Models: C1050ES, C950ES, 940ESO, 940ES, 830ES

High Temperature kit
THERM and GREENTHERM

Technical Service Instruction
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1 Key to symbols and safety instructions

1.1 Key to symbols

Warnings

The following keywords are defined and can be used in this document:

• NOTICE indicates a situation that could result in damage to property or equipment.
• CAUTION indicates a situation that could result in minor to medium injury.
• WARNING indicates a situation that could result in severe injury or death.
• DANGER indicates a situation that will result in severe injury or death.

Important information

This symbol indicates important information where there is no risk to people or property.

Additional symbols

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶</td>
<td>Step in an action sequence</td>
</tr>
<tr>
<td>➔</td>
<td>Cross-reference to another part of the document</td>
</tr>
<tr>
<td>•</td>
<td>List entry</td>
</tr>
<tr>
<td>–</td>
<td>List entry (second level)</td>
</tr>
</tbody>
</table>

Table 1
2 Introduction

Note: The installation of this high temperature kit will reduce the heat exchanger warranty to 5 years from the date of original installation and operation. For more details consult the water heater’s installation manual for warranty period.

Tools needed:
- Phillips head screw driver
- Small flat head screw driver
- Needle-nosed pliers

3 Preparation

▶ Push power button to "OFF" and unplug power cord.
▶ Loosen two Phillips head screws on bottom rear of front cover.
▶ Pull cover bottom outwards then lift cover upwards to remove.

4 Appliance identification

The high temperature activation is different for Therm and Greentherm models. Here is how to identify which model you have:

<table>
<thead>
<tr>
<th>Type</th>
<th>Model Number</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greentherm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7 736 501 516</td>
<td>C950ES NG</td>
</tr>
<tr>
<td></td>
<td>7 736 501 518</td>
<td>C950ES LP</td>
</tr>
<tr>
<td></td>
<td>7 736 501 515</td>
<td>C1050 ES NG</td>
</tr>
<tr>
<td></td>
<td>7 736 501 517</td>
<td>C1050 ES LP</td>
</tr>
<tr>
<td>Therm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7 703 311 081</td>
<td>C950ES NG</td>
</tr>
<tr>
<td></td>
<td>7 703 411 077</td>
<td>C950ES LP</td>
</tr>
<tr>
<td></td>
<td>7 703 311 074</td>
<td>C1050ES NG</td>
</tr>
<tr>
<td></td>
<td>7 703 411 072</td>
<td>C1050ES LP</td>
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<tr>
<td></td>
<td>7 703 311 076</td>
<td>830ES NG</td>
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<td></td>
<td>7 703 411 074</td>
<td>830ES LP</td>
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<td></td>
<td>7 703 311 075</td>
<td>940ES NG</td>
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<td>940 ESO NG</td>
</tr>
<tr>
<td></td>
<td>7 703 411 069</td>
<td>940 ESO LP</td>
</tr>
</tbody>
</table>

Table 2

For Therm models see chapter 6, for Greentherm models see chapter 7.

5 Control unit service position

▶ Remove three Phillips screws on front of control unit (Fig. 1, pos. 1).
▶ Turn control unit to expose the rear.

Fig. 1 Control unit front

![](image1.png)

Note: Damages to the PCB!
- Avoid touching printed circuit board (PCB) as static discharge may damage circuitry.

DANGER: Risk of fatal injury from electric shock!
- Before servicing the water heater, unplug power supply cord from outlet. Failure to do so could result in severe personal injury or death.
4 | Control unit service position

- Remove rear hatch from control unit to expose circuit board electrical connections. (Fig. 2, pos. 3).

**Fig. 2**  Control unit rear

- Control unit rear (wiring not shown for clarity purposes).

**Fig. 3**  Control unit rear
6 Therm Models

6.1 Jumper installation

- Jumpers 5 and 6 may also be populated based on the model. Do not remove those jumpers.

Fig. 4 Optional jumpers 5 and 6 not shown for clarity.

- Install jumpers from the kit on positions JP7 and JP8.
- Reinstall the rear hatch.
- Reinstall the control unit securing the 3 Philips head screws.
- Plug in power cord.

<table>
<thead>
<tr>
<th>Jumper</th>
<th>Temperature range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ON</td>
</tr>
<tr>
<td>JP7 + JP8</td>
<td>38 °C - 84 °C</td>
</tr>
<tr>
<td></td>
<td>100 °F - 184 °F</td>
</tr>
</tbody>
</table>

Table 3

6.2 Software configuration

Setting the desired hot water temperature:

- Power on the appliance by pressing the \( \text{On/Off} \) button.

Fig. 5

- Press the \( \text{+} \) button in order to reach temperatures above 140 °F (60 °C).

Fig. 6

The Therm appliance is now set at the desired elevated temperature.

For DHW recirculating applications, see Technical Service Bulletin AP-03 Direct Recirculation, to avoid damage in internal components.
7  Greentherm Models

7.1  Jumper installation

- Install jumpers from the kit on positions JP2 and JP5.

![Jumper configuration](image)

Fig. 7  Jumper configuration

7.2  Software configuration

1. Press ON/OFF button \( \text{ON} \) into ON.
2. The key symbol must appear on the display (Fig. 8).

![Key symbol](image)

Fig. 8  Key symbol

3. Press and hold buttons + or - and \( \text{P} \) simultaneously for 3 seconds, until display reads P2.
4. Use the + or - button to cycle through different programs modes, until display shows PE.
5. Press \( \text{P} \) to enter PE adjustment. The current setting will appear on the display. If not, repeat process.
6. Use the + or - button on the control board to select “C”.
7. Hold the \( \text{P} \) button for 5 seconds until display flashes selection “C”.
8. Press ON/OFF button to turn OFF the appliance.
9. Remove the jumpers from the PCB and store them with the technical documentation.

From now on the temperature range is 100 °F - 184 °F.

- Reinstall the rear hatch.
- Reinstall the control unit securing the 3 Philips head screws.
- Plug in power cord.

For DHW recirculating applications, see Technical Service Bulletin AP-03 Direct Recirculation, to avoid damage in internal components.

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Table 4

<table>
<thead>
<tr>
<th></th>
<th>C</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>38 °C - 84 °C</td>
<td>38 °C - 60 °C</td>
</tr>
<tr>
<td></td>
<td>100 °F - 184 °F</td>
<td>100 °F - 140 °F</td>
</tr>
</tbody>
</table>

Temperature range
To adjust the temperature:

- Power on the appliance by pressing the On/Off button.

**Fig. 9**

- Press the button in order to reach temperatures above 140 °F (60 °C).

**Fig. 10**