Electrolux Distriparts

SERVICE MANUAL

COOKING

Built-in ovens

THEORETICAL DESCRIPTION OF THE KRONOS SYSTEM

© ELECTROLUX HOME PRODUCTS
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1 - INTRODUCTION

1.1 - PURPOSE OF THIS MANUAL

The purpose of this Manual is to provide a general theoretical overview of the new KRONOS system.
This new system comprises different hardware and software versions, depending on the type of application (e.g. normal oven, steam oven, pyrolytic oven). This Manual contains all the general functional and theoretical information; for a description of the specific functions and characteristics, a series of specific Manuals will be issued.

1.2 - ESD

Electrostatic Discharge and its effect on the components

The interface for the control unit is not fitted with an internal device to protect against electrostatic discharge (multiple connectors - see drawings on pp. 19, 20 and 21). When effecting repairs, therefore, the service engineer must check for stabilization of the potential on the oven casing (i.e. discharge any static electricity by touching the oven casing) in order to prevent the possibility of overload, which might damage the control unit.
The same care is necessary when handling control units supplied as spare parts (i.e. not yet fitted to the oven), which must be removed from the protective bag in ESD only after stabilizing the potential (i.e. discharging any static electricity) and only then installed in the appliance.
Important: The theory behind the process of electrostatic charge and discharge is not discussed in this Manual, since the tangible effects are considered to be more important. However, the effects are felt frequently when touching a metal handle and feeling the electrostatic discharge in the form of a minor shock.
But what happens when stabilization of the potential takes place with semi-conductor components (i.e. components on a circuit board, such as integrated circuits, microprocessors etc.)?
Stabilization of the potential takes place across the internal structure of the component. This does not necessarily lead to the immediate destruction of the component; subsequent malfunctions across damaged internal connections may be more harmful, and these occur only as a result of overheating or current overloads.
It is true that almost all sensitive semi-conductor components (such as MOS circuits) have been improved by the addition of protective measures, but the internal structures of these components are today smaller than, for example, ten years ago, which tends to increase their sensitivity to the previous levels.

Important!

Which components are susceptible to damage by static electricity during repairs?
All circuit boards featuring accessible control and command connections (door switches, food probes etc.), bare tracks and microprocessors, as well as any other circuits with free access.

Examples:

- Programmers with accessible connections for the food probe and the door switch.
- Programmers whose control processors are accessible (due to their high costs, the protective systems are only partial).
- W.O.E.C. control units.
- S.O.E.C. control units.
- C.H.E.C. control units.
- KRONOS control units.

2 - DESCRIPTION OF THE KRONOS SYSTEM

2.1 - INTRODUCTION

KRONOS is an integrated control system for ovens. The system consists of an electronic programmer, which is controlled by a programmable microprocessor (via a customized programme). This enables the user to select the type of heating element, the cooking temperature, the cooking time and the cooking programmes (recipes) pre-programmed for particular cooking methods. The system also features multilingual text messages, as well as error codes that are displayed in the event of a malfunction in order to facilitate the identification of the fault.

2.2 - BASIC BLOCK DIAGRAM

The system comprises a series of components, and may be represented as shown in Fig. 1 below.
The system's control logic (hardware and software) is contained in the control unit.
The system features control buttons, a display and a buzzer.
The power board directly controls the high-power loads (heating elements) via relays, and the low-power loads (fans and oven lamps) via triacs.
The sensors (oven sensor and meat probe, if featured) transmit the data relative to the various temperatures to the system, thus ensuring that the operation of the appliance is controlled correctly.

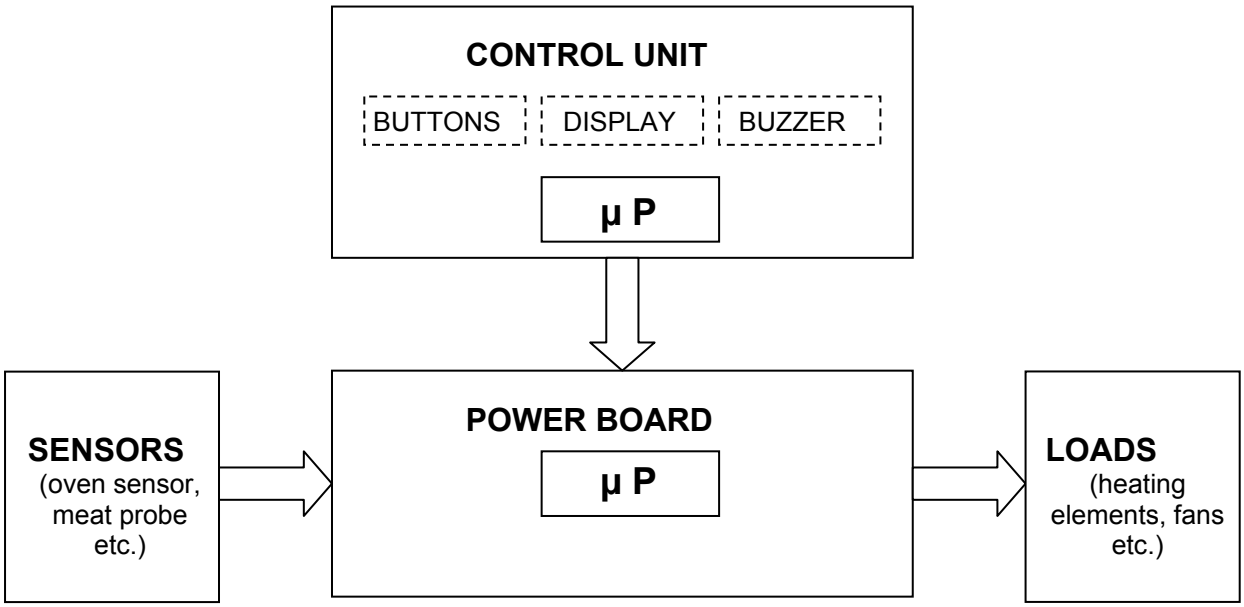


Fig. 1

The diagram in Fig. 2 represents the system as a whole, including the external units for the development of the software and for programming (these operations are performed during production).
It may be observed that external interfaces are possible on certain models to meet styling requirements.

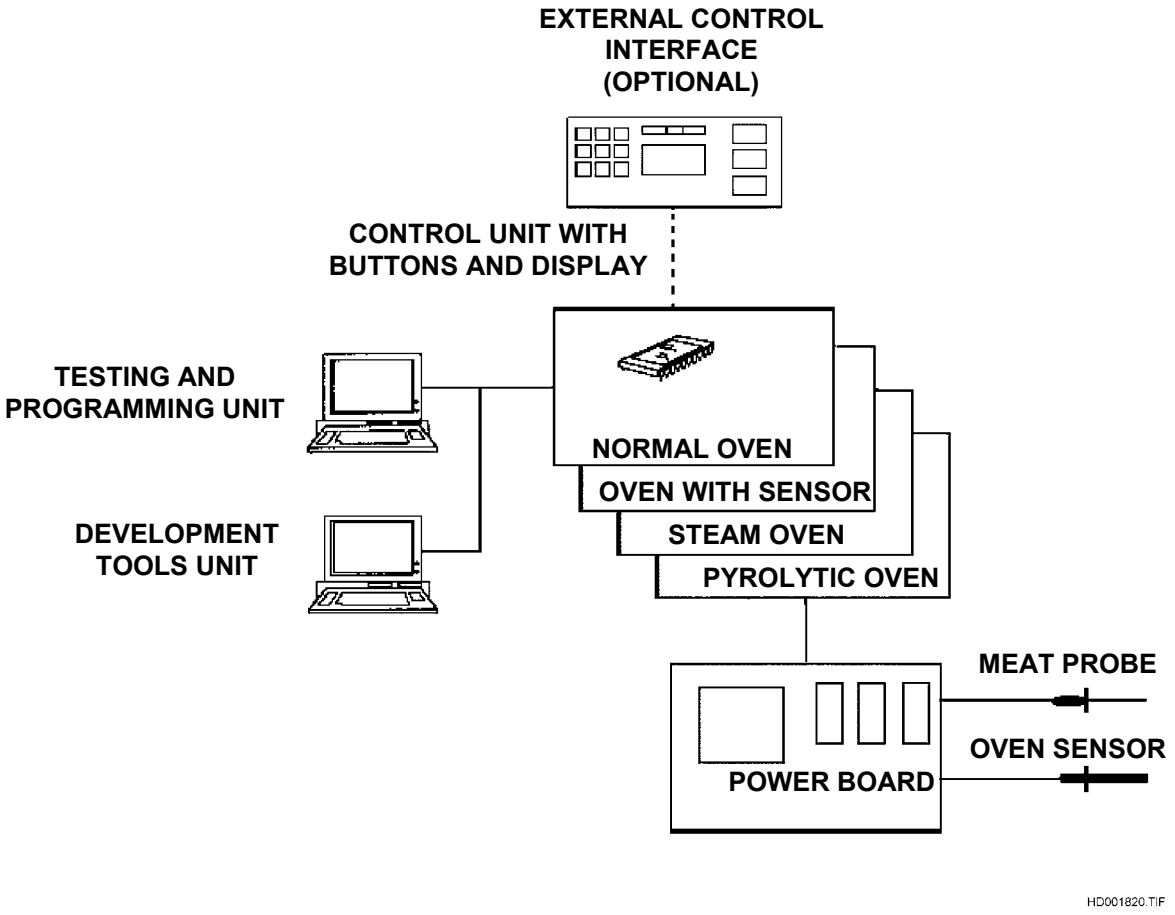


Fig. 2

2.3 - CUSTOMIZED VERSIONS

The flexibility of the hardware-software system makes it possible to produce numerous applications with different levels of performance and complexity.

2.3.1 - THREE LEVELS FOR THE CONTROL UNIT

This control system consists of three levels in which the complexity varies according to the control unit used.

LEVEL 1 CONTROL UNIT

Main functions:

- Function selection by rotary selector.
- Programmable cooking.
- Selection of the temperature.
- Single LCD display indicating the cooking symbols

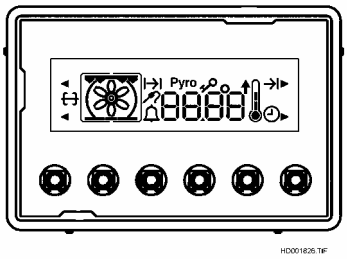


Fig. 3

LEVEL 2 CONTROL UNIT

Main functions:

- Sequential function selection with indication on the display.
- Selection of the temperature.
- Programmable cooking.
- Cooking with meat probe.
- Single LCD display indicating the cooking symbols.
- Rapid heating.
- Demo function.
- Autodiagnostics and error codes.

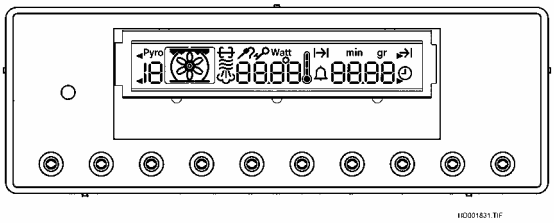


Fig. 4

LEVEL 3 CONTROL UNIT

Main functions:

- Sequential function selection with indication on the display.
- Selection of the temperature.
- Programmable cooking.
- Cooking with meat probe.
- Dual LCD display with text and symbols.
- Recipes.
- Rapid heating.
- Demo function.
- Autodiagnostics and error codes.

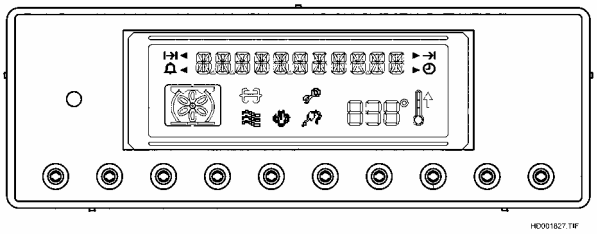


Fig. 5

2.3.2 - FOUR TYPES OF OVEN

The various control unit levels can be applied to different types of product:

Normal oven
Oven with meat probe
Steam oven
Pyrolytic oven

2.4 - VARIOUS APPLICATIONS

2.4.1 - NORMAL OVEN

Depending on the models, these types of ovens may feature any of the three levels of control unit. This gives the following possible combinations:

Normal oven with level 1 control unit (LCD display with symbols and rotary selector)
Normal oven with level 2 control unit (LCD display with symbols)
Normal oven with level 3 control unit (dual display with symbols and text)

2.4.1.1 - NORMAL OVEN WITH LEVEL 1 CONTROL UNIT

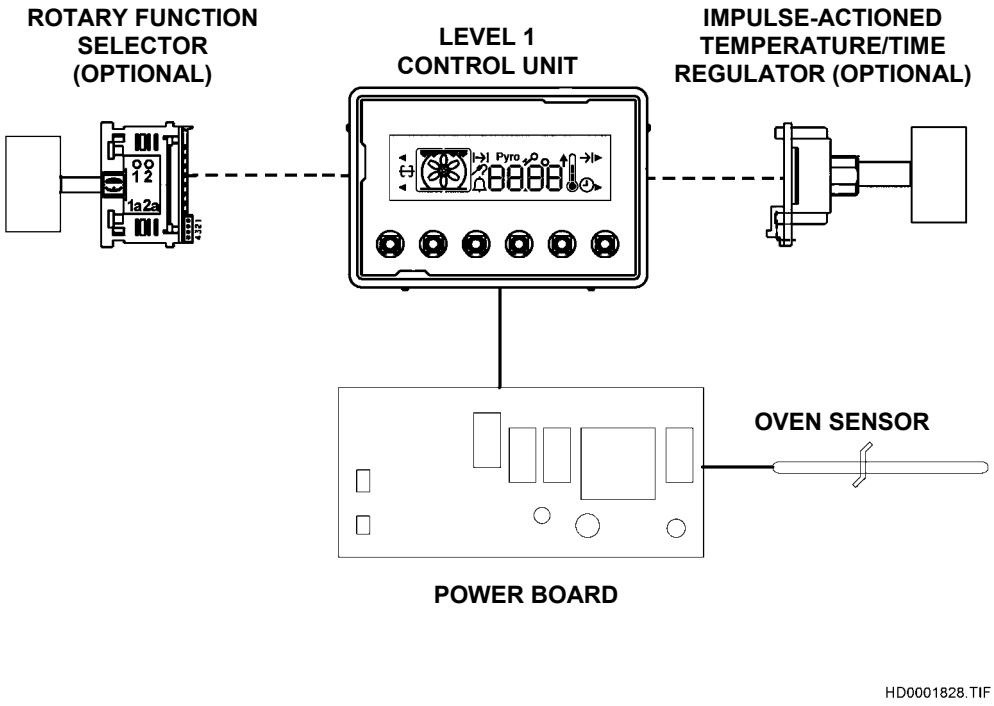


Fig. 6

2.4.1.2 - NORMAL OVEN WITH LEVEL 2 CONTROL UNIT

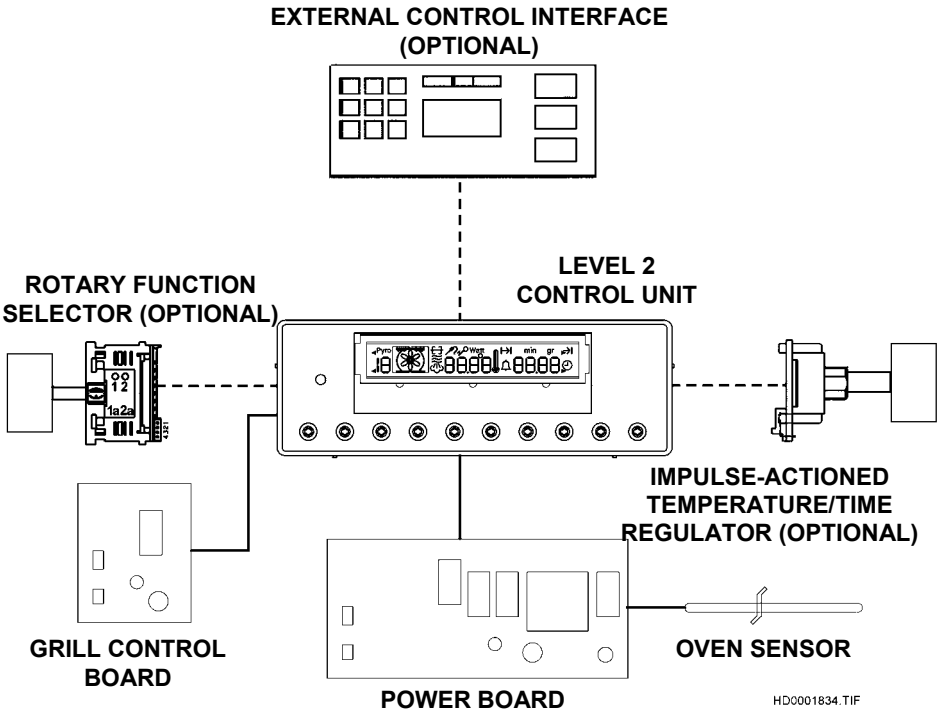


Fig. 7

2.4.1.3 - NORMAL OVEN WITH LEVEL 3 CONTROL UNIT

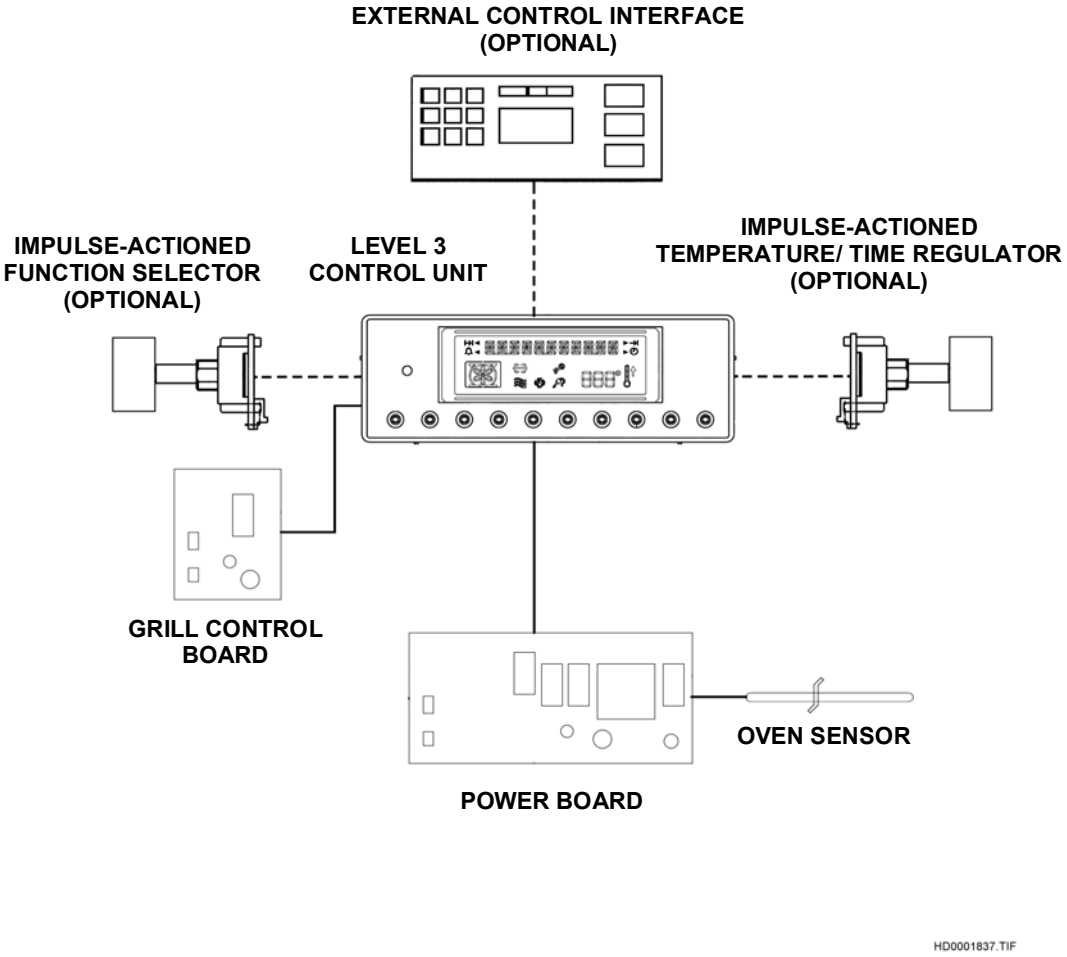


Fig. 8

2.4.2 - OVEN WITH MEAT PROBE

Depending on the models, these types of ovens may feature any of the three levels of control unit. This gives the following possible combinations:

Meat probe oven with level 1 control unit (LCD display with symbols)
Meat probe oven with level 2 control unit (LCD display with symbols)
Meat probe oven with level 3 control unit (Dual display with symbols and text)

2.4.2.1 - MEAT PROBE OVEN WITH LEVEL 1 CONTROL UNIT

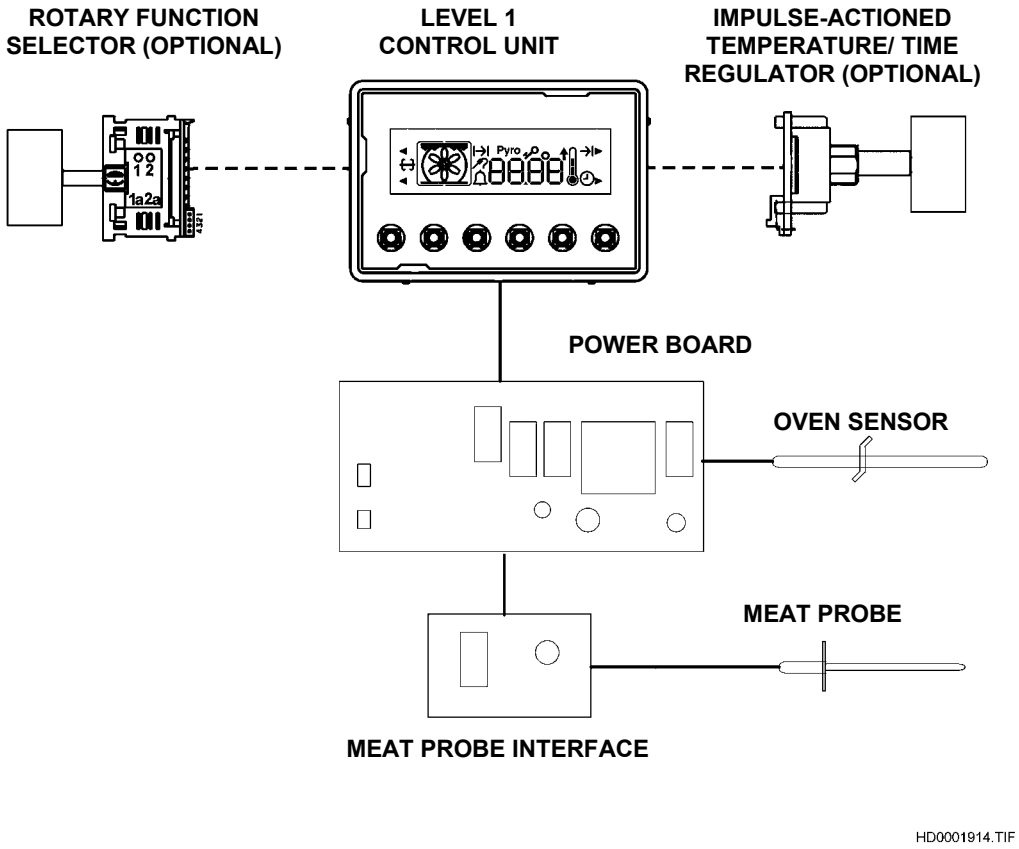


Fig. 9

2.4.2.2 - MEAT PROBE OVEN WITH LEVEL 2 CONTROL UNIT

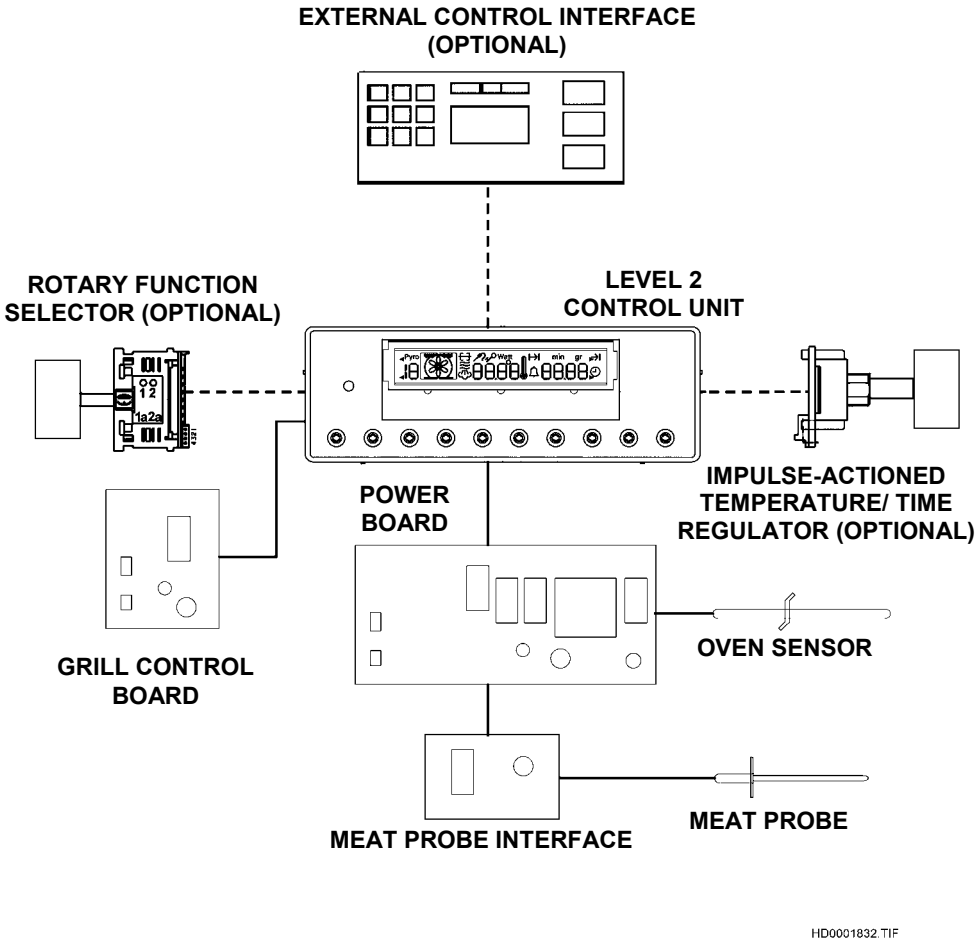


Fig. 10

2.4.2.3 - MEAT PROBE OVEN WITH LEVEL 3 CONTROL UNIT

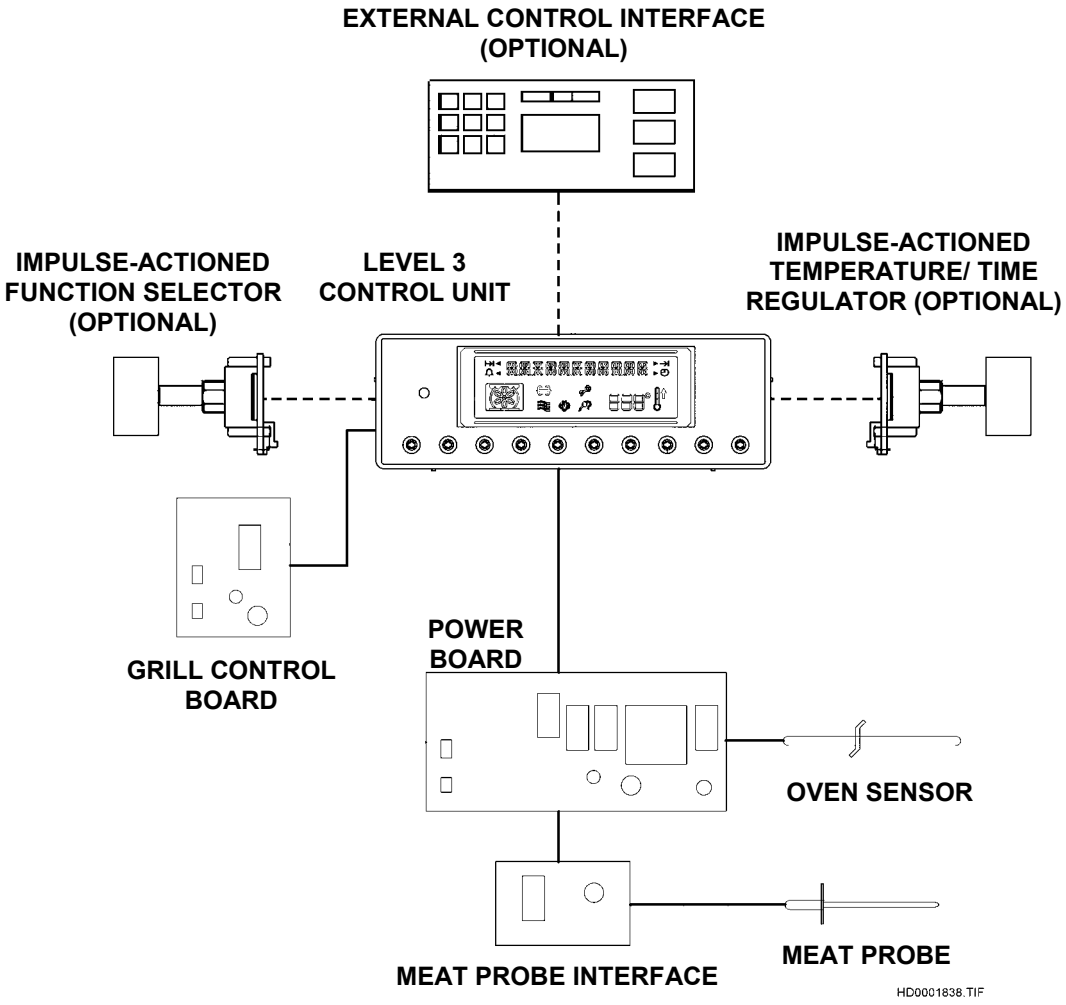


Fig. 11

2.4.3 - STEAM OVEN

In the case of steam ovens, level 2 or 3 control units can be fitted, depending on the model:

Steam oven with level 2 control unit (LCD display with symbols)
Steam oven with level 3 control unit (dual display with symbols and text)

2.4.3.1 - STEAM OVEN WITH LEVEL 2 CONTROL UNIT

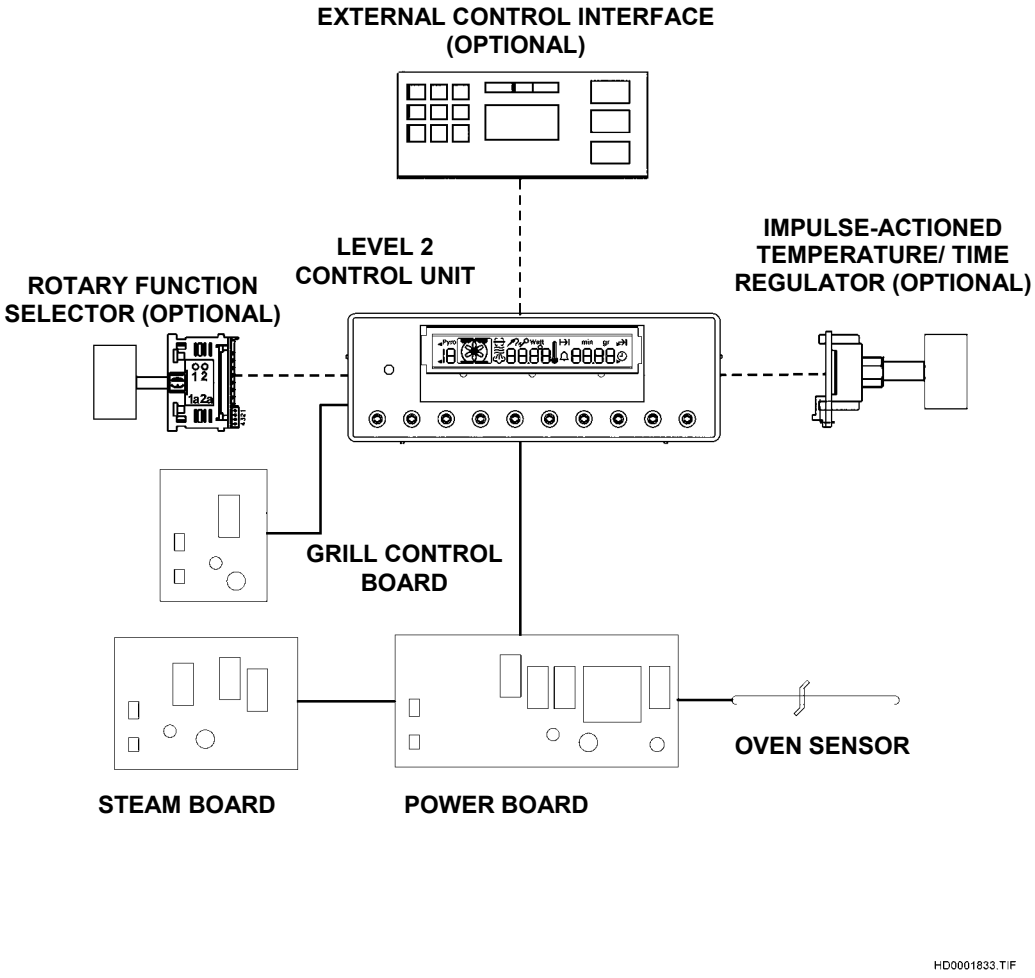


Fig. 12

2.4.3.2 - STEAM OVEN WITH LEVEL 3 CONTROL UNIT

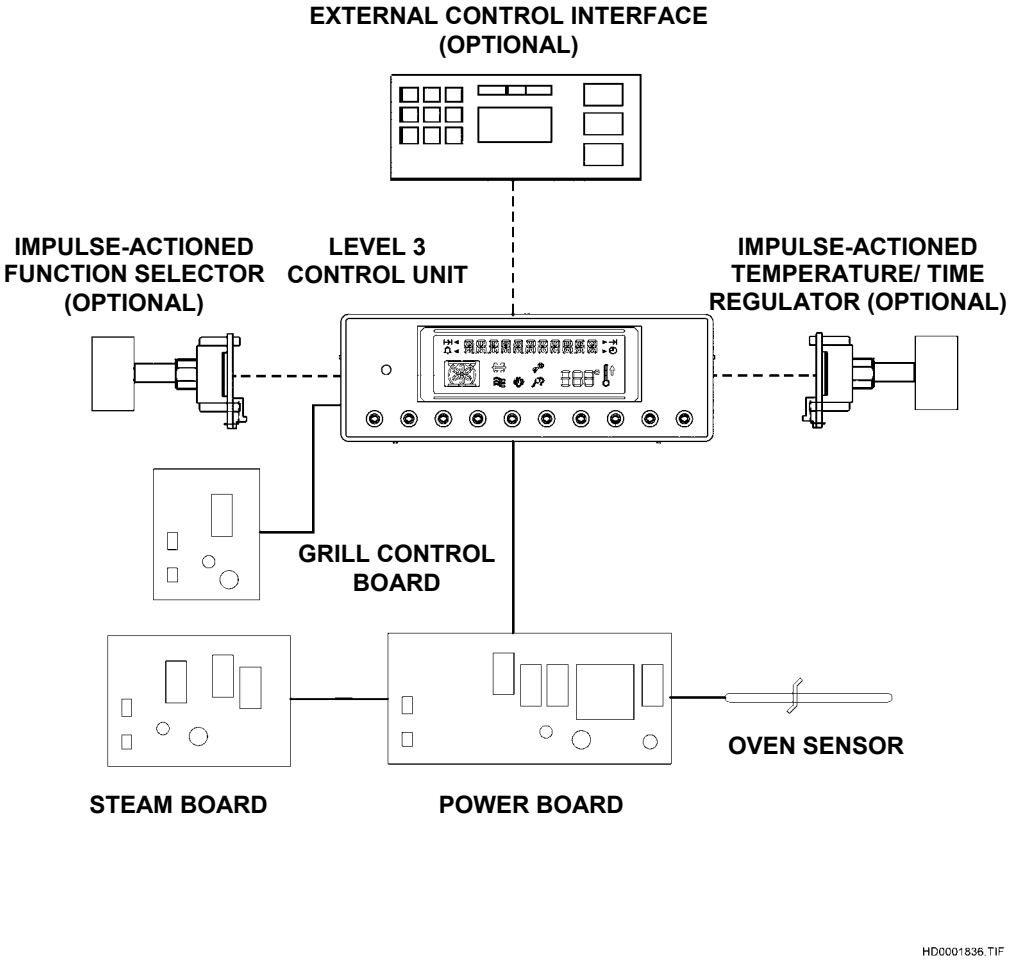


Fig. 13

2.4.4 - PYROLYTIC OVEN

Depending on the models, these types of ovens may feature any of the three levels of control unit. This gives the following possible combinations:

Pyrolytic oven with level 1 control unit (LCD display with symbols and rotary selector).
Pyrolytic oven with level 2 control unit (LCD display with symbols).
Pyrolytic oven with level 3 control unit (Dual display with symbols and text).

2.4.4.1 - PYROLYTIC OVEN WITH LEVEL 1 CONTROL UNIT

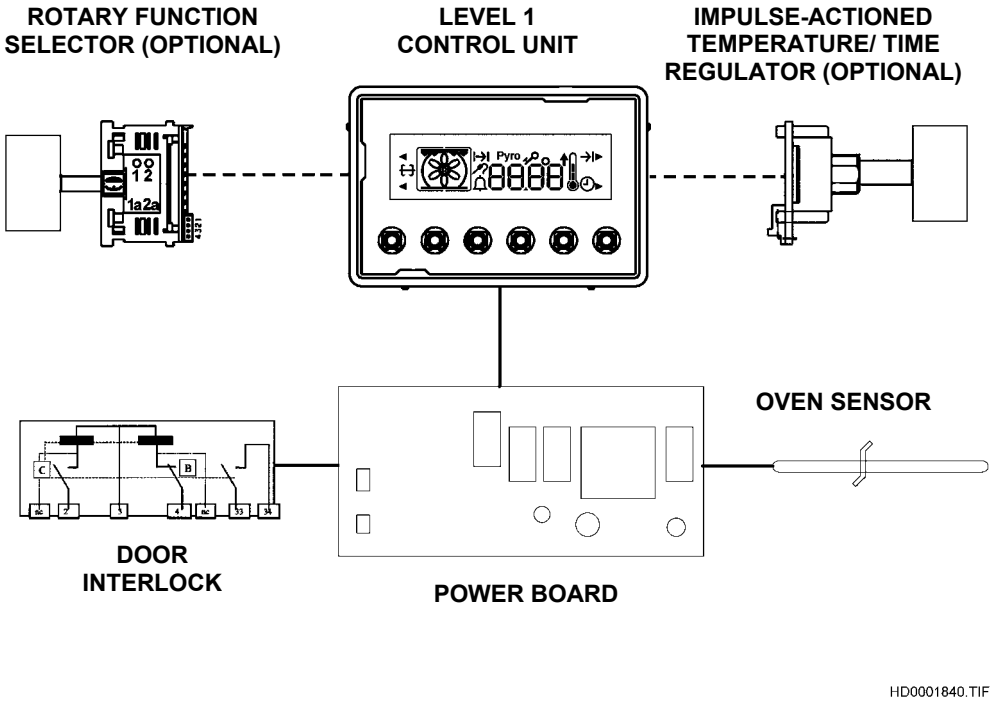


Fig. 14

2.4.4.2 - PYROLYTIC OVEN WITH LEVEL 2 CONTROL UNIT

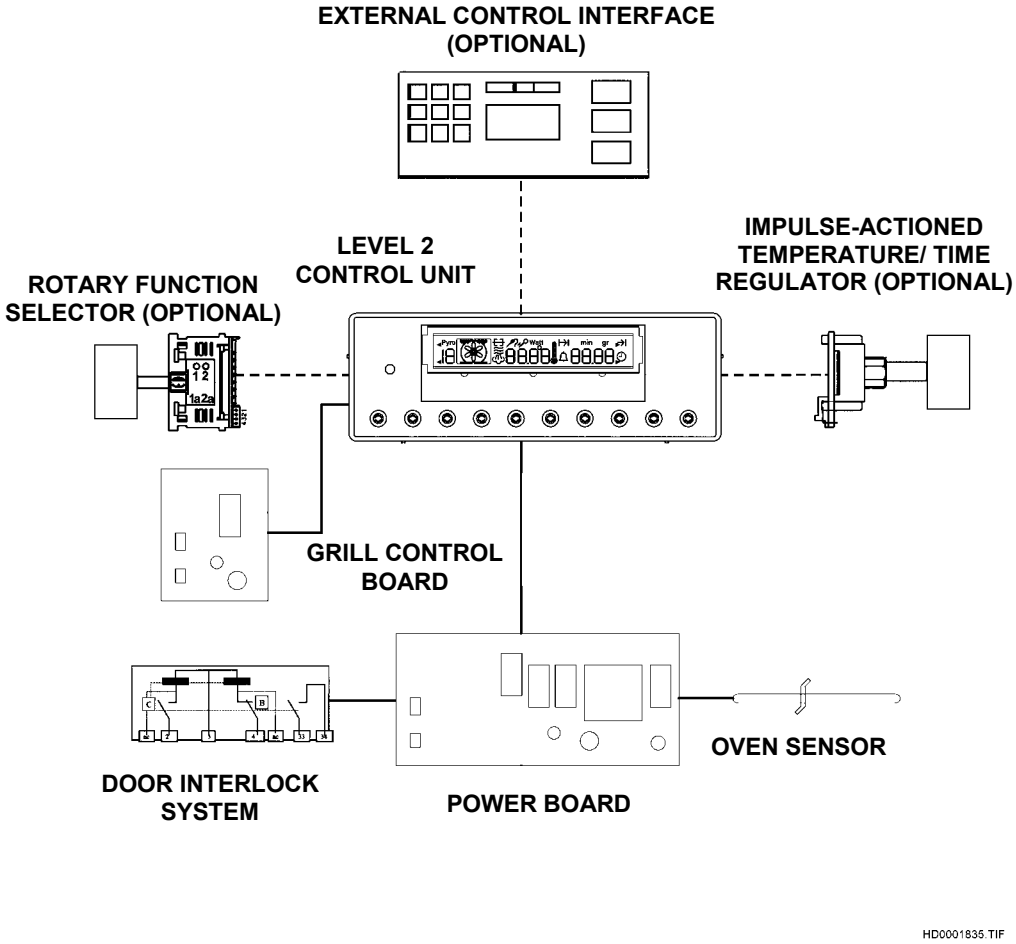


Fig. 15

2.4.4.3 - PYROLYTIC OVEN WITH LEVEL 3 CONTROL UNIT

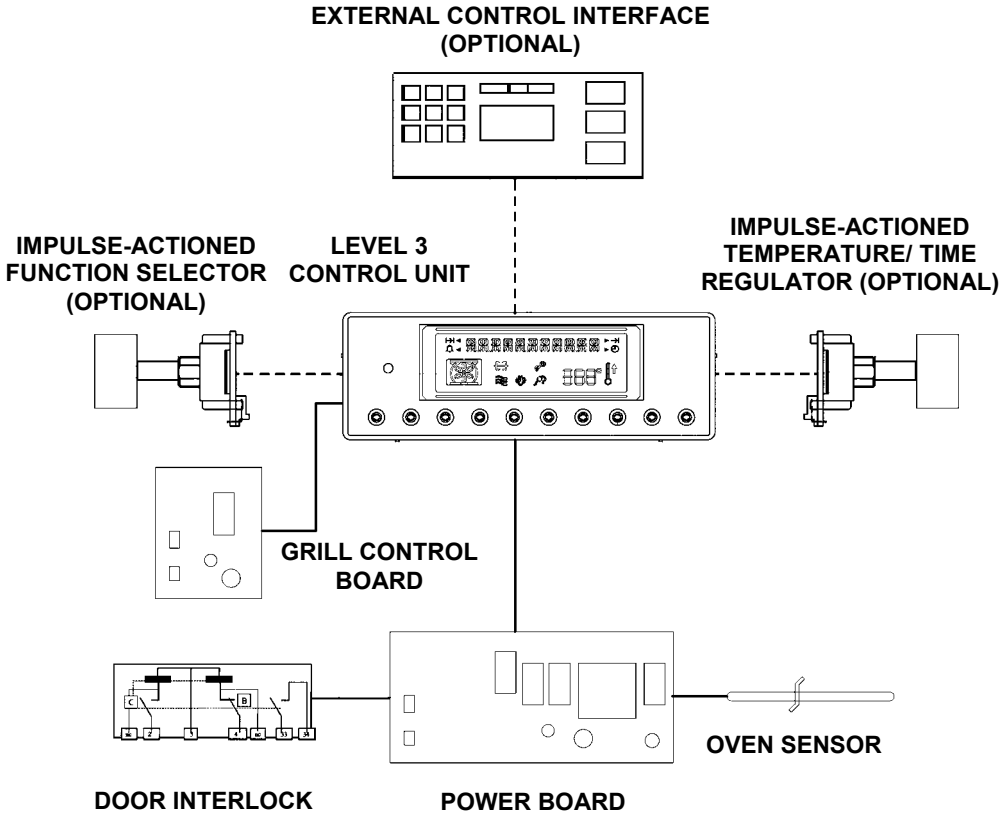


Fig. 16

2.5 - SUMMARY TABLE FOR THE VARIOUS APPLICATIONS

	TYPE OF OVEN			
CONTROL UNIT	**NORMAL OVEN**	**OVEN WITH MEAT PROBE**	**STEAM OVEN**	**PYROLYTIC OVEN**
LEVEL 1	Section 2.4.1.1	Section 2.4.2.1	--	Section 2.4.4.1
LEVEL 2	Section 2.4.1.2	Section 2.4.2.2	Section 2.4.3.1	Section 2.4.4.2
LEVEL 3	Section 2.4.1.3	Section 2.4.2.3	Section 2.4.3.2	Section 2.4.4.3

2.6 - CONTROL UNIT

The control unit contains a low-voltage board which includes logic circuits, a display and a buzzer. The unit is inserted into a plastic casing fitted to the front panel of the appliance.
This module is connected using connectors and wiring to the power board (relays and triacs).
The system memory contains information relative to the customization selected for the appliance to which the system is fitted.
A further feature is the system of autotesting and diagnostics used to identify possible faults and display the relative error codes; in certain cases, the functions may be disactivated.
The KRONOS system may be fitted with one of three types of control unit:

2.6.1 - LEVEL 1 CONTROL UNIT

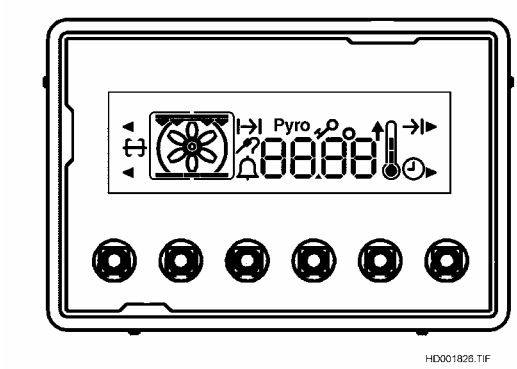


Fig. 17

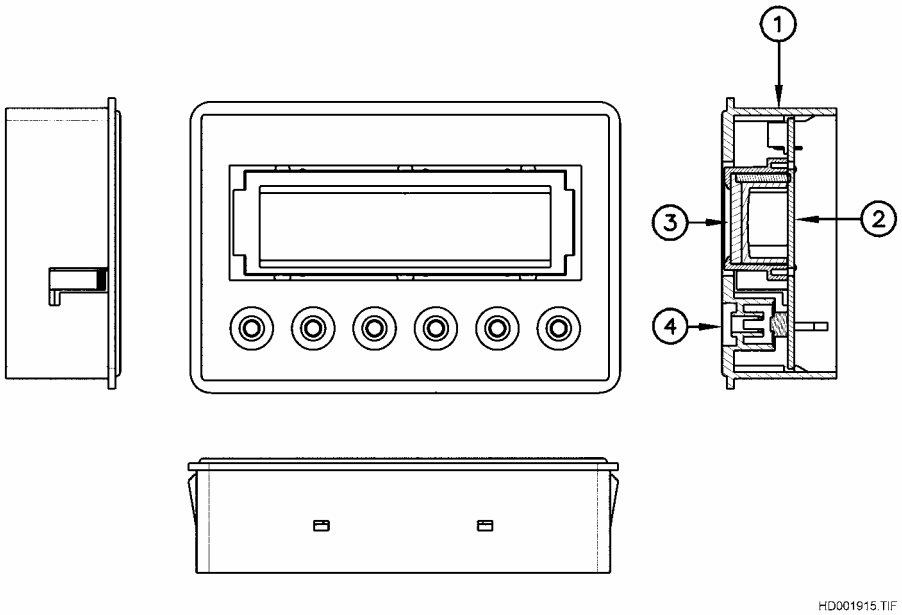


Fig. 18

1 - PLASTIC CASING
2 - BOARD FOR LEVEL 1 CONTROL UNIT
3 - DISPLAY
4 - BUTTONS

2.6.2 - LEVEL 2 CONTROL UNIT

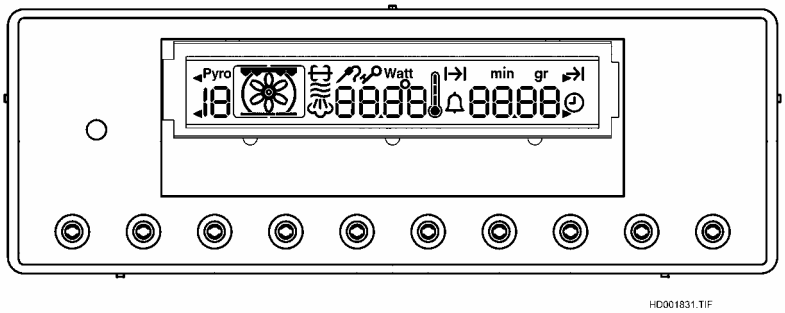
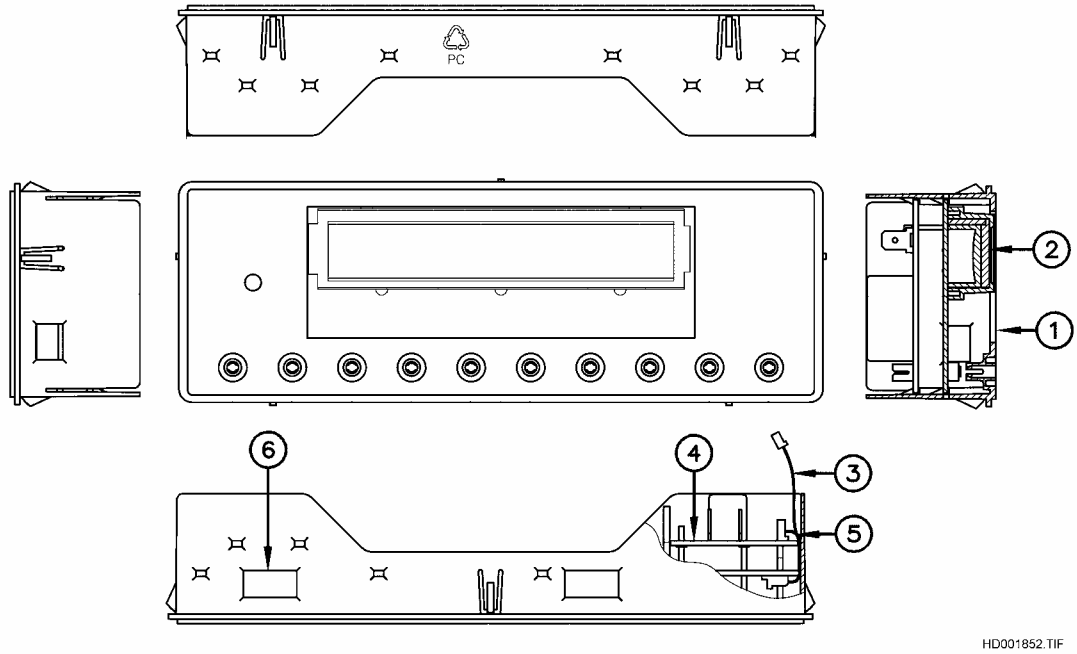


Fig. 19



1 - PLASTIC CASING
2 - BOARD FOR LEVEL 2 CONTROL UNIT
3 - CABLE FOR DISPLAY BOARD - 6-POLE POWER BOARD
4 - RELAY BOARD
5 - CABLE FOR DISPLAY BOARD - RELAY BOARD
6 - PROGRAMMING CONNECTOR

2.6.3 - LEVEL 3 CONTROL UNIT

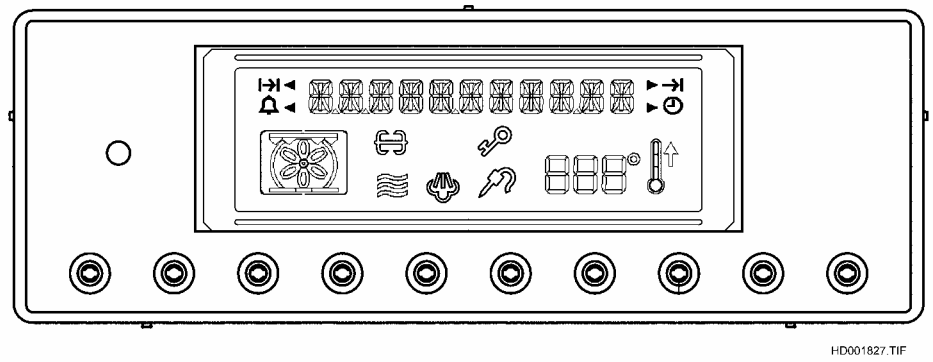


Fig. 21

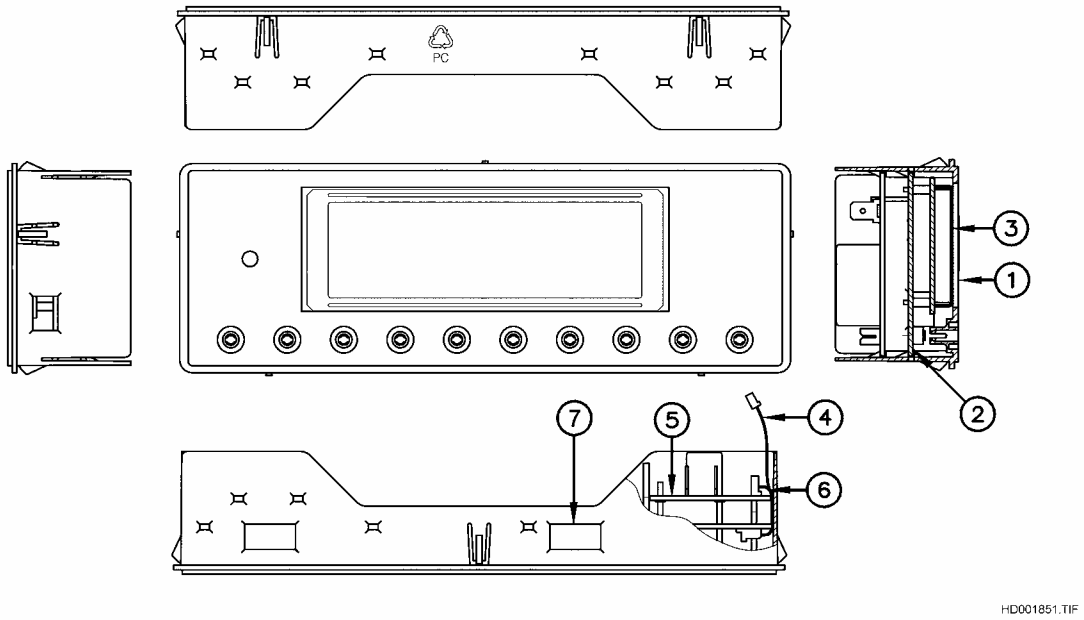


Fig. 22

1 - PLASTIC CASING
2 - BOARD FOR LEVEL 3 CONTROL UNIT
3 - DISPLAY WITH SYMBOLS AND TEXT (LEVEL 3)
4 - CABLE FOR DISPLAY BOARD - 6-POLE POWER BOARD
5 - RELAY BOARD
6 - CABLE FOR DISPLAY BOARD - RELAY BOARD
7 - PROGRAMMING CONNECTOR

2.7 - S.O.E.C. POWER BOARD (RELAYS AND TRIACS)

The function of the power board is to control the operation of the heating elements, the convection fan, the tangential cooling fan and the oven lamp according to the information received from the control/display board.
The power board comprises a power supply section (which also supplies low voltage to the control/display board), four relays which control the operation of the high-voltage components (heating elements). SP06 is a general safety relay, while SP35, SP30 and SP20 control the operation of the various heating elements according to the software customization applied to the various models. The board is also fitted with four triacs which control the low-voltage components (oven lamp, fans and spit).
All the functions of the board are controlled by an internal microprocessor.
The following components may also be connected to the power board: steam control board, meat probe interface and door interlock for the pyrolysis function.

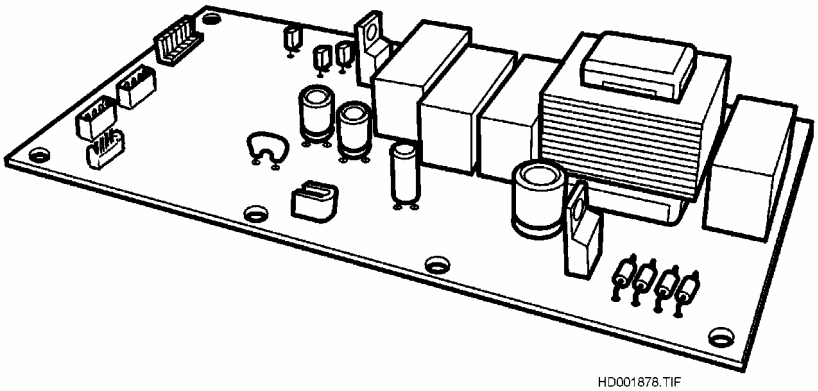


Fig. 23

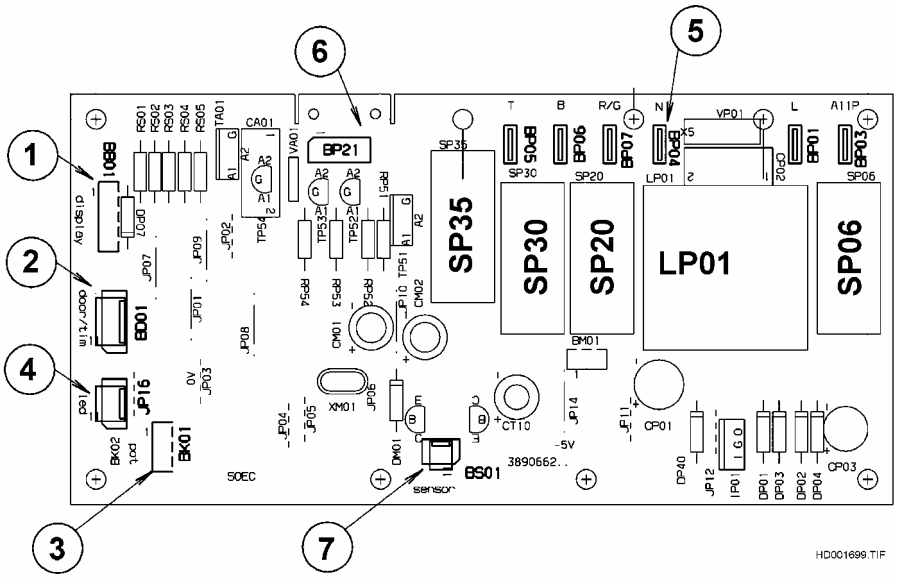


Fig. 24

1. DISPLAY BOARD CONNECTOR **BB01**
2. CONNECTION TO RELAY BOARD **BD01**
3. CONNECTOR **BK01**
4. CONNECTOR **JP16**
5. HIGH-VOLTAGE FASTON CONNECTORS
6. LOW-VOLTAGE USER COMPONENTS **BP21**
7. CONNECTION FOR TEMPERATURE SENSOR **BS01**

LP01 POWER TRANSFORMER
SP06 -SECOND-PHASE SAFETY RELAY
SP20 -HEATING ELEMENT RELAY (*)
SP30 -HEATING ELEMENT RELAY (*)
SP35 -HEATING ELEMENT RELAY (*)

(*) The components whose operation is controlled vary according to the application and the software installed (refer to the customization data).

2.8 - OVEN TEMPERATURE SENSOR

The SOEC system controls the temperature inside the oven by means of a temperature sensor fitted to a bracket. The support bracket is screwed to the interior of the oven cavity.
The sensor is a PT500 type with a platinum resistor, and provides the control board with the data necessary to perform the following functions:

- Cycling of the heating elements in order to reach the necessary oven temperature.
- Disconnection of the heating elements in the case of overheating or malfunction of the sensor.
- Delay in switching the cooling fan on and off.
- Detection of relay malfunctions.

The temperature sensor is encapsulated in a sealed metal casing, which must be connected to an earth wire.

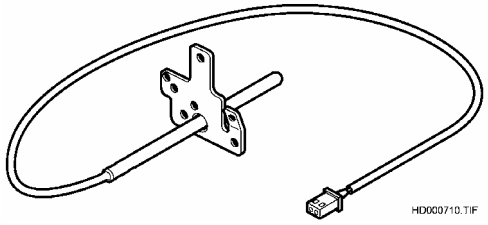


Fig. 25

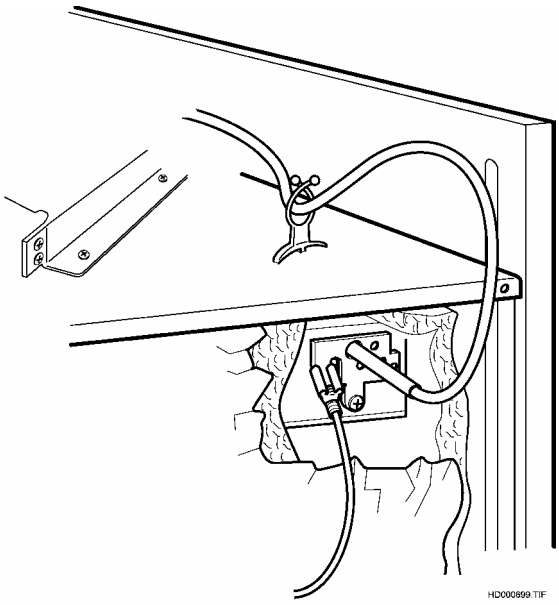


Fig. 26

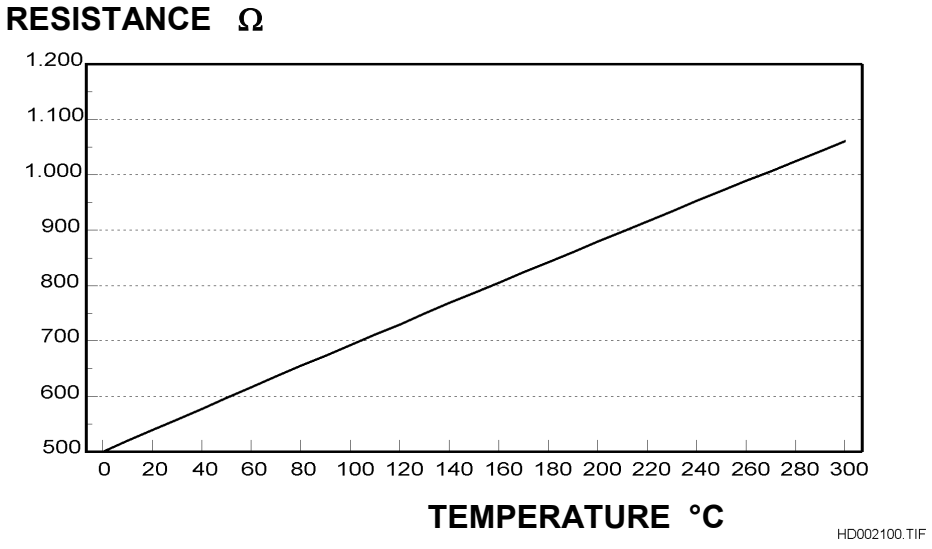


Fig. 27

3 - CONTROL PANEL

3.1 - CONTROLS - LEVEL 1 CONTROL UNIT

3.1.1 - CONTROL PANEL (LEVEL 1)

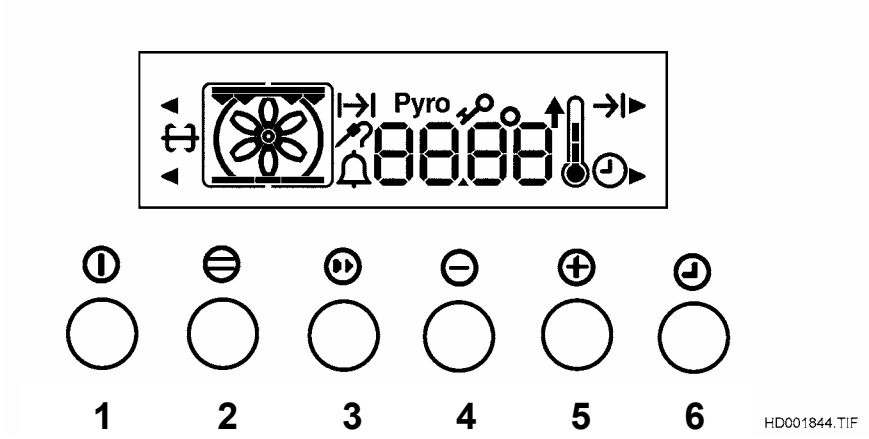


Fig. 28

3.1.2 - KEY FUNCTIONS

1 - ON/OFF key
Switches the oven ON and OFF

2 - FUNCTION key
Selects the cooking functions

3 - SPECIAL FUNCTIONS key
Selects the special cooking functions

4 - "-" key (back)
To decrease the temperature and time of day

5 - "+" key (forward)
To increase the temperature and time of day

6 - CLOCK key
Used to set the "minute-minder", "end of cooking", "cooking time" functions and the time of day.

3.1.3 - DESCRIPTION OF DISPLAY - LEVEL 1

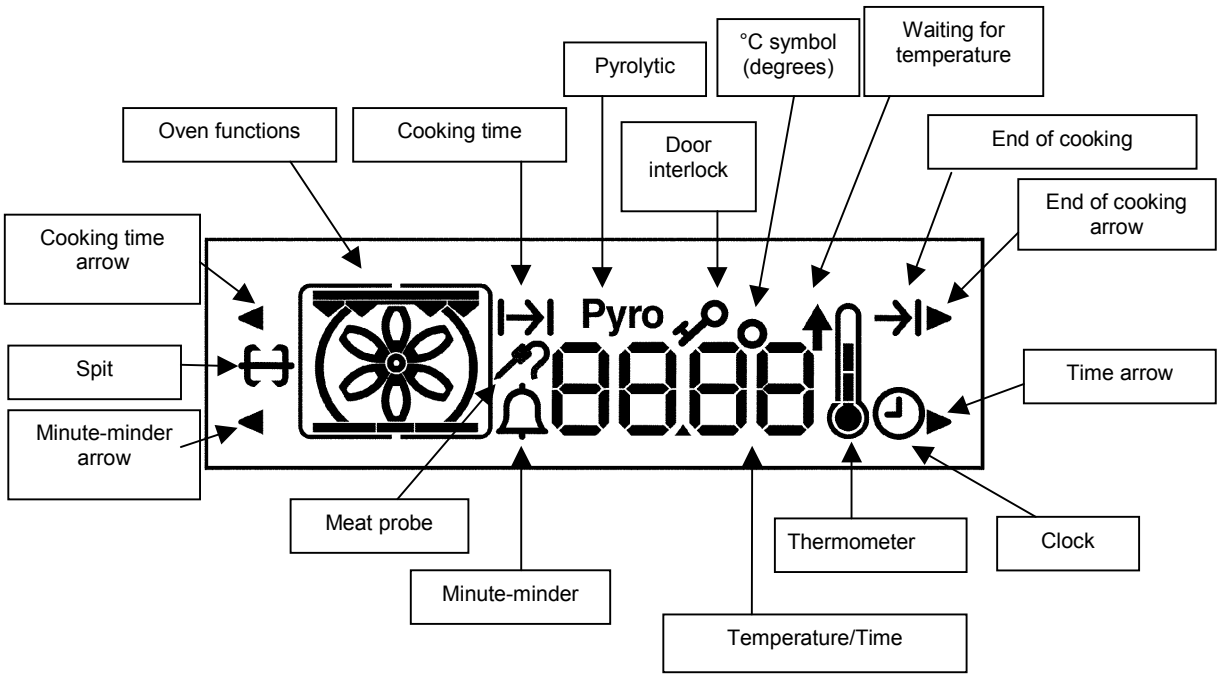


Fig. 29

3.2 - CONTROLS - LEVEL 2 CONTROL UNIT

3.2.1 - CONTROL PANEL (LEVEL 2)

The control panel shown in Fig. 30 refers to the standard version.

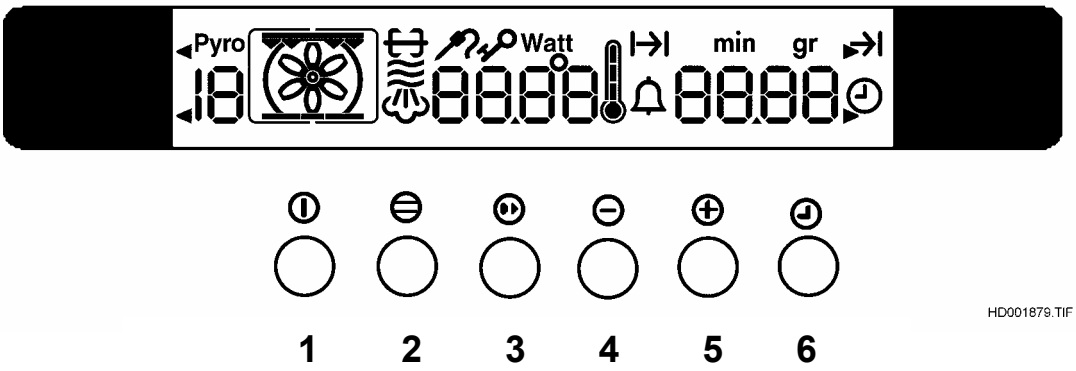


Fig. 30

3.2.2 - KEY FUNCTIONS

1 - ON/OFF key
Switches the oven ON and OFF

2 - FUNCTION key
Selects the cooking functions

3 - RAPID HEATING key
Heats the oven rapidly

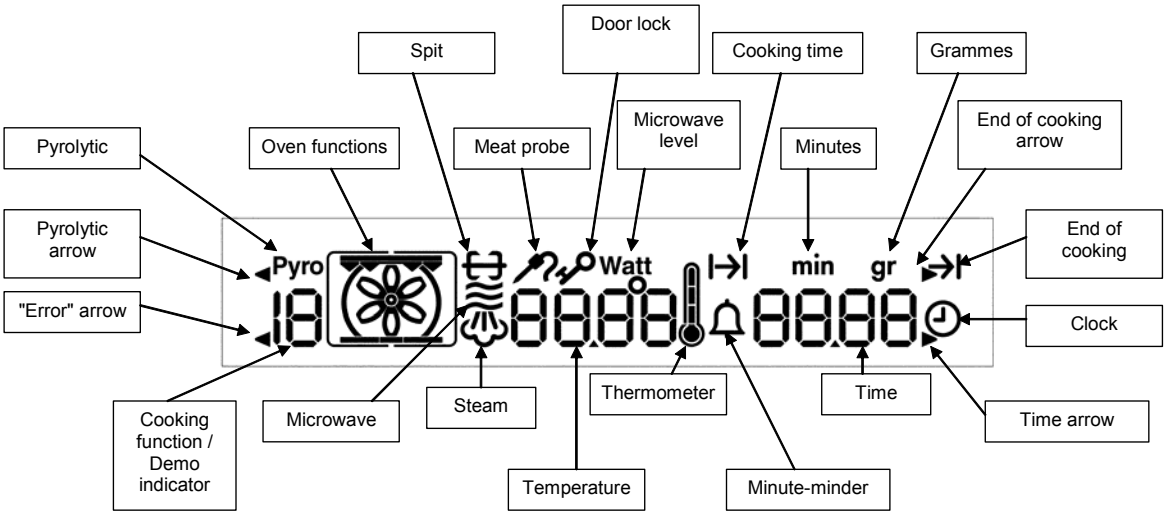
4 - "-" key (back)
To decrease the temperature and time of day

5 - "+" key (forward)
To increase the temperature and time of day

6 - CLOCK key
Used to set the "minute-minder", "end of cooking", "cooking time" functions and the time of day.

3.2.3 - DESCRIPTION OF DISPLAY - LEVEL 2

Figure 31 illustrates all the symbols used on the various appliances.
The positions of the keys and the symbols that are activated depend on the software customization (refer to section 5, page 63).



HD001845.TIF

Fig. 31

3.3 - CONTROLS - LEVEL 3 CONTROL UNIT

3.3.1 - CONTROL PANEL (LEVEL 3)

The control panel shown in Fig. 32 refers to the standard version.

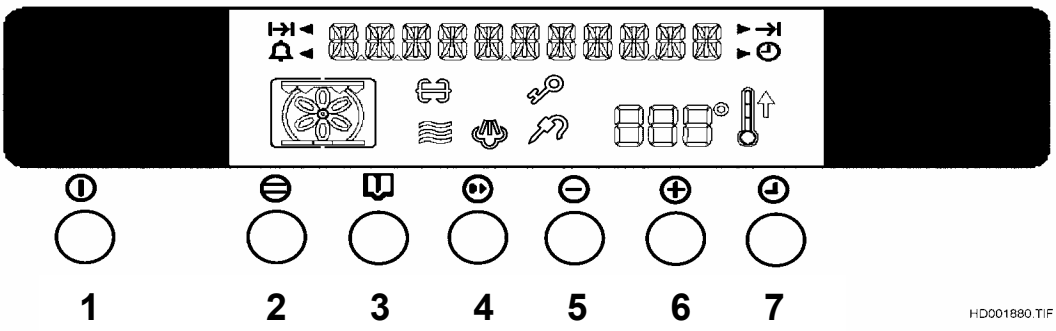


Fig. 32

3.3.2 - KEY FUNCTIONS

1 - ON/OFF key
Switches the oven ON and OFF

2 - FUNCTION key
Selects the cooking functions

3 - RECIPES key
Used to select the recipes

4 - RAPID HEATING key
Heats the oven rapidly

5 - "-" key (back)
To decrease the temperature and time of day

6 - "+" key (forward)
To increase the temperature and time of day

7 - CLOCK key
Used to set the "minute-minder", "end of cooking", "cooking time" functions and the time of day.

3.3.3 - DESCRIPTION OF DISPLAY - LEVEL 3

Figure 33 illustrates all the symbols used on the various appliances.
The positions of the keys and the symbols that are activated depend on the software customization (refer to section 5, page 70).

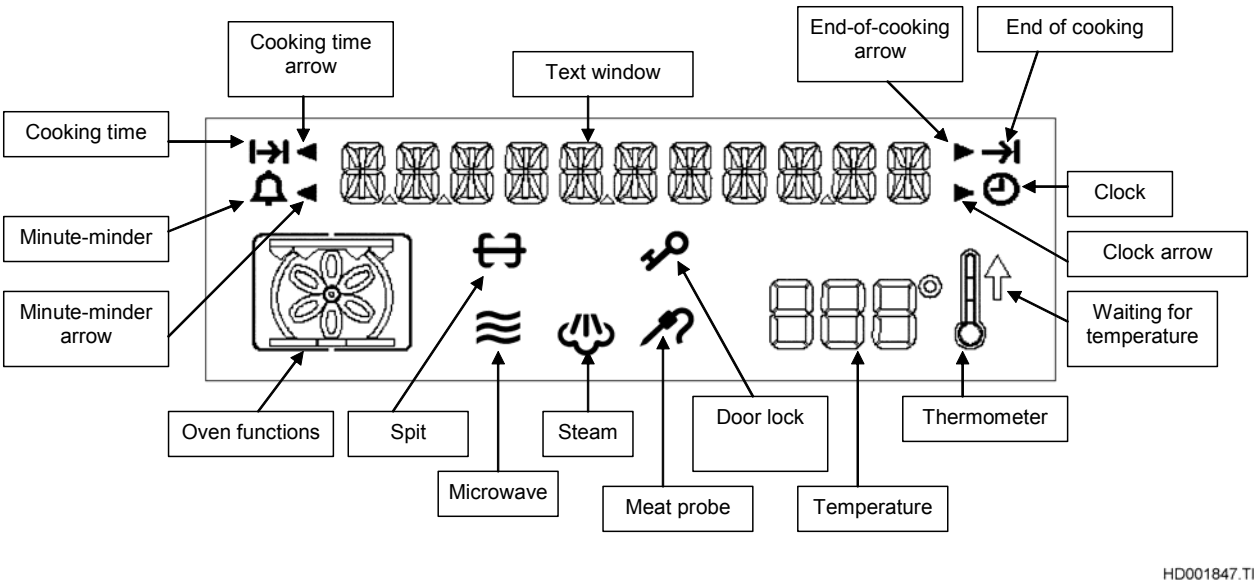


Fig. 33

4 - USING THE PROGRAMME SELECTOR (GENERAL)

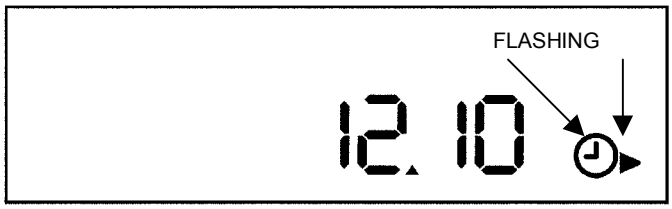
4.1 - USING THE PROGRAMME SELECTOR - LEVEL 1

4.1.1 - OPERATING THE OVEN FOR THE FIRST TIME

When the oven is switched on for the first time, or in the event of a power failure, it is necessary to enter the time of day.

4.1.1.1 - SETTING THE CORRECT TIME OF DAY

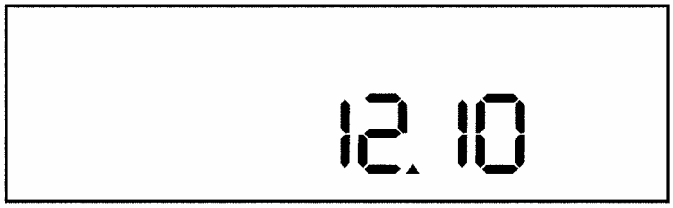
When the oven is switched on for the first time, or in the event of a power failure, the CLOCK symbol and the corresponding LED will flash.



HD001916.TIF

Fig. 34

Set the time of day by pressing "+" or "-" until the correct time is displayed.
Five seconds after the last modification, the TIME arrow switches off and the time setting is memorized.



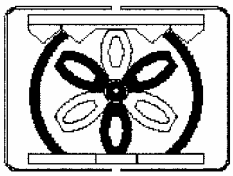
HD001917.TIF

Fig. 35

4.1.2 - COOKING FUNCTIONS

The normal oven features eight cooking functions which can be selected in the sequence described below:

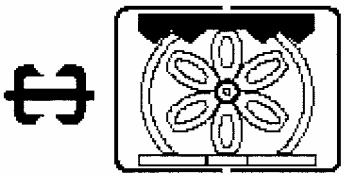
Fan cooking



Elements activated:
Oven lamp
Circular heating element
Convection fan

Pre-set temperature: 175 °C

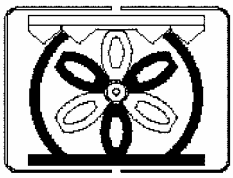
Grill with spit



Elements activated:
Oven lamp
Grill heating element
Spit

Pre-set temperature: 250 °C

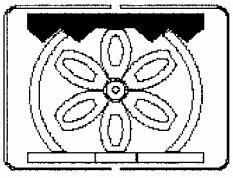
Pizza



Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan
N.B. In the Italian version, the lower and circular heating elements switch on alternately in order to save energy.

Pre-set temperature: 175 °C

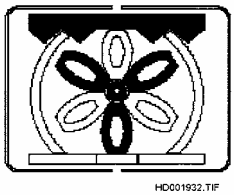
Large grill



Elements activated:
Oven lamp
Grill heating element
Upper heating element

Pre-set temperature: 250 °C

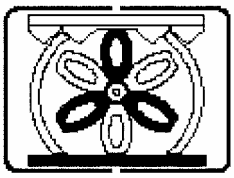
Grill + Fan



Elements activated:
Oven lamp
Grill heating element
Convection fan

Pre-set temperature: 180 °C

Fan with lower element



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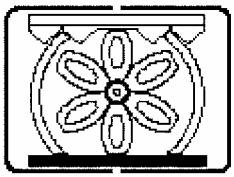
Elements activated:
Oven lamp
Convection fan
Lower heating element

Pre-set temperature: 200 °C

Lower element



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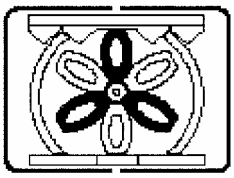
Elements activated:
Oven lamp
Lower heating element

Pre-set temperature: 250 °C

Defrosting



HD001934.TIF

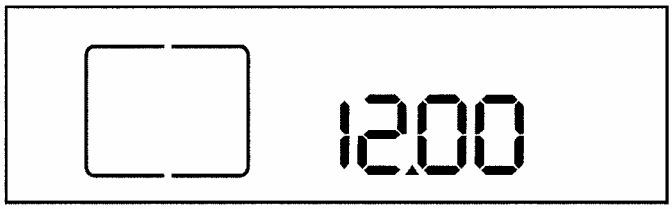
Elements activated:
Oven lamp
Convection fan

Pre-set temperature: 30 °C

4.1.3 - HOW TO SELECT A COOKING FUNCTION

To select a cooking function:

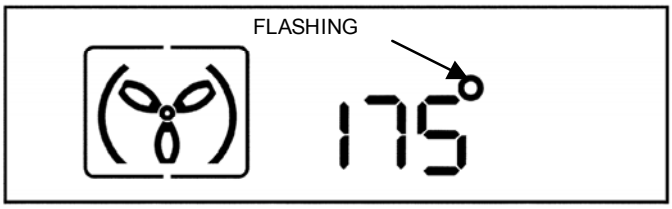
1. Press the ON/OFF button to switch on the oven.
- The oven lamp lights and the display shows:



HD001935.TIF

Fig. 36

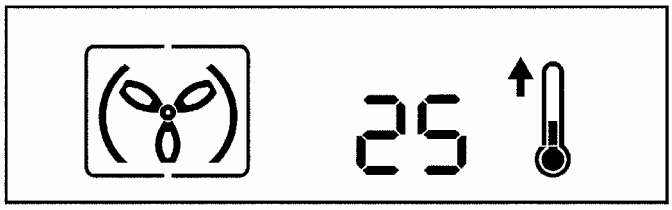
2. Press the "FUNCTION SELECTION" button and hold down until the desired cooking function is displayed. The functions are displayed sequentially.
- The suggested cooking temperature for the selected function flashes



HD001936.TIF

Fig. 37

- If the suggested temperature is not modified within 5 seconds, the oven begins the cooking cycle and the THERMOMETER symbol appears on the display.

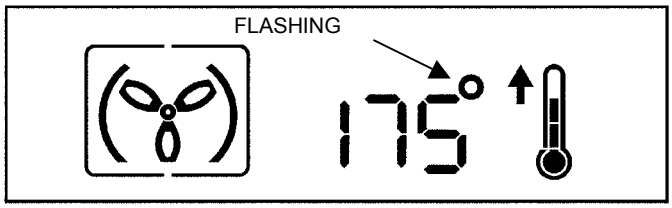


HD001937.TIF

Fig. 38

4.1.4 - HOW TO MODIFY THE TEMPERATURE OF THE OVEN

To modify the temperature of the oven, it is necessary to press the FUNCTIONS button and then "+" or "-" to increase or decrease the temperature, while the symbol "°" flashes on the display. Each modification increases or decreases the temperature by 5°C.

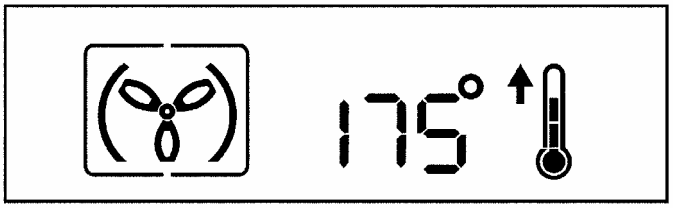


HD001938.TIF

Fig. 39

4.1.5 - THERMOMETER SYMBOL

- The THERMOMETER symbol increases gradually to indicate the increasing temperature inside the oven.



HD001938.TIF

Fig. 40

4.1.6 - HOW TO MODIFY THE COOKING FUNCTION

Press the FUNCTION selector button and hold down until the desired cooking function is displayed. The functions are displayed in sequence.

4.1.7 - HOW TO SWITCH OFF THE OVEN

To switch the oven off, press the ON/OFF button.

4.1.8 - COOLING FAN

The oven features a fan which cools the control panel, the knobs and the handle of the oven door.
To prevent overheating, this fan **continues to operate AFTER the oven has been switched off, until the temperature falls to a normal level.**

4.1.9 - CLOCK FUNCTIONS

The clock functions are as follows:

Time of day

This function can be entered only when the appliance is switched off, and is necessary when it is switched on for the first time or after a power failure (see section 4.2.1.1).

Cooking time

This function allows the user to enter the cooking time, at the end of which the oven will switch off automatically. A cooking time can be selected only if a cooking function has already been entered.

End of cooking

This function allows the user to set the time for the end of the cooking cycle, after which the oven will switch off automatically. The "end-of-cooking" time can be entered only if a cooking function has already been selected.

"Cooking time" + "End of cooking" function

By combining the "Cooking Time" and "End-of-cooking" functions, the user can programme cooking with a delayed start time, in which case the oven will switch on and off automatically.

Minute-minder

Used to select a timed countdown, which is shown on the display, at the end of which the buzzer sounds but the operation of the oven is not interrupted.

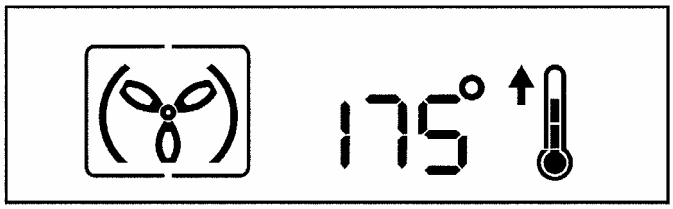
N.B.:

General suggestions

- When one of the CLOCK functions is selected, the corresponding arrow flashes for about five seconds. During this five-second period, the setting can be modified by pressing "+" or "-".
- After entering the desired setting, the arrow flashes for a further five seconds. At the end of this period, the arrow remains lit and the time entered is memorized.
- The minute-minder buzzer sounds at a frequency different from that of the cooking time signal.

4.1.9.1 - COOKING TIME

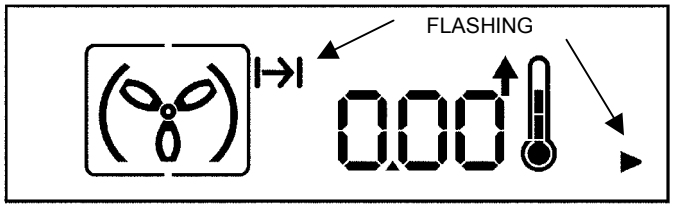
1. Select the cooking function and the temperature.



HD001938.TIF

Fig. 41

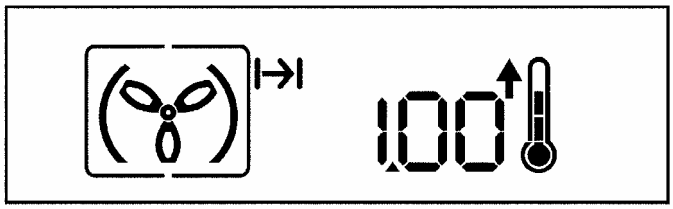
2. Press the CLOCK button repeatedly until the COOKING TIME symbol is displayed.



HD001939.TIF

Fig. 42

3. Select the cooking time by pressing "+" or "-" while the TIME arrow is flashing.



HD001940.TIF

Fig. 43

Five seconds after the last modification to the time, the arrow switches off.
When the time entered has elapsed, the buzzer will sound for one minute and the oven will switch off. The display will show the number "0.00", and the COOKING TIME symbol will flash.
Press any key to switch off the buzzer.
To display the temperature of the oven during the cooking time, press the CLOCK button until the temperature appears on the display.

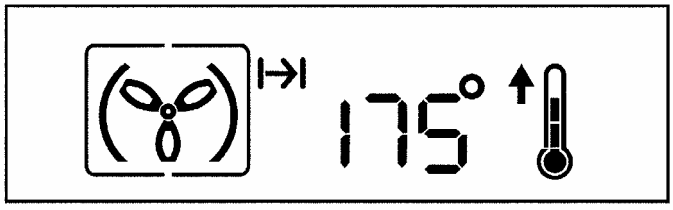


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Fig. 44

4.1.9.2 - END OF COOKING

To select the END OF COOKING function:

1. Select a cooking function and a temperature.

2. Press the CLOCK key repeatedly until the END OF COOKING symbol is displayed.

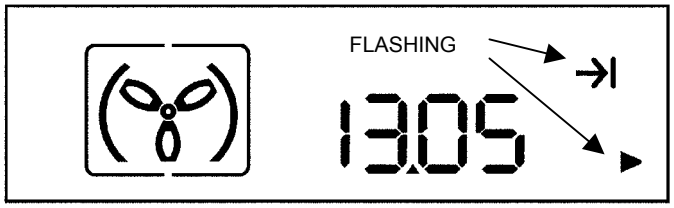


Fig. 45 HD001941.TIF

3. Select the end-of-cooking time by pressing "+" or "-" while the END OF COOKING arrow is flashing.

When the time entered has elapsed, the buzzer will sound for one minute and the oven will switch off. The display will show the number "0.00", and the END OF COOKING symbol will flash.
Press any key to switch off the buzzer.

4.1.9.3 - COMBINED OPERATION OF THE "COOKING TIME" AND "END OF COOKING" FUNCTIONS

The COOKING TIME and END OF COOKING functions can be used together to switch the oven on and off automatically after a certain time.

1. Select a cooking function and the desired temperature.
2. Using the COOKING TIME function, select the desired cooking time (e.g. one hour).
3. Using the END OF COOKING function, enter the desired end-of-cooking time (e.g. 13:05).

The COOKING TIME and END OF COOKING arrows light.
The oven will switch on automatically at the time entered (in this case, at 12:05).
At the end of the programmed time, the buzzer will sound for one minute, after which the oven switches off automatically (in this case, at 13:05).

4.1.9.4 - MINUTE-MINDER

1 - Press the CLOCK key repeatedly until the MINUTE-MINDER symbol flashes.

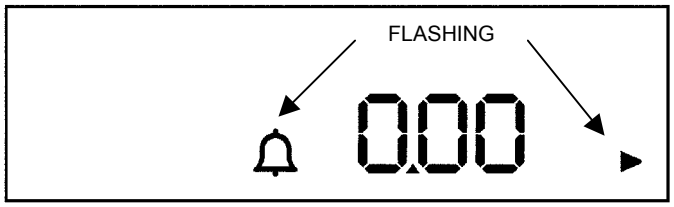
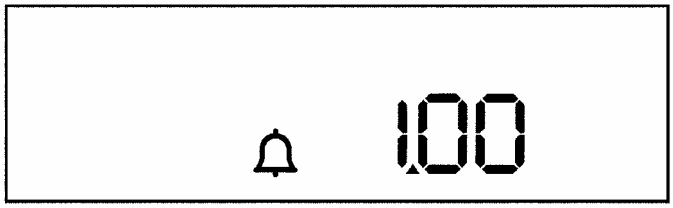


Fig. 46 HD001942.TIF

2 - Select the desired cooking time by pressing "+" or "-" while the MINUTE-MINDER arrow is flashing.



HD001943.TIF

Fig. 47

When the time entered has elapsed, the buzzer will sound for one minute. The display will show the number "0.00", and the MINUTE-MINDER symbol will flash.
Press any key to switch off the buzzer.

4.1.9.5 - PRIORITY FUNCTIONS
The COOKING TIME and END OF COOKING functions take priority over the others.
The MINUTE-MINDER display takes priority over the time of day.
Functions with lower priorities may be selected using the CLOCK key after a higher-priority function has been selected.
After pressing the key, the function with lower priority will be displayed for 20 seconds, after which the display will again show the function with the higher priority.

4.1.10 - AUXILIARY FUNCTIONS

4.1.10.1 - "CHILD SAFETY" FUNCTION
When the CHILD SAFETY function has been selected, the oven cannot be operated or switched on.

N.B.
The CHILD SAFETY function disactivates the oven only; the hob remains operative.

4.1.10.1.1 - Selecting the CHILD SAFETY function
1. If necessary, switch the oven **OFF** by pressing the ON/OFF key.
2. Press the FUNCTIONS and "-" keys simultaneously until "SAFE" is shown on the temperature display window. The oven is now inoperative.

Fig. 48

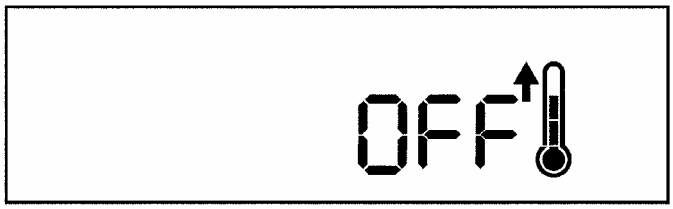
HD001944.TIF

- When the CHILD SAFETY function has been selected, only the CLOCK and MINUTE-MINDER functions can be utilized.

4.1.10.1.2 - Disactivating the CHILD SAFETY function:
Press the FUNCTIONS and "-" keys simultaneously until "SAFE" is no longer shown on the temperature display window.
The oven is now operative.

4.1.10.2 - SAFETY SWITCH-OFF FUNCTION

The oven switches off automatically if it is not switched off manually after a certain time or if the temperature is not modified.
In this case, the display shows "OFF" and the buzzer sounds.



HD001945.TIF

Fig. 49

The oven switches off automatically at the temperatures shown below:

30 - 120° C	after 19,59 hours
120 - 200° C	after 8.5 hours
200 - 250° C	after 5.5 hours
250 - 280° C	after 1.5 hours

4.1.10.3 - "BEEP" WHEN A KEY IS PRESSED

The "beep" signal can be activated to sound whenever a key is pressed.
The oven is switched off, no cooking programme has been selected, and the time of day is shown on the display.

- Press the FUNCTIONS key and "+" for two seconds. The unit will emit a "beep". In the default setting, the system does NOT emit the "beep".
- To reset the function, repeat the procedure described above.

4.1.10.4 - "RESIDUAL HEAT" FUNCTION

For every cooking function selected, the heating elements switch off shortly before the cooking time has elapsed.
This feature is designed to exploit the residual heat inside the oven, thus completing the cooking cycle without wasting energy.
This function is completely automatic. The switch-off time is calculated automatically by the system according to the time and temperature selected by the user for the cycle.
This function is operative only for programmed cooking times of more than 15 minutes, and anticipates the end-of-cooking time by a maximum of 20 minutes.

4.2 - USING THE PROGRAMME SELECTOR - LEVEL 2

4.2.1 - OPERATING THE OVEN FOR THE FIRST TIME

When the oven is switched on for the first time, or in the event of a power failure, it is necessary to enter the time of day.

4.2.1.1 - SETTING THE CORRECT TIME OF DAY

When the oven is switched on for the first time, or in the event of a power failure, the CLOCK symbol and the corresponding LED will flash.

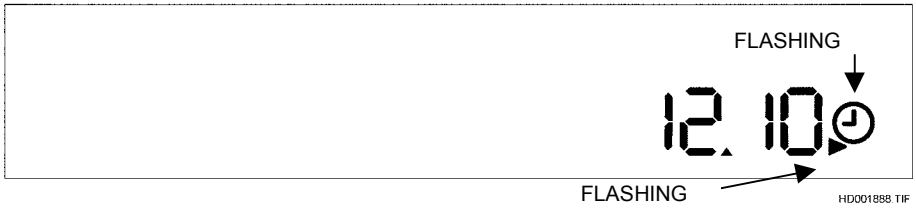


Fig. 50

Set the time of day by pressing "+" or "-" until the correct time is displayed.
Five seconds after the last modification, the TIME arrow switches off and the time setting is memorized.

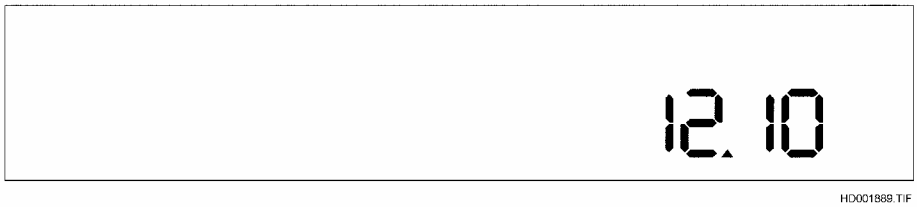
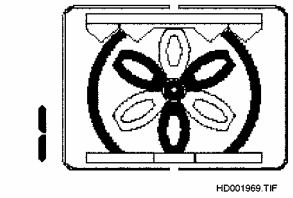


Fig. 51

4.2.2 - COOKING FUNCTIONS

The normal oven features nine (or ten) cooking functions which can be selected in the sequence described below:

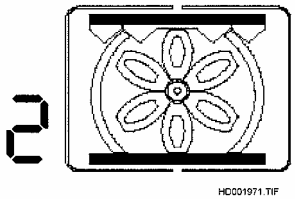
Fan cooking



Elements activated:
Oven lamp
Circular heating element
Convection fan

Pre-set temperature: 175 °C

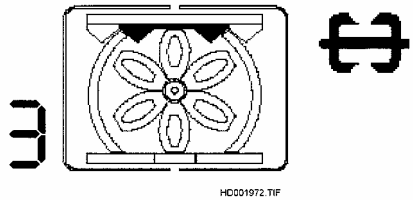
Traditional cooking



Elements activated:
Oven lamp
Upper heating element
Lower heating element

Pre-set temperature: 200 °C

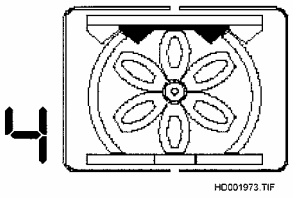
Grill with spit



Elements activated:
Oven lamp
Grill heating element
Spit

Pre-set temperature: 250 °C

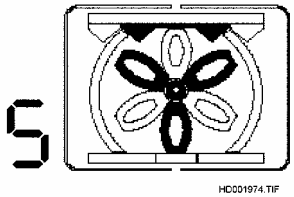
Grill



Elements activated:
Oven lamp
Grill heating element

Pre-set temperature: 250 °C

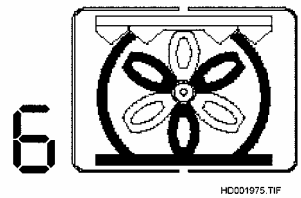
Grill + Fan



Elements activated:
Oven lamp
Grill heating element
Convection fan

Pre-set temperature: 180 °C

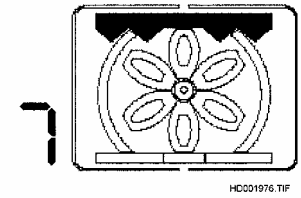
Pizza



Pre-set temperature: 175 °C

Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan
N.B. In the Italian version, the lower and circular heating elements switch on alternately in order to save energy.

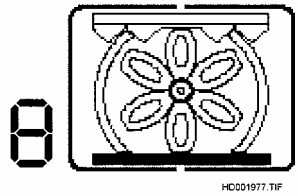
Large grill



Pre-set temperature: 250 °C

Elements activated:
Oven lamp
Grill heating element
Upper heating element

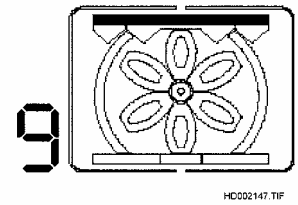
Oven bottom



Pre-set temperature: 250 °C

Elements activated:
Oven lamp
Lower heating element

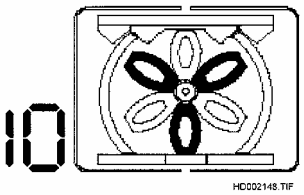
Oven top



Pre-set temperature: 250 °C

Elements activated:
Oven lamp
Upper heating element

Defrosting



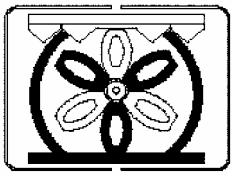
dEF

Pre-set temperature: 30 °C

Elements activated:
Oven lamp
Convection fan

SPECIAL FUNCTIONS

Rapid heating (European version)

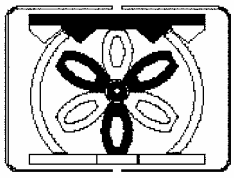


Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan

FHU

The figure illustrates the elements that are effectively in operation when the RAPID HEATING function has been selected, although the display indicates only the first function selected.

Rapid heating (Italian version)



Elements activated:
Oven lamp
Upper heating element
Grill heating element
Convection fan

FHU

The figure illustrates the elements that are effectively in operation when the RAPID HEATING function has been selected, although the display indicates only the first function selected.

N.B.: Some models could not feature all the functions or may have a different sequence.

4.2.3 - HOW TO SELECT A COOKING FUNCTION

To select a cooking function:

1. Press the ON/OFF button to switch on the oven.
- The oven lamp lights and the display shows:

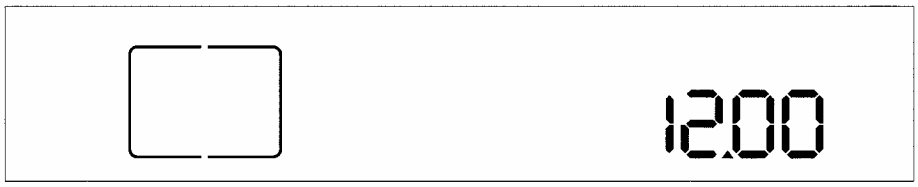


Fig. 52

2. Press the "FUNCTION SELECTION" button and hold down until the desired cooking function is displayed. The functions are displayed sequentially.
- The suggested cooking temperature for the selected function flashes

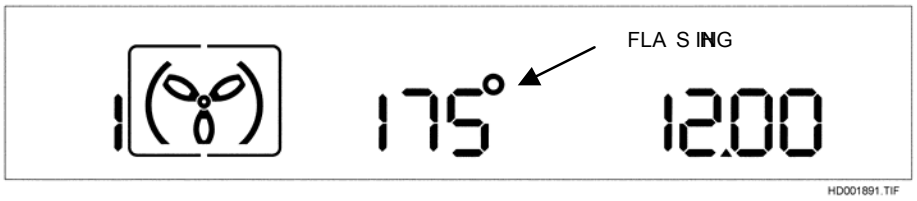


Fig. 53

- If the suggested temperature is not modified within 5 seconds, the oven begins the cooking cycle and the THERMOMETER symbol appears on the display.

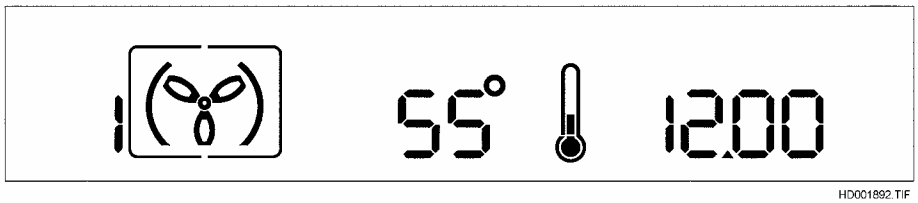


Fig. 54

4.2.4 - HOW TO MODIFY THE TEMPERATURE OF THE OVEN

To modify the temperature of the oven, it is necessary to press the FUNCTIONS button and then "+" or "-" to increase or decrease the temperature, while the symbol "°" flashes on the display. Each modification increases or decreases the temperature by 5°C.

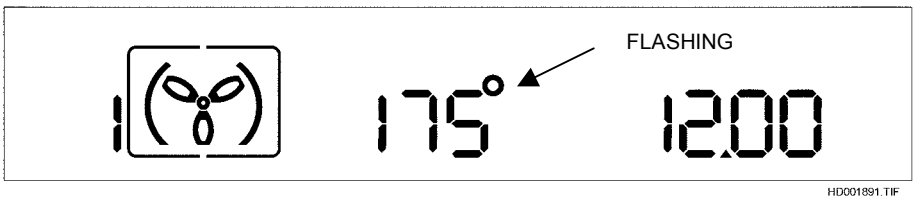


Fig. 55

4.2.5 - "THERMOMETER" SYMBOL

- The THERMOMETER symbol increases gradually to indicate the increasing temperature inside the oven.
- The three segments of the THERMOMETER symbol flash in sequence when the RAPID HEATING function is in operation.

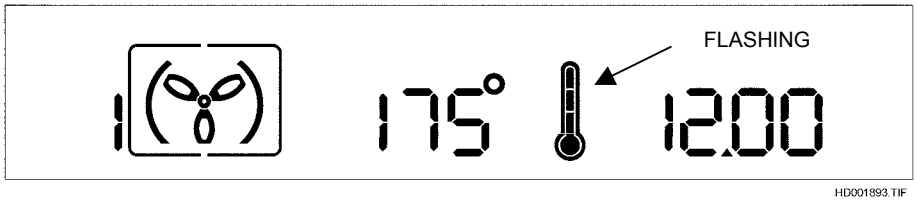


Fig. 56

4.2.6 - HOW TO MODIFY THE COOKING FUNCTION

Press the FUNCTION selector button and hold down until the desired cooking function is displayed. The functions are displayed in sequence.

4.2.7 - HOW TO SWITCH OFF THE OVEN

To switch the oven off, press the ON/OFF button.

4.2.8 - COOLING FAN

The oven features a fan which cools the control panel, the knobs and the handle of the oven door.
To prevent overheating, this fan **continues to operate AFTER the oven has been switched off, until the temperature falls to a normal level.**

4.2.9 - CLOCK FUNCTIONS

The clock functions are as follows:

Time of day

This function can be entered only when the appliance is switched off, and is necessary when it is switched on for the first time or after a power failure (see section 4.2.1.1).

Cooking time

This function allows the user to enter the cooking time, at the end of which the oven will switch off automatically. A cooking time can be selected only if a cooking function has already been entered.

End of cooking

This function allows the user to set the time for the end of the cooking cycle, after which the oven will switch off automatically. The "end-of-cooking" time can be entered only if a cooking function has already been selected.

"Cooking time" + "End of cooking" function

By combining the "Cooking Time" and "End-of-cooking" functions, the user can programme cooking with a delayed start time, in which case the oven will switch on and off automatically.

Minute-minder

Used to select a timed countdown, which is shown on the display, at the end of which the buzzer sounds but the operation of the oven is not interrupted.

N.B.:

General suggestions

- When one of the CLOCK functions is selected, the corresponding arrow flashes for about five seconds. During this five-second period, the setting can be modified by pressing "+" or "-".
- After entering the desired setting, the arrow flashes for a further five seconds. At the end of this period, the arrow remains lit and the time entered is memorized.
- The minute-minder buzzer sounds at a frequency different from that of the cooking time signal.

4.2.9.1 - COOKING TIME

1. Select a cooking function and a temperature.

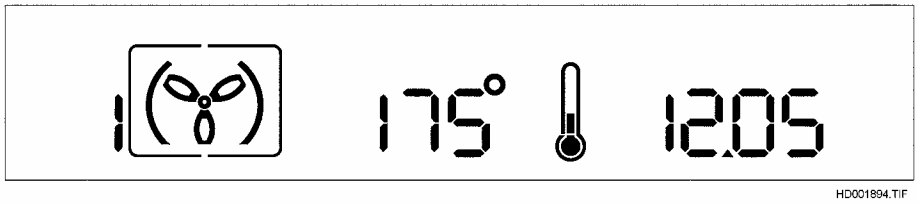


Fig. 57

2. Press the CLOCK button repeatedly until the COOKING TIME symbol is displayed.

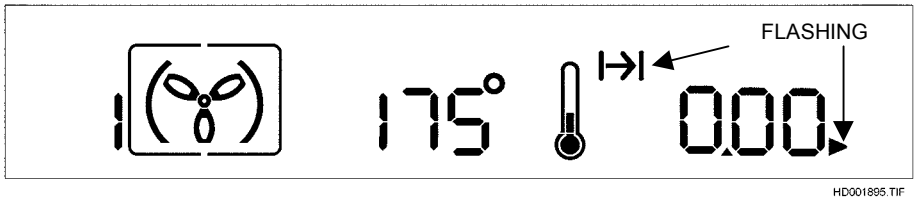


Fig. 58

3. Select the cooking time by pressing "+" or "-" while the TIME arrow is flashing.

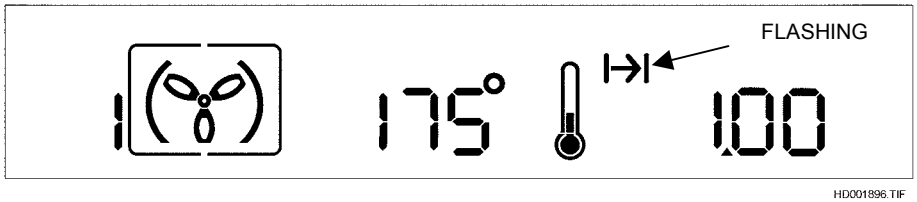


Fig. 59

Five seconds after the last modification to the time, the arrow switches off.
When the time entered has elapsed, the buzzer will sound for one minute and the oven will switch off. The display will show the number "0.00", and the COOKING TIME symbol will flash.
Press any key to switch off the buzzer.

4.2.9.2 - END OF COOKING

To select the END OF COOKING function:

1. Select a cooking function and a temperature.

2. Press the CLOCK key repeatedly until the END OF COOKING symbol is displayed.

Fig. 60

3. Select the end-of-cooking time by pressing "+" or "-" while the END OF COOKING arrow is flashing.
4. After a few seconds, the oven will start the cooking cycle until the COOKING TIME entered by the user has been reached.

When the time entered has elapsed, the buzzer will sound for one minute and the oven will switch off. The display will show the number "0.00", and the COOKING TIME symbol will flash.
Press any key to switch off the buzzer.

4.2.9.3 - COMBINED OPERATION OF THE "COOKING TIME" AND "END OF COOKING" FUNCTIONS

The COOKING TIME and END OF COOKING functions can be used together to switch the oven on and off automatically after a certain time.
1. Select a cooking function and the desired temperature.
2. Using the COOKING TIME function, select the desired cooking time (e.g. one hour).
3. Using the END OF COOKING function, enter the desired end-of-cooking time (e.g. 13:05).

The COOKING TIME and END OF COOKING arrows light.
The oven will switch on automatically at the time entered (in this case, at 12:05).
At the end of the programmed time, the buzzer will sound for one minute, after which the oven switches off automatically (in this case, at 13:05).

4.2.9.4 - MINUTE-MINDER

1 - Press the CLOCK key repeatedly until the MINUTE-MINDER symbol flashes.

Fig. 61

2 - Select the desired cooking time by pressing "+" or "-" while the MINUTE-MINDER arrow is flashing.

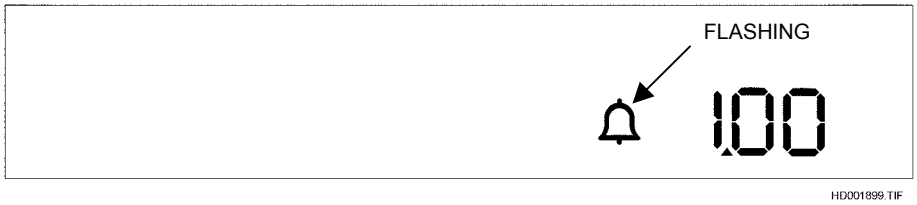


Fig. 62

When the time entered has elapsed, the buzzer will sound for one minute. The display will show the number "0.00", and the MINUTE-MINDER symbol will flash.
Press any key to switch off the buzzer.

4.2.9.5 - PRIORITY FUNCTIONS

The COOKING TIME and END OF COOKING functions take priority over the others.
The MINUTE-MINDER display takes priority over the time of day.
Functions with lower priorities may be selected using the CLOCK key after a higher-priority function has been selected.
After pressing the key, the function with lower priority will be displayed for 20 seconds, after which the display will again show the function with the higher priority.

4.2.10 - AUXILIARY FUNCTIONS

4.2.10.1 - RAPID HEATING

During the pre-heating period, the FHU (Rapid Heating) function can be activated to heat the oven more quickly.

1. Press the ON/OFF key to switch on the oven.
2. Press the FUNCTION key to select a cooking function.
3. Press "+" or "-" to select the desired temperature. The temperature will flash on the display.
4. Press the FHU key.

Fig. 63

- The TEMPERATURE window on the display will show "FHU".
- Press "+" or "-" to select the temperature. The temperature displayed will flash for ten seconds, during which the temperature selection can be modified.

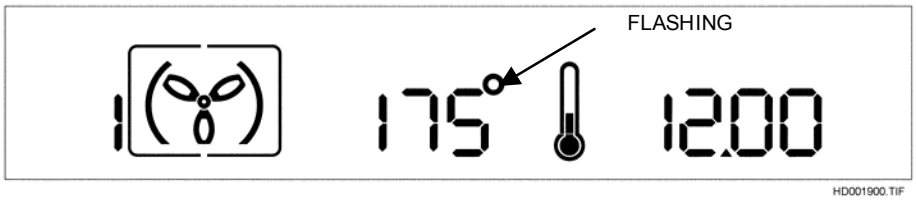


Fig. 64

- When the selected temperature is reached, the buzzer will sound and the selected temperature will be shown on the display.

4.2.10.2 - "CHILD SAFETY" FUNCTION

When the CHILD SAFETY function has been selected, the oven cannot be operated or switched on.

N.B.
The CHILD SAFETY function disactivates the oven only; the hob remains operative.

4.2.10.2.1 - Selecting the CHILD SAFETY function

1. If necessary, switch the oven **OFF** by pressing the ON/OFF key.
2. Press the FUNCTIONS and "-" keys simultaneously until "SAFE" is shown on the temperature display window.

The oven is now inoperative.

HD001902.TIF

Fig. 65

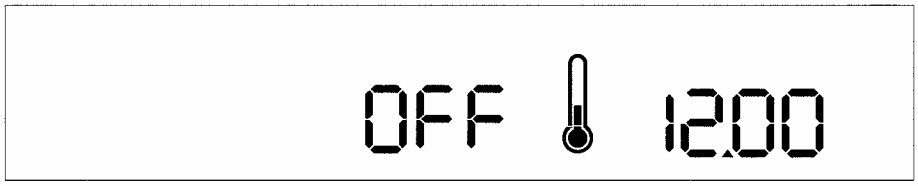
- When the CHILD SAFETY function has been selected, only the CLOCK and MINUTE-MINDER functions can be utilized.

4.2.10.2.2 - Disactivating the CHILD SAFETY function:

Press the FUNCTIONS and "-" keys simultaneously until "SAFE" is no longer shown on the temperature display window.
The oven is now operative.

4.2.10.3 - SAFETY SWITCH-OFF FUNCTION

The oven switches off automatically if it is not switched off manually after a certain time or if the temperature is not modified.
In this case, the display shows "OFF" and the buzzer sounds.



HD001903.TIF

Fig. 66

The oven switches off automatically at the temperatures shown below:

30 - 120° C	after 19.59 hours
120 - 200° C	after 8.5 hours
200 - 250° C	after 5.5 hours
250 - 280° C	after 1.5 hours

4.2.10.4 - "BEEP" WHEN A KEY IS PRESSED

The "beep" signal can be activated to sound whenever a key is pressed.
The oven is switched off, no cooking programme has been selected, and the time of day is shown on the display.

- Press the FUNCTIONS key and "+" for two seconds. The unit will emit a "beep". In the default setting, the system does NOT emit the "beep".
- To reset the function, repeat the procedure described above.

4.2.10.5 - "DEMO" FUNCTION

This function can be used in the shop or show-room to demonstrate the functions of the oven without consuming electricity (except for the oven lamp).
To select the DEMO function, the appliance must be in STANDBY mode.
Press "FHU" and "+" for two seconds. The system will emit a "beep".
Press the "ON" key: The symbol "1d" will be shown on the display alongside the oven lamp symbol (see Fig. 67).
All the oven functions can be selected, although the THERMOMETER symbol does not flash.
To disactivate the DEMO function, repeat the procedure described above.

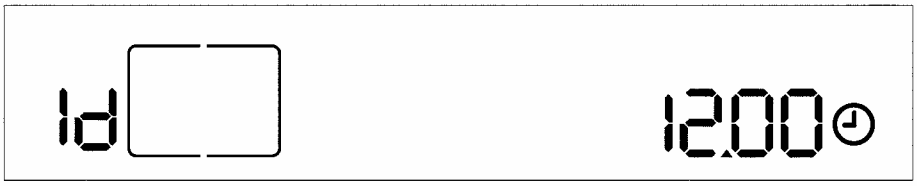


Fig. 67

4.2.10.6 - "RESIDUAL HEAT" FUNCTION

For every cooking function selected, the heating elements switch off shortly before the cooking time has elapsed.
This feature is designed to exploit the residual heat inside the oven, thus completing the cooking cycle without wasting energy.
This function is completely automatic. The switch-off time is calculated automatically by the system according to the time and temperature selected by the user for the cycle.
This function is operative only for programmed cooking times of more than 15 minutes, and anticipates the end-of-cooking time by a maximum of 20 minutes.

4.3 - USING THE PROGRAMME SELECTOR - LEVEL 3

4.3.1 - OPERATING THE OVEN FOR THE FIRST TIME

When the oven is switched on for the first time, or in the event of a power failure, the display will show the following text, which scrolls sequentially.
WELCOME TO * KRONOS -3 * BASIC * DANSK * DEUTSCH *
ENGLISH * ESPANOL * FRANCAIS * ITALIANO * NEDERLANDS * NORSK * PORTUGUES * SVENSKA

At the same time, the CLOCK symbol appears on the display and the corresponding arrow flashes.

- Press the CLOCK key. The display will show "12:00".
- If no key is pressed, the welcome text will continue to scroll on the display.

4.3.1.1 - SETTING THE CORRECT TIME OF DAY

The oven will function only if the time of day has been set.

While the SET CLOCK arrow is flashing:

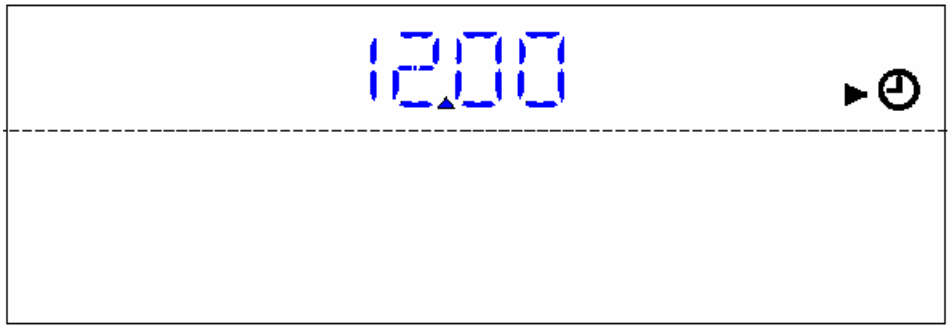


Fig. 68

Press "+" or "-" to enter the correct time of day.

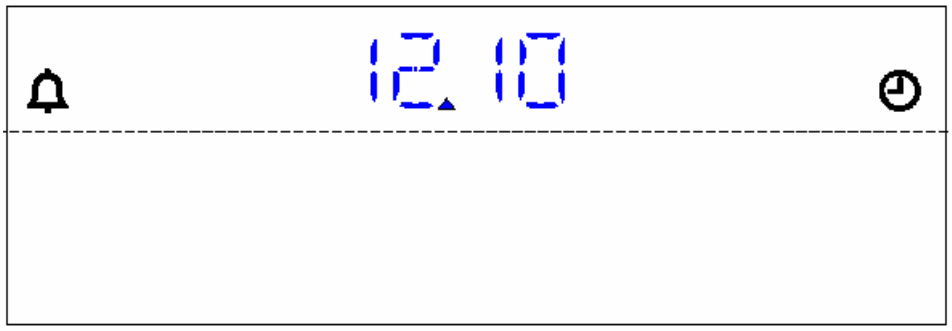


Fig. 69

4.3.1.2 - TO SELECT THE LANGUAGE FOR THE DISPLAY

The appliance must be in STANDBY node.

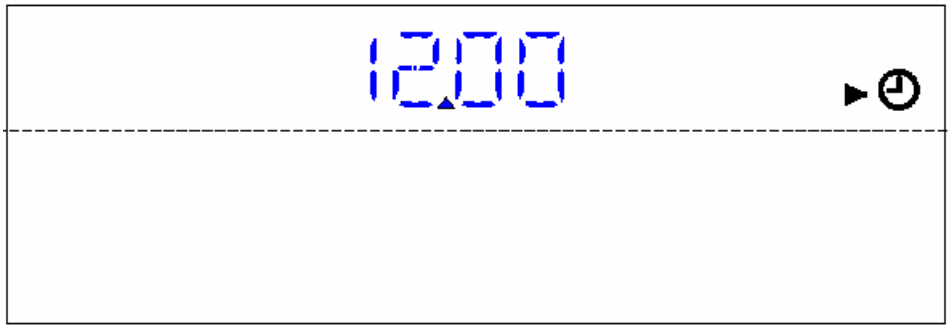


Fig. 70

Press the FUNCTION and RECIPES keys simultaneously for two seconds.

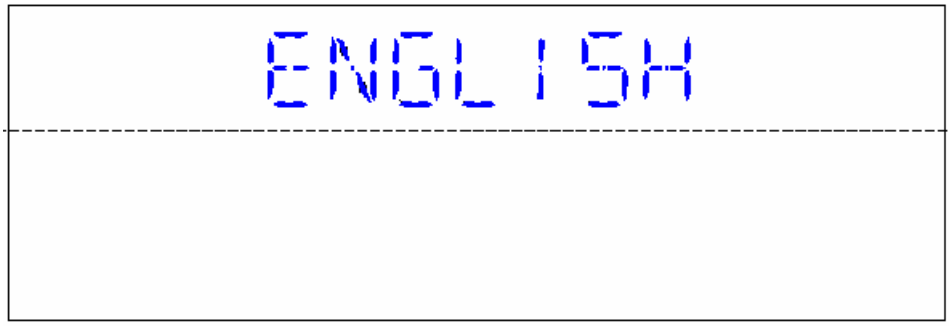


Fig. 71

The display will show the default language setting: English

Press "+" or "-" to change the language.

To memorize the selected language, press the FUNCTION and RECIPES keys simultaneously

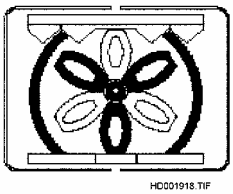
The display will show the OVEN LAMP symbol and the text in the selected language.

The following languages may be selected, and will be displayed as follows:
DANSK
DEUTSCH
ENGLISH
ESPANOL
FRANCAIS
ITALIANO
NEDERLANDS
NORSK
PORTUGUES
SVENSKA

4.3.2 - COOKING FUNCTIONS

The normal oven features nine (or ten) cooking functions which can be selected in the sequence described below:

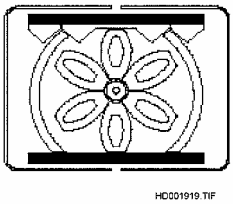
Fan cooking



Elements activated:
Oven lamp
Circular heating element
Convection fan

Pre-set temperature: 175 °C

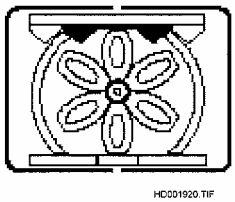
Traditional cooking



Elements activated:
Oven lamp
Upper heating element
Lower heating element

Pre-set temperature: 200 °C

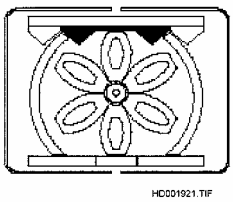
Grill with spit



Elements activated:
Oven lamp
Grill heating element
Spit

Pre-set temperature: 250 °C

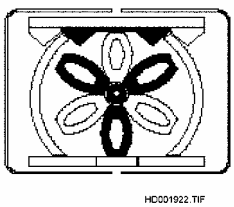
Grill



Elements activated:
Oven lamp
Grill heating element

Pre-set temperature: 250 °C

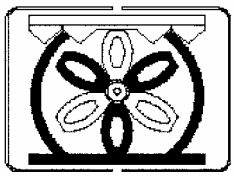
Grill + Fan



Elements activated:
Oven lamp
Grill heating element
Convection fan

Pre-set temperature: 180 °C

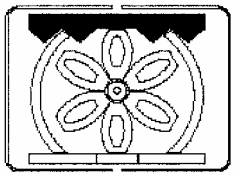
Pizza



Pre-set temperature: 175 °C

Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan
N.B. In the Italian version, the lower and circular heating elements switch on alternately in order to save energy.

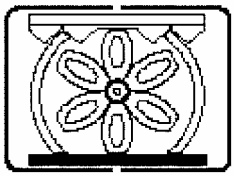
Large grill



Pre-set temperature: 250 °C

Elements activated:
Oven lamp
Grill heating element
Upper heating element

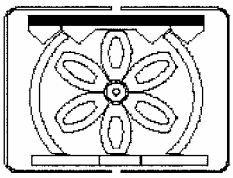
Oven bottom



Pre-set temperature: 250 °C

Elements activated:
Oven lamp
Lower heating element

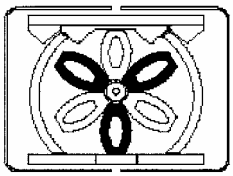
Oven top



Pre-set temperature: 250 °C

Elements activated:
Oven lamp
Upper heating element

Defrosting

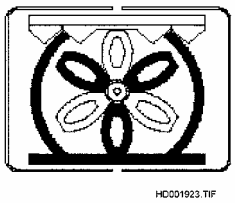


Pre-set temperature: 30 °C

Elements activated:
Oven lamp
Convection fan

SPECIAL FUNCTIONS

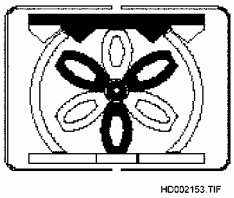
Rapid heating (European version)



Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan

The figure illustrates the elements that are effectively in operation when the RAPID HEATING function has been selected, although the display indicates only the first function selected.

Rapid heating (Italian version)



Elements activated:
Oven lamp
Grill heating element
Convection fan

The figure illustrates the elements that are effectively in operation when the RAPID HEATING function has been selected, although the display indicates only the first function selected.

N.B.: Some models could not feature all the functions or these may have a different sequence.

4.3.3 - TEXT DESCRIPTIONS

Texts used for the cooking function descriptions - standard version

ENGLISH	ITALIANO	DEUTSCH	FRANCAIS
FAN COOKING	COTTURA VENTILATA	HEISSLUFT	CUISSON VENTILEE
CONVENTIONAL COOKING	COTTURA TRADIZIONALE	OBER-/UNTERHITZE	CUISSON TRADITIONNELLE
GRILL TURNSPIT	GRILL CON GIRARROSTO	GRILL MIT DREHSPIESS	GRIL AVEC TOURNBROCHE
GRILL	GRILL	INFRAROT GRILL	PETIT GRIL
THERMAL GRILLING	GRILL VENTILATO	TURBO RAUMGRILL	TURBO-GRIL
PIZZA	PIZZA	PIZZA STUFE	PIZZA
DOUBLE GRILL	GRILL GRANDE	GROSS GRILL	GRAND GRIL
BOTTOM	SUOLA	UNTERHITZE	CUISSON PAR LE BAS
TOP	CIELO	OBERHITZE	COISSON PAR LE VOUTE
DEFROST	SCONGELAMENTO	AUFTAUEN	DECONGELATION

NEDERLANDS	ESPANOL	PORTUGUES	SVENSKA
HETELUCH-VERWARMING	COCCION VENTILADOR	CONFECCAO COM CALOR CIRCULANTE	VARMLUFT
TRADITIONELE VERWARMING	COCCION CONVENCIONAL	CONFECCAO TRADICIONAL	OEVER-UNDERVAERME
GRILL DRAAISPIT	GRILL CON ASADOR AUTOMATICO	GRILL COM ESPETO ROTATIVO	ROTERANDE GRILLSPETT
BINNENSTE GRILLELEMENT	GRILL	GRELHADOR INTERIOR	GRILL
GRILL+ HETELUCHT	GRILL TERMAL	GRELHADOR VENTILADO	GRATINERING
PIZZAFUNCTIE	HORNO PIZZA	CONFECCAO PIZZA	PIZZAFUNKTION
TRADITIONEEL GRILLEN	GRILL DOBLE	GRELHADOR	FULL GRILL
ONDERSTE VERWARMINGS-ELEMENT	RESISTENCIA INFERIOR	ACQUECIMENTO INFERIOR	BOTTENELEMENT
ALLEEN BOVELEMENT	RESISTENCIA SUPERIOR	ACQUECIMENTO SUPERIOR	OEVERVAERME
ONTDOOIEN	DESCONGELACION	DESCONGELACAO	UPPTINING

DANSK	NORSK
VARMLUFT	VARMLUFT
OVER-UNDERVARME	OVER-/UNDERVARME
GRILL DREJESPYD	GRILLSPIDD
GRILL	GRILL
VARMEGRILL	GRATINERING
PIZZAFUNKTION	PIZZA
DOBBELTGRILL	DOBBELT GRILL
UNDERVARME	UNDERVARME
OVERWARME	OVERWARME
OPTØNING	TINING

General text

ENGLISH	ITALIANO	DEUTSCH	FRANCAIS	NEDERLADS
LIGHT	LUCE FORNO	BACKOFEN LAMPE	LAMPE DU FOUR	OVENVERLICHTING

ESPANOL	PORTUGUES	SVENSKA	DANSK	NORSK
LAMPARA DE HORNO	LAMPADA DO FORNO	UGNSBLYSNING	OVNLYS	OVNSLYS

Temperature values

Standard version	Minimum	Pre-set value	Maximum
FAN COOKING	30	175	250
CONVENTIONAL COOKING	30	200	250
GRILL TURNSPIT	200	250	250
GRILL	200	250	250
THERMAL GRILLING	30	190	200
PIZZA	30	175	250
DOUBLE GRILL	200	250	250
BOTTOM	30	250	250
TOP	30	250	250

4.3.4 - HOW TO SELECT A COOKING FUNCTION

1. Press the ON/OFF key to switch the oven on.
   - The oven light switches on, and the corresponding message is displayed ("LIGHT").

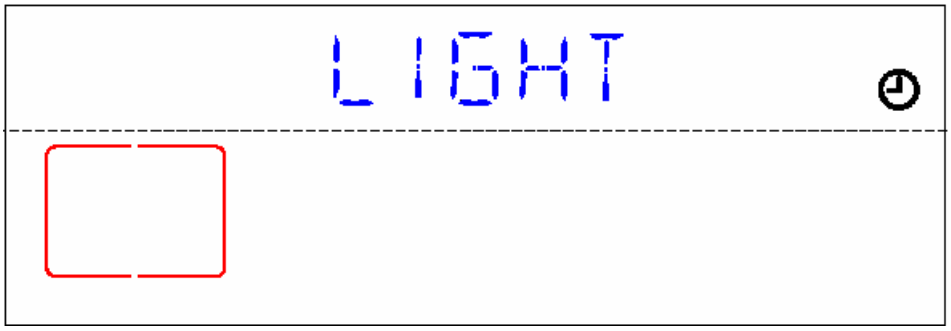


Fig. 72

2. Press the FUNCTION key repeatedly until the desired function appears on the display. The corresponding text message will be displayed.

   - The selected temperature will flash in the temperature display window.

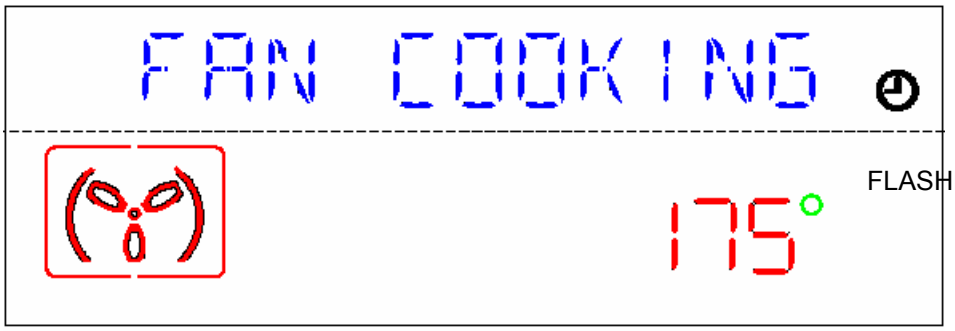


Fig. 73

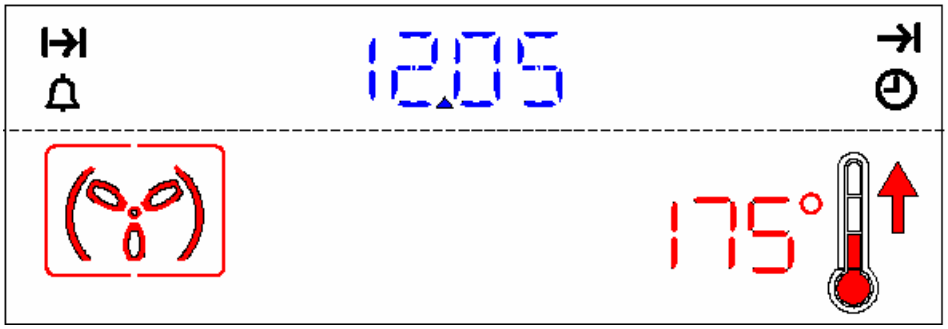


Fig. 74

If the selected temperature is not modified within 5 seconds, the oven begins to heat, and the temperature shown on the display ceases to flash.
The THERMOMETER symbol is shown on the display together with the corresponding arrow.
At intervals of one minute, the text display changes for about 10 seconds from the time of day to the function selected. Alternatively, the user can press the CLOCK key to display the function selected.
When the temperature of the oven reaches the selected level, the programmer sounds a short acoustic signal.

4.3.5 - HOW TO MODIFY THE TEMPERATURE OF THE OVEN

- Press the FUNCTION key and then keys "+" and "-" to modify the temperature. During this procedure, the selected temperature flashes on the display.
- The temperature is modified at intervals of 5°C.

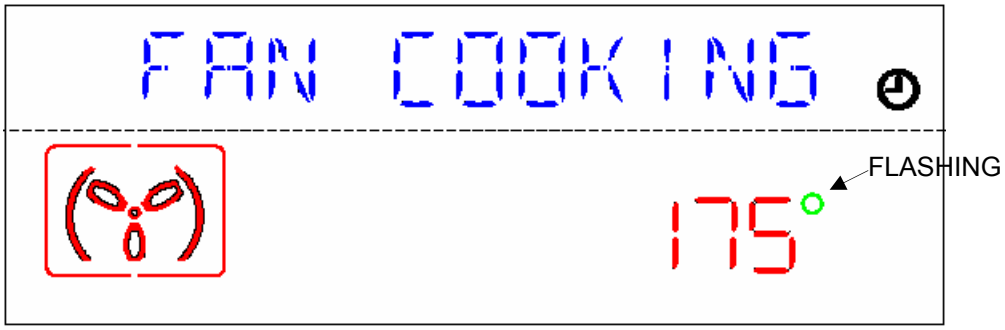


Fig. 75

4.3.6 - "THERMOMETER" SYMBOL

- The level shown on the THERMOMETER symbol increases gradually, indicating the current temperature inside the oven.
- The three segments of the THERMOMETER symbol flash in sequence to indicate that the oven is in RAPID HEATING mode.

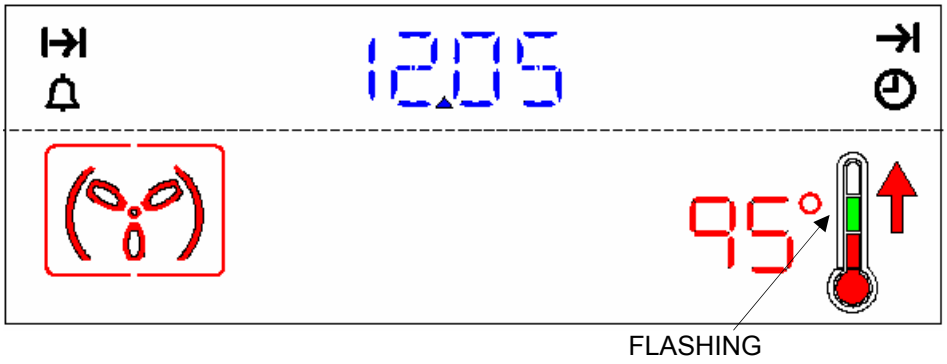


Fig. 76

When the oven has reached the selected temperature, the THERMOMETER arrow switches off.

4.3.7 - HOW TO MODIFY THE COOKING FUNCTION

Press the FUNCTION key repeatedly until the desired cooking function is displayed with the corresponding text.

4.3.8 - HOW TO SWITCH OFF THE OVEN

To switch off the oven, press ON/OFF.

4.3.9 - COOLING FAN

The oven features a fan designed to cool the control panel, the knobs and the handle of the oven door.
To prevent overheating, this fan **continues to operate AFTER the oven has been switched off**, until the temperature falls to a normal level**.**

4.3.10 - SPECIAL FUNCTIONS

4.3.10.1 - RECIPES

4.3.10.1.1 - How to select a recipe

1. Press the ON/OFF key to switch the oven on.
2. Press the RECIPES key repeatedly until the desired recipe is shown on the display.

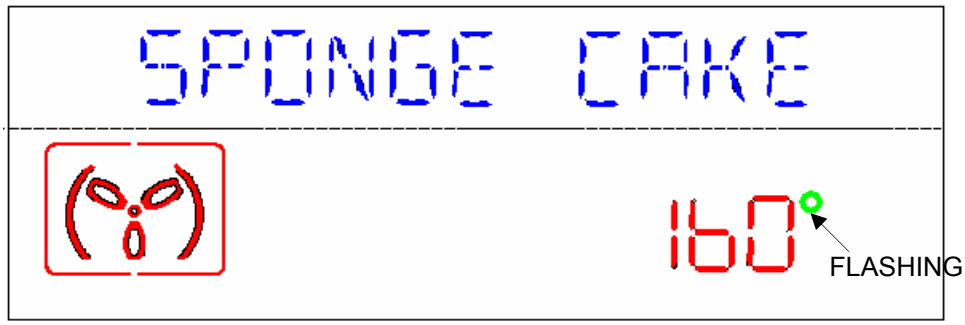


Fig. 77

- The FUNCTIONS display shows the symbol corresponding to the cooking function.
- The TEMPERATURE display shows the selected temperature.
- The text display window shows the duration of the cycle and the end-of-cooking time.
- The oven switches on after about 5 seconds.
- At the end of the selected cooking time, the buzzer sounds.

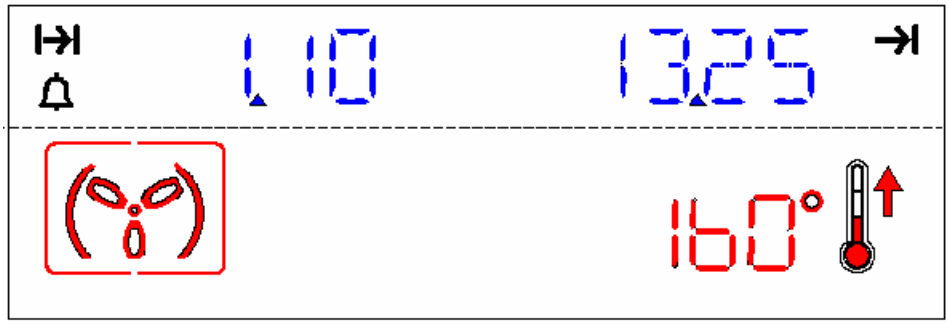


Fig. 78

3. At intervals of one minute, the text display changes for about 10 seconds from the time of day to the recipe selected. Alternatively, the user can press the CLOCK key to display the recipe.
4. Check the cooking result.
   - The TIME display window will show "0:00".
   - Press any key to switch off the buzzer.

4.3.10.1.2 - Descriptions of recipes

If the name of the recipe is longer than 11 characters, it will be displayed as scrolled text on the display.

4.3.10.1.3 - Delayed-start operation

The oven can be programmed to begin cooking at a pre-programmed time (see "END OF COOKING FUNCTION").

N.B.
The "FHU" key is not enabled when a recipe is selected.

4.3.10.1.4 - Modifying the temperature

Press the RECIPES key and then the "-" or "+" keys.

4.3.10.1.5 - Modifying the cooking time

Press the CLOCK key: the COOKING TIME arrow will begin to flash. To select the desired cooking time, press the "+" or "-" keys. After about five seconds, the COOKING TIME arrow will remain lit.

4.3.10.1.6 - Interrupting the cooking cycle before the selected time has elapsed

Press the ON/OFF key. Alternatively, press the FUNCTION key twice (in this case, the display will show the OVEN LIGHT function).

4.3.10.1.6 - List of recipes

Examples of recipes (normal oven)

		ENGLISH	ITALIANO	Time	Temperature °C
1	Roast pork	PORK	ARROSTO DI MAIALE	85’	175
2	Roast beef/Veal	(*)	ARROSTO DI MANZO/VITELLO	115’	175
3	Roasts	ROASTBEEF	ROAST	50’	200
4	Lamb	LAMB	(*)	105’	175
5	Rabbit (in pieces)	(*)	CONIGLIO (IN PEZZI)	75’	175
6	Chicken (whole)	(*)	POLLO (INTERO)	75’	175
7	Duck	DUCK	(*)	120’	160
8	Turkey	TURKEY	(*)	185’	160
9	Fish (medium size)	(*)	(*)	40’	160
10	Fish fillets	(*)	FILETTO DI PESCE	35’	175
11	Quiche - Savoury tarts	QUICHES	(*)	35’	175
12	Potato gratin	POTATO GRATIN	(*)	35’	175
13	Lasagne/Cannelloni	(*)	LASAGNE/ CANNELLONI	55’	190
14	Pizza	PIZZA	PIZZA	25’	190
15	Almond cake	(*)	TORTA MARGHERITA	35’	175
16	Apple pie	APPLE PIE	TORTA DI MELE	40’	175
17	Chocolate cake	(*)	(*)	50’	175
18	Strudel	(*)	(*)	50’	160
19	Bread	(*)	(*)	40’	190
20	Sponge Cake	SPONGE CAKE	(*)	60’	160

(*) Recipes not available in the language indicated.

		DEUTSCH	FRANCAIS	Time	Temperature °C
1	Roast pork	SCHWEINEBRATEN	ROTI DE PORC	85’	175
2	Roast beef/Veal	(*)	(*)	115’	175
3	Roasts	ROASTBEEF	ROSBIF A L’ANGLAISE	50’	200
4	Lamb	(*)	(*)	105’	175
5	Rabbit (in pieces)	(*)	(*)	75’	175
6	Chicken (whole)	HUHM (IN GANZE)	POULET (ENTIER)	75’	175
7	Duck	(*)	CANARD	120’	160
8	Turkey	(*)	(*)	185’	160
9	Fish (medium size)	(*)	POISSON (MOYEN)	40’	160
10	Fish fillets	FISCHFILETS	FILETS DE POISSON	35’	175
11	Quiche - Savoury tarts	(*)	QUICHE	35’	175
12	Potato gratin	GRATINIERTE KARTOFFEELN	POMMES DE TERRE GRATINEES	35’	175
13	Lasagne/Cannelloni	LASAGNE/ CANNELLONI	(*)	55’	190
14	Pizza	PIZZA	PIZZA	25’	190
15	Almond cake	(*)	(*)	35’	175
16	Apple pie	(*)	GATEAU AUX POMMES	40’	175
17	Chocolate cake	SCHOKOLADEKUCHEN	(*)	50’	175
18	Strudel	STRUDEL	(*)	50’	160
19	Bread	BROT	(*)	40’	190
20	Sponge Cake	(*)	(*)	60’	160

(*) Recipes not available in the language indicated.

		NEDERLANDS		Time	Temperature °C
1	Roast pork	VARKENSVLEES, GEBRADEN		85’	175
2	Roast beef/Veal	RUND/KALFSVLEES, GEBRADEN		115’	175
3	Roasts	RUNDVLEESRS		50’	200
4	Lamb	LAMSVLEES		105’	175
5	Rabbit (in pieces)	(*)		75’	175
6	Chicken (whole)	KIP (GEHEEL)		75’	175
7	Duck	(*)		120’	160
8	Turkey	(*)		185’	160
9	Fish (medium size)	VIS (MIDDELGROOT)		40’	160
10	Fish fillets	(*)		35’	175
11	Quiche - Savoury tarts	(*)		35’	175
12	Potato gratin	(*)		35’	175
13	Lasagne/Cannelloni	(*)		55’	190
14	Pizza	PIZZA		25’	190
15	Almond cake	(*)		35’	175
16	Apple pie	APPELTAART		40’	175
17	Chocolate cake	CHOCLADETAART		50’	175
18	Strudel	(*)		50’	160
19	Bread	BROOD		40’	190
20	Sponge Cake	(*)		60’	160

(*) Recipes not available in the language indicated.

4.3.11 - CLOCK FUNCTIONS

The clock functions are as follows:

Time of day

This function can be entered if the appliance is switched off, and is necessary when it is switched on for the first time or after a power failure (see section 4.1.1, page 32).

Cooking time

This function allows the user to enter the cooking time. A cooking time can be selected only if a cooking function has already been entered.

End of cooking

This function allows the user to set the time for the end of the cooking cycle. The "end-of-cooking" time can be entered only if a cooking function has already been selected.

Cooking time + End of cooking

By combining the "Cooking Time" and "End-of-cooking" functions, the user can programme cooking with a delayed start time, in which case the oven will switch on and off automatically.

Minute-minder

Used to select a timed countdown, at the end of which the buzzer sounds but the operation of the oven is not interrupted.

N.B.:

General suggestions

- When one of the CLOCK functions is selected, the corresponding arrow flashes for about five seconds. During this five-second period, the setting can be modified by pressing "+" or "-".
- After entering the desired setting, the arrow flashes for a further five seconds. At the end of this period, the arrow remains lit and the time entered is memorized.
- The minute-minder buzzer sounds at a frequency different from that of the cooking time signal.

4.3.11.1 - COOKING TIME

1. Select the cooking function and the temperature.

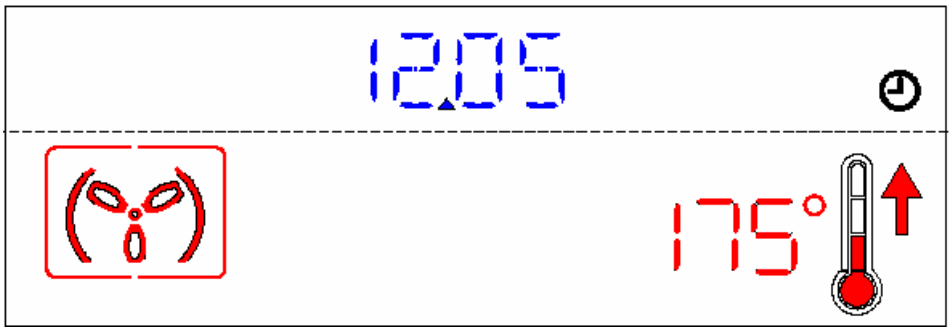


Fig.. 79

2. Press the CLOCK button repeatedly until the COOKING TIME symbol is displayed.

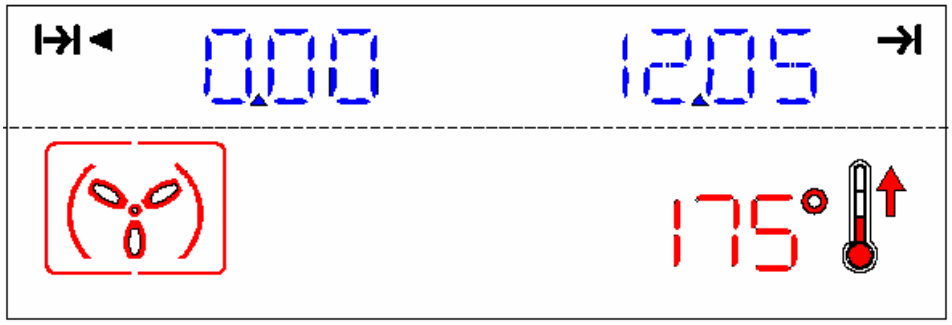


Fig. 80

3. Select the cooking time by pressing "+" or "-". The COOKING TIME arrow remains lit. When the selected time has elapsed, the buzzer sounds for about one minute, and the oven switches off automatically.
The COOKING TIME symbol and the corresponding arrow will flash on the display.
Press any key to switch off the buzzer.
If any key other than ON/OFF is pressed, the display will show the OVEN LIGHT function.

4.3.11.2 - END OF COOKING

1. Select a cooking function and a temperature.
2. Press the CLOCK key repeatedly until the END OF COOKING arrow begins to flash.
3. Select the end-of-cooking time by pressing "+" or "-". The corresponding arrow remains lit
4. After a few seconds, the oven will start the cooking cycle until the end-of-cooking time entered by the user is reached.

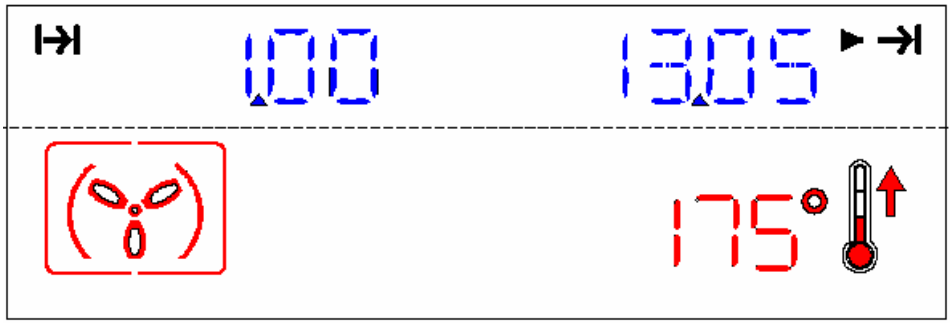


Fig. 81

When the time entered has elapsed, the buzzer will sound for one minute and the oven will switch off automatically.
The END OF COOKING arrow and symbol will flash on the display.
Press any key to switch off the buzzer.
If any key other than ON/OFF is pressed, the display will show the OVEN LIGHT function.

4.3.11.3 - COMBINED OPERATION OF THE "COOKING TIME" AND "END OF COOKING" FUNCTIONS

The COOKING TIME and END OF COOKING functions can be used together to switch the oven on and off automatically after a certain time ("delayed start" feature).

1. Select a cooking function and the desired temperature.
2. Using the COOKING TIME function, select the desired cooking time (e.g. one hour).
3. Using the END OF COOKING function, enter the desired end-of-cooking time (e.g. 14:05).

The COOKING TIME and END OF COOKING arrows light.
The oven will switch on automatically at the time entered (in this case, at 13:05).
At the end of the programmed time, the buzzer will sound for one minute, after which the oven switches off automatically (in this case, at 14:05).

If no key is pressed, the symbol for the cooking function and the times selected will be shown on the display.

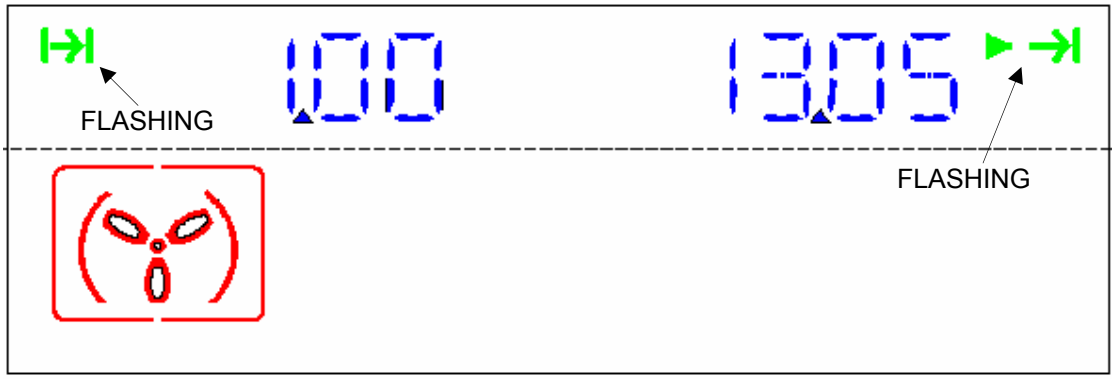


Fig. 82

4.3.11.4 - MINUTE-MINDER

1. Press the CLOCK key repeatedly until the MINUTE-MINDER arrow flashes.

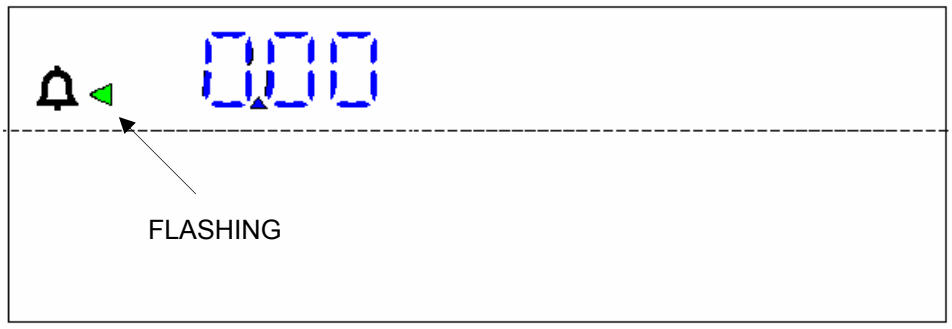


Fig. 83

2. Select the desired time by pressing "+" or "-" (maximum time is 23 hours 59 minutes). After about five seconds, the time to elapse will be shown on the display. The MINUTE-MINDER arrow remains lit.

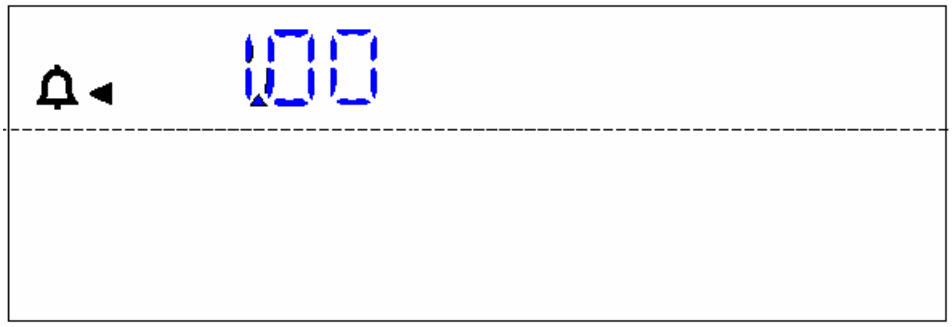


Fig. 84

When the time entered has elapsed, the buzzer will sound for one minute.
The MINUTE-MINDER arrow and symbol will flash on the display.
Press any key to switch off the buzzer.

4.3.11.5 - PRIORITY FUNCTIONS
The COOKING TIME and END OF COOKING functions take priority over the others.
The MINUTE-MINDER display takes priority over the time of day.
Functions with lower priorities may be selected using the CLOCK key after a higher-priority function has been selected.
After pressing the key, the function with lower priority will be displayed for 20 seconds, after which the display will again show the function with the higher priority.

4.3.12 - AUXILIARY FUNCTIONS

4.3.12.1 - RAPID HEATING
During the pre-heating period, the FHU (Rapid Heating) function can be activated to heat the oven more quickly.
1. Press the ON/OFF key to switch on the oven.
2. Press the FUNCTIONS key to select a cooking function.
3. Press "+" or "-" to select the desired temperature. The temperature will flash on the display.
4. Press the FHU key.

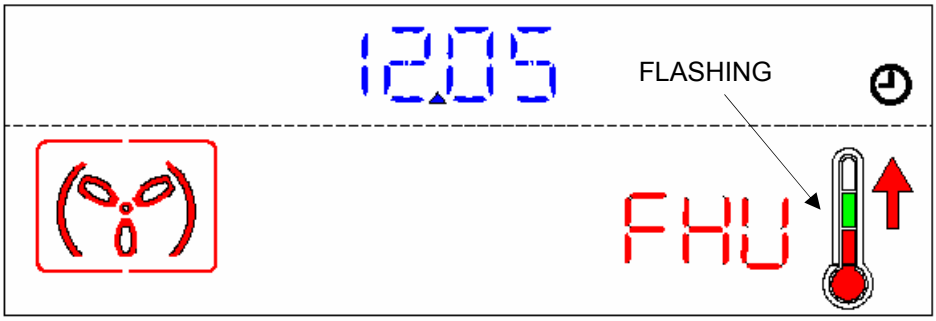


Fig. 85

- The TEMPERATURE window on the display will show "FHU".
- If the FUNCTION key is pressed, the selected temperature will flash for ten seconds, indicating that it can be modified if desired.

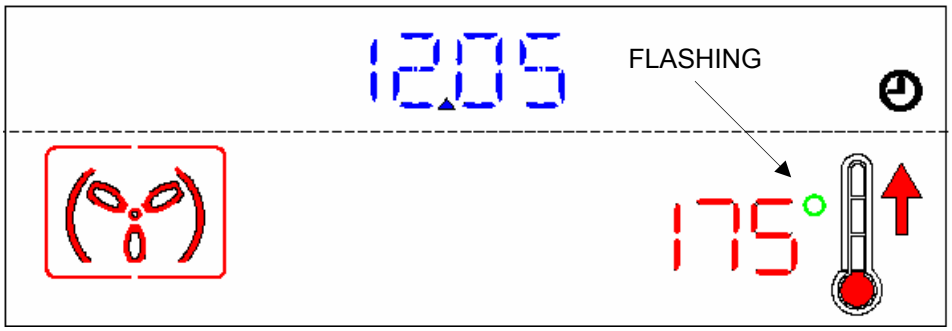


Fig. 86

- When the selected temperature is reached, the buzzer will sound a "beep" and the selected temperature will be shown on the display.

4.3.12.2 - "CHILD SAFETY" FUNCTION

When the CHILD SAFETY function has been selected, the oven cannot be operated or switched on.

N.B.
The CHILD SAFETY function disactivates the oven only; the hob remains operative.

4.3.12.2.1 - Selecting the CHILD SAFETY function

1. If necessary, switch the oven **OFF** by pressing the ON/OFF key.
2. Press the FUNCTIONS and "-" keys simultaneously until "SAFE" is shown on the temperature display window.

The oven is now inoperative.

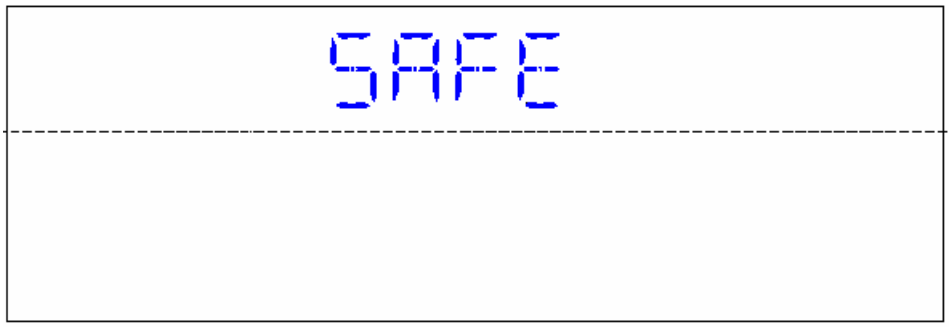


Fig. 87

- The CLOCK function can be activated by pressing the CLOCK key.

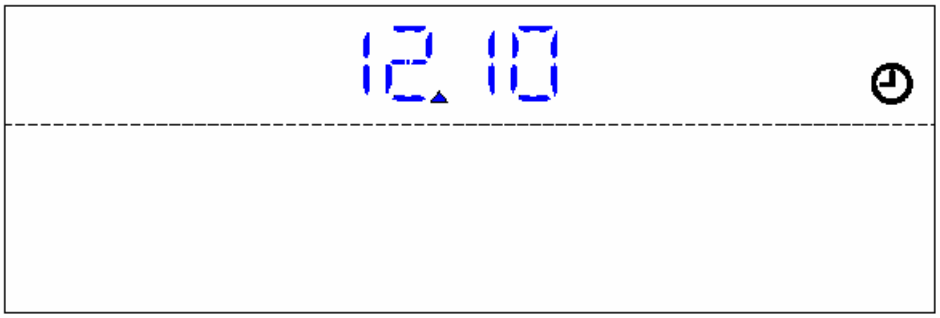


Fig. 88

4.3.12.2.2 - Disactivating the CHILD SAFETY function:
Press the FUNCTIONS and "-" keys simultaneously until "SAFE" is no longer shown on the temperature display window.
The oven is now operative.

4.3.12.3 - SAFETY SWITCH-OFF FUNCTION
The oven switches off automatically if it is not switched off manually after a certain time or if the temperature is not modified.
In this case, the text window of the display shows "AUTO OFF" and the buzzer sounds.

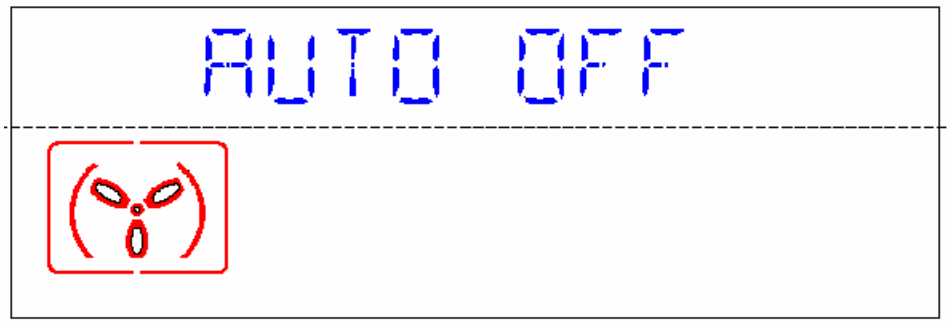


Fig. 89

The oven switches off automatically at the temperatures shown below:

30 - 120° C	after 23.59 hours
120 - 200° C	after 8.5 hours
200 - 250° C	after 5.5 hours
250 - 280° C	after 1.5 hours

4.3.12.4 - "BEEP" WHEN A KEY IS PRESSED
The "beep" signal can be activated to sound whenever a key is pressed.
The oven is switched off, no cooking programme has been selected, and the time of day is shown on the display.
- Press the FUNCTIONS key and "+" for two seconds. The unit will emit a "beep".
  In the default setting, the system does NOT emit the "beep".
- To reset the function, repeat the procedure described above.

4.3.12.5 - "DEMO" FUNCTION
This function can be used in the shop or show-room to demonstrate the functions of the oven without consuming electricity (except for the oven lamp).
To select the DEMO function, the appliance must be in STANDBY mode.
Press "FHU" and "+" for two seconds. The system will emit a "beep".
Press the "ON" key: "DEMO" will be shown on the display.
All the oven functions can be selected, although the thermometer symbol does not flash.
To disactivate the DEMO function, repeat the procedure described above.

4.3.12.6 - "RESIDUAL HEAT" FUNCTION
For every cooking function selected, the heating elements switch off shortly before the cooking time has elapsed.
This feature is designed to exploit the residual heat inside the oven, thus completing the cooking cycle without wasting energy.
This function is completely automatic. The switch-off time is calculated automatically by the system according to the time and temperature selected by the user for the cycle.
This function is operative only for programmed cooking times of more than 15 minutes, and anticipates the end-of-cooking time by a maximum of 20 minutes.

5 - DIFFERENCES IN THE VARIOUS APPLICATIONS

5.1 - NORMAL OVEN

5.1.1 - NORMAL OVEN - LEVEL 1

5.1.1.1 - CONTROL PANEL - NORMAL OVEN - LEVEL 1

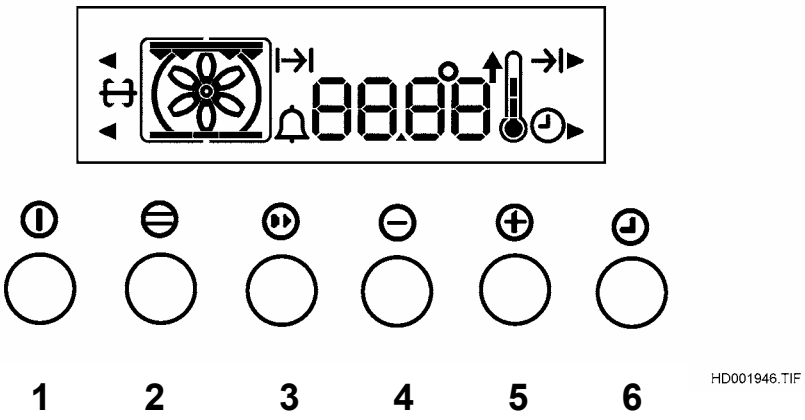


Fig. 90

5.1.1.2 - KEY FUNCTIONS - NORMAL OVEN - LEVEL 1

1 - ON/OFF key
Switches the oven ON and OFF

2 - FUNCTION key
Selects the cooking functions

3 - SPECIAL FUNCTIONS key
Selects the special cooking functions

4 - "-" key (back)
To decrease the temperature and time of day

5 - "+" key (forward)
To increase the temperature and time of day

6 - CLOCK key
Used to set the "minute-minder", "end of cooking", "cooking time" functions and the time of day.

5.1.1.3 - DESCRIPTION OF DISPLAY - NORMAL OVEN - LEVEL 1

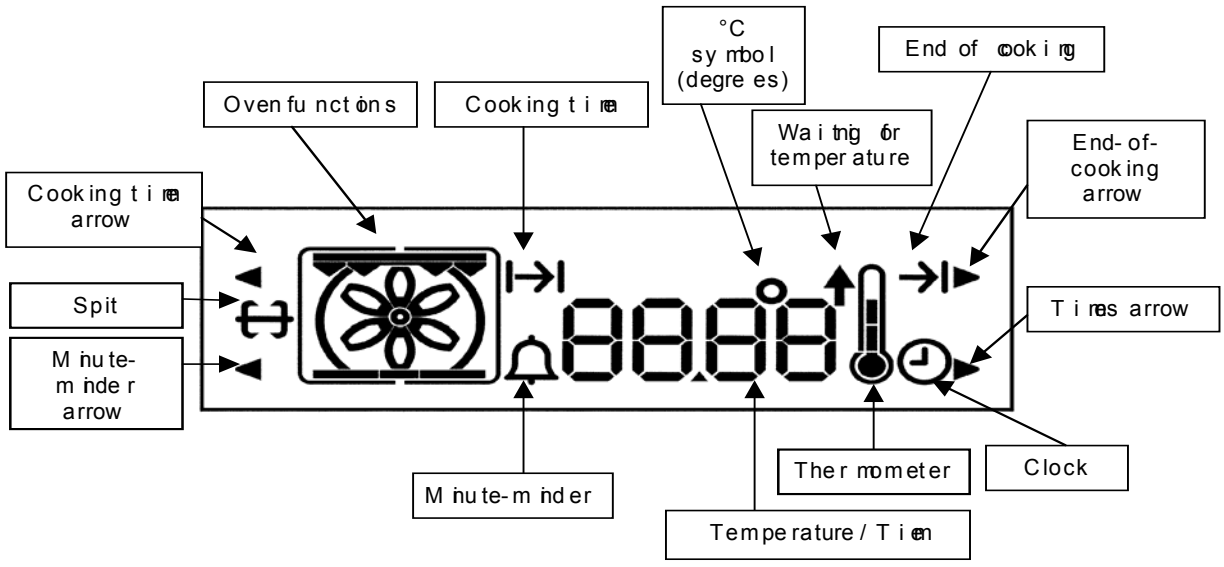
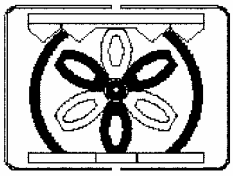


Fig. 91

5.1.1.4 - COOKING FUNCTIONS - NORMAL OVEN - LEVEL 1

The normal oven features eight cooking functions which can be selected in the sequence described below:

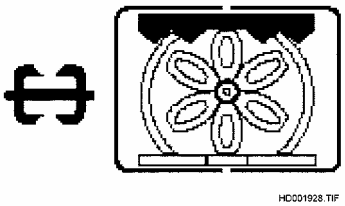
Fan cooking



Elements activated:
Oven lamp
Circular heating element
Convection fan

Pre-set temperature: 175 °C

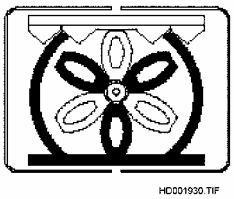
Grill with spit



Elements activated:
Oven lamp
Grill
Spit

Pre-set temperature: 250 °C

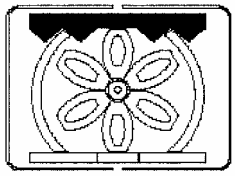
Pizza



Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan
N.B. In the Italian version, the lower and circular heating elements switch on alternately in order to save energy.

Pre-set temperature: 175 °C

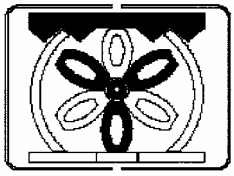
Large grill



Elements activated:
Oven lamp
Grill heating element
Upper heating element

Pre-set temperature: 250 °C

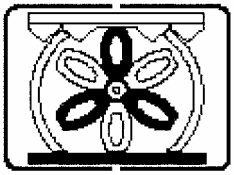
Grill + Fan



Elements activated:
Oven lamp
Grill heating element
Convection fan

Pre-set temperature: 180 °C

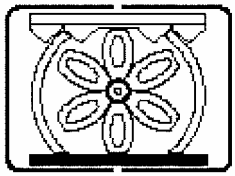
Fan with lower element



Elements activated:
Oven lamp
Convection fan
Lower heating element

Pre-set temperature: 200 °C

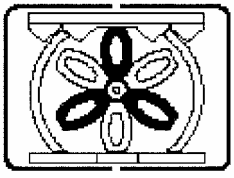
Bottom oven



Elements activated:
Oven lamp
Lower heating element

Pre-set temperature: 250 °C

Defrosting



Elements activated:
Oven lamp
Convection fan

Pre-set temperature: 30 °C

N.B.: Some models could not feature all the functions and these may have a different sequence.

5.1.2 - NORMAL OVEN - LEVEL 2

5.1.2.1 - CONTROL PANEL - NORMAL OVEN - LEVEL 2

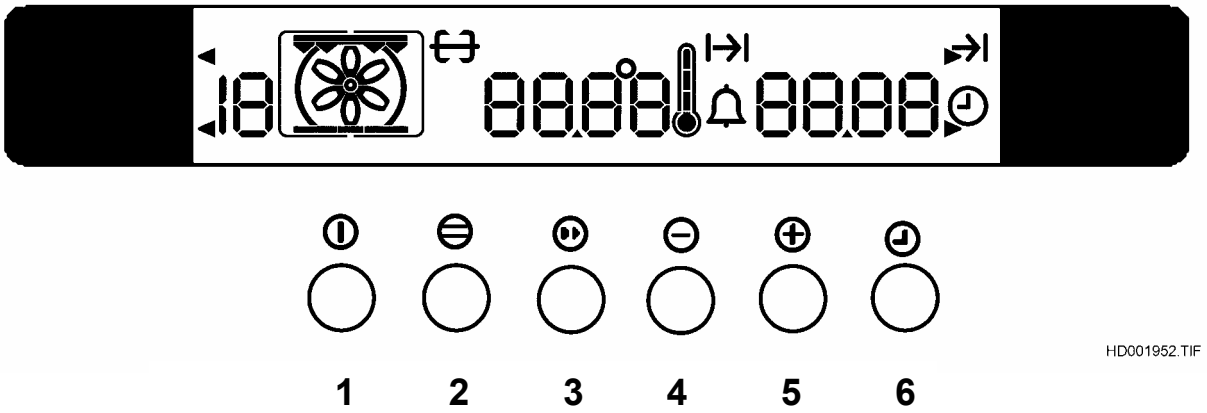


Fig. 92

5.1.2.2 - KEY FUNCTIONS - NORMAL OVEN - LEVEL 2

1 - ON/OFF key
Switches the oven ON and OFF

2 - FUNCTION key
Selects the cooking functions

3 - RAPID HEATING key
Heats the oven rapidly

4 - "-" key (back)
To decrease the temperature and time of day

5 - "+" key (forward)
To increase the temperature and time of day

6 - CLOCK key
Used to set the "minute-minder", "end of cooking", "cooking time" functions and the time of day.

5.1.2.3 - DESCRIPTION OF DISPLAY - NORMAL OVEN - LEVEL 2

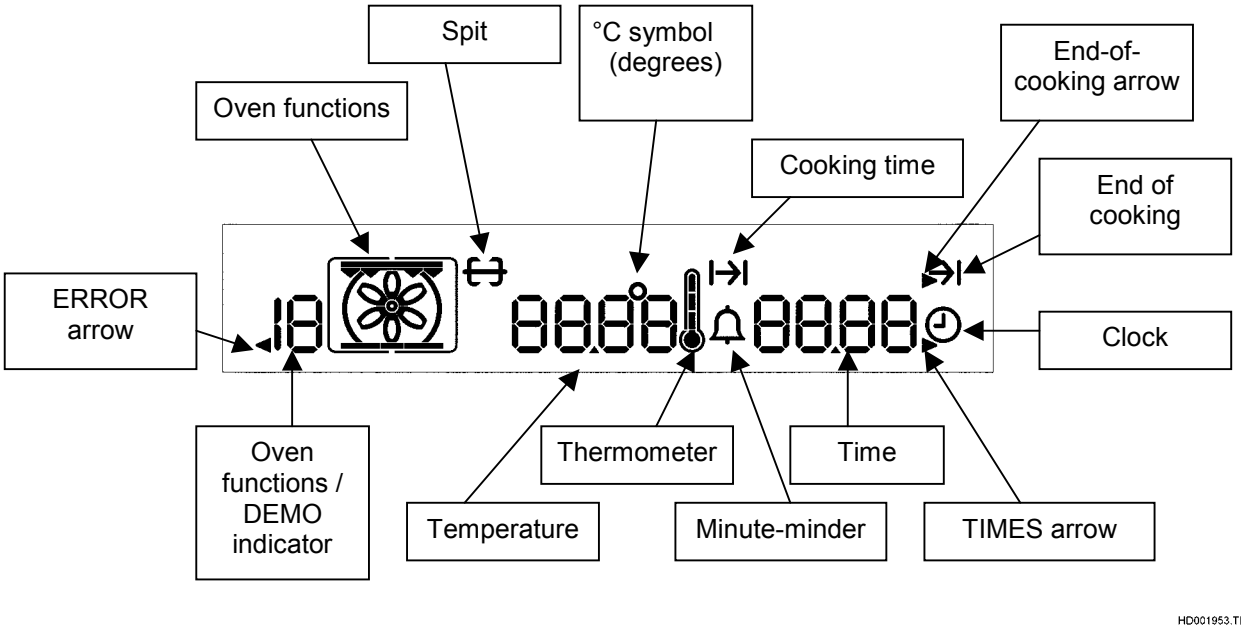
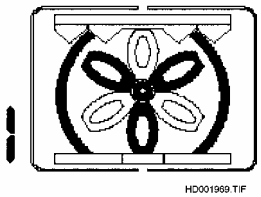


Fig. 93

5.1.2.4 - COOKING FUNCTIONS - NORMAL OVEN - LEVEL 2

The normal oven features nine (or ten) cooking functions which can be selected in the sequence described below:

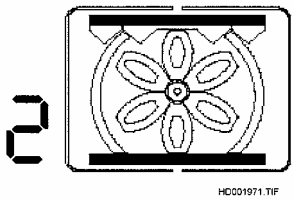
Fan cooking



Elements activated:
Oven lamp
Circular heating element
Convection fan

Pre-set temperature: 175 °C

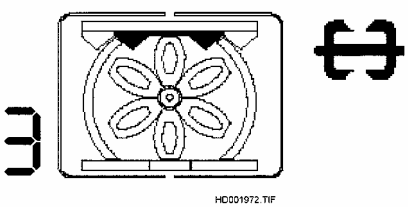
Traditional cooking



Elements activated:
Oven lamp
Upper heating element
Lower heating element

Pre-set temperature: 200 °C

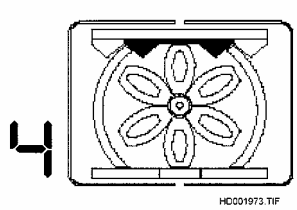
Grill with spit



Elements activated:
Oven lamp
Grill
Spit

Pre-set temperature: 250 °C

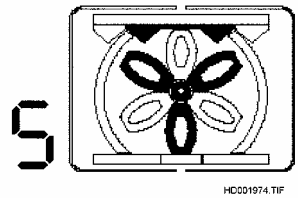
Grill



Elements activated:
Oven lamp
Grill heating element

Pre-set temperature: 250 °C

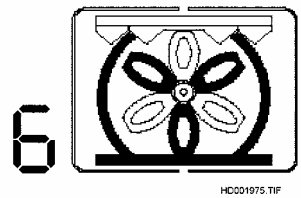
Grill + Fan



Elements activated:
Oven lamp
Grill
Convection fan

Pre-set temperature: 180 °C

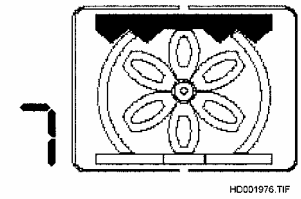
Pizza



Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan
N.B. In the Italian version, the lower and circular heating elements switch on alternately in order to save energy.

Pre-set temperature: 175 °C

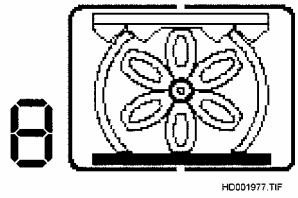
Large grill



Elements activated:
Oven lamp
Grill heating element
Upper heating element

Pre-set temperature: 250 °C

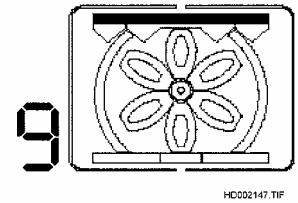
Oven bottom



Elements activated:
Oven lamp
Lower heating element

Pre-set temperature: 250 °C

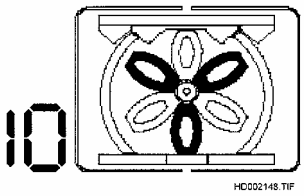
Oven top



Elements activated:
Oven lamp
Upper heating element

Pre-set temperature: 250 °C

Defrosting



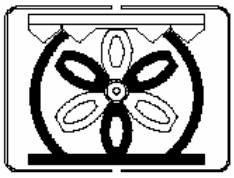
dEF

Elements activated:
Oven lamp
Convection fan

Pre-set temperature: 30 °C

SPECIAL FUNCTIONS:

Rapid heating (European version)

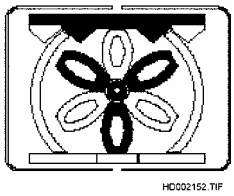


FHU

Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan

The figure illustrates the elements that are effectively in operation when the RAPID HEATING function has been selected, although the display indicates only the first function selected.

Rapid heating (Italian version)



FHU

Elements activated:
Oven lamp
Upper heating element
Grill heating element
Convection fan

The figure illustrates the elements that are effectively in operation when the RAPID HEATING function has been selected, although the display indicates only the first function selected.

N.B.: Some models could not feature all the functions or these may have a different sequence.

5.1.3 - NORMAL OVEN - LEVEL 3

5.1.3.1 - CONTROL PANEL - NORMAL OVEN - LEVEL 3

HD001960.TIF

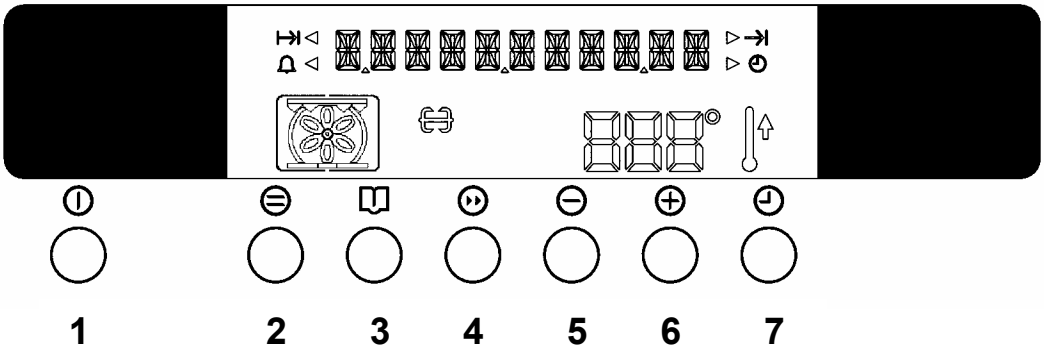


Fig. 94

5.1.3.2 - KEY FUNCTIONS - NORMAL OVEN - LEVEL 3

1 - ON/OFF key
Switches the oven ON and OFF

2 - FUNCTION key
Selects the cooking functions

3 - RECIPES key
Used to select the recipes

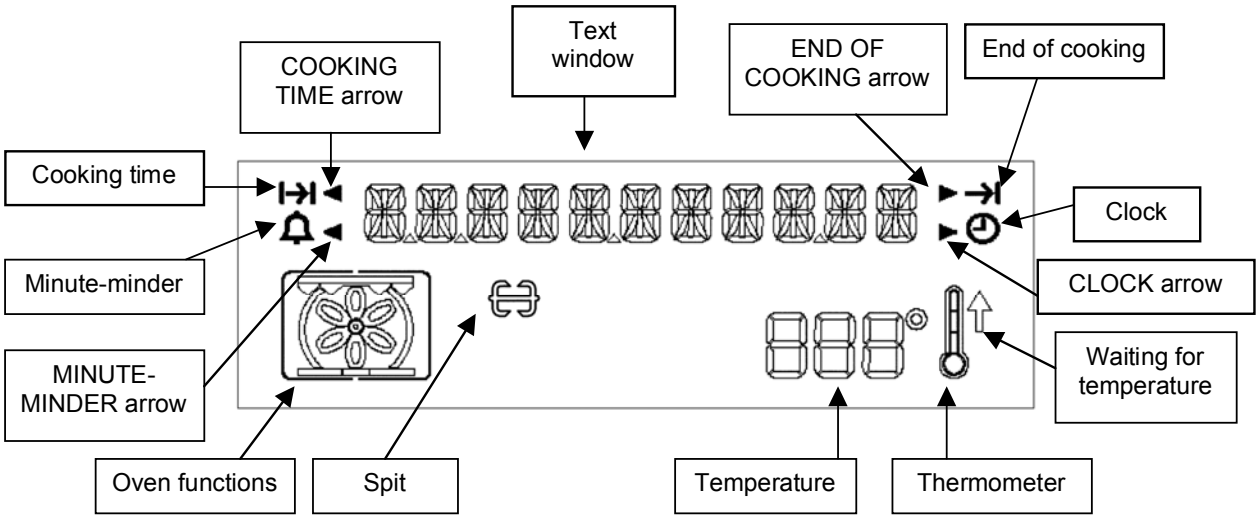
4 - RAPID HEATING key
Heats the oven rapidly

5 - "-" key (back)
To decrease the temperature and time of day

6 - "+" key (forward)
To increase the temperature and time of day

7 - CLOCK key
Used to set the "minute-minder", "end of cooking", "cooking time" functions and the time of day.

5.1.3.3 - DESCRIPTION OF DISPLAY - NORMAL OVEN - LEVEL 3

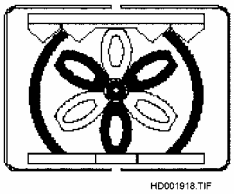


HD001964.TIF

5.1.3.4 - COOKING FUNCTIONS - NORMAL OVEN - LEVEL 3

The normal oven features nine (or ten) cooking functions which can be selected in the sequence described below:

Fan cooking

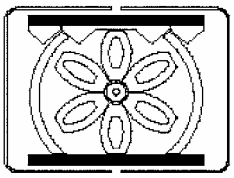


HD001918.TIF

Elements activated:
Oven lamp
Circular heating element
Convection fan

Pre-set temperature: 175 °C

Traditional cooking

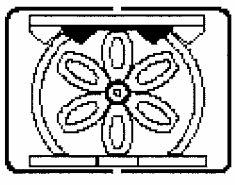


HD001919.TIF

Elements activated:
Oven lamp
Upper heating element
Lower heating element

Pre-set temperature: 200 °C

Grill with spit

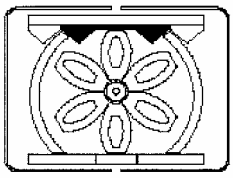


HD001920.TIF

Elements activated:
Oven lamp
Grill
Spit

Pre-set temperature: 250 °C

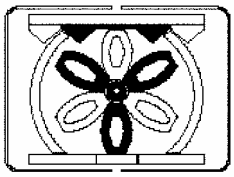
Grill



Elements activated:
Oven lamp
Grill heating element

Pre-set temperature: 250 °C

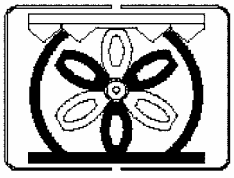
Grill + Fan



Elements activated:
Oven lamp
Grill heating element
Convection fan

Pre-set temperature: 180 °C

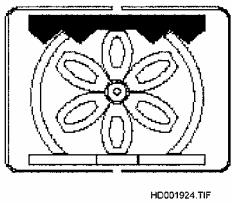
Pizza



Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan
N.B. In the Italian version, the lower and circular heating elements switch on alternately in order to save energy.

Pre-set temperature: 175 °C

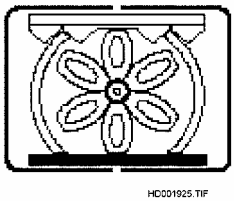
Large grill



Elements activated:
Oven lamp
Grill heating element
Upper heating element

Pre-set temperature: 250 °C

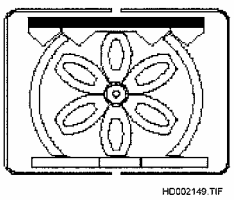
Oven bottom



Elements activated:
Oven lamp
Lower heating element

Pre-set temperature: 250 °C

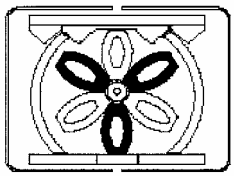
Oven top



Elements activated:
Oven lamp
Upper heating element

Pre-set temperature: 250 °C

Defrosting

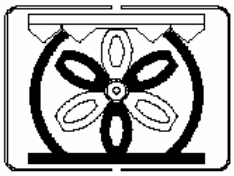


Elements activated:
Oven lamp
Convection fan

Pre-set temperature: 30 °C

SPECIAL FUNCTIONS

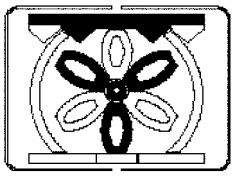
Rapid heating (European version)



Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan

The figure illustrates the elements that are effectively in operation when the RAPID HEATING function has been selected, although the display indicates only the first function selected.

Rapid heating (Italian version)



Elements activated:
Oven lamp
Upper heating element
Grill heating element
Convection fan

The figure illustrates the elements that are effectively in operation when the RAPID HEATING function has been selected, although the display indicates only the first function selected.

NOTA: Some models couldn not feature all the functions and these may have a different sequence.

5.2 - OVEN WITH MEAT PROBE

5.2.1 - OVEN WITH MEAT PROBE - LEVEL 1

5.2.1.1 - CONTROL PANEL - OVEN WITH MEAT PROBE - LEVEL 1

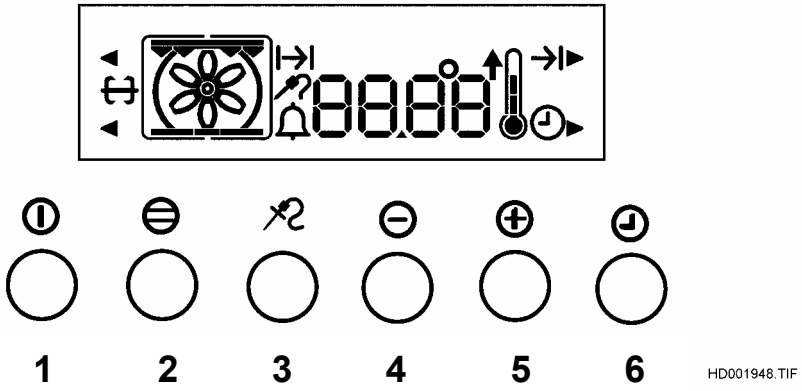


Fig. 96

5.2.1.2 - KEY FUNCTIONS OVEN WITH MEAT PROBE LEVEL 1

1 - ON/OFF key
Switches the oven ON and OFF

2 - FUNCTION key
Selects the cooking functions

3 - MEAT PROBE key
Selects the meat probe function

4 - "-" key (back)
To decrease the temperature and time of day

5 - "+" key (forward)
To increase the temperature and time of day

6 - CLOCK key
Used to set the "minute-minder", "end of cooking" and "cooking time"

5.2.1.3 - DESCRIPTION OF DISPLAY - OVEN WITH MEAT PROBE - LEVEL 1

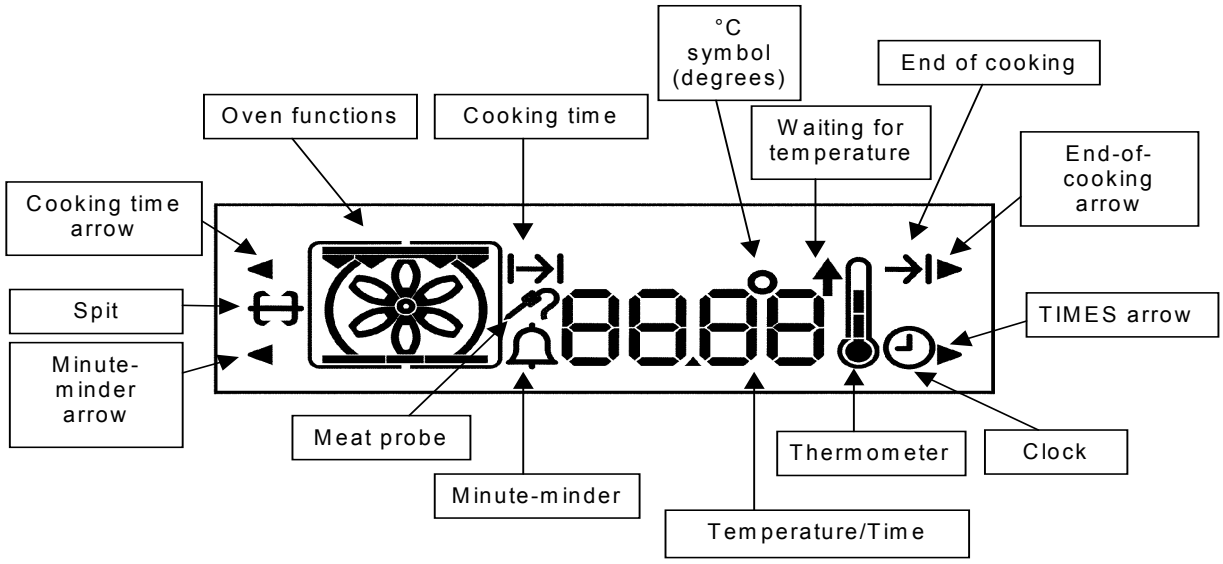
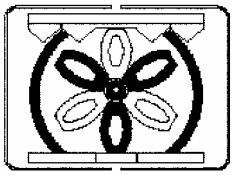


Fig. 97

5.2.1.4 - COOKING FUNCTIONS - OVEN WITH MEAT PROBE - LEVEL 1

The meat probe oven features eight cooking functions (as in the normal oven) which can be selected in the sequence described below:

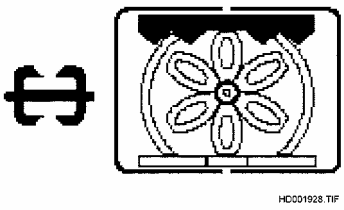
Fan cooking



Elements activated:
Oven lamp
Circular heating element
Convection fan

Pre-set temperature: 175 °C

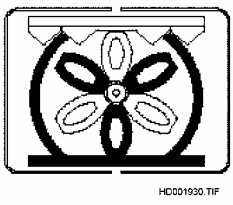
Grill with spit



Elements activated:
Oven lamp
Grill heating element
Spit

Pre-set temperature: 250 °C

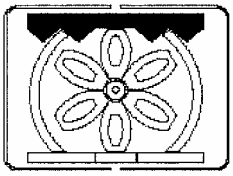
Pizza



Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan
N.B. In the Italian version, the lower and circular heating elements switch on alternately in order to save energy.

Pre-set temperature: 175 °C

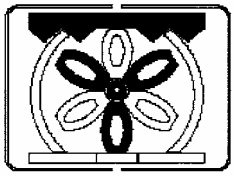
Large grill



Elements activated:
Oven lamp
Grill heating element
Upper heating element

Pre-set temperature: 250 °C

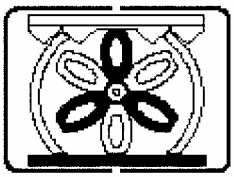
Grill + Fan



Elements activated:
Oven lamp
Grill heating element
Convection fan

Pre-set temperature: 180 °C

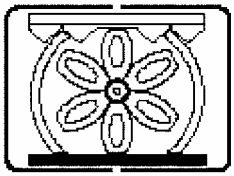
Fan with lower element



Elements activated:
Oven lamp
Convection fan
Lower heating element

Pre-set temperature: 200 °C

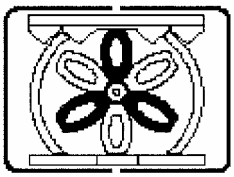
Oven bottom



Elements activated:
Oven lamp
Lower heating element

Pre-set temperature: 250 °C

Defrosting



Elements activated:
Oven lamp
Convection fan
Lower heating element (impulse operation)

Pre-set temperature: 30 °C

N.B.: Some models could not feature all the functions and these may have a different sequence.

5.2.2 - OVEN WITH MEAT PROBE - LEVEL 2

5.2.2.1 - CONTROL PANEL - OVEN WITH MEAT PROBE - LEVEL 2

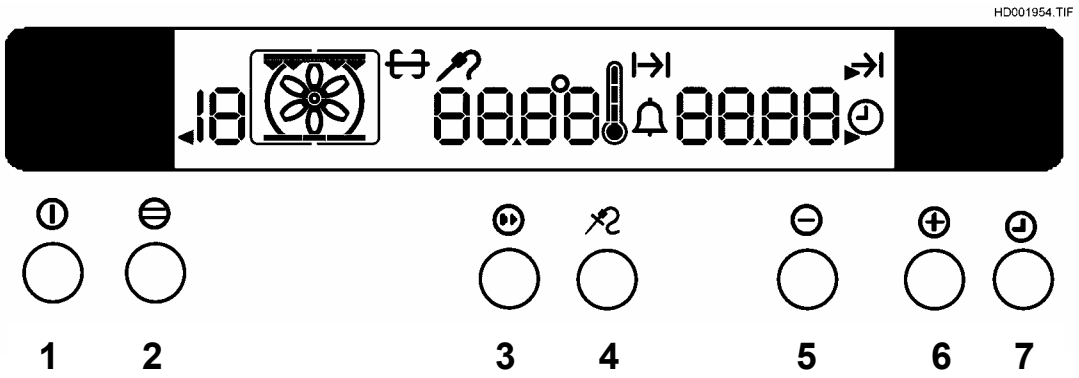


Fig. 98

5.2.2.2 - KEY FUNCTIONS - OVEN WITH MEAT PROBE - LEVEL 2

1 - ON/OFF key
Switches the oven ON and OFF

2 - FUNCTION key
Selects the cooking functions

3 - RAPID HEATING key
Heats the oven rapidly

4 - "MEAT PROBE" key
Used to select the "Cooking with meat probe" function

5 - "-" key (back)
To decrease the temperature and time of day

6 - "+" key (forward)
To increase the temperature and time of day

7 - CLOCK key
Used to set the "minute-minder", "end of cooking", "cooking time" functions and the time of day.

5.2.2.3 - DESCRIPTION OF DISPLAY - OVEN WITH MEAT PROBE - LEVEL 2

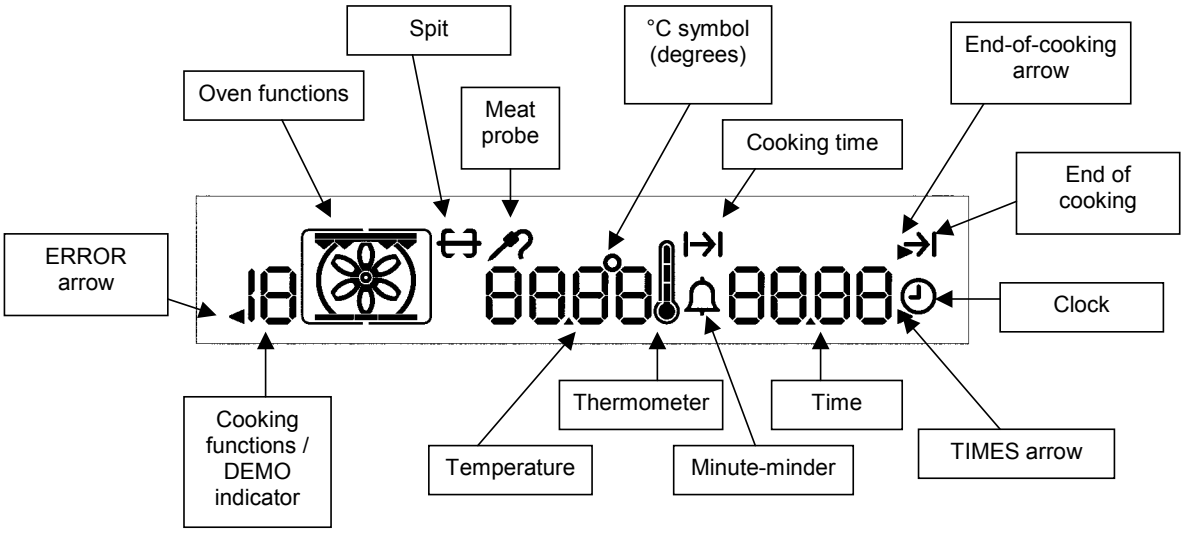
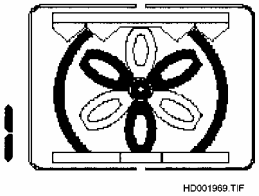


Fig. 99

5.2.2.4 - COOKING FUNCTIONS - OVEN WITH MEAT PROBE - LEVEL 2

The meat probe oven features nine (or ten) cooking functions (as in the normal oven) which can be selected in the sequence described below:

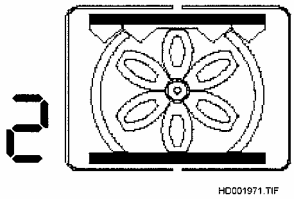
Fan cooking



Elements activated:
Oven lamp
Circular heating element
Convection fan

Pre-set temperature: 175 °C

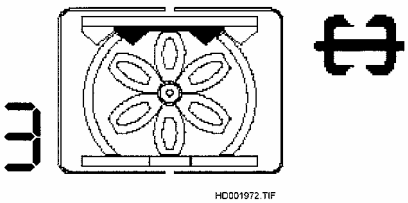
Traditional cooking



Elements activated:
Oven lamp
Upper heating element
Lower heating element

Pre-set temperature: 200 °C

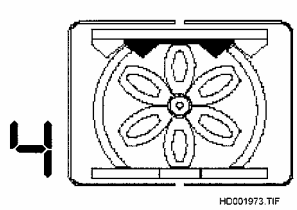
Grill with spit



Elements activated:
Oven lamp
Grill heating element
Spit

Pre-set temperature: 250 °C

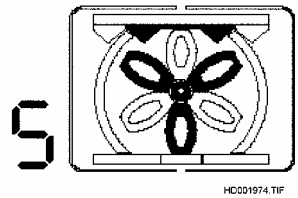
Grill



Elements activated:
Oven lamp
Grill heating element

Pre-set temperature: 250 °C

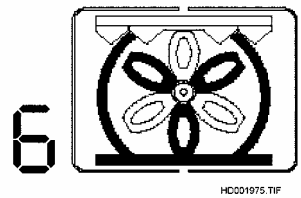
Grill + Fan



Elements activated:
Oven lamp
Grill heating element
Convection fan

Pre-set temperature: 180 °C

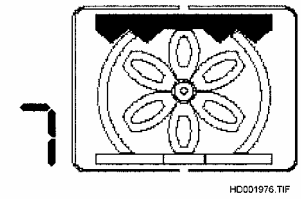
Pizza



Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan
N.B. In the Italian version, the lower and circular heating elements switch on alternately in order to save energy.

Pre-set temperature: 175 °C

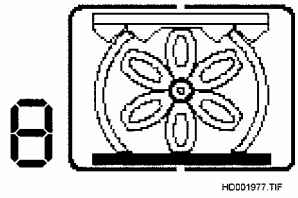
Large grill



Elements activated:
Oven lamp
Grill heating element
Upper heating element

Pre-set temperature: 250 °C

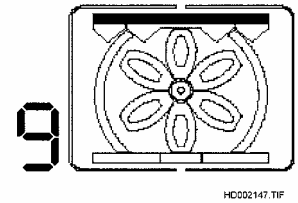
Oven bottom



Elements activated:
Oven lamp
Lower heating element

Pre-set temperature: 250 °C

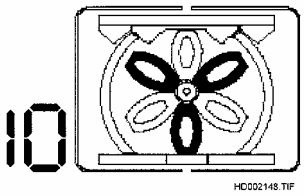
Oven top



Elements activated:
Oven lamp
Upper heating element

Pre-set temperature: 250 °C

Defrosting



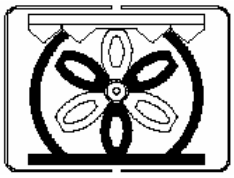
dEF

Elements activated:
Oven lamp
Convection fan

Pre-set temperature: 30 °C

SPECIAL FUNCTIONS:

Rapid heating (European version)

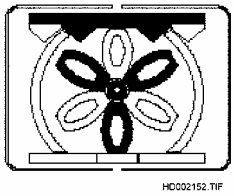


FHU

Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan

The figure illustrates the elements that are effectively in operation when the RAPID HEATING function has been selected, although the display indicates only the first function selected.

Rapid heating (Italian version)



FHU

Elements activated:
Oven lamp
Upper heating element
Grill heating element
Convection fan

The figure illustrates the elements that are effectively in operation when the RAPID HEATING function has been selected, although the display indicates only the first function selected.

N.B.: Some models could not feature all the functions and these may have a different sequence.

5.2.3 - OVEN WITH MEAT PROBE - LEVEL 3

5.2.3.1 - CONTROL PANEL - OVEN WITH MEAT PROBE - LEVEL 3

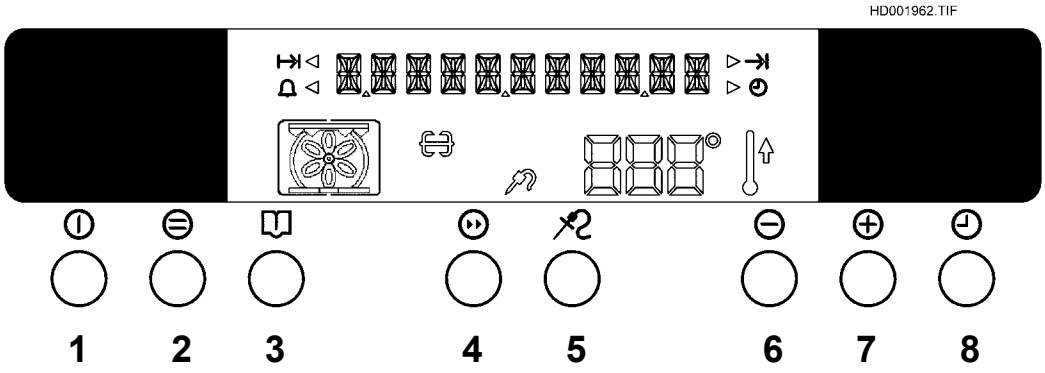


Fig. 100

5.2.3.2 - KEY FUNCTIONS - OVEN WITH MEAT PROBE - LEVEL 3

1 - ON/OFF key
Switches the oven ON and OFF

2 - FUNCTION key
Selects the cooking functions

3 - RECIPES key
Used to select the recipes

4 - RAPID HEATING key
Heats the oven rapidly

5 - MEAT PROBE key
Used to select the "Cooking with meat probe" function

6 - "-" key (back)
To decrease the temperature and time of day

7 - "+" key (forward)
To increase the temperature and time of day

8 - CLOCK key
Used to set the "minute-minder", "end of cooking", "cooking time" functions and the time of day.

5.2.3.3 - DESCRIPTION OF DISPLAY - OVEN WITH MEAT PROBE - LEVEL 3

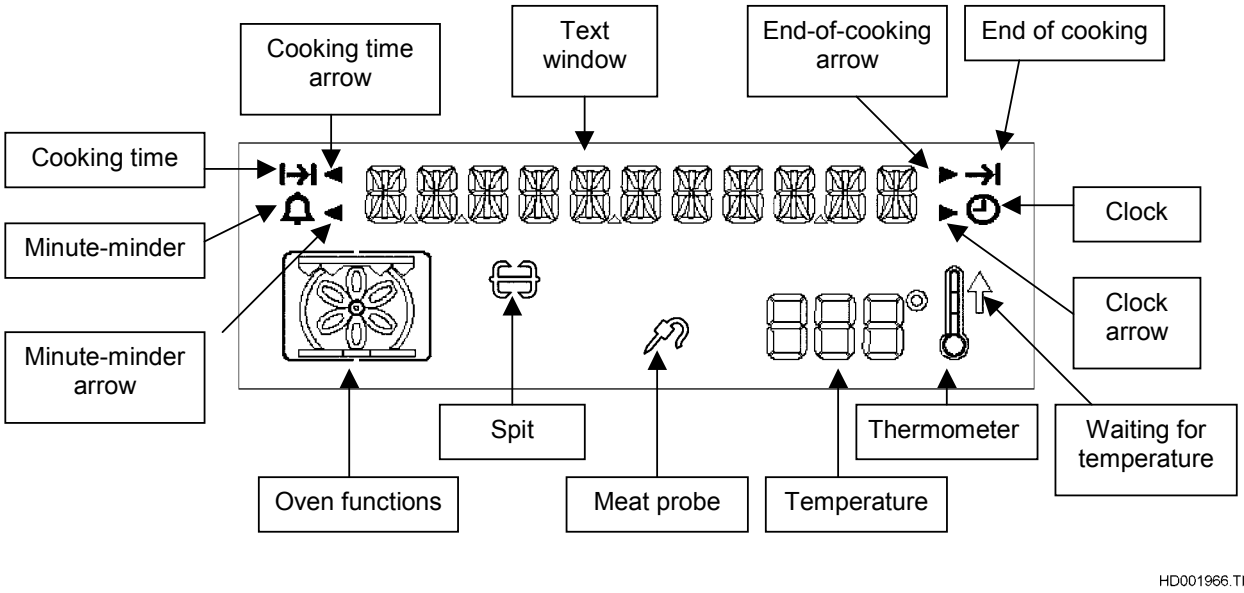
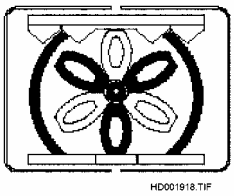


Fig. 101

5.2.3.4 - COOKING FUNCTIONS - OVEN WITH MEAT PROBE - LEVEL 3

The meat probe oven features nine (or ten) cooking functions (as in the normal oven) which can be selected in the sequence described below:

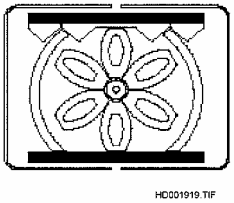
Fan cooking



Elements activated:
Oven lamp
Circular heating element
Convection fan

Pre-set temperature: 175 °C

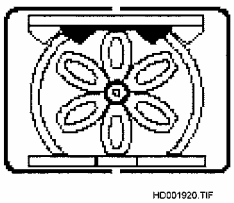
Traditional cooking



Elements activated:
Oven lamp
Upper heating element
Lower heating element

Pre-set temperature: 200 °C

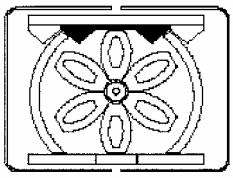
Grill with spit



Elements activated:
Oven lamp
Grill heating element
Spit

Pre-set temperature: 250 °C

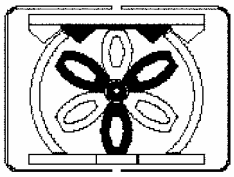
Grill



Elements activated:
Oven lamp
Grill heating element

Pre-set temperature: 250 °C

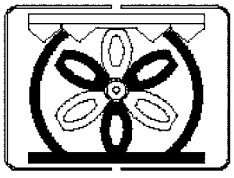
Grill + Fan



Elements activated:
Oven lamp
Grill heating element
Convection fan

Pre-set temperature: 180 °C

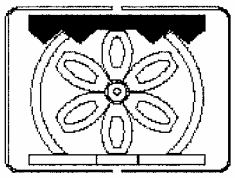
Pizza



Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan
N.B. In the Italian version, the lower and circular heating elements switch on alternately in order to save energy.

Pre-set temperature: 175 °C

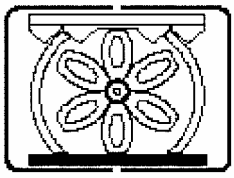
Large grill



Elements activated:
Oven lamp
Grill heating element
Upper heating element

Pre-set temperature: 250 °C

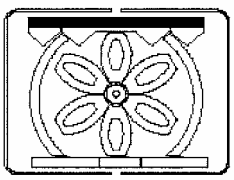
Oven bottom



Elements activated:
Oven lamp
Lower heating element

Pre-set temperature: 250 °C

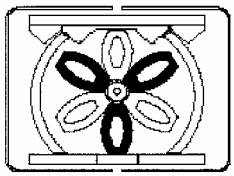
Oven top



Elements activated:
Oven lamp
Upper heating element

Pre-set temperature: 250 °C

Defrosting

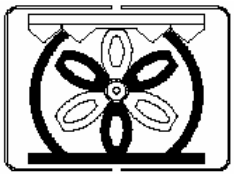


Elements activated:
Oven lamp
Convection fan

Pre-set temperature: 30 °C

SPECIAL FUNCTIONS:

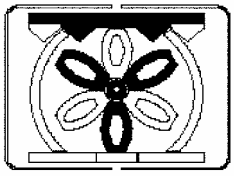
Rapid heating (European version)



Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan

The figure illustrates the elements that are effectively in operation when the RAPID HEATING function has been selected, although the display indicates only the first function selected.

Rapid heating (Italian version)



Elements activated:
Oven lamp
Upper heating element
Grill heating element
Convection fan

The figure illustrates the elements that are effectively in operation when the RAPID HEATING function has been selected, although the display indicates only the first function.

N.B.: Some models could not feature all the functions and these may have a different sequence.

5.3 - STEAM OVEN

5.3.1 - STEAM OVEN - LEVEL 2

5.3.1.1 - CONTROL PANEL - STEAM OVEN - LEVEL 2

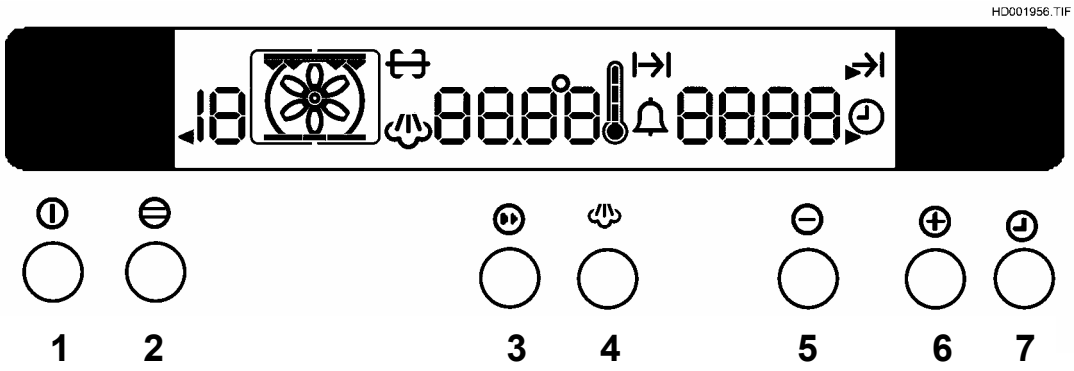


Fig. 102

5.3.1.2 - KEY FUNCTIONS - STEAM OVEN - LEVEL 2

1 - ON/OFF key
Switches the oven ON and OFF

2 - FUNCTION key
Selects the cooking functions

3 - RAPID HEATING key
Heats the oven rapidly

4 - STEAM key
Used to select the STEAM COOKING function

5 - "-" key (back)
To decrease the temperature and time of day

6 - "+" key (forward)
To increase the temperature and time of day

7 - CLOCK key
Used to set the "minute-minder", "end of cooking", "cooking time" functions and the time of day.

5.3.1.3 - DESCRIPTION OF DISPLAY - STEAM OVEN - LEVEL 2

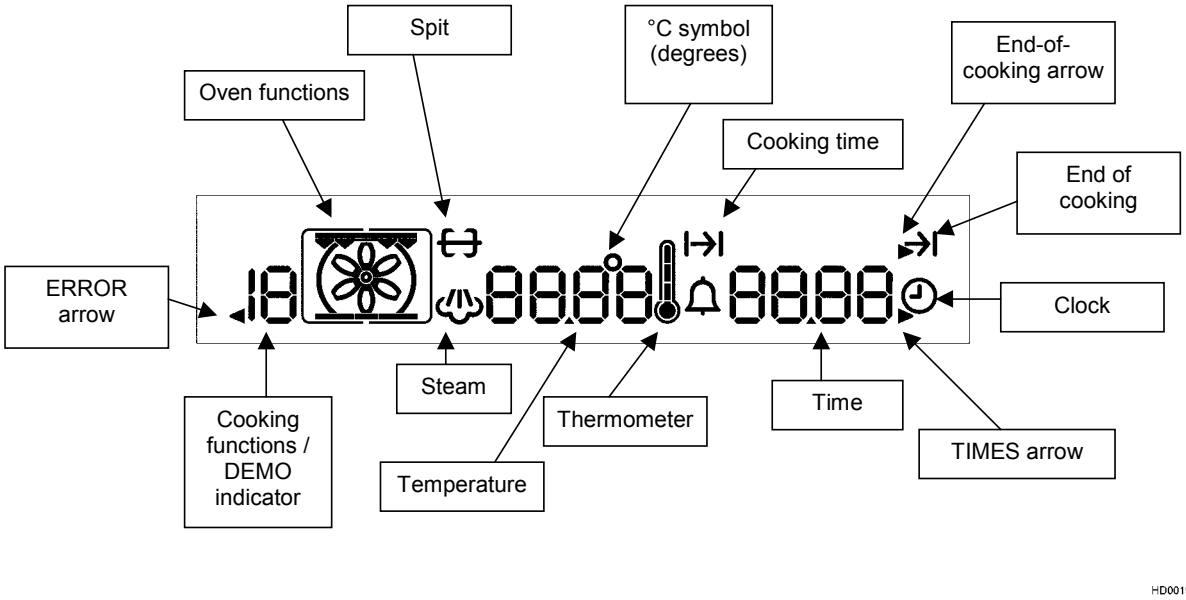
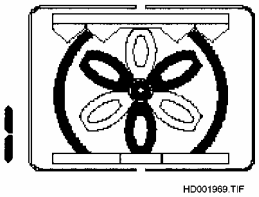


Fig. 103

5.3.1.4 - COOKING FUNCTIONS - STEAM OVEN - LEVEL 2

The steam oven features nine (or ten) cooking functions, which can be selected in the sequence described below:

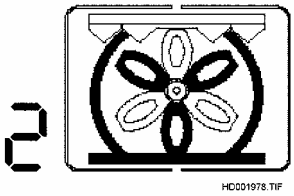
Fan cooking



Elements activated:
Oven lamp
Circular heating element
Convection fan

Pre-set temperature: 175 °C

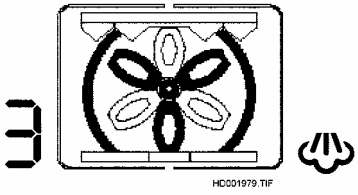
Pizza



Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan
N.B. In the Italian version, the lower and circular heating elements switch on alternately in order to save energy.

Pre-set temperature: 175 °C

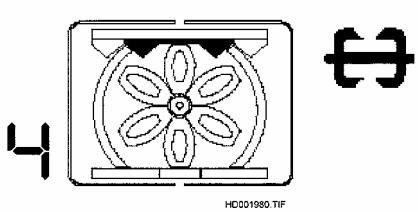
Steam cooking



Elements activated:
Oven lamp
Circular heating element
Convection fan
Steam generator

Pre-set temperature: 175 °C

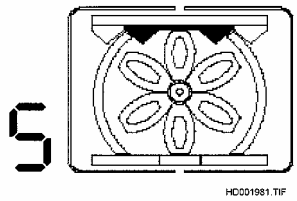
Grill with spit



Elements activated:
Oven lamp
Grill heating element
Spit

Pre-set temperature: 250 °C

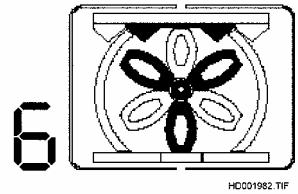
Grill



Elements activated:
Oven lamp
Grill heating element

Pre-set temperature: 250 °C

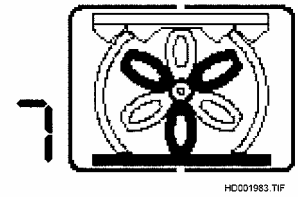
Grill + Fan



Elements activated:
Oven lamp
Grill heating element
Convection fan

Pre-set temperature: 180 °C

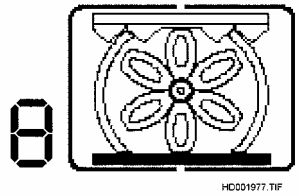
Fan with lower element



Elements activated:
Oven lamp
Lower heating element
Convection fan

Pre-set temperature: 200 °C

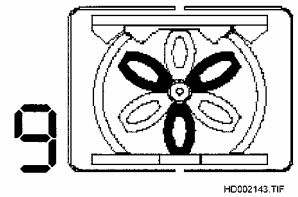
Oven bottom



Elements activated:
Oven lamp
Lower heating element

Pre-set temperature: 250 °C

Defrosting

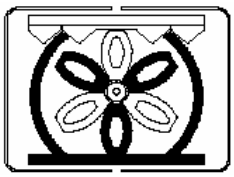


Elements activated:
Oven lamp
Convection fan

Pre-set temperature: 30 °C

SPECIAL FUNCTIONS:

Rapid heating (European version)

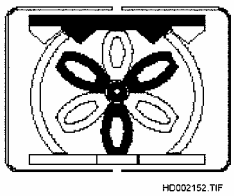


FHU

Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan

The figure illustrates the elements that are effectively in operation when the RAPID HEATING function has been selected, although the display indicates only the first function selected.

Rapid heating (Italian version)



FHU

Elements activated:
Oven lamp
Lower heating element
Grill heating element
Convection fan

The figure illustrates the elements that are effectively in operation when the RAPID HEATING function has been selected, although the display indicates only the first function selected.

N.B.: Some models could not feature all the functions and these may have a different sequence.

5.3.2 - STEAM OVEN - LEVEL 3

5.3.2.1 - CONTROL PANEL - STEAM OVEN - LEVEL 3

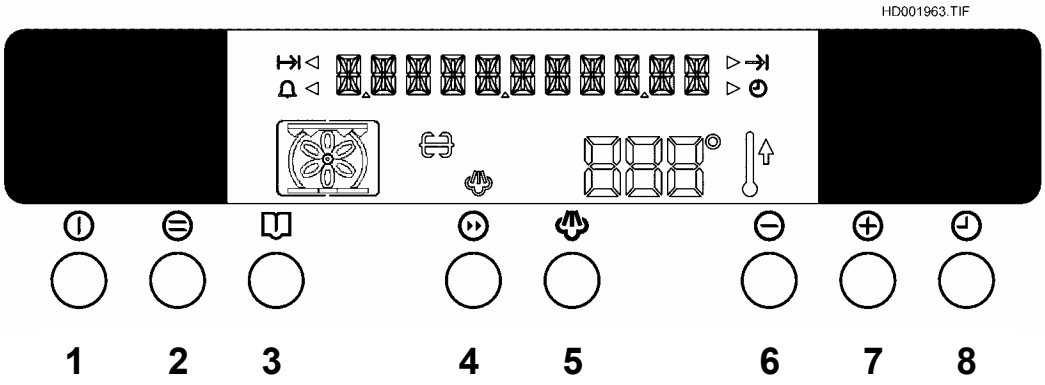


Fig. 104

5.3.2.2 - KEY FUNCTIONS - STEAM OVEN - LEVEL 3

1 - ON/OFF key
Switches the oven ON and OFF

2 - FUNCTION key
Selects the cooking functions

3 - RECIPES key
Used to select the recipes

4 - RAPID HEATING key
Heats the oven rapidly

5 - STEAM key
Used to select the STEAM COOKING function

6 - "-" key (back)
To decrease the temperature and time of day

7 - "+" key (forward)
To increase the temperature and time of day

8 - CLOCK key
Used to set the "minute-minder", "end of cooking", "cooking time" functions and the time of day.

5.3.2.3 - DESCRIPTION OF DISPLAY - STEAM OVEN LEVEL 3

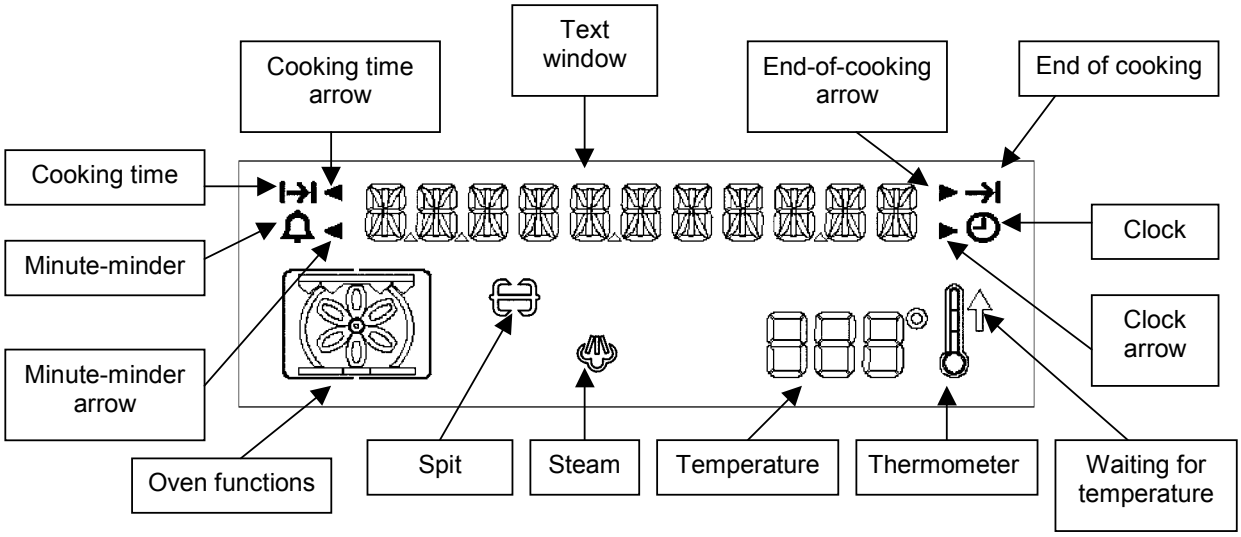
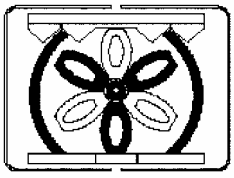


Fig. 105

5.3.2.4 - COOKING FUNCTIONS - STEAM OVEN - LEVEL 3

The steam oven features nine (or ten) cooking functions, which can be selected in the sequence described below:

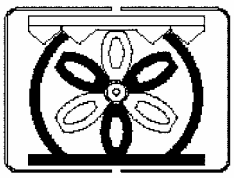
Fan cooking



Elements activated:
Oven lamp
Circular heating element
Convection fan

Pre-set temperature: 175 °C

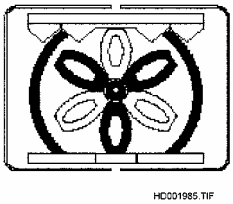
Pizza



Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan
N.B. In the Italian version, the lower and circular heating elements switch on alternately in order to save energy.

Pre-set temperature: 175 °C

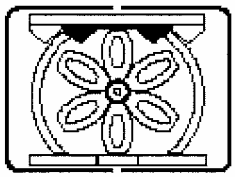
Steam cooking



Elements activated:
Oven lamp
Circular heating element
Convection fan
Steam generator at full power

Pre-set temperature: 175 °C

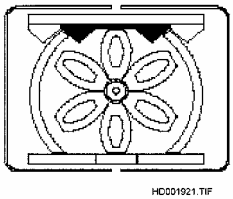
Grill with spit



Elements activated:
Oven lamp
Grill heating element
Spit

Pre-set temperature: 250 °C

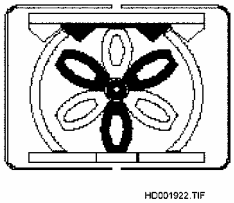
Grill



Elements activated:
Oven lamp
Grill heating element

Pre-set temperature: 250 °C

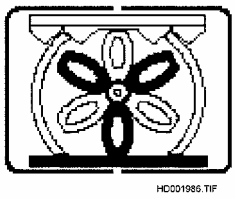
Grill + Fan



Elements activated:
Oven lamp
Grill heating element
Convection fan

Pre-set temperature: 180 °C

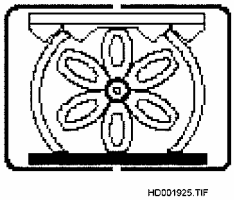
Fan with lower element



Elements activated:
Oven lamp
Lower heating element
Convection fan

Pre-set temperature: 200 °C

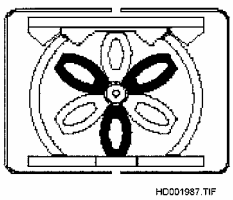
Oven bottom



Elements activated:
Oven lamp
Lower heating element

Pre-set temperature: 250 °C

Defrosting

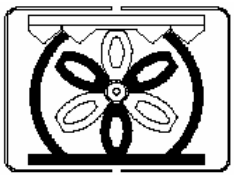


Elements activated:
Oven lamp
Convection fan

Pre-set temperature: 35 °C

SPECIAL FUNCTIONS:

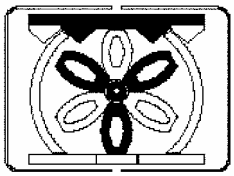
Rapid heating (European version)



Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan

The figure illustrates the elements that are effectively in operation when the RAPID HEATING function has been selected, although the display indicates only the first function selected.

Rapid heating (Italian version)



HDD02153.TIF

Elements activated:
Oven lamp
Upper heating element
Grill heating element
Convection fan

The figure illustrates the elements that are effectively in operation when the RAPID HEATING function has been selected, although the display indicates only the first function selected.

N.B.: Some models could not feature all the functions or these may have a different sequence.

5.4 - PYROLYTIC OVEN

5.4.1 - PYROLYTIC OVEN - LEVEL 1

5.4.1.1 - CONTROL PANEL - PYROLYTIC OVEN - LEVEL 1

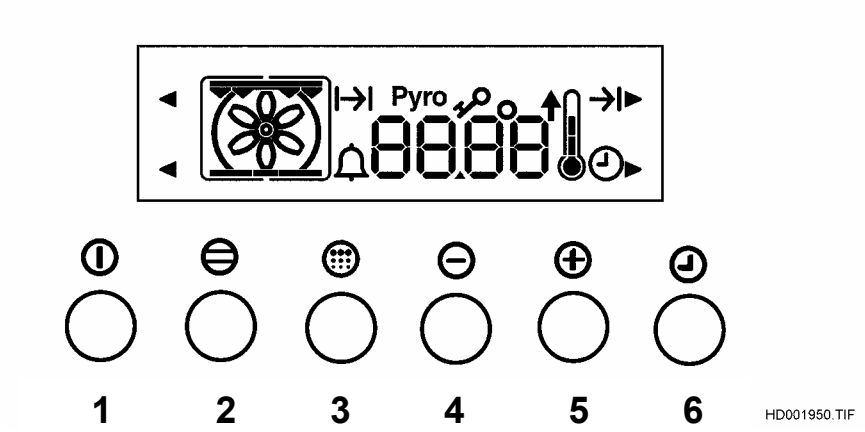


Fig. 106

5.4.1.2 - KEY FUNCTIONS - PYROLYTIC OVEN - LEVEL 1

1 - ON/OFF key
Switches the oven ON and OFF

2 - FUNCTION key
Selects the cooking functions

3 - PYROLYTIC key
Used to select the "PYROLYSIS" function

4 - "-" key (back)
To decrease the temperature and time of day

5 - "+" key (forward)
To increase the temperature and time of day

6 - CLOCK key
Used to set the "minute-minder", "end of cooking", "cooking time" functions and the time of day.

5.4.1.3 - DESCRIPTION OF DISPLAY - PYROLYTIC OVEN - LEVEL 1

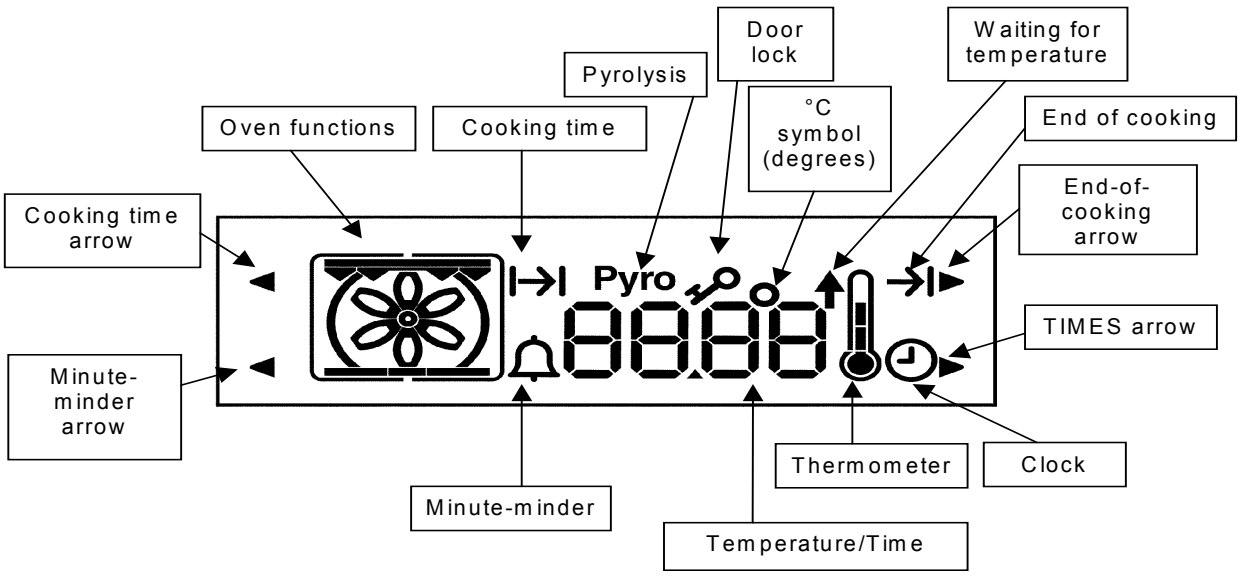
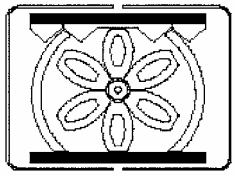


Fig. 107

5.4.1.4 - COOKING FUNCTIONS - PYROLYTIC OVEN - LEVEL 1

The Pyrolytic oven features seven (or eight) cooking functions (as in the normal version), which can be selected in the sequence described below:

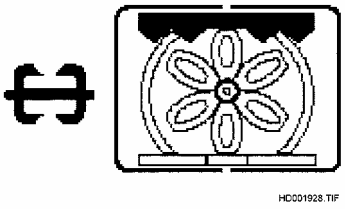
Traditional cooking



Elements activated:
Oven lamp
Upper heating element
Lower heating element

Pre-set temperature: 200 °C

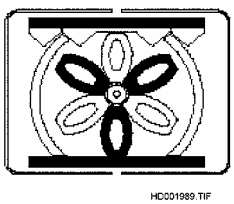
Grill with spit



Elements activated:
Oven lamp
Grill heating element
Spit

Pre-set temperature: 250 °C

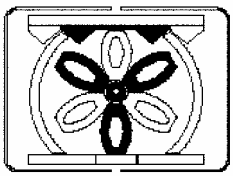
Traditional fan cooking



Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan

Pre-set temperature: 175 °C

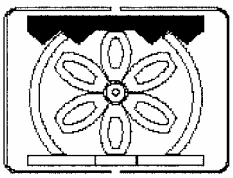
Grill + Fan



Elements activated:
Oven lamp
Grill heating element
Convection fan

Pre-set temperature: 180 °C

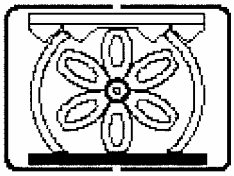
Large grill



Elements activated:
Oven lamp
Grill heating element
Upper heating element

Pre-set temperature: 250 °C

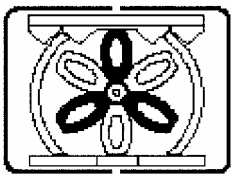
Oven bottom



Elements activated:
Oven lamp
Lower heating element

Pre-set temperature: 250 °C

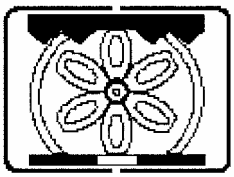
Defrosting



Elements activated:
Oven lamp
Convection fan

Pre-set temperature: 30 °C

Pyrolytic



Pyro

Elements activated:
Oven lamp
Upper heating element at 100%
Grill heating element at 80%
Lower heating element at 20%

N.B.: Some models could not feature all the functions and these may have a different sequence.

5.4.2 - PYROLYTIC OVEN - LEVEL 2

5.4.2.1 - CONTROL PANEL - PYROLYTIC OVEN - LEVEL 2

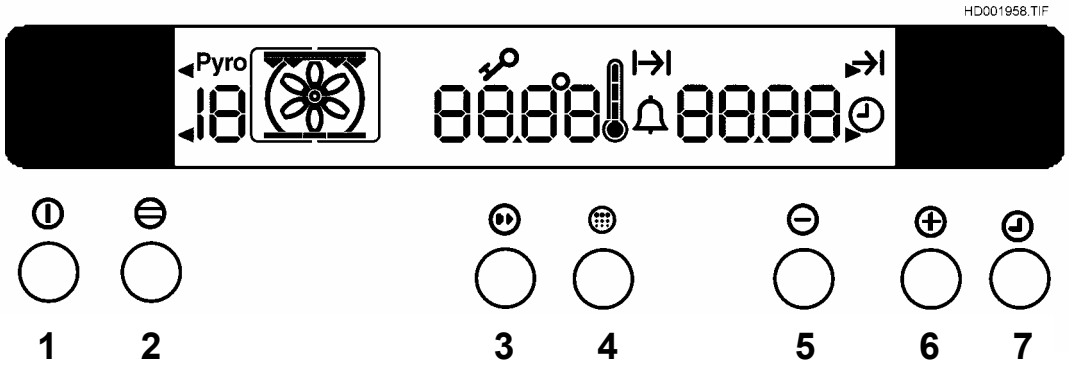


Fig. 108

5.4.2.2 - KEY FUNCTIONS - PYROLYTIC OVEN - LEVEL 2

1 - ON/OFF key
Switches the oven ON and OFF

2 - FUNCTION key
Selects the cooking functions

3 - RAPID HEATING key
Heats the oven rapidly

4 - PYROLYTIC key
Used to select the "PYROLYSIS" function

5 - "-" key (back)
To decrease the temperature and time of day

6 - "+" key (forward)
To increase the temperature and time of day

7 - CLOCK key
Used to set the "minute-minder", "end of cooking", "cooking time" functions and the time of day.

5.4.2.3 - DESCRIPTION OF DISPLAY - PYROLYTIC OVEN - LEVEL 2

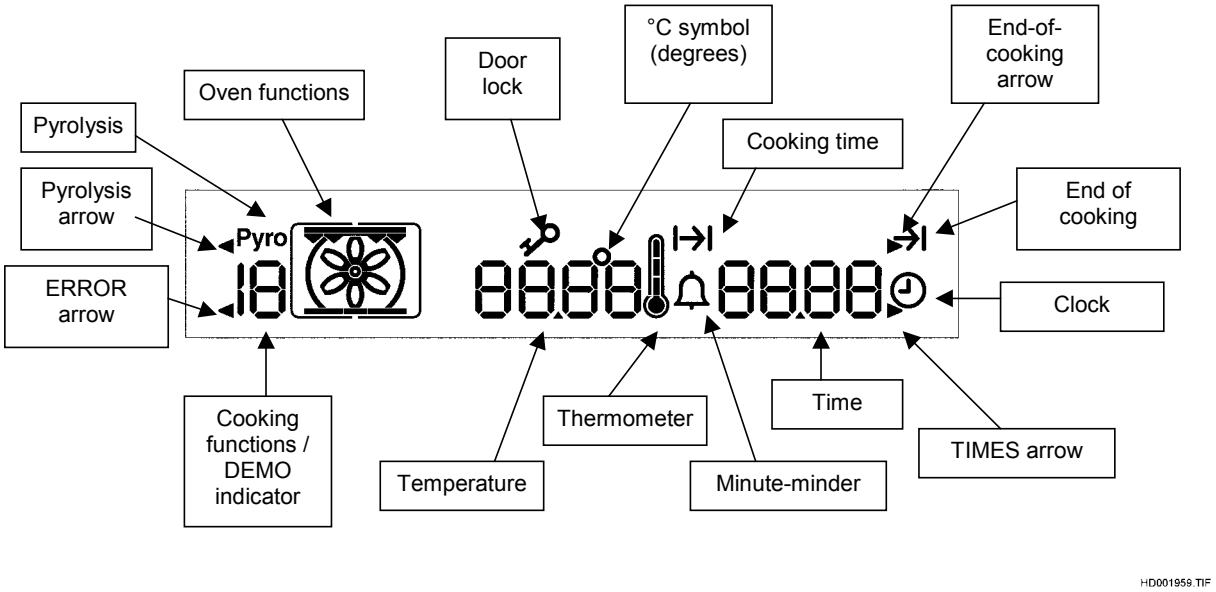
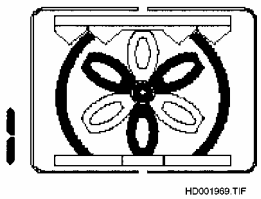


Fig. 109

5.4.2.4 - COOKING FUNCTIONS - PYROLYTIC OVEN - LEVEL 2

The Pyrolytic oven features nine (or ten) cooking functions (as in the normal version), which can be selected in the sequence described below:

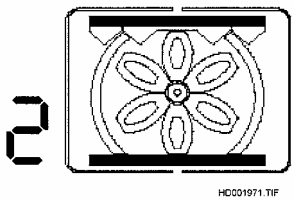
Fan cooking



Elements activated:
Oven lamp
Circular heating element
Convection fan

Pre-set temperature: 175 °C

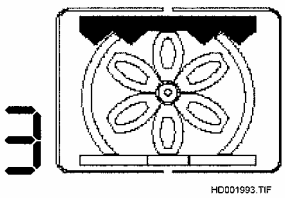
Traditional cooking



Elements activated:
Oven lamp
Upper heating element
Lower heating element

Pre-set temperature: 200 °C

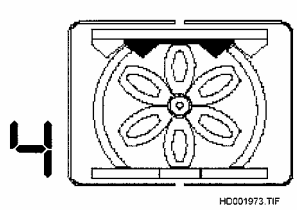
Large grill



Elements activated:
Oven lamp
Grill heating element
Upper heating element

Pre-set temperature: 250 °C

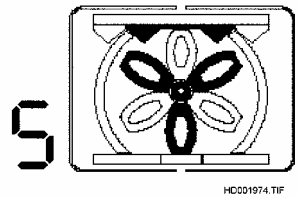
Grill



Elements activated:
Oven lamp
Grill heating element

Pre-set temperature: 250 °C

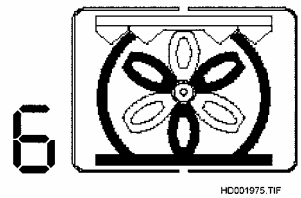
Grill + Fan



Elements activated:
Oven lamp
Grill heating element
Convection fan

Pre-set temperature: 180 °C

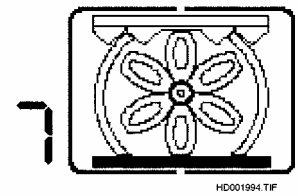
Pizza



Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan

Pre-set temperature: 175 °C

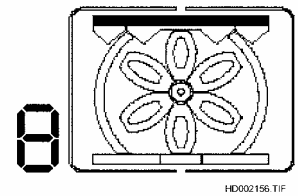
Oven bottom



Elements activated:
Oven lamp
Lower heating element

Pre-set temperature: 250 °C

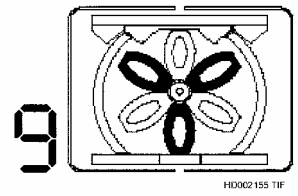
Oven top



Elements activated:
Oven lamp
Upper heating element

Pre-set temperature: 250 °C

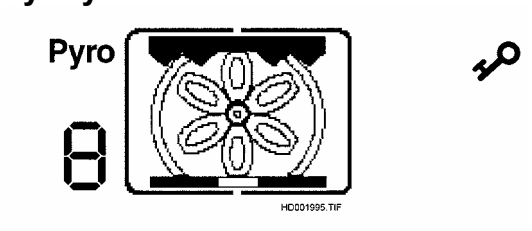
Defrosting



Elements activated:
Oven lamp
Convection fan

Pre-set temperature: 30 °C

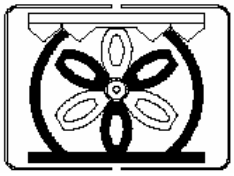
Pyrolytic



Elements activated:
Oven lamp
Upper heating element at 100%
Grill heating element at 80%
Lower heating element at 20%

SPECIAL FUNCTIONS:

Rapid heating (European version)

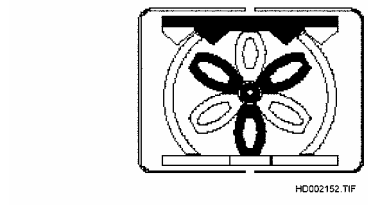


FHU

Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan

The figure illustrates the elements that are effectively in operation when the RAPID HEATING function has been selected, although the display indicates only the first function selected.

Rapid heating (Italian version)



FHU

Elements activated:
Oven lamp
Upper heating element
Grill heating element
Convection fan

The figure illustrates the elements that are effectively in operation when the RAPID HEATING function has been selected, although the display indicates only the first function selected.

N.B.: Some models could not feature all the functions and these may have a different sequence.

5.4.3 - PYROLYTIC OVEN - LEVEL 3

5.4.3.1 - CONTROL PANEL - PYROLYTIC OVEN - LEVEL 3

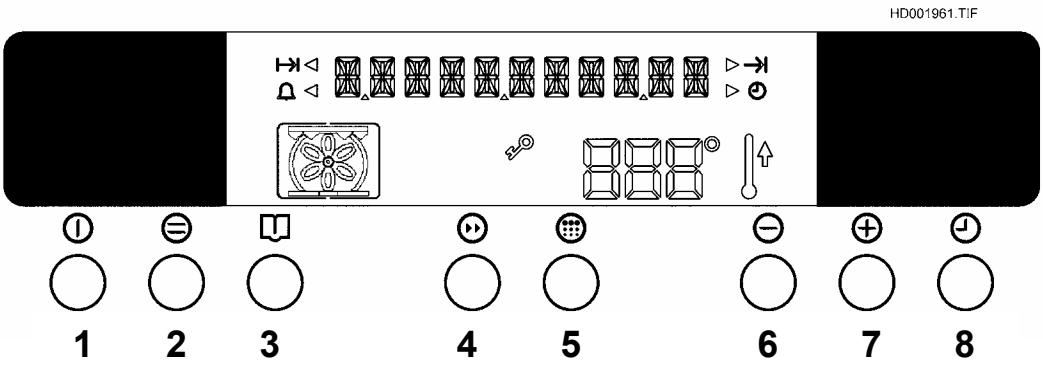


Fig. 110

5.4.3.2 - KEY FUNCTIONS - PYROLYTIC OVEN - LEVEL 3

1 - ON/OFF key
Switches the oven ON and OFF

2 - FUNCTION key
Selects the cooking functions

3 - RECIPES key
Used to select the recipes

4 - RAPID HEATING key
Heats the oven rapidly

5 - PYROLYTIC key
Used to select the "PYROLYSIS" function

6 - "-" key (back)
To decrease the temperature and time of day

7 - "+" key (forward)
To increase the temperature and time of day

8 - CLOCK key
Used to set the "minute-minder", "end of cooking" e "cooking time"

5.4.3.3 - DESCRIPTION OF DISPLAY - PYROLYTIC OVEN - LEVEL 3

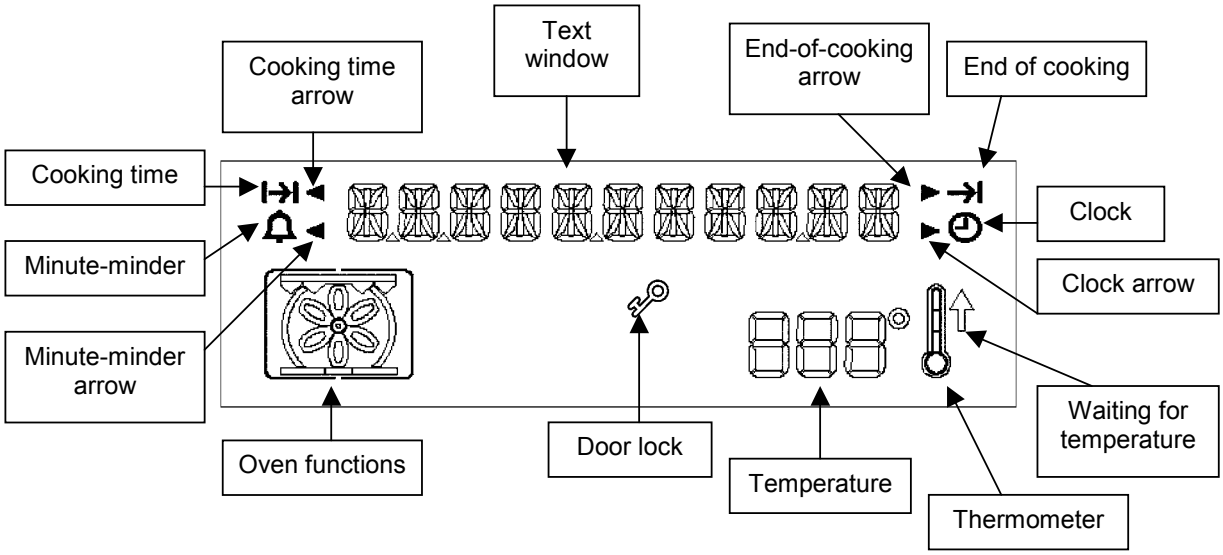
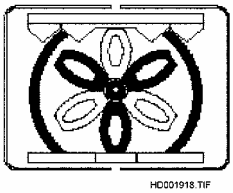


Fig. 111

5.4.3.4 - COOKING FUNCTIONS - PYROLYTIC OVEN - LEVEL 3

The Pyrolytic oven features nine (or ten) cooking functions (as in the normal version), which can be selected in the sequence described below:

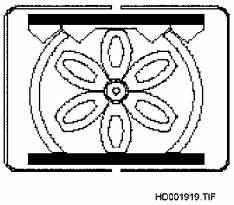
Fan cooking



Elements activated:
Oven lamp
Circular heating element
Convection fan

Pre-set temperature: 175 °C

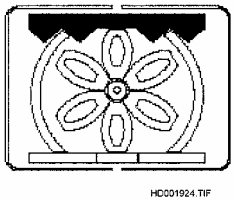
Traditional cooking



Elements activated:
Oven lamp
Upper heating element
Lower heating element

Pre-set temperature: 200 °C

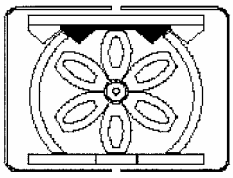
Large grill



Elements activated:
Oven lamp
Grill
Upper heating element

Pre-set temperature: 250 °C

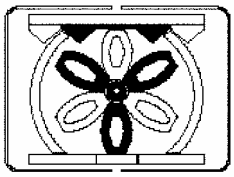
Grill



Elements activated:
Oven lamp
Grill heating element

Pre-set temperature: 250 °C

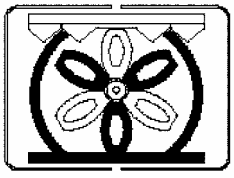
Grill + Fan



Elements activated:
Oven lamp
Grill heating element
Convection fan

Pre-set temperature: 180 °C

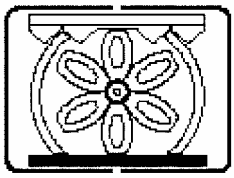
Pizza



Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan

Pre-set temperature: 175 °C

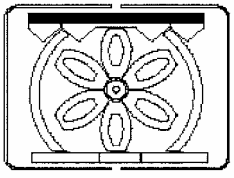
Oven bottom



Elements activated:
Oven lamp
Lower heating element

Pre-set temperature: 250 °C

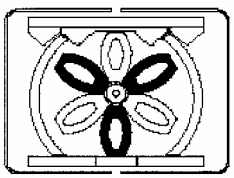
Oven top



Elements activated:
Oven lamp
Upper heating element

Pre-set temperature: 250 °C

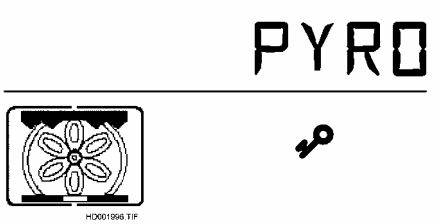
Defrosting



Elements activated:
Oven lamp
Convection fan

Pre-set temperature: 30 °C

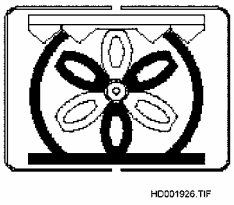
Pyrolytic



Elements activated:
Oven lamp
Upper heating element at 100%
Grill heating element at 80%
Lower heating element at 20%

SPECIAL FUNCTIONS:

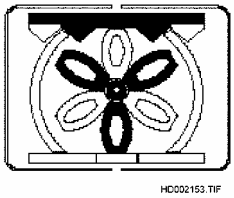
Rapid heating (European version)



Elements activated:
Oven lamp
Circular heating element
Lower heating element
Convection fan

The figure illustrates the elements that are effectively in operation when the RAPID HEATING function has been selected, although the display indicates only the first function selected.

Rapid heating (Italian version)



Elements activated:
Oven lamp
Upper heating element
Grill heating element
Convection fan

The figure illustrates the elements that are effectively in operation when the RAPID HEATING function has been selected, although the display indicates only the first function selected.

N.B.: Some models could not feature all the functions and these may have a different sequence.

6 - FUNCTIONAL DIAGRAMS

6.1 - FUNCTIONAL DIAGRAMS - NORMAL OVEN

6.1.1 - FUNCTIONAL DIAGRAM - NORMAL OVEN - LEVEL 1

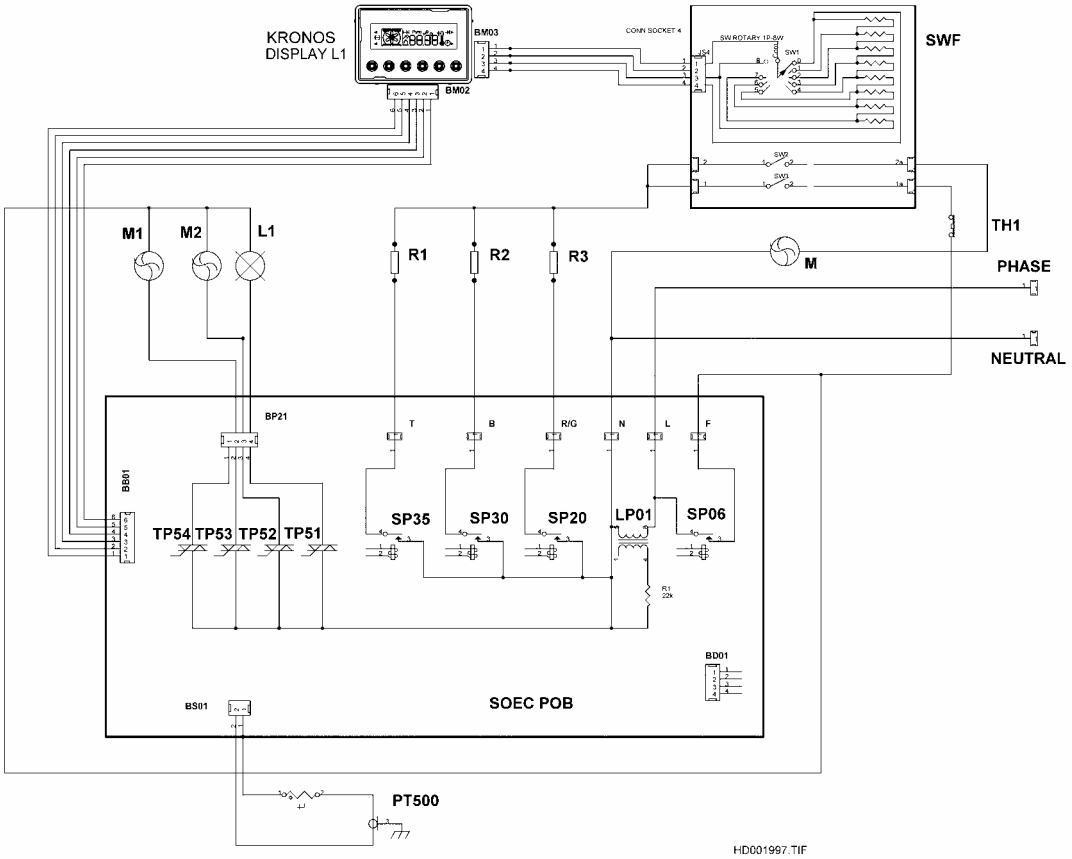


Fig. 112

KEY

DISPLAY L1	-	LEVEL 1 CONTROL UNIT
L1	-	OVEN LAMP
LP01	-	LOW-VOLTAGE TRANSFORMER
M	-	SPIT MOTOR
M1	-	CONVECTION FAN
M2	-	TANGENTIAL COOLING FAN
NEUTRAL	-	NEUTRAL POWER WIRE
PHASE	-	LIVE POWER WIRE
PT500	-	OVEN SENSOR
R1	-	UPPER HEATING ELEMENT (CEILING)
R2	-	LOWER HEATING ELEMENT (BOTTOM)
R3	-	GRILL HEATING ELEMENT
SOEC POB	-	POWER BOARD
SP06	-	MAIN SAFETY RELAY
SP35	-	CONTROL RELAY FOR UPPER HEATING ELEMENT
SP30	-	CONTROL RELAY FOR LOWER HEATING ELEMENT
SP20	-	CONTROL RELAY FOR GRILL HEATING ELEMENT
SWF	-	ROTARY FUNCTION SELECTOR
TH1	-	SAFETY THERMOSTAT
TP54	-	CONTROL TRIAC FOR SPIT MOTOR (NOT USED)
TP53	-	CONTROL TRIAC FOR CONVECTION FAN
TP52	-	CONTROL TRIAC FOR TANGENTIAL COOLING FAN
TP51	-	CONTROL TRIAC FOR OVEN LAMP

6.1.2 - FUNCTIONAL DIAGRAM - NORMAL OVEN - LEVEL 2

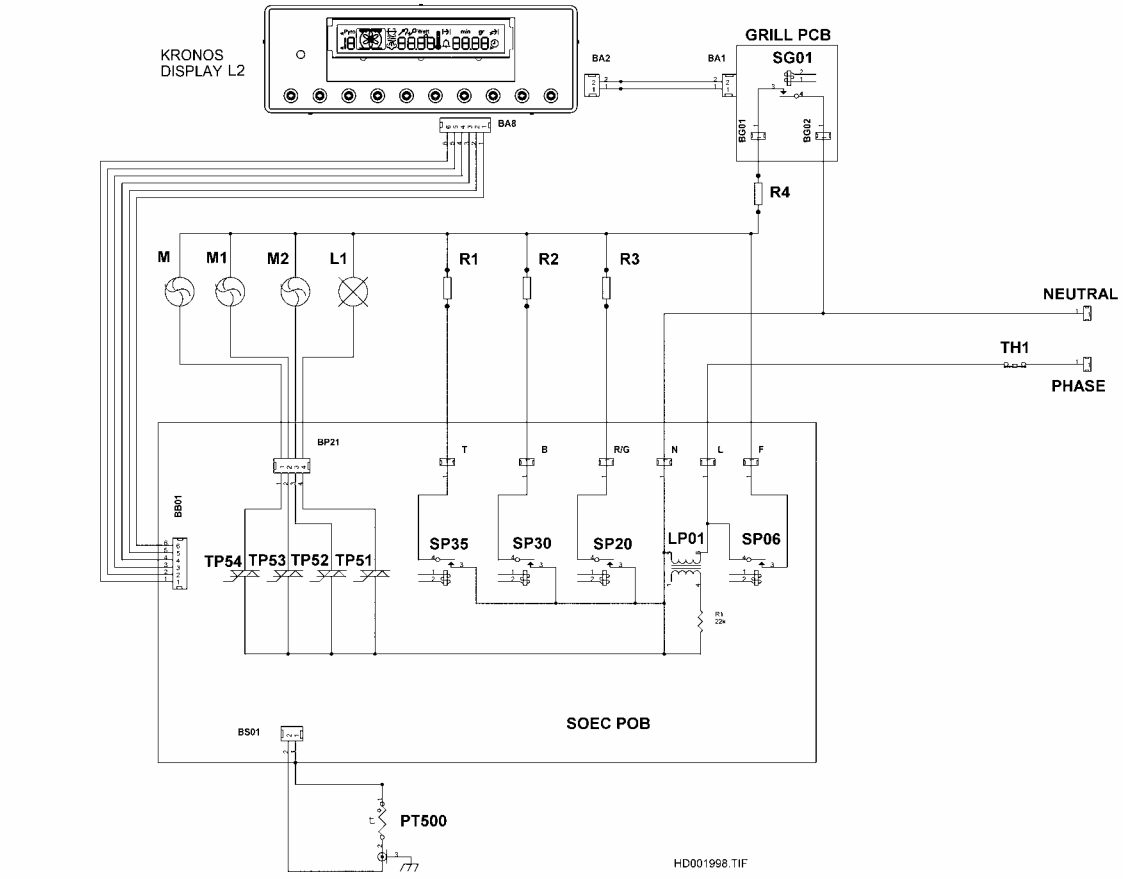


Fig. 113

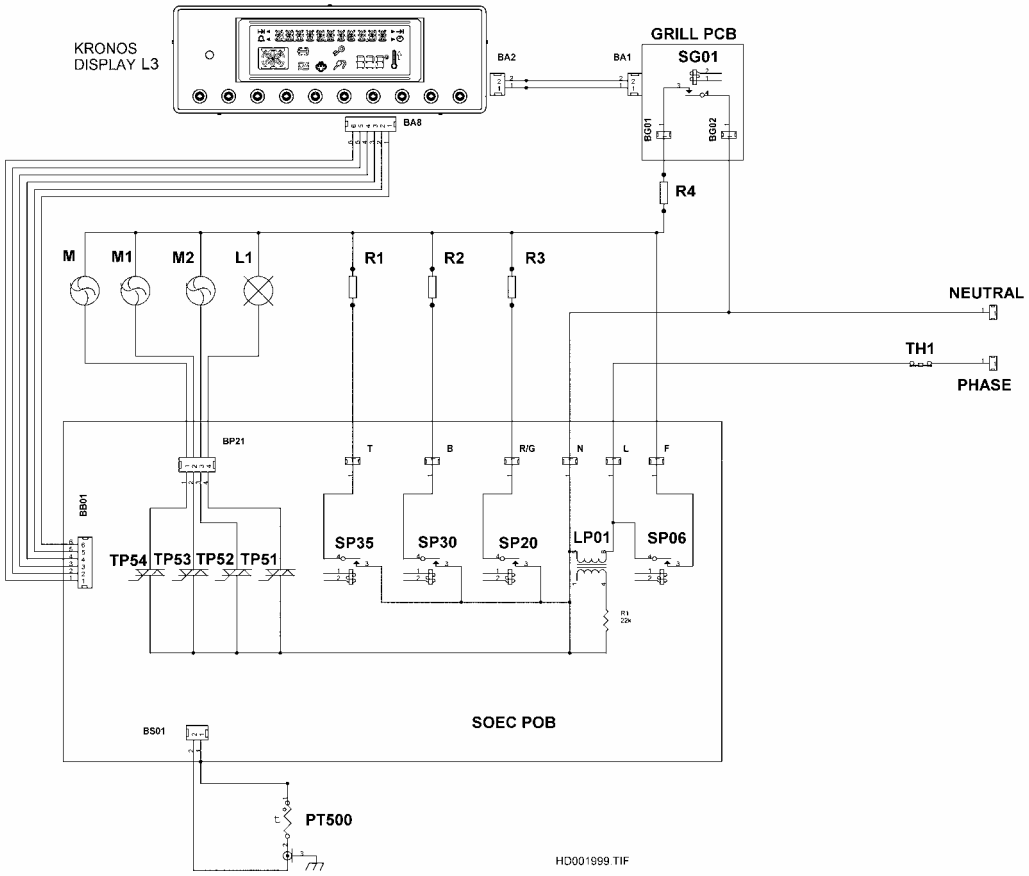
KEY

DISPLAY L2	-	LEVEL 1 CONTROL UNIT
GRILL PCB	-	RELAY BOARD FOR GRILL
L1	-	OVEN LAMP
LP01	-	LOW-VOLTAGE TRANSFORMER
M	-	SPIT MOTOR
M1	-	CONVECTION FAN
M2	-	TANGENTIAL COOLING FAN
NEUTRAL	-	NEUTRAL POWER WIRE
PHASE	-	LIVE POWER WIRE
PT500	-	OVEN SENSOR
R1	-	UPPER HEATING ELEMENT (CEILING)
R2	-	LOWER HEATING ELEMENT (BOTTOM)
R3	-	CONVECTION HEATING ELEMENT (CIRCULAR)
R4	-	GRILL HEATING ELEMENT
SOEC POB	-	POWER BOARD
SP06	-	MAIN SAFETY RELAY
SP35	-	CONTROL RELAY FOR UPPER HEATING ELEMENT
SP30	-	CONTROL RELAY FOR LOWER HEATING ELEMENT
SP20	-	CONTROL RELAY FOR CONVECTION HEATING ELEMENT
SW1	-	ROTARY FUNCTION SELECTOR
TH	-	SAFETY THERMOSTAT
TP54	-	CONTROL TRIAC FOR SPIT MOTOR
TP53	-	CONTROL TRIAC FOR CONVECTION FAN
TP52	-	CONTROL TRIAC FOR TANGENTIAL COOLING FAN
TP51	-	CONTROL TRIAC FOR OVEN LAMP

FUNCTIONAL DESCRIPTION - NORMAL OVEN - LEVEL 2

The mains power supply to the system goes to the power board, which provides low-voltage power to the control unit. The entire circuit of the oven is protected by a safety thermostat (TH1) which disconnects the power circuit in the event of overheating caused by a malfunction in the electronic system.
When a cooking function is selected (see "Using the Programme Selector - Level 2", section 4.2) the relays and triacs for the corresponding function, which are mounted on the power board, are activated. If the GRILL function is selected, relay SG01 on the grill control board is also activated.
Also connected to the power board is the PT500 temperature sensor, whose resistance varies with the temperature inside the oven. When the electronic system detects that the resistance of the PT500 sensor corresponds to the selected temperature, it switches off the heating elements.
If the temperature inside the oven exceeds 120°C, triac TP52 activates the tangential fan (M2), which provides extra cooling for the exterior of the oven casing (muffle) in the areas where the various electrical components are located.
At the end of a programmed cooking function, or when the appliance is switched off, the tangential cooling fan remains in operation until the temperature at the centre of the oven falls below 110°C.
In the event of a malfunction, such as a fault in a relay or the temperature sensor, the system is able to detect the malfunction according to the signal received from the temperature sensor; in this case, safety relay SP06 disconnects the appliance from the power supply.
The system is also able to display an error code that identifies the fault that has occurred (see "Error Codes").

6.1.3 - FUNCTIONAL DIAGRAM - NORMAL OVEN - LEVEL 3



KEY

DISPLAY L3	-	LEVEL 1 CONTROL UNIT
GRILL PCB	-	RELAY BOARD FOR GRILL
L1	-	OVEN LAMP
LP01	-	LOW-VOLTAGE TRANSFORMER
M	-	SPIT MOTOR
M1	-	CONVECTION FAN
M2	-	TANGENTIAL COOLING FAN
NEUTRAL	-	NEUTRAL POWER WIRE
PHASE	-	LIVE POWER WIRE
PT500	-	OVEN SENSOR
R1	-	UPPER HEATING ELEMENT (CEILING)
R2	-	LOWER HEATING ELEMENT (BOTTOM)
R3	-	CONVECTION HEATING ELEMENT (CIRCULAR)
R4	-	GRILL HEATING ELEMENT
SOEC POB	-	POWER BOARD
SP06	-	MAIN SAFETY RELAY
SP35	-	CONTROL RELAY FOR UPPER HEATING ELEMENT
SP30	-	CONTROL RELAY FOR LOWER HEATING ELEMENT
SP20	-	CONTROL RELAY FOR CONVECTION HEATING ELEMENT
SW1	-	ROTARY FUNCTION SELECTOR
TH	-	SAFETY THERMOSTAT
TP54	-	CONTROL TRIAC FOR SPIT MOTOR
TP53	-	CONTROL TRIAC FOR CONVECTION FAN
TP52	-	CONTROL TRIAC FOR TANGENTIAL COOLING FAN
TP51	-	CONTROL TRIAC FOR OVEN LAMP

FUNCTIONAL DESCRIPTION - NORMAL OVEN - LEVEL 3

The mains power supply to the system goes to the power board, which provides low-voltage power to the control unit. The entire circuit of the oven is protected by a safety thermostat (TH1) which disconnects the power circuit in the event of overheating caused by a malfunction in the electronic system.
When a cooking function is selected (see "Using the Programme Selector - Level 3", section 4.3) the relays and triacs for the corresponding function, which are mounted on the power board, are activated. If the GRILL function is selected, relay SG01 on the grill control board is also activated.
Also connected to the power board is the PT500 temperature sensor, whose resistance varies with the temperature inside the oven. When the electronic system detects that the resistance of the PT500 sensor corresponds to the selected temperature, it switches off the heating elements.
If the temperature inside the oven exceeds 120°C, triac TP52 activates the tangential fan (M2), which provides extra cooling for the exterior of the oven casing (muffle) in the areas where the various electrical components are located.
At the end of a programmed cooking function, or when the appliance is switched off, the tangential cooling fan remains in operation until the temperature at the centre of the oven falls below 110°C.
In the event of a malfunction, such as a fault in a relay or the temperature sensor, the system is able to detect the malfunction according to the signal received from the temperature sensor; in this case, safety relay SP06 disconnects the appliance from the power supply.
The system is also able to display an error code that identifies the fault that has occurred (see "Error Codes").

7 - ERROR CODES

The KRONOS system performs a series of internal diagnostics routines; in the event of abnormal operation, the system displays the corresponding error code.
The error code is shown on the display as shown in the figures relative to the various levels of appliance (see Figg. 112, 113 and 114).

The table below shows the various error codes.

ERROR CODE	DESCRIPTION OF MALFUNCTION
08	Oven sensor short-circuited
20	Temperature safety level overcome
40 (*)	Overheating detected
60	Overheating detected + temperature safety level overcome
65	Oven sensor connection interrupted
80	No increase in temperature

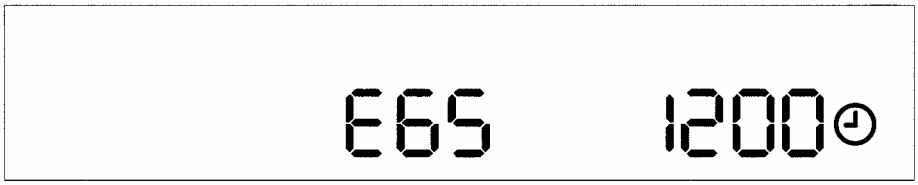
Examples of various error codes relative to the various levels:

Error code (65) on LEVEL 1 CONTROL UNIT

HD001904.TIF

Fig. 112

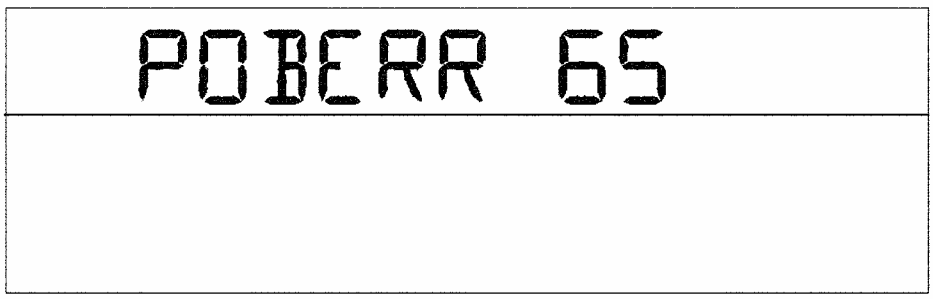
Error code (65) on LEVEL 2 CONTROL UNIT



HD001905.TIF

Fig. 113

Error code (65) on LEVEL 3 CONTROL UNIT



HD001906.TIF

Fig. 114

8 - DIAGNOSTICS

A diagnostics test routine can be used to check the basic operation of the system.
The tests are activated in different ways for each level of control unit.

8.1 - DIAGNOSTICS ON LEVEL 1 CONTROL UNIT

8.2 - DIAGNOSTICS ON LEVEL 2 CONTROL UNIT

To activate the diagnostics test routine for the normal version, proceed as follows:

Press and hold down key "FHU" and connect the appliance to the power supply.
The test is performed in the following sequence:

1. A number indicating the status of the software system (*) is displayed.
2. All the segments of the display light.
3. The various control relays for the heating elements are activated in sequence and the software code is shown on the display (e.g. **1 E 0020**).
4. The grill relay remains operative for a certain period and, simultaneously, the four triacs are activated.

(*) This number indicates the status of the internal memory, and changes according to the time that has elapsed since switching off the appliance and the data remaining memorized in the system. e.g. "**L 3004**" or "**S 3005**".

During this sequence, other information can be displayed by pressing the corresponding keys:

Key no.	Key symbol	Information displayed
1	⏻	Software code.
2	⊖	The temperature measured by the oven sensor.
5	⊕	Indicates the presence of the meat probe and the temperature measured by the probe. (In this normal version, the display shows "**00**", since the meat probe is not featured).
6	◴	The system sounds a "beep" to confirm that the buzzer functions correctly, then exits the test.

8.3 - DIAGNOSTICS ON LEVEL 3 CONTROL UNIT

To activate the diagnostics test routine for the normal version, proceed as follows:

Press and hold down key "1" and connect the appliance to the power supply.
The test is performed in the following sequence:

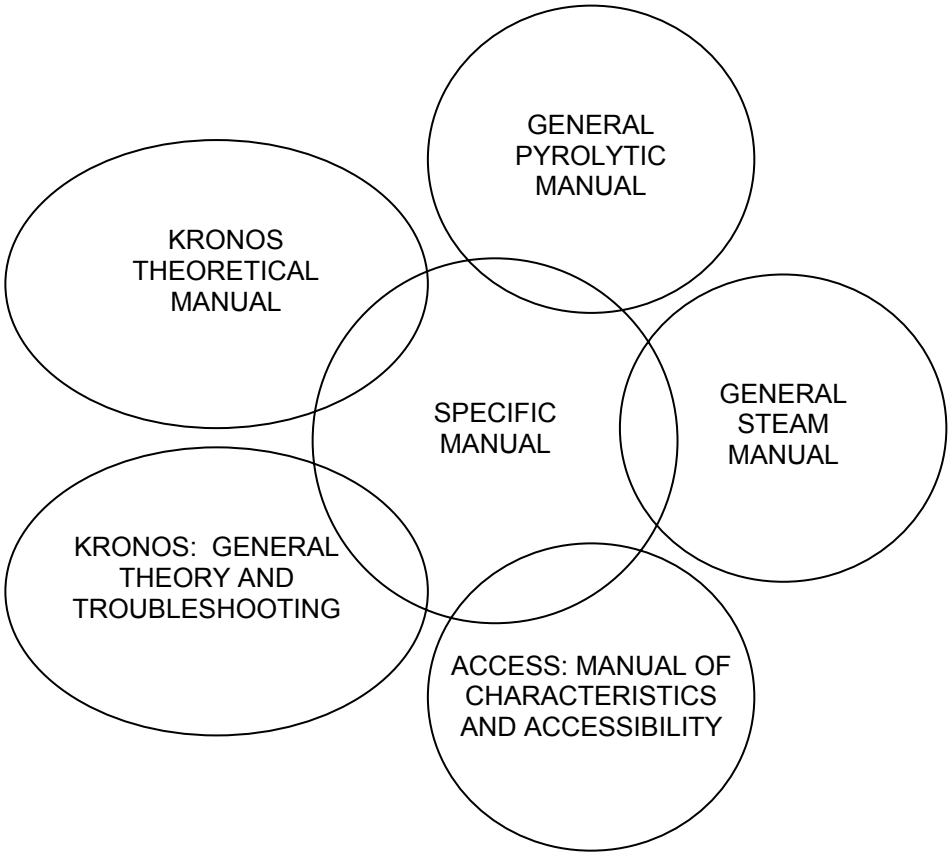
1. A number indicating the status of the software system (*) is displayed.
2. All the segments of the display light.
3. The various control relays for the heating elements are activated in sequence and the software code is shown on the upper section of the display (e.g. **BE 10 W0S48**).
4. The grill relay remains operative for a certain period and, simultaneously, the four triacs are activated.

(*) This number indicates the status of the internal memory, and changes according to the time that has elapsed since switching off the appliance and the data remaining memorized in the system. e.g. "**L 3004**" or "**S 3005**".

During this sequence, other information can be displayed by pressing the corresponding keys:

Key no.	Key symbol	Information displayed
2		Software code.
3		The temperature measured by the oven sensor.
5		Indicates the presence of the meat probe and the temperature measured by the probe. (In this normal version, the display shows "**00**", since the meat probe is not featured).
6		The system sounds a "beep" to confirm that the buzzer functions correctly, then exits the test.

9 - ACCESS/KRONOS: ORGANIZATION OF SERVICE MANUALS

In view of the quantity of theoretical, technical and practical information relative to the various combinations for the structure of the ACCESS/KRONOS system, this information has been subdivided into Service Manuals describing the general concepts, and separate Service Manuals containing specific information relative to each group of appliances.
Only the specific Service Manuals should be used for a specific appliance.

The various Service Manuals are as shown in the diagram below: