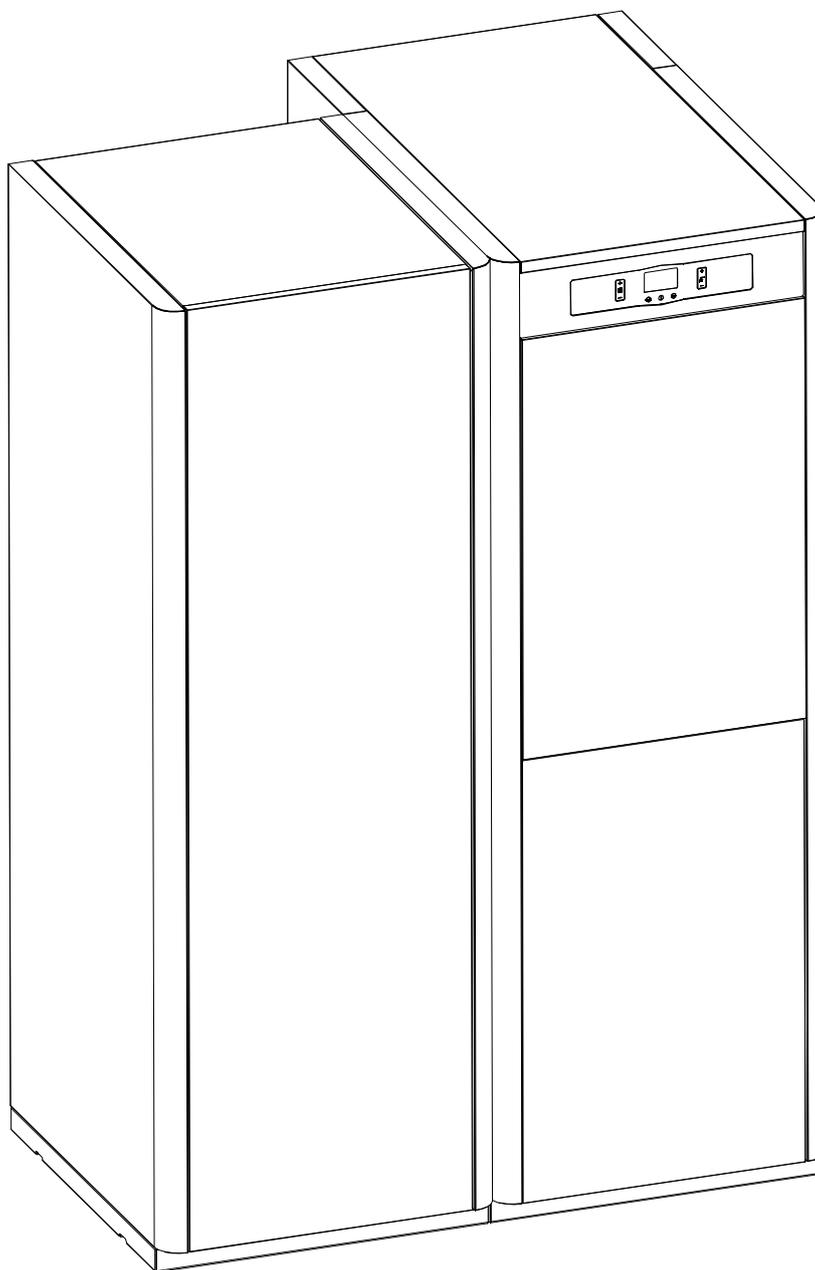


# INSTALLATION AND OPERATING INSTRUCTIONS

→ EVOLUTION SOLAR HDX



**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 HDX** model. With a suitable hydraulic installation, this oil-fired boiler will provide the ideal level of comfort for your home. You will also be able to enjoy a balanced, economical supply of domestic hot water.

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.

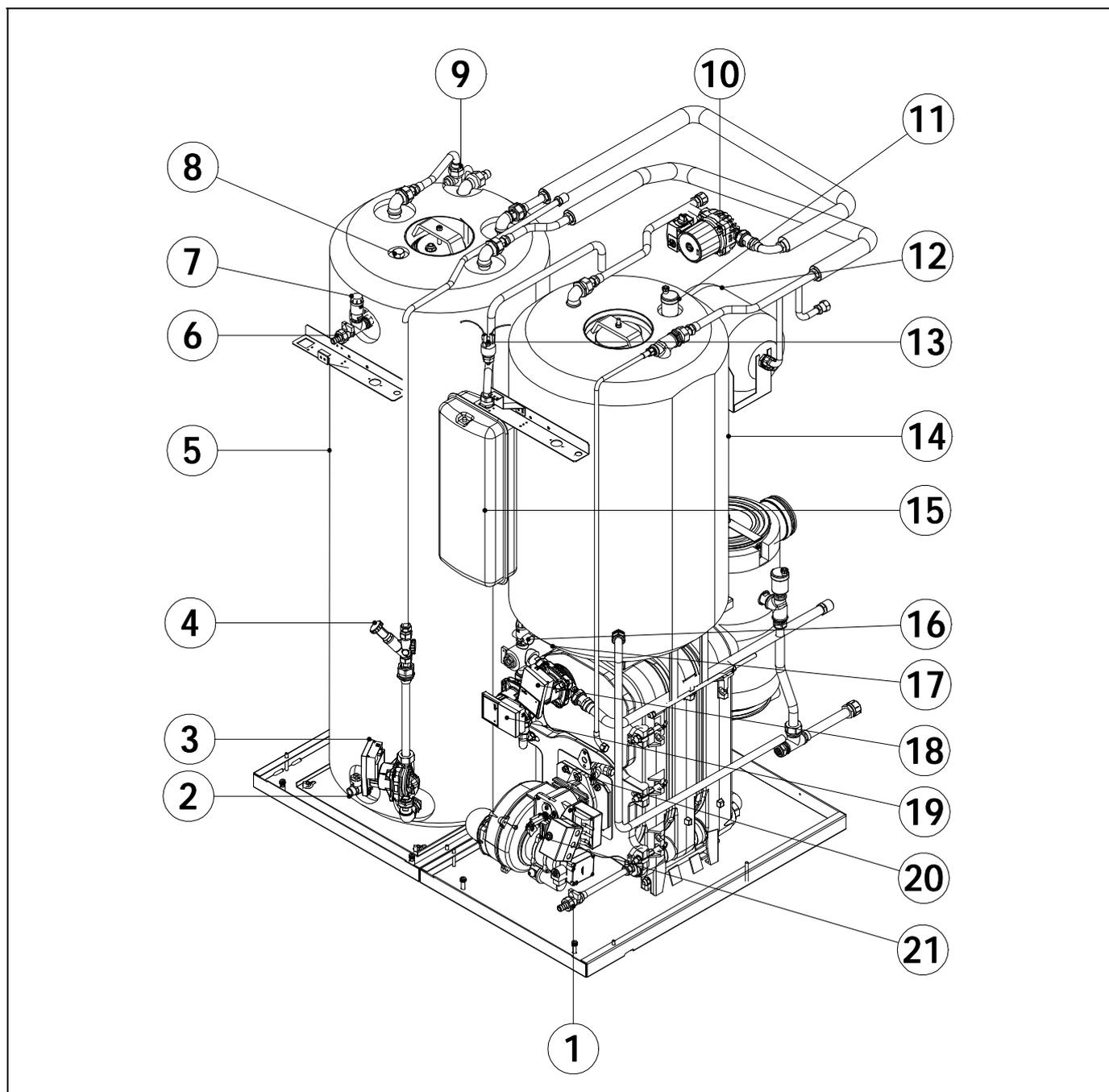
**INDEX**

1 COMPONENTS DIAGRAM.....	3
2 CONTROL ELEMENTS.....	4
3 INSTALLATION INSTRUCTIONS .....	5
3.1 LOCATION AND ASSEMBLY OF THE BOILER/HOT WATER TANK UNIT .....	5
3.2 HYDRAULIC INSTALLATION OF THE HEATING AND D.H.W. CIRCUIT.....	6
3.3 FUEL INSTALLATION.....	6
3.4 ELECTRICAL CONNECTION.....	7
3.5 INSTALLING HEATING CIRCUIT 2 (OPTIONAL) .....	7
3.6 INSTALLING THE SOLAR CIRCUIT .....	8
3.7 LOCATION OF THE SOLAR COLLECTOR .....	9
3.8 REMOVAL OF COMBUSTION PRODUCTS .....	10
4 REMOVAL OF COMBUSTION PRODUCTS.....	11
4.1 Ø80 DUAL DUCT SYSTEM FOR COMBUSTION PRODUCT REMOVAL AND AIR INTAKE (TYPE C <sub>53</sub> ).....	11
4.2 CHANGING FROM DUAL DUCT FUME REMOVAL TO COAXIAL FUME REMOVAL.....	12
4.3 Ø80-125 CONCENTRIC HORIZONTAL DUCT FOR COMBUSTION PRODUCT REMOVAL AND AIR INTAKE (TYPE C <sub>13</sub> ).....	13
4.4 Ø80-125 CONCENTRIC VERTICAL DUCT FOR COMBUSTION PRODUCT EVACUATION AND AIR INTAKE (TYPE C <sub>33</sub> ) .....	14
5 STARTING-UP THE BOILER .....	15
5.1 PRIOR WARNINGS .....	15
5.2 FILLING THE DOMESTIC HOT WATER TANK .....	15
5.3 FILLING THE HEATING CIRCUIT .....	15
5.4 START-UP.....	15
5.5 INSTALLATION DELIVERY.....	15
5.6 FILLING THE SOLAR CIRCUIT.....	16
5.7 SOLAR PUMP FUNCTIONING IN MANUAL MODE .....	17
5.8 STARTING UP THE SOLAR PUMP WITH TIMER .....	17
5.9 CHECKING THE SOLAR CIRCUIT SEAL.....	17
5.10 ADJUSTING THE SOLAR CIRCUIT FLOW.....	18
6 DIGITAL DISPLAY:.....	19
7 TEMPERATURE SELECTION .....	21
7.1 SELECTING THE BOILER SET POINT TEMPERATURE .....	21
7.2 SELECTING THE DHW SETPOINT TEMPERATURE OF THE BACK-UP HOT WATER TANK .....	21
7.3 SELECTING THE DHW SETPOINT TEMPERATURE IN THE SOLAR HOT WATER TANK .....	22
7.4 SELECTING THE UNDERFLOOR HEATING FLOW SETPOINT TEMPERATURE (WITH SRX2/EV KIT OPTION) .....	22
8 OPERATION .....	23
8.1 SOLAR CIRCUIT FUNCTIONING .....	23
8.2 HEATING FUNCTION.....	24
8.3 DOMESTIC HOT WATER PRODUCTION FUNCTION OF TANK .....	24
8.4 HEATING CIRCUIT 2 FUNCTIONING (OPTIONAL) .....	25
8.5 FUNCTIONING WITH AN SRX2/EV UNDERFLOOR HEATING KIT (OPTIONAL).....	25
9 ADDITIONAL FUNCTIONS .....	26
9.1 PUMP ANTI-BLOCK FUNCTION .....	26
9.2 ANTI-FROST FUNCTION .....	26
9.3 TELEPHONE RELAY CONNECTION .....	26
9.4 ANTI-LEGIONELLA FUNCTION (OPTIONAL).....	26
9.5 BOILER PRESSURE SENSOR FUNCTION .....	26
9.6 ROOM THERMOSTAT CONNECTION .....	26
9.7 DISCONNECTING THE OIL-FIRED BOILER'S BACK-UP ENERGY SUPPLY .....	27
9.8 DISCONNECTING THE SOLAR CIRCUIT.....	27
9.9 KEYPAD BLOCK FUNCTION.....	27
10 E20 REMOTE CONTROL (OPTIONAL) .....	27
10.1 FUNCTIONING WITHOUT AN OUTDOOR SENSOR.....	28
10.2 FUNCTIONING WITH AN EXTERNAL SENSOR (OPTIONAL) .....	28
10.3 DHW MODE FUNCTIONING.....	29
10.4 TELEPHONE RELAY FUNCTION.....	29
11 SHUTTING DOWN THE BOILER .....	29
12 DRAINING THE BOILER.....	29
13 DRAINING THE SOLAR CIRCUIT .....	29
14 SAFETY CUT-OUTS .....	29
14.1 TEMPERATURE SAFETY CUT-OUT.....	30
14.2 BURNER CUT-OUT .....	30
14.3 LOW PRESSURE CUT-OUT.....	30
15 BOILER MAINTENANCE.....	31
16 CIRCULATION PUMP FLOW CURVES.....	33
16.1 CHARACTERISTIC HEATING PUMP.....	33
16.2 REGULATION PUMP HEATING.....	33
16.3 PRESSURE DROP.....	33
17 DIAGRAMS AND MEASUREMENTS.....	34
17.1 EVOLUTION SOLAR 30 HDX.....	34
17.2 EVOLUTION SOLAR 30 HDX WITH SRX2 / EV UNDERFLOOR HEATING KIT.....	35
18 TECHNICAL CHARACTERISTICS.....	36
19 CONNECTION DIAGRAM.....	37
19.1 EVOLUTION SOLAR 30 HDX.....	37

# Evolution Solar HDX

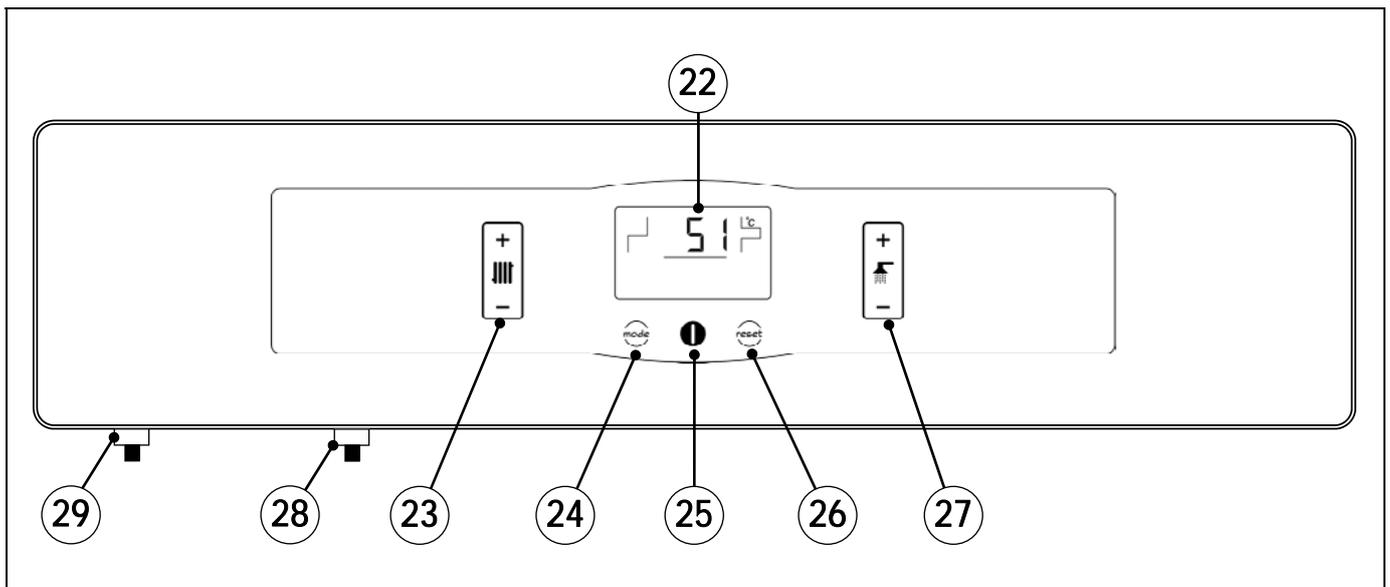
19.2 EVOLUTION SOLAR 30 HDX WITH SRX2 / EV UNDERFLOOR HEATING KIT.....	38
20 ELECTRICAL DIAGRAM.....	39
20.1 EVOLUTION SOLAR HDX .....	39
20.2 EVOLUTION SOLAR HDX KIT FLOOR HEATING WITH SRX2 / EV .....	40
21 ALARM CODES.....	41
22 BURNER.....	42
22.1 ASSEMBLY.....	42
22.2 BURNER START-UP.....	42
22.3 ADJUSTING THE COMBUSTION CONDITIONS.....	42
22.4 OIL PRESSURE ADJUSTMENT .....	44
22.5 OIL SUPPLY PIPING DIAGRAMS.....	44
22.6 TECHNICAL SPECIFICATIONS .....	45
22.7 OPERATING CURVES.....	45
22.8 NOZZLES.....	45
22.9 ELECTRICAL CONNECTION DIAGRAM .....	46
22.10 QUICK CONNECTOR.....	46
22.11 BURNER CONTROL OPERATING SEQUENCE.....	47
23 SPARES LIST .....	48
24 FAILURES .....	52

**1 COMPONENTS DIAGRAM**



- |                                  |                                       |
|----------------------------------|---------------------------------------|
| 1. Heating circuit drain valve.. | 12. DHW expansion vessel.             |
| 2. Solar circuit drain valve.    | 13. Pressure switch.                  |
| 3. Solar circuit pumps.          | 14. 130 litre DHW storage tank.       |
| 4. Flow regulator.               | 15. Heating circuit expansion vessel. |
| 5. 250 litre solar storage tank  | 16. Automatic air vent.               |
| 6. Solar circuit level gauge.    | 17. Heating circuit safety valve..    |
| 7. Solar circuit safety valve.   | 18. Heating pump.                     |
| 8. Solar circuit fill valve.     | 19. DHW pump.                         |
| 9. DHW safety unit               | 20. Fill valve.                       |
| 10. Solar capture pump           | 21. Sealed burner.                    |
| 11. Automatic air vent.          |                                       |

## 2 CONTROL ELEMENTS



### 22. 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.

### 23. 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.

### 24. MODE touch button:

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

### 26. ON touch button:

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

### 26. 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.

### 27. 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.

### 28. Boiler safety thermostat:

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

### 29. Fume safety thermostat:

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

### 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 and assembly of the boiler/hot water tank unit

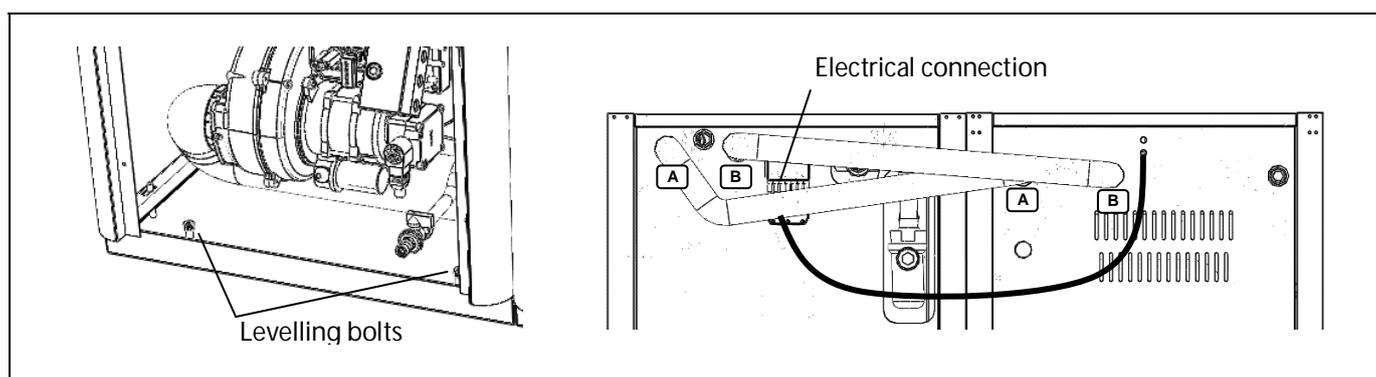
The boiler must be installed in a sufficiently ventilated site. The boiler has an integrated solar capture system and must therefore be located at a lower level than the solar collector installation.

The two modules are to be placed back-to-back and aligned at the front. The assembly may be made either towards the right or towards the left. Each module is supplied with levelling screws on its base, accessible from the front, as shown in the picture below.

When you have correctly positioned the modules, interconnect them hydraulically using the two flexible connection tubes supplied inside the boiler module. Open the door to access them. Connect socket "A" on the rear of the accumulator module to the corresponding socket "A" of the boiler module, and socket "B" to the corresponding socket "B", as shown in the picture below.

Finally, connect the two modules electrically using the connectors on the rear of each module, as shown in the picture below.

**The boiler must be accessible from the side** for maintenance purposes. The solar accumulator module may be placed on either side of the back-up boiler module for this purpose.

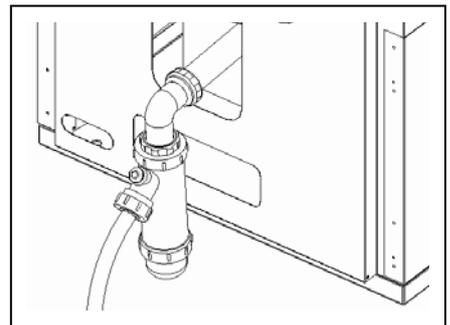


# Evolution Solar HDX

## 3.2 Hydraulic installation of the heating and D.H.W. 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.
- Ensure the two modules have been hydraulically interconnected before connecting the boiler. (See section "3.1")
- 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 HDX** 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.

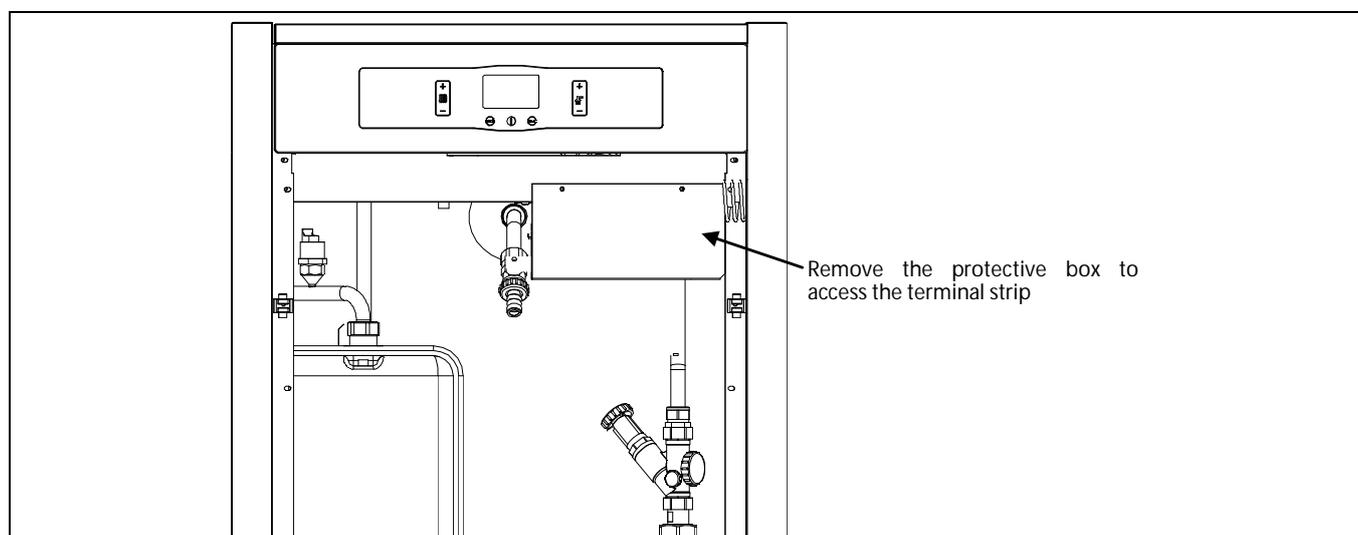
### 3.4 Electrical Connection

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, **TA<sub>1</sub>** (J5) and **TA<sub>2</sub>** (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 **TA<sub>1</sub>**. For connection to **TA<sub>2</sub>**, 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 HDX** range of boilers are supplied equipped with a circulation pump connected to a heating circuit, circuit 1 (BC<sub>1</sub>). In addition to this circuit, all the models are designed to control a second heating circulation pump, in a second heating circuit, circuit 2 (BC<sub>2</sub>).

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*").

A circulation pump and a shut-off valve or electrovalve will need to be included in heating circuit N° 2. This pump must be electrically connected between terminals N and 8 on the supply connector block **J2** (see "*Electrical Connection Diagram*").

# Evolution Solar HDX

## 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, two solar circulation pumps, a flow regulator and one or two solar collectors 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". When making 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 ( $\alpha$ )	Piping $\varnothing$
0.5 m.	10.9 m.	20 m.	40 m.	4%	$\varnothing$ 12 mm.

When the solar circuit hydraulic connections have been made, assemble the collector sensor bulb (**Scol**) on the bulb-holder provided on the collector, and make the electrical connection on the connector block of sensors **J3**, terminals 17 and 18 (see "Connection Diagram"). The collector sensor "**Scol**" is supplied with the solar collectors, in the accessory box.

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, check the seal and adjust the flow.

The heat transmission in the **Evolution Solar HDX** 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 HDX** boiler is supplied pre-loaded with 7.5 litres of inhibitor liquid in the solar circuit of the hot water tank, which means the optimum proportion of inhibitor liquid is obtained on filling the circuit (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 HDX 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.

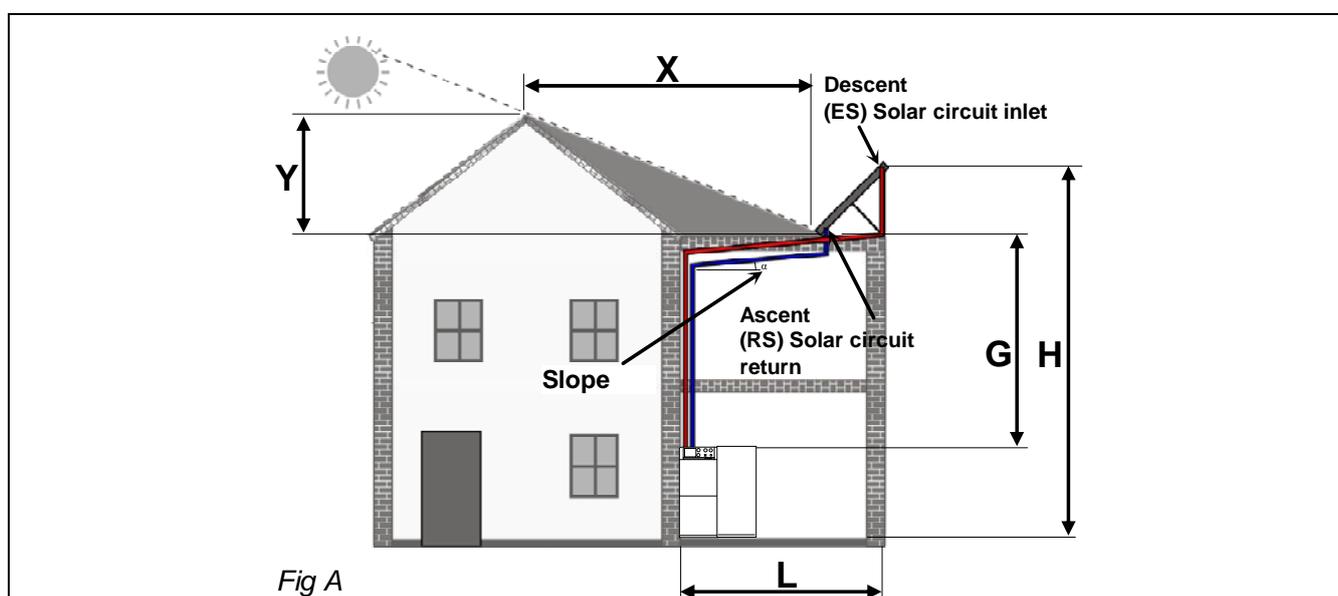
To correctly locate the solar collector, the calculation methods and reference tables figuring in the "Technical Building Code" (CTE, Section HE 4) should be carefully followed. **DOMUSA TEKNIK** provides a calculation computer program for installers, which can be ordered through the website [www.domusateknik.com](http://www.domusateknik.com). However, it is recommended to bear the following indications in mind 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 should normally be installed with a slope  $5^\circ$  greater than the latitude of the location. Any difference from this angle will reduce its efficiency.
- **For installations with integrated supports for slate, the tilt must be at least  $27^\circ$ , and for those with integrated supports for tiles, it must be at least  $16^\circ$ . 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 $35^\circ$	Latitude $40^\circ$	Latitude $45^\circ$
Calculation of X	$Y \times 1.75$	$Y \times 2$	$Y \times 2.25$



# Evolution Solar HDX

## 3.8 Removal of combustion products

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

The **Evolution Solar HDX** 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. We recommend that the position of the outside exhaustion duct is as shown in the figures and in the table below:

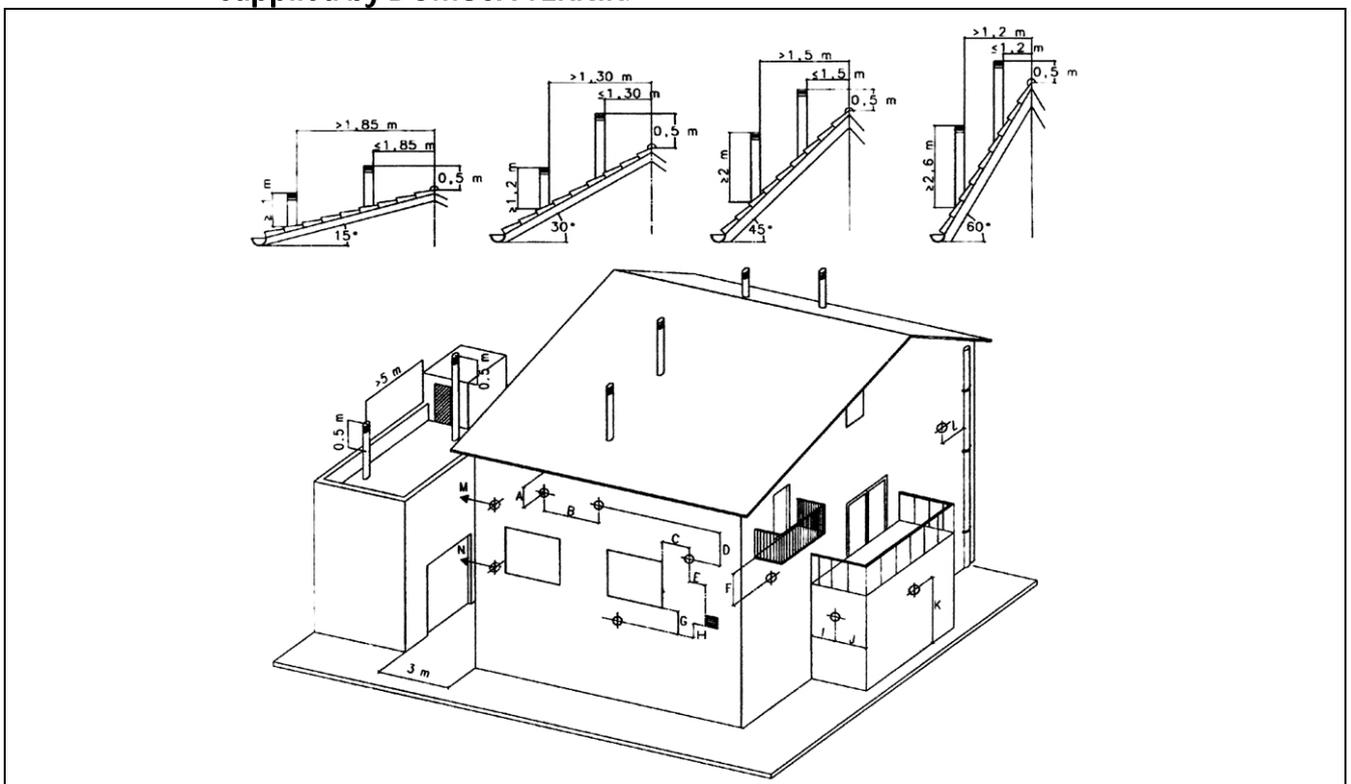
Exhaustion duct position	Minimum distance (mm)
<b>A</b> under a cornice	300
<b>B</b> between two horizontal ducts	1000
<b>C</b> from an adjacent window	400
<b>D</b> between two vertical ducts	1500
<b>E</b> from an adjacent ventilation grille	600
<b>F</b> under a balcony (*)	300
<b>G</b> under a window	600
<b>H</b> under a ventilation grille	600
<b>I</b> from a recess in the building	300
<b>J</b> from a corner of the building	300
<b>K</b> from the ground	2500
<b>L</b> from a vertical or horizontal duct or outlet (**)	300
<b>M</b> from a frontal surface at a distance of 3 metres from the fume outlet	2000
<b>N</b> 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 exhaustion 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 removal and air intake are to be those supplied by DOMUSA TEKNIK.**



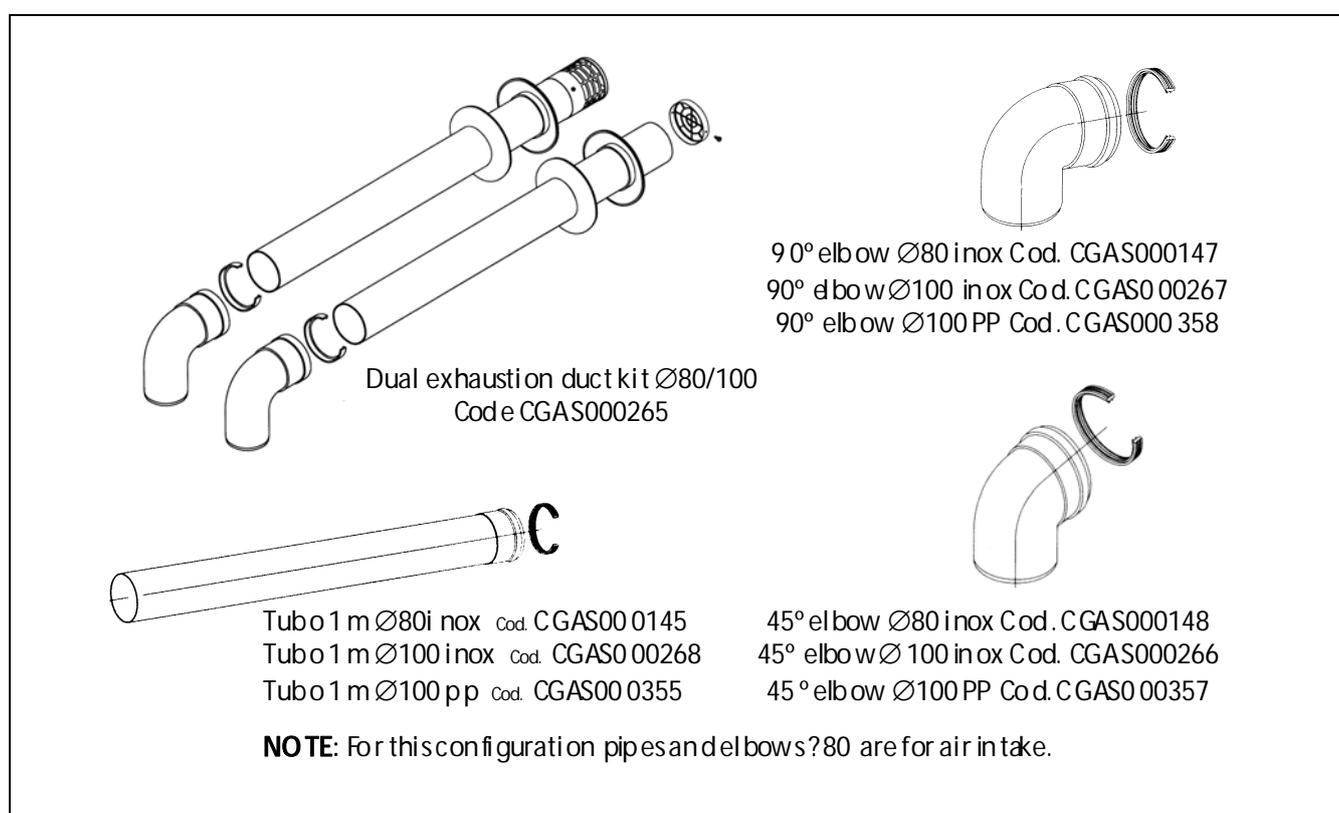
## 4 REMOVAL OF COMBUSTION PRODUCTS

### 4.1 Ø80 dual duct system for combustion product removal and air intake (type C<sub>53</sub>)

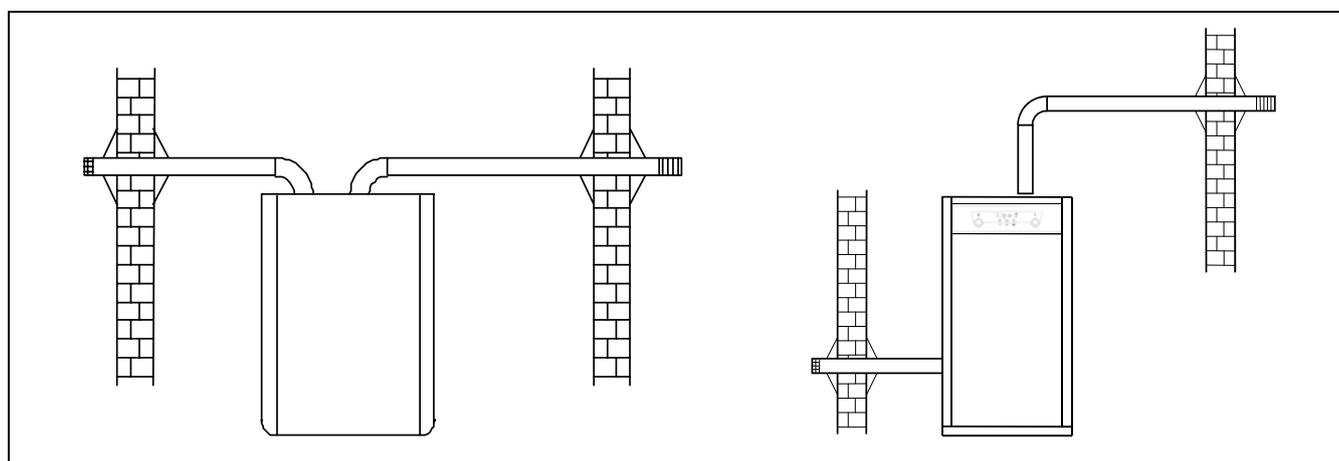
For this type of boiler, combustion product removal and air intake take place through separate Ø80 mm dual ducts, using the Ø80 dual duct outlet kit, code CGAS000265. Evolution Solar HDX boilers are equipped with this type of fume removal by default.

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 removal 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.



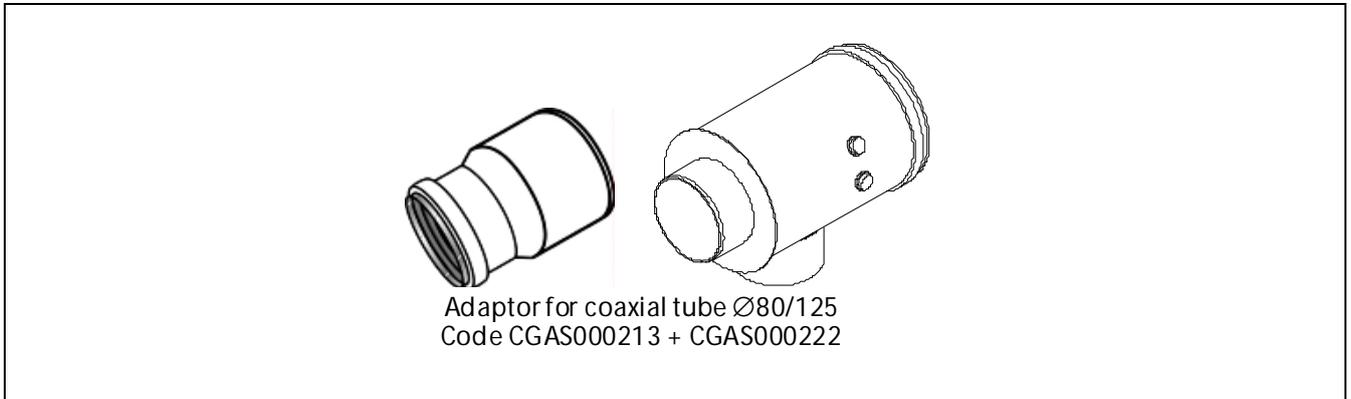
Examples of installation:



# Evolution Solar HDX

## 4.2 Changing from dual duct fume removal to coaxial fume removal

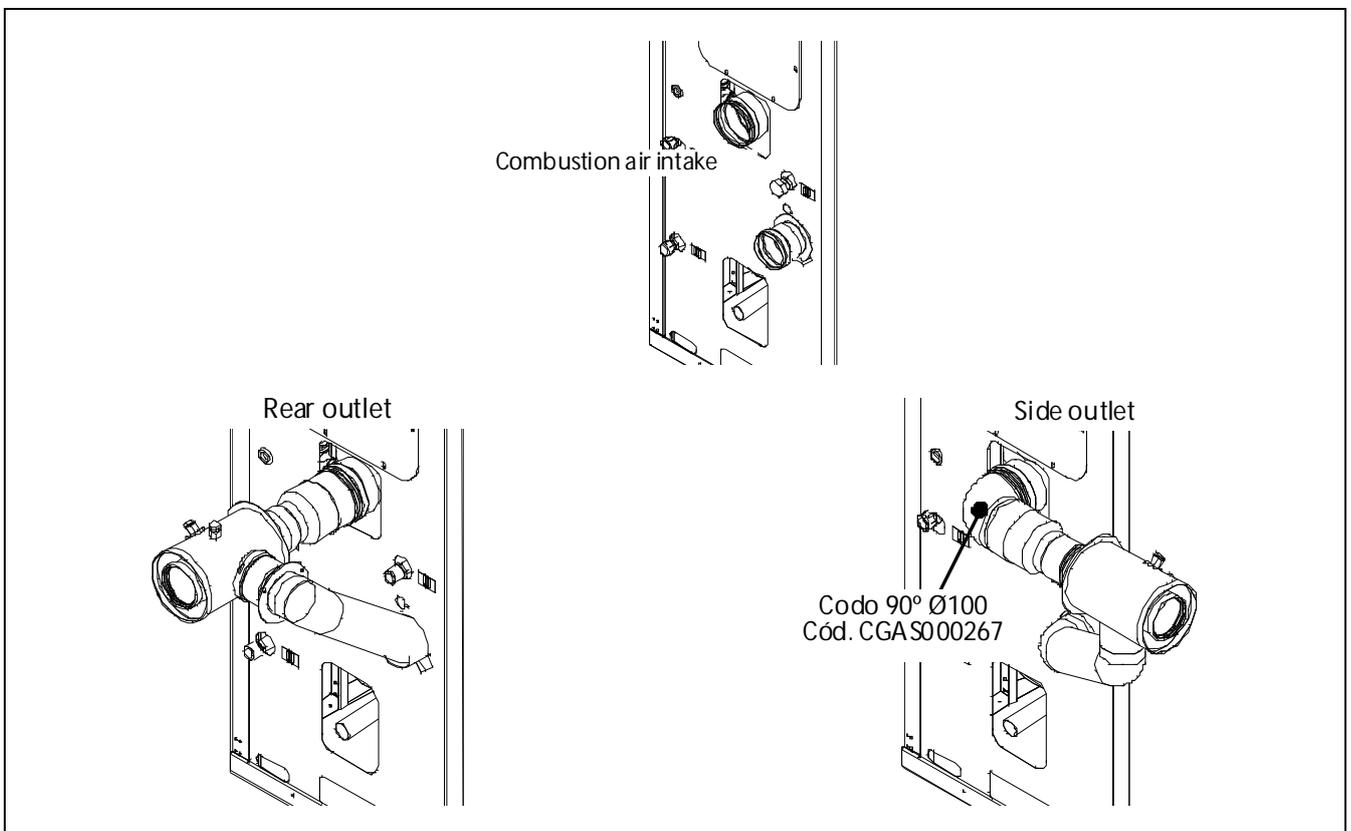
The Evolution Solar HDX boiler has a Ø80 dual duct system for combustion product removal and air intake. If you prefer the combustion products to be removed by means of a Ø80/125 coaxial tube, you may use the Ø80/125 coaxial tube adaptor kit (supplied to order), code CGAS000213 + code CGAS000222.



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:

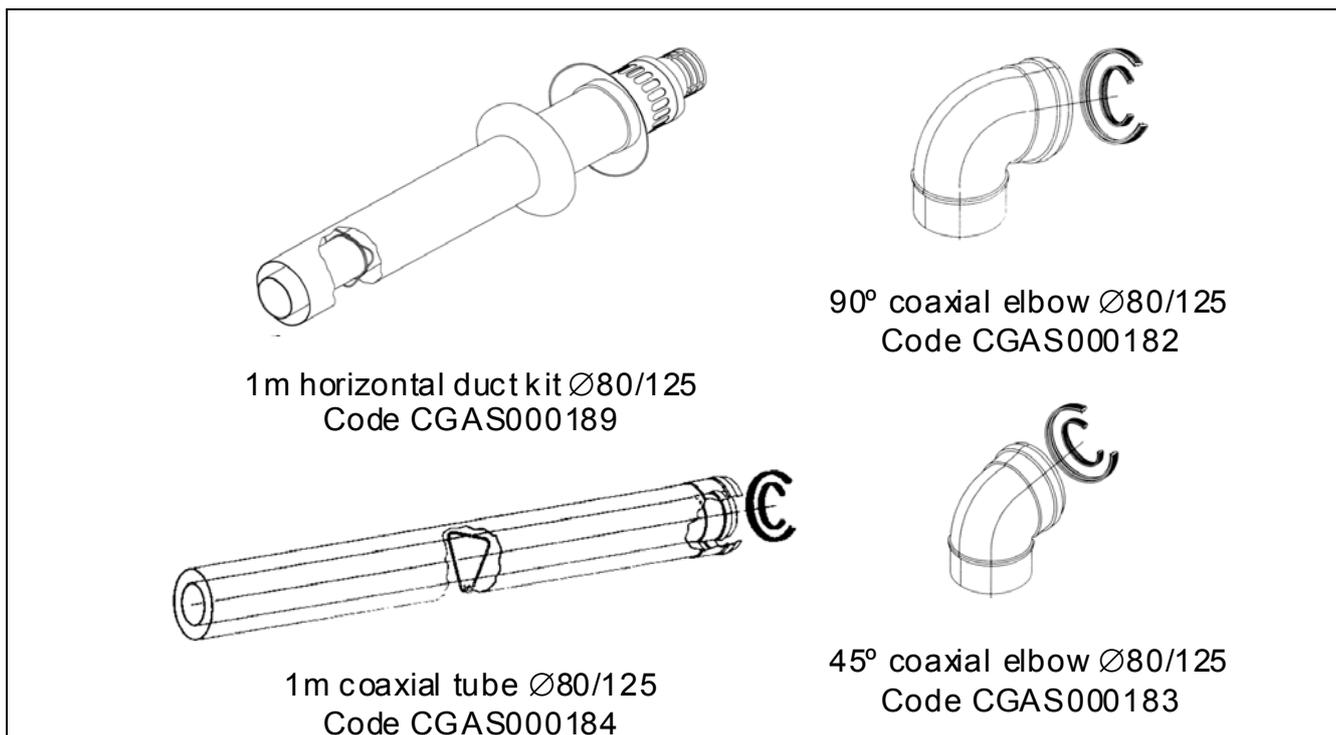


### 4.3 Ø80-125 concentric horizontal duct for combustion product removal and air intake (type C<sub>13</sub>)

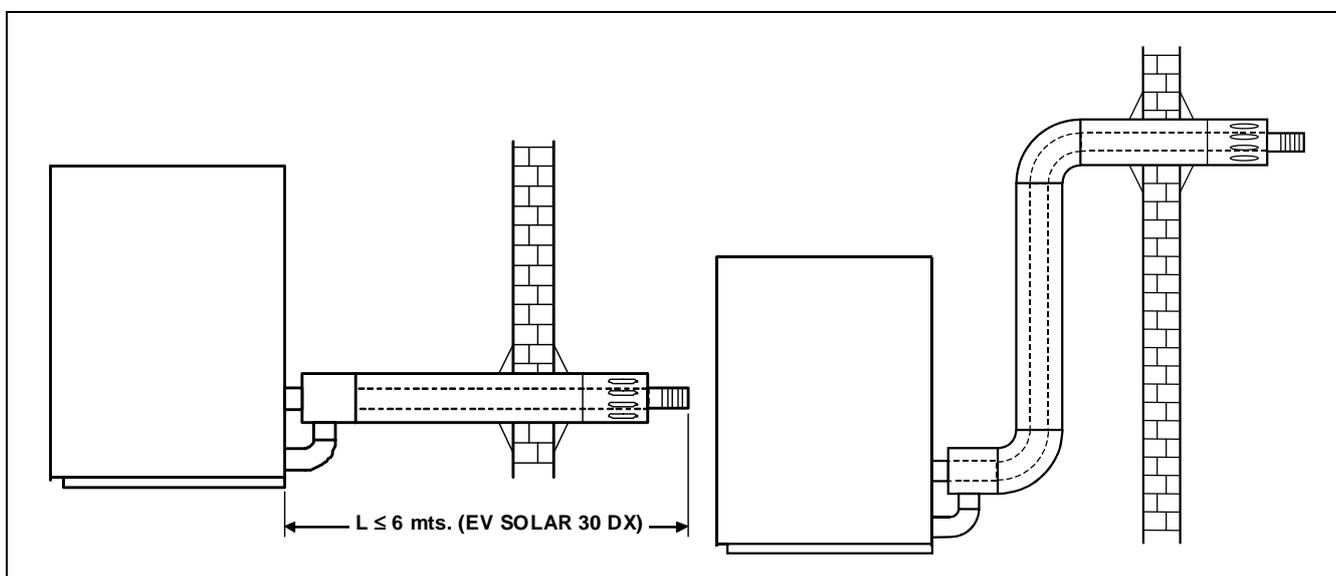
Combustion product evacuation and air intake can be made using concentric Ø80 mm ducts for combustion product evacuation and Ø125 mm ducts for air intake, using the 1m Ø80-125 horizontal outlet kit, code CGAS000189.

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.



Examples of installation:

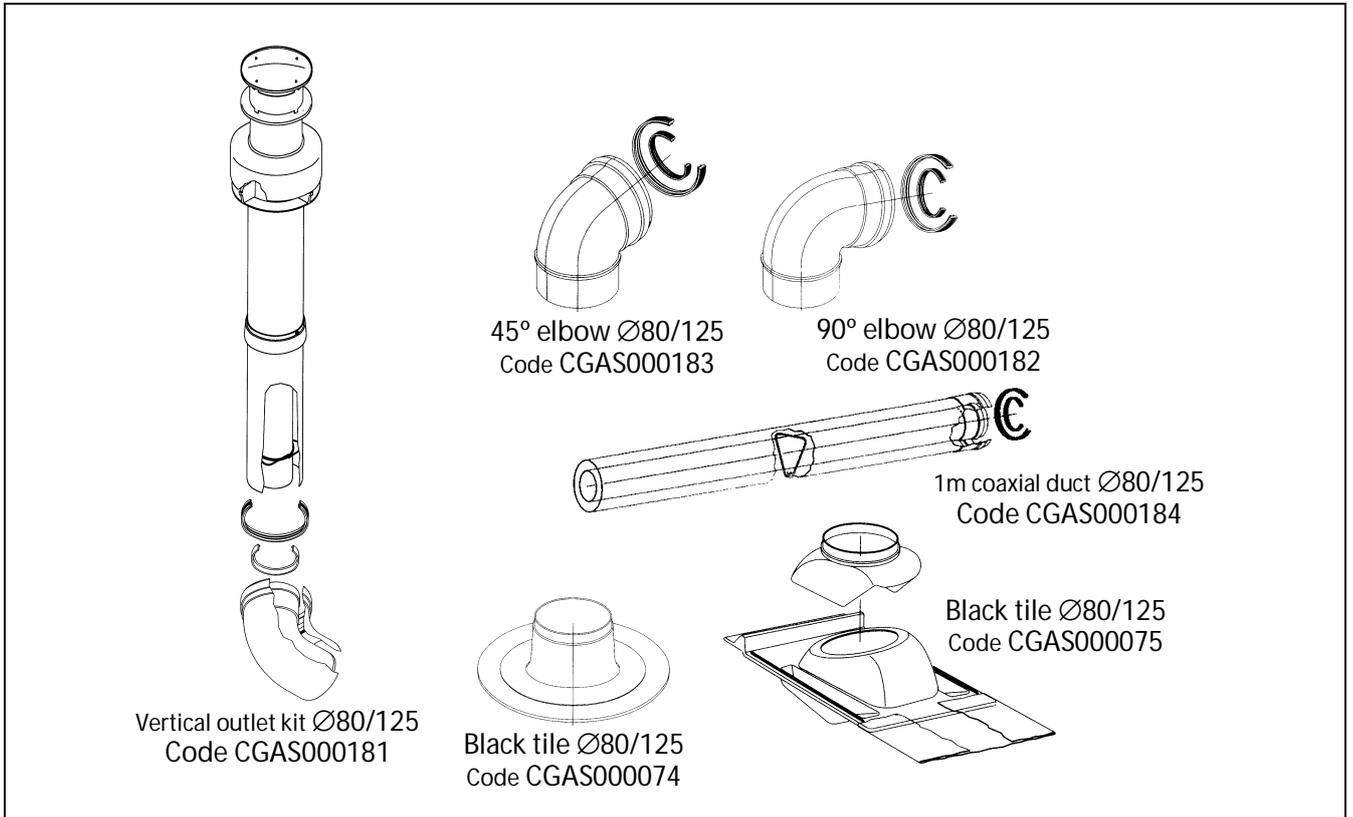


# Evolution Solar HDX

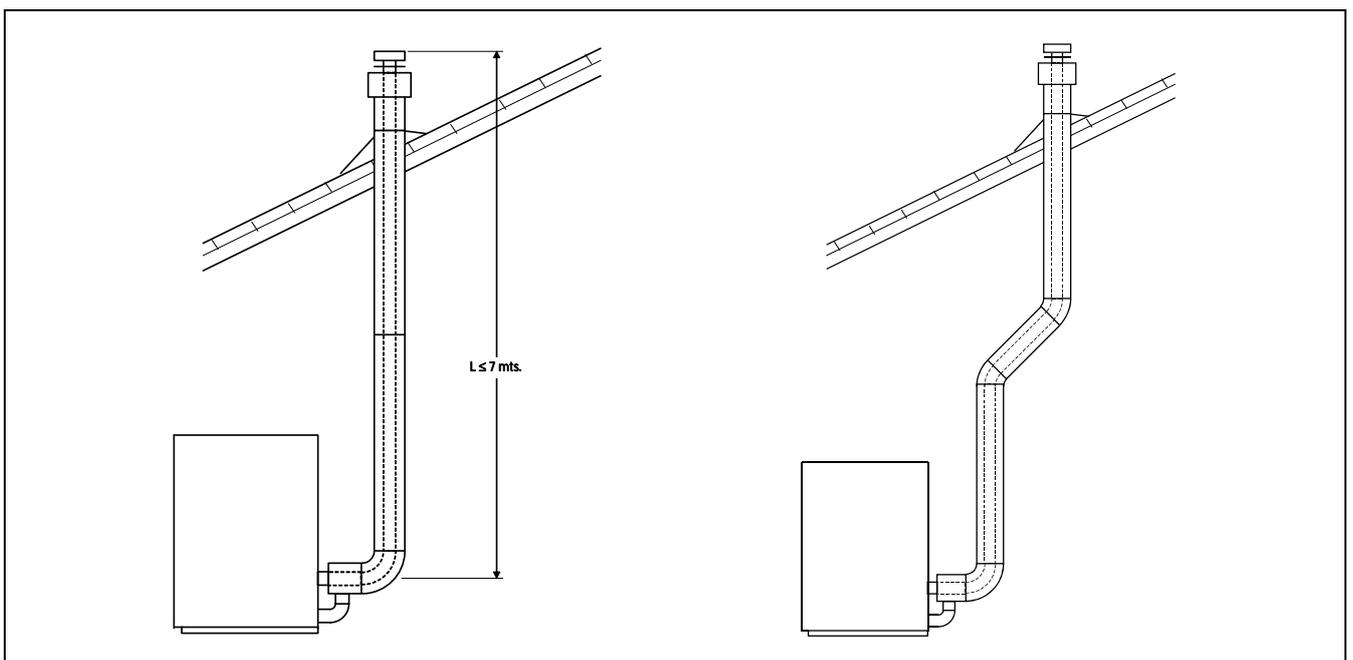
## 4.4 Ø80-125 concentric vertical duct for combustion product evacuation and air intake (type C<sub>33</sub>)

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:



## 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 domestic hot water tank

The hot water tanks must be filled before filling the heating circuit. Open the flow of domestic hot water to the hot water tank, and turn on a hot water tap in the installation. When the tap begins to run freely, turn it off, as this means the hot water tank is full.

### 5.3 Filling 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 caps **(16)** and **(11)** 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 HDX** boilers have a pressure sensor **(13)** 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.**

### 5.4 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.

### 5.5 Installation delivery

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.

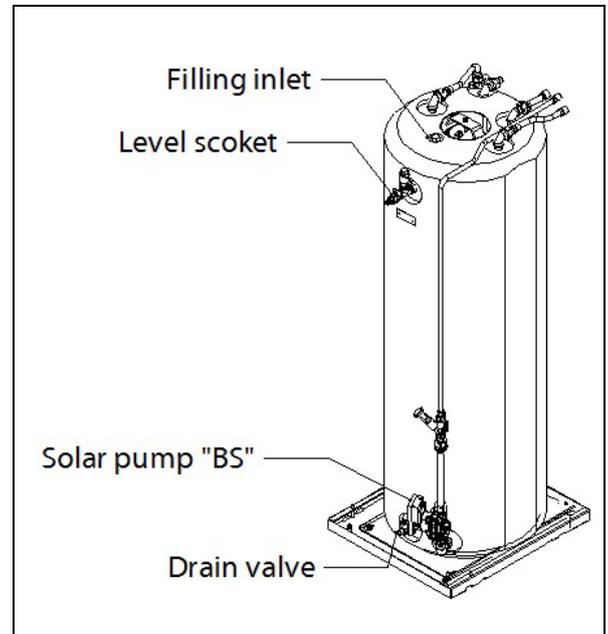
# Evolution Solar HDX

## 5.6 Filling the solar circuit

The **Evolution Solar HDX** 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 with a hose.
- Connect a hose to the level socket and lead it to a container.
- Open the level socket valve.
- Turn on the water supply.
- When liquid begins to come out of the level socket, cut off the water supply to the filling inlet.
- Close the level socket 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 15 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.**

## 5.7 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 HDX** boiler allows the solar pumps to be activated using the "hn" setting on the digital display. To do this, use the MODE touch button to browse to this setting and the On touch button (25) to access it. When you have accessed the setting, use the touch button on the right of the display (27) to change the value, enabling the solar pumps with the following values selected:

- "0" – Automatic functioning mode (default value).
- "1" – Solar pump is switched off.
- "2" – The solar pump is activated.
- "3" – Solar pump speed activated defined "US" parameter.

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 "HN" 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 "HN" 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.

## 5.8 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.

## 5.9 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 "2" on the "hn" 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.

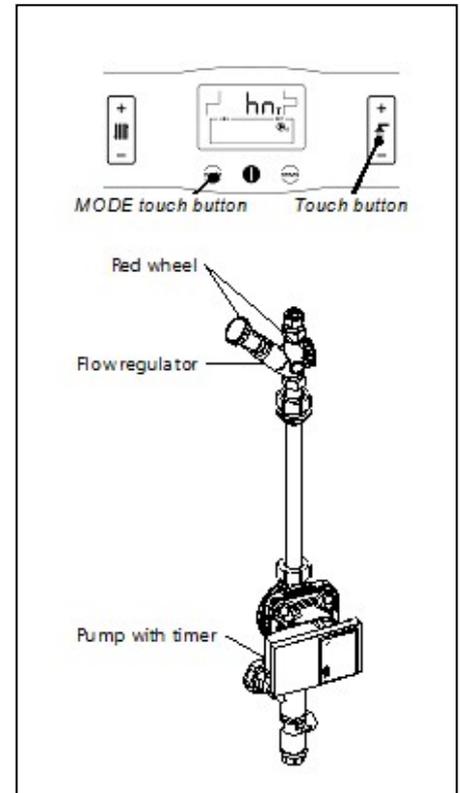
# Evolution Solar HDX

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

## 5.10 Adjusting the solar circuit flow

For the solar circuit to function correctly it is essential to regulate its flow. The **Evolution Solar HDX** 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:

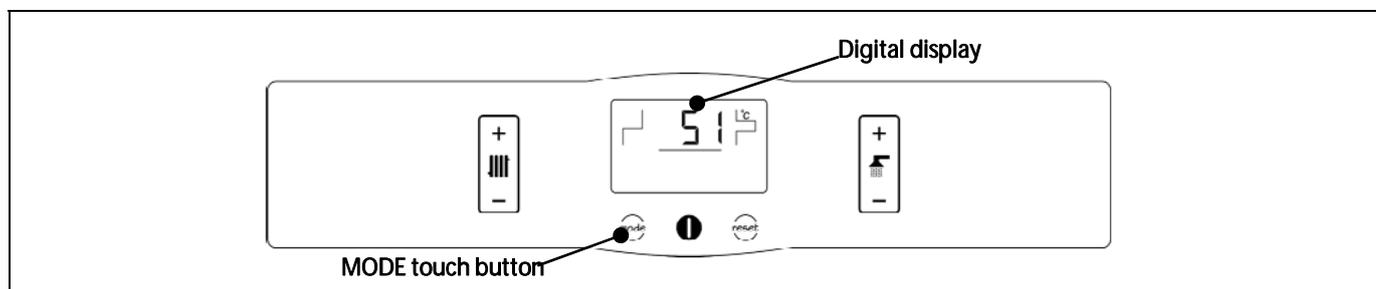
- 1 - Select the "hr" setting on the display using the MODE touch button. When you have selected it, access it using the On touch button.
- 2 - Select 2 on the touch button on the right of the display (27). The two pumps will start up.
- 3 - Let the pumps run for at least 15 minutes, to ensure the flow has stabilised.
- 4 - Repeat step 1 to switch off the solar pump with a timer, selecting 3 on the "hr" 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 "hr" 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.

## 6 DIGITAL DISPLAY:

The **Evolution** boiler is electronic and includes a digital display **(22)** 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.

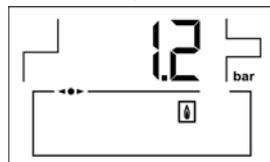
The following table shows the different display options:

	Standby. The actual boiler temperature is shown.
	Actual boiler temperature.
	Actual temperature of the hot water stored in the back-up hot water tank.
	Actual flow temperature of the underfloor heating installation (option SRX2/EV only)
	Boiler setpoint temperature selected using the corresponding touch button <b>(23)</b> .
	Underfloor heating installation flow setpoint temperature selected using the corresponding touch button <b>(23)</b> . (option SRX2/EV only)

# Evolution Solar HDX



DHW setpoint temperature for the back-up hot water tank selected using the corresponding touch button **(27)**.



Actual boiler pressure, measured by the Pressure Sensor **(13)**.



Actual Solar Collector temperature.



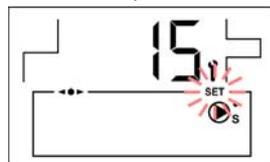
Actual temperature of the domestic hot water stored in the solar accumulator.



Maximum desired setpoint temperature for the hot water stored in the solar accumulator.



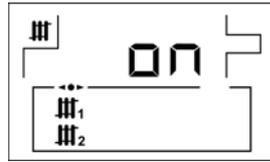
Manual solar pump operation setting. This setting should only be changed by qualified personnel during start-up of the boiler's solar circuit.



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.



The solar pump speed BS.



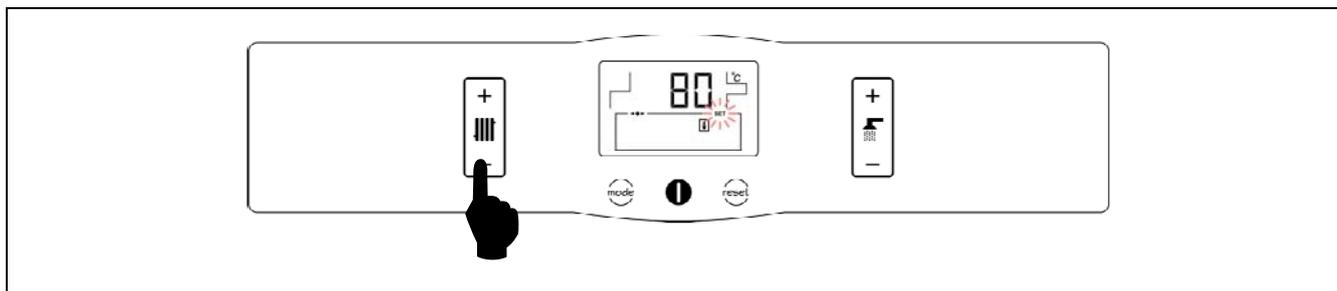
Indication of the heating demand status of each circuit connected to the boiler.



The desired display contrast can be adjusted using the touch button on the right of the display **(27)**.

## 7 TEMPERATURE SELECTION

### 7.1 Selecting the boiler set point temperature



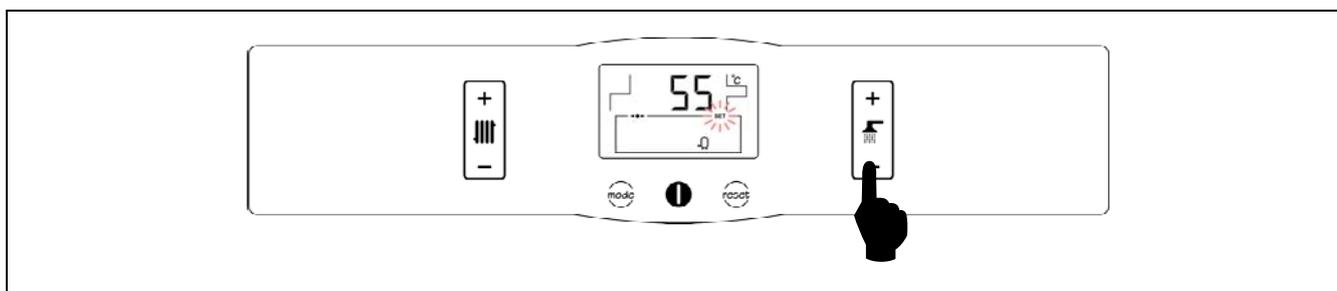
The desired boiler operating temperature is selected using the touch button, as shown in the figure. To select the desired temperature, touch the "+" or "-" symbols to increase or decrease the temperature. When the temperature has been selected, the display will return to standby mode after a few seconds.

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.

### 7.2 Selecting the the DHW setpoint temperature of the back-up hot water tank



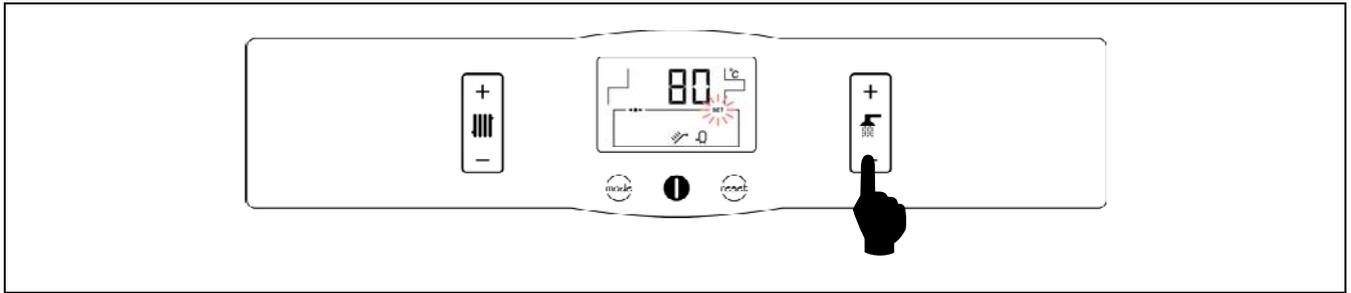
The desired DHW temperature is selected using the touch button, as shown in the figure. To select the desired temperature, touch the "+" or "-" symbols to increase or decrease the temperature. When the temperature has been selected, the display will return to standby mode after a few seconds. The DHW setpoint temperature range permitted is OFF and 15 - 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 the boiler will only produce DHW through its solar heating system.

# Evolution Solar HDX

## 7.3 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.

## 7.4 Selecting the underfloor heating flow setpoint temperature (with SRX2/EV kit option)



If the boiler is supplied with an optional SRX2/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.

## 8 OPERATION

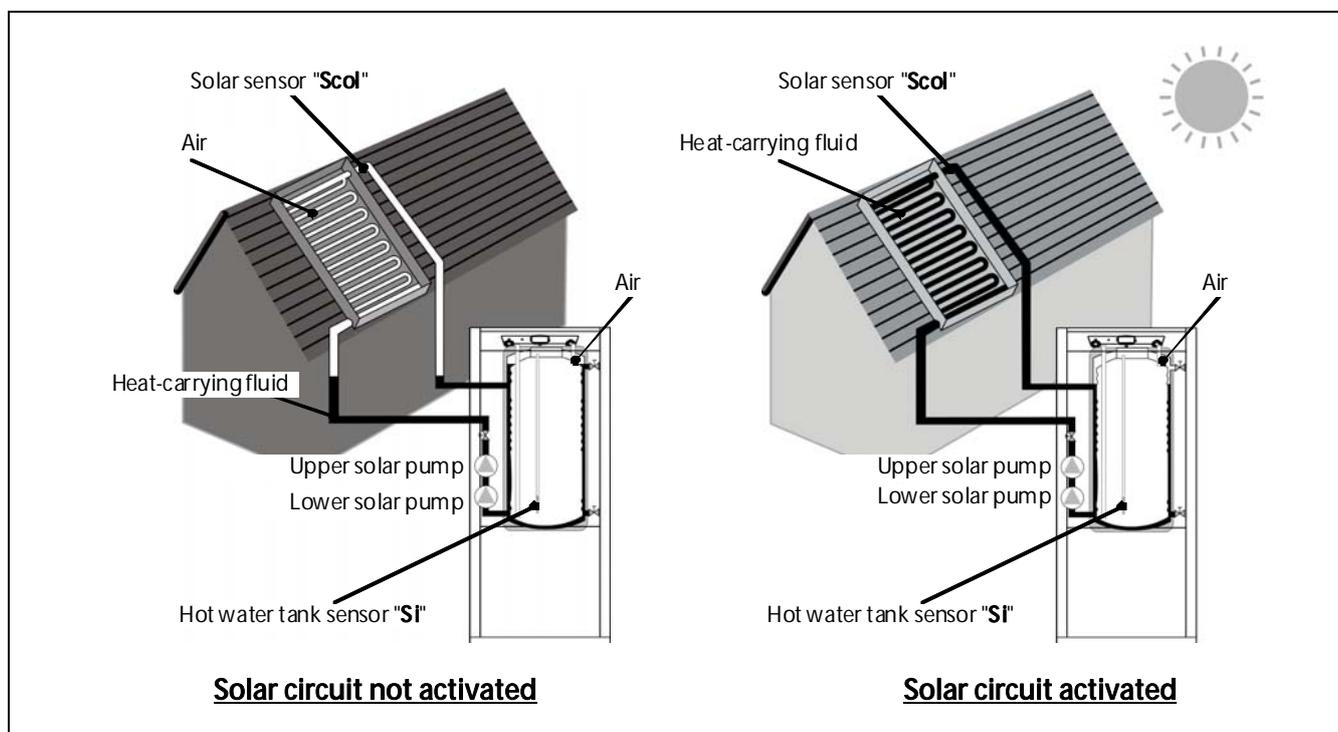
The **Evolution Solar HDX** boiler is designed to heat a heating installation and provide domestic hot water by solar collection. Optionally, a second heating circuit, heating circuit 2, may be connected to the installation to improve its performance.

The boiler also includes a DHW collecting and storage system whereby installation of the solar collectors supplied with the boiler optimises the use of the solar energy in the collection area, for economical, environment-friendly domestic hot water production. The solar functioning principle consists of heating the solar circuit liquid in the solar collectors and then exchanging 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.

### 8.1 Solar circuit functioning

The **Evolution Solar HDX** boiler is equipped with a circuit, separate from the heating circuit, for the producing DHW using solar energy. This is called the "Solar Circuit". This circuit basically consists of a dual-chamber DHW tank, for exchanging heat with the domestic hot water, two solar circulation pumps, a flow regulator and one or two solar collectors, for exchanging heat 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).



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.

## Evolution Solar HDX

Also, the "*Maximum 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.

### 8.2 Heating Function

In this mode, 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 and the heating pump of circuit 1 (**BC<sub>1</sub>**) will begin to function until the installation reaches the selected boiler setpoint temperature (or the temperature on room thermostat, 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.

If the DHW temperature in the boiler's integrated back-up hot water tank is lower than the DHW setpoint temperature selected, the heating function will cut out and priority will be given to domestic hot water production, starting up the hot water tank feed pump.

The boiler heating function can be totally disabled (**Summer** mode) by selecting "**oFF**" as the boiler setpoint value. In this operating mode, only the DHW production function will remain enabled, providing there is a DHW tank connected to the boiler.

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

### 8.3 Domestic Hot Water production function of tank

In this mode to activate this mode, select the desired DHW setpoint temperature (see "*Selecting the DHW setpoint temperature*"). The burner will ignite and the DHW pump. When the tank reaches the setpoint temperature selected it was ready to heat the heating circuit if it was on.

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

## 8.4 Heating circuit 2 functioning (Optional)

All the models in the **Evolution Solar HDX** 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 (**BC<sub>2</sub>**) 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.

## 8.5 Functioning with an SRX2/EV Underfloor Heating Kit (Optional)

The **Evolution Solar HDX** boiler may optionally be supplied fitted with an SRX2/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 SRX2/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.

# Evolution Solar HDX

## 9 ADDITIONAL FUNCTIONS

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

### 9.1 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.

### 9.2 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.

### 9.3 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.

### 9.4 Anti-legionella function (optional)

This optional function prevents the bacteria causing legionnaire's disease from proliferating in the hot water accumulated in the hot water tank. Every 7 days, the temperature of the water in the hot water tank is raised to 70 °C to kill any such bacteria. This function will only be enabled if the boiler is left switched on.

The boiler is supplied with this function disabled. To enable it, carefully read the "Installation Instructions" section. We recommend that the operation for enabling this function is carried out by qualified personnel.

### 9.5 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 (**13**), 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.

### 9.6 Room thermostat connection

The boiler has two terminal strips, **TA<sub>1</sub>** and **TA<sub>2</sub>**, 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 **TA<sub>1</sub>**, and to connect **TA<sub>2</sub>**, 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.

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

The **Evolution Solar HDX** boiler's electronic control allows the oil-fired boiler's function as an auxiliary power source backing the solar energy to be disconnected, 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*").

### 9.8 Disconnecting the solar circuit

The **Evolution Solar HDX** 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 storage heating and hot water boiler, and will not use the solar energy from the site where it is installed.

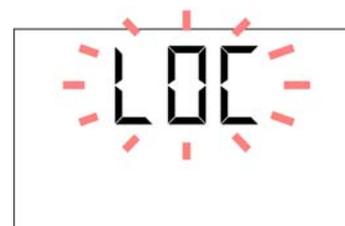
To disconnect the solar circuit, firstly disconnect the "Si" and "Scol" sensors from the sensor terminal strip **J3** ("Si": terminals 19-21, and "Scol": terminals 17-18), and fit electrical bridges in their place, shorting the inputs of these sensors (see "*Electrical Connection Diagram*").

### 9.9 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.



## 10 E20 REMOTE CONTROL (OPTIONAL)

A remote control (E20) can optionally be supplied together with the **Evolution Solar HDX** boiler. This remote control can be used to fully operate the boiler from any room in the home in which it is installed. The E20 remote control governs the settings of heating circuit 1 and the installation's domestic hot water production (where the case may be).

This remote control allows the hours of home comfort to be programmed for heating circuit 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 DHW and heating setpoint temperatures at any time, and for viewing the different boiler operation settings. 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. When this option is installed, the remote control can adjust the home comfort level (circuit 1) according to the weather conditions at each particular time, optimising fuel consumption and heating comfort in the home.

# Evolution Solar HDX

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 E20 remote control's different operating modes and options.

## 10.1 Functioning without an outdoor sensor

### Conventional heating installation (direct circuit)

The maximum temperature for heating circuit 1, the scheduled 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 1 depending on the heating times and room temperatures programmed.

### Heating installation with an SRX2/EV underfloor heating kit (mixed circuit)

If the boiler has an SRX2/EV Underfloor Heating Kit installed on circuit 1, the underfloor heating circuit is adjusted and controlled from the boiler control panel (see "*Functioning with an underfloor heating kit*").

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

## 10.2 Functioning with an external sensor (Optional)

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

### Conventional heating installation (direct circuit)

The maximum temperature, an operating curve for heating circuit 1 (see instructions enclosed with the E20 remote control) and the desired heating times and room temperatures can all be selected on the 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 (setting HEATSLOPE 1 on the E20), switching the heating on and off in accordance with the heating times and the room temperatures programmed.

### Heating installation with an SRX2/EV underfloor heating kit (mixed circuit)

If the boiler has an SRX2/EV underfloor heating kit installed on circuit 1 and the control of this kit is activated on the E20 remote control using the HEATSLOPE 2 setting (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 HEATSLOPE 2 setting on the E20 remote control). For mixed underfloor heating circuits, we recommend selecting operating curves of less than 0.8.

The boiler setpoint temperature will be fixed at 75°C and can be changed using the boiler control panel. This setpoint temperature can be changed 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.

The E20 remote control can also be used to select the maximum flow temperature for heating circuit 1 and to programme the desired heating times and room temperature. The E20 remote control will switch the heating function of this circuit 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 NO HIGHER THAN 45 °C, to protect the underfloor heating installation from overheating.

### 10.3 DHW mode functioning

The E20 remote control can be used to select up to two DHW temperatures and the desired DHW production times. The E20 remote control regulates the DHW tank temperature at each particular time, and enables or disables the DHW function according to the times scheduled.

The E20 remote control also has an option for enabling a function to protect against legionella bacteria (see instructions enclosed with the E20 remote control).

### 10.4 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 1 and the DHW 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).

## 11 SHUTTING DOWN THE BOILER

To switch off the boiler, place your finger on the power touch button **(25)** 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.

## 12 DRAINING THE BOILER

The water is drained from the boiler by opening the air drain valve **(1)** 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.

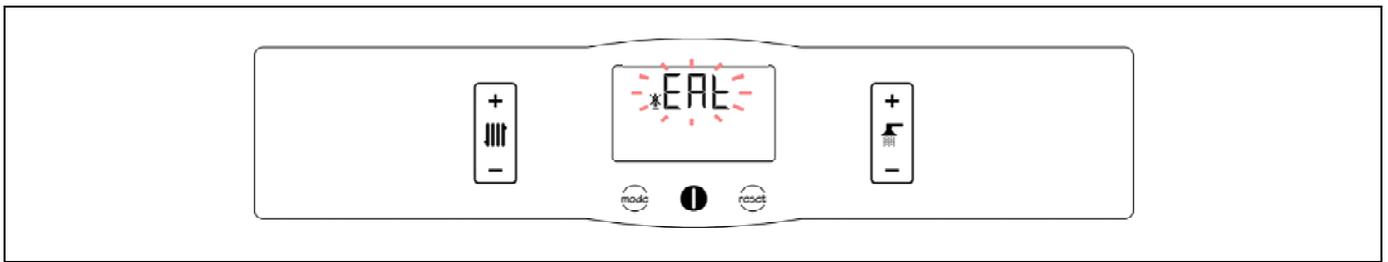
## 13 DRAINING THE SOLAR CIRCUIT

If you need to drain the solar circuit, connect a hose to the solar accumulator drain valve **(2)** 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.

## 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.

# Evolution Solar HDX



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

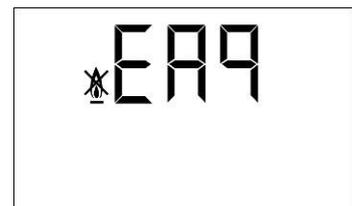
When this cut-out occurs, the alarm code **"EAt"** (temperature alarm) will begin to flash on the digital display (19). The burner will switch off and stop heating the installation.



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 (19). The burner will switch off and stop heating the installation.



This occurs as a result of an anomaly in the burner (18) 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 (19). 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 (19).

## 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

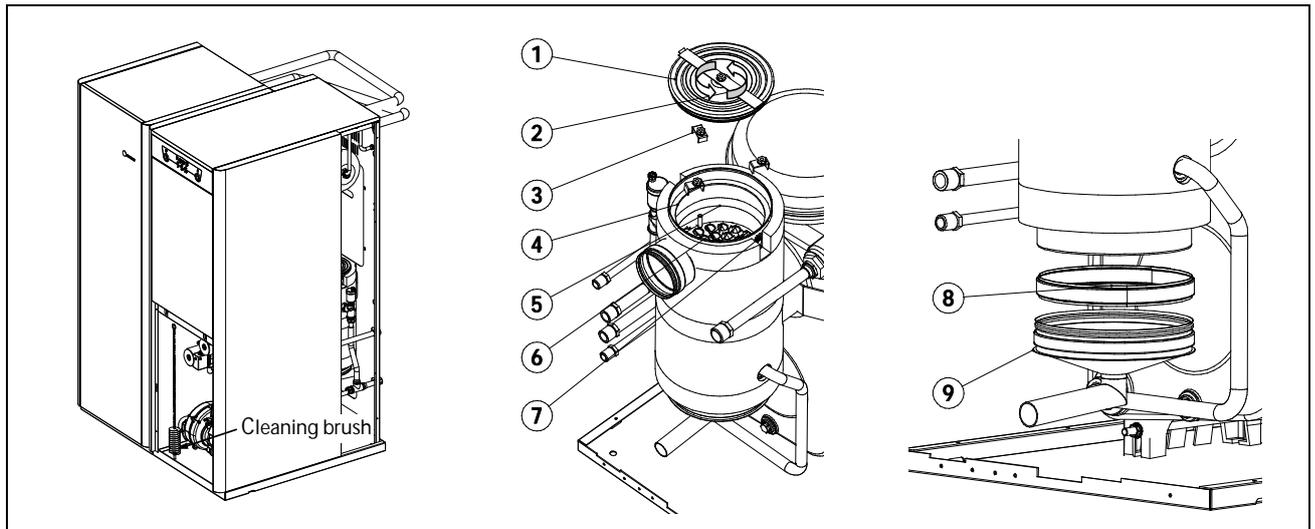
- Open and remove the outer door of the boiler.
- Remove the burner **(21)** by unscrewing the fixing nut on the top of the burner.
- Remove the combustion chamber door and the exhaustion duct cover, unscrewing the six fixing nuts beside them.
- Clean the exhaustion ducts on the cast iron body, using 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.

# Evolution Solar HDX

- 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.



## Anti-frost protection

The **Evolution Solar HDX** 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.

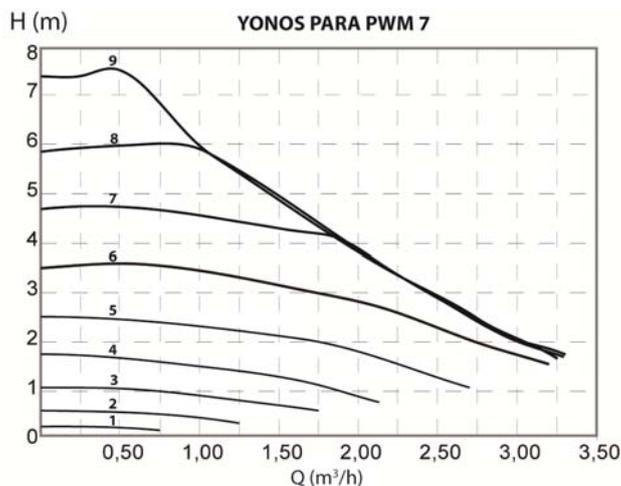
You should check that the heat-carrying fluid in the solar circuit is in good condition. Check that the proportions of the mix of water and inhibitor liquid are correct (70/30).

The heat-carrying fluid needs to be renewed every 3 years, with a minimum concentration of 30% of inhibitor liquid (minimum 15 litres).

## 16 CIRCULATION PUMP FLOW CURVES

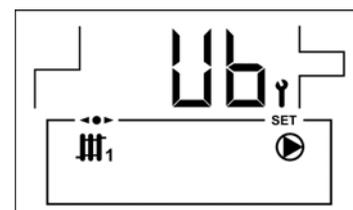
The following graphs may obtain hidromotriz pressure available at the facility off the boiler, considering the pressure loss of the boiler and the performance curves of the pump.

### 16.1 Characteristic heating pump



### 16.2 Regulation pump heating

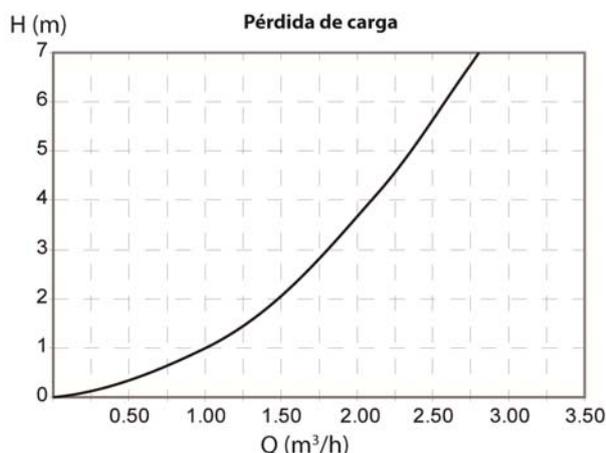
To regulate the speed of the circulation pump BC1 by navigating to the 'Ub' parameter and touching on the touch button (28) to access it touch MODE button. Once inside the setting, using the jog dial on the right side of the display (24) the value is changed. After selecting the desired speed, to touch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



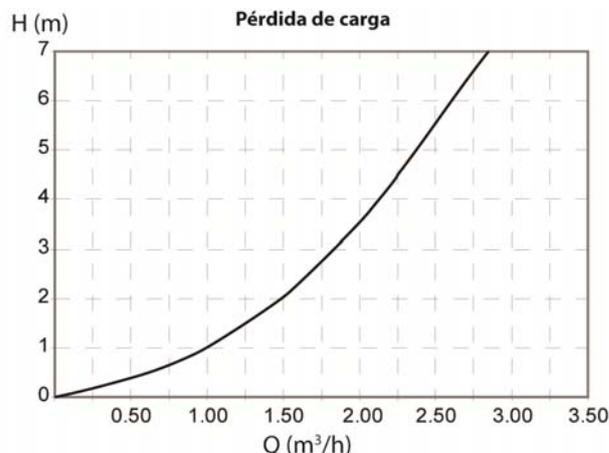
**ATTENTION:** Any interference in the operation and installation of the heating circuit must be done by suitably qualified personnel, always respecting current legislation and installation and safety standards, both national and local level.

### 16.3 Pressure drop

Evolution Solar 30 HDX:



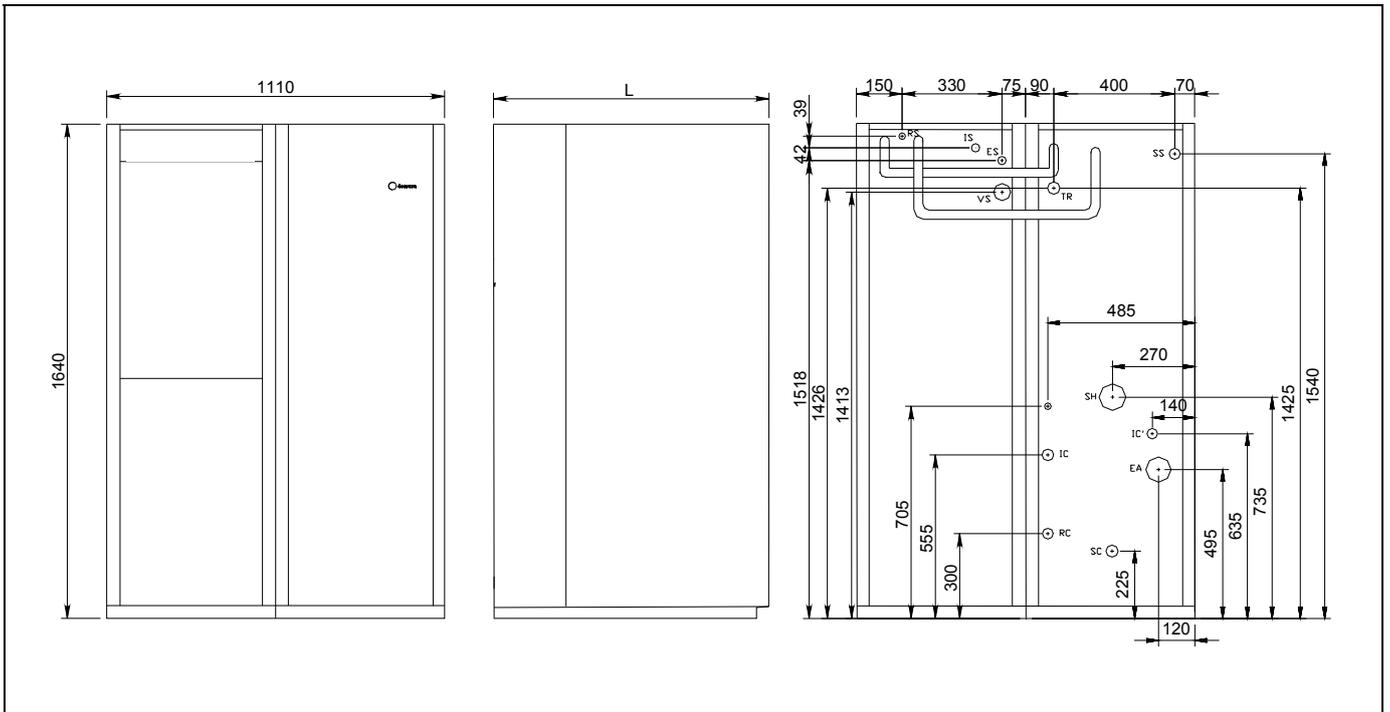
Evolution Solar 40 HDX:



# Evolution Solar HDX

## 17 DIAGRAMS AND MEASUREMENTS

### 17.1 Evolution Solar 30 HDX



**IC:** Heating Flow.

**IC':** Optional Heating Flow.

**RC:** Heating return.

**EAS:** Domestic cold water inlet.

**IAS:** Domestic hot water inlet.

**SC:** Condensation outlet, 1" H.

**ES:** Solar outlet.

**RS:** Solar return.

**TR:** Recirculation socket.

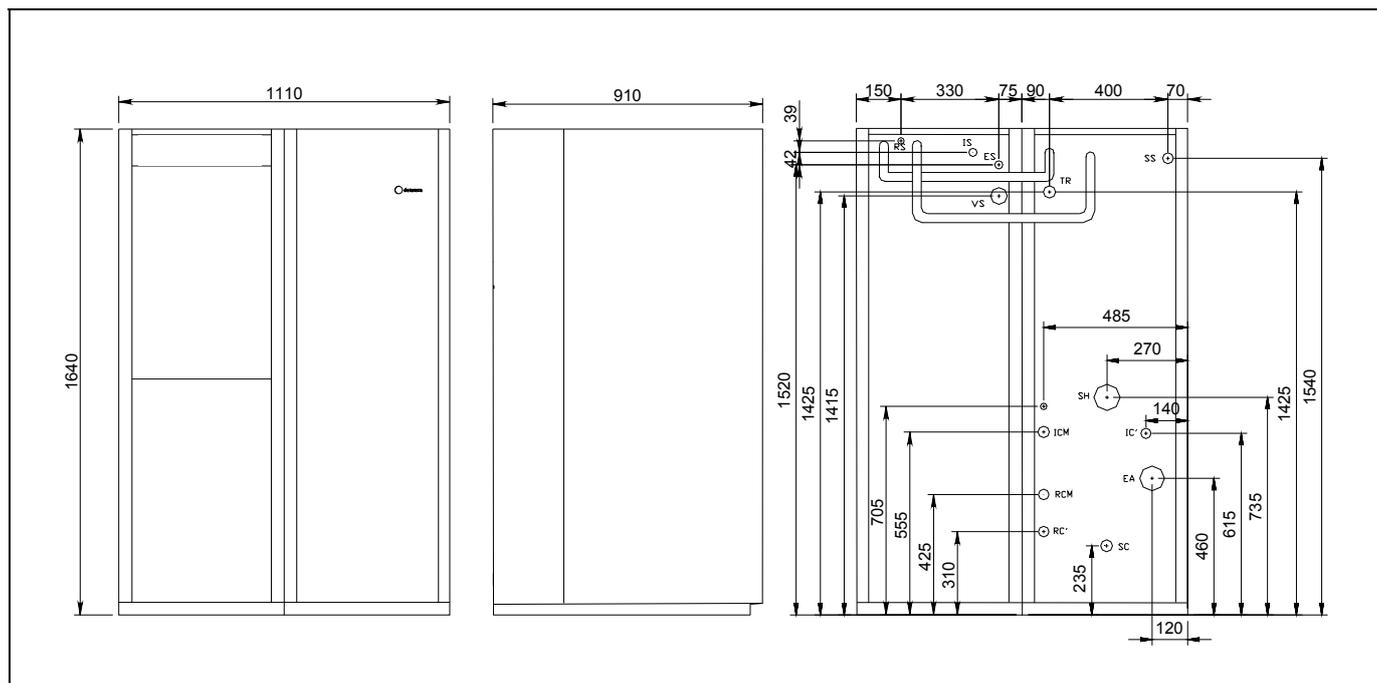
**SH:** Fume exhaust duct, Ø100.

**EA:** Combustion air intake, Ø80.

**VS:** Domestic hot water safety valve.

MODEL	IC/IC' RC	EAS IAS	ES RS	DIM. L
EV SOLAR 30 HDX	3/4"M	3/4"M	1/2"M	910
EV SOLAR 40 HDX	1"M			960

## 17.2 Evolution Solar 30 HDX with SRX2 / EV underfloor heating kit



**IC:** Heating Flow.

**IC':** Optional Heating Flow.

**RC:** Heating return.

**EAS:** Domestic cold water inlet.

**IAS:** Domestic hot water inlet.

**SC:** Condensation outlet, 1" H.

**VS:** Domestic hot water safety valve.

**ICM:** Mixed Heating Flow.

**RCM:** Mixed Return Flow.

**ES:** Solar outlet.

**RS:** Solar return.

**SH:** Fume exhaust duct, Ø100.

**EA:** Combustion air intake Ø80.

**TR:** Recirculation socket.

MODEL	IC/IC' RC	ICM/RC M	EAS IAS	ES RS	DIM L
<b>EV SOLAR 30 HDX + SR</b>	3/4"M	3/4"M	3/4"M	1/2"M	910
<b>EV SOLAR 40 HDX + SR</b>	1"M	1"M			960

# Evolution Solar HDX

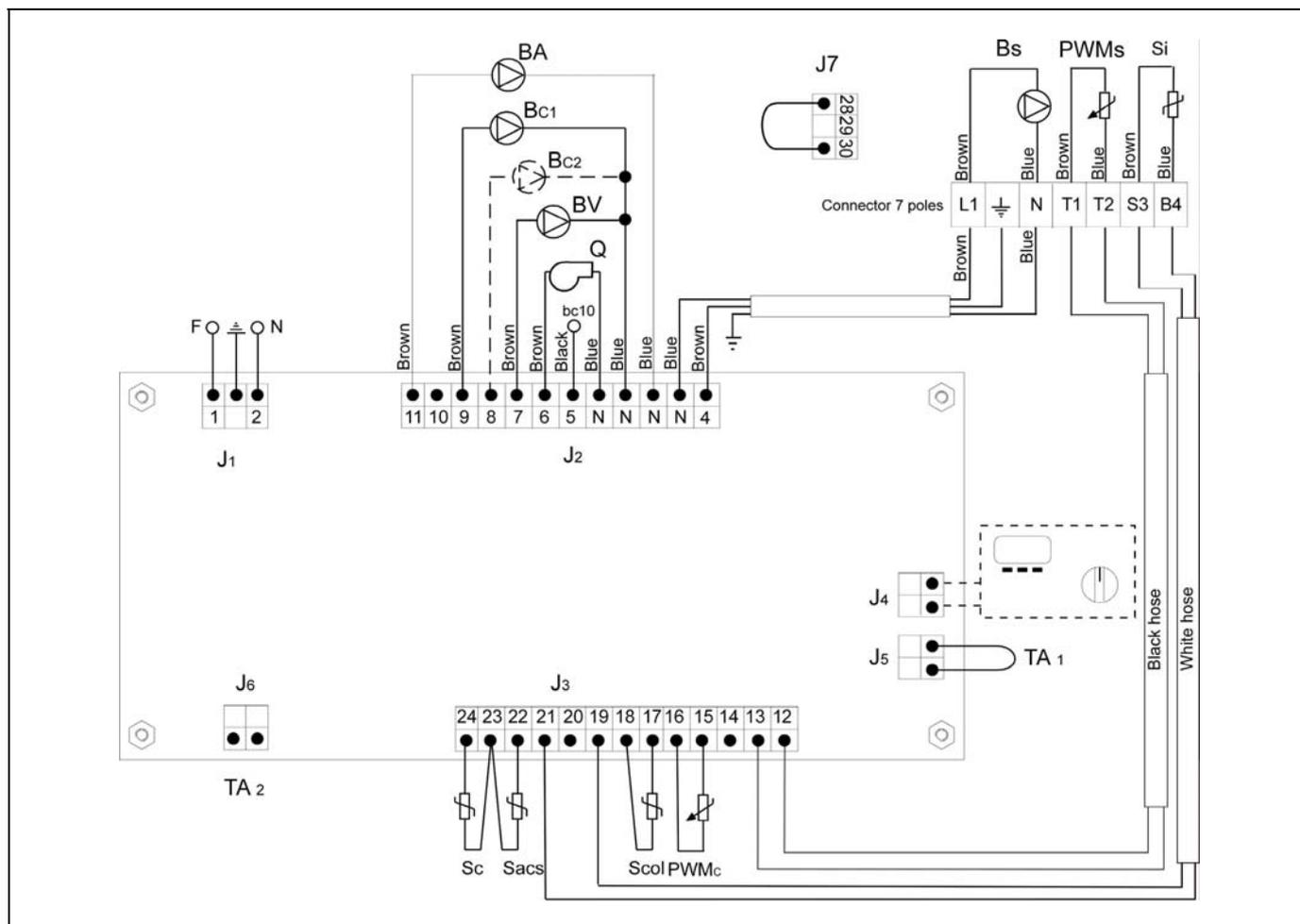
## 18 TECHNICAL CHARACTERISTICS

EVOLUTION SOLAR HDX		30 HDX	40 HDX	
Boiler type	-	condensación Calef. y ACS acumulación		
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	$\eta_s$ %	91	92	
Useful efficiency	$\eta_4$	% (PCI)	97,96	97,29
		% (PCS)	92,38	91,74
Useful efficiency (30%)	$\eta_1$	% (PCI)	103,45	104,15
		% (PCS)	97,55	98,21
Auxiliary electricity consumption at full load	$e_{l_{max}}$ kW	0,226		
Auxiliary electricity consumption at part load	$e_{l_{min}}$ 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	-	XXL		
Water heating energy efficiency	$\eta_{wh}$ %	68	67	
Daily electricity consumption	$Q_{elec}$ kWh	0,533	0,402	
Daily fuel consumption	$Q_{fuel}$ kWh	36,709	37,890	
Hot water tank capacity	Lts	130	130	
Solar accumulator capacity	Lts	250	250	
D.H.W. production in 10 min. $\Delta t=30^\circ\text{C}$ without solar energy input	Lts	321	321	
D.H.W. production in 1 hour $\Delta t=30^\circ\text{C}$ without solar energy input	Lts	846	846	
DHW recover time from 35 to 58 °C	min	8		
Heating temperature range	°C	OFF, 30-85		
DHW temperature range	°C	OFF, 15-65		
Solar accumulator temperature adjustment	°C	10-80		
Heating security maximum temperature	°C	110		
Heating security maximum pressure	bar	3		
DHW security maximum pressure	bar	7		
Heating expansion vessel capacity	Lts	8	12	
Boiler water capacity	Lts	19,2	23,2	
Water pressure drop	mbar	163	272	
Flue gases temperature	°C	67	83	
Flue gases volume	$\text{m}^3$	0,114	0,175	
Maximum flue gases flow	Kg/s	0,0132	0,0186	
Flue gases pressure drop	mbar	0,20	0,21	
Combustion chamber length	mm	300	400	
Combustion chamber type	-	húmeda + 3 paso de humos		
Burner type	-	ON/OFF		
Electric power	-	~220-230 V - 50 Hz - 200 W		
Weight	Kg	421	448	

## 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 in the diagram below:

### 19.1 Evolution Solar 30 HDX



**F:** Phase.

**N:** Neutral.

**BA:** Solar capture pump.

**BC<sub>1</sub>:** Heating pump, circuit n° 1.

**BC<sub>2</sub>:** Heating pump, circuit n° 2.

**BV:** Domestic hot water pump.

**Q:** Burner.

**bc10:** Burner terminal n° 10.

**BS:** Solar pump.

**E20:** E20 remote control (optional).

**TA<sub>1</sub>:** Room thermostat, circuit n° 1.

**TA<sub>2</sub>:** Room thermostat, circuit n° 2.

**PWMc:** Heating Cable PWM.

**PWMs:** PWM Solar Cable.

**SC:** Boiler sensor.

**Sacs:** Domestic hot water sensor.

**Si:** Lower solar accumulator sensor.

**Scol:** Solar collector sensor.

**J<sub>1</sub>:** Supply connector.

**J<sub>2</sub>:** Component connector.

**J<sub>3</sub>:** Sensor connector.

**J<sub>4</sub>:** Remote control connector.

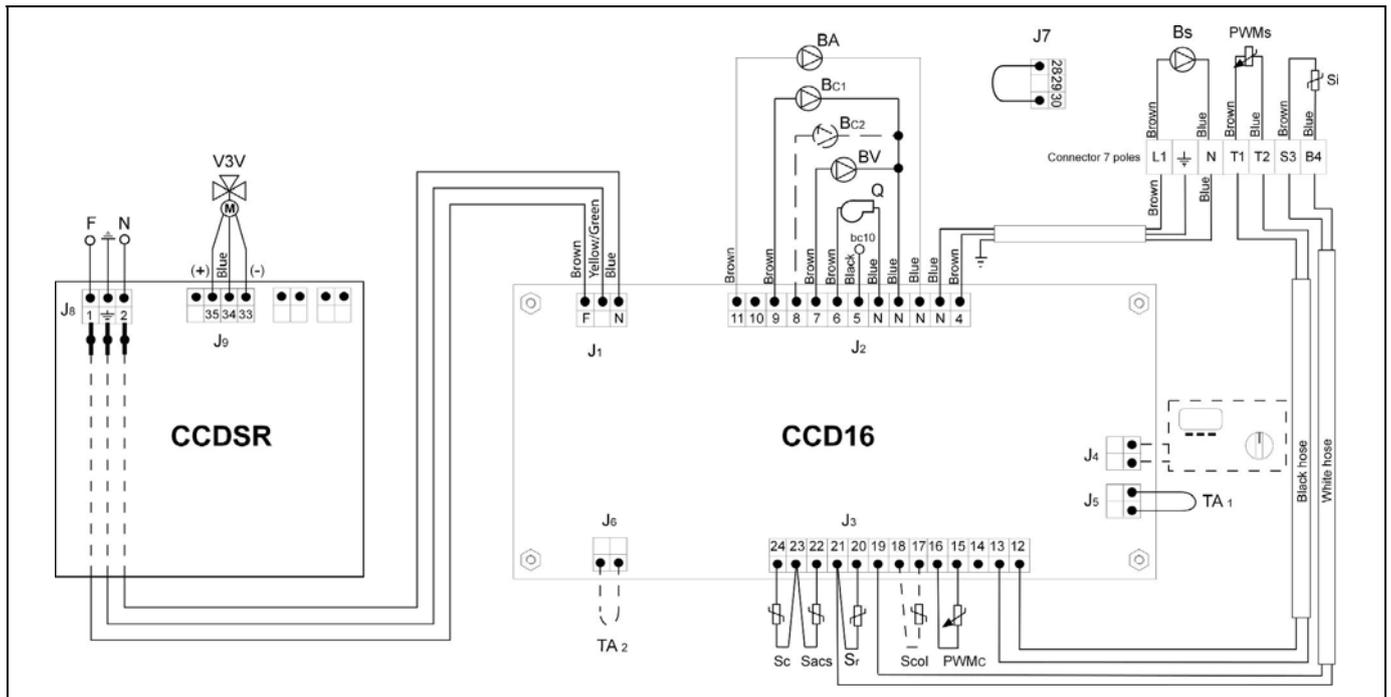
**J<sub>5</sub>:** Room thermostat connector 1.

**J<sub>6</sub>:** Room thermostat connector 2.

**J<sub>7</sub>:** Phone relay connector.

# Evolution Solar HDX

## 19.2 Evolution Solar 30 HDX with SRX2 / EV underfloor heating kit



**F:** Phase.

**N:** Neutral.

**BA:** Solar capture pump.

**BC<sub>1</sub>:** Heating pump, circuit n° 1.

**BC<sub>2</sub>:** Heating pump, circuit n° 2.

**BV:** Domestic hot water pump.

**M:** 3-way valve motor.

**V3V:** Floor heating mixing valve.

**Q:** Burner.

**bc10:** Burner terminal n° 10.

**BS:** Solar pump.

**E20:** E20 remote control (optional).

**TA<sub>1</sub>:** Room thermostat, circuit n° 1.

**TA<sub>2</sub>:** Room thermostat, circuit n° 2.

**SC:** Boiler sensor.

**Sacs:** Domestic hot water sensor.

**Sr:** Underfloor heating sensor.

**Si:** Lower solar accumulator sensor.

**Scol:** Solar collector sensor.

**J<sub>1</sub>:** Supply connector.

**J<sub>2</sub>:** Component connector.

**J<sub>3</sub>:** Sensor connector.

**J<sub>4</sub>:** Remote control connector.

**J<sub>5</sub>:** Room thermostat connector 1.

**J<sub>6</sub>:** Room thermostat connector 2.

**J<sub>7</sub>:** Phone relay connector.

**J<sub>8</sub>:** Leading power connector.

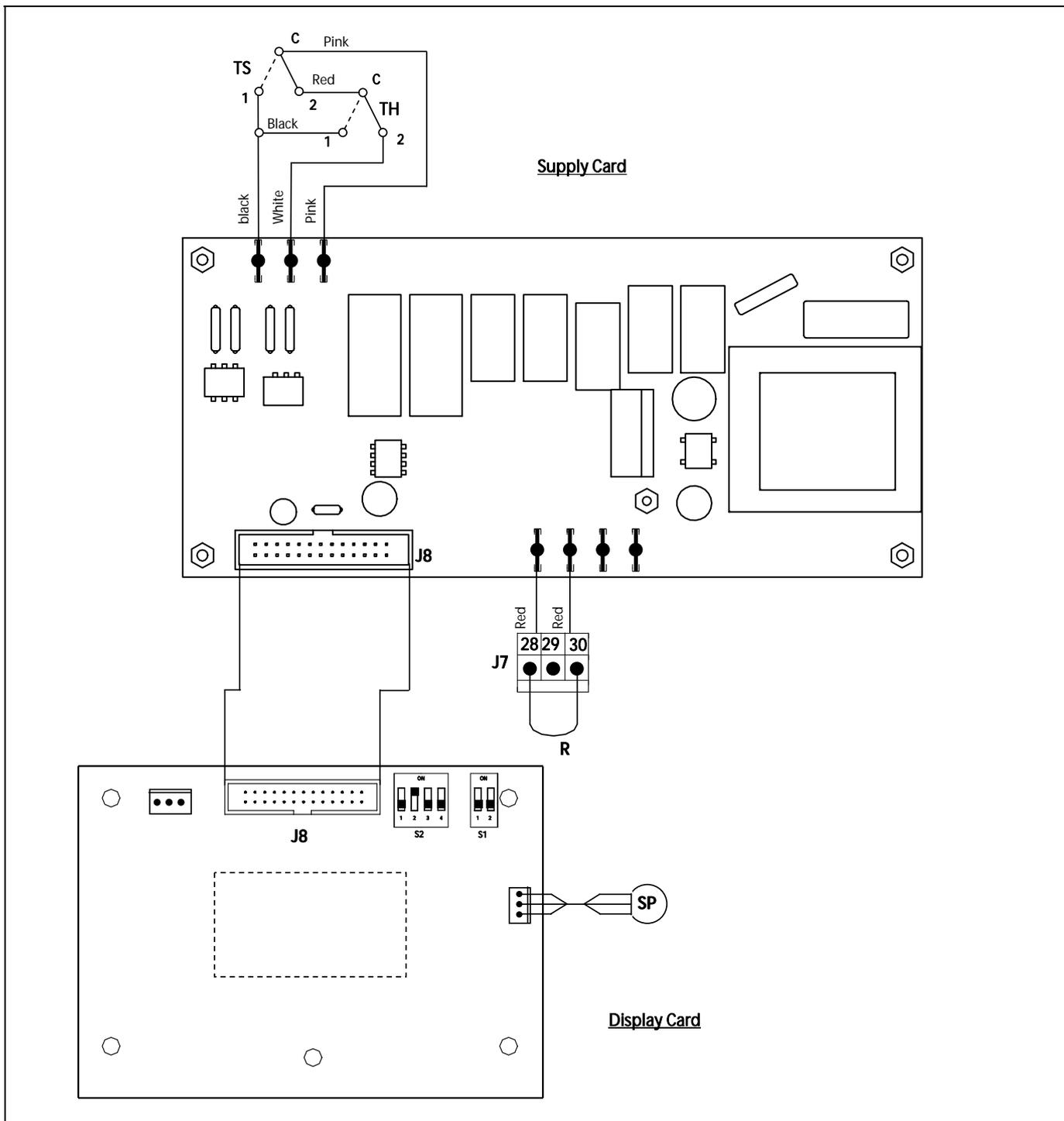
**J<sub>9</sub>:** V3V connector underfloor.

**PWMC:** Heating Cable PWM.

**PWMS:** PWM Solar Cable.

**20 ELECTRICAL DIAGRAM**

**20.1 Evolution Solar HDX**



**TS:** Safety thermostat.

**TH:** Fumes thermostat

**R:** Telephone relay.

**SP:** Pressure sensor.

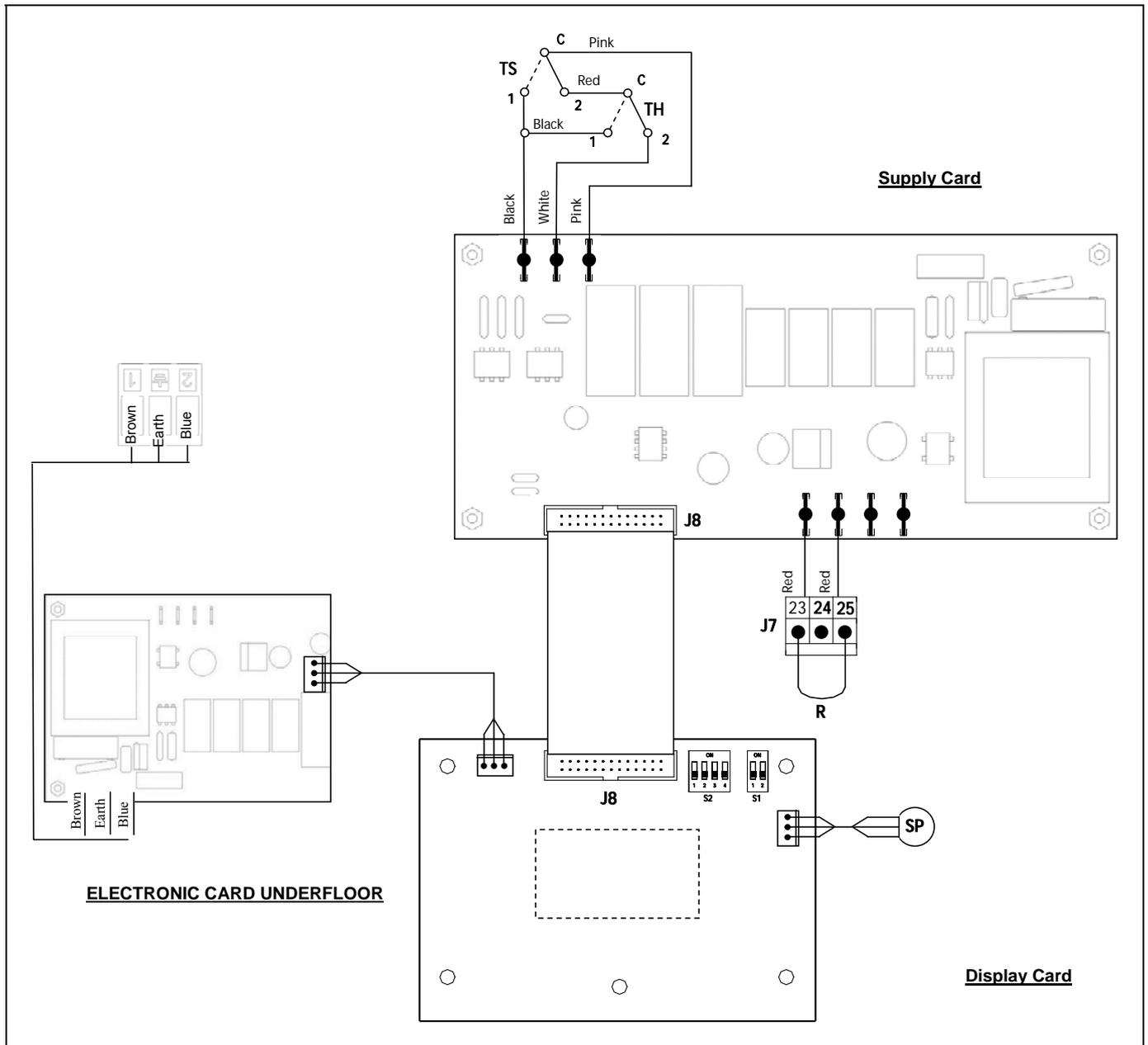
**J7** Telephone relay connector.

**J8:** Communication connector between plates.

**S1,S2:** Boiler model selector.

# Evolution Solar HDX

## 20.2 Evolution Solar HDX Kit floor heating with SRX2 / EV



**TS:** Safety thermostat.

**TH:** Fumes thermostat

**R:** Telephone relay.

**SP:** Pressure sensor.

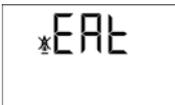
**J7:** Telephone relay connector.

**J8:** Communication connector between plates.

**S1,S2:** Boiler model selector.

## 21 ALARM CODES

The **Evolution Solar HDX** boiler has an electronic circuit which performs continuous self-testing to detect any operating failures in the boiler. When the electronic control detects an operating error, it indicates this by showing an alarm code on the display. The following list describes the possible alarm codes:

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 <b>(21)</b> . This alarm is set off when there is a functioning anomaly in the burner or the fuel installation. 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 tank DHW sensor is damaged or disconnected. Contact your nearest official technical assistance service to have it replaced.
	SRX2/EV flow sensor (only with SRX2/EV kit)	The underfloor heating sensor is damaged or disconnected. Contact your nearest official technical assistance service to have it replaced.
	Pressure sensor	The pressure sensor <b>(13)</b> 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.
	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.

**NOTE:** It will be very useful for the technical assistance service if you can inform them of the alarm code that has appeared on call-out.

# Evolution Solar HDX

## 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.

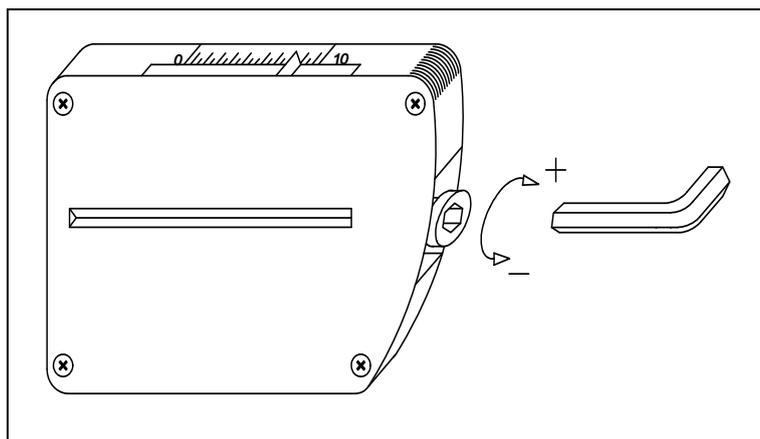
If the shape of the boiler makes it difficult or impossible to observe the flame, the combustion air flow can be regulated by observing the smoke coming out of the flue. If the smoke is dark in colour, more air will need to be provided to the burner, or if it is a very whitish colour, the air in the 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.

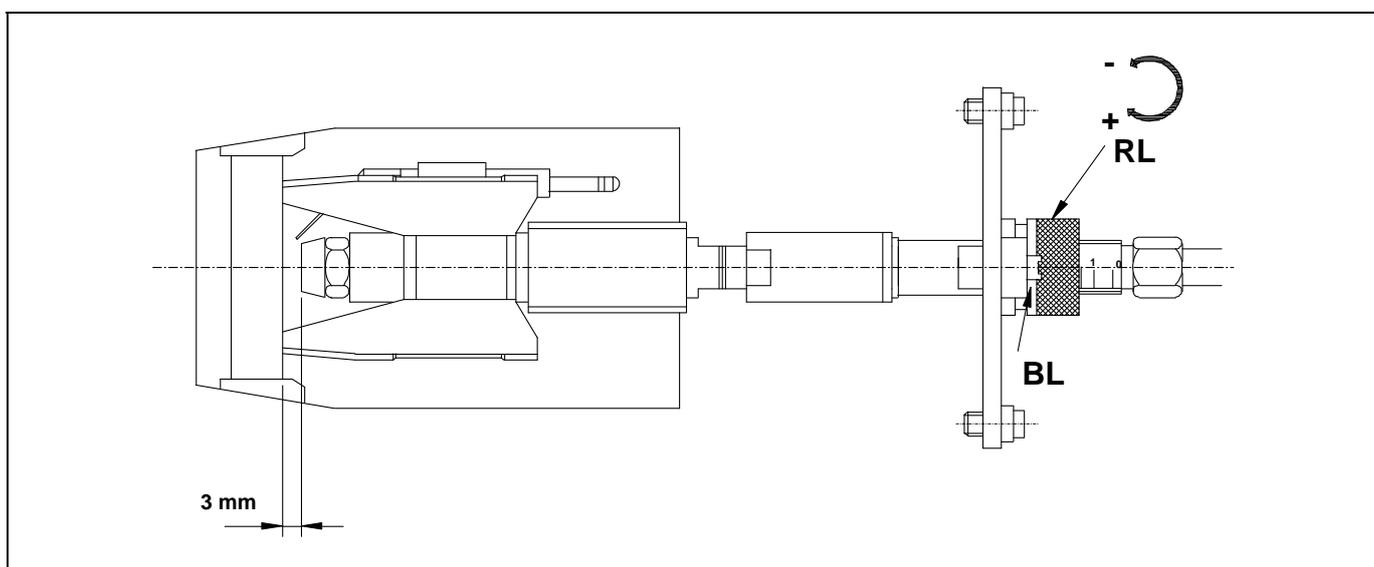
## Primary air adjustment

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.



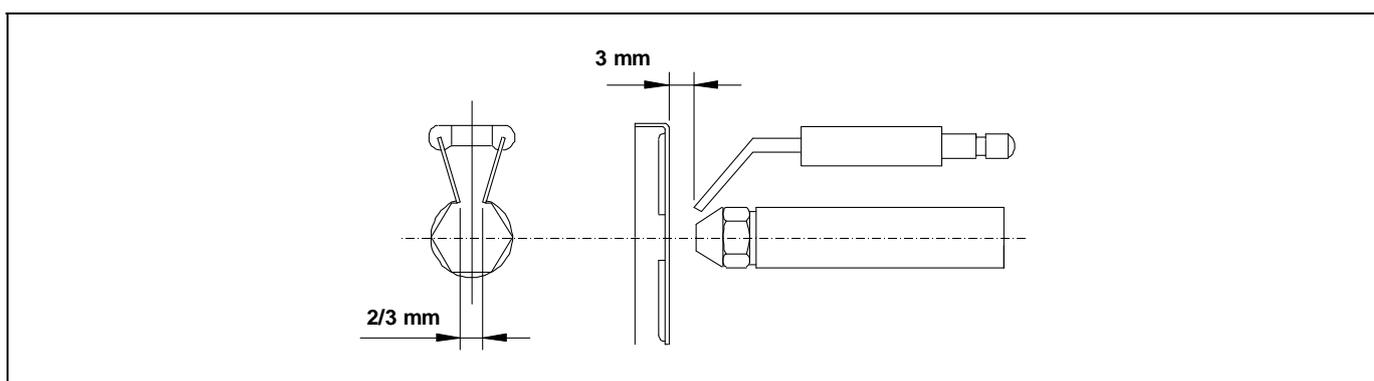
## Combustion line adjustment

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.

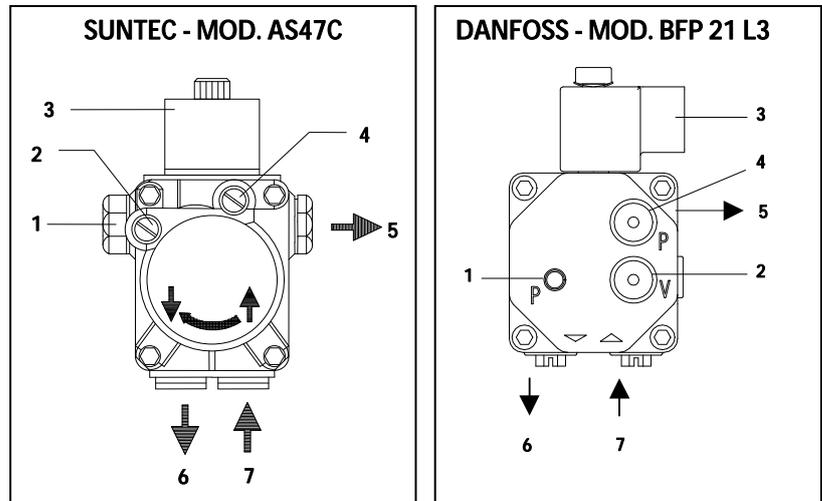


# Evolution Solar HDX

## 22.4 Oil pressure adjustment

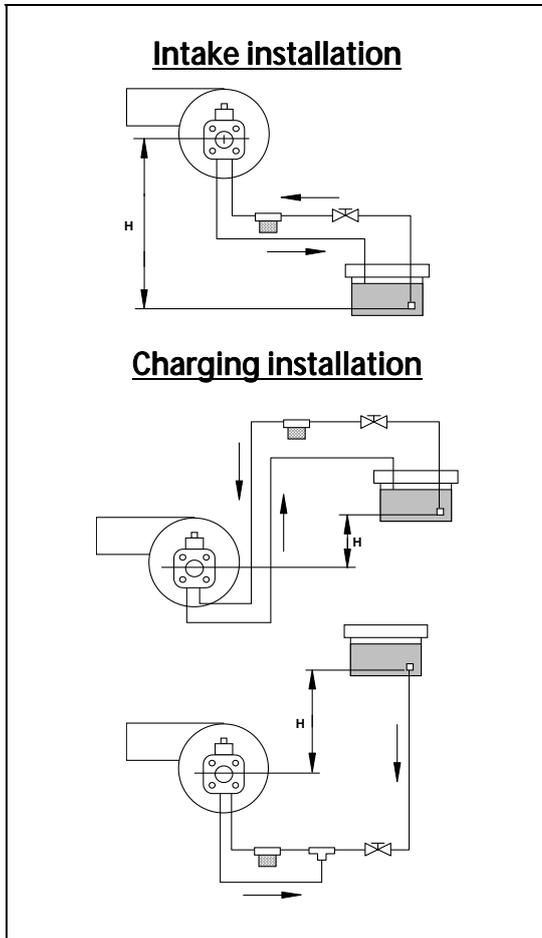
To adjust the oil pump pressure, turn the screw **(1)** clockwise to increase the pressure, and anticlockwise to decrease it.

- 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.



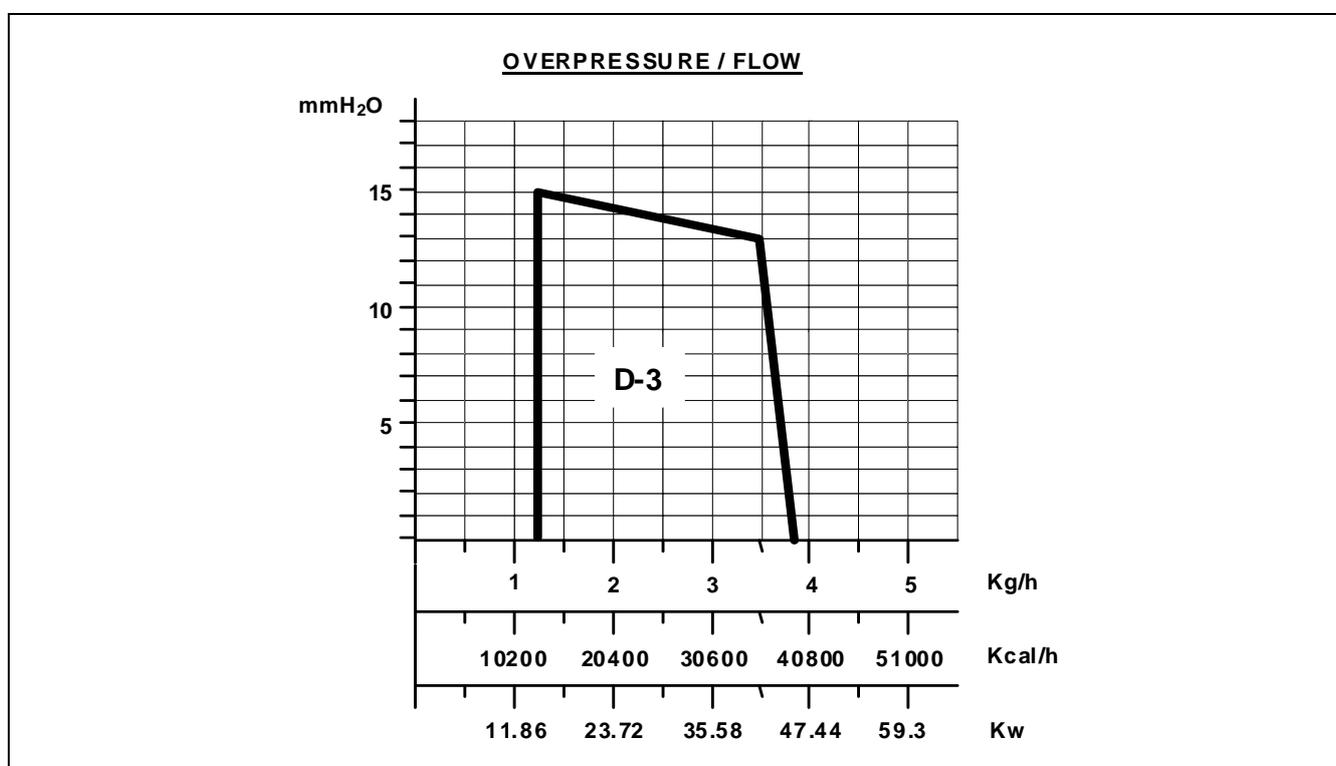
Intake installation		
H (m)	Pipe length	
	int Ø 8 mm.	int Ø 10 mm.
0.0	25	60
0.5	21	50
1.0	18	44
1.5	15	38
2.0	12	26
2.5	10	26
3.0	8	20
3.5	6	16

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

## 22.6 Technical specifications

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

## 22.7 Operating curves



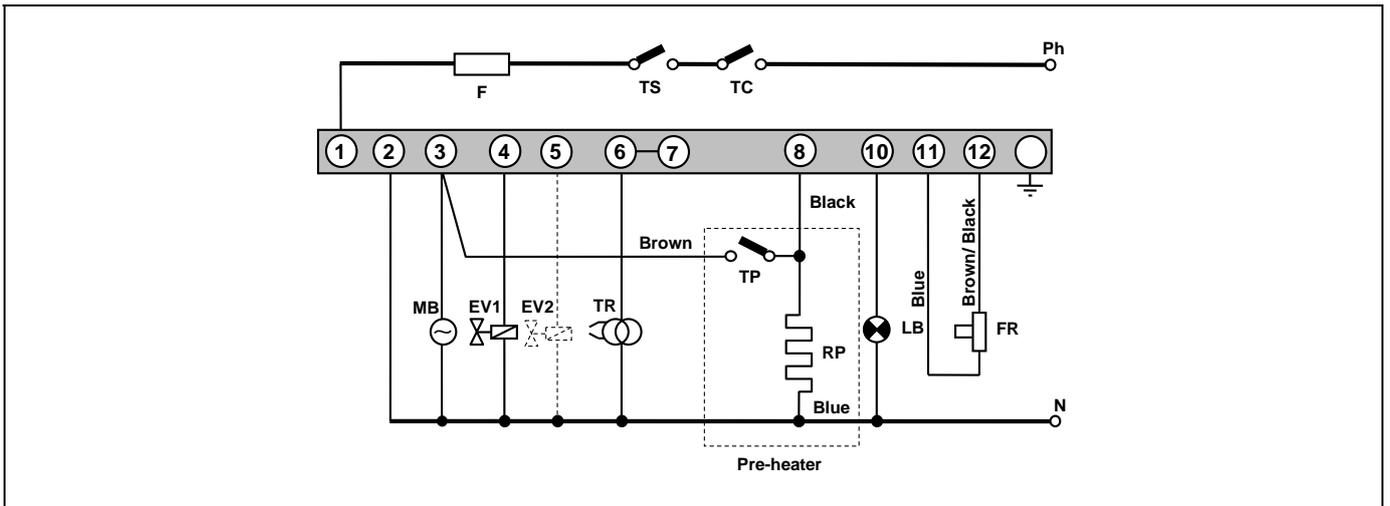
## 22.8 Nozzles

**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:

<b>MODEL</b>	<b>Nozzle</b>	<b>Burner pressure (bar)</b>	<b>Air adjustment</b>	<b>Line adjustment</b>
<b>EVOLUTION SOLAR 30 HDX</b>	0,55 60° H	13	2,5	1
<b>EVOLUTION SOLAR 40 HDX</b>	0,60 45° H	18,5	2,5	1

# Evolution Solar HDX

## 22.9 Electrical connection diagram



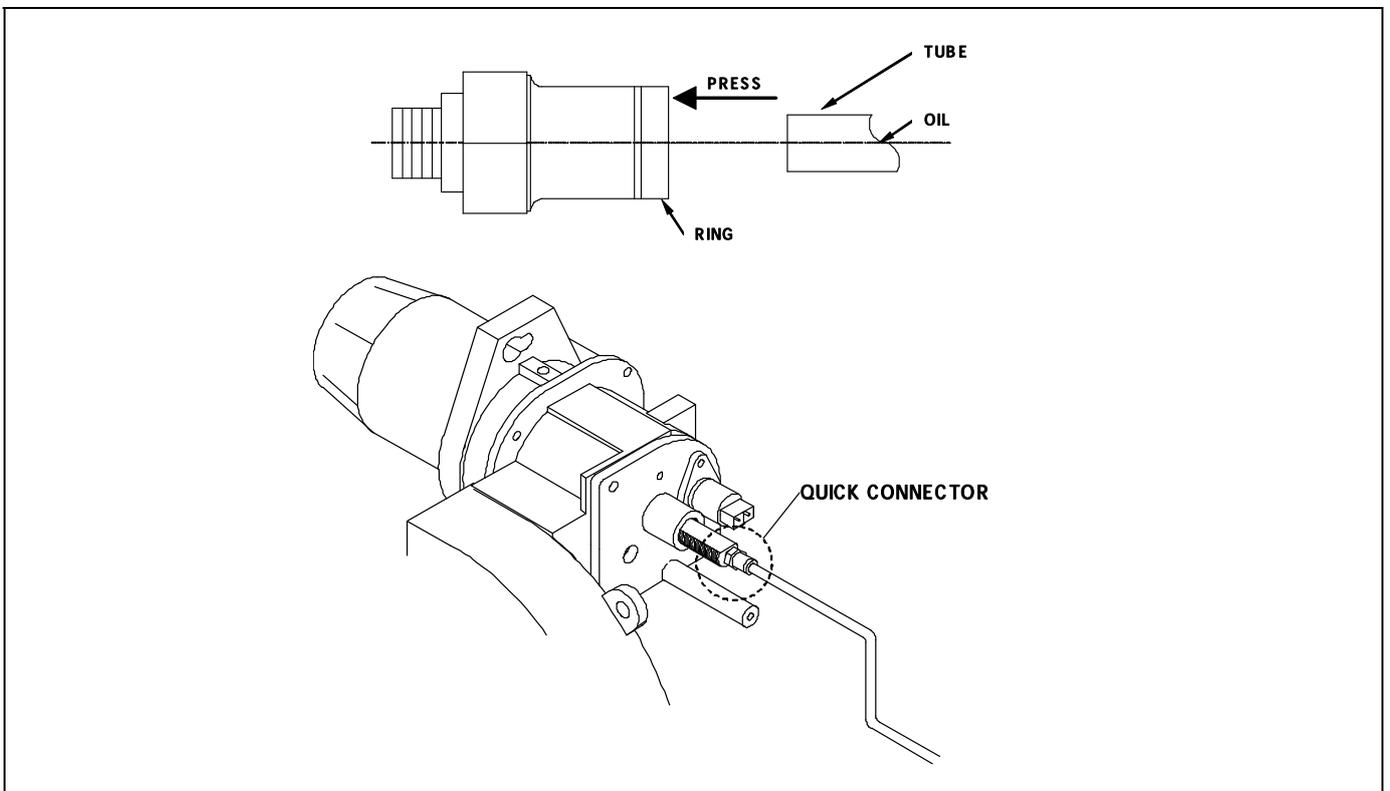
**TC:** Boiler thermostat  
**TS:** Safety thermostat.  
**F:** Fuse.  
**LB:** Cut-off light.  
**FR:** Photocell.  
**TR:** Transformer.

**MB:** Motor pump.  
**EV:** Valve.  
**RP:** Preheater element.  
**Ph:** Phase.  
**N:** Neutral.  
**TP:** Pre-heater thermostat.

## 22.10 Quick connector

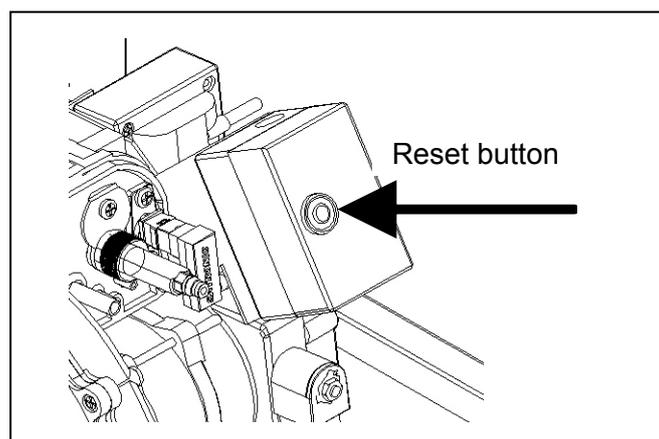
To connect and disconnect the red oil intake tube to the nozzle, proceed as follows:

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



## 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

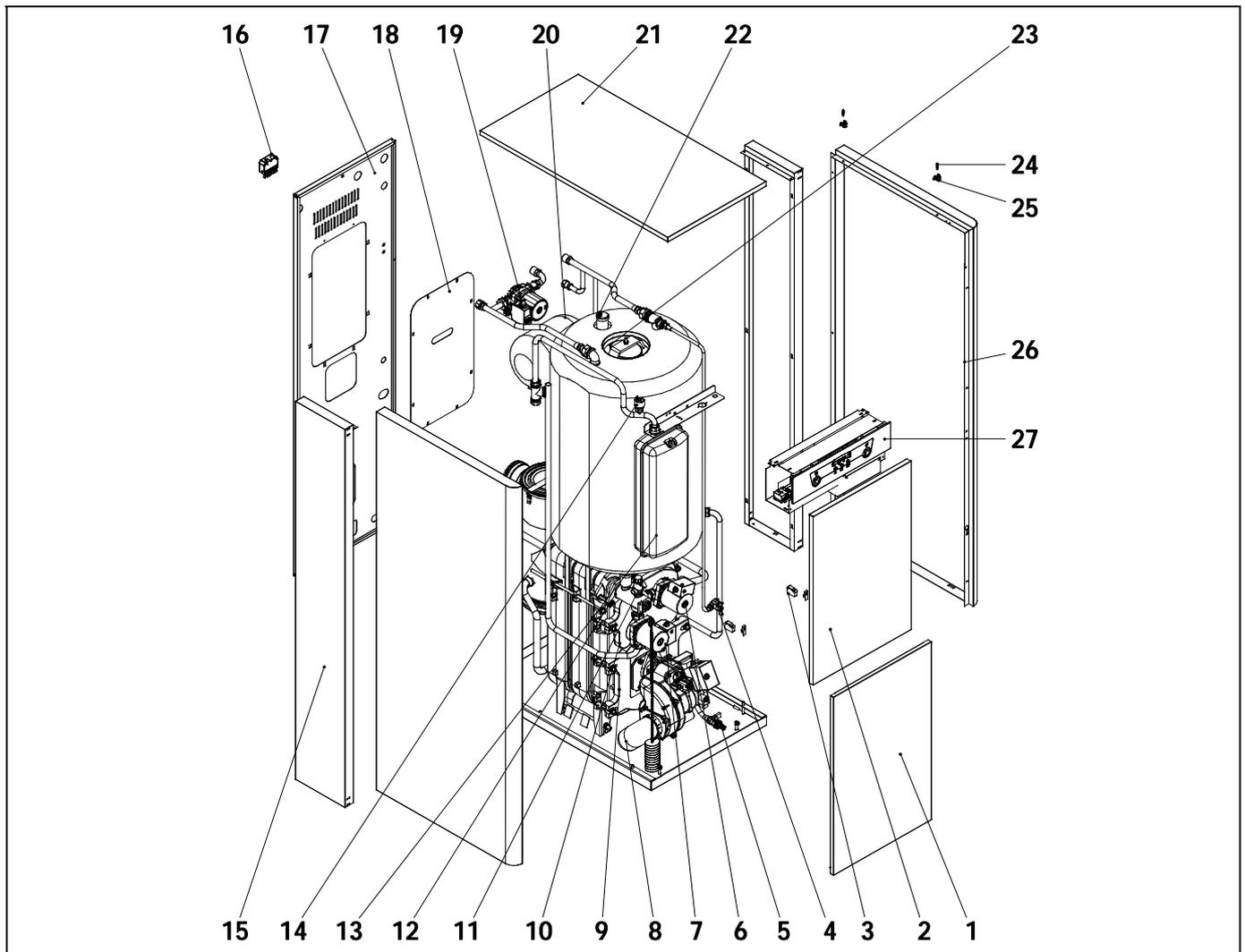
● Yellow

□ Green

# Evolution EV FHDX

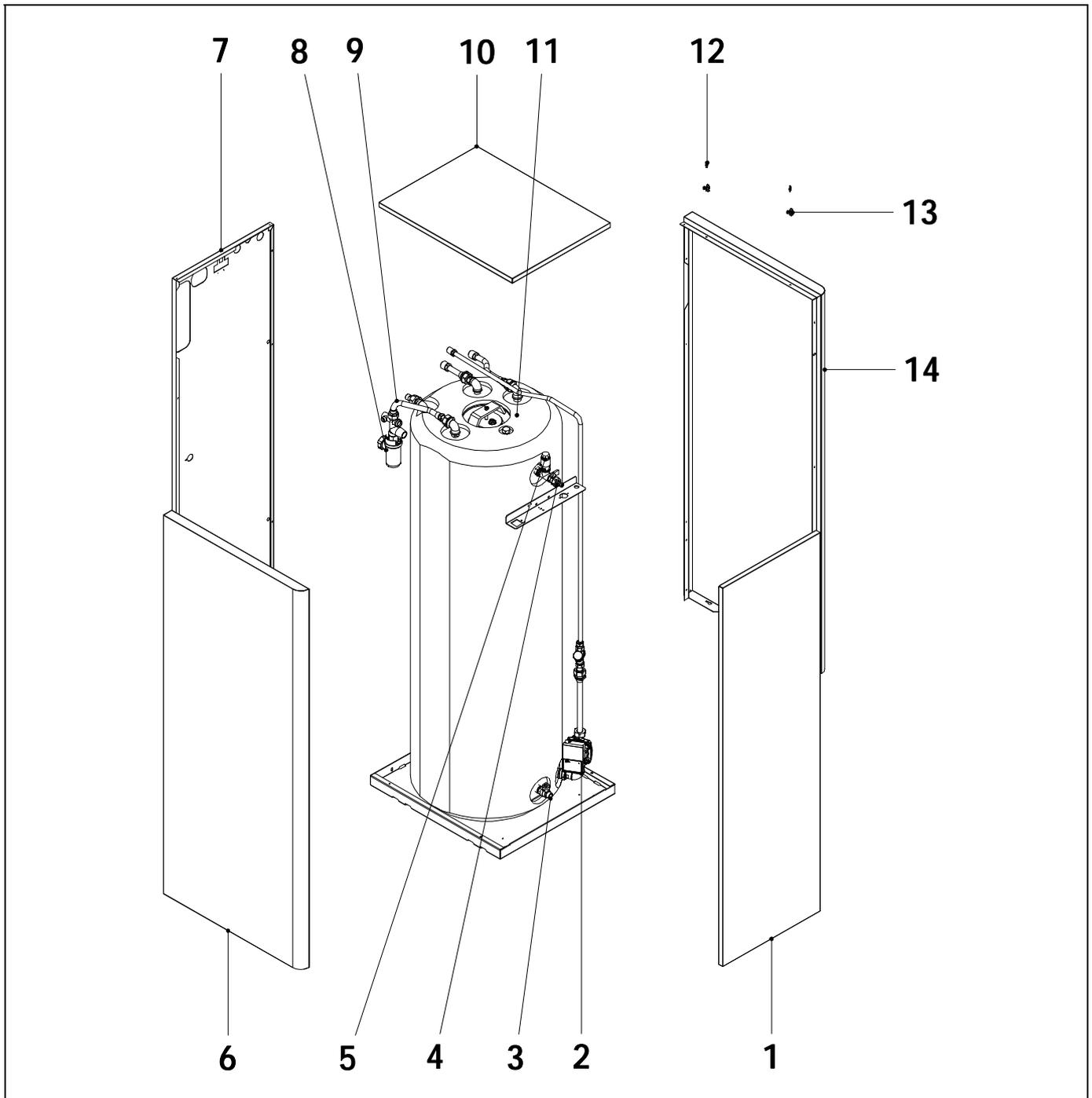
## 23 SPARES LIST

### Mod. Evolution Solar 30 HDX boiler



<u>Pos</u>	<u>Code</u>	<u>Designation</u>	<u>Pos</u>	<u>Code</u>	<u>Designation</u>
1	CEXT000727	Door	15	CEXT000734	Side extension (Evo 30)
2	CEXT000728	Front panel		CEXT000738	Side extension (Evo 30)
3	CFER000059	Automatic closure	16	CQUE000042	Male 7-pole plug
4	CVAL000002	Fill/drain valve	17	CEXT001257	Rear
5	CVAL000034	Drain valve	18	CEXT000733	Rear cover
7	CFOV000148	Summer pump	19	CFOV000077	Solar pump
6	CFOV000148	Winter pump (Evo 30)	20	CFOV000030	Domestic hot water expansion vessel
	CFOV000149	Winter pump (Evo 40)	21	CEXT000726	Top cover (Evo 30)
8	CFER000051	Extendable tube		CEXT000830	Top cover (Evo 40)
9	CFUC000052	Burner support door	22	CFOV000024	Drain valve
10	CFUC000053	Fume inspection window cover	23	GDEPMCX004	130-litre tank
11	CVAL000004	Safety valve	24	CTOE000012	Fixing clip
12	CFUR000019	Manifold (Evo 30)	25	CFER000048	Spring closure
	CFUR000018	Manifold (Evo 40)	26	CEXT000729	Right side
13	CFOV000032	Expansion vessel (Evo 30)		CEXT000730	Left side
	CFOV000005	Expansion vessel (Evo 40)	27	SELEEVOS11	Control panel
14	CELC000252	Pressure transducer			

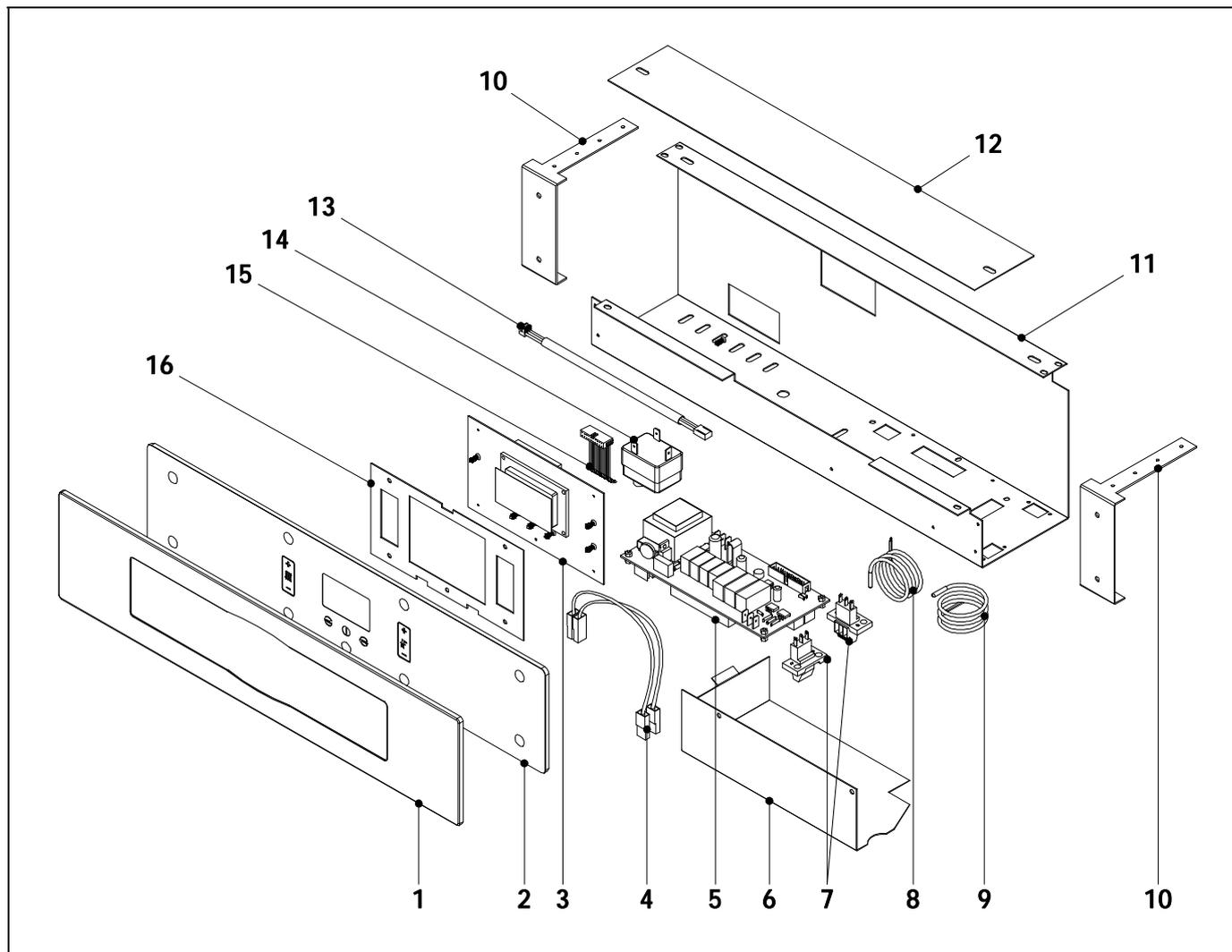
**Mod. Evolution Solar 30 HDX hot water tank**



<u>Pos</u>	<u>Code</u>	<u>Designation</u>	<u>Pos</u>	<u>Code</u>	<u>Designation</u>
1	CEXT001033	Front panel	9	CFOV000001	Safety unit
2	CFOV000152	Winter pump	10	CEXT001042	Top cover
3	CVAL000037	Drain valve	11	GDEPSLE002	250-litre tank
4	CVAL000034	Drain valve	12	CTOE000012	Fixing clip
5	CVAL000017	Safety valve	13	CFER000048	Spring closure
6	CEXT001031	Left side panel	14	CEXT001032	Right side panel
7	CEXT001043	Rear			
8	CFOV000072	Siphon			

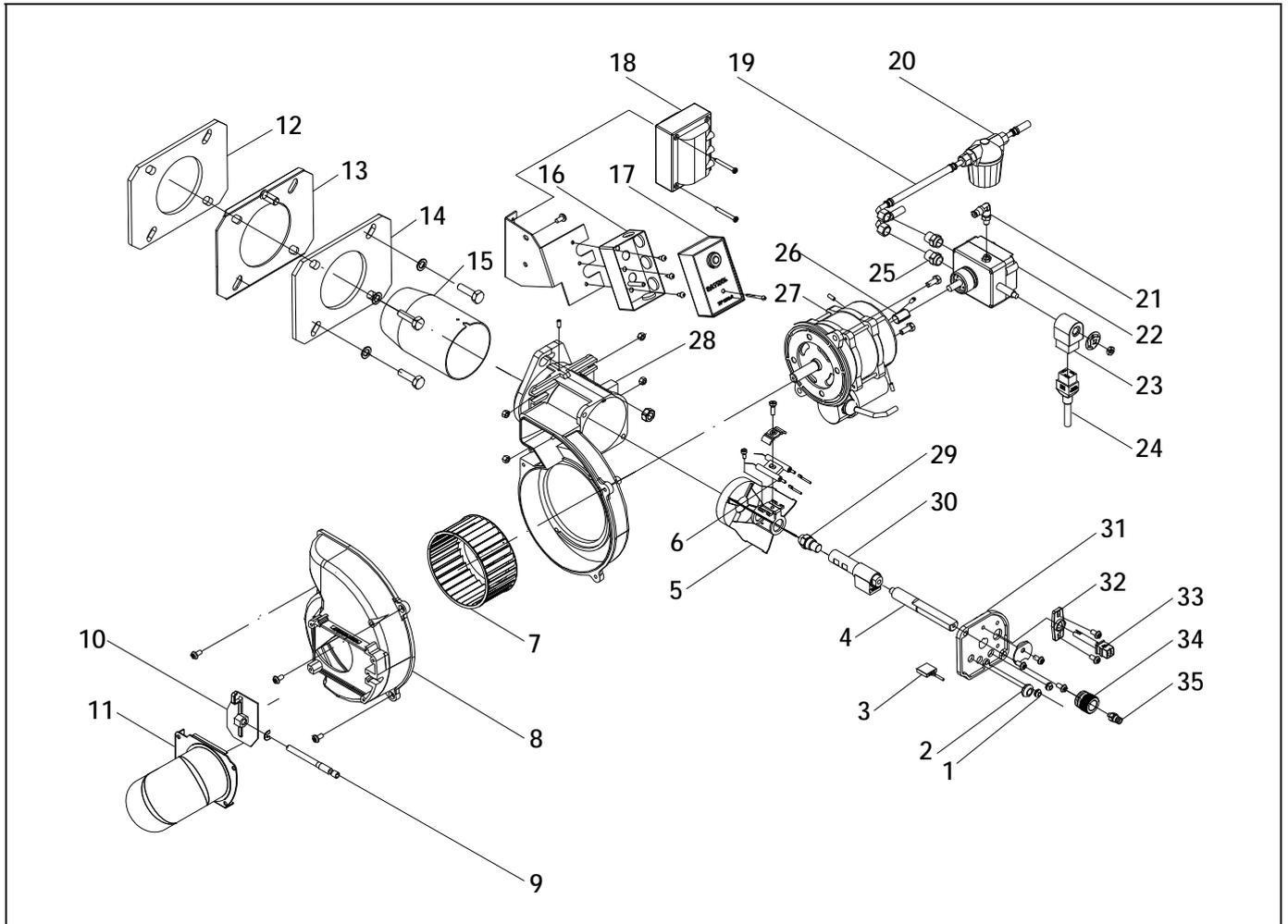
# Evolution EV FHDX

## Electrical board



<u>Pos.</u>	<u>Code</u>	<u>Designation</u>
1	CELC000294	Control panel embellisher
2	COTR000046	Control panel glass
3	CELC000360	Display card
4	CMAZ000128	Cable harness
5	CELC000364	Electronic supply solar card
6	SEPO001366	Connection cover
7	CELC000036	Weidmuller strip 3 poles
8	CELC000234	Temp. Evolution sensor 0,90 mts
9	CELC000211	Electronic control sensor 1,5 mts.
10	SEPO001303	Panel fastening
11	SEPO001976	Drawer
12	SEPO001304	Drawer cover
13	CELC000255	Pressure sensor cable
14	CELC000022	Safety thermostat 110° 1,5m
15	CELC000298	Electronic cards cable
16		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	D3 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		CQUE000081	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	CQUE000223	Photocell support
16	CQUE000129	Control box base	33	SOPE000241	Photocell
18	CQUE000005	Transformer	34	CTOE000054	Line adjustment nut
17	CQUE000169	Control box	35	CTOR000006	Straight connector

# Evolution EV FHDX

## 24 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	- Pump 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

## 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

# DOMUSA

## T E K N I K

### POSTAL ADDRESS

Apartado 95  
20730 AZPEITIA  
Spain

### HEADQUARTERS & FACTORY

B° San Esteban s/n  
20737 ERREZIL (Gipuzkoa)  
Tel: (+34) 943 813 899

[www.domusateknik.com](http://www.domusateknik.com)

**DOMUSA TEKNIK** reserves the right to make modifications of any kind to its product characteristics without prior notice.



CDOC001276 07/09/20