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Built-in ovens

**STEAM OVENS
GENERAL MANUAL**

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1 - INTRODUCTION

1.1 - PURPOSE OF THIS MANUAL

The purpose of this manual is to provide a general overview of the steam generation system used in domestic ovens.

The system features different versions of hardware and software depending on the application (e.g. on the KRONOS oven with SET programming system).

This manual provides general information concerning the steam-generating section; for specific functions and characteristics, please refer to the specific manuals supplied with each appliance.

2 - COOKING WITH STEAM

For steam cooking, the appliance uses the steam produced by heating water in combination with the traditional functions of a normal oven.

This method cooks the food uniformly maintaining its flavour and nutritional value unaltered; all the vitamins and mineral salts are conserved, and the flavour of the food remains

Using the steam cooking method, the food being cooked does not dry out, but remains fresh and nourishing. This type of cooking method is sometimes referred to as "dietary cooking", since it requires almost no seasoning or flavouring, so that the final dish is light and healthy.

The steam generated by a boiler is ducted at atmospheric pressure into the oven cavity, which is already heated by the traditional heating elements. The temperature is maintained constant at between 130°C and 220°C approximately, which prevents the formation of condensation so that the user can check the food inside the oven during cooking.

Steam is generated only when the temperature is above 130°C.

N.B. If the oven door is opened during steam cooking, care must be taken since the steam is at a very high temperature.

3 - THE STEAM GENERATING SYSTEM

The water used to generate steam must be introduced into the water fill drawer (see "Water fill drawer"). The water is ducted through a silicone tube to the water reservoir tank, which has a capacity of about 1 litre. The steam generator features a 750W heating element, and is connected directly to the water reservoir so that the water can be heated until steam is generated. The heating of the generator will start only when the temperature inside the oven cavity has reached 130°C. Water in a fluid state is separated from the steam in the expansion chamber. This water is ducted back to the generator (see "Water Reservoir"), while the steam is directed into the pre-heated oven cavity through the steam outlet tube.

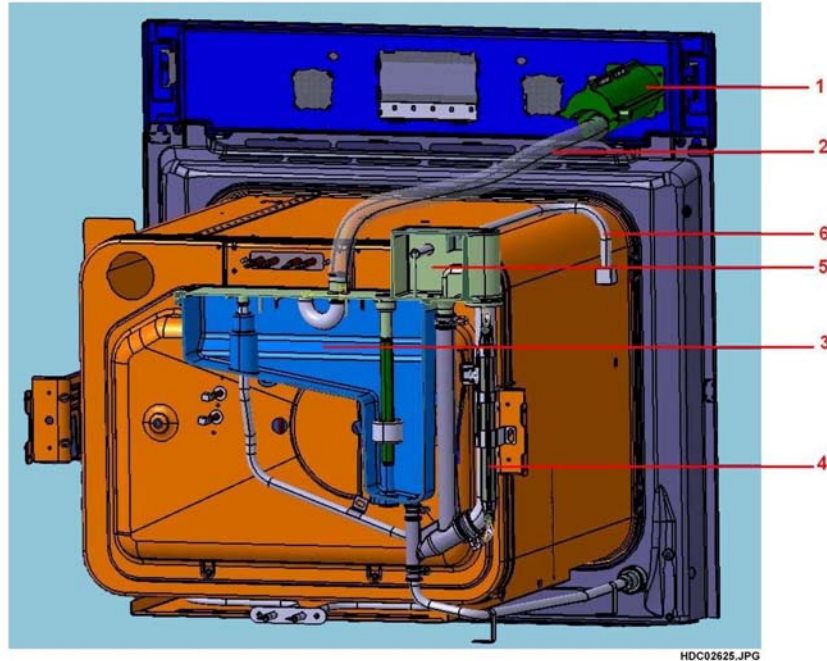
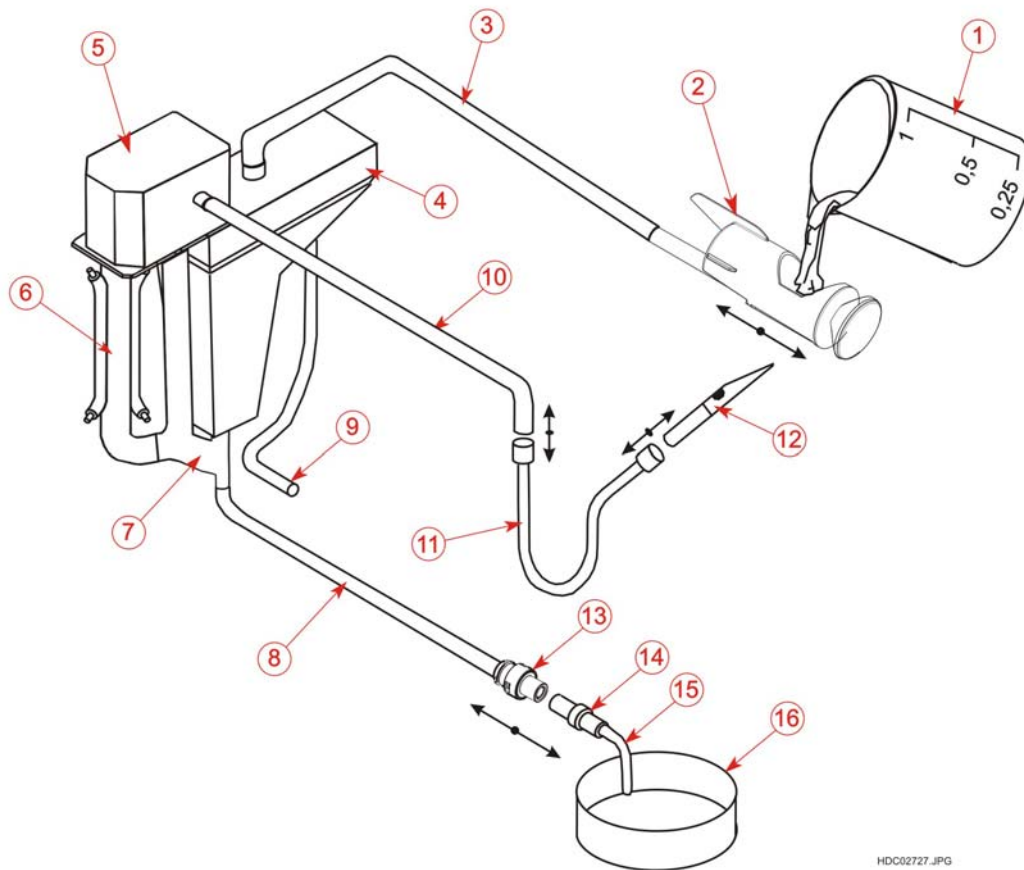


Fig. 1

- 1 - WATER FILL DRAWER
- 2 - SILICONE TUBE
- 3 - WATER RESERVOIR
- 4 - GENERATOR HEATING ELEMENT
- 5 - EXPANSION CHAMBER
- 6 - STEAM OUTLET TUBE

3.1 - HYDRAULIC CIRCUIT



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Fig. 2

- 1 - WATER CONTAINER
- 2 - REMOVABLE WATER FILL DRAWER
- 3 - WATER FILL DUCT
- 4 - RESERVOIR
- 5 - EXPANSION CHAMBER
- 6 - STEAM GENERATOR (BOILER)
- 7 - SILICONE RESERVOIR COUPLING
- 8 - DRAIN DUCT
- 9 - OVERFLOW PIPE
- 10 - STEAM TUBE
- 11 - STEAM TUBE EXTENSION (*)
- 12 - STEAM INJECTOR (*)
- 13 - DRAIN VALVE
- 14 - DRAIN COUPLING
- 15 - DRAIN TUBE EXTENSION
- 16 - CONTAINER FOR DRAINED WATER

(*) **N.B.:** Optional accessories (not supplied as standard)

3.2 - STEAM GENERATOR

The steam generator comprises also the heating elements and the steam generating thermostats and safety thermostats.

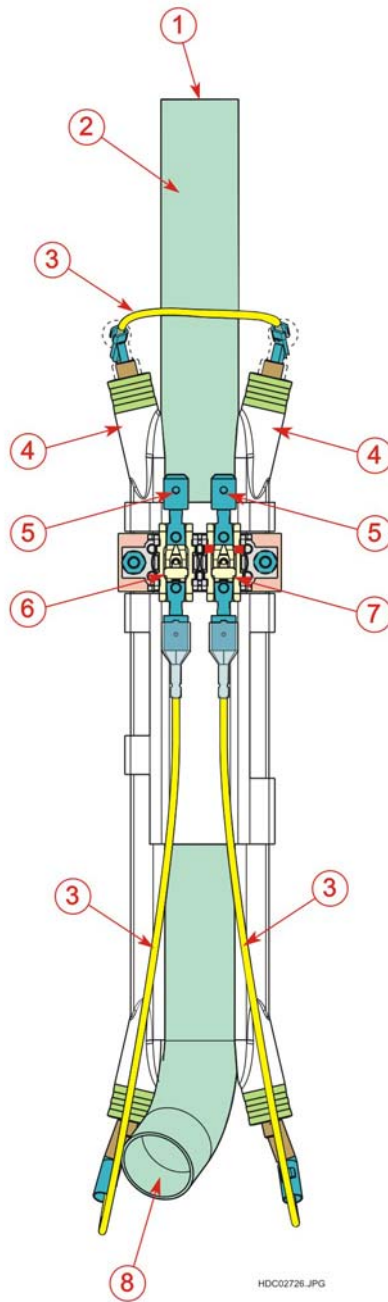


Fig. 3

- 1 - CONNECTION TO EXPANSION CHAMBER
- 2 - STEAM GENERATOR BODY
- 3 - WIRES TO HEATING ELEMENTS
- 4 - GENERATOR HEATING ELEMENTS
- 5 - FASTON CONNECTOR
- 6 - STEAM GENERATION THERMOSTAT ($130^{\circ}\text{C} \pm 5^{\circ}\text{C}$)
- 7 - STEAM SAFETY THERMOSTAT ($170^{\circ}\text{C} \pm 5^{\circ}\text{C}$ IDENTIFIED BY RED DOTS)
- 8 - CONNECTION TO SILICONE COUPLING ON RESERVOIR

3.3 - WATER FILL DRAWER

The water fill drawer is inserted into the control panel and is designed to be pulled out when required. The drawer clicks into position (see section 3.3.1)

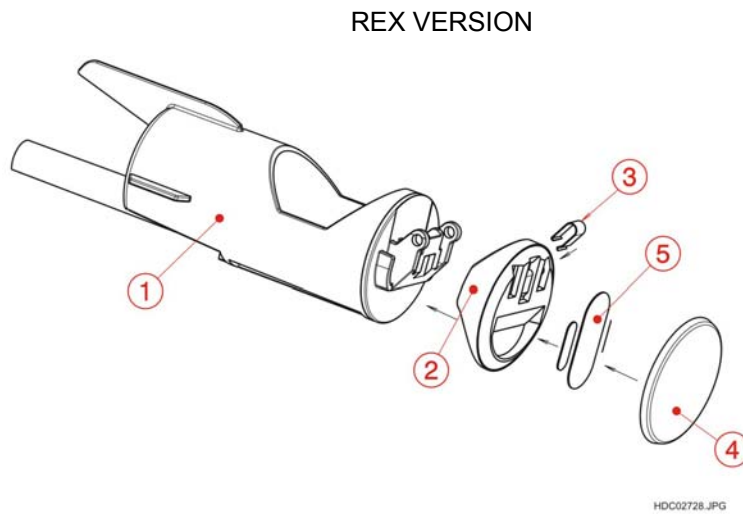


Fig. 4

- 1 - SLIDING BODY
- 2 - COVER FOR SLIDING BODY COUPLING
- 3 - CAP SPRING
- 4 - STAINLESS STEEL FINISHING CAP
- 5 - BI-ADHESIVE CAP RETAINING STRIP

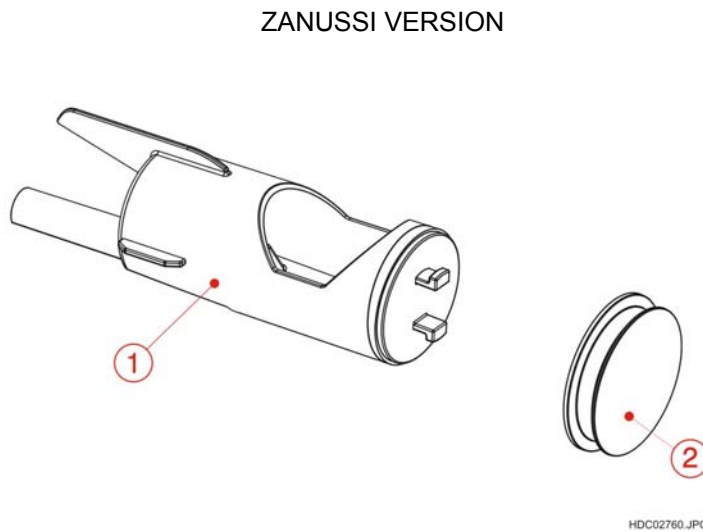


Fig. 5

- 1 - SLIDING BODY
- 2 - COVER FOR SLIDING BODY COUPLING WITH CAP

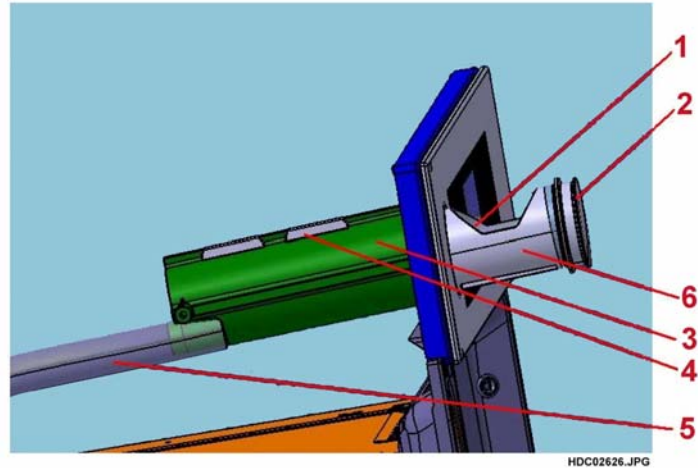
Pull out the water fill drawer and introduce the water required to produce steam. The guide which houses the sliding drawer is connected to the reservoir by a silicone tube. The water flows into the drawer guide and then through the silicone tube into the reservoir.

Correct movement of the drawer is guided by three guide elements inside the guide support, which run inside three grooves in the drawer itself.

A small knob-shaped ring in the front section enables the user to centre the drawer in the aperture in the control panel. When the drawer is pushed in completely, a spring-actioned locking clip holds it in the closed position.

Fig. 6

- 1 - WATER FILL DRAWER
- 2 - KNOB-SHAPED FRONT SECTION WITH GUIDE RING
- 3 - DRAWER GUIDE
- 4 - SPRING-ACTIONED LOCK
- 5 - SILICONE TUBE
- 6 - DRAWER SLIDING SYSTEM



3.3.1 - DRAWER APERTURE SYSTEM – REX VERSION

1. Press the upper section of the flush-fitted cap so that the lower part tilts outwards.

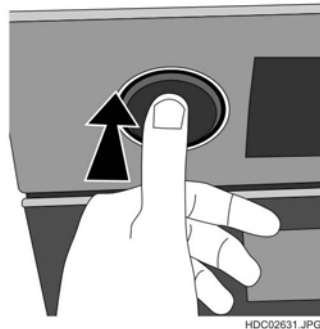


Fig. 7

4. Fill the reservoir with water until the "RESERVOIR FULL" LED lights, then push the drawer inwards by pressing the centre of the cap.



Fig. 10

2. Begin pulling out the drawer, holding the cap as shown in fig. 4.

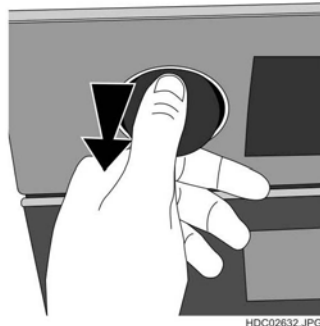


Fig. 8

5. When the drawer is pushed in fully, it locks into position.

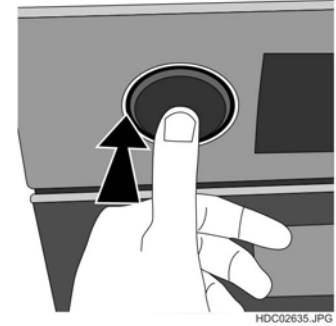


Fig. 11

3. Pull the drawer completely out.

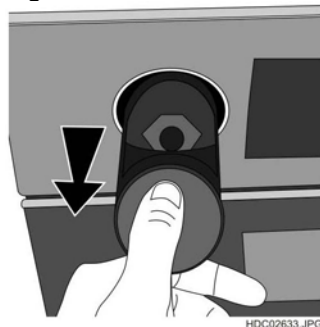


Fig. 9

3.3.2 - DRAWER APERTURE SYSTEM – ZANUSSI VERSION

In order to open the water fill drawer fitted to Zanussi models, simply grip the edge of the sliding-drawer cap, which protrudes slightly from the front panel, and pull outwards.

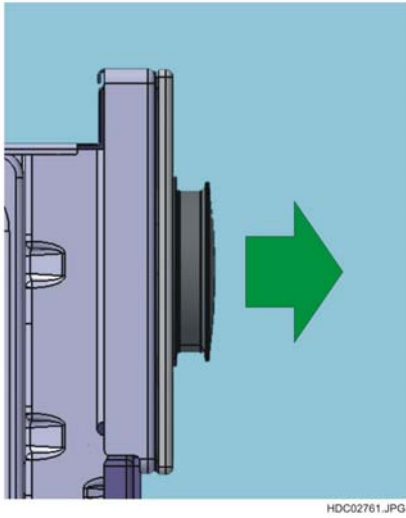


Fig. 12

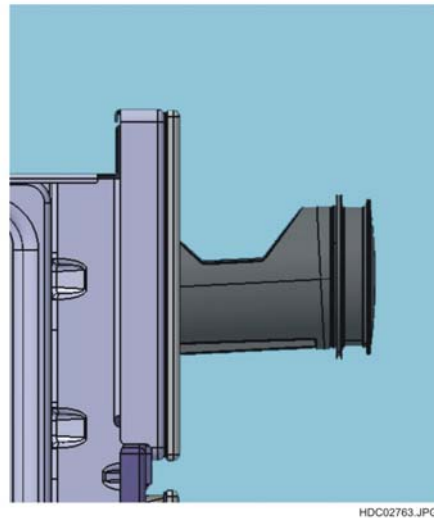


Fig. 13

To re-close the drawer, push the cap until the drawer returns to its original position.

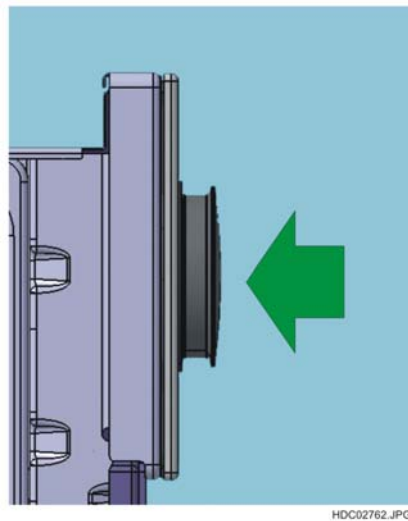


Fig. 14

3.4 - WATER RESERVOIR

The water reservoir includes the expansion chamber and the water level indicator.

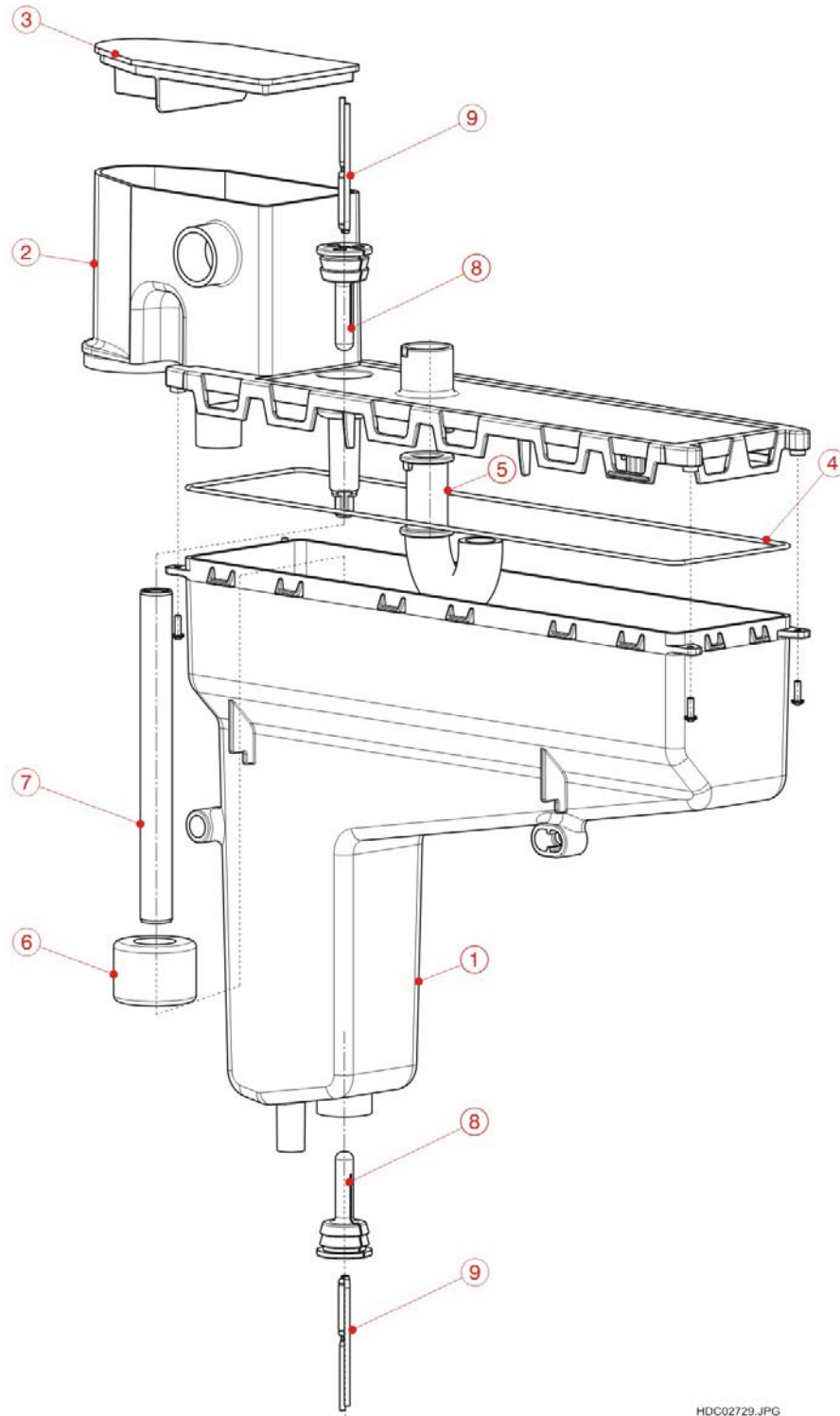


Fig. 15

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- 1 - WATER RESERVOIR
- 2 - WATER RESERVOIR COVER AND EXPANSION CHAMBER
- 3 - EXPANSION CHAMBER COVER
- 4 - SEALING RING BETWEEN RESERVOIR AND RESERVOIR COVER
- 5 - SIPHON
- 6 - FLOAT
- 7 - FLOATING GUIDE
- 8 - REED SWITCH SUPPORT
- 9 - REED SWITCH

3.5 - WATER LEVEL INDICATION

The system which indicates the water level comprises a float fitted with a magnet. This magnet trips two REED switches which signal that the reservoir is empty or full. Picture 16 indicates the components regarding the level indicator.

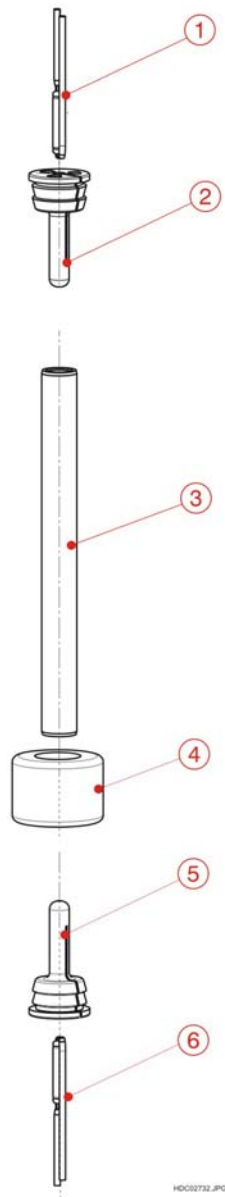


Fig. 16

- 1 - "RESERVOIR FULL" REED SWITCH (*)
- 2 - SUPPORT FOR "RESERVOIR FULL" REED SWITCH
- 3 - FLOATING GUIDE
- 4 - FLOAT WITH MAGNET
- 5 - SUPPORT FOR "RESERVOIR EMPTY" REED SWITCH
- 6 - "RESERVOIR EMPTY" REED SWITCH (*)

(*) **N.B.:** The two REED switches are supplied in a kit together with the relative wiring (see spare parts catalogue).

3.5.1 - "RESERVOIR EMPTY" INDICATOR

When the reservoir is empty, the float moves downwards to the bottom of the reservoir and the magnet on the float trips the "reservoir empty" reed switch (fig. 17).

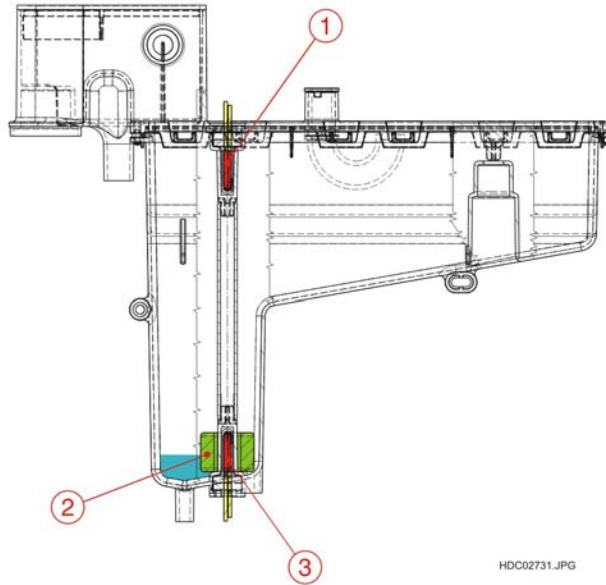


Fig. 17

- 1 - "RESERVOIR FULL" REED SWITCH
- 2 - FLOAT WITH MAGNET
- 3 - "RESERVOIR EMPTY" REED SWITCH

3.5.2 - "RESERVOIR FULL" INDICATOR

When the reservoir is full, the float moves upwards and the magnet on the float trips the "reservoir full" reed switch (fig. 18).

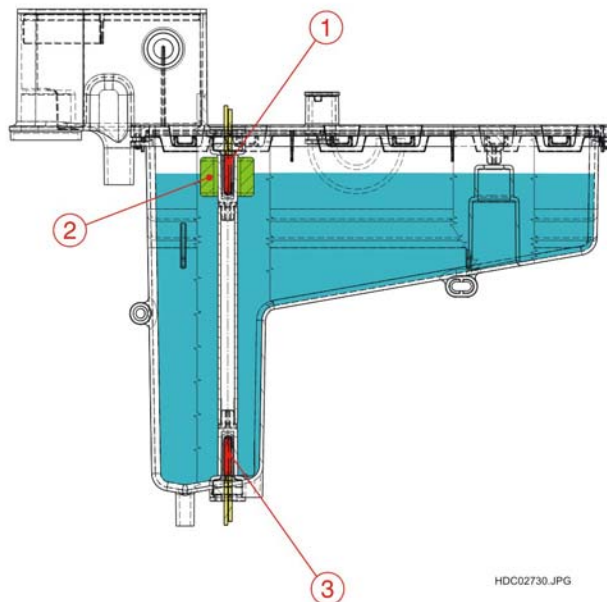


Fig. 18

- 1 - "RESERVOIR FULL" REED SWITCH
- 2 - SUPPORT FOR "RESERVOIR FULL" REED SWITCH
- 3 - FLOAT GUIDE

3.5.3 - LEVEL INDICATOR: CIRCUIT DIAGRAM

CIRCUIT DIAGRAM FOR LEVEL INDICATOR - MODELS WITH FUNCTION SELECTOR

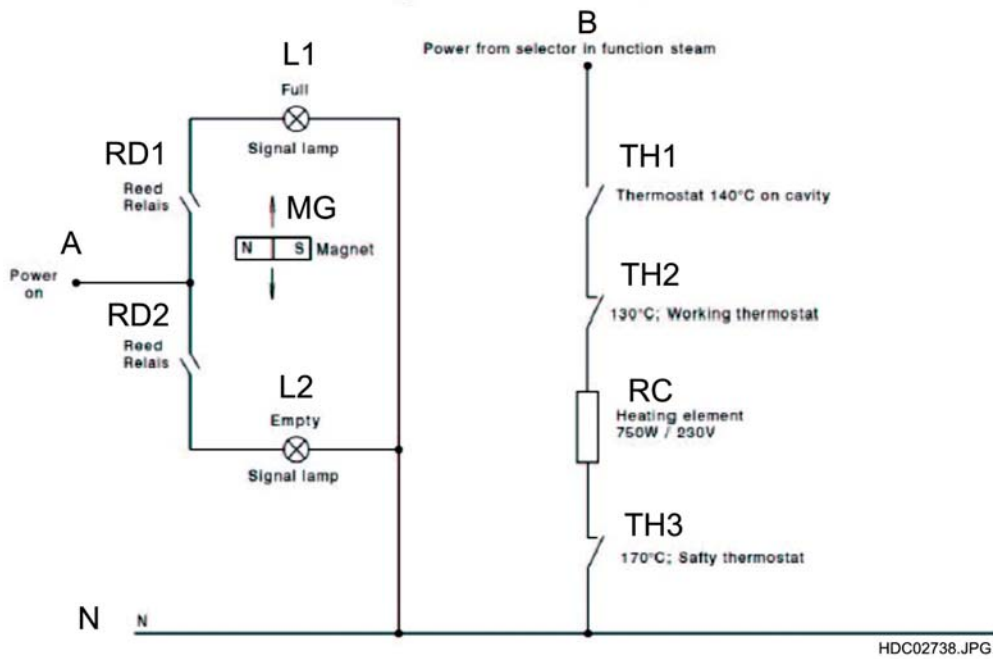


Fig. 19

- | | | | |
|----|---|-----|--|
| A | - "L" POWER SUPPLY LINE (WITH OVEN SWITCHED ON) | RD1 | - "FULL" REED SWITCH |
| B | - "L" POWER SUPPLY LINE FROM POWER SELECTOR | RD2 | - "EMPTY" REED SWITCH |
| L1 | - "FULL" PILOT LAMP | TH1 | - CAVITY HEATING THERMOSTAT (140°C) |
| L2 | - "EMPTY" PILOT LAMP | TH2 | - STEAM GENERATOR SERVICE THERMOSTAT (130°C) |
| MG | - FLOAT MAGNET | TH3 | - STEAM GENERATOR SAFETY THERMOSTAT (170°C) |
| N | - "N" POWER LINE | | |
| RC | - STEAM GENERATOR HEATING ELEMENT | | |

CIRCUIT DIAGRAM FOR LEVEL INDICATOR - MODELS WITH ELECTRONIC CONTROL SYSTEM

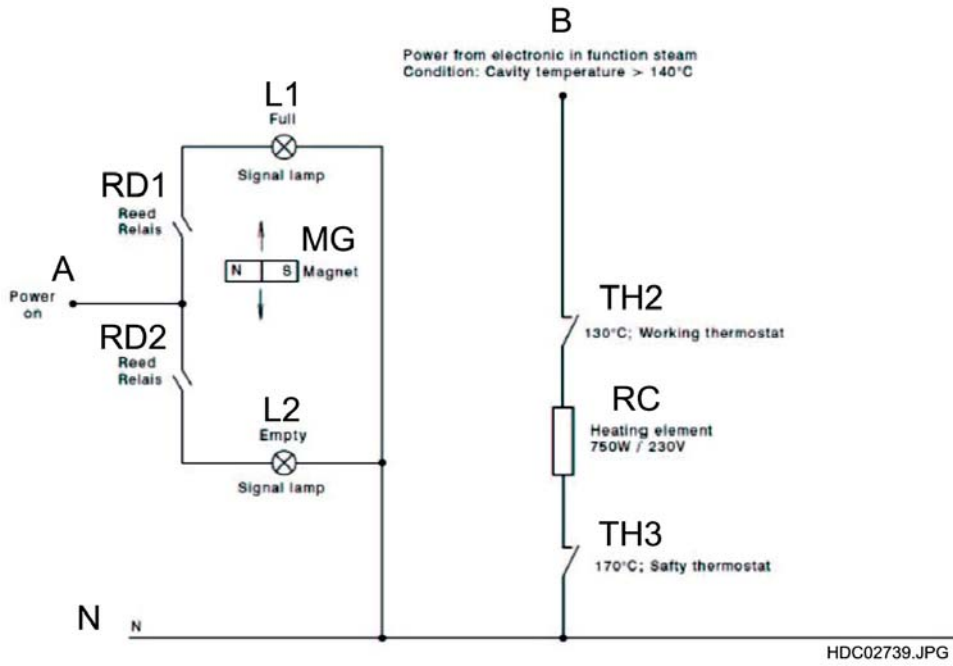


Fig. 20

- | | |
|---|---|
| <p>A - "L" POWER SUPPLY LINE (WITH OVEN SWITCHED ON)</p> <p>B - "L" POWER SUPPLY LINE FROM ELECTRONIC CONTROL UNIT IN "STEAM" FUNCTION (CAVITY TEMPERATURE >140°C)</p> <p>L1 - "FULL" PILOT LAMP</p> <p>L2 - "EMPTY" PILOT LAMP</p> <p>MG - FLOAT MAGNET</p> | <p>N - "N" POWER LINE</p> <p>RC - STEAM GENERATOR HEATING ELEMENT</p> <p>RD1 - "FULL" REED SWITCH</p> <p>RD2 - "EMPTY" REED SWITCH</p> <p>TH2 - STEAM GENERATOR SERVICE THERMOSTAT (130°C)</p> <p>TH3 - STEAM GENERATOR SAFETY THERMOSTAT (170°C)</p> |
|---|---|

The steam produced by the generator is mixed with water. The fluid portion of the water remains in the expansion chamber, while the steam is ducted through the outlet tube to the oven cavity. The extremity of the steam outlet tube inside the expansion chamber is fitted with a supplementary protective element that prevents water from entering the steam outlet tube.

As the temperature of the water is very high, this may result in the generation of steam inside the reservoir itself. For this reason, a siphon (see detail 12, fig. 21) is fitted to prevent this steam from returning to the fill drawer.

To start the generation of steam, the control system must receive confirmation that the temperature inside the oven cavity has reached 130°C. This confirmation is given by the electronic control unit in electronic models, or by a thermostat inside the oven cavity in models with a function selector.

Thermostat TH1 (see fig. 19), featured only on models with function selector, maintains the temperature inside the steam generator at 130°C. If due to a fault or malfunction the temperature should reach 170°C, the safety thermostat for the generator opens the contacts, thus disconnecting the heating element and preventing the risk of damage to the generator or fire.

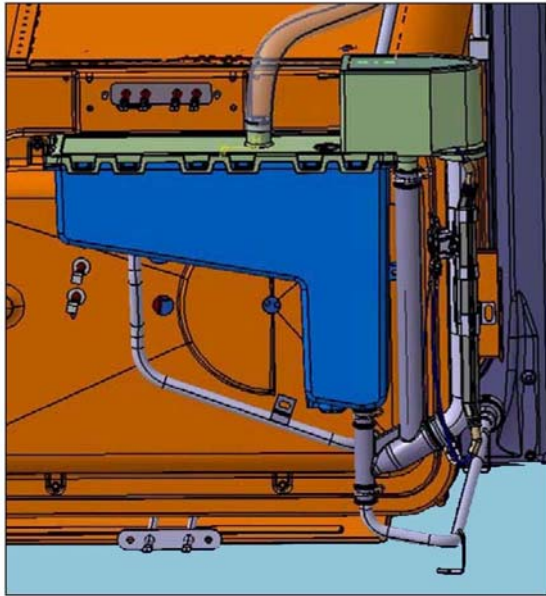


Fig. 22

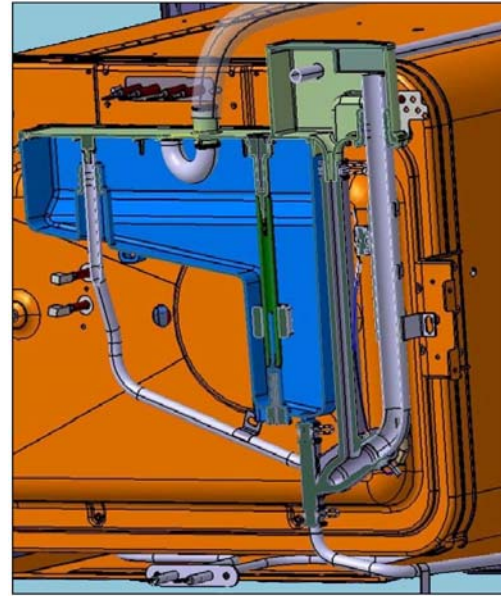


Fig. 23

3.7 - DRAINING THE WATER

On completion of a steam cooking cycle, the water present in the reservoir can be drained via the drain tube (fitted with a coupling and valve) located in the lower section of the front of the oven (see fig. 25). To drain the water, use the tube (B) and the drain coupling (A) shown in fig. 24.

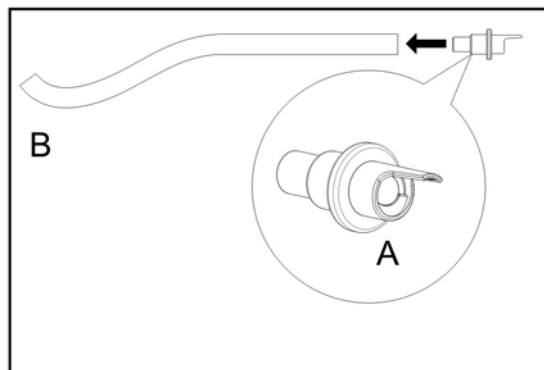
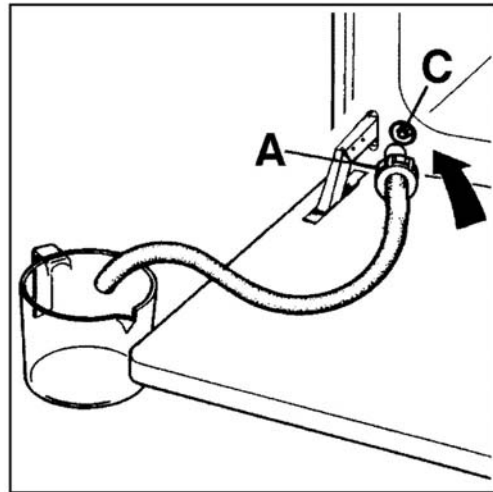


Fig. 24

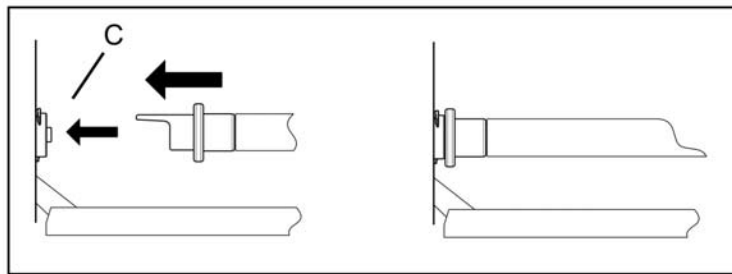
- A - DRAIN COUPLING
- B - DRAIN TUBE

Fig. 25

A - DRAIN COUPLING
C - DRAIN VALVE



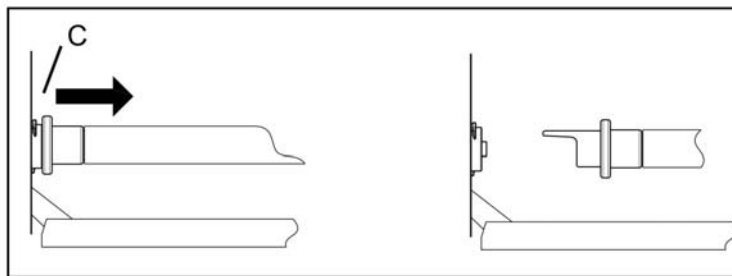
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Fig. 26

C - DRAIN VALVE



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Fig. 27

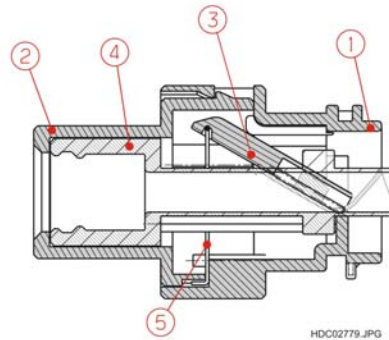
C - DRAIN VALVE

3.8 - WATER DRAIN VALVE

The water can be drained quickly and easily from the reservoir and the steam generator using a special valve which is opened by the actuating element on the drain coupling (see fig. 30, detail 4). The actuating element releases the arrest flap in the valve, allowing the water to drain off.

Fig. 28

- 1 - VALVE BODY
- 2 - COVER
- 3 - ARREST FLAP
- 4 - VALVE
- 5 - SPRING



VIEW FROM TUBE COUPLING SIDE

VIEW FROM DRAIN OUTLET SIDE

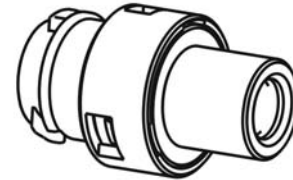
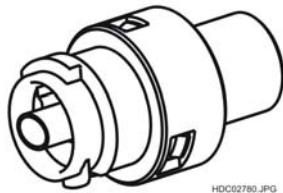


Fig. 29

Fig. 30

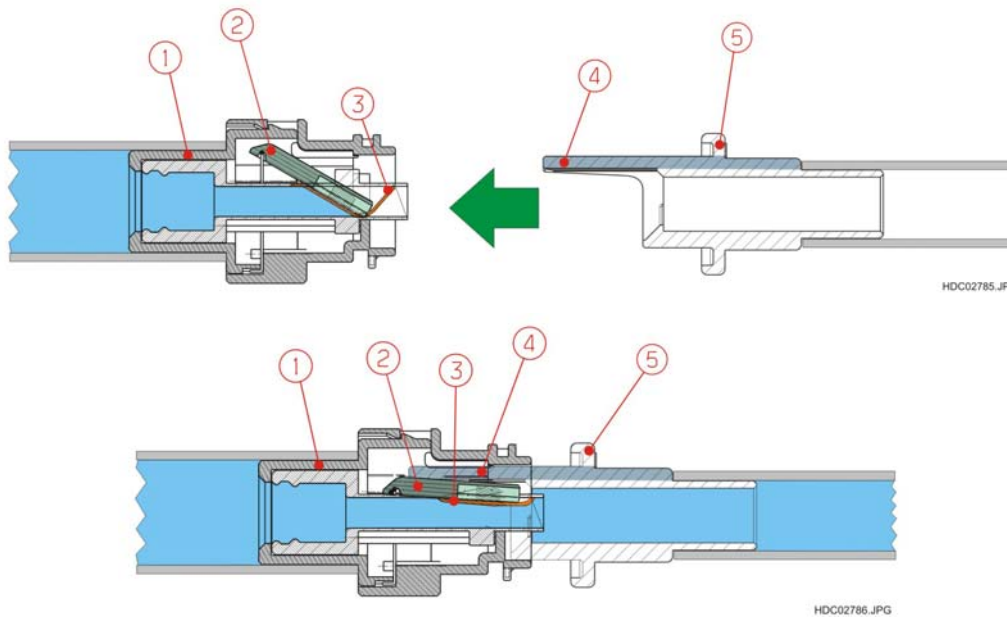
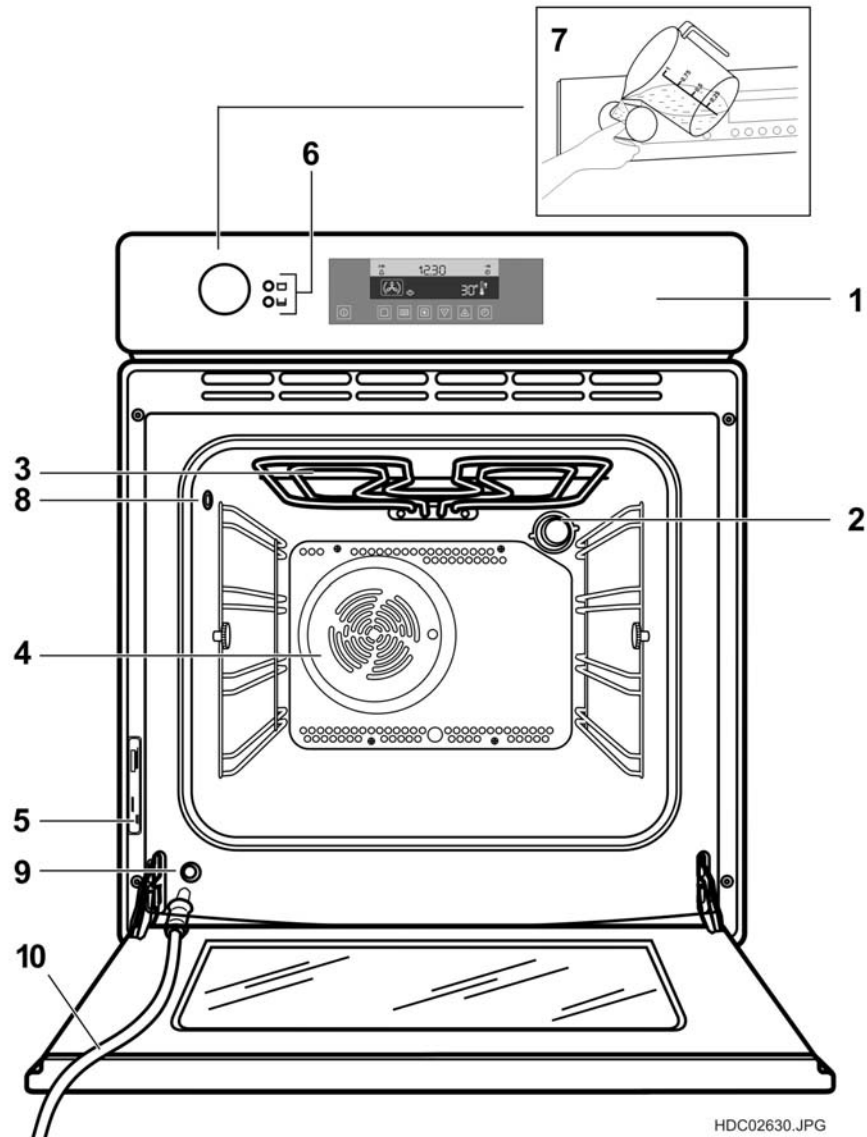


Fig. 31

- 1 - VALVE BODY
- 2 - ARREST FLAP
- 3 - SEALING MEMBRANE
- 4 - ACTIONING ELEMENT ON DRAIN COUPLING
- 5 - DRAIN COUPLING

4 - DESCRIPTION OF THE OVEN



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Fig. 32

- 1 - CONTROL PANEL
- 2 - OVEN LAMP
- 3 - UPPER HEATING ELEMENT – GRILL
- 4 - CONVECTION FAN
- 5 - SERIAL NUMBER PLATE
- 6 - WATER LEVEL PILOT LAMPS
- 7 - WATER FILL DRAWER
- 8 - STEAM INLET
- 9 - WATER DRAIN VALVE
- 10 - DRAIN TUBE

4.1 - CONTROL PANEL - ELECTRONIC MODELS

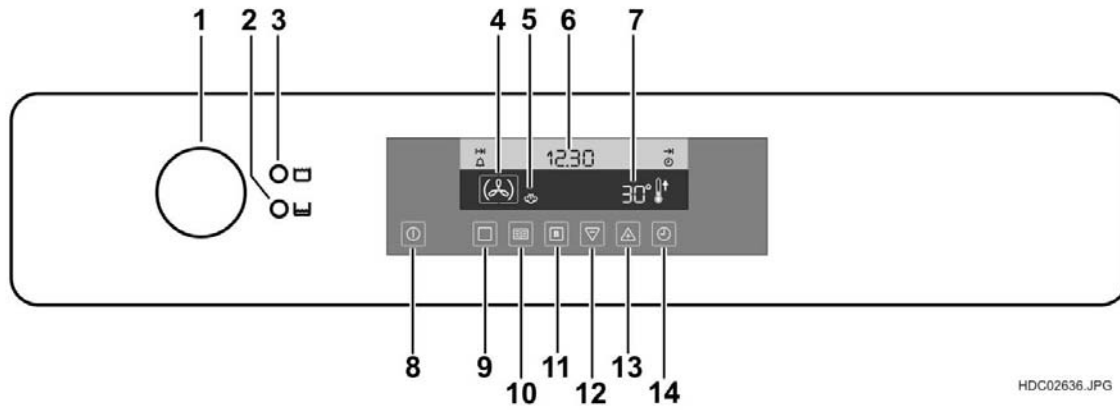


Fig. 33

- | | |
|----------------------------------|--------------------------------|
| 1 - WATER FILL DRAWER | 8 - ON/OFF TOUCH KEY |
| 2 - "RESERVOIR EMPTY" PILOT LAMP | 9 - COOKING FUNCTION TOUCH KEY |
| 3 - "RESERVOIR FULL" PILOT LAMP | 10 - RECIPES TOUCH KEY |
| 4 - COOKING FUNCTIONS DISPLAY | 11 - RAPID-HEATING TOUCH KEY |
| 5 - STEAM COOKING SYMBOL | 12 - DECREASE TOUCH KEY |
| 6 - CLOCK | 13 - INCREASE TOUCH KEY |
| 7 - TEMPERATURE | 14 - CLOCK TOUCH KEY |

4.2 - CONTROL PANEL - MODELS WITH FUNCTION SELECTOR

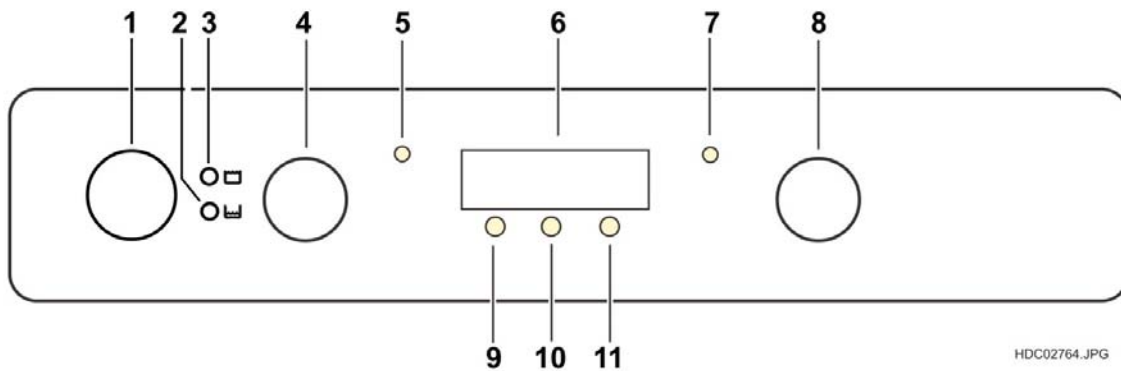


Fig. 34

- 1 - WATER FILL DRAWER
- 2 - "RESERVOIR EMPTY" PILOT LAMP
- 3 - "RESERVOIR FULL" PILOT LAMP
- 4 - THERMOSTAT KNOB
- 5 - THERMOSTAT LED
- 6 - SET PROGRAMMING DISPLAY
- 7 - "ON" LED
- 8 - FUNCTION SELECTOR
- 9 - "-" (DECREASE) KEY
- 10 - PROGRAMMER FUNCTIONS KEY
- 11 - "+" (INCREASE) KEY

5 - METHODS OF STEAM COOKING

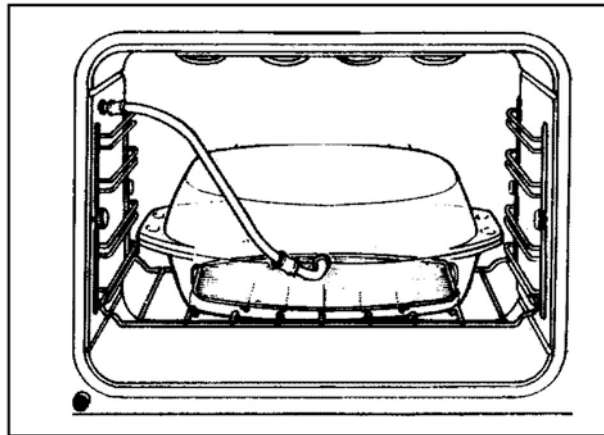
Using this oven, steam cooking at ambient pressure, in combination with traditional cooking methods and the correct accessories, offers a variety of steam cooking methods.

- Steam cooking in dish (*).
- Direct-steam cooking (*).
- Diffused-steam cooking.

(*) The casserole dish and the steam injector are optional accessories (i.e. available on request).

5.1 - STEAM COOKING IN DISH

Using this cooking method, the steam is introduced directly into the casserole dish with cover (supplied as an accessory depending on the model) via the special tube (see fig. 35).

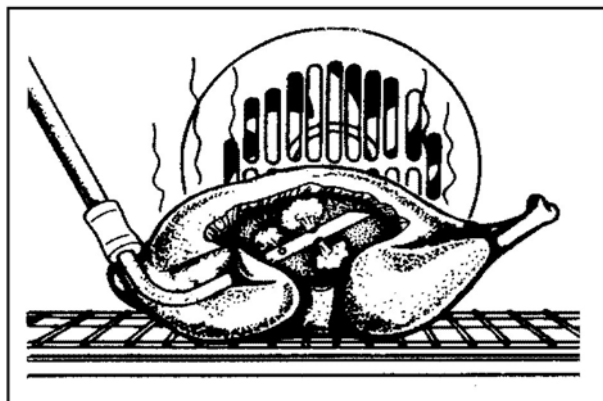


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Fig. 35

5.2 - DIRECT-STEAM COOKING

Using the direct-steam cooking method, steam is injected (through a specific injector) into the internal cavity of a chicken or turkey, and the internal steaming method is combined with the traditional method of cooking the food from outside (see fig. 36).

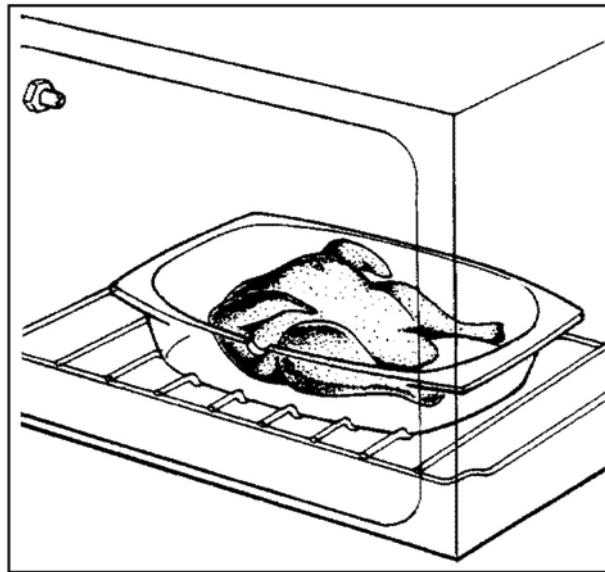


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Fig. 36

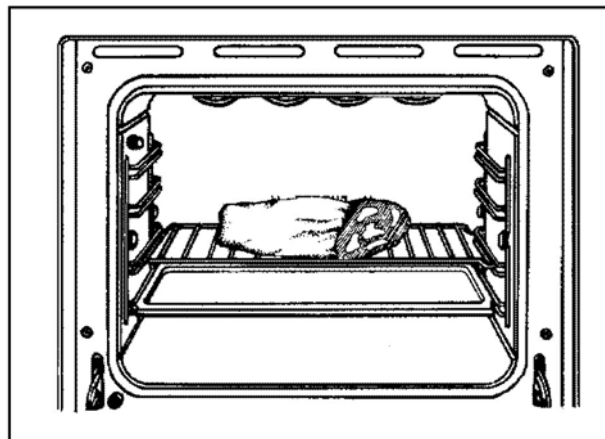
5.3 - DIFFUSED-STEAM COOKING

With this method of cooking, the steam is diffused inside the oven cavity (see figs. 37 and 38).



HDC02734.JPG

Fig. 37



HDC02735.JPG

Fig. 38

6 - DESCRIPTION OF THE ELECTRICAL CIRCUIT

Ovens with function selector

When the steam system is in operation, the steam generator is powered from contact "L" of the terminal block via the safety thermostat (TH6), the contacts of the programmer (PG), contacts P2-2 of the function selector (SR1), the steam enabling thermostat (TH5) and to the steam generator unit.

The steam generator comprises the steam safety thermostat (TH4) the heating elements (R1 and R2) (which are built into the generator) and the service thermostat (TH3).

The circuit is closed via function selector SR1 (contacts 9-P9) to contact "N" of the terminal block.

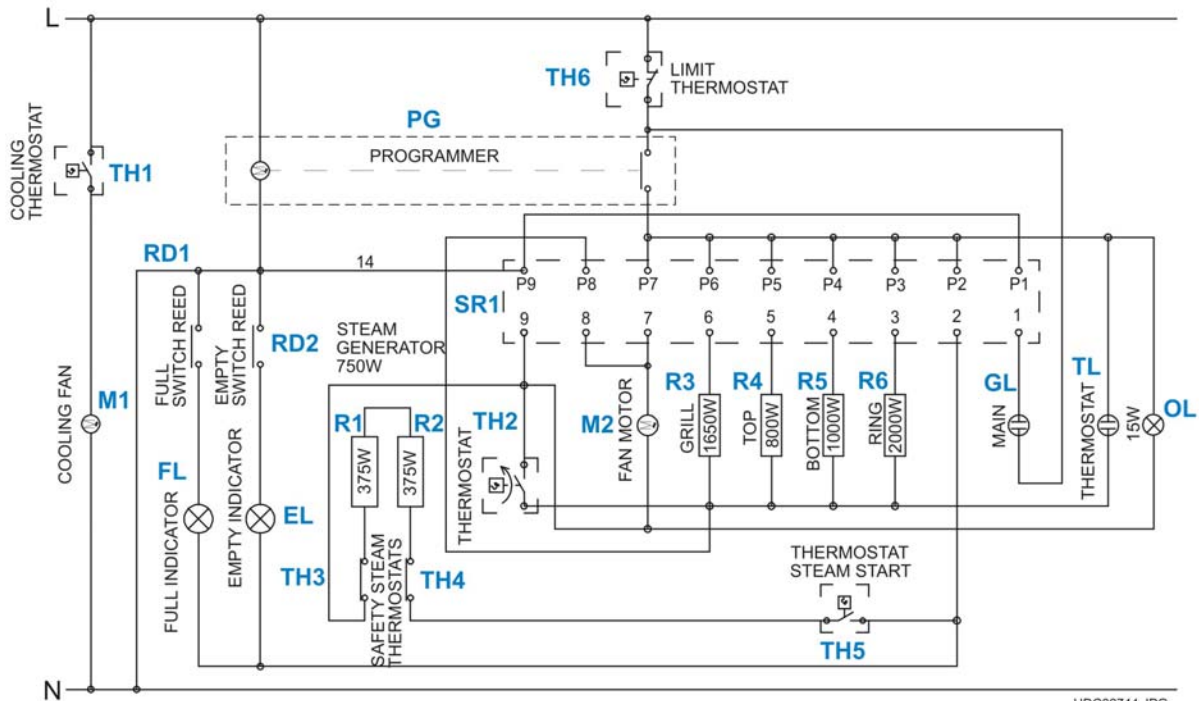
Ovens with electronic control system

When the steam system is in operation, the steam generator is powered from contact "L" of the terminal block to board OVC1000 (contacts of the internal safety relay BR04-BR05), the safety thermostat TH1 and then to the steam generator unit which comprises: the steam thermostat TH2, the heating elements (R1 and R2) (which are built into the generator) and the safety thermostat (TH3) and then through the steam relay RL1 (contacts 4-5).

The circuit is closed via contact "N" of the terminal block.

The coil of the steam enabling relay RL1 (contacts A-B) is powered by the OVC1000 board (pin 7 of connector RS01).

6.1 - BASIC CIRCUIT DIAGRAM: MODELS WITH FUNCTION SELECTOR



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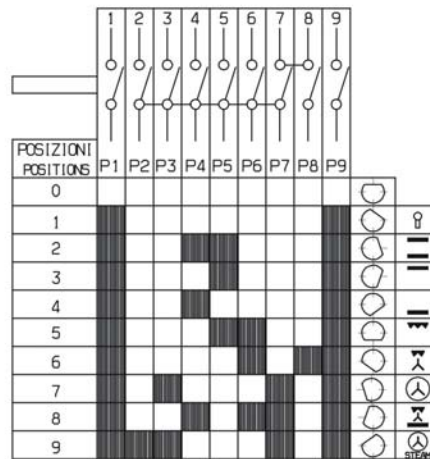


Fig. 39

KEY	
FL - "RESERVOIR FULL" LED	R6 - CONVECTION HEATING ELEMENT
EL - "RESERVOIR EMPTY" LED	RD1 - "FULL" REED SWITCH
GL - MAIN LED	RD2 - "EMPTY" REED SWITCH
M1 - COOLING FAN	SR1 - FUNCTION SELECTOR
M2 - CONVECTION FAN	TH1 - SAFETY THERMOSTAT
OL - OVEN LAMP	TH2 - OVEN THERMOSTAT
PG - PROGRAMME SELECTOR	TH3 - STEAM GENERATOR SERVICE THERMOSTAT (130°C).
R1 - STEAM GENERATOR HEATING ELEMENT	TH4 - STEAM GENERATOR SAFETY THERMOSTAT (170°C).
R2 - STEAM GENERATOR HEATING ELEMENT	TH5 - STEAM ENABLING THERMOSTAT
R3 - GRILL HEATING ELEMENT	TH6 - SAFETY THERMOSTAT
R4 - UPPER HEATING ELEMENT	
R4 - LOWER HEATING ELEMENT	

6.2 - BASIC CIRCUIT DIAGRAM: NORMAL ELECTRONIC-CONTROL MODELS

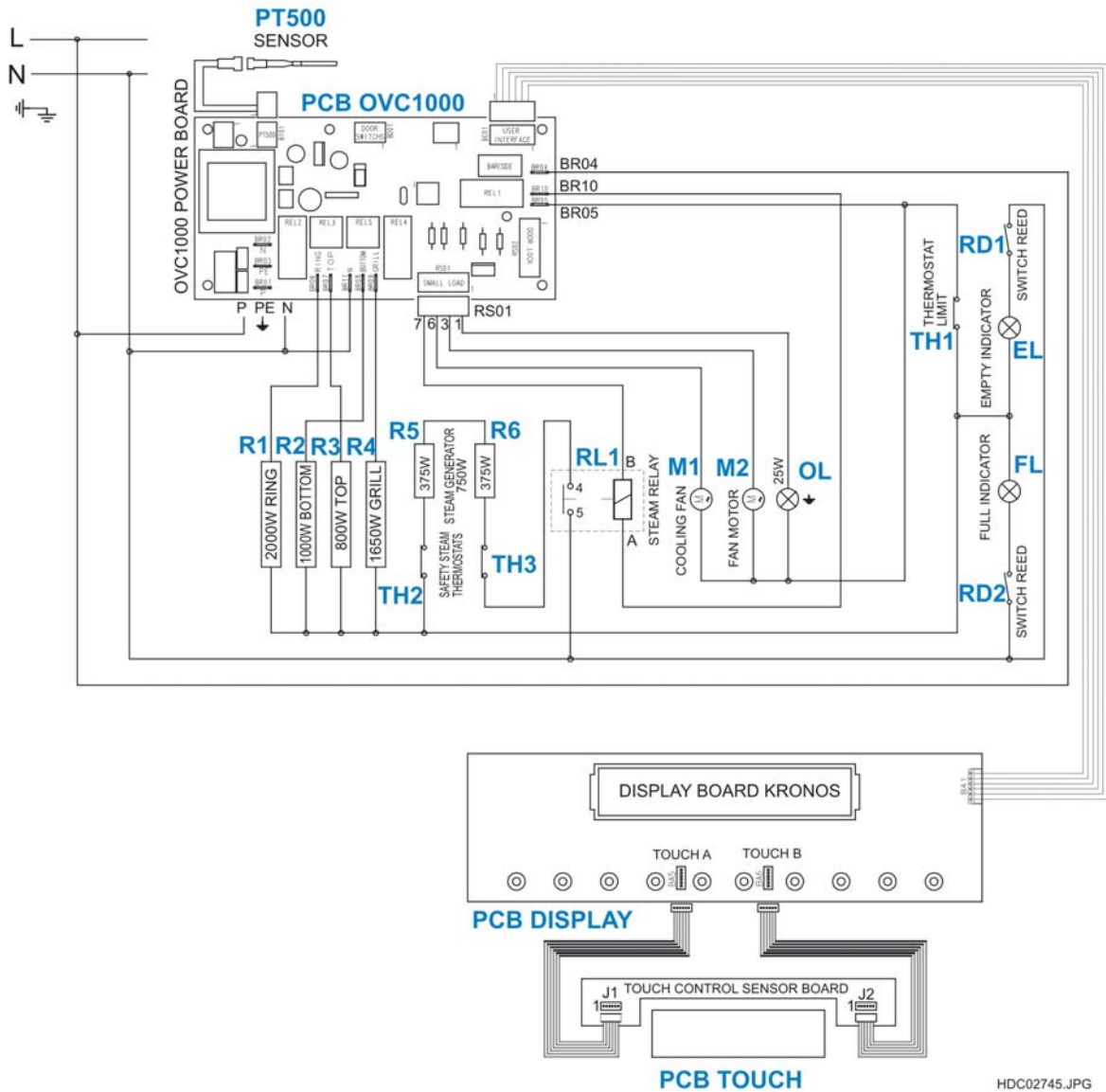


Fig. 40

KEY			
FL	- "RESERVOIR FULL" LED	R3	- UPPER HEATING ELEMENT
EL	- "RESERVOIR EMPTY" LED	R4	- GRILL HEATING ELEMENT
M1	- COOLING FAN	R5	- STEAM GENERATOR HEATING ELEMENT
M2	- CONVECTION FAN	R6	- STEAM GENERATOR HEATING ELEMENT
OL	- OVEN LAMP	RD1	- "FULL" REED SWITCH
PT500	- OVEN SENSOR	RD2	- "EMPTY" REED SWITCH
PCB DISPLAY	- KRONOS DISPLAY BOARD	RL1	- STEAM ENABLING RELAY
PCB OVC1000	- OVC1000 POWER BOARD	TH1	- SAFETY THERMOSTAT
PCB TOUCH	- TOUCH CONTROL BOARD	TH2	- STEAM GENERATOR SERVICE THERMOSTAT (130°C).
R1	- CONVECTION HEATING ELEMENT	TH3	- STEAM GENERATOR SAFETY THERMOSTAT (170°C).
R2	- LOWER HEATING ELEMENT		

6.3 - BASIC CIRCUIT DIAGRAM: PYRO MODELS WITH ELECTRONIC CONTROL

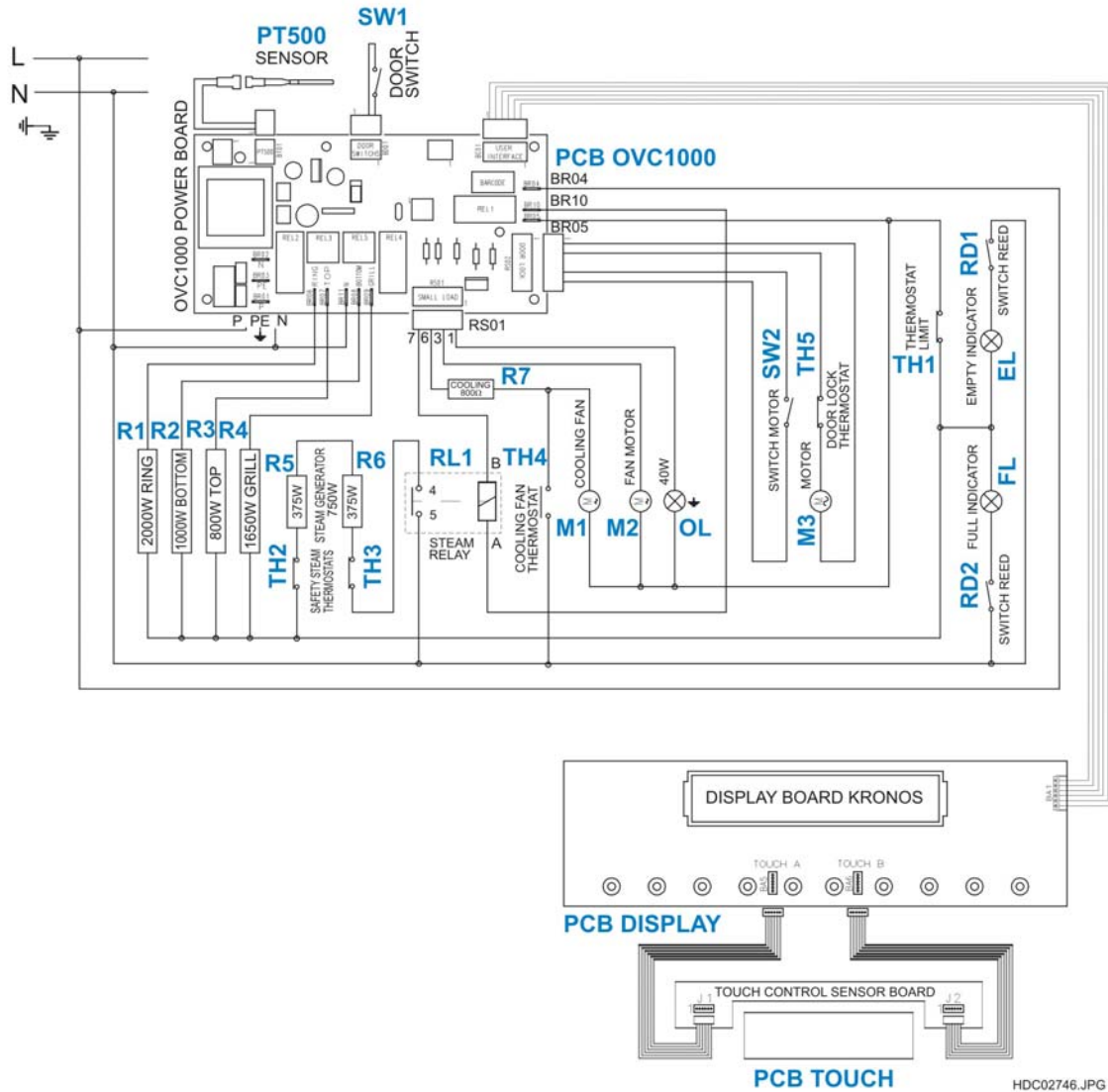


Fig. 41

KEY			
FL	- "RESERVOIR FULL" LED	R5	- STEAM GENERATOR HEATING ELEMENT
EL	- "RESERVOIR EMPTY" LED	R6	- STEAM GENERATOR HEATING ELEMENT
M1	- COOLING FAN	R7	- DROP RESISTOR FOR FAN DOUBLE SPEED
M2	- CONVECTION FAN	RD1	- "FULL" REED SWITCH
OL	- OVEN LAMP	RD2	- "EMPTY" REED SWITCH
PT500	- OVEN SENSOR	RL1	- STEAM ENABLING RELAY
PCB DISPLAY	- KRONOS DISPLAY BOARD	SW1	- DOOR MICROSWITCH
PCB OVC1000	- OVC1000 POWER BOARD	SW2	- DOOR LATCH POSITION MICROSWITCH
PCB TOUCH	- TOUCH CONTROL BOARD	TH1	- SAFETY THERMOSTAT
R1	- CONVECTION HEATING ELEMENT	TH2	- STEAM GENERATOR SERVICE THERMOSTAT (130°C).
R2	- LOWER HEATING ELEMENT	TH3	- STEAM GENERATOR SAFETY THERMOSTAT (170°C).
R3	- UPPER HEATING ELEMENT	TH4	- FAN DOUBLE SPEED THERMOSTAT
R4	- GRILL HEATING ELEMENT	TH5	- DOOR INTERLOCK THERMSTAT

7 - CLEANING THE STEAM GENERATOR AND THE RESERVOIR

As with all appliances which use water (e.g. steam irons), the formation of scale in the oven is perfectly normal. After a certain number of steam cooking cycles, the scale that builds up inside the reservoir may reduce the quantity of steam generated.

After about six months of use, the scale build-up may become noticeable. In this case, the parts of the oven that generate steam should be carefully cleaned.

Proceed as follows to clean the generator and the reservoir:

- Drain the reservoir as described in section 3.7 - DRAINING THE WATER
- Prepare a solution of 800 cc of water and 50-60 grammes of citric acid (equivalent to two heaped spoonfuls).
- Pour the solution into the water fill drawer (the oven must be cold when adding the solution).
- Wait for about 60 minutes to allow the solution to remove the scale.
- Switch on the oven and select the steam function. After 20-25 minutes, switch off the oven.
- Allow the oven to cool, then drain the solution from the reservoir as described above.

7.1 - CITRIC ACID

Citric acid is widely available from most drugstores, chemists' and specialist food retailers. It is sold in the form of small white granules, rather like sugar, and used mainly in the food industry.

7.2 - CLEANING THE EXTENDED HOSE AND THE STEAM INJECTOR

The injector should be carefully cleaned after use. The extended hose and the steam injector can be washed in lukewarm water using normal household washing-up liquid. Do not use acids, spray or similar or similar substances, which may damage them.

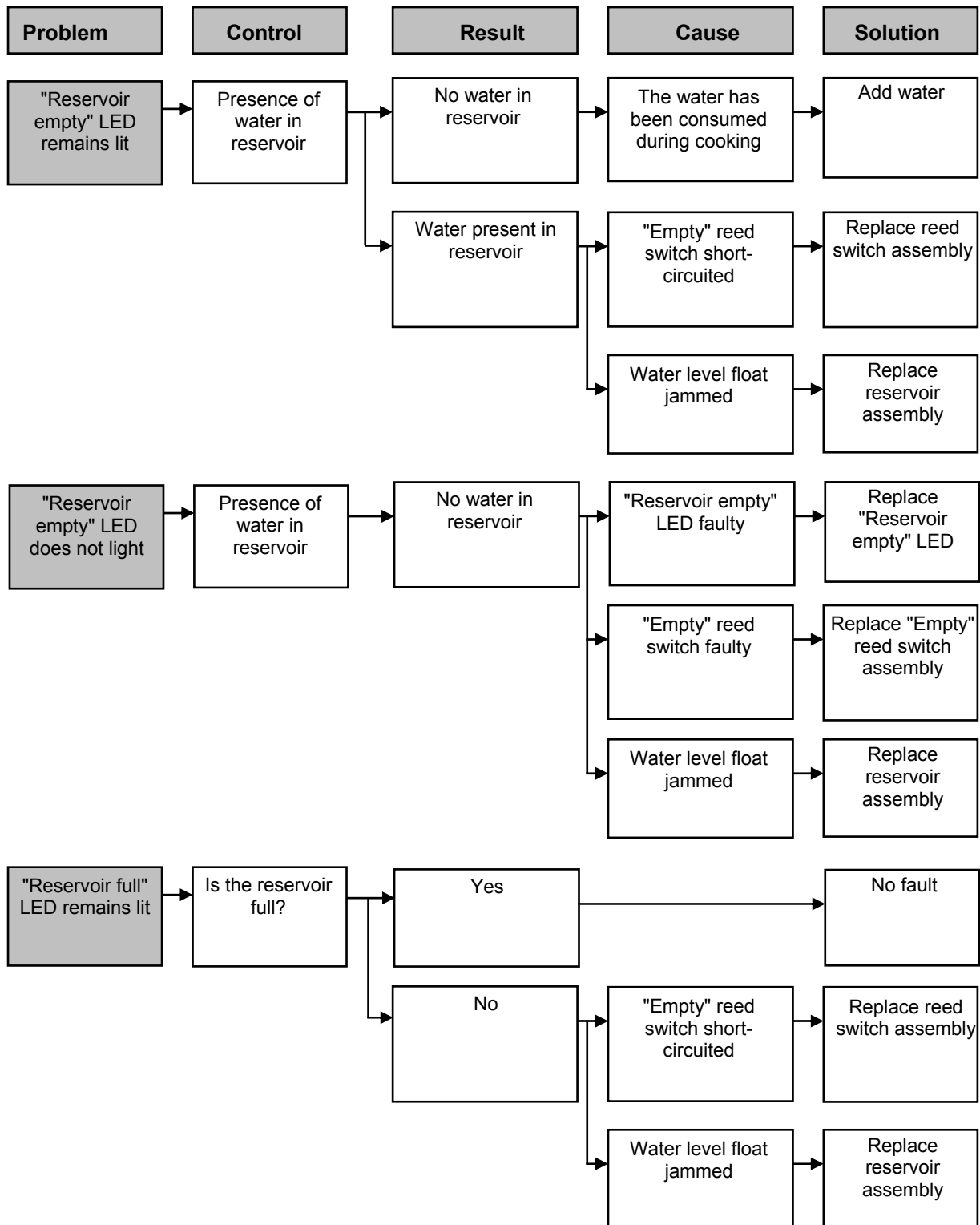
7.3 - WATER HARDNESS

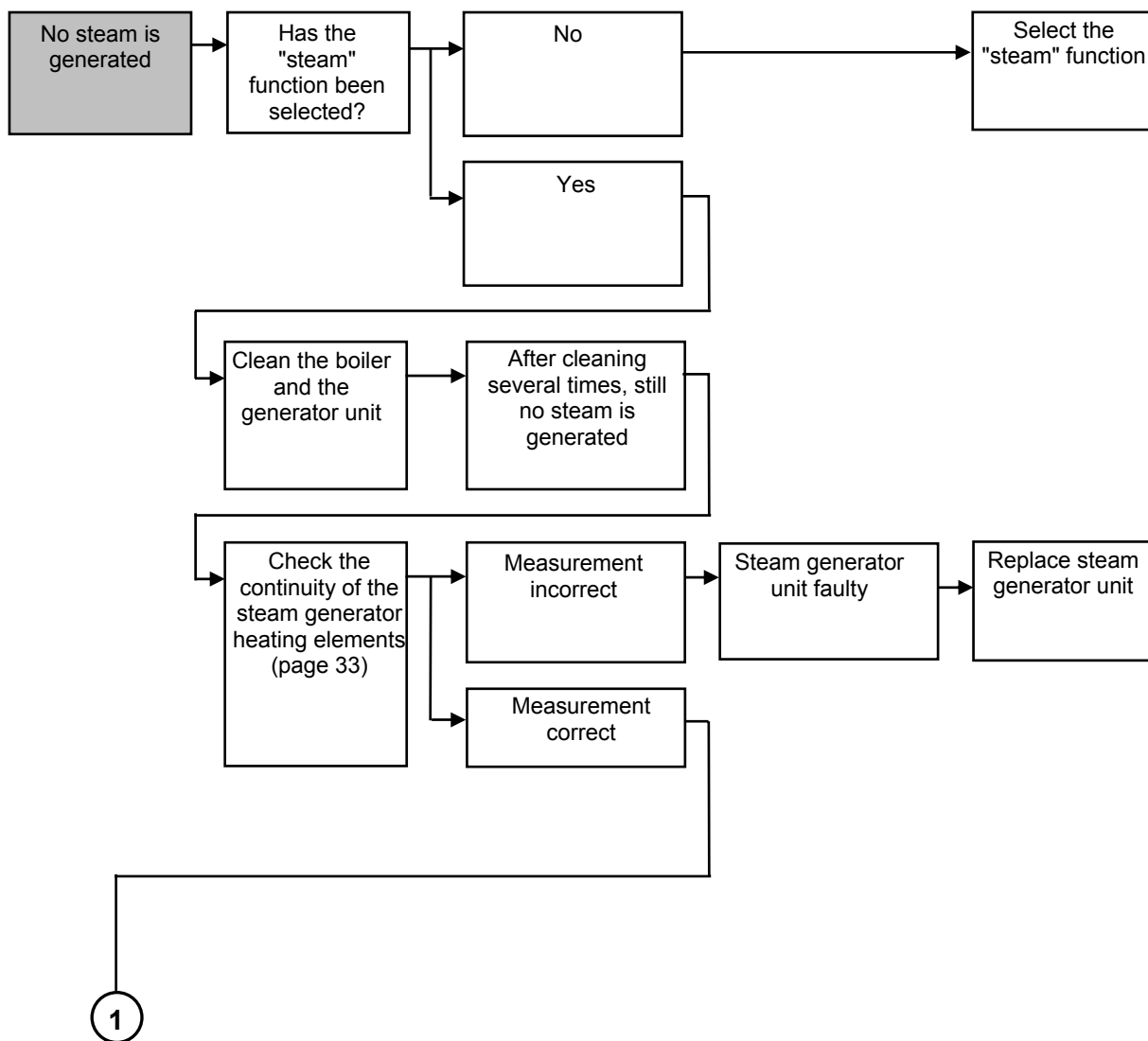
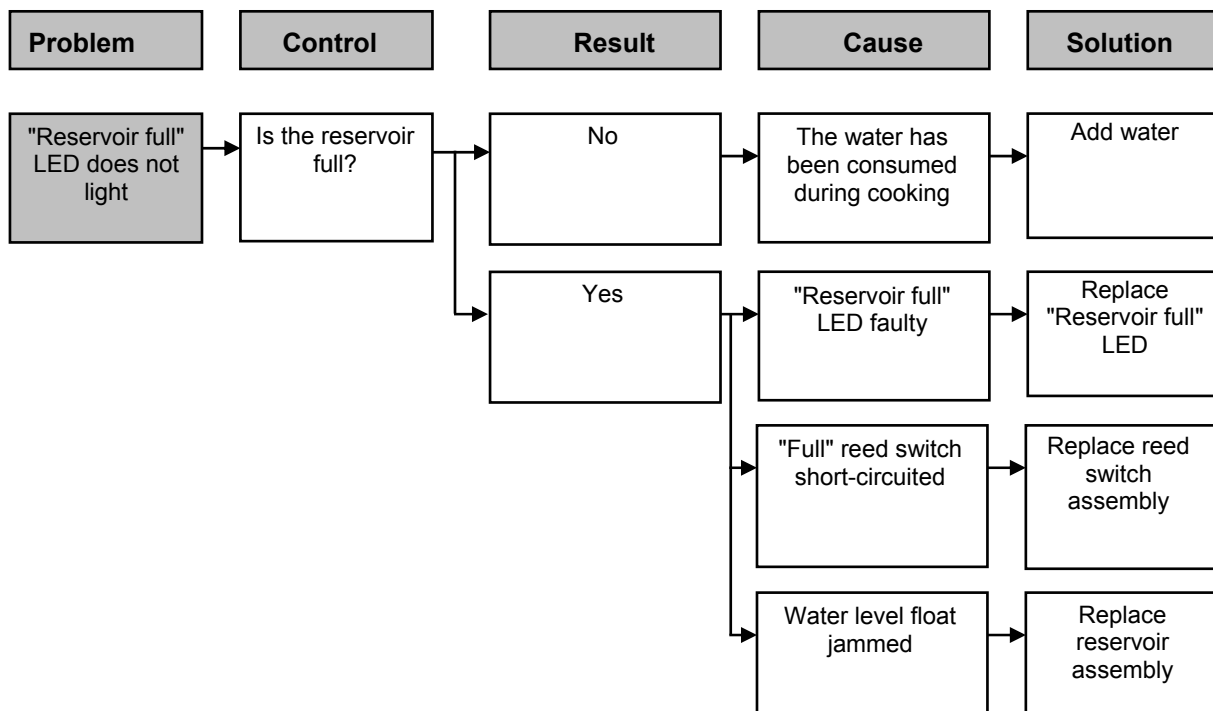
If still (not carbonated) mineral water, or tapwater in a soft-water area is used, the frequency of cleaning is drastically reduced (for example, 100 - 150 cooking cycles). If the domestic water circuit is fitted with a water softening system, then tapwater can be used without problems.

N.B.: The use of hard water (i.e. water containing higher quantities of minerals such as calcium) makes it necessary to clean the appliance more frequently, but its efficiency is not affected in any way.

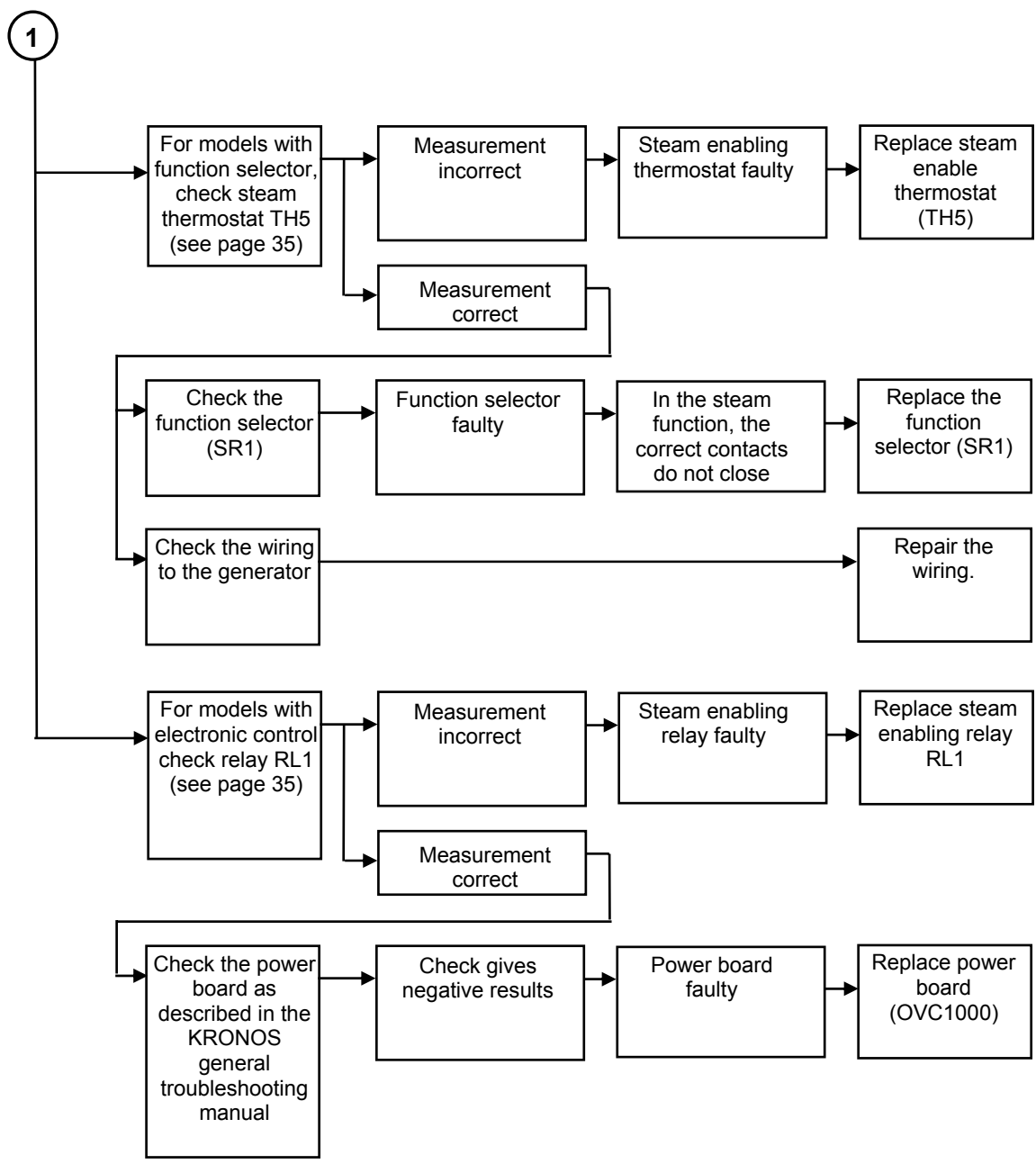
8 - TROUBLESHOOTING: STEAM SECTION

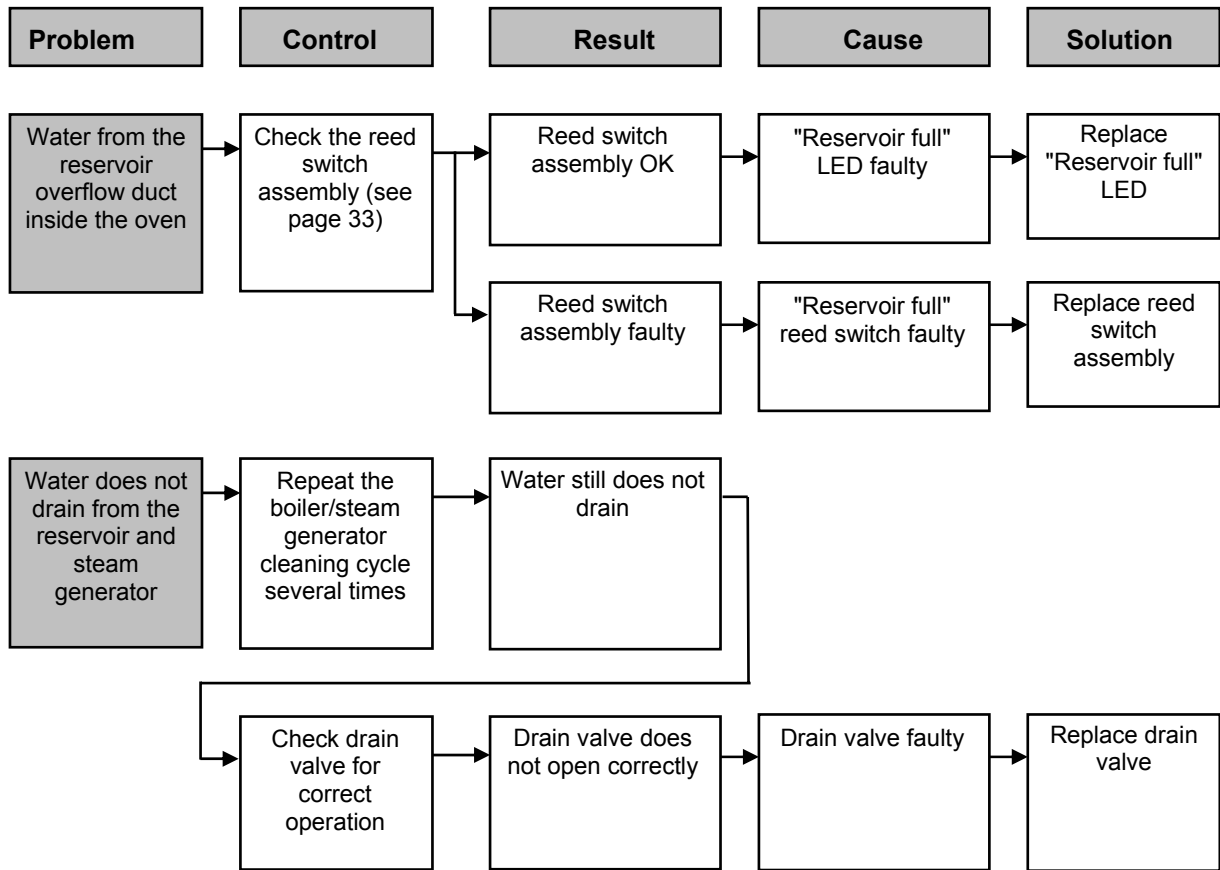
This troubleshooting chart refers to possible problems concerning the steam section only. For further details regarding troubleshooting, refer to the manuals for the various electronic control systems.





Problem	Control	Result	Cause	Solution
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8.1 - TESTING THE STEAM GENERATOR

To check the steam generator unit for correct operation, measure the resistance using an ohmmeter. The correct resistance is approximately 60-70Ω.

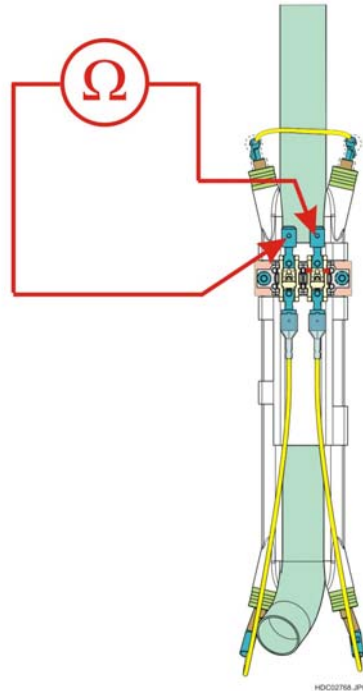
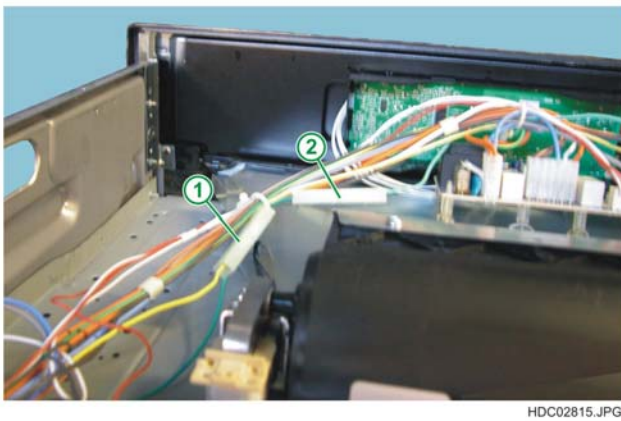


Fig. 42

8.2 - CHECKING THE REED SWITCH ASSEMBLY

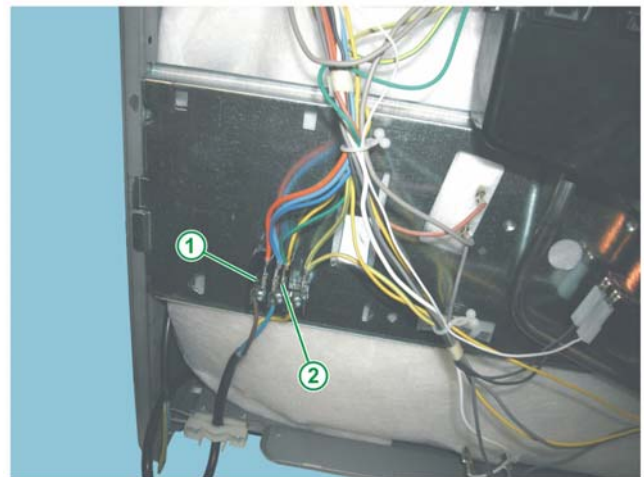
It is possible to test the efficiency of the REED switches through an ohmmeter and a permanent magnet. To perform the test, after disconnecting the measurement points of the two REED (see Fig. 43) and extracted the REED unit, just put the REED near the permanent magnet and check with the ohmmeter the closure of the REED activated by the magnet (see Fig. 45 and 46).



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Fig. 43

- 1 - CONNECTION POINT OF THE REED EMPTY INDICATION
- 2 - CONNECTION POINT OF THE REED FULL INDICATION



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Fig. 44

- 1 - TERMINAL BLOCK
- 2 - CONNECTION POINT

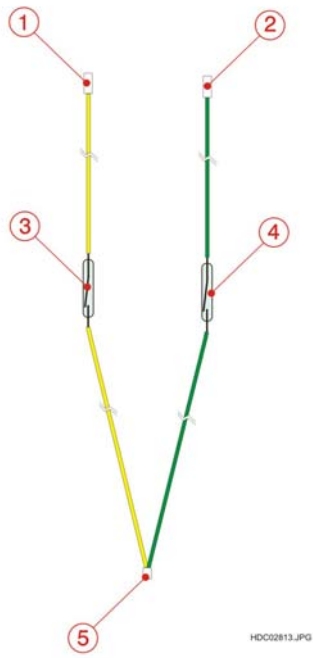


Fig. 45

- 1 - CONNECTION POINT OF THE REED EMPTY
- 2 - CONNECTION POINT OF THE REED FULL
- 3 - EMPTY REED
- 4 - FULL REED
- 5 - CONNECTION POINT

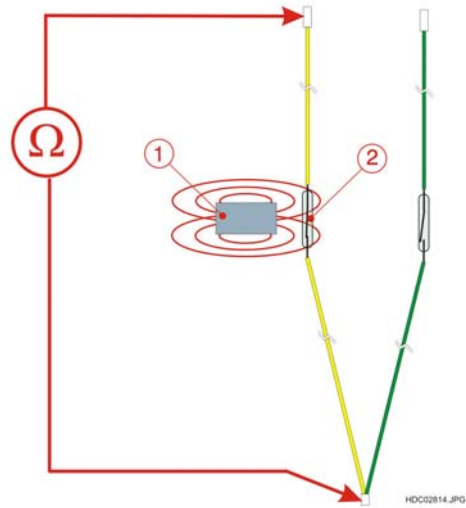


Fig. 46

- 1 - PERMANENT MAGNET
- 2 - TESTED REED SWITCH

8.3 - TESTING THE STEAM ENABLING THERMOSTAT (TH5)

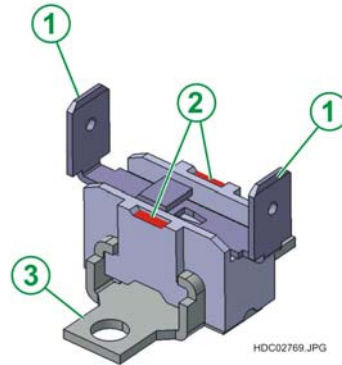
The function of the steam enabling thermostat (TH5) is to ensure that the steam generator (in ovens with a function selector) switches on only when the temperature inside the oven exceeds 130°C, closing the thermostat contacts to supply power to the steam generating circuit.

This is a normally-closed fixed-temperature ceramic thermostat which closes at **115±5-0°C** and re-opens at **100°C±5** (colour: red).

Using a hair-dryer or a welding torch, heat the thermostat and check that the contacts close correctly.

Fig. 47

- 1 - FASTON CONNECTORS
- 2 - COLOUR
- RED (N.O. 115-5-0°C - 100°C±5)
- 3 - SUPPORT BRACKET



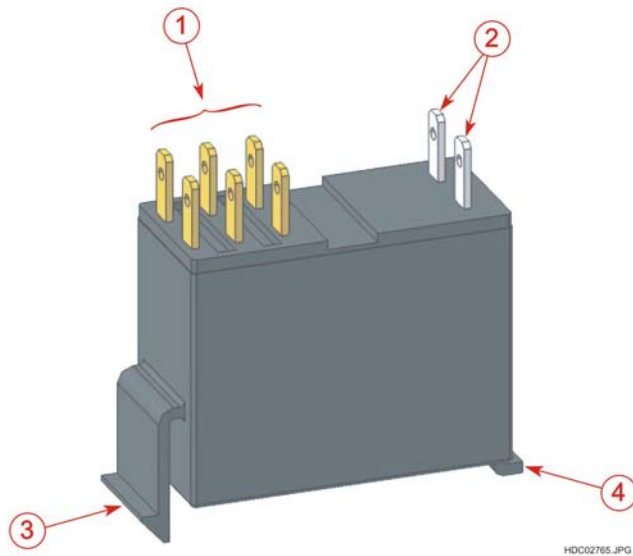
8.4 - TESTING THE STEAM ENABLING RELAY (RL1)

Use an ohmmeter to check the relay as follows:

- Measure the resistance of the control coil. (ref A and B Fig. 49).
The correct resistance is approximately **15-20 kΩ**.
- Check for correct closure of contacts 5-6.
- Check for correct aperture of contacts 4-5.

Fig. 48

- 1. POWER CONTACTS (1-6)
- 2. RELAY COIL CONTACTS (A-B)
- 3. FLEXIBLE ANCHOR CLIP
- 4. FIXED ANCHOR LIP



POSITION OF CONTACTS

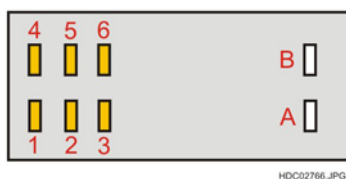


Fig. 49

CIRCUIT DIAGRAM

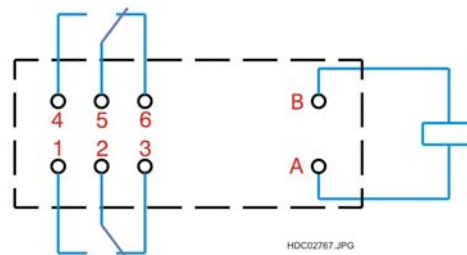


Fig. 50

9 - ACCESS TO COMPONENTS

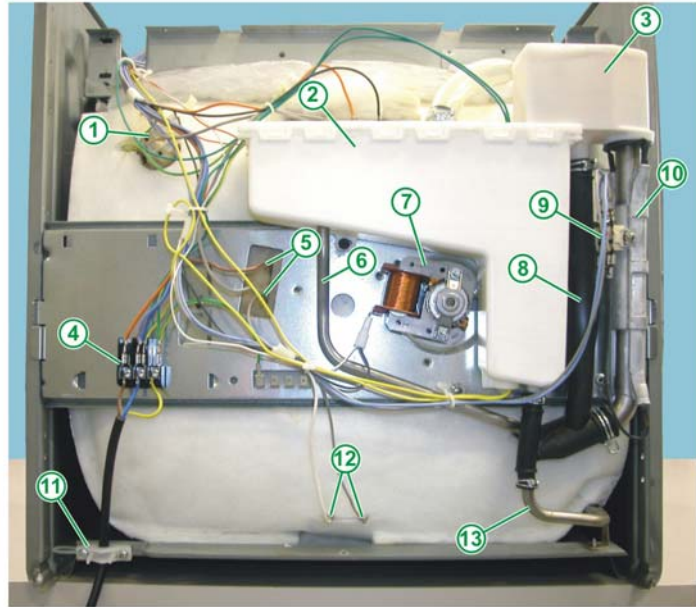
9.1 - DISMANTLING THE RESERVOIR + STEAM GENERATOR

To dismantle the reservoir/steam generator unit, proceed as follows.

1 - Remove the rear panel (fig. 51).

Fig. 51

1. CABLE CLAMP
2. WATER RESERVOIR
3. EXPANSION CHAMBER
4. TERMINAL BLOCK
5. CONVECTION HEATER CONTACTS
6. OVERFLOW TUBE
7. CONVECTION FAN
8. SILICONE RESERVOIR COUPLING
9. STEAM GENERATOR THERMOSTATS
10. STEAM GENERATOR
11. CABLE CLAMP
12. LOWER HEATING ELEMENT CONTACTS
13. WATER DRAIN TUBE

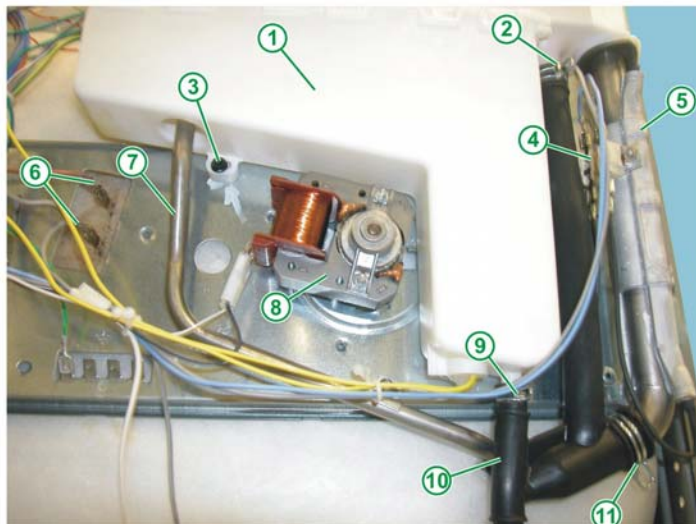


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2 - Remove the 2 screws which secure the assembly (fig. 52-53).

Fig. 52

1. WATER RESERVOIR
2. RETAINING CLIP FOR SILICONE COUPLING - EXPANSION CHAMBER
3. RESERVOIR FIXING SCREWS
4. STEAM GENERATOR THERMOSTATS
5. STEAM GENERATOR
6. CONVECTION HEATER CONTACTS
7. OVERFLOW TUBE
8. CONVECTION FAN MOTOR
9. RETAINING CLIP FOR SILICONE COUPLING - RESERVOIR
10. SILICONE COUPLING
11. RETAINING CLIP FOR SILICONE COUPLING - STEAM GENERATOR



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3 - Remove the screws which secure the overflow tube (fig. 53 and 54).

Fig. 53

1. WATER RESERVOIR
2. RESERVOIR SCREW
3. STEAM GENERATOR UNIT
4. HOLE FOR OVERFLOW TUBE FIXING SCREW
5. RETAINING CLIP FOR OVERFLOW DRAIN TUBE

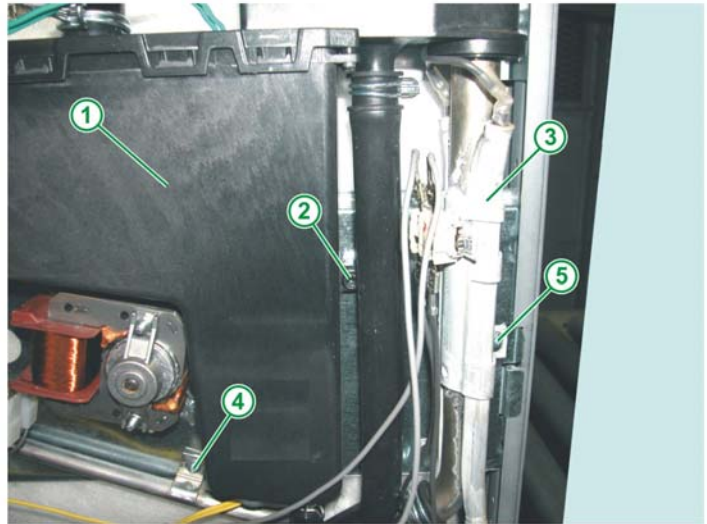
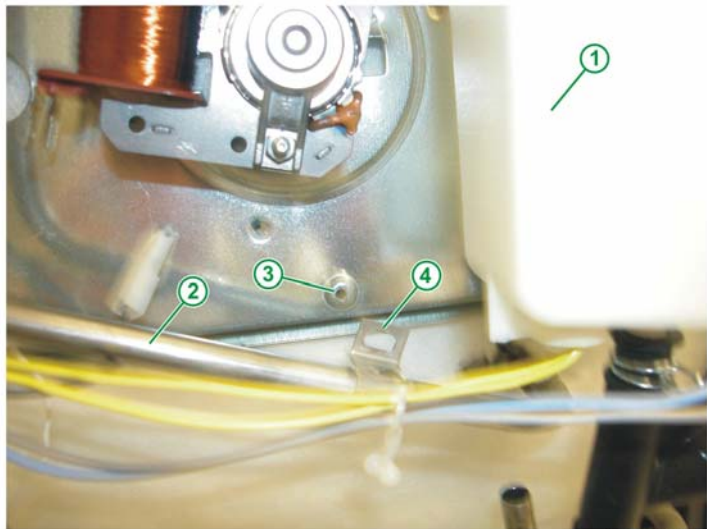


Fig. 54

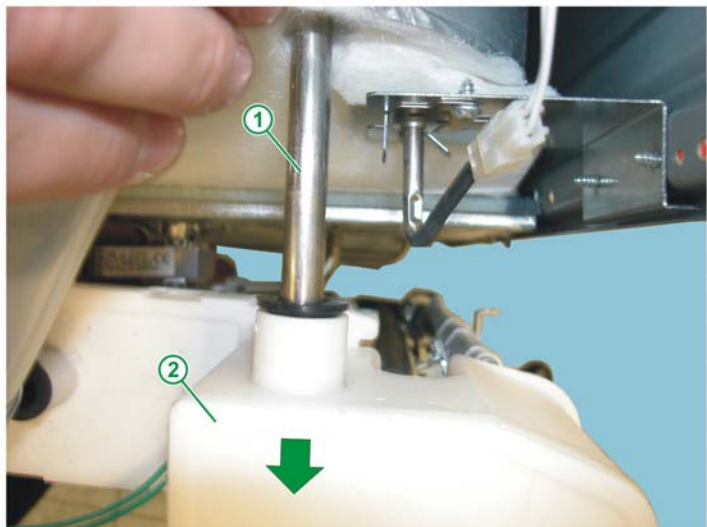
- 1 - WATER RESERVOIR
- 2 - OVERFLOW DRAIN TUBE
- 3 - HOLE FOR OVERFLOW TUBE FIXING SCREW
- 4 - CLAMP OF OVERFLOW DRAIN TUBE



4 - Move the assembly to the rear in order to detach the steam outlet tube (fig. 55).

Fig. 55

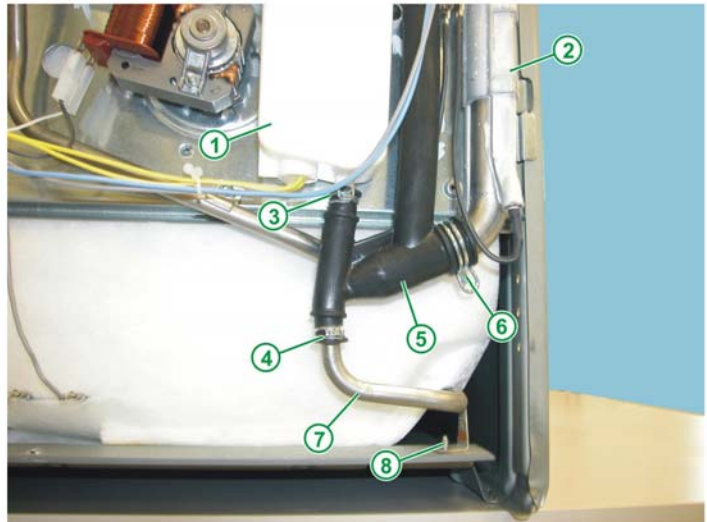
1. STEAM OUTLET TUBE
2. EXPANSION CHAMBER



5 - Detach the water drain tube from the silicone coupling, using pincers to release the retaining clip (fig. 56).

Fig. 56

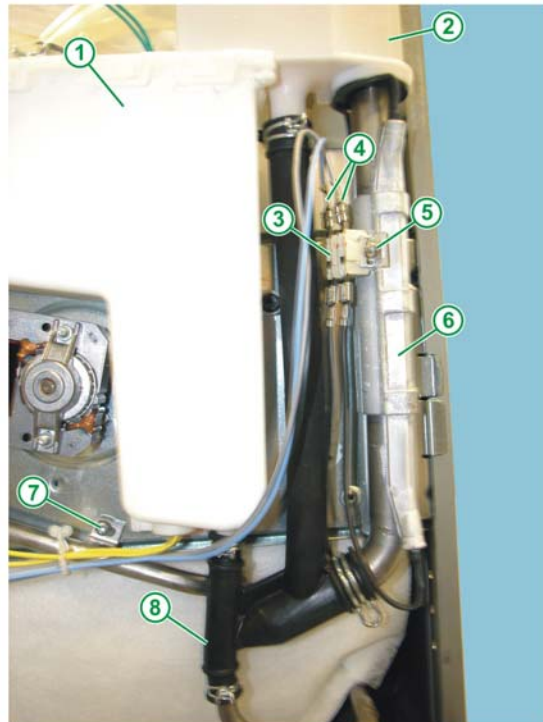
1. WATER RESERVOIR
2. STEAM GENERATOR
3. RETAINING CLIP FOR SILICONE COUPLING - RESERVOIR
4. RETAINING CLIP FOR SILICONE COUPLING - DRAIN TUBE
5. SILICONE COUPLING
6. RETAINING CLIP FOR SILICONE COUPLING - STEAM GENERATOR
7. WATER DRAIN TUBE
8. FIXING SCREW FOR WATER DRAIN TUBE



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Fig. 57

1. WATER RESERVOIR
2. EXPANSION CHAMBER
3. STEAM GENERATOR THERMOSTATS
4. STEAM GENERATOR ELECTRICAL CONTACTS
5. FIXING SCREW FOR THERMOSTATS
6. STEAM GENERATOR
7. FIXING SCREW FOR OVERFLOW TUBE
8. SILICONE COUPLING



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9.2 - DISMANTLING THE LEVEL INDICATOR REED SWITCHES

Proceed as follows to dismantle the reed switch assembly:

1 - Remove the rear panel to access the "empty" and "full" REED (fig. 58 and 59).

Fig. 58

1. WATER FILL TUBE
2. EXPANSION CHAMBER
3. WATER RESERVOIR
4. "FULL" REED SWITCH
5. CONVECTION FAN MOTOR
6. "EMPTY" REED SWITCH

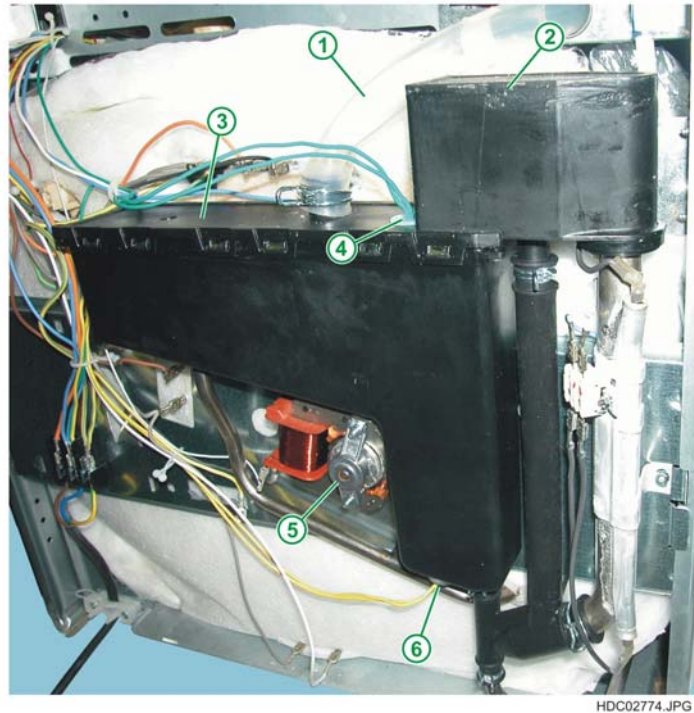
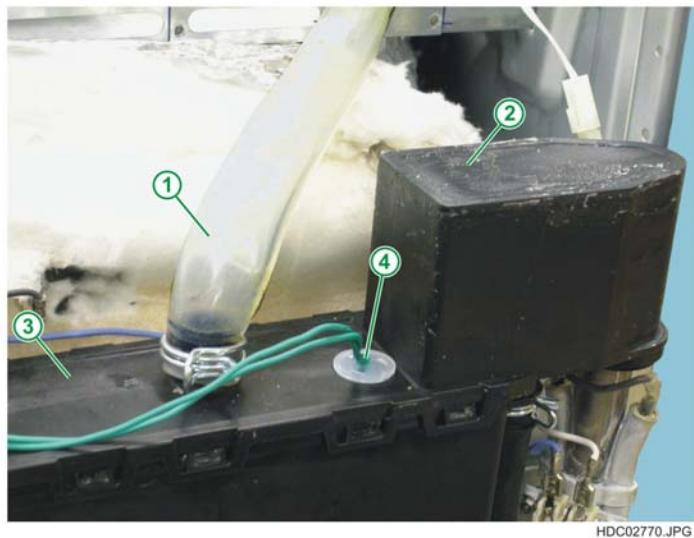


Fig. 59

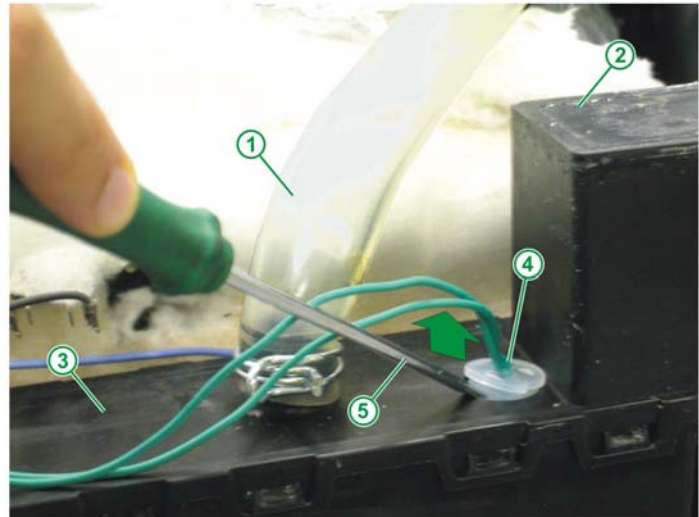
- 1 - WATER FILL TUBE
- 2 - EXPANSION CHAMBER
- 3 - WATER RESERVOIR
- 4 - "FULL" REED SWITCH



2 - Using a standard (flat) screwdriver, lever off the rubber support for the reed switches (fig. 60).

Fig.60

1. WATER FILL TUBE
3. WATER RESERVOIR
2. EXPANSION CHAMBER
4. "FULL" REED SWITCH
5. STANDARD SCREWDRIVER

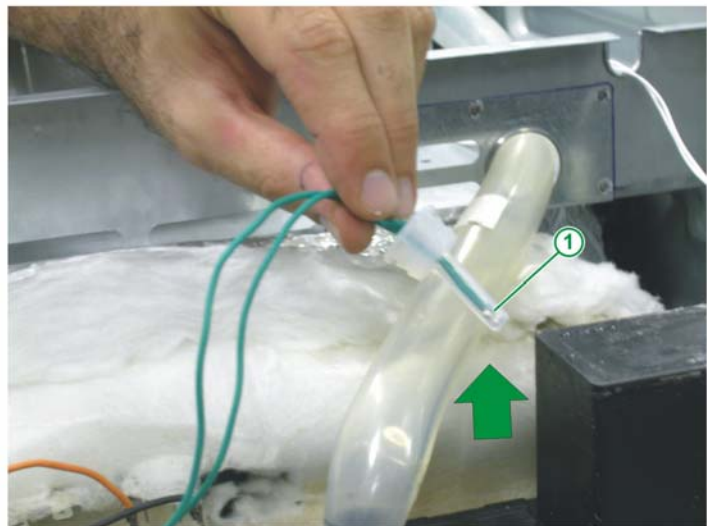


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3 - Detach the reed switch assembly with the rubber support (fig. 61).

Fig. 61

1. REED SWITCH



HDC02772.JPG

4 - Detach the reed switches from the rubber support (fig. 62).

Fig. 62

1. SILICONE RUBBER SUPPORT
2. REED SWITCH



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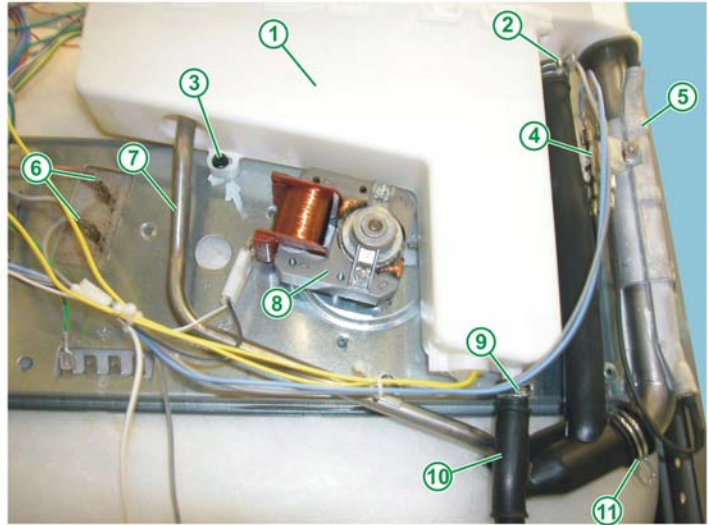
9.3 - REMOVING THE WATER RESERVOIR

Proceed as follows to remove the water reservoir:

1 - Remove the reservoir + steam generator assembly (see section 9.1).

Fig. 63

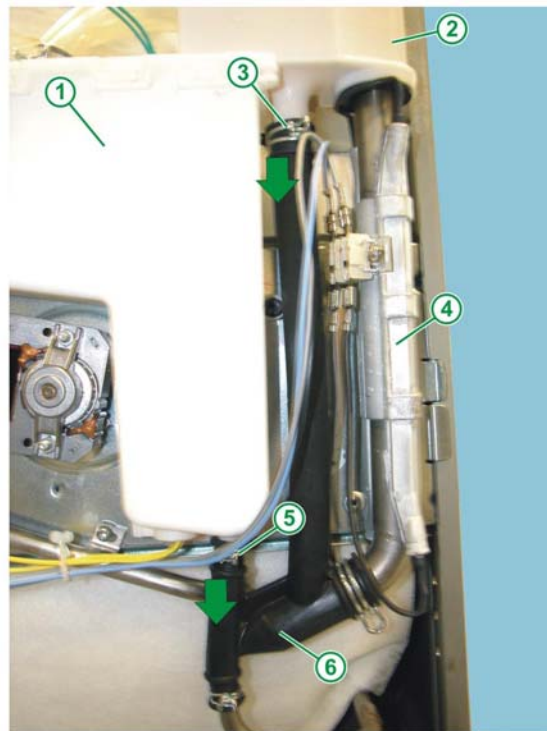
1. WATER RESERVOIR
2. RETAINING CLIP FOR SILICONE COUPLING - EXPANSION CHAMBER
3. RESERVOIR FIXING SCREW
4. STEAM GENERATOR THERMOSTATS
5. STEAM GENERATOR
6. CONVECTION HEATER CONTACTS
7. OVERFLOW TUBE
8. CONVECTION FAN MOTOR
9. RETAINING CLIP FOR SILICONE COUPLING - RESERVOIR
10. SILICONE COUPLING
11. RETAINING CLIP FOR SILICONE COUPLING - STEAM GENERATOR



2 - Detach the silicone coupling from the reservoir using pincers to release the retaining clip (fig. 64).

Fig. 64

1. WATER RESERVOIR.
2. EXPANSION CHAMBER.
3. RETAINING CLIP FOR SILICONE COUPLING - EXPANSION CHAMBER
4. STEAM GENERATOR
5. RETAINING CLIP FOR SILICONE COUPLING - RESERVOIR.
6. SILICONE COUPLING



3 - Detach the steam outlet tube on the steam generator from the expansion chamber (fig. 65).

Fig. 65

1. WATER RESERVOIR.
2. EXPANSION CHAMBER.
3. STEAM OUTLET TUBE ON GENERATOR
4. STEAM GENERATOR



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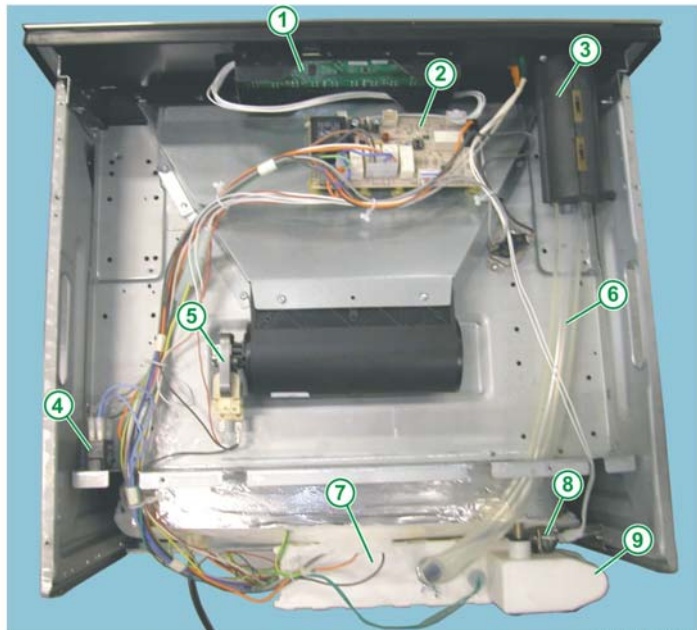
9.4 - REMOVING THE WATER FILL DRAWER AND THE CONTROL COMPONENTS

Proceed as follows to remove the water fill drawer:

- 1 - Remove the top from the oven.

Fig. 66

1. KRONOS CONTROL UNIT
2. OVC1000 POWER BOARD
3. WATER FILL DRAWER
4. STEAM GENERATOR CONTROL RELAY
5. TANGENTIAL COOLING FAN
6. WATER FILL TUBE
7. WATER RESERVOIR
8. PT500 TEMPERATURE SENSOR
9. EXPANSION CHAMBER



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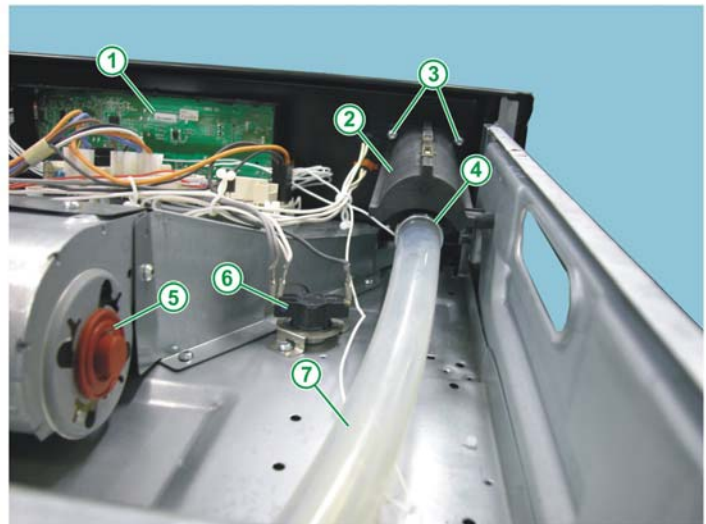
- 2 - Detach the retaining clip for the water fill tube and remove the tube (fig. 67).

- 3 - Remove the screws which secure the water fill drawer in position (fig. 67).

- 4 - Remove the water fill drawer from the internal section of the oven.

Fig. 67

1. KRONOS CONTROL UNIT
2. WATER FILL DRAWER
3. DRAWER FIXING SCREWS
4. RETAINING CLIP FOR WATER FILL TUBE
5. TANGENTIAL FAN
6. SAFETY THERMOSTAT
7. WATER FILL TUBE



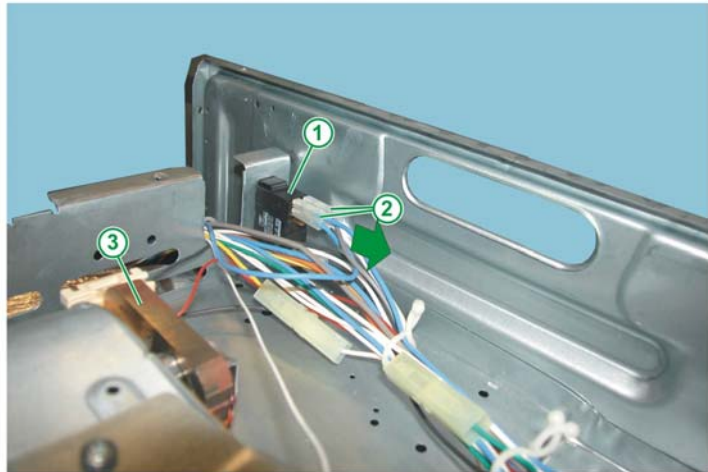
HDC02777.JPG

Proceed as follows to remove the steam enabling relay:

1 - Detach the wiring (note the position of each wire).

Fig. 68

1. STEAM ENABLING RELAY
2. ELECTRICAL CONNECTIONS TO RELAY
2. TANGENTIAL FAN MOTOR

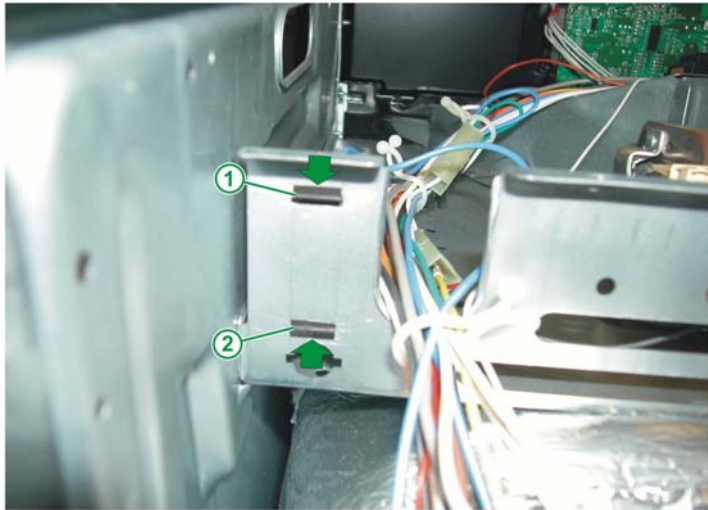


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2 - Detach the tabs which secure the relay from the support bracket (fig. 69).

Fig. 69

1. FLEXIBLE ANCHOR CLIP
2. FIXED ANCHOR LIP

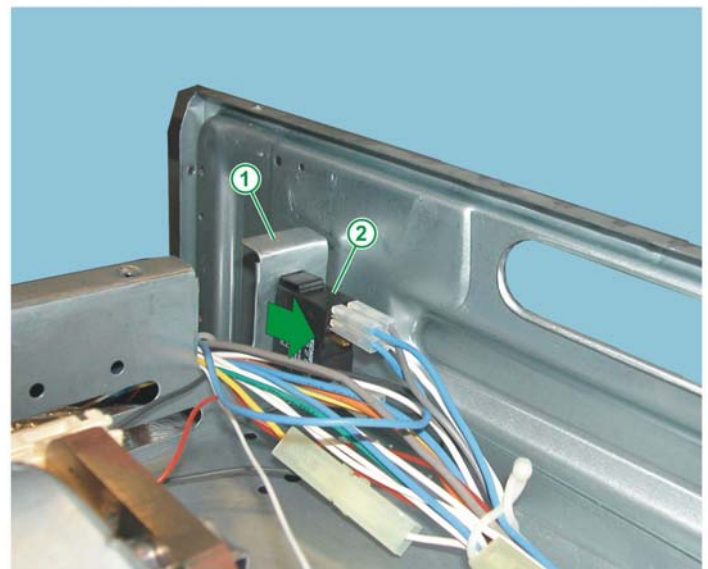


HDC02776.JPG

2 - Remove the relay from the front of the oven (fig. 70).

Fig. 70

1. RELAY FIXING BRACKET
2. STEAM ENABLING RELAY



HDC02784.JPG

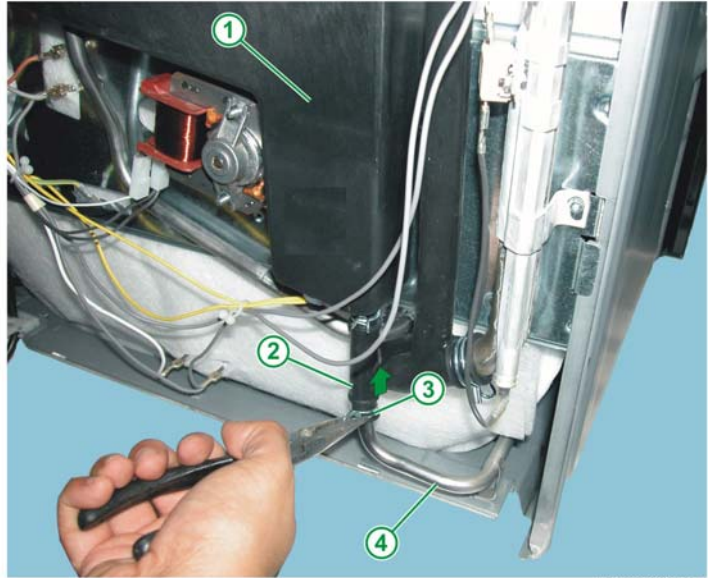
9.5 - WATER DRAIN VALVE

To access the water drain valve it is necessary to:

1 - Detach the silicone coupling from the water drain tube removing the clamp.

Fig. 71

1. WATER RESERVOIR
2. SILICONE COUPLING
3. CLAMP FOR SILICONE COUPLING – WATER DRAIN TUBE
4. WATER DRAIN TUBE



HDC02822.JPG

2 - Unscrew the 2 screws of water drain tube (see Fig. 72).

Fig. 72

- 1 - REAR SCREW OF WATER DRAIN TUBE
- 2 - FRONT SCREW OF WATER DRAIN TUBE
- 3 - TORX SCREWDRIVER
- 4 - OVEN BOTTOM



HDC02823.JPG

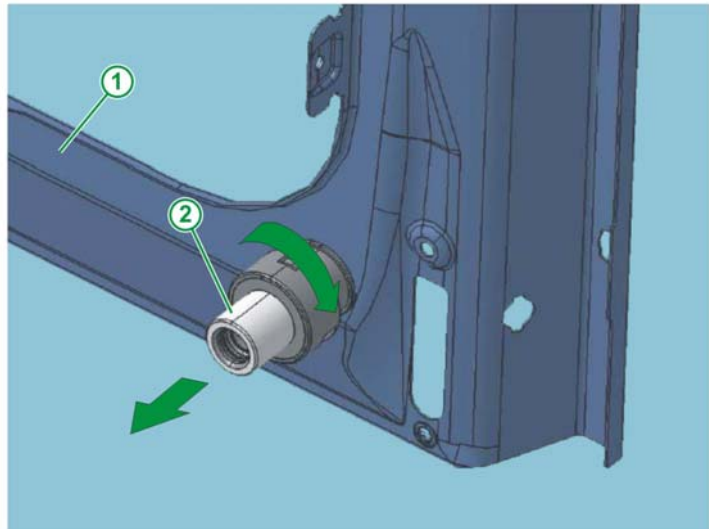
3 - Extract the water drain tube from the oven rear side.

4 - Remove the oven front part as indicated in the “Access structure accessibility” Manual.

5 - Release the drain valve from the front part turning it clockwise (see Fig. 73 and 74).

Fig. 73

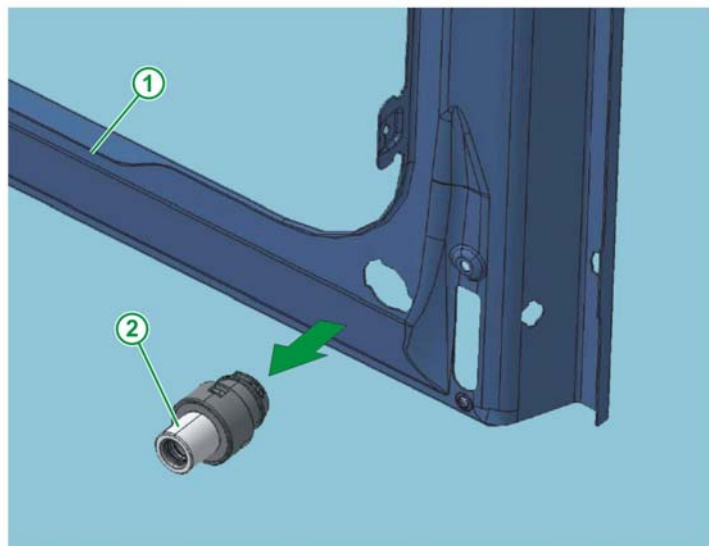
- 1 - OVEN FRONT PART
- 2 - WATER DRAIN VALVE



HDC02817.JPG

Fig. 74

- 1 - OVEN FRONT PART
- 2 - WATER DRAIN VALVE



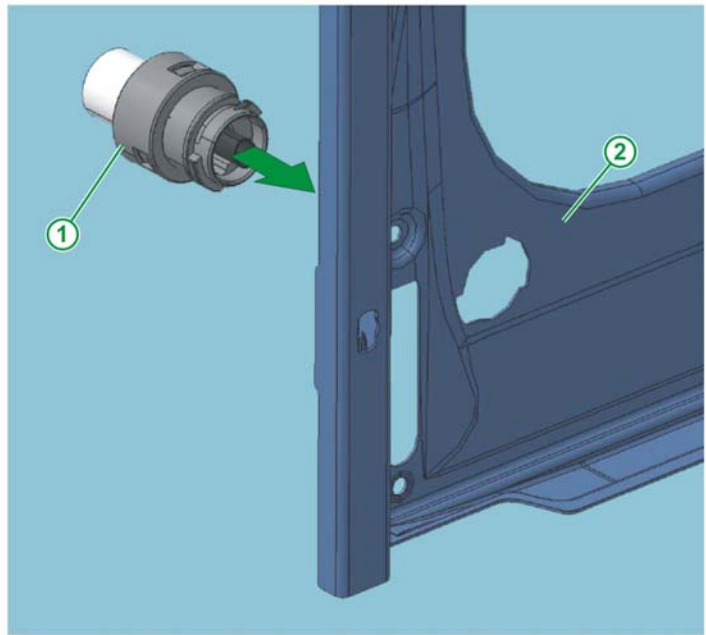
HDC02818.JPG

To remount the water drain valve:

1 - Insert the valve into the front part and turn it to fix it (see Fig. 75 and 76).

Fig. 75

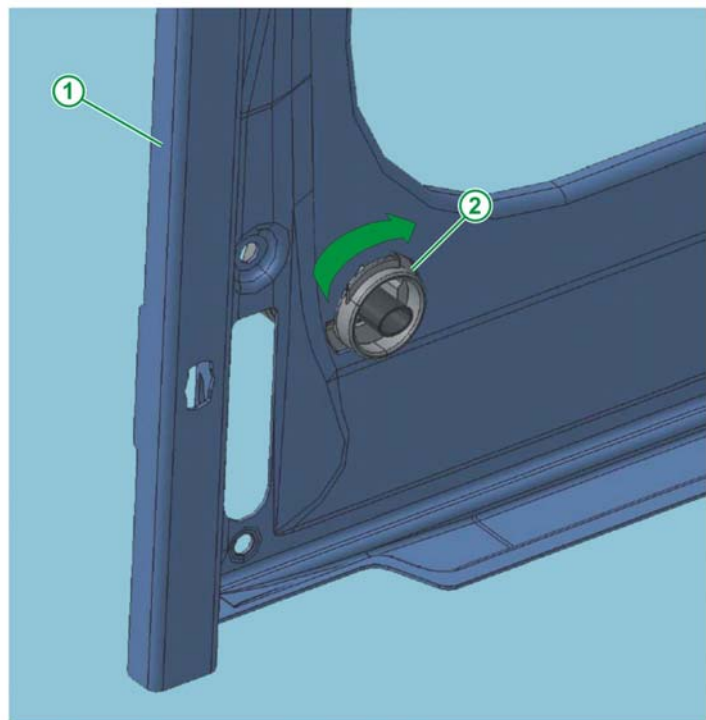
1 - WATER DRAIN VALVE
2 - OVEN FRONT PART



HDC02819.JPG

Fig. 76

1 - OVEN FRONT PART
2 - WATER DRAIN VALVE



HDC02820.JPG

2 - Remount the oven front part.

3 - Remount the water drain tube.

4 - Reconnect the silicone coupling to the water drain tube using the fixing clamp.

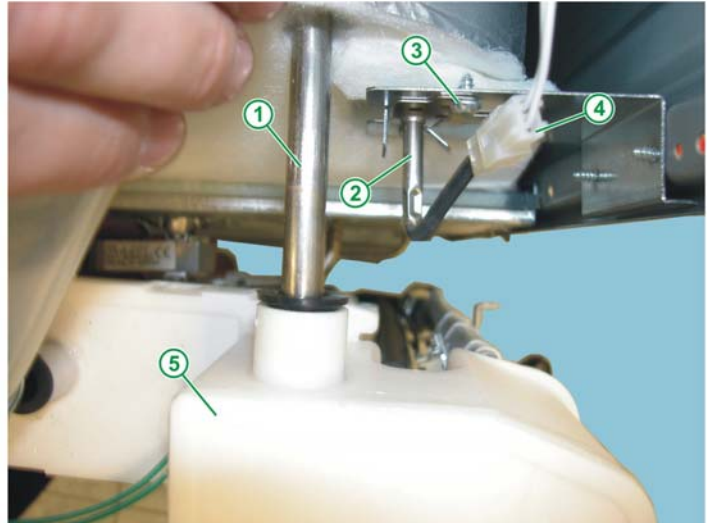
9.6 - ACCESS TO THE TEMPERATURE SENSOR (ELECTRONIC MODELS)

In electronic models, proceed as follows to access the temperature control sensor:

- 1 - Remove the reservoir + steam generator assembly as described in section 9.1.
- 2 - Detach the connector from the temperature sensor.
- 3 - Remove the screw which secures the sensor in position.
- 4 - Remove the sensor from its seat.

Fig. 77

1. STEAM OUTLET TUBE
2. PT500 TEMPERATURE SENSOR
3. SENSOR FIXING SCREW
4. TEMPERATURE SENSOR CONNECTOR
5. EXPANSION CHAMBER



HDC02778.JPG

9.7 - ACCESS TO THE CONVECTION FAN

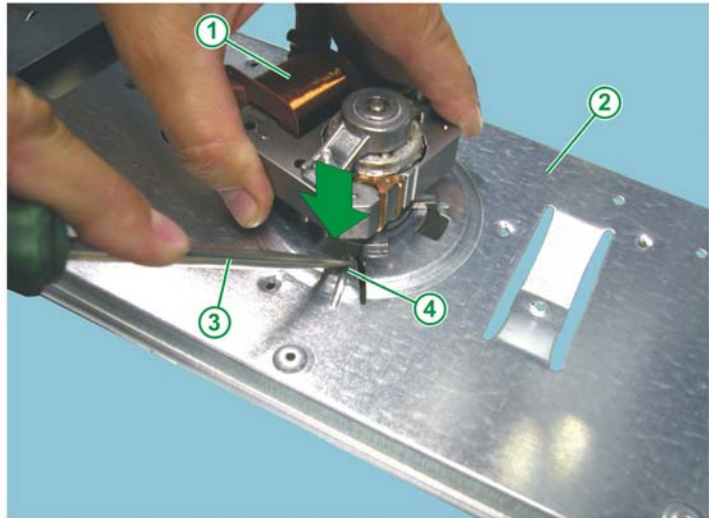
To remove the convection fan:

1 - Push the blocking tab of the motor using a screwdriver (see Fig. 78).

2 - Turn the motor clockwise and extract it (see Fig. 79 and 80).

Fig. 78

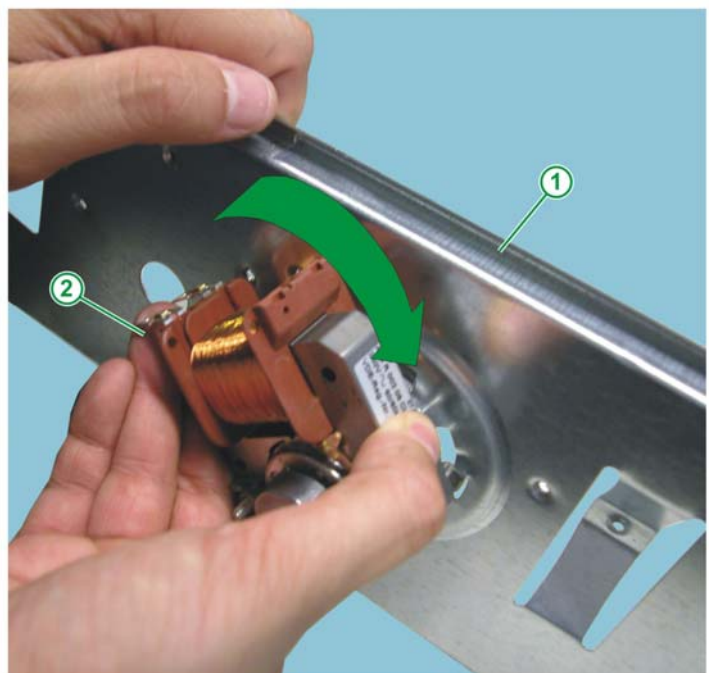
- 1 - CONVECTION FAN MOTOR
- 2 - MOTOR SUPPORT BRACKET POSITIONED IN THE REAR PART OF THE OVEN
- 3 - SCREWDRIVER
- 4 - BLOCKING TAB



HDC02828.JPG

Fig. 79

- 1 - MOTOR SUPPORT BRACKET POSITIONED IN THE REAR PART OF THE OVEN
- 2 - CONVECTION FAN MOTOR



HDC02824.JPG

Fig. 80

- 1 - MOTOR SUPPORT BRACKET POSITIONED IN THE REAR PART OF THE OVEN
- 2 - CONVECTION FAN MOTOR



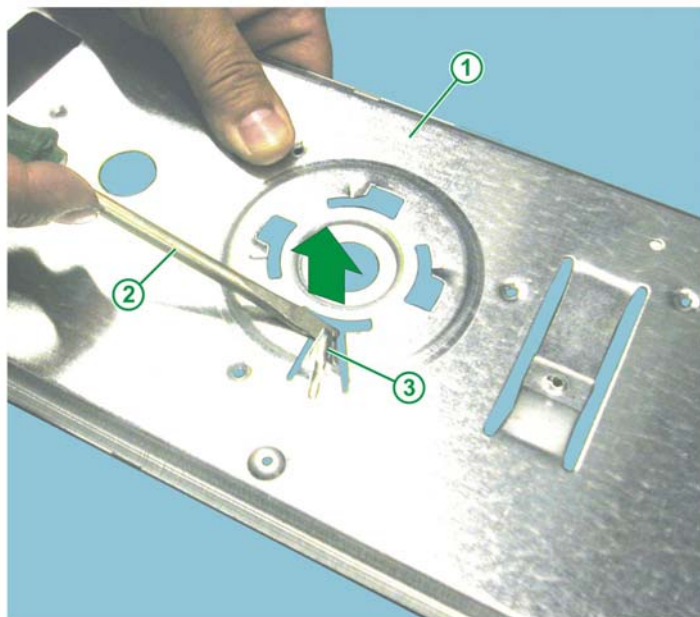
HDC02825.JPG

To remount the convection fan:

- 1 - Reposition the tab correctly rising it up with a screwdriver (see Fig. 81).

Fig. 81

- 1 - MOTOR SUPPORT BRACKET POSITIONED IN THE REAR PART OF THE OVEN
- 2 - SCREWDRIVER
- 3 - BLOCKING TAB

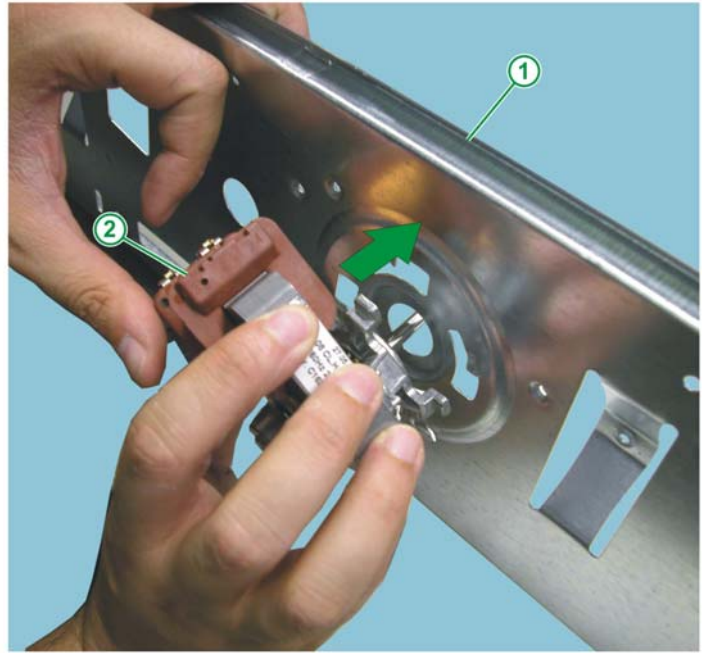


HDC02829.JPG

- 2 - Insert the motor into the motor support bracket matching the motor tabs to the proper fixing apertures (see Fig. 82).

Fig. 82

- 1 - MOTOR SUPPORT BRACKET POSITIONED IN THE REAR PART OF THE OVEN
- 2 - CONVECTION FAN MOTOR

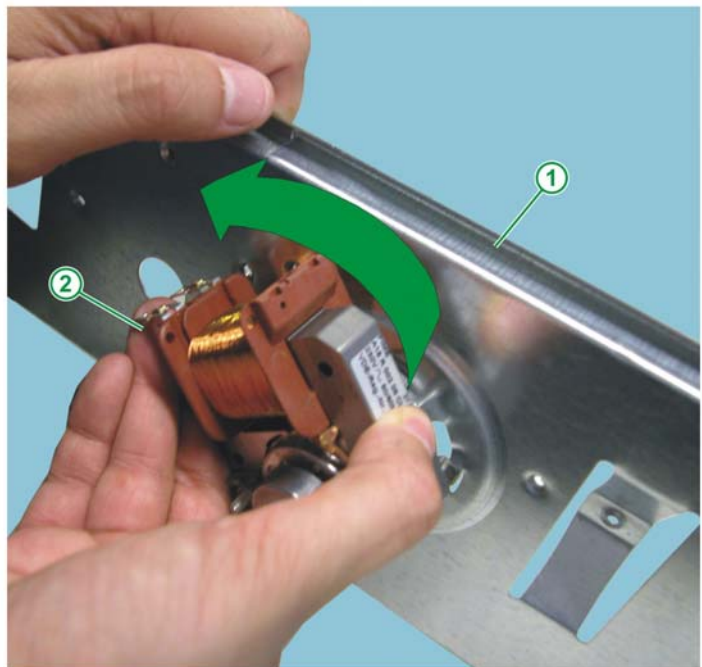


HDC02826.JPG

- 3 - Turn the motor anti-clockwise to block it (see Fig. 83).

Fig. 83

- 1 - MOTOR SUPPORT BRACKET POSITIONED IN THE REAR PART OF THE OVEN
- 2 - CONVECTION FAN MOTOR



HDC02827.JPG