



SERVICE MANUAL

28L // MICROWAVE TMW228B

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 **tisira**

Version 1.4



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CAUTION

WARNING: Repairs must be done only by a qualified service person.

In order to prevent electric shocks:

- Before performing maintenance or repair, turn the appliance off and disconnect it from the power supply.
- Do not touch the housing or frame of the microwave if the appliance is deemed faulty. These components may be live.
- Ensure that the high-voltage capacitor is discharged before proceeding with any repair.
- If tests have to be performed while the appliance is live, always use a residual-current-operated circuit breaker.
- Do not test the high-voltage circuit while the appliance is in operation. DANGER OF DEATH!

Once the repairs are completed, conduct a functional test.

PRODUCT SPECIFICATIONS

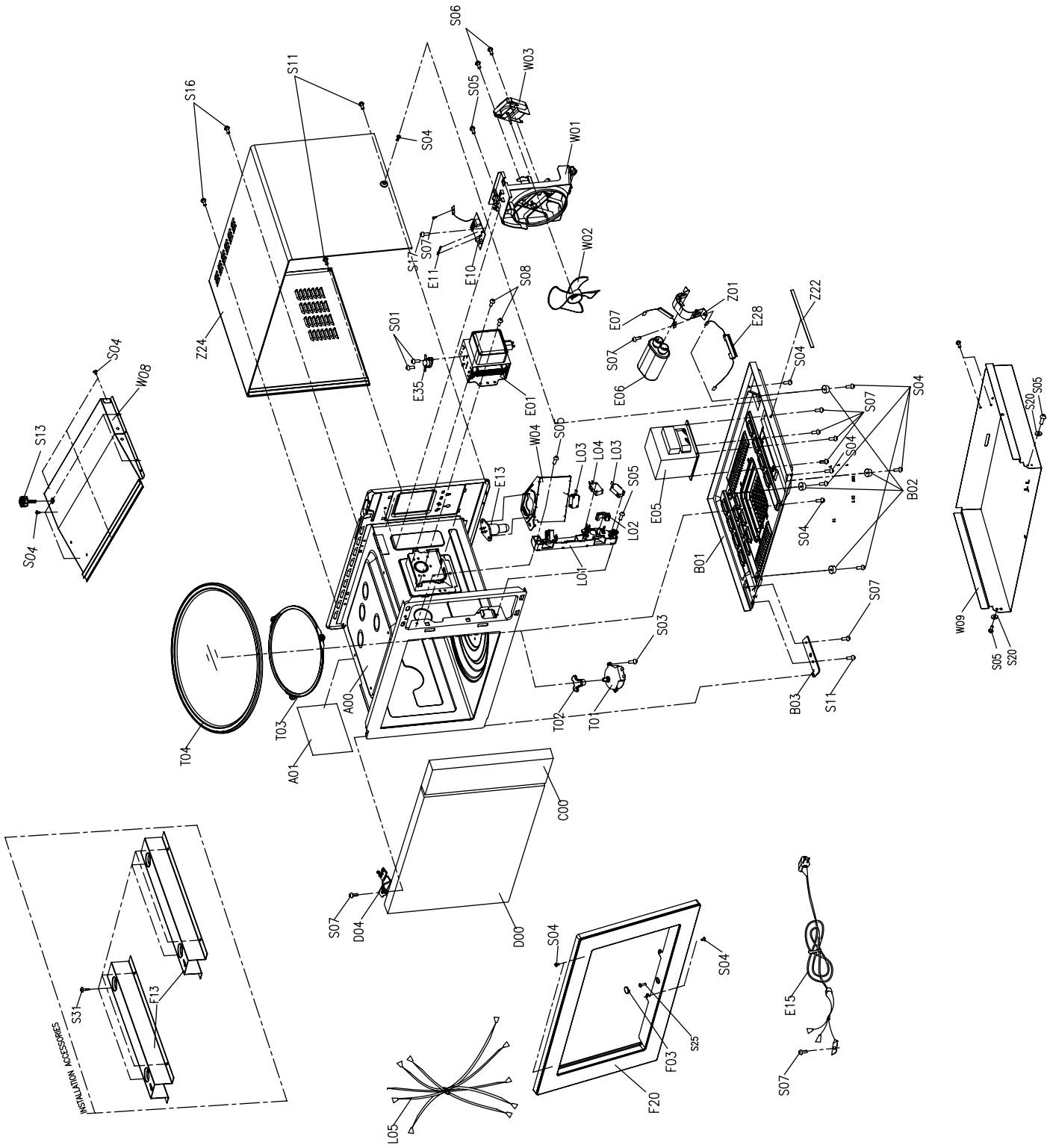
Dimensions	W595 x D400 x H388mm
Voltage / Frequency	220 -240V~ / 50Hz
Rated Power	145W
Microwave Power	900W
Capacity	28L
Turntable diameter	Ø315mm
Net weight	18.5kg



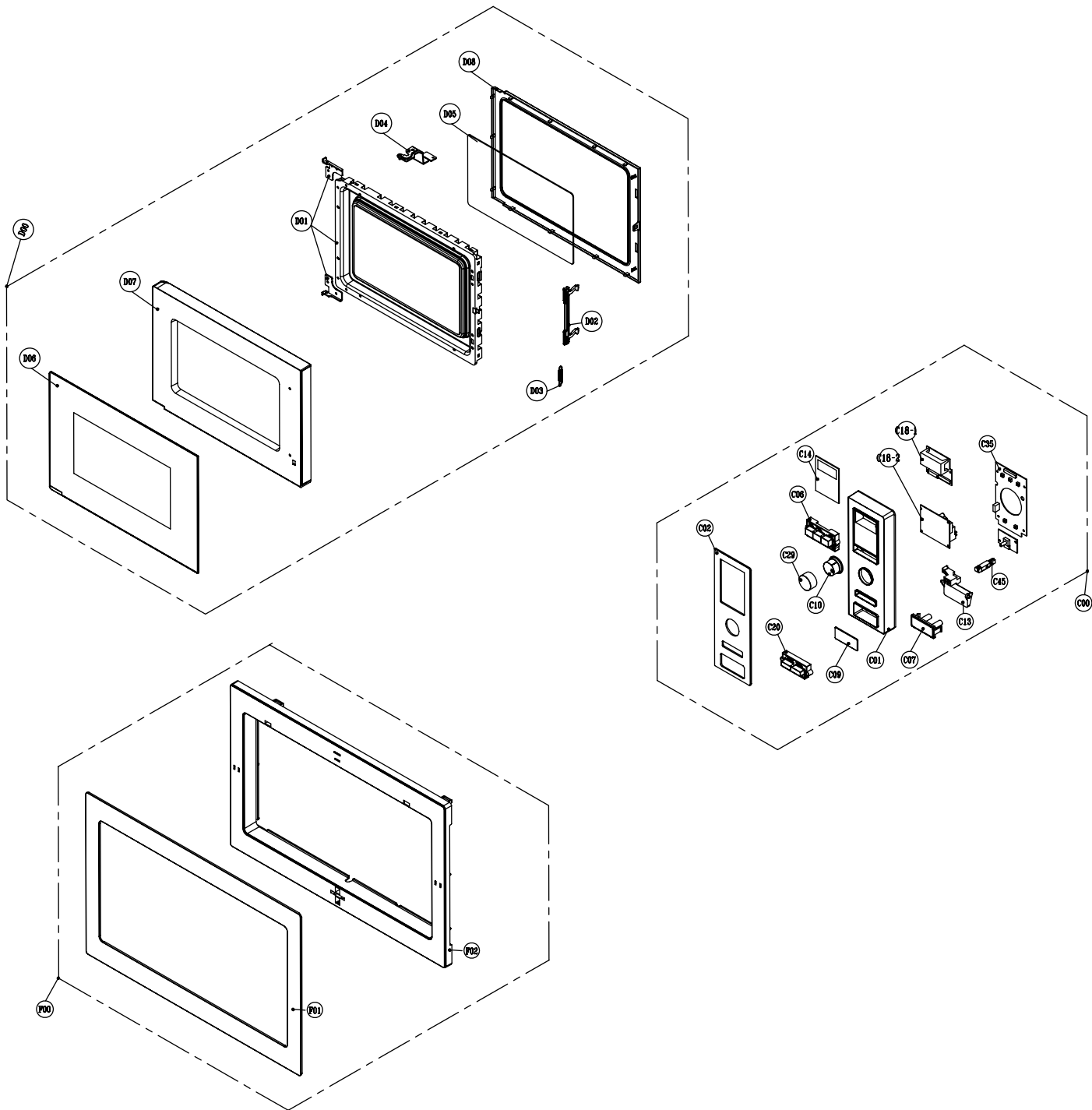
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EXPLODED VIEW



EXPLODED VIEW



Parts List

ID	Part Number	Description
T02	2899407	TURNTABLE COUPLER
W09	2899913	LOWER COVER - WIND GUIDE
Z24	2899102	TOP COVER PANEL
C13	2899406	DOOR LEVER
C18-2	2899501	POWER BOARD
C10 & C29	2899907	DIAL KNOB
C18-1	2899502	DISPLAY BOARD
C45	2899908	DIAL SHAFT
C07	2899404	DOOR RELEASE BUTTONS
C35	2899500	BUTTONS BOARD
C01	2899405	CONTROL PANEL FRAME
C20	2899402	STOP AND START BUTTONS
C06	2899403	FUNCTION BUTTONS
T03	2899909	TURNTABLE RING ASSEMBLY
D00	2899914	WHOLE DOOR ASSEMBLY
D07	2899400	EXTERNAL DOOR PANEL
D05	2899901	DOTTED DOOR FILM
D03	2899902	SPRING FOR DOOR LATCH
D04	2899100	TOP HINGE ASSEMBLY
D02	2899903	DOOR LATCH
D08	2899401	INTERNAL DOOR PANEL
D01	2899904	DOOR FRAME ASSEMBLY
E06	2899512	CAPACITOR (high voltage)
E07	2899513	DIODE (high voltage)
B03	2899103	HINGE SUPPORT (bottom)
Z01	2899104	BRACKET FOR HIGH VOLTAGE CAPACITOR
B02	2899915	FOOT
A01	2899906	SPLASH COVER
W08	2899101	TOP COVER - WIND GUIDE
W02	2899409	FAN BLADES
W01	2899410	FAN FRAME
W03	2899505	FAN MOTOR
E01	2899510	MAGNETRON
E16	2899511	FLEXIBLE POWER CORD WITH PLUG
T01	2899503	TURNTABLE MOTOR
E05	2899509	TRANSFORMER (high voltage)
T04	2899910	TURNTABLE GLASS PLATE (315mm)
L00	2899911	INTERLOCK ASSEMBLY
L01	2899411	INTERLOCK FOR DOOR LATCH
L02	2899412	INTERLOCK LEVER

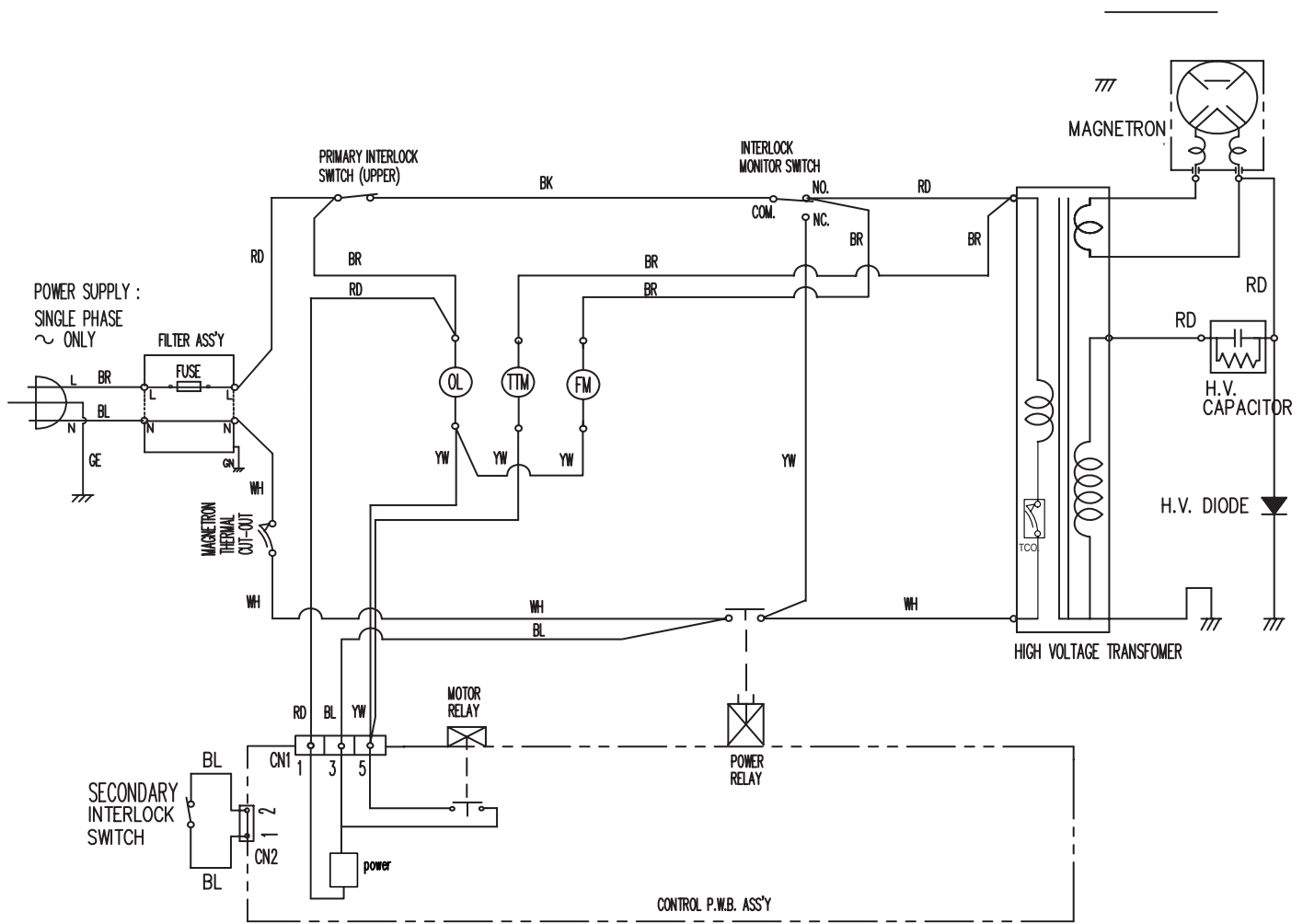


Parts List

ID	Part Number	Description
L03	2899514	MICROSWITCH (interlock)
L04	2899515	MICROSWITCH (monitor)
L05	2899516	MAIN WIRE HARNESS
C14	2899916	DISPLAY WINDOW
E10+E11	2899517	NOISE FILTER AND FUSE ASSEMBLY
E11	2899507	FUSE
E10	2899508	NOISE FILTER
W04/C43	2899408	LIGHT COVER
E13	2899504	LIGHT
F00	2801905	TRIM KIT- STAINLESS STEEL
	2899923	TRIM KIT- BLACK
*	2899912	ANTI-TILTING BRACKET + 3 screws
E35	2899506	THERMOSTAT 160°C/95°C



Wiring Diagram



[CONDITION]
 DOOR : CLOSED
 COOK : OFF

NOTE :

OL : OVEN LAMP	BK : BLACK	BL : BLUE
FM : FAN MOTOR	RD : RED	BR : BROWN
TTM : TURN TABLE MOTOR	WH : WHITE	GE : GREEN/YELLOW
	YW : YELLOW	

Trouble shooting

CONDITION	CAUSE	REMEDY
Microwave oven does not work	Multiple devices plugged into one power outlet and operating at the same time (overloading)	Avoid using other electrical appliances when using the microwave oven
	Microwave oven plug is not plugged in correctly	Verify if the power plug is correctly plugged to the outlet
Output power is too low	low voltage input	Ensure that the supplied voltage is 220-240V
	Food temperature is too low	This may not be a defect. It is possible that the food should be cooked for longer
Sparks occurring	Using metallic ware and placing them too close to the internal walls	Do not use metallic ware for cooking except where noted in the cooking guide
	Use of ceramic ware trimmed in gold or silver powder	Do not use any type of cookware with metallic trimming
Uneven cooking	Inconsistent intensity of microwave by their characteristics	<ol style="list-style-type: none"> 1. Cover the thinner/smaller parts of the food with aluminium foil 2. Use plastic wrap or lid 3. Pause the cooking process once or twice to stir when cooking soup, milk, etc.
Turntable drags and make noises	The glass plate is not properly positioned or it is overloaded	Distribuite food evenly. Cook smaller portions and/or use lighter cookware



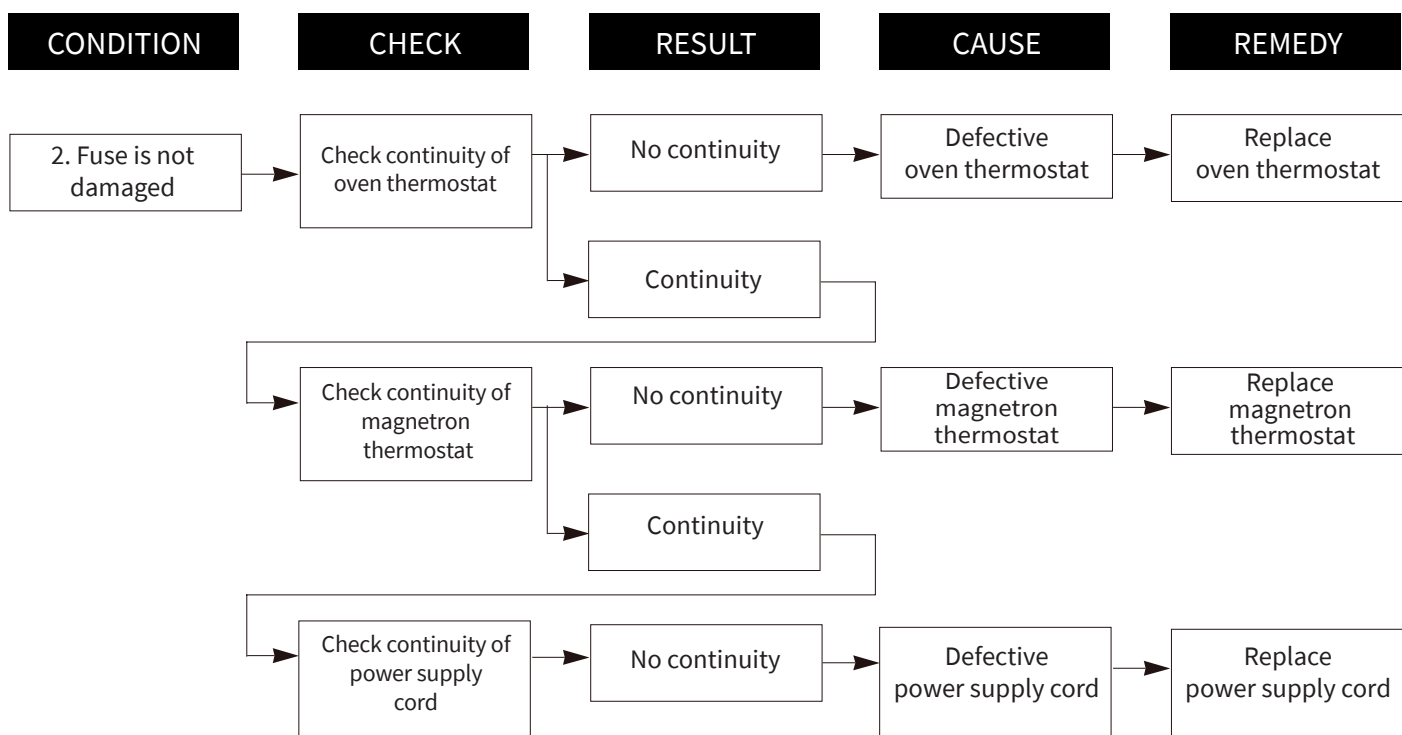
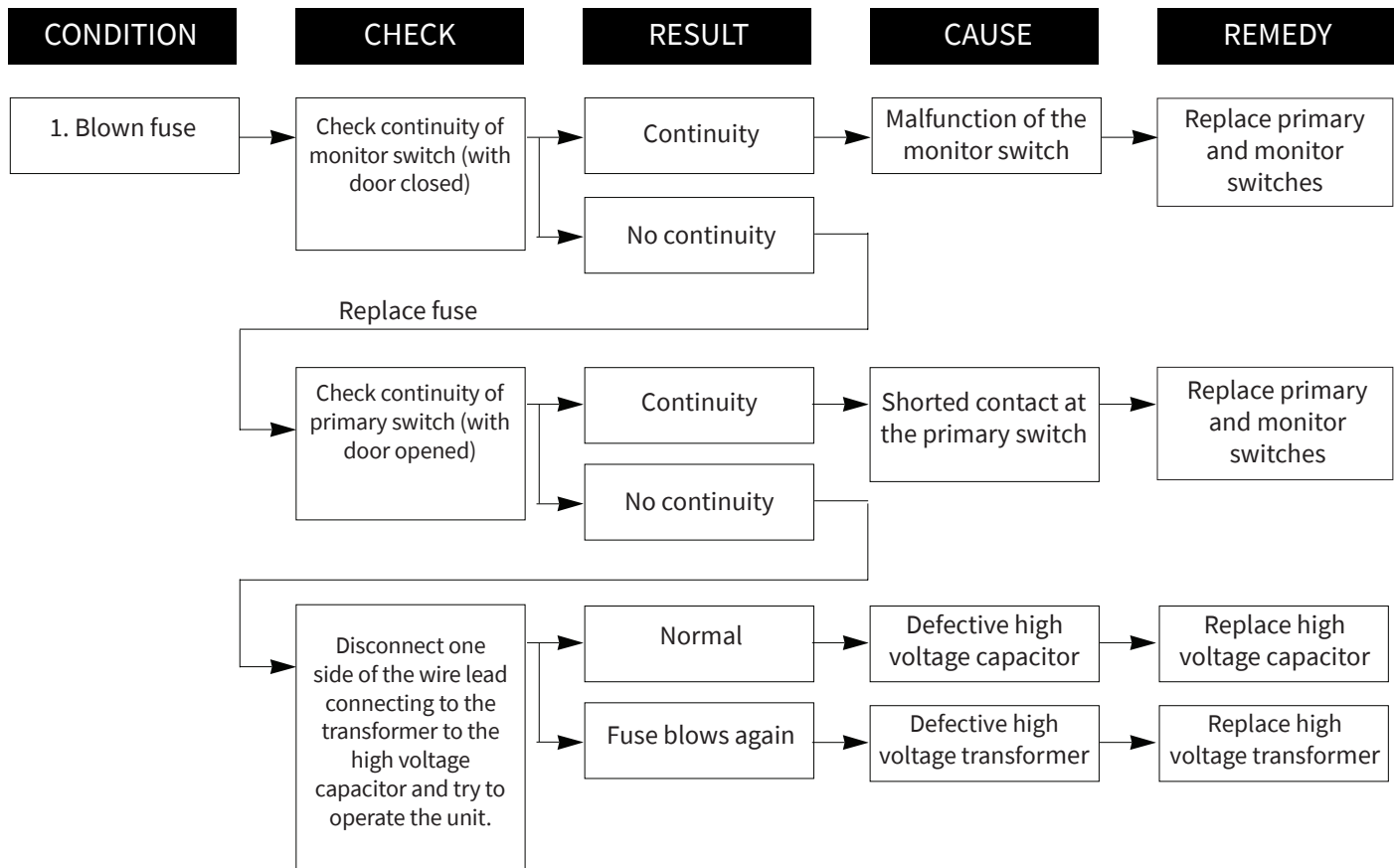
Trouble Shooting

The following display conditions indicate the possibility of a defective control circuit.

CONDITION	CHECK	RESULT	CAUSE	REMEDY
1. No input can be programmed	check the connection between membrane key assembly and PCB assembly	Continuity	Defective PCB assembly	Replace PCB assembly
		No continuity	Loose connection	Check connections
2. Some inputs can not be programmed	Replace key membrane assembly	Everything works as specified	Defective key membrane assembly	Replace key membrane assembly
3. Display shows a number or figure different to the selection		Still have trouble	Defective PCB assembly	Replace PCB assembly
4. Random programming when touching other pads				
5. Display is frozen and can not accept any input				

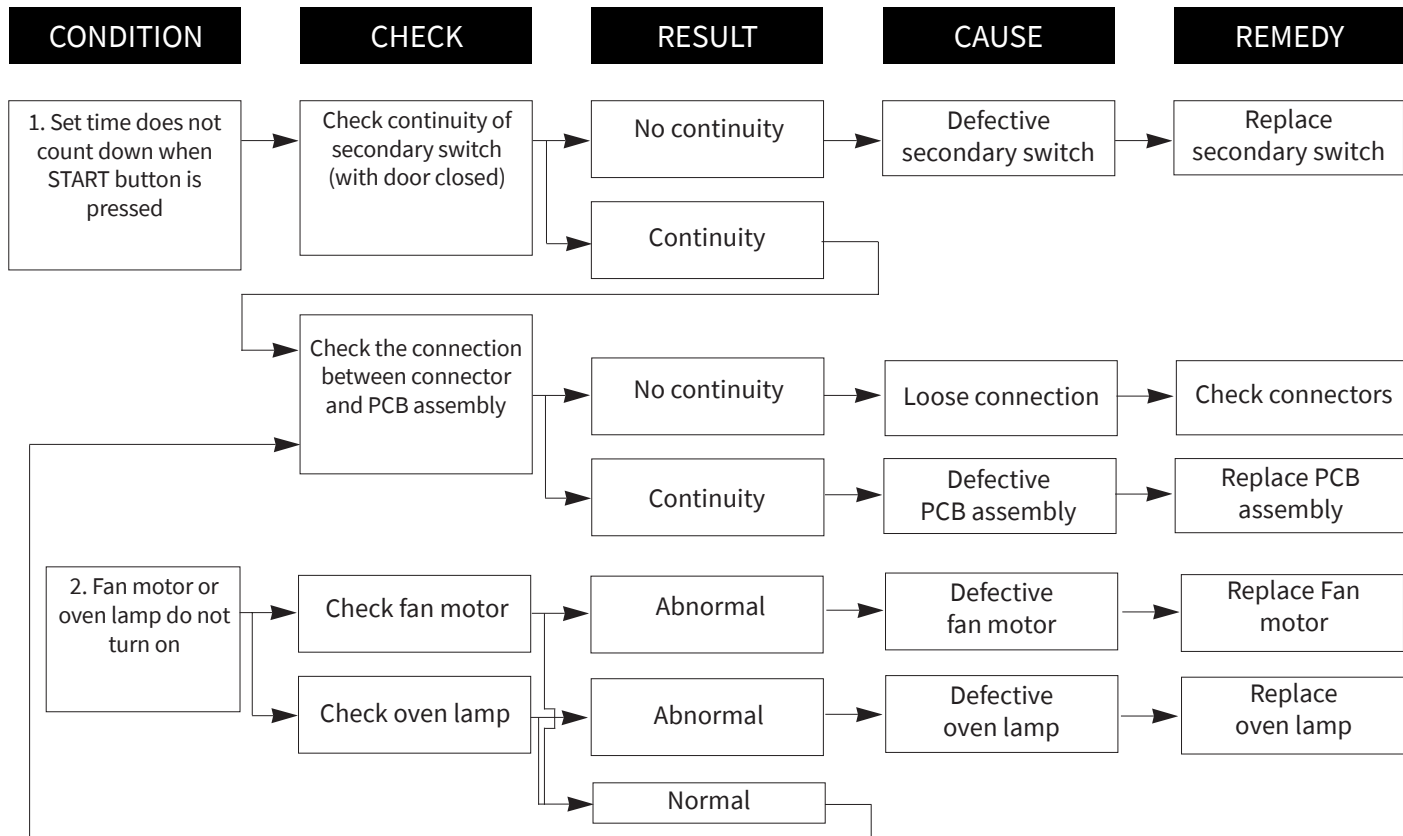
Trouble Shooting

Microwave does not operate. Display is off and inputs cannot be entered.



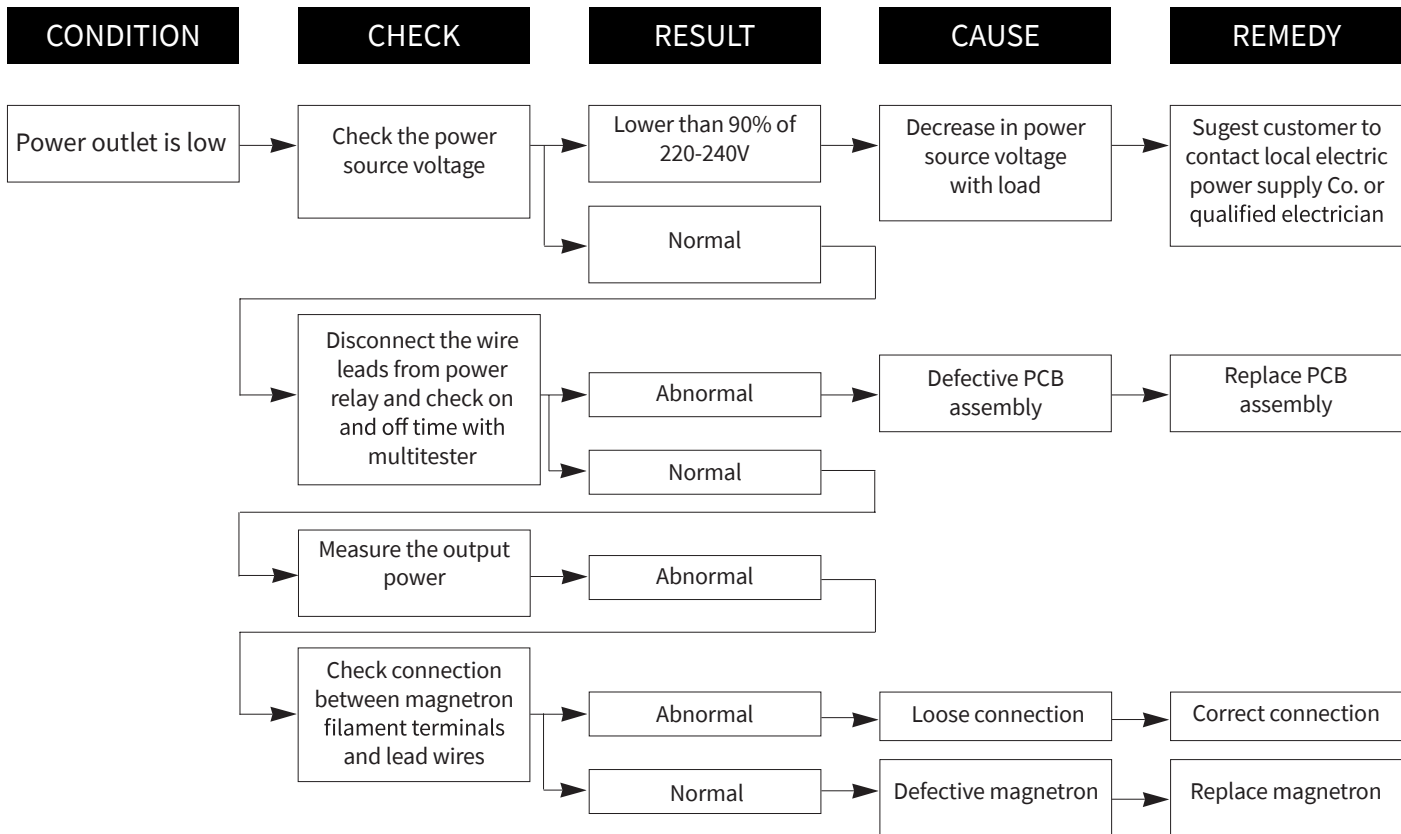
Trouble Shooting

Display is not working, but oven does not start cooking after the desired program and time are set and the START button is pressed.

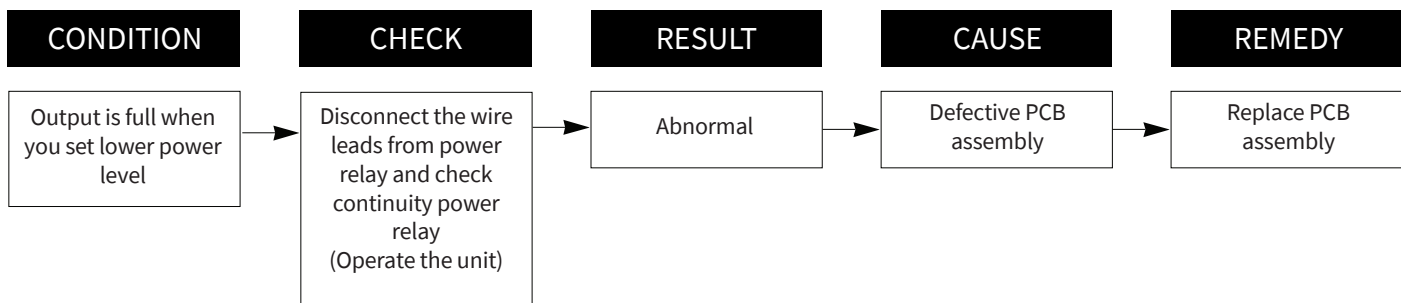


Trouble Shooting

Microwave seems to be in operation but power output is low.



Oven does not cook properly when programmed for the set power level (Operates properly at the highest power setting)

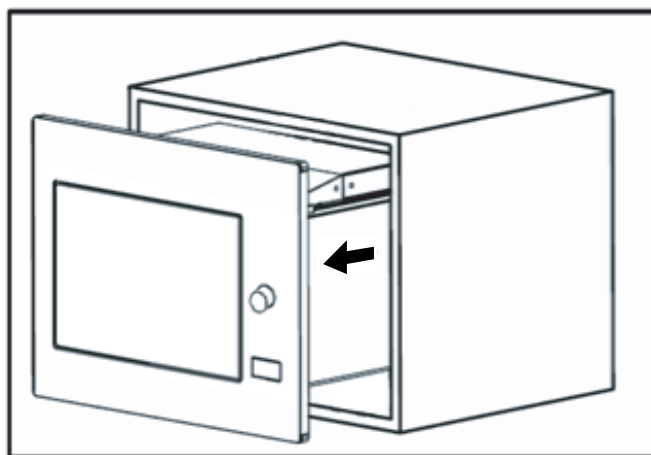
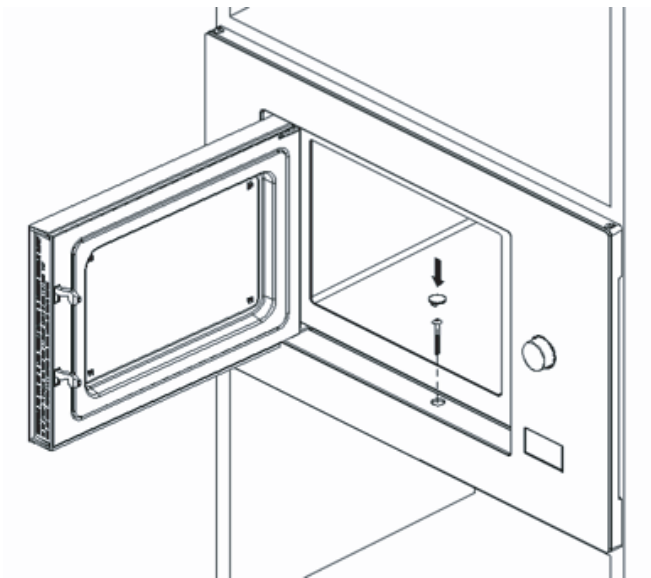


Repairing the Microwave

IMPORTANT: Ensure that the high-voltage capacitor is discharged before proceeding with any repair.

Following the steps below will provide you access to most of the components in the microwave.

1 – To remove the microwave from the cabinet cavity, remove the fixing screw located underneath the microwave door.



2 – Disconnect the power supply cord from the power outlet.

3 – Unscrew and detach the trim kit from the microwave carcass.

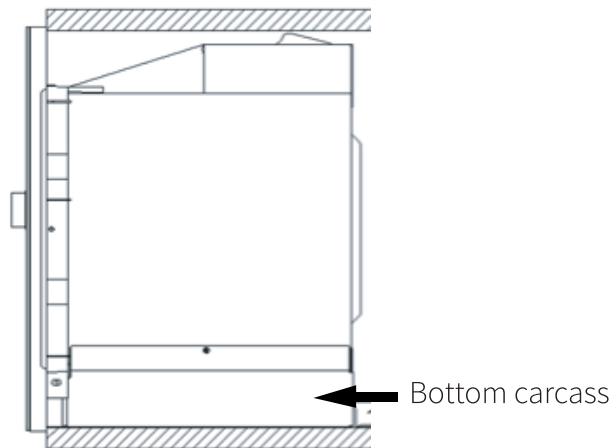
4 – Remove the screws holding the bottom carcass.



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Repairing the Microwave



5 – Remove the screws along the rear and side edges of the carcass. Slide the carcass backwards before lifting it off the unit.

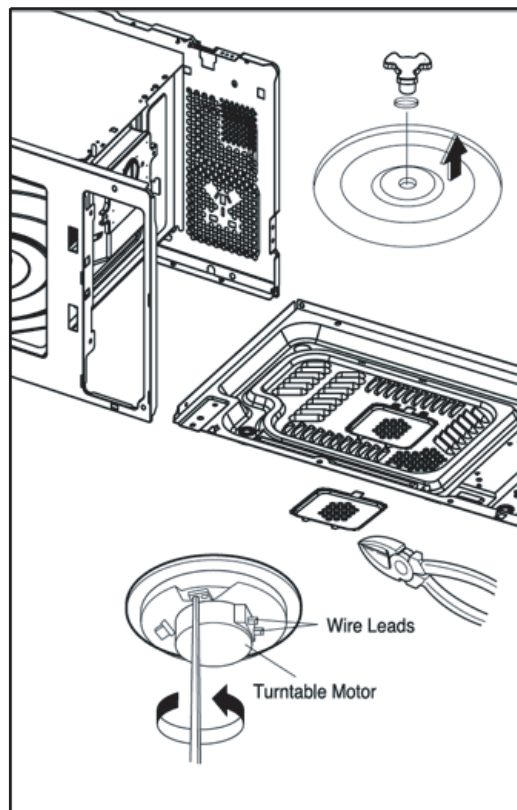
Following the steps bellow will provide you access to the Turntable Motor.

1 – Remove the turntable glass plate.

2 – Carefully remove the turning shaft.

3 – Lay the unit down on its back.

4 – Remove the cover of the turntable motor. Use pliers to pinch the clips that hold the cover in position.



Critical Components

1. High-voltage diode

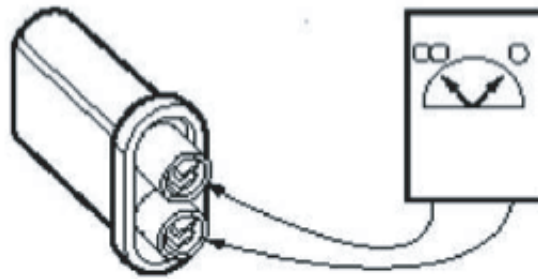
The high-voltage diode can be tested the same way a standard diode is tested.

- The diode should present full continuity in conduction direction.
- The diode should present infinity resistance in blocking direction.

2. High-voltage capacitor

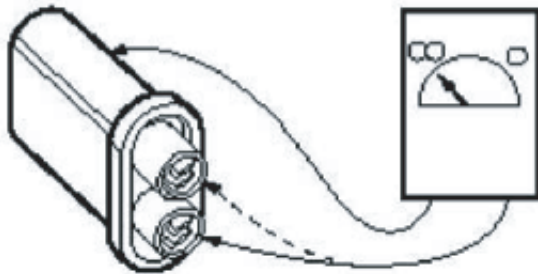
The high-voltage capacitor can be tested by resistance measurement (range 20M Ω)

The resistance between the connector of a capacitor in good working condition presents momentary continuity followed by a resistance increase proportional to the load.



A defective capacitor presents short-circuit (continuity) permanently between its connectors.

The resistance between the connectors and the housing should be infinite.



3. High-voltage transformer

This transformer supplies high voltage to the magnetron and also the operating voltage to the heater.

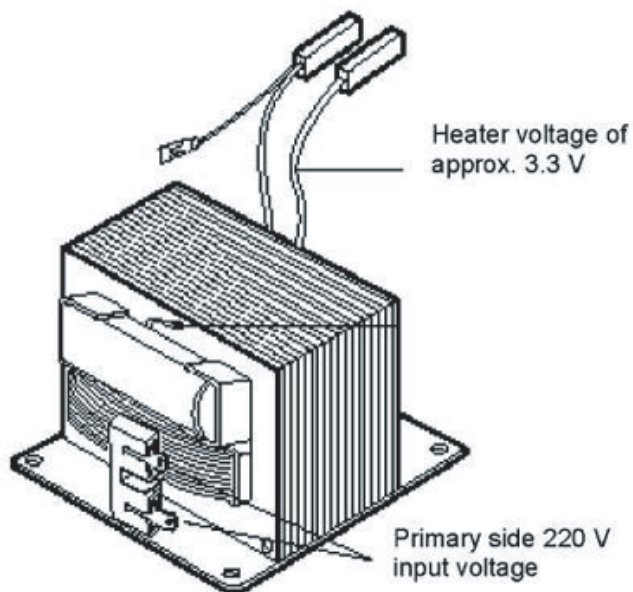
- Input voltage – 220-240V~
- Heater voltage – 3.3V~
- Operating voltage approx. – 2300V~

WARNING: DO NOT ATTEMPT TO MEASURE THE OPERATING VOLTAGE.



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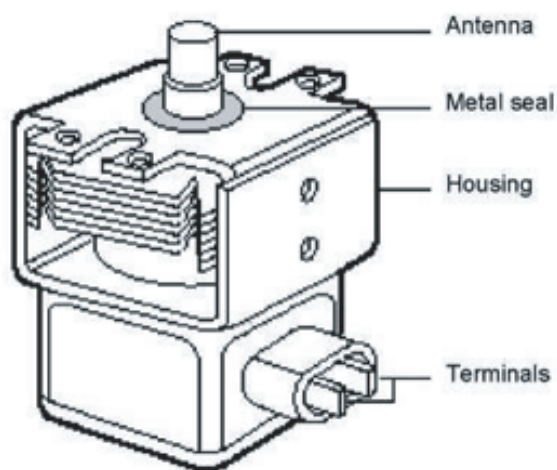
4. Magnetron

The magnetron can be tested by ohmic measurement only. The resistance between the terminals F and FA should be lower than 1Ω .

The resistance between any of the terminals and the housing should be infinite.

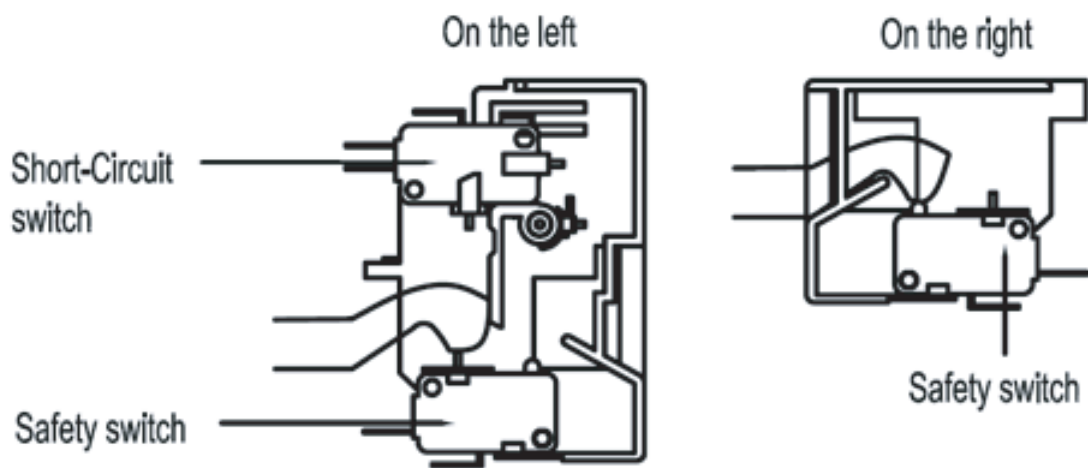
NOTE: An internal short-circuit between the cathode and anode cannot be detected by simply measuring the terminals. This short-circuit is only detectable when the appliance is on and high voltage is being supplied to the magnetron. Loud humming noises are also an indication of a defective magnetron.

Before installing the magnetron, ensure that the metal seal is placed correctly on top on the magnetron as per image below.



5. Safety Switches

At least 3 safety switches can be found in most microwaves models. These switches are responsible for interrupting the generation of microwave energy as soon as the door is opened.



The short-circuit switch works as a safety device in case one of the safety switches doesn't function when required. If the short-circuit switch is activated, it will not be possible to turn the microwave on.

Safety switches operation sequence:

Open door

Safety switch on the right > Safety switch on the left > Short-circuit switch

Close door

Short-circuit switch > Safety switch on the left > Safety switch on the right





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