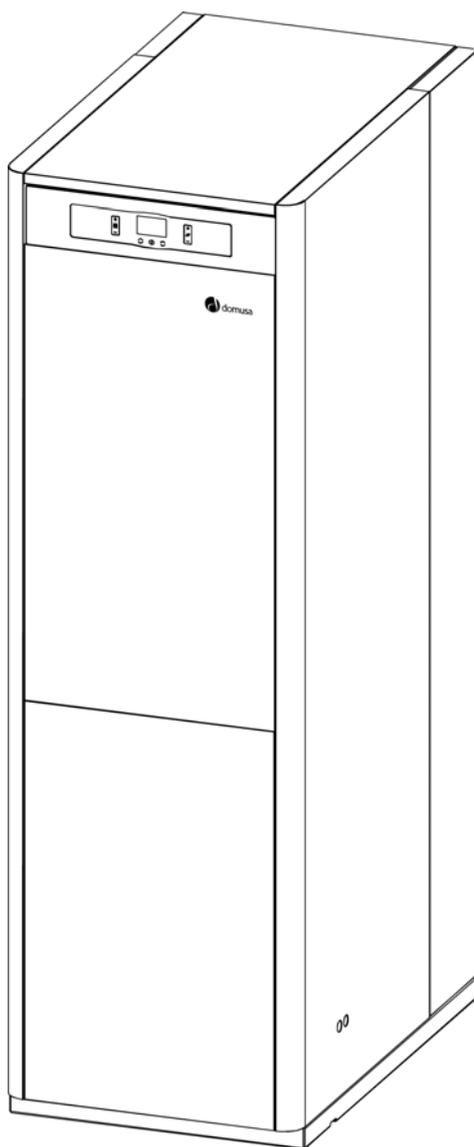


INSTALLATION AND OPERATING INSTRUCTIONS

→ EVOLUTION SOLAR HFD



DOMUSA
T E K N I K

Thank you for choosing a DOMUSA TEKNIK heating boiler. From the range of **DOMUSA TEKNIK** products you have chosen the **Evolution Solar HFD** model. With a suitable hydraulic installation, this oil-fired boiler will provide the ideal level of comfort for your home. If you have chosen the **Mix-Duo** or **Cal** models from the **Sirena V e** range, you will also be able to enjoy a balanced, economical domestic hot water supply.

This manual forms an essential part of the product and it must be given to the user. Read the warnings and recommendations in the manual carefully, as they contain important information on the safety, use and maintenance of the installation.

These boilers are to be installed by skilled personnel only, in accordance with the legislation in force and following the manufacturer's instructions.

The start-up of these boilers and any maintenance operations must only be carried out by **DOMUSA TEKNIK's** Authorised Technical Assistance Services.

Incorrect installation of these boilers could result in damage to people, animals or property, and the manufacturer will hold no liability in such cases.

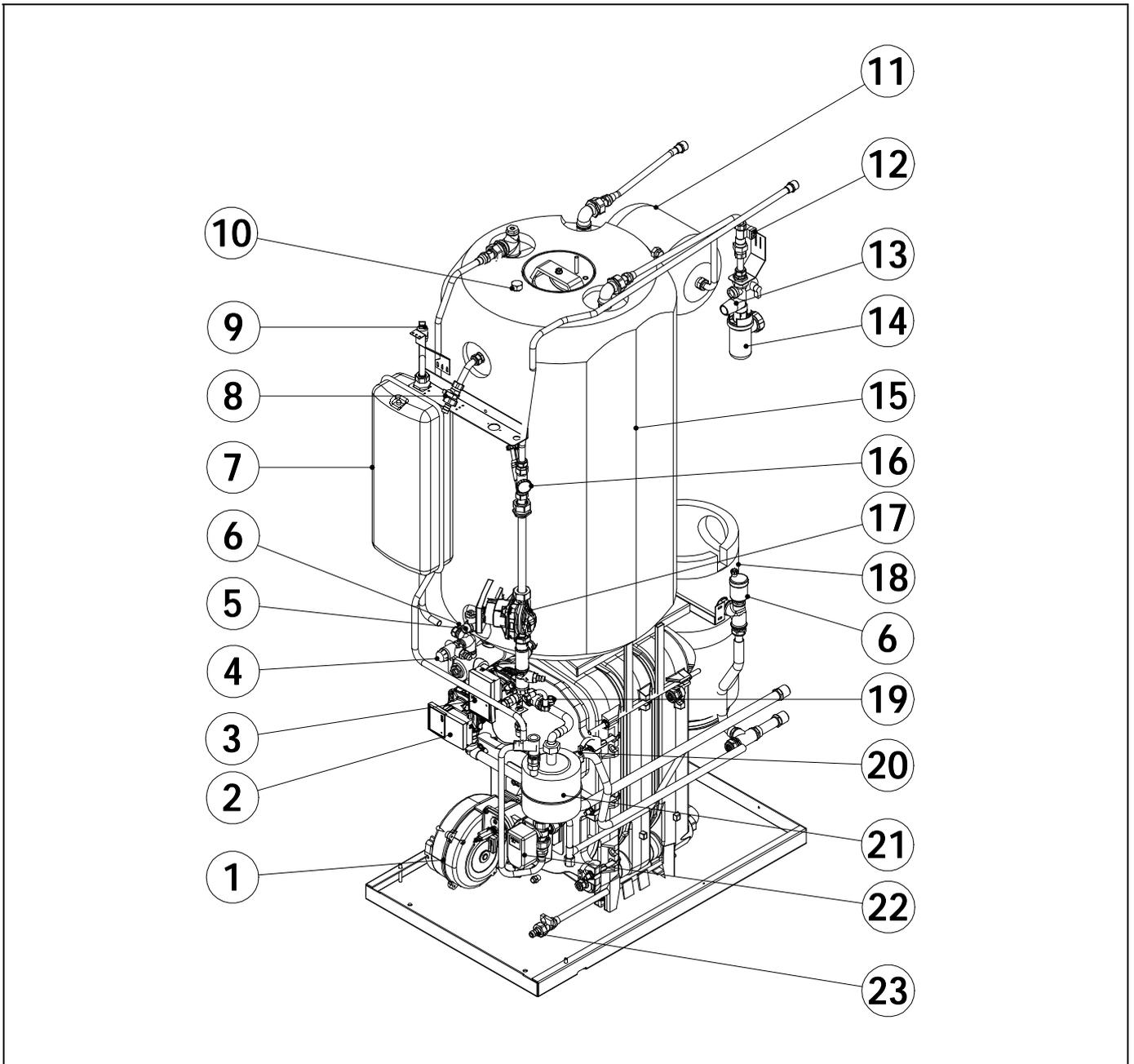
DOMUSA TEKNIK informs all parties concerned that, in compliance with section 1 of the first additional provision of Law 11/1997, the responsibility for delivering packaging waste or used packaging for its proper environmental management will be that of the final owner of the product (Article 18.1 Royal Decree 782/1998). At the end of its useful life, the product must be taken to a selected collection point for electrical and electronic equipment or must be returned to the distributor at the time of purchasing a new equivalent appliance. For more detailed information on the collection schemes available, contact either the collection facilities of the local authority or the distributor where the purchase was made.

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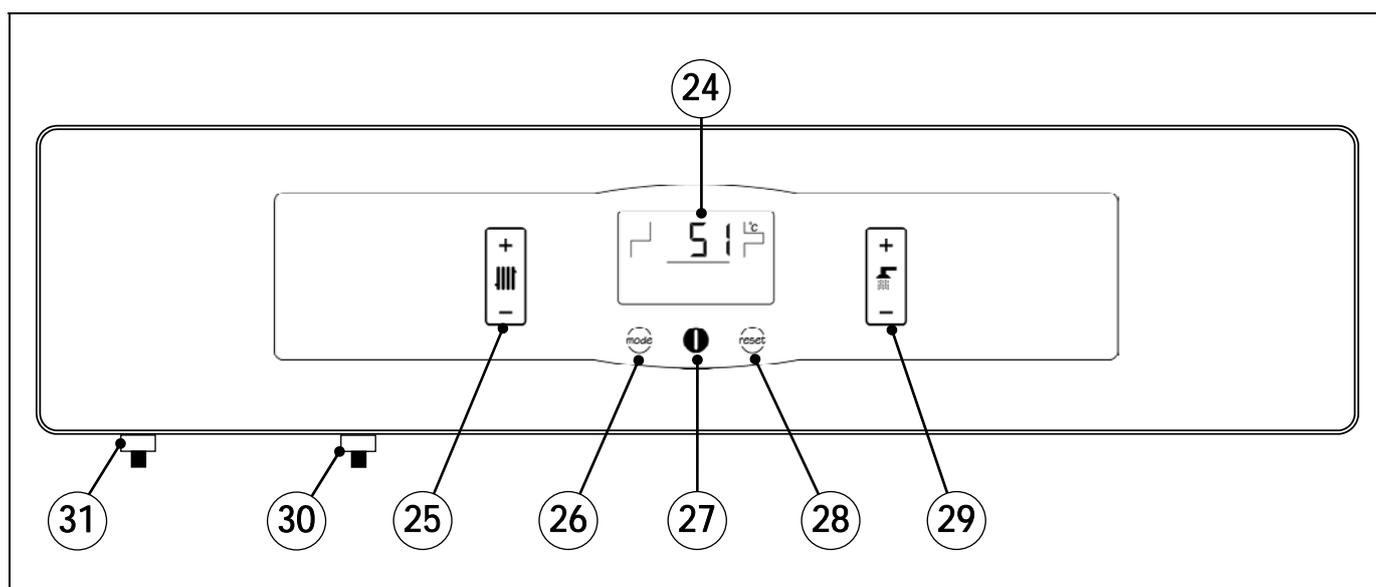
Evolution Solar HFD

1 COMPONENTS DIAGRAM



- | | |
|--|---|
| 1. Domestic sealed burner. | 13. Domestic hot water safety unit. |
| 2. Heating pump. | 14. Safety unit siphon. |
| 3. Domestic hot water pump. | 15. Stainless steel solar storage tank. |
| 4. Heating safety valve. | 16. Solar circuit flow regulator. |
| 5. Solar drain valve. | 17. Solar pump. |
| 6. Automatic air bleed valve. | 18. Stainless steel condenser. |
| 7. Heating expansion vessel. | 19. Solar circuit safety valve. |
| 8. Solar circuit level socket. | 20. Heating fill valve. |
| 9. Water pressure sensor. | 21. Domestic hot water heat exchanger. |
| 10. Solar circuit filling gauge. | 22. Solar deflector valve. |
| 11. Domestic hot water expansion vessel. | 23. Heating circuit drain valve. |
| 12. Flow switch. | |

2 CONTROL COMPONENTS



24. Digital display:

This is the boiler functioning display, on which all the operating information, settings and values appear. In standard operating mode (default display), the actual boiler temperature is shown. If any malfunctioning should occur, the corresponding alarm code will appear on the digital display.

25. Boiler temperature touch button:

This is used to select the boiler setpoint temperature. If **OFF** is selected, the heating function is disabled. To select the desired temperature, simply place your finger on the "+" or "-" symbols on the touch button to increase or decrease the desired boiler temperature.

26. MODE touch button:

When this button is touched the different boiler temperatures appear on the digital display.

27. ON touch button:

If you place your finger on this button for 1 second the boiler will switch on or off.

28. RESET touch button:

If the boiler is in lock-out mode as the alarm has been triggered, touch the RESET button to reset the lock-out and restore functioning. If you are modifying any of the settings or browsing the user menu, you may touch the RESET button to exit the menu **WITHOUT SAVING** and return to the previous menu level.

29. DHW temperature touch button:

This is used to select the setpoint temperature for domestic hot water. If **OFF** is selected, the heating function is disabled. To select the desired temperature, simply place your finger on the "+" or "-" symbols on the touch button to increase or decrease the desired DHW temperature.

30. Boiler safety thermostat:

This is a cut-out mechanism to ensure the boiler temperature does not exceed 110°C.

31. Fume safety thermostat:

This safety thermostat operates when the temperature of the combustion products exceeds 110°C, in order to protect the polypropylene duct.

Evolution Solar HFD

3 INSTALLATION INSTRUCTIONS

The boiler must be installed by personnel authorised by the Department of Industry in accordance with the applicable regulations and standards in force. However, the following recommendations must be complied with when installing the boiler:

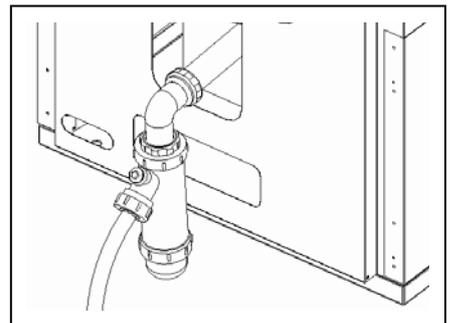
3.1 Location

The boiler must be installed in a sufficiently ventilated site. **The boiler must be accessible from the side for maintenance purposes.**

3.2 Hydraulic installation of the heating and DHW circuit.

The hydraulic installation must be made by qualified personnel. The applicable installation legislation is to be complied with, and the following recommendations should also be taken into account:

- The inside of the installation piping should be thoroughly cleaned before switching on the boiler.
- We recommend inserting cut-off valves between the installation piping and the boiler to simplify maintenance tasks.
- If the boiler is installed at a lower height than the heating installation, it is recommendable to create a siphon at the boiler outlet, to prevent the installation from heating up due to natural convection when heating is not required.
- For correct boiler functioning, there must be a pressure of at least 0.5 bar in the domestic hot water circuit.
- When the DHW supply pressure is over 5 bars, a pressure reducer must be fitted.
- It is recommended to install a thermostatic mixing valve at the DHW outlet to protect against burns and to guarantee a constant, stable supply of hot water.
- Before starting up the unit, it is essential to install the condensation siphon supplied with the boiler documentation on the condensation drain tube on the back of the boiler.
- **The condensation pipe should lead to a drain outlet, as the Evolution boiler is a condensation boiler and a large amount of water may be generated.** This connection should be made in accordance with the regulations for draining off condensation water to the drain network.
- Fill the siphon with water before starting up the unit, to prevent fumes coming out of it.



3.3 Fuel installation

The **Evolution Solar HFD** boiler is supplied with a **Domestic** sealed oil burner (see model in "Technical Characteristics"). To correctly make the fuel installation, proceed in accordance with the burner instructions enclosed with this manual (see "Burner" section).

The oil line installation and start-up of the burner must be carried out by qualified, authorised personnel.

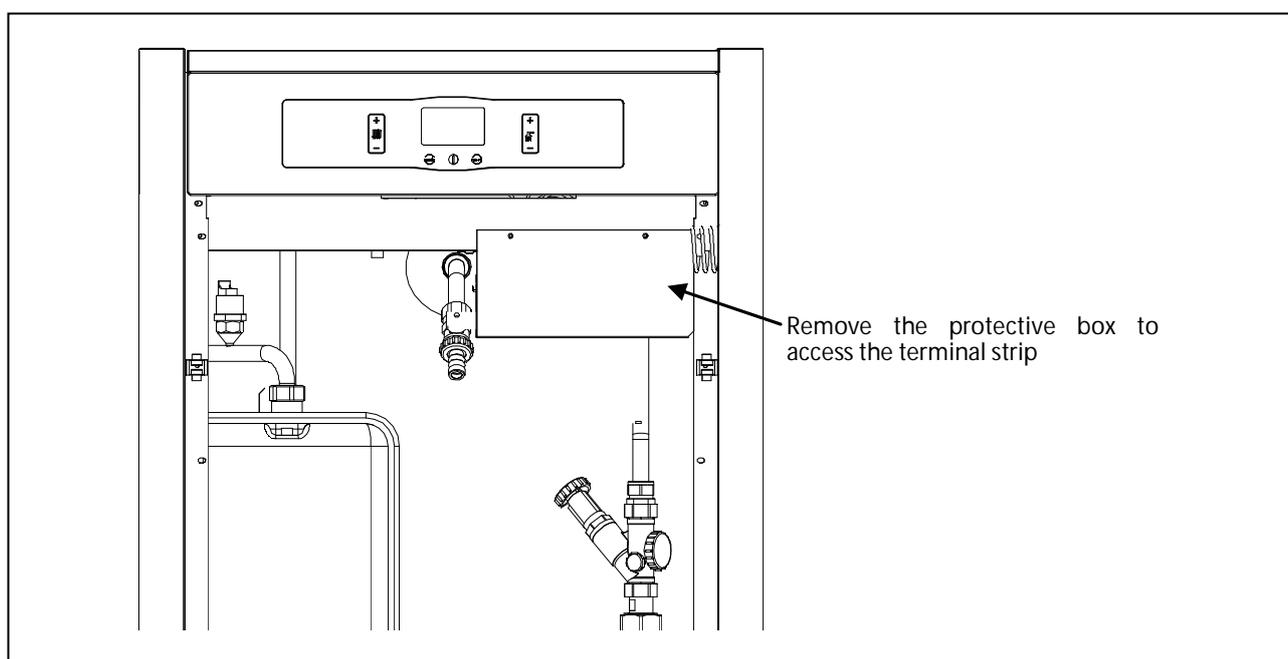
3.4 Electrical Connection

The boiler is equipped for connection at 230 V~, 50 Hz to terminals **1** and **2** of terminal strip **J1** (see "*Electrical Connection Diagram*"). **Remember to earth the appliance.**

The boiler has two terminal strips, **TA₁** (J5) and **TA₂** (J6) for connecting room thermostats or room chronothermostats (see "*Electrical Connection Diagram*") for remote control of heating circuits 1 and 2 respectively. To correctly connect the room thermostats, firstly remove the bridge joining the terminals of terminal strip **TA₁**. For connection to **TA₂**, simply connect the thermostat to the terminal strip.

IMPORTANT: Before carrying out any work on the boiler's electrical installation, always ensure it is disconnected from the mains.

IMPORTANT: To access the electrical connection terminal strip, remove the protection box under the main board, as shown in the picture below.



3.5 Installing heating circuit 2 (Optional)

All the models in the **Evolution Solar HFD** range of boilers are supplied equipped with a circulation pump connected to heating circuit 1 (BC₁). In addition to this circuit, all the models are designed to control a second heating circulation pump, in heating circuit 2 (BC₂).

The hydraulic installation of heating circuit 2 should be made using the **optional flow circuit (IC')** on the rear of the boiler (see "*Diagrams and Measurements*").

The circulation pump installed in heating circuit 2 must be electrically connected between terminals N and 8 on supply connector block **J2** (see "*Electrical Connection Diagram*").

Evolution Solar HFD

3.6 Installing the solar circuit

The solar circuit integrated in the boiler must be installed by qualified personnel. The solar circuit basically consists of a dual-chamber domestic hot water storage tank, for exchanging heat with the domestic hot water, one solar circulation pump, a flow regulator and a solar collector, for exchanging heat with the sun.

To make optimum use of the solar energy, take special care when locating and positioning the solar collector. Read the "Location of the Solar Collector" section carefully to obtain full performance from the circuit. To correctly assemble the solar collector and its corresponding supports, carefully follow the assembly instructions included with the same.

The hydraulic connection between the solar collector and the boiler is made using the solar inlet socket "ES" and the solar return socket "RS" (see "Diagrams and Measurements"). On establishing the solar circuit and the hydraulic connection between the solar collector and the boiler, the following limitations must be taken into account:

| Min. height (G) | Max. height (H) | Max. horizontal L. (flow and return) (L) | Max. total length | Min. slope (α) | Piping \varnothing |
|-----------------|-----------------|--|-------------------|-------------------------|----------------------|
| 0.5 m. | 10 m. | 20 m. | 40 m. | 4% | \varnothing 12 mm. |

See fig. A

When the solar circuit hydraulic connections have been made, fit the collector sensor bulb (**Scol**) to the bulb-holder on the collector, and make the electrical connection on the terminal strip of sensors **J3**, terminals 17 and 18 (see "Connection Diagram"). The collector sensor "**Scol**" is supplied with the boiler, in the documents bag.

For the solar circuit to function properly, it is essential to start it up correctly, carefully following the instructions given in the points on this subject in the "Start-up" section of this manual. These sections provide a detailed description of how to correctly fill the circuit, control the seal and adjust the flow.

The heat transmission in the **Evolution Solar HFD** boiler solar circuit is made by means of a heat-carrying fluid consisting of a mix of water (70%) and **DOMUSA TEKNIK** inhibitor liquid (minimum 30%). The **DOMUSA TEKNIK** inhibitor liquid's resistance and heat transmission properties make it suitable for use in solar heating installations. Its main function is to protect the different components from corrosion, as the installation contains various metals. The **Evolution Solar HFD** boiler is supplied pre-loaded with 8 litres of inhibitor liquid in the solar circuit of the hot water tank, which means the optimum proportion of inhibitor liquid is reached when the circuit has been filled (see "Filling the Solar Circuit").

IMPORTANT: The inhibitor liquid must always be mixed with water before use, as otherwise it could damage the installation.

IMPORTANT: DOMUSA TEKNIK will only be liable for the correct functioning of the system if it has been filled with DOMUSA TEKNIK inhibitor liquid.

IMPORTANT: Evolution Solar 30 HFD boilers are specifically designed to function with \varnothing 12 mm diameter tubes for the flow and return connection between the solar collector and the hot water tank. If you wish to use any other diameter, consult the DOMUSA TEKNIK customer service department.

3.7 Location of the solar collector

The choice of location for the solar collector is very important, as an unsuitable location could mean a reduction in the efficiency of the solar circuit due to incorrect orientation, shadows being cast on the solar collector, etc.

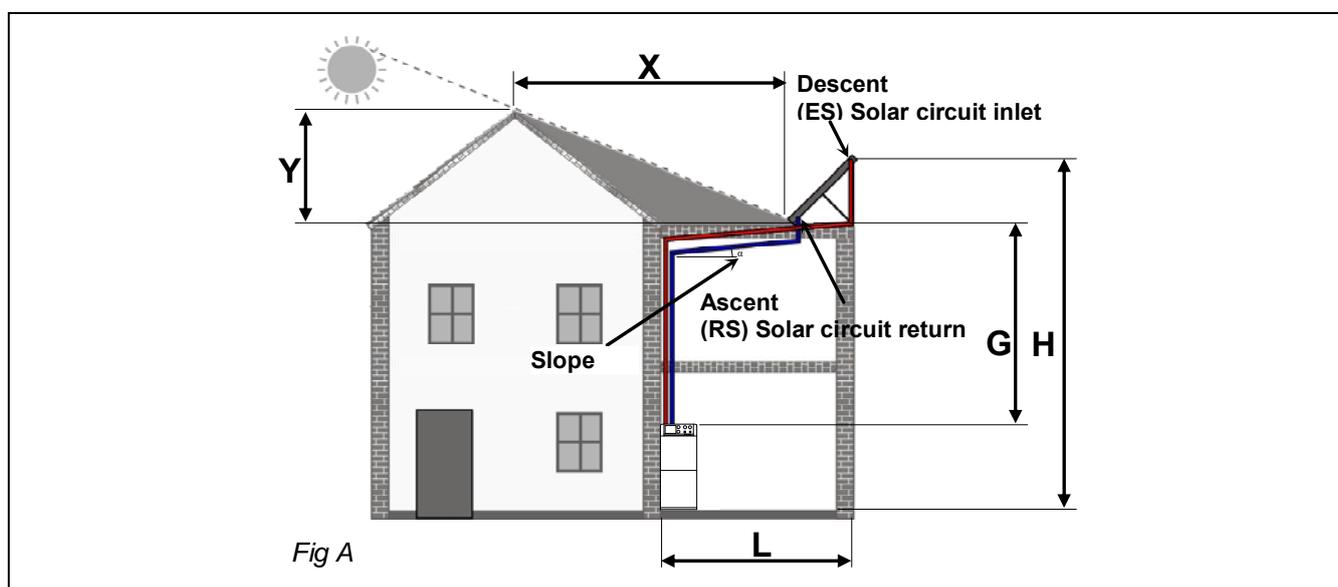
To correctly locate the solar collector, the calculation methods and reference tables figuring in the "Technical Building Code" (CTE, Section HE 4) should be carefully followed. **DOMUSA TEKNIK** provides a calculation computer program for installers, which can be ordered through the website www.domusateknik.com. However, it is recommended to take the following indications into account when choosing the ideal location:

- Before deciding on the location, the accessibility of the site must be taken into account, both as regards the installation itself and for maintenance work on the solar collectors.
- The solar collector **must face south**.
- The solar collector must normally be installed with a slope 5° greater than the latitude of the location. Any difference from this angle will reduce its efficiency.
- **For installations with integrated supports for slate tiles, the tilt must be at least 27° , and for those with integrated supports for tiles, it must be at least 16° . The solar collector must be levelled on installation, so that the upper part is horizontal.**
- According to the Technical Building Code, losses due to orientation/tilt and shade must not exceed the following values:

| Case | MAXIMUM LOSSES | | |
|---------------------------|----------------------|-------|-------|
| | Orientation and tilt | Shade | Total |
| General | 10% | 10% | 15% |
| Overlap | 20% | 15% | 30% |
| Architectural integration | 40% | 20% | 50% |

When installing the solar collector, ensure that no objects cast shadow on it, particularly in winter, when the sun is lower in the sky. The minimum distance from an obstacle the solar collector can be installed at depends on the height of the obstacle and the latitude of the site of installation, as shown in the table below:

| | Latitude 35° | Latitude 40° | Latitude 45° |
|------------------|---------------------|---------------------|---------------------|
| Calculation of X | $Y \times 1.75$ | $Y \times 2$ | $Y \times 2.25$ |



Evolution Solar HFD

4 COMBUSTION PRODUCT EVACUATION

The Evolution Solar HFD boiler is a sealed oil-fired boiler, and the combustion products are therefore removed through an outlet pipe, with a separate air intake from outside. It can also work by taking the air intake for the burner from the room, this is how the boilers come set from factory. To operate in this mode, the room must be sufficiently ventilated and not obstruct or block any ventilation openings.

4.1 External position of the gas evacuation pipes terminal

The combustion product exhaust ducts must be installed by qualified personnel and must comply with current legislation and standards.

We recommend that the position of the outside exhaust duct is as shown in the figures and in the table below:

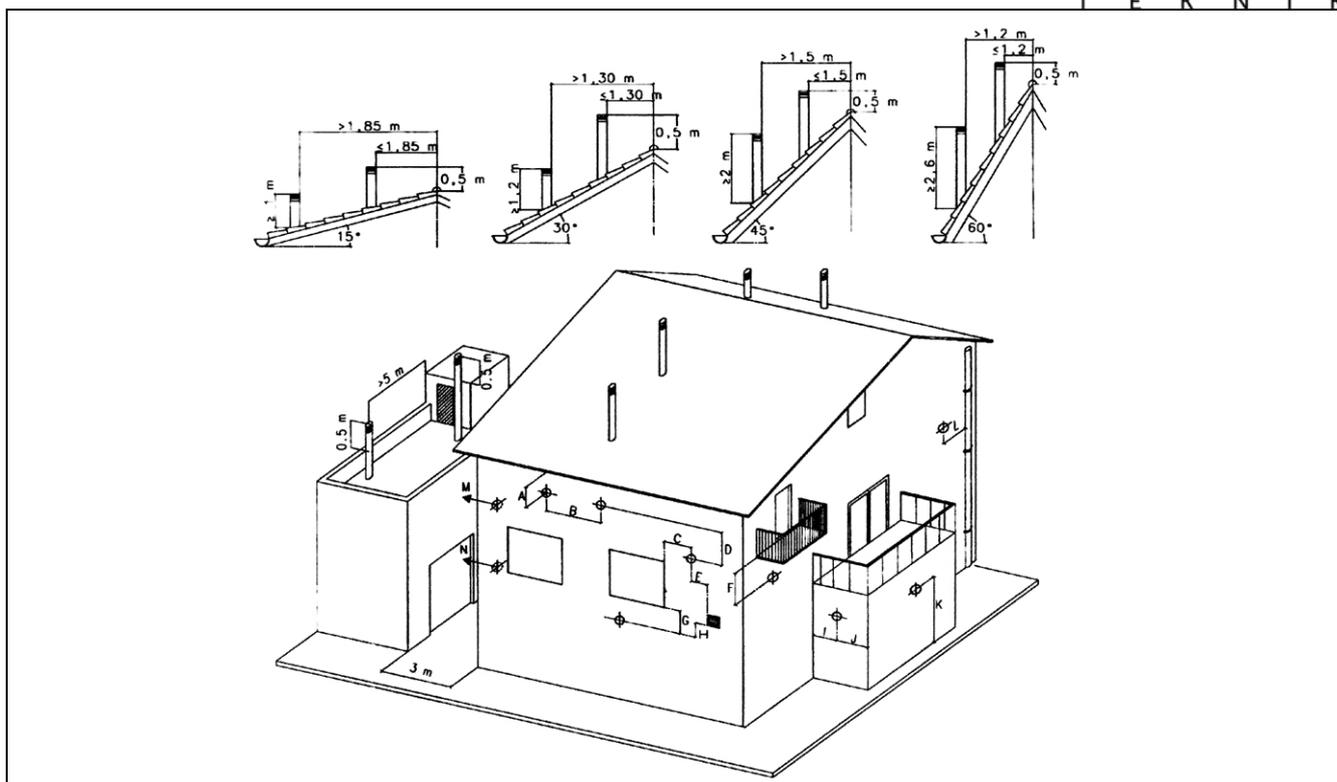
| Exhaustion duct position | Minimum distance (mm) |
|--|-----------------------|
| A under a cornice | 300 |
| B between two horizontal ducts | 1000 |
| C from an adjacent window | 400 |
| D between two vertical ducts | 1500 |
| E from an adjacent ventilation grille | 600 |
| F under a balcony (*) | 300 |
| G under a window | 600 |
| H under a ventilation grille | 600 |
| I from a recess in the building | 300 |
| J from a corner of the building | 300 |
| K from the ground | 2500 |
| L from a vertical or horizontal duct or outlet (**) | 300 |
| M from a frontal surface at a distance of 3 metres from the fume outlet | 2000 |
| N as above, but with an opening | 3000 |

(*) Providing the width of the balcony is not over 2000 mm

(**) If the pipe is made of materials sensitive to the action of the flue gases, this distance should be over 500 mm.

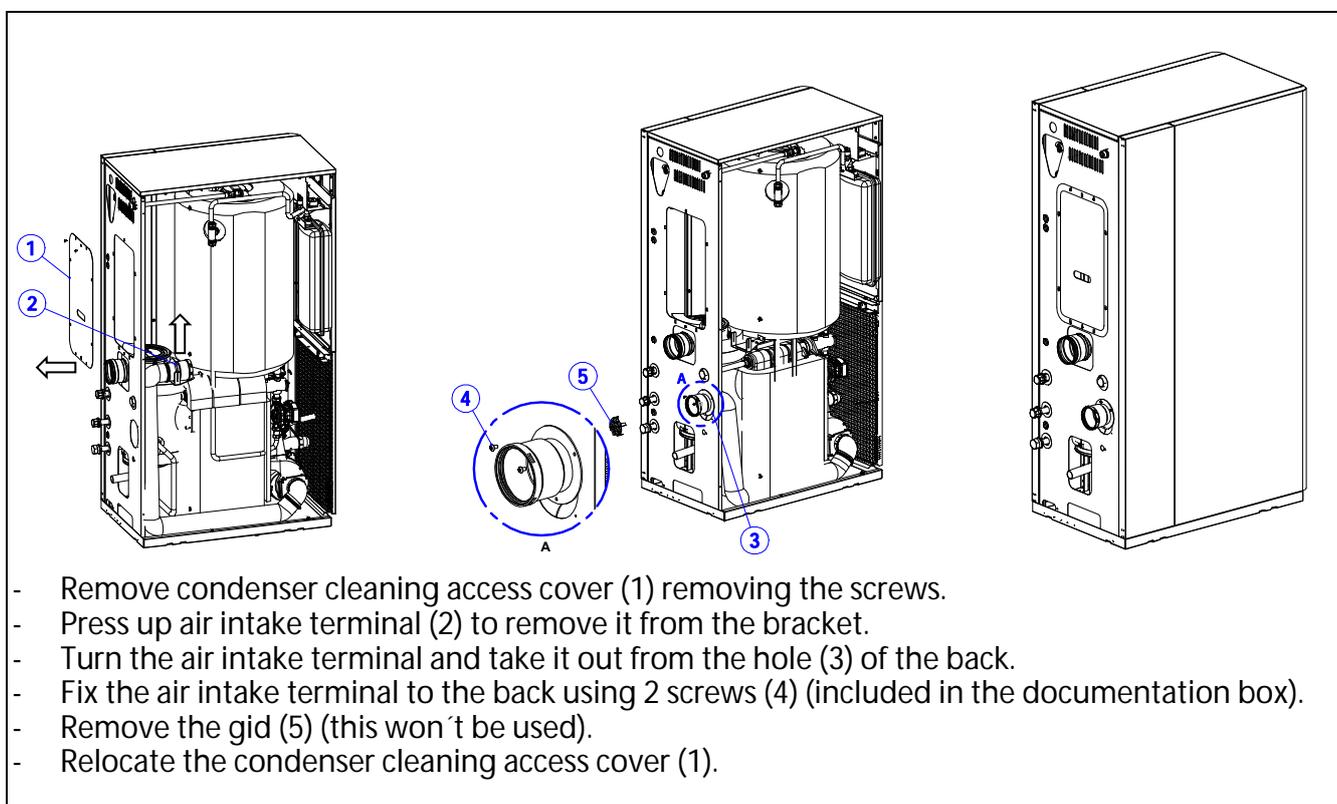
Note: Spanish law also stipulates that the end of the exhaust duct must be at a distance of at least 400 mm. from any air intake opening, and from the wall.

IMPORTANT: All accessories used for combustion product evacuation and air intake are to be those supplied by DOMUSA TEKNIK.



4.2 Preparation of the burner air intake for balanced flue operation mode

Evolution boilers come prepared from factory for operation by taking the intake air for the burner from the room. In case of choosing room sealed mode operation, with the evacuation of the combustion gases through an outlet conduct and an independent external air intake, air intake for the burner must be prepared following these instructions:



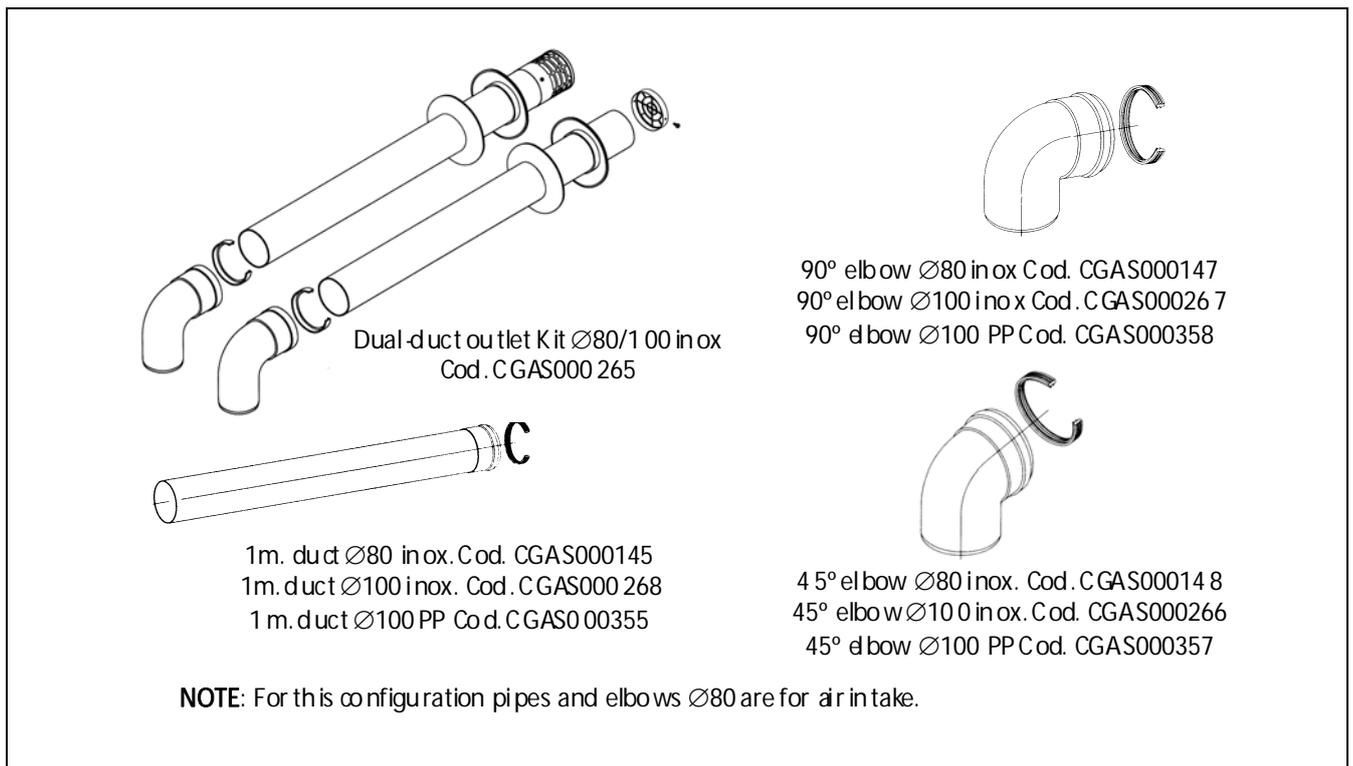
Evolution Solar HFD

4.3 Ø80 dual duct system for combustion product evacuation and air intake (type C₅₃)

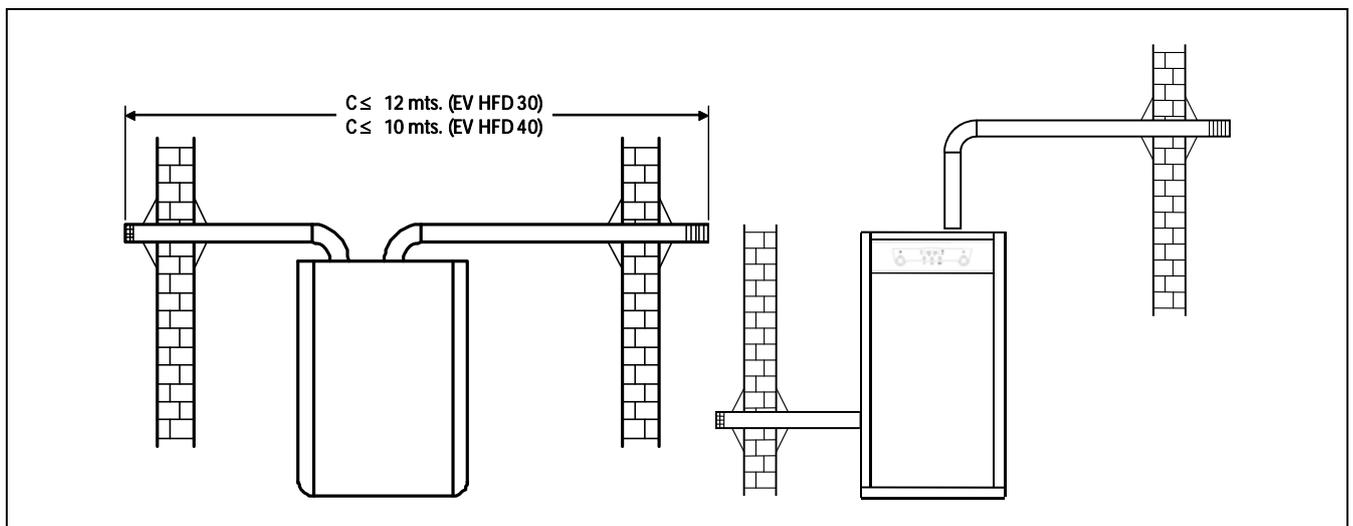
For this type of boiler, combustion product evacuation and air intake take place through separate Ø80 mm dual ducts, using the Ø80 dual duct outlet kit, code CGAS000265. Evolution Solar HFD boilers are equipped with this type of fume removal by default.

The **maximum length** of piping that can be installed is 12 metres, which is the maximum sum of the metres of the air intake duct and the metres of the combustion product evacuation duct. Each 90° elbow, or each two 45° elbows, will reduce the available length by 1 m. One horizontal metre is the equivalent of 2 metres.

It is recommended to fit the exhaust duct in a slightly upwardly-inclined direction, at around 2° - 3°, thus preventing any water and condensation from dripping out.

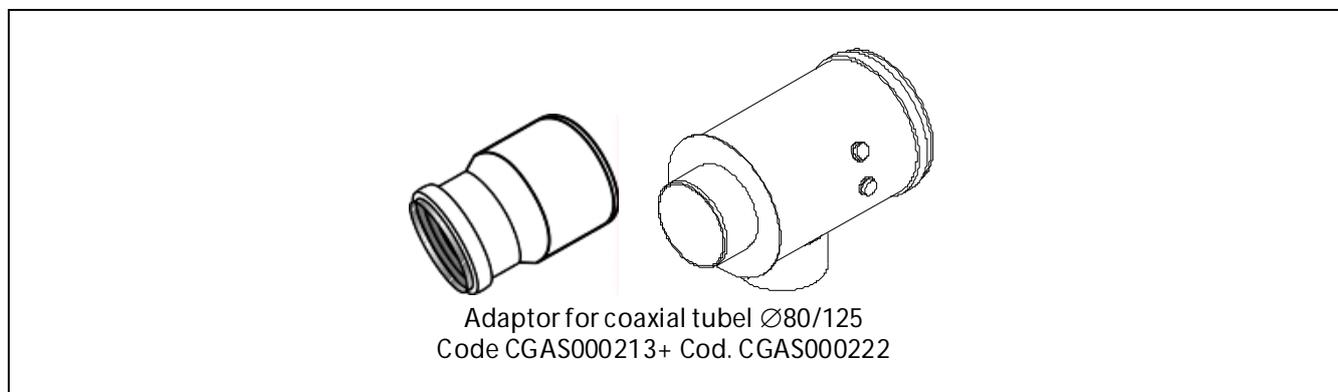


Examples of installation:



4.4 Changing from dual duct fume removal to coaxial fume removal

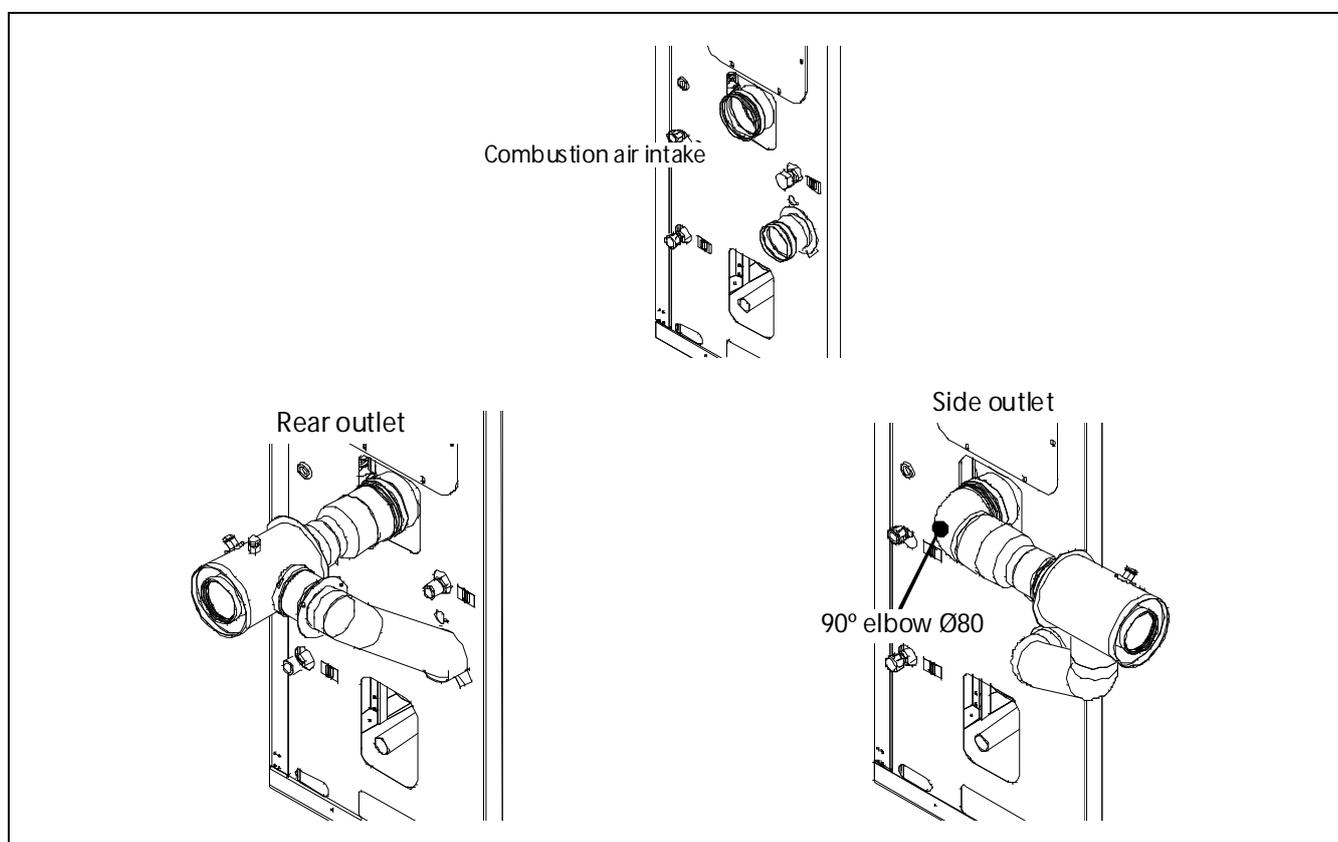
The **Evolution Solar HFD** boiler has a Ø80 dual duct system for combustion product evacuation and air intake. If you prefer the combustion products to be removed by means of a Ø80/125 coaxial tube, you may use the Ø80/125 coaxial tube adaptor kit (supplied to order), code CGAS000213+Cód. CGAS000222..



The changeover may be made with two different assembly configurations:

1. Rear outlet: simply remove the combustion air intake from the boiler, unscrewing the three screws holding it in place, mount the adaptor on the fume outlet towards the rear, and use the flexible air inlet tube to connect it to the adaptor T.
2. Side or top outlet: the procedure is the same, but for side mounting of the adaptor kit a 90° Ø80 elbow (code CGAS000147) needs to be fitted before the adaptor at the fume outlet.

The two configurations are shown in the figures below:



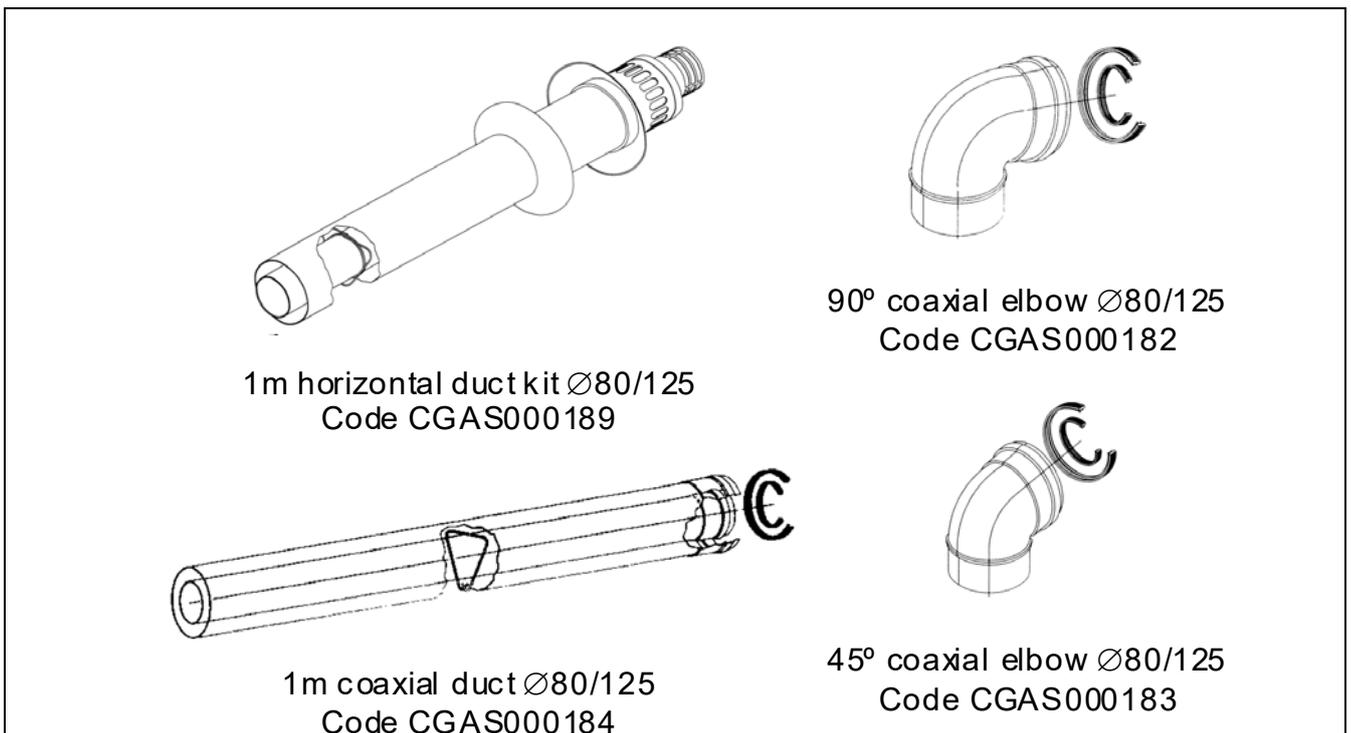
Evolution Solar HFD

4.5 Ø80-125 concentric horizontal duct for combustion product evacuation and air intake (type C13)

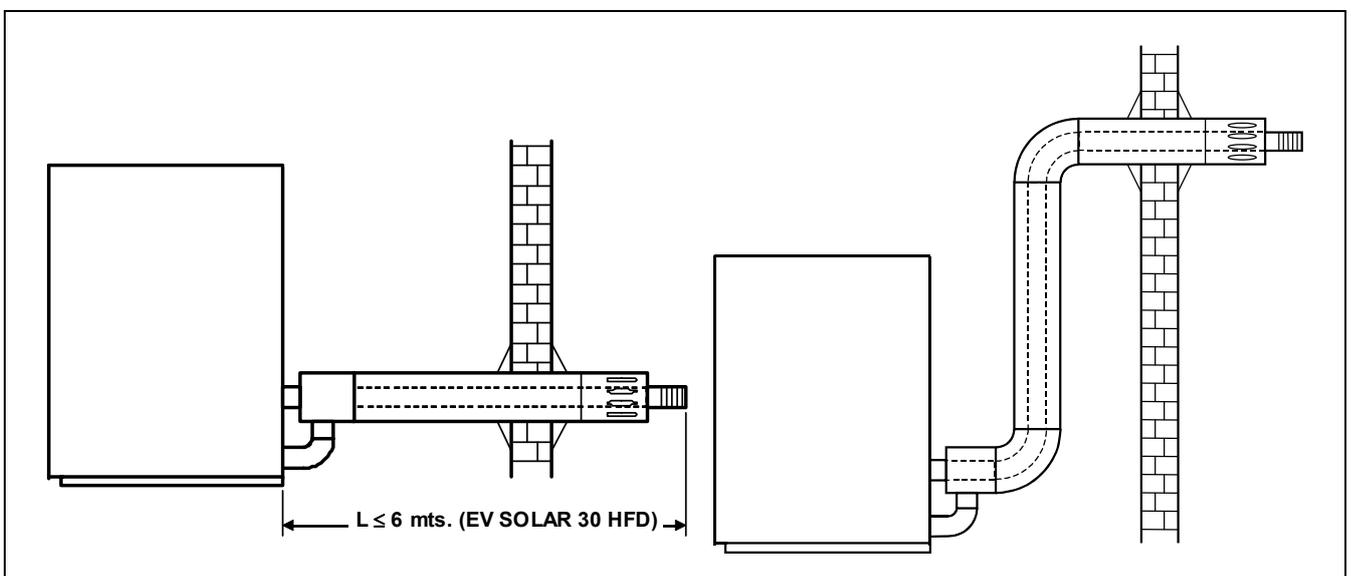
Combustion product evacuation and air intake can be made using concentric Ø80 mm ducts for combustion product evacuation and Ø125 mm ducts for air intake, using the 1m Ø80-125 horizontal outlet kit, code CGAS000189.

The **maximum horizontal length** from the boiler, including the kit terminal, is 6 metres for this model. Each 90° elbow, or two 45° elbows, will reduce the available length by 1 metre. One horizontal metre is the equivalent of 2 metres.

It is recommended to fit the pipe in a slightly upwardly-inclined direction, at around 2° - 3°, to prevent any water or condensation from dripping out.



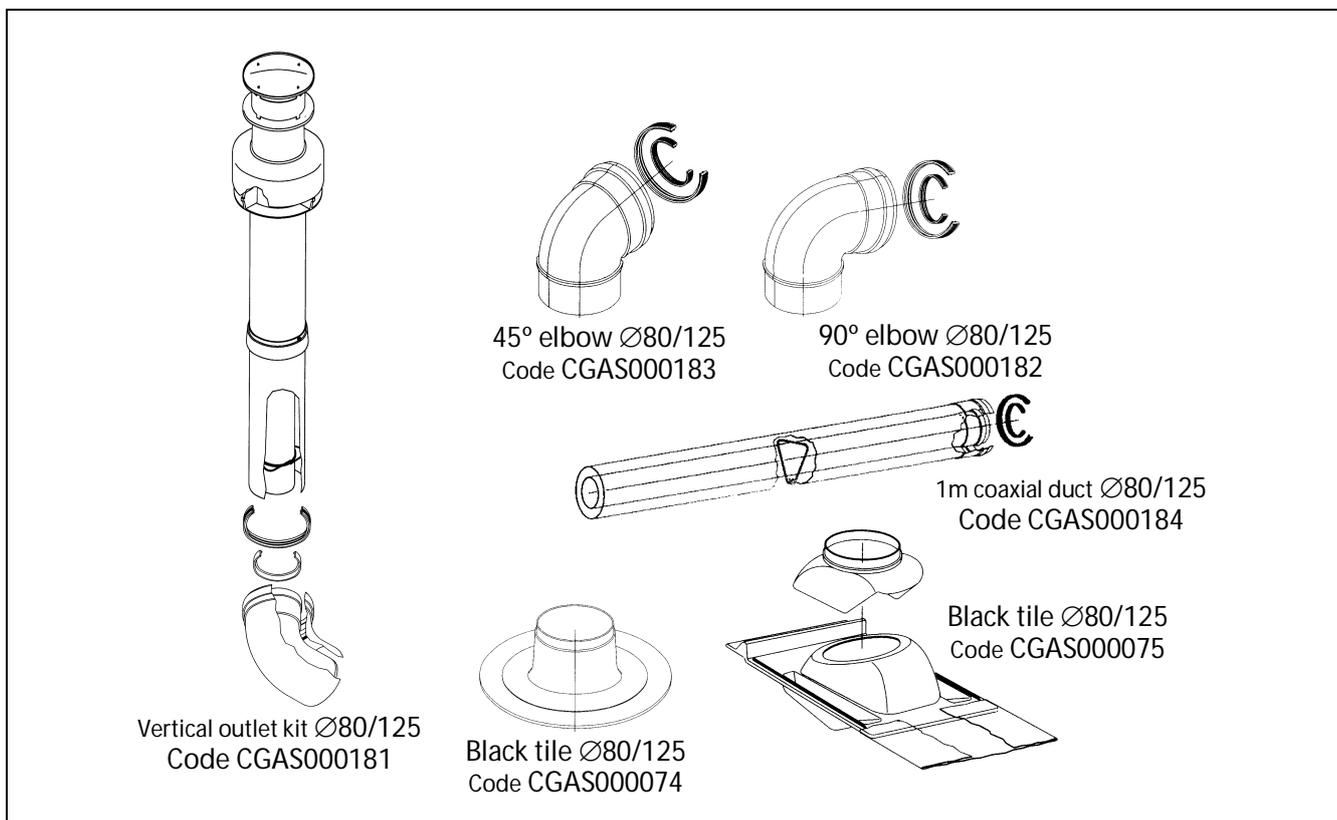
Installation examples:



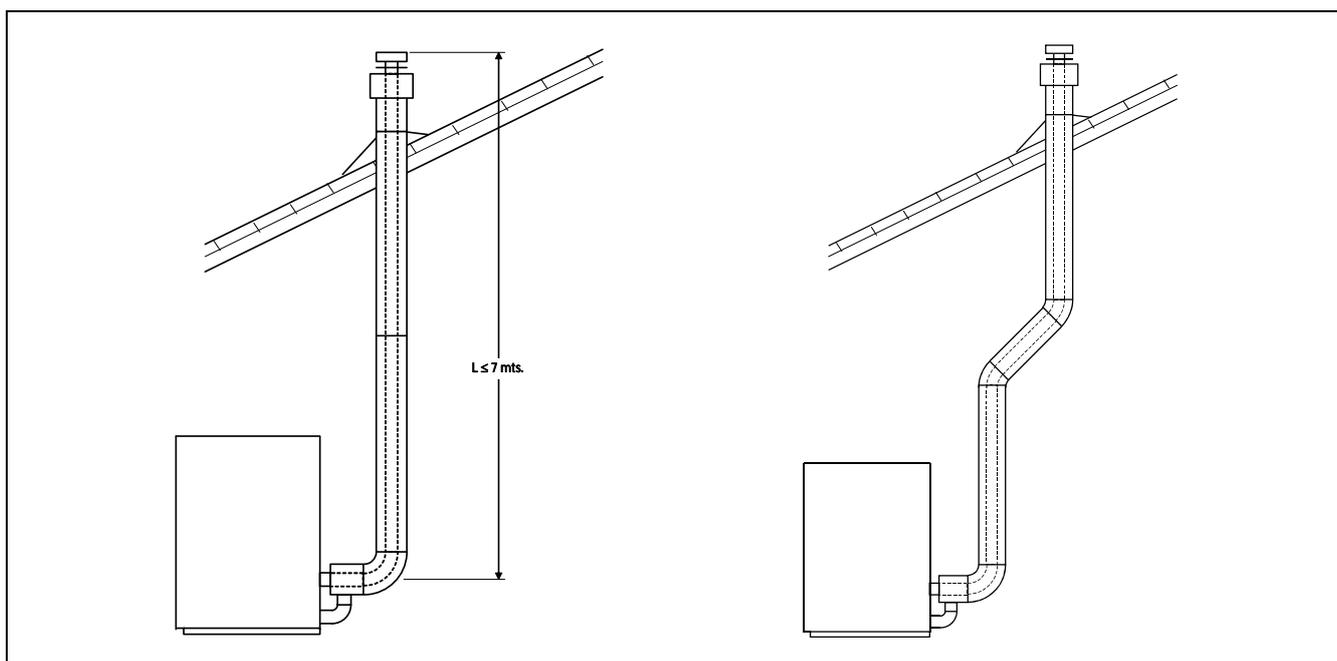
4.6 Ø80-125 concentric vertical duct for combustion product evacuation and air intake (type C33)

Combustion product evacuation and air intake can be made using concentric Ø80 mm ducts for combustion product evacuation and Ø125 mm ducts for air intake, using the Ø80-125 vertical duct kit, code CGAS000181.

The **maximum vertical length** from the boiler, including the kit terminal, is 7 metres. Each 90° elbow, or two 45° elbows, will reduce the available length by 1 metre. One horizontal metre is the equivalent of 2 metres.



Examples of installation:



Evolution Solar HFD

5 STARTING UP THE BOILER

5.1 Prior warnings

Repair and maintenance of the boiler must be carried out by a qualified professional, authorised by DOMUSA TEKNIK. For optimum functioning and conservation of the boiler, it should be serviced annually.

Carefully read this instructions manual and keep it in a safe, easily-accessible place.

Before any servicing, disconnect the boiler from the mains and cut off the oil supply. Any manipulation of the sealed parts of the boiler is prohibited.

DOMUSA TEKNIK will not be liable for any damages caused by failure to follow these instructions.

5.2 Filling the the heating circuit

To fill the heating circuit installation, open the fill valve **(20)** until a pressure of 1 - 1.5 bars appears on the "*boiler pressure*" setting on the display. The circuit should be filled slowly and with the automatic air bleed valve cap **(6)** loose, to let the air out of the installation. The air should also be bled from the rest of the installation using the air bleed valves provided. When the installation has been filled, close the fill valve.

Evolution Solar HFD boilers have a pressure sensor **(9)** for controlling the pressure of the installation. If the installation pressure drops below a minimum of 0.5 bar, the boiler will not switch on and a low pressure alarm will appear on the display ("**AP**").

NOTE: Switching on the boiler with no water inside could result in serious damage.

5.3 Start-up

In order for the **guarantee to be valid**, the boiler must be started up by an **official DOMUSA TEKNIK Technical Assistance Service**. Before beginning start-up, the following must be complied with:

- The boiler must be electrically connected to the mains.
- The installation must be filled with water (the manometer must indicate 1 - 1.5 bar).
- Fuel must be reaching the burner at a pressure of no more than 0.5 bar.
- The solar circuit must be filled up to the level socket.

5.4 Delivery of the installation

After the initial start-up, the Technical Assistance Service will explain to the user how the boiler functions, making any observations they consider relevant.

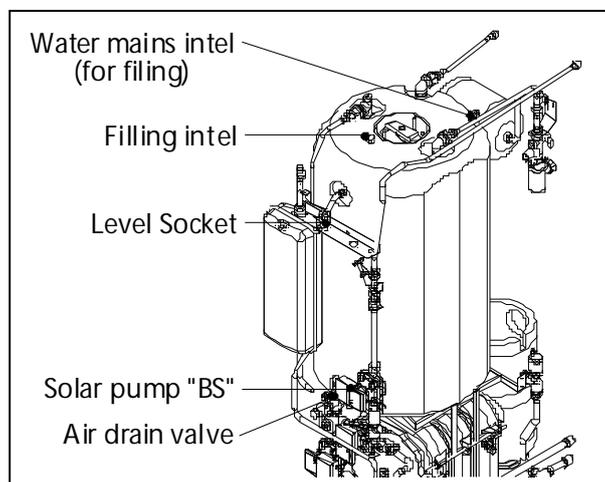
The installer is responsible for clearly explaining to the user the functioning of any control or regulation device forming part of the installation but not supplied with the boiler.

5.5 Filling the solar circuit

The **Evolution Solar HFD** boiler is supplied with the inhibitor liquid required for its correct functioning. The rest of the solar circuit needs to be filled with tap water to obtain a perfect mix of heat-carrying fluid and for optimum circuit functioning. The circuit is filled by connecting a hose to the filling inlet on the solar hot water tank.

To correctly fill the solar circuit, proceed as follows:

- Connect the filling inlet to the water mains (mains filling inlet) with a hose.
- Connect a hose to the level gauge and lead it to a container.
- Open the level gauge valve.
- Turn on the water supply.
- When liquid begins to come out of the level gauge, cut off the water supply to the filling inlet.
- Close the level gauge valve when liquid stops coming out of it.



If the solar circuit should need to be drained and filled while carrying out maintenance, ensure it is filled with the correct mix of water and inhibitor liquid, with at least 30% inhibitor liquid (minimum 8.5 litres).

IMPORTANT: DOMUSA TEKNIK will only be liable for the correct functioning of the system if it has been filled with DOMUSA TEKNIK inhibitor liquid.

5.6 Solar pump functioning in manual mode

For start-up and maintenance of the solar circuit, the solar circulation pumps need to be switched on manually. The **Evolution Solar HFD** boiler allows the solar pumps to be activated using the "hp" setting on the digital display. To do this, use the MODE touch button to browse to this setting and the On touch button (27) to access it. When you have accessed the setting, use the touch button on the right of the display (29) to change the value, enabling the solar pumps with the following values selected:

- "0" – Automatic functioning mode (default value).
- "1" – Both solar pumps are disabled.
- "2" – Both solar pumps are activated.
- "3" – Solar pump speed activated defined "US" parameter.

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When you have selected the desired manual functioning mode, place your finger on the On touch button again to record the value and exit the "h_n" setting. Operating modes 0, 1 and 2 will remain activated indefinitely, until another operating mode is selected (even if the boiler is switched off and switched on again). However, for safety reasons, manual modes 3 and 4 will only remain active while they are selected, and the "h_n" setting cannot be exited until another mode is selected (if the boiler is switched off at this point, it will return to automatic operating mode when it is switched on again).

IMPORTANT: The solar circuit must only be serviced and installed by sufficiently qualified personnel, in accordance with current national and local installation and safety legislation and standards.

5.7 Starting up the solar pump with timer

For correct system start-up, the solar circuit is equipped with 2 circulation pumps, one of which has a timer (BST). When the system has started up, after ensuring that the heat-carrying liquid is flowing through the whole circuit and when the flow is stabilised (15 minutes by default), the electronic control switches off the pump with a timer, as one pump is sufficient to maintain the flow, thus optimising the electricity consumption of the solar circuit.

To change the switch-off time for the pump with a timer, use the MODE touch button to browse to the "Switch-off time for solar pump with timer" display option. When this option is displayed, touch the "+/-" symbols on the touch button on the right of the display (27) to select the desired time. The switch-off time can be adjusted between OFF and 5 and 30 minutes. To disable the switch-off function for the pump with a timer, select "oFF" for the pump to remain continuously switched on while there is solar energy.

IMPORTANT: The solar circuit must only be serviced and installed by sufficiently qualified personnel, in accordance with current national and local installation and safety legislation and standards.

5.8 Checking the solar circuit seal

For the solar circuit to function correctly, it is very important to ensure it is correctly sealed. To do this, switch on the two solar pumps in manual mode by selecting value "2" on the "h_n" setting on the digital display (see "Solar pump functioning in manual mode").

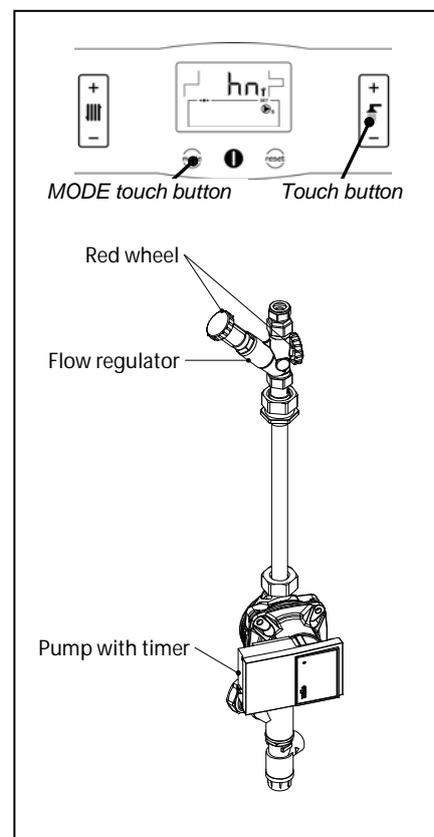
After 15 minutes have elapsed and with the pumps still switched on, check there are no leaks anywhere in the solar circuit. Make sure no siphons have been created in the installation, as this would prevent correct drainback of the solar circuit.

IMPORTANT: Insufficient sealing of the solar circuit and a siphon effect caused by incorrect layout of the piping can cause serious operating problems.

5.9 Adjusting the solar circuit flow

For the solar circuit to function correctly it is essential to regulate its flow. The **Evolution Solar HFD** boiler has a manual adjustment device with a window for viewing the flow, which is supplied totally open at maximum flow and should be adjusted to 2 l/min. To do this, when the solar circuit has been filled, carefully proceed as follows:

- 1 - Select the "hn" setting on the display using the MODE touch button. When you have selected it, access it using the On touch button.
- 2 - Select 2 on the touch button on the right of the display (**29**). The two pumps will start up.
- 3 - Let the pumps run for at least 15 minutes, to ensure the flow has stabilised.
- 4 - Repeat step 1 to switch off the solar pump with a timer, selecting the value 3 on the "hn" setting.
- 5 - Remove the red wheel from the interlock switch and fit it to the end of the flow regulator indicator. Turn the wheel to adjust the flow to 2 l/min, as shown on the display. When you have adjusted the flow, turn the red wheel back in its initial position again.
- 6 - Lastly, return to automatic solar pump functioning mode, selecting the value 0 on the "hn" setting.



IMPORTANT: The solar circuit flow must be adjusted to 2 l/min. For installations that do not reach a flow of 2 l/min, it is recommended to leave the flow regulator totally open.

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6 SHUTTING DOWN THE BOILER

To switch off the boiler, place your finger on the power touch button **(27)** for 1 second. In **Off mode**, while the boiler is plugged into the mains and connected to the fuel installation, its heating and DHW functions will be switched off but the anti-frost protection and pump anti-block functions will remain activated.

To shut down the boiler functioning completely, unplug it from the mains and cut off the fuel supply.

7 DRAINING THE BOILER

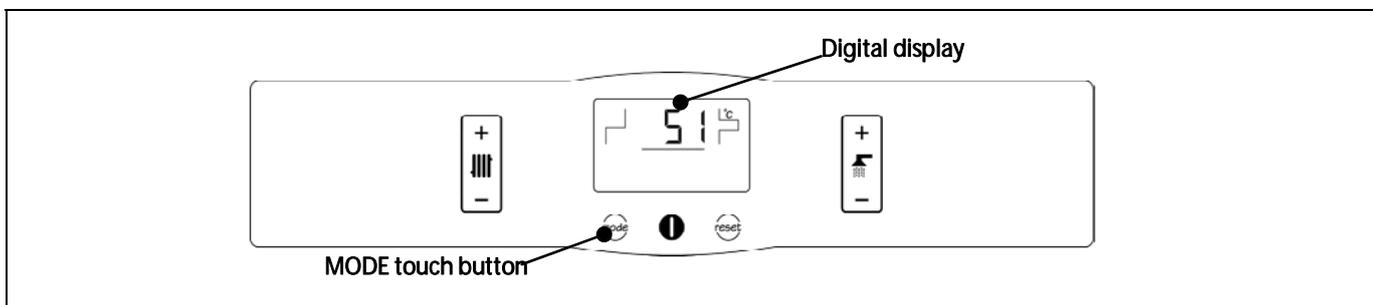
The water is drained from the boiler by opening the air drain valve **(23)** inside the boiler (on the lower right hand side on opening the door). Connect a flexible tube to this valve and run it to a drain. After draining the boiler, close the valve again and remove the flexible tube.

8 DRAINING THE SOLAR CIRCUIT

If you need to drain the solar circuit, connect a hose to the solar hot water tank drain valve **(5)** and run the hose to a suitable container (minimum capacity 19 litres), so that the heat-carrying fluid can be reused if necessary. Open the drain valve and the level valve. After draining the circuit, close the shut-off valves and disconnect the hoses.

9 DIGITAL DISPLAY:

The **Evolution** boiler is electronic and includes a digital display (24) showing the actual temperatures, the setpoint temperatures and the pressure of the installation. In standby mode, the actual boiler temperature in °C is shown on the display. The rest of the available display options can be browsed by touching the MODE button below the display, as follows:



Repeatedly place your finger on the MODE touch button to select the different display options. When the desired option has been selected, it will return to standby after 20 seconds have elapsed.

The following table shows the different display options:

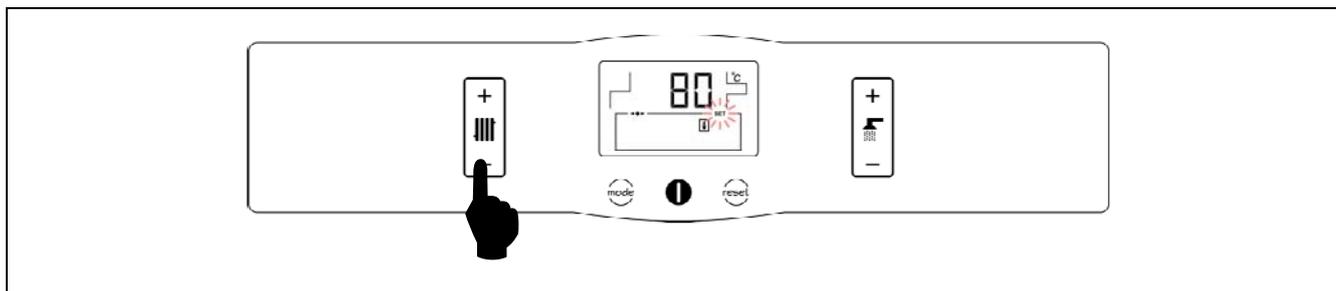
| | |
|--|---|
| | Standby. The actual boiler temperature is shown. |
| | Actual boiler temperature. |
| | Instantaneous domestic hot water temperature. |
| | Actual flow temperature of the underfloor heating installation (option SRS2/EV only) |
| | Boiler setpoint temperature selected using the corresponding touch button (26). |
| | Underfloor heating installation flow setpoint temperature selected using the corresponding touch button (26). (option SRS2/EV only) |

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| | |
|--|---|
| | <p>Back-up instantaneous DHW setpoint temperature selected using the corresponding touch button (29).</p> |
| | <p>Actual boiler pressure, measured by the Pressure Sensor (9).</p> |
| | <p>Actual Solar Collector temperature.</p> |
| | <p>Actual temperature of the domestic hot water stored in the solar hot water tank.</p> |
| | <p>Maximum desired setpoint temperature for the hot water stored in the solar hot water tank.</p> |
| | <p>Manual solar pump operation setting. This setting should only be changed by qualified personnel during start-up of the boiler's solar circuit.</p> |
| | <p>Switch-off time for the solar pump with a timer. This setting must only be modified by qualified personnel. If there is an error in this setting, it could cause malfunctioning of the boiler's solar circuit.</p> |
| | <p>The solar pump speed BS.</p> |
| | <p>Indication of the heating demand status of each circuit connected to the boiler.</p> |
| | <p>The desired display contrast can be adjusted using the touch button on the right of the display (24).</p> |

10 TEMPERATURE SELECTION

10.1 Selecting the boiler setpoint temperature



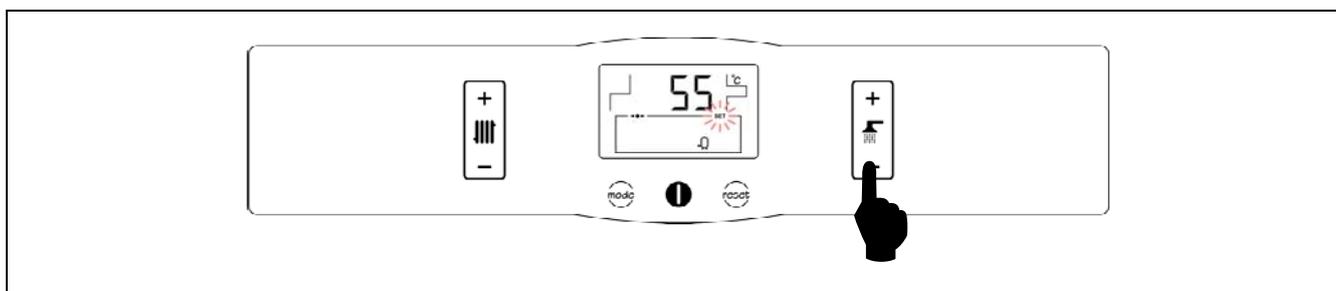
The desired boiler operating temperature is selected using the touch button, as shown in the figure. To select the desired temperature, touch the "+" or "-" symbols to increase or decrease the temperature respectively. When the temperature has been selected, the display will return to standby mode after a few seconds.

The boiler setpoint temperature can also be selected by using the MODE touch button to browse to the "*boiler setpoint temperature*" display option. When the display shows this option, touch the "+ /-" symbols to select the desired temperature.

If you wish to totally disable the boiler heating function (*Summer* mode), select the setpoint value "**oFF**" by touching the "-" symbol until this value appears on the display.

The permitted boiler setpoint temperature range is OFF and 30 - 85 °C. **Evolution** model boilers are condensing boilers. In order to obtain maximum boiler performance and energy savings, it is therefore recommended to select a setpoint temperature of 55-70 °C, providing this is permitted by the heating system installed and the insulation conditions of your home.

10.2 Selecting the back-up DHW setpoint temperature



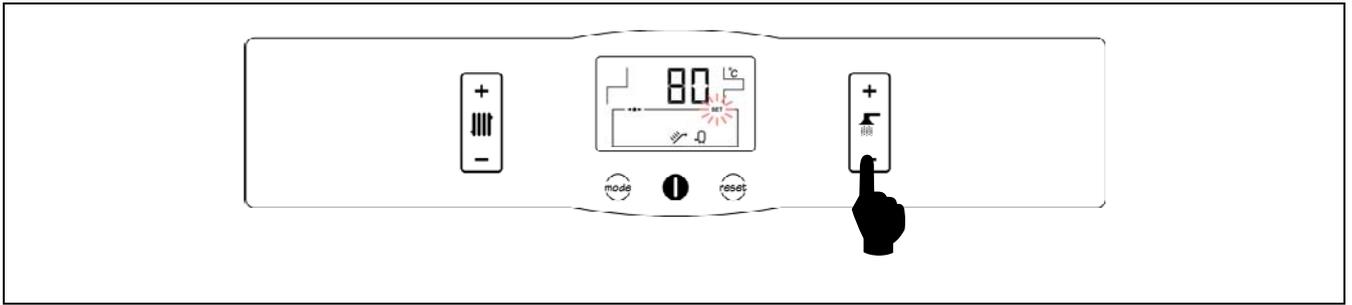
The desired DHW temperature is selected using the touch button, as shown in the figure. To select the desired temperature, touch the "+" or "-" symbols to increase or decrease the temperature respectively. When the temperature has been selected, the display will return to standby mode after a few seconds. The DHW setpoint temperature range permitted is OFF and 30 - 65 °C.

The DHW setpoint temperature can also be selected by using the MODE touch button to browse to the "*DHW setpoint temperature*" display option. When this option appears on the display, touch the "+ /-" symbols to select the desired temperature.

If you wish to totally disable the boiler's DHW production function, select the setpoint value "**oFF**" by touching the "-" symbol until this value appears on the display. In this case DHW will only be produced by the boiler's solar heating system.

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10.3 Selecting the DHW setpoint temperature in the solar hot water tank



The temperature of the DHW in the solar hot water tank is selected by using the MODE touch button to browse to the *"Solar hot water tank DHW setpoint temperature"* viewing option. When this option appears on the display, select the desired temperature by touching the "+" and "-" symbols to increase or decrease the temperature. The DHW setpoint temperature range that may be selected for the solar hot water tank is 10 - 80°C.

10.4 Selecting the underfloor heating flow setpoint temperature (with SRSC2/EV kit option)



If the boiler is supplied with an optional SRS2/EV underfloor heating kit integrated, the desired flow temperature of the installation can be selected using the touch button as shown in the figure above. To select the desired temperature, touch the "+" or "-" symbols to increase or decrease the temperature. When the temperature has been selected, the display will return to standby mode after a few seconds.

The installation flow setpoint temperature can also be selected by using the MODE touch button to browse to the *"underfloor heating installation flow setpoint"* display option. When this option appears on the display, touch the "+ /-" symbols to select the desired temperature.

If you wish to disable the underfloor heating circuit function, select the setpoint value **"OFF"** by touching the "-" symbol until this value appears on the display.

The flow setpoint temperature range permitted is OFF and 0 - 45°C. To obtain optimum performance from the underfloor heating system installed, we recommend selecting a setpoint temperature of 25 - 35 °C, providing this is permitted by the heating system installed and the insulation in your home.

11 OPERATION

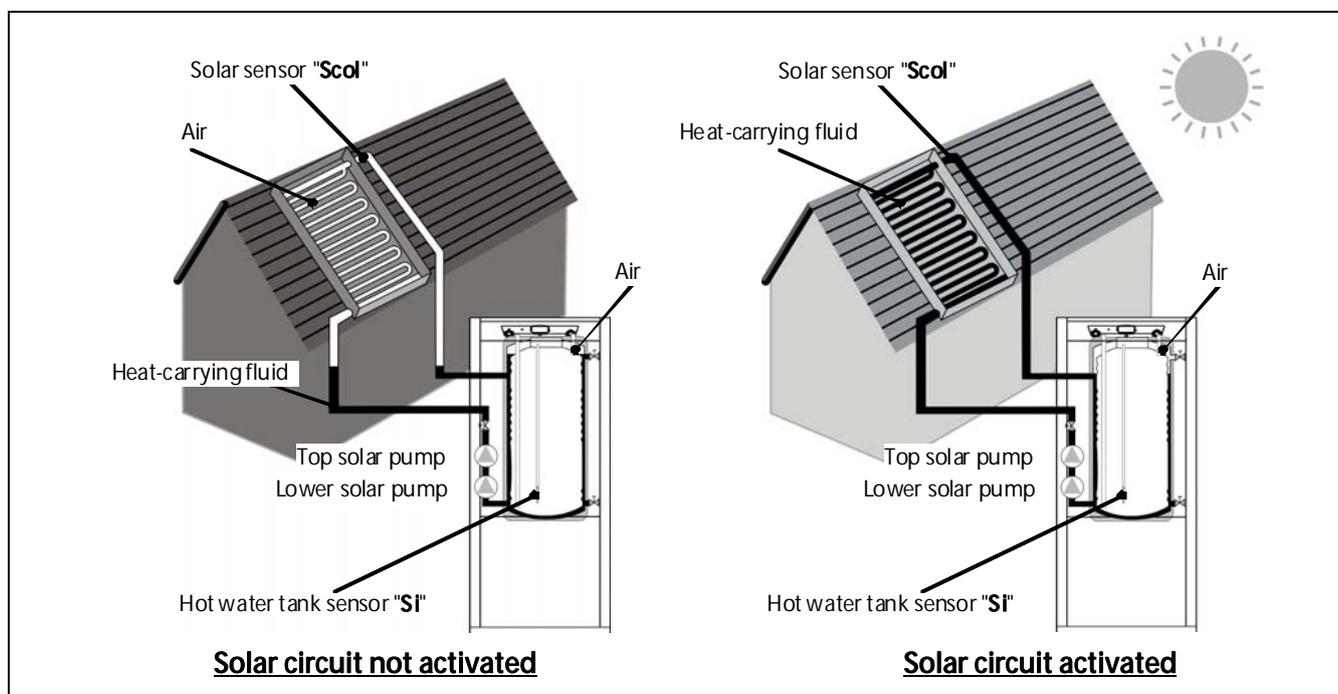
The **Evolution Solar HFD** boiler is designed to heat a heating installation and provide domestic hot water, instantly and/or by solar collection. Optionally, a second heating circuit, heating circuit 2, may be connected to the installation to improve its performance.

The boiler also includes a DHW collecting and storage system, whereby installation of the solar collector supplied with the boiler optimises the use of the solar energy in the place of installation, for economical, environment-friendly DHW production. The solar operating principle consists of the liquid in the solar circuit being heated at the solar collector, followed by exchange of the heat absorbed with the domestic hot water in the hot water tank. As an auxiliary source of energy to back the main source, the oil-fired boiler adds the necessary heat to obtain a suitable domestic hot water temperature, if the energy collected from the sun is not sufficient.

11.1 Solar circuit functioning

The **Evolution Solar HFD** boiler is equipped with a circuit, separate from the heating circuit, for the production of domestic hot water using solar energy. This is called the "Solar Circuit". It basically consists of a dual-chamber hot water tank, for heat exchange with the domestic hot water, two solar circulation pumps, a flow regulator and a solar collector, for heat exchange with the sun.

The functioning of the solar circuit is based on the drainback principle, whereby the heat-carrying liquid in the solar circuit does not completely fill the installation, maintaining the solar collector empty while there is no demand for solar energy and thus preventing freezing or overheating problems. When there is a demand for solar energy, the solar pumps start up so that all the air in the solar collector is conveyed towards the dual chamber of the solar hot water tank. The heat-carrying fluid circulates through the solar collector, collecting the energy provided by the sun and exchanging it with the domestic hot water stored in the solar hot water tank. When there is no demand for solar energy, the solar pumps stop and the heat-carrying fluid returns to the dual chamber of the hot water tank by the force of gravity, and the solar collector drains again (drainback).



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The boiler's electronic control system manages the automatic functioning of the solar circuit, switching on the solar circulation pumps when the temperature difference detected is over 6 °C. Also, the "*Solar water tank DHW setpoint temperature*" display option can be used to limit the maximum desired DHW temperature in the solar hot water tank. When this temperature is reached, or when the temperature difference between the solar sensor "Scol" and the hot water tank sensor "Si" is less than 4°C, the boiler's electronic control system switches off the solar pumps.

For correct system start-up, the solar circuit is equipped with 2 circulation pumps, one of which has a timer (BST). When the system has started up, after ensuring that the heat-carrying fluid is flowing through the entire circuit and the flow is stabilised (15 minutes by default, see "*Starting up the solar pump with timer*"), the electronic control disconnects the pump with a timer as one pump is sufficient to maintain the flow, which optimises the solar circuit's electrical energy consumption.

11.2 Heating Function

In this mode, the boiler can heat up the heating installation. To do this, select the desired boiler setpoint temperature (see "*Selecting the boiler setpoint temperature*") and the temperature of room thermostat 1 (TA1) or remote control E20 (if the boiler is equipped with these). The burner will switch on. When the boiler reaches 60°C it is ready to heat up the heating installation and will start up the heating pump for this purpose. The burner will shut down when the boiler reaches the adjusted setpoint temperature. The heating pump and the burner will stop when the room temperature reaches or exceeds the temperature set on the installation's room thermostat (if it has one). When a hot water tap is turned on, the instantaneous DHW production function is given priority and begins to function. The heating mode will continue to function, providing the temperature of the DHW in the solar hot water tank is sufficient.

The boiler heating function can be totally disabled (*Summer* mode) by selecting "**oFF**" as the boiler setpoint value.

NOTE: When the heating function is disabled, circuit 2 will also be disabled if it is connected.

11.3 Instantaneous domestic hot water production function

In this mode, the boiler provides instantaneous DHW. To activate this mode, select the desired DHW setpoint temperature (see "*Selecting the DHW setpoint temperature*"). The burner will ignite until the boiler reaches 60 °C. If a hot tap is turned on, the instantaneous DHW production system will start up and provide constant hot water at the selected setpoint temperature. If the solar energy collected by the boiler has heated up the water stored in the solar hot water tank to higher than the setpoint temperature selected, the boiler will supply DHW directly from the hot water tank, at the temperature it is stored at. If the temperature of the water stored in the solar hot water tank is lower than the setpoint temperature, the hot water will be heated up by the support oil boiler, supplying instantaneous DHW at the set temperature.

If the solar energy stored in the solar hot water tank water is insufficient to provide the desired heating level, the **Evolution Solar HFD** boiler is equipped with a microprocessor-controlled **modulating** system for instantaneous hot water production and **progressive regulation** of the hot water consumption temperature, so that the water is heated to the selected temperature:

- **The modulation** allows the boiler power to constantly adapt to the DHW consumption requirements at all times, without altering the efficiency of the boiler. Consumption savings are thus obtained together with improved boiler functioning and lower emissions.
- **Progressive electronic adjustment** of the DHW temperature, a system designed by DOMUSA TEKNIK, enables the DHW consumption temperature to be stabilised at the temperature selected using the button on the control panel, and a constant hot water temperature with no variations is obtained **regardless of the water flow required and the cold water inlet temperature at any given time**. This enables optimum hot water comfort and adaptation to each user's particular needs.

If you wish, you may totally disable the domestic hot water production function by selecting "**oFF**" as the instantaneous DHW setpoint temperature. In this case DHW will only be produced by the boiler's solar heating system.

11.4 Heating circuit 2 functioning(Optional)

All the models in the **Evolution Solar HFD** range of boilers have the option of controlling a second heating circuit. This requires the installation of a second circulation pump on the boiler. To correctly install this pump, carefully follow the instructions given in the "*Installing heating circuit 2*" section of this manual.

Heating circuit 2 will work with the selected boiler setpoint temperature (see "*Selecting the boiler setpoint temperature*") and the temperature of room thermostat 2 (**TA₂**) (if the boiler has one). The burner and the heating pump of circuit 2 (**BC₂**) will begin to function until the installation reaches the selected boiler setpoint temperature (or the temperature on room thermostat 2 (if the unit has one). When the temperature of the installation drops below the selected boiler temperature, the burner will start up again, running the heating cycle.

NOTE: When the heating function is disabled, if OFF is selected circuit 2 will also be disabled.

11.5 Functioning with an SRS2/EV Underfloor Heating Kit (Optional)

The **Evolution Solar HFD** boiler may optionally be supplied fitted with an SRS2/EV underfloor heating kit (fitted to heating circuit 1). This kit basically consists of a motorised 3-way mixing valve and an underfloor heating installation flow temperature sensor.

The underfloor heating installation is worked by the electronic boiler control. The installation flow sensor is used to adjust the temperature, selecting the installation flow setpoint temperature using the boiler setpoint adjustment touch button on the control panel, between OFF, 0 and 45 °C (see "*Selecting the Underfloor Heating flow setpoint temperature*"). In this operating mode, the electronic control sets the boiler setpoint temperature to 75°C by default, and the installation flow temperature can be adjusted to the selected setpoint temperature using the mixing valve.

The boiler setpoint temperature can be changed using the MODE touch button to browse to the "*boiler setpoint temperature*" display option. When the display shows this option, touch the "+ /-" symbols to select the desired temperature.

If you wish, the SRS2/EV Underfloor Heating circuit function can be totally disabled, by selecting "**oFF**" as the installation flow setpoint temperature.

NOTE: When the Underfloor Heating circuit function is disabled by selecting OFF as the setpoint temperature, only circuit 1 will be disabled. Circuit 2 will continue to function.

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12 ADDITIONAL FUNCTIONS

The **Evolution Solar HFD** boiler is equipped with an electronic control for efficiently regulating the automatic functioning of the boiler. It also has the following additional control features:

12.1 Pump anti-block function

This function prevents the boiler circulation pumps from seizing up if they have been out of use for a long period. This system remains enabled while the boiler is plugged into the mains.

12.2 Anti-frost function

This function protects the boiler from freezing up during cold weather. If the boiler temperature drops to below 6 °C, the heating circulation pump will start up. If the boiler temperature continues to drop and reaches 4 °C, the burner will start up, heating the installation. When this function has been activated, it will continue working until the boiler reaches 8 °C. This system remains on standby while the boiler is plugged into the mains.

12.3 Boiler pressure sensor function

This function prevents boiler failure caused by a low water level or excess pressure in the boiler. The pressure is detected by a pressure sensor (9), and its value appears on the control panel display (see "*Digital display*"). If the pressure drops below 0.5 bar, the electronic control blocks boiler functioning and triggers the "**AP**" alarm on the display. If boiler pressure exceeds 2.5 bar, the "**HI**" warning will flash on the display to warn of the excess pressure. If this should occur we recommend calling the nearest **Technical Assistance Service**, and slightly draining the boiler.

12.4 Room thermostat connection

The boiler has two terminal strips, **TA₁** and **TA₂**, for connecting room thermostats or room chronothermostats (J5 and J6, see "*Electrical Connection Diagram*"). This allows the heating mode for each circuit installed to be switched off according to the room temperature. To suitably connect them, first remove the bridge joining the terminals of terminal strip **TA₁**, and to connect **TA₂**, simply connect the thermostat to the terminal strip.

Installing a room thermostat will optimise the installation's performance, adapting the heating to the requirements of your home and obtaining enhanced comfort. Also, if the thermostat allows the hours of functioning to be programmed (chronothermostat), it can adapt the heating system to the hours of use of the installation.

12.5 Telephone relay connection

The **Evolution** boiler is designed to enable a phone relay to be connected for switching the boiler on and off. This feature allows the boiler to be switched on and off remotely, from any location, by means of a phone call. The relay is connected to the boiler via terminal strip **J7** (see "Electrical Connection Diagram"). When the telephone relay contact closes the boiler switches on. When the contact opens, the boiler switches off and remains in anti-frost protection and pump anti-block mode.

12.6 Disconnecting the solar circuit

The **Evolution Solar HFD** boiler's electronic control enables the solar circuit functioning to be disconnected, if this should be required for maintenance or start-up. If the solar circuit functioning is disconnected, the boiler will work as a standard oil-fired heating and instantaneous hot water boiler, and will not use the solar energy from the site where it is installed.

To disconnect the solar circuit, firstly disconnect the "**Si**" and "**Scol**" sensors from the sensor terminal strip **J3** ("**Si**": terminals 19-21, and "**Scol**": terminals 17-18), and fit electrical bridges in their place, shorting the inputs of these sensors (see "Electrical Connection Diagram").

12.7 Disconnecting the oil-fired boiler's back-up energy supply

The **Evolution Solar HFD** boiler's electronic control enables disconnection of the oil-fired boiler's functioning as an auxiliary power source for solar energy back-up, so that the only hot water produced by the boiler will be that obtained from the solar energy of the installation site, with only the solar circuit functioning.

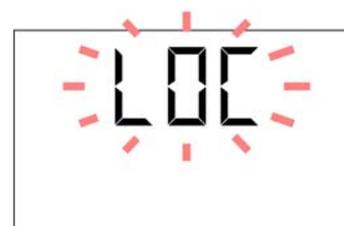
To disconnect the oil-fired boiler's back-up energy supply, select the "**oFF**" as the DHW setpoint temperature (see "*Selecting the DHW setpoint temperature of the back-up hot water tank*").

12.8 Keypad block function

This function protects the control panel from being accidentally or erroneously pressed while it is being cleaned, by children or by unauthorised persons. When this function is enabled, the electronic control will not react when any of the symbols or touch buttons on the control panel are pressed.

To lock the keypad, keep your finger on the RESET touch button for 5 seconds. The word "**LOC**" will flash on the display until the control panel is unlocked again.

To unlock the keypad, place your finger on the RESET touch button again for 5 seconds. The display will then return to its normal status.



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13 E20 REMOTE CONTROL (OPTIONAL)

A remote control (E20) can optionally be supplied together with the **Evolution Solar HFD** boiler. This remote control can be used to fully operate the boiler from anywhere in the room in which it is installed. The E20 remote control governs the parameters of heating circuit N° 1 and the installation's domestic hot water production

This remote control allows the hours of home comfort to be programmed for heating circuit N° 1, adjusting the installation to the particular requirements of the home by measuring the room temperature and consequently adapting the installation temperature. The remote control can also be used to adjust the hot water and heating set point temperatures at any time, and for viewing the different boiler operation parameters. It also warns of any functioning anomalies affecting the boiler.

The E20 remote control may optionally be connected to an external sensor, for measuring the outside temperature. With this option installed, the remote control can adjust the home comfort level circuit N° 1 according to the weather conditions at each particular time, optimising fuel consumption and heating comfort in the home.

The E20 remote control takes over the control of the boiler when it is connected to it. The different selectable boiler temperatures must be modified using the remote control. It is easy to install, only requiring 2 wires for communication between the boiler and the E20 control. It is connected to the boiler by connecting the two wires on terminal strip **J4** (see "Electrical Connection Diagram"). For correct installation and functioning, carefully read the instructions enclosed with the remote control.

The following sections contain a general explanation of the different operating modes and options of the E20 remote control.

13.1 Functioning without an outdoor sensor

Conventional heating installation (direct circuit)

The maximum temperature for heating circuit N° 1, the heating times and the desired room temperatures can be selected on the remote control. The E20 remote control will calculate the boiler temperature required at each particular time, depending on the temperature of the room, and it will activate or disable the heating mode of circuit N° 1 depending on the heating times and room temperatures programmed.

Installing heating with an SRS2/EV underfloor heating kit (mixed circuit)

If the boiler is supplied with an integrated SRS2/EV underfloor heating kit, underfloor heating circuit N° 1 is adjusted and controlled via the boiler control panel (see "operation with underfloor heating kit").

The E20 remote control can be used to programme the desired heating times and room temperatures.

13.2 Functioning with an outdoor sensor (Optional)

If the E20 remote control is fitted with an outdoor temperature sensor, it can calculate the heating temperature of heating installation N° 1 according with the outside weather conditions at each particular time, with optimum adjustment of the heating installation conditions for improved heating comfort in the home and energy savings.

Conventional heating installation (direct circuit)

The maximum temperature and an operating curve for heating circuit N° 1, the heating times and the room temperatures desired can all be selected on the remote control (see instructions enclosed with the E20 remote control). The E20 remote control calculates the required boiler temperature at each particular time, depending on the temperature inside the home and the outside weather conditions, in accordance with the operating curve selected (parameter CURVE 1 on the E20), switching the heating on and off in accordance with the heating times and the room temperatures programmed.

Installing heating with an SRS2 underfloor heating kit (mixed circuit)

If the boiler is supplied with an SRS2 underfloor heating kit fitted to circuit N° 1 and the control of this kit is activated on the E20 remote control using the CURVE 2 parameter (see instructions enclosed with the E20 remote control), the adjustment and control of the underfloor heating circuit flow temperature will be performed by the remote control. The E20 will calculate the required flow temperature at each particular time, depending on the temperature inside the home and the outside weather conditions, in accordance with the operating curve selected (the CURVE 2 parameter on the E20 remote control). For mixed underfloor heating circuits, we recommend selecting operating curves of less than 0.8.

The boiler set point temperature will be fixed at 75 °C and can be changed using the boiler control panel. To change this setting, browse with the set button until the option **"tc"** appears on the display. When it appears, hold down the set button for 5 seconds until the **"tc"** symbol begins to flash. If the set button is pressed repeatedly, the boiler set point temperature will gradually increase. When the desired temperature has been selected, hold down the set button for 5 seconds again until it stops flashing. The value selected will be stored in the memory.

The E20 remote control can also be used to select the maximum flow temperature for heating circuit N° 1 and to programme the desired heating times and room temperature. The E20 remote control will switch the heating on and off in accordance with the heating times and room temperatures programmed.

NOTE: For mixed underfloor heating circuits, we recommend selecting a maximum flow temperature of NO HIGHER THAN 45 °C, in order to protect the underfloor heating installation from overheating.

13.3 Functioning in hot water mode

On the **Evolution Solar HFD** boiler, the remote control can be used to select the D.H.W. set point temperature and the desired hot water times. The E20 remote control regulates the instant hot water temperature at each particular time and activates or disables the D.H.W. mode in accordance with the times programmed.

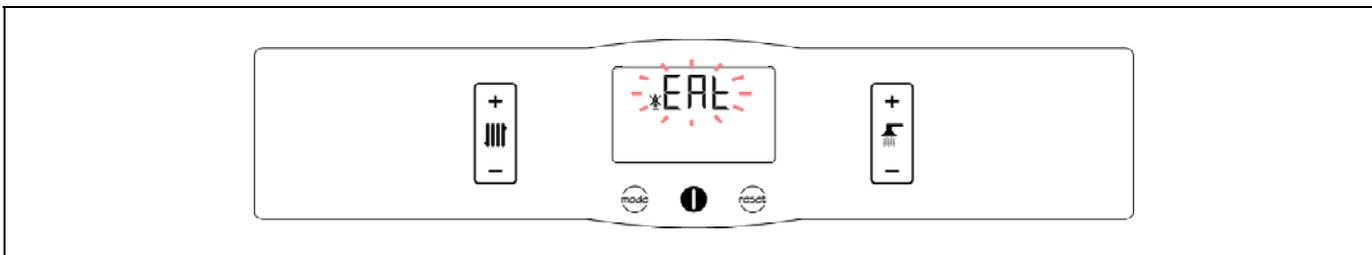
13.4 Telephone relay function

The E20 remote control is designed for connection to an external telephone relay. If a telephone relay is connected to the E20 remote control, the heating mode of heating circuit N° 1 and the hot water mode can be switched on and off from anywhere in the world, simply by making a telephone call (see instructions enclosed with the E20 remote control).

Evolution Solar HFD

14 SAFETY CUT-OUTS

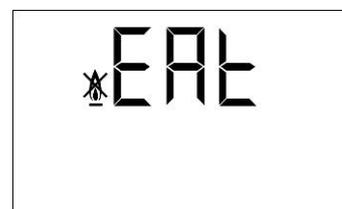
The boiler's electronic control system may activate the following safety cut-outs to stop the boiler functioning. When one of these safety cut-outs occurs, the boiler will stop functioning, a cut-out code will flash on the display and the red alarm warning pilot light will flash on the control panel.



If any of the safety cut-outs described below should occur repeatedly, switch off the boiler and call your nearest official technical assistance service.

14.1 Temperature safety cut-out

When this cut-out occurs, the alarm code **"EAL"** (temperature alarm) will begin to flash on the digital display (24). The burner will switch off and stop heating the installation.



This occurs when the boiler exceeds a temperature of 110 °C. To unblock it, wait until the boiler drops to below 100°C and press the button on the safety thermostat, located inside the boiler on the underside of the electrical box, after first having removed the button cover.

14.2 Burner cut-out

When this cut-out occurs, the alarm code **"EAQ"** (burner alarm) will begin to flash on the digital display (24). The burner will switch off and stop heating the installation.



This occurs as a result of an anomaly in the burner (1) or in the fuel installation. To unblock it, press the illuminated button that lights up on the burner.

14.3 Low pressure cut-out

When this cut-out occurs, the alarm code **"EAP"** (pressure alarm) will begin to flash on the digital display (24). The burner and the boiler circulation pumps will switch off, cutting off the heating and water flow to the installation.



This occurs when the boiler pressure drops to below 0.5 bar, preventing the boiler from functioning when the water is drained from the installation, due to either leakage or maintenance operations. To unlock it, fill the installation again until a pressure of 1 - 1.5 bar appears on the *"boiler pressure"* setting on the display (24).

15 BOILER MAINTENANCE

To maintain the boiler in perfect working order, a yearly overhaul should be performed by **DOMUSA TEKNIK**'s authorised personnel.

Cleaning the boiler

To keep the boiler in perfect working order, we recommend cleaning the boiler chamber, exhaustion ducts and condenser on a yearly basis. A cleaning brush of a suitable size for cleaning the inside of the exhaustion ducts is supplied with the boiler for this purpose. This brush is located at the rear of the boiler, beside the condenser.

The combustion chamber and exhaustion ducts should not be cleaned using chemical products or hard steel brushes. After any cleaning operation has been carried out, it is important to run several ignition cycles to check all the elements are functioning correctly.

For correct cleaning, the following recommendations should be carefully observed:

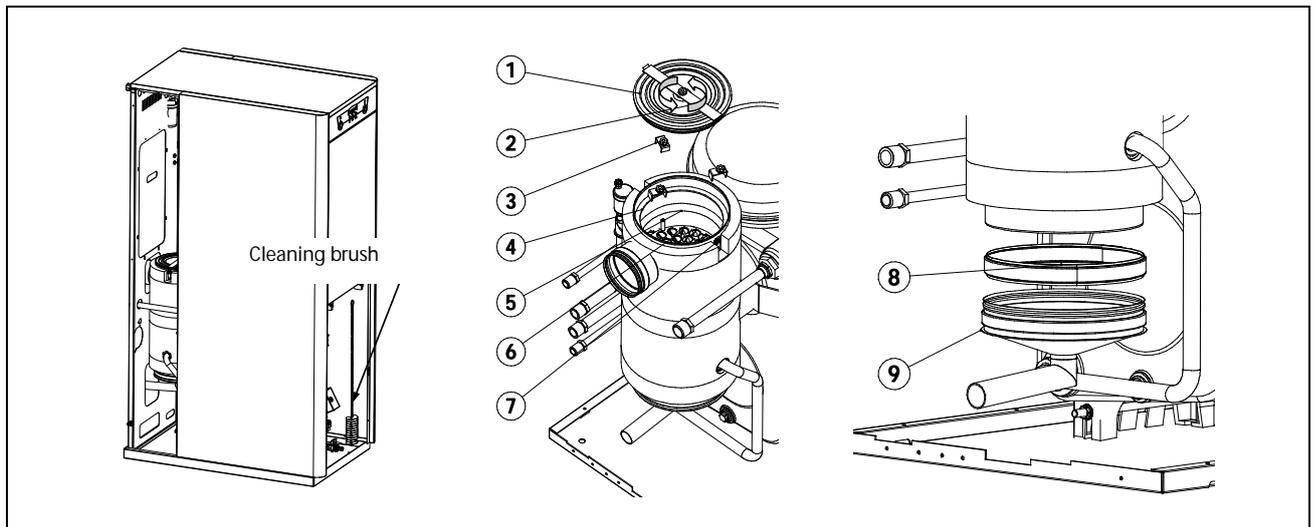
Cleaning the boiler body

- Open and remove the outer door of the boiler.
- Remove the burner **(1)** by unscrewing the fixing nut on the top of the burner.
- Remove the combustion chamber door and the exhaustion duct cover, unscrewing the six fixing nuts beside them.
- Clean the exhaustion ducts on the cast iron body, using the cleaning brush supplied with the boiler.
- Clean the boiler combustion chamber. We recommend using a soft brush for scraping the combustion chamber surfaces, and a blower to remove scale.
- After cleaning, replace the combustion chamber door, the exhaustion duct cover, the burner and the outer door of the boiler.

Cleaning the condenser

- Remove the rear extension on the sides of the boiler to access the condenser on the rear of the boiler body.
- Open the top cover of the condenser **(1)** to access its exhaustion ducts. To open this cover, firstly release the two side closures **(7)**, turn the locking plate **(2)** anti-clockwise and pull the cover upwards to remove it.
- Remove the fume deflectors **(6)** inside the fume outlets.
- Clean the exhaustion ducts using the cleaning brush supplied with the boiler. Scale could fall out of the lower condenser cover and come out of the condensation drain, and it is therefore recommendable to pour water into the top of the condenser, for more effective cleaning. This water will be automatically discharged through the condensation drain.
- To clean the outer part of the condenser cylinder, remove the three screws **(3)** and then remove the metal ring **(4)**. Take out the seal **(5)** and use the brush to clean it. Then put the components back in place again and replace and tighten the three screws and the metal ring.
- If the lower condenser cover **(9)** needs cleaning, remove the side cover of the boiler to access it. Firstly remove the bracket **(8)** holding it in place and pull on it to open it. Then pull the lower cover down to open and clean it.
- After cleaning, replace the fume deflectors, the top condenser cover and the top outer cover of the boiler. Then put the cleaning brush back inside the boiler.
- The condensation siphon should be cleaned once a year. To do this, remove it and wash it in soapy water. Replace the siphon after cleaning.

Evolution Solar HFD



Anti-frost protection

The **Evolution Solar HFD** boiler has a function for preventing frost damage to the installation. This will function as long as the appliance remains plugged into the mains. Despite this function, and particularly in areas with very cold weather, we recommend taking precautions in order to prevent damage to the boiler. It is advisable to add anti-freeze to the water in the heating circuit. If the boiler is to be out of use for long periods of time, we recommend **draining all the water and leaving it empty**.

Boiler water characteristics

In areas with water hardness of over 25-30°F, treated water must be used in the heating installation to avoid any scale deposits on the boiler.

It should be noted that even a few millimetres of scale will greatly reduce the boiler's heat conductivity, causing a major drop in performance.

Treated water must be used in the heating circuit in the following cases:

- Very large circuits (containing a large amount of water).
- Frequent filling of the installation.

If repeated partial or total draining of the installation is necessary, we recommend filling it with treated water.

Heat-carrying solar fluid

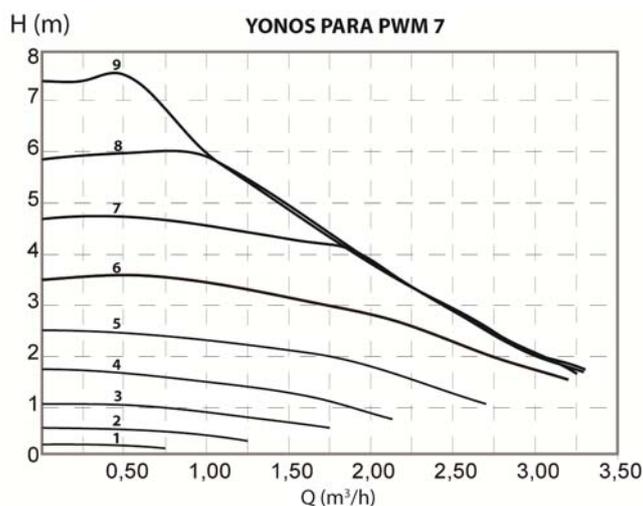
The boiler's solar circuit uses a heat-carrying fluid, which is a mix of water (70%) and inhibitor liquid (30%). This optimises its functioning and helps it remain in perfect working order.

You should check that the heat-carrying fluid in the solar circuit is in good condition. Check that the proportions of the mix of water and inhibitor liquid are correct (70/30).

16 HEATING CIRCULATION PUMP FLOW CURVES

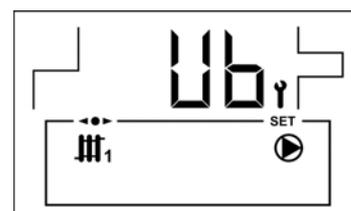
The hydrodriving pressure available in the installation at the boiler output can be deduced from the following graphs, having taken the boiler pressure drop into account.

16.1 Characteristic curves of the pump



16.2 Regulation of the circulation pump

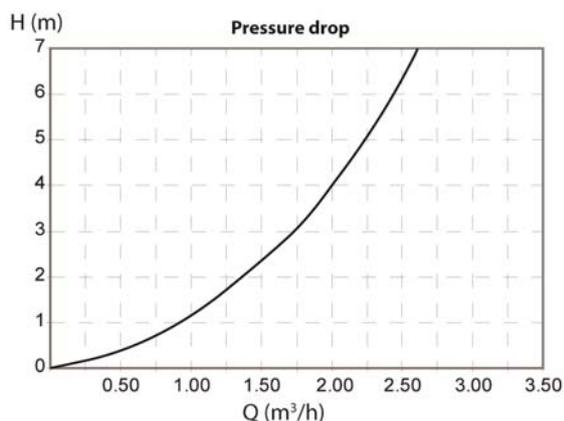
To regulate the speed of the circulation pump BC1 you should navigate to the "Ub" parameter by touching MODE button and touch ON button (28) to access it. Once inside the setting, using the jog dial on the right side of the display (24) the value changes. After selecting the desired speed, touch the ON touch button to record the value and exit the parameter "Ub".



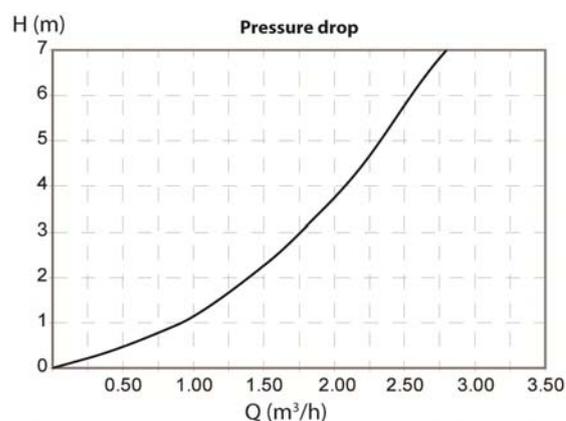
WARNING: Any interference in the operation and installation of the heating circuit must be done by authorised personnel, always respecting current legislation and installation safety standards, both national and local level.

16.3 Pressure drop

Evolution 30 HFD:



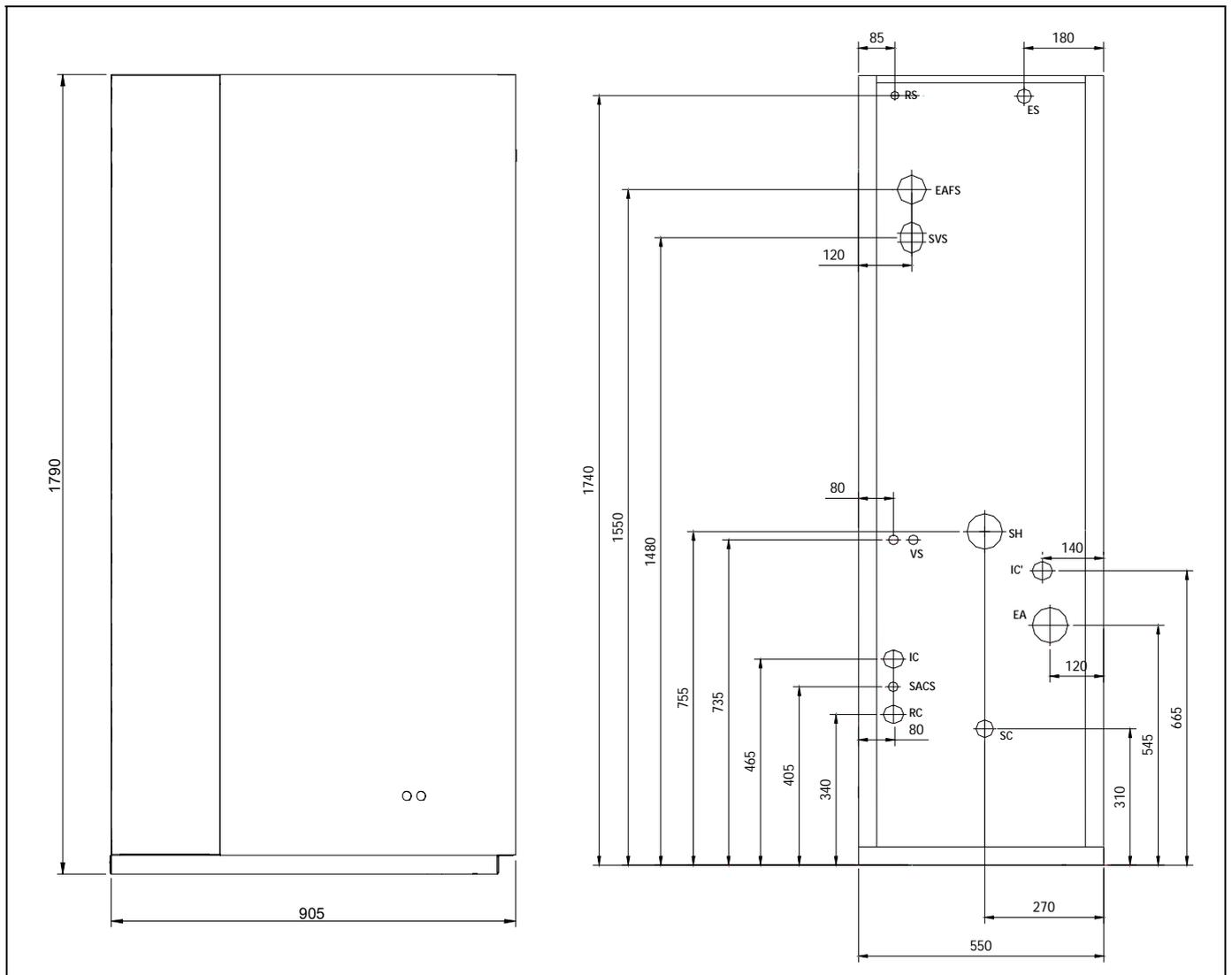
Evolution 40 HFD:



Evolution Solar HFD

17 DIAGRAMS AND MEASUREMENTS

17.1 Evolution solar 30 HFD



IC: Heating flow

IC': Optional heating flow.

RC: Heating return.

EACS: Domestic cold water inlet.

SACS: Domestic hot water outlet.

SC: Condensation outlet.

SH: Fume exhaust duct, Ø100.

EA: Combustion air intake, Ø80.

SVS: Domestic hot water safety unit siphon.

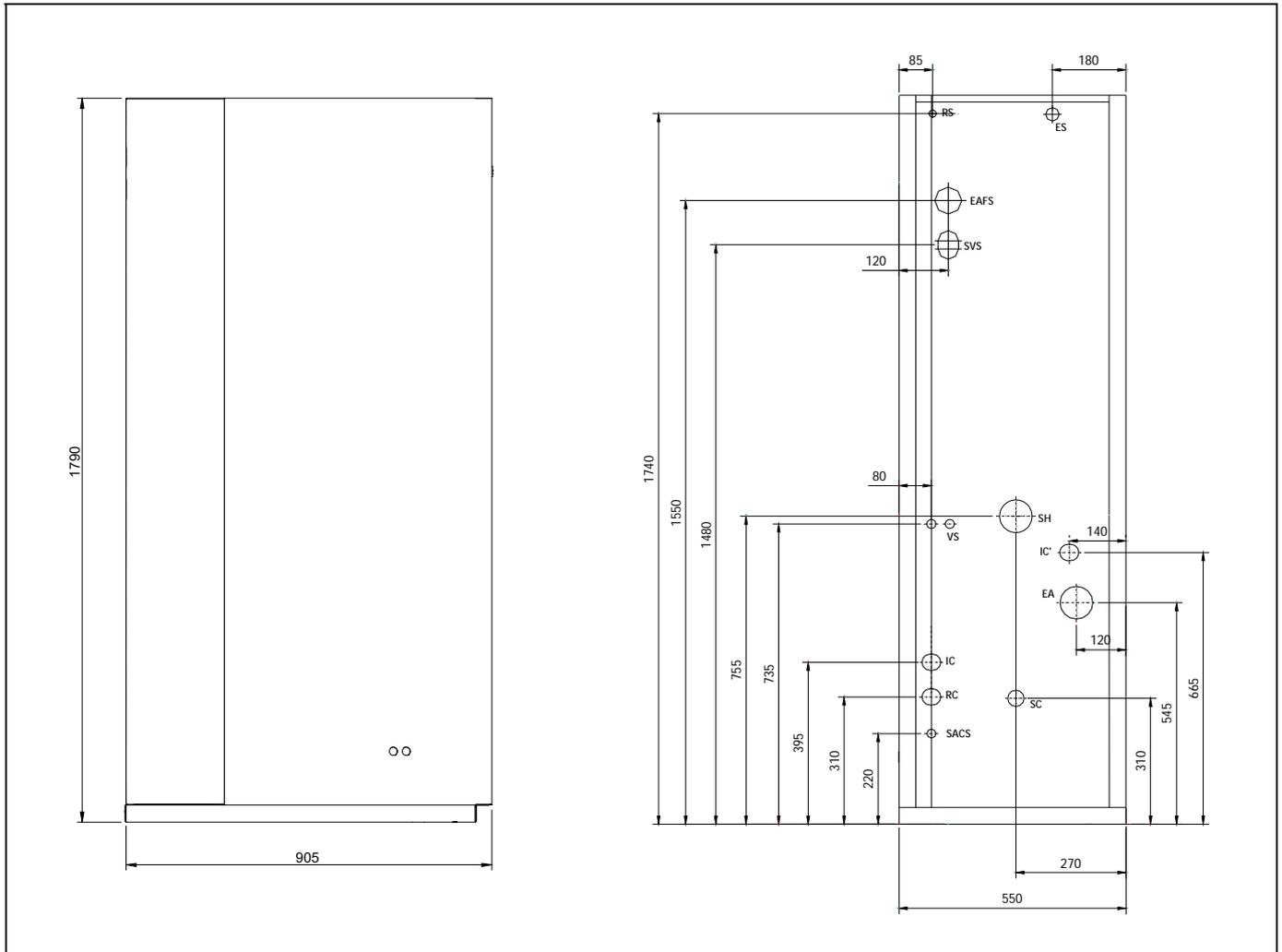
VS: Safety valve.

ES: Solar inlet

RS: Solar return

| MODELO | IC/ RC | IC' | EAS | IAS | ES RS | COTA L |
|--------------------|-----------|------|-----------|-----------|----------|-----------|
| EV SOLAR 30 HFD | 3/4" M | 1" M | 3/4" M | 1/2" M | 1/2" M | 910 |

17.2 Evolution solar 40 HFD

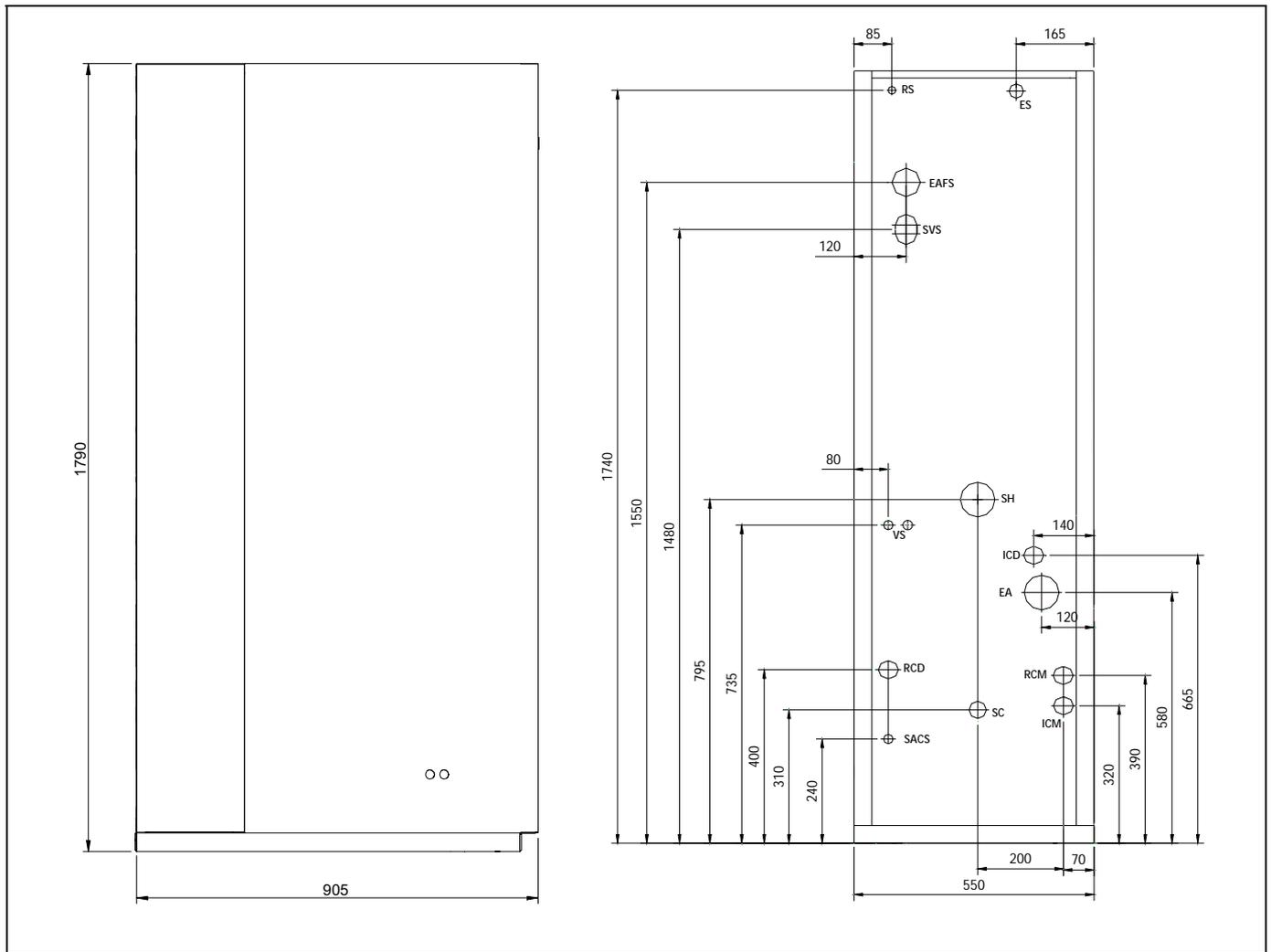


- IC:** Heating flow
- IC':** Optional heating flow.
- RC:** Heating return.
- EACS:** Domestic cold water inlet.
- SACS:** Domestic hot water outlet.
- SC:** Condensation outlet.
- SH:** Fume exhaust duct, Ø100.
- EA:** Combustion air intake, Ø80.
- SVS:** Domestic hot water safety unit siphon.
- VS:** Safety valve.
- ES:** Solar inlet
- RS:** Solar return

| MODELO | IC/IC' RC | EAS | IAS | ES RS | COTA L |
|----------------------------|--------------|-----------|-----------|----------|-----------|
| EV SOLAR 40 HFD | 1" M | 3/4" M | 1/2" M | 1/2"M | 960 |

Evolution Solar HFD

17.3 Evolution solar 30/40 HFD with SRS2/EV underfloor heating kit



- ICD:** Direct Heating flow.
- ICM:** Underfloor heating flow.
- RC:** Heating return.
- RCM:** Underfloor heating return.
- EACS:** Domestic cold water inlet.
- SACS:** Domestic hot water outlet.
- SC:** Condensation outlet.
- SH:** Fume exhaust duct, Ø100.
- EA:** Combustion air intake, Ø80.
- SVS:** Domestic hot water safety unit siphon.
- VS:** Safety valve.
- ES:** Solar circuit inlet
- RS:** Solar return

| MODELO | IC/ICM RC/RCM | EAS | IAS | ES / RS | COTA L |
|--------------------|------------------|-------|-------|---------|-----------|
| EV SOLAR 30 HFD | 3/4"M | 3/4"M | 1/2"M | 1/2"M | 910 |
| EV SOLAR 40HFD | 1"M | | | | 960 |

18 TECHNICAL CHARACTERISTICS

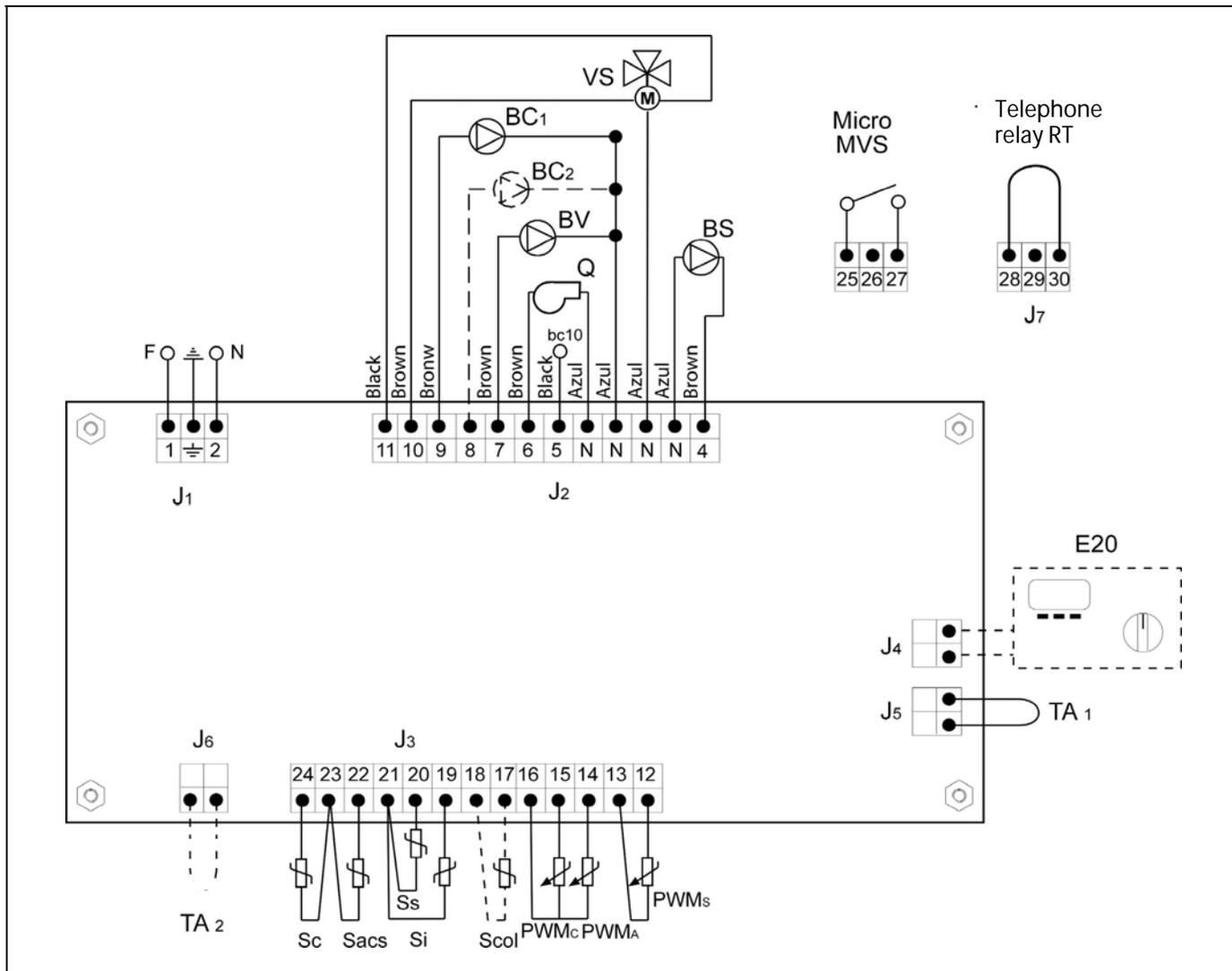
| EVOLUTION SOLAR HFD | | | 30 HFD | 40 HFD |
|---|------------------|---------|----------------------------------|--------|
| Boiler type | - | | condensation heating + D.H.W. | |
| Rated heat output | P_{rated} | kW | 30 | 40 |
| Useful heat output | P_4 | kW | 28,7 | 38,7 |
| Useful heat output (30%) | P_1 | kW | 8,5 | 12,4 |
| Seasonal space heating energy efficiency | η_s | % | 91 | 92 |
| Useful efficiency | η_4 | % (PCI) | 97,96 | 97,29 |
| | | % (PCS) | 92,38 | 91,74 |
| Useful efficiency (30%) | η_1 | % (PCI) | 103,45 | 104,15 |
| | | % (PCS) | 97,55 | 98,21 |
| Auxiliary electricity consumption at full load | e_{lmax} | kW | 0,226 | |
| Auxiliary electricity consumption at part load | e_{lmin} | kW | 0,078 | |
| Auxiliary electricity consumption in standby mode | PSB | kW | 0,001 | |
| Standby heat loss | P_{stby} | kW | 0,135 | 0,17 |
| Emissions of nitrogen oxides | NOx | mg/kWh | 118 | 119 |
| Declared load profile | - | | XL | |
| Water heating energy efficiency | η_{wh} | % | 80 | 80 |
| Daily electricity consumption | Q_{elec} | kWh | 0,337 | 0,296 |
| Daily fuel consumption | Q_{fuel} | kWh | 24,110 | 24,630 |
| Hot water tank capacity | Lts | | 150 | 150 |
| D.H.W. production in 10 min. $\Delta t=30^\circ\text{C}$ with solar accumulator at 60°C | Lts | | 211 | 211 |
| D.H.W. production $\Delta t=30^\circ\text{C}$ without solar energy input | Lts | | 12,8 | 17,8 |
| Hot water tank temperature adjustment | $^\circ\text{C}$ | | 10-80 | |
| Heating temperature adjustment | $^\circ\text{C}$ | | OFF, 30-85 | |
| DHW temperature adjustment | $^\circ\text{C}$ | | OFF, 30-65 | |
| Maximum safety temperature | $^\circ\text{C}$ | | 110 | |
| Maximum heating operating pressure | bar | | 3 | |
| Maximum D.H.W. operating pressure | bar | | 7 | |
| Heating expansion vessel capacity | Lts | | 8 | 12 |
| Heating water volume | Lts | | 19,2 | 23,2 |
| Water pressure drop | mbar | | 163 | 272 |
| Fume temperature | $^\circ\text{C}$ | | 67 | 83 |
| Volume on fume side | m^3 | | 0,114 | 0,175 |
| Maximum fume flow | Kg/s | | 0,0132 | 0,0186 |
| Fume pressure drop | mbar | | 0,20 | 0,21 |
| Combustion chamber length | mm | | 300 | 400 |
| Combustion chamber type | - | | wet, with 3 exhaust ducts | |
| Burner adjustment type | - | | ON/OFF | |
| Electrical supply | - | | ~220-230 V - 50 Hz - 200 W | |
| Gross weight | Kg | | 276 | 296 |

Evolution Solar HFD

19 CONNECTION DIAGRAM

There are a series of removable terminal strips located on the rear of the control panel, for connecting the various options and components of this model. To connect them correctly, carefully follow the indications shown below:

19.1 Evolution solar



F: Phase.

N: Neutral.

VS: Solar deflector valve.

BC₁: Heating pump, circuit n° 1.

BC₂: Heating pump, circuit n° 2.

BV: Domestic hot water pump.

Q: Burner.

bc10: Burner control terminal n° 10.

BS: Solar pump.

MVS: Solar deflector valve micro switch.

RT: Telephone relay.

E20: E20 remote control.

TA₁: Room thermostat, circuit 1.

TA₂: Room thermostat, circuit 2.

Sc: Boiler sensor.

Sacs: Domestic hot water sensor.

Ss: Upper solar accumulator sensor.

Si: Lower solar accumulator sensor.

Scol: Solar collector sensor.

PWMc: Heating Cable PWM.

PWMA: PWM Cable A.C.S..

PWMs: Cable PWM Solar.

J₁: Supply connector.

J₂: Component connector.

J₃: Sensor connector.

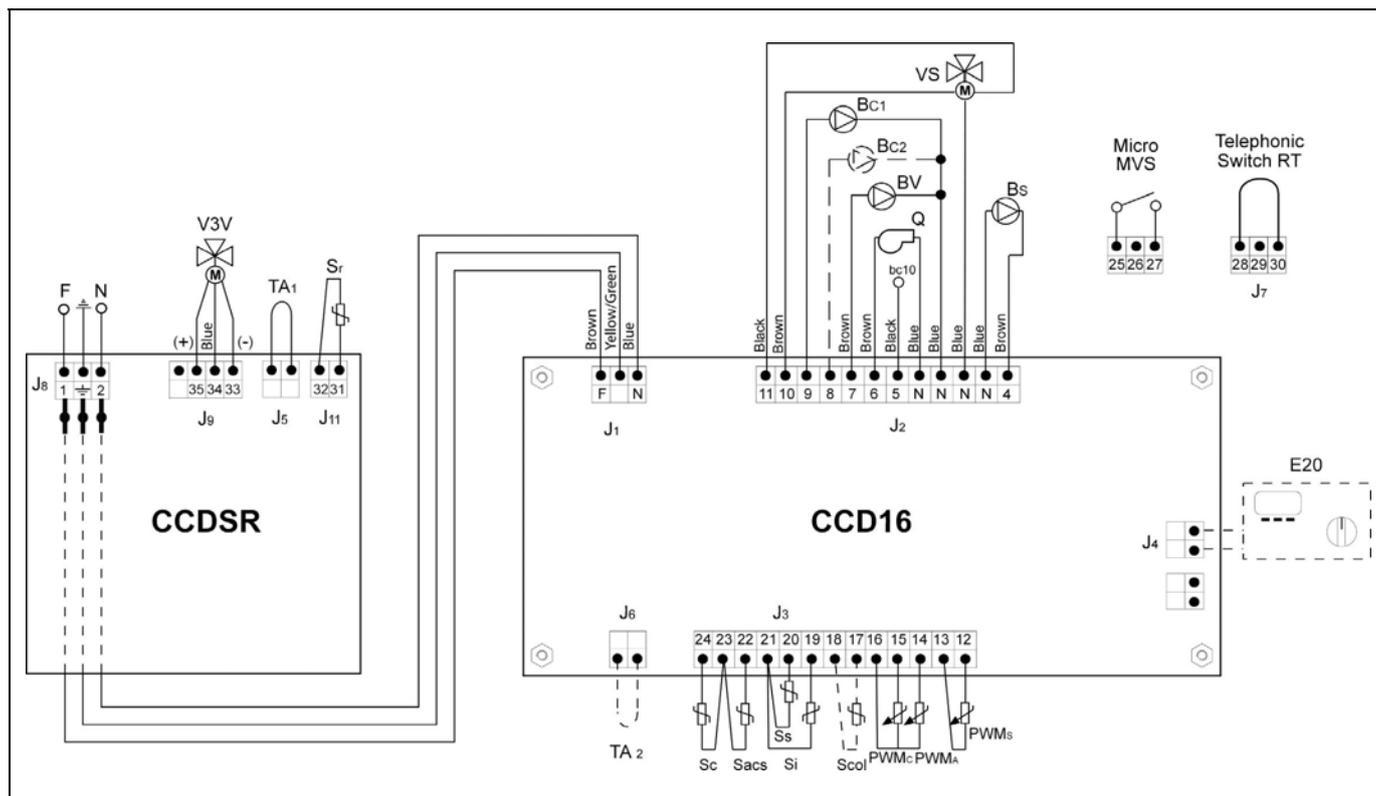
J₄: Remote control connector.

J₅: Room thermostat connector 1.

J₆: Room thermostat connector 2.

J₇: Telephone relay connector.

19.2 Evolution solar with SRS2/EV underfloor heating kit



F: Phase.

N: Neutral.

VS: Solar diverting valve.

BC₁: Heating pump, circuit n° 1.

BC₂: Heating pump, circuit n° 2.

BV: DHW pump.

Q: Burner.

bc10: Burner control terminal n° 10.

BS: Solar pump.

MVS: Solar deflector valve micro switch.

SR: Underfloor heating sensor.

E20: E20 remote control.

TA₁: Room thermostat, circuit 1.

TA₂: Room thermostat, circuit 2.

V3V: Underfloor heating mixing valve.

Sc: Boiler sensor.

Sacs: DHW sensor.

Ss: Solar tank upper sensor.

Si: Solar tank lower sensor.

Scol: Solar collector sensor.

PWMc: Heating Cable PWM.

PWMA: PWM Cable A.C.S..

PWMs: Cable PWM Solar.

J₁: Supply connector.

J₂: Component connector.

J₃: Sensor connector.

J₄: Remote control connector.

J₅: Room thermostat connector 1.

J₆: Room thermostat connector 2.

J₇: Telephone switch connector.

J₈: Supply connector.

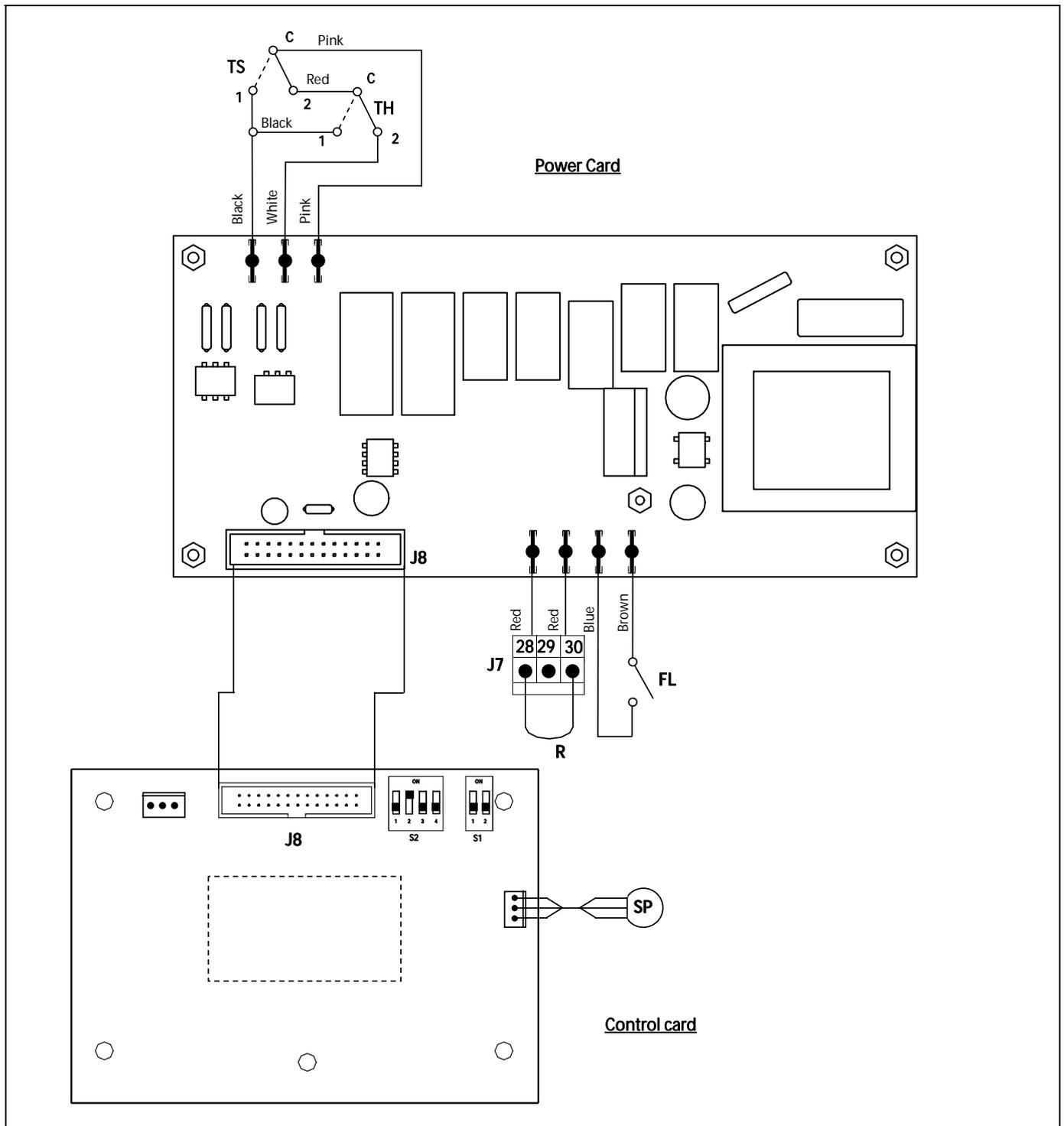
J₉: Pump connector and V3V circuit 1.

J₁₁: Underfloor heating sensor connector.

Evolution Solar HFD

20 ELECTRICAL CONNECTION

20.1 Evolution solar



TS: Safety thermostat.

FL: Domestic hot water flow switch.

TH: Fumes thermostat.

R: Telephone relay.

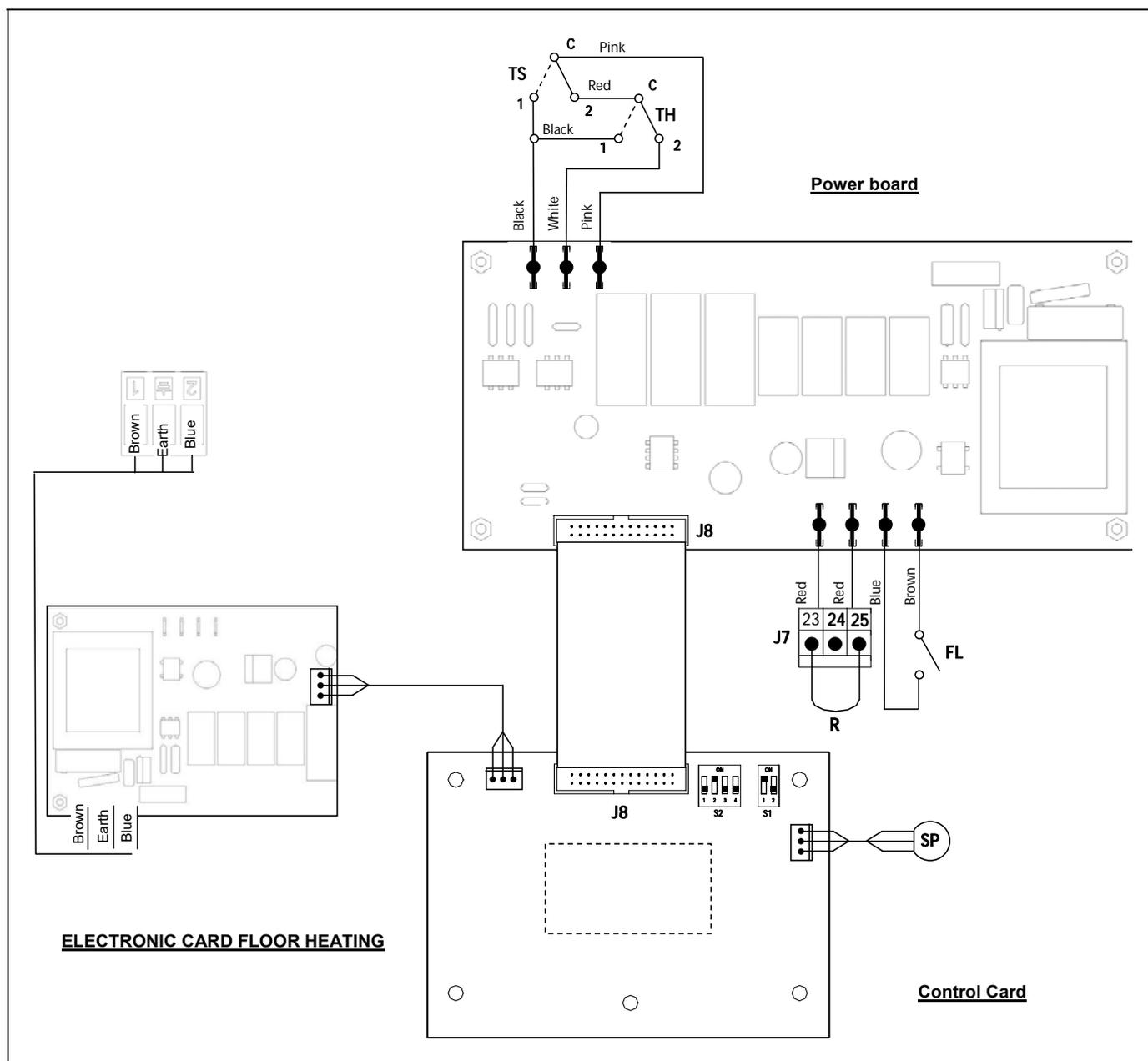
SP: Pressure sensor.

J7: Telephone relay connector.

J8: Communication connector between plates.

S1,S2: Boiler model selector.

20.2 Evolution solar with SRS2/EV underfloor heating kit



TS: Safety thermostat.

FL: Domestic hot water flow switch.

TH: Fumes thermostat.

R: Telephone relay.

SP: Pressure sensor.

J7: Telephone relay connector.

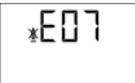
J8: Communication connector between plates.

S1,S2: Boiler model selector.

Evolution Solar HFD

21 ALARM CODES

The **Evolution EV AC** boiler has an electronic circuit that performs continuous self-testing to detect any operating failures in the boiler. When the electronic control detects malfunctioning, this is indicated by an alarm code flashing on the display. The following list describes the alarm codes that may appear:

| CODE | ALARM | DESCRIPTION |
|---|-----------------------------------|---|
|  | Pressure | The pressure in the installation has dropped to below 0.5 bar. The boiler will cut out. To unblock it, fill the installation at a pressure of 1 - 1.5 bar. This alarm may be set off due to the water having been drained from the boiler or leakage in the installation. If this alarm occurs repeatedly, you should contact the nearest official technical assistance service. |
|  | Temperature | The boiler has exceeded the safety temperature of 110 °C. The boiler will cut out. To unblock it, press the safety thermostat button when the temperature has dropped. If this alarm occurs repeatedly, you should contact the nearest official technical assistance service. |
|  | Burner | The burner has cut out. To unblock it, press the illuminated button on the burner (1) . If this alarm occurs repeatedly, you should contact the nearest official technical assistance service. |
|  | Boiler sensor | The boiler sensor is damaged or disconnected. Contact your nearest official technical assistance service to have it replaced. |
|  | DHW sensor. | The DHW sensor is damaged or disconnected. Contact your nearest official technical assistance service to have it replaced. |
|  | SRS2/EV flow sensor. | The underfloor heating sensor is damaged or disconnected. Contact your nearest official technical assistance service to have it replaced. |
|  | Pressure sensor | The pressure sensor (9) is damaged or disconnected. Contact your nearest official technical assistance service to have it replaced. |
|  | Solar collector sensor | The solar collector sensor is damaged or disconnected. Contact your nearest official technical assistance service to have it replaced. |
|  | Lower solar hot water tank sensor | The lower solar hot water tank sensor is damaged or disconnected. Contact your nearest official technical assistance service to have it replaced. |
|  | Upper solar hot water tank sensor | The upper solar hot water tank sensor is damaged or disconnected. Contact your nearest official technical assistance service to have it replaced. |
|  | Wrong switch position alarm | The position of the switches does not correspond to the actual boiler model. |
|  | Card connection alarm | Communication failure between the underfloor heating electronic card and the boiler control board. |
|  | Overpressure | This indicates that the water pressure in the boiler is over 2.5 bar, warning that the installation is in overpressure status. Boiler functioning will NOT cut out. To restore normal boiler functioning, drain the boiler until it reaches a pressure of 1 – 1.5 bar. If this warning occurs repeatedly, you should contact the nearest official technical assistance service. |

22 BURNER.

22.1 Assembly

Fix the burner support to the boiler, then fix the burner to the support. This will allow the correct tilt of the flame tube towards the combustion chamber. Fit the intake and return tubes, inserting the oil filter in the intake tube.

22.2 Burner start-up

The "**Domestic**" burner is equipped with a self-extracting pump to enable fuel intake from a tank installed at a lower level than the burner, providing the pressure difference measured with the vacuum gauge at the pump does not exceed 0.4 bar (30 cmHg).

Ensure there is fuel in the tank, that the oil valves are open and that voltage is reaching the burner. Turn on the master switch. Unscrew the air bleed screw (manometer point). Then, when the valve opens, remove the photocell sensor and move it towards a light source until the oil comes out. Disconnect the burner and screw the bleed screw back in.

22.3 Adjusting the combustion conditions

As each particular installation has a different combustion circuit, it is essential to adjust the combustion conditions of each boiler. In order for the **guarantee to be valid**, the burner must be adjusted by an **official DOMUSA TEKNIK Technical Assistance Service**.

Observe the flame. If there is insufficient combustion air, it will be dark in colour and will produce smoke, rapidly obstructing the flue outlet.

On the contrary, if there is an excess of combustion air, the flame will be whitish or bluish-white in colour. This will reduce the performance of the boiler and it will fail to comply with anti-pollution standards, and the excess air may also hinder the ignition process.

The flame should be orange in colour.

If the shape of the boiler makes it difficult or impossible to observe the flame, the combustion air flow can be regulated by observing the smoke coming out of the flue. If the smoke is dark in colour, more air will need to be provided to the burner, or if it is a very whitish colour, the air in the burner will need to be decreased until no smoke at all is observed.

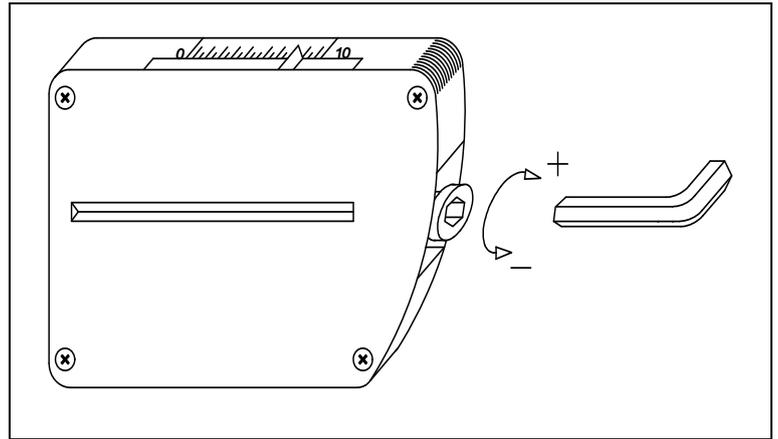
If you have a device for determining the composition of the combustion gases, this will be the best guide for flame adjustment. If not, simply follow the above indications.

To adjust the air and burner line conditions, carefully follow the instructions given below.

Evolution Solar HFD

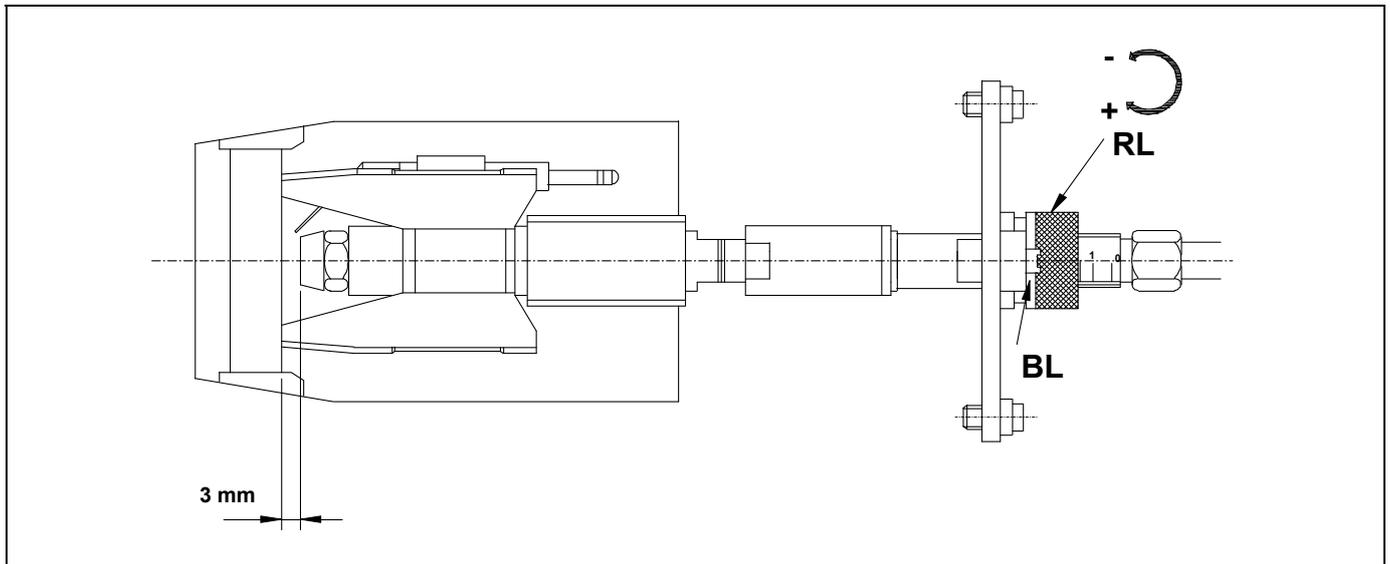
Primary air adjustment

To adjust the primary combustion air, turn the screw using a 6 mm. Allen key, as shown in the diagram. Turn it clockwise to increase the airflow, and anticlockwise to decrease it.



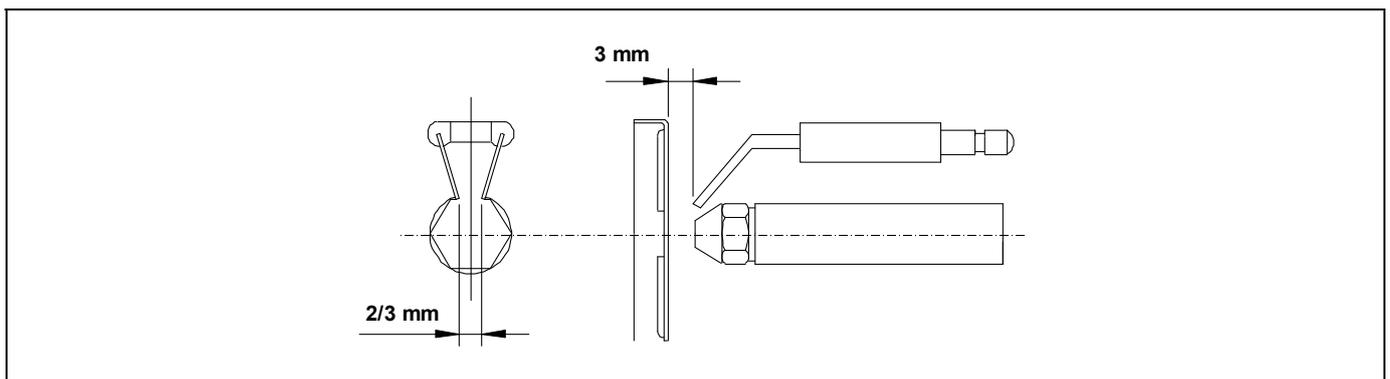
Combustion line adjustment

To adjust the combustion line, loosen the combustion line blocking screw "BL". Turn the line regulator "RL" clockwise to increase the airflow and anticlockwise to decrease it. After adjustment, tighten the combustion line blocking screw "BL".



Correct position of electrodes

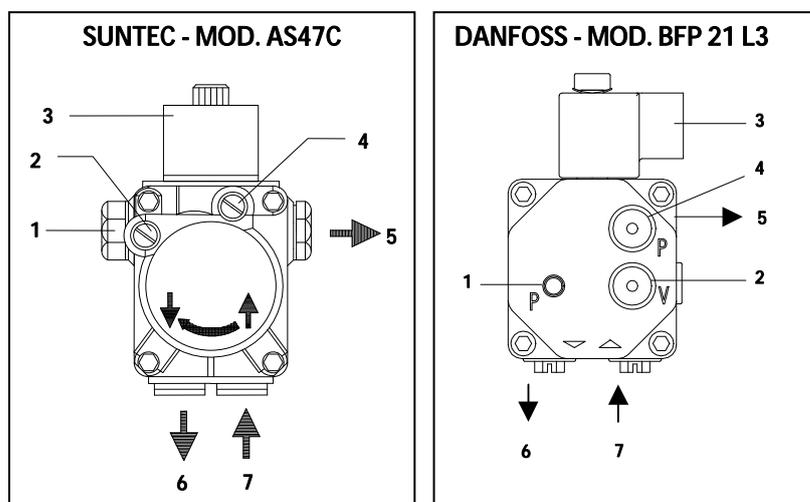
To ensure correct ignition of the "Domestic" burner, the measurements shown in the diagram must be observed. Also ensure the electrode fixing screws have been screwed in place before replacing the flame tube.



22.4 Oil pressure adjustment

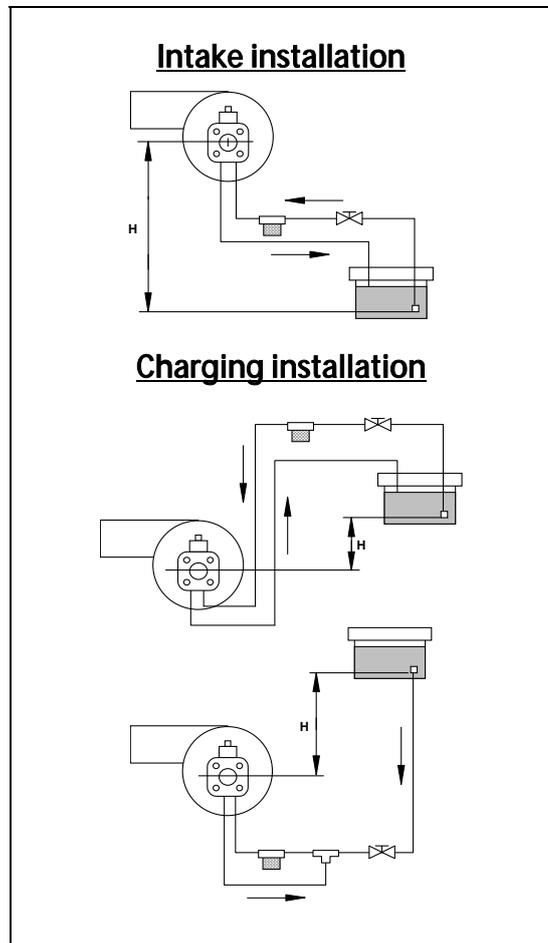
To adjust the oil pump pressure, turn the screw (1) clockwise to increase the pressure, and anticlockwise to decrease it.

- 1 – Pressure adjustment.
- 2 - Vacuum gauge point.
- 3 - Valve.
- 4 - Manometer point.
- 5 – Nozzle outlet.
- 6 - Return.
- 7 – Intake.



22.5 Oil supply piping diagrams

The diagrams and tables below correspond to installations without reductions and with a perfect hydraulic seal. It is recommended to use copper pipes. A pressure drop of 0.4 bar (30 cmHg) must not be exceeded.



| Intake installation | | |
|---------------------|--------------|---------------|
| H (m) | Pipe length | |
| | int. Ø 8 mm. | int. Ø 10 mm. |
| 0.0 | 25 | 60 |
| 0.5 | 21 | 50 |
| 1.0 | 18 | 44 |
| 1.5 | 15 | 38 |
| 2.0 | 12 | 26 |
| 2.5 | 10 | 26 |
| 3.0 | 8 | 20 |
| 3.5 | 6 | 16 |

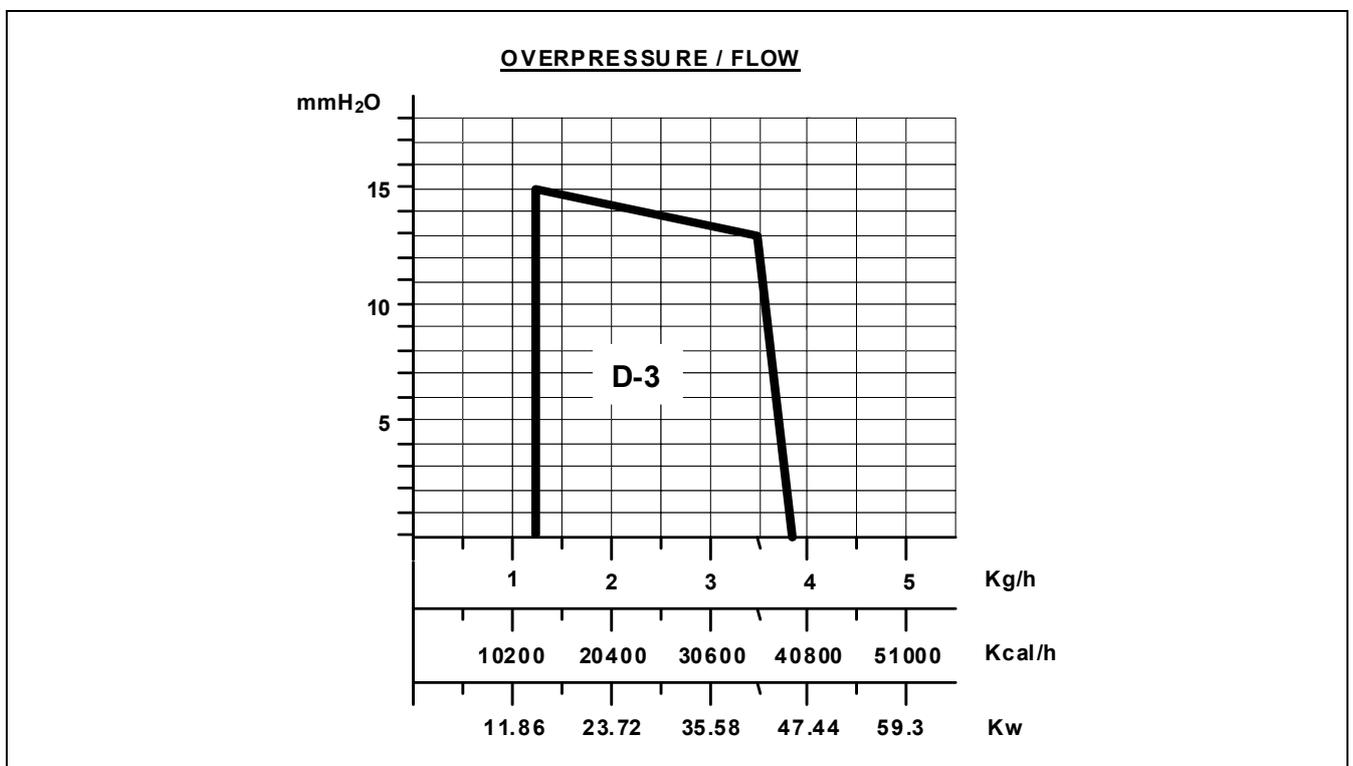
| Charging installation | | |
|-----------------------|--------------|---------------|
| H (m) | Pipe length | |
| | int. Ø 8 mm. | int. Ø 10 mm. |
| 0.5 | 10 | 20 |
| 1.0 | 20 | 40 |
| 1.5 | 40 | 80 |
| 2.0 | 60 | 100 |

Evolution Solar HFD

22.6 Technical specifications

| | | |
|-----------------------------------|-------------|---------------|
| MODEL | | D-3 |
| Minimum consumption | Kg/h | 1.5 |
| Maximum consumption | Kg/h | 3 |
| Minimum power | kW | 17.7 |
| Maximum power | kW | 35.5 |
| Motor power at 2800 r.p.m. | W | 90-110 |
| Adjustment type | | On/Off |
| Electric voltage | | 220 V - 50 Hz |
| Weight | Kg | 12.5 |
| Preheater | | YES |

22.7 Operating curves

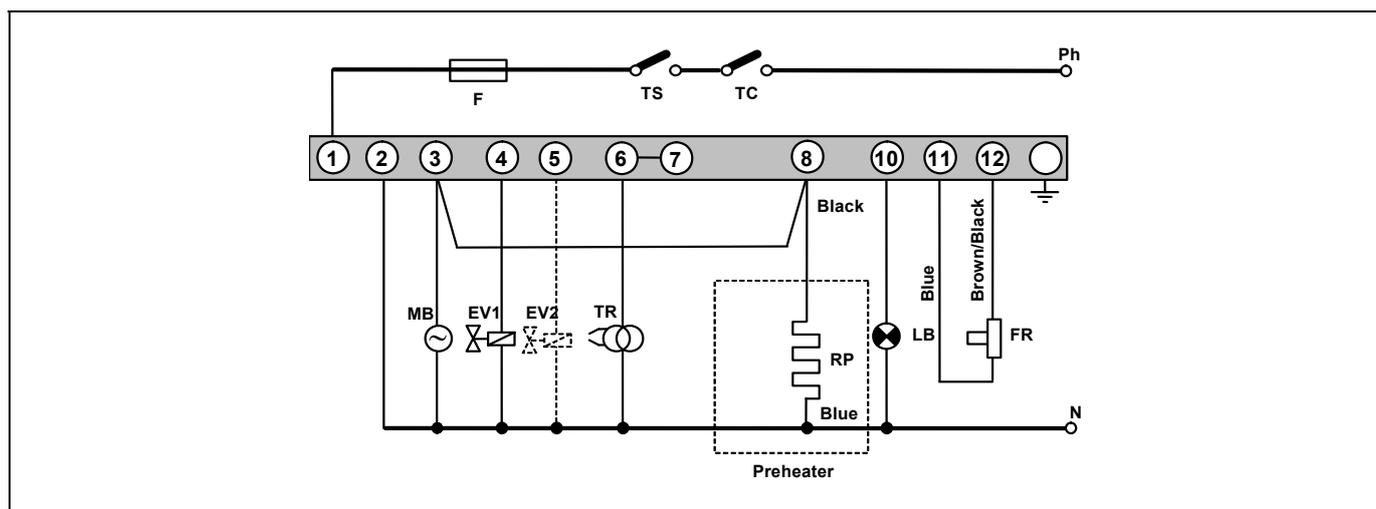


22.8 Nozzles

Evolution boilers are supplied with the burner fitted, together with its corresponding nozzle and a standard pre-adjustment. The following table shows the nozzles and adjustments for each particular model:

| MODEL | Nozzle | Burner pressure (bar) | Air adjustment | Line adjustment |
|-------------------------------|---------------|------------------------------|-----------------------|------------------------|
| EVOLUTION SOLAR 30 HFD | 0,55 60° H | 13 | 2.5 | 1 |
| EVOLUTION SOLAR 40 HFD | 0,60 45° H | 18,5 | 2,5 | 1 |

22.9 Electrical connection diagram



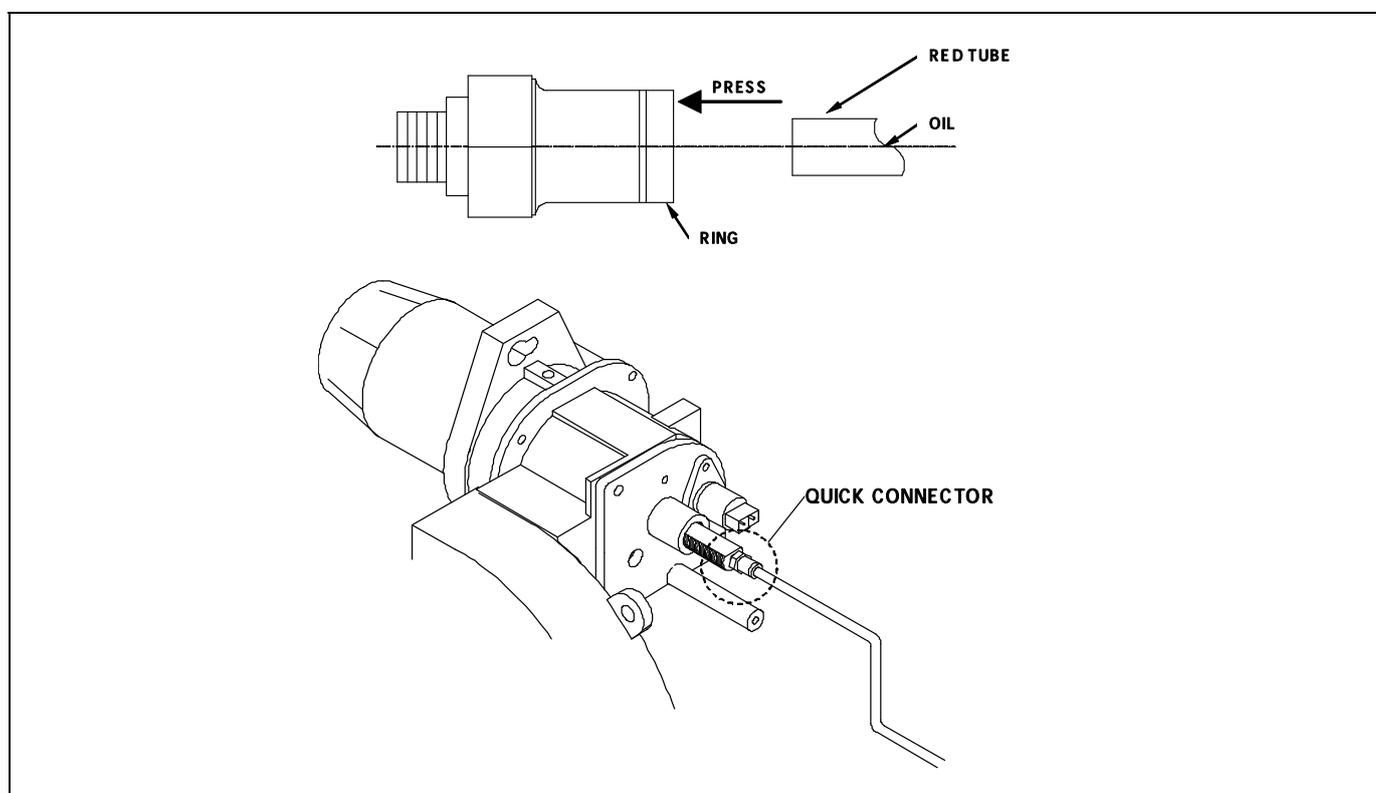
TC: Boiler thermostat
TS: Safety thermostat.
F: Fuse.
LB: Cut-off light.
FR: Photocell.
TR: Transformer.

MB: Motor pump.
EV: Valve.
RP: Preheater element.
Ph: Phase.
N: Neutral.

22.10 Quick connector

To connect and disconnect the red oil intake tube to the nozzle, proceed as follows:

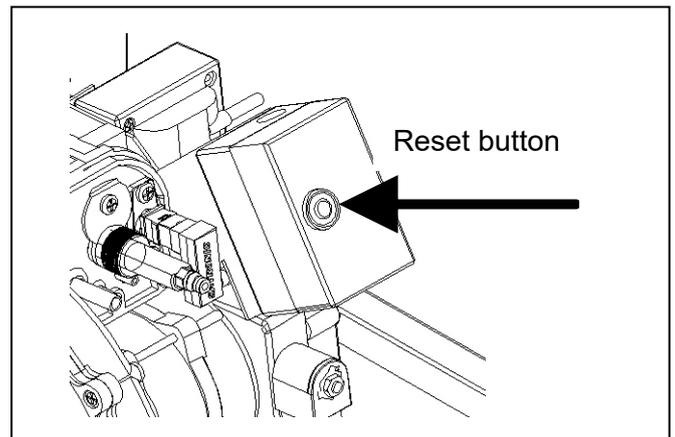
- Press the connector ring in the direction of the arrow, pulling on the red tube at the same time.



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22.11 Burner control operating sequence

The burner's LMO control box has a reset button which is the key element for resetting the burner control and activating/deactivating the diagnosis functions. The multi-colour LED on the reset button is the indicator for visual diagnosis. The button and the LED are located under the transparent cover of the reset button. During normal functioning, the various operating statuses are indicated in the form of colour codes (see the colour code table below). During ignition, the indication is as shown in the following table:



| Colour code table for multi-colour indicator lights (LEDs) | | |
|--|-----------------------|--------------------|
| Status | Colour code | Colour |
| Wait time «tw», other standby statuses | ○ | Off |
| Fuel pre-heater on | ● | Yellow |
| Ignition phase, controlled ignition | ● ○ ● ○ ● ○ ● ○ ● ○ ● | Flashing yellow |
| Functioning, flame OK | □ | Green |
| Functioning, flame not OK | □ ○ □ ○ □ ○ □ ○ □ ○ | Flashing green |
| External light during burner ignition | □ ▲ □ ▲ □ ▲ □ ▲ □ ▲ | Red/green |
| Undervoltage | ● ▲ ● ▲ ● ▲ ● ▲ ● | Yellow/red |
| Failure, alarm | ▲ | Red |
| Error code output (see «Error code table») | ▲ ○ ▲ ○ ▲ ○ ▲ ○ ▲ ○ | Flashing red |
| Interface diagnosis | ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ | Flashing red light |

..... Steady light

○ Off

▲ Red

● Yellow

□ Green

23 FAILURES

This section provides a list of the most common burner and boiler failures.

Burner error code

We have already mentioned that the burner is equipped with a cut-out system, indicated by the reset button light. It may cut out accidentally, and in this case the steady red light on this button will come on. You may unblock it by pressing the button for approx. 1 second. When the burner is blocked and the steady red light is on, visual failure diagnosis may be activated, in accordance with the error code table. To enter visual failure diagnosis mode, hold down the reset button for at least three seconds.

| Error code table | | |
|-----------------------|------------------|---|
| Red flashing LED code | "AL" on term. 10 | Possible cause |
| Flashes 2 times | On | No flame established when ignition safety time ends. - Fuel valves defective or dirty - Flame detector defective or dirty - Burner maladjustment, no fuel - Ignition unit defective |
| Flashes 4 times | On | External light during burner ignition |
| Flashes 7 times | On | Excessive flame loss during functioning (limited number of repetitions) - Fuel valves defective or dirty - Flame detector defective or dirty - Burner maladjustment |
| Flashes 8 times | On | Supervision of fuel pre-heater time |
| Flashes 10 times | On | Cabling fault or internal failure, output contacts, other failures |

During the failure diagnosis time, the control outputs are disabled and the burner remains off. To exit failure diagnosis and activate the burner again, reset the burner control. Hold down the reset button for approx. 1 second (<3 s).

Boiler failures

| FAILURE | CAUSE | SOLUTION |
|---------------------------|--|--|
| RADIATOR DOES NOT HEAT UP | - The pump is not turning - Air in hydraulic circuit | Unblock the pump Drain the installation and the boiler (the automatic air bleed valve cap must always be loose) |
| EXCESSIVE NOISE | - Burner badly adjusted - Flue not correctly sealed - Flame unstable - Flue not insulated | Correctly adjust it Eliminate any leaks Examine the burner Suitably insulate it |

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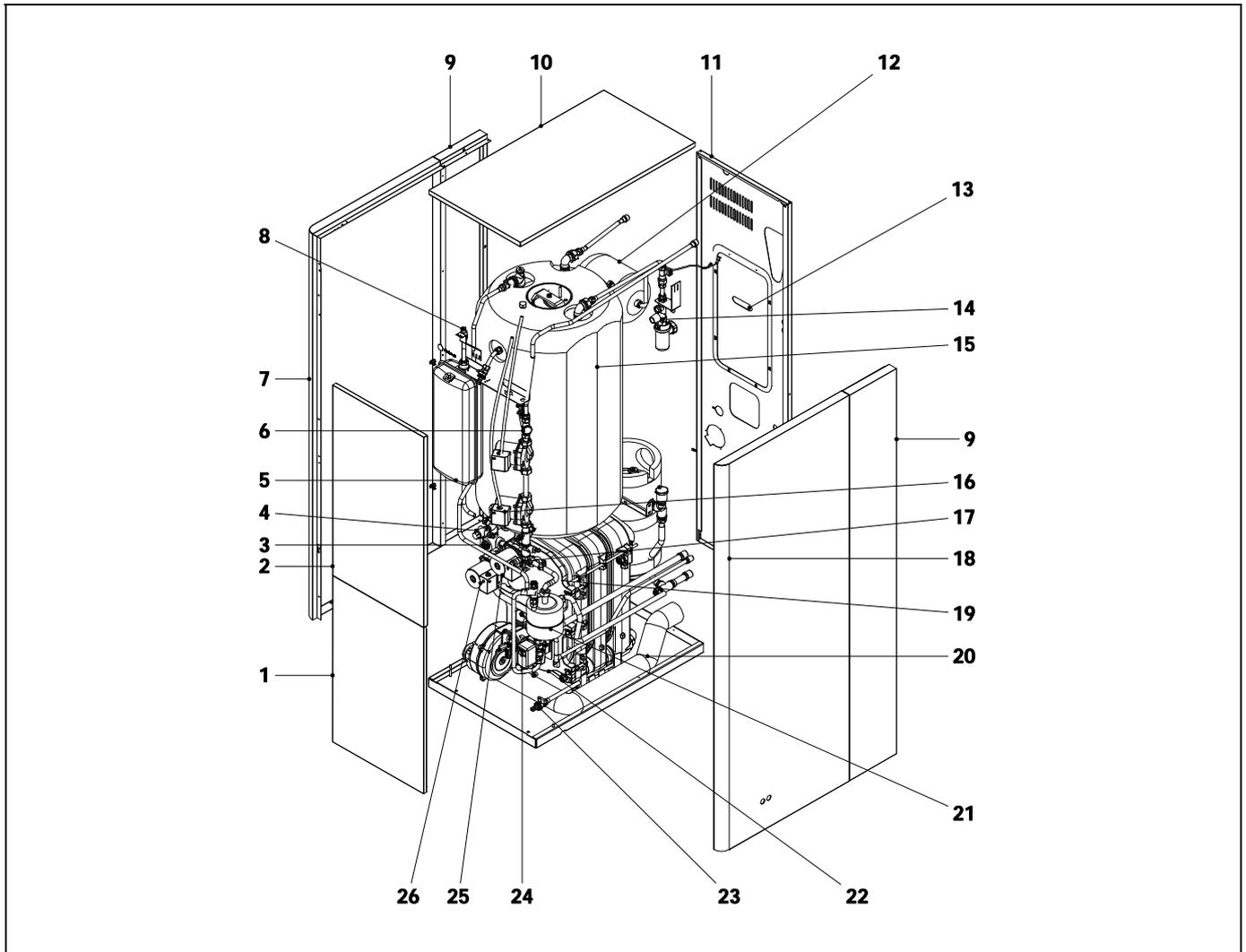
Circulating pump alarms

The high efficiency pumps include a Led (light) which displays their status.

| PUMP LIGHT | DESCRIPTION | STATUS | CAUSE | SOLUTION |
|----------------------|---|---|--|--|
| It is lit green | The pump is functioning | The pump operates according to its setting | Standard functioning | |
| It flashes green | Standby mode (PWM version) | The pump is in standby mode | | |
| It flashes red/green | The is ready for service but is not functioning | The pump will start up again automatically once the error has been solved | 1. Low voltage $U < 160 \text{ V}$ or Excess voltage $U > 253 \text{ V}$ | 1. Check the power supply $195 \text{ V} < U < 253 \text{ V}$ |
| | | | 2. Excess temperature of the module: the temperature of the motor is too high | 2. Check the room temperature and that of the fluid |
| Flashes red | The pump is out of order | The pump is stopped (blocked) | The pump does not start up automatically. | Change the pump. Please contact your nearest official technical assistance service to have it replaced |
| Light off | There is no power supply | The electrical system is not receiving power supply | 1. The pump is not connected to the power supply | 1. Check the connection of the cable |
| | | | 2. The LED is faulty | 2. Check if the pump works |
| | | | 3. The electrical system is faulty | 3. Change the Pump. Change the pump. Please contact your nearest official technical assistance service to have it replaced |

24 SPARE PARTS LIST

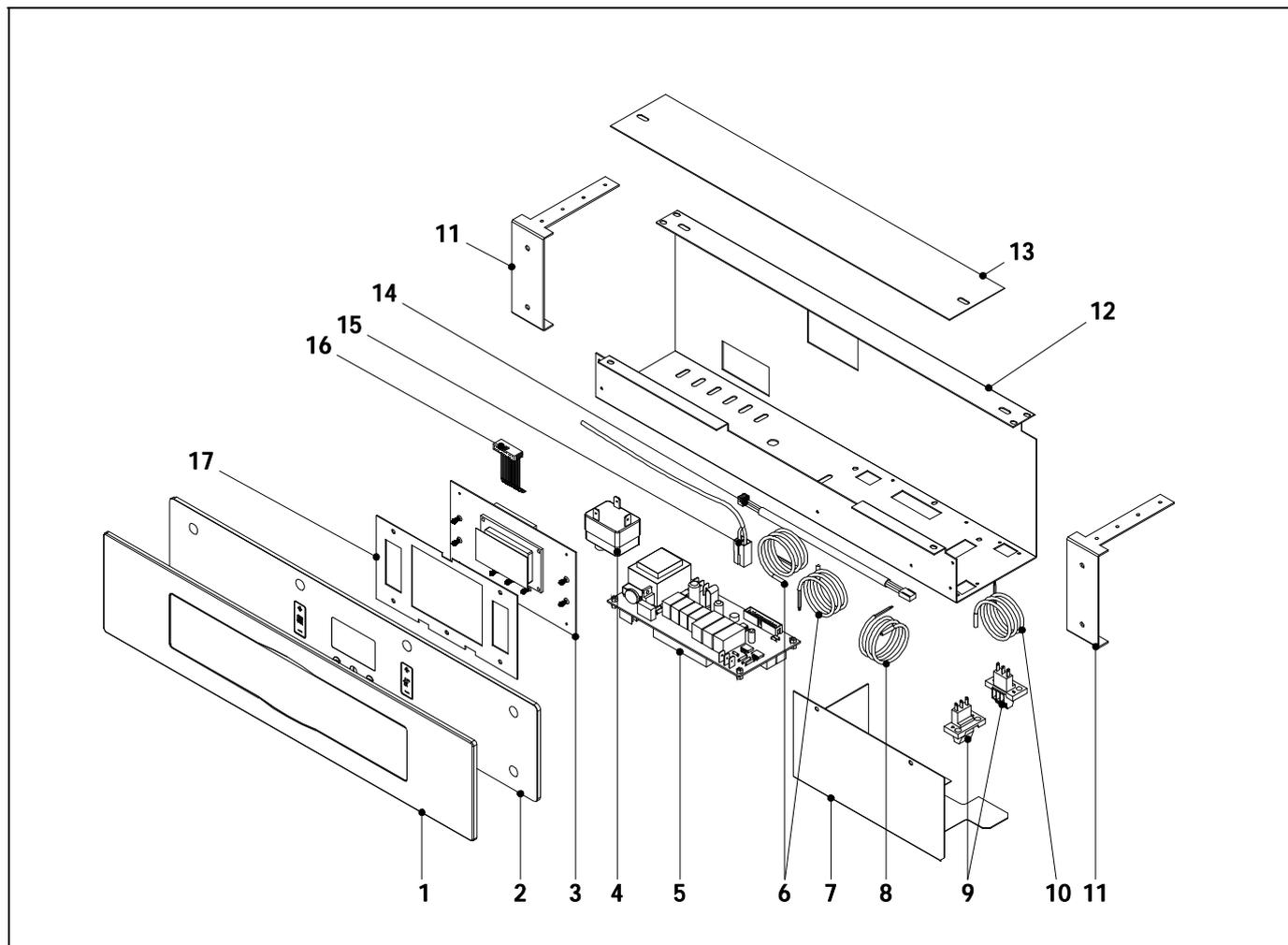
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| <u>Pos.</u> | <u>Código</u> | <u>Denominación</u> | <u>Pos.</u> | <u>Código</u> | <u>Denominación</u> |
|-------------|---------------|-------------------------------|-------------|---------------|--------------------------------|
| 1 | SEPO000590 | Door | 13 | SEPO000588 | Back lid |
| 2 | SEPO001869 | Front panel | 14 | CFOV000001 | Safety unit |
| 3 | CFUR000020 | Colector (30) | 15 | CDEO000041 | Tank |
| | CFUR000017 | Colector (40) | 16 | CFOV000073 | MYL 53-15 pump |
| 4 | CVAL000017 | Safety valve | 17 | CVAL000027 | Key of filling - emptying |
| 5 | CFOV000032 | Heating expansion vessel (30) | 18 | SEPO001857 | Left side panel |
| | CFOV000005 | Heating expansion vessel (40) | 19 | CFUC000053 | Cast iron vent cover |
| 6 | CVAL000018 | Flow regulator | 20 | CFER000051 | Extraflex extendable tube |
| 7 | SEPO001858 | Right side panel | 21 | CFOV000033 | Exchanger (30) |
| 8 | CELC000252 | Pressure transducer | | CFOV000067 | Exchanger (40) |
| 9 | SEPO001859 | Side extension (30) | 22 | CFUC000052 | Cast iron burner support cover |
| | SEPO001868 | Side extension (40) | 23 | CVAL000027 | Key of emptying |
| 10 | SEPO000597 | Roof (30) | 24 | CVAL000038 | Deflecting vanne |
| | SEPO000692 | Roof (40) | 25 | CFOV000148 | Summer pump |
| 11 | SEPO001860 | Rear panel (30) | 26 | CFOV000148 | heating pump (30) |
| | SEPO001861 | Rear panel (40) | | CFOV000149 | heating pump (40) |
| | SEPO001862 | Rear panel (SR) | | | |
| 12 | CFOV000030 | DHW expansion vessel | | | |

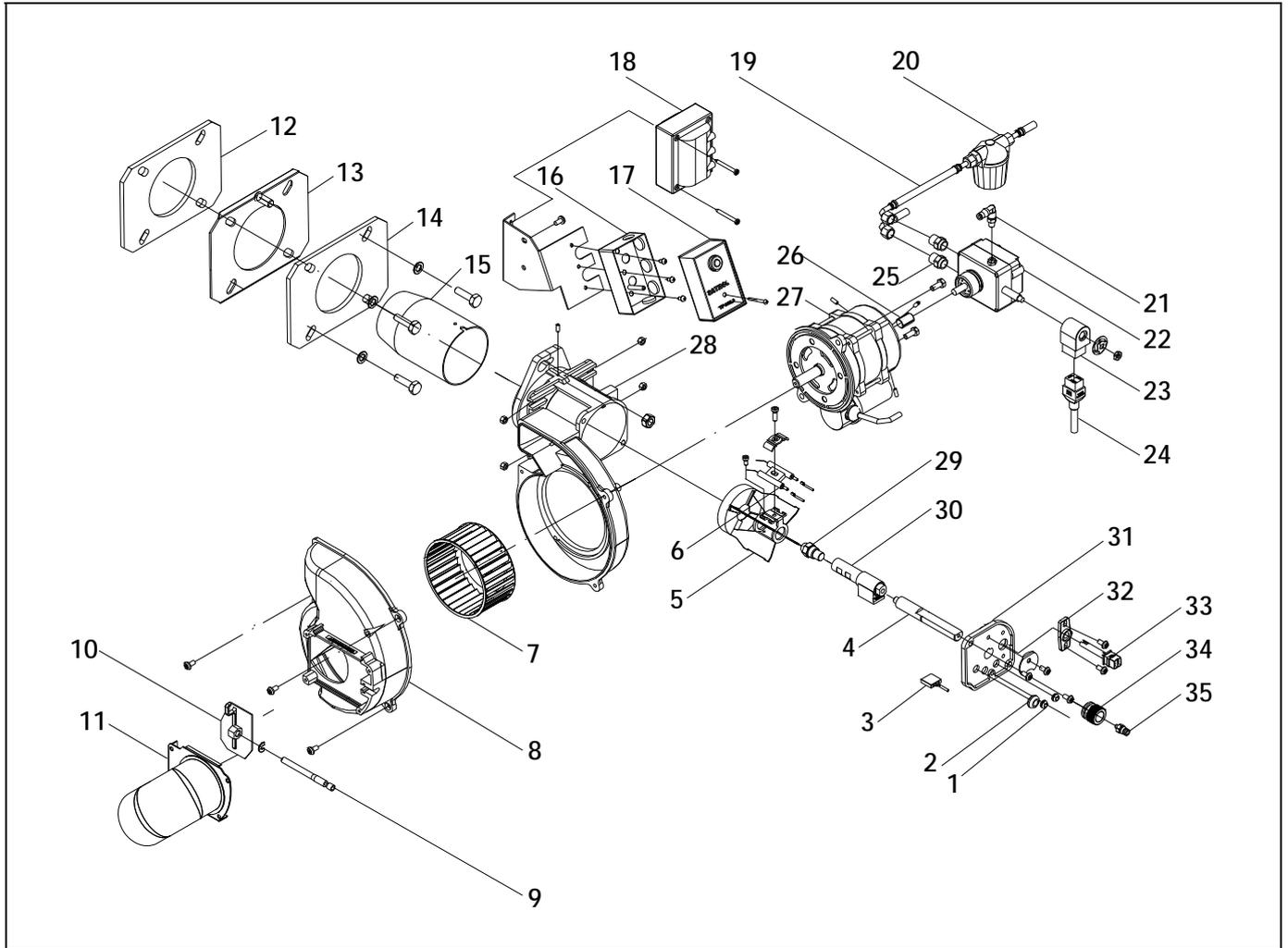
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Electrical Main Board



| <u>Pos.</u> | <u>Código</u> | <u>Denominación</u> |
|-------------|---------------|------------------------------------|
| 1 | CELC000294 | Control panel embellisher |
| 2 | COTR000046 | Main board glass |
| 3 | CELC000360 | Display card |
| 4 | CELC000192 | Safety thermostat 110° 1,5m |
| 5 | CELC000364 | Electronic supply solar card |
| 6 | CELC000270 | Electronic control sensor 1,80 m |
| 7 | SEPO001366 | Connection cover |
| 8 | CELC000234 | Temp. Evolution sensor 0,90 mts |
| 9 | CELC000036 | Weidmuller strip 3 poles |
| 10 | CELC000211 | Electronic control sensor 1,5 mts. |
| 11 | SEPO001303 | Panel fastening |
| 12 | SEPO001976 | Drawer |
| 13 | SEPO001304 | Drawer cover |
| 14 | CELC000255 | Pressure sensor cable |
| 15 | CELC000277 | Flowswitch connector |
| 16 | CELC000298 | Electronic cards cable |
| 17 | | Display support |

Burner



| <u>Pos</u> | <u>Code</u> | <u>Designation</u> | <u>Pos.</u> | <u>Code</u> | <u>Designation</u> |
|------------|-------------|-------------------------|-------------|-------------|-----------------------------|
| 1 | CFER000032 | Cable duct | 19 | CQUE000147 | Oil hose |
| 2 | CFER000033 | Cable duct | 20 | CQUE000055 | Oil filter |
| 3 | CQUE000027 | Pre-heater cable | 21 | CTOR000007 | Elbow connector |
| 4 | CTOE000063 | Burner line | 22 | CQUE000011 | Oil pump Suntec |
| 5 | CQUE000155 | Turbulator disc D3 | | CQUE000088 | Oil pump Danfoss |
| | CQUE000013 | Turbulator disc D4 | 23 | CQUE000056 | Valve coil Suntec |
| 6 | CQUE000019 | Set of electrodes | | CQUE000089 | Valve coil Danfoss |
| 7 | CQUE000044 | Fan | 24 | CQUE000054 | Valve coil cable Suntec |
| 8 | CQUE000095 | Air adjustment support | | CQUE000124 | Valve coil cable Danfoss |
| 9 | CTOE000064 | Air adjustment screw | 25 | CTOE000065 | Counter thread |
| 10 | CQUE000151 | D3 air regulating plate | 26 | CQUE000004 | Pump motor coupling |
| | CQUE000152 | D4 air regulating plate | 27 | CQUE000102 | Motor |
| 11 | CGAS000220 | Manifold | 28 | CQUE000094 | Motor support |
| 12 | CQUE000173 | Flange seal | 29 | CQUE000080 | Nozzle OD-H 0,55 – 60° (D3) |
| 13 | SATQUE0001 | Flange | | CQUE000074 | Nozzle OD-H 0,60 – 45° (D4) |
| 14 | CQUE000158 | Flange support | 30 | CQUE000061 | Preheater |
| 15 | | D3 tube Ø84x25 | 31 | CQUE000096 | Line cover |
| | | D4 tube Ø84x45 | 32 | CQUE000149 | Line cover |
| 16 | CQUE000129 | Control box base | 33 | CQUE000223 | Photocell support |
| 17 | CQUE000169 | Control box | 34 | SOPE000241 | Photocell |
| 18 | CQUE000005 | Transformer | 35 | CTOR000006 | Line adjustment nut |

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