



DRAFT 17/04/2012

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Customer Care - EMEA
Training and Operations Support
Technical Support

Publication
number

599 52 20-20

EN

Built-in ovens

**COMPACT RANGE
MICROWAVE**

Edition: 04/2012 - Rev. 01

PRELIMINARY

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PRELIMINARY

1 - INTRODUCTION

1.1 - PURPOSE OF THIS MANUAL

The purpose of this Manual is to provide information for repairing Built-in ovens COMPACT RANGE MICROWAVE .

1.2 - GENERAL WARNINGS



- All work with open appliances must be done with the mains supply disconnected.
- Work on electrical equipment should only be carried out by qualified personnel.
- Before working on a device, check the efficiency of the system casing using appropriate equipment. As an example, refer to the indications described / illustrated in the portal Electrolux Learning Gateway (<http://electrolux.edvantage.net>).

After the work, carry out electrical safety tests and ensure that the all safety devices are working properly.

- In the case of manipulation / replacement of the PCB, use the ESD kit (Code 405 50 63-95/4) to prevent electrostatic discharge damage the circuit board see SB No. 599 72 08-09

1.3 - SAFETY REQUIREMENTS FOR MICROWAVE APPLIANCES



- Before and during a repair you must take precautionary measures in order to prevent that the service technician is possibly exposed to the microwave energy!
- Never put the appliance into operation with open door!
- Before putting an appliance to be repaired into operation, perform the previous safety tests:

Locking behaviour of door - sealings and surfaces - hinges and bolts - mechanical (foreign) interventions from the outside!

UNPLUG

By all means discharge the high-voltage capacitor before. This must happen by suitable lines with insulated spits!

With any microwave oven, a high-frequency leakage test (measurement of radiation leakage) and the test according to VDE must be performed after a repair (this includes also the opening of the appliance).

Microwave ovens may only be repaired by technicians who have been trained and instructed correspondingly, who have the required tools, measurement devices and technical documents!

Extensive information on the basis of microwave, measurement technique and troubleshooting you can take from the Service Manual Microwave Ovens general, publ. No.: 599 510 968.

TO BE COMPLETED

1.4 - ESD = ELECTROSTATIC DISCHARGE



As the single electronic interfaces are not protected internally against static electricity and are partially open, you must pay attention to that, in case of a repair, there will be a potential compensation via the housing of the appliance (touch it) in order to neutralize a possible charging and to prevent a damaging of the affected electronic interface.

You also have to be careful with those electronics delivered as spare parts, which have to be put out of the ESD protective package only after a potential compensation (discharge of possible static electricity).

If a potential compensation with an existing static electricity is not executed, it does not mean that the electronic is damaged directly. Consequential damages may result due to the damaging of internal structures which arise only in case of load through temperature and current.

Endangered are all assembly groups which are provided with control entries, wire paths lying open and free-accessible processors.

NOTE: See also Service Bulletin 599720809 "ESD PREVENTION"

1.5 - TESTS AND MEASURES WITH APPLIANCES UNDER VOLTAGE



Normally in all equipment is recommended to perform tests and measurements with the equipment disconnected from the mains.

Nevertheless in microwave ovens, there are situations that, to detect the failed component, when troubleshooting is necessary to make voltage measurements. These measurements must be made by placing a carefully and follow all safety rules involving measurements on energized equipment.

It is strictly forbidden Carry out measures voltage in HIGH VOLTAGE section.

2 - SOFTWARE SPECIFICATIONS, FUNCTIONS

2.1 - PANEL EXAMPLE (Electrolux CH)



Fig. 1

HDC05078.JPG



Fig. 2

HDC05079.JPG

2.2 - POSSIBLE TOUCH CONTROLS OF ALL GROUPS OF APPLIANCES

2.2.1 - FUNCTION TOUCH KEYS

Depending on the appliance design it may be eight or ten touching keys. The functions of the several keys are also different depending on the brand.

COMBI MODELS 10 KEYS

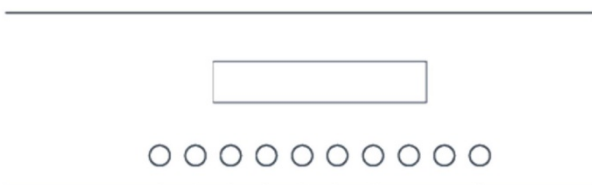
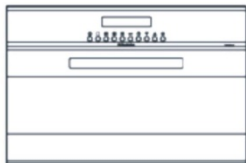


Fig. 3

HDC05091.JPG

SOLO MODELS 8 KEYS

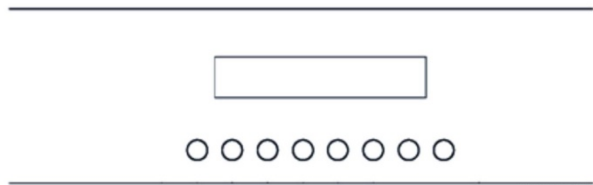
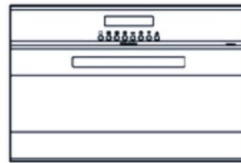


Fig. 4

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2.2.1.1 - MICROWAVE COMBI

AEG - D

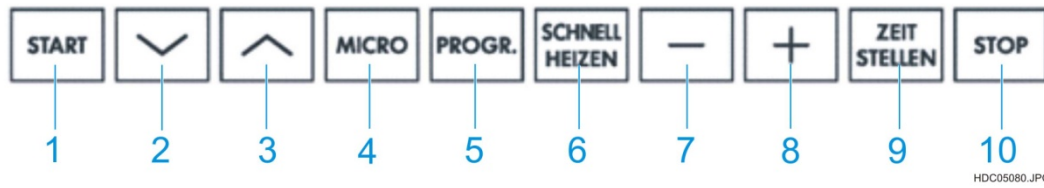


Fig. 5

- | | | | |
|---|---------------|----|--------------------|
| 1 | Start | 6 | High speed heating |
| 2 | To the bottom | 7 | Minus |
| 3 | To the top | 8 | Plus |
| 4 | Microwave | 9 | Clock Functions |
| 5 | Programs | 10 | Stop |

AEG - Intern.

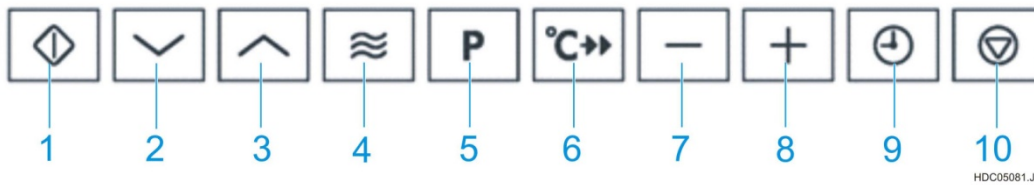


Fig. 6

- | | | | |
|---|---------------|----|--------------------|
| 1 | Start | 6 | High speed heating |
| 2 | To the bottom | 7 | Minus |
| 3 | To the top | 8 | Plus |
| 4 | Microwave | 9 | Clock Functions |
| 5 | Programs | 10 | Stop |

AEG - CH

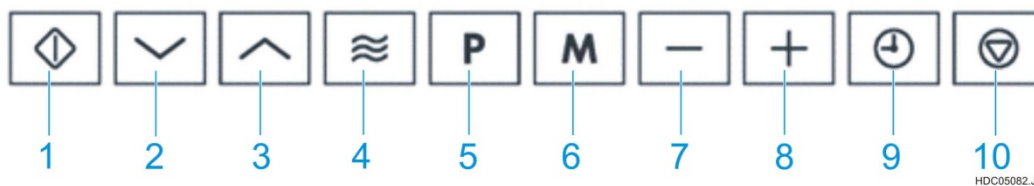


Fig. 7

- | | | | |
|---|---------------|----|-----------------|
| 1 | Start | 6 | Memory Function |
| 2 | To the bottom | 7 | Minus |
| 3 | To the top | 8 | Plus |
| 4 | Microwave | 9 | Clock Functions |
| 5 | Programs | 10 | Stop |

Electrolux - CH :

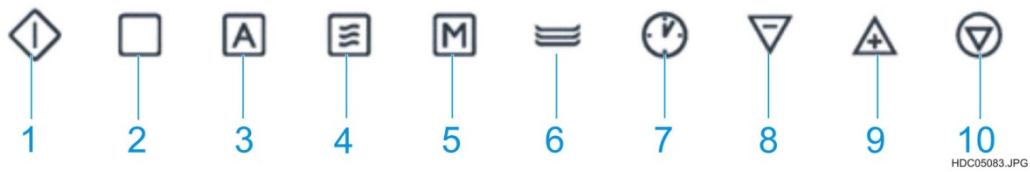


Fig. 8

- | | | | |
|---|-----------------|----|-----------------|
| 1 | Start | 6 | Light |
| 2 | Oven Functions | 7 | Clock Functions |
| 3 | Programs | 8 | Minus |
| 4 | Microwave | 9 | Plus |
| 5 | Memory Function | 10 | Reset |

Electrolux - Intern.

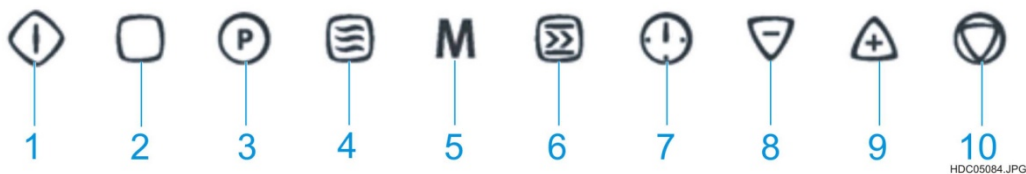


Fig. 9

- | | | | |
|---|-----------------|----|--------------------|
| 1 | Start | 6 | High speed heating |
| 2 | Oven Functions | 7 | Clock Functions |
| 3 | Programs | 8 | Minus |
| 4 | Microwave | 9 | Plus |
| 5 | Memory Function | 10 | Reset |

Juno - Electrolux

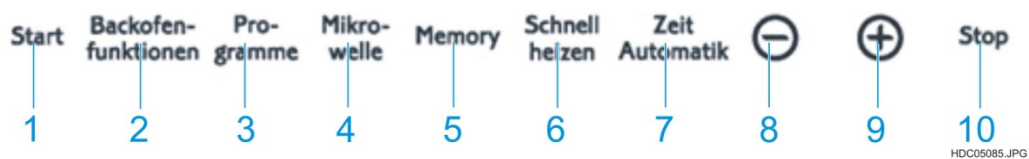
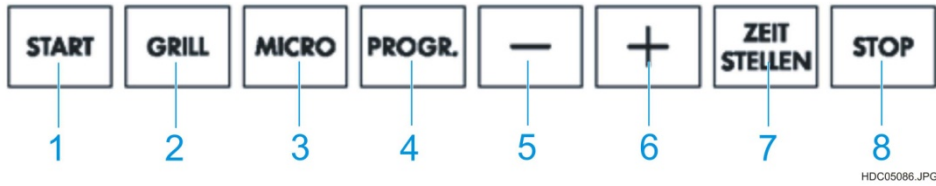


Fig. 10

- | | | | |
|---|-----------------|----|--------------------|
| 1 | Start | 6 | High speed heating |
| 2 | Oven Functions | 7 | Clock Functions |
| 3 | Programs | 8 | Minus |
| 4 | Microwave | 9 | Plus |
| 5 | Memory Function | 10 | Reset |

2.2.1.2 - MICROWAVE SOLO

AEG - D

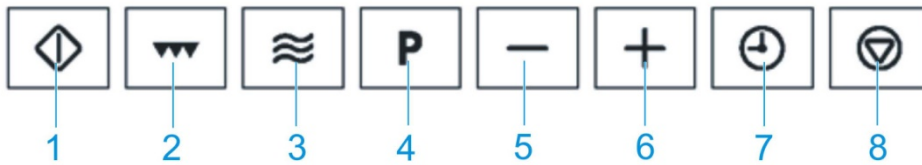


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Fig. 11

- | | | | |
|---|-----------|---|-----------------|
| 1 | Start | 5 | Minus |
| 2 | Grill | 6 | Plus |
| 3 | Microwave | 7 | Clock Functions |
| 4 | Programs | 8 | Stop |

AEG - Intern.+ CH

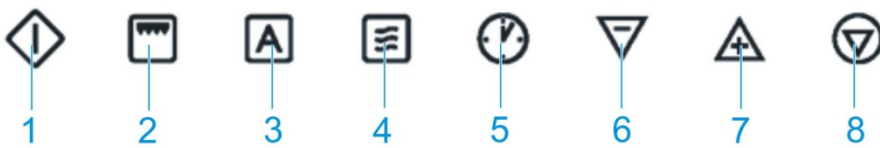


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Fig. 12

- | | | | |
|---|-----------|---|-----------------|
| 1 | Start | 5 | Minus |
| 2 | Grill | 6 | Plus |
| 3 | Microwave | 7 | Clock Functions |
| 4 | Programs | 8 | Stop |

Electrolux - CH :



HDC05088.JPG

Fig. 13

- | | | | |
|---|-----------|---|-----------------|
| 1 | Start | 5 | Clock Functions |
| 2 | Grill | 6 | Minus |
| 3 | Programs | 7 | Plus |
| 4 | Microwave | 8 | Reset |

Electrolux - Intern.

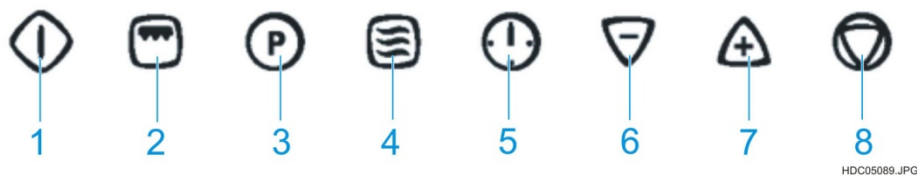


Fig. 14

- | | | | |
|---|-----------|---|-----------------|
| 1 | Start | 5 | Clock Functions |
| 2 | Grill | 6 | Minus |
| 3 | Programs | 7 | Plus |
| 4 | Microwave | 8 | Reset |

Juno - Electrolux

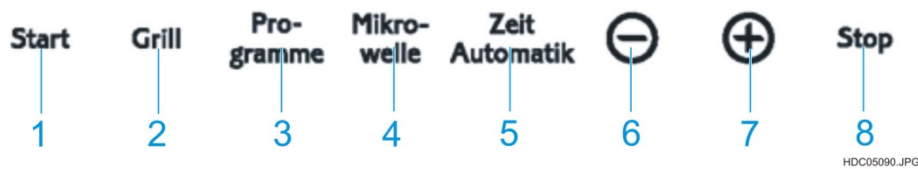


Fig. 15

- | | | | |
|---|-----------|---|-----------------|
| 1 | Start | 5 | Clock Functions |
| 2 | Grill | 6 | Minus |
| 3 | Programs | 7 | Plus |
| 4 | Microwave | 8 | Reset |

2.2.2 - SYMBOL, EXPLANATION FOR DISPLAY

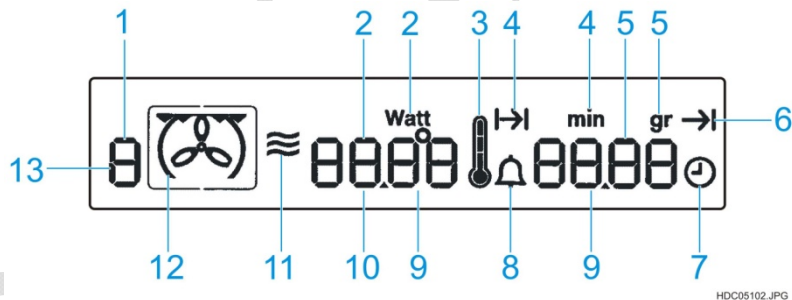


Fig. 16

Symbol / indication no.	Meaning / explanation
1	display baking/broiling programs and memory function
2	display microwave performance
3	thermometer symbol
4	duration
5	display weight
6	end
7	time of day
8	short time
9	display time of day
10	display temperature
11	display microwave
12	display oven functions
13	d=Demo-functions

2.3 - MAIN FEATURES OF OPERATIONS

2.3.1 - SET CLOCK

Information: The oven functions only with a set time.

When the appliance must be connected again with the mains e.g. after a repair, you have to set the clock anew. Proceed as follows.

After the connection or a short circuit the symbol for "time of day" is flashing. Use keys "+" or "-" to set the current time of day.

Wait 5 seconds

The flashing goes out and the clock shows the set time of day. The appliance is ready for operation.

Note: For detailed information on the operation/oven functions see Service Manual **599 354 040**

2.3.2 - CHILD-PROOF LOCK

When the child-proof lock has been activated, the appliance can not be put into operation.

Activate child-proof lock

- If necessary, switch off the appliance by the START key.
- Press and hold "program" and "-" keys simultaneously until the display indicates "SAFE" (approx. 2 seconds). Now the child-proof lock is activated.

Deactivate child-proof lock

- If necessary, switch off the appliance by the START key.
- Press and hold "program" and "-" keys simultaneously until "SAFE" in the display goes out (approx. 2 seconds). Now the child-proof lock is deactivated and the oven is ready for operation again.

2.3.3 - KEY BEEP

Deactivate key beep:

- If necessary, switch off the appliance by the START key.
- Press and hold "+" and "-" simultaneously until a beep will sound (approx. 2 seconds). The key beep is now deactivated.

Activate key beep:

- Beep sounds (approx. 2 seconds). The key beep is activated again.

3 - FUNCTIONS OF APPLIANCES

3.1 - FUNCTION OF OVEN

Microwave Combi		Capacity [W]	Hot air	GRILL	TURBO GRILL	Drying	MW
	Suggested temperature		Elux CH 170° Other 150°C	250°C	180°C	30°C	1000W
	Max.		250°C	250°C	250°C	100°C	1000W
	Min.		30°C	30°C	30°C	30°C	100W
Consumer	Grill heating element	1500		X	X		
	Motor hot air	26	X		X	X	
	Ring-element	1650	X			X	
	Microwave	1750					X
	Motor wave agitator	4					X
	Motor cooling magnetron	30					X
	Coolingfan	19	X	X	X	X	X
	Oven light	26	X	X	X	X	X
Active sensor / door switches	Oven sensor		X	X	X	X	X
	Sensor magnetron						X
	Door switch		X	X	X	X	X
Voltage cooling fan [%]			50	100	100	100	100
Microwave Solo		Capacity [W]		GRILL		DEFROST	MW
	Suggested temperature			250°C		30°C	1000W
	Max.			250°C		100°C	1000W
	Min.			30°C		30°C	100W
Consumer	Grill heating element	1500		X			
	Motor hot air	26				X	
	Microwave	1750					X
	Motor wave agitator	4					X
	Motor cooling magnetron	30					X
	Coolingfan	19		X		X	X
	Oven light	26		X		X	X
Active sensor / door switches	Oven sensor			X		X	X
	Sensor magnetron						X
	Door switch			X		X	X

4 - TECHNICAL EQUIPMENT

4.1 - FAN AFTER-RUNNING

After switching off the appliance the cooling fan continues running until the centre of gravity temperature of the muffle has fallen below 140°C. In case of less than 140°C the cooling fan is running approx. 10 minutes. The residual heat will be indicated until the temperature has fallen down to 40°C.

4.2 - MEASURE AGAINST WRONG ELECTRICAL CONNECTION

Not provided

4.3 - SAFETY CUTOFF OF OVEN

When setting function and temperature without a time limit, the safety cutoff of the oven switches off automatically, depending on the set temperature.

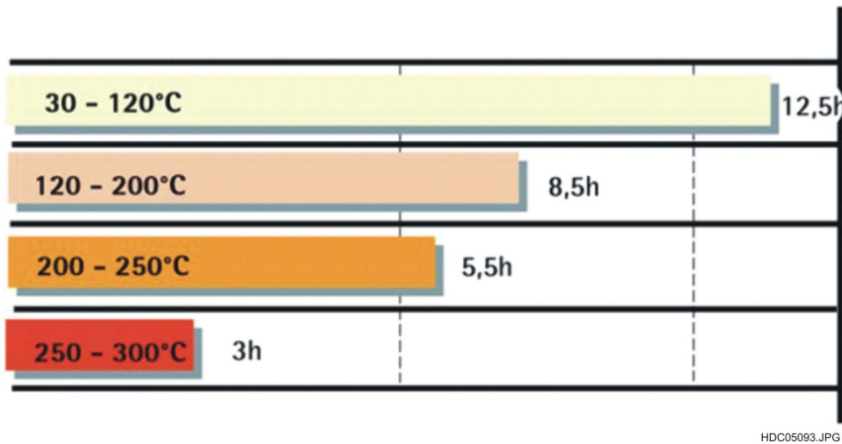


Fig. 17

4.4 - TEMPERATURE SAFETY DEVICE

At the side of the air channel there is a double temperature safety device which will switch off all poles of the appliance in case of overheating. The measured temperature value during a cutoff is 150°C.

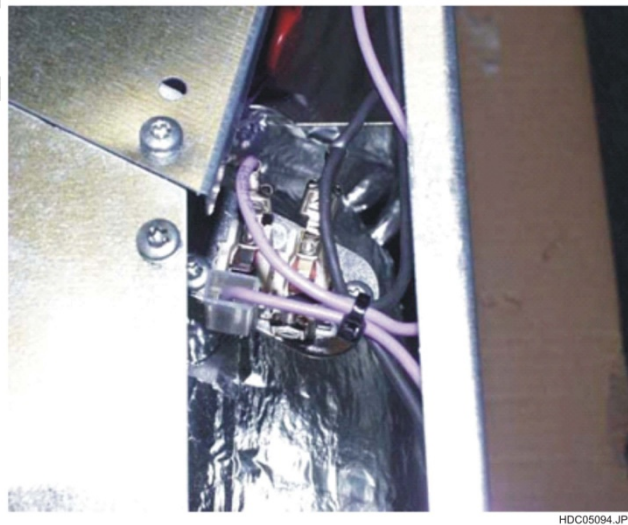
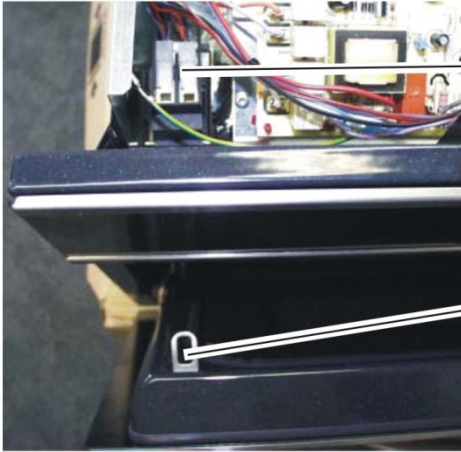


Fig. 18 : assembling location temperature safety device

4.5 - ELECTRONIC SAFETY SYSTEM "INTERLOCK" MICROSWITCH SYSTEM

Opening the door activates all 3 microswitches via two mechanical systems. Primary and secondary switch interrupt the power supply. If one of these switches does not open, the monitor (surveillance) switch shorts the input circuit resp. the high-voltage transformer. In this connection it is accepted that the microfuse will trigger off (see wiring diagram Chapter 7).



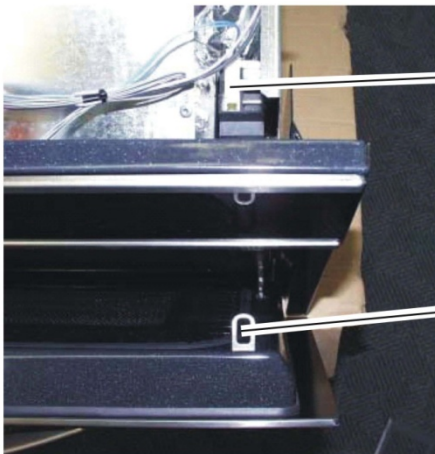
Monitor switch "Q1" and primary switch "Q2"

Installation location: behind the knob panel, left at the side panel.

Actuating hook

Fig. 19

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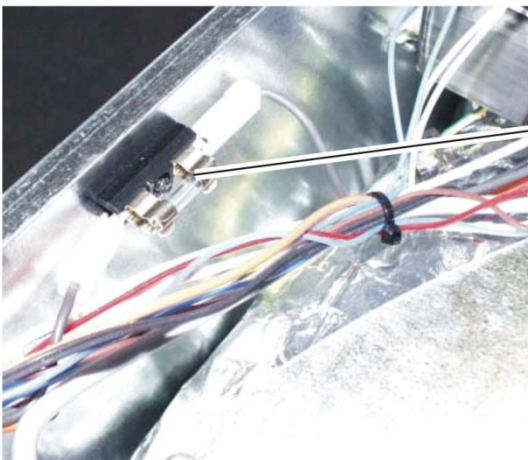
Secondary switch "Q3"

Installation location: behind the knob panel, right at the side panel.

Actuating hook

Fig. 20

HDC05096.JPG



Microfuse "fuse" in the wiring diagram

Installation location: at the left side panel.

Fig. 21

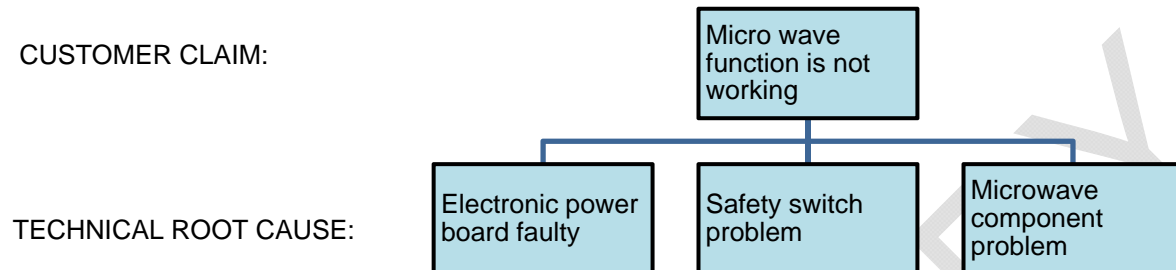
HDC05097.JPG

5 - FAULT DIAGNOSIS / WHAT TO DO IF ...?

5.1 - TROUBLESHOOTING

5.1.1 - METHOD OF APPROACH TO TROUBLESHOOTING

The customer claim Microwave function not working has different root causes. This report will help to guide the service technician in the root cause analyze.



How to analyse to root cause of the problem:

The electric power supply of the microwave system is divided in a main electrical circuit and a secondary electrical circuit (see Fig. 22).

In the main circuit is the whole 230V system involved. Power board, heating elements, motors and door switches for microwave security. Secondary circuit is starting after high voltage transformer and includes the full micro wave creation system with magnetron, capacitor, diode and high voltage transformer.

With measurement of the power in the main ore secondary electric circuit you are able to define if the defect is in the micro wave system or in the rest of the appliance.

5.1.2 - CONTROL CIRCUIT AND POWER MICROWAVE CIRCUIT

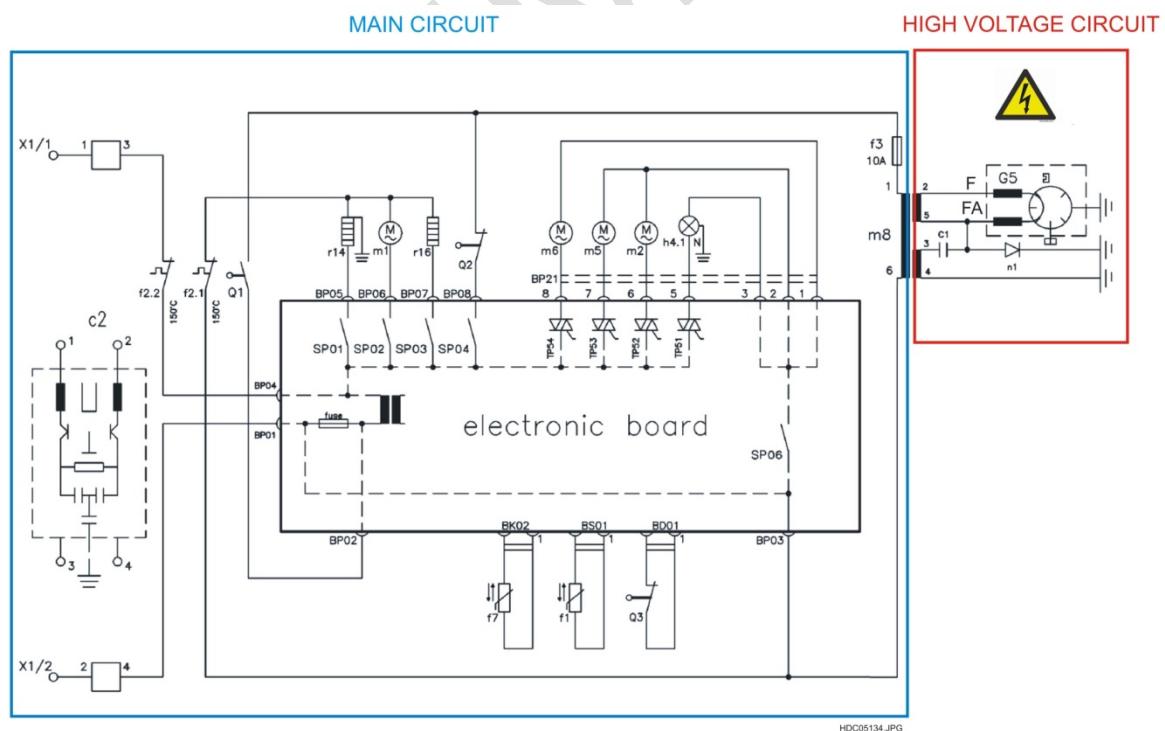


Fig. 22

5.1.3 - MEASURING POINT IN MAIN CIRCUIT

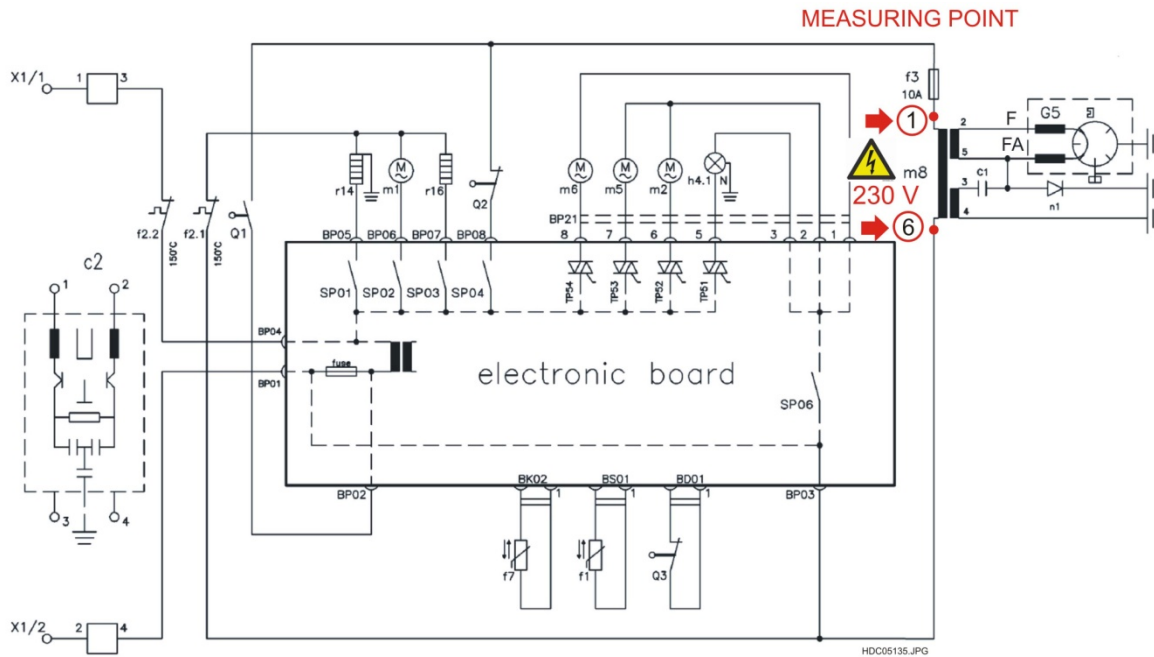


Fig. 23

SCHEMATIC CODE	REFERENCE Fig. 24	DESCRIPTION
c1	324	High voltage capacitor
c2	332	Line filter / main filter
electronic board	404	Power board
f1	345	Temperature sensor PT500
f2.1 / f2.2	344	Safety thermostat baking oven
f3	092	Fuse
f7	315	Magnetron sensor
G5	325	Magnetron
h4.1	314 (*)	Oven lamp
Q1	158L	Monitor switch (opener), positioned on the left
Q2	158L	Primary switch (closer), located on the left
Q3	158R	Secondary switch (closer), located on the right
m1	301	Fan hot-air (convection)
m2	317	Tangential Fan cooling oven
m5	301A	Magnetron cooling fan
m6	312	Stirrer Motor
m8	328A	High voltage transformer
n1	327	High voltage diode
r14	300	Grill heating element
r16	307	Circular heating element (convection)

(*) **NOTE** : In some models, the oven light is the halogen type with its transformer.

Example of an exploded view with the position of components and references to descriptions in TDS. Details you will find behind the principal wiring diagram and the component list with link to the position numbering in the TDS spare part list.

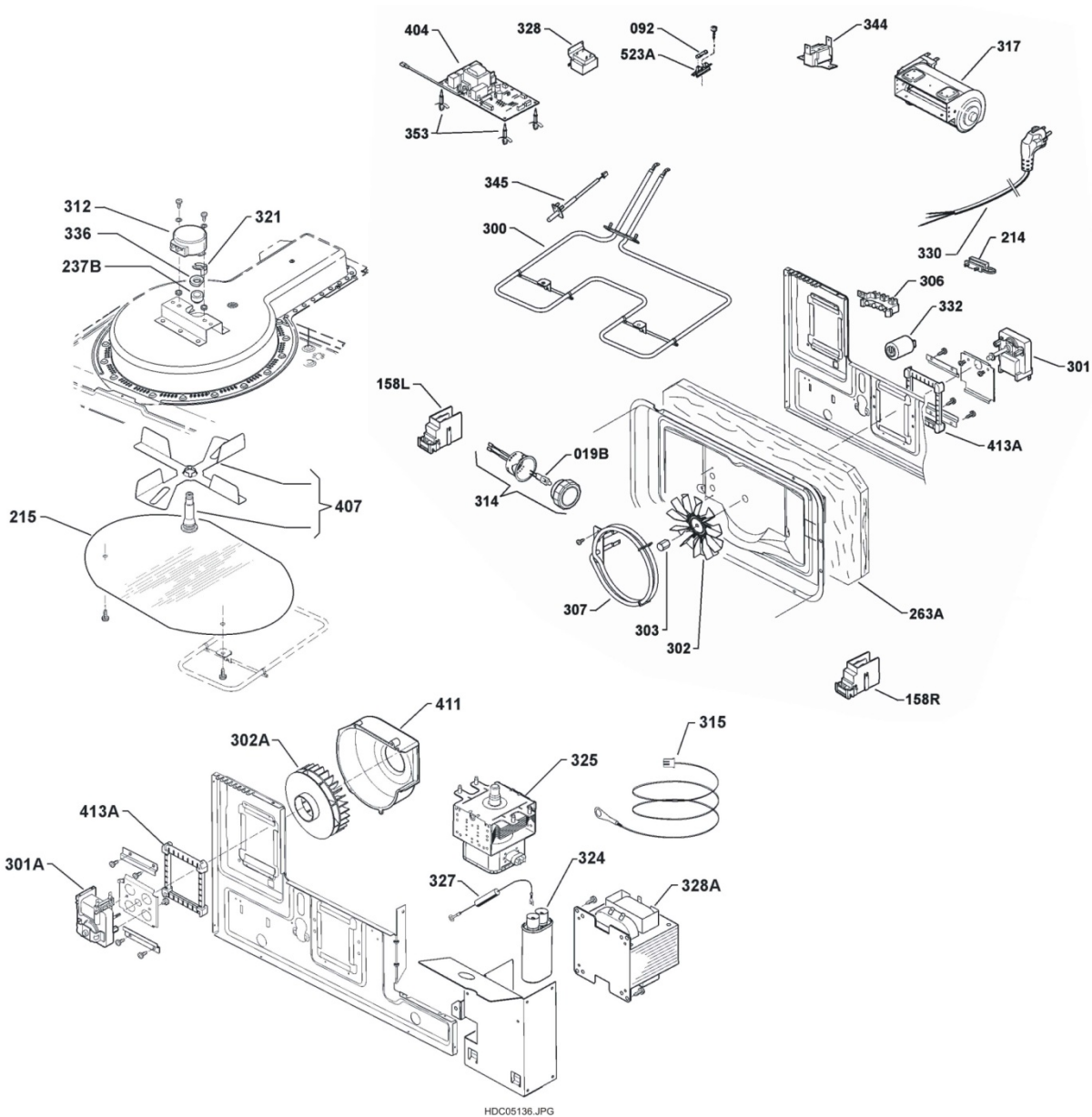



Fig. 24

5.1.4 - DESCRIPTINO OF FAILURE MODES ON MICROWAVE FUNCTIONS

The following table gives an idea of how to find a fault on the Oven operation in Microwave function.

FAULT DESCRIPTION	CHECK / ACTION	RESULT	POSSIBLE ROOT CAUSE	REMEDY
Microwave functions is not working.	1. Switch on appliance and choose microwave function. 2. Check if you have electrical at the power connection pin 1 and 6 of high voltage transformer. (see Fig. 23 and Fig. 24)  Attention: live potential 230V !	If it is no voltage:	Main fuse f3 interrupted	Check the fuse f3 (Go to Check 3)
		If it is voltage OK:	Microwave components of high voltage circuit.	Microwave components (Go to Check)
	3. Check fuse f3 (Fig. 24 Pos. 092)	The fuse f3 is OK:	Security door switches or Powerboard,	Check the microwave security door switches (Go to Check 4)
		The fuse f3 is interrupted:	Security door switches	Replace the fuse f3 and check the microwave security door switches . (Go to Check 4)
	4. Readjust the microwave security door switches according to the instruction on page 23	The appliance does not work even if the system of door safety switches work well.	Powerboard fault.	Replace the power board (Fig. 24 Pos 404)
		The system of door safety switches does not work well.	Left security door switch Q1 and Q2. (Fig. 24 Pos 158L)	Check the switch if faulty replace.
			Right security door switch Q3. (Fig. 24 Pos 158R)	Check the switch if faulty replace.

TO BE COMPLETED

5.1.5 - SUMMARY OF THE TESTS IN DIFFERENT SITUATIONS OF FAILURE

A) Electronic Power board fault

1. Switch on the appliance and choose microwave function
2. Check if you have electrical power (230V) at the connection pin 1 and 6 of high voltage transformer (see Fig. 23). If it is no voltage:
3. Check fuse f3 (see Fig. 23 and Fig. 24 Pos. 092), if it is o.k.:
4. Readjust the microwave security door switches according to the instruction on page 23.
5. If it is not working after adjustment replace the electronic power board (see Fig. 24 Pos 404)

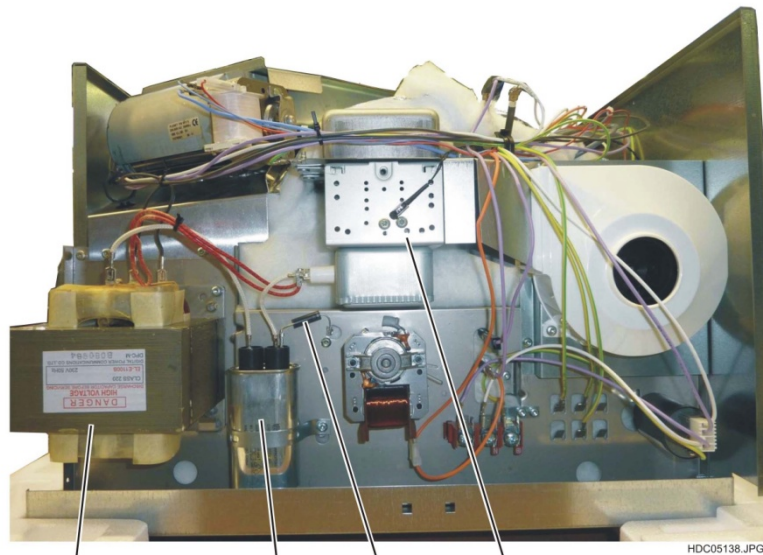
B) Safety switch problem

1. Switch on the appliance and choose microwave function
2. Check if you have electrical power (230V) at the connection pin 1 and 6 of high voltage transformer (see Fig. 23). If it is no voltage:
3. Check fuse f3 (see Fig. 23 and Fig. 24 Pos. 092), if it is o.k.:
4. Readjust the microwave security door switches according to the instruction on page 23.
5. If not working changes first left security door switch (see Fig. 24 Pos. 158L) and if necessary right security door switch (see Fig. 24 Pos. 158R) (see Chapter "5.3 - PROCEDURE FOR ADJUSTMENT OF MICRO SWITCH DOOR" on page 22).

C) Micro wave component problem

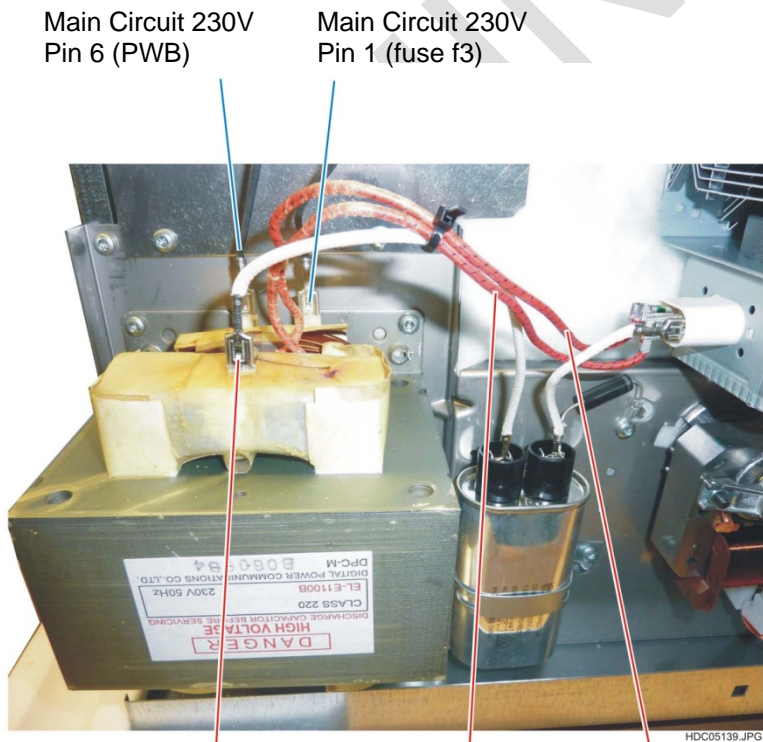
1. Switch on the appliance and choose microwave function.
2. Check if you have electrical power (230V) at the connection pin 1 and 6 of high voltage transformer (see Fig . 23 page 17). If it is no voltage:
3. Check if **TO BE COMPLETED**
4. If you find no power exchange first diode n1 (Fig. 24 Pos. 327 page 18). Check power again.
5. Second step after diode change is replace capacitor c1 (Fig. 24 Pos. 324 page 18.)
6. Check **TO BE COMPLETED**
7. Exchange magnetron g5 (Fig. 24 Pos. 325 page 18).

When you micro wave not working after all this steps last possibility is to change the high voltage transformer m8 (Fig. 24 Pos. 328A page 18).



High voltage Transformer High voltage Capacitor High voltage Diode Magnetron

Fig. 25



Main Circuit 230V Pin 6 (PWB) Main Circuit 230V Pin 1 (fuse f3)

⚡ High voltage circuit Pin 3 (Capacitor) ⚡ High voltage circuit Pin 5 (Magnetron FA) ⚡ High voltage circuit Pin 2 (Magnetron F)

Fig. 26

5.2 - FAULT CODES

Display	Fault	Cause/measure
E0020	Oven lamp defect	Replace oven lamp
E0101	Internal electronic problem	Execute mains reset -> Disconnect the appliance from the mains and reconnect again. If necessary, replace power board.
E0202	Sensor magnetron defect / out of range	Check sensor magnetron, replace if necessary
E0404	Sensor oven (PT500) defect / out of range	Check sensor oven, replace if necessary
E0808	Sensor oven (PT500) defect / out of range	Check sensor oven, replace if necessary
E0C0C	Sensor oven (PT500) defect / out of range	Check sensor oven, replace if necessary
E2020	Power board general failure /Triac on power board defect	Execute mains reset -> Disconnect the appliance from the mains and reconnect again. If necessary, replace power board.
E4040	Oven temperature > 290°C	Check relay contacts on power board. If necessary, replace power board.
E4444	Oven temperature > 290°C, sensor oven (PT500) defect / out of range	Check sensor oven, replace if necessary
E4848	Oven temperature > 290°C, sensor oven (PT500) defect / out of range	Check sensor oven, replace if necessary
E4C4C	Oven temperature > 290°C, sensor oven (PT500) defect / out of range	Check sensor oven, replace if necessary

5.3 - ADJUSTMENT OF MICRO SWITCH DOOR

5.3.1 - EQUIPMENT NEEDED FOR ADJUSTMENT OF MICRO SWITCH DOOR

- Kit Adjustment Door Switch no. 315 69 80-00/9 consisting of:

4 Distance pieces:	0.50 mm, magnetically
2 Distance pieces:	0.85 mm, magnetically
2 Distance pieces:	1.55 mm, magnetically

- Ohmmeter to check status of switch contact.
- MW meter to check MW leakage.

5.3.2 - LIMITS OF GAPS FOR ADJUSTMENT OF MICRO SWITCH DOOR

If door gap is 0...0.5 mm => Appliance can be started / light is off

If door gap is 1.0 mm or bigger => Appliance cannot be started / light is on

5.3.3 - DEFINED DOOR GAP FOR ADJUSTMENT OF MICRO SWITCH DOOR

Put distance piece on the front frame, left and right (see Fig. 27).

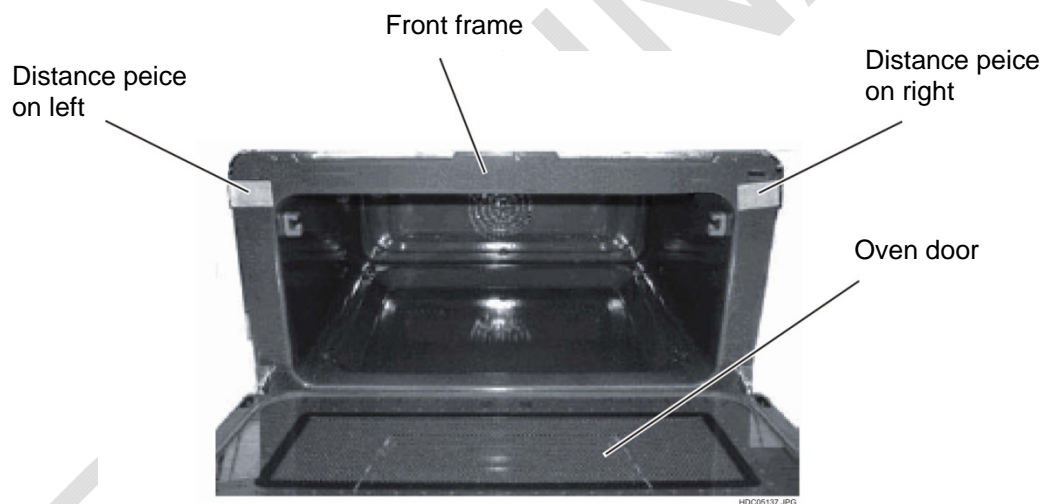


Fig. 27

5.3.4 - PROCEDURE FOR ADJUSTMENT OF MICRO SWITCH DOOR

SAFETY WARNING: The appliance has to be disconnected from supply voltage for this procedure !

5.3.4.1 - DOOR SWITCH RIGHT

1. Put 2 x 0.5 mm = 1.0 mm distance plates on the front frame (see Fig. 27).
2. Close the door.
3. Move the switch housing backwards, just until Q3 micro opens.
4. Fix the switch housing.
5. Put 0.5 mm distance plates on the front frame, 1 x left and 1 x right side.
6. Close the door, Q3 is closed.
7. Put 2 x 0.5 mm = 1.0 mm distance plates on the front frame, 2 x left and 2 x right side => Q3 is open.
8. Take out the distance plates, close the door.

5.3.4.2 - DOOR SWITCH LEFT

1. Put 2 x 0.5 mm = 1.0 mm distance plates on the front frame (see Fig. 27).
2. Close the door.
3. Move the switch housing backwards, just until Q2 micro opens.
4. Fix the switch housing.
5. Put 0.5 mm distance plates on the front frame, 1 x left and 1 x right side.
6. Close the door, Q2 is closed.
7. Put 2 x 0.5 mm = 1.0 mm distance plates on the front frame, 2 x left and 2 x right side => Q2 is open.
8. Take out the distance plates, close the door.

5.3.5 - CHECK MICROWAVE LEKAGE / FINAL TEST

1. Put a suitable container to microwave with 275 ml of water into the cavity, start MW operations, measure MW leakage.
2. Slowly open the door: The maximum allowed value is 5.0 mW/cm².
3. Check the other oven functions (hot air, grill, light, ..).

5.4 - TEST OF MICROWAVE COMPONENTS



PRECAUTION

1. High voltage is present at the high voltage terminals during any cook cycle.
2. It is neither necessary nor advisable to attempt measurement of the high voltage.
3. Before touching any oven components or wiring, always unplug the oven from its power source and discharge the high voltage capacitor or wait a certain period of time since the last operation of the appliance to allow the capacitor to discharge through the internal resistor.

5.4.1 - HIGH VOLTAGE DIODE TEST

TO BE COMPLETED

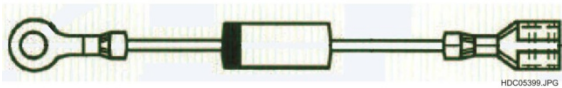


Fig. 28

Connecting to the earth point (cathode)

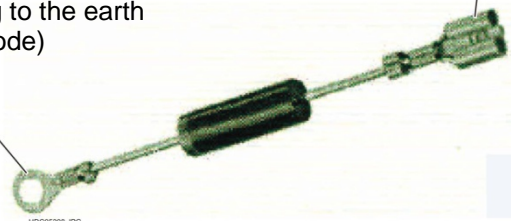


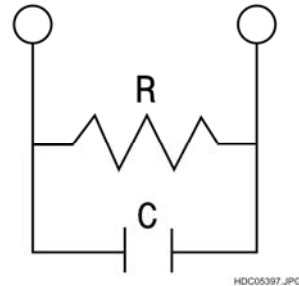
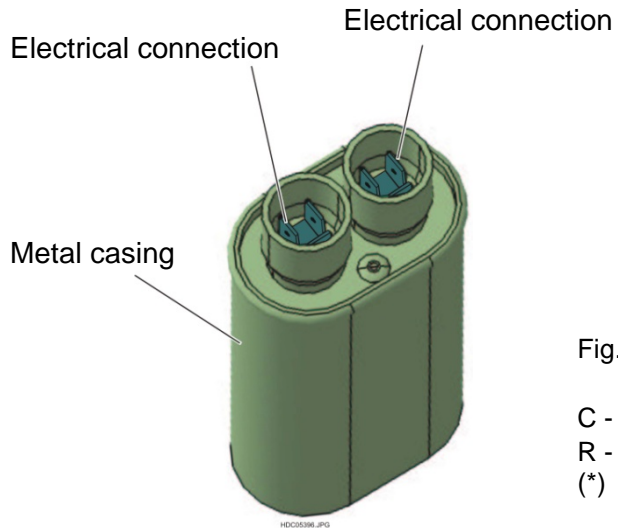
Fig. 29

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 K Ω in the other direction.

5.4.2 - HIGH VOLTAGE CAPACITOR TEST

TO BE COMPLETED

Example of the high voltage capacitor Test



C - HV CAPACITOR (1,05 μ F +/- 3% 2300VAC)
R - DISCHARGE RESISTOR (10M Ω +/- 20%)
(*)

ATTENTION: Before testing capacitor wait a certain period of time since the last operation of the appliance to allow the capacitor to discharge through the internal resistance.

1. Check continuity of the capacitor with the meter set at the highest resistance scale.
2. Once the capacitor is changed, a normal capacitor shows continuity for a short time, and then indicates 10M Ω (*).
3. A shorted capacitor will show continuous continuity.
4. An open capacitor will show constant 10M Ω (*).
5. Resistance between each terminal and chassis should read infinite.

(*) **NOTE:** The values are as an example, it depend on the component code.

5.4.3 - MAGNETRON TEST

TO BE COMPLETED

Example of the Magnetron Test

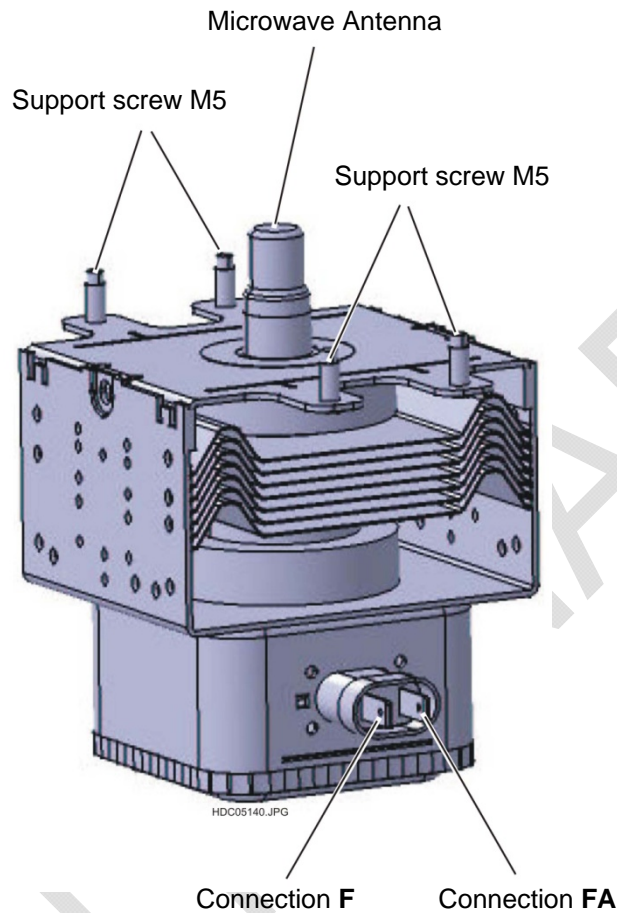


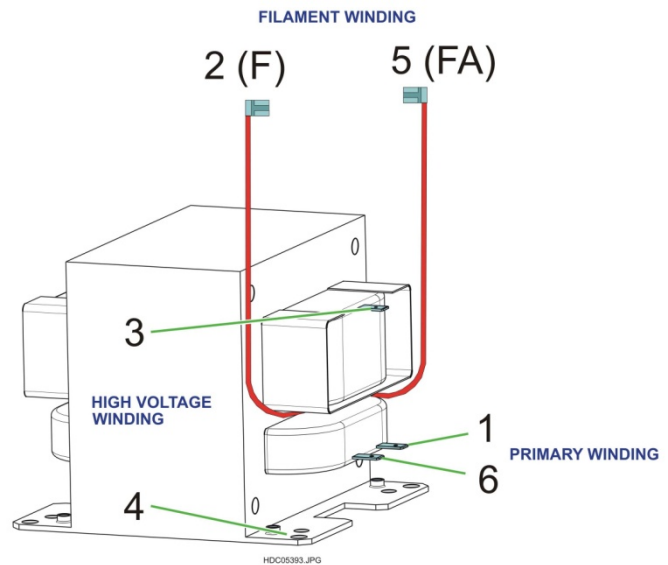
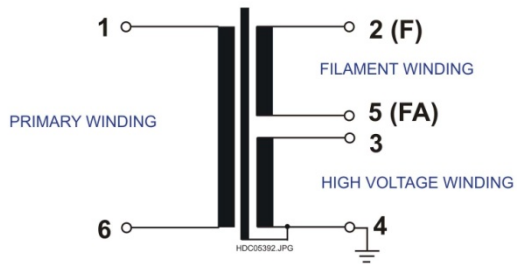
Fig. 32

1. Continuity checks can indicate only an open filament or a short circuit of magnetron. To diagnose an open filament or short circuit of magnetron:
2. Isolate the magnetron from the circuit by disconnecting its leads.
3. A continuity check across the magnetron filament terminals (F and FA) should indicate one ohm or less.
4. A continuity check between each filament terminal and magnetron case should read open.

5.4.4 - HIGH VOLTAGE TRANSFORMER TEST

TO BE COMPLETED

Example of the high voltage Transformer Test



1. Remove connectors from the transformer terminals and check continuity.
2. Normal resistance readings are follows:

HIGH VOLTAGE WINDING	Approx. 100Ω
FILAMENT WINDING	Approx. 0Ω
PRIMARY WINDING	Approx. 1.450Ω

(*) **NOTE:** The values are as an example, it depend on the component code.

5.5 - DEMO MODE ON/OFF

Key combination: Actuate "program" and "+" simultaneously 2 sec.

5.6 - MEASURING THE TEMPERATURE SENSOR

If a failure at the temperature sensor is assumed, the resistance can be checked by means of an ohmmeter. The resistance of the temperature sensor should be 500 – 600 ohms at room temperature. Make sure to measure the insulation resistance between the metallic housing and each connection terminal. The resistance should be higher than 2 MOhms.

MEASURING THE TEMPERATURE SENSOR

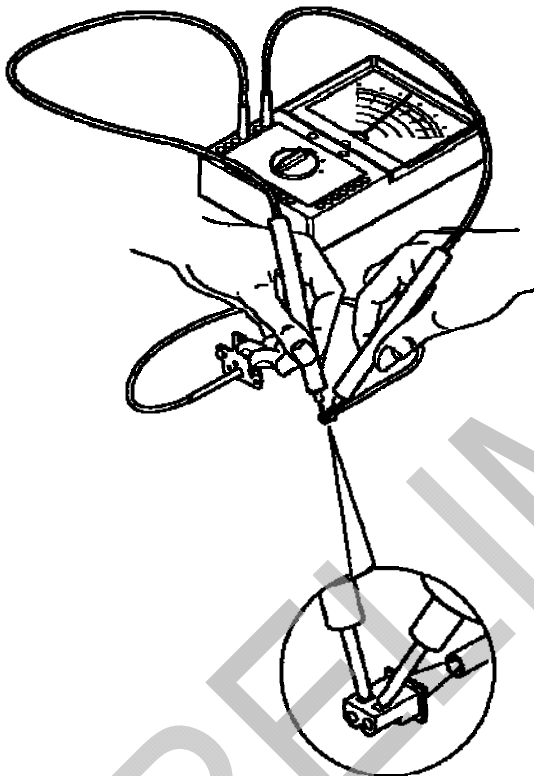


Fig. 35

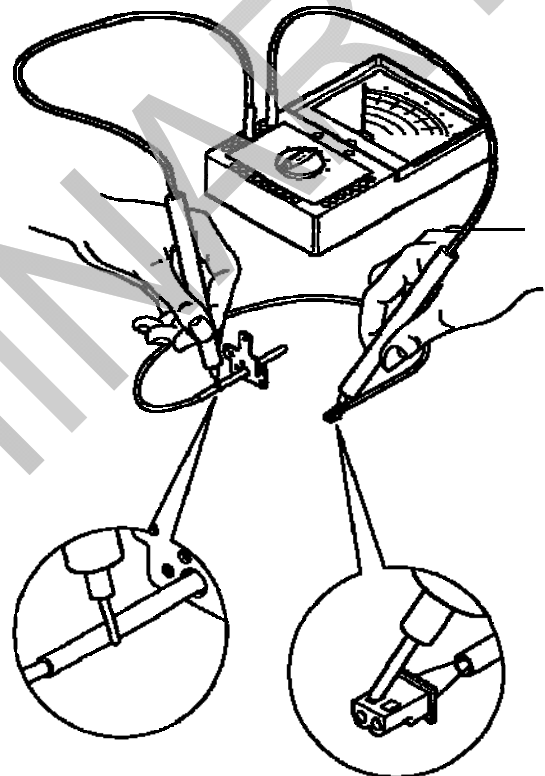


Fig. 36

6 - DATA OF COMPONENTS / ASSEMBLY SITUATION / DISASSEMBLY

On principle the oven must be removed completely from the installation niche in case of service.

Note: 90% of all screws used in the appliance are Torx screws of size T20

6.1 - OPENING THE APPLIANCE



Fig. 37

HDC05103.JPG



Fig. 38

HDC05104.JPG

The housing lid is made of a front and a rear half. For opening the front half of the lid you first have to remove both Torx screws right and left.

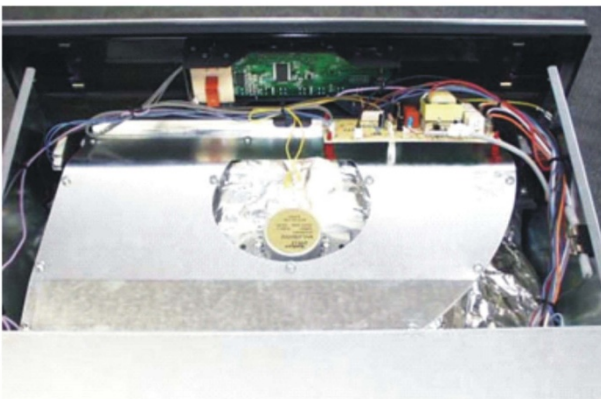


Fig. 39

HDC05105.JPG



Fig. 40

HDC05106.JPG

User interface, power board, cooling fan, safety thermostat and door switch light are accessible.

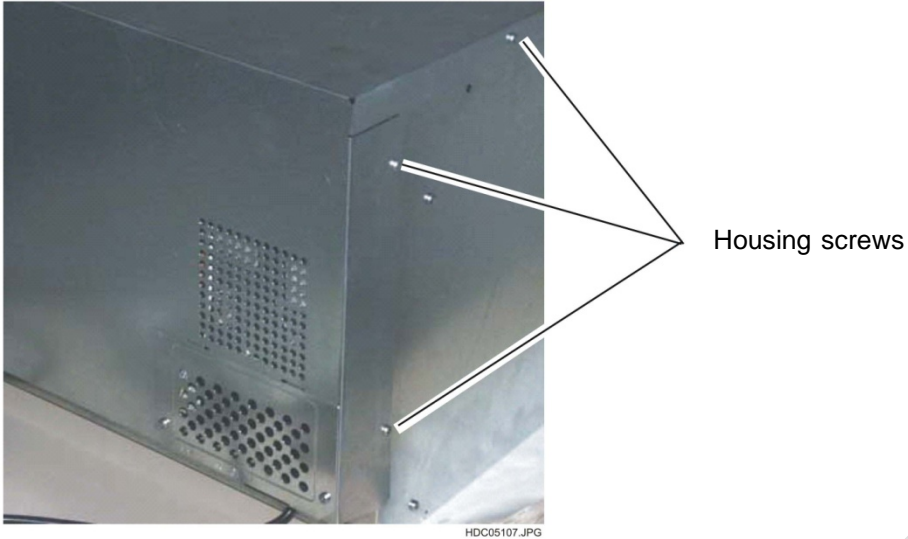


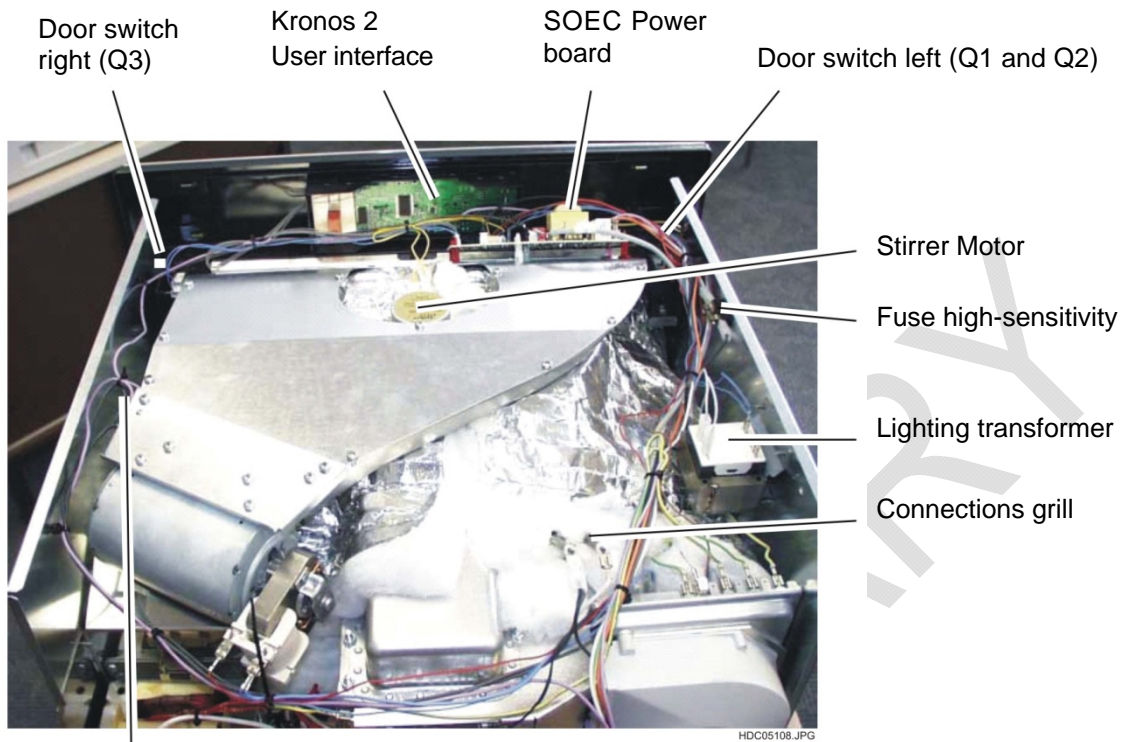
Fig. 41

The rear upper half of the lid and the housing rear wall are one unit. For removing this unit unscrew three housing screws each at the right and the left side of the appliance.

PRELIMINARY

6.2 - VIEW OF OPEN APPLIANCE

6.2.1 - TOP VIEW



Safety thermostat (hidden from the air duct). More information on Chapter 4.4

Fig. 42

6.2.2 - REAR VIEW

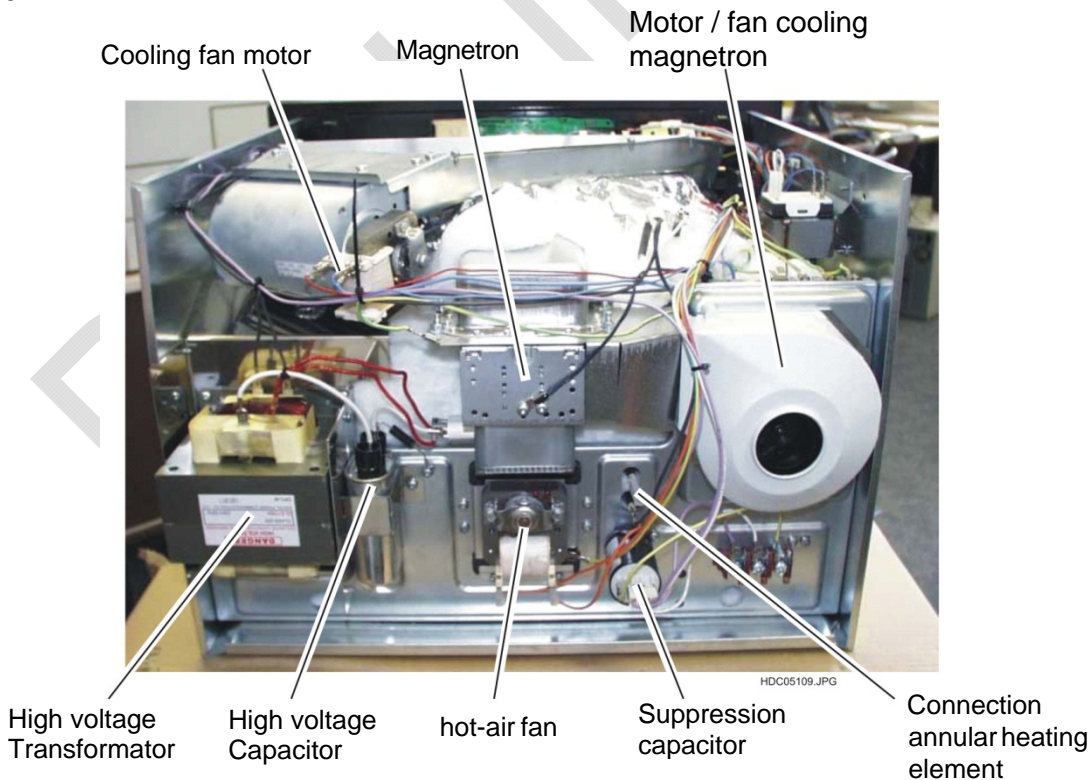


Fig. 43

6.3 - DISASSEMBLY OF KRONOS 2 INPUT ELECTRONIC



Fig. 44 : Switch panel after disassembly



Fig. 45 : Support springs switch panel

The switch panel is adjusted and attached by four springs to the panel support. For disassembly you have to take off the switch panel from the panel support to the front.

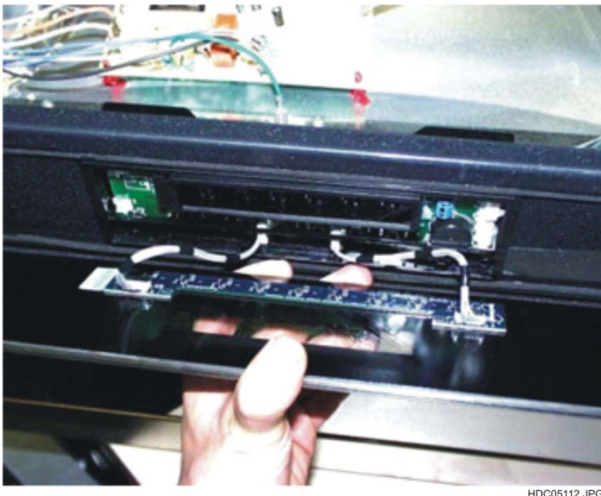


Fig. 46 : Touch board with data links



Fig. 47 : Removed data link

Attention

At works the touch board is stuck directly onto the switch panel. Even in case of replacement, the switch panel and the Touch board form one unit. It is provided with sensors which transmit the received impulses to the user interface. This is realised via a data link. When disassembling the switch panel pay attention to that both data links touch board/user interface have to be taken off.



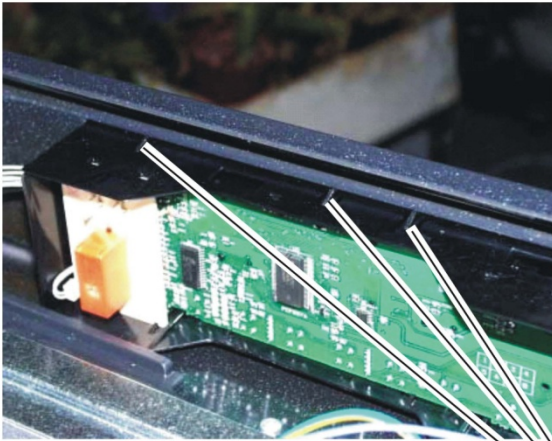
Fig. 48 : Input electronic in installed condition



Fig. 49 : Disassembling after unlocking

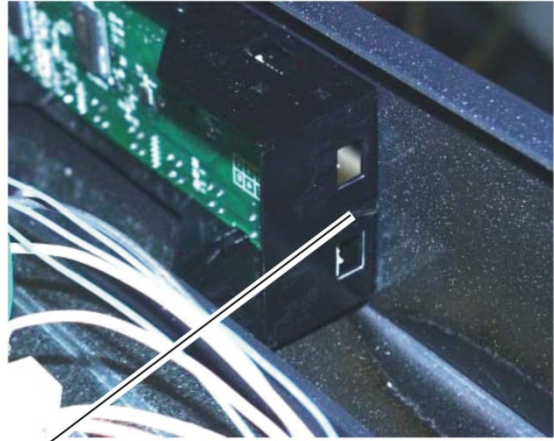
The input electronic is fixed by several locking hooks in the panel support. These must be unlocked before it is possible to remove the input electronic to the front side of the appliance.

Fig. 50



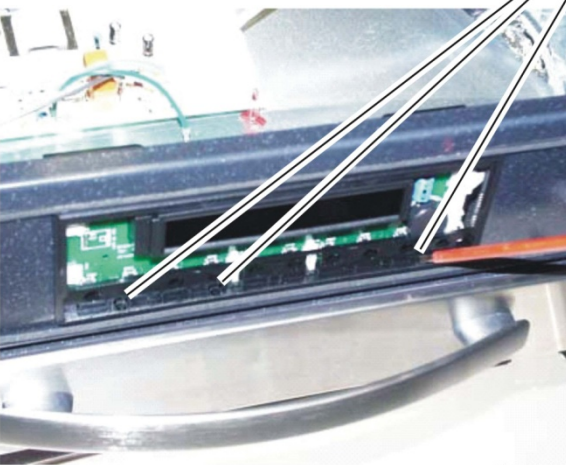
HDC05116.JPG

Fig. 51



HDC05117.JPG

Locking hooks



HDC05118.JPG

Fig. 52

6.4 - DISASSEMBLY OF SOEC POWER BOARD

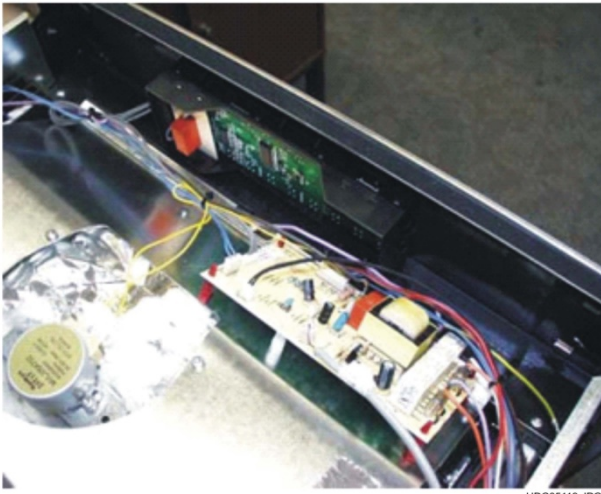


Fig. 53 : Assembly position SOEC power board

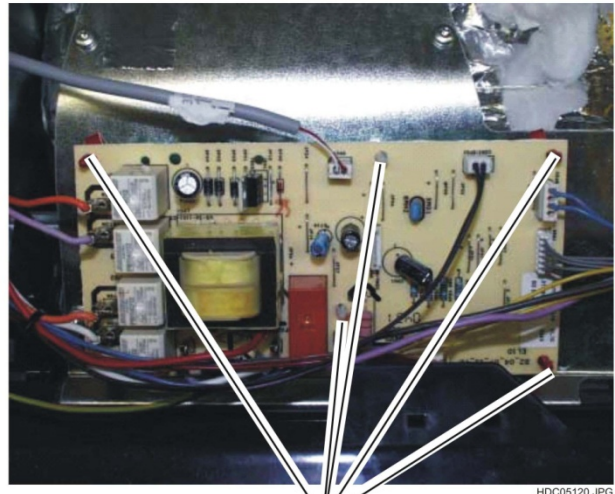


Fig. 54 Fixing clips

It is positioned by five fixing clips. These must be released to remove the power board.

Note: For technical description of the SOEC power board see Service Manual 599 354 040

6.5 - WAVE AGITATING MOTOR / WAVE DISTRIBUTION



Fig. 55



Fig. 56

The wave agitating motor is located in the centre at the upper side of the appliance (see top view of the appliance). It can now be removed by unscrewing both fixing screws right and left.

The task of the wave agitating motor is to impel the propeller-designed wave agitator made of reflecting metal. As the wave agitator is continuously in another position, the reflection and the wave distribution of the microwaves will also change continuously, which are guided to the oven cavity through a metallic wave duct.

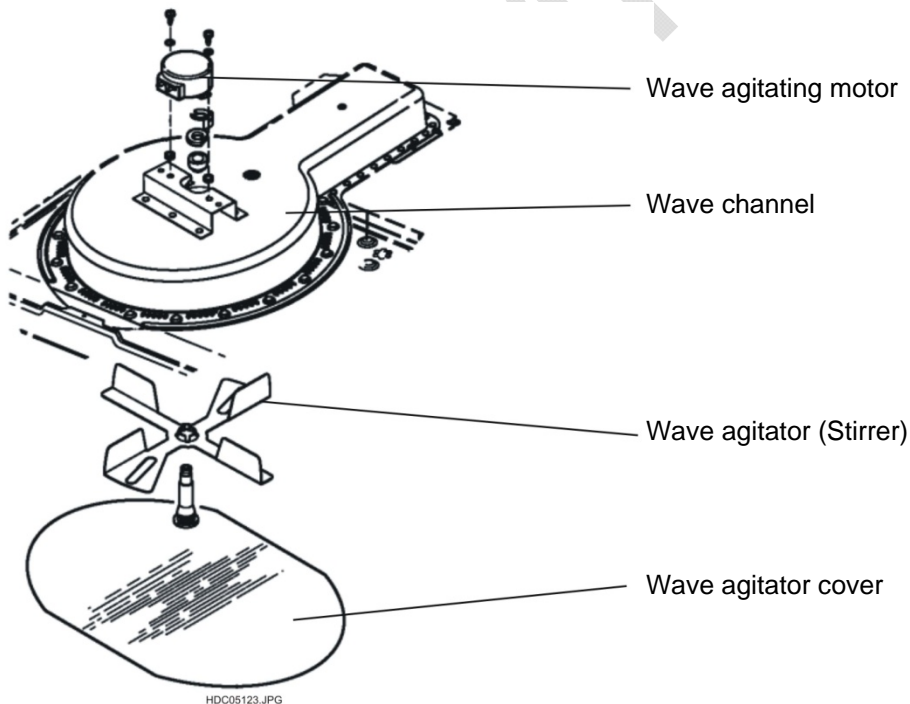


Fig. 57

6.6 - MAGNETRON

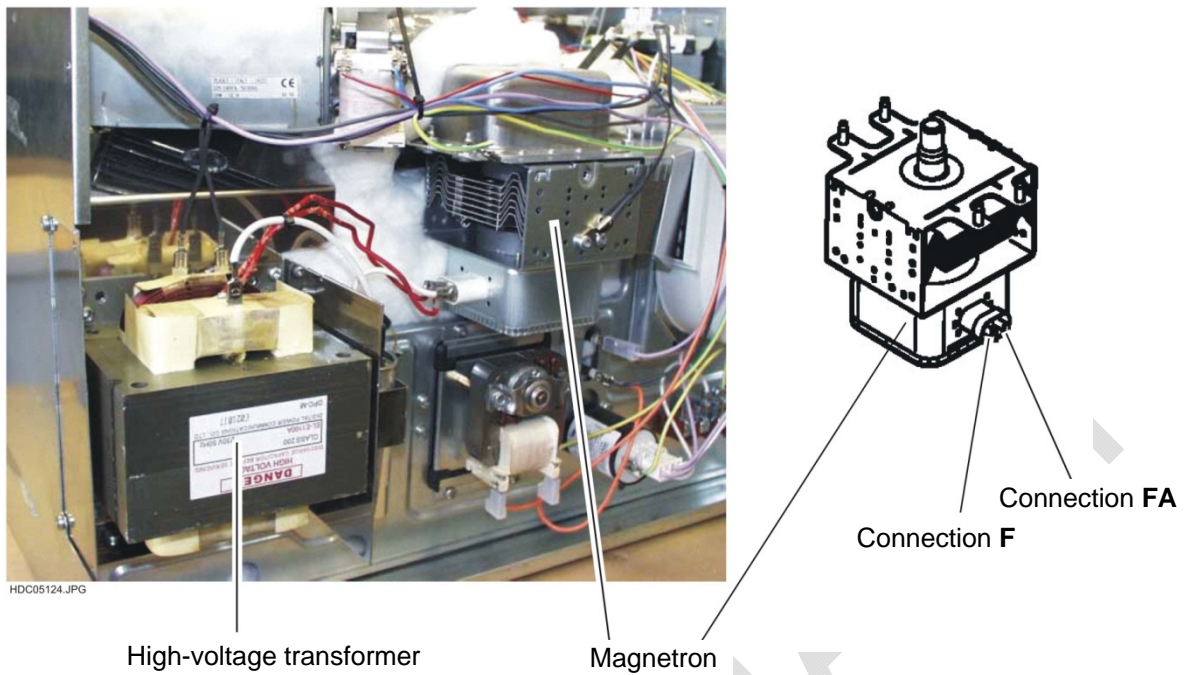


Fig. 58

The magnetron is the heart of the microwave. By means of the high-voltage transformer, the rectifier and a magnetic field it changes the mains voltage of 230 Volt 50 Hz into microwave energy with the frequency of 2450 Mhz.

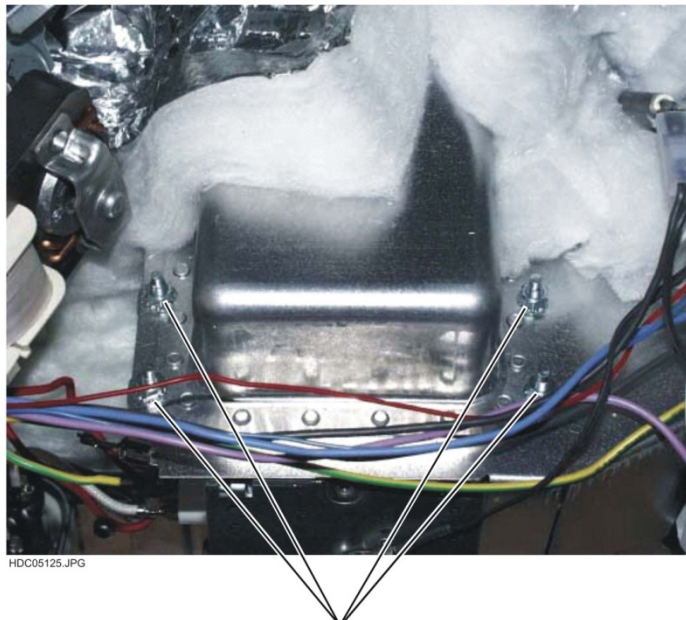


Fig. 59

Support screw nuts M5

The magnetron is kept to the wave duct with four screw nuts of M5 size. For removing the magnetron you have to unscrew these.

6.7 - HIGH-VOLTAGE TRANSFORMER

The high-voltage transformer consists of three coils, a primary coil, a secondary high-voltage coil and a secondary low-voltage coil. If the primary coil is supplied with 230V mains voltage, following voltages are induced in the secondary coils:

- 3,1V as low voltage directly to the heating coil of the Magnetron
- 2750V as high voltage for the Magnetron

see also wiring diagrams Chapter 7

The transformer is installed at the rear side of the appliance. It is positioned to the support sheet by two Torx screws. If these are removed, it is possible to take the transformer out of the support at the lower side.

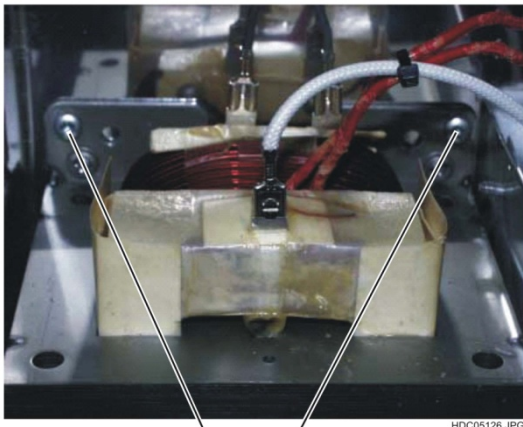


Fig. 60 Holding screws



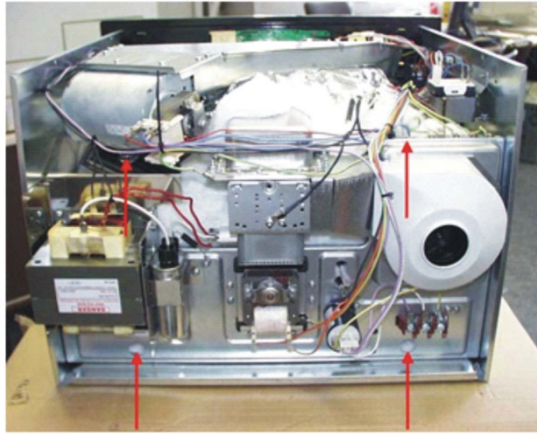
Fig. 61 Fixture

6.8 - ACCESS TO THE RIGHT-HEATING ELEMENT

Act as follows after removing the external sheet metal coverings (top/bottom):

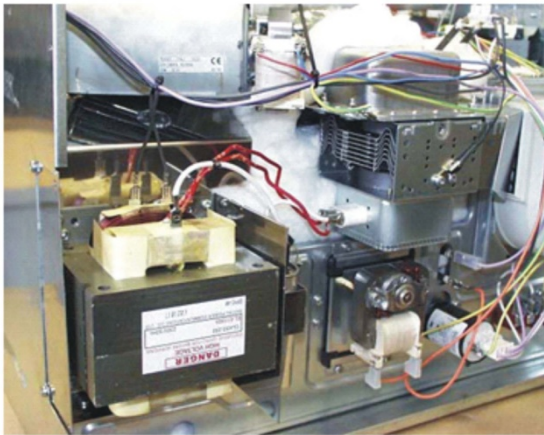
1. Remove the wiring for the diverse connections and components and lay the cable upwards.
2. Remove the high-voltage components: magnetron, capacitor, diodes and transformer (the wire connections can remain (additional protection against an incorrect connection).
3. Remove the rear panel screws (4 items, see Fig. 62).
4. Loosen the component plate (6 screws, 2 each at the side and bottom).
5. Allow the complete package to extend backwards.
6. Replace the defective component.
7. Reassemble in the reverse order.
8. Important: Do not squeeze the insulation when replacing the rear panel. The insulation should seal well again. At the top, the cooling fan can be loosened and folded up so that the insulation can be more easily positioned.

The ring-heating element can now be accessed.



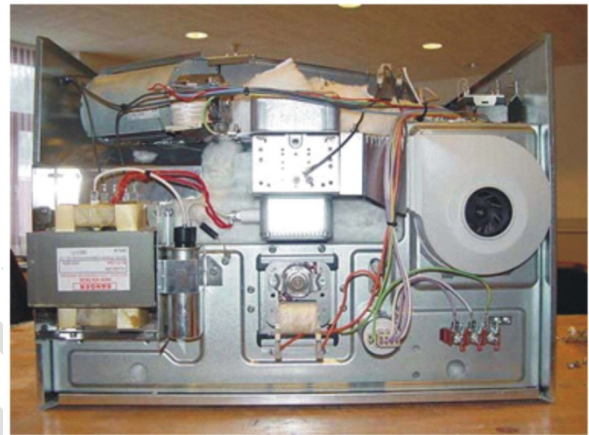
HDC05128.JPG

Fig. 62



HDC05129.JPG

Fig. 63



HDC05130.JPG

Fig. 64



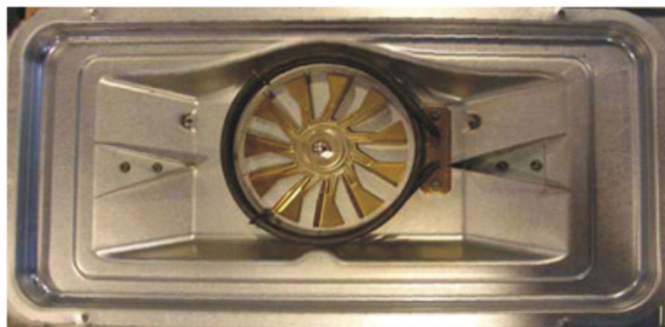
HDC05131.JPG

Fig. 65



HDC05132.JPG

Fig. 66



HDC05133.JPG

Fig. 67

7 - WIRING DIAGRAMS / MEASURING POINTS

7.1 - DIAGRAM MICROWAVE COMBI

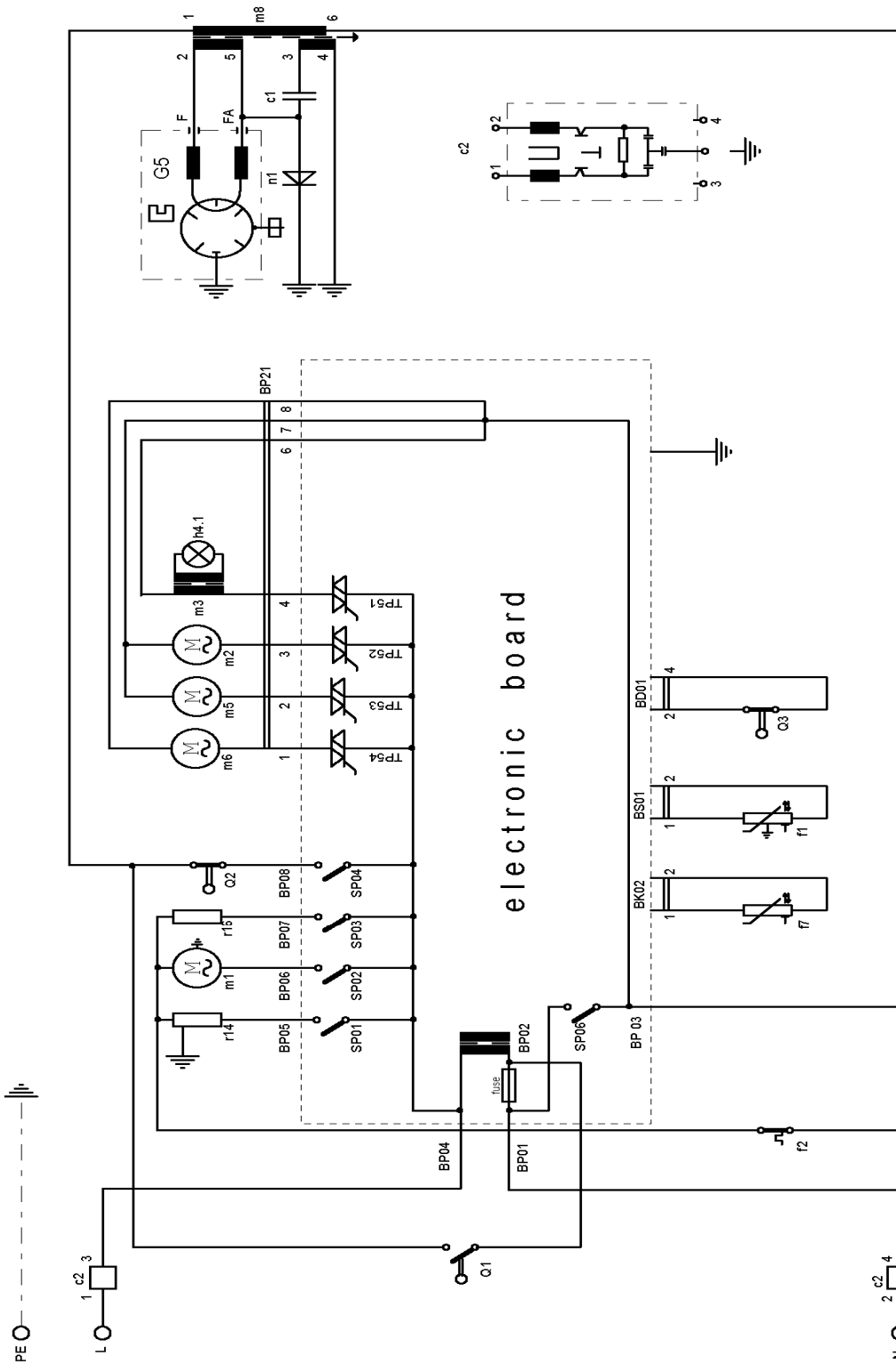


Fig. 68

7.2 - DIAGRAM MICROWAVE SOLO

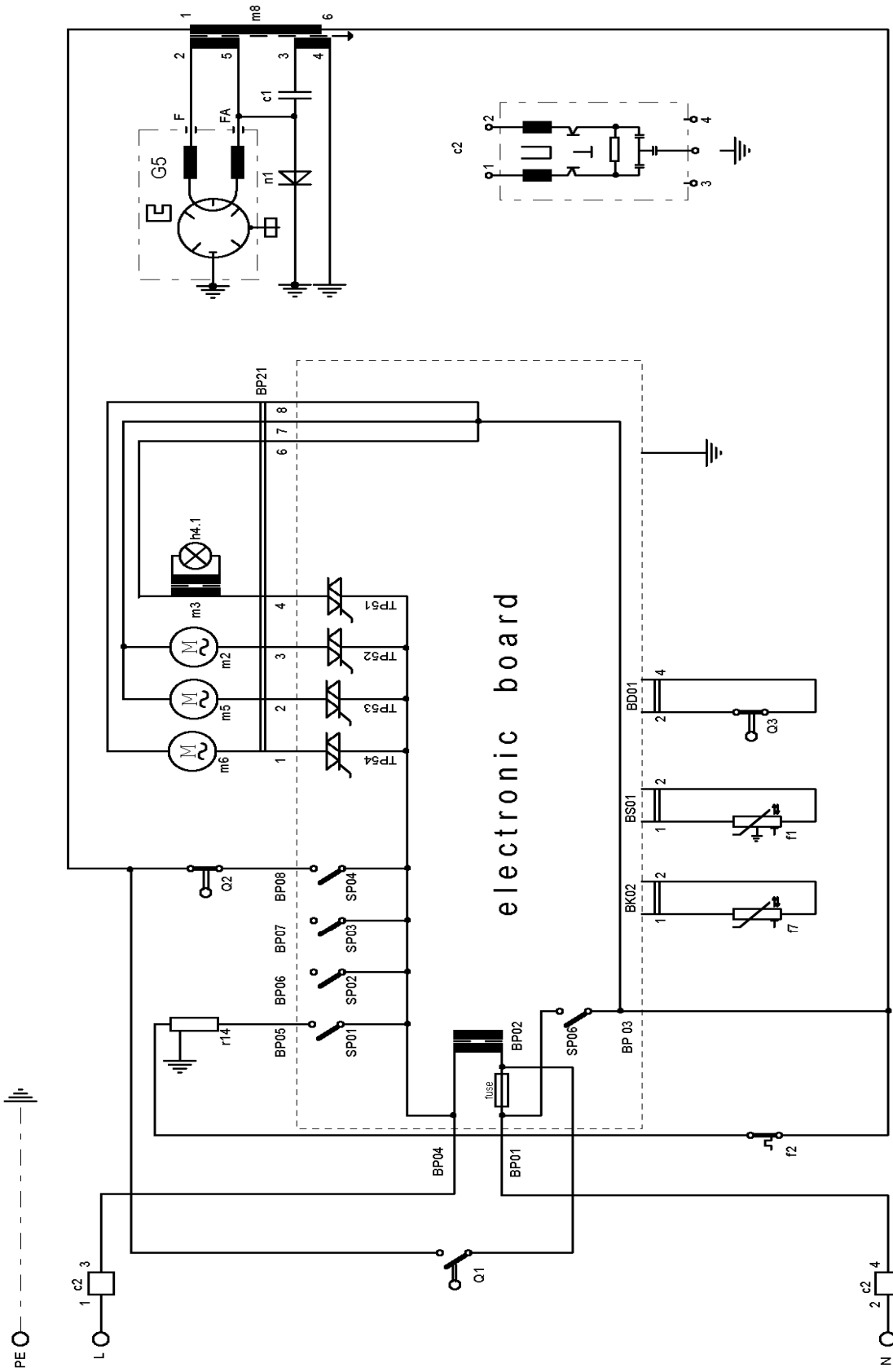


Fig. 69

7.3 - LEGEND TO THE WIRING DIAGRAMS

c1	High voltage capacitor
c2	Line filter
electronic board	Power board
f1	Temperature sensor Main oven-fry
f2	Safety thermostat baking oven
f7	Magnetron sensor
fuse	Fuse high-sensitivity
G5	Magnetron
h4.1	Oven lamp
Q1	Monitor switch (opening), positioned on the left
Q2	Primary switch (closing), located on the left
Q3	Secondary switch (closing), located on the right
m1	Fan hot-air (convection)
m2	Tangential Fan cooling oven
m3	Halogen lamp transformer
m5	Magnetron cooling fan
m6	Stirrer Motor
m8	High voltage transformer
n1	High voltage diode
r14	Grill heating element
r16	Circular heating element (convection)

8 - REVISIONS

Revision	Date	Description	Author	Approved by - on
00	08/2005	Document Creation	UH/AB	
01	04/2012	Updated Chapter 6; Subchapter 6.1, Correct error codes and general revision.	FV	