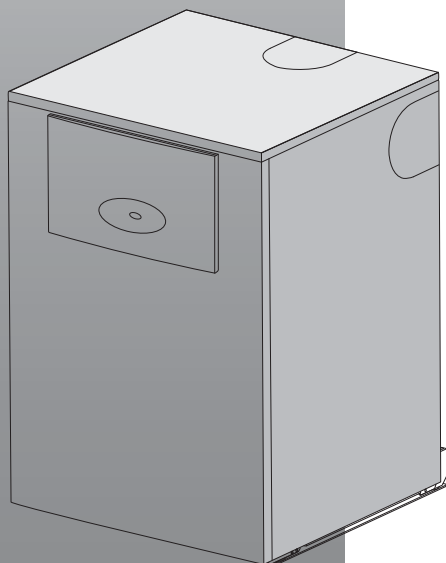


# USER INSTRUCTIONS

## FLOOR STANDING RSF GAS FIRED CONDENSING COMBINATION BOILER

# Greenstar Highflow 440CDi<sup>ErP</sup> & 550CDi<sup>ErP</sup>

FOR SEALED CENTRAL HEATING SYSTEMS AND MAINS FED DOMESTIC HOT WATER



The appliances are for use with:  
Natural Gas or L.P.G. (Cat. II 2H3P type C13, C33 & C53)

Natural Gas:  
Highflow 440CDi<sup>ErP</sup>, GC number 47-406-89  
Highflow 550CDi<sup>ErP</sup>, GC number 47-406-91

L.P.G.:  
Highflow 440CDi<sup>ErP</sup>, GC number 47-406-90  
Highflow 550CDi<sup>ErP</sup>, GC number 47-406-92

UK/IE

**WORCESTER**  
Bosch Group

## Preface

### Please read these instructions carefully

These instructions are applicable to the Worcester, Bosch Group boiler model stated on the front cover only.

These instructions apply in the UK/IE only and must be followed except for any statutory obligation.

After installation please leave this User instruction Manual and the Installation, Commissioning and Servicing Instructions including the completed Benchmark Checklist with the user.

### Dedicated to heating comfort

Thank you for purchasing a Greenstar gas-fired condensing combination boiler manufactured by Worcester, Bosch Group. The company prides itself on manufacturing boilers to the strictest quality control standards throughout every stage of production.

Worcester, Bosch group has led the field in innovative boiler design and performance for more than 50 years. This heritage means all our products are of exceptional quality and proven reliability.

The Greenstar range in particular is extremely energy efficient, offering you economical running costs and value for money. It sits in SEDBUK 2005 Band A, scoring highly in SEDBUK 2009, and is therefore among the top energy rated boilers available.

There is also the reassurance of our no-nonsense 2 years parts and labour guarantee, backed up by Worcester Total Cover, an optional complete maintenance scheme to keep your boiler operating at peak condition and efficiency.

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# 1 Symbols and safety precautions

## 1.1 Explanation of symbols


### Warning symbols

	Safety instructions in this document are framed and identified by a warning triangle which is printed on a grey background.
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Signal words indicate the seriousness of the hazard in terms of the consequences of not following the safety instructions.

- **NOTICE** indicates possible damage to property or equipment, but where there is no risk of personal injury.
- **CAUTION** indicates possible personal injury.
- **WARNING** indicates possible severe personal injury.

### Important information

	Notes contain important information in cases where there is no risk of personal injury or material losses and are identified by the symbol shown on the left.
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### Additional symbols

Symbol	Meaning
1.	a numbered step in an action sequence
▶	a step in an action sequence
•	a list entry
–	a list entry (second level)

## 1.2 Safety precautions

### If you smell gas

A gas leak could potentially cause an explosion. If you smell gas, observe the following rules.

- ▶ Prevent flames or sparks:
  - Do not smoke, use a lighter or strike matches.
  - Do not operate any electrical switches or unplug any equipment.
  - Do not use the telephone or ring doorbells.
- ▶ Turn off the gas at the meter or regulator
- ▶ Open windows and doors
- ▶ Warn your neighbours and leave the building
- ▶ Prevent anyone from entering the building.
- ▶ Move well away from the building: call Emergency Services
- ▶ LPG boilers: Call the supplier's number on the side of the gas tank

### Boiler Operation

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.

### Combustible and Corrosive Materials

Chemically aggressive substances can corrode the boiler and invalidate any guarantee.

- Do not store or use any combustible materials (paper, thinners, paints, propellants, cleaning agents etc.) inside the cupboard containing the boiler or within the vicinity of the appliance.

### Fittings and Modifications

Only a competent registered gas engineer, such as a Gas Safe registered engineer or British gas engineer can remove the boiler's inner combustion chamber cover and carry out any work, in accordance with the Gas Safety (Installation and Use) Regulations.

- Do not remove the inner combustion chamber cover.

Any misuse or unauthorised modifications to the boiler, flue or associated accessories and heating system will invalidate the guarantee.

- Do not modify the boiler or flue system in any way.

Worcester, Bosch Group accepts no liability arising from any such actions. This does not affect your statutory rights.

### Cleaning the boiler case

Use a damp, soft cloth to clean the outer painted metal case of the boiler, do not use chemicals or abrasive materials.

## 2 Product details

### 2.1 General information

#### Servicing



Ensure that the service engineer completes the Service Record in the Benchmark Checklist after each service. The Benchmark Checklist and service interval record can be found at the back of the Installation, Commissioning and Servicing Instructions.

- The boiler must be serviced annually by a competent, registered gas engineer, such as a Worcester service engineer, or other Gas Safe registered engineer.
- Always use original spares, to help maintain the efficiency, safety and reliability of the boiler and have the Service Record completed in the Benchmark Checklist.

The completed Benchmark Checklist will be required in the event of any guarantee work and may be required by the local Building Control Inspector.

#### BENCHMARK STANDARD



The Benchmark initiative is a code of practice to encourage the correct installation, commissioning and servicing of domestic central heating boilers and system equipment.

A checklist/logbook is supplied with every boiler and can be found at the back of the Installation, Commissioning and Servicing Instructions. This is a vital document that needs to be completed by the installer at the time of installation. It confirms that the boiler has been installed and commissioned according to the manufacturer's instructions.

The log book provides space for the recording of regular servicing of the boiler/heating system and this can become a valuable document when, for example, you wish to sell the property. The log book will show a potential purchaser that the heating system has received regular professional maintenance and servicing during its lifetime.

The Benchmark initiative aims to:

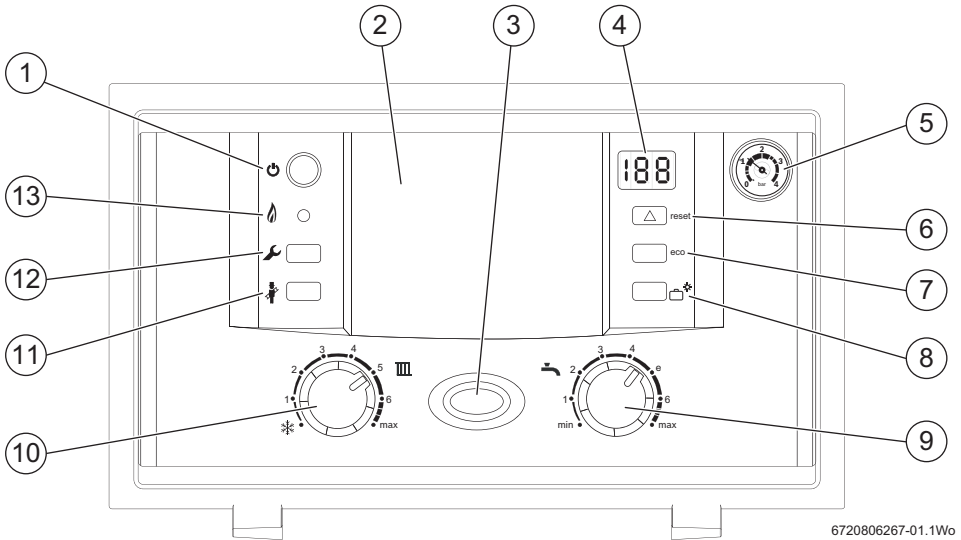
- Raise standards among professional installers
- Build and maintain high safety standards in the industry
- Improve customer satisfaction levels
- Make a contribution to the nation's commitment to climate change

### 2.2 Product data on energy consumption

The product data on energy consumption can be found in the Installation, Servicing and Maintenance manual instructions for contractors.

### 3 Controls

► To gain access to the controls, pull the flap towards you and swing down.



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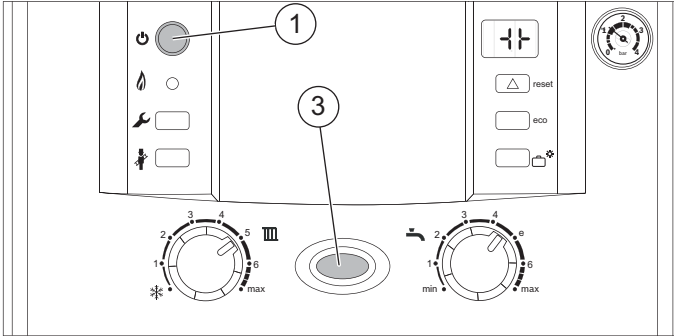
Fig. 1 Basic boiler controls

<b>Boiler Controls</b>	1	Master switch for ON/OFF	8	Not used
	2	Position for optional programmer	9	Hot water temperature control
	3	Power ON and fault indicator (blue)	10	Central heating temperature control
	4	Boiler display	11	Service Engineer button only
	5	System pressure gauge	12	Service Engineer button only
	6	Reset button	13	Burner ON indicator light (green)
	7	ECO button (Domestic Hot Water pre-heat control)		

### 3.1 Switching the boiler ON/OFF

#### 3.1.1 Switching ON

1. Switch on the boiler by pressing the main power button [1].  
The power indicator light shows blue[3].



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Fig. 2 Power button



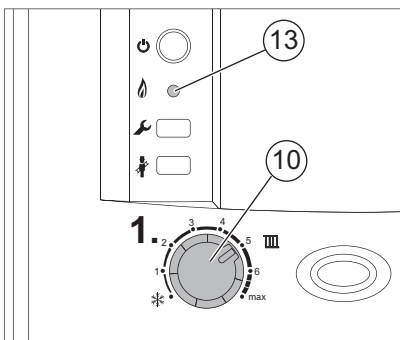
The boiler runs for 15 minutes at minimum heating output to fill the condensate trap. The display alternates between and the central heating flow temperature. This occurs every time the mains supply has been interrupted.

#### Switching off

- ▶ Switch off the boiler by pressing the main power button.  
The blue power button light goes out.

### 3.2 Setting the central heating temperature

1. Turn the central heating temperature control [10] to the desired level, between approximately 40 and 82°C.  
When the burner is lit, the green indicator light [13] underneath the on/off switch is illuminated.



Min	---	40 °C
1	---	47 °C
2	---	53 °C
3	---	61 °C
4	---	68 °C
5	---	74 °C
6	---	80 °C
Max	---	82 °C

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Fig. 3 Settings for the central heating temperature (with approximate temperatures)

#### 3.2.1 Controlling the central heating

Central heating systems must be controlled effectively using a programmer or timer and a room thermostat.

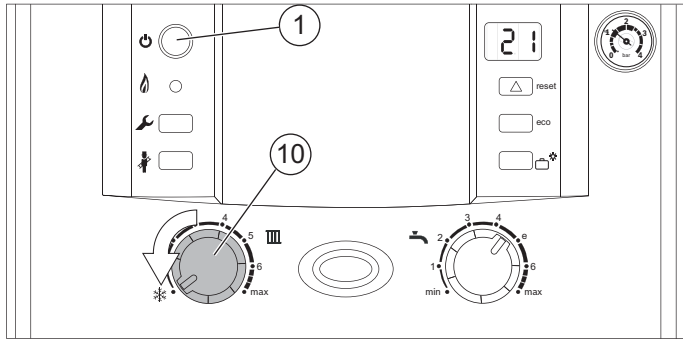
- ▶ For further information on how to control your central heating system please refer to the individual user guides for the programmer or timer installed in your home.

### 3.3 Frost protection (for the boiler)

Activating frost protection will turn off the central heating system.

Heating of domestic water will stay activated.

If the temperature within the boiler drops to 5°C the boiler will fire to avoid the possibility of freezing.



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#### To activate frost protection:

- ▶ Leave master switch on [1].
- ▶ Turn the central heating temperature control [10] to ❄️.

#### 3.3.1 Frost protection (for the heating system)

If remote pipework is likely to be subject to freezing conditions:

- ▶ Ensure the installer has fitted a frost/pipe thermostat in the area to protect the pipework from freezing.
- ▶ Ensure the installer has added a suitable anti-freeze fluid to the water in the central heating system.

### 3.4 Setting the domestic hot water temperature

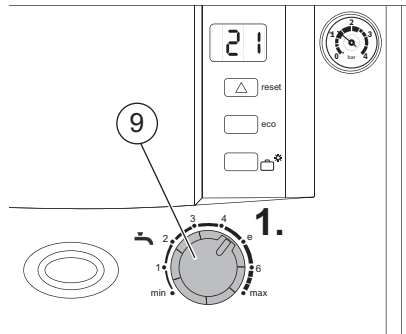
- ▶ Turn the domestic hot water temperature control [9] to the desired level, between approximately 45 and 65°C.



This is the temperature of the water produced at the boiler, not at the tap.

This a guide only, it depends on the length of the pipe run to the taps as to the temperature that is delivered to the tap.

Min	---	45 °C
1	---	50 °C
2	---	52 °C
3	---	54 °C
4	---	56 °C
e	---	58 °C
6	---	60 °C
Max	---	65 °C



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Fig. 4 Settings for domestic hot water temperature (with approximate temperatures)

### 3.5 ECO indicator



By default the boiler is set to ECO mode, so if the mains supply to the boiler is interrupted, the ECO mode will become active.

Press the ECO button until the light goes out if you require the boiler to be in Pre-heat mode.

Refer to the explanation below for ECO and Pre-heat modes

You can choose to run your boiler in Pre-heat mode or in ECO mode.

**To activate pre-heat mode:**

- ▶ Press the ECO button [7] until it is no longer illuminated.

When the ECO button [7] is NOT lit the boiler is in pre-heat mode for hot water.

Pre-heat will ensure the storage tank temperature is maintained and will allow high flow rates of hot water to be drawn off at taps.

Hot water will now be available at the tap almost immediately as the boiler constantly maintains a tank of hot water ready for use.

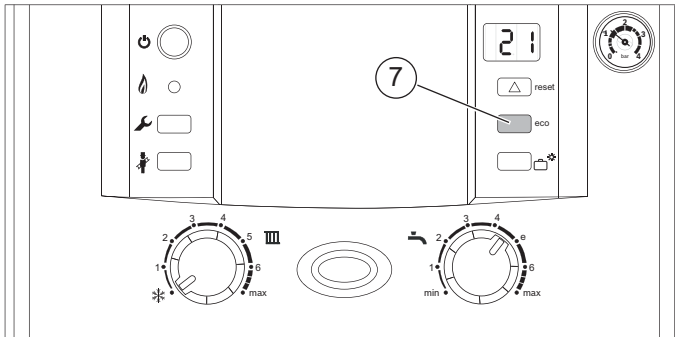
**To activate ECO mode:**

- ▶ Press the ECO button [7] until it is illuminated.

When the ECO button is illuminated, the boiler runs in ECO mode and pre-heat is not available.

When the ECO button [7] is lit the storage tank pre-heat function is turned off, but the boiler will supply hot water as a normal Combi boiler.

This means that the flow rates at taps may have to be reduced to obtain satisfactory hot water temperatures.

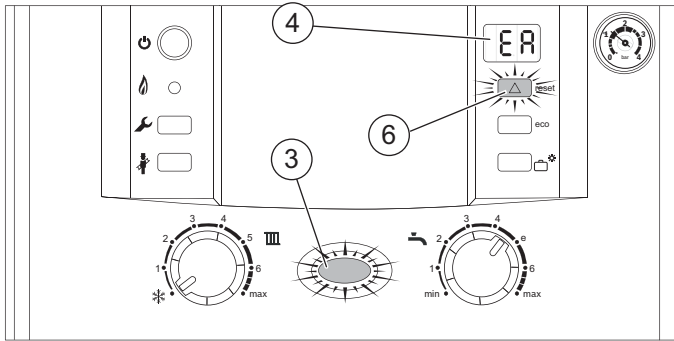




### 3.6 Fault condition

In the unlikely event of a fault occurring while the boiler is in operation the reset button [6] and the main power indicator [3] will flash.

The display [4] will show a fault code.



#### To reset the boiler:

- ▶ Press the reset button [6] for three seconds.  
The reset button [6] and the mains power indicator [3] will stop flashing.  
The boiler will function normally, dependent on programmer and room thermostat settings.



If the fault cannot be cleared by pressing the reset button [6]:

- ▶ Refer to the fault finding section on page 13 of this user guide.
- ▶ Call Worcester, Bosch Group, giving a description of the fault and, if possible, the fault code from the seven segment display. Alternatively contact a competent registered gas engineer, such as a Gas Safe registered engineer or British Gas engineer for assistance.

## 4 System pressure

### 4.1 Sealed heating systems

This boiler is fitted to a sealed heating system which will have been pressurised by your installer. Your installer will advise you of the minimum and maximum pressure indicated on the pressure gauge.

- ▶ Check regularly that the pressure is maintained.
- ▶ If the pressure gauge reads less than 1 bar then the system requires re-charging.
- ▶ Contact your installer or maintenance engineer, such as a Gas Safe registered engineer, if a permanent significant decrease or increase in pressure is indicated on the pressure gauge.

The filling method is an integral filling loop fitted with non-return valves and flexible hose.

### 4.2 Locating the integral filling link

**To access the filling loop connection:**

1. Pull the upper edges of the front panel forwards.
2. Lift front panel.

**Using the filling loop:**

3. Unscrew the tank drain cap from the Tank drain valve.
4. Connect the integral filling loop from the Flow valve [1] using the hose [2] to the Tank drain valve [3].
5. Open the flow and tank drain valves.
  - ▶ Fill the system to a pressure up to 1.5 bar.
  - ▶ Close the flow valve.
  - ▶ Close the tank drain valve.
  - ▶ Disconnect the integral filling loop.
  - ▶ Refit tank drain cap.

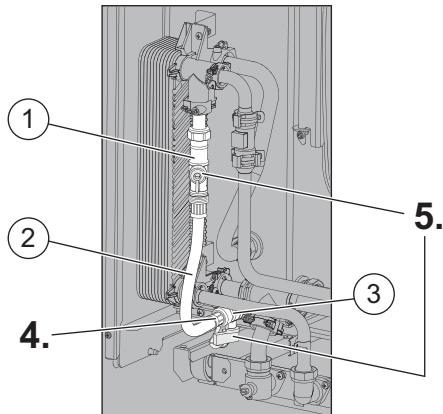
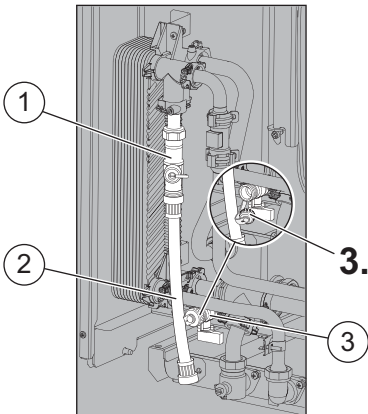
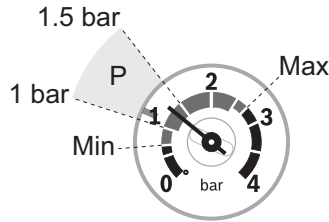
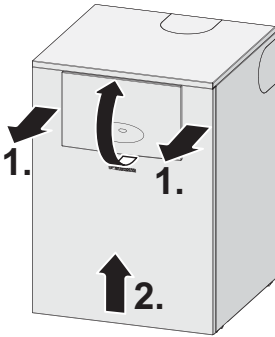


Fig. 5 Integral filling loop

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## 5 Boiler/compartments clearances

Your installer will have provided adequate space around the boiler for safety and servicing access.

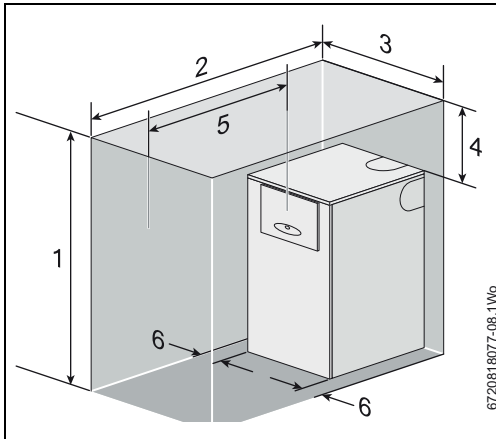


**CAUTION:** Restricted space.

The boiler may overheat.

▶ Do not restrict this space with the addition of cupboards, shelves etc. next to the boiler.

### 5.1 Boiler clearances



item	Minimum distance requirements for compartments
1	Overall height of compartment
2	Overall depth of compartment
3	Overall width of compartment
4	Height above the boiler to top of compartment
5	Depth to front of boiler (or shelf)
6	Gap between sides of boiler and compartment
7	Gap between shelf and back of compartment

### CLEARANCES

Refer to the figure above and the table below for the minimum clearances to service the boiler and for an unventilated compartment.

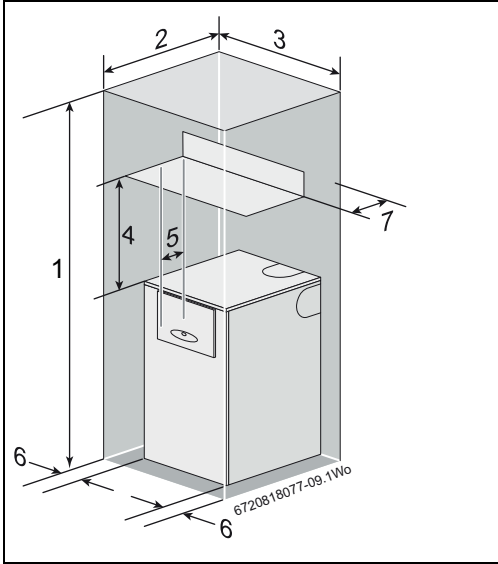
item	Compartment clearances (mm)	
	Servicing	Unventilated
1	865	900
2	1200	800
3	610	800
4	15	50
5	600 <sup>1)</sup>	200 <sup>2)</sup>
6	5	100 <sup>3)</sup>

- 1) Can be reduced to 25mm to removable surface
- 2) Space required with removable door or panel
- 3) Can be reduced to 50mm on one side, but maintaining the overall 200 minimum

### 5.2 Airing cupboard clearances

The dimensions below show the minimum space required to install and service the boiler within an airing cupboard.

If a compartment is built around the boiler after installation, then the compartment must be separated from the boiler space by a noncombustible partition as described in BS 6798.



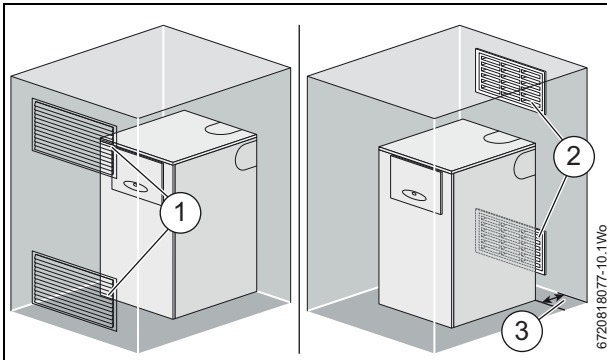
item	Minimum clearances (mm)
1	2300
2	625
3	800
4	200
5	25 <sup>1)</sup>
6	100
7	100

1) From the front of the boiler and the front of the shelf

### 5.3 Vented compartments

If the clearances available are less than those stated for an unventilated compartment or an airing cupboard then ventilation must be provided as described in BS 5440.

A minimum of two air vents of equal size must be fitted, one at low level and another at high level on the same wall using the same air for circulation.



#	Boiler	Air source	Vent area
1	440CDi <sup>ErP</sup>	Internal room or space	310cm <sup>2</sup>
	550CDi <sup>ErP</sup>		440cm <sup>2</sup>
2	440CDi <sup>ErP</sup>	Outside	155cm <sup>2</sup>
	550CDi <sup>ErP</sup>		220cm <sup>2</sup>
3	All	100mm space between the boiler and vent	

## 6 Maintaining your Boiler

Your new gas-fired boiler represents a long term investment in a reliable, high quality product.

To clean, wipe the boiler casing with a soft clean cloth. Please do not use chemical cleaning products which may damage the paint finish.

In order to realise its maximum working life, and to ensure it continues to operate at peak efficiency and performance, it is essential that your boiler receives regular annual servicing and maintenance checks during and beyond the guarantee period from a competent registered gas engineer, such as a Worcester service engineer or other Gas Safe registered engineer.

If your Greenstar gas-fired boiler should fail to operate correctly or requires servicing, please contact the Worcester, Bosch Group Appointments Team (see rear cover for details).

Details of the boiler including the Gas Council number can be found on the front cover of these User Instructions and on the boiler identification label on the boiler fascia.

The Gas Council number is also listed on the front cover of your Installation, Commissioning and Servicing Instructions.

## 7 Fault Finding

In the event that the boiler stops functioning or does not perform as expected, you can carry out a few simple checks. The checks listed in the table below detail some of the possible causes. Should the problem persist or if other fault codes are displayed, then it will be necessary to contact the Worcester, Bosch Group.

This table gives information on basic operating system problems.

<b>Problem</b>	<b>Cause</b>	<b>Remedy</b>
EA fault code flashing on display	No gas supply/low gas supply pressure	▶ Contact your gas supplier.
	Condensate outlet blocked	▶ If it is safe to do so, check your condensate pipe outlet for blockages, such as ice or foreign objects.
	Flue blocked	▶ If it is safe to do so, check your flue outlet for damage or blockages.
Desired room temperature is not reached	Thermostatic radiator valve(s) set too low	▶ Increase thermostatic radiator valve setting(s)
	Temperature control for central heating flow on boiler set too low	▶ Increase central heating flow temperature control setting
	Air trapped in heating system	▶ Bleed radiators and recharge heating system
	Low system water pressure	▶ Re-pressurise the system, refer to page 10
	Boiler temperature controls set too low	▶ Increase settings on boiler controls
Desired room temperature too high	Radiators are too hot	▶ Turn down thermostatic radiator valves/room thermostat
		▶ Reduce central heating temperature by turning down the Central Heating control on boiler
Heating stays on for too long	Timer or programmer is incorrectly set	▶ Check setting and adjust
ON/OFF Indicator is not illuminated	Momentary power failure	▶ Disconnect boiler supply, wait a few seconds then reconnect.
Hot water temperature too low	Temperature set too low on boiler controls	▶ Check setting and adjust
	Water flow at tap too high	▶ Reduce flow rate at tap
	Air trapped in heating system	▶ Bleed radiators and recharge heating system
	Low system water pressure	▶ Re-pressurise the system, refer to page 10
Hot water temperature too high	Temperature set too high on boiler controls	▶ Check setting and adjust
	Water flow at tap too low	▶ Increase flow rate at tap

Table 1 Fault finding

## 7.1 Error codes



When calling Worcester, Bosch Group, you may be asked for the error code. This table is for you to help identify the possible cause of the fault.

- ▶ Do not try to rectify any of the faults listed below by yourself.
- ▶ Contact a Worcester, Bosch Group service engineer, or other Gas Safe registered engineer.

Error code	Description
A7	A7 Hot water NTC sensor defective.
A8	A8 Break in communication to weather compensating clip-in control or Greenstar Comfort II RF
b1	b1 Code plug not detected.
C6	C6 Fan speed too low.
d5	d5 Condensate pump fault
E2	E2 CH flow NTC sensor defective.
E9	E9 Safety temp. limiter in CH flow has tripped.
EA	EA Flame not detected. Check, if it is safe to do so: <ul style="list-style-type: none"> <li>• if gas is on in the house</li> <li>• for frozen condensate pipe</li> <li>• for blocked flue outlet</li> </ul>
F0	F0 Internal error.
F7	F7 Flame detected even though boiler switched off.
FA	FA Flame detected after gas shut off.
Fd	Fd Reset button pressed by mistake.
SE	SE Service required
U1	U1 Boiler flow temperature is too high, the boiler will shut down until it has cooled down
U2	U2
U3	U3

## 7.2 Extreme cold weather

In some instances where the condensate pipe work is run externally or in an unheated area, such as a garage, the condensate pipe work can be at risk of freezing, even if well insulated.

A frozen/blocked condensate pipe will cause the boiler to shut down.



**WARNING:** Falling hazard!

Failure to follow this guidance may result in personal injury.

- ▶ Only attempt to thaw a condensate pipe that is at ground level, and that is easily accessible.
- ▶ Never attempt to thaw a condensate pipe that is at height.



**CAUTION:** Pipe damage

- ▶ **DO NOT** use boiling water to thaw the condensate pipe!



**CAUTION:** Slip hazard

- ▶ Ensure that the subsequent freezing of any water does not result in a slip hazard

If the condensate pipe has frozen:

- ▶ Locate the blockage.  
It is likely that the pipe is frozen at the most exposed point outside the building or where there is an obstruction to flow.  
This could be the open end of the pipe, at a bend or elbow, or where there is a sag in the pipe in which condensate can collect.  
The location of the blockage should be identified as closely as possible before taking further action.
- ▶ Thaw the frozen pipe.  
The pipe can be thawed by applying a hot water bottle, a microwaveable heating pack (the sort used for muscular aches and pains) or a cloth soaked in hot water to the exterior of the pipe, close to the point of blockage.  
Hot water, but not boiling, can also be poured onto the pipe from a watering can or similar container.
- ▶ Once the pipe has been thawed the boiler must be reset, press the reset button for five seconds and wait two to three minutes for the boiler to restart.
- ▶ If the boiler does not restart, contact Worcester, Bosch Group Appointments Team (see back cover for details).
- ▶ Contact your installer in order to find a permanent solution to the problem.

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## 8 Fault or breakdown

This boiler is supported in the UK and Eire by Worcester, Bosch Group.

Specialist service engineers are available to attend a breakdown occurring on this boiler.



Invoices for attendance and repair work carried out on this boiler by any third party will not be accepted.

- No charge will be made for parts and/or labour providing: A boiler fault is found and the boiler is within the guarantee period. Reasonable evidence of this must be supplied on request. i.e. the Benchmark Checklist.
- A call-out charge will be made where:
  - The boiler is outside the guarantee period.
  - Evidence cannot be provided that the annual service inspections have been carried out (i.e. entries in the Benchmark Checklist).
  - Our Field Service Engineer finds no fault with the boiler.
  - The cause of breakdown is misuse or with other parts of your plumbing/heating system, or with equipment not supplied by Worcester, Bosch Group.

### Technical support



#### **No boiler fault is found on over 30% of all service calls.**

In the case of a suspected fault, refer to the fault finding section of this guide.

In the event of a boiler fault or breakdown please contact Worcester, Bosch Group appointments team (see back cover for details)

Your advisor will arrange for an engineer to call with the minimum of delay.

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## 9 Environment / disposal

Environmental protection is a fundamental corporate strategy of the Bosch Group.

The quality of our products, their economy and environmental safety are all of equal importance to us and all environmental protection legislation and regulations are strictly observed.

We use the best possible technology and materials for protecting the environment taking account of economic considerations.

### Packaging

We participate in the recycling programmes of the countries in which our products are sold to ensure optimum recycling.

All of our packaging materials are environmentally compatible and can be recycled.



#### **USED APPLIANCES**

- ▶ Greenstar gas boilers are 100% recyclable. The various assemblies can be easily dismantled and synthetic materials are marked accordingly. Assemblies can therefore be sorted by composition and passed on for recycling.

## 10 Tips on energy saving

### Heating economically

The boiler provides a high level of comfort whilst keeping gas consumption low and so minimising the environmental impact.

The gas supply to the boiler's burner is regulated according to the demand for heat. The boiler operates with a low flame if the demand for heat reduces. The technical term for this process is modulating control.

Modulating control reduces temperature fluctuations and provides an even distribution of heat throughout the home.

This means that the boiler may stay on for relatively long periods of time but will use less gas than a boiler that continually switches on and off.

### Central heating systems with room thermostat/thermostatic radiator valves

With modern heating systems designed around a 20 °C heat loss across the system, the optimum setting for a condensing boiler will be approximately between the first and second segment on the central heating temperature control. The system must be balanced correctly and the radiators may need upgrading.

The temperature of each room can be set individually (except primary room with the room thermostat) using the thermostatic radiator valves.

### Room thermostats

Reducing the setting of the room thermostat by 1 °C can reduce fuel consumption by up to 10%.

### New control systems

Upgrade your heating control system if necessary with the latest equipment available.

### Roof insulation

Around 30% of the heat loss from a property is through the roof. Replace any old insulation with new insulation, preferably of around 200mm thickness or more.

### Window frames

Single glazed windows, particularly those with steel frames, can lose a great deal of heat. Consideration should be given to replacement with PVCu or wooden framed double glazed units.

### Radiators

If a radiator is sited underneath a window, its performance will be affected if the curtains are allowed to drape over the radiator. Shelves fitted above or in front of the radiator should also be avoided.

It is advisable to manually adjust all thermostatic radiator valves every 2 - 3 months to prevent them sticking. Ensure radiator valves are correctly set and not damaged.

### Draughts

Try to ensure that draughts around doors, windows, letter boxes and keyholes etc. are reduced by using a suitable draught excluder.



#### **WARNING:** Air vents

- ▶ Do not block or seal any air vents that are installed to ensure that the central heating boiler operates safely.

### Curtains

Lined curtains, or heavier full length curtains can provide excellent insulation. However, always ensure that the curtains do not drape over radiators.



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## 11 Glossary

### Central heating systems

All radiators must be heated at an even rate. If the top of a radiator is at a lower temperature than the bottom then it should be bled by releasing air through the bleed screw at the top of the radiator.

Ask your installer to show you how this is done.

This boiler is fitted to a sealed system. Should water leaks be found or if excessive bleeding is required, then a service engineer must be contacted to inspect the installation and rectify any fault.

Only additives that are compatible with aluminium may be used in the system. Any incompatible additive used will invalidate the guarantee.

### Plumbing and condensate drain

This is a condensing boiler and the flue terminal will, at times give out a plume of water vapour. This is quite normal.

The boiler produces condensate which is discharged regularly from within the boiler via a plastic pipe to a drain point. This pipe must not be blocked or altered in any way.

### Room thermostat / programmer

A room thermostat and a twin channel programmer must be fitted to control the central heating and hot water. This controls the timing of the central heating and hot water, preventing the boiler from firing unnecessarily. If pre-heat mode is used, then this mode can be timed to be on during times of high demand. Refer to the instructions supplied with the thermostat and twin channel programmer for further information.

### Thermostatic radiator valves

Thermostatic radiator valves must be fitted in sleeping accommodation. It is recommended that this type of valve is fitted to all but one of the radiators. The remaining radiator, where the room thermostat is located, must be uncontrolled and left open.

### Pump over run function

After the boiler has finished a demand for central heating or hot water, the pump may continue to run for a short while to dissipate the heat from within the boiler.

### Pump anti-seizure

If there has been no heating demand for 24 hours, the boiler will run the system pump for a few seconds to reduce the possibility of pump seizure during long periods of inactivity.

### SEDBUK

Seasonal Efficiency of Domestic Boilers in the UK.

## 12 GUARANTEE

### Guarantee Terms and Conditions

This appliance is guaranteed against faulty materials or workmanship for a period of 24 calendar months from the date of installation subject to the following conditions and exceptions;

- (i) that during the period of this guarantee any components of the unit which are proved to be faulty or defective in manufacture will be exchanged or repaired free of material charges and free of labour charges if repaired directly by Bosch Thermotechnology Ltd,
- (ii) the product must be maintained in accordance with the manufacturer's instructions and serviced annually, by a Gas Safe registered engineer. Proof of servicing will be required to validate a guarantee
- (iii) invoices for attendance and repair of this appliance by third parties will not be accepted for payment by Bosch Thermotechnology Ltd,
- (iv) that the householder may be asked to prove the date of installation and that the appliance was correctly commissioned,
- (v) the guarantee must be registered within 30 days of installation.
- (vi) that any product or part thereof returned for servicing under the guarantee must be accompanied by a claim stating the Model, Serial Number, Date of Installation,
- (vii) that Bosch Thermotechnology Ltd will not accept responsibility for damage caused by faulty installation, neglect, misuse or accidental damage or the non-observance of the instructions contained in the Installation and Users Instructions leaflets,

- (viii) that the appliance has been used only for normal domestic purposes for which it was designed,
- (ix) that this guarantee applies only to equipment purchased and used in the United Kingdom of Great Britain and Northern Ireland, the Republic of Ireland, the Isle of Man or the Channel Islands.

'For full terms and conditions, please visit:  
[worcester-bosch.co.uk/guarantee-terms-and-conditions](http://worcester-bosch.co.uk/guarantee-terms-and-conditions).

### Guarantee registration

Your Greenstar appliance carries a guarantee against faulty material or manufacture subject to Terms and Conditions. Guarantee Registration can be completed:

- Via the Worcester, Bosch Group guarantee app:
  - By scanning the appliance label QR code, all the appliance information is populated in the app, so you just need to fill out the property and installer details
- On-line:
  - You can register on our website:  
[www.worcester-bosch.co.uk/guarantee](http://www.worcester-bosch.co.uk/guarantee)
- By post:
  - Fill out the guarantee card and return it to Worcester, Bosch Group
- By telephone:
  - Please call one of our Guarantee Registration advisors on 0330 123 9559



The guarantee app can be downloaded to your smart device from Apple iTunes, Google Play or via the Worcester, Bosch Group website

### For your own records

Please ensure that the Benchmark Checklist has been completed by your installer or service engineer.

Model	
Serial No.	
Type/Size	
Date of installation	
Name of installer	
Telephone number of installer	

## NOTES

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Worcester, Bosch Group is a brand name of  
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