

# Grant Spira 6-26kW and 9-36kW

Condensing Wood Pellet Boiler

## User Instructions



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This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

# 1 Introduction

This guide is intended to assist and instruct the user in the operation of the Grant Spira Condensing Wood Pellet Boiler.

A separate manual is available to the installer for the installation, servicing and commissioning of the boiler.

The following special text formats are used in this manual for the purposes listed below:

## WARNING

Warning of possible human injury as a consequence of not following the instructions in the 'Warning'.

## CAUTION

Caution concerning likely damage to equipment or tools as a consequence of not following the instructions in the 'Caution'.

## NOTE

Note text. Used for emphasis or information not directly concerned with the surrounding text but of importance to the reader.

# 2 About your Boiler

## 2.1 General

Your Grant Spira wood pellet boiler should only be installed, commissioned and serviced by a Grant Accredited Installer who has undergone specific product training by Grant Engineering (UK) Ltd.

If you have a Grant Spira 6-26 or 9-36, your boiler basically consists of two parts:

- The boiler itself, with the burner mounted on the front
- The pellet hopper, with the pellet feed auger protruding from the front of the hopper casing

The hopper may be either a 110kg or 200kg capacity unit and will be located on either the left or right hand side of the boiler. Check with your installer for the actual capacity of pellet hopper you have with your boiler.

Alternatively, if you have a Grant Spira 12-52, 15-62 or 18-72, your boiler will basically consist of three parts:

- Two boilers, each with the burner mounted on the front
- The pellet hopper, with two pellet feed augers protruding from the front of the hopper casing

In this case the hopper will have a 140kg capacity and will be located between the two boilers.

## CAUTION

All Grant Spira boilers and pellet hoppers are designed for indoor use only and **MUST** be positioned in a dry environment.

## 2.2 Pellet Hoppers

The pellet hopper is mounted on castors (with the front castors lockable) to allow it to be easily moved when required. Allow sufficient area in front of the hopper for it to be moved out and away from the boiler(s) for servicing.

The electrical connections to the boiler(s) are all made to the 4-way electrical plug on one of the three factory-fitted 'flying leads' at the rear of the pellet hopper.

All Grant pellet hoppers are fitted with a contents switch. Refer to Figure 2-1. This automatically detects when the level of pellets in the hopper falls to a pre-set minimum value.

The minimum quantity of pellets required to restart the boiler is 20kg for the single boiler hoppers and 30kg for the double boiler hoppers.

If you have a bulk pellet store (refer to Section 2.3), the contents switch automatically triggers the operation of either the bulk store auger or Grant SpiraVAC system, whichever is fitted, to deliver pellets from the bulk pellet store into the pellet hopper beside the boiler.



Figure 2-1: Contents switch in the base of the pellet hopper

When there is no bulk store (but the pellet hopper only), the contents switch stops the burner operating when the minimum pellet level is reached. In this case, topping up the hopper with more pellets will automatically operate the contents switch and the burner will restart, as long as there is a demand from the heating controls (room thermostat, etc.) for the boiler to run.

## CAUTION

Always ensure that the door on the top of the pellet hopper is closed after filling to ensure no foreign debris enters the hopper. The hopper should only be filled to the point where it is still possible to close the top door.

## 2.3 Bulk Pellet Stores

You may also have a bulk pellet store, located either inside or outside the building. If so, check with your installer for the capacity of the bulk pellet store.

If you have a bulk pellet store you will have either a bulk store auger, or a Grant SpiraVAC vacuum system, to move the pellets from the bulk store to the pellet hopper as and when required. Check with your installer regarding which system you have fitted. If you have the Grant SpiraVAC system, please refer to the instructions provided with that system for details of its operation.

## NOTE

If you have a bulk pellet store it is essential that you routinely check the level of pellets in the store and arrange for a delivery of pellets before the store is empty.

Where a bulk store is fitted; if the bulk store and pellet hopper are both allowed to run out of pellets then the error message 'FAILED PELLET LIGHTING' will be displayed on the burner control panel screen. Once the bulk store has been refilled with pellets, the bulk store auger (if fitted) will need to be re-primed before the pellet hopper is automatically filled from the bulk store.

If a Grant SpiraVAC vacuum system is fitted refer to the Instructions supplied with the system to restart the pellet supply to the pellet hopper.

Once the pellet hopper is filled, the pellet hopper auger will also need to be re-primed. Refer to Section 7 of these instructions.

Once this has been done press the reset button on the burner control panel to cancel the error message and restart the boiler.

## 2.4 Boiler Operation

During the combustion process, hydrogen and oxygen combine to produce heat and water vapour. The water vapour produced is in the form of superheated steam that contains heat that is locked up in the flue gases. A conventional boiler cannot recover any of this heat and this energy is lost to the atmosphere through the flue.

Your Grant Spira condensing wood pellet boiler contains an extra (secondary) heat exchanger which is designed to recover much of the heat normally lost by a conventional boiler through the flue system. It does this by cooling the flue gases and extracting more heat from them, pre-heating the cooler water returning to the boiler from your heating system.

Even when not operating in a condensing mode, this additional heat exchanger ensures that your Grant Spira boiler will still operate at an extremely high efficiency.

The burner output is determined by the delivery rate of the pellets via the pellet feed auger (on the pellet hopper). This is automatically controlled by the burner control system. During commissioning the burner control parameters should have been checked and adjusted as necessary by your Installer.

#### WARNING

**Do not adjust or modify the appliance in any way as to do so could cause malfunction of the appliance, injury to persons or death or result in a potential fire hazard.**

**Only an Grant trained installer, who has completed the Grant training course, should carry out any work on the appliance.**

Once commissioned by a Grant trained installer, your Grant Spira boiler will operate automatically to provide heating and domestic hot water (if you have a hot water cylinder fitted), as long as:

- There are sufficient pellets of the correct type in the pellet hopper. Refer to Section 3.
- The pellet auger is fully primed. Refer to Section 7.
- The heating system controls are set to ON and 'calling', i.e. the programmer and room thermostat are on.
- The burner ON/STANDBY switch on the boiler control panel is set to ON. Refer to Section 4.

If your appliance is controlled by a remote programmer and/or a room thermostat, it will provide heating and (when fitted) hot water during the ON periods as set on the programmer, when either the room thermostat and/ or the hot water cylinder thermostat are 'calling'.

#### WARNING

**Always ensure the front access door of the combustion chamber is fully closed and latched during operation.**

**Certain external surfaces of the boiler will be hot to touch when in operation, due care is needed.**

### 2.5 Cleaning

The burner incorporates a brazier, located within the boiler combustion chamber, where the combustion of the wood pellets takes place. This brazier is fitted with a self-cleaning system to prevent a build-up of ash and clinker. This operates automatically after a pre-set period has elapsed.

The boiler has two heat exchangers, the primary and secondary (condensing), and each is fitted with a self-cleaning system to keep the heat exchanger tubes clear of ash build-up. As with the brazier cleaning system, these are operated automatically after a pre-set period has elapsed.

#### CAUTION

Even with the automatic cleaning systems, it is vitally important that the boiler ash pan is regularly emptied and the boiler regularly serviced. Refer to Sections 10 and 11 of these instructions for further information on the cleaning and servicing of your boiler.

## 3 About your Fuel

You Grant Spira boiler is designed to run only on 6mm diameter EN Plus Grade A1 wood pellets (conforming to EN14961-2).

Under no circumstances should any other form of biomass fuel be used with this boiler.

#### CAUTION

ONLY EN Plus Grade A1 (EN14961-2) wood pellets MUST be used with your Grant Spira boiler. These pellets must be bark and sand free AND previously tested by Grant BEFORE being used in your Spira boiler.

Failure to use pellets that meet the conditions above will invalidate the product guarantee. If you are in any doubt over which pellets are suitable please contact Grant for assistance.

For your guidance, below are examples of both the correct grade of pellets to be used and poor quality pellets that must not be used in your Grant Spira boiler.



Figure 3-1: Correct grade of pellets

Meets EN Plus Grade A1. Correct diameter and length with no dust and minimum bark content.



Figure 3-2: Poor quality pellets

Pellets not pressed correctly causing them to easily disintegrate. DO NOT USE! The auger will be unable to consistently deliver these pellets from the hopper to the burner, resulting in pellet lighting problems.



Figure 3-3: Pellets too dark in colour

Too much bark content. DO NOT USE!

These will cause excessive sand in the ash resulting in clinker blocking air holes, poor combustion and jamming of the brazier cleaning system.



Figure 3-4: Pellets too short in length

DO NOT USE! The auger will not be able deliver these pellets at the correct rate to the burner, affecting the input (and output) of the boiler and the combustion.



Figure 3-5: Pellets with high dust content

DO NOT USE! The auger will not be able deliver these pellets from the hopper to the burner, resulting in pellet lighting problems.



## 4 Boiler Controls

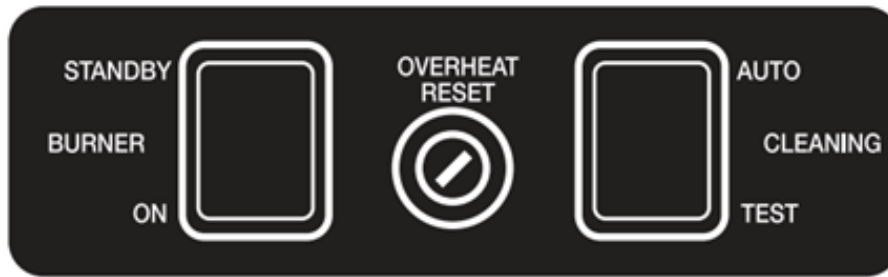


Figure 4-1:Boiler Control Panel

### 4.1 Boiler Control Panel

The boiler control panel is located at the top of the boiler.

This control panel is fitted with three controls, as follows:

- **BURNER ON/STANDBY switch:**

To switch off the burner when required, by interrupting the signal from the heating system controls, i.e. the remote programmer and room thermostat.

This switch **MUST** be left in the ON position during normal operation of the boiler.

**WARNING**

**This switch does NOT isolate the electrical supply to the burner.**

**WARNING**

**After the burner has been switched off (either manually using the burner ON/STANDBY switch on the control panel, automatically by the boiler temperature control, or the heating system controls) the burner needs to burn-down the remaining pellets in the brazier.**

**Do not open the front combustion chamber access door until “WAIT BOILER THERMOSTAT” is showing on the burner control panel display.**

- **OVERHEAT thermostat:**

This is a built-in safety device to automatically shut down the boiler if it overheats.

If this device should operate, it can be manually reset once the boiler has cooled down.

Switch the burner ON/STANDBY switch to ‘STANDBY’ and allow the boiler to cool down.

Then unscrew the plastic cap and press the reset button. If this overheat thermostat continually trips there may be a fault and you should contact your Installer.

- **CLEANING AUTO/TEST switch:**

When pressed and held in the TEST position, it allows the installer or Grant service engineer to manually operate and test the automatic cleaning systems in both heat exchangers. When released, it will automatically return to the default AUTO position to allow the boiler cleaning system to perform automatically.

Only operate the cleaning switch when the boiler is not operating and ‘WAIT BOILER THERMOSTAT’ is showing on the burner control panel display.

**NOTE**

The Cleaning Auto/Test switch does NOT operate the brazier cleaning system.

**WARNING**

**After the burner has been switched off (either manually using the burner ON/STANDBY switch on the control panel, automatically by the boiler temperature control, or the heating system controls) the burner needs to burn-down the remaining pellets in the brazier.**

**Do not open the front combustion chamber access door until ‘WAIT BOILER THERMOSTAT’ is showing on the burner control panel display.**

**If the burner door is opened during the operation of the burner there can be a large uncontrollable flame from the brazier.**

**NOTE**

Avoid repeated opening and closing of the boiler door as this will cause the automatic cleaning of the boiler and burner to be delayed. This can cause excessive ash build-up within the boiler and burner that may result in nuisance faults occurring.

# 5 Burner Control Panel

## 5.1 Burner Control Panel

The burner control panel is located on the upper front part of the red burner cover. This control panel is used by the Installer or Grant Service Engineer to check and set the burner and boiler settings during commissioning or servicing.

The burner control panel display shows the following information:

### Temperature Set Point

The set point is set by the Installer, during commissioning, using either button 1 or 2 (as shown below) within the range 55°C to 75°C. Refer to Figure 5-1.

Typically it will be set to 70-75°C. This is the 'target' temperature setting about which the modulation of the boiler output will operate.

- 5°C below the set point, the boiler is in 100% power mode.
- 5°C above the set point, the boiler has reached minimum output.

The set point is NOT the temperature at which the burner stops. The maximum boiler temperature at which the burner will cut out is factory set in the burner control settings. This can, if required, be adjusted by the installer or Grant service engineer.

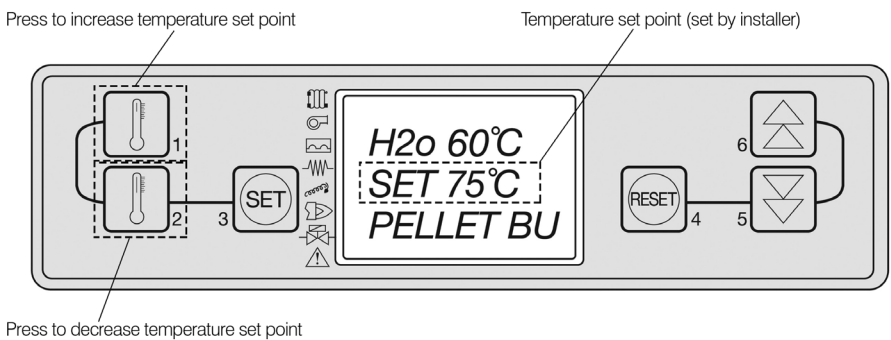


Figure 5-1: Burner control panel display - temperature set point

### Boiler System Water Temperature

This is the temperature of the water in the boiler. Refer to Figure 5-2.

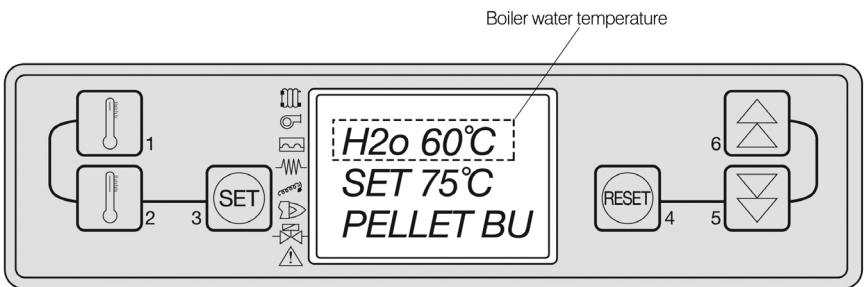


Figure 5-2: Burner control panel display - boiler system water temperature

### NOTE

When the burner cuts out, the temperature will continue to rise as the heat from the flame is transferred to the system water in the boiler.

### Burner Operating Modes

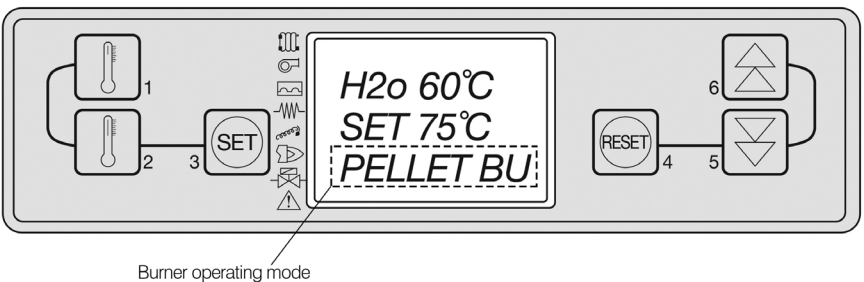


Figure 5-3: Burner control panel display - burner operating mode indication

At any point during the start-up, running and shutting down of the burner, the burner operational mode is shown scrolling across the bottom of the display screen. This can be one of several modes, depending on the operation of the boiler at the time it is viewed, as follows:

- WAIT BOILER THERMOSTAT: boiler is in standby mode awaiting either a signal from the heating system controls and/or for the burner ON/STANDBY switch to be set to ON to start the boiler, OR the temperature to fall to the Restart Temperature (5°C below the set temperature)
- WAIT PRELOAD BRAZIER: initial loading of pellets into the burner brazier to enable the burner to be lit.
- WAIT LIGHTING: period of time taken for the pellets to light, for the flame to stabilise and then for small amounts of pellets to be added to build up the flame in the brazier.
- PELLET BURNER FIRING – Power 100%: flame is fully developed and boiler is operating on full power.
- PELLET BURNER FIRING – Power 99% - 25%: boiler output is being modulated down.
- PELLET BURNER FIRING – Power 25%: boiler is operating at minimum output.
- TURNING OFF BRAZIER: burn-down period to remove any pellets remaining in the brazier.
- WAIT POST PURGE: period of time after burn-down is complete to ensure no unburnt pellets ignite.

## 5.2 Error Messages

The burner control panel display can also indicate that a fault has occurred with the boiler. In the event of a fault, one of the following error (fault) messages may be seen scrolling across the bottom of the display screen:

- FAILED PELLET LIGHTING
- SERVO MOTOR BLOCKED
- PROBE FAULT
- AIR PRESSURE ERROR

## 5.3 Service Indicator

The burner will indicate when a service is required by showing the word 'SERVICE' on the control panel display.

This will occur after a preset period (500 hours of pellet auger running time) has elapsed. This equates to the consumption of 6 tonnes of pellets.

The boiler must be serviced either annually, or when you see the 'SERVICE' message on the burner control panel display, whichever comes first. Contact your Grant Approved Installer and arrange for your boiler to be serviced.

## 5.4 Active Symbols

There are eight symbols on the left hand side of the burner control panel display.

These are the 'active symbols' that, when they have a cursor displayed next to them in the screen area, indicate what functions the burner is operating at any point when the boiler is running.

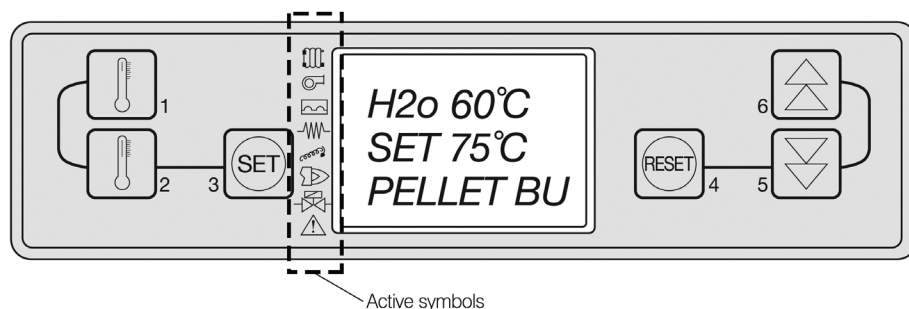


Figure 5-4: Burner control panel display – active symbols

The function indicated by each of these 'Active Symbols' is as follows:









Symbol	Function
	Heating demand (from heating system controls)
	Burner fan operational
	Air pressure switch closed
	Ignition element operational
	Pellet feed auger operational
	Flame on
	Not applicable
	Fault

Table 5-5: Active symbols

## 6 Pellet Feed Tube Thermostat

This is a built-in safety device, mounted on the pellet feed tube (on the top of the burner) to automatically shut down the burner if the temperature on the pellet feed tube (between the pellet auger and the burner) exceeds a safe level.

If this device should operate, it can be manually reset once the boiler and pellet feed tube has cooled down.

To reset:

- Isolate the electrical supply to the boiler (set the switch on the fused spur to off).
- Remove the red burner cover by loosening the four M5 screws (two on each side of the cover) and lifting it off the burner. The thermostat is located on the pellet feed tube. Refer to Figure 6-1.
- Disconnect the lead from the thermostat terminals. Refer to Figure 6-2.
- Press the reset button located between the two terminals.
- Reconnect the lead. Ensure it is fully pushed on to thermostat terminals.
- Finally, refit the burner cover and tighten the four screws.
- Reconnect the electrical supply to the boiler and check operation.

### NOTE

There is no power present on the two thermostat terminals when the lead has been disconnected, so there is no risk of electrocution when resetting the thermostat.

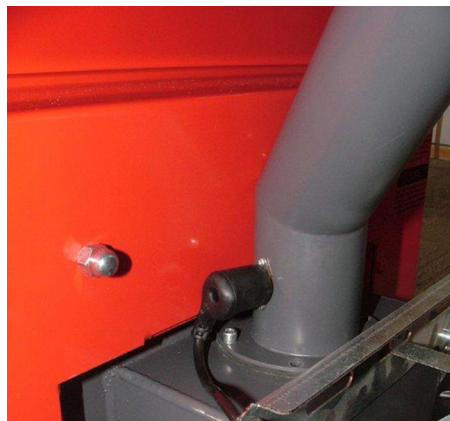


Figure 6-1: Location of pellet feed tube thermostat



Figure 6-2: Disconnect lead from pellet tube thermostat

## 7 Priming the Auger

The pellet feed auger on the pellet hopper **MUST** be fully primed **BEFORE** attempting to start the boiler. The auger should be initially primed by the Installer as part of the commissioning process.

If for any reason the auger needs to be re-primed, this is a simple process using the following procedure:

### Step 1

First set the burner ON/STANDBY switch to the STANDBY position.

### Step 2

Disconnect the pellet feed auger 6-way plug (3) from the upper socket on the left side of the burner. Refer to Figure 7-1.



Figure 7-1: Remove plug 3 from burner

### Step 3

Disconnect the 7-way plug (1) from the socket on the left side of the burner. Refer to Figure 7-2.

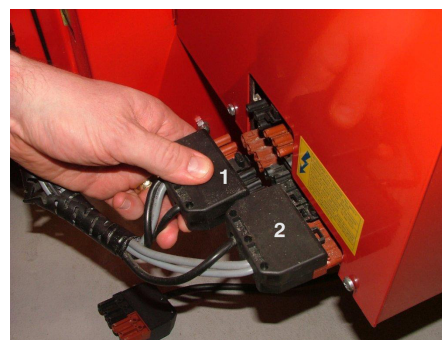


Figure 7-2: Remove plug 1 from burner

### Step 4

Disconnect the pellet delivery hose from the pellet feed tube (on the burner) and place the open end into a DRY container of at least 1 litre capacity. Refer to Figure 7-3.



Figure 7-3: Pellet tube ready for priming the pellet auger

### Step 5

Insert the 6-way plug (3) into the 7-way plug (1). Refer to Figure 7-4. It is not possible to connect these two plugs incorrectly as they will only fit together one way. When these plugs are connected the pellet feed auger will run continuously.

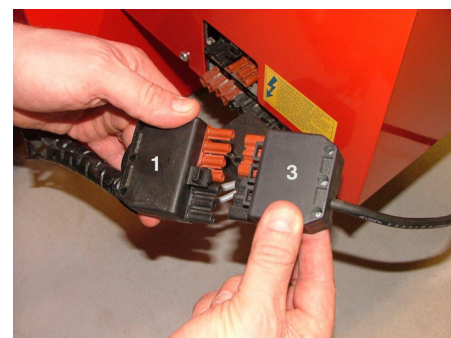


Figure 7-4: Connect plugs together

### Step 6

Leave the auger running until there is a continuous flow of pellets from the pellet delivery hose. This may take 15 to 20 minutes. The pellet feed auger is now fully primed.

### Step 7

Disconnect the two plugs from each other and the auger will stop. Refit the pellet delivery hose onto the pellet feed tube of the burner.

### WARNING

**Ensure that the pellet delivery hose forms an air tight seal each end and that the hose is not damaged. Leakage of air could cause increased temperature in the pellet delivery hose and result in the pellet feed tube thermostat shutting down the burner.**



## 8 Lighting your Boiler

### Step 8

Re-fit both the 6-way and then 7-way plugs to their corresponding sockets on the left side of the burner. Ensure that both plugs are fully pushed home until the small catch on each plug clicks into place.

### Step 9

Make sure that the boiler pellet hopper is correctly located against the side of the boiler with the front edge aligned with the top front edge of the boiler. Refer to Figure 7-5.



Figure 7-5: Correct alignment of hopper to boiler.

### Step 10

Finally, set the burner ON/STANDBY switch to the ON position.

To start your boiler:

- First ensure that the electrical supply to the hopper and boiler is switched on.
- Check that the heating system controls are operating and are 'calling' for heat. There should be a cursor next to the 'Heating Demand' symbol on the burner display. Refer to Section 5.4 – Active Symbols.
- Set the burner ON/STANDBY switch to ON. The flue fan will start and pellets will be delivered to the burner for it to start.

### NOTE

If the burner ON/STANDBY switch is switched to STANDBY at this stage the pellet feed will continue, and then the burner will go through the 'WAIT BOILER LIGHTING' phase and light.

It will then immediately go to 'TURNING OFF BRAZIER' followed by 'WAIT POST PURGE' and then stop.

This process will take several minutes to complete before the boiler can be re-started.

- The flue fan will start and pellets will be delivered to the burner. The boiler will now light automatically after a short ignition period.
- Set the heating (CH) and hot water (HW) functions on your programmer to 'Timed'. The boiler will now operate during the 'on' periods set on the programmer.

### CAUTION

Do not repeatedly switch the ON/STANDBY switch on and off the burner at this stage, as a build-up of pellets in the brazier will occur resulting in poor combustion during lighting.

## 9 If your Boiler Fails to Light

If you experience a problem with your boiler, it may be due to something quite simple and by making a few checks you can quickly rectify it for yourself. If your boiler fails to light, please follow the procedure given below, starting with STEP 1:

<b>STEP 1</b>	<p>Is the burner control panel display blank? NO - go to STEP 2</p> <p>YES – Check the following:</p> <ul style="list-style-type: none"> <li>• Is the electrical supply to boiler and heating system controls switched on at fused spur?</li> <li>• Has the fuse in the fused spur blown?</li> <li>• Are all the plugs at the rear of the hopper, the rear of the boiler and the side of the burner fitted correctly?</li> <li>• Is the combustion chamber door closed and the catch fully engaged?</li> <li>• Has the boiler overheat thermostat tripped? Remove cap to check. If yes, press the reset button. Refer to Section 4. If this does not rectify the problem, contact your Installer.</li> <li>• Has the pellet feed tube thermostat tripped? Reset the thermostat. Refer to Section 6 – Pellet Feed Tube Thermostat for details. If this does not rectify the problem, contact your Installer.</li> </ul> <p>If, after checking the above, there is still a problem then contact your Installer for assistance.</p>
<b>STEP 2</b>	<p>Is one of the four ERROR MESSAGES scrolling across the bottom of the burner control panel display? YES – go to STEP 4</p> <p>NO – go to STEP 3</p>
<b>STEP 3</b>	<p>Is there a cursor next to the 'Heating Demand' symbol on the burner display? YES – Check the temperatures on the burner display.</p> <ul style="list-style-type: none"> <li>• Is the H2O value on the display higher than the set point temperature value plus 5°C. If so, there is NO fault but the boiler is waiting for the system temperature to drop before firing again.</li> </ul> <p>NO – Check the following:</p> <ul style="list-style-type: none"> <li>• Is the burner STANDBY/ON switch set to the ON position? If not, then set it to ON.</li> <li>• Is there a sufficient quantity of pellets in the pellet hopper? If not, top up the hopper with pellets.</li> <li>• Are the heating system controls (programmer, room thermostat, etc.) 'calling' for heat? If not, set controls to call for heat.</li> </ul> <p>If, after checking the above, there is still a problem then contact your Installer for assistance.</p>
<b>STEP 4</b>	<p>Which one of the four ERROR MESSAGES is scrolling across the bottom of the burner control panel display?</p> <ul style="list-style-type: none"> <li>• FAILED PELLET LIGHTING – go to STEP 5</li> <li>• SERVO MOTOR BLOCKED – go to STEP 6</li> <li>• PROBE FAULT – go to STEP 7</li> <li>• AIR PRESSURE ERROR – go to STEP 8</li> </ul>
<b>STEP 5</b>	<p>FAILED PELLET LIGHTING is scrolling across the bottom of the burner control panel display.</p> <p>Check the following:</p> <ul style="list-style-type: none"> <li>• Is there a sufficient quantity of pellets in the pellet hopper? If not, top up the hopper.</li> <li>• Is the pellet auger fully primed? If not, prime the auger. Refer to Section 7.</li> <li>• If there is a bulk pellet store, Are there pellets in the bulk store? Refer to Section 2 – Bulk pellet stores.</li> <li>• Is the bulk store auger (if fitted) fully primed? Refer to Section 2 – Bulk pellet stores.</li> <li>• If a Grant SpiraVAC vacuum system is fitted, is it delivering pellets to the pellet hopper? Refer to Instructions supplied with the SpiraVAC system.</li> <li>• Are pellets being delivered to the burner by the pellet hopper auger? If not, check the following:             <ol style="list-style-type: none"> <li>a) Is the auger rotating? If not, check if the auger power supply lead is correctly plugged in to the burner. If it is still not rotating then contact your Installer.</li> <li>b) Is there a build-up of dust in the bottom of the hopper? If so, this dust MUST be removed from the hopper and auger, and the auger then must be re-primed. Refer to Section 7.</li> </ol> </li> </ul> <p><b>NOTE</b> Pellets that contain an excessive amount of dust will prevent the auger from pulling the pellets out of the hopper. The hopper will need to be cleaned of any dust.</p> <ul style="list-style-type: none"> <li>• With the burner STANDBY/ON switch set to the STANDBY position, remove the pellet feed tube from the burner and open the combustion chamber door.</li> <li>• Is the brazier blocked with ash/clinker? If yes, is the correct grade of pellets being used? If not, empty the hopper and refill with correct grade of pellet.</li> </ul> <p>If, after checking the above, there is still a problem then contact your Installer for assistance.</p>

<b>STEP 6</b>	<p>SERVO MOTOR BLOCKED is scrolling across the bottom of the burner control panel display.</p> <p>Check the following:</p> <ul style="list-style-type: none"> <li>• With the burner STANDBY/ON switch set to the STANDBY position, remove the pellet feed tube from the burner and open the combustion chamber door.</li> <li>• Is the brazier blocked with ash/clinker? If yes, remove the blockage and close the combustion chamber door. Reset the STANDBY/ON switch to ON and wait for the cleaning process to be completed.</li> </ul> <p>If, after checking the above, there is still a problem then contact your Installer for assistance.</p>
<b>STEP 7</b>	<p>PROBE FAULT is scrolling across the bottom of the burner control panel display.</p> <p>Check the following:</p> <ul style="list-style-type: none"> <li>• Are the three plugs correctly fitted to the left side of the burner?</li> <li>• Press the RESET button on burner control panel to clear error message.</li> </ul> <p>If, after checking the above, there is still a problem then contact your Installer for assistance.</p>
<b>STEP 8</b>	<p>AIR PRESSURE ERROR is scrolling across the bottom of the burner control panel display.</p> <p>Check the following:</p> <ul style="list-style-type: none"> <li>• Press the RESET button on the burner control panel to clear error message.</li> </ul> <p>If there is still a problem then contact your Installer for assistance.</p>

#### **WARNING**

Do not under any circumstances enter a bulk pellet store or pellet hopper that has been in operation as there may be a build-up of fumes within the enclosure if the boiler has malfunctioned.

## 10 Emptying the Ash Pan

It is essential that the ash pan (located inside the boiler combustion chamber) is periodically emptied.

This simple task must be carried out by the user at MONTHLY intervals for the FIRST THREE MONTHS after the boiler is installed.

After that the ash pan should be emptied regularly, on at least a MONTHLY basis, or as indicated by the amount of ash found during the first three months.

### NOTE

The amount of ash produced varies between the different pellet brands and this will affect the frequency of cleaning and maintenance required.

To remove and empty the ash pan you will need the following items (supplied with the boiler):

- The removable door handle – to open the combustion chamber door. Refer to Figure 10-1.
- The ash pan carrying handles – to remove and carry the ash pan when hot. Refer to Figure 10-2.

To remove and empty the ash, follow the procedure below:

### Step 1

Set the burner STANDBY/ON switch to 'STANDBY'.

### Step 2

If the boiler is running at the time, wait for it to complete the burner shut-down sequence, i.e. until the burner control panel display screen reads 'WAIT PELLET THERMOSTAT'.

### WARNING

**After the burner has been switched off (either manually using the burner ON/STANDBY switch on the control panel, automatically by the boiler temperature control, or the heating system controls) the burner needs to burn-down the remaining pellets in the brazier.**

**Do not AT ANY TIME open the front combustion chamber access door until the burner display reads "WAIT BOILER THERMOSTAT"**

### Step 3

Allow the burner to cool down, for a period of at least 30 minutes.

### Step 4

Disconnect the pellet delivery hose from the pellet feed tube on the burner. Refer to Figure 10-3.

### Step 5

Fit the removable door handle into the slot in the door catch. Refer to Figure 10-4.



Figure 10-1: Removable door handle

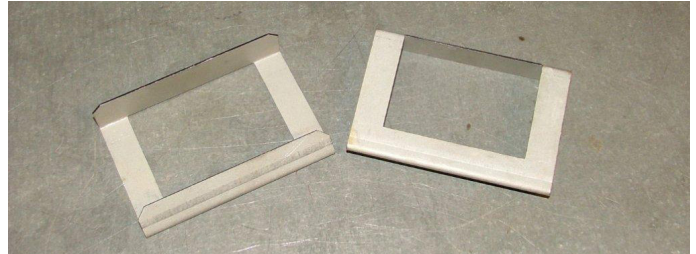


Figure 10-2: Carrying handles



Figure 10-3: Disconnect pellet hose from burner

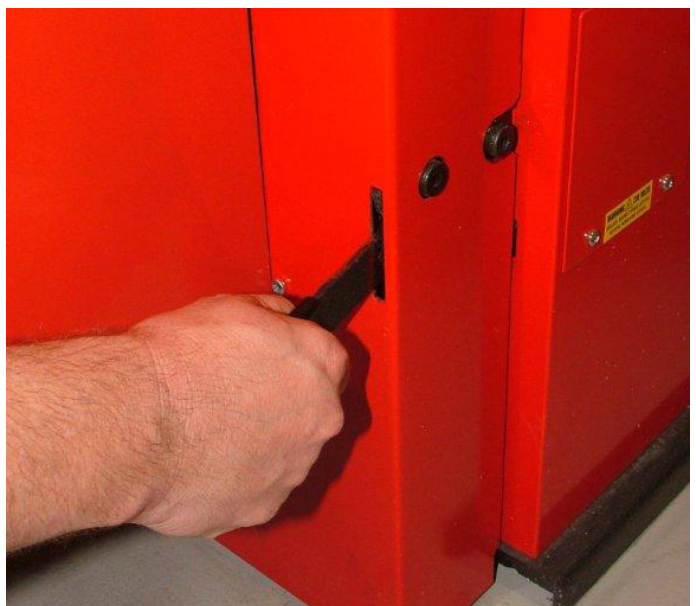


Figure 10-4: Fitting the removable door handle



**Step 6**

Lift the handle to disengage the catch and fully open the combustion chamber door. Refer to Figure 10-5.

**WARNING**

**The interlock on the combustion chamber door automatically disconnects the power supply to the burner if the door is opened.**

**IT DOES NOT IMMEDIATELY EXTINGUISH THE BURNER FLAME.**

**If the burner door is opened during the operation of the burner there can be a large uncontrollable flame from the brazier.**

**Step 7**

Hook one of the two carrying handles (supplied with the boiler) under the front edge of the ash pan and carefully pull the ash pan forward by about 300mm (12inches). Refer to Figure 10-6.

**Step 8**

Brush/scrape any ash resting on the burner into the ash pan below.

**Step 9**

Using both of the carrying handles, one at the front and the other at the back, carefully lift the ash pan out of the boiler. Refer to Figure 10-7.

**Do NOT use the centre cross bar of the ash pan as a carrying handle.**

**Step 10**

Safely dispose of the ash.

**WARNING**

**Extreme care is required when emptying the ash pan as smouldering ash could be present and can cause serious damage to persons or property.**

**Ensure the ash is disposed of in a safe manner.**

**Step 11**

Remove any remaining ash that may be left in the base of the boiler before putting the ash pan back into the combustion chamber.

**Step 12**

Close the combustion chamber door and ensure that the door catch is fully engaged.

Remove the door handle and keep in a safe place for future use, along with the carrying handles.



Figure 10-5: Opening combustion chamber door



Figure 10-6: Removal of ash pan from boiler



Figure 10-7: Lifting ash pan using carrying handles

## 11 Cleaning and Servicing your Boiler

The boiler **MUST** be serviced either **ANNUALLY** or when a service is indicated on the burner control panel display, whichever comes **FIRST**. Refer to Section 5.

Servicing should only be carried out by a Grant trained installer or Grant service engineer, and details of each service should be recorded in the Service Log in Section 17 of these User Instructions.

### CAUTION

Failure to regularly service the boiler will invalidate the terms of the Grant product guarantee.

Failure to maintain a clean flue may result in the release of flue gases into the dwelling or damage from potential fire in the flue. It is therefore essential that your flue is inspected annually and cleaned as necessary by either a Grant trained installer or a suitably qualified chimney sweep.

## 12 Ventilation

As an 'open flued' appliance, your Grant Spira boiler draws the air it requires for combustion from the room in which it is located. In turn, this air comes from outside via a permanently open air vent (or vents) correctly sized to meet the air requirements of your boiler.

### WARNING

**Any permanently open combustion air vents in the room containing the boiler MUST NOT be blocked off or obstructed in any way. Do not attempt to 'box in' the boiler, or build a compartment around it, without contacting your installer first for guidance.**

**Do NOT place any combustible material against, around or on the boiler or flue pipe.**

### NOTE

Current Building Regulations require that a Carbon Monoxide alarm (conforming to BS EN 50291:2001) must be fitted in the room where the boiler is located.

This should be positioned between 1 and 3 metres horizontally from the boiler either:

- On the ceiling, at least 300mm from any wall, or
- On a wall as high up as possible (above any windows or doors) at least 150mm from the ceiling.

## 13 Electricity Supply

If the electricity supply fails, the boiler will cease to operate. It should automatically relight when the electrical supply is restored. However, it may first burn off any smouldering pellets still present in the brazier before starting the lighting sequence again. If a remote programmer is connected to your boiler, it may have a 'battery back-up' of some kind that will retain the on/off time settings you previously entered. It may also resume operation with the correct time of day and thus require no re-setting of time and on/off settings when the supply is restored. Refer to the instructions supplied with your programmer for further details. It is recommended that you check that the on/off and time settings after a power failure has occurred.

### WARNING

**The electricity connections to the boiler must be earthed.**

## 14 Sealed Heating System

If your boiler is operating on a sealed heating system, the installer will have adjusted the pressure in the system and should have told you (or set it on the pressure gauge) the system pressure when cold. This is normally between 0.5 and 1.0 bar, which will increase slightly when hot. If the pressure (when cold) is below the set pressure mentioned above, you can re-pressurize the system. If this is frequently required, ask your Installer or service engineer to check the heating system for leaks and to check the expansion vessel air charge.

The boiler or system will be fitted with an automatic air vent to remove any air from the system. Any trapped air in the radiators should be removed by venting the radiators using the vent screw at the top of each radiator. Only vent a radiator if the top is cool and the bottom is hot.

Excessive venting will reduce the system pressure, so only vent when necessary and check the system pressure as mentioned above. Re-pressurise the system as necessary.

The sealed system is fitted with a safety valve to release excess pressure from the system. If water or steam is emitted from the end of the safety valve discharge pipe, switch off the boiler and contact your Installer for assistance.

## 15 Frost Protection

Your installer may have fitted a frost thermostat. If not, and you are likely to be away for a short time, leave the boiler on with the room thermostat set at a low setting. For longer periods, the boiler should be turned off and the system drained down. Contact your Installer for draining and re-filling the system.

Alternatively, a suitable anti-freeze may have been added to the heating system water. Check with your installer.

## 16 Corrosion Protection

In order to prevent corrosion within your heating system and boiler, your installer should have flushed the system and added a suitable corrosion inhibitor.

### NOTE

The Grant Guarantee on the boiler shell (heat exchanger) requires that the heating system is flushed or chemically cleaned, following installation, and the required quantity of corrosion inhibitor is added to the heating system water.

Grant strongly recommends that an in-line magnetic filter (either a Grant Mag-One or equivalent\*) is fitted in the heating system pipework.

This should be installed and regularly serviced in accordance with the filter manufacturer's instructions.

\*The Grant Mag-One magnetic filter has a Gauss measurement of 12000.

## 17 Service Log

	Service 1	Service 2	Service 3	Service 4	Service 5
<b>Heating System</b>					
System pressure – check/top up					
Pressure relief valve operation - check					
Expansion vessel charge pressure – check					
Magnetic filter – inspect/clean					
Corrosion inhibitor in system – check					
<b>Flue System</b>					
Flue terminal – check condition					
Flue system – check clean					
Draught stabilizer – check operation					
Smoke test (Smoke test II Part J. Section E15)					
Combustion ventilation – check					
<b>Boiler</b>					
Temperature probe – check					
Overheat thermostat – check					
Primary heat exchanger – inspect/clean					
Secondary heat exchanger – inspect/clean					
Wash system – inspect/clean					
Combustion chamber – inspect/clean					
Fan – inspect/clean					
Shaker mechanism - grease					
Shaker system – check operation					
Condensate trap – inspect/clean					
Condensate discharge pipe – inspect/clean					
<b>Burner</b>					
Brazier – dismantle/clean					
Photocell – inspect/clean					
Ignition element – inspect/clean					
Boiler settings – check					
<b>Safety devices</b>					
Hopper lid switch – check operation					
Combustion door switch – check operation					
<b>Pellet Hopper</b>					
Check for dust build-up					
Auger – check for blockages					
<b>Combustion</b>					
Combustion chamber draught – check/adjust					
Flue gas analysis – check/adjust					
Customer handover					
<b>Service Date</b>					
<b>Service Company</b>					
<b>Signature</b>					



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