

CHEF'S **COMBI**<sup>TM</sup>

## MAINTENANCE MANUAL





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1. THE ESSENTIALS

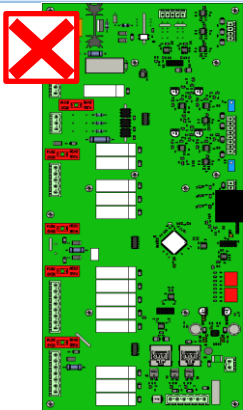
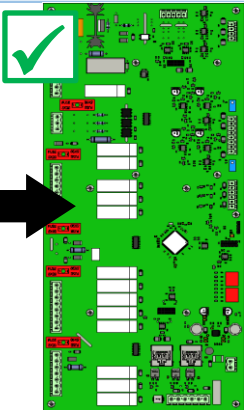
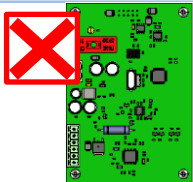
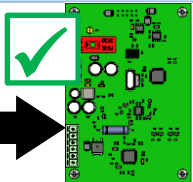
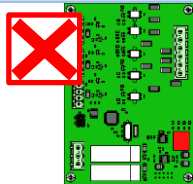
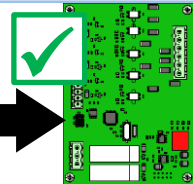
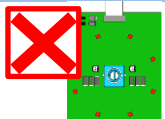
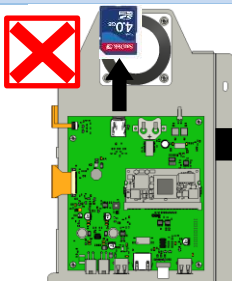
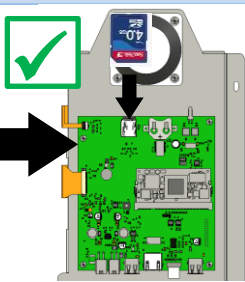
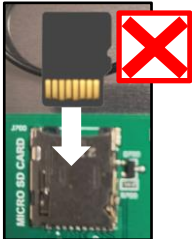
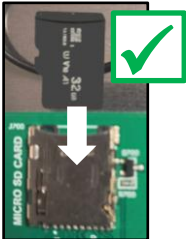
1.1 REPLACING ELECTRONIC BOARDS

When replacing the electronic boards (Aag gas board, Ahu humidity board, Ar Main board or Ac encoder board), no additional updates or settings are required. Simply follow these steps:

- » Remove the faulty board.
- » Install new board in its place.
- » Make necessary connections.
- » On start-up, the system will automatically set up the new board

However, to replace the Ai interface board, it is essential to recover the SD card from the faulty board. This makes it easier to set parameters and recover customer settings and data. Follow these steps:

- » Remove faulty interface board.
- » Remove SD card from the interface board.
- » Insert this SD card into interface board.
- » Install new interface board.
- » Make necessary connections.
- » When it starts up, the system will ask you to confirm that the parameters have been copied and will automatically configure the board.

| Boards               | Faulty board                                                                        | New board                                                                           | Application                                                                                                                                                                                                                                                                                                                              |
|----------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Main board - Ar      |   |   | No settings - Automatic recognition between boards                                                                                                                                                                                                                                                                                       |
| Humidity board - Ahu |  |  | No settings - Automatic recognition between boards                                                                                                                                                                                                                                                                                       |
| Gas board - Aag      |  |  | No settings - Automatic recognition between boards                                                                                                                                                                                                                                                                                       |
| Encoder board - Ac   |  |  | No settings - Automatic recognition between boards                                                                                                                                                                                                                                                                                       |
| Interface board - Ai |  |  | Recover the SD card and insert it on the new Interface board.<br>Copy settings and customer data if the SD card present on the faulty board is recovered.<br>  |



## 1.1.1 INTERFACE BOARD SETTING

This step is crucial if the interface board on your Chef'sCombi oven is to be replaced. There are two methods available for carrying out this operation: you can either copy the existing configuration using the SD card from the faulty interface board, or you can configure the oven manually. Be sure to follow the instructions carefully to ensure correct configuration.



It is in your interest to recover the SD card, as all customer data, history, logs, settings and oven configuration will be preserved.



SD card: Mini 4GB / FAT32 formatted

### Replace the SD card on the faulty interface board.

- » When replacing interface board, make sure you recover the SD card present on it.
- » Insert this SD card into the new interface board.
- » Start oven.
  - ⓘ Important, When the oven starts up, the system will detect that there is no configuration and will offer to copy the configuration.
  - » If you accept to copy the configuration, the oven will be configured with the previously saved settings.
  - » If you refuse, or if the SD card is corrupted, you will have to configure the oven manually by following the instructions ([▶ Troubleshooting](#) - Reset).

### Insert a blank SD card into the Interface board

- » If you do not have the original SD card or if it is damaged, you can use the blank SD card present on the new Interface (check that it is present).
- » Start oven.
  - ⓘ When it starts up, the system will detect that there is no configuration and will ask you to configure the oven.
  - » Configure the oven manually by following the instructions ([▶ Troubleshooting](#) - Reset).

## 1.2 REPLACING THE HUMIDITY SENSOR

Prepare your intervention:

- ✓ Remove the left-hand oven cover ([▶ Access to components](#))
- ✓ Tools: 22" spanner

Disconnecting the probe

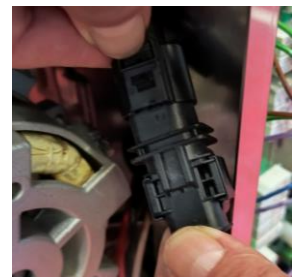
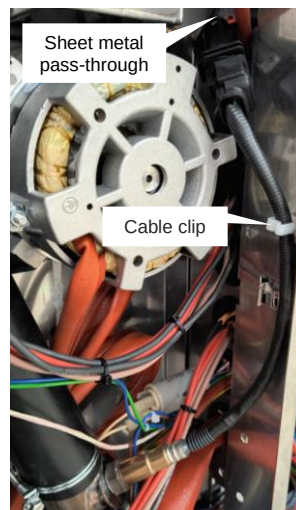
- » Disconnect the probe at the Black terminal block by pressing on the terminal block tab

Removing the probe

- » Unscrew the probe using the spanner
- » Remove the probe

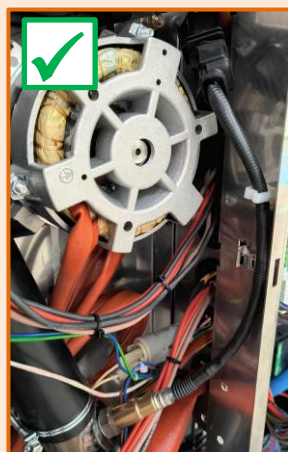
Fitting the new probe

- » Reposition and screw the probe fully into its housing, taking care not to twist or damage the cable
- » Connect the probe to the black terminal block, taking care to follow the instructions below.



When connecting the new probe to the humidity board, make sure that :

- » The cable is as straight as possible (no loops)
- » The cable is not twisted
- » The cable has passed through the cable clip provided.
- » The cable is routed through the highest grommet on the board to avoid twisting the cable



### 1.3 REPLACING THE FOOD CORE TEMPERATURE PROBE

Prepare your intervention:

- ✓ Remove the right-hand ladder from the cooking chamber  
(▶ [Access to components](#))
- ✓ Tools: Wrenches, screwdriver

Disconnecting the probe

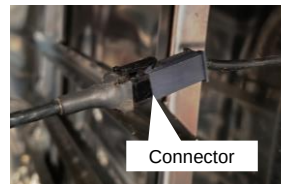
- » Unscrew the 2 fixing screws (8 wrench) from the core probe pass-through and remove the 2 screws.
- » Gently pull on the lead wire to access and release the connector.
- » Disconnect the 2 wires from the connector.
- » Remove the probe and its gasket.

Mounting the new probe

- » Connect the probe to the connector and insert the connector into its housing.
- » Position the gasket and attach the probe pass-through to the cooking cavity.

Check / Test

- » Perform the probe calibration procedure.



### 1.4 REPLACING THE TEMPERATURE PROBE OF ELECTRIC STEAM GENERATOR



Locate the probe wires on the terminal block according to color. Red wire: analog, White wire: numeric.



It is imperative to systematically change the probe seals each time the probe is serviced (replacement or inspection).



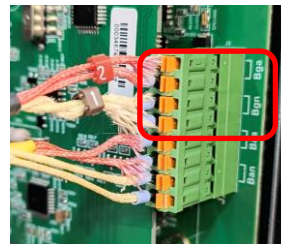
It is imperative to systematically change the immersion element seal when servicing the immersion element.

Prepare your intervention:

- ✓ Remove the left-hand oven panel (▶ [Access to components](#) - Left-hand side panel)
- ✓ Drain the steam generator (▶ [Troubleshooting](#) - Maintenance screens - Hydraulics diagram)
- ✓ Tools: Wrenches, screwdriver

Probe disconnection

- » Disconnect the wires from the terminal block on the Main board.

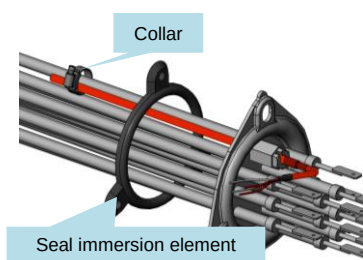
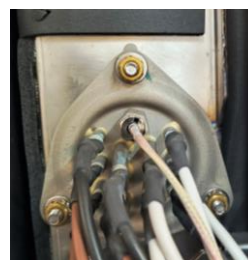


Removing the immersion element

- » Unscrew the 3 flange nuts on the immersion heater fitted with the temperature probe.
- » Remove the immersion element.

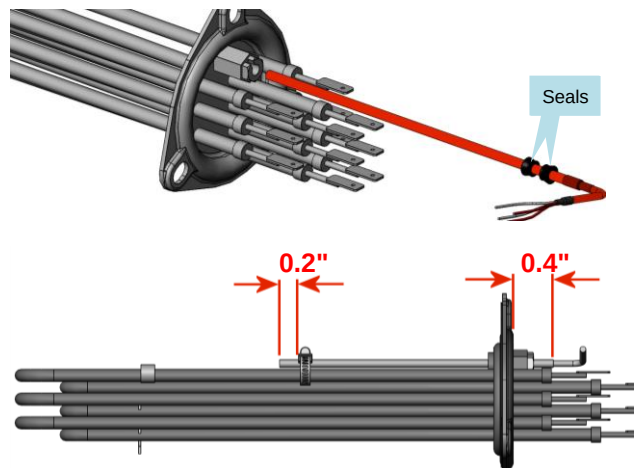
Removing the probe

- » Unscrew and remove the clamp holding the probe to the immersion element.
- » Unscrew the probe and remove it.



Mounting the new probe

- » Position the new probe on the immersion element according to the instructions.
  - Insert the cable gland and the two seals on the temperature probe.
  - Insert the temperature probe into the immersion element housing, leaving it protruding by 0.4 inch, then tighten the cable gland.
  - Secure the probe to the top bar with a metal Serflex clamp at 0.2 inch from the end of the probe.



Mounting the immersion element

- » Insert the immersion element into the steam generator not forgetting to change the gasket.

Check / Test

- » Perform the probe calibration procedure.

## 1.5 REPLACING THE TEMPERATURE PROBE OF GAS STEAM GENERATOR



Locate the probe wires on the terminal block according to color. Red wire: analog, White wire: numeric.



It is imperative to systematically change the probe seals each time the probe is serviced (replacement or inspection).

Prepare your intervention:

- ✓ Remove the left-hand oven panel (► [Access to components](#) - Left-hand side panel)
- ✓ Drain the steam generator (► [Troubleshooting](#) - Maintenance screens - Hydraulics diagram)
- ✓ Tools: Wrenches, screwdriver

Probe disconnection

- » Disconnect the wires from the terminal block on the Main board.

Removing the probe

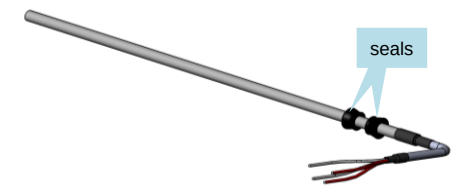
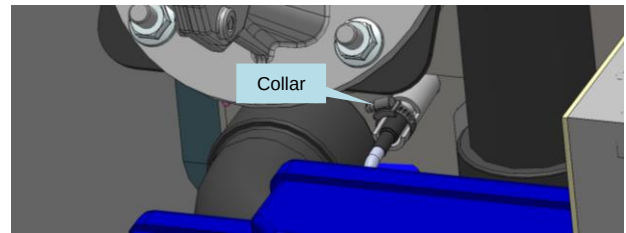
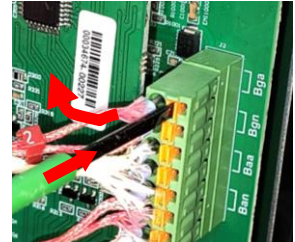
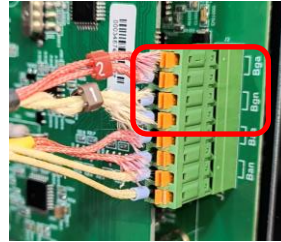
- » Unscrew the collar holding the probe to the gas steam generator.
- » Remove the probe and the two seals and replace them.

Mounting the new probe

- » Position the new probe in the steam generator according to the instructions
  - Insert the 2 seals on the temperature probe as far as they will go.
  - Insert the probe into the steam generator and tighten with a screw clamp.

Check / Test

- » Perform the probe calibration procedure.



## 1.6 REPLACING THE AMBIANT TEMPERATURE PROBE



It is imperative to systematically change the probe seal each time the probe is serviced (replacement or inspection).

Prepare your intervention:

- ✓ Remove the left-hand oven panel (► [Access to components](#) - Left-hand side panel)
- ✓ Remove the left-hand runner from the oven (► [Access to components](#) - Runners)
- ✓ Remove the ventilation duct (► [Access to components](#) - Ventilation duct)
- ✓ Tools: Wrenches, screwdriver

Probe disconnection

- » Disconnect the wires from the terminal block on the Main board.

Removing the probe

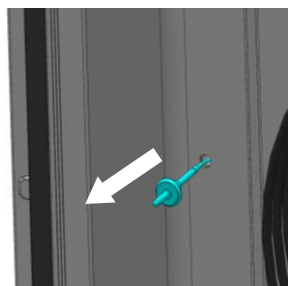
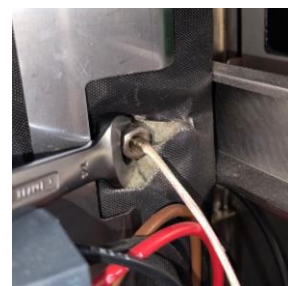
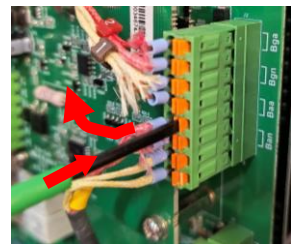
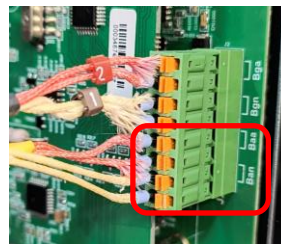
- » In the technical compartment, unscrew the threaded hexagonal spacer (14 mm spanner) used to secure the probe.
- » Remove the probe and its seal from the inside of the oven.

Mounting the new probe

- » Lubricate and assemble the O-ring with the ambient probe
- » Pass the wires of the new probe through from the inside of the oven.
- » Position and secure the new probe.
- » Insert and press the probe against the inside of the cooking cavity and secure it with the threaded hexagonal spacer.
- » Reconnect the probe wires to the terminal block on the Main board

Check / Test

- » Perform the probe calibration procedure.



## 2. SPECIFIC TOOLS

| Chapter           | Tools                                                                    | Characteristics                                           | Application                                                                                             |
|-------------------|--------------------------------------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| <b>Common</b>     | Standard hand tool kit                                                   |                                                           |                                                                                                         |
|                   | Cutting tools                                                            | Retractable blade knife                                   |                                                                                                         |
|                   | Set of metric wrenches (flat, pipe, ratchet with sockets, Allen Hex Key) | From 5.5 to 22 mm                                         |                                                                                                         |
|                   | Set of screwdrivers (flat, Phillips)                                     | Philips.                                                  |                                                                                                         |
|                   | Pliers (multi-socket, flat, cutting, stripping)                          |                                                           |                                                                                                         |
|                   | Measuring tools (tape measure, calliper, level)                          | Classic tubular level 40cm                                |                                                                                                         |
|                   | Wrench                                                                   |                                                           |                                                                                                         |
| <b>Water</b>      | PPE                                                                      | Standard                                                  | Personal protection for technicians.                                                                    |
|                   | Water control kit                                                        | Allows control of Hardness, Cl-, PH, Conductivity and Cl2 | Check the characteristics of the water.                                                                 |
| <b>Drain</b>      | Water pressure gauge                                                     | Measuring range 0-10 bar                                  | Check water supply pressure.                                                                            |
|                   | Container                                                                | 3 litres minimum                                          | Fill the drain box.                                                                                     |
| <b>Electric</b>   | Verification of absence of voltage (VAT)                                 | Max 690V a.c.                                             | Check that there is no voltage.                                                                         |
|                   | Multimeter-Voltmeter                                                     | Max 690V a.c.                                             | Various checks on electrical and electronic components.                                                 |
|                   | Draw knife                                                               | Typ : "JOKARI" No 50 and No 28                            | Pull out the power cable.                                                                               |
|                   | Torque spanner                                                           | Type: J208-50 + 13mm 3/8" square socket                   | Motor mounting: Torque 14N/m.                                                                           |
| <b>Gas</b>        | Flue gas analyser                                                        | Type: "Testo 300 professionnel or equivalent              | Check the level of CO emitted when the oven is operating.                                               |
|                   | Water column or electronic pressure gauge                                | Type: Testo 510 or equivalent                             | Check the gas pressure.                                                                                 |
|                   | Spray or Electronic Gas Leak Detector                                    | Type: 1000 Bubbles spray                                  | Check gas connection for leaks.                                                                         |
|                   | Thickness gauges                                                         | Dimensions: 6mm and 3.5mm                                 | Position the ignition and detection electrodes.                                                         |
|                   | Ratchet spanner                                                          | Size 8mm M5 screw                                         | Remove the gas exchanger.                                                                               |
| <b>Software</b>   | Claw key                                                                 | Opening 1/2-3/4                                           | Dismantle the gas hoses and connections if the grease collection option is chosen.                      |
|                   | USB flash drive                                                          | USB2 type: Maximum capacity = 32 GB - FAT32 formatted     | Updating software version, copying oven configuration data and customer data (protocols, images, etc.). |
| <b>Mechanical</b> | Hub puller                                                               | Type: "Facom U35.L or similar pulling tool.               | Remove the convection fan to service the motor.                                                         |

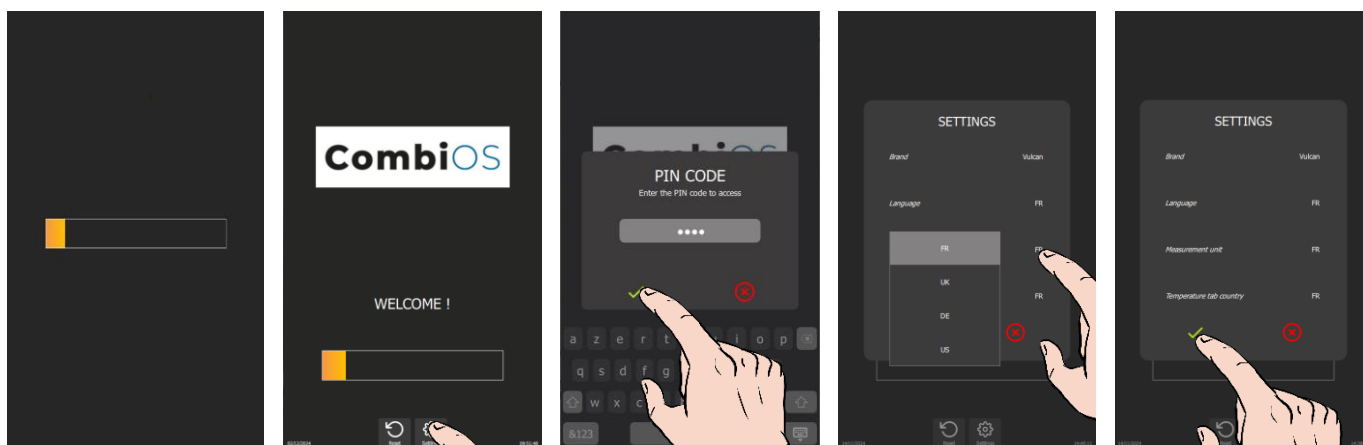
### 3. SETTINGS

#### 3.1 PIN CODES

The access PIN codes are essential for entering the settings menu reserved for the installer, user (after setting by the Chef) and maintenance. They ensure the security and protection of the sensitive settings of your Chef'sCombi oven. Please keep these codes in a safe place and only share them with authorised personnel.

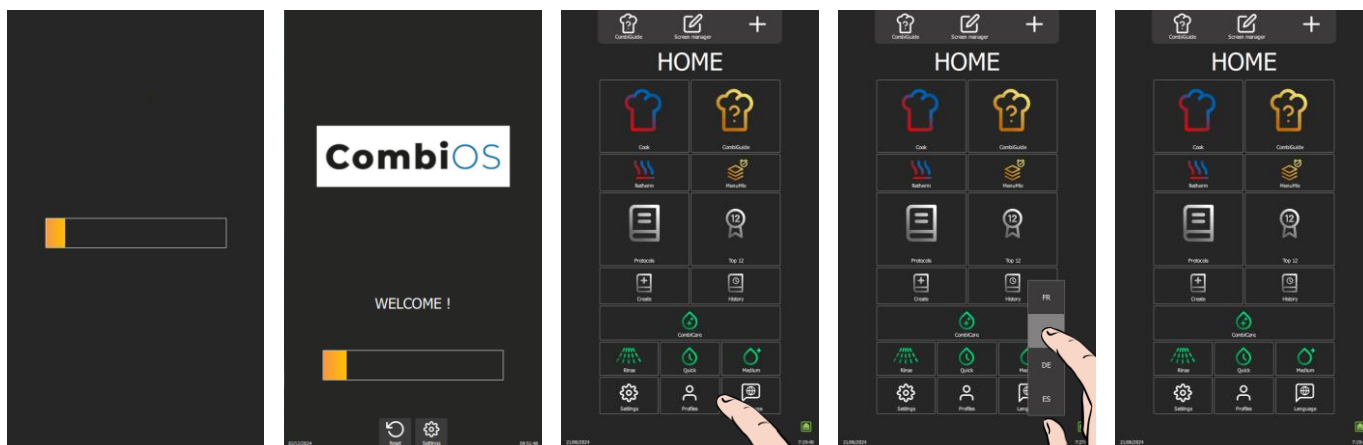
| Code No | Description                 | Level | Remark                                                                     |
|---------|-----------------------------|-------|----------------------------------------------------------------------------|
| 0000    | Default user code           | 1     | Accessible in the settings / Can be changed by the user.                   |
| CHEF    | Emergency code for Chef     | 1     | If the password set by the Chef (user) is forgotten (after changing 0000). |
| INST    | Installers                  | 5     | Access to installer parameters                                             |
| SERV    | Network Service Technicians | 7     | Access to 1st level maintenance parameters                                 |

#### 3.2 SOFTWARE INITIALIZATION



- » Switch on the display by holding down the encoder button.
- » Before the power-on bar graph is displayed, press the « Settings » button.
- » The PIN code identification pop-up appears.
- » Enter PIN code (level 5 or 7) to access "Installer" parameters (► [Settings](#) - Codes PIN).
- » Confirm by pressing the « ✓ » icon. If the code is correct, access to the screen is authorized; otherwise, return to entering the PIN code
- » Press on the parameter values to modify if necessary.
- » The selection drop-down menu appears.
  - Select the desired value.
- » Confirm by pressing the « ✓ » icon.

#### 3.3 SETTING THE SOFTWARE LANGUAGE



- » Switch on the display by holding down the encoder button until the power-on bar graph is displayed.
- » Wait for the "Home" menu to appear.
- » Press the "Languages" button.
- » The language selection drop-down menu appears.
- » Select the desired language (En: by example).

### 3.4 WATER TREATMENT CAPACITY

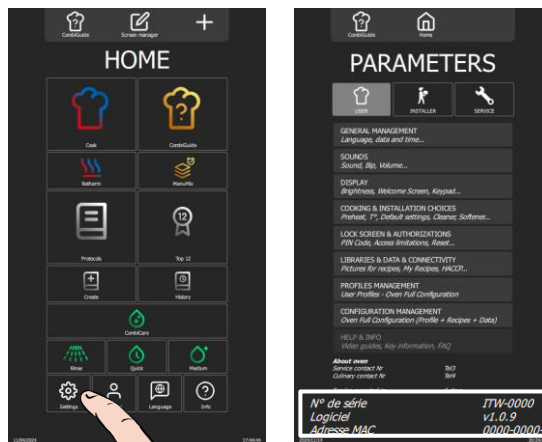
This counter is only applicable when the oven is supplied by two separate water networks.



- » From the "Home" menu screen, select the "Settings" button.
- » The screen displays the "Parameters" menu with the "User" tab selected.
- » Select "Cooking and Installation choices" button.
- » The screen displays the "Cooking and Installation" settings.
- » Enter the capacity of the water treatment system in litres. Adjustable from 0 to 99999L. The value defaults to 0 if there is no dedicated water treatment for the oven.
  - Select the area of the value to be modified.
  - Set the value using the encoder knob or the keypad.
- » Confirm by pressing "✓" icon.
- » Reset the counter if necessary, by pressing the "Reset" button.
- » Confirm by pressing "✓" icon.

### 3.5 CHECKING SOFTWARE VERSION

The software version is visible in the "User" tab of the "Settings" screen, below the device serial number.



- » From the "Home" menu screen, select the "Parameters" button.
- » The screen displays the "Parameters" menu with the "User" tab selected.

### 3.6 UPDATING THE SOFTWARE

A regular software update ensures that the oven interface has the latest developments and improvements for use by the customer and/or the technician. The technician is alerted as soon as a new update is available via the "Vulcanequipment.com/resource-center" website software and/or the "software info" distribution.

Before starting the update, check that the software is in the local language and change if necessary.

**Warning:**

Do not disconnect the power supply to the device while the software is being loaded.

**Do not remove the UBS key while the software is being loaded.**

The oven will be unavailable for the duration of this operation.

#### USB key

For this configuration operation, you will need a blank FastPad USB key or a blank USB key with the following specifications:

- Maximum capacity = 32 Gb
- Formatted in FAT32 (default allocation unit size = 4096 bytes) or formatted in FAT (default allocation unit size = 32 Kilobytes).

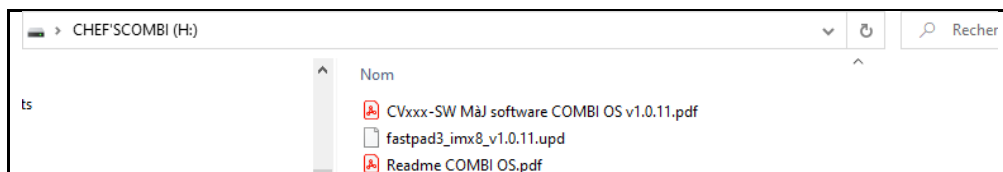
### Software update file

Download the software update file "CVxxx-SW.zip" from our Vulcan website maintenance site.

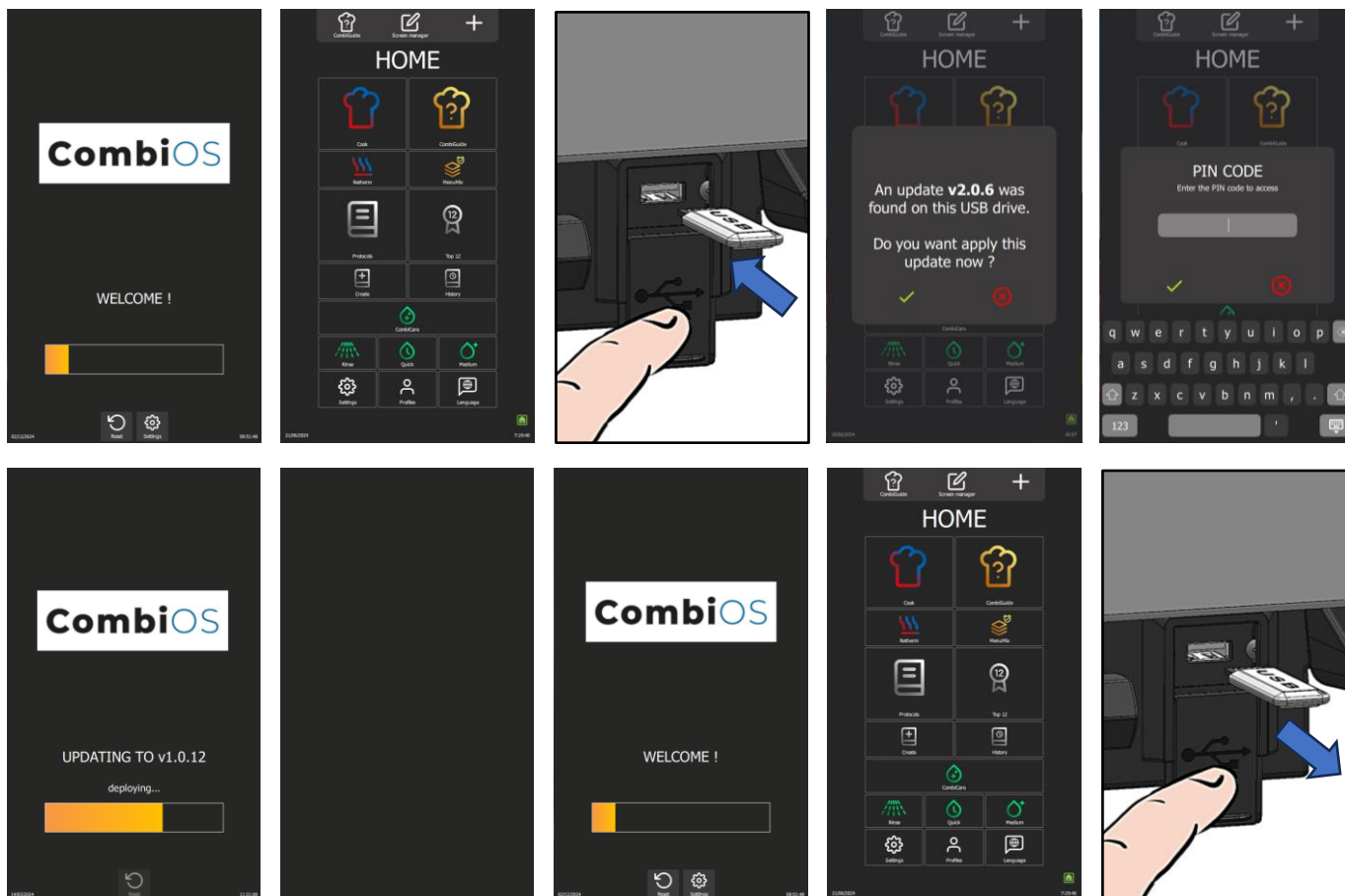
Unzip the downloaded file.

Copy the executable file to the blank USB key and run it: fastpad3\_imxX\_VX.X.XX.upd

The files will be automatically created on the USB key. The USB key must contain only :



### Procedure



- Step 1 Switch on the device.  
Wait for welcome menu to appear. If necessary, skip the pre-heating.
- Step 2 Insert USB key with the new version of Software into the USB socket (next to the spray hose location).  
The USB socket has a protective cover.  
Lift the cover upwards to insert the USB key.



#### Caution !

Verify flap has closed as soon as USB socket is no longer in use.

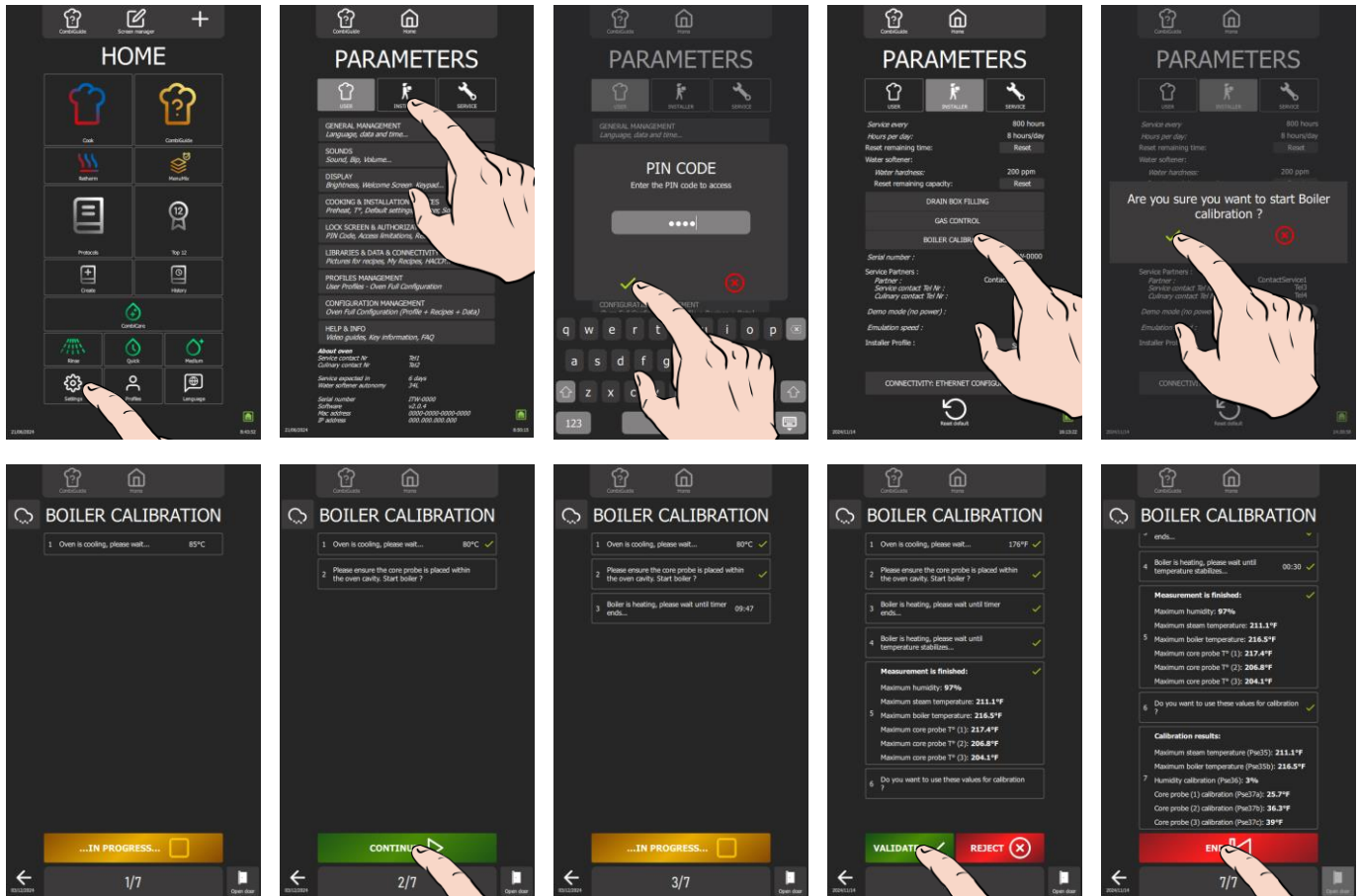
- Step 3 When the USB key is connected, the "UPDATE" request window will appear.  
*If no window appears, this means software version is identical between the USB key and the device.*
- Step 4 Confirm the update by pressing the « ✓ » icon.
- Step 5 Confirm the update by entering your PIN code (level 5 or 7) (► [Settings](#) - PIN Codes).  
Software will start loading.  
*The device may restart once during the update.*
- Step 5 Do not remove the USB key until the welcome screen appears.

### 3.7 PROBES CALIBRATION



Calibration of the probes (core probe, steam generator probe and cavity probe) must be carried out **systematically** each time these components are replaced.

The cavity probe, core probe and humidity sensor are calibrated during the 'Steam generator calibration' procedure, which takes approximately 12 minutes. If a measured value is inconsistent during the process, interrupt the check immediately by pressing the 'Reject' button. Then switch off the oven and check the probe(s) concerned. Replace faulty components if necessary.



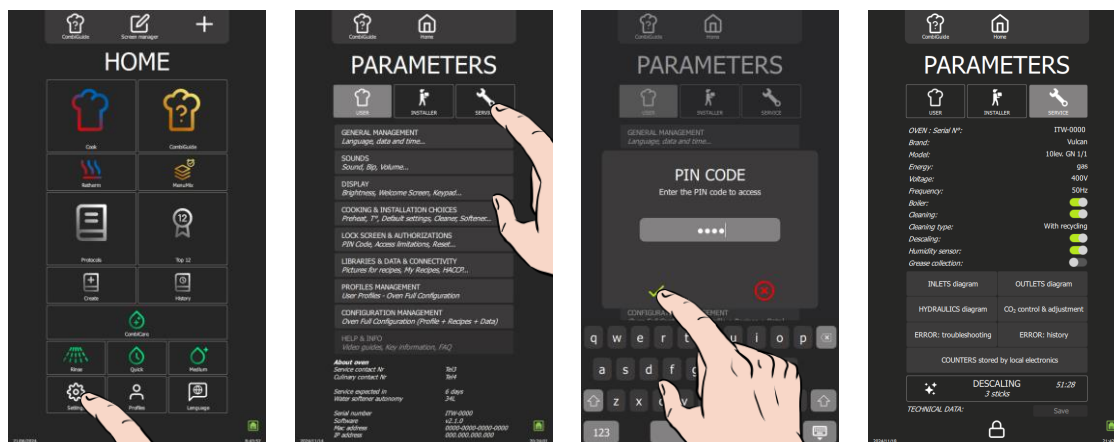
Prepare for your test:

- ✓ The oven door is closed.
- ✓ The left-hand trim panel is in place.
- » From the "Home" menu screen, select the "Settings" button.
- » The screen displays the "Parameters" menu with the "User" tab selected.
- » Select the "Installer" tab.
- » The PIN code identification pop-up appears.
- » Enter the PIN code (level 5 ou 7) to access the "Installer" parameters. (► [PIN Codes](#)).
- » Confirm by pressing the "✓" icon. If the code is correct, access to the screen is authorised; if not, return to entering the PIN code.
- » Press the "Steam generator calibration" button
- » Confirm by pressing the "✓" icon.
- » The "Steam generator calibration" screen appears.
- » Start the test by pressing the "Start" button.
- » Follow the actions shown on the oven display "step by step".
- » When point 6 "Do you want to use these values for calibration?" is displayed, press "✓" to confirm.
- » When the calibration result is displayed, press the "End" icon to return to the previous screen.

### 3.8 PARAMETERS SCREEN

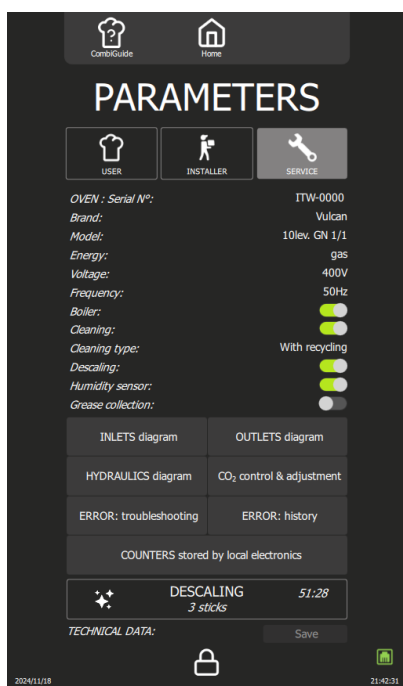
For security reasons, the "Installer" and "Service" tabs are password-protected. You can permanently adjust your device's factory settings by pressing the value of the parameter you want to change or activate. Once settings have been made, the parameters are adjusted immediately.

#### 3.8.1 ACCESSING THE SERVICE SETTINGS MENU



- » On the "Home" menu screen, select the "Parameters" button.
- » The screen displays "Parameters" menu with "User" tab selected.
- » Select "Service" tab.
- » The PIN code identification pop-up appears.
- » Enter PIN code (level 7) to access "Service" parameters (► [PIN Codes](#)).
- » Validate by pressing « ✓ » icon. If the code is correct, access to the screen is authorised; otherwise, return to entering the PIN code.

#### 3.8.2 LIST OF PARAMETERS



- Oven serial number
- Oven settings
- Maintenance diagrams
- Errors
- Counters
- Descaling the steam generator
- Save maintenance history: Button active if a USB key is connected to the oven

#### 3.8.3 TROUBLESHOOTING ACCESS

**Service screens: Input status screen, Output status screens and Hydraulics screen.**  
(► [Troubleshooting](#) - Maintenance screens)

##### Error: Troubleshooting

The screen displays the error table, starting with the first number listed in the error table (► [Errors messages](#)). To scroll through the numbers, use the encoder to scroll to the desired number.

Alternatively, you can click on the number field to bring up the keypad and enter the desired target number directly.

You can access this screen by selecting an error line in the error history (► [Error: History](#)). When browsing the history, click on the specific error to be automatically redirected to this screen. This feature enables efficient incident management, providing quick access to specific error details.

##### Error : History

The Error History screen provides a detailed view of incidents that have occurred, presented in chronological order from most recent to oldest. This feature enables users to follow and understand the evolution of problems encountered by the Chef'sCombi.

Error messages are recorded in the history for a set period of 6 months; ensuring reliable tracking of incidents over an extended period.

### Counters

The counter screen lists all the counters, with a history for the main counters. Following values for main counters, you will find the following values:

- The total value since the oven was switched on.
- Values for the last 7 days (D, D-1, D-2, D-3... D-7).
- Values for the last 12 months (M, M-1, M-2, M-3... M-12).

Note: Some counters can only display the current day's value, with no history of previous days.

### List of counters

| Designation                                 | Units      |
|---------------------------------------------|------------|
| Total operating time                        | Seconds    |
| Cooking time convection mode                | Seconds    |
| Cooking time steam mode                     | Seconds    |
| Cooking time combi mode                     | Seconds    |
| Total time in cooking cycle                 | Seconds    |
| Total time in cleaning cycle                | Seconds    |
| Hard water consumption                      | Millilitre |
| Softened water consumption                  | Millilitre |
| Elec. energy consumption                    | 0.1Wmin    |
| Gas energy consumption                      | 0.1Wmin    |
| Water consumption since last reset          | Litre      |
| Remaining water capacity                    | Litre      |
| Hours elapsed since last service            | Hours      |
| Remaining hours before service              | Hours      |
| Cooking seconds elapsed since last cleaning | Seconds    |
| Cleaning status                             | -          |
| Number of completed cooking cycles          | -          |
| Number of completed cleaning cycles         | -          |
| Number of completed descaling cycles        | -          |
| Total operating time                        | Seconds    |
| Cooking time convection mode                | Seconds    |
| Cooking time steam mode                     | Seconds    |
| Cooking time combi mode                     | Seconds    |
| Total time in cooking cycle                 | Seconds    |
| Total time in cleaning cycle                | Seconds    |
| Hard water consumption                      | Litre      |
| Softened water consumption                  | Litre      |
| Elec. energy consumption                    | KWh        |
| Gas energy consumption                      | KWh        |
| Elec. energy consumption last cycle         | KWh        |
| Gas energy consumption last cycle           | KWh        |
| Water consumption last cycle                | Litre      |
| Duration last cycle                         | Seconds    |
| Elec. energy consumption per cycle          | KWh        |
| Gas energy consumption per cycle            | KWh        |
| Water consumption per cycle                 | Litre      |
| Average duration per cycle                  | Seconds    |
| Elec. energy consumption last hour          | KWh        |
| Gas energy consumption last hour            | KWh        |
| Water consumption last hour                 | Litre      |
| Average duration last hour                  | Seconds    |
| Elec. energy consumption per hour           | KWh        |
| Gas energy consumption per hour             | KWh        |
| Water consumption per hour                  | Litre      |
| Average duration per hour                   | Seconds    |
| Total cleaning tabs consumption             | -          |
| Total descaling sticks consumption          | -          |

| Designation                              | Units   |
|------------------------------------------|---------|
| S01 CAVITY LIGHT (MOS)                   | -       |
| S02 DAMPER (MOS)                         | -       |
| S03 GREASE PUMP (MOS)                    | -       |
| S04 DESCALING PUMP (RELAY)               | -       |
| S05 CAVITY DRAIN PUMP (RELAY)            | -       |
| S06 STEAM GENERATOR DRAIN PUMP (RELAY)   | -       |
| S08 TECH FAN (RELAY)                     | -       |
| S09 KP (RELAY)                           | -       |
| S10 POWER HEAT 1 (RELAY)                 | -       |
| S11 POWER HEAT 2 (RELAY)                 | -       |
| S12 POWER HEAT G (RELAY)                 | -       |
| S13 CLEAN PUMP (RELAY)                   | -       |
| S15 SPRAY VALVE (RELAY)                  | -       |
| S16 DESCALER DISSOLUTION VALVE (RELAY)   | -       |
| S18 CONDENSER VALVE (OPTO)               | -       |
| S19 COOLING VALVE (OPTO)                 | -       |
| S20 STEAM GENERATOR FILLING VALVE (OPTO) | -       |
| S22 FAN OPERATION (TRIAC)                | -       |
| S23 FAN DIRECTION (RELAY)                | -       |
| SR1 COOKING STATE (RELAY)                | -       |
| S01 CAVITY LIGHT (MOS)                   | Seconds |
| S02 DAMPER (MOS)                         | Seconds |
| S03 GREASE PUMP (MOS)                    | Seconds |
| S04 DESCALING PUMP (RELAY)               | Seconds |
| S05 CAVITY DRAIN PUMP (RELAY)            | Seconds |
| S06 STEAM GENERATOR DRAIN PUMP (RELAY)   | Seconds |
| S08 TECH FAN (RELAY)                     | Seconds |
| S09 KP (RELAY)                           | Seconds |
| S10 POWER HEAT 1 (RELAY)                 | Seconds |
| S11 POWER HEAT 2 (RELAY)                 | Seconds |
| S12 POWER HEAT G (RELAY)                 | Seconds |
| S13 CLEAN PUMP (RELAY)                   | Seconds |
| S15 SPRAY VALVE (RELAY)                  | Seconds |
| S16 DESCALER DISSOLUTION VALVE (RELAY)   | Seconds |
| S18 CONDENSER VALVE (OPTO)               | Seconds |
| S19 COOLING VALVE (OPTO)                 | Seconds |
| S20 STEAM GENERATOR FILLING VALVE (OPTO) | Seconds |
| S22 FAN OPERATION (TRIAC)                | Seconds |
| S23 FAN DIRECTION (RELAY)                | Seconds |
| SR1 COOKING STATE (RELAY)                | Seconds |

### Descaling

Descaling enables the oven and steam generator to be descaled by force. Pressing the button starts a descaling process at the maximum level for the oven without the cleaning program. The number of sticks required is clearly indicated and varies according to the oven model. The descaling process is similar to that used for a wash with descaling and is carried out automatically.

### Save

The save function automatically exports all the oven's essential parameters and data to a USB stick, organising them in different files for more efficient management. Each type of data is saved in a separate file, including connectivity logs, errors, counters, cooking parameters and appliance configuration. These files are automatically filed in a specific folder, created on the USB key, guaranteeing a complete and organised backup of maintenance data.

The function is accessible if a USB stick is plugged into the USB socket.

## 4. PREVENTIVE MAINTENANCE

To ensure that your equipment operates safely and reliably over the long term, we recommend that you have it checked and serviced by our qualified personnel.

The customer is automatically notified of the need for preventive maintenance. The overhaul counter is determined according to the frequency of use of the oven and the number of hours between each intervention. These values must be entered by the technician at the time of installation and checked at each service.

### 4.1 LIST OF ACTIONS



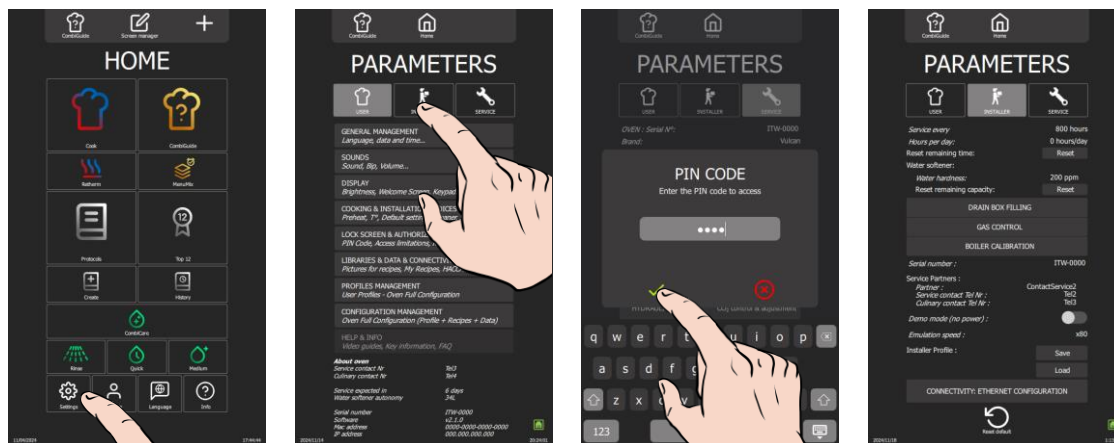
**WARNING :** The appliance must be disconnected from its power supply during cleaning or maintenance, and when replacing parts.

| Subject                                       | Recommendations (Every year or every 3000h)                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General</b>                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Earthing                                      | Check the continuity of the earthing system                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Oven position                                 | Levelling, loading sill height, adjust if necessary.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Fixing the oven                               | If the appliance is fixed, check that it is correctly fixed.                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Facia / Screen</b>                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Control panel sealing                         | Check that the control panel is watertight. If there are any leaks, make it watertight                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Screen electronics / Interface board          | No traces of dirt or dust deposits on the components - Clean and seal the compartment. - Check that the screen is securely fastened to the bracket, as this ensures that it is watertight.                                                                                                                                                                                                                                                                                                                |
| Screen connections                            | No traces of oxidation on the USB / RJ45 plug connectors - Replace if necessary.                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Encoder board                                 | No signs of dripping or oxidation - Check that it is working properly.                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Encoder button                                | Check that it is in good condition and securely fixed, with no excessive play or wear, etc. - Replace if necessary.                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>USB compartment / Spray hose</b>           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| USB compartment                               | Check the condition of the USB socket: no deformation, no oxidation, check the closing flap, good general condition, closing spring working, compartment completely sealed - Replace if necessary.                                                                                                                                                                                                                                                                                                        |
| Spray hose                                    | Check the condition of the spray hose: no blockages, no leaks - dismantle and clean - Check the supply pipe: no leaks, no cracks in the pipe - Check the reel: secure and return spring in good working order - Replace if necessary.                                                                                                                                                                                                                                                                     |
| <b>Technical compartment</b>                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Air vents / technical fan                     | Clean the inlets - Clean the fan blades                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Power supply terminals                        | Check that there are no signs of overheating - Tighten the connections                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Fuse holders (if any)                         | Check that there are no signs of overheating - Tighten the connections                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Contactors                                    | Check that there are no signs of overheating - Tighten the connections                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Main board                                    | Remove dust - Check that there is no oxidation on the output contacts - Check the condition of the fuses (visual check of the status LEDs) - Check that the connector screws are tight and that they are correctly connected.                                                                                                                                                                                                                                                                             |
| Valve In                                      | Check the general tightness - Check the seal - Clean - Using the maintenance table, operate and check that there is no noise, depending on the model, check the operation of the associated motor, noise, etc. - Replace if necessary.                                                                                                                                                                                                                                                                    |
| <b>Heater</b>                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Ventilation motor                             | Using the maintenance table, operate the motor and check that there are no abnormal noises - Systematically replace the motor shaft seal - Check that the mechanical fasteners are tight - Lubricate the motor shaft (high-temperature lubricant).                                                                                                                                                                                                                                                        |
| Resistors                                     | Check the condition of the supply wiring, cables in good condition, no cracks in the insulation. Heat-shrink tubing present and in good condition. - Repair or replace if necessary.                                                                                                                                                                                                                                                                                                                      |
| Intensity measurement (convection heat 180°C) | Measure the current on each phase of each heating element and check that there is no imbalance between phases and no drift from one test to the next. - Replace the element if necessary.                                                                                                                                                                                                                                                                                                                 |
| <b>Gas or electric steam generator</b>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Steam generator body                          | Descale if necessary (remove at least one immersion heater for visual inspection) - Replace the seal - Check that there are no traces of dripping at the hydraulic connections.                                                                                                                                                                                                                                                                                                                           |
| Immersion heaters                             | Dismantle only if leaking - Replace seal - Check condition of wiring and heat-shrink tubing - Repair or replace if necessary.                                                                                                                                                                                                                                                                                                                                                                             |
| Intensity measurement (100°C steam heater)    | Measure the current on each phase of each heating element and check that there is no imbalance between phases and no drift from one test to the next. - Replace the element if necessary.                                                                                                                                                                                                                                                                                                                 |
| Level probe                                   | Dismantle and clean - Check that the connections (probe and earth) are tight and that the thread is watertight.                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Hydraulic</b>                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| General waterproofing                         | Carry out a visual check.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Water inlet                                   | Cleaning the filter.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Solenoid valves                               | Check that there is no indication of overheating in the coils (change of colour if necessary) - Check operation using the maintenance menu, leave the solenoid valves operating and check the various circuits, seals, tightness of connections, etc. - Re-seal or replace the hoses if necessary, and the solenoid valves if necessary.                                                                                                                                                                  |
| Cleaning / descaling circuit                  | Check the condition of the descaling box: that the descaling flap is working properly, and that the grille is clean and in good condition - clean if necessary.<br>Check the condition of the pipework: connections, hoses, no leaks.<br>Check the pump: using the maintenance menu, turn it over and check that there are no abnormal noises, no leaks, and that the electrical connections are free from gap or oxidation. Replace if necessary.<br>Check that there are no foreign bodies in the tank. |

| Subject                                              |  | Recommendations (Every year or every 3000h)                                                                                                                                                                                                                                                                 |
|------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hydraulic</b>                                     |  |                                                                                                                                                                                                                                                                                                             |
| Steam generator drain circuit                        |  | Check the condition of the pipework: connections, hoses, no leaks.<br>Check the pump: using the maintenance menu, turn it over and check that there are no abnormal noises, no leaks, and that the electrical connections are free from gap or oxidation. Check for leaks or replace the pump if necessary. |
| Clean box drain circuit                              |  | Check the condition of the pipework: connections, hoses, no leaks.<br>Check the pump: using the maintenance menu, turn it over and check that there are no abnormal noises, no leaks, and that the electrical connections are free from gap or oxidation. Check for leaks or replace the pump if necessary. |
| Cleaning pump                                        |  | Lubricate the bottom bearing of the pump with WD40 type lubricant product.                                                                                                                                                                                                                                  |
| <b>Cavity</b>                                        |  |                                                                                                                                                                                                                                                                                                             |
| General condition                                    |  | Check that there are no rust stains and that cleaning and descaling are effective.                                                                                                                                                                                                                          |
| Joint                                                |  | Clean - Check general condition - Replace if necessary.                                                                                                                                                                                                                                                     |
| Core probe                                           |  | Check the general condition (tip, cable) - Check that the bulkhead feed-through is tight and watertight - Check that it is working properly by starting a firing and checking the temperature change.                                                                                                       |
| 20-level oven ventilation duct                       |  | Check that the lower axle ring is present and that it functions correctly (pivoting; hooking in).                                                                                                                                                                                                           |
| Sprinkler                                            |  | From the maintenance menu, activate the wash pump and visually check the water flow - Clean the nozzles and retighten if necessary.                                                                                                                                                                         |
| Water injection tube                                 |  | Internal cleaning - Descaling if necessary - Changing the seal if necessary - Mechanical fastening.                                                                                                                                                                                                         |
| Drain                                                |  | Check that the grille is clean, tight and watertight. Change the seal if necessary.                                                                                                                                                                                                                         |
| Under-door trunking                                  |  | Check the drain and flue for leaks and cleanliness - Re-seal if necessary.                                                                                                                                                                                                                                  |
| Ladders                                              |  | Check that there is no corrosion and that the fixings and rails are in good condition. - Repair if necessary.                                                                                                                                                                                               |
| <b>Door</b>                                          |  |                                                                                                                                                                                                                                                                                                             |
| Top and bottom hinges                                |  | Check general condition (wear, etc.); Lubricate and tighten if necessary.                                                                                                                                                                                                                                   |
| Internal door                                        |  | Condition and presence of the door stops (complete if necessary); Check that the springs are correctly pivoted and effective (adjust if necessary).                                                                                                                                                         |
| Lighting                                             |  | General operation - Condition of label (must be watertight) - Clean - Replace if necessary                                                                                                                                                                                                                  |
| Door closing mechanism                               |  | Check clearances and general tightness - Check the state of wear of friction parts - Readjust if necessary.                                                                                                                                                                                                 |
| Bottom door seal (20 levels only)                    |  | Clean and check general condition - Replace if necessary.                                                                                                                                                                                                                                                   |
| <b>Gas ovens only</b>                                |  |                                                                                                                                                                                                                                                                                                             |
| Gas connection                                       |  | If the connection is made with a flexible hose, check its suitability for use (date, condition, etc.) - Replace if necessary                                                                                                                                                                                |
| Gas pressure                                         |  | Check the "static" and "dynamic" pressures at the appliance inlet - Adjust if necessary.                                                                                                                                                                                                                    |
| Combustion                                           |  | Refer to the installation manual to carry out this check.                                                                                                                                                                                                                                                   |
| Exchangers                                           |  | Visually check the general condition and tightness of the flanges in relation to the technical compartment - Check the fixing points.                                                                                                                                                                       |
| Ignition control / Flame safety / Burner motor speed |  | Carry out the checks suggested by the technical screen in the maintenance menu before any dismantling - Observe the results and, if necessary, follow the appropriate procedure.                                                                                                                            |
| Tightness of the gas circuit                         |  | Using a product such as "Mille Bulles", check the tightness of the connections upstream of the gas valves and downstream of each connection when the burner is operating.                                                                                                                                   |
| Safety checks                                        |  | Switch off the gas supply while the burner is operating - The burner must go into safety mode                                                                                                                                                                                                               |
| Plastic fireplaces                                   |  | Check their presence and condition and clean if necessary.                                                                                                                                                                                                                                                  |
| Gas valves                                           |  | Check: tightening of electrical control retaining screws, condition of metal hoses, tightness of connections, etc. - Readjust in accordance with the instructions in this manual - Replace if necessary.                                                                                                    |
| Burner motor                                         |  | Check during operation that there are no abnormal noises - Replace if necessary.                                                                                                                                                                                                                            |
| <b>Grease collection option</b>                      |  |                                                                                                                                                                                                                                                                                                             |
| Grease pump                                          |  | Check the general condition, in particular that there are no leaks or drips, and that the electrical connections are in good condition: no overheating, no traces of oxidation, etc. Using the maintenance menu, run the motor and check that there are no noises - Replace if necessary.                   |
| Circuit                                              |  | Check the condition of the pipes: no leaks, no cracks, no brittleness, no deformation or blockages. - Replace defective parts if necessary.                                                                                                                                                                 |
| Valve                                                |  | Check general condition: no excessive gap at the handle, tightness of connections. - Replace if necessary.                                                                                                                                                                                                  |
| Safety valve                                         |  | Check that it is working: close the grease outlet valve and activate the pump, the valve will discharge the liquid - If not, replace the valve.                                                                                                                                                             |
| Safety pressure switch                               |  | Check that it is working: close the grease outlet valve and activate the pump. The pump should stop and an error message should appear on the display. If this is not the case, replace the pressure switch.                                                                                                |

## 4.2 SETTING MAINTENANCE INTERVENTION FREQUENCY, DAILY USAGE RATE

### Access to the Installer parameters menu



- » From the "Home" menu screen, select the "Settings" button.
- » The screen displays the "Parameters" menu with the "User" tab selected.
- » Select the "Installer" tab.
- » The PIN code identification pop-up appears.
- » Enter PIN code (level 5 or 7) to access the "Installer" (► [Settings](#) - PIN Codes).
- » Confirm by pressing "✓" icon. If the code is correct, access to the screen is authorised; if not, return to entering the PIN code.

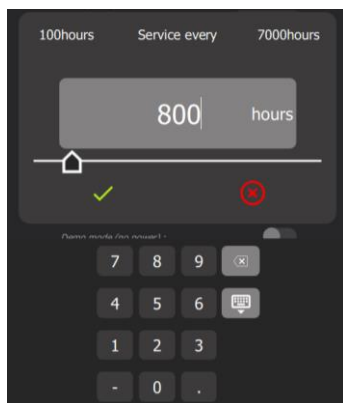
### Frequency of maintenance work and rate of use per day

The frequency of maintenance interventions and the rate of use per day are calculated in the table below according to the information supplied by the customer at the time of installation, such as the number of hours the appliance is used per day and the type of cooking performed. It is the responsibility of the technician to check that these settings correspond to the actual use of the oven, and to modify them if necessary (according to the table below):

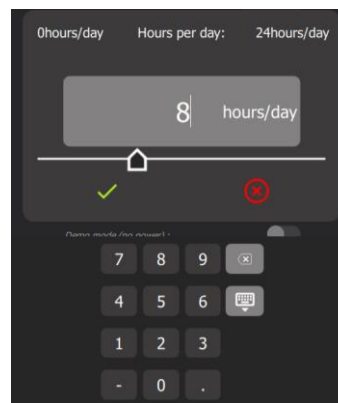
| Type of use<br>(Customer information)                                                                      | Hours of use / day<br>(Customer information) |         | Setting the installation parameters<br>(to be entered in the Installation parameters) |                              |
|------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------|---------------------------------------------------------------------------------------|------------------------------|
|                                                                                                            |                                              |         | Maintenance every<br>(in hours)                                                       | Hours per day*<br>(in hours) |
| <b>NORMAL USE</b><br>(Restaurants, etc.)                                                                   | LIGHT                                        | < 7 h   | 2000                                                                                  | 6                            |
|                                                                                                            | STANDARD                                     | 7-12 h  | 3000                                                                                  | 8                            |
|                                                                                                            | INTENSIVE                                    | 12-17 h | 3000                                                                                  | 16                           |
|                                                                                                            | VERY INTENSIVE                               | 17-24 h | 3000                                                                                  | 24                           |
| <b>COOKING &gt;428°F</b><br>and/or<br><b>COOKING FATTY</b><br><b>PRODUCTS</b><br>(e.g. chicken rotisserie) | STANDARD                                     | < 7 h   | 3000                                                                                  | 8                            |
|                                                                                                            | INTENSIVE                                    | 7-12 h  | 3000                                                                                  | 16                           |
|                                                                                                            | VERY INTENSIVE                               | 12-17 h | 3000                                                                                  | 24                           |
|                                                                                                            |                                              | 17-24 h |                                                                                       |                              |

\* hours of use

#### Frequency of maintenance



#### Number of hours / day



- » Press number of hours input box.
- » The screen displays a keypad and the number entry field.
- » Enter number of hours before the next maintenance (800h by default): Adjustable from 100 to 7000 hours. It's essential that you plan to have your appliance serviced at least once a year.
  - Select the area of the value to be modified.
  - Set the value using the encoder knob or the keypad.
- » Confirm by pressing "✓" icon.
- » Select box to enter number of hours of use per day.

- ⌚ The screen displays a keypad and the number entry field.
- » Enter average hours appliance is in use each day. NOTE: This can be adjusted from 0 to 24 hours.
  - Select area of the value to be modified.
  - Set value using the encoder knob or the keypad.
- » Confirm by pressing "✓" icon.

*Resetting the counter*

- » Reset the counter
  - Press the "Reset" button.
- » Confirm by pressing "✓" icon.

## 5. TROUBLESHOOTING

### 5.1 TROUBLESHOOTING METHOD



Before replacing components without being certain of the problem, it is important to use all the tools supplied with the oven to target the real problem: error history, counters, error message and associated solutions, test using the technical screens, check the status of the LEDS, etc...

#### 1. Interview the customer:

- Collect as much information as possible from the user about the problems encountered (frequency, anomalies, blocking errors, etc.).

#### 2. Identify the problem:

- Check combi steamer is correctly supplied with electricity or gas, water and drain, depending on the type of model used.
- Visually inspect interior of the oven for signs of possible damage or obstructions.
- Check the indications potentially provided by the Chef'sCombi: the error history, counters, ... may give indications of the type of problem encountered, its frequency ....
- Write down the details of the problem encountered, for better understanding.

#### 3. If an error message is displayed: Fault search with ERROR MESSAGE

- Follow instructions given in the error message.
- Refer to error table in this manual if necessary for further information on the specific error code encountered (► [Troubleshooting - Errors messages](#)).

#### 4. If no error message is displayed:

- Fault-finding via the maintenance screens
  - ❖ Check different components via the maintenance screens of outlets, inlets and hydraulics in the maintenance parameters of the oven interface (► [Troubleshooting - Maintenance screens](#)).
  - ❖ Refer to this manual to understand their meaning.
  - ❖ Write down any anomalies and proceed with troubleshooting.
- Fault-finding via communication LEDs
  - ❖ Identify LEDs on the oven boards (► [Troubleshooting - Communications LEDs](#)).
  - ❖ Refer to the LED guide to understand their meaning (► [Troubleshooting - Communications LEDs](#)).
  - ❖ Proceed with troubleshooting.
- Fault-finding OTHER:
  - ❖ Consult the manual to access available diagnostics (► [Troubleshooting - Other symptoms](#)).
  - ❖ Follow the flow charts provided to diagnose the problem and identify the appropriate troubleshooting steps (► [Troubleshooting - Flow charts](#)).
  - ❖ Consult the electrical diagrams (► [Electric diagrams](#)).

#### 5. Contact technical support if necessary:

- If the problem persists or if you are unable to solve the problem using the above steps, contact the manufacturer's technical support. Please always direct service questions to [combi.tech@vulcanequipment.com](mailto:combi.tech@vulcanequipment.com) or (800) 814-2028, select prompt #2, then #8.
- Give all the relevant information you have collected during diagnosis for effective assistance.

### 5.2 ERRORS MESSAGES



To facilitate the intervention, hang the Main board in the maintenance position (► [Access to components](#) – Maintenance position of the Main board assembly).

| Code                                                                                                                          | Title                              | Probable Causes                                                                                                                                                                                                          | What to do?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| E00                                                                                                                           | Cavity overheat greater than 626°F | Control contacts stuck.                                                                                                                                                                                                  | POWER OFF: Using an ohmmeter, place the test probes on the terminal clamping screws to check the resistance between L and T for each pole of the Kr contactor(s). The value must be equal to “OL”; if not, replace the faulty contactor(s).                                                                                                                                                                                                                                                                                      |
|                                                                                                                               |                                    | Output S10 of the Main board permanently activated.                                                                                                                                                                      | POWER OFF: Using an ohmmeter, place the test probes on the terminal clamping screws and check the continuity between the “230Vac” terminal of connector J15 and the “S10” output of connector J16 on the Main board.<br>If there is continuity, replace the Main board.                                                                                                                                                                                                                                                          |
|                                                                                                                               |                                    | Output S11 of the Main board permanently activated (gas ovens 20 levels only).                                                                                                                                           | POWER OFF: Using an ohmmeter, place the test probes on the terminal clamping screws and check the continuity between the “230Vac” terminal of connector J15 and the “S11” output of connector J16 on the Main board.<br>If there is continuity, replace the Main board.                                                                                                                                                                                                                                                          |
| To reset this fault, the power supply to the oven must be cut off by disconnecting the associated protection circuit breaker. |                                    |                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| E01                                                                                                                           | Ambient probe cavity fault.        | Open “Inlets Diagram” in the “Service” screen and check the temperature indicated by the ‘Ban’ ambient probe. If the value is “-°F,” the sensor circuit is faulty (short-circuited or open). Check the following points: |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                                                                                               |                                    | Wire broken in probe or input connection “Ban”                                                                                                                                                                           | POWER OFF: check that the connector is properly inserted into its socket and that each wire is connected to each terminal on the connector. If the problem persists, disconnect the Pt100 “Ban” probe from connector J2 on the Main board and measure between the two white wires using an ohmmeter. (By example, the temperature of the cavity is between 70°F and 80°F, the measured value will be between 108 Ω and 110 Ω). If the measured value is “OL,” the circuit is open. Repair the connection, or replace the sensor. |

| Code | Title                                       | Probable Causes                                                                                                                                                                                                                                                                        | What to do?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |                                             | Short circuit in the probe or probe input connection "Ban"                                                                                                                                                                                                                             | POWER OFF: check that the connector is properly inserted into its socket and that each wire is connected to each terminal on the connector. If the problem persists, disconnect the Pt100 "Ban" probe from connector J2 on the Main board and measure between the two white wires using an ohmmeter. (By example, the temperature of the cavity is between 70°F and 80°F, the measured value will be between 108 Ω and 110 Ω). If the value measured is less than 100 Ω, there is a short circuit. Repair the connection, or replace the probe. |
|      |                                             | Main board electrical fault                                                                                                                                                                                                                                                            | POWER OFF: if the probe and its connection are working, replace the Main board.                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|      |                                             | To reset this fault, the power supply to the oven must be cut off by disconnecting the associated protection circuit breaker.                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|      |                                             |                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| E02  | Ambient probe cavity fault.                 | Wire broken in probe or input connection "Baa"                                                                                                                                                                                                                                         | POWER OFF: check that the connector is properly inserted into its socket and that each wire is connected to each terminal on the connector. If the problem persists, disconnect the Pt100 "Baa" probe from connector J2 on the Main board and measure between the two white wires using an ohmmeter. (By example, the temperature of the cavity is between 70°F and 80°F, the measured value will be between 108 Ω and 110 Ω). If the measured value is "OL," the circuit is open. Repair the connection, or replace the probe.                 |
|      |                                             | Short circuit in the probe or probe input connection "Baa"                                                                                                                                                                                                                             | POWER OFF: check that the connector is properly inserted into its socket and that each wire is connected to each terminal on the connector. If the problem persists, disconnect the Pt100 "Baa" probe from connector J2 on the Main board and measure between the two white wires using an ohmmeter. (By example, the temperature of the cavity is between 70°F and 80°F, the measured value will be between 108 Ω and 110 Ω). If the value measured is less than 100 Ω, there is a short circuit. Repair the connection, or replace the probe. |
|      |                                             | Main board electrical fault                                                                                                                                                                                                                                                            | POWER OFF: if the probe and its connection are working, replace the Main board.                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|      |                                             | To reset this fault, the power supply to the oven must be cut off by disconnecting the associated protection circuit breaker.                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| E10  | Steam generator scale.                      | Water hardness is incorrectly set in the installation parameters                                                                                                                                                                                                                       | Measure the water hardness and adjust the hardness parameter in the installation settings. Carry out descaling cycle from the "Service" screen.                                                                                                                                                                                                                                                                                                                                                                                                 |
|      |                                             | Defective water softener or water filter                                                                                                                                                                                                                                               | Measure water hardness and check or have checked that the water softener and the water filter are working properly. Carry out descaling cycle from the "Service" screen.                                                                                                                                                                                                                                                                                                                                                                        |
|      |                                             | Limescale has built up in the steam generator and the recommended descaling cycles have not been carried out.                                                                                                                                                                          | Carry out descaling cycle from the "Service" screen.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| E11  | High level of steam generator scale.        | Water hardness is incorrectly set in the installation parameters                                                                                                                                                                                                                       | Measure the water hardness and adjust the hardness parameter in the installation settings. Carry out descaling cycle from the "Service" screen,                                                                                                                                                                                                                                                                                                                                                                                                 |
|      |                                             | Defective water softener or water filter                                                                                                                                                                                                                                               | Measure water hardness and check or have checked that the water softener and the water filter are working properly. Carry out descaling cycle from the "Service" screen,                                                                                                                                                                                                                                                                                                                                                                        |
|      |                                             | Limescale has built up in the steam generator and the recommended descaling cycles have not been carried out.                                                                                                                                                                          | Carry out descaling cycle from the "Service screen".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| E12  | Steam generator overheat greater than 266°F | The Steam generator is heating; however, the water level is low: The water level controller is faulty.                                                                                                                                                                                 | Check the functionality of the water level control "BnC" from "Inlets diagram" in the "Service" screen:<br>=> If the control probe is immersed in water, BnC = 1<br>=> If the control probe is not in water, BnC = 0.<br>If not functioning, check the state (Presence of calcium; Mineral fouling...).                                                                                                                                                                                                                                         |
|      |                                             | Steam generator heats even though water level is too low: Sensor connection short-circuited or grounded.                                                                                                                                                                               | Disconnect the connector J1 on the Main board and take a reading between the terminals "BnC" and "EARTH" using an ohmmeter; If there is a short circuit, the ohmmeter indicates a value close to "0" Ω, then locate the fault and repair as required.                                                                                                                                                                                                                                                                                           |
|      |                                             | The Steam generator is heating; however the water level is low: Input "BnC" at the Main board is defective.                                                                                                                                                                            | Replace the Main board                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| E13  | Steam generator temperature probe fault     | Open "Inlets diagram" in the "Maintenance" screen and check the temperature indicated by the "Bgn" steam generator probe. If the value is "-°F", the sensor circuit is faulty (short-circuited or open). Check the following points:<br>Wire broken in probe or input connection "Bgn" | POWER OFF: check that the connector is properly inserted into its socket and that each wire is connected to each terminal on the connector. If the problem persists, disconnect the Pt100 "Bgn" sensor from connector J2 on the Main board and measure between the two white wires using an ohmmeter. (By example, the temperature is between 70°F and 80°F, the measured value will be between 108 Ω and 110 Ω). If the measured value is "OL," the circuit is open. Repair the connection, or replace the probe.                              |
|      |                                             | Short circuit in the probe or probe input connection "Bgn"                                                                                                                                                                                                                             | POWER OFF: check that the connector is properly inserted into its socket and that each wire is connected to each terminal on the connector. If the problem persists, disconnect the Pt100 "Bgn" probe from connector J2 on the Main board and measure between the two white wires using an ohmmeter. (By example, the temperature is between 70°F and 80°F, the measured value will be between 108 Ω and 110 Ω). If the value read is less than 100 Ω, there is a short circuit. Repair the connection, or replace the probe                    |

| Code | Title                                                                             | Probable Causes                                                                                                                                | What to do?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |                                                                                   | Main board electrical fault                                                                                                                    | POWER OFF: If the probe and the connections are functioning, replace the Main board.                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| E14  | Steam generator temperature probe fault.                                          | Wire broken in probe or input connection "Bga"                                                                                                 | POWER OFF: check that the connector is properly inserted into its socket and that each wire is connected to each terminal on the connector. If the problem persists, disconnect the Pt100 "Bga" sensor from connector J2 on the Main board and measure between the two red wires using an ohmmeter. (By example, the temperature is between 70°F and 80°F, the measured value will be between 108 Ω and 110 Ω). If the measured value is "OL," the circuit is open. Repair the connection, or replace the probe.            |
|      |                                                                                   | Short circuit in the probe or probe input connection "Bga"                                                                                     | POWER OFF: check that the connector is properly inserted into its socket and that each wire is connected to each terminal on the connector. If the problem persists, disconnect the Pt100 "Bga" probe from connector J2 on the Main board and measure between the two red wires using an ohmmeter. (By example, the temperature is between 70°F and 80°F, the measured value will be between 108 Ω and 110 Ω). If the value read is less than 100 Ω, there is a short circuit. Repair the connection, or replace the probe. |
|      |                                                                                   | Main board electrical fault                                                                                                                    | POWER OFF: If the probe and the connections are functioning, replace the Main board.                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|      |                                                                                   | <i>To reset this fault, the power supply to the oven must be cut off by disconnecting the associated protection circuit breaker.</i>           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| E15  | The level of water in the steam generator has not been reached after 117 seconds. | Water supply closed                                                                                                                            | Check that the water supply in-line valves are open                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|      |                                                                                   | Water pressure too low                                                                                                                         | Mesure the water pressure at the oven connection. When the water supply to the oven is maximum, the pressure must be greater than 1.5 bar.                                                                                                                                                                                                                                                                                                                                                                                  |
|      |                                                                                   | The Steam generator is not being fed water: The fuse "F1" of the Main board has blown (LED "800" off (► <a href="#">LEDs identification</a> )) | Check the cause of blowing, and the state of condenser's solenoids (Ycond.) and cooling's solenoid (Ycool). Make the repair and change the fuse by a fuse of the same models.                                                                                                                                                                                                                                                                                                                                               |
|      |                                                                                   | The Steam generator is not being supplied water: The output "S20" of the Main board is faulty.                                                 | Press the "Yboiler" button from "Hydraulics diagram" in the "Service" screen, and measure the voltage between the output "S20" of the Automate and terminal "Xb". If the voltage is less than 230V, change the Main board.                                                                                                                                                                                                                                                                                                  |
|      |                                                                                   | Steam generator is not being supplied water: Then steam generator fill solenoid valve is defective.                                            | WARNING: The output is controlled by a triac: a voltage at the output can be measured even if the triac is not open.                                                                                                                                                                                                                                                                                                                                                                                                        |
|      |                                                                                   | The Steam generator is not being supplied water: Then Steam generator fill solenoid valve is defective.                                        | Disconnect the water supply pipe from the steam generator at the elbow and place it in a container. Press the "Yboiler" button from "Hydraulics Diagram" in the 'Service' screen, and check that water is coming out of the pipe. If no water is flowing, the "Yboiler" steam generator fill solenoid valve is defective and must be replaced.                                                                                                                                                                              |
|      |                                                                                   | Water flow rate too low.                                                                                                                       | Disconnect the water supply hose from the steam generator at the elbow and place it in a container. Press the "Yboiler" button from "Hydraulics Diagram" in the "Service" screen and let the water run into the container for as long as the solenoid valve is open (1 minute). The amount of water collected should be approximately 1,3 gallons. If it is less than this, check the condition of the filters and flow limiter in the solenoid valve (clogging, etc.). Clean them or replace the solenoid valve.           |
| E16  | Steam generator drainage pump fault.                                              | 24/230Vac supply voltage input fault                                                                                                           | With a voltmeter, check the supply voltage between input 24/230Vac of the Main board and terminal "Xb". This voltage should be 230V (120V on ovens version "UL"). If not, find the cause of the fault and repair as required.                                                                                                                                                                                                                                                                                               |
|      |                                                                                   | Fuse F4 blown (LED "702" off (► <a href="#">LEDs identification</a> ))                                                                         | Find the cause of the blowing, check the state of the descaling pump (Mdg) and the cavity drain pump (Mvm). Make repairs and replace the fuse with the same model.                                                                                                                                                                                                                                                                                                                                                          |
|      |                                                                                   | Fault with the Main board switch S06                                                                                                           | Connect a voltmeter between the terminal S06 of the Main board and terminal Xb. Activate relay output S06 from "Outlets diagram" in the "Service" screen. If the voltage reads zero when the relay is operated, replace the Main board.                                                                                                                                                                                                                                                                                     |
|      |                                                                                   | The drainage pump is not powered                                                                                                               | Connect a voltmeter to the terminals of the Steam generator drain pump (Mvg). Activate relay output S06 from "Outlets" diagram in the "Service" screen. If the voltage reads zero when the relay is operated, check the pump cabling and repair as required.                                                                                                                                                                                                                                                                |
|      |                                                                                   | Steam generator drainage pump defective or blocked.                                                                                            | Activate relay output S06 from "Outlets" diagram in the "Service" screen. If the pump does not function, visually check its state: clean or swap out as required.                                                                                                                                                                                                                                                                                                                                                           |
|      |                                                                                   | Steam generator water level control failure                                                                                                    | Check the operation of the "BnC" water level control from the "Inlets diagram" in the "Service" screen: if water is present, BnC = 1; if the probe is out of the water, BnC = 0. If this is not the case, check the condition of the probe (limescale, dirt) and its electrical connection. If the probe is working, replace the Main board.                                                                                                                                                                                |
| E20  | The level of water in the cleaning tank has not been reached after 50 seconds.    | Water supply closed                                                                                                                            | Open the water supply                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|      |                                                                                   | Water pressure too low                                                                                                                         | Check the water pressure at the oven connection. During maximum kitchen water use, the pressure must be greater than 1.5 bar.                                                                                                                                                                                                                                                                                                                                                                                               |
|      |                                                                                   | Water flow rate too low.                                                                                                                       | Check the state of the filter and of the condenser flow limiting solenoid valve (Fouling...). Clean if required. The water flow rate should be approximately 5l/min.                                                                                                                                                                                                                                                                                                                                                        |

| Code       | Title                            | Probable Causes                                                                          | What to do?                                                                                                                                                                                                                                                                                                                                                |
|------------|----------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |                                  | Fuse F1 blown ( LED "702" off (► <a href="#">LEDs identification</a> ))                  | Find the cause of the blowing, check the state of the Ycond and Yboiler solenoid valves. Carry out repairs and replace the fuse with the same model.                                                                                                                                                                                                       |
|            |                                  | Fault with the Main board output S18                                                     | Connect a voltmeter between the terminal S18 of the Main board and terminal Xb. Activate relay output S18 from "Outlets diagram" in the "Service" screen. If the voltage is zero when the output is activated, replace the Main board. WARNING: The output is controlled by a triac: a voltage can be read at the output, even when the triac is not open. |
|            |                                  | The condenser solenoid valve (Yc) is not powered.                                        | Connect a voltmeter to the terminals of the condenser solenoid valve (Ycond). Activate relay output S18 from "Outlets diagram" in the "Service" screen. If the voltage reads zero when the output is operated, check the solenoid valve cabling and repair as required.                                                                                    |
|            |                                  | Condenser solenoid valve defective                                                       | Activate output S18 from "Outlets diagram" in the "Service" screen". If the solenoid valve does not function, then replace.                                                                                                                                                                                                                                |
|            |                                  | Cleaning box water level control failure                                                 | Check the operation of the "BnL" water level control from the "Inlets diagram" in the "Service" screen: if water is present, BnL = 1; if the probe is out of the water, BnL = 0. If this is not the case, check the condition of the probe (limescale, dirt) and its electrical connection. If the probe is working, replace the Main board.               |
| <b>E21</b> | Cleaning box drainage pump fault | 24/230Vac supply voltage input fault                                                     | With a voltmeter, check the supply voltage between input 24/230Vac of the Main board and terminal "Xb". This voltage should be 120V on ovens. If not, find the cause of the fault and repair as required.                                                                                                                                                  |
|            |                                  | Fuse F4 blown (LED "702" off (► <a href="#">LEDs identification</a> ))                   | Find the cause of blowing, check the state of the descaling pump (Mdg) and the cavity drainage pump (Mvm). Repair by replacing the fuse with the same model.                                                                                                                                                                                               |
|            |                                  | Fault with the Main board switch S05                                                     | Connect a voltmeter between the terminal S05 of the Main board and terminal Xb. Activate relay output S05 from "Outlets diagram" in the "Service" screen. If the voltage reads zero when the relay is operated, replace the Main board.                                                                                                                    |
|            |                                  | The drainage pump is not powered                                                         | Connect a voltmeter to the terminals of the cavity drain pump (Mvm). Activate relay output S05 from "Outlets diagram" in the "Service" screen. If the voltage reads zero when the relay is operated, check the pump cabling and repair as required.                                                                                                        |
|            |                                  | Cleaning box drainage pump defective or blocked                                          | Activate relay output S05 from "Outlets diagram" in the "Service" screen. If the pump does not function, visually check its state: clean or swap out as required.                                                                                                                                                                                          |
|            |                                  | Cleaning box water level control failure                                                 | Check the operation of the "BnL" water level control from the "Inlets diagram" in the "Service" screen: if water is present, BnL = 1; if the probe is out of the water, BnL = 0. If this is not the case, check the condition of the probe (limescale, dirt) and its electrical connection. If the probe is working, replace the Main board.               |
| <b>E22</b> | Descaling pump cartridge fault.  | 24/230Vac supply voltage input fault                                                     | With a voltmeter, check the supply voltage between input 24-/230Vac of the Main board and terminal "Xb". This voltage should be 120V. If not, find the cause of the fault and repair as required.                                                                                                                                                          |
|            |                                  | Fuse F4 blown (LED "702" off (► <a href="#">LEDs identification</a> ))                   | Find the cause of blowing check the state of the Steam generator drainage pump (Mvg) and the cavity drainage pump (Mvm). Repair by replacing the fuse with the same model.                                                                                                                                                                                 |
|            |                                  | Fault with the Main board switch S04                                                     | Connect a voltmeter between the terminal S04 of the Main board and terminal Xb. Activate relay output S05 from "Outlets diagram" in the "Service" screen. If the voltage reads zero when the relay is operated, replace the Main board.                                                                                                                    |
|            |                                  | The descale pump is not powered                                                          | Connect a voltmeter to the terminals of the descaling pump (Mdg). Activate relay output S04 from "Outlets diagram" in the "Service" screen. If the voltage reads zero when the relay is operated, check the pump cabling and repair as required.                                                                                                           |
|            |                                  | Descaling tank drainage pump defective or blocked                                        | Activate relay output S04 from "Outlets diagram" in the "Service" screen. If the pump does not function, visually check its state: clean or swap out as required.                                                                                                                                                                                          |
|            |                                  | Steam generator water level control failure                                              | Check the operation of the "BnC" water level control from the "Inlets diagram" in the "Service" screen: if water is present, BnC = 1; if the probe is out of the water, BnC = 0. If this is not the case, check the condition of the probe (limescale, dirt) and its electrical connection. If the probe is working, replace the Main board.               |
| <b>E23</b> | Cleaning pump fault              | 230Vac supply voltage input fault                                                        | With a voltmeter, check the supply voltage between input 230Vac of the Main board and terminal "Xb". This voltage should be 230V. If not, find the cause of the fault and repair as required.                                                                                                                                                              |
|            |                                  | Fuse F2 of the main board blown (LED "702" off (► <a href="#">LEDs identification</a> )) | Find the cause of blowing, check the status of the cleaning pump (Mpn) and the solenoid valves for the hand shower (Yspray) and/or descaling box filling (Ydescal.). Carry out repairs and replace the fuse with the same model.                                                                                                                           |
|            |                                  | Fault with the Main board switch S13                                                     | Connect a voltmeter between the terminal S13 of the Main board and terminal Xb. Activate relay output S13 from "Outlets diagram" in the "Service" screen. If the voltage reads zero when the relay is operated, replace the Main board.                                                                                                                    |
|            |                                  | The cleaning pump is not powered                                                         | Connect a voltmeter to the terminals of the cleaning pump (Mpn). Activate relay output S13 from "Outlets diagram" in the "Service" screen. If the voltage reads zero when the relay is operated, check the pump cabling and repair as required.                                                                                                            |

| Code | Title                                                   | Probable Causes                                                              | What to do?                                                                                                                                                                                                                                                                                                                                         |
|------|---------------------------------------------------------|------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |                                                         | Cleaning pump defective or blocked                                           | Activate relay output S13 from "Outlets diagram" in the "Service" screen. If the pump does not function, visually check its state: clean or swap out as required.                                                                                                                                                                                   |
|      |                                                         | Clean wash box water level control failure                                   | Check the water level control function from "Inlets diagram" in the "Service" screen: if the probe is in the water, the BnL = 1, and if it is out of the water, the BnL = 0. If this is not the case, check the condition of the probe (scale; dirt) and its electrical connection. If the probe is functional, replace the Main board.             |
|      |                                                         | Cleaning pump capacitor faulty or incorrectly connected                      | Check cleaning pump capacitor connection (lugs well plugged in and no traces of oxidation). Switch off the oven, disconnect the capacitor and connect a multi-meter in its place to check the capacity of the 6.3µf (+/-5%) capacitor. If the value is incorrect, replace the capacitor.                                                            |
| E30  | Unpricked Core probe or Failed Core Probe.              | Check fault on the "Inlets diagram"                                          | Open "Inlets diagram" in the "Service" screen and check the temperature being indicated by the food probe "Bsc". If the value is "----" at all points, the common point of the probe (Bsc com) is faulty (either short-circuited or open).                                                                                                          |
|      |                                                         | Wire broken in probe or input connection Bsc Com                             | Disconnect the probe Pt100 from the Main board and take readings using an ohmmeter between points Bsc com and Bsc1, Bsc2 and Bsc3; If the circuit is broken, repair the connection. If not, replace the probe.                                                                                                                                      |
|      |                                                         | Short circuit in the probe or probe input connection Bsc Com                 | Disconnect the probe Pt100 from the Main board and take readings using an ohmmeter between points Bsc com and Bsc1, Bsc2 and Bsc3; If there is a short circuit, locate the fault and repair as required. If not, replace the probe.                                                                                                                 |
|      |                                                         | Main board electrical fault                                                  | If the probe and the connections are functioning, replace the Main board.                                                                                                                                                                                                                                                                           |
|      |                                                         | The extension lead between the Main board and the probe is faulty            | Check the ohmic values of each PT100 probe: measure the values between the common (yellow wire) and each of the other wires, compare the values with the values (see chapter PT100 Probe). Carry out this operation on the probe side and on the board side. If the values differ, replace the extension lead between the probe and the Main board. |
| E31  | Food probe degraded.                                    | Check fault on the "Inlets diagram"                                          | Open "Inlets diagram" in the "Service" screen and check the temperature being indicated by the food probe "Bsc". If one of the values is "----", this point of the probe (Bsc1 => Bsc3) is faulty (either short-circuited or open).                                                                                                                 |
|      |                                                         | Wire broken in probe or the input connections Bsc 1 to 3                     | Disconnect the probe Pt100 from the Main board and take readings using an ohmmeter between points Bsc com and Bsc1, Bsc2 and Bsc3; If one of the test points is broken, repair the connection. If not, replace the probe.                                                                                                                           |
|      |                                                         | Short circuit in the probe or one of the probe input connections Bsc 1 to 3  | Disconnect the probe Pt100 from the Main board and take readings using an ohmmeter between points Bsc com and Bsc1, Bsc2 and Bsc3; If one of the test points has short circuited, repair the connection. If not, replace the probe.                                                                                                                 |
|      |                                                         | Main board electrical fault                                                  | If the probe is functioning, replace the Main board.                                                                                                                                                                                                                                                                                                |
|      |                                                         | The extension lead between the Main board and the probe is faulty            | Check the ohmic values of each PT100 probe: measure the values between the common (yellow wire) and each of the other wires, compare the values with the values (see chapter PT100 Probe). Carry out this operation on the probe side and on the board side. If the values differ, replace the extension lead between the probe and the Main board. |
| E32  | Food probe not inserted.                                | Probe not inserted in food, incorrect measurement values                     | Insert the food probe, taking care to follow the instructions of pricking.                                                                                                                                                                                                                                                                          |
| E34  | USB Core Probe unpricked or out of service.             | The probe is detected at the USB port but temperature is not being measured. | Open "Inlets diagram" in the "Service" screen and check the temperature being indicated by the food probe "USB". If the value is "----" at all points, the probe is defective. Replace the probe.                                                                                                                                                   |
| E35  | USB food probe degraded.                                | One or more of the measured temperatures are out of range.                   | Open "Inlets diagram" in the "Service" screen and check the temperature being indicated by the food probe "USB". If the value is "----" at one of the measuring points, the probe is defective. Replace the probe.                                                                                                                                  |
| E40  | Gas safety device active on "convection" cavity burner. | Gas inlet valve closed, no gas or Incorrect gas type                         | Make sure that the gas supply is on. Check that the type of gas being supplied conforms with that shown on the appliance's specification plate. Open the gas valve                                                                                                                                                                                  |
|      |                                                         | No grounding on power supply                                                 | Check the grounding of the device using a megohmmeter. Check or have someone check the continuity of the ground and the grounding.                                                                                                                                                                                                                  |
|      |                                                         | Gas pressure too low                                                         | Measure the gas pressure by measuring from input of the gas valve "Pin" ( <a href="#">▶ Changing/adjusting gas valve</a> ) at the appliance connection when all appliances running off the same supply are operating at maximum capacity. The gas pressure must be within the allowed limits.                                                       |
|      |                                                         | Gas board output AL12 defective                                              | Connect a voltmeter between the terminal AL12 of the add-on gas board (Aag) and terminal Xb. Activate relay output AL12 from "Outlets diagram" in the "Service" screen. If the voltage reads zero when the relay is operated, replace the add-on gas board.                                                                                         |
|      |                                                         | The spark box Ear ( <a href="#">▶ Electric boards</a> ) is not powered.      | Connect a voltmeter to the terminals of the "convection" burner spark box Ear. Activate relay output AL12 from "Outlets diagram" in the "Service" screen. If the voltage reads zero when the relay is operated, check the lighter cabling and repair as required.                                                                                   |

| Code       | Title                                                                                     | Probable Causes                                                                                                                                                                                                                                     | What to do?                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |                                                                                           | The spark box Ear (► <a href="#">Electric boards</a> ) is defective.                                                                                                                                                                                | Activate output relay AL12 from "Outlets diagram" in the "Service" screen. If the spark box Ear does not function, then replace.                                                                                                                                                                                                                                                                             |
|            |                                                                                           | The gas board (Aag) is received a signal from the safety box "Avr1" on SECU12 input on the gas board "Aag".                                                                                                                                         | Check if flame sensor is properly connected to the safety box "Avr1". If properly connected, replace the safety box "Avr1".                                                                                                                                                                                                                                                                                  |
|            |                                                                                           | Incorrect spacing of the gas flame sensor                                                                                                                                                                                                           | Check the spacing of ignition electrodes and flame sensor.                                                                                                                                                                                                                                                                                                                                                   |
|            |                                                                                           | The input PF1 (or PF2 on oven 20N) of the gas add-on board is defective                                                                                                                                                                             | Changing the add-on gas board (Aag)                                                                                                                                                                                                                                                                                                                                                                          |
| <b>E41</b> | Gas safety device active on steam generator burner.                                       | Gas inlet valve closed, no gas or incorrect gas type                                                                                                                                                                                                | Make sure that the gas supply is on. Check that the type of gas being supplied conforms with that shown on the appliance's specification plate. Open the gas valve                                                                                                                                                                                                                                           |
|            |                                                                                           | No grounding on power supply                                                                                                                                                                                                                        | Check the grounding of the device using a megohmmeter. Check or have someone check the continuity of the ground and the grounding.                                                                                                                                                                                                                                                                           |
|            |                                                                                           | Gas pressure too low                                                                                                                                                                                                                                | Measure the gas pressure by measuring from input of the gas valve "Pin" (► <a href="#">Changing/adjusting gas valve</a> ) at the appliance connection when all appliances running off the same supply are operating at maximum capacity. The gas pressure must be within the allowed limits.<br>If not, adjust the gas pressure or increase the capacity of the gas supply (Expansion valve, pipe diameter). |
|            |                                                                                           | Gas board AL3 output defective                                                                                                                                                                                                                      | Connect a voltmeter between the terminal AL3 of the add-on gas board (Aag) et une terminal Xb. Operate the output relay AL3 from "Outlets diagram" in the "Service" screen. If the voltage reads zero when the relay is operated, replace the add-on gas board.                                                                                                                                              |
|            |                                                                                           | The spark box Eag (► <a href="#">Electric boards</a> ) is not powered.                                                                                                                                                                              | Connect a voltmeter to the terminals of the Steam generator burner spark box Eag. Operate the output relay AL3 from "Outlets diagram" in the "Service" screen. If the voltage reads zero when the relay is operated, check the lighter cabling and repair as required                                                                                                                                        |
|            |                                                                                           | The spark box Eag (► <a href="#">Electric boards</a> ) is defective.                                                                                                                                                                                | Activate relay output AL3 from "Outlets diagram" in the "Service" screen. If the Steam generator burner spark box Eag does not function, then replace.                                                                                                                                                                                                                                                       |
|            |                                                                                           | The gas board (Aag) is received a signal from the safety box "Avg" on SECU3 input on the gas board "Aag".                                                                                                                                           | Check if flame sensor is properly connected to the safety box "Avg". If properly connected, replace the safety box "Avg".                                                                                                                                                                                                                                                                                    |
|            |                                                                                           | Incorrect spacing of the gas flame sensor                                                                                                                                                                                                           | Check the spacing of ignition electrodes and flame sensor.                                                                                                                                                                                                                                                                                                                                                   |
|            |                                                                                           | The input "PF3" of the gas add-on board is defective.                                                                                                                                                                                               | Changing the add-on gas board (Aag)                                                                                                                                                                                                                                                                                                                                                                          |
| <b>E50</b> | Humidity sensor faulty (This error only appears when the oven is cooking not preheating). | Open "Inlets diagram" on the "Service" screen and check the humidity value delivered by the sensor. This must be greater than 3%. If this is not the case, check the following points:                                                              |                                                                                                                                                                                                                                                                                                                                                                                                              |
|            |                                                                                           | The F2 fuse on the "Ahu" humidity additional board (► <a href="#">Humidity board</a> ) is blown, (LED 100 off (► <a href="#">LEDs identification</a> ))                                                                                             | Find the cause of the blowing and replace the fuse by the same model.                                                                                                                                                                                                                                                                                                                                        |
|            |                                                                                           | The "Humidity" add-on board (Ahu) is not powered.                                                                                                                                                                                                   | Check the flashing of the communication LED "green" and "orange" on the board. If they do not flash, use a voltmeter to check that the board is powered (Set to DC current). This must be +24Vdc                                                                                                                                                                                                             |
|            |                                                                                           | The "Humidity" add-on board (Ahu) is not communicating with the Main board.                                                                                                                                                                         | Check the flashing of the communication LED "green" and "orange" on the board. If they do not flash, change the add-on board                                                                                                                                                                                                                                                                                 |
|            |                                                                                           | The J2 connector on the Ahu "Humidity" additional board is not properly inserted into its socket, or the wires are not properly connected in the connector.                                                                                         | Check the connections on connector J2 of the AHU "Humidity" additional board, check that the connector screws are tight, and check that the extension connector is properly connected to the sensor connector.                                                                                                                                                                                               |
|            |                                                                                           | The humidity probe is defective                                                                                                                                                                                                                     | Check the status of the LEDs: if the "200" LED is flashing red or steady red, replace the humidity sensor (► <a href="#">Communication LEDs</a> )                                                                                                                                                                                                                                                            |
| <b>E60</b> | Internal oven fan not functioning                                                         | Before resolving error E60, please refer to the "error history" on the "Service" screen and check that no other error codes are displayed. If any are displayed, correct these errors first.                                                        |                                                                                                                                                                                                                                                                                                                                                                                                              |
|            |                                                                                           | The fuse "Ftmv" is blown                                                                                                                                                                                                                            | Find the cause of the blowing and replace by the fuse with the same model                                                                                                                                                                                                                                                                                                                                    |
|            |                                                                                           | The fuse F3 of the Main board (► <a href="#">Main board</a> ) has blown (LED "701" off (► <a href="#">LEDs identification</a> ))                                                                                                                    | Find the cause of the blowing and replace by the fuse with the same model.                                                                                                                                                                                                                                                                                                                                   |
|            |                                                                                           | The fuse Fm (located in the black cylindrical fuse holder near connector J22) of the Main board (► <a href="#">Main board</a> ) has blown (LED "801" off (► <a href="#">LEDs identification</a> )) This LED lights only when the contactor Kp is on | Find the cause of the blowing and replace by the fuse with the same model.                                                                                                                                                                                                                                                                                                                                   |
|            |                                                                                           | The fan motor thermal protection is open                                                                                                                                                                                                            | POWER OFF, check the continuity of the circuit between the terminal A2 of the contactor Kp and terminal Xb. If the circuit is broken, check the cabling or change the motor.                                                                                                                                                                                                                                 |
|            |                                                                                           | The main contactor Kp is not powered                                                                                                                                                                                                                | Connect a voltmeter between the terminals A1 and A2 of the main contactor Kp. Activate relay output Kp from "Outlets diagram" in the "Service" screen. If the voltage reads zero when the relay is operated, check the contactor Kp cabling or replace the Main board.                                                                                                                                       |
|            |                                                                                           | The main contactor Kp is defective                                                                                                                                                                                                                  | Connect a voltmeter between the terminals A1 and A2 of the main contactor Kp. Operate the output Kp from "Outlets diagram" in the "Service" screen. If the main contactor Kp does not close when powered, replace the contactor.                                                                                                                                                                             |

| Code | Title                                                       | Probable Causes                                                                                                                      | What to do?                                                                                                                                                                                                                                                                                                                                                                                                   |
|------|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |                                                             | The motor is not powered                                                                                                             | POWER OFF: check the motor connector (it is properly engaged in the socket, the connections are secure, etc.).<br>POWER ON: connect a voltmeter between the terminals Xm1 and Xm0. Operate the output switch Kp from "Outlets diagram" in the "Service" screen. If the voltage is not between 208V et 240V, inspect the cabling.                                                                              |
|      |                                                             | Motor circuit cut                                                                                                                    | POWER OFF, check the continuity of the circuit between the outputs S22 and S23 of the Main board and the terminal Xm0. If the circuit is open (the measurement indicated is "OL"), check the cabling or change the fan motor.                                                                                                                                                                                 |
|      |                                                             | Short-circuited Triac motor                                                                                                          | POWER OFF: measure the continuity between terminals E21 and S22 on the Main board. If they are short-circuited, the ohmmeter will indicate a value close to "0" Ω. If this is the case, replace the Main board.                                                                                                                                                                                               |
|      |                                                             | <i>To reset this fault, the power supply to the oven must be cut off by disconnecting the associated protection circuit breaker.</i> |                                                                                                                                                                                                                                                                                                                                                                                                               |
| E70  | Electronics overheat: temp. greater than or equal to 149°F. | Ambient temperature around oven too high                                                                                             | The oven is not getting enough fresh air: clean the air intake vents ( <a href="#">► Location of technical components</a> ), check the installation, and move any appliances that generate a lot of heat, such as open burners or hot plates, away from the oven. It may be necessary to install an optional heat shield.                                                                                     |
|      |                                                             | Air inlets require cleaning                                                                                                          | Clean the cool air intake vents                                                                                                                                                                                                                                                                                                                                                                               |
|      |                                                             | Technical fan(s) require(s) cleaning                                                                                                 | Clean the technical fan(s)                                                                                                                                                                                                                                                                                                                                                                                    |
|      |                                                             | The fuse F3 of the Main board ( <a href="#">► Main board</a> ) has blown (LED "701" off ( <a href="#">► LEDs identification</a> ))   | Find the cause of blowing and replace with fuse of the same model.                                                                                                                                                                                                                                                                                                                                            |
|      |                                                             | The output S08 in J16 connector of the Main board is defective.                                                                      | Connect a voltmeter between the terminal S08 of Main board and a Xb terminal. Activate relay output S08 from "Outlets diagram" in the "Service" screen. If there is no voltage, replace the Main board.                                                                                                                                                                                                       |
|      |                                                             | In electrical oven only, the output S091 in J16 connector of the Main board is defective.                                            | Connect a voltmeter between the terminal S091 of Main board et a Xb terminal. Activate relay output S091 from "Outlets diagram" in the "Service" screen. If there is no voltage, replace the Main board.                                                                                                                                                                                                      |
|      |                                                             | The technical fan(s) is (are) not powered                                                                                            | Connect a voltmeter between the terminals ventilator power supply. Activate relay output S08 from "Outlets diagram" in the "Service" screen. If the voltage reads zero, inspect the cabling. On electric's ovens only, do the same operation with the S091 output. From "Outlets diagrams in the "Service" screen, activate Kp, if the voltage between the terminal fan connexions is "0"V, check the wiring. |
|      |                                                             | The technical fan(s) is defective                                                                                                    | Activate relay output S08 from "Oven diagram" in the "Service" screen. If the fan does not turn, then replace. On electric ovens only, activate output S091 by pressing on "Kp" from "Outlets diagram" in "Service" screen then the second fan must run. If it does not turn, replace it.                                                                                                                     |
| E71  | Electronics overheat: temp. greater than or equal to 158°F. | Ambient temperature around oven too high                                                                                             | The oven is not getting enough fresh air: clean the air intake vents ( <a href="#">► Location of technical components</a> ), check the installation, and move any appliances that generate a lot of heat, such as open burners or hot plates, away from the oven. It may be necessary to install an optional heat shield.                                                                                     |
|      |                                                             | Air inlets require cleaning                                                                                                          | Clean the cool air intake vents.                                                                                                                                                                                                                                                                                                                                                                              |
|      |                                                             | Technical fan(s) require(s) cleaning                                                                                                 | Clean the technical fan(s).                                                                                                                                                                                                                                                                                                                                                                                   |
|      |                                                             | The fuse F3 of the Main board ( <a href="#">► Main board</a> ) has blown (LED "701" off ( <a href="#">► LEDs identification</a> ))   | Find the cause of blowing and replace with fuse of the same model.                                                                                                                                                                                                                                                                                                                                            |
|      |                                                             | The output S08 in J16 connector of the Main board is defective.                                                                      | Connect a voltmeter between the terminal S08 of Main board and a Xb terminal. Activate relay output S08 from "Outlets diagram" in the "Service" screen. If there is no voltage, replace the Main board.                                                                                                                                                                                                       |
|      |                                                             | In electrical oven only, the output S091 in J16 connector of the Main board is defective.                                            | Connect a voltmeter between the terminal S091 of Main board et a Xb terminal. Activate relay output S091 from "Outlets diagram" in the "Service" screen. If there is no voltage, replace the Main board.                                                                                                                                                                                                      |
|      |                                                             | The technical fan(s) is (are) not powered                                                                                            | Connect a voltmeter between the terminals ventilator power supply. Activate relay output S08 from "Outlets diagram" in the "Service" screen. If the voltage reads zero, inspect the cabling. On electric's ovens only, do the same operation with the S091 output. From "Outlets diagrams in the "Service" screen, activate Kp, if the voltage between the terminal fan connexions is "0"V, check the wiring. |
|      |                                                             | The technical fan(s) is defective                                                                                                    | Activate relay output S08 from "Oven diagram" in the "Service" screen. If the fan does not turn, then replace. On electric ovens only, activate output S091 by pressing on "Kp" from "Outlets diagram" in "Service" screen then the second fan must run. If it does not turn, replace it.                                                                                                                     |
| E72  | Electronics overheat: temp. greater than or equal to 167°F. | Ambient temperature around oven too high                                                                                             | The oven is not getting enough fresh air: clean the air intake vents ( <a href="#">► Location of technical components</a> ), check the installation, and move any appliances that generate a lot of heat, such as open burners or hot plates, away from the oven. It may be necessary to install an optional heat shield.                                                                                     |
|      |                                                             | Air inlets require cleaning                                                                                                          | Clean the cool air intake vents                                                                                                                                                                                                                                                                                                                                                                               |
|      |                                                             | Technical fan(s) require(s) cleaning                                                                                                 | Clean the technical fan(s)                                                                                                                                                                                                                                                                                                                                                                                    |
|      |                                                             | The fuse F3 of the Main board ( <a href="#">► Main board</a> ) has blown (LED "701" off ( <a href="#">► LEDs identification</a> ))   | Find the cause of blowing and replace with fuse of the same model.                                                                                                                                                                                                                                                                                                                                            |
|      |                                                             | The output S08 in J16 connector of the Main board is defective.                                                                      | Connect a voltmeter between the terminal S08 of Main board and a Xb terminal. Activate relay output S08 from "Outlets diagram" in the "Service" screen. If there is no voltage, replace the Main board.                                                                                                                                                                                                       |
|      |                                                             | In electrical oven only, the output S091 in J16 connector of the Main board is defective.                                            | Connect a voltmeter between the terminal S091 of Main board et a Xb terminal. Activate relay output S091 from "Outlets diagram" in the "Service" screen. If there is no voltage, replace the Main board.                                                                                                                                                                                                      |

| Code | Title                                                                                                                                                              | Probable Causes                                                                                                                    | What to do?                                                                                                                                                                                                                                                                                                                                                                                                   |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |                                                                                                                                                                    | The technical fan(s) is (are) not powered                                                                                          | Connect a voltmeter between the terminals ventilator power supply. Activate relay output S08 from "Outlets diagram" in the "Service" screen. If the voltage reads zero, inspect the cabling. On electric's ovens only, do the same operation with the S091 output. From "Outlets diagrams in the "Service" screen, activate Kp, if the voltage between the terminal fan connexions is "0"V, check the wiring. |
|      |                                                                                                                                                                    | The technical fan(s) is defective                                                                                                  | Activate relay output S08 from "Oven diagram" in the "Service" screen. If the fan does not turn, then replace. On electric ovens only, activate output S091 by pressing on "Kp" from "Outlets diagram" in "Service" screen then the second fan must run. If it does not turn, replace it.                                                                                                                     |
| E75  | Screen electronic (SoM) temperature above 176°F. The temperature of the electronics has exceeded its critical operating threshold. The oven can no longer operate. | Ambient temperature around oven too high                                                                                           | The oven is not getting enough fresh air: clean the air intake vents ( <a href="#">► Location of technical components</a> ), check the installation, and move any appliances that generate a lot of heat, such as open burners or hot plates, away from the oven. It may be necessary to install an optional heat shield.                                                                                     |
|      |                                                                                                                                                                    | Air inlets require cleaning                                                                                                        | Clean the cool air intake vents                                                                                                                                                                                                                                                                                                                                                                               |
|      |                                                                                                                                                                    | Technical fan(s) require(s) cleaning                                                                                               | Clean the technical fan(s)                                                                                                                                                                                                                                                                                                                                                                                    |
|      |                                                                                                                                                                    | The fuse F3 of the Main board ( <a href="#">► Main board</a> ) has blown (LED "701" off ( <a href="#">► LEDs identification</a> )) | Find the cause of blowing and replace with fuse of the same model.                                                                                                                                                                                                                                                                                                                                            |
|      |                                                                                                                                                                    | The output S08 in J16 connector of the Main board is defective.                                                                    | Connect a voltmeter between the terminal S08 of Main board and a Xb terminal. Activate relay output S08 from "Outlets diagram" in the "Service" screen. If there is no voltage, replace the Main board.                                                                                                                                                                                                       |
|      |                                                                                                                                                                    | In electrical oven only, the output S091 in J16 connector of the Main board is defective.                                          | Connect a voltmeter between the terminal S091 of Main board et a Xb terminal. Activate relay output S091 from "Outlets diagram" in the "Service" screen. If there is no voltage, replace the Main board.                                                                                                                                                                                                      |
|      |                                                                                                                                                                    | The technical fan(s) is (are) not powered                                                                                          | Connect a voltmeter between the terminals ventilator power supply. Activate relay output S08 from "Outlets diagram" in the "Service" screen. If the voltage reads zero, inspect the cabling. On electric's ovens only, do the same operation with the S091 output. From "Outlets diagrams in the "Service" screen, activate Kp, if the voltage between the terminal fan connexions is "0"V, check the wiring. |
|      |                                                                                                                                                                    | The technical fan(s) is defective                                                                                                  | Activate relay output S08 from "Oven diagram" in the "Service" screen. If the fan does not turn, then replace. On electric ovens only, activate output S091 by pressing on "Kp" from "Outlets diagram" in "Service" screen then the second fan must run. If it does not turn, replace it.                                                                                                                     |
| E76  | Screen electronic (SoM) temperature above 194°F. The temperature of the electronics has exceeded its critical operating threshold. The oven can no longer operate. | Ambient temperature around oven too high                                                                                           | The oven is not getting enough fresh air: clean the air intake vents ( <a href="#">► Location of technical components</a> ), check the installation, and move any appliances that generate a lot of heat, such as open burners or hot plates, away from the oven. It may be necessary to install an optional heat shield.                                                                                     |
|      |                                                                                                                                                                    | Air inlets require cleaning                                                                                                        | Clean the cool air intake vents                                                                                                                                                                                                                                                                                                                                                                               |
|      |                                                                                                                                                                    | Technical fan(s) require(s) cleaning                                                                                               | Clean the technical fan(s)                                                                                                                                                                                                                                                                                                                                                                                    |
|      |                                                                                                                                                                    | The fuse F3 of the Main board ( <a href="#">► Main board</a> ) has blown (LED "701" off ( <a href="#">► LEDs identification</a> )) | Find the cause of blowing and replace with fuse of the same model.                                                                                                                                                                                                                                                                                                                                            |
|      |                                                                                                                                                                    | The output S08 in J16 connector of the Main board is defective.                                                                    | Connect a voltmeter between the terminal S08 of Main board and a Xb terminal. Activate relay output S08 from "Outlets diagram" in the "Service" screen. If there is no voltage, replace the Main board.                                                                                                                                                                                                       |
|      |                                                                                                                                                                    | In electrical oven only, the output S091 in J16 connector of the Main board is defective.                                          | Connect a voltmeter between the terminal S091 of Main board et a Xb terminal. Activate relay output S091 from "Outlets diagram" in the "Service" screen. If there is no voltage, replace the Main board.                                                                                                                                                                                                      |
|      |                                                                                                                                                                    | The technical fan(s) is (are) not powered                                                                                          | Connect a voltmeter between the terminals ventilator power supply. Activate relay output S08 from "Outlets diagram" in the "Service" screen. If the voltage reads zero, inspect the cabling. On electric's ovens only, do the same operation with the S091 output. From "Outlets diagrams in the "Service" screen, activate Kp, if the voltage between the terminal fan connexions is "0"V, check the wiring. |
|      |                                                                                                                                                                    | The technical fan(s) is defective                                                                                                  | Activate relay output S08 from "Oven diagram" in the "Service" screen. If the fan does not turn, then replace. On electric ovens only, activate output S091 by pressing on "Kp" from "Outlets diagram" in "Service" screen then the second fan must run. If it does not turn, replace it.                                                                                                                     |
| E80  | Communication fault between boards.                                                                                                                                | Degraded communications cable                                                                                                      | Replace the communication cable between Main board "Ar" and Interface board "Ai". If the problem persists, check electronics boards.                                                                                                                                                                                                                                                                          |
|      |                                                                                                                                                                    | Defective electronic boards                                                                                                        | Test and replace the faulty electronic board(s) following the procedure ( <a href="#">► Replacing electronic boards</a> ).                                                                                                                                                                                                                                                                                    |
| E81  | Break in communication between circuit boards.                                                                                                                     | Degraded communications cable                                                                                                      | Replace the communication cable between Main board "Ar" and Interface board "Ai". If the problem persists, check electronics boards.                                                                                                                                                                                                                                                                          |
|      |                                                                                                                                                                    | Defective Main boards                                                                                                              | Test and replace the faulty electronic board(s) following the procedure ( <a href="#">► Replacing electronic boards</a> ).                                                                                                                                                                                                                                                                                    |
|      | <i>To reset this fault, the power supply to the oven must be cut off by disconnecting the associated protection circuit breaker.</i>                               |                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                               |
| E82  | SD Card fault.                                                                                                                                                     | SD card corrupted                                                                                                                  | Replace the SD card as described in the first chapter of this document ( <a href="#">► Replacing electronic boards</a> ).                                                                                                                                                                                                                                                                                     |
| E83  | Cloud error.                                                                                                                                                       | The network is inaccessible                                                                                                        | Restore access to the Ethernet or WiFi network                                                                                                                                                                                                                                                                                                                                                                |
|      |                                                                                                                                                                    | Is the network cable connected correctly?                                                                                          | Check the connection to the RJ45 socket on the screen board, check or have checked the condition of the cable using a network cable tester, replace the cable if necessary.                                                                                                                                                                                                                                   |

| Code | Title                                                                         | Probable Causes                                                                                                                                                                                           | What to do?                                                                                                                                                                                                                                                                                                                                  |
|------|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |                                                                               | The wifi dongle key is incorrectly connected or faulty                                                                                                                                                    | Check that the Wifi dongle key is connected to the USB socket, check that the Wifi dongle key is working properly and replace it if necessary.                                                                                                                                                                                               |
|      |                                                                               | The screen board is faulty                                                                                                                                                                                | Replace the screen board following the procedure ( <a href="#">► Replacing electronic boards</a> ).                                                                                                                                                                                                                                          |
| E90  | Steam generator fault (E11,12,13,14,15) during cycle.                         | A fault E11,12,13,14,15 appeared and remained for more than 3 minutes, triggering the TWIN CONTROL and automatically switching to Convection mode.                                                        | Check the error history to identify the original error and potential causes.                                                                                                                                                                                                                                                                 |
| E91  | Steam generator fault (E11,12,13,14,15) during cleaning.                      | A fault E11,12,13,14,15 appeared and remained for more than 3 minutes, triggering the TWIN CONTROL and removing the steam phases.                                                                         | Check the error history to identify the original error and potential causes.                                                                                                                                                                                                                                                                 |
| E92  | Humidity sensor fault (E50).                                                  | A fault E11,12,13,14,15 appeared and remained for more than 3 minutes, triggering the TWIN CONTROL and removing the steam phases.                                                                         | Check the error history to identify the original error and potential causes.                                                                                                                                                                                                                                                                 |
| E93  | Core probe fault (E30, E34).                                                  | A fault E130, E34 appeared and remained for more than 3 minutes, triggering the TWIN CONTROL and removing the steam phases.                                                                               | Check the error history to identify the original error and potential causes.                                                                                                                                                                                                                                                                 |
| E94  | Fault preventing washing.                                                     | A fault E00, 02, 14, 60, 81 appeared and remained for more than 3 minutes, triggering TWIN CONTROL and cancelling the clean sequence.                                                                     | Check the error history to identify the original error and potential causes.                                                                                                                                                                                                                                                                 |
| I98  | Started with Remaining Water Treatment Capacity at 0.                         | The water treatment system has reached its maximum treatment capacity                                                                                                                                     | Carry out or arrange for maintenance of the water treatment system                                                                                                                                                                                                                                                                           |
| I99  | Started with Number of days before service < 0.                               | The maintenance frequency has been reached or exceeded.                                                                                                                                                   | Contact the technical department to arrange preventive maintenance                                                                                                                                                                                                                                                                           |
| i100 | Gas Control: Speed control of a gas fan done successfully.                    | During preventive maintenance or any other operation requiring this check, it has been carried out successfully, the fan speed in ignition mode does not exceed +/- 20% of the setpoint value on average. | No intervention                                                                                                                                                                                                                                                                                                                              |
| E101 | Gas Control: Speed control of a gas fan, with speed drift/ speed issue.       | During preventive maintenance or any other operation requiring this control, the fan speed in ignition mode exceeds +/- 20% of the setpoint value on average.                                             | Check rotating motor, no suspicious noises, replace gas board                                                                                                                                                                                                                                                                                |
| E102 | Gas Control: Speed control of a gas fan made, with acquisition issue.         | During preventive maintenance or any other operation requiring this control, the Aag gas board does not detect the return of the speed setpoint.                                                          | Check fan motor wiring, i.e. correct connection of speed feedback connector, correct connection of connector on gas board, wiring between these two elements, if correct, replace motor.                                                                                                                                                     |
| i103 | Gas Control: Control of a burner done, with rapid ignition, OK.               | If the average ignition time is less than or equal to 9 seconds.                                                                                                                                          | No intervention                                                                                                                                                                                                                                                                                                                              |
| E104 | Gas Control: Control of a burner done, with average ignition but OK.          | If the average ignition time is greater than 9 seconds and less than or equal to 19.5 seconds.                                                                                                            | A word of caution: plan a thorough check during the next preventive maintenance cycle.                                                                                                                                                                                                                                                       |
| E105 | Gas Control: Control of a burner done, with ignition OK but difficult.        | If average ignition time is greater than 19.5 seconds and less than or equal to 30 seconds.                                                                                                               | Check burner ignition line, gas pressure at time of sequence, condition of valve and spark box if ok disassemble burner and readjust ignition electrodes.                                                                                                                                                                                    |
| E106 | Gas Control: Control of a burner done, with ignition OK but very problematic. | If the average ignition time is greater than 30 seconds and less than or equal to 51 seconds.                                                                                                             | Disassemble burner adjust or replace electrodes                                                                                                                                                                                                                                                                                              |
| E107 | Gas Control: Ignition failed. Safety activated.                               | If average ignition time is greater than 51 seconds.                                                                                                                                                      | See error E40 or E41                                                                                                                                                                                                                                                                                                                         |
| E108 | The grease collection is stopped.                                             | The grease collection valve is closed.                                                                                                                                                                    | Open the valve.                                                                                                                                                                                                                                                                                                                              |
|      |                                                                               | The pressure switch is defective                                                                                                                                                                          | From "Hydraulics diagram" in the "Service" screen, check the state of the E1 input. If the button lights up in yellow, the contact is open then check there is no overpressure, check the wiring, and if the problem persists, replace the pressure switch. Be careful, the pressure switch is setting by the builder, never modify the set. |
|      |                                                                               | The circuit is blocked                                                                                                                                                                                    | Check the grease flows properly, if problem, clean the circuit and/or replace the defective elements.                                                                                                                                                                                                                                        |

5.3 MAINTENANCE SCREENS

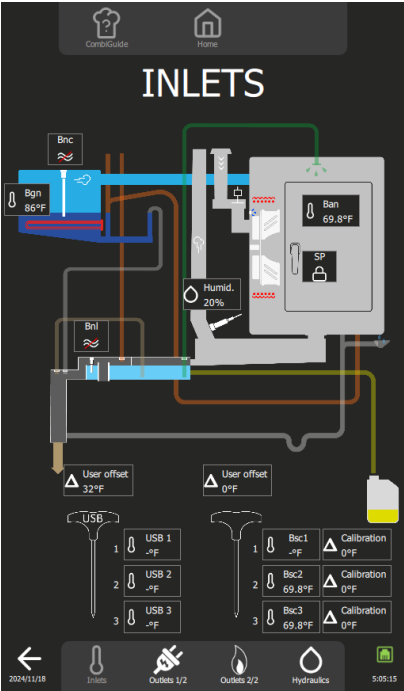
After taking into account the information provided by the customer, and if no error message is displayed on the screen, activate the diagnostic help module, which consists of 3 separate screens.

Help function checks the board's inputs and outputs, as well as the associated peripheral components:

- Screen 1 "Inlets Diagram" check inputs: temperatures, doors, water level, humidity, etc...
- Screen 2 "Outlets Diagram", comprising two screens, controls outputs: ventilation, heating, lighting, safety contactor, technical ventilation, IN valve, etc.
- Screen 3 "Hydraulics diagram" controls hydraulics outputs: water solenoid valves, cleaning pump, drain pump, descaling pump...

You can navigate between the various diagrams using the display area at the bottom of the screen, accessible from any of the 4 screens of the diagnostic assistance module.

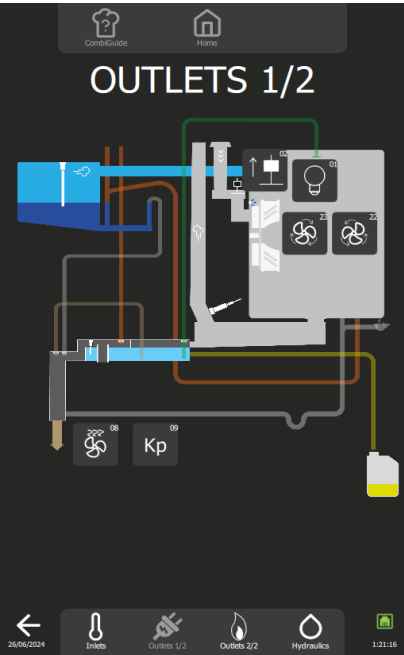
5.3.1 INLETS STATUS SCREEN



| Inputs   | Normal status               | Remarks                                                  |
|----------|-----------------------------|----------------------------------------------------------|
| Ban      | Cooking cavity temperature  | -                                                        |
| Sp       | Door position               | Padlock closed = door closed<br>Padlock open = door open |
| Bnl      | Cleaning box level          | Red line through symbol = no water                       |
| Bnc      | Steam generator water level | Red line through symbol = no water                       |
| Bgn      | Steam generator temperature | -                                                        |
| Bsc1...3 | Core probe temperature      | -                                                        |
| Humid.   | Humidity rate               | -                                                        |

5.3.2 OUTLETS STATUS SCREEN

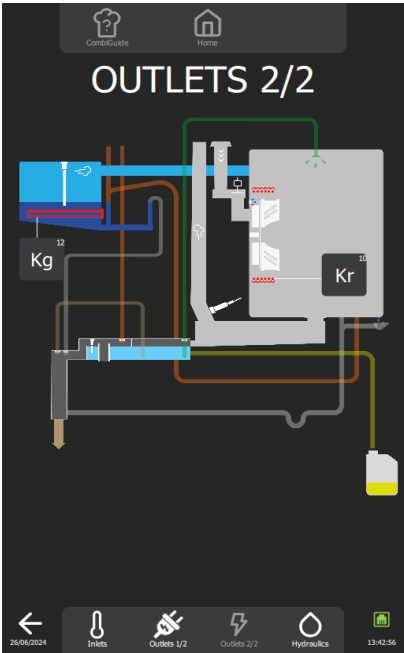
This screen is divided into 2 screens: Outlets 1/2 and Outlets 2/2.



Screen 1/2

Pressing a button activates a timer, the duration of which may vary according to the element being controlled. This time delay can be cancelled by pressing the same button again.

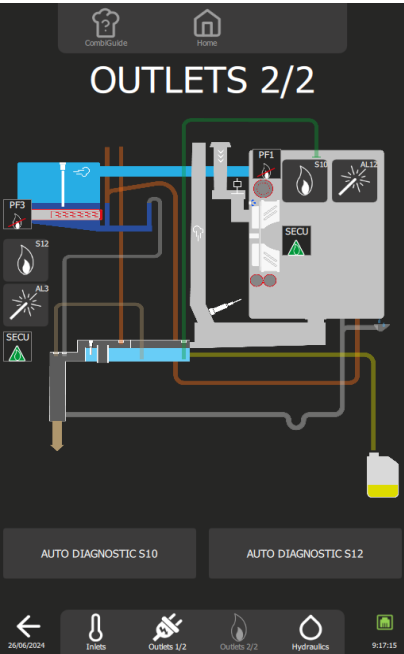
| No. Outlet | Components                 | Operating                                            |
|------------|----------------------------|------------------------------------------------------|
| 01         | Leds lighting              | 1 press on the button activates the lighting for 60s |
| 02         | In flapper motor           | 1 press on the button activates the flapper for 60s  |
| 08         | Technical fan              | 1 press on the button activates the fan for 5s       |
| 09         | Safety contactor           | 1 press on the button activates the contactor for 1s |
| 22         | Turbine (clockwise)        | 1 press on the button activates the turbine for 5s   |
| 23         | Turbine (counterclockwise) | 1 press on the button activates the turbine for 5s   |



Screen 2/2: Electric ovens

Pressing a button activates a timer, the duration of which may vary according to the element being controlled. This time delay can be cancelled by pressing the same button again.

| No. Outlet | Components                | Operating                                            |
|------------|---------------------------|------------------------------------------------------|
| 10         | Heating contactor         | 1 press on the button activates the contactor for 1s |
| 12         | Steam generator contactor | 1 press on the button activates the contactor for 1s |



Screen 2/2: Gas ovens

Pressing a button activates a timer, the duration of which may vary according to the element being controlled. This time delay can be cancelled by pressing the same button again.

| No. Outlet | Components                | Operating                                                   |
|------------|---------------------------|-------------------------------------------------------------|
| AL12       | Ignitor                   | 1 press on the button, activates the spark box for 5s       |
| AL3        | Steam generator spark box | 1 press on the key, activates the spark box for 5s          |
| PF1        | Burner 1 flame present    | Crossed out: flame absent<br>Not crossed out: flame present |
| PF2        | Burner 2 flame present    | Crossed out: flame absent<br>Not crossed out: flame present |
| PF3        | Burner 3 flame present    | Crossed out: flame absent<br>Not crossed out: flame present |
| S10        | Outlet S10                | 1 press on the button activates outlet for 10s              |
| S11        | Outlet S11                | 1 press on the button activates outlet for 10s              |
| S12        | Outlet S12                | 1 press on the button activates outlet for 10s              |
| SECU       | Safety                    | Green: not active Red: active                               |

Procedure for checking the operation of the gas heater: presence of a flame in the burner (S10 - S11 or S12)

- During the preventive maintenance visit, or in order to check the burners BEFORE removing them, you can use TWO TOOLS on this screen:
- The S10 / S11 / S12 burner buttons (number of burners depending on the model): Each button will attempt to ignite the burner, resulting in correct ignition and flame detection (the corresponding PFx icon is no longer crossed out), or in a safety shutdown (the associated SECU label changes to red).
  - The « AUTO DIAGNOSTIC S10, S11 and S12 » buttons : These buttons are used to check that the gas burner fans are operating correctly and then to make a real evaluation of the ignition quality. Even if ignition takes place, the quality will be assessed on 4 levels, from Fast (perfect), to Problematic, to Medium and Difficult. Depending on the rating, it will not be necessary to remove the burner to check the electrodes and burners.

Using the S10 / S11 / S12 burner buttons

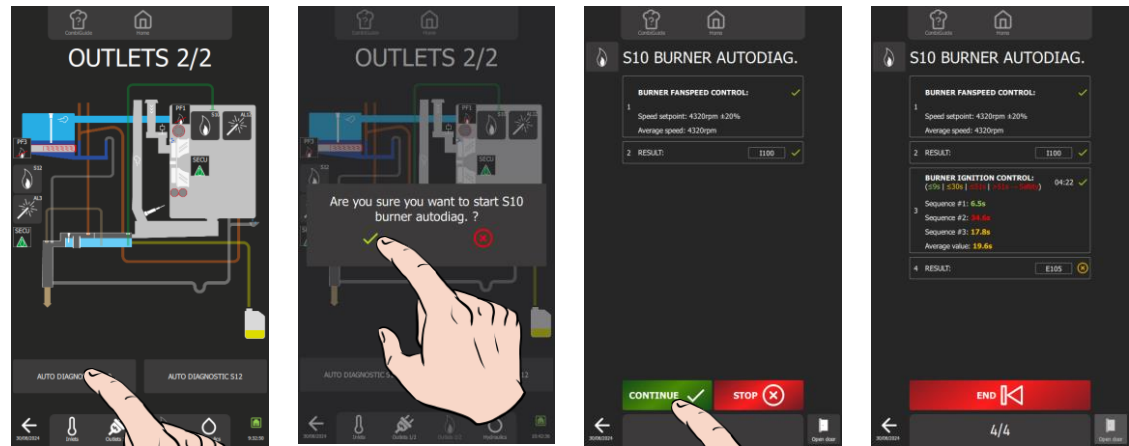
- » Press button S10 or S11 (depending on the model) or S12 (depending on the type of burner to be tested) to activate the burner concerned.
  - ⚙ For 10 seconds, outlets Ar-10 / Ar-11 or Ar-12 on the Main board closes, as well as outlets Ar-081 and Ar-09. This causes the relay on the gas board to close, initiating an ignition cycle.
- » If this fails, try again.
  - ⚙ If the PF1 / PF2 or PF3 sticker is no longer crossed out, and the associated SECU sticker stays green, this indicates that the system is operating correctly.
    - Check the heating elements (spark box, gas board, etc.). (► [Troubleshooting](#))
- » If another failure occurs, make a third attempt.
  - ⚙ If the PF1 / PF2 or PF3 sticker is crossed out, and the associated SECU sticker changes to red, this indicates that the system isn't operating correctly.



- Dismantle the burner and clean and/or adjust the electrodes in accordance with the instructions in this manual. (► Electrode inspection). (► [Control of the electrodes](#))

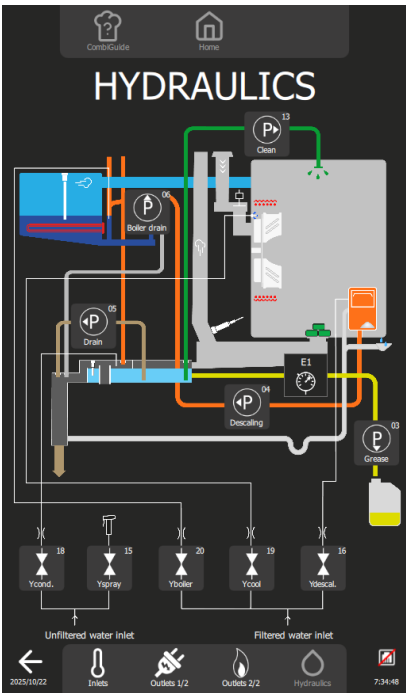
Using the “S10 / S11 / S12 auto-diagnostic” buttons

In progress



- » Pressing the AUTO DIAGNOSTIC button S10 or S11 (depending on the model) or S12 (depending on the type of burner to be tested) activates the burner self-diagnosis module.

5.3.3 HYDRAULIC DIAGRAMS



Pressing a button activates a timer, the duration of which may vary according to the element being controlled. This time delay can be cancelled by pressing the same button again.

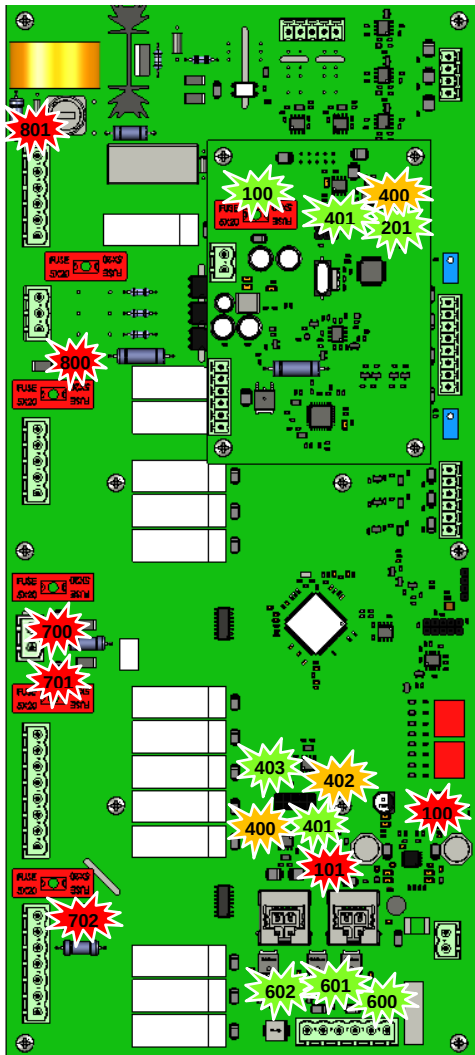
| No. Outlet            | Components                           | Operating                                                  |
|-----------------------|--------------------------------------|------------------------------------------------------------|
| P - 13                | Cleaning pump                        | 1 press on the button activates the pump for 5s            |
| P - 06                | Steam generator drain pump           | 1 press on the button activates the pump for 5s            |
| P - 05                | Cleaning box drain pump              | 1 press on the button activates the pump for 5s            |
| P - 04                | Descaling pump                       | 1 press on the button activates the pump for 5s            |
| P - 03                | Grease collection pump (optional)    | 1 press on the button activates the pump for 5s            |
| Ycond. - 18           | Condenser solenoid valve             | 1 press on the button activates the solenoid valve for 60s |
| Yspray - 15           | Spray solenoid valve                 | 1 press on the button activates the solenoid valve for 60s |
| Ysteam generator - 20 | Steam steam generator solenoid valve | 1 press on the button activates the solenoid valve for 60s |
| Ycool - 19            | Cooling solenoid valve               | 1 press on the button activates the solenoid valve for 60s |
| Ydescal. - 16         | Descaling solenoid valve             | 1 press on the button activates the solenoid valve for 60s |

| No. Inlet | Components                                   | Operating                                                         |
|-----------|----------------------------------------------|-------------------------------------------------------------------|
| E1        | Pressure switch Grease collection (optional) | Normally closed, opens if there is excess pressure in the circuit |

## 5.4 COMMUNICATIONS LEDS

### 5.4.1 LEDS IDENTIFICATION

#### Main board, humidity board



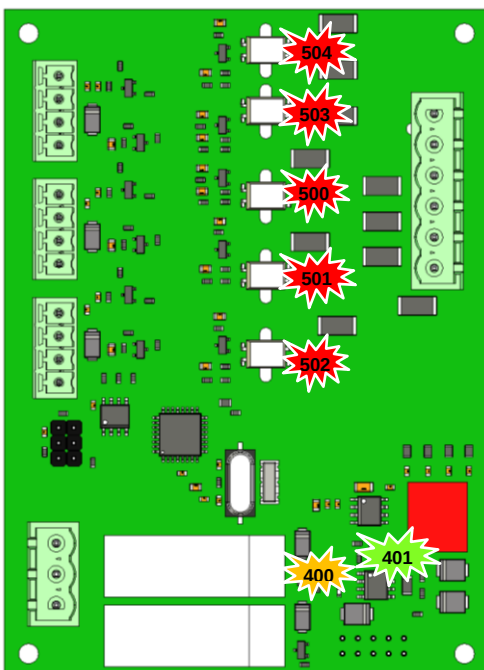
#### Main board

| LED | Colour | Status         | Designation                          |
|-----|--------|----------------|--------------------------------------|
| 100 | Red    | On - Permanent | 3.3 Volt voltage present             |
| 101 | Red    | On - Permanent | 5 Volt voltage present               |
| 400 | Orange | Flashing       | Tx signals RS485 communication       |
| 401 | Green  | Flashing       | Tx signals RS485 communication       |
| 402 | Orange | Flashing       | Tx signals RS485 communication       |
| 403 | Green  | Flashing       | Tx signals RS485 communication       |
| 600 | Green  | On - Permanent | Outlet S1 switched on                |
| 601 | Green  | On - Permanent | Outlet S2 switched on                |
| 602 | Green  | On - Permanent | Outlet S3 switched on                |
| 700 | Red    | On - Permanent | Fuse F2 OK                           |
| 701 | Red    | On - Permanent | Fuse F3 OK                           |
| 702 | Red    | On - Permanent | Fuse F4 OK                           |
| 800 | Red    | On - Permanent | Fuse F1 OK                           |
| 801 | Red    | On - Permanent | Lighting if activated Kp. Fuse Fm OK |

#### Humidity board

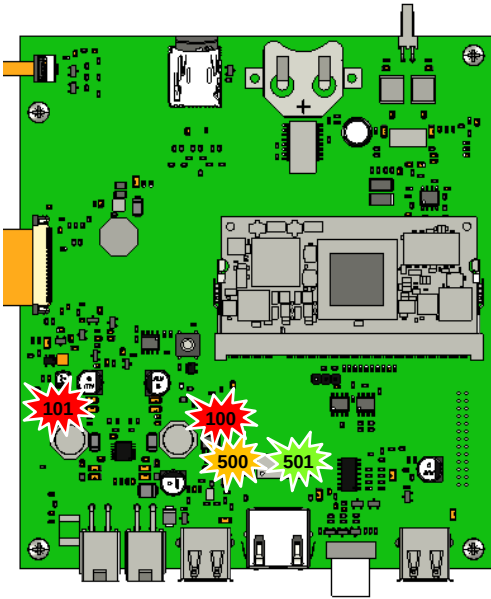
| LED | Colour | Status                  | Designation                                          |
|-----|--------|-------------------------|------------------------------------------------------|
| 100 | Green  | On - Permanent          | Fuse F1 OK                                           |
| 200 | Green  | Flashing then Off       | Indicates uncorrect operation of the humidity sensor |
| 201 | Green  | Flashing then Permanent | Indicates correct operation of the humidity sensor   |
| 400 | Orange | Flashing                | RS485 communication Tx signals - Transmit            |
| 401 | Green  | Flashing                | RS485 communication Rx signals - Reception           |

#### Gas board



| LED | Colour | Status    | Designation                                                            |
|-----|--------|-----------|------------------------------------------------------------------------|
| 400 | Orange | Flashing  | Tx signals RS485 communication                                         |
| 401 | Green  | Flashing  | Tx signals RS485 communication                                         |
| 500 | Red    | Permanent | Presence of gas in the gas steam generator burner                      |
| 501 | Red    | Permanent | Presence of gas in convection heater burner 2 (on certain models only) |
| 502 | Red    | Permanent | Presence of gas in convection heater burner 1                          |
| 503 | Red    | Permanent | Gas safety fault - steam generator burner                              |
| 504 | Red    | Permanent | Gas safety fault - convection heat burner                              |

Interface board



| LED | Colour | Status         | Designation                    |
|-----|--------|----------------|--------------------------------|
| 100 | Red    | On - Permanent | 3.3 Volt voltage present       |
| 101 | Red    | On - Permanent | 5 Volt voltage present         |
| 500 | Orange | On - Permanent | Tx signals RS485 communication |
| 501 | Green  | On - Permanent | Tx signals RS485 communication |

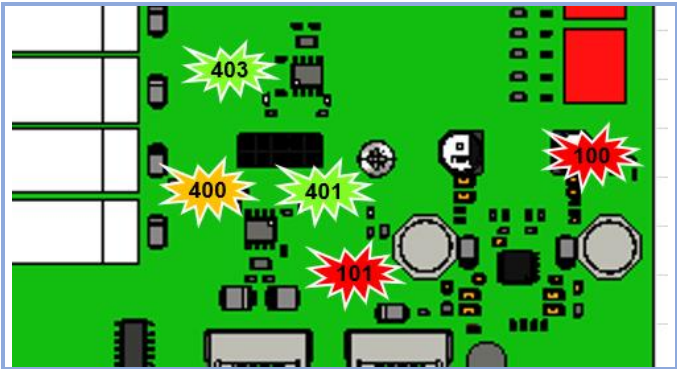
5.4.2 OPERATION: COMMUNICATION

Legends

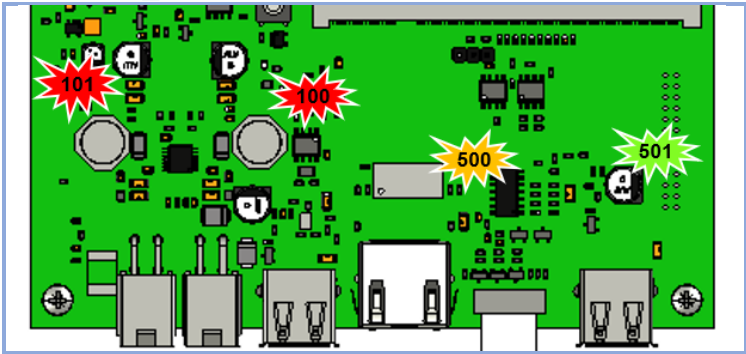
| LED                                                                                 | Meaning               |
|-------------------------------------------------------------------------------------|-----------------------|
|   | Green - Receiving     |
|  | Orange - Transmitting |
|  | Red - Power on        |
|  | LED off               |



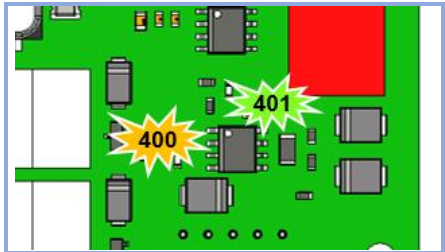
Communication LEDs Main board and Interface board



| Ai Interface Board |     |     |     | Aa Main board |     |     |     | Diagnostics                                                   | Solutions                                                              |
|--------------------|-----|-----|-----|---------------|-----|-----|-----|---------------------------------------------------------------|------------------------------------------------------------------------|
| 101                | 100 | 500 | 501 | 400           | 401 | 101 | 100 |                                                               |                                                                        |
|                    |     |     |     |               |     |     |     | Aa and Ai board - OK                                          | Functioning normally                                                   |
|                    |     |     |     |               |     |     |     | Power supply failure                                          | Check for 24 Vd.c. at the terminals of J18                             |
|                    |     |     |     |               |     |     |     | Connection problem with Ai board                              | Replace interconnecting cable between Ar and Ai board, and/or Ai board |
|                    |     |     |     |               |     |     |     | Aa board - Out of order                                       | Replace the Aa board                                                   |
|                    |     |     |     |               |     |     |     | Ai board - Out of order                                       | Replace Ai board                                                       |
|                    |     |     |     |               |     |     |     | Interconnecting Cable between Ai board and Aa assembly faulty | Replace interconnecting cable                                          |



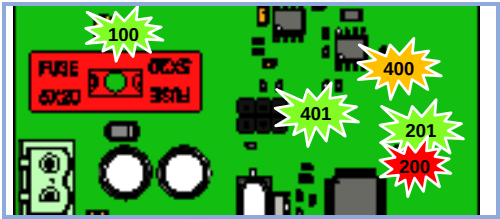
Communication LEDs Gas board



| Gas board Aag |     | Diagnostics              | Solutions            |
|---------------|-----|--------------------------|----------------------|
| 400           | 401 |                          |                      |
|               |     | Aag board - OK           | Functioning normally |
|               |     | Aag board - Out of order | Replace the board    |



Communication LEDs Humidity board



| Humidity board Ahu |     | Diagnostics              | Solutions            |
|--------------------|-----|--------------------------|----------------------|
| 401                | 400 |                          |                      |
|                    |     | Ahu board - OK           | Functioning normally |
|                    |     | Ahu board - Out of order | Replace the board    |

| Humidity board Ahu |     | Diagnostics                             | Comments                                                                                                                                                                               |
|--------------------|-----|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 201                | 201 |                                         |                                                                                                                                                                                        |
|                    |     | Standby                                 |                                                                                                                                                                                        |
|                    |     | Initialization                          | Flashes - Start-up or wake-up from standby.                                                                                                                                            |
|                    |     | Start-up calibration                    | Alternating flashes.                                                                                                                                                                   |
|                    |     | Initial heating ramp on heater          | Blinking proportional to heating percentage.                                                                                                                                           |
|                    |     | Heater temperature within control range | Normal functioning.                                                                                                                                                                    |
|                    |     | Heater overheating                      | Flashing.                                                                                                                                                                              |
|                    |     | Other errors                            | <div>- Ar communication error<br/>- CJ125 calibration error<br/>- Supply voltage too low<br/>- Humidity sensor missing or incorrectly connected<br/>- Heater probe current zero.</div> |



## 5.5 OTHER SYMPTOMS

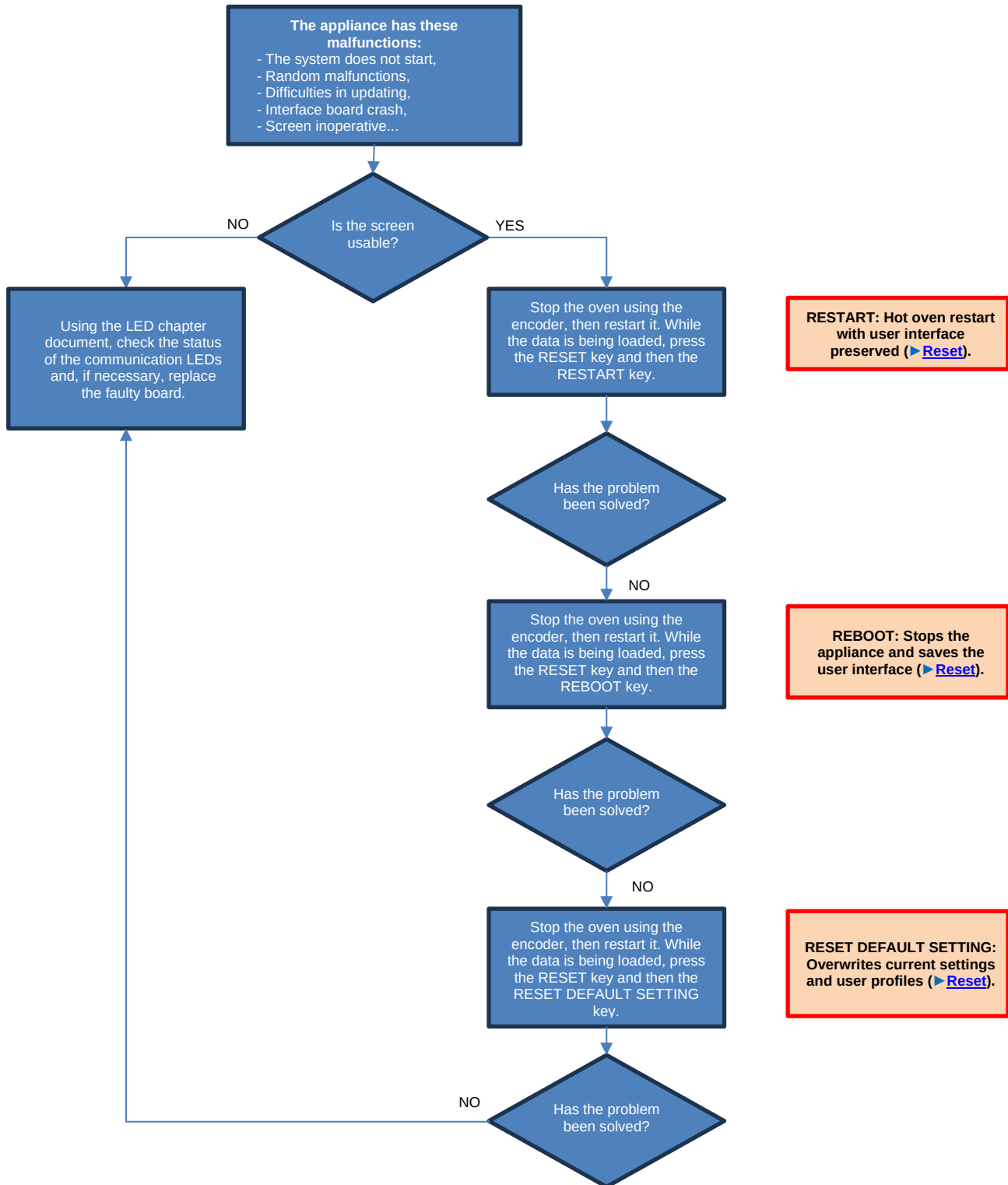
All electrical measurements must be carried out in compliance with local legislation (personnel authorization, use of PPE, etc.).  
OFF-VOLTAGE tests must absolutely be carried out in this configuration. Make sure you carry out these tests safely (consignment, etc.).

| SYMPTOM                                                                                                                           | CAUSE                                                                     | WHAT TO DO?                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The oven is not working the display is off.                                                                                       |                                                                           |                                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                   | - Supply voltage is not present at the device terminals.                  | Check condition of the power cable and all the connection points, and rectify any problems encountered.                                                                                                                                                                                                                                                                     |
|                                                                                                                                   | - Oven circuit breaker is not switched on.                                | Switch circuit breaker on or have it switched on. If it trips again, verify appliance is properly insulated; leakage currents must be less than 30mA.                                                                                                                                                                                                                       |
|                                                                                                                                   | - System voltage is not present at the Ar Main board terminals.           | Check voltage at terminals 1 and 2 of connector J18 (refer to the electronic diagram in this manual). If there is no voltage, disconnect connector J18:<br>- If voltage is present again, replace the Main board,<br>- If voltage is still absent, check the Tc power supply. Verify its correct operation is indicated by a green LED; if necessary, replace power supply. |
|                                                                                                                                   | - Molex connector link cable between Main board and the screen is faulty. | Verify voltage is present. Check communication LEDs (see LED assignment section in this document). If the problem persists, replace the cable.                                                                                                                                                                                                                              |
|                                                                                                                                   | - Screen is faulty.                                                       | If the problem persists, replace the screen.                                                                                                                                                                                                                                                                                                                                |
|                                                                                                                                   | - Short-circuit at switching power supply output.                         | LEDs (switching power supply, red LEDs on the Main board) are flashing. Disconnect cable between the interface board and encoder board.                                                                                                                                                                                                                                     |
|                                                                                                                                   | - Encoder inoperative, LED ring does not light up.                        | Verify it is correctly connected and operating correctly. If problem persists, replace encoder board.                                                                                                                                                                                                                                                                       |
| Screen inoperable, system won't start, random malfunctions, difficulty updating.                                                  |                                                                           |                                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                   | - Loss of communication.                                                  | Refer to the "screen inoperable or blocked" flowchart in this manual.                                                                                                                                                                                                                                                                                                       |
| Display on, oven not working.                                                                                                     |                                                                           |                                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                   | - An error code displayed (blocking message).                             | Refer to error code section of this manual.                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                                   | - The oven door is not closed properly.                                   | Make sure oven door is correctly locked.                                                                                                                                                                                                                                                                                                                                    |
|                                                                                                                                   | - The switch does not detect when the oven is closed.                     | Check status of the door closing position switch in the technical panel, if the output remains at "0":<br>On the Aar Main board, verify J5 connector is correctly connected to its socket, verify contact closes when the door is closed and that it is correctly fitted mechanically. If the problem persists, adjust the door and replace the switch if necessary.        |
| The screen is lit, the oven works but the lighting does not.                                                                      |                                                                           |                                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                   | - LED banners are not powered.                                            | Refer to "Enclosure lighting fault" flow chart in this document.                                                                                                                                                                                                                                                                                                            |
| The screen is lit, the oven, lighting and ventilation are working, but it does not heat up or does not reach the set temperature. |                                                                           |                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Special case of electric ovens</b>                                                                                             |                                                                           |                                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                   | - One or more heating elements do not work.                               | Refer to "electric heater fault" diagram in this document.                                                                                                                                                                                                                                                                                                                  |
| <b>Special case of gas ovens</b>                                                                                                  |                                                                           |                                                                                                                                                                                                                                                                                                                                                                             |
| Burner does not ignite.                                                                                                           |                                                                           |                                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                   | - Spark box does not work.                                                | Refer to "gas spark box fault" diagram in this document.                                                                                                                                                                                                                                                                                                                    |
|                                                                                                                                   | - Gas fan not working.                                                    | Check fan power supply at terminal 2 of Kbg or Kbr and Xb.<br>- if 230Va.c. present, change the fan.<br>- if there is no 230Vac, verify Kbg or Kbr contactor is switched on, check the connections and tighten the screws, etc.                                                                                                                                             |
|                                                                                                                                   | - No gas or too low pressure.                                             | Verify gas entering the appliance is of the correct type and pressure.                                                                                                                                                                                                                                                                                                      |
|                                                                                                                                   | - The gas valve does not work.                                            | Check the resistance of the 848 Sigma gas solenoid valve coils Ev1 (terminals 4-3) and Ev2 (terminals 1-3);<br>- If the resistance is greater than 0, check the gas pressure at the valve inlet and the burner heating demand; if the burner does not ignite, replace the valve,<br>- If the resistance is equal to 0, replace the valve.                                   |
|                                                                                                                                   | - The ionisation electrode does not detect the flame.                     | Check electrode (see electrode adjustment section of this manual).                                                                                                                                                                                                                                                                                                          |
|                                                                                                                                   | - The flame control box does not work.                                    | Turn off the gas supply and start cooking, if at the end of the ignition sequence:<br>- "gas error" fault appears, the flame control box is operational, proceed with the above checks.<br>- if the error does not appear, replace the flame control box.                                                                                                                   |
| Noisy burner.                                                                                                                     |                                                                           |                                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                   | - The gas settings are incorrect or the wrong gas is being connected.     | Check in the technician parameters that the gas selected corresponds to what is indicated on the oven identification plate.<br>Check gas supplied to the oven is the same as that indicated on the oven identification plate.                                                                                                                                               |

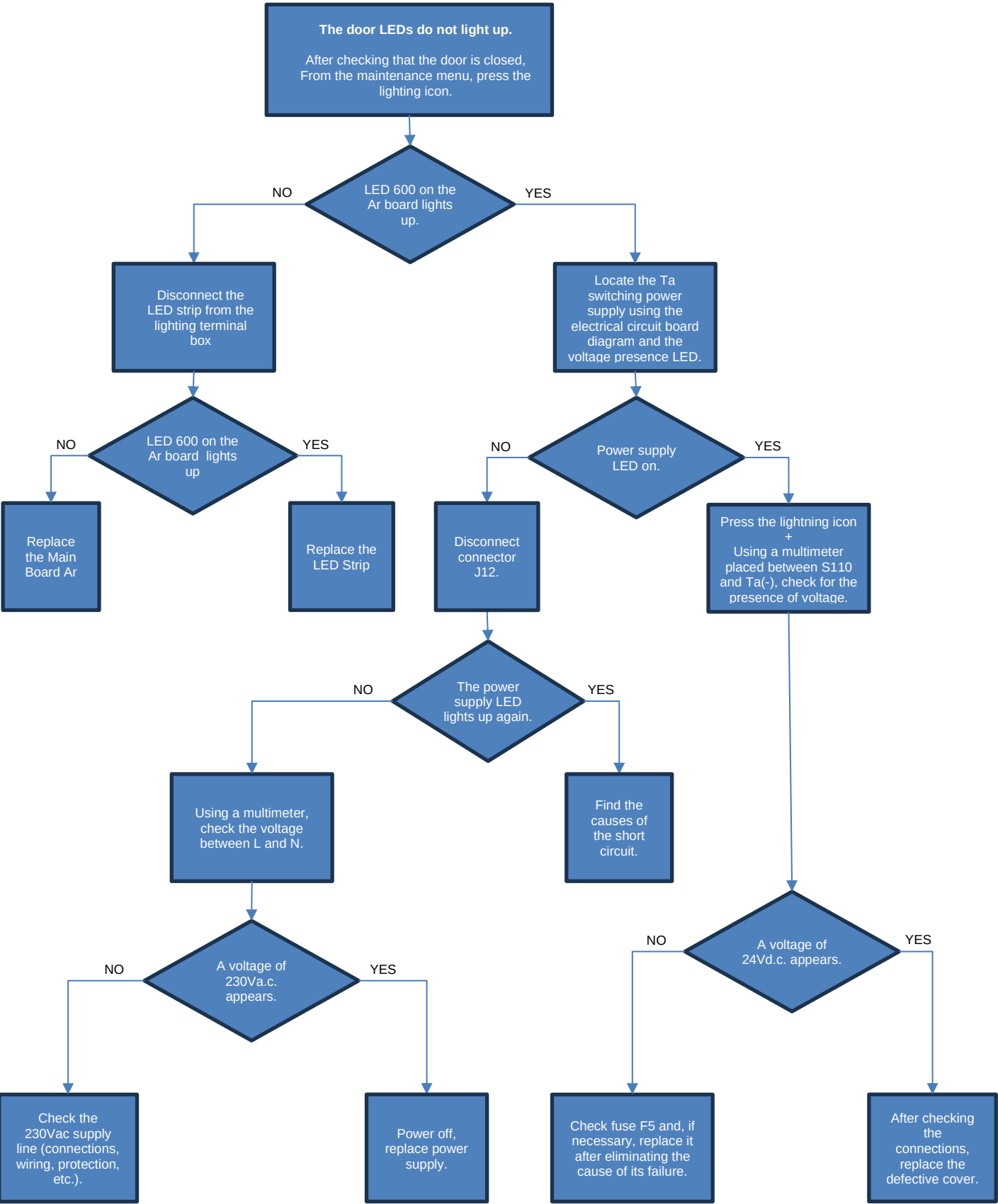
| SYMPTOM                                    | CAUSE                                                                   | WHAT TO DO?                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Noisy burner.                              |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                            | - Gas valve incorrectly set.                                            | Check CO2 level by following the procedure indicated in the manual.                                                                                                                                                                                                                                                                                                                               |
|                                            | - Air supply problem.                                                   | Check that the air inlet tube is correctly connected and that it is not obstructed.                                                                                                                                                                                                                                                                                                               |
|                                            | - The silicone venturi valve connection tube is disconnected or faulty. | Check that the tube is correctly connected. If the problem persists, replace it.                                                                                                                                                                                                                                                                                                                  |
| Explosion on starting gas burner.          |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                            | - The ignition electrode is incorrectly adjusted.                       | Check in technician parameters that gas selected corresponds to what is indicated on the oven identification plate. Check the electrode soapstone is not broken See "Checking the electrodes" section.                                                                                                                                                                                            |
| Polluting burner.                          |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                            | - The gas settings are incorrect or the wrong gas is being connected.   | Check in technician parameters that gas selected corresponds to what is indicated on the oven identification plate. Check gas supplied to the oven is the same as what is indicated on the oven identification plate.                                                                                                                                                                             |
|                                            | - Gas valve incorrectly set.                                            | Check CO2 level by following the procedure indicated in the manual.                                                                                                                                                                                                                                                                                                                               |
| Burner fan running at full speed.          |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                            | - Communication fault between the Main board and the gas valve.         | Check status of LEDs on gas board.                                                                                                                                                                                                                                                                                                                                                                |
|                                            |                                                                         | - If they are off, verify the gas board is connected to the Main board (rear connector, condition of connections) and the gas board mounting screws are secure to the Main board.                                                                                                                                                                                                                 |
|                                            |                                                                         | - If they are lit, check the various connections (screwing and fixing the connectors to their sockets) from gas board to the fan.                                                                                                                                                                                                                                                                 |
| The burner emits a random whistling sound. |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                            | - When the oven is cold, a hissing sound may be heard.                  | This should disappear quickly as the burner heats up.                                                                                                                                                                                                                                                                                                                                             |
|                                            | - If the problem persists.                                              | Check air intakes (unobstructed vents).                                                                                                                                                                                                                                                                                                                                                           |
| The spark box works continuously.          |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                            | The Presence Flame (PF) does not return.                                | Fault in the connection between gas box and the gas board, verify wires and connections are secure.<br>Fault in the connection between the gas board and Main board, check state of the LEDs on gas board, verify rear connection between the gas board and Main board, verify the gas board screws and connections are secure to the Main board, if the problem persists, replace the gas board. |
| The pump whistles.                         |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                            | - Air in the circuit.                                                   | Check the circuit for leaks (connections, hoses, etc.).                                                                                                                                                                                                                                                                                                                                           |
|                                            | - Defective bearings.                                                   | Verify the flow rate is as specified in this manual.                                                                                                                                                                                                                                                                                                                                              |

## 5.6 FLOWCHART

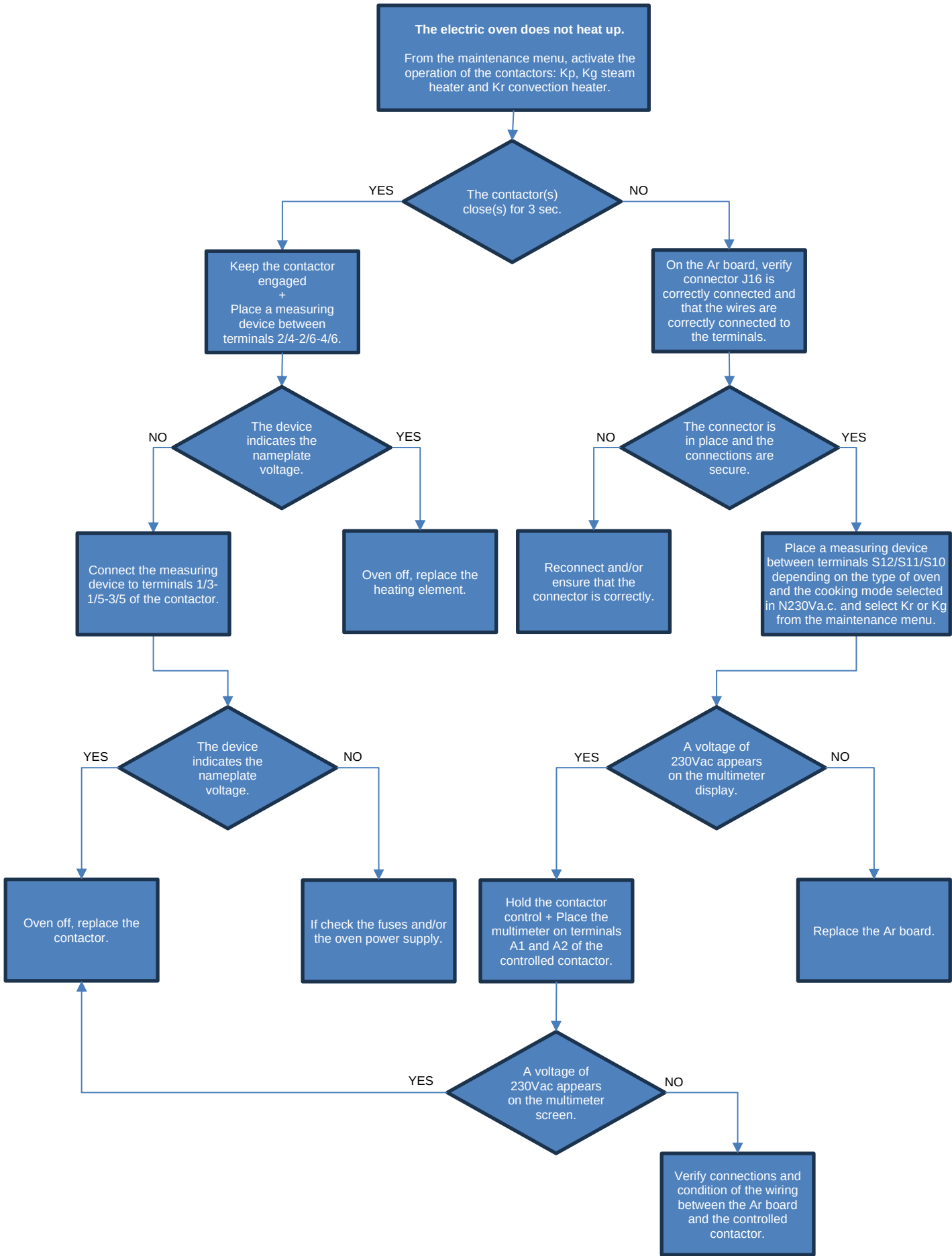
## 5.6.1 SCREEN INOPERATIVE OR BLOCKED



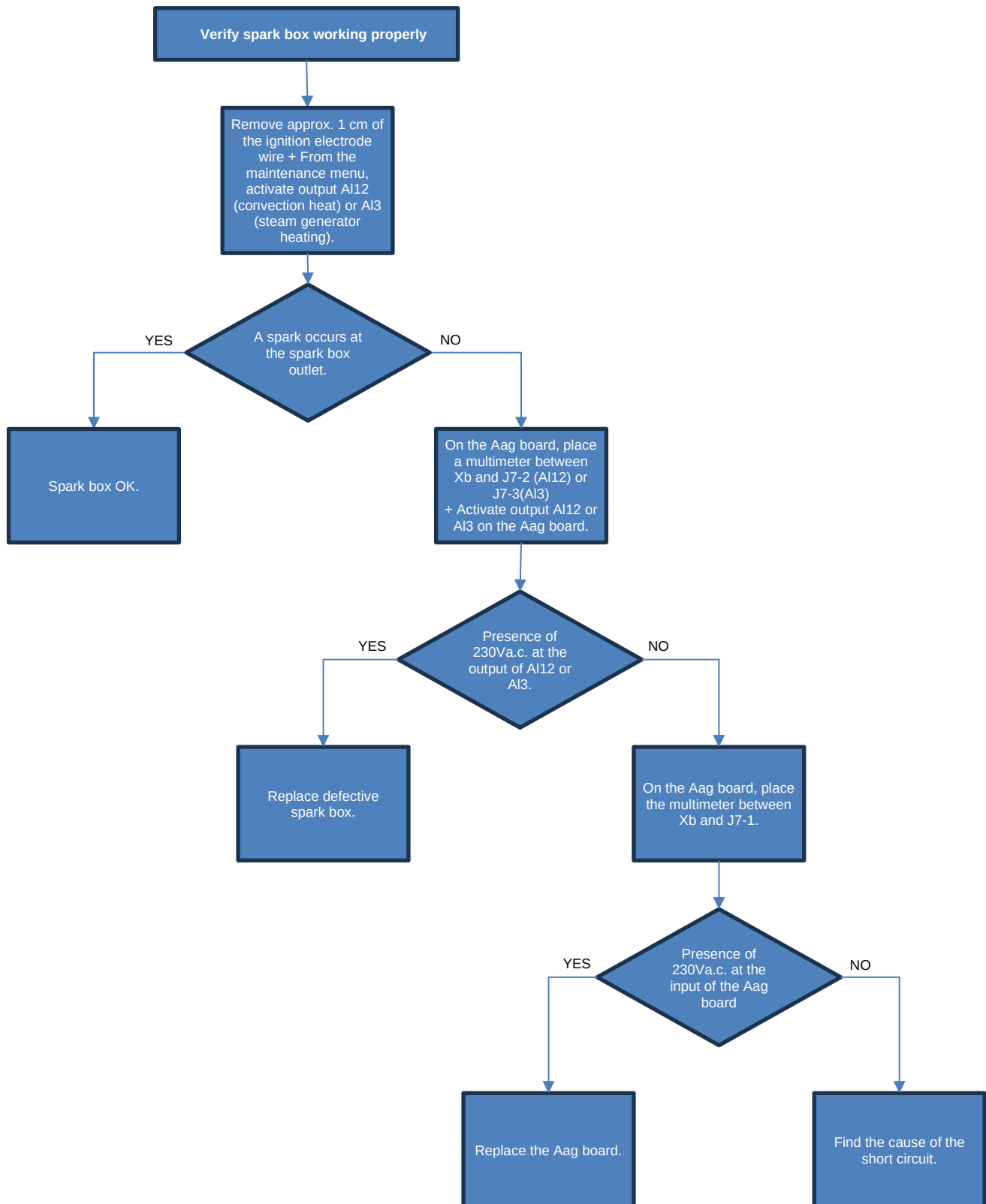
5.6.2 LIGHTING FAULT OF COOKING CAVITY



5.6.3 ELECTRIC HEATER FAULT

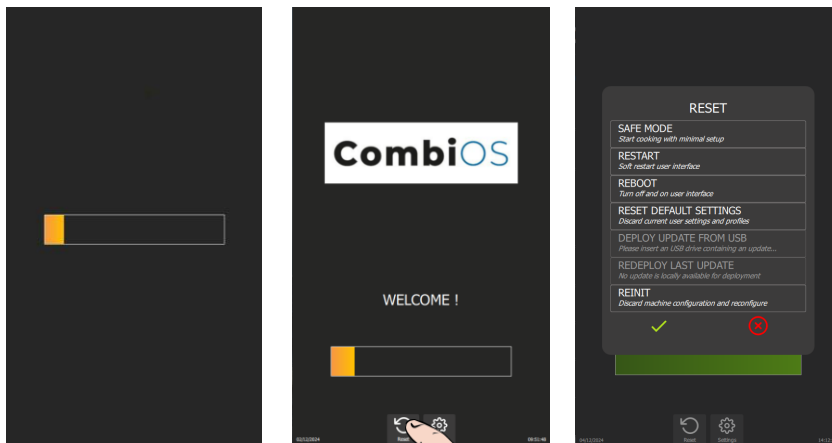


## 5.6.4 GAS SPARK BOX FAULT



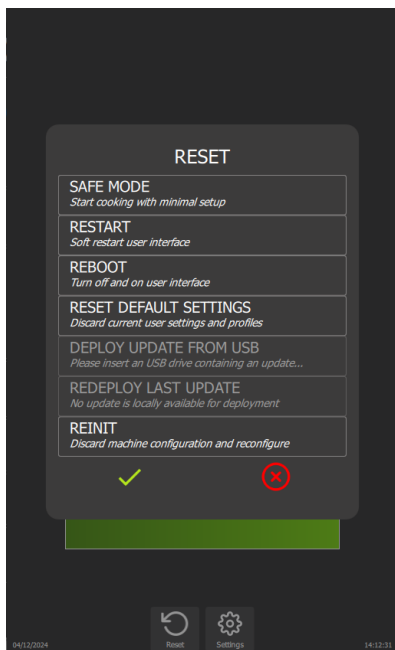
## 5.7 RESET

### 5.7.1 ACCESS TO THE RESET SCREEN



- » Switch on the display by holding down the encoder button until the power-on bar graph is displayed.
- » Wait for the "Home" menu to appear.
- » Press "Reset" button.
  - ⓘ The display shows a pop-up of possible actions.

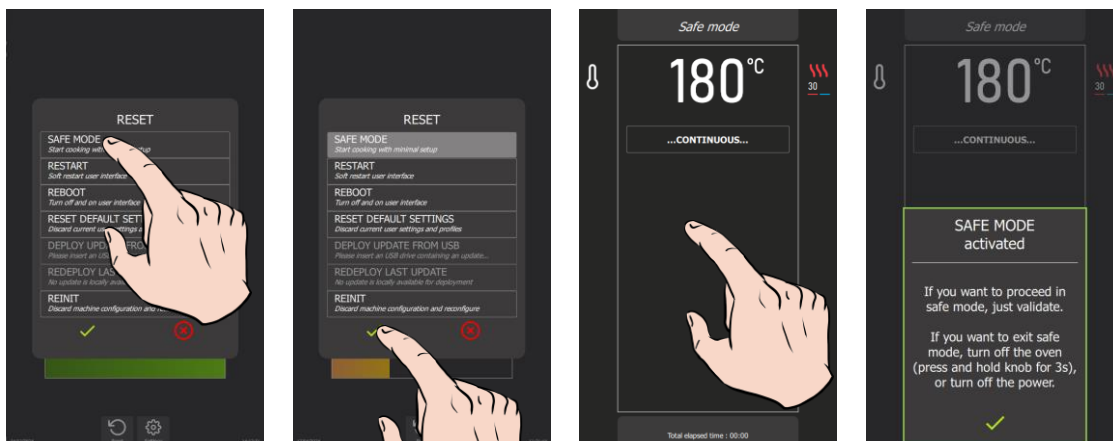
### 5.7.2 PARAMETERS LIST



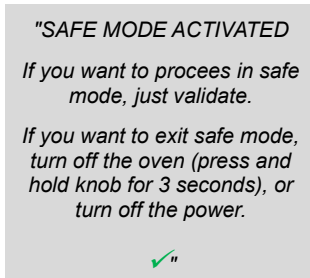
- ➔ Switch Chef'sCombi to Safe Mode
- ➔ Restart Interface
  - ➔ Restart interface and Main board
- ➔ Reset to default settings
- ➔ Reinstall an update from a USB key
- ➔ Reinstall last update
- ➔ Reset Chef'sCombi configuration (accessible with factory PIN code only)
- ➔ Validate or cancel selected "Reset" type

#### Safe mode

This action enables you to go into safe mode with minimal configuration. Only the ambient temperature: the default temperature is 356°F, and the cooking mode: convection heat cooking mode are indicated.



On confirmation, the continuous icon appears on the display, indicating cooking similar to the continuous cooking mode. When the screen is pressed, an information message appears, indicating the following:



In the event of a problem with the screen, this mode can be obtained by successively opening the door 3 times within 5 seconds at power-up.

#### **Restart: Restart the interface**

This option performs a basic restart of the Chef'sCombi interface. **No customer-configured parameters are affected.**

#### **Reboot: Restart with reset**

This function restarts the unit and exits the current cycle. **No customer-configured parameters are affected.**

#### **Reset default settings**

This function resets current settings and user profiles. Access to this action is protected by a PIN code (level 5 or 7), guaranteeing the security of the process (► [Settings](#) – PIN Codes).

In particular, it deletes parameters, profiles, customer protocols, manufacturer protocols and customer photos. After a reset, it is necessary to redo the CO control and "Steam generator calibration".



#### **WARNING! Please inform the customer!**

All parameters configured and copied by the customer, such as settings, profiles, protocols (recipes), photos, etc... will be deleted.

#### **Deploy update from USB : Reinstall an update from a USB stick**

This feature is active when a USB key is connected to the appliance. It allows you to reinstall (force) an update from a USB key.



When a manufacturer update is in progress, there is no need to activate this menu. If the update version on the USB key is higher than the one already present in the chef'sCombi memory, the update starts automatically (► [Settings](#) - Updating the software).

#### **Redeploy last update : Reinstall the last update**

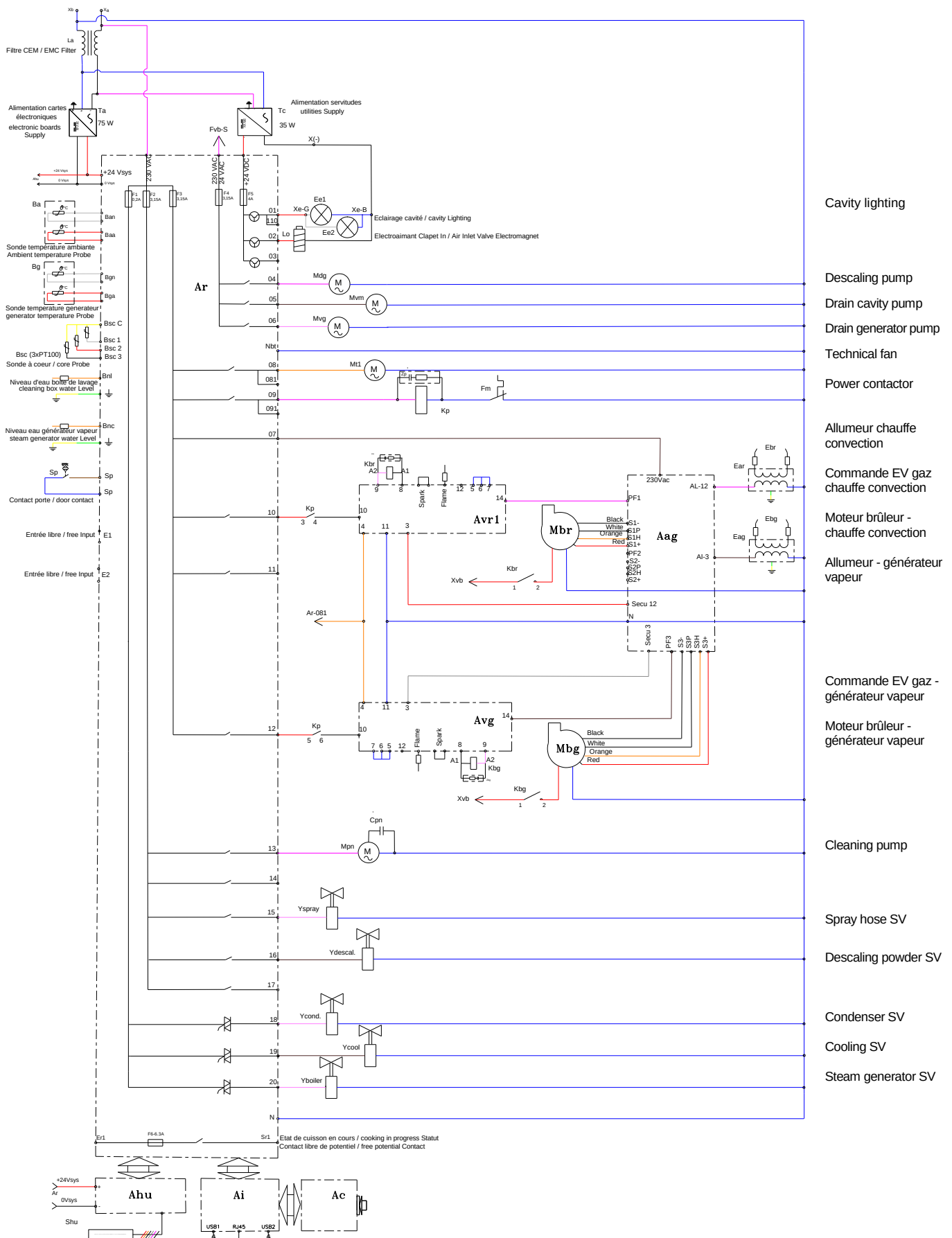
This menu allows you to reinstall the latest update installed on the appliance. It is essential to select this option when corrupted parameters have been installed or detected by the appliance. A clean backup is kept on the SD card.

## 6. ELECTRIC DIAGRAMS

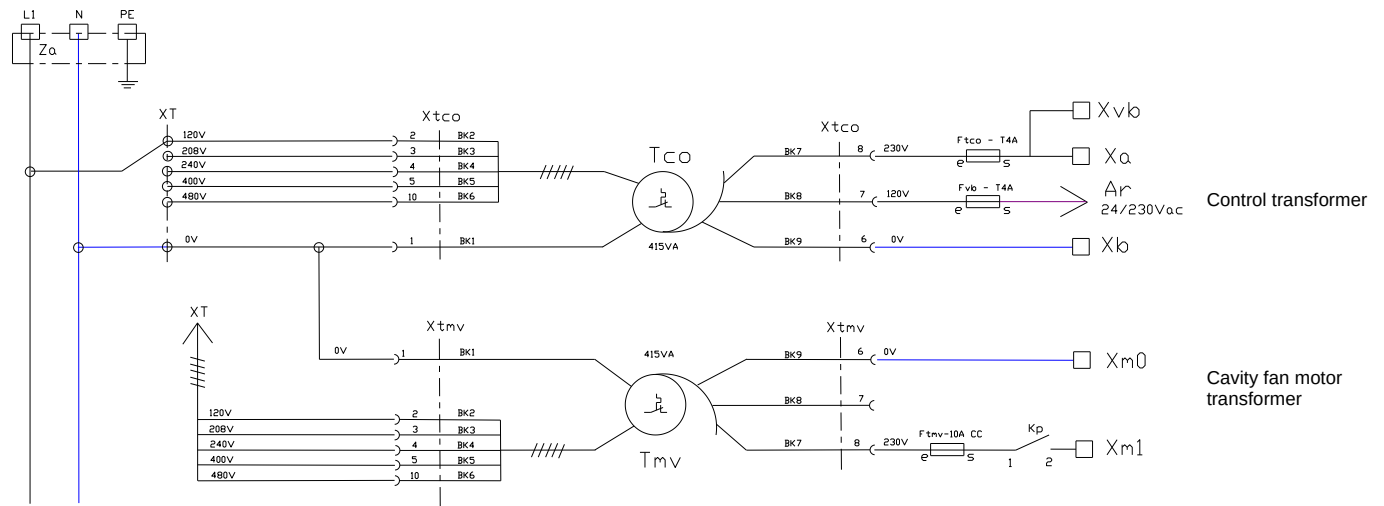
### 6.1 DIAGRAMS

#### 6.1.1 GAS OVENS

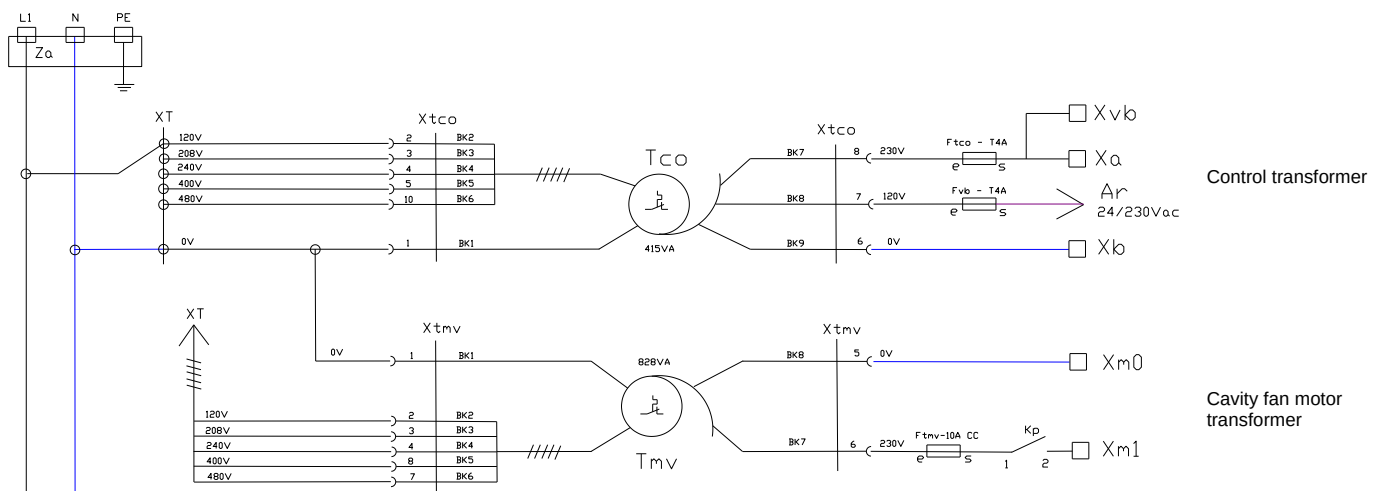
Wiring diagram



Power diagram 6 &amp; 10 GN 1/1

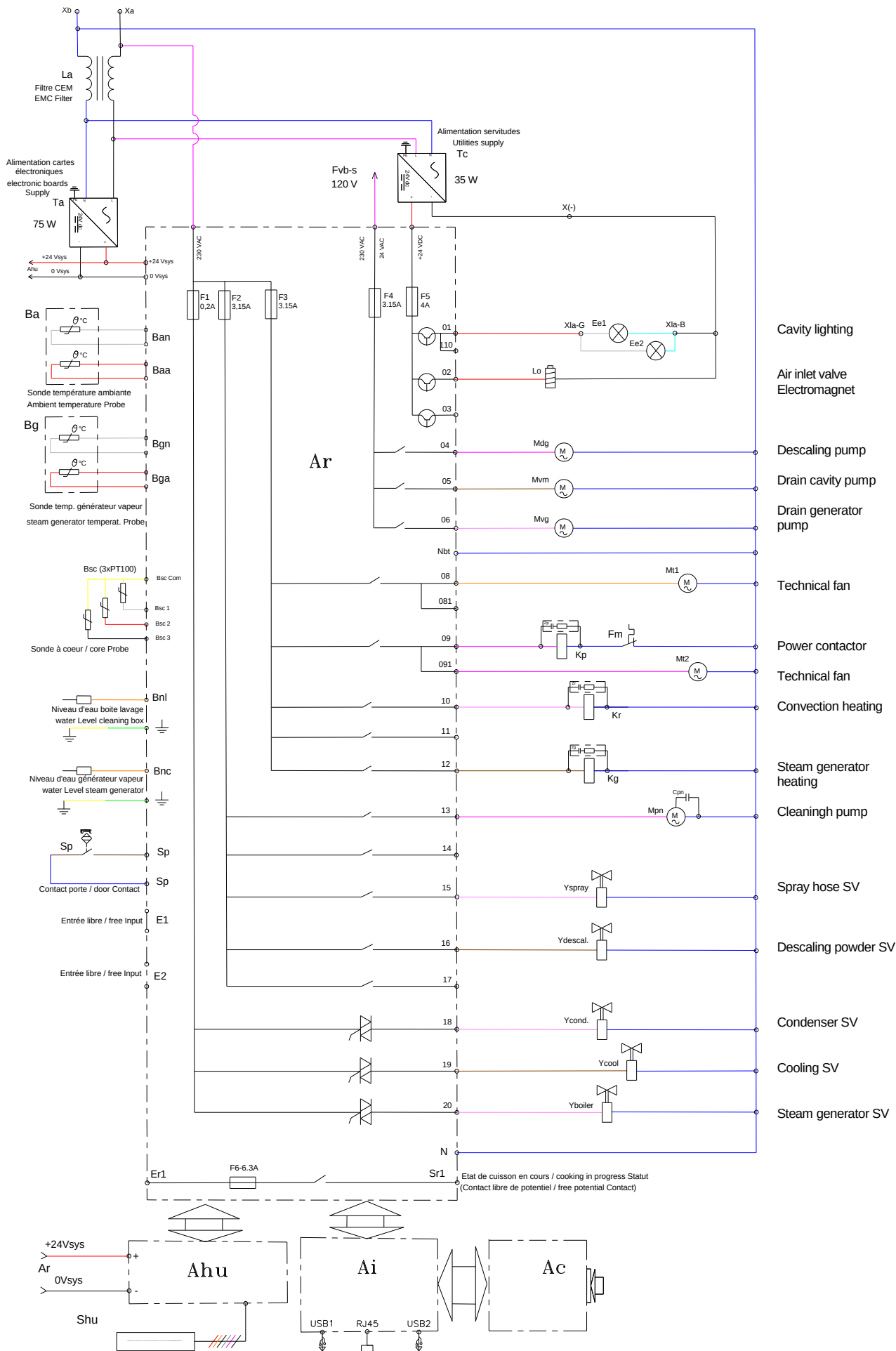


Power diagram 6 &amp; 10 GN 2/1

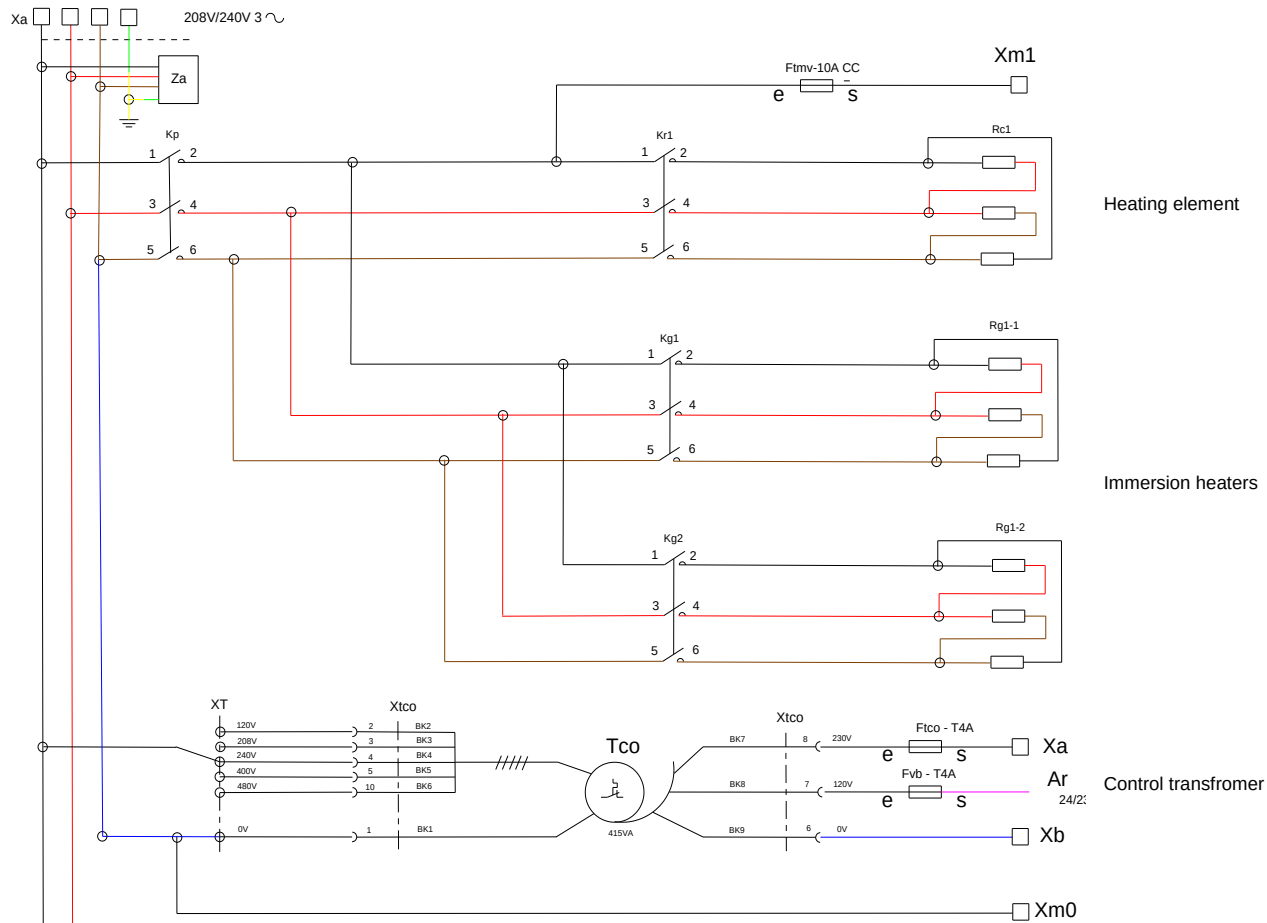


6.1.2 ELECTRIC OVENS

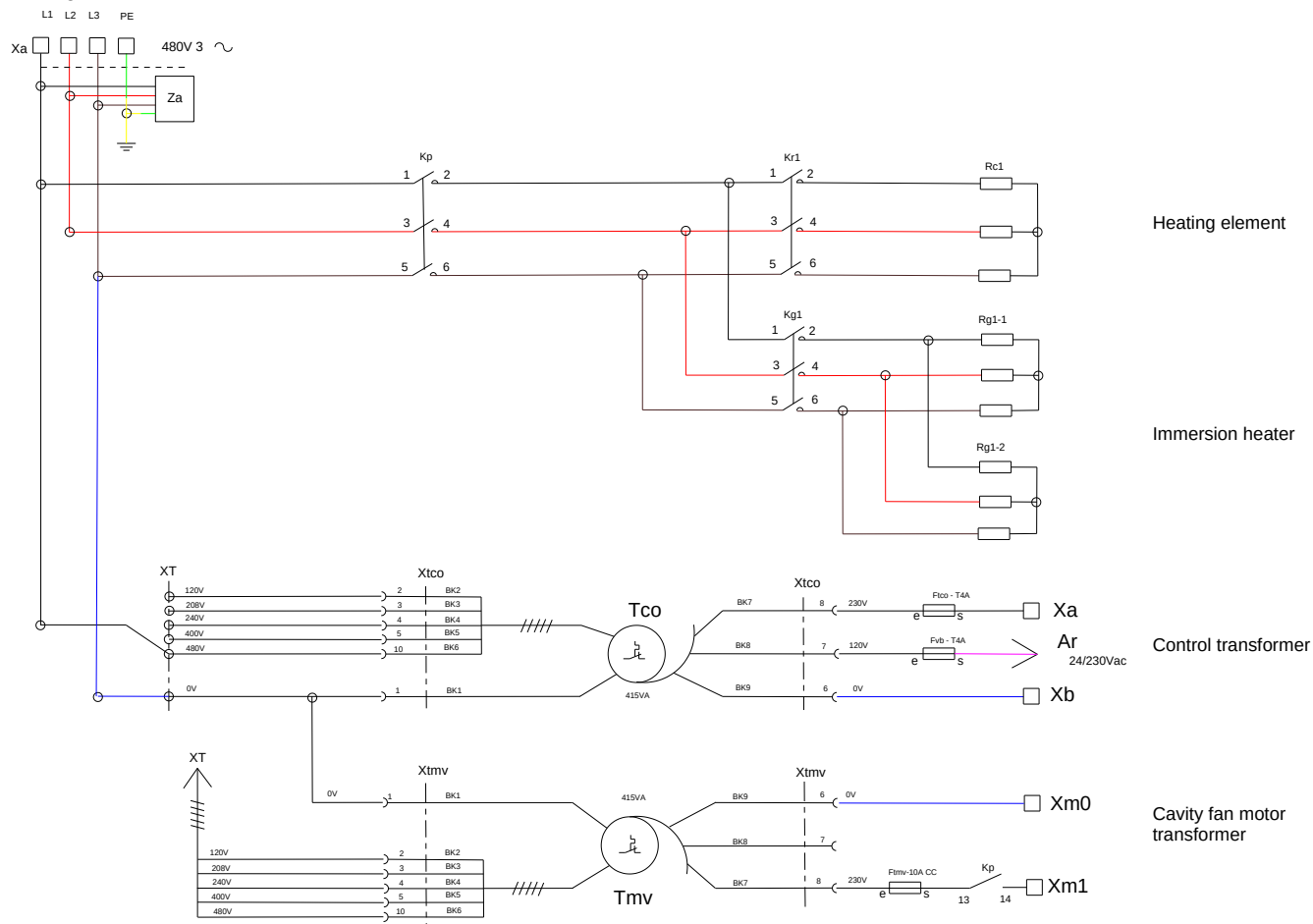
Wiring diagram

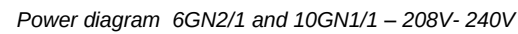


Power diagram 6GN1/1 – 208V – 240V

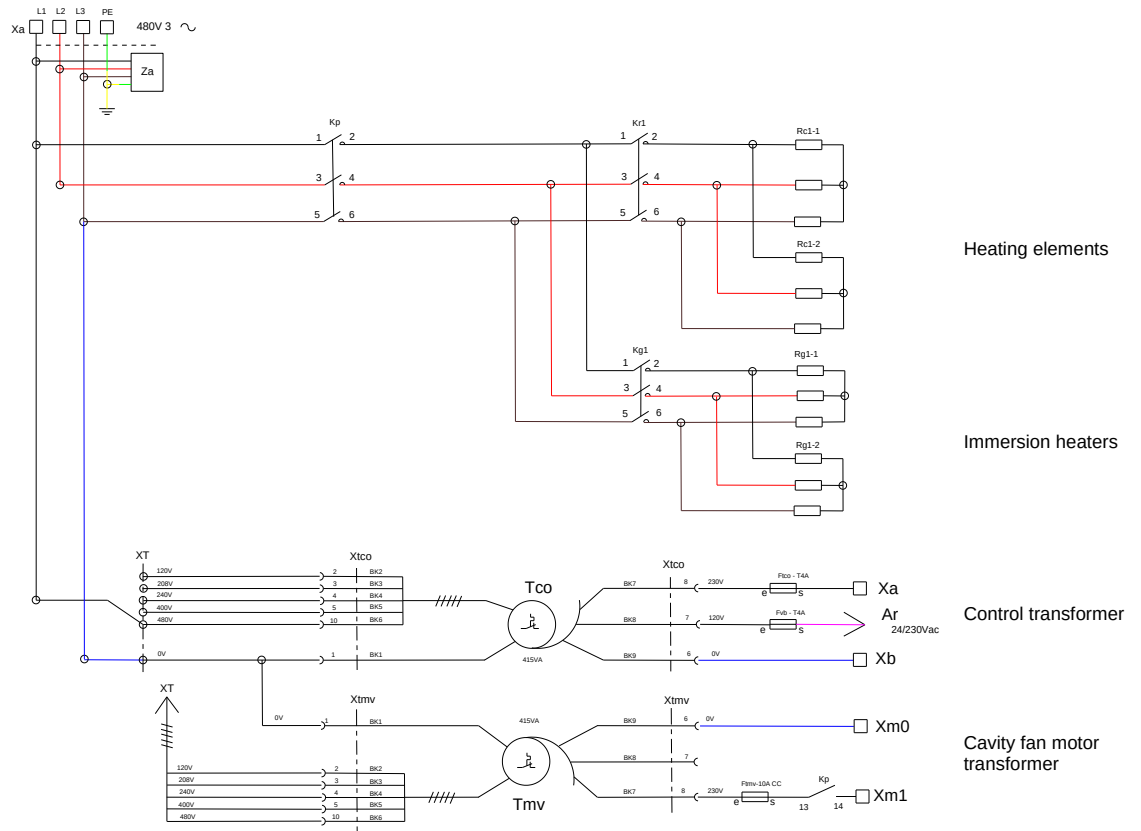


Power diagram 6GN1/1 – 480V

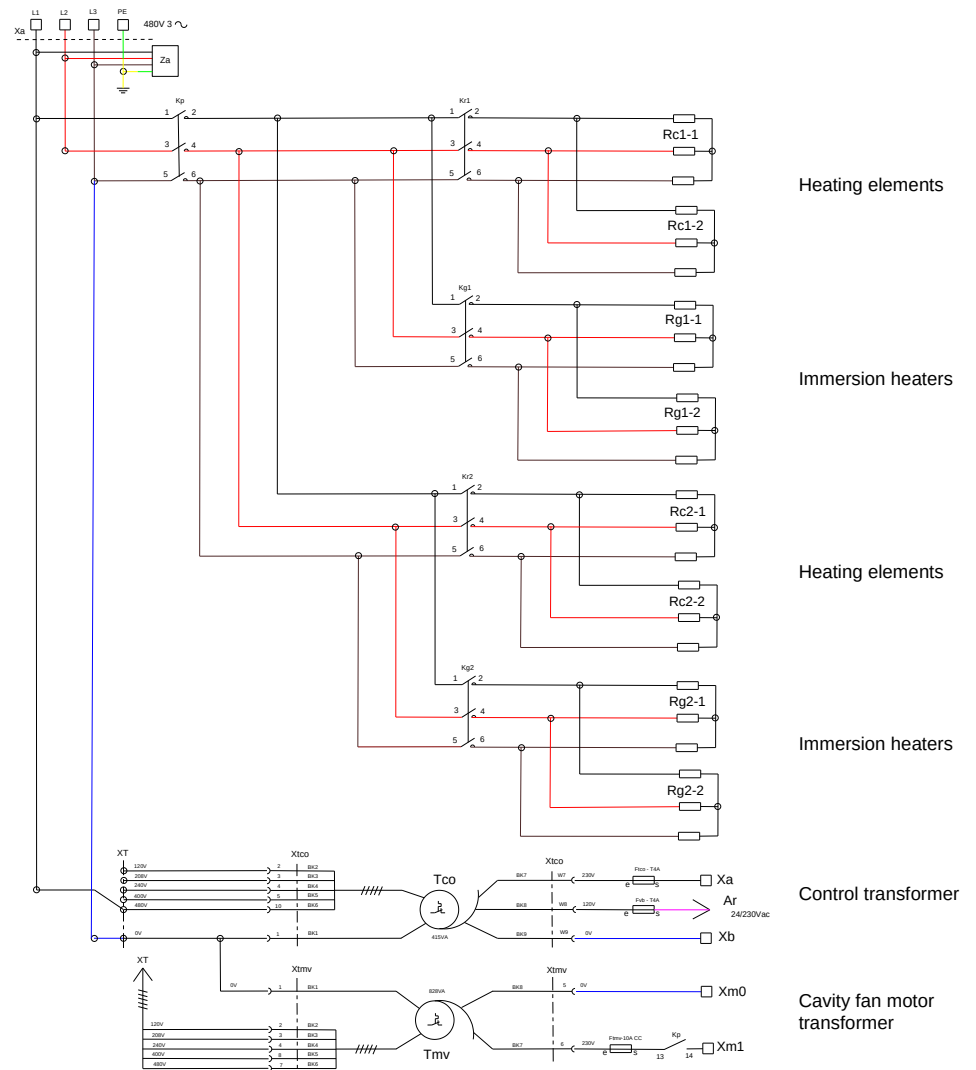




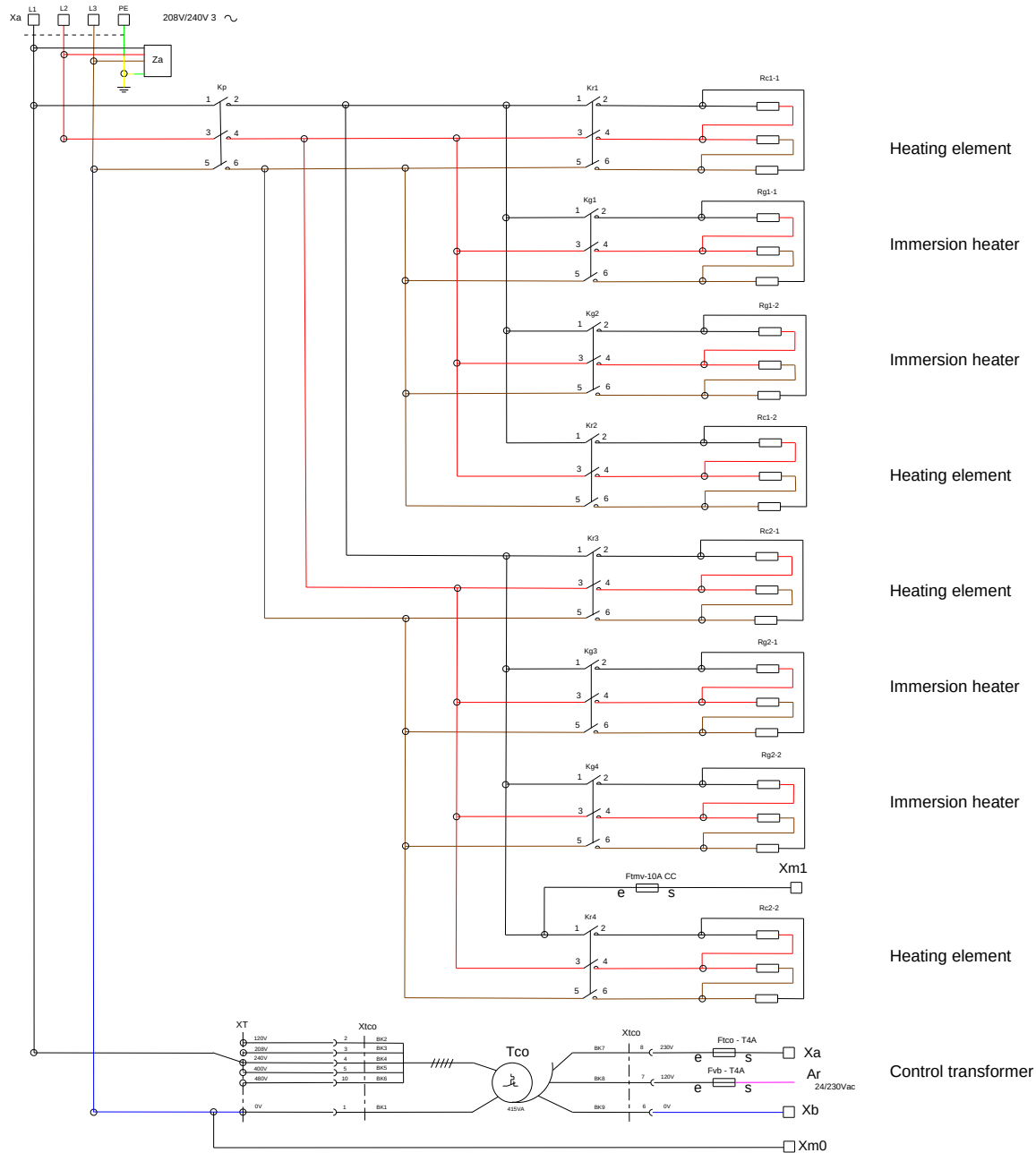
Power diagram 10GN1/1 – 480V



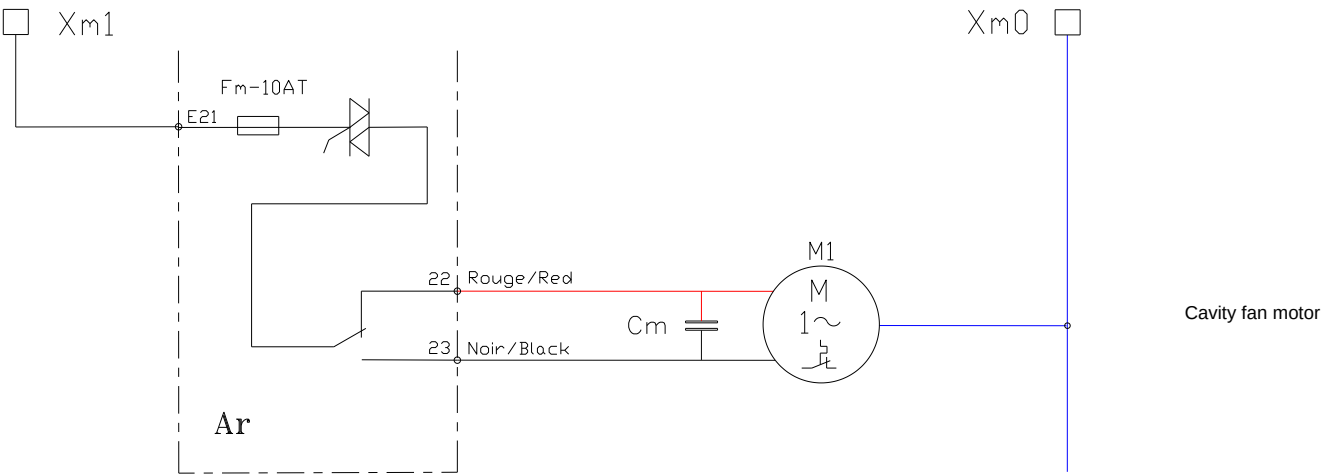
Power diagram 10GN2/1 – 480V

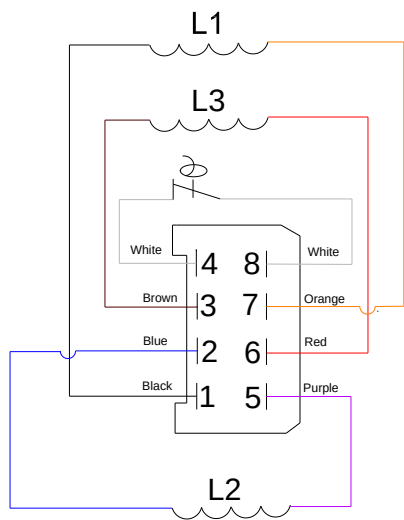


Power diagram 10GN2/1 – 208V- 240V



6.2 6 AND 10 LEVEL CAVITY VENTILATION

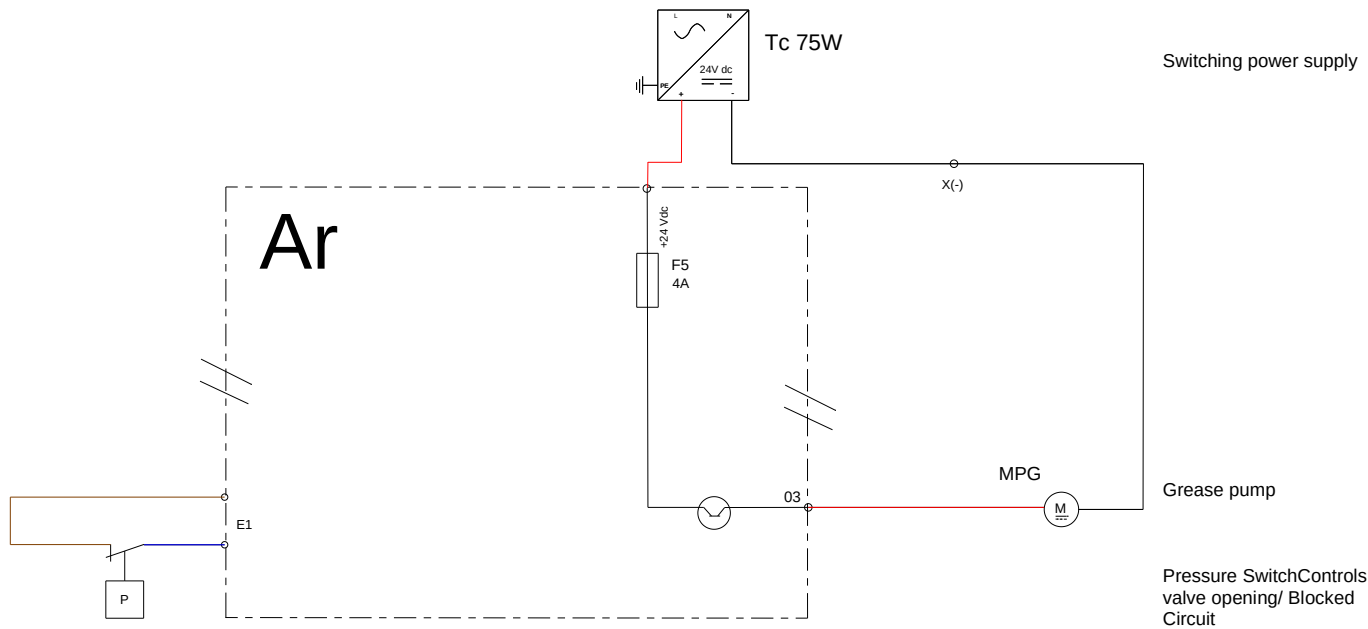




|    | Half size motor | Full size motor |
|----|-----------------|-----------------|
| L1 | 56 Ω            | 20.4 Ω          |
| L2 | 56 Ω            | 20.4 Ω          |
| L3 | 56 Ω            | 20.4 Ω          |

Values tolerances +/-15%

6.3 GREASE COLLECTION OPTION



## 6.4 PARTS LIST

## Common components

| Ref.                             | Designation                                  | Characteristics                                   | Quantity | Code            |
|----------------------------------|----------------------------------------------|---------------------------------------------------|----------|-----------------|
| <b>Ac</b>                        | Encoder board                                |                                                   | 1        | 309716          |
| <b>Ahu</b>                       | Additional humidity board                    |                                                   | 1        | 309718          |
| <b>Ai</b>                        | Interface board                              |                                                   | 1        | 309714          |
| <b>Ar+Ah</b>                     | Main + humidity boards                       | Electric oven                                     | 1        | 309720          |
|                                  | Connection cable for Main – interface boards |                                                   | 1        | 309723          |
| <b>Ar+Ah+Aag</b>                 | Main + humidity + gas boards                 | Gas oven                                          | 1        | 309721          |
| <b>Ba</b>                        | Ambient probe                                | PT100                                             | 1        | 159030          |
| <b>Bg</b>                        | Steam generator temperature probe            | PT100                                             | 1        | 159028          |
| <b>Bnc</b>                       | Steam generator level probe                  |                                                   | 1        | 301514          |
| <b>Bnl</b>                       | Cleaning box level probe                     |                                                   | 1        | 301519          |
| <b>Bsc</b>                       | Core probe                                   | 3-point probe - 6- level GN 1/1 ovens             | 1        | 301517          |
|                                  |                                              | 3-point probe - 10-level GN 2/1 ovens             | 1        | 301518          |
|                                  |                                              | Probe 3 points - 6 levels GN2/1 & 10 levels GN1/1 | 1        | 301524          |
| <b>Cpn</b>                       | Cleaning pump condensator                    | 6.3µF                                             | 1        | 304311          |
| <b>Cm</b>                        | Cavity motor condensator                     | 12,5µF - GN1/1 oven                               | 1        | 304296          |
|                                  |                                              | 25µF - GN2/1 oven                                 | 1        | 304326          |
| <b>Ee1 - Ee2</b>                 | LED strips                                   | 24Vd.c. 5W                                        | 1        | 309719          |
| <b>F1</b>                        | Fast fuse                                    | 5x20 - 0,2 A                                      | 1        | 300787          |
| <b>F2 - F3 - F4</b>              | Time-delay fuses                             | 5x20 - 3,15A                                      | 3        | 309407          |
| <b>F5</b>                        | Standard automotive fuse                     | ATC - 4A                                          | 1        | 300807          |
| <b>Fm</b>                        | Motor fuse                                   | 5x20 - 10A                                        | 1        | 300788          |
| <b>Ftco</b>                      | Fuse holder and fuse                         | 4A T                                              | 1        | 300777 + 300801 |
| <b>Ftmv</b>                      | Fuse holder and fuse                         | 10A CC                                            | 1        | 300792 + 300793 |
| <b>Fvb</b>                       | Fuse holder and fuse                         | 4A T                                              | 1        | 300777 + 300801 |
| <b>La</b>                        | EMC filter                                   |                                                   | 1        | 309639          |
| <b>Lo</b>                        | Electromagnet of In flapper                  | 24Vd.c. 8,3W                                      | 1        | 468108          |
| <b>M1</b>                        | Cavity fan motor                             | 6 and 10 levels GN1/1                             | 1        | 147147          |
|                                  |                                              | 6 and 10 levels GN2/1                             | 1        | 159032          |
| <b>Mdg</b>                       | Descaling pump motor                         | 56W - Steam generator                             | 1        | 304321          |
| <b>Mpg</b>                       | Grease pump motor                            | 24Vdc 31W                                         | 1        | 304314          |
| <b>Mpn</b>                       | Cleaning pump motor                          | 253W                                              | 1        | 314396          |
| <b>Mt1 – Mt2</b>                 | Technical ventilation motor                  |                                                   | 1        | 304334          |
| <b>Mvg</b>                       | Steam generator drain motor                  | 56W                                               | 1        | 304323          |
| <b>Mvm</b>                       | Cavity fan motor                             | 56W                                               | 1        | 304322          |
| <b>P</b>                         | Pressure switch                              |                                                   |          | 159064          |
| <b>Shu</b>                       | Humidity sensor                              |                                                   | 1        | 301515          |
| <b>Sp</b>                        | Closed door reed switch                      | Standard door                                     | 1        | 300806          |
|                                  |                                              | Reversed door option (left-hand fitting)          | 1        | 300805          |
| <b>Ta</b>                        | Switching power supply                       | 230Va.c. / 24Vd.c.                                | 1        | 300802          |
| <b>Tc</b>                        | Switching power supply                       | 230Va.c. / 24Vd.c.                                | 1        | 308353          |
|                                  |                                              | 230Va.c. / 24Vd.c. if grease collection option    | 1        | 300802          |
| <b>Tco</b>                       | Control transformer                          | 415VA                                             | 1        | 408407          |
| <b>Tcm</b>                       | Cavity fan motor transformer                 | 6 and 10 levels GN1/1                             | 1        | 408407          |
|                                  |                                              | 6 and 10 levels GN2/1                             | 1        | 408406          |
| <b>Yspray - Ycond</b>            | Two-way solenoid valve                       | Spray / Condenser                                 | 1        | 468105          |
| <b>Ycool - Yboiler - Ydesca.</b> | Three-way solenoid valve                     | Descaling / Steam generator / Injection           | 1        | 468107          |

## Contactors Electric ovens

208V/240V - 230V

| Ref.      | Designation                               | 6 GN1/1    | 6 GN2/1    | 10 GN1/1   | 10 GN2/1   |
|-----------|-------------------------------------------|------------|------------|------------|------------|
| <b>Kg</b> | Steam generator contactor                 | 300699 * 2 | 300699 * 2 | 300699 * 2 | 300699 * 4 |
| <b>Zg</b> | Interference-suppression Blocks           | 300769 * 2 | 300769 * 2 | 300769 * 2 | 300769 * 4 |
| <b>Kp</b> | Power contactor                           | 300699     | 300702     | 300702     | 300798     |
| <b>Zp</b> | Interference-suppression Blocks           | 300769     | 407002     | 407002     | 300799     |
| <b>Kr</b> | Regulation contactor ( convection heater) | 300699     | 300699 * 2 | 300699 * 2 | 300699 * 4 |
| <b>Zr</b> | Interference-suppression Blocks           | 300769     | 300769 * 2 | 300769 * 2 | 300769 * 4 |

480V

| Ref.      | Designation                               | 6 GN1/1 | 6 GN2/1 | 10 GN1/1 | 10 GN2/1   |
|-----------|-------------------------------------------|---------|---------|----------|------------|
| <b>Kg</b> | Steam generator contactor                 | 300697  | 300698  | 300698   | 300698 * 2 |
| <b>Zg</b> | Interference-suppression Blocks           | 300769  | 300769  | 300769   | 300769 * 2 |
| <b>Kp</b> | Power contactor                           | 300697  | 300699  | 300698   | 300702     |
| <b>Zp</b> | Interference-suppression Blocks           | 300769  | 300769  | 300769   | 407002     |
| <b>Kr</b> | Regulation contactor ( convection heater) | 300697  | 300699  | 300698   | 300699 * 2 |
| <b>Zr</b> | Interference-suppression Blocks           | 300769  | 300769  | 300769   | 300769 * 2 |

**Contactors Gas ovens**

| Ref.                  | Designation                      | 6 GN1/1 | 6 GN2/1 | 10 GN1/1 | 10 GN2/1 |
|-----------------------|----------------------------------|---------|---------|----------|----------|
| <b>Kbg</b>            | Steam generator burner contactor | 300697  | 300697  | 300697   | 300697   |
| <b>Kbr</b>            | Burner regulation switch         | 300697  | 300697  | 300697   | 300697   |
| <b>Kp</b>             | Power contactor                  | 300697  | 300697  | 300697   | 300697   |
| <b>Zp - Zvb - Zbg</b> | Interference suppressor          | 300769  | 300769  | 300769   | 300769   |

**Heating elements Electric oven**

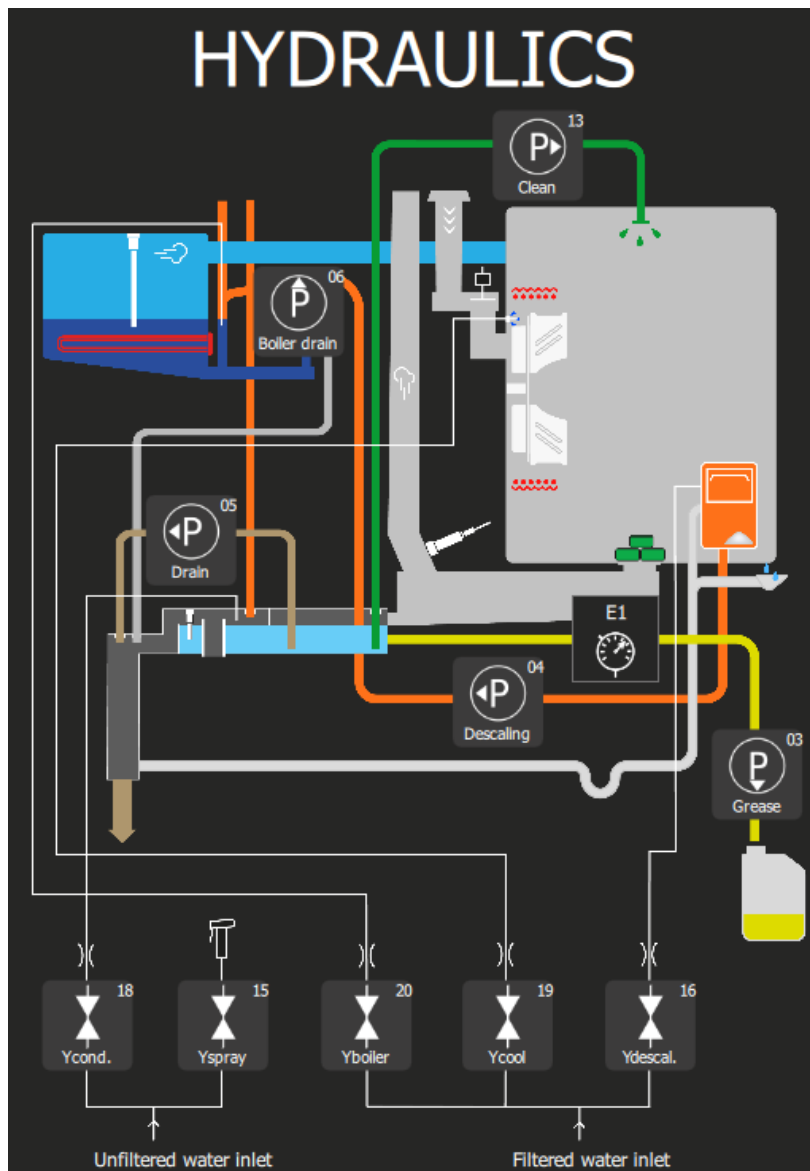
| Ref.      | Designation                       |      | 6 GN1/1      | 6 GN2/1   | 10 GN1/1  | 10 GN2/1  |
|-----------|-----------------------------------|------|--------------|-----------|-----------|-----------|
| <b>Rc</b> | Convection heating elements       | 208V | <i>Codes</i> | 159010    | 159012    | 159013    |
|           |                                   |      | Vulcan codes | 00-978295 | 00-978296 | 00-978308 |
|           |                                   | 240V | <i>Codes</i> | 159005    | 159007    | 159008    |
|           |                                   |      | Vulcan codes | 00-978291 | 00-978292 | 00-978293 |
|           |                                   | 480V | <i>Codes</i> | 159015    | 159017    | 159018    |
|           |                                   |      | Vulcan codes | 00-978299 | 00-978300 | 00-978301 |
| <b>Rg</b> | Steam generator immersion heaters | 208V | <i>Codes</i> | 159024    | 159025    | 159025    |
|           |                                   |      | Vulcan codes | 00-978305 | 00-978306 | 00-978306 |
|           |                                   | 240V | <i>Codes</i> | 159022    | 159023    | 159023    |
|           |                                   |      | Vulcan codes | 00-978303 | 00-978304 | 00-978304 |
|           |                                   | 480V | <i>Codes</i> | 159026    | 159027    | 159027    |
|           |                                   |      | Vulcan codes | 00-978305 | 00-978308 | 00-978308 |

**Specific components - Gas ovens**

| Ref.             | Designation                              | Characteristics                | Quantity | Code   |
|------------------|------------------------------------------|--------------------------------|----------|--------|
| <b>Aag</b>       | Additional gas board                     |                                | 1        | 309721 |
| <b>Avg</b>       | Steam generator gas solenoid valves      |                                | 1        | 310356 |
| <b>Avr1</b>      | Gas solenoid valves regulation 1         |                                | 1        | 310356 |
| <b>Eag</b>       | Steam generator gas spark box            | prim:230Va.c. 0,3A /sec 1x15kV | 1        | 408402 |
| <b>Ear</b>       | Gas spark box for convection heaters 1/2 | prim:230Va.c. 0,3A /sec 1x15kV | 1 or 2   | 408402 |
| <b>Ebg - Ebr</b> | Curved ignition electrode                |                                | 2        | 148885 |
|                  | Straight ionisation electrode            |                                | 2        | 148886 |
| <b>Flamme</b>    | Flame control electrode                  |                                | 2        | 148889 |
| <b>Mbg</b>       | Steam generator burner motor             | 207VA                          | 1        | 159046 |
| <b>Mbr</b>       | Burner motor regulation                  | 207VA                          | 1        | 159046 |

## 7. HYDRAULIC DIAGRAM

## 7.1 6 AND 10 LEVEL OVENS

**UNFILTERED WATER (hard water inlet)**

|                                |                                                                                                                          |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Pressure (Min / Max)           | 14.5 psi / 87psi (1.5 bar / 6 bar)                                                                                       |
| Max cold water temperature     | 73°F                                                                                                                     |
| Nature                         | Filtered at 114 mesh                                                                                                     |
| Water quality                  | Chloride Cl <sup>-</sup> : ≤ 8.76 gr/gal (150 ppm)<br>Chlorine Cl <sub>2</sub> : ≤ 0.01 gr/gal (0.2 ppm)<br>6.5 ≤ PH ≤ 9 |
| Conductivity                   | ≥ 25 TDS                                                                                                                 |
| Connection                     | Male G 3/4" + GHT 3/4" adapter                                                                                           |
| Max. instantaneous consumption | 3.35 gpm                                                                                                                 |

**FILTERED WATER (Soft water inlet)**

|                                |                                                                                                                          |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Pressure (Min / Max)           | 14.5 psi / 87psi (1.5 bar / 6 bar)                                                                                       |
| Max cold water temperature     | 73°F                                                                                                                     |
| Nature                         | Filtered at 114 mesh                                                                                                     |
| Hardness                       | 3.5 to 11.6 grains/gal (60 to 200 ppm)                                                                                   |
| Water quality                  | Chloride Cl <sup>-</sup> : ≤ 8.76 gr/gal (150 ppm)<br>Chlorine Cl <sub>2</sub> : ≤ 0.01 gr/gal (0.2 ppm)<br>6.5 ≤ PH ≤ 9 |
| Conductivity                   | ≥ 25 TDS                                                                                                                 |
| Connection                     | Male G 3/4" + GHT 3/4" adapter                                                                                           |
| Max. instantaneous consumption | 2.03 gpm                                                                                                                 |

**TWO-WAY SOLENOID VALVE - COLD WATER**

|               |                               |             |
|---------------|-------------------------------|-------------|
| <b>Ycond</b>  | Condenser solenoid valve      | 42,8 gal/h  |
| <b>Yspray</b> | Solenoid valve for spray hose | 158,5 gal/h |

**THREE-WAY SOLENOID VALVE - COLD WATER**

|                 |                                            |            |
|-----------------|--------------------------------------------|------------|
| <b>Yboiler</b>  | Solenoid valve for steam generator filling | 87.1 gal/h |
| <b>Ycool</b>    | Cooling solenoid valve                     | 14.4 gal/h |
| <b>Ydescal.</b> | Descaling solenoid valve                   | 14.4 gal/h |

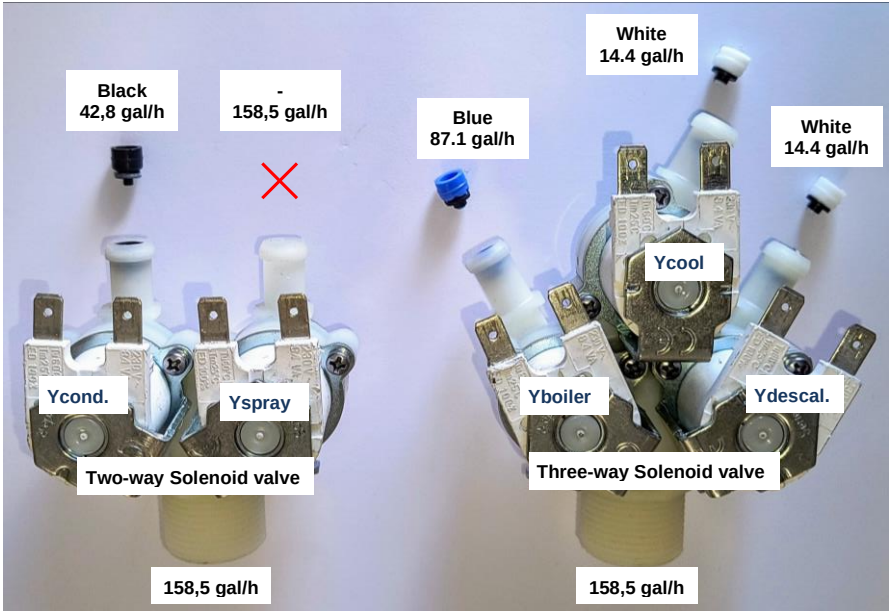
**PUMPS**

|               |                       |             |
|---------------|-----------------------|-------------|
| <b>P - 04</b> | Clean                 | 2061 gal/h  |
| <b>P - 03</b> | Descaling             | 317 gal/h   |
| <b>P - 13</b> | Drain                 | 317 gal/h   |
| <b>P - 05</b> | Drain steam generator | 317 gal/h   |
| <b>P - 06</b> | Grease                | 52,31 gal/h |

**PRESSURE SWITCH (GREASE COLLECTION OPTION)**

|           |                 |          |
|-----------|-----------------|----------|
| <b>E1</b> | Pressure switch | 0.3 bars |
|-----------|-----------------|----------|

7.1.1 FLOW LIMITER



7.1.2 IDENTIFICATION OF TERMINALS

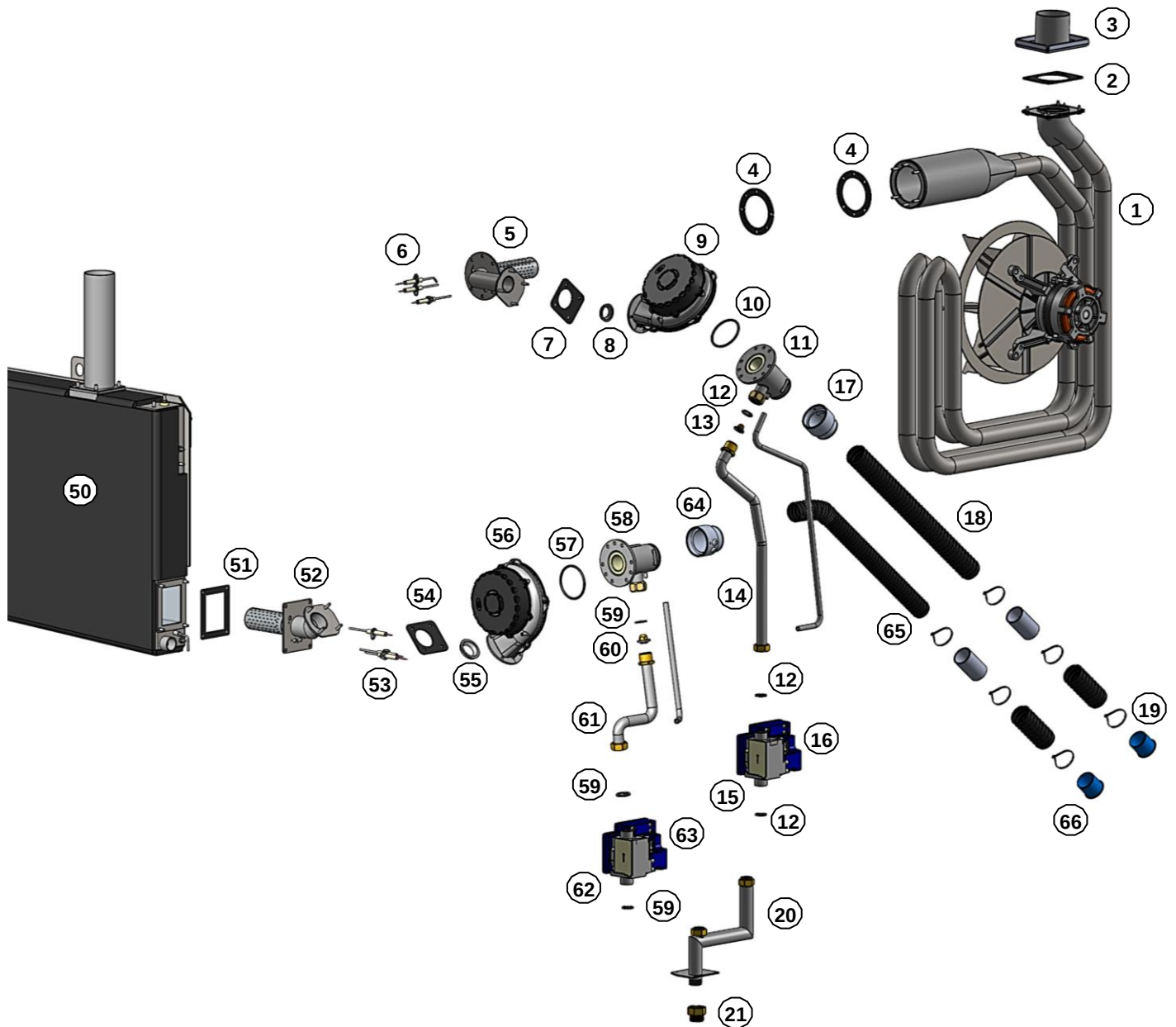


|  | <u>Two-way Solenoid valve</u>                          | <u>Three-way Solenoid valve</u>                                       |
|--|--------------------------------------------------------|-----------------------------------------------------------------------|
|  | Condenser → Yellow<br>Spray hose → Clear - Transparent | Cooling → Blue<br>Steam generator → Pink - purple<br>Descaling → Grey |



## 8. GAS DIAGRAM

## 8.1 6 AND 10 LEVEL OVENS

**Gas circuit - Convection heating**

- 1 Heat exchanger
- 2 Gas exchanger outlet gasket
- 3 Flue gas pipe
- 4 Gas exchanger inlet gasket
- 5 Gas burner
- 6 Ignition electrodes
- 7 Gas burner gasket
- 8 Gas burner reducer
- 9 Gas burner blower
- 10 Gas venturi seal
- 11 Venturi
- 12 Gasket 20/27
- 13 Injector (present depending on model)
- 14 Gas pipework
- 15 Gas valve
- 16 Safety box
- 17 Venturi adapter
- 18 Air inlet hose
- 19 Flexible air plug
- 20 Gas ramp
- 21 3/4" NPT gas inlet adaptor

**Gas circuit - Steam heating**

- 50 Gas steam generator
- 51 Steam generator inlet gasket
- 52 Gas burner
- 53 Ignition electrodes
- 54 Gas fan gasket
- 55 Gas burner reducer
- 56 Gas burner blower
- 57 Gas venturi seal
- 58 Venturi
- 59 Gasket 20/27
- 60 Injector (present depending on model)
- 61 Gas pipework
- 62 Gas valve
- 63 Safety box
- 64 Venturi adapter
- 65 Air inlet hose
- 66 Flexible air plug

## 9. ACCESS TO COMPONENTS

### 9.1 LOCATION OF TECHNICAL COMPONENTS



### 9.2 ACCESS TO COMPONENTS

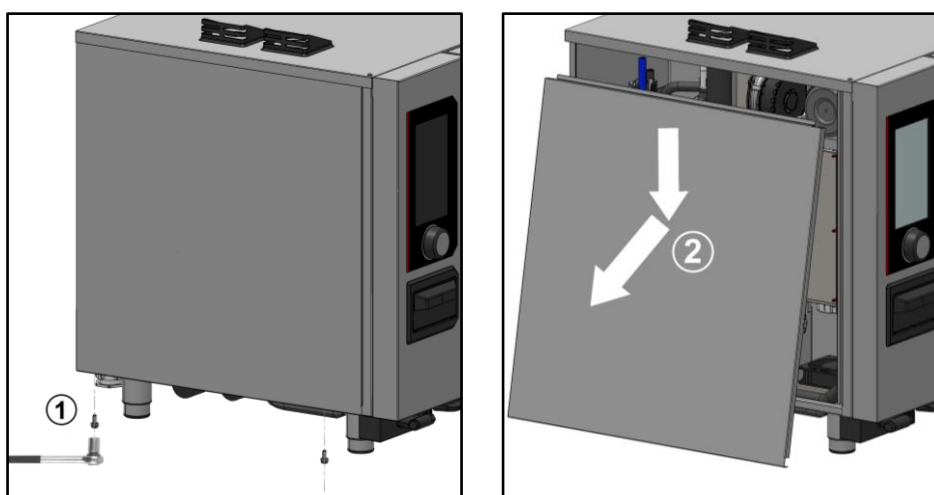


**CAUTION:** The appliance must be disconnected from its power supply during cleaning or maintenance, and when replacing parts.

The various assembly procedures and component access below are designed to avoid any repetition which could lead to errors when improving the procedures.

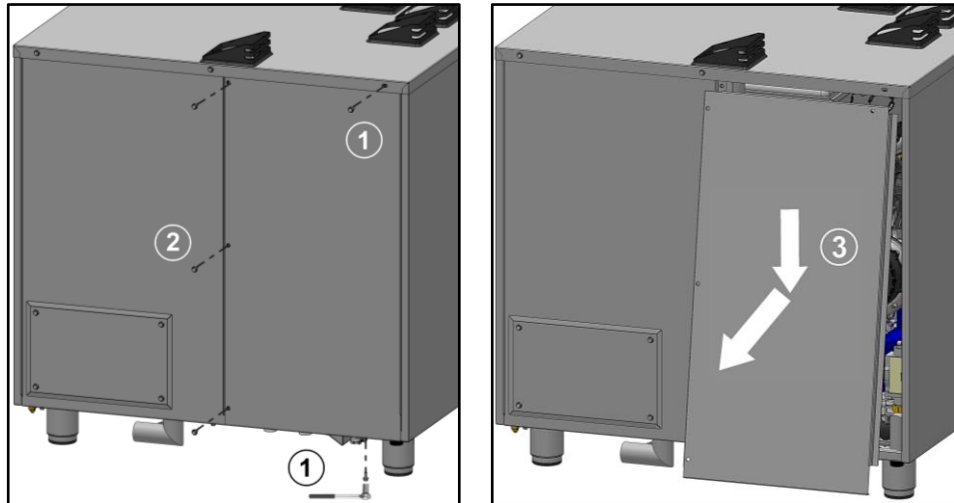
Actions already explained in a paragraph are not re-explained but are referred to in the paragraph originally concerned, using the symbol « ► » followed by the title of the paragraph where the procedure can be found.

#### 9.2.1 LEFT-HAND SIDE PANEL



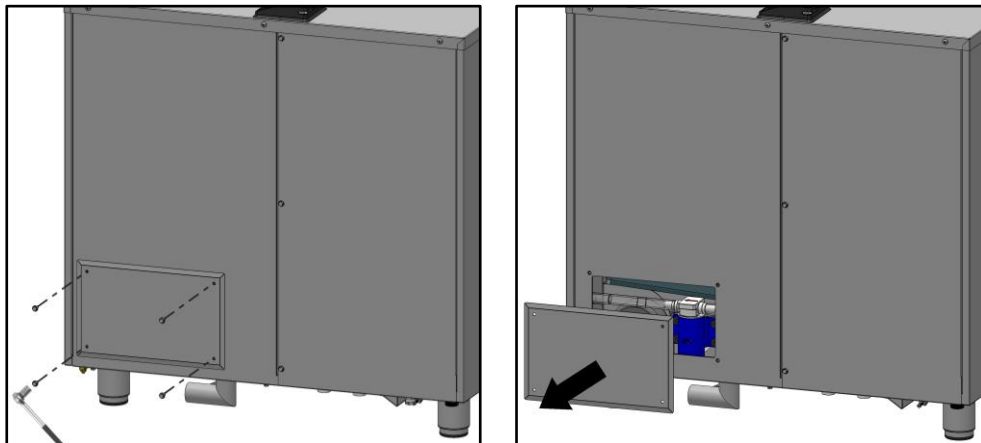
- » Prepare your intervention:
  - ✓ Tools: Wrenches.
- » Unscrew and remove the 2 x M5 screws securing the underside of the panel ①.
- » Remove the panel: Unhook the bottom of the panel and lower it to remove ②.

### 9.2.2 REAR PANEL (GAS APPLIANCE)



- » Prepare your intervention:
  - ✓ Tools: Wrenches.
- » Remove the left oven panel (► [Left side panel](#)).
- » Unscrew and remove the 2 x M5 screws securing the panel at the top and bottom ① and then the 3 x M5 screws securing the left-hand side of the half-panel ②.
- » Remove the half-panel: Unhook bottom of the half-panel then lower it to remove ③.

### 9.2.3 REAR HATCH (GREASE COLLECTION OPTION)



- » Prepare your intervention:
  - ✓ Tools: Wrenches.
- » Unscrew and remove the 4 x M5 screws securing the hatch cover to the rear panel.
- » Remove the hatch cover.

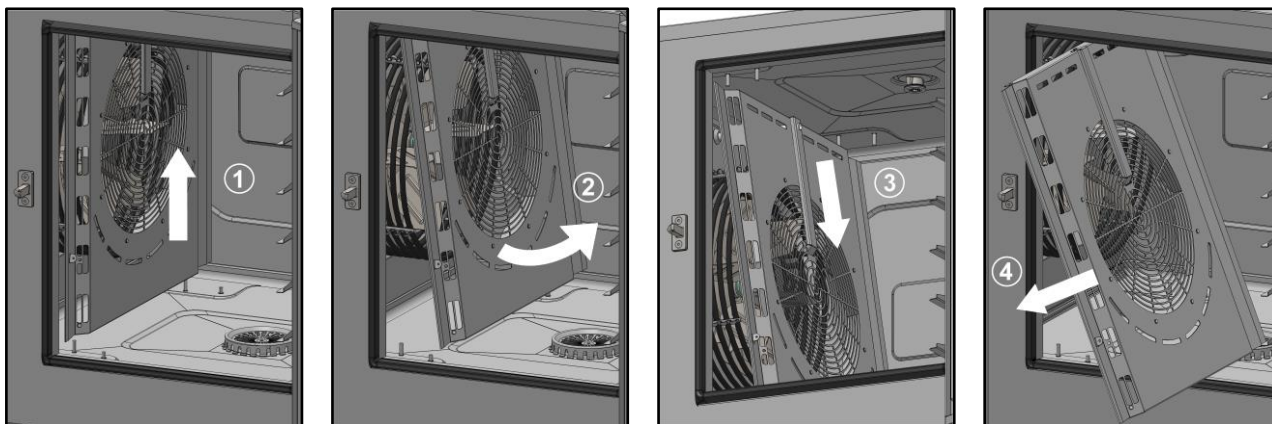
### 9.2.4 RUNNERS



- » Prepare the cooking cavity and check the following points:
  - ✓ Remove all trays, plates and grids from the cooking cavity
  - ✓ Verify the core probe has been removed from its housing

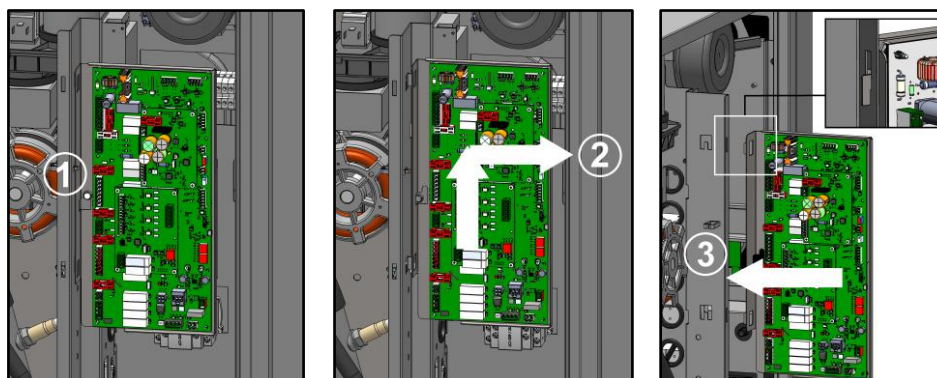
- ✓ Verify the USB core probe is not in the cooking cavity
- » Lift the runner slightly by the middle of one of the upper levels ①.
- » Tilt the runner towards the centre of the oven to release it from its lower supports (rear and front) ②.
- » Release the runner from its upper supports (front and rear) ③.
- » Remove the runner from cooking cavity ④.

#### 9.2.5 VENTILATION DUCT



- » Prepare the cooking cavity and check the following points:
  - ✓ Remove all trays, plates and grids from the cooking cavity
  - ✓ Verify the core probe has been removed from its housing
  - ✓ Verify the USB core probe is not in the cooking cavity
  - ✓ Protect bottom of the cavity with board
- » Remove left-hand runner (► [Runners](#)).
- » Lift the duct slightly ①.
- » Tilt the duct to release it from its lower supports (rear and front) ②.
- » Release the duct from its upper supports (front and rear) ③.
- » Remove the duct from the cooking cavity ④.

#### 9.2.6 MAINTENANCE POSITION OF THE MAIN BOARD

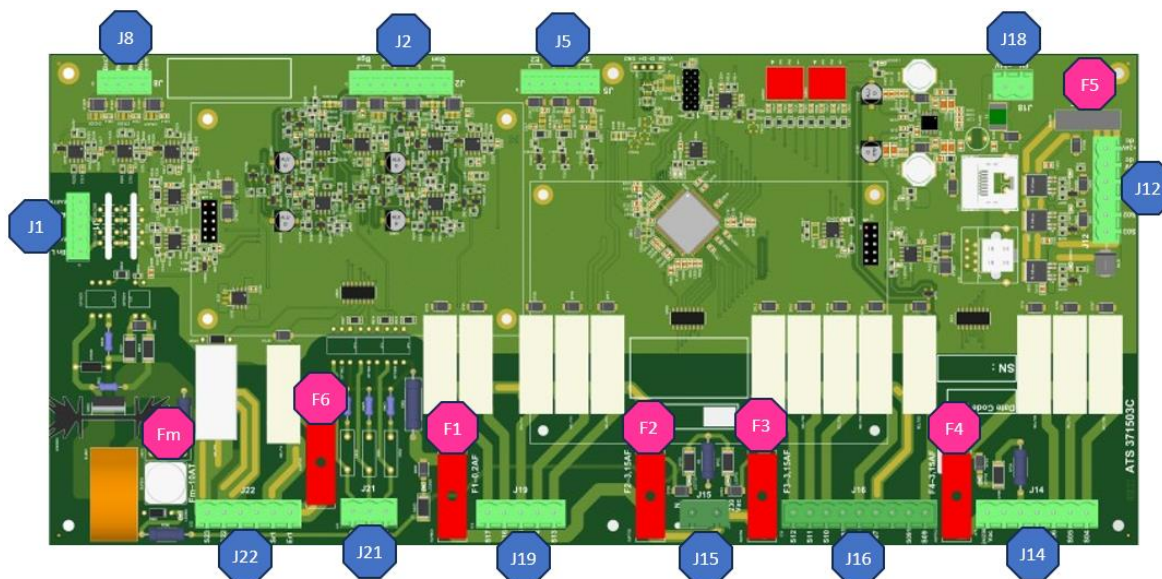


- » Prepare your intervention:
  - ✓ Tools: Wrenches
- » Remove the left oven panel (► [Left side panel](#)).
- » Slightly unscrew the screw securing the board to the electrical board ①.
- » Lift up and remove the main board ②.
- » Position the board in the 2 notches provided during maintenance operations ③.

## 10. COMPONENTS

### 10.1 ELECTRONIC BOARDS

#### 10.1.1 MAIN BOARD - AR



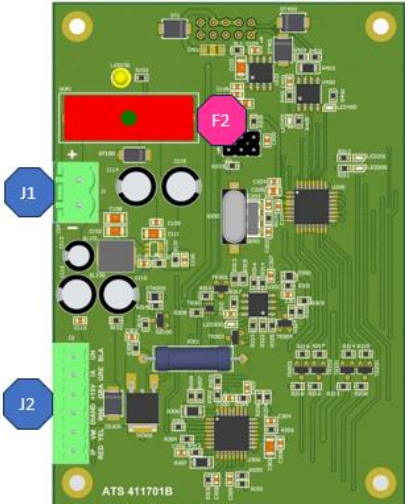
| Fuse | Ref.* | Function                                                                | Caliber        | Size |
|------|-------|-------------------------------------------------------------------------|----------------|------|
| Fm   | Fm    | Ventilation motor protection                                            | 10A Time-delay | 5x20 |
| F1   | F1    | Solenoid valve protection                                               | 0,2A Fast      | 5x20 |
| F2   | F2    | Wash pump solenoid valve protection                                     | 3,15A Fast     | 5x20 |
| F3   | F3    | Protection of Heating, technical ventilation and gas board power supply | 3,15A Fast     | 5x20 |
| F4   | F4    | Pump protection                                                         | 3,15A Fast     | 5x20 |
| F5   | F5    | 24Vdc service protection                                                | 4A Fast        | ATC  |
| F6   | F6    | Potential-free contact protection (hood)                                | 6,3A Fast      | 5x20 |

\* References on electrical diagrams.

| Connectors | Nber of terminals | Color of wires | Destination | Function of the destination elements                                       | Measurements                                                                                                     |
|------------|-------------------|----------------|-------------|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| J1         | 2                 | Orange         | BnL         | Checks the water level in the cleaning box                                 |                                                                                                                  |
|            | 5                 | G Y            | Earth       |                                                                            |                                                                                                                  |
|            | 3                 | NC             |             |                                                                            |                                                                                                                  |
|            | 4                 | Orange         | BnC         | Checks the water level in the steam generator                              |                                                                                                                  |
|            | 5                 | G Y            | Earth       |                                                                            |                                                                                                                  |
| J2         | 1                 | Red            | Bga         | Measures steam generator temperature (safety input)                        | Value between 100 Ohms (35°F) and 212 Ohms (572°F)                                                               |
|            | 2                 | Red            | Bga         |                                                                            |                                                                                                                  |
|            | 3                 | White          | Bgn         | Measures steam generator temperature (control input)                       | Value between 100 Ohms (35°F) and 212 Ohms (572°F)                                                               |
|            | 4                 | White          | Bgn         |                                                                            |                                                                                                                  |
|            | 5                 | Red            | Baa         | Measures cavity temperature (safety input)                                 | Value between 100 Ohms (35°F) and 212 Ohms (572°F)                                                               |
|            | 6                 | Red            | Baa         |                                                                            |                                                                                                                  |
|            | 7                 | White          | Ban         | Measures the ambient temperature of the cavity (control input)             | Value between 100 Ohms (35°F) and 212 Ohms (572°F)                                                               |
| J5         | 8                 | White          | Ban         |                                                                            |                                                                                                                  |
|            | 1                 |                | E2          |                                                                            |                                                                                                                  |
|            | 2                 |                | E2          |                                                                            |                                                                                                                  |
|            | 3                 | Brown          | E1          | Grease collection pressure switch option                                   | Normally closed contact                                                                                          |
|            | 4                 | Blue           | E1          |                                                                            |                                                                                                                  |
|            | 5                 | Brown          | Sp          | Control the closing of the door                                            |                                                                                                                  |
| J8         | 6                 | Blue           | Sp          |                                                                            |                                                                                                                  |
|            | 1                 | Black          | PT100Bsc3   | Food temperature control (3 levels)                                        | Value between 100 Ohms (35°F) and 212 Ohms (572°F)<br>Take these mesures between Yellow wire and each other wire |
|            | 2                 | Red            | PT100Bsc2   |                                                                            |                                                                                                                  |
|            | 3                 | White          | PT100Bsc1   |                                                                            |                                                                                                                  |
|            | 4                 | Yellow         | Bsc com.    |                                                                            |                                                                                                                  |
| J12        | 1                 | Red            | S03         | Supplies the pump for the grease collection option                         | 24Vd.c. with Tc-                                                                                                 |
|            | 2                 | Red            | S02         | Supplies the In valve or the In valve contactor (20-level ovens only)      | 24Vd.c. with Tc-                                                                                                 |
|            |                   | Red            | S110        | Supplies power to the LED lightning on the oven door (20-level ovens only) | 24Vd.c. with Tc-                                                                                                 |
|            | 4                 | Red            | S01         | Supplies power to the LED lightning on the oven door                       | 24Vd.c. with Tc-                                                                                                 |
|            | 5                 | Black          | 0Vd.c.      | Not connected                                                              |                                                                                                                  |

|            |   |         |                     |                                                                                                  |                                                                                                                   |
|------------|---|---------|---------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
|            | 6 | Red     | 24Vd.c.             | External power supply 24Vd.c. from Tc+                                                           | 24Vd.c. with Tc-                                                                                                  |
| <b>J14</b> | 1 | Purple  | 24/230Vac           | supplies the 120Va.c pump.                                                                       | 120Vac with Nbt                                                                                                   |
|            | 2 | -       |                     |                                                                                                  |                                                                                                                   |
|            | 3 | Blue    | Nbt                 | common pump supply 120Va.c.( neutral)                                                            | 120Vac with 24/230Vac                                                                                             |
|            | 4 | -       |                     |                                                                                                  |                                                                                                                   |
|            | 5 | Purple  | Mdg - S06           | activates the descaling pump 120Vac                                                              | 120Vac with Nbt                                                                                                   |
|            | 6 | Brown   | Mvm - S05           | activates the 120Vac cavity drain pump                                                           | 120Vac with Nbt                                                                                                   |
|            | 7 | Pink    | Mvg - S04           | activates the steam generator drain pump 120Vac                                                  | 120Vac with Nbt                                                                                                   |
| <b>J15</b> | 1 | Blue    | Neutral             | Supplies the 230Vac outputs                                                                      | 230Va.c. between these two points                                                                                 |
|            | 2 | Purple  | 230Vac              |                                                                                                  |                                                                                                                   |
| <b>J16</b> | 1 | Brown   | Chauf Vap- S12      | In an electric oven, activate the Kg steam generator heating contactor(s)                        | 230Va.c. with neutral                                                                                             |
|            |   | Red     |                     | In a gas oven, activates the steam generator burner                                              |                                                                                                                   |
|            | 2 | Red     | Chauf 2-S11         | Not used in an electric oven<br>In a gas oven, activates the heating burner (only 20 level oven) | 230Va.c. with neutral                                                                                             |
|            | 3 | Pink    | Chauf 1-S10         | In an electric oven, activate the Kr (green) control contactor(s)                                | 230Va.c. with neutral                                                                                             |
|            |   | Red     |                     | In a gas oven, activate the heating burner                                                       |                                                                                                                   |
|            | 4 | Orange  | S081                | In a gas oven, supplies the gas solenoid valves                                                  | 230Va.c. with neutral                                                                                             |
|            | 5 | Orange  | Mtv1 - S08          | Activates technical ventilation                                                                  | 230Va.c. with neutral                                                                                             |
|            |   | Purple  | Mtv1 - S08          | Activates technical ventilation                                                                  | 230Va.c. with neutral                                                                                             |
|            | 6 | Brown   | Aag 230V - S07      | Not used in electric ovens<br>Supplies the gas card of gas ovens                                 | 230Va.c. with neutral                                                                                             |
|            | 7 | -       | -                   |                                                                                                  | -                                                                                                                 |
|            | 8 | Purple  | XeA-S091            | Controls the energy saver (electric oven)<br>Controls the second technical ventilation           | 230Va.c. with neutral                                                                                             |
|            |   | W1- 3   |                     | Controls the rotation speed of the hood                                                          |                                                                                                                   |
|            | 9 | Purple  | S09                 | Activates the power contactor(s) Kp                                                              | 230Va.c. with neutral                                                                                             |
| <b>J18</b> | 1 | Red     | +24VSyst            | 24Vd.c. power supply for Main board                                                              | 24Vd.c. between 1 and 2                                                                                           |
|            | 2 | Black   | 0VSyst              |                                                                                                  |                                                                                                                   |
| <b>J19</b> | 1 | Reserve | S17                 | Reserved                                                                                         |                                                                                                                   |
|            | 2 | Brown   | Ydescal. - S16      | Activates the powder dissolution solenoid valve                                                  | 230Va.c. with neutral                                                                                             |
|            | 3 | Pink    | Yspray - S15        | Activates the spray hose solenoid valve                                                          | 230Va.c. with neutral                                                                                             |
|            | 4 | Brown   | S14                 | Activate the motor Air inlet contactor (20 levels ovens only)                                    | 230Va.c. with neutral                                                                                             |
|            | 5 | Purple  | Cleaning pump – S13 | Activates the cleaning pump                                                                      | 230Va.c. with neutral                                                                                             |
| <b>J21</b> | 1 | Pink    | Yboiler- S20        | Activates the injection solenoid valve                                                           | 230Va.c. with neutral                                                                                             |
|            | 2 | Brown   | Ycool - S19         | Activates the cooling solenoid valve                                                             | 230Va.c. with neutral                                                                                             |
|            | 3 | Pink    | Ycond. - S18        | Activates the condenser solenoid valve                                                           | 230Va.c. with neutral                                                                                             |
| <b>J22</b> | 1 | Black   | S23                 | Activates clockwise motor rotation                                                               | 208Va.c. with Xm0 for 208Va.c. oven<br>240Va.c. with Xm0 for 240Va.c. oven<br>230Va.c. with Xm0 for 480Va.c. oven |
|            | 2 | Red     | S22                 | Activates anticlockwise motor rotation                                                           | 208Va.c. with Xm0 for 208Va.c. oven<br>240Va.c. with Xm0 for 240Va.c. oven<br>230Va.c. with Xm0 for 480Va.c. oven |
|            | 3 | Black   | E21                 | Supplies power to the motor                                                                      | 208Va.c. with Xm0 for 208Va.c. oven<br>240Va.c. with Xm0 for 240Va.c. oven<br>230Va.c. with Xm0 for 480Va.c. oven |
|            | 4 | -       | -                   | -                                                                                                |                                                                                                                   |
|            | 5 | W1-2    | Sr1                 | Potential-free contact for hood motor control                                                    | Closed when the oven is operating                                                                                 |
|            | 6 | W1-1    | Er1                 |                                                                                                  |                                                                                                                   |

10.1.2 HUMIDITY BOARD - AHU

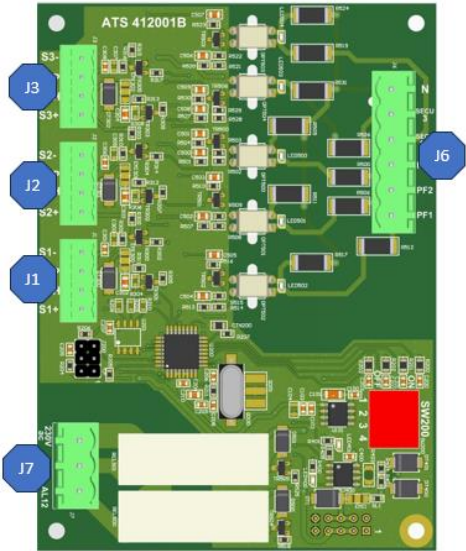


| Fuse | Ref.* | Function               | Caliber | Size |
|------|-------|------------------------|---------|------|
| F2   | F2    | Protect Humidity board | 3.15A   | 5X20 |

\* References on electrical diagrams.

| Connectors | Nber of terminals | Color of wires | Destination | Function of the destination elements                  | Measurements                   |
|------------|-------------------|----------------|-------------|-------------------------------------------------------|--------------------------------|
| J1         | 1                 | Red            | Ahu/+       | Humidity board power supply                           | 24Vdc between these two points |
|            | 2                 | Black          | Ahu/-       |                                                       |                                |
| J2         | 1                 | Black          | Ah Blk      | Supply humidity probe, heater unit and probe feedback |                                |
|            | 2                 | Violet         | Ah Pure     |                                                       |                                |
|            | 3                 | Grey           | Ah Gre      |                                                       |                                |
|            | 4                 | White          | AhWhi       |                                                       |                                |
|            | 5                 | Orange         | Ah Yel      |                                                       |                                |
|            | 6                 | Red            | Ah Red      |                                                       |                                |

10.1.3 GAS BOARD - AAG

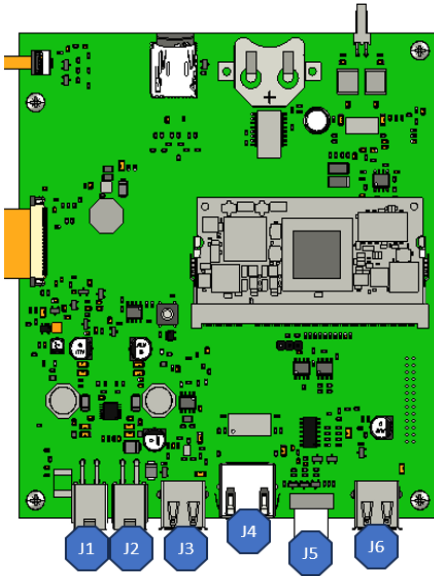


| Connectors | Nber of terminals | Color of wires | Destination               | Function of the destination elements              | Measurements |
|------------|-------------------|----------------|---------------------------|---------------------------------------------------|--------------|
| J1         | 1                 | Black          | GND/Alim- PWM             | Convection heat burner fan control                |              |
|            | 2                 | Pink           | S1P/PWM input             |                                                   |              |
|            | 3                 | Orange         | S1H/PWM Hall probe output |                                                   |              |
|            | 4                 | Red            | +24Vdc/Alim+PWM           |                                                   |              |
| J2         | 1                 | Black          | GND/Alim- PWM             | Convection heat burner fan control only 20 levels |              |
|            | 2                 | Pink           | S2P/PWM input             |                                                   |              |
|            | 3                 | Orange         | S2H/PWM Hall probe output |                                                   |              |
|            | 4                 | Red            | +24Vdc/Alim+PWM           |                                                   |              |



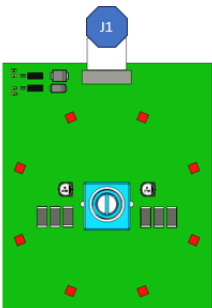
|    |   |        |                           |                                    |                                    |
|----|---|--------|---------------------------|------------------------------------|------------------------------------|
| J3 | 1 | Black  | GND/Alim- PWM             | Steam generator burner fan control |                                    |
|    | 2 | Pink   | S1P/PWM input             |                                    |                                    |
|    | 3 | Orange | S1H/PWM Hall probe output |                                    |                                    |
|    | 4 | Red    | +24Vdc/Alim+PWM           |                                    |                                    |
| J6 | 1 | Blue   | Neutral                   | Flame and safety burner check      | Flame control feedback at 230Va.c. |
|    | 2 | Grey   | Secu3                     |                                    |                                    |
|    | 3 | Red    | Secu 12                   |                                    |                                    |
|    | 4 | Brown  | Pf3                       |                                    |                                    |
|    | 5 | Purple | Pf2                       |                                    |                                    |
|    | 6 | Purple | Pf1                       |                                    |                                    |
| J7 | 1 | Brown  | 230Vac                    | Burner ignition control            | 230Va.c. between 230Va.c. and Xb   |
|    | 3 | Brown  | AL3                       |                                    |                                    |
|    | 2 | Purple | AL12                      |                                    |                                    |

10.1.4 INTERFACE BOARD - AI



| Connectors | Nber of terminals | Connectors type                            | Destination | Function of the destination elements                 | Measurements |
|------------|-------------------|--------------------------------------------|-------------|------------------------------------------------------|--------------|
| J1         |                   | 4-pin Molex connector                      |             | Not used                                             |              |
| J2         |                   | 4-pin Molex connector                      |             | Connects to the Main board                           |              |
| J3         |                   | USB connector                              |             | Connects the WIFI Dongle (Kit)                       |              |
| J4         |                   | RJ45                                       |             | Ensures customer network connection for connectivity |              |
| J5         |                   | 10-way ribbon connector 1.27mm pitch AWG28 |             | Connects coder board to interface board              |              |
| J6         |                   | USB connector                              |             | Connects front USB socket                            |              |

10.1.5 CODER

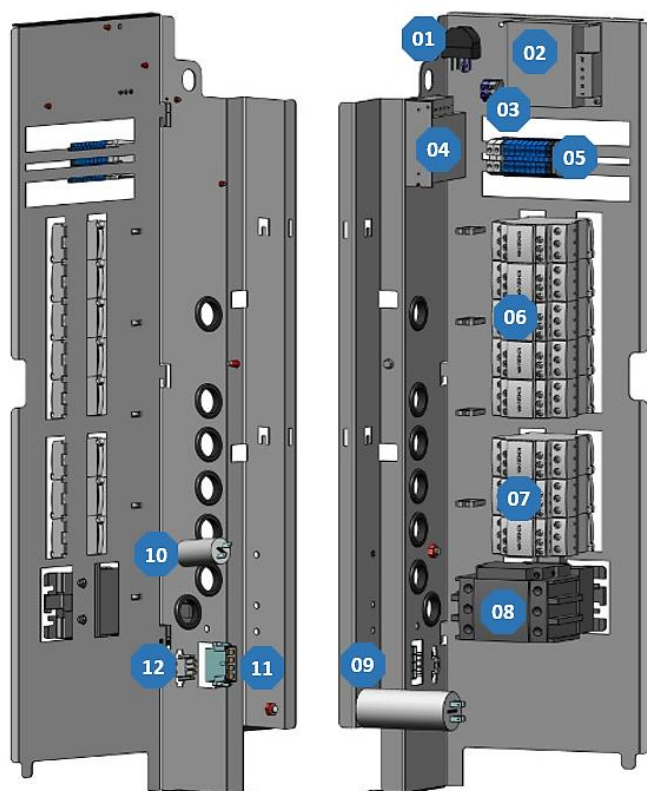


| Connectors | Nber of terminals | Connectors type                         | Destination | Function of the destination elements        | Measurements |
|------------|-------------------|-----------------------------------------|-------------|---------------------------------------------|--------------|
| J1         |                   | 10-way ribbon cable 1.27mm pitch AWG 28 |             | Connects coder board to the interface board |              |

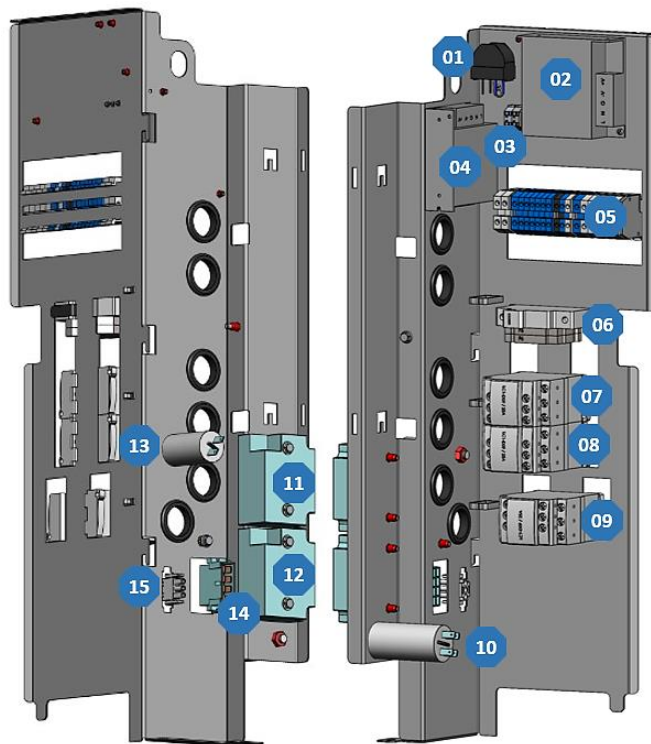


## 10.2 ELECTRIC BOARDS

Electric ovens



Gas ovens



Electric ovens

| Item | Ref.* | Description                               | Functions                                                            |
|------|-------|-------------------------------------------|----------------------------------------------------------------------|
| 1    | La    | EMC filter                                | Limits electromagnetic interference                                  |
| 2    | Ta    | Switching power supply                    | Supplies 24Vdc to services (lighting, In valve solenoid, grease gun) |
| 3    | Xe    | Lighting terminal block                   | Connects LED strips for oven lighting                                |
| 4    | Tc    | Switching power supply                    | Supplies 24Vdc to the Main board                                     |
| 5    | X     | Terminal block (Xa, Xb, X+, X-, Xm0, Xm1) | Connects the various power supplies                                  |
| 6    | Kr    | Convection heat control contactor         | Supplies the heating elements with convection heat                   |
| 7    | Kg    | Steam generator heating contactor         | Supplies steam generator immersion heaters                           |
| 8    | Kp    | Power contactor                           | Controls power to the oven                                           |
| 9    | Cvm   | Cooling fan                               | Starts the cooling fan                                               |
| 10   | Cpl   | Wash pump capacitor                       | Starts the wash pump                                                 |
| 11   | Xmv   | Fan motor connector                       | Connects the fan motor to the board                                  |
| 12   | Xpl   | Wash pump connector                       | Connects the wash pump to the board                                  |

\* References on electrical diagrams.

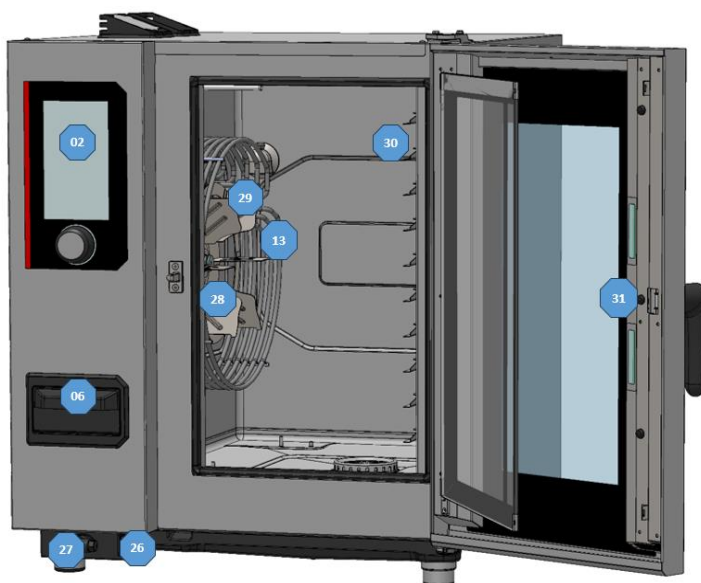
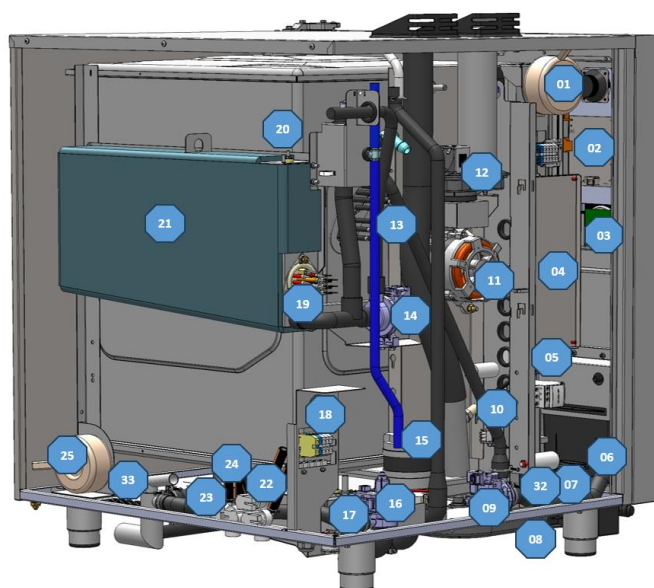
Gas ovens

| Item | Ref.* | Description                               | Functions                                                                                |
|------|-------|-------------------------------------------|------------------------------------------------------------------------------------------|
| 1    | La    | EMC filter                                | Limits electromagnetic interference                                                      |
| 2    | Ta    | Switching power supply                    | Supplies 24Vdc to services (lighting, In valve solenoid, grease gun)                     |
| 3    | Xth   | Lighting terminal block                   | Connects LED strips for oven lighting                                                    |
| 4    | Tc    | Switching power supply                    | Supplies 24Vdc to the Main board                                                         |
| 5    | X     | Terminal block (Xa, Xb, X+, X-, Xm0, Xm1) | Connects the various power supplies                                                      |
| 6    | F     | Protections (Ftco, Ftvb, Ftmv)            | Protects the transformer and fan motor outputs (US model only)                           |
| 7    | Kr    | Convection heating control switch         | Controls the convection heater burner control board (1 or 2 depending on the oven model) |
| 8    | Kg    | Steam generator contactor                 | Controls the steam burner regulation board                                               |
| 9    | Kp    | Power contactor                           | Controls power to the oven                                                               |
| 10   | Cm    | Cavity fan capacitor                      | Starts the cavity ventilation motor                                                      |
| 11   | Ear   | Convection heating ignition transformer   | Ignites the convection burner electrode (1 or 2 depending on the oven model)             |
| 12   | Eag   | Steam generator ignition transformer      | Ignites the steam generator burner electrode                                             |
| 13   | Cpn   | Wash pump capacitor                       | Starts the wash pump                                                                     |
| 14   | Xm    | Fan motor connector                       | Connects the fan motor to the board                                                      |
| 15   | Xpn   | Wash pump connector                       | Connects the wash pump to the board                                                      |

\* References on electrical diagrams.

## 10.3 OTHER COMPONENTS

### 10.3.1 ELECTRIC OVENS



| Item                            | Ref.*                         | Description                                          | Functions                                                                                                                                            |
|---------------------------------|-------------------------------|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                               | Tco                           | Control auto transformer                             | (On certain models only) Ensures that customer voltage can be matched to oven operating voltages                                                     |
| 2                               | Ai                            | Interface board                                      | Human-machine interface                                                                                                                              |
| 3                               | Ac                            | Encoder board                                        | Human-machine interface                                                                                                                              |
| 4                               | Ar                            | Main board                                           | Control all oven components                                                                                                                          |
| 5                               | -                             | Electrical board                                     | Provides the link between Main board commands and the functions of external components                                                               |
| 6                               | -                             | Descaling box                                        | Contains descaling powder                                                                                                                            |
| 7                               | Mt1-2                         | Technical fan                                        | Ensure forced ventilation of the technical compartment                                                                                               |
| 8                               | -                             | Spray hose reel                                      | Contains spray hose reel                                                                                                                             |
| 9                               | Mdg                           | Steam generator descaling pump                       | Ensures circulation of steam generator descaling agent                                                                                               |
| 10                              | Shu                           | Humidity sensor                                      | Humidity control                                                                                                                                     |
| 11                              | M1                            | Cavity fan motor                                     | Ensures turbine rotation                                                                                                                             |
| 12                              | Lo                            | Air inlet valve                                      | Controls air inlet valve movements                                                                                                                   |
| 13                              | Rc                            | Convection heating elements                          | Heats the inside of the cavity (several depending on model)                                                                                          |
| 14                              | Mvg                           | Steam generator drain pump                           | Drain water from steam generator                                                                                                                     |
| 15                              | Mpn                           | Cleaning pump                                        | Ensures water circulation during cleaning phases                                                                                                     |
| 16                              | Mvm                           | Cavity drain pump                                    | Ensures the draining of liquid elements contained in the cavity                                                                                      |
| 17                              | Bnl                           | Clean box water level probe                          | Controls water level in clean box                                                                                                                    |
| 18                              | Xp                            | Power terminal block                                 | Allows the oven to be connected to the customer's electrical network                                                                                 |
| 19                              | Rg + Bg                       | Steam generator immersion heater + Temperature probe | Heats the water contained in the steam generator, the sensor controls the water temperature in the steam generator (safety and regulation circuits). |
| 20                              | Bnc                           | Steam generator water level probe                    | Controls water level in steam generator                                                                                                              |
| 21                              | -                             | Steam generator                                      | Produce steam                                                                                                                                        |
| 22                              | Ycool - Yboiler<br>- Ydescal. | Triple solenoid valve                                | Controls filtered water supply cooling, steam generator filling and descaling                                                                        |
| 23                              | Yspray - Ycond                | Double solenoid valve                                | Controls unfiltered water inlet for spray hose and condenser                                                                                         |
| 24                              | -                             | Clean box                                            | Collects liquid elements contained in the cavity                                                                                                     |
| 25                              | Tmv                           | Cavity fan motor autotransformer                     | (On some models only) Adapts customer voltage to the voltage used by the cavity fan motor                                                            |
| 26                              | -                             | USB socket                                           | Allows connection of a USB key for updates, backups, etc.                                                                                            |
| 27                              | -                             | Spray hose                                           | Cleans the oven                                                                                                                                      |
| 28                              | Ba                            | Cavity temperature probe                             | Controls oven cavity temperature (safety circuits and regulation)                                                                                    |
| 29                              | M1                            | Fan                                                  | For even heat distribution                                                                                                                           |
| 30                              | Bsc                           | 3-point food core probe                              | Allows food temperature to be taken                                                                                                                  |
| 31                              | Ee1 – Ee2                     | LED strips                                           | Provide interior oven lighting (number depends on model)                                                                                             |
| <b>Grease collection option</b> |                               |                                                      |                                                                                                                                                      |
| 32                              | P                             | Pressure switch                                      | Check no over pressure in the circuit.                                                                                                               |
| 33                              | Mpg                           | Grease pump                                          | Drain grease from the cavity.                                                                                                                        |

\*References on electrical diagrams.

## 10.3.2 GAS OVENS



| Item                            | Ref.*                      | Description                                                      | Functions                                                                                        |
|---------------------------------|----------------------------|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| 1                               | Tco                        | Control auto transformer                                         | (On certain models only) Ensures that customer voltage can be matched to oven operating voltages |
| 2                               | Ai                         | Interface board                                                  | Human-machine interface                                                                          |
| 3                               | Ac                         | Encoder board                                                    | Human-machine interface                                                                          |
| 4                               | Ar                         | Main board                                                       | Controls all oven components                                                                     |
| 5                               | -                          | Descaling box                                                    | Contains descaling powder                                                                        |
| 6                               | Mt1                        | Technical fan                                                    | Ensures forced ventilation of the technical compartment                                          |
| 7                               | -                          | Spray hose reel                                                  | Contains spray hose reel                                                                         |
| 8                               | Mdg                        | Steam generator descaling pump                                   | Ensures circulation of steam generator descaling agent                                           |
| 9                               | Shu                        | Humidity sensor                                                  | Humidity control                                                                                 |
| 10                              | -                          | Electrical board                                                 | Provides the link between Main board commands and the functions of external components           |
| 11                              | M1                         | Cavity fan motor                                                 | Ensures turbine rotation                                                                         |
| 12                              | Lo                         | Air inlet valve                                                  | Controls air inlet valve movements                                                               |
| 13                              | Mbr                        | Convection-heating burner motor                                  | Supplies oxygen to the flame                                                                     |
| 14                              | Mbg                        | Steam generator burner motor                                     | Supplies oxygen to the flame                                                                     |
| 15                              | Avr-1                      | Connection box of solenoid valve for convection gas heating      | Controls the solenoid valve for the gas supply to the convection-heating burner                  |
| 16                              | Mpn                        | Cleaning pump                                                    | Ensures water circulation during cleaning phases                                                 |
| 17                              | Mvm                        | Cavity drain pump                                                | Ensures the draining of liquid elements contained in the cavity                                  |
| 18                              | Bnl                        | Clean box water level probe                                      | Controls water level in clean box                                                                |
| 19                              | Avs                        | Connection box of solenoid valve for steam generator gas control | Controls the solenoid valve of the gas supply to the steam generator burner                      |
| 20                              | Xp                         | Power terminal block                                             | Allows the oven to be connected to the customer's electrical network                             |
| 21                              | Ycool - Yboiler - Ydescal. | Triple solenoid valve                                            | Controls filtered water supply cooling, steam generator filling and descaling                    |
| 22                              | Yspray - Ycond             | Double solenoid valve                                            | Controls infiltrated water inlet for spray hose and condenser                                    |
| 23                              | -                          | Clean box                                                        | Collects liquid elements contained in the cavity                                                 |
| 24                              | Mvg                        | Steam generator drain pump                                       | Drain water from steam generator                                                                 |
| 25                              | Bg                         | Steam generator temperature probe                                | Controls temperature of the water in the steam generator (safety circuit and regulation)         |
| 26                              | Bnc                        | Steam generator level probe                                      | Controls water level in steam generator                                                          |
| 27                              | -                          | Steam generator                                                  | Produce steam                                                                                    |
| 28                              | Tmv                        | Cavity fan motor autotransformer                                 | (On some models only) Adapts customer voltage to the voltage used by the cavity fan motor        |
| 29                              | -                          | USB socket                                                       | Allows connection of a USB key for updates, backups, etc.                                        |
| 30                              | -                          | Spray hose                                                       | Cleans the oven                                                                                  |
| 31                              | Ba                         | Cavity temperature probe                                         | Controls oven cavity temperature (safety circuit and regulation)                                 |
| 32                              | M1                         | Fan                                                              | For even heat distribution                                                                       |
| 33                              | -                          | Gas exchanger                                                    | Heats the oven interior                                                                          |
| 34                              | Bsc                        | 3-point food core probe                                          | Allows food temperature to be taken                                                              |
| 35                              | Ee1, Ee2                   | LED strips                                                       | Provide interior oven lighting (number depends on model)                                         |
| <b>Grease collection option</b> |                            |                                                                  |                                                                                                  |
| 32                              | P                          | Pressure switch                                                  | Check no over pressure in the circuit.                                                           |
| 33                              | Mpg                        | Grease pump                                                      | Drain grease from the cavity.                                                                    |

\*References on electrical diagrams.

## 11. RECOMMENDED AND EMERGENCY SPARE PARTS

| Code   | Vulcan Code | Description                                                      | Category         |
|--------|-------------|------------------------------------------------------------------|------------------|
| 145587 | 00-977003   | Drive shaft gasket + wear ring                                   | Wearing Part     |
| 147147 | 00-978115   | 120W UL Motor service kit + ring + gasket                        | Recommended Part |
| 148885 | 00-978275   | Arched ignition electrode                                        | Wearing Part     |
| 148886 | 00-978276   | Straight Ionisation electrode                                    | Wearing Part     |
| 148889 | 00-978277   | Flame control electrode                                          | Recommended Part |
| 159005 | 00-978291   | ICS24-61E - Service Kit Round heating element 11.2kW 230/240V    | Recommended Part |
| 159007 | 00-978292   | ICS24-6~102E - Service Kit Round heating element 23.5kW 230/240V | Recommended Part |
| 159008 | 00-978293   | ICS24-101E - Service Kit Round heating element 19.6kW 230/240V   | Recommended Part |
| 159009 | 00-978294   | ICS24-102E - Service Kit Round heating element 15.2kW 230/240V   | Recommended Part |
| 159010 | 00-978295   | ICS24-61E - Service Kit Round heating element 10.3kW 208V        | Recommended Part |
| 159012 | 00-978296   | ICS24-6~102E - Service Kit Round heating element 21.6kW 208V     | Recommended Part |
| 159013 | 00-978308   | ICS24-101E - Service Kit Round heating element 18kW 208V         | Recommended Part |
| 159014 | 00-978298   | ICS24-102E - Service Kit Round heating element 14kW 208V         | Recommended Part |
| 159015 | 00-978299   | ICS24-61E - Service Kit Round heating element 10.3kW 277V        | Recommended Part |
| 159017 | 00-978300   | ICS24-6~102E - Service Kit Round heating element 21.6kW 277V     | Recommended Part |
| 159018 | 00-978301   | ICS24-101E - Service Kit Round heating element 18.0kW 277V       | Recommended Part |
| 159019 | 00-978302   | ICS24-102E - Service Kit Round heating element 14kW 277V         | Recommended Part |
| 159022 | 00-978303   | ICS24-61E - Service Kit Immersion heater 9.8kW 230/240V          | Recommended Part |
| 159023 | 00-978304   | ICS24-6~10E - Service Kit Immersion heater 19.1kW 230/240V       | Recommended Part |
| 159024 | 00-978305   | ICS24-61E - Service Kit Immersion heater 9kW 208V                | Recommended Part |
| 159025 | 00-978306   | ICS24-6&10E Service Kit Immersion heater 17.5kW 208V             | Recommended Part |
| 159026 | 00-978307   | ICS24-61E - Service Kit Immersion heater 9kW 277V                | Recommended Part |
| 159027 | 00-978308   | ICS24-6~10E - Service Kit Immersion heater 17.5kW 277V           | Recommended Part |
| 159028 | 00-978309   | ICS24-6&10E - Service Kit Temperature sensor                     | Recommended Part |
| 159030 | 00-978311   | ICS24 - Service Kit Ambient sensor                               | Recommended Part |
| 159032 | 00-978313   | ICS24 GN21 - Service Kit Motor                                   | Recommended Part |
| 159046 | 00-978325   | ICS24-G- Service kit Gas fan NG40                                | Recommended Part |
| 159048 | 00-978270   | ICS24-61 - Service Kit Core temperature probe                    | Recommended Part |
| 159049 | 00-978271   | ICS24-102 - Service Kit Core temperature probe                   | Recommended Part |
| 159050 | 00-978272   | ICS24-62&101 - Service Kit Core temperature probe                | Recommended Part |
| 159053 | 01-556342   | IC24-61&101 - Service kit for descaling pump                     | Recommended Part |
| 159054 | 01-556343   | IC24-62&102 - Service kit for descaling pump                     | Recommended Part |
| 159060 | 01-556309   | ICS24 - Service kit Fuses UL                                     | Recommended Part |
| 159064 | 01-556328   | Kit after-sales service pressure switch                          | Recommended Part |
| 159065 | 01-556370   | ICS24-61&101 - Service Kit TPE-S AL Transparent pipe             | Wearing Part     |
| 159066 | 01-556371   | ICS24-62&102 - Service Kit TPE-S AL Transparent pipe             | Wearing Part     |
| 300697 | 00-978061   | Three-pole 25A 230V 50/60 Hz contactor                           | Recommended Part |
| 300698 | 00-977007   | Three-pole 32A 230V 50/60 Hz contactor                           | Recommended Part |
| 300699 | 00-977375   | Three-pole 40A 230V 50/60 Hz contactor                           | Recommended Part |
| 300702 | 00-978065   | Tree-pole 80A 230V 50/60 HZ contactor                            | Recommended Part |
| 300769 | 00-977008   | Anti-interference relay                                          | Recommended Part |
| 300787 | 00-977009   | Ultra fast fuse 0.2A 250V 5 x 20                                 | Recommended Part |
| 300793 | 00-977014   | 600VAC fuse 10A 10.3 x 38.1                                      | Recommended Part |
| 300798 | 00-978062   | Three-pole contactor 125A 230V 50/60 HZ                          | Recommended Part |
| 300799 | 00-978064   | Block RC LA4DA2U                                                 | Recommended Part |
| 300801 | 00-978059   | Glass fuse 4A                                                    | Recommended Part |
| 300802 | 01-556134   | Integrated switching power supply                                | Recommended Part |
| 300805 | 00-978339   | ICS24 - Door reed                                                | Recommended Part |
| 300806 | 00-978340   | ICS24 - Door reed                                                | Recommended Part |
| 301514 | 00-978341   | ICS24-6&10E - Boiler level sensor                                | Recommended Part |
| 301515 | 00-978342   | ICS24 - Humidity probe                                           | Recommended Part |
| 301519 | 00-978345   | ICS24 - Wash box level probe                                     | Recommended Part |
| 301520 | 00-978346   | ICS24-102E - Boiler level sensor                                 | Recommended Part |
| 304296 | 00-977018   | Condenser 12.5µf                                                 | Recommended Part |
| 304314 | 01-556135   | Grease pump and fitting for hose diameter13                      | Recommended Part |
| 304317 | 00-978350   | ICS24 61E - Fan wheel                                            | Recommended Part |
| 304321 | 00-978351   | ICS24 - Descaling pump 120V UL 60HZ 20L/min                      | Recommended Part |
| 304322 | 00-978352   | ICS24 - Drain pump wash box 120V UL 60HZ 20L/min                 | Recommended Part |
| 304323 | 00-978353   | ICS24 - Pump 120V UL 60HZ 20L/min                                | Recommended Part |
| 304326 | 00-978354   | ICS24 GN21 - Capacitor 25µ                                       | Recommended Part |
| 304328 | 00-978355   | ICS24 61G 101E - Fan wheel 320                                   | Recommended Part |
| 304329 | 00-978356   | ICS24 62E 101G - Fan wheel 340                                   | Recommended Part |
| 304330 | 00-978357   | ICS24 62G 102E - Fan wheel 370                                   | Recommended Part |
| 304331 | 01-556310   | ICS24 102G - Fan wheel 390                                       | Recommended Part |
| 304334 | 00-978358   | ICS24 - Fan UL 230V 120 x 120 x 38 mm                            | Recommended Part |
| 308353 | 00-978370   | ICS24 - Switching power supply 24V 35W                           | Recommended Part |
| 309407 | 00-977024   | Fuse 3.15 Amps                                                   | Recommended Part |
| 309608 | 00-978132   | Filter with connection for gas oven                              | Recommended Part |
| 309714 | 00-978375   | FastPad 3 Interface Unit                                         | Recommended Part |
| 309716 | 00-978376   | FastPad 3 Illuminated Optical Encoder                            | Recommended Part |
| 309717 | 00-978377   | FastPad 3 Gas board                                              | Recommended Part |

| Code   | Vulcan Code           | Description                                  | Category         |
|--------|-----------------------|----------------------------------------------|------------------|
| 309718 | 00-978378             | FastPad 3 Humidity board                     | Recommended Part |
| 309719 | 00-978379             | Led Strip 4000K 24V                          | Recommended Part |
| 309720 | 00-978380             | Automate board + Humidity board              | Recommended Part |
| 309725 | 00-978383             | SELF common mode 2x10                        | Recommended Part |
| 310356 | 00-978145             | Security box                                 | Recommended Part |
| 310358 | 00-978386             | Electromagnet GY030 24V                      | Recommended Part |
| 311356 | 00-977221             | LED strip label                              | Wearing Part     |
| 311361 | 00-977218             | LED strip protective film                    | Recommended Part |
| 314396 | 00-978083             | UL Wash pump                                 | Recommended Part |
| 316192 | 01-556137             | Transparent TPE-S AL Hose 12.7 x 20.1mm      | Wearing Part     |
| 366068 | 00-978078 / 00-978096 | Transparent silicone tube                    | Wearing Part     |
| 366572 | 00-977033             | Door stop                                    | Wearing Part     |
| 366683 | 00-978139             | Outlet seal exchanger 6/10 levels            | Wearing Part     |
| 366685 | 00-978152             | Gas fan gasket                               | Wearing Part     |
| 366688 | 01-556144             | FKM gasket 17,12x2,62mm                      | Wearing Part     |
| 366698 | 00-978432             | ICS24-61 - Cooking cabinet gasket            | Wearing Part     |
| 366699 | 00-978433             | ICS24-62 - Cooking cabinet gasket            | Wearing Part     |
| 366700 | 00-978434             | ICS24-101 - Cooking cabinet gasket           | Wearing Part     |
| 366701 | 00-978435             | ICS24-102 - Cooking cabinet gasket           | Wearing Part     |
| 366711 | 00-978441             | ICS24 - Gasket In flap                       | Wearing Part     |
| 366712 | 00-978442             | ICS24-GN11E - Immersion heater gasket        | Wearing Part     |
| 384183 | 00-977034             | Door closure mechanism                       | Recommended Part |
| 384677 | 00-977035             | Moulded door catch                           | Wearing Part     |
| 407002 | 00-978066             | Anti-parasite module                         | Recommended Part |
| 408402 | 00-978136             | Gas ignition                                 | Recommended Part |
| 408407 | 00-978511             | Auto Transformer 415 VA                      | Recommended Part |
| 416003 | 00-978513             | ICS24 - Hand shower kit                      | Wearing Part     |
| 468105 | 00-978545             | ICS24 - Sub-assembly UL 2-way solenoid valve | Recommended Part |
| 468107 | 00-978546             | ICS24 - Sub-assembly UL 3-way solenoid valve | Recommended Part |

## 12. COMBUSTION GAS ANALYSIS PROCEDURE

### WHO (can carry out this procedure):

Expert Technician (Trained on Combis – Trained for this Procedure)

### EQUIPMENT (tool required):

Combustion Analyzer, complying with the local regulations, and:

- Analyzer technology should be with onboard CO<sub>2</sub> probe (direct measure)
- If analyzer technology doesn't have a CO<sub>2</sub> probe (%CO<sub>2</sub> = calculation), check that the correct gas has been set in the analyzer, for the measure (mandatory for correct calculation)

### WHEN (to do this procedure):

To switch from one gas to another

After changing Key Gas components as: Burner, Valve, Motor, Jet and exchanger

### Procedure:

**1** PARAMETERS

OVEN : Serial N° ITW-0000  
Brand: Bormet  
Model: 100w. CH 1/L  
Energy: gas  
Voltage: 400V  
Frequency: 50Hz  
Boiler: With recycling  
Cleaning type: With recycling  
Descaling: Humidity sensor: Greenair collection:

INLETS diagram OUTLETS diagram  
HYDRAULICS diagram CO<sub>2</sub> % & adjustment  
ERROR: troubleshooting ERROR

COUNTERS stored by local electronics  
DESCALING / 49.58  
TECHNICAL DATA

**2** Are you sure you want to start CO<sub>2</sub> control ?

**3** CO<sub>2</sub> CONTROL  
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- » From the "Home" menu screen, select "Settings" button.
- » The screen displays the "Parameters" menu with the "User" tab selected.
- » Select "Service" tab.
- » The PIN code identification pop-up appears.
- » Enter the PIN code (level 7) to access "Service" parameters (► [Settings](#) - PIN Codes).
- » Confirm by pressing "✓" icon. If the code is correct, access to the screen is authorised; if not, return to entering the PIN code.
- » The screen displays the "Parameters" menu with the "Service" tab displayed.
- » Press "CO<sub>2</sub> control & adjustment" button.
- » Confirm by pressing « ✓ » icon.
- » The "CO<sub>2</sub> control" screen appears.
- » Verify gas type matches the oven's supply gas.
- » Start test by pressing the "Start" button.
- » Place probe of the gas testing appliance in the cooking cavity flue gas chimney.
- » Open the oven door.
- » Press "Continue" button.
- » Follow the information displayed on the oven screen and confirm by pressing « ✓ » icon if the measurement values are correct.
- » The percentage of CO<sub>2</sub> measured must correspond within +/- 0.2% to the required value for the gas type in the table below.
- » Each check is performed on 3 measurement readings.

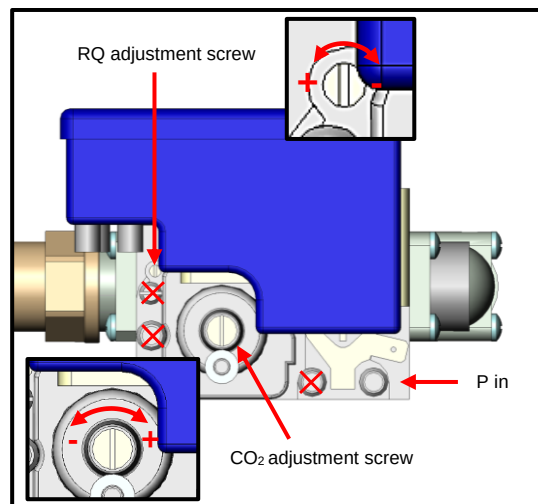
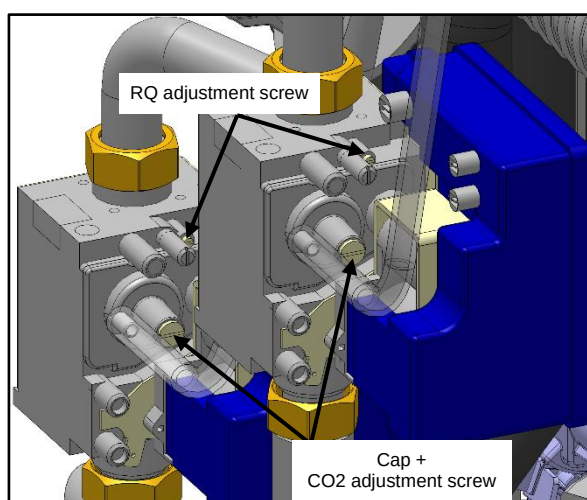
| Burner<br>Convection heat | CO <sub>2</sub> (%) – Low speed |           |           |           |
|---------------------------|---------------------------------|-----------|-----------|-----------|
|                           | 61                              | 62        | 101       | 102       |
| Gas A                     | 10.4 ±0.2                       | 10.7 ±0.2 | 10.1 ±0.2 | 10.0 ±0.2 |
| Gas E                     | 11.5 ±0.2                       | 11.5 ±0.2 | 11.5 ±0.2 | 11.7 ±0.2 |

| Burner<br>Convection heat | CO <sub>2</sub> (%) – High speed |           |           |           |
|---------------------------|----------------------------------|-----------|-----------|-----------|
|                           | 61                               | 62        | 101       | 102       |
| Gas A                     | 10.3 ±0.2                        | 10.4 ±0.2 | 9.9 ±0.2  | 10.1 ±0.2 |
| Gas E                     | 11.5 ±0.2                        | 11.8 ±0.2 | 11.6 ±0.2 | 11.8 ±0.2 |

| Burner (Generator)<br>Steam heat | CO <sub>2</sub> (%) – Low speed |           |           |           |
|----------------------------------|---------------------------------|-----------|-----------|-----------|
|                                  | 61                              | 62        | 101       | 102       |
| Gas A                            | 10.6 ±0.2                       | 10.4 ±0.2 | 9.5 ±0.2  | 9.5 ±0.2  |
| Gas E                            | 11.4 ±0.2                       | 11.7 ±0.2 | 10.9 ±0.2 | 11.7 ±0.2 |

| Burner (Generator)<br>Steam heat | CO <sub>2</sub> (%) – High speed |           |           |           |
|----------------------------------|----------------------------------|-----------|-----------|-----------|
|                                  | 61                               | 62        | 101       | 102       |
| Gas A                            | 10.2 ±0.2                        | 10.3 ±0.2 | 9.7 ±0.2  | 9.6 ±0.2  |
| Gas E                            | 11.6 ±0.2                        | 11.4 ±0.2 | 11.1 ±0.2 | 11.7 ±0.2 |

- » "If the percentage of CO<sub>2</sub> measured does not correspond to that requested for the gas used in the table above, adjust the setting screws.
- » Remove the left side panel to access the gas valves (► [Access to components](#) – Left-hand side panel).
- » Adjust the CO<sub>2</sub> adjustment screw on the gas valve to set the CO<sub>2</sub> to « Low speed »:
  - Remove the protective cap from the adjustment screw
  - Adjust the setting by screwing/unscrewing the screw using a 4mm Allen key or Torx T25, **a maximum of one turn at a time** (1% = 1 turn).
  - » Turn clockwise to increase the CO<sub>2</sub> level and anticlockwise to decrease the CO<sub>2</sub> level.
  - After adjustment replace the protective cap.
- » Adjust the RQ adjustment screw on the gas valve to set the CO<sub>2</sub> to « High speed »:
  - Adjust the setting by screwing/unscrewing the screw using a 2.5mm Allen key or Torx T10, **a maximum of a quarter turn at a time**.
  - » Turn clockwise to decrease the CO<sub>2</sub> level and anticlockwise to increase the CO<sub>2</sub> level.



- » Follow "step by step" the actions displayed on the oven screen, validating if the measurement values are correct at each step up to step 9.
- » Place the probe of the gas testing appliance in the steam generator flue gas chimney.
- » Close the oven door.
- » Press the "Continue" button.
- » Follow the information displayed on the oven screen and confirm by pressing the « ✓ » icon if the measurement values are correct. If not, adjust the RQ or/and CO<sub>2</sub> adjustment screw on the corresponding gas valve, then confirm by pressing the « ✓ » icon.
- » When the display shows "Full control / adjustment achieved", press "End" to return to the previous screen.

13. CONTROL OF THE ELECTRODES (GAS BURNER)



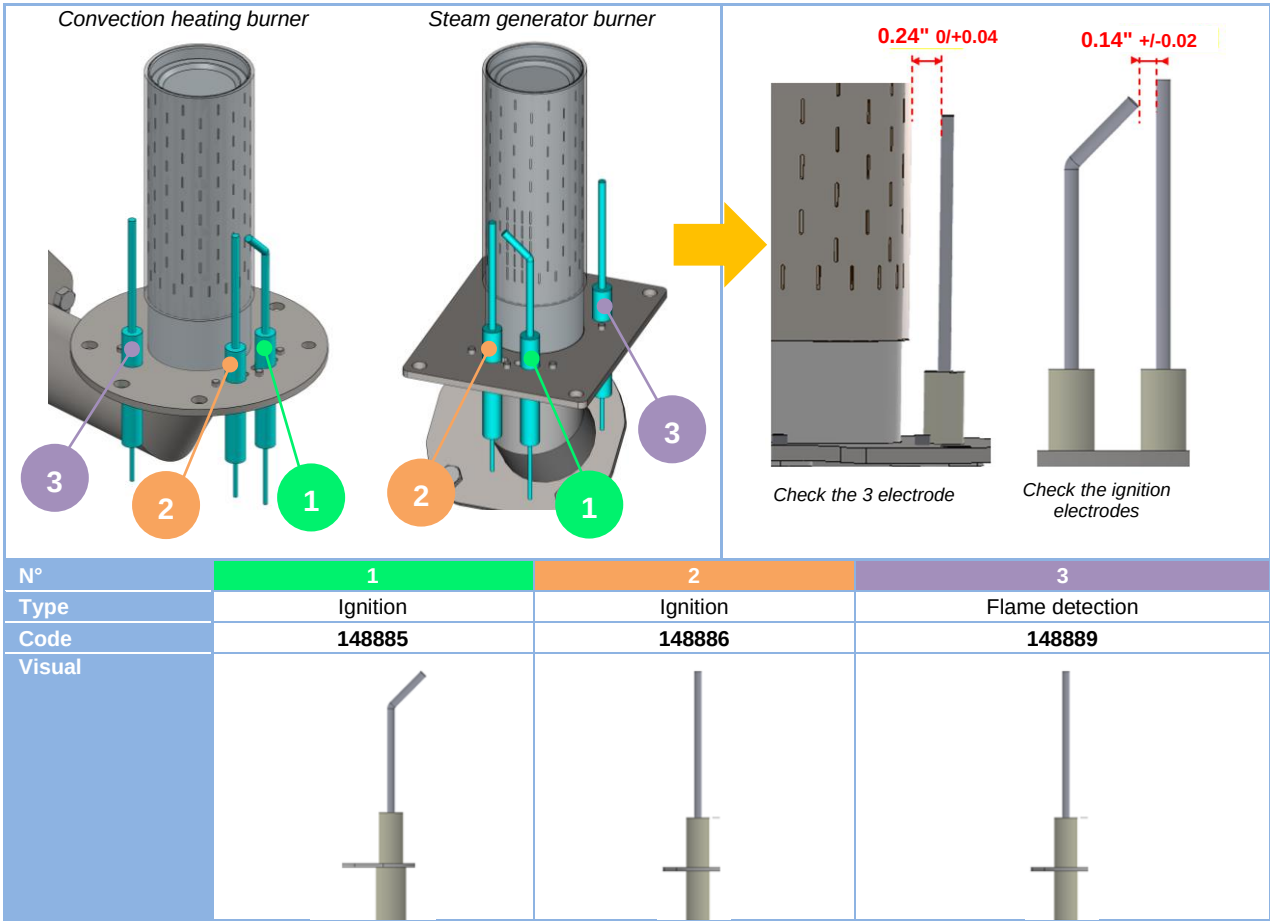
**WHO (can carry out this procedure):**  
Expert Technician (Trained on Combis – Trained for this Procedure)

**EQUIPMENT (tool required):**  
- A rod / gauge by 0.24" diameter for the 3 electrodes (detection and flame detection).  
- A rod / gauge by 0.12" (passes) and 0.16" (doesn't pass) diameters for ignition electrodes.

**WHEN (to do this procedure):**  
In case of unusual noise from burners (loud ignition, detonation, etc.),

Procedure:

- » Record the noise,
- » Note the Serial Number (see data plate),
- » Remove the burner and control the position of ignition and flame detection electrodes (see drawing below):
  - A wrong electrodes' adjustment is the main reason to have abnormal noise.
  - No need to check the combustion (except after changing some gas circuit components) or, worse, change the combustion settings (screw ...).
- » Before changing anything in the Electrodes positions/ adjustments, take picture and measure the related positions (2 dimensions in the drawing bellow), and note any potential visible issue (deposits? ...).
- » Proceed to the setting / adjustment of the electrodes if out of the tolerances (see drawing). Change the electrodes if needed.



- » Reassemble the burner / gas circuit and validate that the noise problem is resolved.
- » Send all information to TECHNICAL SUPPORT: Serial Number, Gas & pressure, Noise record, setting before any change, settings after change if needed ... and global validation.



## 14. CHANGING THE EQUIPMENT FROM ONE GAS TO ANOTHER



The change of gas type can only be carried out by a technician authorised and trained by manufacturer, or by our local representative.

Before any intervention, check with the owner which gas is currently in use in the kitchen.

Ensure that you are equipped with suitable measuring instruments (product analysis, gas water column pressure gauge, gas leak detector etc.) and that they are in full working order. Without these instruments it is prohibited to carry out any gas-related maintenance or adjustment!

**Note :** Connection/disconnection of the gas supply, as well as any maintenance or interventions are subject to the local legislation in force.

In the following chapters, the different gases are designated by their international codification:

|              |             |
|--------------|-------------|
| <b>Gas A</b> | NATURAL GAS |
| <b>Gas E</b> | PROPANE     |

### 14.1 GAS FLOW RATES AND POWERS

|                      | Gas power             |                       | Gas flow rates                                         |                                           |
|----------------------|-----------------------|-----------------------|--------------------------------------------------------|-------------------------------------------|
|                      | Gas A<br><i>Btu/h</i> | Gas E<br><i>Btu/h</i> | Gas A<br>6.5 - 10 inch w.c.<br><i>ft<sup>3</sup>/h</i> | Gas E<br>10 - 15 inch w.c.<br><i>lb/h</i> |
| VICS61G / CHEF-61G   | 58006                 | 54594                 | 53.89                                                  | 2.59                                      |
| VICS62G / CHEF-62G   | 112601                | 102364                | 104.61                                                 | 4.86                                      |
| VICS101G / CHEF-101G | 93834                 | 88716                 | 87.17                                                  | 4.21                                      |
| VICS102G / CHEF-102G | 143310                | 136144                | 133.14                                                 | 6.46                                      |

### 14.2 CHART OF GAS INJECTORS

|                                              | GAS         |       |                              | INJECTORS |               |         |
|----------------------------------------------|-------------|-------|------------------------------|-----------|---------------|---------|
|                                              | Designation |       | Pressure<br>inch w.c. (mbar) | Qty       | Ø<br>(1/100°) | Code    |
|                                              | Family      | Type  |                              |           |               |         |
| Burners<br>Convection heat and<br>Steam heat | Natural gas | Gas A | 6.5 – 10 (16 – 25)           | -         | -             | -       |
|                                              | Propane     | Gas E | 10 – 15 (25 – 38)            | 1         | 580           | 148 799 |

### 14.3 CHANGEOVER FROM ONE GAS TO ANOTHER:



**Warning: Risk of poisoning!**

When in use, connecting the wrong type of gas and/or setting the burners incorrectly can lead to a serious risk of intoxication.

Connect the appliance only to the type of gas used.

Check that the appliance settings correspond to the type and pressure of the gas in the installation.

Carry out a flue gas analysis when the appliance is commissioned for the first time.

We recommend installing a CO detector at the installation site.



The oven is equipped with 2 gas burners: one for convection heating and one for the steam generator. It is essential to analyse the combustion gases at the outlet of the two chimneys.



**Caution: Gas leaks = danger for the user!**

Check for leaks: This is a standard procedure and is your responsibility.

#### Notice

- The gas connection must be carried out by a qualified and certified gas fitter.
- Check that the appliance settings correspond to the type and pressure of the gas supplied to the installation.
- The gas connection pipe must be sized according to the nominal heat output and type of gas indicated on the nameplate. The cross-section of the gas pipe must be at least 3/4".
- Connect the appliance to the gas supply pipe using a shut-off valve to isolate the appliance from the rest of the installation.
- Flue gas extraction must comply with local regulations.
- Flue gas analysis must be carried out before commissioning and only by a technician approved by the manufacturer.
- Check the gas supply for leaks using a suitable gas detector.
- All connecting parts on the installation site must be certified for gas use (e.g. NF gas; DVGW).
- A gas appliance with a mobile base must be installed using:

*In EU:* "Flexible gas approved in accordance with the regulations in force. (eg : NF TUBOGAZ length 0.75 m, Ø 15/21 (1/2"))" without flexible coupling, to be examined periodically and replaced if necessary.

*In US:* a connector that complies with the current standard (ANSI Z21.69 - CSA 6.16 US) (standard relating to connectors for mobile gas appliances) and a quick disconnection device that complies with the current standard (ANSI Z21.41 - CSA 6.9 US) (standard relating to quick disconnection devices for use with gaseous fuel)

#### **Table of actions when switching from one gas to another:**

According to the country of installation and the category of the appliance (indicated on the firm plate), the adaptation from one gas to another may require 2 operations:

- IN:** Addition or removal of injector  
(Convection heat and steam burners (steam generator))
- RV:** Gas valve adjustment (CO<sub>2</sub> rate)

Research into the operations required to change gas:

- » On the appliance firm plate, check:
  - The category (ies) of the equipment.
  - The gas and pressure for which it is adjusted.
- » In the following chart, select
  - The country concerned.
  - The gas and the category of the appliance (previously identified)
  - The gas and the pressure for which the appliance is going to be adjusted
  - Identify the operations required when changing gas.

| Countries concerned | Category and GAS OF ORIGIN (or new gas) | NEW GAS and Category (or gas of origin) | Required operations |
|---------------------|-----------------------------------------|-----------------------------------------|---------------------|
|                     | Gas                                     | Gas                                     |                     |
| <b>US - Canada</b>  | Gas A                                   | Gas E                                   | IN + RV             |

#### **Procedure:**

Prepare your connection and check the points below:

- ✓ A shut-off valve is fitted to isolate the appliance from the rest of the installation.
- ✓ The appliance is installed in the space provided.
- ✓ The appliance is securely positioned to avoid any risk of slipping.
- ✓ The appliance settings correspond to the type and pressure of the gas supplied to the installation (► [Installation manual](#)).
- ✓ You will have the tools and measuring instruments you need for the connection (monitoring of carbon dioxide CO<sub>2</sub> and carbon monoxide CO), water column manometer, gas leak detector, etc...
- » Connect the appliance tightly to the gas supply system (follow the standards in force) (► [Installation manual](#)).
- » Remove the left-hand side panel of the oven (► [Access to components](#)).
- » Check in the table above whether it is necessary to add or remove the gas injector depending on the new gas.
- » Depending on the new gas, remove or insert the injector if necessary (► [Chart of gas injectors](#)) at the **inlet of the convection heating burner venturi and the steam burner venturi** (steam generator) (► [Gas diagram](#))
- » Check for leaks (► [Installation manual](#)):
  - Use leak detectors or spray to check the gas pipes and make sure there are no leaks.
  - Check the pressure on the gas valve on the supply side:
    - Unscrew the pressure screw by 2 to 3 turns and open the gas valve.
    - Connect the water column hose to the pressure tap and close the gas valve.
    - Monitor the water column level for 1 minute. An unchanged reading at -1 mbar is expected.
  - Check the static pressure (appliance not in operation):
    - Check the pressure using a water column.
    - The reading must be the same as or higher than the pressure specified on the nameplate.
- » Check the connection pressure/dynamic pressure (► [Installation manual](#)):
  - Connect a water column pressure gauge to the pressure tap when the burner is in operation (all gas appliances in operation, burners on).
  - The gas pressure measured in this way must be within the pressure range indicated on the nameplate for the gas used (► [Installation manual](#)).
- » Set the measuring instrument to "CO<sub>2</sub>" for a calculation result of "CO<sub>2</sub> rate in %".
- » From the "Home" menu screen, select the "Settings" button.
- » The screen displays the "Parameters" menu with the "User" tab selected.
- » Select the "Service" tab.
- » The PIN code identification pop-up appears.
- » Enter the PIN code (level 7) to access the "Service" parameters (► [Settings](#) - PIN Codes).
- » Confirm by pressing the "✓" icon. If the code is correct, access to the screen is authorised; if not, return to entering the PIN code.
- » The screen displays the "Parameters" menu with the "Service" tab displayed.
- » Press the "CO<sub>2</sub> control & adjustment" button.
- » Confirm by pressing the « ✓ » icon.
- » The "CO<sub>2</sub> control" screen appears.
- » Set up the oven with the new gas.
  - Press the gas type field.
  - » The pop-up with the list of gases appears.
  - Select the desired gas type (Gas A = GA, Gas E = GE)
  - » The gas type is changed in the field.
- » Start the test by pressing the "Start" button (► [Combustion gas analysis procedure](#)).
- » When the display shows "Full control / adjustment achieved", press "End" to return to the previous screen.
- » On the new gas plate, fill in the gas corresponding to the gas for which the appliance has been set.

|            |             |         |       |
|------------|-------------|---------|-------|
| Convection |             | Steam   |       |
| Max :      |             |         | Btu/h |
| Min :      |             |         | Btu/h |
| Gas        |             |         |       |
| Type       | Gas Natural | Propane |       |
| P (in.WC)  |             |         |       |

- » Stick the new gas plate in place.

#### 14.4 CHANGING/ADJUSTING GAS VALVE

When replacing a gas valve, it is imperative to carry out a leak check and adjust the gas valve by performing a flue gas analysis.

##### Checking for leaks ([► Installation manual](#))

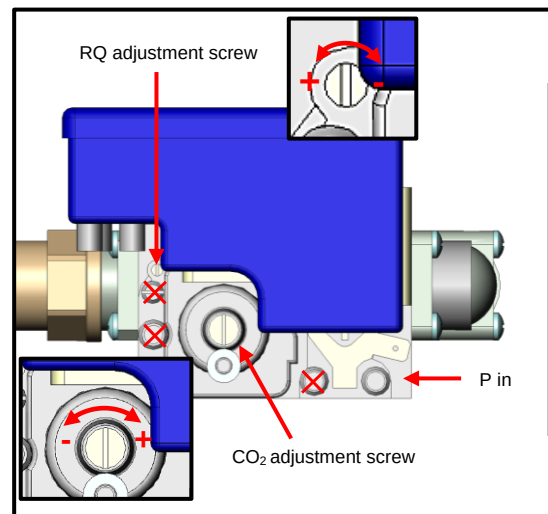
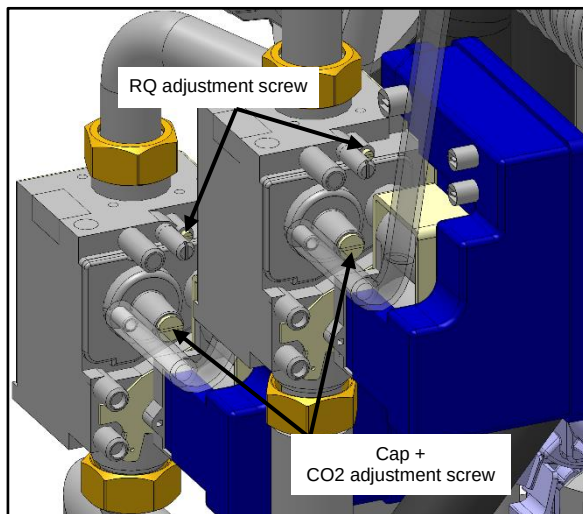
- » Use leak detectors or spray to check the gas pipes and make sure there are no leaks.
- » Check the pressure on the gas valve on the supply side:
  - Unscrew the pressure screw by 2 to 3 turns and open the gas valve.
  - Connect the water column hose to the pressure tap and close the gas valve.
  - Monitor the water column level for 1 minute. An unchanged reading at -1 mbar is expected.
- » Check the static pressure (appliance not in operation):
  - Check the pressure using a water column.
  - The reading must be the same as or higher than the pressure specified on the nameplate.
- » Check the connection pressure/dynamic pressure:
  - Connect a water column pressure gauge to the pressure tap when the burner is in operation (all gas appliances in operation, burners on).
  - The gas pressure measured in this way must be within the pressure range indicated on the nameplate for the gas used ([► Installation manual](#)).

##### Valve adjustment

MANDATORY carry out a burnt gas analysis and adjust the RQ and CO<sub>2</sub> screws of the gas valve if necessary, for a CO<150ppm

##### ([► Combustion gas analysis procedure](#)).

The evacuation of combustion gases must comply with local legislation.



## 15. CONVERSION TABLES

### 15.1 PT100 PROBE

#### PT100 probe components

Temperature probe comprises a resistance probe with the value of 100 ohms for a temperature of 0° and 138.5 ohms for a temperature of 100°C. The variation of the resistance to temperature relationship is linear. The resistance reading is directly proportional to the measured temperature. The probe is not polarised. The probe can be extended using copper wire.

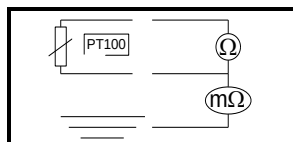
| Temperature in °F relative to Resistance in Ω for PT100 probe |        |        |        |        |        |        |        |        |        |        |
|---------------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| °F                                                            | 0      | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      |
| 30                                                            |        |        | 100.00 | 100.22 | 100.43 | 100.65 | 100.87 | 101.09 | 101.30 | 101.52 |
| 40                                                            | 101.74 | 101.95 | 102.17 | 102.39 | 102.60 | 102.82 | 103.04 | 103.25 | 103.47 | 103.69 |
| 50                                                            | 103.90 | 104.12 | 104.34 | 104.55 | 104.77 | 104.98 | 105.20 | 105.42 | 105.63 | 105.85 |
| 60                                                            | 106.07 | 106.28 | 106.50 | 106.71 | 106.93 | 107.15 | 107.36 | 107.58 | 107.79 | 108.01 |
| 70                                                            | 108.23 | 108.44 | 108.66 | 108.87 | 109.09 | 109.30 | 109.52 | 109.73 | 109.95 | 110.17 |
| 80                                                            | 110.38 | 110.60 | 110.81 | 111.03 | 111.24 | 111.46 | 111.67 | 111.89 | 112.10 | 112.32 |
| 90                                                            | 112.53 | 112.75 | 112.96 | 113.18 | 113.39 | 113.61 | 113.82 | 114.04 | 114.25 | 114.47 |
| 100                                                           | 114.68 | 114.90 | 115.11 | 115.33 | 115.54 | 115.76 | 115.97 | 116.18 | 116.40 | 116.61 |
| 110                                                           | 116.83 | 117.04 | 117.26 | 117.47 | 117.68 | 117.90 | 118.11 | 118.33 | 118.54 | 118.76 |
| 120                                                           | 118.97 | 119.18 | 119.40 | 119.61 | 119.82 | 120.04 | 120.25 | 120.47 | 120.68 | 120.89 |
| 130                                                           | 121.11 | 121.32 | 121.53 | 121.75 | 121.96 | 122.18 | 122.39 | 122.60 | 122.82 | 123.03 |
| 140                                                           | 123.24 | 123.46 | 123.67 | 123.88 | 124.09 | 124.31 | 124.52 | 124.73 | 124.95 | 125.16 |
| 150                                                           | 125.37 | 125.59 | 125.80 | 126.01 | 126.22 | 126.44 | 126.65 | 126.86 | 127.08 | 127.29 |
| 160                                                           | 127.50 | 127.71 | 127.93 | 128.14 | 128.35 | 128.56 | 128.78 | 128.99 | 129.20 | 129.41 |
| 170                                                           | 129.62 | 129.84 | 130.05 | 130.26 | 130.47 | 130.68 | 130.90 | 131.11 | 131.32 | 131.53 |
| 180                                                           | 131.74 | 131.96 | 132.17 | 132.38 | 132.59 | 132.80 | 133.01 | 133.23 | 133.44 | 133.65 |
| 190                                                           | 133.86 | 134.07 | 134.28 | 134.50 | 134.71 | 134.92 | 135.13 | 135.34 | 135.55 | 135.76 |
| 200                                                           | 135.97 | 136.19 | 136.40 | 136.61 | 136.82 | 137.03 | 137.24 | 137.45 | 137.66 | 137.87 |
| 210                                                           | 138.08 | 138.29 | 138.51 | 138.72 | 138.93 | 139.14 | 139.35 | 139.56 | 139.77 | 139.98 |
| 220                                                           | 140.19 | 140.40 | 140.61 | 140.82 | 141.03 | 141.24 | 141.45 | 141.66 | 141.87 | 142.08 |
| 230                                                           | 142.29 | 142.50 | 142.71 | 142.92 | 143.13 | 143.34 | 143.55 | 143.76 | 143.97 | 144.18 |
| 240                                                           | 144.39 | 144.60 | 144.81 | 145.02 | 145.23 | 145.44 | 145.65 | 145.86 | 146.07 | 146.28 |
| 250                                                           | 146.49 | 146.70 | 146.91 | 147.11 | 147.32 | 147.53 | 147.74 | 147.95 | 148.16 | 148.37 |
| 260                                                           | 148.58 | 148.79 | 149.00 | 149.21 | 149.41 | 149.62 | 149.83 | 150.04 | 150.25 | 150.46 |
| 270                                                           | 150.67 | 150.88 | 151.08 | 151.29 | 151.50 | 151.71 | 151.92 | 152.13 | 152.33 | 152.54 |
| 280                                                           | 152.75 | 152.96 | 153.17 | 153.38 | 153.58 | 153.79 | 154.00 | 154.21 | 154.42 | 154.62 |
| 290                                                           | 154.83 | 155.04 | 155.25 | 155.46 | 155.66 | 155.87 | 156.08 | 156.29 | 156.49 | 156.70 |
| 300                                                           | 156.91 | 157.12 | 157.33 | 157.53 | 157.74 | 157.95 | 158.15 | 158.36 | 158.57 | 158.78 |
| 310                                                           | 158.98 | 159.19 | 159.40 | 159.61 | 159.81 | 160.02 | 160.23 | 160.43 | 160.64 | 160.85 |
| 320                                                           | 161.05 | 161.26 | 161.47 | 161.67 | 161.88 | 162.09 | 162.29 | 162.50 | 162.71 | 162.91 |
| 330                                                           | 163.12 | 163.33 | 163.53 | 163.74 | 163.95 | 164.15 | 164.36 | 164.57 | 164.77 | 164.98 |
| 340                                                           | 165.18 | 165.39 | 165.60 | 165.80 | 166.01 | 166.21 | 166.42 | 166.63 | 166.83 | 167.04 |
| 350                                                           | 167.24 | 167.45 | 167.66 | 167.86 | 168.07 | 168.27 | 168.48 | 168.68 | 168.89 | 169.09 |
| 360                                                           | 169.30 | 169.51 | 169.71 | 169.92 | 170.12 | 170.33 | 170.53 | 170.74 | 170.94 | 171.15 |
| 370                                                           | 171.35 | 171.56 | 171.76 | 171.97 | 172.17 | 172.38 | 172.58 | 172.79 | 172.99 | 173.20 |
| 380                                                           | 173.40 | 173.61 | 173.81 | 174.02 | 174.22 | 174.43 | 174.63 | 174.83 | 175.04 | 175.24 |
| 390                                                           | 175.45 | 175.65 | 175.86 | 176.06 | 176.26 | 176.47 | 176.67 | 176.88 | 177.08 | 177.29 |
| 400                                                           | 177.49 | 177.69 | 177.90 | 178.10 | 178.30 | 178.51 | 178.71 | 178.92 | 179.12 | 179.32 |
| 410                                                           | 179.53 | 179.73 | 179.93 | 180.14 | 180.34 | 180.55 | 180.75 | 180.95 | 181.16 | 181.36 |
| 420                                                           | 181.56 | 181.77 | 181.97 | 182.17 | 182.38 | 182.58 | 182.78 | 182.98 | 183.19 | 183.39 |
| 430                                                           | 183.59 | 183.80 | 184.00 | 184.20 | 184.40 | 184.61 | 184.81 | 185.01 | 185.22 | 185.42 |
| 440                                                           | 185.62 | 185.82 | 186.03 | 186.23 | 186.43 | 186.63 | 186.84 | 187.04 | 187.24 | 187.44 |
| 450                                                           | 187.65 | 187.85 | 188.05 | 188.25 | 188.45 | 188.66 | 188.86 | 189.06 | 189.26 | 189.46 |
| 460                                                           | 189.67 | 189.87 | 190.07 | 190.27 | 190.47 | 190.67 | 190.88 | 191.08 | 191.28 | 191.48 |
| 470                                                           | 191.68 | 191.88 | 192.09 | 192.29 | 192.49 | 192.69 | 192.89 | 193.09 | 193.29 | 193.49 |
| 480                                                           | 193.70 | 193.90 | 194.10 | 194.30 | 194.50 | 194.70 | 194.90 | 195.10 | 195.30 | 195.50 |
| 490                                                           | 195.71 | 195.91 | 196.11 | 196.31 | 196.51 | 196.71 | 196.91 | 197.11 | 197.31 | 197.51 |
| 500                                                           | 197.71 | 197.91 | 198.11 | 198.31 | 198.51 | 198.71 | 198.91 | 199.11 | 199.31 | 199.51 |
| 510                                                           | 199.71 | 199.91 | 200.11 | 200.31 | 200.51 | 200.71 | 200.91 | 201.11 | 201.31 | 201.51 |
| 520                                                           | 201.71 | 201.91 | 202.11 | 202.31 | 202.51 | 202.71 | 202.91 | 203.11 | 203.31 | 203.51 |
| 530                                                           | 203.71 | 203.91 | 204.11 | 204.31 | 204.51 | 204.71 | 204.90 | 205.10 | 205.30 | 205.50 |
| 540                                                           | 205.70 | 205.90 | 206.10 | 206.30 | 206.50 | 206.70 | 206.89 | 207.09 | 207.29 | 207.49 |
| 550                                                           | 207.69 | 207.89 | 208.09 | 208.29 | 208.48 | 208.68 | 208.88 | 209.08 | 209.28 | 209.48 |
| 560                                                           | 209.67 | 209.87 | 210.07 | 210.27 | 210.47 | 210.67 | 210.86 | 211.06 | 211.26 | 211.46 |
| 570                                                           | 211.66 | 211.85 | -      | -      | -      | -      | -      | -      | -      | -      |

#### How to read the chart:

To find the resistance corresponding to a temperature of 364°F.

- Find the intersection of the line 360°F and the column 4°F.
- The reading shows 169.92 Ohms.

#### Check



Check probe resistance with an ohmmeter set to 200 ohms (less than 107 ohms for 68°F).

Check the probe insulation between one of the leads and the metal part with the ohmmeter set at 20 mega ohms (a value over 15 mega ohms).

Check the continuity between the feed and the metal part of the probe.

## 15.2 CELSIUS / FAHRENHEIT TEMPERATURE

| Value in °C | Value in °F | Specific temperatures                                   |
|-------------|-------------|---------------------------------------------------------|
| 23°C        | 73°F        | Maximum cold water inlet temperature (city or softened) |
| 25°C        | 77°F        | Minimum temperature in Convection mode and Mixed mode   |
| 30°C        | 86°F        | Minimum temperature in Steam mode                       |
| 35°C        | 95°F        |                                                         |
| 40°C        | 104°F       |                                                         |
| 45°C        | 113°F       |                                                         |
| 50°C        | 122°F       |                                                         |
| 55°C        | 131°F       |                                                         |
| 60°C        | 140°F       | Maximum operating temperature for cleaning products     |
| 65°C        | 149°F       |                                                         |
| 70°C        | 158°F       |                                                         |
| 75°C        | 167°F       | Maximum electronic temperature                          |
| 80°C        | 176°F       |                                                         |
| 85°C        | 185°F       |                                                         |
| 90°C        | 194°F       |                                                         |
| 95°C        | 203°F       |                                                         |
| 100°C       | 212°F       |                                                         |
| 10°C        | 230°F       |                                                         |

| Value in °C | Value in °F | Specific temperatures                                 |
|-------------|-------------|-------------------------------------------------------|
| 120°C       | 248°F       |                                                       |
| 130°C       | 266°F       | Maximum temperature in steam mode                     |
| 140°C       | 284°F       |                                                       |
| 150°C       | 302°F       |                                                       |
| 160°C       | 320°F       |                                                       |
| 170°C       | 338°F       |                                                       |
| 180°C       | 356°F       | No-Fail mode operating temperature                    |
| 190°C       | 374°F       |                                                       |
| 200°C       | 392°F       |                                                       |
| 210°C       | 410°F       |                                                       |
| 220°C       | 428°F       |                                                       |
| 230°C       | 446°F       |                                                       |
| 240°C       | 464°F       |                                                       |
| 250°C       | 482°F       |                                                       |
| 260°C       | 500°F       |                                                       |
| 270°C       | 518°F       |                                                       |
| 280°C       | 536°F       |                                                       |
| 290°C       | 554°F       |                                                       |
| 300°C       | 572°F       | Maximum temperature in Convection mode and Mixed mode |
| 400°C       | 752°F       | Safety temperature                                    |

## 15.3 WATER HARDNESS

|                 | °dH   | °f    | °e   | ppm   | mmol/l | gr/gal | mval/kg | CaO [mg/l] | CaCO3 [mg/l] | Ca2+ [mg/l] |
|-----------------|-------|-------|------|-------|--------|--------|---------|------------|--------------|-------------|
| 1 °f (France)   | 0.56  | 1     | 0.70 | 10,0  | 0.1    | 0.584  | 0.2     | 5.60       | 10.0         | 4.00        |
| 1 °e (GB)       | 0.8   | 1.43  | 1    | 14.25 | 0.14   | 0.83   | 0.284   | 7.98       | 14.25        | 5.71        |
| 1 °dH (Germany) | 1     | 1.78  | 1.25 | 17.9  | 0.1783 | 1.042  | 0.357   | 10         | 17.85        | 7.15        |
| 1 ppm (USA)     | 0,056 | 0.1   | 0.07 | 1     | 0.01   | 0.0584 | 0.02    | 0.56       | 1.0          | 0.40        |
| 1 gr/gal (USA)  | 0.96  | 1.71  | 1.20 | 17.1  | 0.171  | 1      | 0.342   | 9.60       | 17.11        | 6.85        |
| 1 mmol/l        | 5.60  | 10.01 | 7.02 | 100.1 | 1      | 5.84   | 2       | 56.07      | 100.1        | 40.08       |
| 1 mval/kg       | 2.8   | 5.0   | 3.51 | 50    | 0.5    | 2.92   | 1       | 28.04      | 50.0         | 20.04       |

## 15.4 PRESSURE

| kPa | bar   | mbar | psi    | Inch / wc |
|-----|-------|------|--------|-----------|
| 0,1 | 0.001 | 1    | 0,0145 | 0,4019    |
| 0,2 | 0.002 | 2    | 0,0290 | 0,8037    |
| 0,3 | 0.003 | 3    | 0,0435 | 1,2056    |
| 0,4 | 0.004 | 4    | 0,0580 | 1,6075    |
| 0,5 | 0.005 | 5    | 0,0725 | 2,0093    |
| 0,6 | 0.006 | 6    | 0,0870 | 2,4112    |
| 0,7 | 0.007 | 7    | 0,1015 | 2,8131    |
| 0,8 | 0.008 | 8    | 0,1160 | 3,2149    |
| 0,9 | 0.009 | 9    | 0,1305 | 3,6168    |
| 1   | 0,01  | 10   | 0,1450 | 4,0187    |
| 2   | 0,02  | 20   | 0,2901 | 8,0373    |
| 3   | 0,03  | 30   | 0,4351 | 12,0560   |
| 4   | 0,04  | 40   | 0,5802 | 16,0746   |
| 5   | 0,05  | 50   | 0,7252 | 20,0933   |
| 6   | 0,06  | 60   | 0,8702 | 24,1119   |
| 7   | 0,07  | 70   | 1,0153 | 28,1306   |
| 8   | 0,08  | 80   | 1,1603 | 32,1492   |
| 9   | 0,09  | 90   | 1,3053 | 36,1679   |
| 10  | 0,1   | 100  | 1,4504 | 40,1865   |
| 20  | 0,2   | 200  | 2,9008 | 80,3730   |
| 30  | 0,3   | 300  | 4,3511 | 120,5595  |

| kPa  | bar | mbar  | psi      | Inch / wc |
|------|-----|-------|----------|-----------|
| 40   | 0,4 | 400   | 5,8015   | 160,7460  |
| 50   | 0,5 | 500   | 7,2519   | 200,9325  |
| 60   | 0,6 | 600   | 8,7023   | 241,1190  |
| 70   | 0,7 | 700   | 10,1527  | 281,3055  |
| 80   | 0,8 | 800   | 11,6030  | 321,4920  |
| 90   | 0,9 | 900   | 13,0534  | 361,6785  |
| 100  | 1   | 1000  | 14,5038  | 401,8650  |
| 150  | 1,5 | 1500  | 21,7557  | 602,7975  |
| 200  | 2   | 2000  | 29,0076  | 803,7300  |
| 250  | 2,5 | 2500  | 36,2595  | 1004,6625 |
| 300  | 3   | 3000  | 43,5114  | 1205,5950 |
| 350  | 3,5 | 3500  | 50,7633  | 1406,5275 |
| 400  | 4   | 4000  | 58,0152  | 1607,4600 |
| 450  | 4,5 | 4500  | 65,2671  | 1808,3925 |
| 500  | 5   | 5000  | 72,5190  | 2009,3250 |
| 550  | 5,5 | 5500  | 79,7709  | 2210,2575 |
| 600  | 6   | 6000  | 87,0228  | 2411,1900 |
| 700  | 7   | 7000  | 101,5266 | 2813,0550 |
| 800  | 8   | 8000  | 116,0304 | 3214,9200 |
| 900  | 9   | 9000  | 130,5342 | 3616,7850 |
| 1000 | 10  | 10000 | 145,0380 | 4018,6500 |