



*Confeo Premix*

# CONFEO PREMIX CONDENSING BOILER

CONFEO PREMIX P  
14/20/24/28/30/35 HM-HCH-HST

SERVICE MANUAL



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## 1.INTRODUCTION

First of all, we would like to thank you for choosing E.C.A brand. E.C.A. Confeo Premix condensing boilers have been designed to meet for an efficient, safe and comfortable central heating and hot water requirement. The Confeo Premix condensing boilers can possibly use natural gas or LPG according to the desired fuel preference. There is no standard LPG models. LPG usage is only possible after gas conversion in the field.

**HM Model (Boiler)** : Both Central Heating (CH) and Domestic Hot Water (DHW).

**HCH Model (Heat Only)** : Only for Central Heating (CH).

**HST Model (System Boiler)** : Both for Central Heating (CH) and Domestic Hot Water (DHW) with external storage tank (not included).

The assembly and usage information of 14/20/24/28/30/35 kW Confeo Premix condensing boilers are available in this manual. Detailed information have been provided in the guide regarding the technical specification of the boiler, selection of the boiler location, fitting its water, gas, flue and electric supply connections, gas conversion, maintenance information and solving of possible failures. Please carefully read the manual in order to benefit from all the features of your boiler.

**The Benchmark Checklist and Service Record Card are located at the back of the Operating Manual.**



**The Benchmark Checklist must be filled by gas safe engineer during installation. Operating Manual and Service Manual must be handed over the user for future operations.**

**Service Record Card must be filled by gas safe engineer and handed over the user after each service operation and annual Maintenance.**

### 1.1. Installer's Responsibility

The installer is responsible for the installation and initial start-up of the boiler. Instructions are given below.

- ✓ Check Operating and Service manuals and follow instructions before installation.
- ✓ Carry out installation in compliance with the prevailing legislation and standards.
- ✓ Be sure that the system is flushed and inhibitor added.
- ✓ Only gas safe engineer must operate the boiler.
- ✓ Explain the user about installation and operation of boiler.
- ✓ Fill the Commissioning Checklist.
- ✓ Give all Operating and Service manuals to user.
- ✓ The warranty certificate must be registered by gas safe engineer within 30 days after installation.

## 2.DEFINITION OF SYMBOLS







| SYMBOL   | DEFINITION           | SYMBOL        | DEFINITION  |
|--|----------------------|---------------|---|
|   | Domestic Hot Water   | ∅             | Diameter  |
|   | Gas Supply           | <b>LPG</b>    | Liquid Petroleum Gas  |
|   | Parameter Adjustment | <b>DHW</b>    | Domestic Hot Water  |
| <b>R</b>   | Reset                | <b>NTC</b>    | Negative Temperature Coefficient (sensor)                     |
|   | Winter Mode          | <b>RCD</b>    | Residual Current Device                                       |
|   | Summer Mode          | <b>ECV</b>    | Emergency Control Valve                                       |
|  | Solar Panel Mode     | <b>SEDBUK</b> | Seasonal Efficiency of Domestic Boilers in the United Kingdom |
| <b>ECO</b>   | ECO Mode             |               |   |
| <b>COMFORT</b>   | Comfort Mode         |               |   |

Table 1. Definition of Symbols and Abbreviation




| SYMBOL  | DEFINITION  |
|---|---|
|  | Indicates that the situation that can only be interfered by gas safe engineer.  |
|  | Explanation containing information that should be considered by the user.   |
|  | <b>CAUTION:</b> It means that you may suffer from material damage or slight personal injury.<br><b>DANGER:</b> It means that you may suffer from sever personal injury. |

Table 2. Definition of Symbols



### 3. TOUCH BUTTON FUNCTIONS



Figure 1

#### Button No 1: Reset Button

Main functions:

- Removing the permanent error state (EXX)
- Activating ECO mode
- Activating Comfort mode

When your device malfunctions, the error code and description will be displayed on the screen. Additionally, your device will sound a periodic warning alarm. There are two types of errors: Permanent (EXX) and Temporary (FXX). In case of a permanent error (EXX), the error needs to be resolved to remove the error code from the LCD screen, after which the device can be put back to normal operation state by pressing the “Reset” button once. In case of a temporary error (FXX), on the other hand, it is not possible to remove the error code from the LCD screen by pressing the “Reset” button. The error code on the LCD screen automatically disappears once the error is resolved. If you press the Reset Button while the device is operating in the Comfort mode, the device will switch to the Eco mode. The device will switch to the Comfort mode if you press the Reset button once again.

#### Button No 2: Domestic Hot Water Temperature Increase Button

The domestic water temperature increase button allows you to increase the domestic water temperature up to 65°C.

#### Button No 3: Central Heating Temperature Increase Button

Central heating temperature increase button allows you to increase the temperature of the heating water in the central heating up to 80°C.

#### **Button No 4: Domestic Hot Water Temperature Decrease Button**

The domestic water temperature decrease button allows you to decrease the domestic water temperature down to 30°C.

#### **Button No 5: Central Heating Temperature Decrease Button**

Central heating temperature decrease button allows you to decrease the temperature of the heating water in the central heating down to 30°C.

#### **Button No 6: On/Off and Summer/Winter Mode Selection Button**

Main functions:

- Turning the device on and off
- Selecting the summer and winter mode

#### **Button No 7: Child Lock Button**

The Child Lock is activated by pressing the Child Lock Button for 5 seconds, and none of the touch buttons on the screen functions. Pressing the Child Lock Button for 5 seconds deactivates the Child Lock.

#### **Button No 8: Central Heating Temperature Adjustment Slider Button**

The temperature of the heating water in the central heating can be adjusted between 30°C – 80°C using the central heating temperature adjustment slider button.

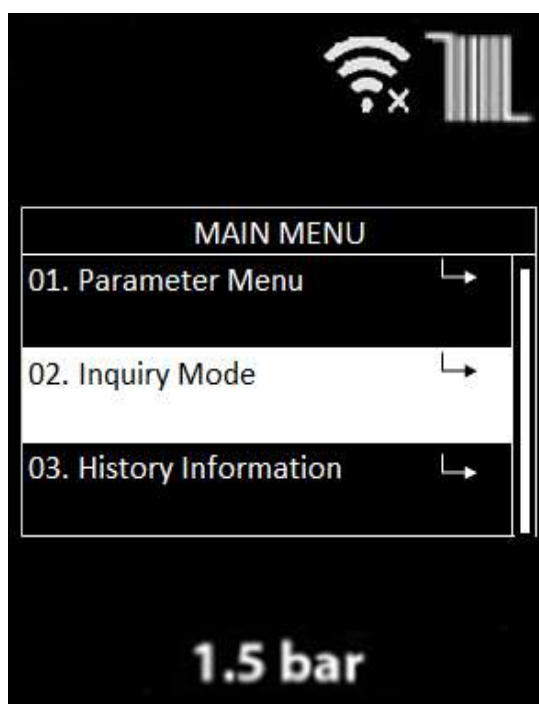
#### **Button No 9: Domestic Hot Water Temperature Adjustment Slider Button**

The temperature of the domestic water can be adjusted between 30°C – 65°C using the domestic hot water temperature adjustment slider button.

### **4. ENTERING THE SERVICE MENU**

You can enter the menu by pressing the reset button no 1 for 5 seconds. You can exit the menu by pressing the OFF mode button no 6 for 5 seconds.

You can select one of the following menus using the DHW +/- buttons no 2 and 4 once you are in the menu.



*Figure 2*

All three menus are accessed by pressing the reset button no 1.

1. *The Parameter Menu* allows you access to the service parameters.
2. *The Inquiry Menu* allows you to display values such as sensor temperature, fan speed, ionization current in real time.
3. *The History Menu* displays information about the device in the following order:
  - Number of hours with Main power supply ON
  - Error history (last 8 errors )
  - Number of total burner switching
  - Number of burner switching in CH mode
  - Number of burner switching in DHW mode
  - Number of CH hours of operation
  - Number of DHW hours of operation
  - Number of burner off hours
  - Number of CH Pump ON hours of operation
  - Number of Flame Loss Predictions

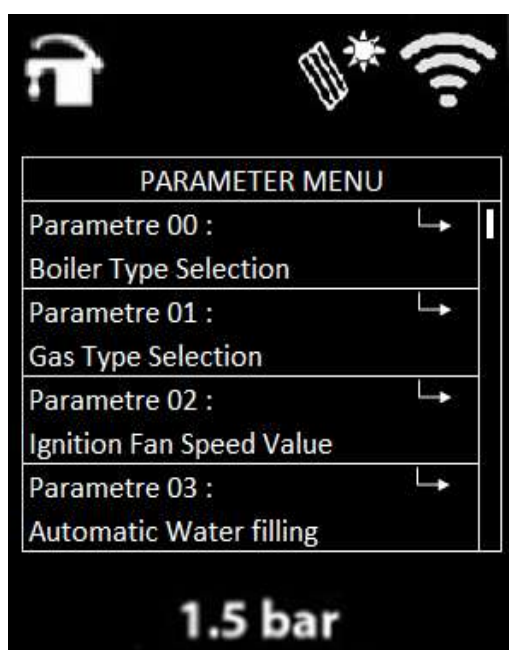


Figure 3

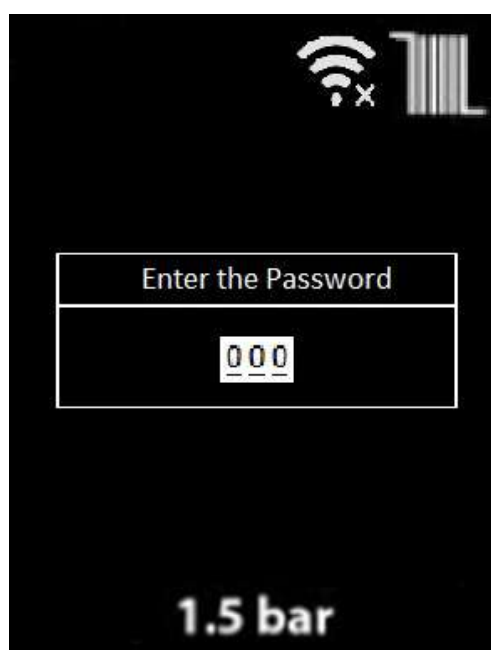


Figure 4

#### 4.1. Entering The Parameter Menu

Use the password “003” on the “Enter Password” screen that appears when you enter the Parameter Menu. Use the DHW +/- buttons no 2 and 4 to switch between the digits on the 3-digit display. Use the CH +/- buttons no 3 and 5 to set numerical values. Each digit can be set from 0 to 9.

Once you enter the parameter menu, the service parameters appear. Use the DHW +/- buttons no 2 and 4 are to move between parameters. Use the CH +/- buttons no 3 and 5 to enter any parameter when you are on the parameter that you wish to enter.

After you select and enter a parameter, use the CH +/- buttons no 3 and 5 to change the set value of the said parameter. To save the desired value, press the reset button no 1 once.

Once you save the parameter, the “Parameter XX-YY saved” message will appear on the screen as shown in the image below.

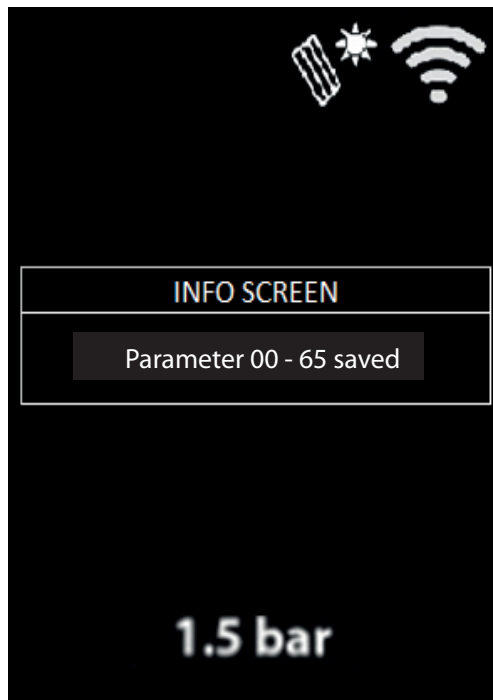


Figure 5

Then you can return to the previous menu by pressing the Reset button no 1 for 5 seconds and to the main screen by pressing the Off button no 6.

You can access the following parameters on the Parameter Menu: "P00, P01, P03, P26, P35, P38, P39, P40, P41, P44, P45, P46, P47, P48, P49, P50"

| LIST OF SERVICE PARAMETERS |                   |   |                                   |      |       |       |         |       |       |       |       |       |
|----------------------------|-------------------|---|-----------------------------------|------|-------|-------|---------|-------|-------|-------|-------|-------|
| Category                   | E2prom parameters |   |                                   | Unit | Range |       | Default |       |       |       |       |       |
|                            | Paramet           | Description   |                                   |      | Lower | Upper | Value   |       |       |       |       |       |
|                            |                   |   |                                   |      |       |       | 14 KW   | 20 KW | 24 KW | 28 KW | 30 KW | 35 KW |
| Boiler Type                | P00               | DHW configuration                                       | 1=Instantaneous                   | Num. | 1     | 5     | 1       | 1     | 1     | 1     | 1     | 1     |
|                            |                   |   | 2=Instantaneous + Solar           |      |       |       |         |       |       |       |       |       |
|                            |                   |   | 3=Storage tank                    |      |       |       |         |       |       |       |       |       |
|                            |                   |   | 4 = Solar storage tank            |      |       |       |         |       |       |       |       |       |
|                            |                   |   | 5 = CH only                       |      |       |       |         |       |       |       |       |       |
| System                     | P01               | Gas type selection 0 = Natural gas / 1 = LPG            |                                   | Num. | 0     | 1     | 0       | 0     | 0     | 0     | 0     | 0     |
| System                     | P03               | Water filling 1 = active / 0 = inactive / 2 = automatic |                                   | Num. | 0     | 2     | 0       | 0     | 0     | 0     | 0     | 0     |
| CH                         | P26               | CH off time   |                                   | Min. | 0     | 10    | 3       | 3     | 3     | 3     | 3     | 3     |
| CH                         | P35               | OTC curve selection                                     |                                   | Num. | 0     | 30    | 0       | 0     | 0     | 0     | 0     | 0     |
| DHW                        | P38               | System Configuration (Water pressure circuit + flow)    | 1 – Emas Hydroblock (CCB Pakkens) | Num. | 1     | 2     | 1       | 1     | 1     | 1     | 1     | 1     |
|                            |                   |   | 2 - Bitron Hydroblock             |      |       |       |         |       |       |       |       |       |

|                     |     |                                 |                     |      |              |    |   |   |   |   |   |   |
|---------------------|-----|---------------------------------|---------------------|------|--------------|----|---|---|---|---|---|---|
| System              | P39 | System Configuration            | 0- 24kW V1 capacity | Num. | 0            | 7  | 0 | 0 | 0 | 2 | 4 | 6 |
|                     |     |                                 | 1- 24kW V2 capacity |      |              |    |   |   |   |   |   |   |
|                     |     |                                 | 2- 28kW V1 capacity |      |              |    |   |   |   |   |   |   |
|                     |     |                                 | 3- 28kW V2 capacity |      |              |    |   |   |   |   |   |   |
|                     |     |                                 | 4- 30kW V1 capacity |      |              |    |   |   |   |   |   |   |
|                     |     |                                 | 5- 30kW V2 capacity |      |              |    |   |   |   |   |   |   |
|                     |     |                                 | 6- 35kW V1 capacity |      |              |    |   |   |   |   |   |   |
| 7- 35kW V2 capacity |     |                                 |                     |      |              |    |   |   |   |   |   |   |
| CH                  | P40 | Heating system type             | 0- Radiator heating | Num. | 0            | 1  | 0 | 0 | 0 | 0 | 0 | 0 |
|                     |     |                                 | 1- Floor heating    |      |              |    |   |   |   |   |   |   |
| CH                  | P41 | Eco mode burner on set value    |                     | Num. | 0            | 1  | 1 | 1 | 1 | 1 | 1 | 1 |
| DHW                 | P44 | DHW Hysteresis OFF              |                     | Num. | 0            | 1  | 0 | 0 | 0 | 0 | 0 | 0 |
|                     |     | 0: OFF at 71°C                  |                     |      |              |    |   |   |   |   |   |   |
|                     |     | 1: Standard algorithm           |                     |      |              |    |   |   |   |   |   |   |
| System              | P45 | Room thermostat activation      |                     | Num. | 0            | 1  | 1 | 1 | 1 | 1 | 1 | 1 |
| System              | P46 | LCD backlight OFF time          |                     | Min  | 0            | 10 | 1 | 1 | 1 | 1 | 1 | 1 |
| System              | P47 | Button tone activation          |                     | Num  | 0            | 3  | 1 | 1 | 1 | 1 | 1 | 1 |
| System              | P48 | Language Selection              |                     | Num  | 0            | 1  | 0 | 0 | 0 | 0 | 0 | 0 |
| System              | P49 | Predictive Maintenance Function |                     | Num  | 0            | 1  | 0 | 0 | 0 | 0 | 0 | 0 |
| System              | P50 | DHW activation delay            |                     | Sec  | 0            | 3  | 0 | 0 | 0 | 0 | 0 | 0 |
| System              |     | Service Phone Number            |                     | Num  | Phone Number |    |   |   |   |   |   |   |

Table 3

## Parameter Descriptions

**P00:** Device type selection (HM/HM+Solar/HST/HST+Solar/HCH)

**P01:** Gas type selection (Natural/LPG)

**P03:** Water filling selection (inactive/active/automatic)

**P26:** When the CH set temperature reaches the closing value (hysteresis off), the boiler stops burning. Even if the temperature drops below the device opening value (hysteresis on), the boiler does not reactivate until the time set by this parameter has expired. If the boiler has complaints of frequent activation, the time in this parameter can be increased.

**P35:** OTC curve selection is based on the temperature difference between the exterior temperature and the set temperature set by the user according to the selected curve slope and the combi boiler starts to run when it rises above that temperature difference.

**P38:**Hydroblock selection (Composite/Brass)

**P39:** Device capacity and model selection. Only V1 versions will be available.

**P40:** Determines the heating system type. (Radiator/floor heating)

**P41:** This is the parameter that determines the temperature at which the device starts to run in ECO mode.

| P41       | 1                           | 0                           |
|-----------|-----------------------------|-----------------------------|
| Set Value | CH Return Water Temperature | CH Return Water Temperature |
| 30        | 27                          | 22                          |
| 35        | 27                          | 22                          |
| 40        | 31                          | 26                          |
| 45        | 34                          | 29                          |
| 50        | 36                          | 31                          |
| 55        | 40                          | 35                          |
| 60        | 44                          | 39                          |
| 65        | 47                          | 42                          |
| 70        | 51                          | 46                          |
| 75        | 53                          | 48                          |
| 80        | 57                          | 52                          |

- Eco Mode Hysteresis ON Set Value:  
 - P41: The factory-set value is 1. Example: When the CH set value is set to 30 °C, there is no flame before the boiler return water temperature sensor reaches 27 °C.  
 The value that can be set by the service is 0.

If the user wishes to consume even less fuel in ECO mode, it can be activated by the service.

*Table 4*

**P44:** This is the parameter used to set the off temperature of the domestic water when it is active.

**P45:** This is the parameter used to activate the room thermostat. Default value is "1=active".

**P46:** This is the parameter used to set the time for the display light to go off if no button is pressed on the device.

**P47:** This parameter used to activate the buzzer has 4 options.

0. Not active (all sounds off)
1. Active (all sounds on)
2. Error sounds not active (button sounds are active, but error sounds are not active)
3. Button not active (button sounds are not active, but error sounds are active)

**P48:** This is the language selection parameter which you can set to English or Turkish. When the parameter adjusted to English language , Service Phone Number feature opens.

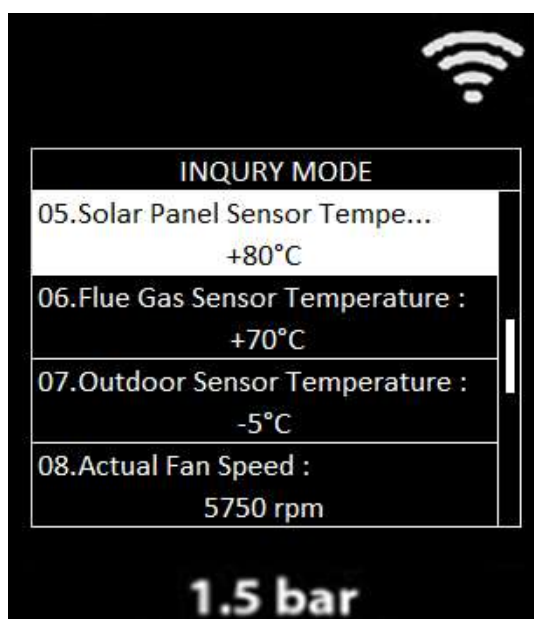
**P49:** This is the parameter used to activate predictive maintenance warnings (risk of flame loss, risk of high water pressure, risk of low water pressure).

**P50:** This parameter enables the domestic water delay to be activated for the time specified against the instantaneous high pressure risk that may occur in the installation. This value should be increased in installations where there is high water-hammer effect.

**Service Phone Number:** You can save the number of authorized service in your country with this parameter. When the device gives an error or a warning, the authorized service number that you entered from the service number parameter appears at the bottom of the LCD screen.

## 5. ENTERING THE INQUIRY MENU

The Inquiry Menu gives information about the device during operation. It allows the user to view real time data on the menu screen. When you are in the menu, you can see the real time values of the device by using the DHW +/- buttons no 2 and 4.



1. Supply Water Temperature between 00 and 125 °C
2. Return Water Temperature between 00 and 125 °C
3. DHW Temperature between 00 and 125 °C
4. DHW Sen. Tank Below 00 and 125 °C
5. Solar Temperature between 00 and 125 °C
6. Exhaust Gas Temperature between 00 and 125 °C
7. Exterior Temperature
8. Current Fan Speed
9. Current Water Pressure
10. Ionization current 00 to 99 uA
11. Firmware Version C\_x.xx

Figure 6

## 6. ENTERING THE HISTORY MENU

You can see the device data in this menu during operation in the following order.

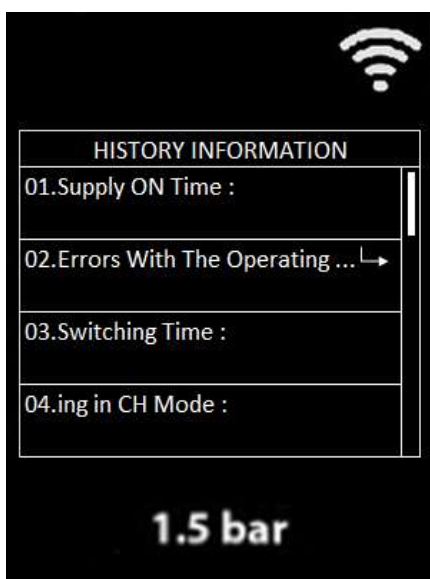


Figure 7

1. Number of Hours with Main Power Supply ON (total number of hours with main power supply ON)
2. Error history (last 8 errors)
3. Number of Burner Switching (total number of burner switching)
4. Number of CH Burner Switching (total number of CH burner switching)
5. Number of DHW Burner Switching (total number of DHW burner switching)
6. Number of CH Hours of Operation
7. Number of DHW Hours of Operation
8. Number of Burner OFF Hours
9. Number of Pump ON Hours of Operation
10. Number of Flame Loss Predictions

## 7. ERROR CODES (DEFINITIONS-SOLUTIONS) AND PREDICTIVE MAINTENANCE WARNINGS

| Error Code | Error Type       | Probable Cause               | Solution  |
|------------|------------------|------------------------------|---|
| E01        | Ignition Failure | No gas supply to the boiler. | <ol style="list-style-type: none"> <li>1- Ensure that the gas valve is on.</li> <li>2- Ensure that there is gas supply.</li> <li>3- If the gas valve is off, turn it on and press the reset button.</li> <li>4- Check the gas setting. If there is a problem, adjust the gas setting according to the table given in the manual and reset the device.</li> <li>5- Check fan-venturi-silencer assemblies.</li> <li>6- Check if the siphon is clogged. Ensure that the connection is slopping at least 3° downwards and there is water in the main heat exchanger up to the part where the electrode is located.</li> <li>7- If the siphon is clogged, clean it. If there is a problem with the gland, replace it. If the electrode is wet, replace it. Then reset the device.</li> <li>8- Ensure that the connection of the electrode cable (both on the mainboard and on the main heat exchanger) is done correctly and that it sits properly. If there is a problem, make sure it is properly installed and locked. Then reset the device.</li> <li>9- Check the cable connections and ensure the cables are not damaged. If there is damage, replace them and reset the device.</li> <li>10- If the problem persists, remove the ignition electrode and check for oxidation. If there is oxidation, clean the electrode and place it back and then reset the device.</li> <li>11- Check the distance of the ignition and ionization electrodes. If there is a problem, adjust it according to the measurements given in the manual. Then reset the device.</li> <li>12- Turn off the boiler and check for a resistance of 110-120 ohm between the ends of the gas valve. If the resistance value is not within this range, replace the gas valve.</li> <li>13- Remove the gas valve connector and turn on the boiler's electrical connection. Ensure that there is a voltage of 23-25 V between the ends of the connector from the mainboard during ignition. If it is not in this range, replace the mainboard.</li> </ol> |



|     |  |   |  |
|-----|--|---|--|
| E02 | False Flame Signal                                 | This occurs when flame is detected in the burner while the gas valve is on. | <ol style="list-style-type: none"> <li>1- Press the reset button. Check if the error continues.</li> <li>2- If the error continues, replace the mainboard.</li> </ol>  |
| E03 | High Temperature Warning                           | This occurs when the supply or return temperature exceeds 90°C.             | <ol style="list-style-type: none"> <li>1. Ensure that the boiler's water valves are on. If not, turn on the valves and reset the device.</li> <li>2. If the boiler gives this error in the winter mode, ensure that the valves of at least one radiator are on. If not, turn on the valves of at least one radiator and reset the device.</li> <li>3. Ensure that the resistance of the water temperature sensors is correct. Sensors may be malfunctioning. If they do not give the correct resistance values, replace them and reset the device.</li> <li>4. Internal bypass may not be functional. After replacing the 3-way valve set and resetting the device, make sure the error is removed.</li> <li>5. The pump connection cables may be loose or displaced or lost their conductivity. Check the connections. If there is a problem, replace the cables and reset the device.</li> <li>6. There may be congestion in the installation. Observe the temperature changes in both the summer and winter mode while the boiler is running. If there is blockage, clean the system.</li> <li>7. Ensure that the circulation pump is working. If the pump is defective, replace it.</li> <li>8. If the problem persists, the mainboard may be defective. Replace the mainboard.</li> </ol> |
| E15 | Temperature Sensors Measurement Deviation Error    | Temperature sensors may be defective.                                       | <ol style="list-style-type: none"> <li>1-Check if the sensors are connected correctly and if they are defective. If they are defective, replace the CH supply and return sensors.</li> <li>2-If the error continues, replace the mainboard.</li> </ol>   |
| E16 | Supply Water Temperature Sensor Error              | No temperature change is detected by the supply water temperature sensor.   | <ol style="list-style-type: none"> <li>1-Check if the sensor is connected correctly and if it is defective. If it is defective, replace the CH supply sensor.</li> <li>2-If the error continues, replace the mainboard.</li> </ol>   |
| E17 | Return Water Temperature Sensor Error              | No temperature change is detected by the return water temperature sensor.   | <ol style="list-style-type: none"> <li>1-Check if the sensor is connected correctly and if it is defective. If it is defective, replace the CH return sensor.</li> <li>2-If the error continues, replace the mainboard.</li> </ol>   |
| E18 | Temperature Sensor Error                           | The temperature change on the temperature sensor is too high (30°C)         | <ol style="list-style-type: none"> <li>1-Ensure that the water temperature sensor cable is working properly. If there is a problem, replace the CH return sensor cable.</li> <li>2-If the problem persists, replace the CH supply sensor cable.</li> </ol>   |
| E33 | Return Water Temperature Sensor Error              | Return water temperature sensor short or open circuit                       | <ol style="list-style-type: none"> <li>1- Check the cable connections and ensure the cables are not damaged. If there is a problem, replace the CH return sensor cable.</li> <li>2- Check if there is any rusting, corrosion, or deformation inside. Also measure the resistance at the points where the copper contacts the pipe and ensure that it is in the appropriate range.</li> <li>3- If there is a problem, replace the CH return sensor cable and reset the device.</li> <li>4- If the problem persists, replace the CH supply sensor cable as well.</li> </ol>  |
| E35 | Supply Water Temperature Sensor Error              | Supply water temperature sensor short or open circuit                       | <ol style="list-style-type: none"> <li>1-Ensure the cables are connected properly and check for damage. If there is a problem, replace the supply sensor cables.</li> <li>2-Check if there is any rusting, corrosion, or deformation inside. Also measure the resistance at the points where the copper contacts the pipe and ensure that it is in the appropriate range. If there is a problem, replace the supply sensor cables.</li> <li>3-If the problem persists, replace the mainboard</li> </ol>  |
| E38 | Low water pressure 1 week after last water filling | Water leakage in installation or boiler                                     | <ol style="list-style-type: none"> <li>1- Open the front panel of the boiler and check if there is water leakage/water traces inside.</li> <li>2- Check if there is water dripping from the safety valve. Replace the valve in case of leakage.</li> <li>3- Check if there is water leakage from boiler-installation pipe connections.</li> </ol>  |

|     |  |   |  |
|-----|--|---|--|
| E02 | False Flame Signal                                 | This occurs when flame is detected in the burner while the gas valve is on. | <ol style="list-style-type: none"> <li>1- Press the reset button. Check if the error continues.</li> <li>2- If the error continues, replace the mainboard.</li> </ol>  |
| E03 | High Temperature Warning                           | This occurs when the supply or return temperature exceeds 90°C.             | <ol style="list-style-type: none"> <li>1. Ensure that the boiler's water valves are on. If not, turn on the valves and reset the device.</li> <li>2. If the boiler gives this error in the winter mode, ensure that the valves of at least one radiator are on. If not, turn on the valves of at least one radiator and reset the device.</li> <li>3. Ensure that the resistance of the water temperature sensors is correct. Sensors may be malfunctioning. If they do not give the correct resistance values, replace them and reset the device.</li> <li>4. Internal bypass may not be functional. After replacing the 3-way valve set and resetting the device, make sure the error is removed.</li> <li>5. The pump connection cables may be loose or displaced or lost their conductivity. Check the connections. If there is a problem, replace the cables and reset the device.</li> <li>6. There may be congestion in the installation. Observe the temperature changes in both the summer and winter mode while the boiler is running. If there is blockage, clean the system.</li> <li>7. Ensure that the circulation pump is working. If the pump is defective, replace it.</li> <li>8. If the problem persists, the mainboard may be defective. Replace the mainboard.</li> </ol> |
| E15 | Temperature Sensors Measurement Deviation Error    | Temperature sensors may be defective.                                       | <ol style="list-style-type: none"> <li>1-Check if the sensors are connected correctly and if they are defective. If they are defective, replace the CH supply and return sensors.</li> <li>2-If the error continues, replace the mainboard.</li> </ol>   |
| E16 | Supply Water Temperature Sensor Error              | No temperature change is detected by the supply water temperature sensor.   | <ol style="list-style-type: none"> <li>1-Check if the sensor is connected correctly and if it is defective. If it is defective, replace the CH supply sensor.</li> <li>2-If the error continues, replace the mainboard.</li> </ol>   |
| E17 | Return Water Temperature Sensor Error              | No temperature change is detected by the return water temperature sensor.   | <ol style="list-style-type: none"> <li>1-Check if the sensor is connected correctly and if it is defective. If it is defective, replace the CH return sensor.</li> <li>2-If the error continues, replace the mainboard.</li> </ol>   |
| E18 | Temperature Sensor Error                           | The temperature change on the temperature sensor is too high (30°C)         | <ol style="list-style-type: none"> <li>1-Ensure that the water temperature sensor cable is working properly. If there is a problem, replace the CH return sensor cable.</li> <li>2-If the problem persists, replace the CH supply sensor cable.</li> </ol>   |
| E33 | Return Water Temperature Sensor Error              | Return water temperature sensor short or open circuit                       | <ol style="list-style-type: none"> <li>1- Check the cable connections and ensure the cables are not damaged. If there is a problem, replace the CH return sensor cable.</li> <li>2- Check if there is any rusting, corrosion, or deformation inside. Also measure the resistance at the points where the copper contacts the pipe and ensure that it is in the appropriate range.</li> <li>3- If there is a problem, replace the CH return sensor cable and reset the device.</li> <li>4- If the problem persists, replace the CH supply sensor cable as well.</li> </ol>  |
| E35 | Supply Water Temperature Sensor Error              | Supply water temperature sensor short or open circuit                       | <ol style="list-style-type: none"> <li>1-Ensure the cables are connected properly and check for damage. If there is a problem, replace the supply sensor cables.</li> <li>2-Check if there is any rusting, corrosion, or deformation inside. Also measure the resistance at the points where the copper contacts the pipe and ensure that it is in the appropriate range. If there is a problem, replace the supply sensor cables.</li> <li>3-If the problem persists, replace the mainboard.</li> </ol>   |
| E38 | Low water pressure 1 week after last water filling | Water leakage in installation or boiler                                     | <ol style="list-style-type: none"> <li>1- Open the front panel of the boiler and check if there is water leakage/water traces inside.</li> <li>2- Check if there is water dripping from the safety valve. Replace the valve in case of leakage.</li> <li>3- Check if there is water leakage from boiler-installation pipe connections.</li> </ol>  |

|     |  |   |   |
|-----|--|---|---|
| E44 | Gas valve on error   | The gas valve may be defective.   | <ol style="list-style-type: none"> <li>1-Set the P50 parameter to "2".</li> <li>2-If the problem persists, replace the gas valve.</li> <li>3-Replace the motherboard as last resort.</li> </ol>   |
| E64 | Hardware error 1   | Specific hardware error   | <ol style="list-style-type: none"> <li>1-Turn the device off and on.</li> <li>2-If the problem persists, replace the mainboard.</li> </ol>  |
| E65 | Hardware error 2   | Specific hardware error   | <ol style="list-style-type: none"> <li>1-Turn the device off and on.</li> <li>2-Check the gas valve connections.</li> <li>3-If the problem persists, replace the mainboard.</li> </ol>  |
| E80 | Swap test error  | Return water temperature sensor temperature higher than supply water sensor temperature | <ol style="list-style-type: none"> <li>1-Ensure that the connections of the CH supply and return water temperature sensors are correct. Reset the device after securing the connections.</li> <li>2-If the problem persists, replace the temperature sensors.</li> <li>3-Check the cable connections of the pump and ensure the cables are not damaged. If there is a problem, replace the pump cables.</li> <li>4-Ensure that the pump is working properly. If there is a problem, replace the pump.</li> <li>5-If the problem persists, replace the mainboard.</li> </ol>   |
| E82 | Flame loss error (more than 12 consecutive flame losses)                     | Flame detection problem   | <ol style="list-style-type: none"> <li>1-Check the gas settings. If the setting are not correct, adjust the gas settings according to the gas setting table given in the manual.</li> <li>2-Check the flue connections and installation as indicated in the manual. If there is a problem, remove the flues and check for obstructions in the air intake and gas discharge sections as well as the compatibility of the ports and seals.</li> <li>3-Measure CO2 emissions in the clean air section from the boiler flue elbow. CO2 emission value should be less than 0.1%.</li> <li>4-Check the fan-venturi-silencer assembly.</li> <li>5-Check if the gas pressure at the gas valve inlet is above 12 mbar.</li> <li>6-Ensure that the connection of the ignition electrode cable (both on the mainboard and on the main heat exchanger) is done correctly and that it sits properly. If there is a problem, make sure it is properly installed and locked. Then reset the device.</li> <li>7-If the problem persists, remove the ignition electrode and check for oxidation. If there is oxidation, clean the electrode and place it back and then reset the device.</li> <li>8-Check the distance of the ignition and ionization electrodes. If there is a problem, adjust it according to the measurements given in the manual. Then reset the device.</li> <li>9-Turn off the boiler and check for a resistance of 110-120 ohm between the ends of the gas valve. If the resistance value is not within this range, replace the gas valve.</li> <li>10-Remove the gas valve connector and turn on the boiler's electrical connection. Ensure that there is a voltage of 23-25 V between the ends of the connector from the mainboard during ignition. If it is not in this range, replace the mainboard.</li> <li>11-Check CO2 values and stability. If there is a problem, replace the gas valve.</li> </ol> |
| E83 | Exhaust gas high temperature warning (F07 error twice within the last month) | Main Heat Exchanger problem   | <ol style="list-style-type: none"> <li>1- You can refer to the explanations given for the F07 error.</li> </ol>   |
| E98 | Hardware error 3   | Hardware-specific error   | <ol style="list-style-type: none"> <li>1-There may be a problem with the mains frequency. Turn off and on the electrical connection of the device.</li> <li>2-Check the error history for error F36. If you see this error, refer to the explanation for the F36 error.</li> <li>3-If there is no problem with the mains voltage and frequency, replace the mainboard.</li> </ol>   |

|     |                                      |   |  |
|-----|--------------------------------------|---|--|
| E99 | Hardware error 4                     | Specific hardware error   | <ol style="list-style-type: none"> <li>1-Turn the device off and on.</li> <li>2-If the problem persists, replace the mainboard.</li> </ol>   |
| F05 | Fan feedback error                   | Fan or fan cable problem  | <ol style="list-style-type: none"> <li>1-Check the connections of the fan cable (both mainboard and fan connections). If there is a problem, replace the fan cables.</li> <li>2-If the problem persists, replace the fan.</li> <li>3-If the problem is not resolved, replace the mainboard.</li> </ol>   |
| F07 | High Exhaust Gas Temperature Error   | This occurs when the exhaust gas temperature exceeds 95°C.  | <ol style="list-style-type: none"> <li>1-Check if there is water in the boiler by turning on the drain valve.</li> <li>2-If there is no water in the boiler and the pressure sensors are measuring pressure, replace the pressure sensors. Fill the boiler with water up to 1-1.5 bar.</li> <li>3-See if there is a difference between the value read for the parameter "i06" in the inquiry Menu and the temperature you measure with the measuring device. If there is a difference between these two values, replace the flue gas sensor.</li> <li>4- The pump connection cables may be loose or displaced or lost their conductivity. Check the connections. If there is a problem, replace the cables and reset the device.</li> <li>5- Ensure that the pump is working properly. If there is a problem, replace the pump.</li> <li>6- Check if there is congestion in the installation.</li> <li>7-There may be congestion in the waste gas part of the heat exchanger or the space between the helical pipes may not be appropriate. In this case, clean the heat exchanger and make sure that the space between the helical pipes is not less than 0.4 mm.</li> <li>8-If the problem persists, replace the mainboard.</li> </ol> |
| F10 | Insufficient water circulation error | Installation congestion   | <ol style="list-style-type: none"> <li>1- The pump connection cables may be loose or displaced or lost their conductivity. Check the connections. If there is a problem, replace the cables and reset the device.</li> <li>2- Ensure that the pump is working properly. If there is a problem, replace the pump.</li> <li>3- Check if there is congestion in the installation.</li> <li>4- There may be a congestion in the heat exchanger's water line. In this case, clean the heat exchanger.</li> <li>5- If there is no congestion in the installation, ensure that all radiator valves are on or at least one of them is on. If it is open, there may be congestion on the boiler internal bypass line. In this case, clean the 3-way valve assembly and replace it if necessary.</li> </ol>  |
| F13 | Excess resetting error               | Pressing the Reset button more than 5 times within 1 hour   | <ol style="list-style-type: none"> <li>1-Check the error history and disconnect the power supply and turn it back on. Perform the necessary operation according to the recent errors in the error history.</li> <li>2-If the error still appears on the screen, replace the mainboard.</li> </ol>  |
| F34 | Low Supply voltage                   | This occurs when the supply voltage drops below 170V.   | <ol style="list-style-type: none"> <li>1-Check if the supply voltage is below 170V. If the voltage is below this value, the system will remain blocked and the heat demand will not be met unless the voltage returns to the normal value.</li> <li>2-If the voltage value is normal (200-240 V), replace the mainboard.</li> </ol>  |
| F36 | Mains frequency error                | Mains (electricity) problem   | <ol style="list-style-type: none"> <li>1-Turn the device off and on.</li> <li>2-If the problem persists, replace the mainboard.</li> </ol>   |
| F37 | Low Water Pressure Error             | This occurs when the water pressure sensor detects a low water pressure (0.4 bar) which may be dangerous for your device. | <ol style="list-style-type: none"> <li>1-Check the heater circuit water pressure of your device.</li> <li>2- Fill the system with water until the pressure reaches 1-1.5 bar (the error state is removed once the device reaches a pressure above 0.8 bar).</li> <li>3- Check the valves and installation for leakage.</li> <li>4- Check the 3-bar safety valve, replace it if there is a problem.</li> <li>5-Check the pressure inside the expansion tank and pressurize or replace it if necessary.</li> <li>6- There may be a hole in the heat exchanger's helical pipe. Check and replace the heat exchanger if necessary.</li> <li>7- Check all water connections in the boiler.</li> <li>8- Check the connections and conductivity of the pressure sensor cables. If there is a problem, replace the cables.</li> </ol>  |

|     |  |  |   |
|-----|--|--|---|
|     |  |  | <p>9- Remove the connectors on the water pressure sensor and measure the DC voltage values while the boiler is connected to power supply. Check whether the measurement is within the 4.9-5.1 V DC range. If the value is out of this range, replace the pressure sensor.</p> <p>10- If the problem persists, replace the mainboard.</p>  |
| F39 | Outdoor Temperature Sensor Error                       | The outdoor temperature sensor may be defective.   | <p>1- Check the connection and conductivity of the outdoor temperature sensor cables. If there is a problem, replace the outdoor temperature sensor.</p> <p>2- While the outdoor temperature sensor is not connected, ensure that the P35 parameter is set to "0". If P35 is not "0", set its value to "0".</p>   |
| F40 | High Water Pressure Error                              | This occurs when the water pressure sensor detects high water pressure ( $\geq 2.9$ bar) which may be dangerous for your device. | <p>1- Check the heater circuit water pressure of your device. If the value is greater than 2.9 bar, reduce the water pressure. If the water pressure value is lower than 2.9 bar and the problem persists, replace the mainboard.</p> <p>2- Check the connection and conductivity of the pressure sensor cables. If there is a problem, replace the cables.</p> <p>3- Remove the connectors on the water pressure sensor and measure the DC voltage values between the input and GND at the cable ends while the boiler is connected to power supply. Check whether the measurement is within the 4.9-5.1 V DC range. If the value is out of this range, replace the pressure sensor.</p> <p>4- If the problem persists, replace the mainboard.</p> <p>5- Check if the pressure of the expansion tank is above 0.5 bar. If the pressure is low, pressurize by pumping air up to 1 bar. If this problem repeats within 6 months, replace the expansion tank.</p> <p>6- Make sure the filling valve is completely closed and functional. Replace if necessary.</p> <p>7- There may be a hole in the plate heat exchanger. If the water pressure increases while the filling tap is off and the boiler is not operating, replace the plate heat exchanger.</p> |
| F41 | Water filling (auto) operational                       | Automatic water filling is in progress.  |   |
| F42 | Water filling (auto) not completed                     | The water filling valve may be defective or the mains water pressure may be insufficient.  | <p>1- Automatic water filling valve is working. This is an informational message.</p> <p>2- If the automatic water filling valve is not installed, make sure that the parameter P03 is set to "0". 3- If the problem persists, replace the mainboard.</p>   |
| F43 | Low water pressure error after automatic water filling | The water filling valve may be defective or the mains water pressure may be insufficient.  |   |
| F47 | Water Pressure Sensor Error                            | There is no water pressure sensor installed or there is loose contact.   | <p>1- Check the connection and conductivity of the pressure sensor cables. If there is a problem, replace the cables.</p> <p>2- Replace the pressure sensor.</p> <p>3- If the problem is not resolved, replace the mainboard.</p>   |
| F49 | Modulating room thermostat communication error         | Room thermostat is defective or there is a connection problem  | <p>1- Turn the device off and on.</p> <p>2- Check the connection and conductivity of the cable between the room thermostat and the boiler and check for any damage. If there is a problem, replace the cable.</p> <p>3- If the room thermostat is working properly, replace the mainboard.</p>  |

|  |   |  |  |
|--|---|--|--|
| F50                                    | Boiler Sensor Error                           | The boiler sensor may be defective.  | <p>1-Make sure that the boiler is installed with boiler system and that the P00 parameter is set to 3 or 4.</p> <p>2-Check the connection and conductivity of the boiler sensor cables. If there is a problem, replace the cables.</p> <p>3-Check the resistance of the sensor by measuring it. If there is a problem, replace the sensor.</p> <p>4- If the problem is not resolved, replace the mainboard.</p>                                    |
| F51                                    | PT1000 solar sensor error                     | PT1000 solar sensor may be defective.  | <p>1- Ensure that the P00 parameter is set to 2 or 4 because the boiler is installed with the solar system.</p> <p>2- Check the connection and conductivity of the PT1000 sensor cables. If there is a problem, replace the cables.</p> <p>3- Check the resistance of the sensor by measuring it. If there is a problem, replace the sensor.</p> <p>4- If the problem is not resolved, replace the mainboard.</p>                                  |
| F52                                    | Domestic water temperature sensor error       | The water temperature sensor may be defective.   | <p>1-Check the connection and conductivity of the DHW sensor cables. If there is a problem, replace the cables.</p> <p>2- Check the resistance of the sensor by measuring it. If there is a problem, replace the sensor.</p> <p>3- If the problem is not resolved, replace the mainboard.</p>  |
| F53                                    | Flue gas temperature sensor error             | Flue gas temperature sensor short or open circuit  | <p>1-Check the connection and conductivity of the flue gas sensor cables. If there is a problem, replace the cables.</p> <p>2- Check the resistance of the sensor by measuring it. If there is a problem, replace the sensor.</p> <p>3- If the problem is not resolved, replace the mainboard.</p>   |
| F81                                    | Waiting for temperature sensor deviation test | Temperature sensors may be defective.  | <p>1-Turn off the power and wait 5 minutes. Turn on the power again and ensure that the error does not appear on the display.</p> <p>2- Check the connection and conductivity of the supply/return or DHW sensor cables. If there is a problem, replace the cables.</p> <p>3- Check the resistance of the sensors by measuring it. If there is a problem, replace the sensor.</p> <p>4- If the problem is not resolved, replace the mainboard.</p> |
| F201                                   | Mainboard - MMI card communication error      | There may be a problem with the card or cable  | <p>1- Check the ports on both sides of the MMI cable (mainboard and MMI card). If there is a problem, replace the MMI cable.</p> <p>2-If the problem persists, replace the MMI card.</p>   |
| <b>PREDICTIVE MAINTENANCE WARNINGS</b> |   |  |  |
| 1                                      | Risk of flame loss                            | Predicts the flame loss risk of the device.  | <p>1-Check the electrode position and the electrode cable.</p> <p>2-Replace the electrode if necessary.</p> <p>3-If the error repeats within a short period (&lt;1 year), replace the mainboard.</p>   |
| 2                                      | Risk of high water pressure                   | Predicts the safety valve activation of the device.if the water pressure increases above 2.5 bar this warning will appear.                             | <p>1-Ensure the user fills the boiler with water up to the pressure range of 1-1.5 bar.</p> <p>2-If the water filling pressure range is correct, check the expansion tank pressure and replace it if necessary.</p>  |
| 3                                      | Risk of low water pressure                    | There may be water leakage. If the boiler is plugged in electricity for the last 24 hours and gives F37 error within a week, this warning will appear. | <p>1- The water leakage may be caused by the boiler or the installation. If there is no water leakage from the boiler, inform the user that the installation should be inspected.</p>  |

*Table 5*

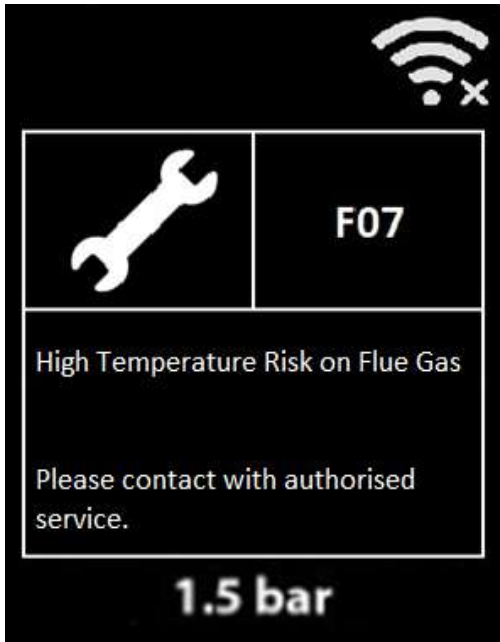


Figure 8

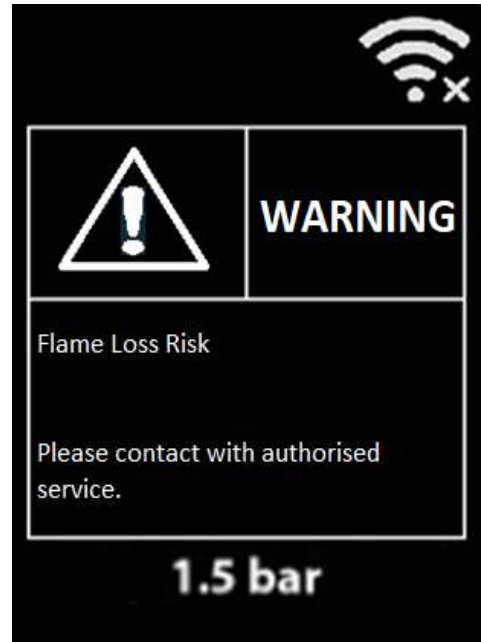


Figure 9

## 8. AP MODE

The device switches to AP mode under four different conditions.

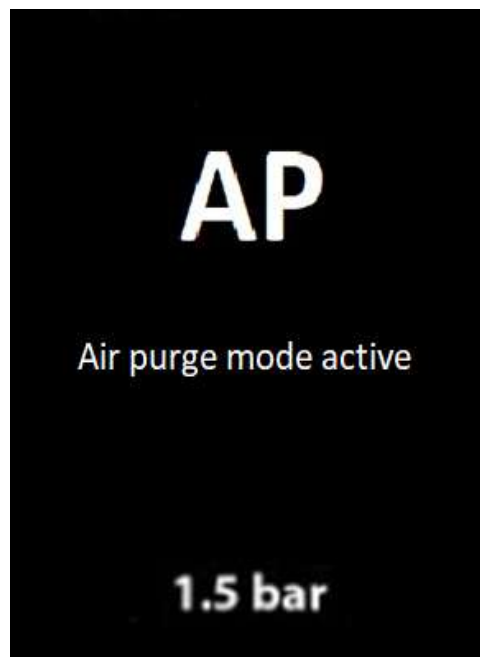
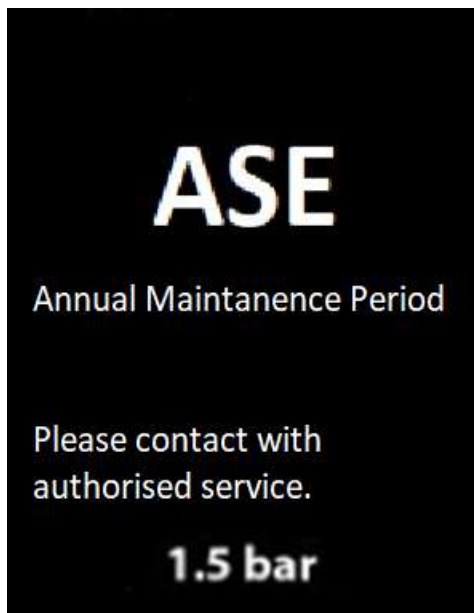


Figure 10

1. When the device is plugged and operated for the first time;
2. When the E03 (extreme temperature warning) error is reset manually;
3. When the water pressure in the CH circuit exceeds the limit level and after F37-F40 errors;
4. When the F42 (Low water pressure error after automatic water filling) error is reset manually.

## 9. MAINTENANCE REMINDER (ASE)

From the moment the device is plugged for the first time, it starts to count the number of hours with main power supply on. Once 7500 hours have been reached, a warning appears on the screen to remind annual periodic maintenance, as shown in the image below.



*Figure 11*

The maintenance alert appears on the display again 72 hours after the first reset. Once this process has been repeated 10 times, the counter is activated again.

Follow the steps below to reset the counter.

- Put in “011” on the password screen.
- ASE reset is activated and the counter is reset.



*Figure 12*

**NOTE:** After the annual maintenance, you must reset the maintenance reminder counter.



## 10. GAS CONVERSION

The gas conversion process (Natural Gas-LPG) involves replacing the gas adjusting washer, adjusting gas pressure settings (capacity settings), and adjusting the P01 service parameter. Natural gas and LPG parameter values are given below. The diameter information and the last 3 digits of stock code will be specified on the gas adjusting washer as marking (if there is no marking, it should be specified with a colored pen).



### 10.1. Gas Adjustment Table

#### Confeo Premix P

| Capacity | Gas Type | Gas Orifice (mm) | Gas Orifice Code | P01 Parameter Value | DHW Maximum Fan Speed (rpm) | CH Maximum Fan Speed (rpm) | Minimum Fan Speed (rpm) | Front Cover (Open) CO2 (Max/Min) (%) | Front Cover (Close) CO2 (Max/Min) (%) | P39 Parameter Value |
|----------|----------|------------------|------------------|---------------------|-----------------------------|----------------------------|-------------------------|--------------------------------------|---------------------------------------|---------------------|
| 14 kW    | DG       | 7,65±0,05        | 7006990320       | 0                   | 6250                        | 3800                       | 1850                    | 9,3±0,2 / 8,7±0,2                    | 9,5±0,2 / 8,9±0,2                     | 0                   |
| 14 kW    | LPG      | 6,5±0,05         | 7006990685       | 1                   | 6100                        | 3600                       | 1850                    | 10,4±0,2 / 9,7±0,2                   | 10,6±0,2 / 9,9±0,2                    | 0                   |
| 20 kW    | DG       | 7,65±0,05        | 7006990320       | 0                   | 6250                        | 5100                       | 1850                    | 9,3±0,2 / 8,7±0,2                    | 9,5±0,2 / 8,9±0,2                     | 0                   |
| 20 kW    | LPG      | 6,5±0,05         | 7006990685       | 1                   | 6100                        | 4900                       | 1850                    | 10,4±0,2 / 9,7±0,2                   | 10,6±0,2 / 9,9±0,2                    | 0                   |
| 24 kW    | DG       | 7,65±0,05        | 7006990320       | 0                   | 6750                        | 6250                       | 1850                    | 9,3±0,2 / 8,7±0,2                    | 9,5±0,2 / 8,9±0,2                     | 0                   |
| 24 kW    | LPG      | 6,5±0,05         | 7006990685       | 1                   | 6600                        | 6100                       | 1850                    | 10,4±0,2 / 9,7±0,2                   | 10,6±0,2 / 9,9±0,2                    | 0                   |
| 28 kW    | DG       | 7,9±0,05         | 7006990688       | 0                   | 7000                        | 6500                       | 1900                    | 9,3±0,2 / 8,7±0,2                    | 9,5±0,2 / 8,9±0,2                     | 2                   |
| 28 kW    | LPG      | 6,7±0,05         | 7006990689       | 1                   | 6700                        | 6200                       | 1900                    | 10,4±0,2 / 9,7±0,2                   | 10,6±0,2 / 9,9±0,2                    | 2                   |
| 30 kW    | DG       | 7,9±0,05         | 7006990688       | 0                   | 7450                        | 6900                       | 2100                    | 9,3±0,2 / 8,7±0,2                    | 9,5±0,2 / 8,9±0,2                     | 4                   |
| 30 kW    | LPG      | 7,1±0,05         | 7006990691       | 1                   | 7400                        | 6850                       | 2100                    | 10,4±0,2 / 9,7±0,2                   | 10,6±0,2 / 9,9±0,2                    | 4                   |
| 35 kW    | DG       | 8,1±0,05         | 7006990690       | 0                   | 7600                        | 7600                       | 2300                    | 9,3±0,2 / 8,7±0,2                    | 9,5±0,2 / 8,9±0,2                     | 6                   |
| 35 kW    | LPG      | 7,1±0,05         | 7006990691       | 1                   | 7600                        | 7600                       | 2300                    | 10,4±0,2 / 9,7±0,2                   | 10,6±0,2 / 9,9±0,2                    | 6                   |

Table 6

### 10.2. Gas Pressure Adjustment

Please refer to "Chapter 12. Definitions of assembly/disassembly of the parts" section before starting gas adjustment. Maximum and minimum gas pressure adjustment procedures are listed below.

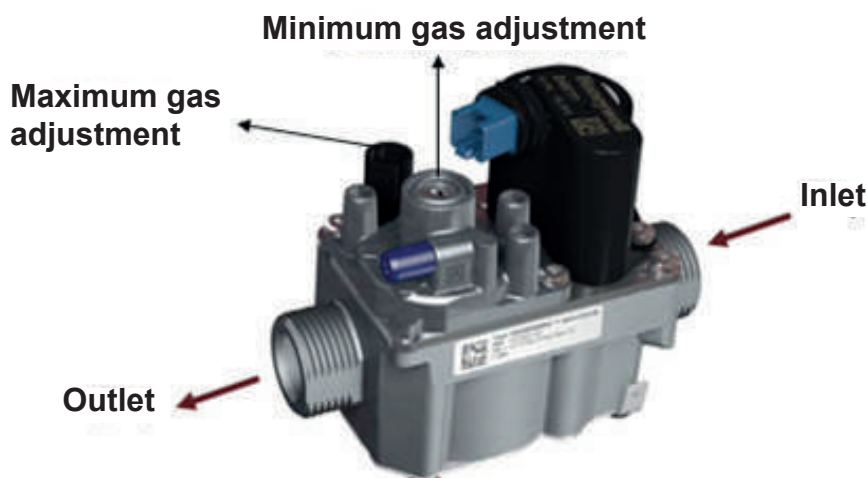


Figure 13

### **Adjusting the maximum outlet pressure:**

- Remove the front panel of the device and tilt the the control panel forward.
- Put the device to the maximum operating position (test mode). (Test mode is activated by pressing the CH temperature increase and decrease buttons (no 4 and 6 on the control panel) for 5 seconds.)
- Slowly turning the "1" maximum gas set point clockwise increases the gas flow to the burner, whe reas turning the set point counterclockwise decreases the gas flow.
- Check the CO<sub>2</sub> value using an emission device when adjusting the setting.
- The maximum gas setting is completed when the CO<sub>2</sub> value reaches the range specified in the table.

Equipment required: 4mm Allen wrench

### **Adjusting the minimum outlet pressure:**

- Put the device into the minimum operating position. Press the CH temperature decrease button (no 6 on the control panel) while the device is in test mode.
- After removing the protection cover of the "2" minimum gas set point screw shown in the figure, turning the screw clockwise increases the gas flow, whereas turning the screw counterclockwise decreases the gas flow.
- Check the CO<sub>2</sub> value using an emission device when adjusting the setting.
- The minimum gas setting is completed when the CO<sub>2</sub> value reaches the range specified in the table.
- Remember to place the "2" minimum gas pressure adjustment regulator cover after making the adjustments.
- Place the front panel and the control panel that you have removed.

Equipment required: T40 Torx Screwdriver

# 11. CONTROLLER CONNECTION

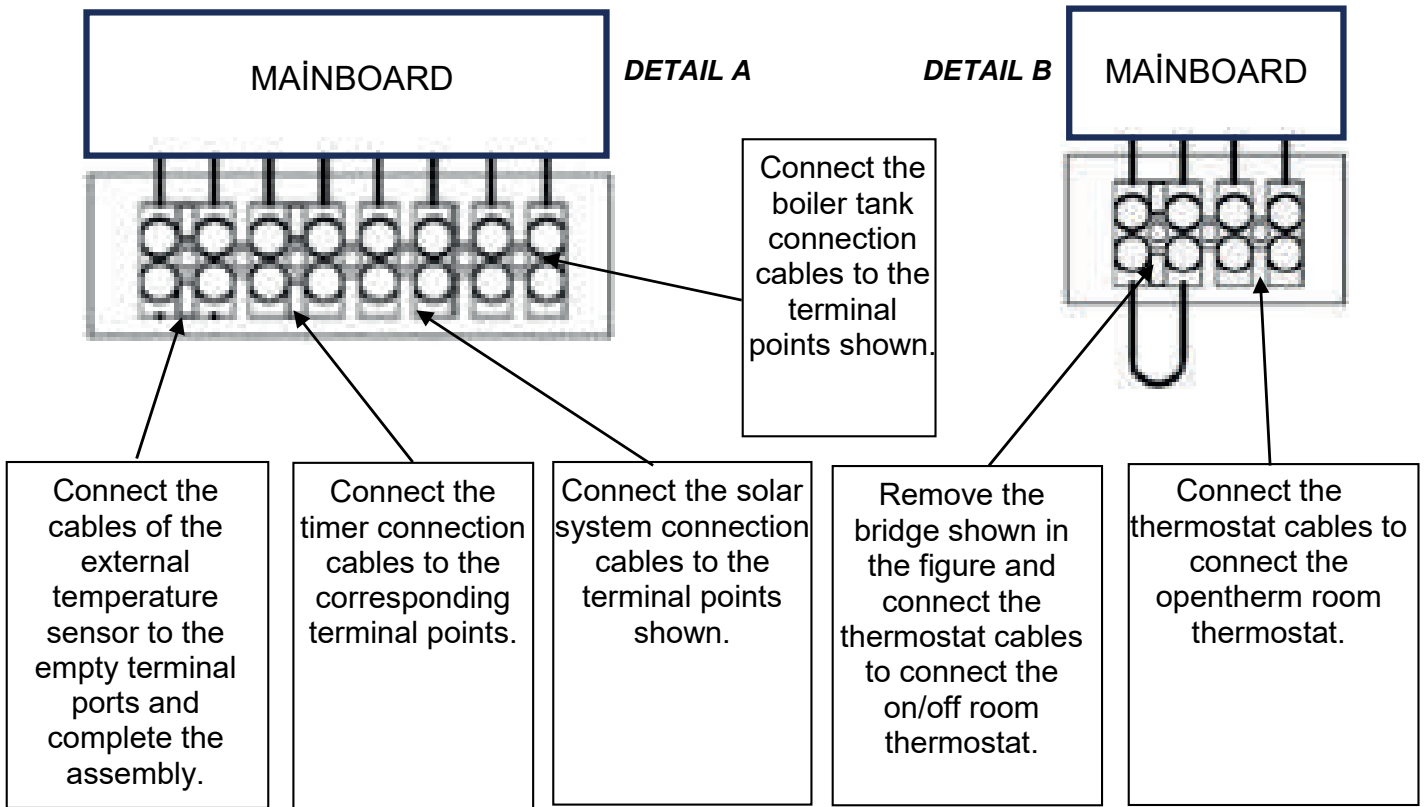


Table 7

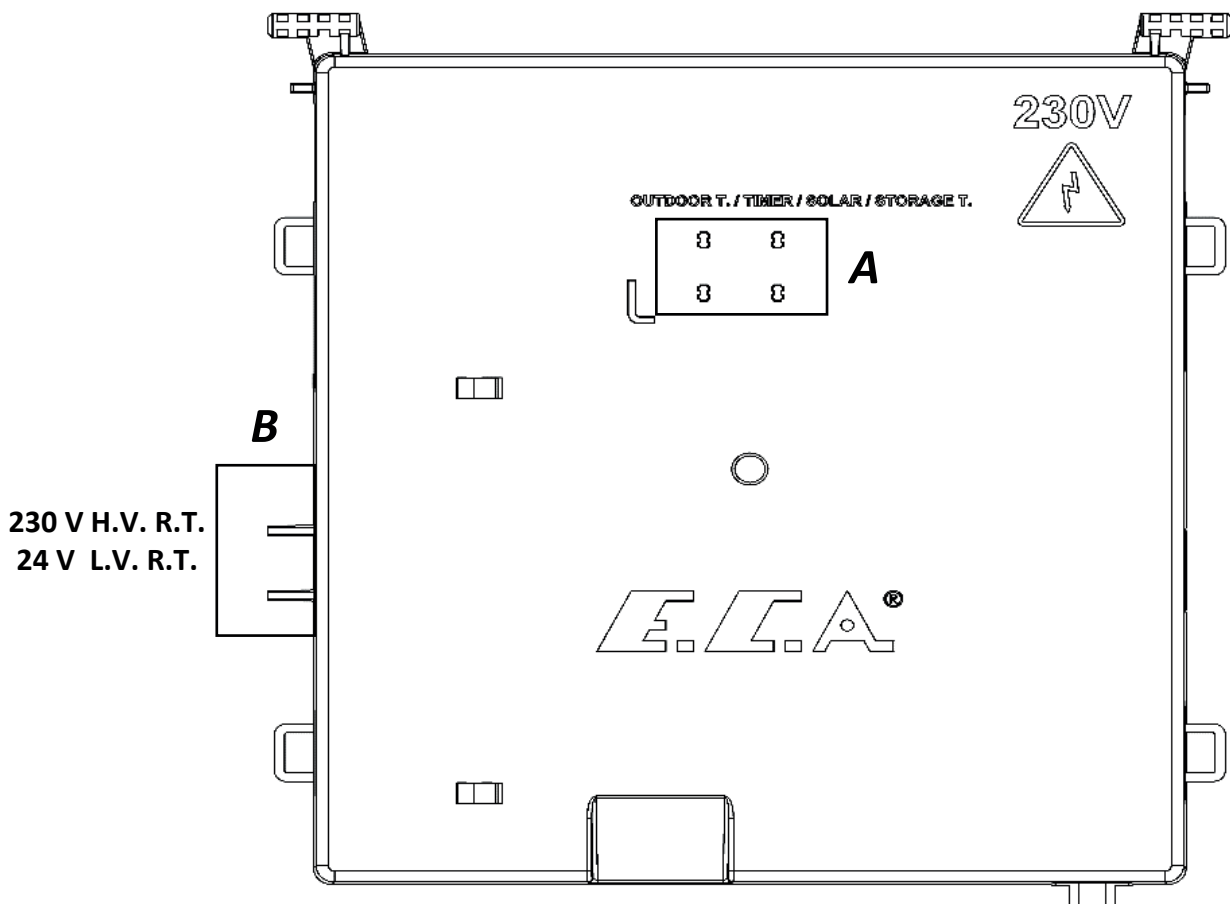


Figure 14

# 12. ELECTRICAL DIAGRAM

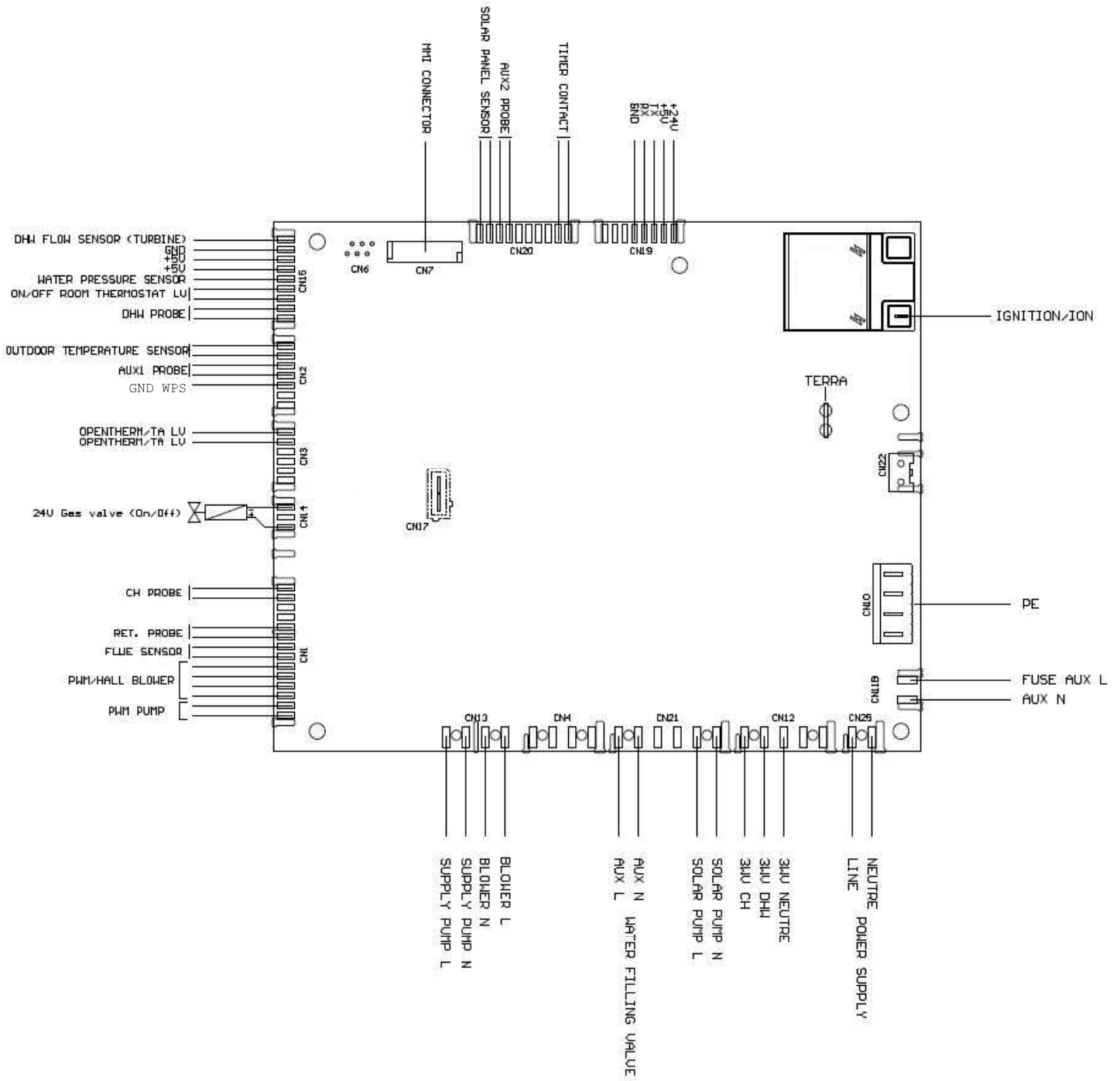


Figure 15

### 13. FLUE ACCESSORIES


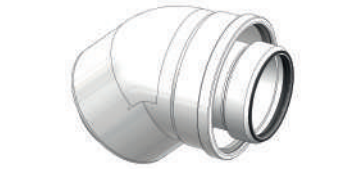








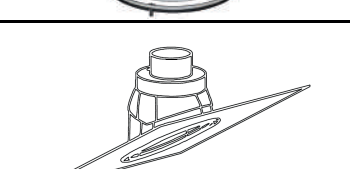
|  |  |  |  |
|--|--|--|--|
|    | <b>7006991677 Ø60-100 (BLACK)</b><br>CCB 60/100 Hermetic Flue (Plume)  |    | <b>7006990071 Ø80-125 (WHITE)</b><br>CCB Extra 45° Elbow<br><b>7006991744 Ø80-125 (BLACK)</b><br>PCB Extra 45° Elbow   |
|    | <b>7006990059 Ø60-100 - 100 cm (WHITE)</b><br>CCB Insertion and Flue Extension<br><b>7006991734 Ø60-100 - 100 cm (BLACK)</b><br>PCB Insertion and Flue Extension |    | <b>7006990072 Ø80-125 (WHITE)</b><br>CCB Vertical Flue Kit<br><b>7006991745 Ø80-125 (BLACK)</b><br>CCB Vertical Flue Kit                                       |
|    | <b>7006990060 Ø60-100 - 50 cm (WHITE)</b><br>CCB Insertion and Flue Extension<br><b>7006991735 Ø60-100 - 50 cm (BLACK)</b><br>PCB Insertion and Flue Extension   |    | <b>7006990073 Ø80-125 (WHITE)</b><br>CCB Flue Adapter<br><b>7006991746 Ø80-125 (BLACK)</b><br>CCB Flue Adapter   |
|    | <b>7006990061 Ø60-100 (WHITE)</b><br>CCB Insertion 90° Elbow<br><b>7006991736 Ø60-100 (BLACK)</b><br>PCB Insertion 90° Elbow                                     |    | <b>7006990067 Ø80-125 - 76 cm (WHITE)</b><br>CCB Horizontal Hermetic Flue Kit<br><b>7006991740 Ø80-125 - 76 cm (BLACK)</b><br>CCB Horizontal Hermetic Flue Kit |
|   | <b>7006990062 Ø80-125 (WHITE)</b><br>PCB Extra 45° Elbow<br><b>7006991737 Ø80-125 (BLACK)</b><br>PCB Extra 45° Elbow   |   | <b>7006990070 Ø80-125 (WHITE)</b><br>CCB Extra 90° Elbow<br><b>7006991743 Ø80-125 (BLACK)</b><br>CCB Extra 90° Elbow   |
|  | <b>7006990063 Ø60-100 - 125 cm (WHITE)</b><br>CCB Vertical Flue Terminal<br><b>7006991738 Ø60-100 - 125 cm (BLACK)</b><br>PCB Vertical Flue Terminal             |  | <b>7006990068 Ø80-125 - 50 cm (WHITE)</b><br>CCB Additional Flue Extension<br><b>7006991749 Ø80-125 - 50 cm (BLACK)</b><br>CCB Additional Flue Extension       |
|  | <b>7006990064 Ø60-100 (WHITE)</b><br>CCB Vertical Flue Adapter<br><b>7006991739 Ø60-100 (BLACK)</b><br>PCB Vertical Flue Adapter                                 |  | <b>7006990069 Ø80-125-100 cm (WHITE)</b><br>CCB Additional Flue Extension<br><b>7006991750 Ø80-125-100 cm (BLACK)</b><br>CCB Additional Flue Extension         |
|  | <b>7006990065 Ø60-100</b><br>CCB Sloping Roof Adapter  |  | <b>7006991251 Ø60/100</b><br>CCB Plume Kit   |
|  | <b>7006990066 Ø60-100</b><br>CCB Deck Roof Adapter   |  | <b>7006991252 Ø60/100</b><br>CCB 1M Flume (Plume)  |

Figure 16

## 14. DEFINITIONS OF ASSEMBLY/DISASSEMBLY OF THE PARTS

- **Removing the front cover:** Remove the 2 screws connecting the front glass panel, side sheets, and bottom chassis and open the front glass panel.

**Torque:  $4 \pm 0.4$  Nm**



*Figure 17*

Then, remove the MMI cable that connects the mainboard box and the MMI card box from its connectors.



*Figure 18*

Step 1



*Figure 19*

Step 2



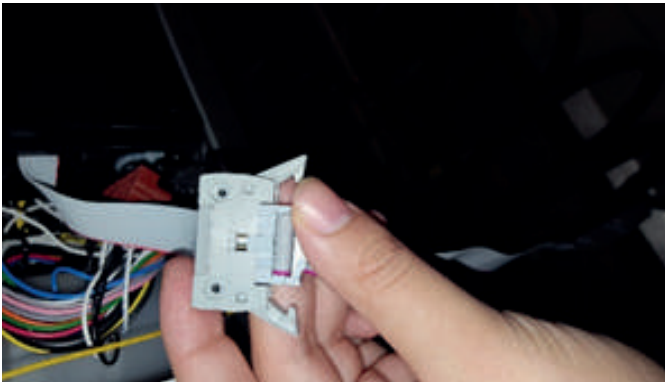


Figure 20  
Step 3



Figure 21  
Step 4

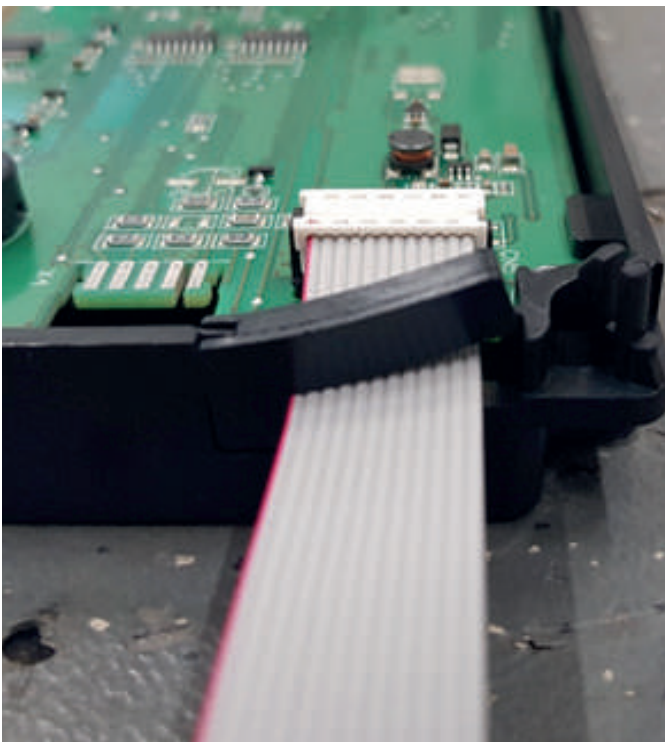


Figure 22  
Step 1

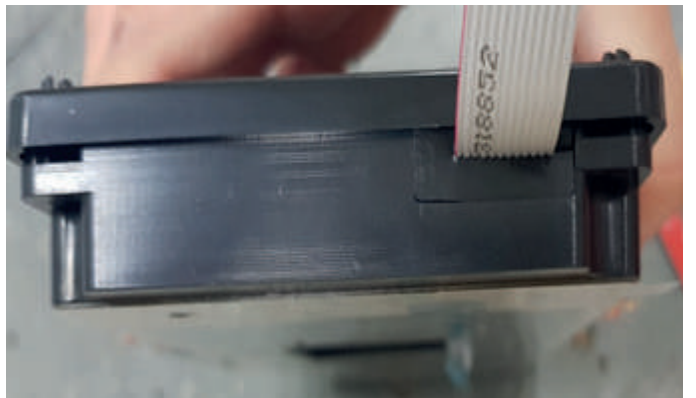


Figure 23  
Step 2

**NOTE:** When inserting the MMI cable into the gasket, it should be noted that it is fully seated as shown in figure 23.

Remove the rope that functions as a stopper from the hook on the same side with the frame as shown in the figure 25 below.

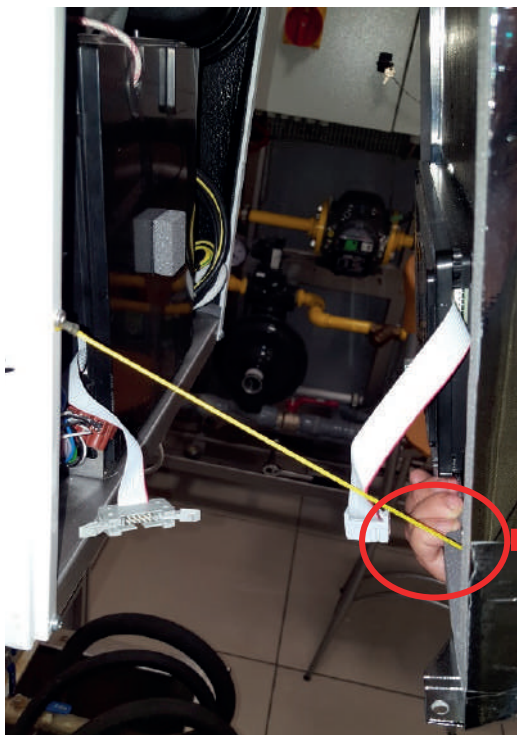


Figure 24

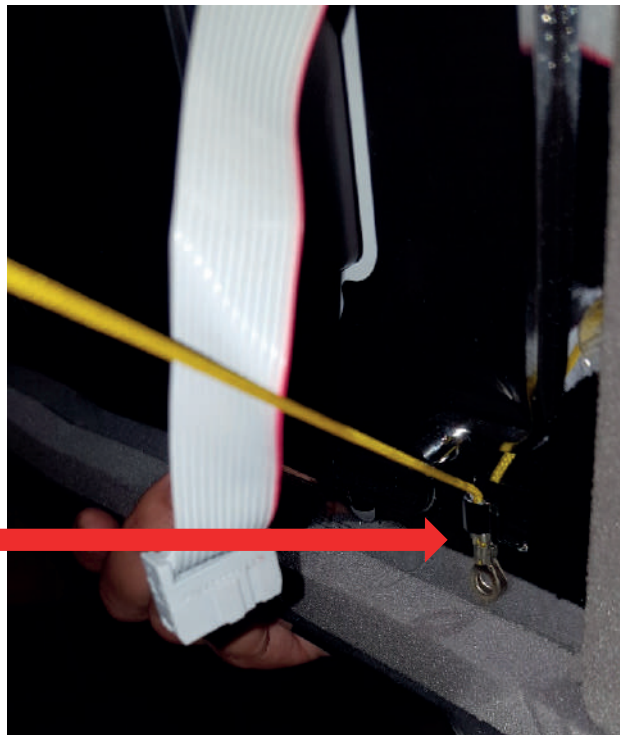


Figure 25



**WARNING:** Do not forget to attach the stopper to the point shown in the image before closing the front panel.

**MMI service cable assembly-disassembly:** In cases where operation is required while the boiler is in operation, the connection of the service cable shown in the image can be done with the front panel open.

**MMI SERVICE  
CABLE**

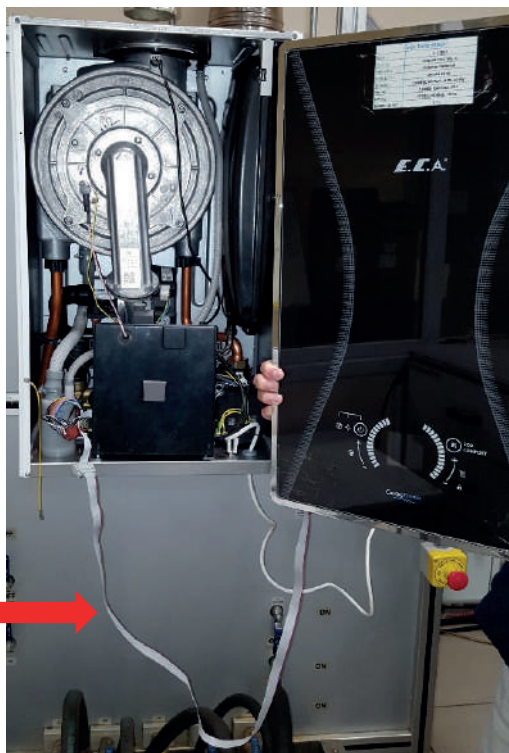


Figure 26



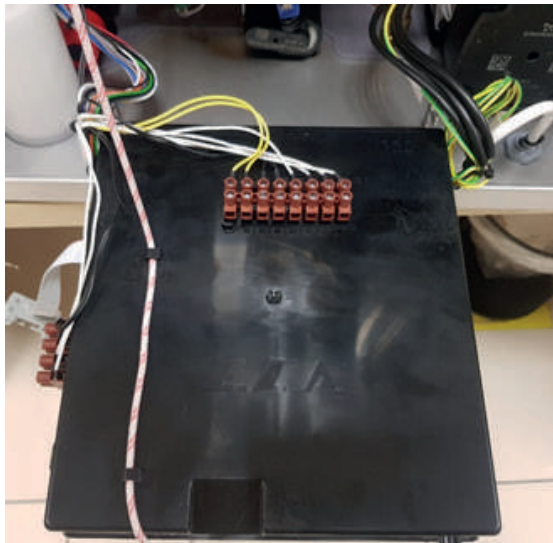
- **Removing the side panel:** Remove the side covers and 4 screws connecting the bottom chassis and body. Open the side lids.

**Torque:**  $4 \pm 0.4$  Nm



*Figure 27*

- **Removing the mainboard box:** Open the cover by removing the tabs of the control panel.



*Figure 28*

**NOTE:** Make sure that the ignition cable passes through the tabs on the back side of the mainboard box.

Remove the the ignition and ionization cables attached to the mainboard passing through the seal shown in the figure 29.



Figure 29

Open the cover by removing the tabs of the control panel.

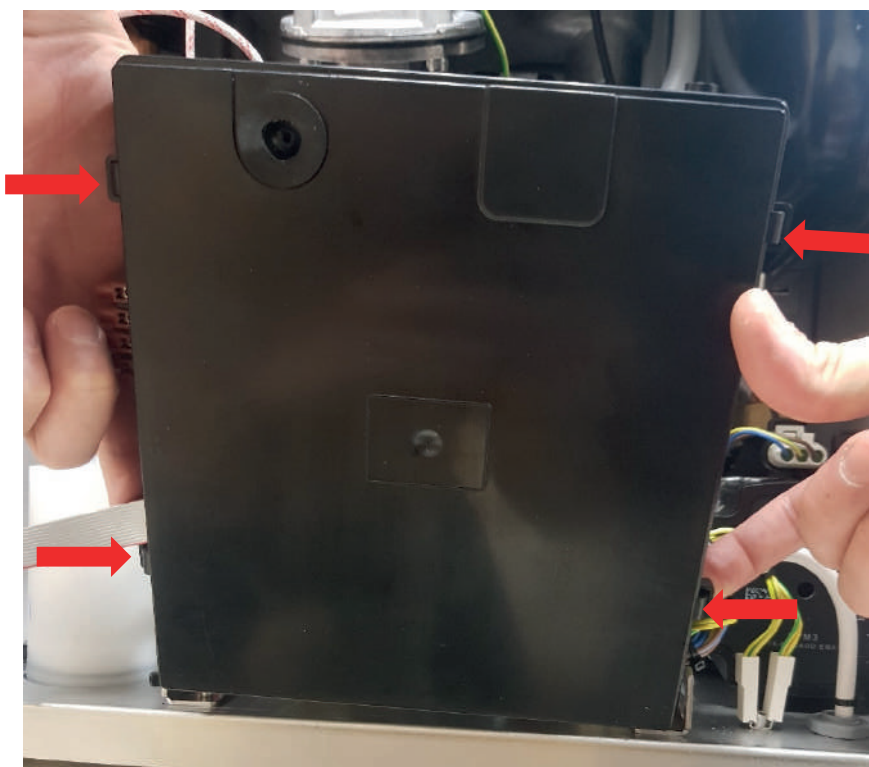


Figure 30

- **Mainboard connections:** Each socket on the mainboard that needs to be installed is shown in the figure 31 below.

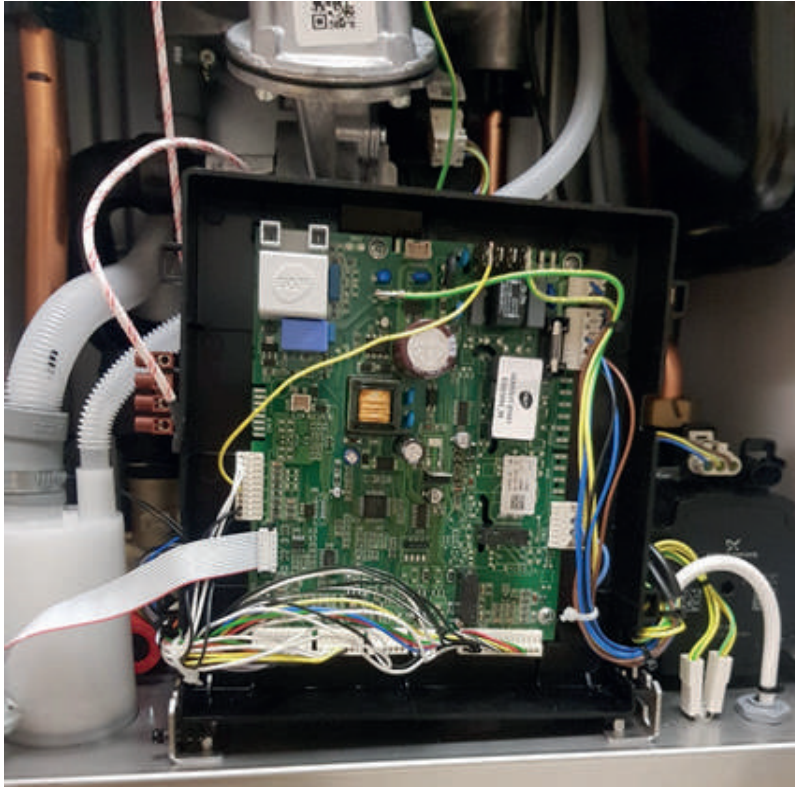


Figure 31

- **Solar Connector Assembly-Disassembly:** The gasket shown in the image below is removed and the solar connector is attached to the empty section CN21 on the mainboard. The gasket on the cable is replaced with the gasket we removed.



Figure 32

Step 1

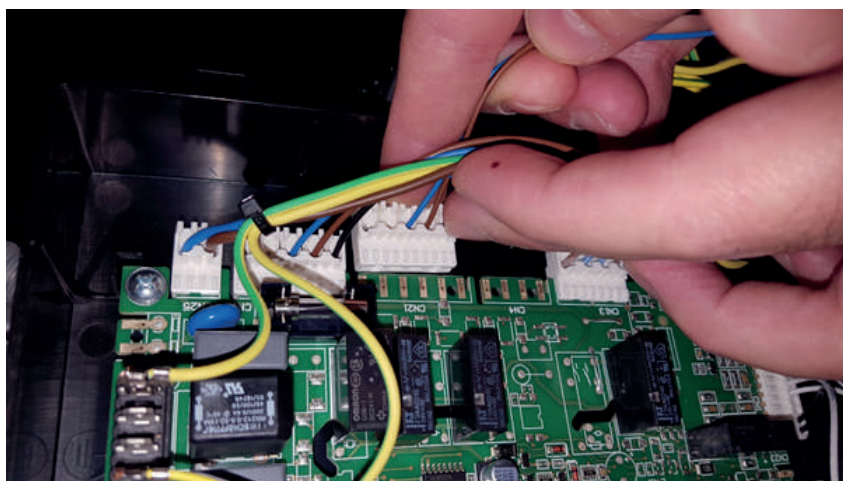


Figure 33

Step 2



After removing the cables on the mainboard, remove the 4 screws shown in the figure by pulling the card tabs.

**Torque:  $0.5 \pm 0.1$  Nm**



*Figure 34*

• **Removing-installing the flue gas sensor:** Place the flue gas sensor into the port shown in the figure 35.



*Figure 35*

- **Removing-installing the ignition and ionization electrode:** Connect the electrode and the grounding cable as shown in the figure 36.

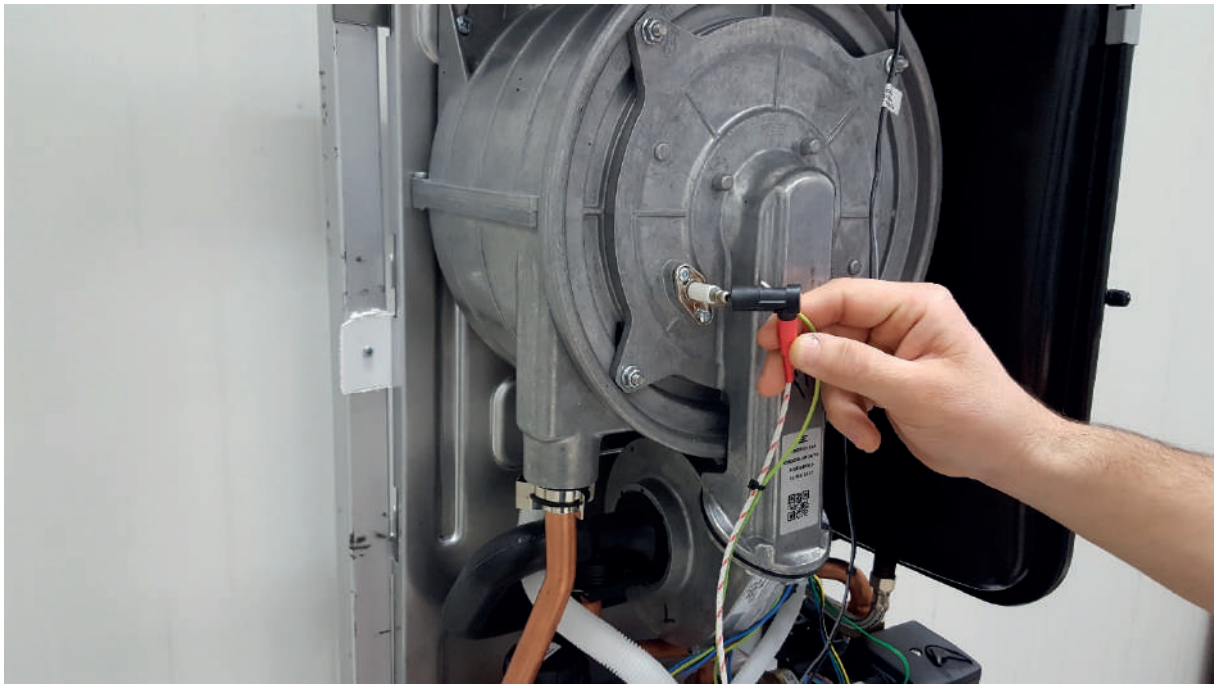


Figure 36



Figure 37

- **Removing-installing the fan cables:** Connect the fan modulation and fan supply cables as shown in the figure 38.

**High Voltage:**

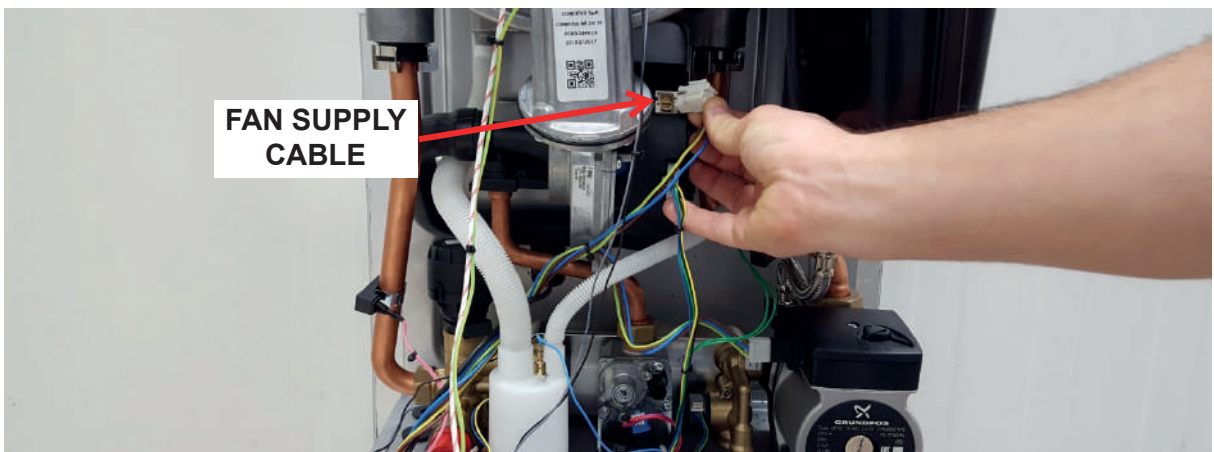
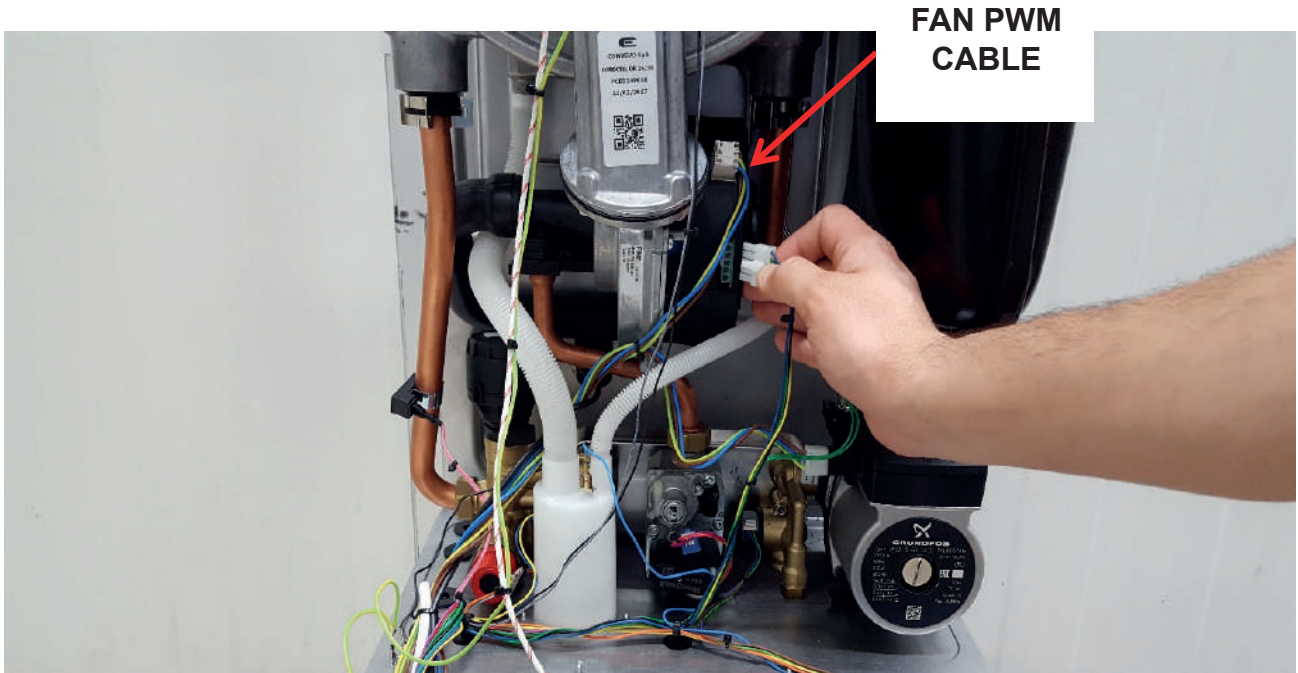


Figure 38

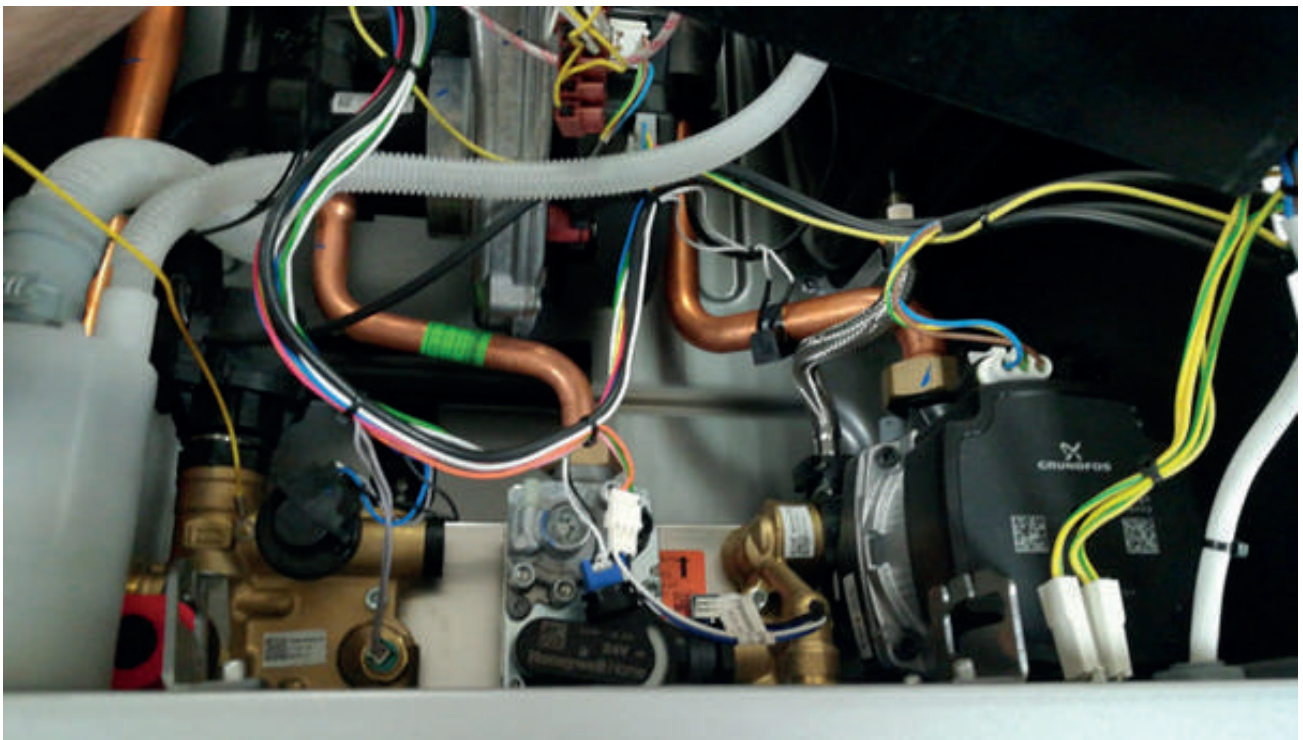


**Low Voltage:**



*Figure 39*

**• Removing-installing the pump cable:**



*Figure 40*

- **Removing-installing the flow sensor and its cable:** The flow sensor (the hall effect sensor) in the domestic water circuit shown in the figure 41 and the connector attached to it can be easily removed and installed.

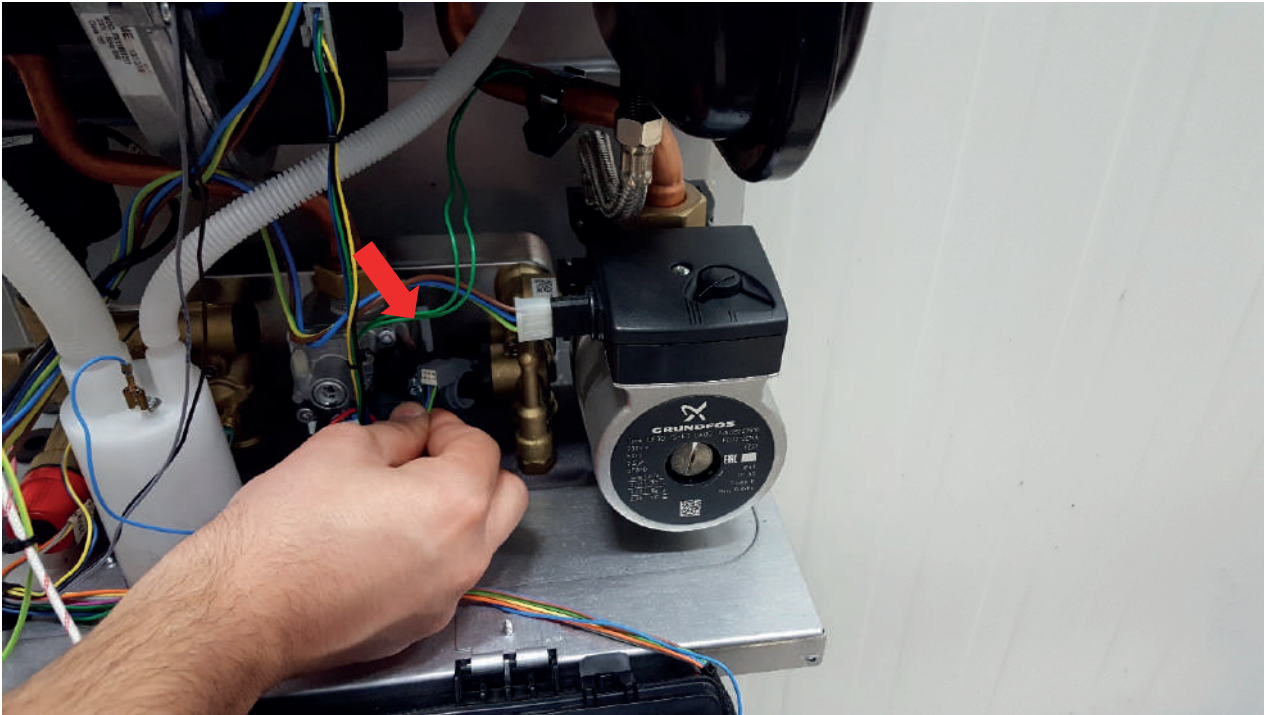


Figure 41

- **Removing-installing the gas valve cable:**

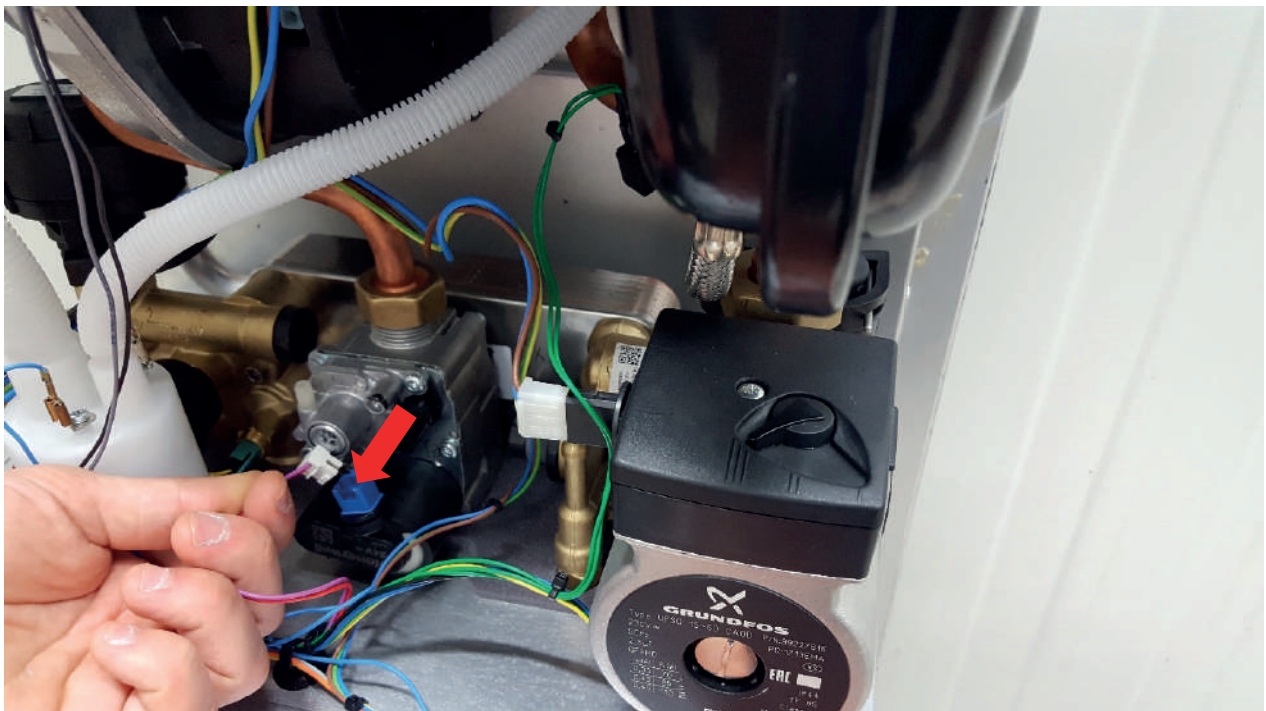


Figure 42



- **Removing-installing the surface-type NTC and its cable:** There are 2 surface-type NTCs on the heater supply and return pipes of the boiler.

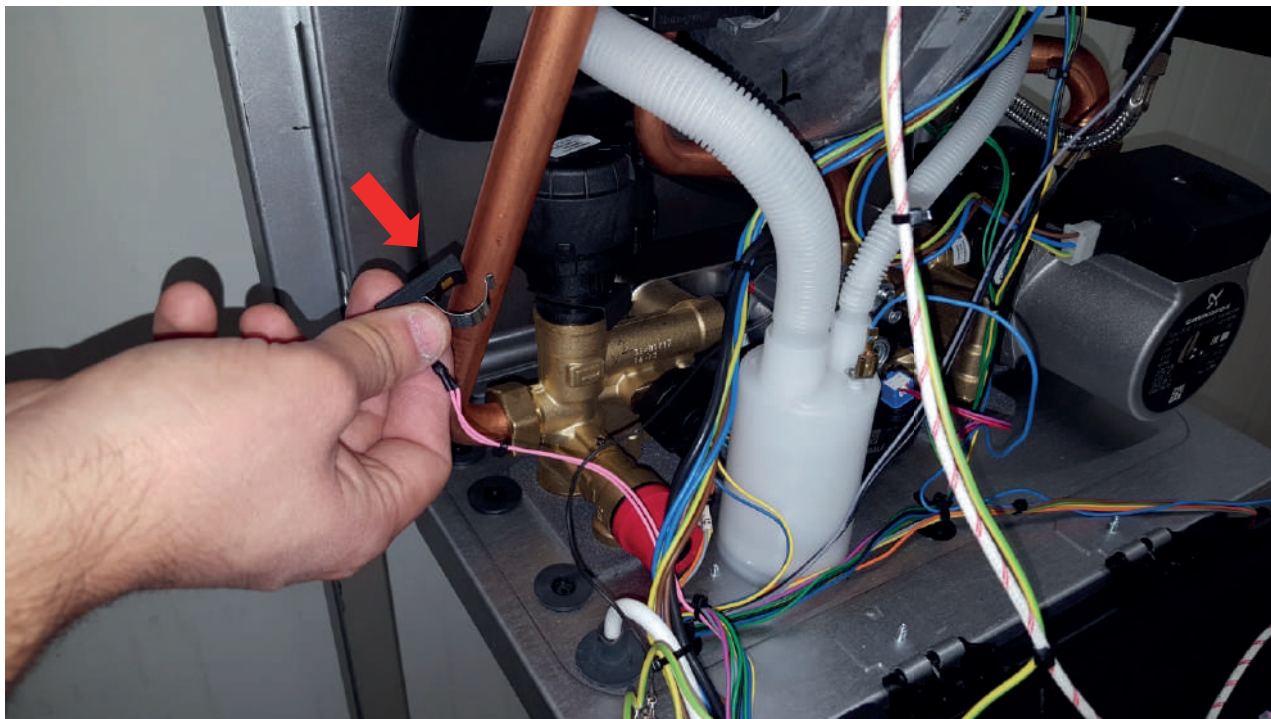


Figure 43



Figure 44

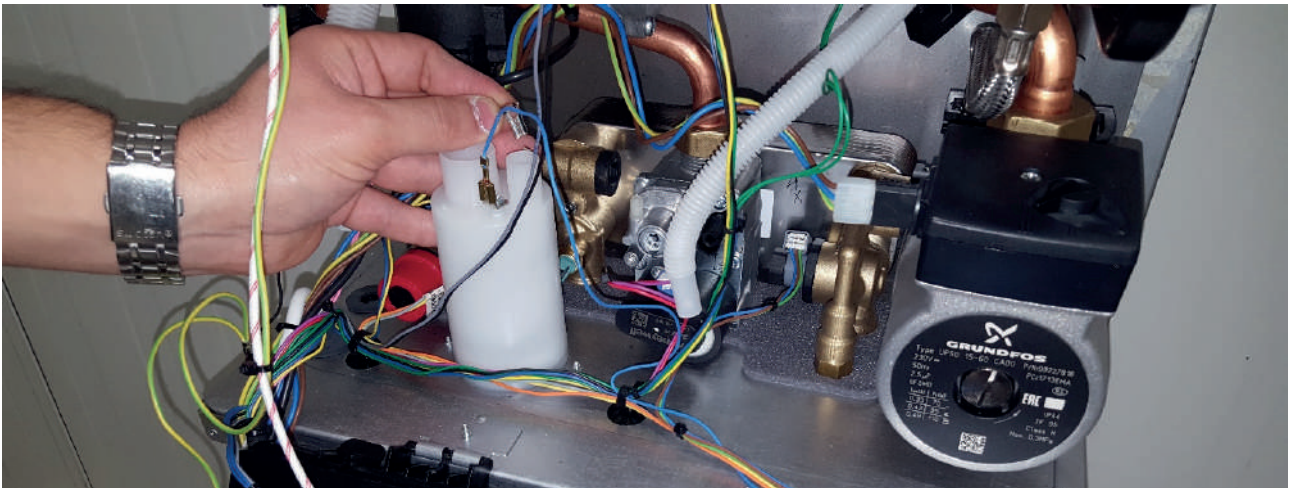


• **Siphon, Siphon Hose Disassembly:** Remove the clamps screw over the condensing hose on the siphon as shown in the figure 45.

**Torque: 1+ 0,1 Nm**



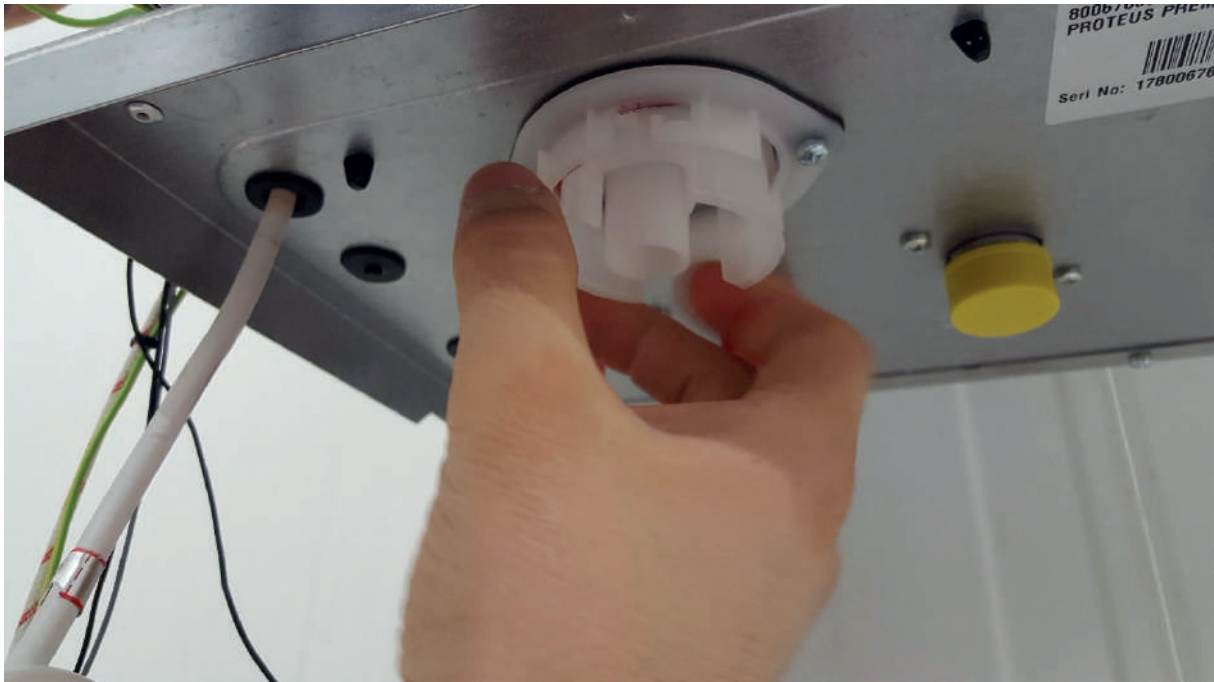
*Figure 45*



*Figure 46*

Lift the siphon upwards and turn it counterclockwise. Then remove the siphon by pulling it down with a hand tool or by hand. Loosen the screw on the clamp and remove.

**Torque:  $0.5 \pm 0.1$  Nm.**



*Figure 47*



*Figure 48*

Remove the siphon hose by loosening the clamp.

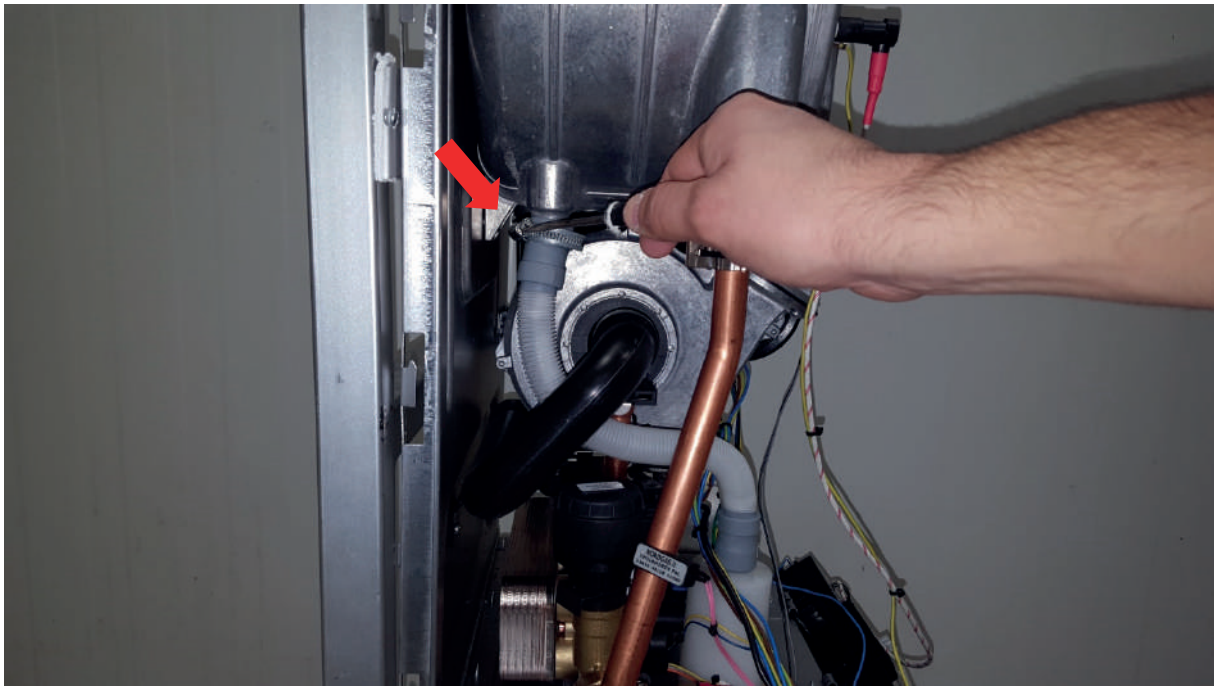


Figure 49

Remove the 2 screws attached to the bottom chassis take out the siphon completely.

**Torque:  $1 \pm 0.1$  Nm**

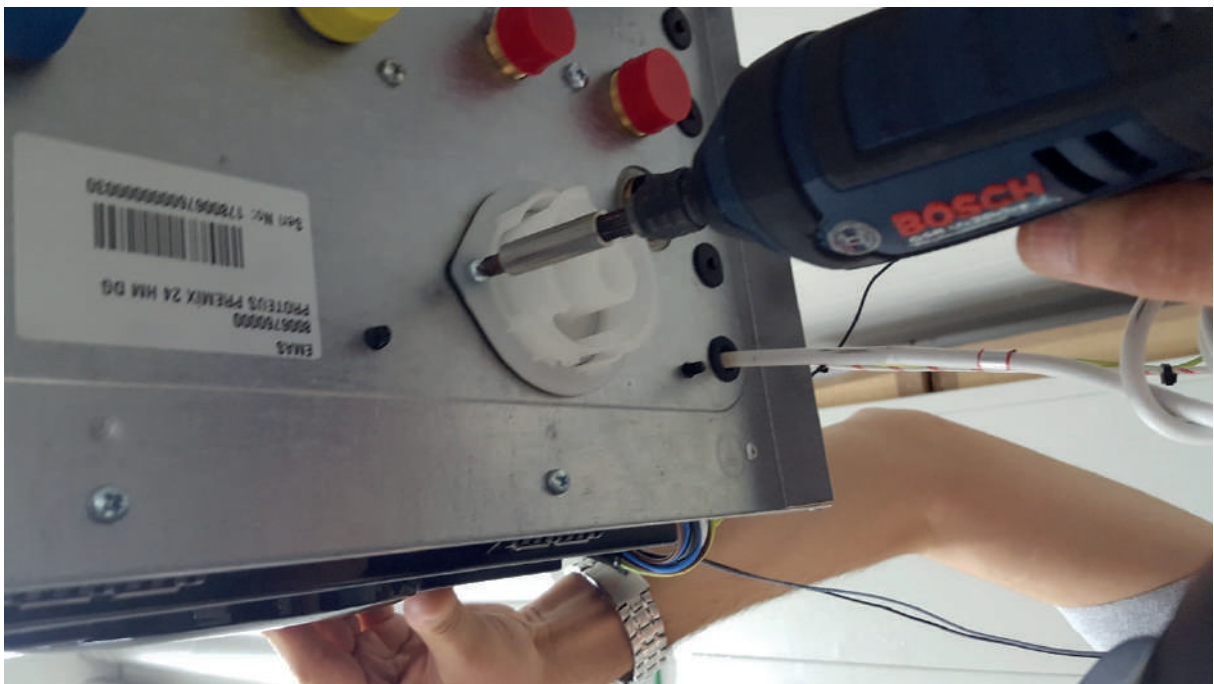


Figure 50

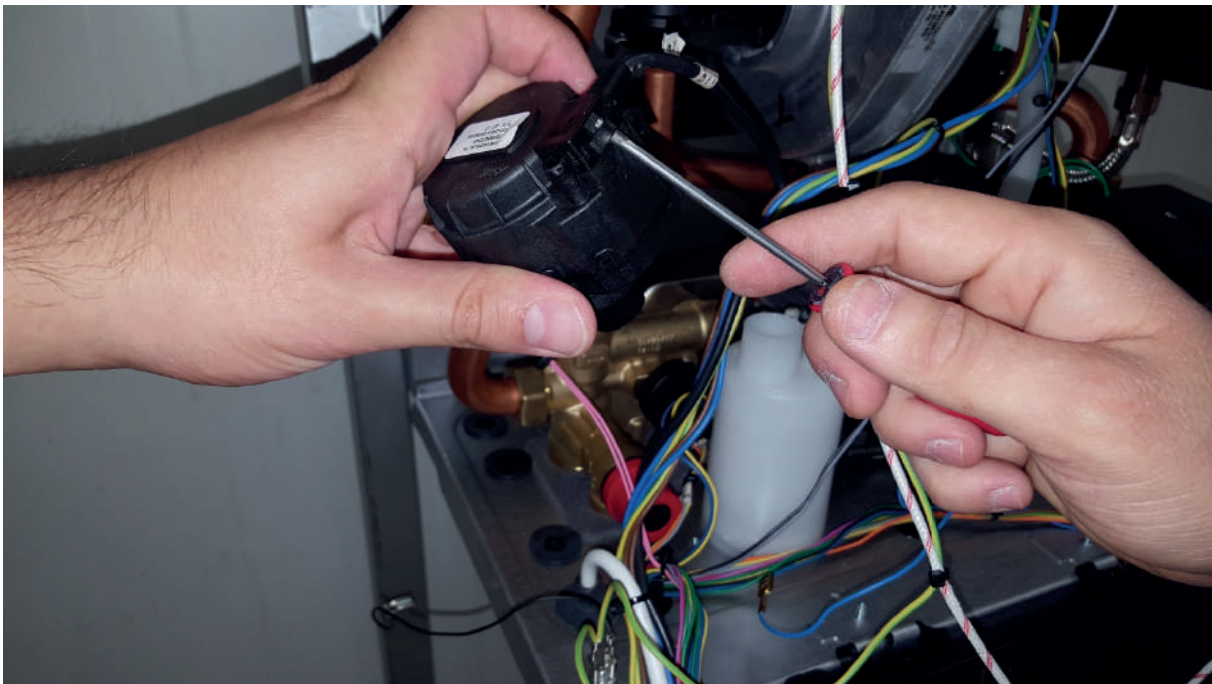


- **Removing-installing the motorized valve:** Remove the clip that fixes the manifold and the motorized valve and then remove the motorized valve.



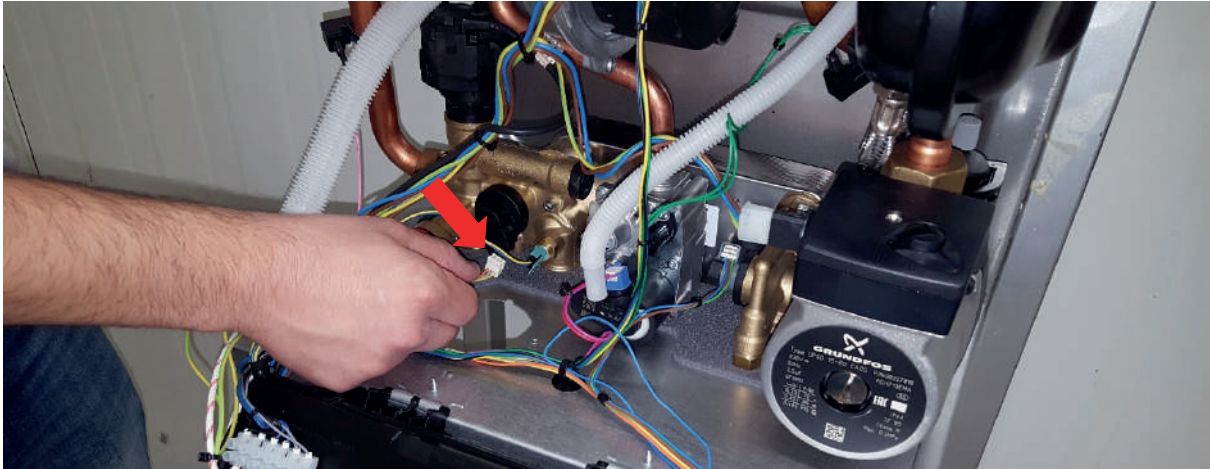
*Figure 51*

Remove the slot of the cable case from the tab with the help of a hand tool to replace the cable of the motorized Valve.



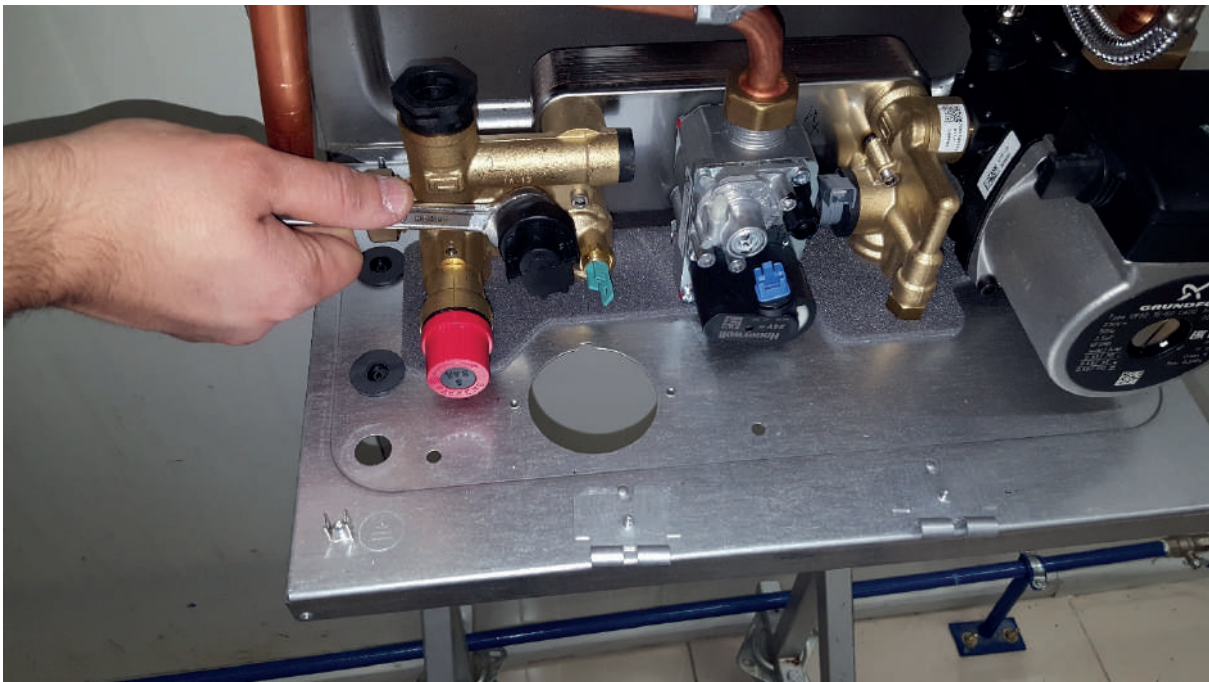
*Figure 52*

- **Removing-installing the water pressure sensor:** Before removing the water pressure sensor, the siphon must be removed completely. Then remove the water pressure sensor cable.



*Figure 53*

Remove the water pressure sensor using a wrench. When reassembling, make sure that there is a seal.



*Figure 54*



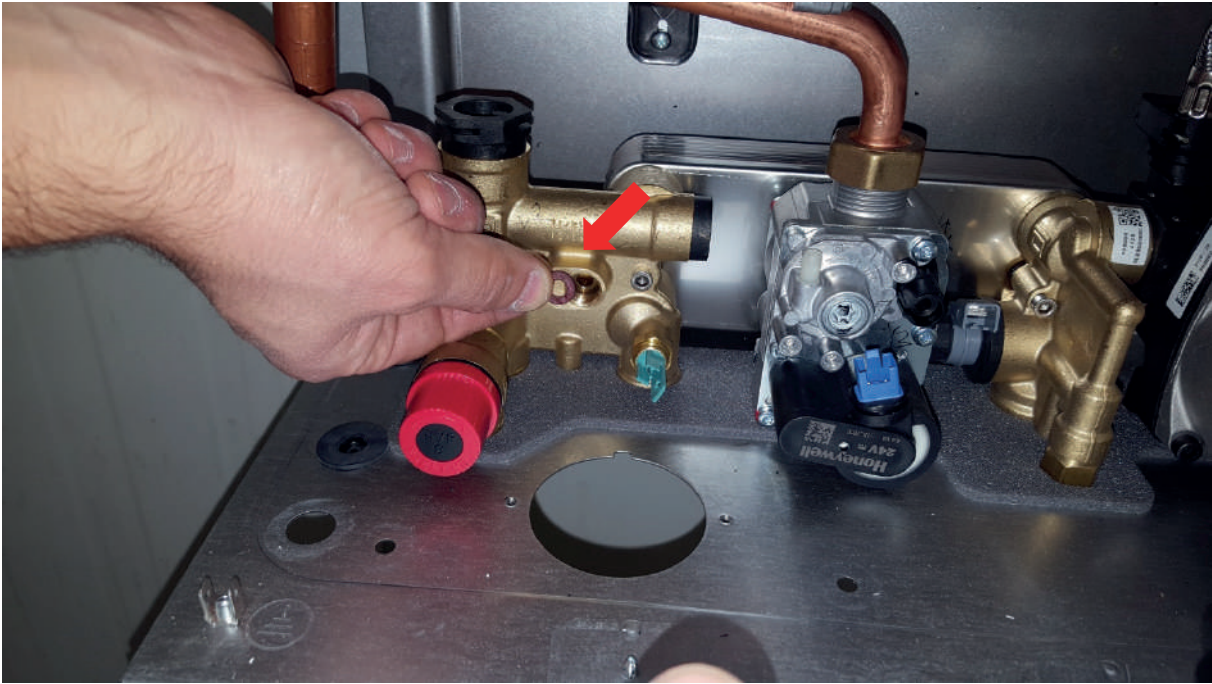


Figure 55

• **Removing-installing the immersion-type NTC:** Remove the NTC using a 18-inch wrench.

**Torque:  $3 \pm 0.3$  Nm**

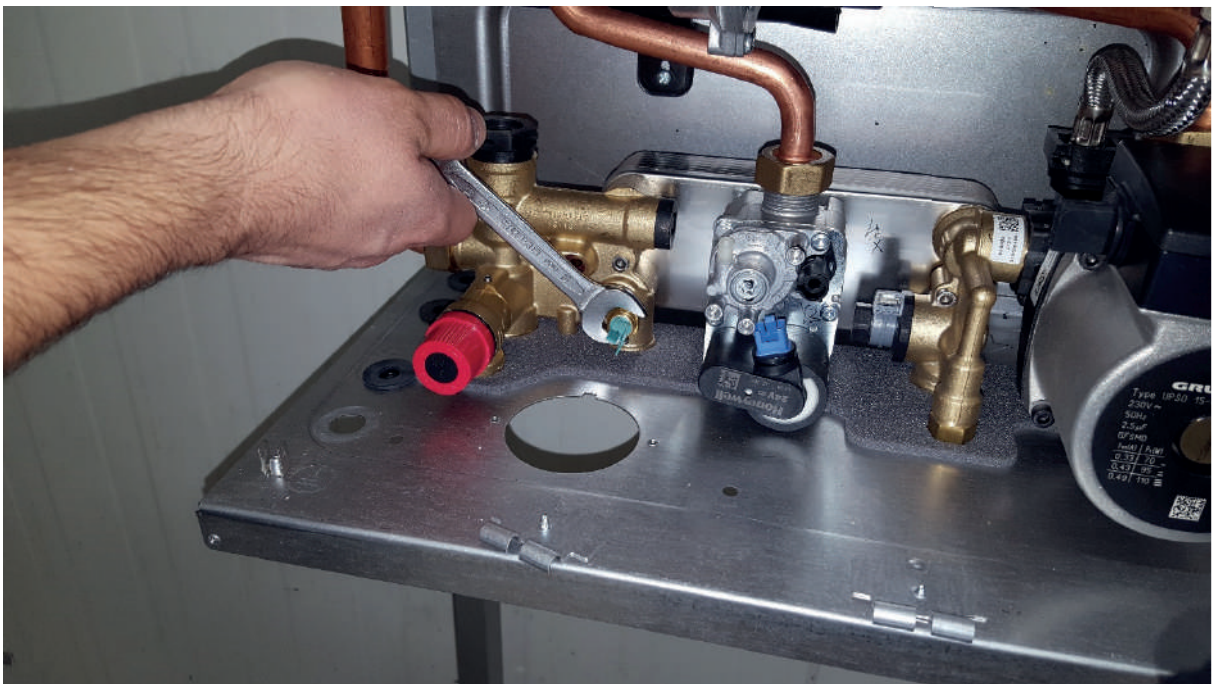


Figure 56



- **Removing-installing the 3-bar safety valve:** Loosen the bolt on the manifold using an Allen wrench and remove the safety valve. (the alternative safety valve model does not have an Allen screw.)

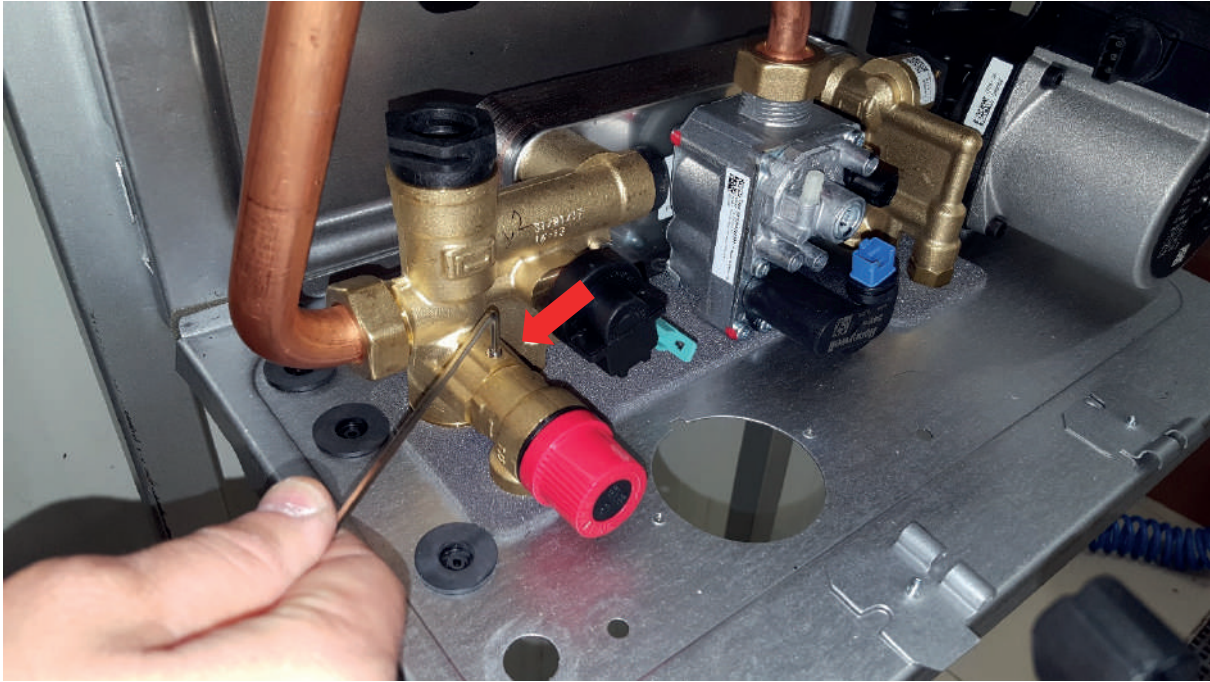


Figure 57

- **Removing-installing the plate heat exchanger:** Loosen the bolt on the manifold using an Allen wrench and remove the plate heat exchanger.

**Torque:  $3 \pm 0.3$  Nm**

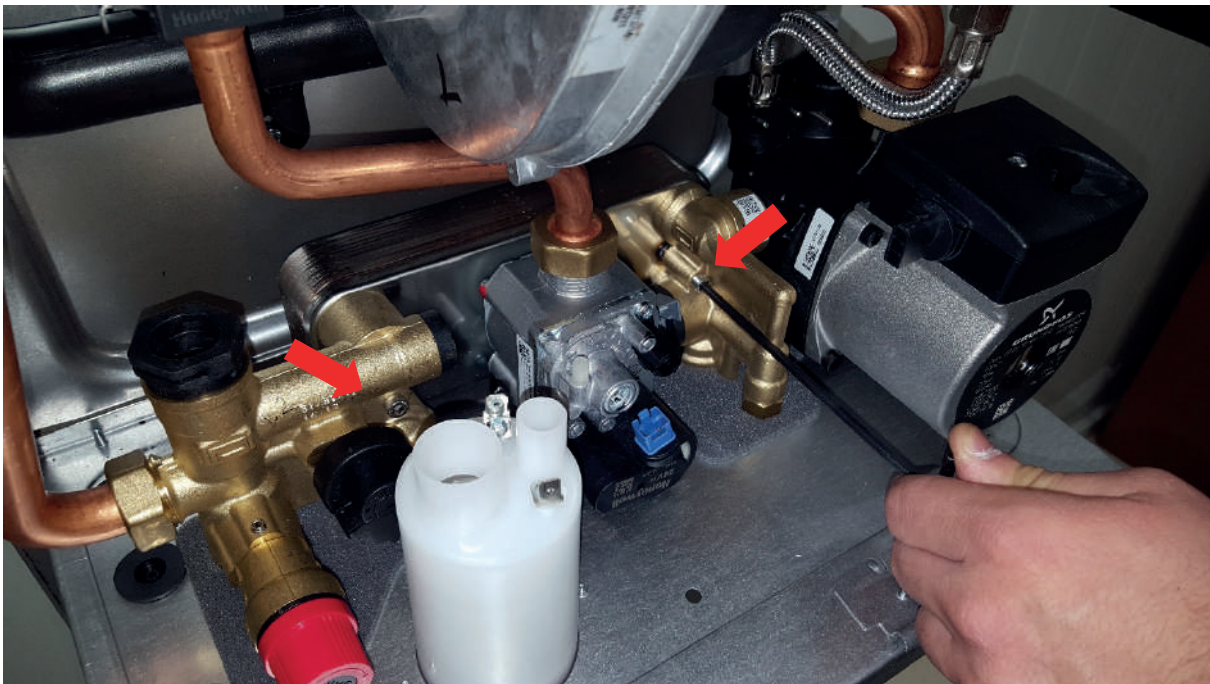


Figure 58

- **Removing-installing the gas valve:** Loosen the 2 bolts that secure the gas valve to the bottom chassis.

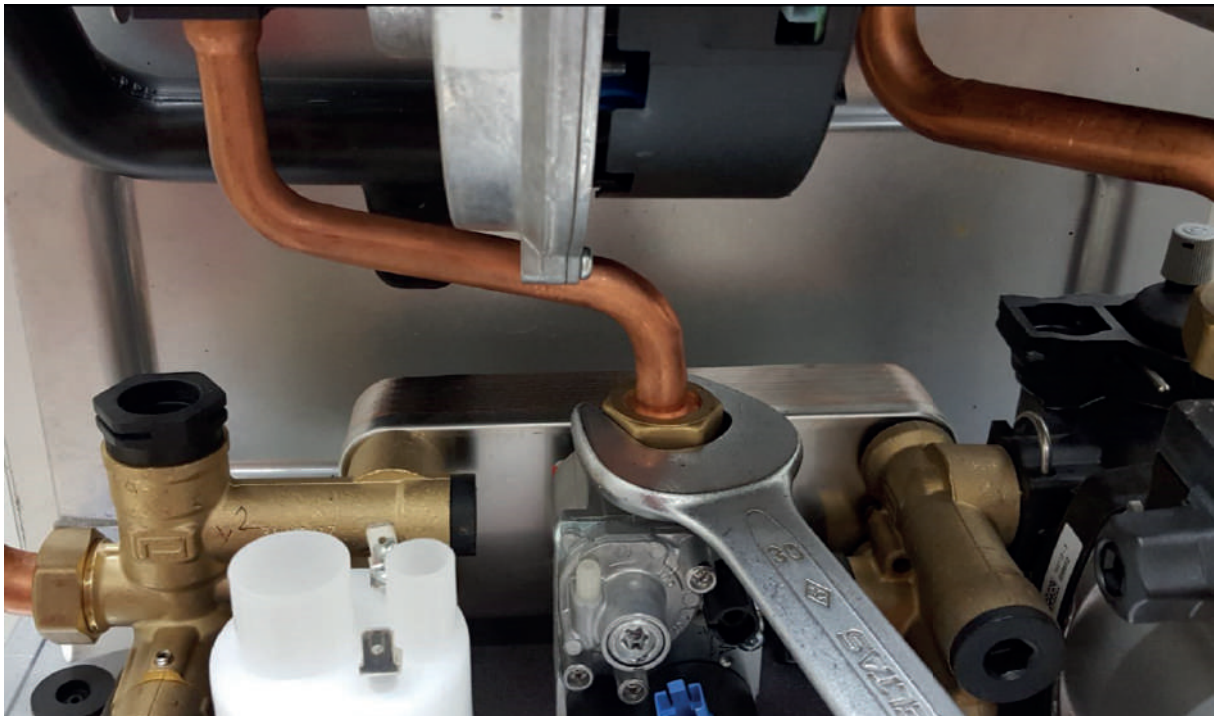
**Torque:  $3 \pm 0.3$  Nm**



*Figure 59*

Loosen the brass nut connecting the gas valve and the gas pipe using an Allen wrench.

**Torque:  $30 \pm 2.5$  Nm**

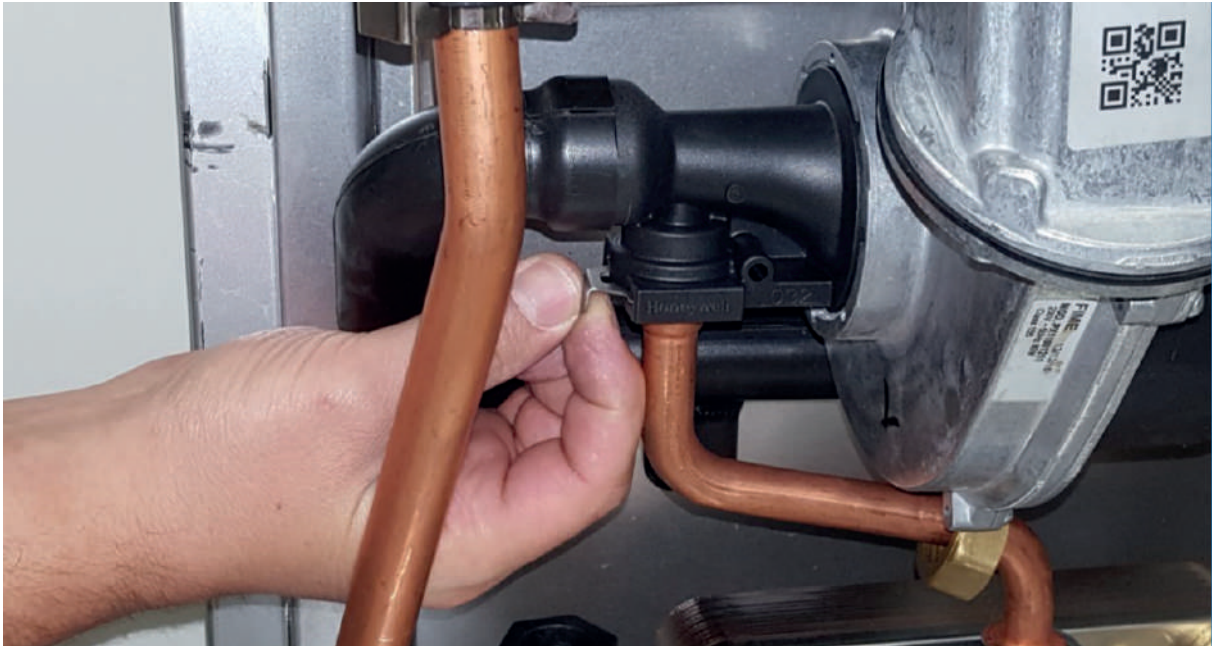


*Figure 60*

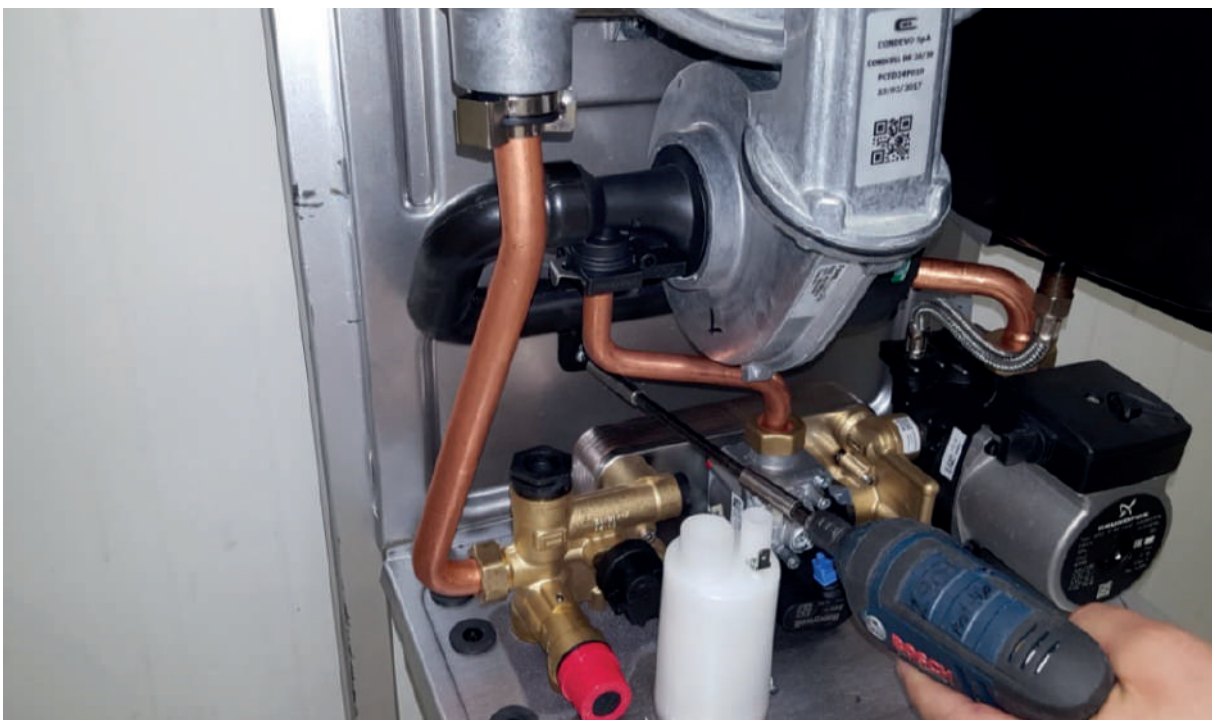


• **Removing-installing the venturi:** Remove the clip that secures the V gas pipe and the venturi. Loosen the bolt that secures the silencer to the combustion body. After removing the silencer, turn and remove the venturi.

**Torque:  $2 \pm 0.1$  Nm**



*Figure 61*



*Figure 62*

Expansion tank brackets are removed.



Figure 63

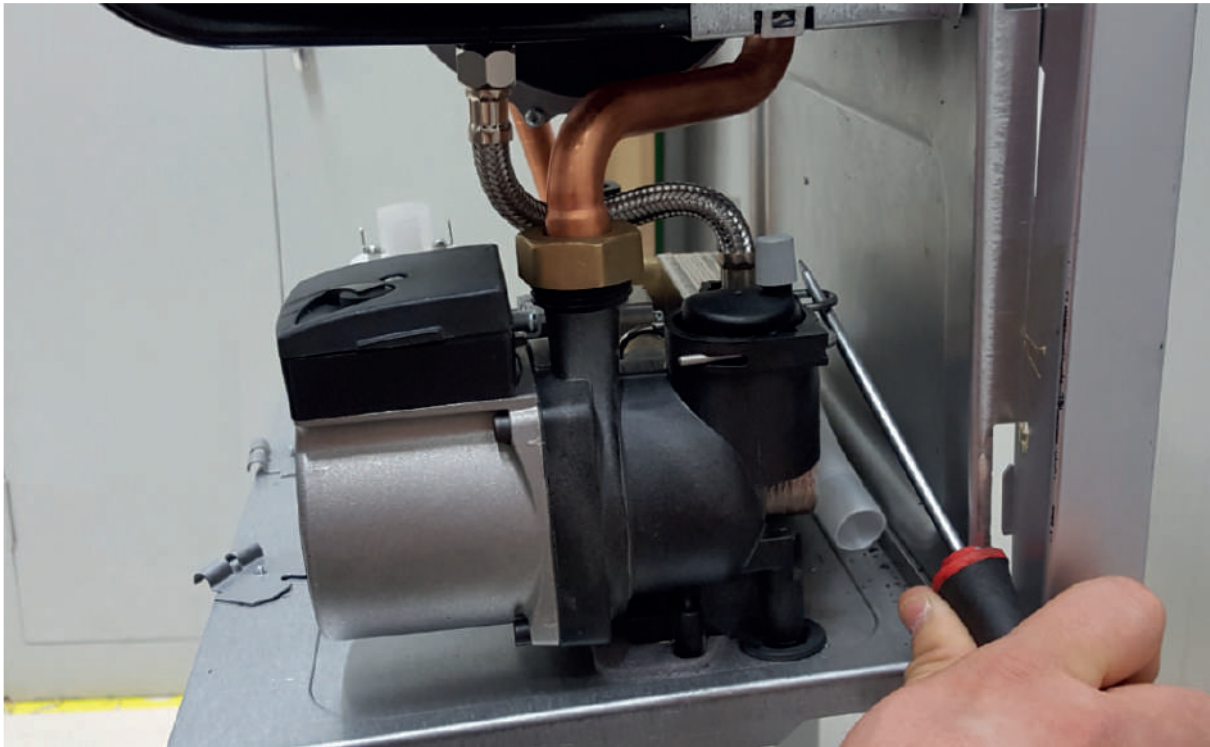
After removing the silencer, turn and remove the venturi.



Figure 64



- **Removing-installing the expansion tank:** Remove the clip where the flex hose connects to the pump using a hand tool to remove the expansion tank.



*Figure 65*

The connection nut of the expansion tank and the flex hose using an Allen wrench.

**Torque:  $10 \pm 0.5$  Nm**



*Figure 66*

Remove the tank holder brackets of the expansion tank.

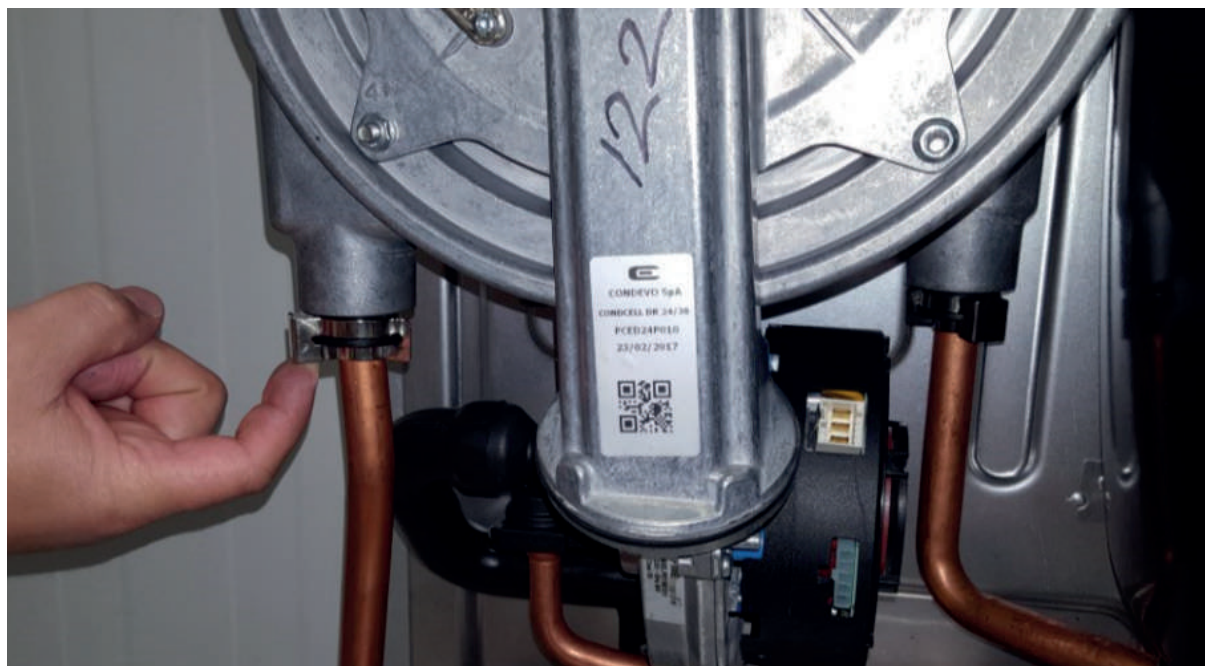
**Torque:  $4 \pm 0.4$  Nm**



*Figure 67*

• **Removing-installing the main heat exchanger assembly:** Remove the screws that connect the fan and the manifold using an Allen wrench. Remove the clips of the inlet-outlet pipes.

**Torque:  $1.8 \pm 0.3$  Nm**



*Figure 68*



*Figure 69*

Remove the screws that connect the fan and the manifold using an Allen wrench.

**Torque:  $3 \pm 0.5$  Nm**



*Figure 70*



Remove the ignition-ionization screws using an Allen wrench.

**Torque:  $1 \pm 0.2$  Nm (Torx 4 mm)**



Figure 71



Figure 72

Remove the 4 cover screws of the heat exchanger. When removing and installing the heat exchanger cover, perform the operations according to the order written on the cover.

**Torque:  $5 \pm 0.5$**



Figure 73

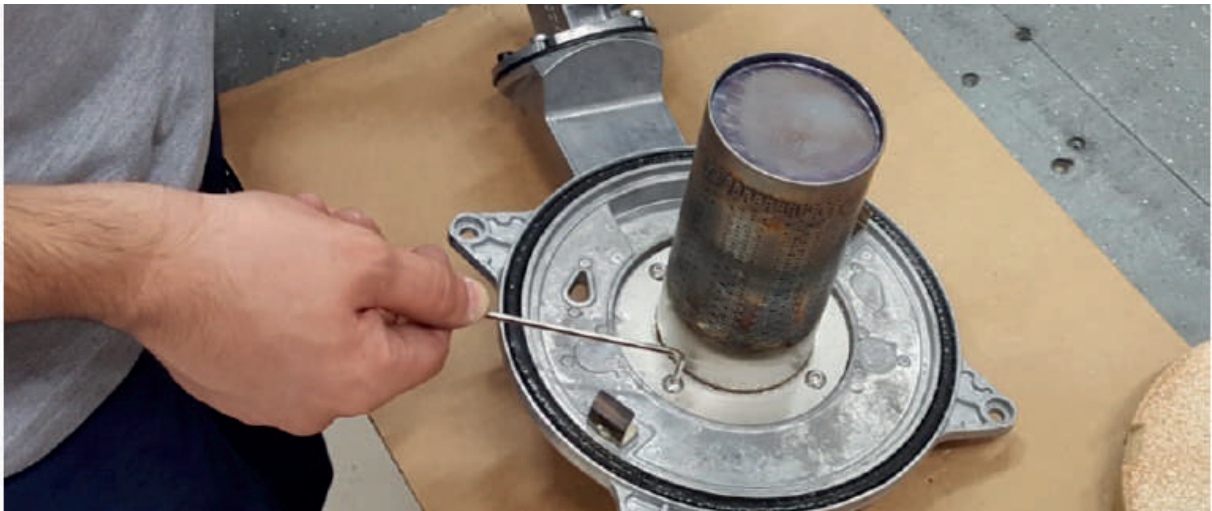
Remove the duroboard as shown in the image.



*Figure 74*

Remove the 4 bolts that connect the burner and the cover using an Allen wrench.

**Torque:  $3 \pm 0.3$  Nm**



*Figure 75*





Figure 76



Figure 77



**Controller connections:** Remove the transition rubber on the bottom chassis.

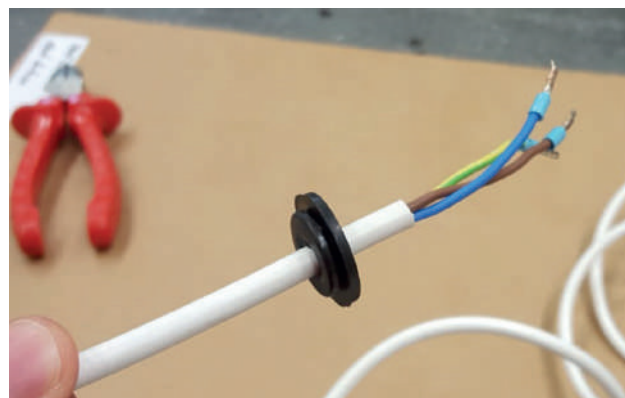


*Figure 78*

Cut off the tip of the transition rubber and attach it to the thermostat cable.



*Figure 79*



*Figure 80*

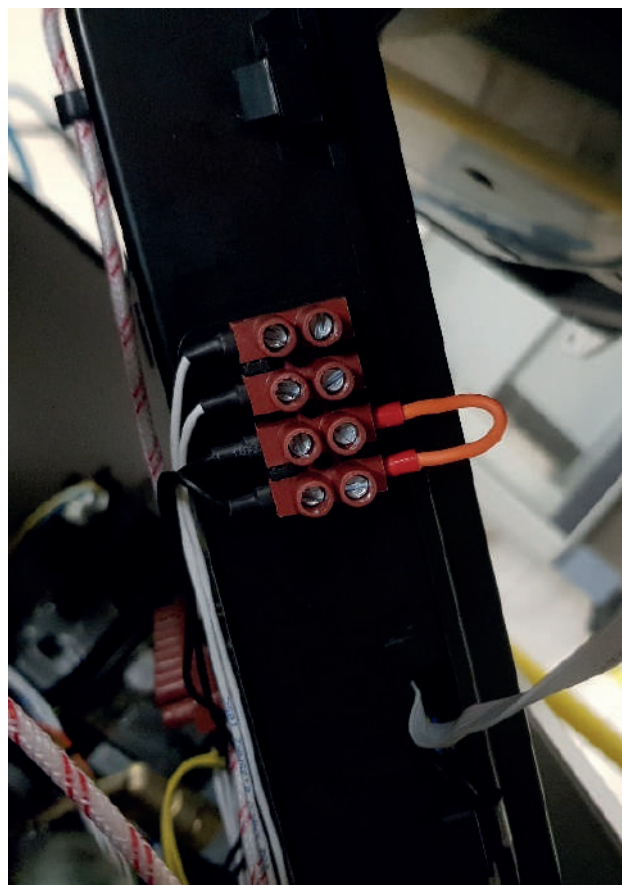


*Figure 81*

**Installing the room thermostat:** Connect the phase and neutral ends of the thermostat cable to the terminal ports (bridged end) shown in the figure 83.



*Figure 82*



*Figure 83*



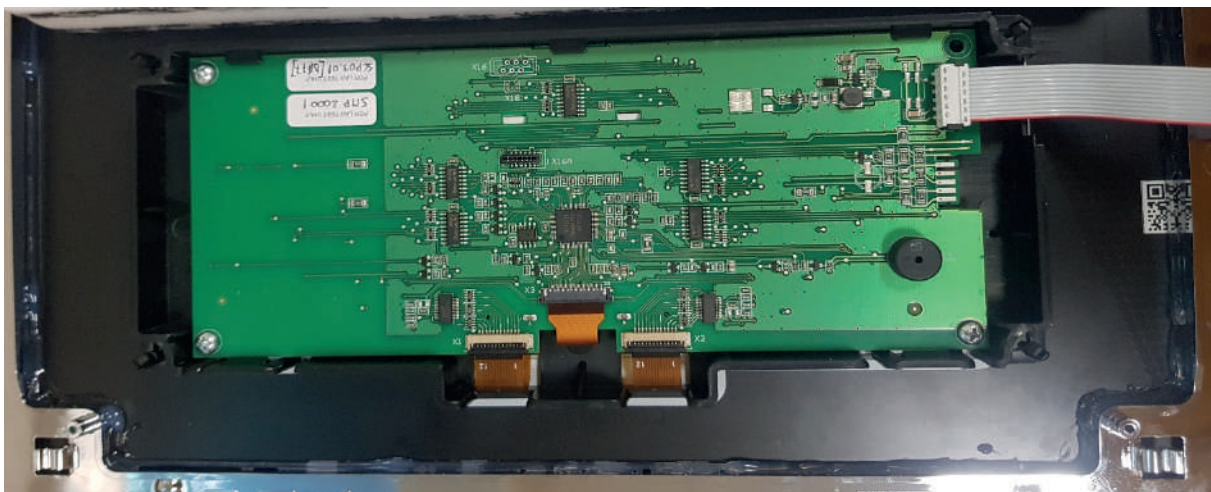
**Opening the MMI board box cover:** The MMI board on the touch screen panel is attached to the glass surface with double-sided tape. Therefore, do not try to remove the board box from the window. You can open the cover of the board box by pressing the tabs. All of the front panel group will be supplied as spare parts. This section is given only in cases where the MMI board box cover should be opened in the field.



*Figure 84*



*Figure 85*



*Figure 86*

**Removing-installing the 3-way shaft assembly:** Remove the assembly part located on the outlet manifold using an Allen wrench.

**Torque:  $5 \pm 0.5$  Nm**



*Figure 87*

**Removing-installing the filling tap:** Remove using a screwdriver as shown in the figure 88.  
**Torque:  $0.5 \pm 0.1$  Nm**



*Figure 88*



**Removing-installing the pump:** Remove the boiler inlet pipe nut using a nut wrench.

**Torque:  $25 \pm 2.5$  Nm**



*Figure 89*

Remove the inlet manifold.

**Torque:  $3 \pm 0.3$  Nm**



*Figure 90*

Remove the bolt that connects the pump and bottom chassis.

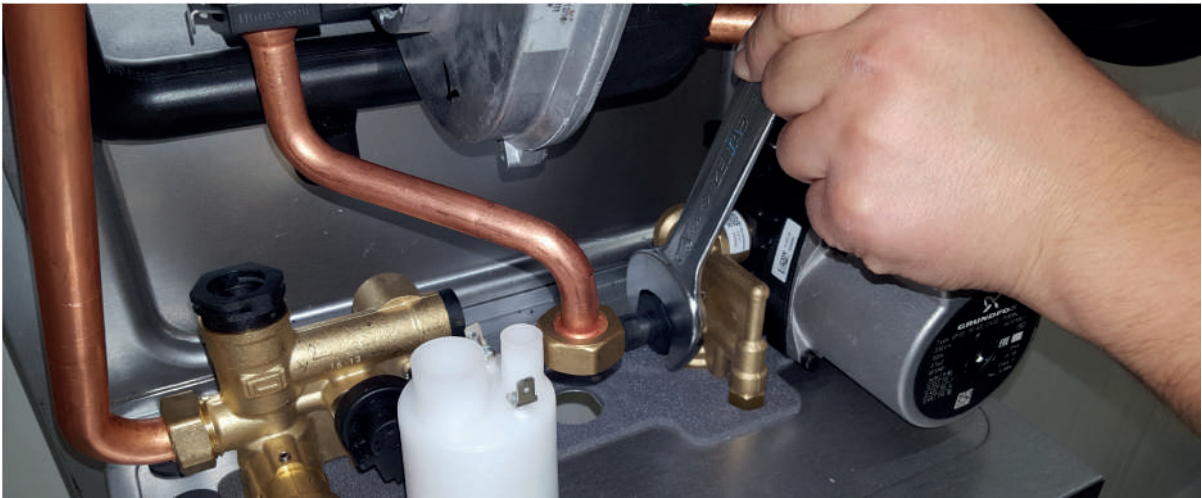
**Torque:  $3 \pm 0.3$  Nm**



*Figure 91*

**Removing-installing the flow sensor:** Remove the sensor using an Allen wrench.

**Torque:  $5 \pm 0.5$  Nm**



*Figure 92*

**Removing the domestic water filter:** Remove the filter on the water inlet pipe using a thin hand tool.



*Figure 93*

**Placing the gas adjusting washer:** Place the gas adjusting washer between 2 gaskets and install it in the gas valve.



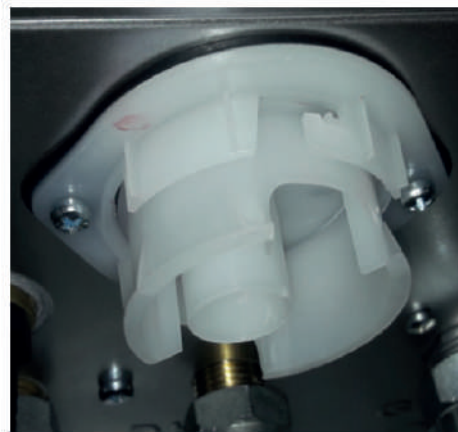
*Figure 94*



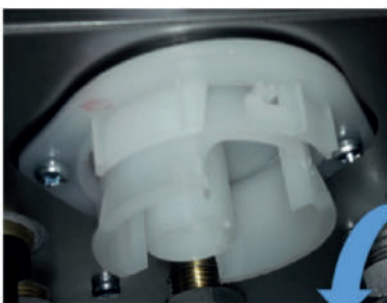
## 13.CONFEO PREMIX P COMPONENT DEFINITIONS

- Siphon

| Subject                                       | Description   |
|---|---|
| Part's Function                               | The component that allows the discharge of condensing water and rainwater without allowing the discharge of waste gas.  |
| Impact in Case of Malfunction                 | 1- Water rises in the siphon due to siphon clogging.<br>2- The siphon discharges waste gas to the external environment.   |
| Main Associated Error Codes                   | E01   |
| Error Diagnostics-Test Method and Maintenance | Visually inspect that there is no dirt, burrs, etc. in the siphon and the siphon is clean.<br>Siphon cleaning steps:<br>1- Move the siphon upwards.<br>2- Turn it counterclockwise.<br>3- Move downwards using a hand tool or by hand.<br>4- Remove the filth accumulated in the siphon by washing.<br>5- If there is filth in the condensing water hose, clean it as well. |



1



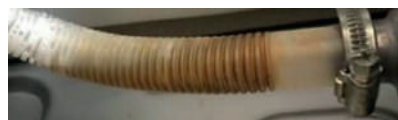
2



3



4



5

Table 9

- Mainboard

| Subject                                  | Description   |
|--|---|
| <b>Part's Function</b>                   | Controls all electronic-electromechanic components.<br>Displays the general operating status of the combi boiler and sensor data.   |
| <b>Impact in Case of Malfunction</b>     | 1- In general, the error code is displayed on the LCD screen in case of PCB failures and heating is not provided.   |
| <b>Main Associated Error Codes</b>       | E01, E02, E64, E65, E98, E99  |
| <b>Error Diagnostics and Test Method</b> | Visual Inspection: Ensure that the cable connections are properly done and undamaged, and check for component/circuit abnormalities on the electronic card (tarnishing, solder crack/break, etc.) |
| <b>Maintenance Requirement</b>           | There is no special maintenance requirement.  |

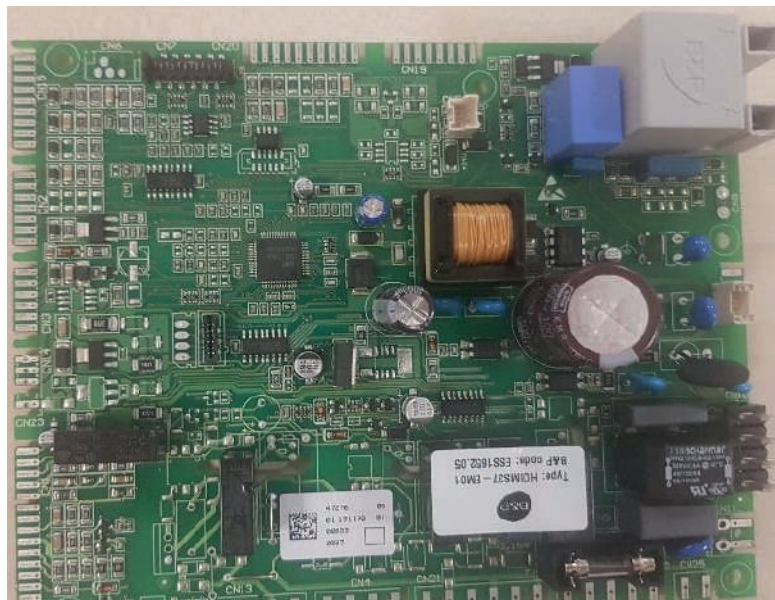


Table 10

• MMI Board

| Subject                       | Description  |
|-------------------------------|--|
| Part's Function               | It provides communication with the mainboard, it shows the boiler data on the LCD screen and enables the boiler settings to be adjusted on the screen via touch.   |
| Impact in Case of Malfunction | 1- Touch functionality is not working and the boiler settings are not made.<br>2- Partial or complete pixel loss on the screen.<br>3- Continuous operation of the buzzer or loss of function.  |
| Main Associated Error Codes   | F201   |
| Diagnostics and Test Method   | Visual Control: check that the cable connections (MMI cable-membrane connection parts-LCD connection part-buzzer part) are smooth and undamaged, component / circuit abnormality control on the electronic board and MMI board (blackout, solder crack / rupture etc.)<br>Pixel / missing character light loss control on LCD screen.<br>One reason for the loss of touch screen functionality is the incompatibility or inadequacy of the adhesive between the MMI board and the glass panel. |
| Maintenance Requirement       | No need special maintenance requirement.   |

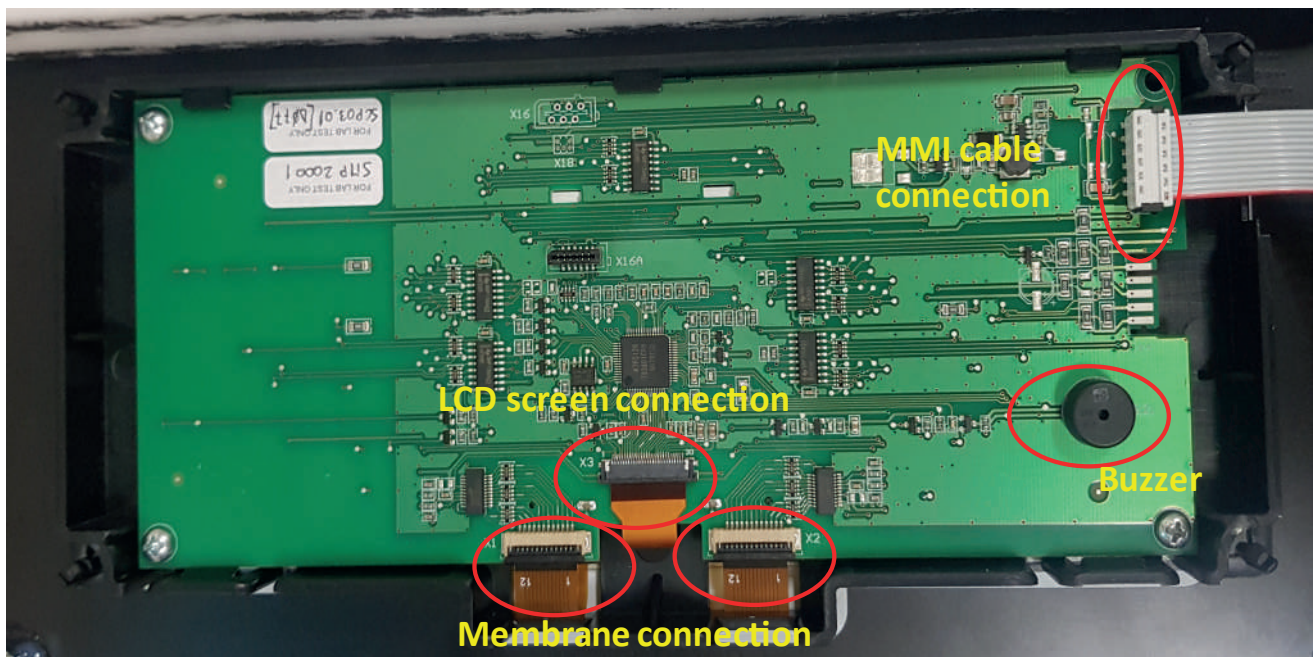


Table 11

• Burner

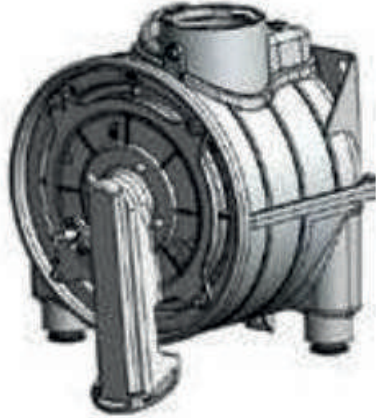
| Subject                              | Description   |
|--------------------------------------|---|
| <b>Part's Function</b>               | It is the component on which the gas + air mixture exits and on which flame is formed.                      |
| <b>Impact in Case of Malfunction</b> | 1- Irregularity in the boiler emissions<br>2- Explosive burning<br>3- Flame loss                            |
| <b>Main Associated Error Codes</b>   | E01, E82, "Flame Loss Risk" warning   |
| <b>Diagnostics and Test Method</b>   | Visual Control: Closed hole on the burner, oxidation, deformation, etc. cleaning with a non-metallic brush. |



Table 12



## • Main Heat Exchanger

| Subject  | Description  |
|--|--|
| <b>Part's Function</b>   | The main element that allows heat transfer to the water in the central heating circuit. It transfers the heat generated as a result of combustion in the burner to the water pipes, allowing the system to heat up.  |
| <b>Impact in Case of Malfunction</b>   | 1- Heating is not provided.<br>2- Water or gas leakage occurs.   |
| <b>Main Associated Error Codes</b>   | E01, E03, F07  |
| <b>Error Diagnostics and Test Method</b>   | 1- Check if there is filth in the heat exchanger fins and pipes and obstruction between the pipes.<br>2- Visually inspect if there is of cracks-holes on the heat exchanger pipes.<br>3- Check for boiling and bubbling sounds from inside the heat exchanger.<br>4- Perform fresh air emission measurement. |
| <b>Maintenance Requirement</b>   | Heat exchanger internal pipe cleaning  |
|  |  |

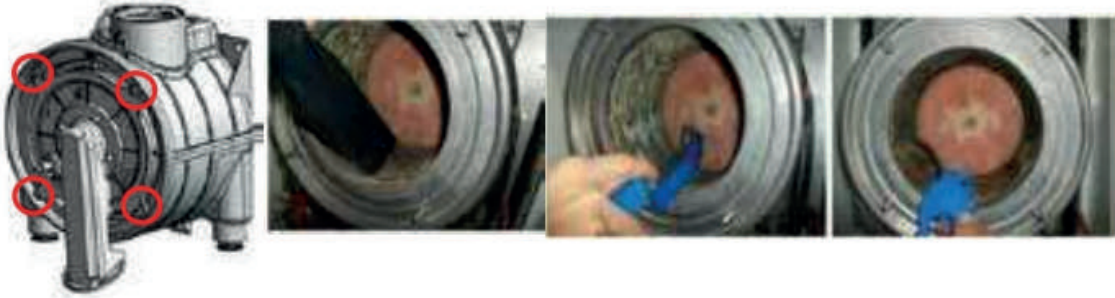

| Maintenance Description  | Maintenance Method  |
|--|---|
| <b>Heat Exchanger Internal Pipe Cleaning</b>   | 1- Open the burner cover by removing the 4 nuts.<br>2- Clean the filth on the pipes using a vacuum cleaner.<br>3- Remove any deposits in the piper using a brush (the brush should not be metal).<br>4- Wash the inside of the heat exchanger with water.<br>5- Since the filth will accumulate in the siphon after washing with water, clean the siphon to complete the procedure. |
|  | Note : Never use acidic or alkaline based cleansers (drain opener, etc.) to remove the filth.   |
|  |   |
| <b>1</b>   | <b>2</b>  |
| <b>3</b>   | <b>4</b>  |

Table 13



## • Plate Heat Exchanger

| Subject   | Description   |
|---|---|
| <b>Part's Function</b>  | 1- The component that transfers the heat from the hot water from the main heat exchanger to the domestic water installation in order to meet domestic water demands.<br>2- The water circulation is maintained through this componen (internal by-pass) when all radiator valves are closed.  |
| <b>Impact in Case of Malfunction</b>  | 1- In case of partial or complete blockage, domestic water does not heat up or continuously overheats.<br>2- The central heating circuit overheats as the internal by-pass function does not work.<br>3- The pressure in the central heating system constantly increases (the domestic water enters the central heating circuit due to puncture in the plate heat exchanger). |
| <b>Main Associated Error Codes</b>  | E03, F07, E16, E17,E80, F40   |
| <b>Error Diagnostics and Test Method</b>  | 1- Visually inspect for leakage from the plate heat exchanger to the external environment.<br>2- Check whether the central heating circuit pressure changes excessively by turning on the domestic water.   |
| <b>Maintenance Requirement</b>  | Internal Cleaning of The Plate  |
|  |   |


| Maintenance Description  | Maintenance Method  |
|--|---|
| <b>Internal Cleaning of The Plate</b>  | 1- Remove the plate heat exchanger.<br>2- Fill the plate heat exchanger holes with decalcifier (HN03) and wait for 10 minutes.<br>3- Pour out the decalcifier and wash the inside of the plate heat exchanger with water. |
|  |   |

Table 14

• Gas Valve

| Subject                                  | Definition   |
|--|--|
| <b>Part's Function</b>                   | 1- Adjusts the amount of gas required for combustion and transmits it to the venturi.  |
| <b>Impact in Case of Malfunction</b>     | 1- The boiler does not burn.<br>2- Gas regulation does not work properly.  |
| <b>Main Associated Error Codes</b>       | E01, E02, E08, E12, E21, E82   |
| <b>Error Diagnostics and Test Method</b> | Visual Inspection and Testing:<br>1- Ensure that the cable connections are properly done and undamaged.<br>2- Check the resistance.<br>3- Measure the voltage. |
| <b>Maintenance Requirement</b>           | There is no special maintenance requirement.   |



| Test Description                        | Test Method   |
|---|---|
| <b>Gas Valve Resistance Measurement</b> | Disconnect the device from power. Measure the resistance between the gas valve connector pins. Ensure the resistance is between 110 -120 ohm. |



|   |   |
|---|---|
| <b>Gas Valve Supply Voltage Measurement</b> | Disconnect the device from power. Remove the gas valve connector. Connect the device to power. When the device attempts ignition, check whether the resistance at the connector ends from the electronic card is in the range of 23-25 V. |
|---|---|



Table 15

• Pump

| Subject                                  | Description  |
|--|--|
| <b>Part's Function</b>                   | 1- Enables water circulation within the central heating circuit.<br>2- Discharges the air in the central heating system thanks to the built-in air purger.   |
| <b>Impact in Case of Malfunction</b>     | 1- The boiler gives overheating error or "temperature sensor does not read detect temperature" error.<br>2- The device cannot heat up domestic water for use.<br>3- The freeze protection function does not work properly.<br>4- The pump air purger releases water instead of air into the boiler.<br>If this occurs constantly, it could lead to a low pressure error. |
| <b>Main Associated Error Codes</b>       | E03, E16, E17, E80, F07, F37   |
| <b>Error Diagnostics and Test Method</b> | Visual Inspection:<br>1- Ensure that the cable connections are properly done and undamaged.<br>2- Check that the connectors on the pump are properly assembled.<br>3- Check if water is coming from the pump purger.<br>4- Measure the voltage.<br>5- Check whether or not the water filter is blocked.  |
| <b>Maintenance Requirement</b>           | There is no special maintenance requirement.   |



**Standard Pump**



**Energy Efficient Pump**



**Air purger**

| Test Description          | Test Method   |
|---------------------------|---|
| <b>Pump Voltage Check</b> | Measure the voltage between the pump's high voltage supply connector pins (phase-brown and neutral-blue) when the device power is on. Ensure the value is in the 215-240 VAC range. |



**Standard Pump**



**Energy Efficient Pump**

Table 16



| Test Description  | Test Method   |
|---|---|
| <b>Pump Blockage Check</b>  | <p>1- For a standard pump, open the plug indicated by "A" and check for movement in the interior. If there is no movement, you can try to unblock it by turning counterclockwise.</p> <p>2- Energy efficient pumps have auto-blockage function. When the pump is blocked, it automatically tries to work at maximum torque every 1.5 seconds and resolve the blockage issue.</p> <p>To manually support the blocking operation, press the point indicated by "B" with a No:2 screwdriver and turn it co unterclockwise.</p> |
|  <p>Standard Pump</p> |  <p>Energy Efficient Pump</p>  |

Table 14

• Venturi


| Subject  | Description   |
|--|---|
| <b>Part's Function</b>   | The component where the gas from the gas valve and the air from the silencer are mixed.   |
| <b>Impact in Case of Malfunction</b>   | <p>1- Combustion emission values deteriorate.</p> <p>2- The device load may be higher or lower.</p> <p>3- The device may produce noise (whistle) when operating.</p>  |
| <b>Main Associated Error Codes</b>   | E01, E82  |
| <b>Error Diagnostics-Test Method and Maintenance</b>                                 | <p>1. Visual Inspection: Check for burrs, filth, etc. at and in the inlet and outlet of the venturi</p> <p>2. Check the connection of the venturi with the gas pipe, fan and silencer.</p> <p>3. Check the combustion emission values using a gas analyzer.</p> |
|  |   |

Table 17



• Fan

| Subject                           | Description   |
|-----------------------------------|---|
| Part's Function                   | 1- Sends the gas-air mixture in the venturi to the burner for combustion.   |
| Impact in Case of Malfunction     | 1- The boiler does not burn.<br>2- The fan does not perform its modulation function. The fan works at maximum speed at all times.<br>3- The devices produces noise.                     |
| Main Associated Error Codes       | E01, E05, E82   |
| Error Diagnostics and Test Method | Visual Inspection:<br>1- Ensure that the cable connections are properly done and undamaged.<br>2- Check that the connectors on the fan are properly mounted.<br>3- Measure the voltage. |
| Maintenance Requirement           | There is no special maintenance requirement.  |



| Test Description  | Test Method   |
|-------------------|---|
| Fan Voltage Check | Measure the voltage between the fan high voltage supply connector pins. Ensure the value is in the 215-240 VAC range. |



Table 18

## • Silencer


| Subject   | Description  |
|---|--|
| <b>Part's Function</b>  | The component where the fresh air flow required for combustion is regulated and air is taken in and transmitted to the venturi.  |
| <b>Impact in Case of Malfunction</b>  | 1- Combustion emission values deteriorate.<br>2- The device load may be higher or lower.<br>3- The device may produce noise (whistle) when operating.  |
| <b>Main Associated Error Code</b>   | E01, E82   |
| <b>Error Diagnostics-Test Method and Maintenance</b>                              | 1- Visual Inspection: Check for burrs, filth, etc. at and in the inlet and outlet of the silencer.<br>2- Check the connection of the silencer with the venturi.<br>3- Check the combustion emission values using a gas analyzer. |
|  |  |

Table 17

## • Filling Tap


| Subject  | Description  |
|--|--|
| <b>Part's Function</b>   | Used for filling water into the central heating installation.  |
| <b>Impact in Case of Malfunction</b>   | 1- The boiler is not filled with water.<br>2- The tap cannot be turned off while filling the boiler with water and causes water discharge by opening the safety valve.<br>3- Causes the domestic water and the central heating circuit water to mix.<br>4- In places where the domestic water mains pressure is very low, the water in the central heating circuit is discharged due to defective tap and the low pressure error occurs. |
| <b>Main Associated Error Codes</b>   | F40, F37   |
| <b>Error Diagnostics and Test Method</b>   | Visual Inspection and Testing:<br>1- Check for dirt, burrs, wear, deformation, etc. at the sealing part of the filling tap.  |
|  |  |

Table 19

## • Surface-type NTC




| Subject  | Description   |
|--|---|
| <b>Part's Function</b>   | 1- The component that measures the inlet and outlet temperature of the water in the central heating circuit.  |
| <b>Impact in Case of Malfunction</b>   | 1- It may lead to inconvenience since the temperature set by the user and the actual temperature will be different.<br>2- The device does not work.   |
| <b>Main Associated Error Codes</b>   | E15, E16, E17, E18, E33, E35, E80, F81  |
| <b>Error Diagnostics and Test Method</b>   | Visual Inspection and Testing:<br>1- Ensure that the cable connections are properly done and undamaged.<br>2- Check for rusting, corrosion, or deformation in the inner part that contacts the copper pipe.<br>3- Measure the resistance.   |
| <b>Maintenance Requirement</b>   | There is no special maintenance requirement.  |
|     |   |
| Test Description   | Test Method   |
| <b>Resistance Measurement for The Surface-type NTC</b>                               | Disconnect the device from power. Remove the supply and return water surface-type NTCs from the boiler and wait for it to cool at room temperature for about 10 minutes. Measure the resistance between the NTC ends. Ensure that the resistance value is appropriate according to the table below. |
|  |   |
| Ambient Temperature (°C)   | Resistance measured at the ends of the surface-type NTC (kohm)  |
| 0-5  | 27.3-22.1   |
| 6-10   | 21.2-18   |
| 11-15  | 17.3-14.7   |
| 16-20  | 14.1-12.1   |
| 21-25  | 11.6-10   |
| 26-30  | 9.63-8.3  |
| 31-35  | 8-6.95  |
| 36-40  | 6.7-5.8   |

Table 20

## • Immersion-type NTC

| Subject  | Description  |
|--|--|
| <b>Part's Function</b>   | 1- The component that measures the outlet temperature of the water in the domestic water circuit.  |
| <b>Impact in Case of Malfunction</b>   | 1- It may lead to water temperature fluctuation as well as inconvenience since the temperature set by the user and the actual temperature will be different.<br>2- The device does not work.                                 |
| <b>Main Associated Error Codes</b>   | E18, F52   |
| <b>Error Diagnostics and Test Method</b>   | Visual Inspection and Testing:<br>1- Ensure that the cable connections are properly done and undamaged.<br>2- Check if there is any rusting, corrosion, or deformation at the immersion probe.<br>3- Measure the resistance. |
| <b>Maintenance Requirement</b>   | There is no special maintenance requirement.   |
|  |  |



| Test Description   | Test Method  |
|--|--|
| <b>Resistance Measurement for The Immersion-type NTC</b>                             | Disconnect the device from power. Remove the immersion-type NTC from the boiler and wait for it to cool at room temperature for about 10 minutes. Measure the resistance between the NTC ends. Ensure that the resistance value is appropriate according to the table below. |
|  |  |
| <b>Ambient Temperature (°C)</b>  | <b>Resistance measured at the ends of the immersion-type NTC (kohm)</b>  |
| 0-5  | 27.3 -22.1   |
| 6-10   | 21.2-18  |
| 11-15  | 17.3-14.7  |
| 16-20  | 14.1-12.1  |
| 21-25  | 11.6-10  |
| 26-30  | 9.63–8.3   |
| 31-35  | 8-6.95   |
| 36-40  | 6.7-5.8  |

Table 21



## • Exhaust Gas Sensor

| Subject  | Definition   |
|--|--|
| <b>Part's Function</b>   | 1- The component that protects the device from overheating by measuring the exhaust gas temperature.   |
| <b>Impact in Case of Malfunction</b>   | 1- If the surface -type NTC sensors work incorrectly, the device may continue to run without giving an overheating warning, causing deformation in the heat exchanger.<br>2- The device does not work.                       |
| <b>Main Associated Error Codes</b>   | E18, F07, F53  |
| <b>Error Diagnostics and Test Method</b>   | Visual Inspection and Testing:<br>1- Ensure that the cable connections are properly done and undamaged.<br>2- Check if there is any rusting, corrosion, or deformation at the immersion probe.<br>3- Measure the resistance. |
| <b>Maintenance Requirement</b>   | There is no special maintenance requirement.   |
|  |  |

| Test Description   | Test Method  |
|--|--|
| <b>Resistance Measurement for The Immersion-type NTC</b> | Disconnect the device from power. Remove the exhaust gas temperature sensor from the boiler and wait for it to cool at room temperature for about 10 minutes. Measure the resistance between the NTC ends. Ensure that the resistance value is appropriate according to the table below. |



| Ambient Temperature (°C) | Resistance measured at the ends of the exhaust gas temperature sensor (kohm) |
|--------------------------|--|
| 0-5                      | 30.9-24.5  |
| 6-10                     | 24-19.5  |
| 11 - 15                  | 19-15.7  |
| 16-20                    | 15.2-12.7  |
| 21-25                    | 12.2-10.3  |
| 26-30                    | 9.8-8.4  |
| 31-35                    | 8-6.9  |
| 36-40                    | 6.5-5.7  |

Table 22

## • Water Pressure Sensor

| Subject                                  | Definition   |
|--|--|
| <b>Part's Function</b>                   | 1- The component that measures the water pressure in the central heating circuit.  |
| <b>Impact in Case of Malfunction</b>     | 1- The device gives a low or high water pressure error.<br>2- The user sees a different water pressure value than the actual value.<br>3- The user may not see an increase in the pressure even after filling the system with water. |
| <b>Main Associated Error Codes</b>       | F37, F40, F47  |
| <b>Error Diagnostics and Test Method</b> | Visual Inspection and Testing:<br>1- Ensure that the cable connections are properly done and undamaged.<br>2- Check whether the inlet hole of the water pressure sensor is blocked<br>3- Measure the voltage.                        |
| <b>Maintenance Requirement</b>           | There is no special maintenance requirement.   |



| Test Description             | Test Method  |
|------------------------------|--|
| <b>Water Pressure Sensor</b> | When the device is connected to power, remove the electrical connector on water the pressure sensor and measure the DC voltage between the "IN"-"GND" ends as shown below. Ensure the value is in the 4.9-5.1 VDC range. |

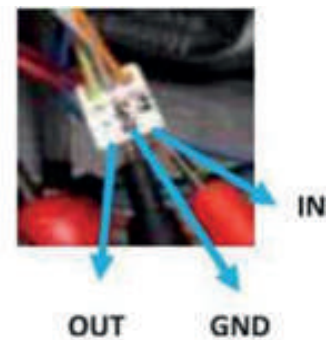



Table 23

## • 3-Way Valve Motor

| Subject  | Description   |
|--|---|
| <b>Part's Function</b>   | Used to forward the water to the central heating and domestic water circuits.   |
| <b>Impact in Case of Malfunction</b>   | 1- The boiler stays only in the central heating state or only in the domestic water state.<br>2- The radiator cores may heat up while in the summer mode.<br>3- The motor may produce noise while the motorized valve position is changing.<br>4- It may lead to overheating. |
| <b>Main Associated Error Codes</b>   | E03, F07  |
| <b>Error Diagnostics and Test Method</b>   | Visual Inspection:<br>1- Ensure that the cable connections are properly done and undamaged.<br>2- Check that the connectors on the 3-way motor are properly mounted.<br>3- Measure the voltage (for central heating and domestic water positions).<br>4- Check the position.  |
| <b>Maintenance Requirement</b>   | There is no special maintenance requirement.  |
|  |   |



| Test Description  | Test Method  |
|---|--|
| <b>3-way Motorized Valve Voltage and Position Check (Central Heating)</b>   | Measure the voltage on the motorized valve connector at the part between A-B in the central heating mode while the device is plugged in. Ensure the value is in the 215-240 VAC range. The motorized valve shaft should be at the end. |
|   |  |

Table 24


| Test Description   | Test Method   |
|--|---|
| <b>3-way Motorized Valve Voltage and Position Check (Domestic Water Heating)</b>   | Turn on the domestic water while the device is plugged in. Measure the voltage on the motorized valve connector at the part between A-B in the domestic water heating mode. Ensure the value is in the 215-240 VAC range. The motorized valve pin should be at the back part. |
|  |   |

Table 25

### • 3-bar Safety Valve



| Subject   | Definition   |
|---|--|
| <b>Part's Function</b>  | When the water pressure in the central heating system reaches 3 bar, it opens the discharge end and discharges the excess water.   |
| <b>Impact in Case of Malfunction</b>  | <ul style="list-style-type: none"> <li>1- May cause low pressure error due to excessive water discharge.</li> <li>2- May cause high pressure error due to no water discharge.</li> <li>3- There is a risk of leakage in installation if the user continues to fill water after high pressure error.</li> </ul> |
| <b>Main Associated Error Codes</b>  | F37, F40   |
| <b>Error Diagnostics and Test Method</b>  | <ul style="list-style-type: none"> <li>1- Check for water leakage from the safety valve tip when the water pressure in the central heating circuit is in the 0.8-2.5 bar range.</li> <li>2- Measure the opening pressure.</li> </ul>   |
| <b>Maintenance Requirement</b>  | There is no special maintenance requirement.   |
|  |  |
| Test Description  | Test Method  |
| <b>Safety Valve On-Off Pressure Test</b>  | Fill the central heating system with water by opening the filling tap. The safety valve should start discharging due to high water pressure in the 2.7-3.3 bar range and continue the discharge until the water pressure drops to 2.5-2.7 bar range.   |

Table 26



## • Ignition-Ionization Electrode

| Subject  | Description   |
|--|---|
| <b>Part's Function</b>   | 1- Ignites the gas+air mixture from the burner and starts combustion.<br>2- Detect if there is flame in the burner.   |
| <b>Impact in Case of Malfunction</b>   | 1- There may be no ignition or combustion due to excessively increased or decreased distance between the ends of the electrode.<br>2- The device may produce noise while burning due to delayed ignition (back flash).<br>3- The ionization current may be reduced due to the electrode moving away from the burner and there may be flame loss in the boiler at certain times. |
| <b>Main Associated Error Codes</b>   | E01, E82  |
| <b>Error Diagnostics-Test Method and Maintenance</b>                               | 1- Visual Inspection: Remove any oxidization, etc. on the electrode rods using a piece of cloth.<br>2- Check the electrode measurements.<br>3- Check the ionization current.  |
|  |   |

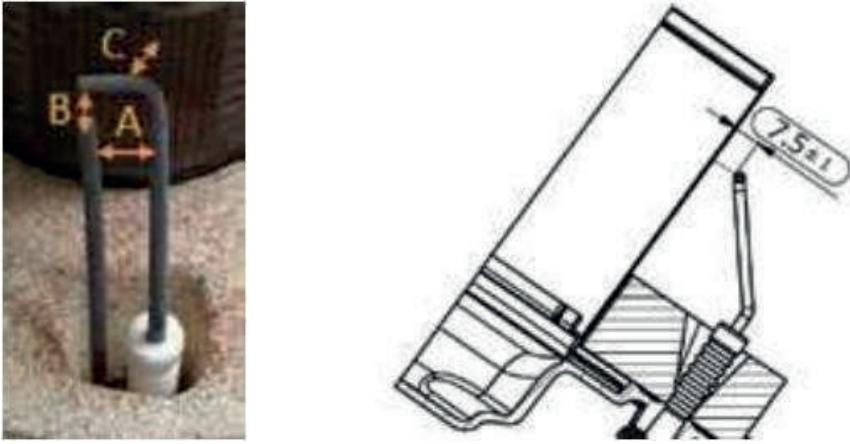

| Test and Maintenance Description   | Test and Maintenance Method  |
|--|--|
| <b>Electrode Measurement Checks</b>  | A) The spacing between the electrode rods should be 9.5 -10.5 mm.<br>B) Measure the distance between the two ends of the electrode. It should be in the 3.5 - 4.5 mm range.<br>C) The closest distance between the electrode rod and the burner should be in the 6.5 - 8.5 mm range. |
|  |  |
| Test and Maintenance Description   | Test and Maintenance Method  |
| <b>Ionization Current Check</b>  | Turn on the combi boiler. After turning the device on, enter the Information mode "In". Enter the I09 information parameter. Wait this parameter for 2 minutes and ensure that the ionization current reading on the LCD screen is at least "40" or above.                           |

Table 27

## • Expansion Tank

| Subject  | Description   |
|--|---|
| <b>Part's Function</b>   | The cold water filled into the central heating system expands as it is heated up. The tank prevents the expanding water from increasing the water pressure. |
| <b>Impact in Case of Malfunction</b>   | The pressure in the central heating circuit may increase and there may be water discharge from the safety valve.  |
| <b>Main Associated Error Codes</b>   | F40   |
| <b>Error Diagnostics-Test Method and Maintenance</b>                               | 1- Measure the gas pressure of the expansion tank.  |
|  |   |



| Test and Maintenance Description   | Test and Maintenance Method   |
|--|---|
| <b>Expansion Tank Gas Pressure Measurement</b>                                       | Drain the water in the central heating system. Then measure the gas pressure from the expansion tank's pressure relief valve using a manometer. The measured pressure value should be greater than 0.5 bar. Otherwise, gas must be added until the pressure reaches 1 bar. (If a pressure drop occurs in the expansion tank within 6 months after adding gas, the expansion tank should be replaced.) |
|  |   |

Table 28

• Flow Sensor

| Subject  | Description   |
|--|---|
| <b>Part's Function</b>   | The component that enables the domestic water demand to be received by the combi boiler.  |
| <b>Impact in Case of Malfunction</b>   | 1- The device cannot receive the domestic water demands and works in the central heating state even if there is a domestic water demand.  |
| <b>Main Associated Error Codes</b>   |   |
| <b>Error Diagnostics and Test Method</b>   | <p>Visual Inspection and Testing:</p> <ol style="list-style-type: none"> <li>1- Ensure that the cable connections are properly done and undamaged.</li> <li>2- Check for oxidation, etc. at the cable entry section</li> <li>3- Measure the voltage.</li> </ol> <p>Note: If the P00 parameter is set to "5", the device will only work in central heating mode, and will not work in the domestic water mode.</p> |
| <b>Maintenance Requirement</b>   | There is no special maintenance requirement.  |
|  |   |


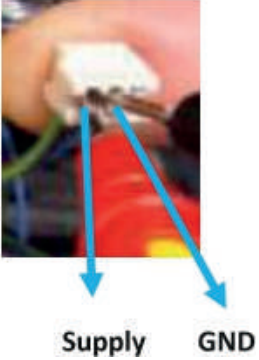
| Test Description  | Test Method  |
|---|--|
| <b>Flow Sensor</b>  | Turn on the domestic water while the device is connected to power. Remove the electrical connector on the flow sensor and measure the DC voltage between the "IN" -"GND" ends as shown below. Ensure the value is in the 11.5 -12.5 VDC range. |
| <div style="display: flex; justify-content: space-around;">   </div> |  |

Table 29

## • Flow Turbine


| Subject   | Description  |
|---|--|
| <b>Part's Function</b>  | When there is a domestic water demand, the turbine starts to turn and creates the magnetic field that the flow sensor detects.   |
| <b>Impact in Case of Malfunction</b>  | 1- The device cannot receive the domestic water demands and works in the central heating state even if there is a domestic water demand.   |
| <b>Main Associated Error Codes</b>  |  |
| <b>Error Diagnostics -Test Method and Maintenance</b>                             | Visual Inspection and Testing:<br>1- Check the fins of the flow turbine for deformation, fractures, cracks, etc.<br>2- Check if the filter is clean and inspect the flow sensor.<br>Note: If the P00 parameter is set to "5", the device will only work in central heating mode, and will not work in the domestic water mode. |
|  |  |

Table 30

## • 3-way Shaft Assembly


| Subject  | Description   |
|--|---|
| <b>Part's Function</b>   | 1- The assembly that receives movement from the 3-way motorized valve in order to enable the boiler to switch between the summer mode and the winter mode.<br>2- It performs the internal by-pass function if the central heating circuit valves are closed.  |
| <b>Impact in Case of Malfunction</b>   | 1- If the assembly hangs up/jams, the boiler may remain in the summer mode or the winter mode continuously.<br>2- The internal by-pass feature may not function.<br>3- There may be water leakage from the three-way motorized valve connection.  |
| <b>Main Associated Error Codes</b>   | E03, F07  |
| <b>Error Diagnostics and Test Method</b>   | Visual Inspection and Testing:<br>1- Run the boiler in winter mode. Check if there is a temperature increase in the supply water temperature sensor.<br>2- Run the boiler in summer mode. Check if there is a temperature increase in the immersion-type temperature sensor. When the boiler is running in the summer mode, the radiator core which is closest to the boiler should not heat up. Ensure this does not happen.<br>3- Remove the 3-way motorized valve and check if there is water at the bottom. |
|  |   |

Table 31



• WRAS APPROVED FILLING LOOP

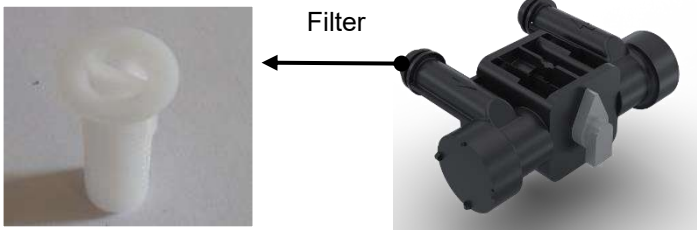
| Subject  | Description   |
|--|---|
| <b>Part Function</b>   | It is used for filling water to the central heating system.   |
| <b>Impact in Case of Faulty Operation</b>  | 1- No water is filled into combi boiler.<br>2- It cannot be turned off when filling water to boiler, and it causes water discharge by opening safety valve.<br>3- It leads to mixing of tap water with the water in the central heating system.<br>4- Where the pressure of main tap water system is very low, it may cause low pressure error by emptying water in the central heating system due to a faulty valve. |
| <b>Primary Relevant Error Codes</b>  | F40, F37  |
| <b>Troubleshooting and Testing Method</b>  | Visual Inspection and Testing:<br>1- Checking whether there is any dirt, burrs, wear, deformation, etc. on filling loop o-ring and filter.  |
| <b>Maintenance Period</b>  | Once a year filter cleaning, according to informations above.   |
|  |   |

Table 32

**PLUME KIT ASSEMBLY**

For Plume kit installation, follow the instructions in the image below, you must disassemble the part at the end of the horizontal flue kit (7006991167) and assemble with the Plume kit (700991251).

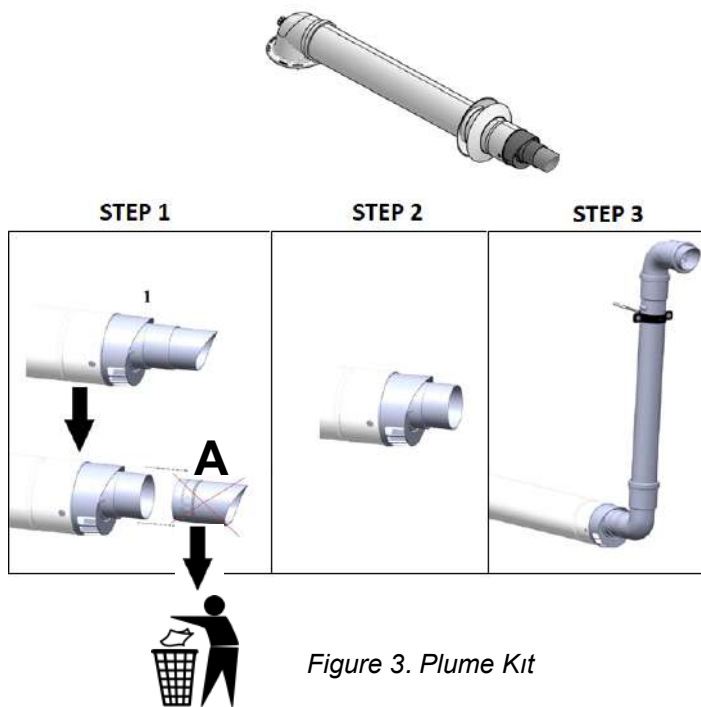


Figure 3. Plume Kit



Do not disassemble this part "A" in case of single horizontal flue kit usage.

## 14. SOLAR CONNECTION

### 14.1. Pressurized Solar System Installation with Single Serpentine Boiler:

**Applicable Combi Boiler Model:**Confeo Premix HM Models

**Mode of Operation:** The boiler domestic water line inlet is directly connected to the boiler. The boiler's mainboard manages the PT 1000 sensor and the Solar pump connected to it. It is connected to the terminal "C" (Boiler Sensor – HONEYW.T7106A10 – 7006952618) that reads "solar" on the back of the control panel of the boiler. The hot water need up to 40 °C is met directly from the boiler and the boiler does not run.

In case of a hot water need above 40 °C, the combi boiler runs and provides support to reach the set temperature. The water in the boiler is used as the domestic water flowing directly from the tap.

**Necessary Parameter Changes:** The P00 parameter is set to "2" and the "HM+Solar" configuration is activated.

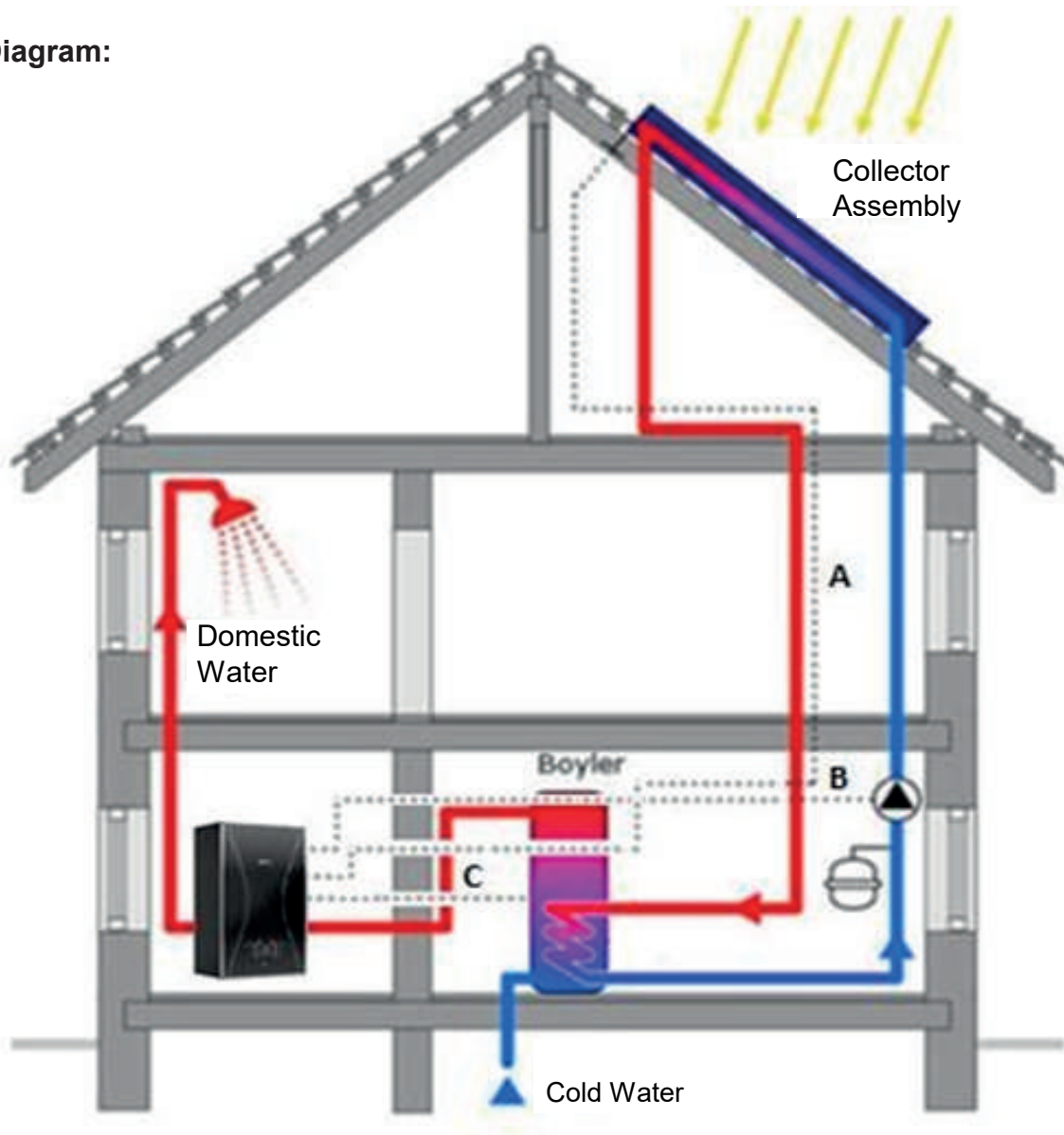
#### System Equipment:

**A:** PT1000 Sensor Cable Set – 7006991705

**B:** Solar Pump Cable Set – 7006991404

**C:** Boiler Sensor – HONEYW.T7106A10 - 7006952618

#### System Diagram:







## PRODUCTION

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