground screw on transformer stack.....	 Less than <1 Ω Less than <1 Ω Approximately 121 – 128 Ω
	Noise filter board	Power In terminals ..... Power Out terminals.....	230/240 VAC 230/240 VAC If no power in, check power outlet. If no power out, check fuses.
	Lamp receptacle	Test continuity of receptacle terminals.	Indicates continuity with bulb installed.
	Wire Harness	Test continuity of wires	Indicates continuity

Component Testing Procedures

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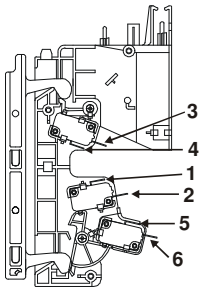
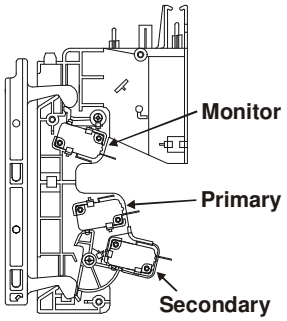
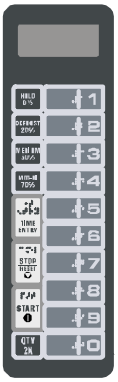
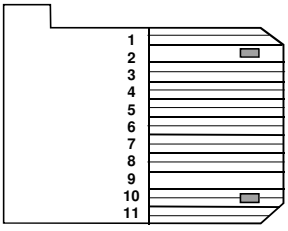
	Interlock switch assembly 	Disconnect wires to switch. With door open measure resistance from: Monitor - Terminal 3 - 4 ..... Primary - Terminal 1 - 2..... Secondary - Terminal 5 - 6 ..... With door closed measure resistance from: Monitor - Terminal 3 - 4 ..... Primary - Terminal 1 - 2..... Secondary - Terminal 5 - 6 ..... **After verifying or replacing the module, reconnect wires to switch and check operation of monitor circuit before operating the oven.**	 Indicates continuity Infinite Ω Infinite Ω Infinite Ω Indicates continuity Indicates continuity

Electronic Control Panel			
	**Service Test Mode:**	**Open door, Press and Hold pad 3 for 5 seconds to enter service test mode.** Press Pad 1..... Press Pad 2..... Press Pad 3..... Press Pad 4..... Press Pad 5..... Press Pad 6..... Press Pad 7..... Press Pad 8..... Press Pad 9..... Press Pad 0..... Stop/Reset Pad	SERVICE appears in the display Indicates number of hours magnetron has been turned on Indicates number of times magnetron tube cycles Indicates number of door cycles CLEAR (Press START pad to reset service data.) Indicates amperage (Top Mag) Indicates amperage (Bottom Mag) RESET (Call Service) N/A N/A N/A Exit Service Test Mode
	Error codes:	**E-08**..... **E-09**..... **E-10**.....	Replace Control Board Replace Control Board Shorted or Open Keypad – Test and replace if necessary

Electronic Control	Keyboard assembly	Continuity is indicated as 100 Ω and below.	Pad	Trace	Measurement
RFS518TS			0	1 & 8	Continuity
			1	2 & 8	Continuity
			2	3 & 8	Continuity
			3	4 & 8	Continuity
			4	5 & 8	Continuity
			5	6 & 8	Continuity
			6	7 & 8	Continuity
			7	1 & 9	Continuity
			8	2 & 9	Continuity
			9	3 & 8	Continuity
			QTY 2X	7 & 9	Continuity
			HOLD (0%)	1 & 10	Continuity
			DEFROST (20%)	2 & 10	Continuity
			MEDIUM (50%)	3 & 10	Continuity
			MED-HI (70%)	4 & 10	Continuity
			TIME ENTRY	5 & 10	Continuity
			STOP/RESET	6 & 10	Continuity
			START	7 & 10	Continuity

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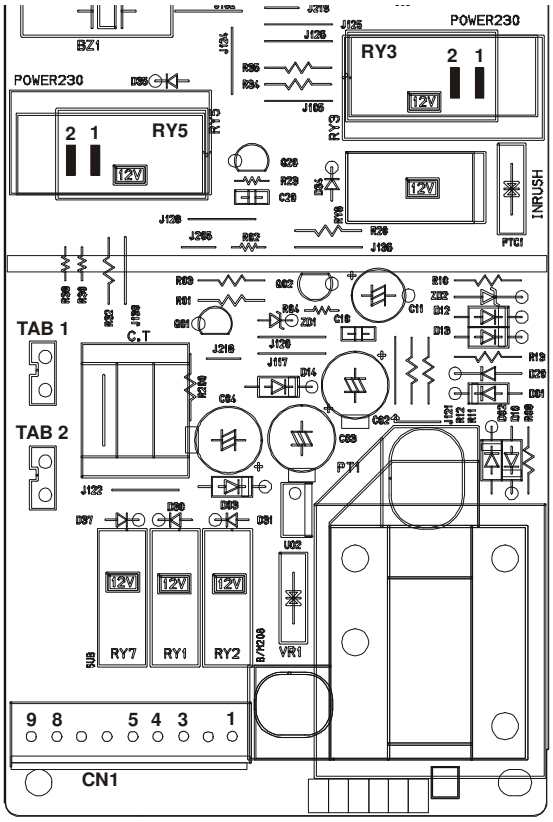

Function	Test Set-Up / Condition	Meter Setting	Probe Placement	Results
Control power transformer input	All Conditions	Volts	CN1 – Pin 3 to Pin 1 (White to Black)	230/240 VAC
Current transformer input	All Conditions	Volts	Tab 1 to Power Cord Blue (Neutral)	230/240VAC
Current transformer output	All Conditions	Volts	Tab 2 to Power Cord Blue (Neutral)	230/240VAC
Oven light relay RY7	Standby ..... Ready ..... Cook	Volts Volts Volts	CN1 – Pin 4 to Pin 1 (Yellow to Black) .. CN1 – Pin 4 to Pin 1 ..... CN1 – Pin 4 to Pin 1	0 VAC 230/240VAC 230/240VAC
Blower / Stirrer motor relay RY1	Standby ..... Ready ..... Cook	Volts Volts Volts	CN1 – Pin 5 to Pin 3 (Brown to White) .. CN1 – Pin 5 to Pin 3 ..... CN1 – Pin 5 to Pin 3	230/240VAC 0 VAC 0 VAC
Secondary Interlock Switch	Door Closed ..... Door Opened.....	Ohms Ohms	CN1 – Pin 8 to Pin 9 (Pink to Green) .... CN1 – Pin 8 to Pin 9	< 1 Ω Infinite
Cook relay RY3	Standby ..... Ready ..... Cook	Volts Volts Volts	Relay 3 – Pin 1 to Pin 2 ..... Relay 3 – Pin 1 to Pin 2 ..... Relay 3 – Pin 1 to Pin 2	230/240VAC 230/240VAC 0 VAC
Cook relay RY5	Standby ..... Ready ..... Cook	Volts Volts Volts	Relay 5 – Pin 1 to Pin 2 ..... Relay 5 – Pin 1 to Pin 2 ..... Relay 5 – Pin 1 to Pin 2	230/240VAC 230/240VAC 0 VAC

Component Testing Procedures

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

Test equipment required:

- 1000 ml test container and thermometer.
- Digital watch / watch with a second hand for use on ovens with electromechanical timers.

Important Notes:

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

Procedure

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

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

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

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

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

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

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

Wiring and Schematic Diagram

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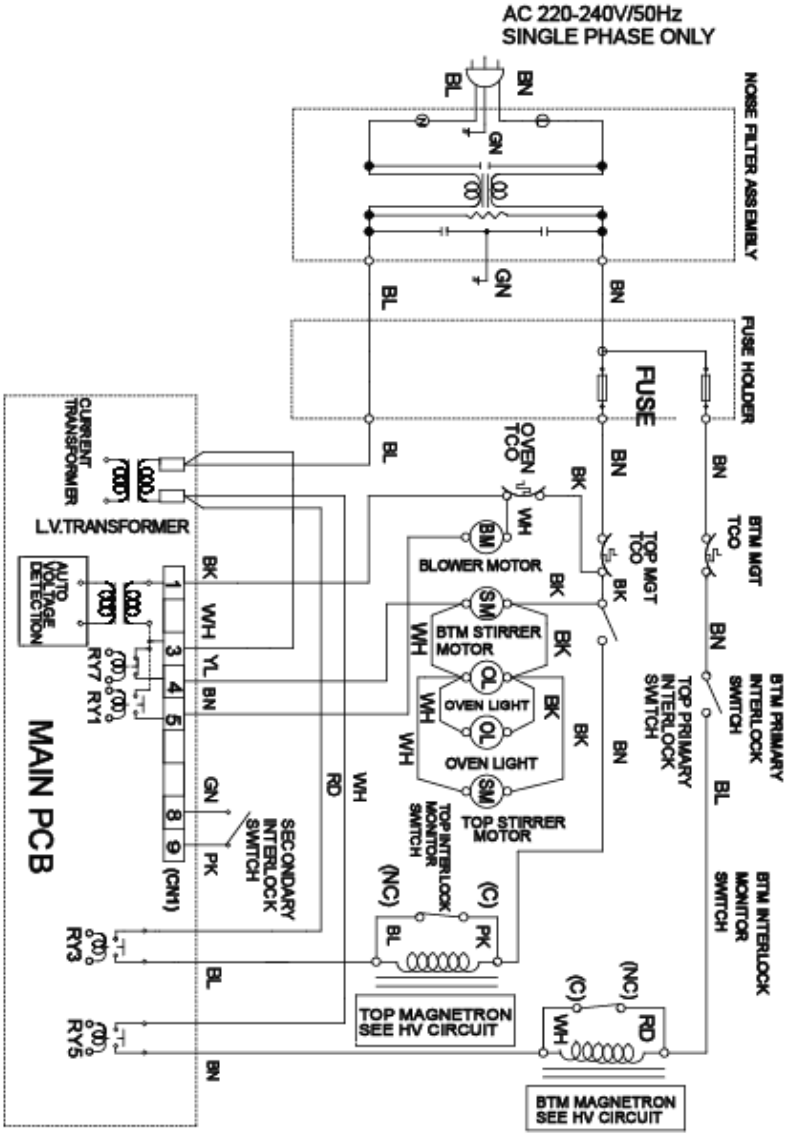
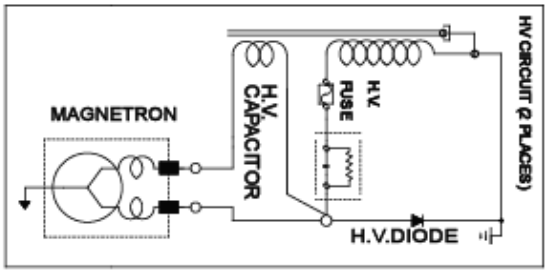


NOTE:
1.DOOR IS OPENED
2.WIRE COLOR

SYMBOL	COLOR
BK	BLACK
BN	BROWN
BL	BLUE
GN	GREEN
PK	PINK
RD	RED
WH	WHITE
YL	YELLOW



⚠ DANGER

HIGH VOLTAGE