

Handy hints

Your heating and
hot water guide.





Reliable heating and hot water are essential to a home. They need to operate smoothly, run as cost-efficiently as possible and provide the comfort levels you want, when you want them.

A straightforward guide

As with any other important elements of a home, knowing how to manage, look after and enhance your system and what you should pay regular attention to will help ensure that it always performs at its best.

This guide is designed to help you to keep your heating and hot water system in optimum working condition. Covering all the key aspects from boilers to radiators, storage cylinders and controls. This guide will help you maximise efficiency, reduce running costs and ensure comfort as well as advise on how to maintain your system.



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“Worcester Bosch continues to impress us with its reliable boilers and happy customers.”

Which? 2016/2017 survey.



By Appointment to
Her Majesty The Queen
Boiler Manufacturer
Worcester, Bosch Group
T/A Bosch Thermotechnology Ltd.
Worcester





Make sure that areas around your radiators are always clear. Putting furniture in front or covering radiators with long curtains will block the heat, reducing your comfort levels.

Radiators.

Radiators use hot water generated by a boiler to warm the air in a room. Generally, the hotter the temperature of the radiator, the hotter the room temperature will be.

Radiators are by far the most common form of heating in a home. In each of the rooms that require heating, there will be one or possibly more radiators. Radiators must always be free of air and full of water in order to function well.

Radiator operation

If you notice a cool spot on the radiator, particularly towards the top, it could mean that air is trapped inside. An air release vent on the radiator allows you to release the air using a special air vent key. Releasing air should take place when the radiator is cold.

If you have a sealed heating system (one without tanks in the loft) then make sure that you know how to check that the water in the system is at the right pressure and how to top up the levels if it's not. Please note that it is most important that your installer has instructed you on how to do this, or visit our YouTube channel for guidance.

Radiator performance

More often than not, radiators are sited underneath a window so that the warm air that they generate heats the colder air coming in through the window. A radiator will not perform as well as it should if curtains cover it or if shelves are fitted above. Putting furniture or tables in front of a radiator will also affect your comfort.

Even heat

Radiators should all heat up at the same even rate. To ensure that they do, your installer should have 'balanced' the system. This is achieved by adjusting each radiator's lockshield valve, which regulates the water flow.

Turning off radiators

In a balanced system, individual room temperatures depend on all the radiators working at the same time. If you decide to turn off radiators, for example in spare bedrooms or rooms that you rarely use, you might find that rooms adjacent to those have a slightly lower temperature.



Watch advice guides on repressurising a heating system and bleeding radiators at youtube.com/WorcesterBoschGroup



If your radiators are getting excessively hot and the boiler is rapidly turning on and off, the temperature of the water going to your radiators may be set too high. This wastes energy and reduces the boiler's efficiency. You can usually adjust the temperature using the central heating control dial or adjustment switches on your boiler. See page 9 for more information.

Thermostatic radiator valves

The radiators in your home should ideally be fitted with thermostatic radiator valves (TRVs), which will enable you to control the individual temperature of each room. They can be adjusted to suit the comfort levels you want and provide a simple way of reducing running costs. The higher the number shown on the TRV, the hotter the room should get, up to a maximum of around 22°C.

It is important to make sure that the area around a TRV is kept clear and is not blocked by furniture or curtains so that it can accurately detect the room temperature. Don't be too concerned if the whole of the radiator is not as hot as an uncontrolled radiator, as it's likely that the room is up to temperature and the TRV has temporarily shut the radiator off. Please note a TRV should not be fitted on a radiator in the same room as a room thermostat.

Maintaining radiator valves

To prevent TRVs and on/off radiator valves from sticking, turn them a little by hand every 2-3 months. It's also important to check that the plastic tops on all valves are always in position and are not cracked or damaged so as to prevent accidents. Take care not to knock valves and pipework when vacuuming or cleaning floors to avoid damaging them.



Radiator removal for decorating

When decorating a room it can be more convenient to remove the radiator from its brackets allowing you to paper or paint behind it more thoroughly. Usually this means isolating the two valves either side of the radiator and opening the union nut connection which will allow the water in the radiator to be drained into a container. The radiator can then be removed. Replacing the radiator after the work has been completed requires tightening the union nuts back to the radiator valves and then turning the valves back to where they were previously set.

If the boiler is a combi and is run on a sealed system, the system will need re-pressurising. See our YouTube channel for guidance.

Underfloor heating

In a modern, well-insulated property, underfloor heating can act as the primary heating source and, in most cases, no other space heating method is required.

Underfloor heating operates with lower water temperatures than traditional radiator systems. This makes it the perfect complement for ground source and air to water heat pumps.

The low return water temperature of underfloor heating also makes it suitable for use with condensing boilers, ensuring they remain at their optimum efficiency, with significant energy savings.





Controlling your heating and hot water.

Boiler controls make a big difference to your comfort and energy usage. You can decide when you want your heating, and in some cases hot water, to come on and go off and how warm you want your home to be. They ensure a comfortable temperature whilst reducing your energy use, so that you only pay for what you need when you need it.

Built-in boiler controls

Your boiler is likely to have two control dials or push buttons on the front. These are a hot water temperature control and a central heating temperature control.

The hot water temperature control dial is for setting the temperature of the hot water coming out of your taps and shower.

The central heating temperature control dial is for controlling the temperature of the water that goes from the boiler into your radiators – not the room temperature. If the setting is too high, the boiler will use more energy than it should as well as wasting it.

You may also find that the radiators will get very hot and reach the programmed room temperature very quickly, which will turn the boiler off and then back on again when the temperature dips down. This constant on-off action uses more energy. A high setting will also affect the boiler's ability to condense (capture and re-use the heat that would otherwise escape), which means that energy will be wasted.

It's also important not to set the dial too low either as the radiators will take longer to heat the rooms to the temperature you want.



Central heating
temperature control

Hot water
temperature control



Central heating
temperature control

Hot water
temperature control

Optional controls.

Timers and programmers

A boiler timer is a basic device that allows you to set specific times for your central heating system to come on and turn off, with the same times repeated every day.

A boiler programmer allows you to set your heating and sometimes hot water to switch on and off at different times on different days of the week to suit your lifestyle.

Most modern programmers also automatically adjust for British Summertime.



Plug-in mechanical timer.



Plug-in programmer.

Room thermostat

A room thermostat monitors the air temperature and enables you to set the level you want. If the room temperature drops below this level, the thermostat switches your boiler on.



Room thermostat.



It is very important to select the correct position for the room thermostat. Avoid placing it close to a window, door or in the corner of a room. Normal locations are the hall or landing.

Find out more about the range and features of Worcester controls at worcester-bosch.co.uk/controls

Programmable room thermostat

A programmable room thermostat is both a boiler programmer and a room thermostat, and allows you to set different room temperatures for different times of the day and night. When programmed correctly, it prevents the system from having to heat your home from a cold start. The boiler simply 'tops up' the temperature, which saves energy and improves comfort.



Programmable room thermostat.

Smart control

The Wave, Worcester's smart control for central heating and hot water, can be operated from a compatible smart device using a wireless internet connection. Simple to use, it includes a host of clever features, including automatic adjustment of your boiler to ensure your heating and hot water preferences are met.

The control can be adjusted through a built-in touch screen or via the downloadable Wave app. The app also provides usage information and identifies where you could potentially make energy savings. To check if your boiler is compatible with the Worcester Wave please visit: worcester-bosch.co.uk/Wave.

Greater energy efficiency

Controls with 'load compensation' and 'weather compensation' features improve energy efficiency even more.

Load compensation means that the temperature of the hot water going to your radiators is adjusted in keeping with the room temperature. With this feature, when a room is cold the temperature of the hot water going to the radiator is high, but as the room warms up the temperature is lowered so that comfort is maintained whilst energy use is reduced.

Weather compensation means that the temperature of the hot water going to your radiators is adjusted in keeping with the outside temperature. With this feature, radiators run hotter if temperatures outside drop, but on milder days they automatically run at a lower temperature, boosting energy efficiency and lowering your bills.



Worcester Wave 'smart' control.



Watch easy step-by-step guides to controls at youtube.com/WorcesterBoschGroup



The thicker the insulation level on a cylinder, the better it is at retaining heat. Most new cylinder insulation ranges from 55-65mm.



Worcester Greenstore solar compatible unvented cylinder.

Hot water storage cylinders.

Hot water cylinders are either open vented (fed from a cold water storage tank in your roof) or unvented (also known as mains pressure) which are connected directly to the water mains.

Unvented cylinders

Unvented or mains pressure cylinders are the perfect complement for system or regular boilers. Hot water is supplied at mains pressure for powerful showers and fast bath filling, and multiple taps can be used at the same time. Even if your mains water pressure is low, you can still benefit from high performance, fast re-heat times and energy savings.

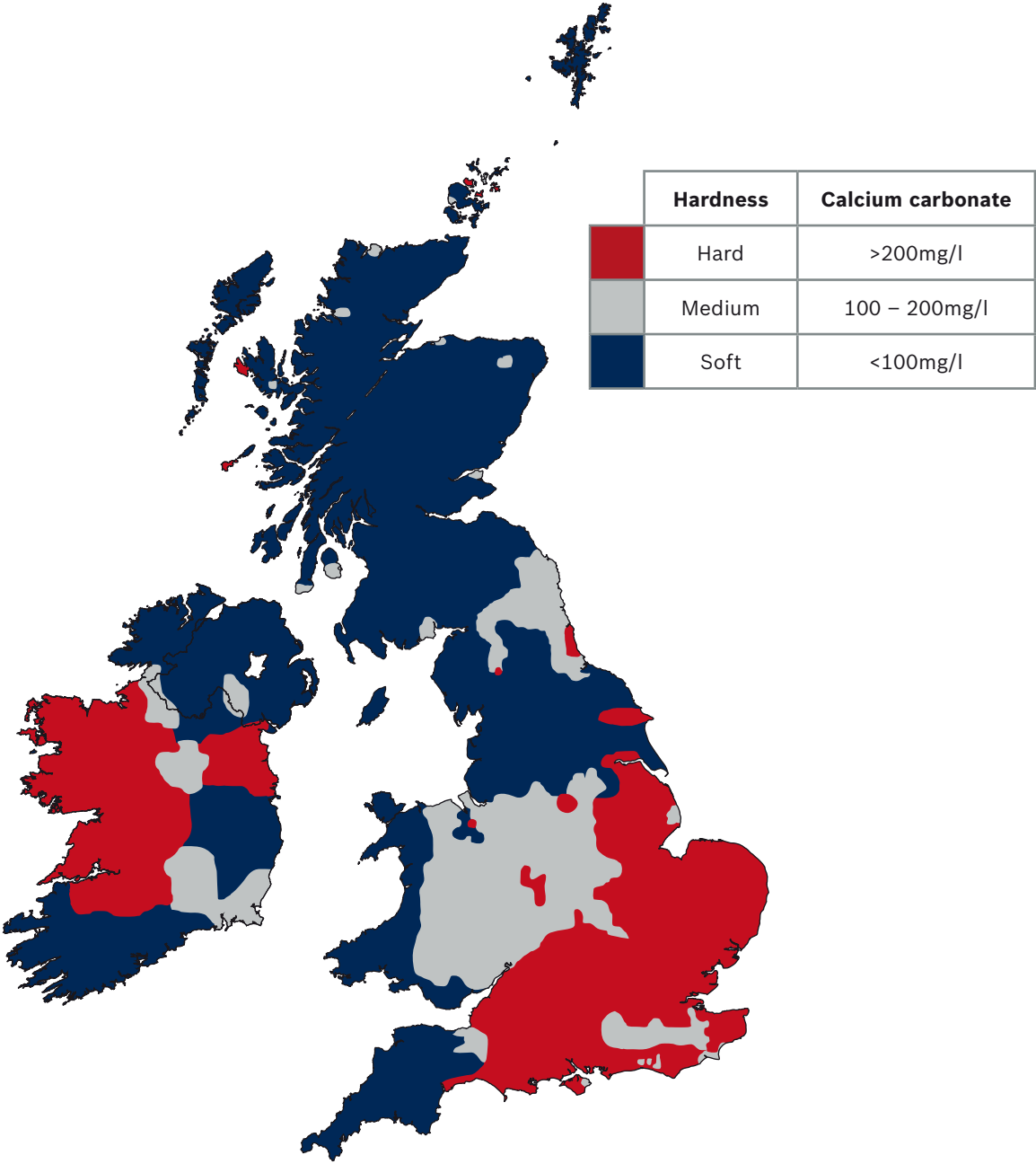
Unvented solar cylinders

Solar-compatible unvented cylinders are specifically designed to work with solar water heating systems. With all the same benefits as standard unvented cylinders, they enable you to add solar water heating to your system at a later date with no need to replace the cylinder. They will provide highly efficient storage for both boiler and solar-heated hot water.

Preventing heat loss

To prevent heat loss from pipes and old cylinders, ensure an adequate level of insulation or 'lagging' is fitted. Modern cylinders have insulation integrated into the casing and therefore do not need external insulation.





To find out if you live in a hard or soft water area visit: ecowater.co.uk/post-code-checker

Please note: This map is still only a generalisation. Hardness does often vary from postcode to postcode, so please contact your water supply company for information on the specific level of hardness in your water.

Water supply.

Hard and soft water

Rainwater absorbs naturally hard minerals from the ground on its way from the surface to the waterways. Whether somewhere is a 'hard' or 'soft' water area is determined by the amount of hard minerals such as chalk, lime and calcium it contains. Areas in the north of the UK tend to have softer water whilst areas in the south experience higher levels of hardness.

Areas of hard water

Hard water leaves limescale deposits on things like pipes, hot water systems, kettles, electric irons and domestic appliances. Over time in areas with very hard water, limescale may build up in the boiler's heat exchanger, which can reduce efficiency and possibly the flow rate, which in turn can effect your comfort.

If the water hardness count in your area is over 200 parts per million (you can check this with your local water company), this build up can be prevented by fitting a scale prevention device or water softener to the incoming mains.

Cloudy water

In certain areas of the country, at certain times of the day, heated domestic water might occasionally have a cloudy or milky appearance. This is completely harmless and is caused by the millions of air bubbles (carbon dioxide) that are created when the water is heated. Just like the cloudy water that you might get when you fill a glass from a tap, this will settle and clear.

Combi boilers and water meters

When a hot water tap is turned on and then turned off, a small amount of the water expands, which is allowed to travel back into the water mains under water regulations. Water meters prevent water from flowing back into the mains so if one has been fitted, in some cases there may be a build up of pressure between the turned off hot water tap and the meter. This could cause taps or showers to drip.

If you have a combi boiler and a water meter was already in place when it was installed, your installer may have needed to fit an expansion vessel to the mains water pipework. This absorbs all of the expansion water. If you had a water meter fitted after your boiler was installed, you may benefit from having an expansion vessel added. In both cases, ask your installer for advice.



Hard water deposits can block pipe work and damage internal boiler components.

Simple ways to protect your heating system.

System flushing and cleansing

If you've had a boiler installed in the last year or two then it is likely that your installer flushed and cleaned the heating system.

If your boiler is older and is making a noise or your radiators are hot at the bottom and cold at the top, your system water may be contaminated. This can be remedied by flushing the system with a chemical cleanser and then adding corrosion inhibitor. Your installer will be able to advise you about this.

Keeping your system clean

Even if you've had your heating system flushed, over time the water in it can accumulate harmful dirt and debris from mains water limescale deposits and from fragments shed by older radiators and boilers. This can reduce efficiency and cause damage to the boiler.

There are a number of different types of filtering products available that can prevent heating system contamination, one of which is the Worcester Greenstar System Filter, which captures contaminants before they reach the boiler. This safeguards the boiler against damage, prevents radiator blockages and protects the efficiency of the system.



A Greenstar System Filter reduces and removes debris that builds up in the heating system.



Learn about how to keep your heating system clean at youtube.com/WorcesterBoschGroup





Keeping your system topped up.

There are three ways to top up your system, which will depend on the type of boiler you have. Ask your installer if you are not sure which method applies to your boiler.

Alternatively, see the 'Homeowner' section of our website at worcester-bosch.co.uk/faqs. With all three methods you should turn off the power to the boiler before you start, and stop the process when the pressure gauge reaches 1 bar.

1. An external filling hose

This needs to be connected manually between the filling link and mains water connection.



2. Worcester internal filling key

This is normally located under the boiler and needs to be inserted into the filling link, enabling you to increase the pressure of your system.



3. Worcester keyless filling link

This is the quickest and easiest method. It is permanently fitted to certain wall-mounted Worcester combi boilers and has a lever underneath. To top up the system, simply pull the lever down until the correct pressure is achieved then release.



Watch how to top up your system at youtube.com/WorcesterBoschGroup

Top tips for saving energy and reducing running costs.



Insulation

Around 30% of the heat loss from your home is through the roof. You can reduce this considerably by insulating the roof space. You may be able to get a grant towards this.



Window frames

Single glazed windows, particularly those with steel frames, can lose a great deal of heat so you could consider replacing them with PVCu, wooden framed double glazed units, or more affordable secondary glazing solutions.



Curtains

Lined or heavier fabric full-length curtains can provide excellent insulation. However always ensure that they don't cover your radiators.



Draughts

Use a suitable draught excluder to cut out heat loss from areas such as doors, windows, letterboxes and keyholes.



Thermostatic taps and showers

It's advisable to have thermostatic taps and showers, particularly if you have young children, as water straight from a tap can be very hot.



Bath filling

Your bath will fill quicker if you run hot water only into the bath then add cold water after. But always take care around small children.



Keeping a bath warm

If your bath is made of cast iron or pressed steel, the water is likely to cool quicker. Putting insulation underneath and around the bath will keep the water warmer and save energy.



Room thermostats

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



Radiators

If radiators are fitted to an outside wall, fix reflective foil on the wall behind them to reduce heat loss through the wall.



New controls

Upgrade to the latest available heating controls. You'll need a programmer, linked room thermostat and thermostatic radiator valves as a minimum. Controls with load and weather compensation features boost energy efficiency even more.



Solar panels

Adding solar water heating panels to your system will give you up to 60%* of your hot water free and from a green energy source.



After bathing

Once you have used your bath there is still a lot of useful heat in the water, heat that can contribute to heating your home. If condensation isn't an issue you could leave the water within the bath until it has gone cold.



Watch how to save energy around the home at [youtube.com/WorcesterBoschGroup](https://www.youtube.com/WorcesterBoschGroup)



Frequently asked questions.

Q. Why does so much white steam come from my flue?

A. If you have had a boiler installed since April 2005, it will be a high efficiency condensing type. Condensing boilers operate more efficiently than non-condensing ones as they extract more heat from the flue gases. In certain weather conditions, particularly when it's cold, the temperature of the flue gases may drop, and you may see a plume – a misty vapour – coming out of the flue. This plume is perfectly normal and means that the boiler is operating efficiently.



Q. What sort of shower should be run off a combi boiler?

A. Because combi boilers produce hot water at mains pressure they are compatible with either a mains pressure balanced or thermostatically controlled shower.

In contrast, when a regular boiler and cylinder has been replaced with a combi boiler, any existing shower should be examined for suitability. This might be a pump assisted power shower, for example, which is designed for low-pressure systems and it may need adjusting or replacing.



Q. Should I have a water softener fitted to my boiler?

A. Water softeners are now commonly used, especially in hard water areas around the UK.

With a condensing boiler, if you intend to use a softener unit you must remember that due to the change in the pH level, it would be unwise to fill your central heating system with such water as this could reduce the life of your central heating and pipe work.

It is wise when adding water using the filling loop to your condensing boiler, that this is fitted prior to the softener unit.

It is acceptable for water supplied into the boiler for hot water from taps to be softened water. This will have no negative effects.



A build-up of limescale in hard water areas can affect efficiency and damage components.

Q. What happens if I suffer a power cut?

A. In the event of a power cut, a digital programmer will normally retain its settings for a set period depending on the model. A mechanical analogue timer with a clock face will stop when the power goes off, so when the power is restored you will need to reset it to the correct time. Once the timer has been reset, the boiler will operate as normal.



Q. What happens if I run out of gas or oil?

A. With a natural gas-fired boiler you are connected to the mains gas supply line, so unless the gas line is interrupted for some reason it's unlikely that you will ever run out of gas. If you have an LPG or oil-fired boiler, you will need to order LPG or oil as and when required. Keep an eye on the level of fuel in your storage tank and make sure that you order supplies well in advance of it running out. If you completely run out of LPG or oil, air will need to be removed from the fuel supply line that runs from the tank to the boiler. It is always recommended that you ask your installer or service engineer to do this before you use your boiler again.

**Q. How do I fill my system?**

A. If you have a combi or system boiler, which are both sealed systems, there is likely to be a water pressure gauge on the front. This should be at a setting of around 1 bar whilst the heating is off. When the boiler is operating, the gauge will usually rise to 1.5 bar or more and when the system cools down again it should return to around 1 bar.

If the gauge has dropped below the 1 bar level, there is likely to be a small leak in the system and the water pressure will need to be topped up with mains cold water. You will only need to do this if you have a sealed system boiler.



If you have a question that isn't answered here then please visit: worcester-bosch.co.uk/faqs where you will find a range of frequently asked questions and answers from our experts.

Q. Why do some boilers stop working in freezing weather?

A. Condensate is water vapour gathered from the boiler's flue and is a natural feature of all condensing boilers. It is discharged via a pipe into a property's drainage system. However, if the outside temperature is below freezing for a prolonged period, external discharge pipes or those in a cold area, such as a garage, can freeze. This prevents the condensate from draining away and causes the boiler to stop working.

There are a number of ways in which the risk of frozen condensate can be eliminated, one of which is the Worcester CondenseSure. This helps prevent external condensate pipes from freezing even in the harshest winter conditions and has been independently tested at a continuous temperature of -15°C for a period of 48 hours. It works with all new and existing condensing boilers, is simple for your installer to fit and, unlike some other products, doesn't use any electricity.



Q. What does the 'SE' code mean on my Greenstar CDi boiler?

A. This is a feature of certain Worcester Greenstar CDi boilers and is a reminder that the boiler requires its annual service. The code is activated after 2,324 burner hours, which is the estimated average burner run time over a 12 month period.

You should contact your installer to arrange for a service visit, but in the meantime you can clear the code by following the instructions in your boiler user manual. If you have lost your manual, you can download a new one from our website.



Watch how to thaw and prevent frozen condensate pipes at [youtube.com/WorcesterBoschGroup](https://www.youtube.com/WorcesterBoschGroup)



Even if your boiler is working perfectly, having it serviced every year is essential. The best time to have this done is in the summer or early autumn so that your boiler is in top condition and ready to keep your home reliably warm through the winter months.



Annual servicing.

It's very important to have your boiler serviced every year. Just like a car, it needs to be well maintained in order to keep it operating at its best. An annual service makes sure that your boiler continues to function safely and efficiently and prevents minor faults from becoming major problems. Gas-fired boilers should always be serviced by a registered Gas Safe engineer and oil-fired boilers by a registered OFTEC engineer.

Keeping your boiler clean

The boiler should ideally be kept in a dust-free environment. To clean the front of the cabinet and side panels, use a cloth dampened with plain water or a very mild solution of washing up liquid.



To book a boiler service please visit our website to find an installer near you who offers servicing. Alternatively, you can book a Worcester service engineer by calling 0300 123 9339, or emailing: service-appointments@uk.bosch.com





Other technologies from Worcester for your home.

Greenskies solar thermal panels.

Greenskies solar hot water heating panels absorb solar energy and convert it to heat.

Effective even on a cloudy day, they can provide up to 60%* of your home's hot water requirements from a clean, renewable source.

They can be installed on or in a sloping roof, on a flat roof or even on a wall or floor, and come with a range of optional controls to enhance efficiency.



Greenstore ground source heat pumps.

Ground source heat pumps work by drawing renewable energy from the ground and converting it into low cost, low carbon heating and hot water all year round.

For every single kilowatt of electricity used to power high efficiency Greenstore ground source heat pumps, the system can generate four kilowatts of energy for the home, which can mean significant savings on your energy bills.

Available in a range of capacities, they are designed to be the sole source of heat generation. They are suitable for well-insulated homes of all types and ages.



Greensource air source heat pumps.

Designed for optimum efficiency, air to air heat pumps can generate up to five kilowatts of heat from every one kilowatt of electricity used to power them.

In addition to generating hot air for distribution around the home, Greensource air to air heat pumps can also act as an air cooler during the summer and feature advanced air purification technology, which is particularly beneficial to allergy sufferers.



* Source: Energy Saving Trust.

Know your system.

There are a number of different boiler systems, so knowing which one you have is an important first step for maintaining and benefiting from the efficiencies it offers.

The three main boiler types are combi, system and regular. To help you identify the system that you have, the following illustrations show how they are typically set up in a home, and what elements they typically contain.

Typical combination boiler heating system.

A combination or 'combi' boiler is both a high efficiency water heater and a central heating boiler in a single compact unit. Combi boilers heat water directly from the mains when you turn on a tap, so you won't need a hot water storage cylinder or a cold water storage tank in the roof space. They are also very cost-effective and energy-efficient as water is heated instantly rather than being heated and then stored in a cylinder.

An added benefit is that hot water is delivered at mains pressure, which means that you could get a powerful shower without the need for a separate pump.



System images for guidance only.

Typical system boiler heating system.

System boilers require a cylinder for storing hot water, however the major heating and hot water system components are built into the boiler itself, making it quicker and easier to install.

In addition, there is no need for a tank in the loft, so it can be an option in a home with little or no loft space or where the space is earmarked for a conversion. These boilers are also compatible with solar water heating systems, which deliver environmental benefits as well as lower energy bills.



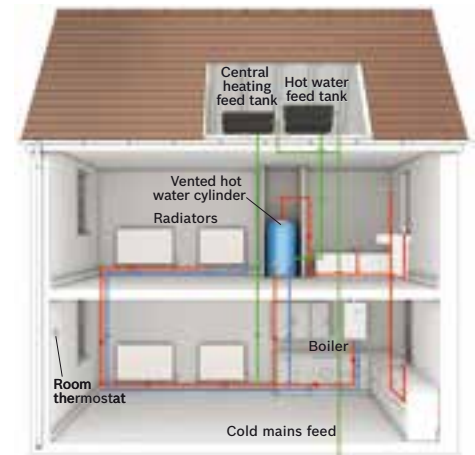
System images for guidance only.



Getting to know which boiler system you have will help you make the most of it and look after it the right way.

Typical regular boiler heating system.

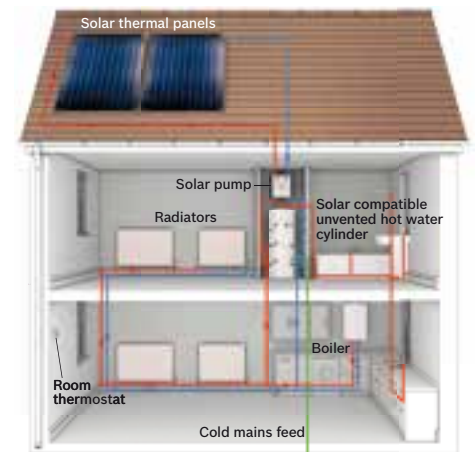
Regular boilers (sometimes known as traditional, conventional or heat only boilers) are ideally suited to homes that already have a traditional heating and hot water system which is linked to a separate hot water cylinder. These boilers also need a cold water storage tank in the loft to feed the hot water cylinder as well as a tank that maintains the water level of the central heating system. A regular boiler may be the best option for replacing an existing boiler if the property has an older radiator system, as it might not be able to cope with the higher water pressure that is delivered by system or combi boilers.



System images for guidance only.

Typical system or regular boiler heating system with solar thermal hot water.

System and regular boilers are perfect partners for Worcester Greenskies solar hot water systems (also known as solar thermal). In a solar thermal system, the panels harness heat from the sun, which is used to heat the water stored in a solar compatible hot water cylinder. The boiler is linked to the system and automatically starts up if the water in the cylinder falls below the required temperature, ensuring you have all the hot water you need all year round.



System images for guidance only.

Useful numbers

Consumer Technical Helpline (Pre & Post Sales)

Tel: 0330 123 3366

Email: technical-advice@uk.bosch.com

Brochures

Email: brochure-request@uk.bosch.com
or download instantly from our website
or telephone 0330 123 9119

Customer Service

Service Enquiries

Email: service-enquiries@uk.bosch.com
or telephone 0330 123 9559

Guarantee Registration

To register your Worcester guarantee,
please visit our website
worcester-bosch.co.uk/registration
or telephone 0330 123 2552

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