

Gas-fired boilers



Your heating and hot water
in safe hands.



 **WORCESTER**
Bosch Group

Discover more with Worcester.



A boiler is at the heart of the home...

This brochure will help you make all the right choices for comfort and warmth to reliably meet your needs both now and into the future.

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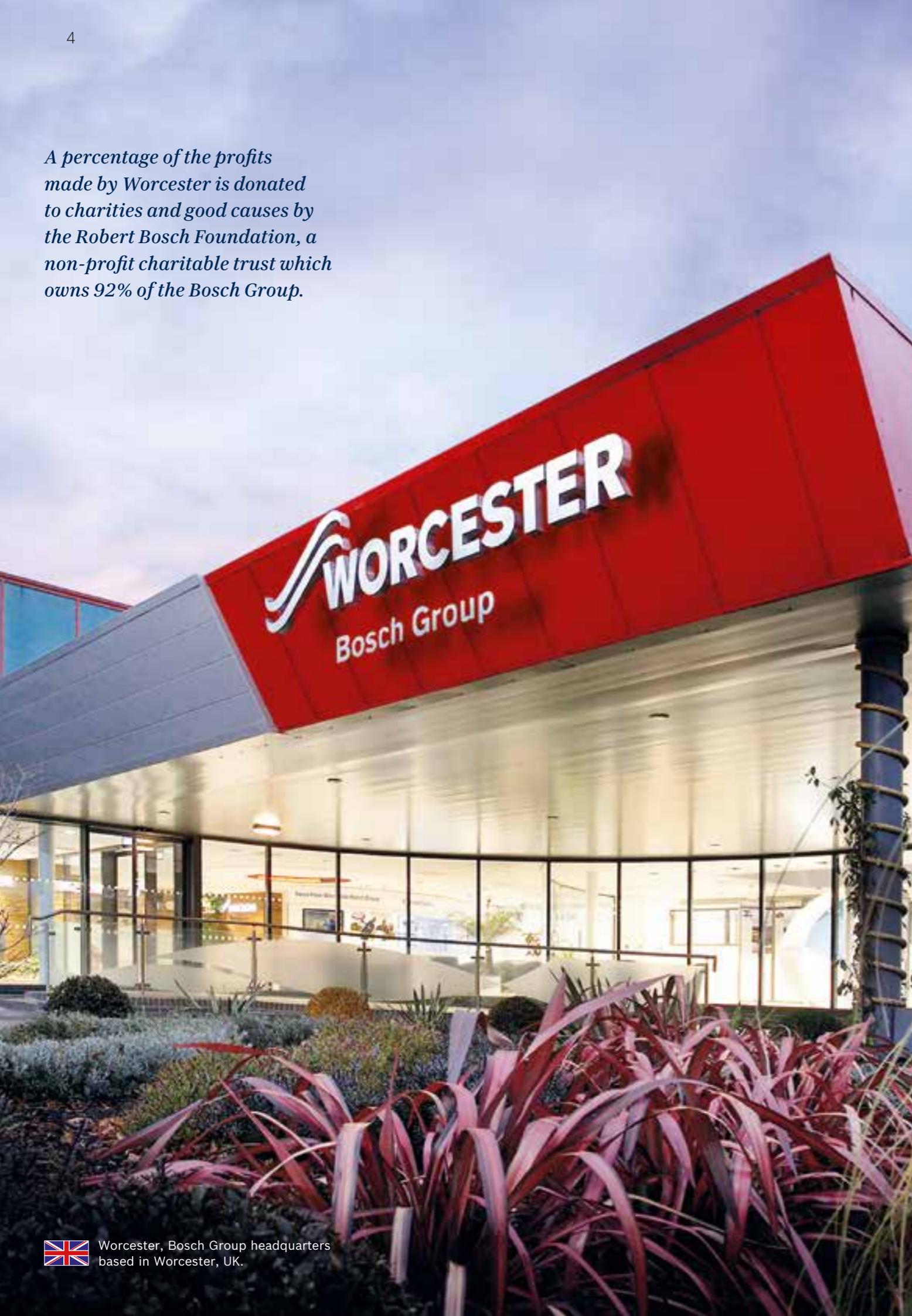
"Worcester Bosch continues to impress us with its reliable products and happy customers."

Which? 2016/2017 survey.



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

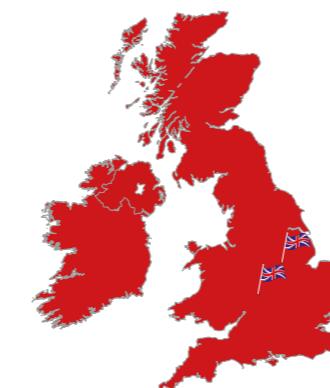
A percentage of the profits made by Worcester is donated to charities and good causes by the Robert Bosch Foundation, a non-profit charitable trust which owns 92% of the Bosch Group.



 Worcester, Bosch Group headquarters based in Worcester, UK.

Why should Worcester be your next boiler choice?

Worcester is the choice for millions of quality and value focused homeowners. In a recent Worcester customer satisfaction survey it has been revealed that we are also the choice of professional tradesmen too, with 9 out of 10 heating engineers choosing Worcester to provide warmth and hot water for their homes and families.



UK based and proud

Dedicated manufacturing plants in Worcester and Clay Cross, Derbyshire.



WHICH? Best Buy

Our Greenstar gas boilers have received WHICH? Best Buy Awards for seven years running.



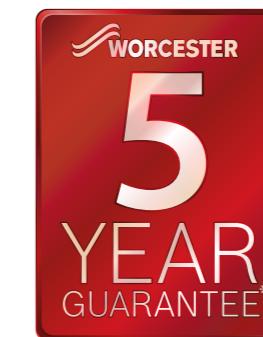
50 years and counting

Manufacturing to the highest standards for over 50 years.



Part of the Bosch Group

All Worcester products are manufactured with Bosch levels of quality and reliability as standard.



5 year guarantee

Every Greenstar boiler is guaranteed for 5 years as standard*.



Royal Warrant

We are honoured to have received a Royal Warrant in recognition of supplying goods to Her Majesty The Queen.

In the last few years, new boiler technology has made a huge difference. Old boilers can be as little as 60% efficient, whilst condensing boilers can achieve over 90% efficiency, helping you to reduce fuel bills.

Heating and hot water: the key facts.

Most of us think of central heating as a modern invention but it in fact dates back to a warm air system developed in Roman times. It wasn't until the 1970s, however, that central heating fired by a gas boiler started to take off and by the early 1980s it was regarded as a basic requirement for UK homes.

Boilers have come a very long way since then. Advances in technology and changes to regulations mean that they are now far more energy-efficient and are much more suited to a variety of homes and lifestyles.

A leap in efficiency

Given that boilers account for about 60%* of a household's annual energy costs, how efficient they are has a big effect on bills. With older gas boilers, a considerable amount of heat that could be used to generate heating and hot water is lost. Generally the older they are, the more heat they lose, making them increasingly expensive to run.

Some very old boilers can only achieve 60% efficiency and even relatively newer ones are only 70-75% efficient, which means that as much as 30%* of your heating and

hot water fuel requirement could be wasted. An added problem is that many of the older boiler types have no proper controls, further reducing your boiler's efficiency.

EFFICIENCY COMPARISON	
Greenstar CDi Compact	94%
Old boiler	up to 60%

In the last few years, new 'condensing technology' has been incorporated into boilers. Essentially this enables some of the heat that would otherwise escape from a boiler to be captured and re-used. As a standard rule the better the boiler quality, the more it captures. For example, our

Greenstar condensing boilers are more than 90% efficient, so over 90p of every £1 you spend on fuel for your boiler is used for your heating and hot water. On top of this, intelligent controls can also make a difference by enabling much smarter, more cost-effective management of your heating and hot water system. For example, each of our Greenstar i, Si and CDi Compact combi boilers already have A-rated status with guaranteed efficiency levels of 94%, but by adding a Wave Internet-connected Smart controller (with its combined weather and load compensation feature), you can boost your heating system efficiency to an impressive 98% (also known as A+).





Every boiler needs to be maintained and serviced so it makes sense to consider the lifetime running costs along with the initial purchase price.

Lifestyle flexibility

With a wide range of boiler types on the market you can be sure to find one to suit your home and lifestyle. Each boiler has its own installation requirements, so talking to an expert is important. They will look at things like the size of your property, mains water pressure, the number of bathrooms or showers, if you have a loft and whether you want to free up space.

Another consideration is how you use your heating and hot water and if it might change, such as if your family is growing. Gaining expertise from the right company, such as Worcester, will help to make this process simple, whilst also ensuring you receive a boiler that meets all your needs, both now and into the future.

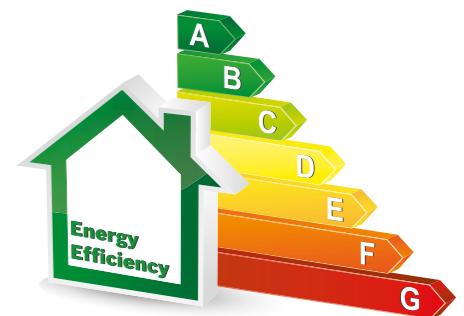
Wise choices

A new boiler will always vastly improve efficiency but it can be a sizeable investment, so it's important to choose wisely. Much like buying any other large appliance, it makes sense to look beyond the purchase price, and to consider the durability of parts and maintenance costs.

The better the boiler quality, the more reliable it will be, so opting for one from an established manufacturer will ensure you receive high performance as well as choice. By discussing everything with experts like your Worcester installer, you'll make certain of the best long-term value for money, giving you financial peace of mind as well as comfort and warmth.

Smaller carbon footprint

Domestic boilers currently account for 21%* of the UK's total CO₂ emissions so the greater their efficiency, the more kind they are to the environment. Greenstar condensing boilers, for example, achieve dramatically reduced emissions of both CO₂ and Nitrogen Oxide, making their carbon footprint smaller than the average for boilers of this kind. Carbon emissions – as well as energy bills – can fall even lower if a new boiler links to a solar water heating system or intelligent control.



If you decide to sell your home in the future, you will need to produce an Energy Performance Certificate (EPC). A high-efficiency condensing boiler will boost your EPC rating, making your home more attractive to buyers.



ErP labels are already a common sight on washing machines, televisions and other appliances in electrical retailers. From 2015 these labels now apply to heating products and systems.

Energy related Product (ErP) labelling.

The ErP Directive is a new regulation set by the European Union and is designed to drive improvements in the efficiency and performance of heating and hot water products.

Its purpose is to ensure that you as homeowners are aware of the energy efficiency levels of your heating appliances. The ErP Directive will help the UK and other European governments reduce carbon emissions. This will improve the overall efficiency of UK properties, whilst also helping you to reduce your energy bills.

The ErP regulations cover boilers, water heaters and other heating appliances up to 400kW (a typical domestic boiler ranges from 9-40kW).

What is Energy Labelling?

Energy Labelling involves adding a label to a product. It is your installer's responsibility to ensure that you receive the energy label with the heating appliance they offer you and if they have a showroom that the Energy Label is visible on products.

The new Energy Labelling Directive will introduce new efficiency classes from A++ to G on top of the existing SEDBUK rating for products in the UK.

Most high efficiency boilers fall within the A band, which requires them to achieve more than 90% seasonal efficiency, while renewable technologies such as heat pumps typically sit within the A+ or A++ bands (depending on the temperature they deliver).

More details on ErP and the information which is included on a label can be found at: worcester-bosch.co.uk/ErP



What about controls?

The ErP Directive also includes controls, which are defined using 'classes'. These run from Class 1 (a simple on/off room thermostat) through to Class 8 (multi-sensor room control for use with modulating heating appliances).

Each control class equates to certain percentage uplift in system efficiency e.g. a Class 6 weather compensating control and room thermostat, such as the Worcester Wave smart phone enabled control, will improve your heating system's efficiency by 4%, giving you the potential to achieve an A+ system efficiency*.

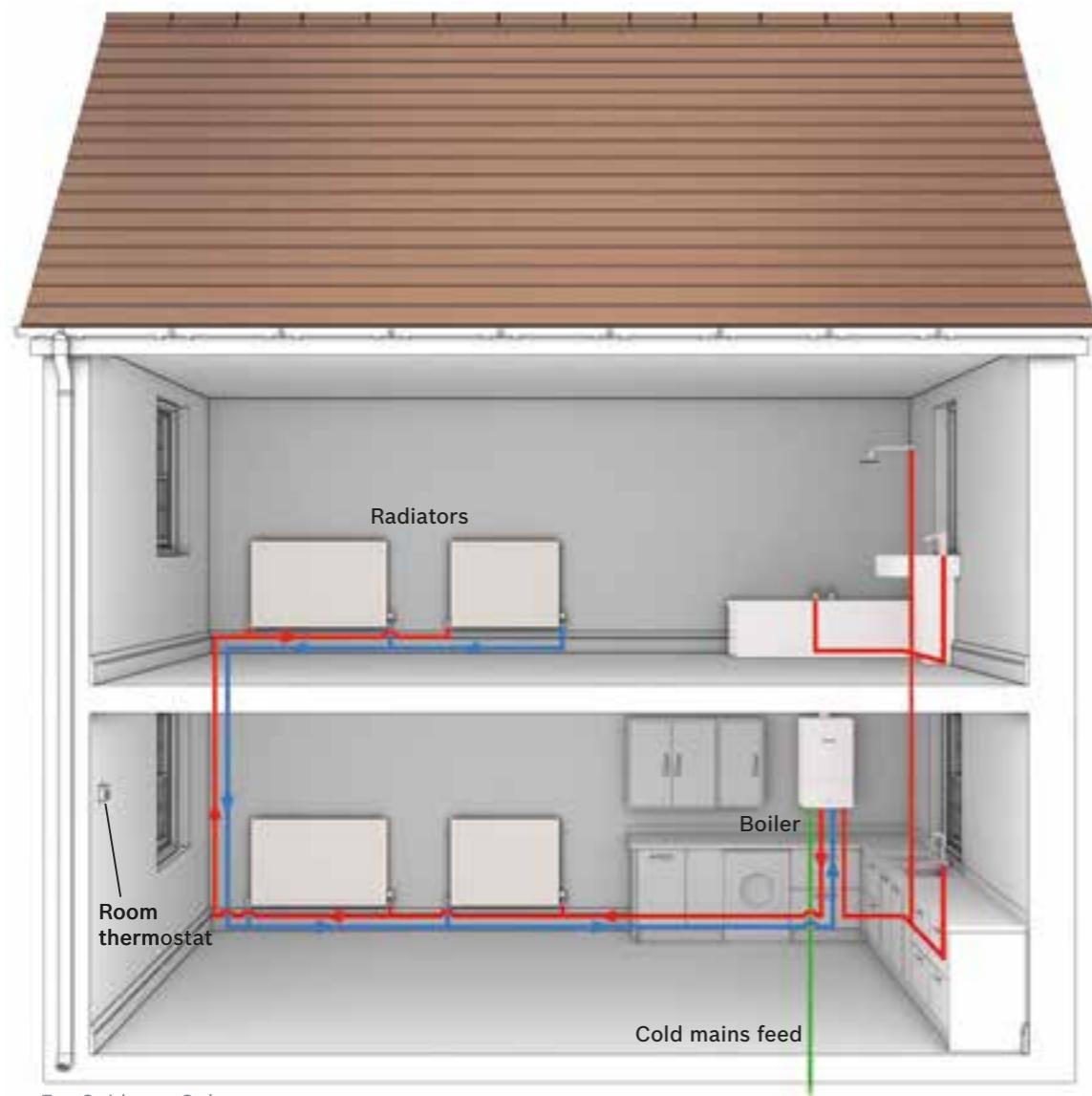


To ensure you benefit from the highest levels of efficiency we always suggest you check that your quote includes an ErP compliant high efficiency boiler.



Which heating and hot water system is best for me and my lifestyle?

Deciding which boiler will make an efficient and practical fit with your home and your lifestyle can be confusing. The following pages explain the main system types, how they work, their advantages, and what kind of homes they work best in.



Typical combination boiler heating system.

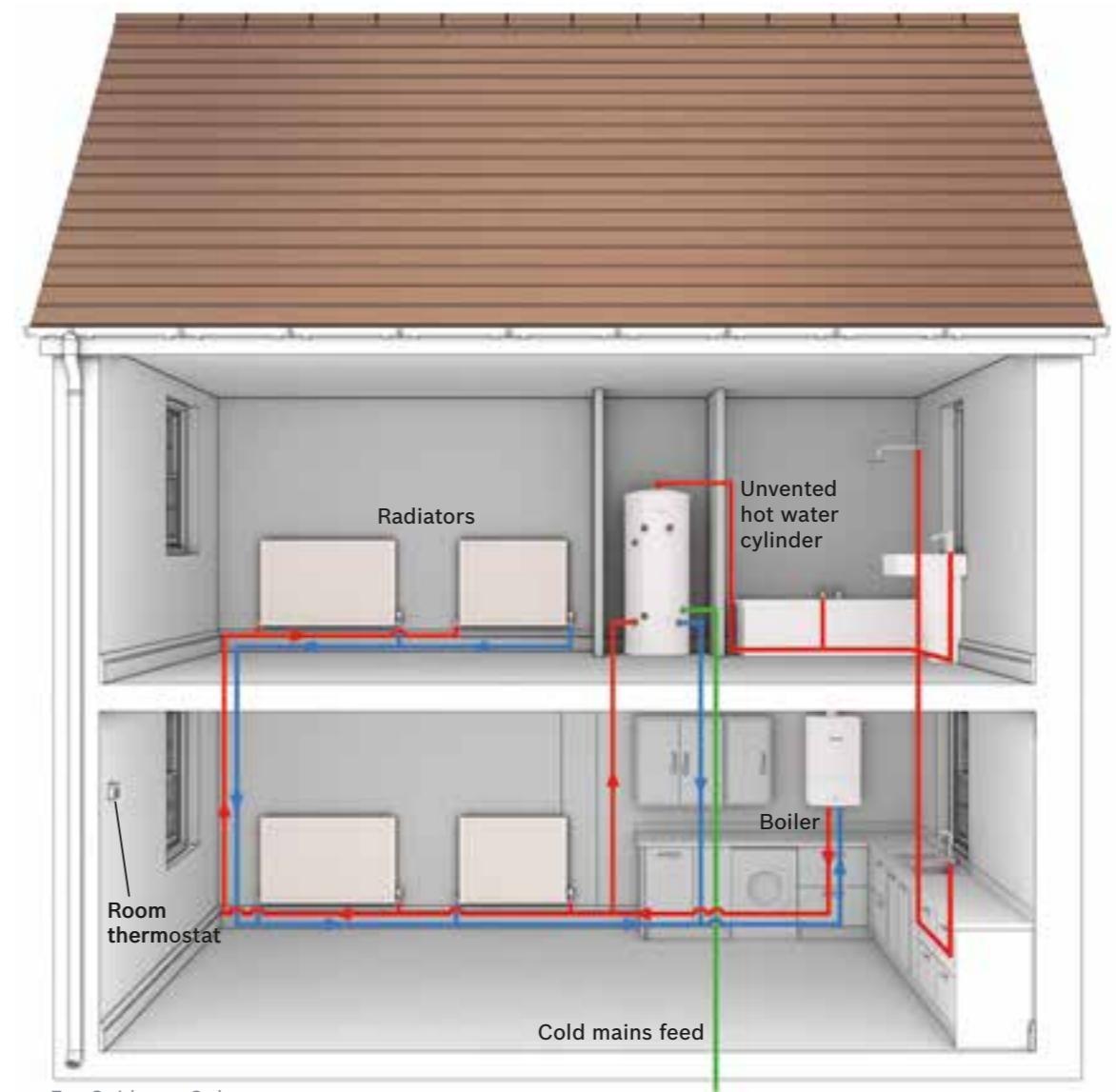
[Go to pages 18-21 to see the Greenstar combi range](#)

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.

Advantages

- Compact sizes make combi boilers perfect for smaller properties
- Ideal where there is little or no loft space
- No need for a hot water cylinder allows increased living space
- No cold water storage tank frees up a loft for conversion
- No risk of loft pipework freezing
- Less pipework in the home makes installation typically cheaper



Typical system boiler heating system.

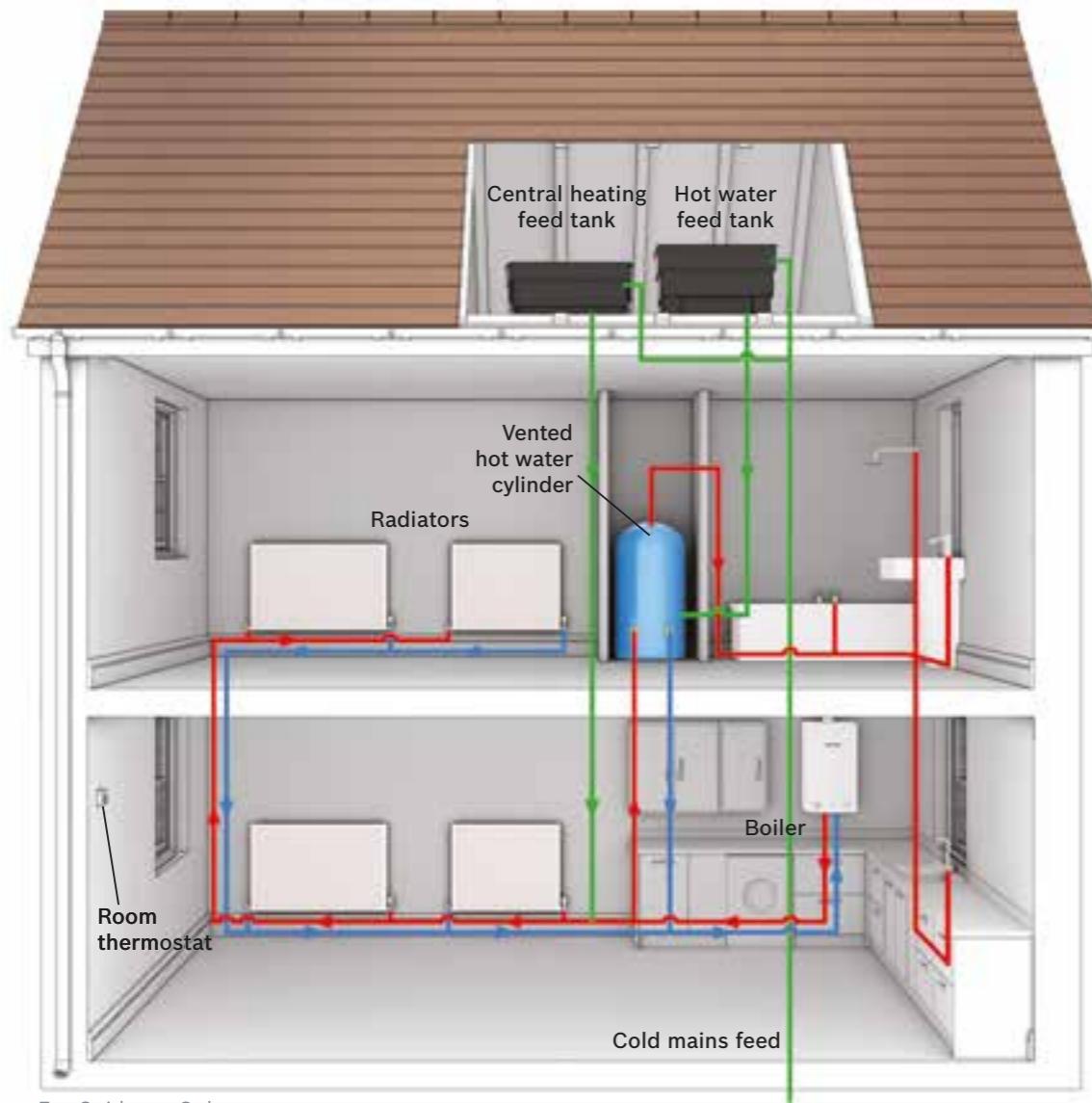
[Go to pages 22-25 to see the Greenstar system range](#)

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.

Advantages

- Ideal for homes with more than one bathroom
- Constant supply of hot water to any number of taps at the same time
- No need for a loft tank, freeing up space and eliminating worries about leaks or frost damage
- Economical to run
- Built-in components makes installation quicker and neater



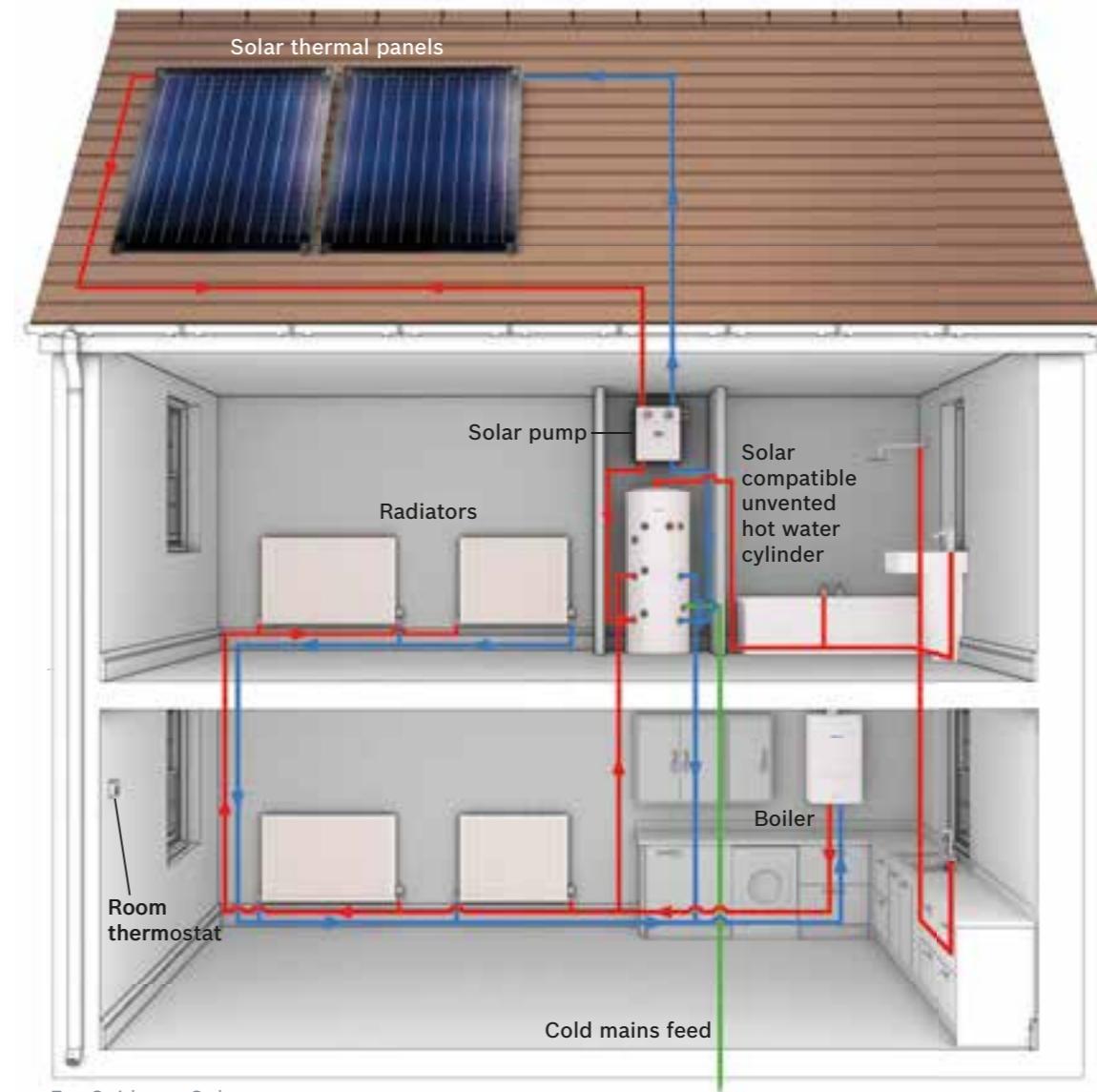
Typical regular boiler heating system.

**Go to pages
26-29 to see the
Greenstar
regular range**

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.

Advantages

- Perfect for homes where a lot of hot water is used at the same time
- Ideal where there are two or more bathrooms
- A good option in areas where water pressure is low
- Compatible with solar water heating systems for a lower carbon footprint and lower energy costs



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

**Go to page
47 to find out
about Greenskies
solar thermal**

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.

Effective even on cloudy days and during shorter winter daylight hours, a solar thermal system will typically meet around 60%* of your home's hot water needs, which could mean considerable savings on your energy bills as well as dramatically reduced carbon emissions.

Advantages

- Typically generates 'free' energy for over half of your hot water needs, giving you lower energy bills
- Particularly beneficial for homes with large families or high hot water usage
- Works in direct and indirect sunlight so that you also benefit in the winter months and on cloudy days
- Compatible with all Worcester regular and system boilers
- Reduces your carbon footprint



Compact and space saving, combi boilers are very reliable as well as highly energy-efficient making them economical to run.



Greenstar combi boilers.

Combi boilers are the most popular heating and hot water solution in the UK. Over 15 million have been fitted across the country and they are now the preferred choice for most householders and installers. Worcester was the pioneer of the combi boiler in the UK, with the Greenstar range developed to suit virtually all homes.

Energy saving and convenient

All Worcester Greenstar combis are designed and manufactured to provide high levels of performance and operating efficiency. This is achieved through features such as the 'keep hot' facility which ensures that hot water is almost instantly available whenever it's required.

The boilers also incorporate a special 'ECO' mode button which can be used to over-ride the 'keep hot' facility. This has the bonus of using less gas, as energy is only used when hot water is required.

For added efficiency, models such as the Greenstar CDi Classic, Greenstar CDi Compact and Greenstar Si Compact condense in both hot water and heating modes.



Greenstar CDi Classic series

Our top of the range Greenstar CDi Classic combis are high performance boilers suitable for small, medium and large-sized properties with one or two bathrooms. Known for their exceptional efficiency and reliability, they are wall-mounted and offer the highest levels of hot water comfort.

MODEL	29CDi CLASSIC	34CDi CLASSIC	38CDi CLASSIC	42CDi CLASSIC
Hot water output	30.9kW	35.0kW	40.0kW	42.0kW
Hot water flow rate	12.3 ltr/min	14.3 ltr/min	16.4 ltr/min	17.2 ltr/min

All figures are maximums

- Larger two bathroom properties can be supplied by higher output options
- The CDi Classic has set the industry benchmark for efficiency, helping to reduce gas bills
- Low energy pump reduces electrical usage
- Frost protection reduces frost risk if installed in a garage or loft
- Wide choice of matching controls.



Greenstar CDi Compact series

The wall-mounted Greenstar CDi Compact series have the smallest dimensions of our combi boilers. They can be installed in a wide range of locations, including inside a standard kitchen cupboard. Despite their small size, high outputs can make them suitable for properties with more than one bathroom.

MODEL	28CDi COMPACT	32CDi COMPACT	36CDi COMPACT
Hot water output	28.0kW	32.0kW	36.0kW
Hot water flow rate	11.4 ltr/min	13.1 ltr/min	14.7 ltr/min

All figures are maximums

- User-friendly displays make boiler easy to operate
- Can be installed in a kitchen cupboard
- High efficiency, greater reliability and durability is achieved by the CDi Compact's innovative new heat exchanger
- Wide choice of matching controls enables greater comfort and economy.



Greenstar Si Compact series

Greenstar Si Compact combis are suitable for small to medium-sized one bathroom homes. They can be wall-mounted in a variety of locations, including a kitchen cupboard, utility room, bathroom, airing cupboard, loft or garage.

MODEL	25Si COMPACT	30Si COMPACT
Hot water output	25.0kW	30.0kW
Hot water flow rate	10.2 ltr/min	12.3 ltr/min

All figures are maximums

- Hot water can be adjusted to fine tune your comfort
- Wide choice of matching controls enables greater comfort and economy
- Frost protection is also included on the Si Compact, reducing frost risk if installed in a garage or loft.



Greenstar i series

The successor to the popular i Junior series which represent 1 in 10 of all boilers installed in the UK. These wall-mounted boilers are ideal for apartments and small to medium-sized properties with one bathroom. The new Greenstar i was not available at the time of the Which? 2014/2015 survey.

MODEL	25i	30i
Hot water output	25.0kW	30.0kW
Hot water flow rate	10.2 ltr/min	12.3 ltr/min

All figures are maximums

- Hot water can be adjusted to fine tune your comfort
- Wide choice of matching controls
- Simple to use control panel which provides information on the boiler operation and allows the temperature of the water in the radiators and the hot water temperature to be adjusted.



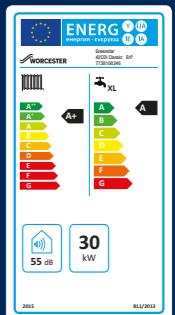
Greenstar Highflow CDi series

These floor-standing combi boilers have been developed specifically for larger two bathroom properties where there is a need for higher heating and hot water outputs. Worcester is the only company that produces a combi boiler of this kind.

MODEL	HIGHFLOW 440CDi	HIGHFLOW 550CDi
Hot water output	29.5kW	41.1kW
Hot water flow rate	20.0 ltr/min	25.0 ltr/min

All figures are maximums

- Larger two bathroom properties can be supplied by higher output options
- Wide choice of matching controls enables greater comfort and economy
- Frost protection and condensate pump reduces frost risk if installed in a garage or cellar.



See page 36 for further information on achieving an A+ rated system with our Wave Smart Controller.



Greenstar combi boilers are complemented by our wide range of controls and programmers to help you save even more money and energy. See pages 32-39 for further information.

Why a combi boiler?

1. Heating and hot water from one compact unit
3. Constant, controllable temperature
2. Instant hot water, always available
4. You only pay to heat water as you use it
5. Saves space
6. No risk of frozen pipes or tanks, or leaks in the loft
7. Fewer components usually means faster installation



We always recommend you consult a qualified Gas Safe installer prior to choosing your boiler.

Do you require very high amounts of hot water?

A **Greenspring instantaneous water heater** is a highly efficient alternative to storing hot water in a separate cylinder. It offers up to 28.8 litres per minute of hot water making it the perfect solution for large domestic as well as small, medium and large commercial applications that use multiple sinks, baths and showers. Please note the Greenspring water heater will only provide hot water and will not heat your property.



System boilers provide plenty of hot water to multiple taps at the same time and do not need any tanks in the loft.



Greenstar system boilers.

Greenstar system boilers are known for their high quality and reliability, making them robust enough to stand up to the highest of heating and hot water demands.

Efficient and economical

Ultra efficient and economical to run, Worcester system boilers incorporate many of the heating and hot water components found in a traditional heating system, making installation less disruptive and neater.

Space saving and attractive

The compact size of Greenstar i System boilers means that they can fit perfectly into many locations, with the 27kW and 30kW models even fitting into a standard kitchen cupboard. With a smart design, they'll also look great in your home, whether alongside cupboards or placed on their own.

Perfect partners

Worcester system boilers can be used with a wide choice of optional controls to maximise comfort and energy savings, and are also perfectly matched to our comprehensive range of Greenstore hot water cylinders. Choosing a complete Worcester system will ensure you will have a highly efficient solution and the opportunity to get a comprehensive 5 year guarantee across your entire system*.

System boilers are also compatible with our Greenskies solar water heating systems, which can be installed at the same time as the boiler or easily retrofitted in the future to reduce your energy bills even further.



Further technical and ErP information for the Greenstar system range can be found on page 50.

Greenstar CDi Classic System series

The wall-mounted Greenstar CDi Classic System series are high performance, high efficiency boilers that suit bigger homes with larger heating and hot water needs. They are compatible with a wide range of optional controls for even greater time and temperature setting flexibility as well as added energy savings.

MODEL	30CDI CLASSIC SYSTEM	35CDI CLASSIC SYSTEM
Central heating output	30.0kW	34.0kW

All figures are maximums

- Stored hot water can be rapidly replenished with high output options
- The CDi Classic has set the heating industry benchmark for efficiency, helping to reduce gas bills
- Low energy pump reduces electrical consumption
- Frost protection reduces frost risk if installed in a garage or loft
- Can be used with Worcester controls and Greenskies solar panels for energy and cost savings.

Greenstar i System (27kW and 30kW)

The 27kW and 30kW Greenstar i System boilers are a new generation of smaller and lighter wall-mounted boilers. Suitable for small, medium and large homes they incorporate all the benefits of Greenstar i System series but offer higher heating output options to suit homes where demand is greater.

MODEL	27i SYSTEM	30i SYSTEM
Central heating output	27.0kW	30.0kW

All figures are maximums

- Can be installed in a kitchen cupboard
- User-friendly displays make boiler easy to operate
- High efficiency, greater reliability and durability is achieved by the innovative new heat exchanger that is featured in the 27kW and 30kW models
- Can be used with Worcester controls and Greenskies solar panels for energy and cost savings.

Greenstar i System series

The ultra efficient Greenstar i System series are our most popular wall-mounted system boilers. They offer flexibility and can be installed in a number of locations. The updated Greenstar i System was not available at the time of the Which? 2014/2015 survey.

MODEL	9i SYSTEM	12i SYSTEM	15i SYSTEM	18i SYSTEM	21i SYSTEM	24i SYSTEM
Central heating output	9.0kW	12.0kW	15.0kW	18.0kW	21.0kW	24.0kW

All figures are maximums

- Suitable for homes where the heating system includes a hot water storage cylinder
- All system components are neatly contained within the boiler
- Can be used with Worcester controls and Greenskies solar panels for energy and cost savings
- Simple to use control panel which provides information on the boiler operation and allows the temperature of the water in the radiators to be adjusted.



Worcester system boilers and Greenstore unvented hot water cylinders offer the perfect combination for plentiful, efficient hot water.

Why a system boiler?

1. Hot water supplied evenly to all taps at the same time
2. No need for separate pump and loft tanks
3. Wide range of optional controls
4. No risk of pipes or tanks in the loft leaking or freezing
5. Energy efficient for lower fuel bills
6. Compatible with Greenskies solar water heating systems



We always recommend you consult a qualified Gas Safe installer prior to choosing your boiler.

Want hot water provided by the sun?

For more information on **Greenskies solar thermal panels** see page 47 or visit our website.

For more information on **Greenstore cylinders** see pages 30-31.





Regular boilers meet all the heating demands of every size of home and are an ideal energy-efficient replacement for an existing boiler.



Greenstar regular boilers.

With quality and reliability at the heart of every Worcester regular boiler, they are robust enough to deliver efficient heating and hot water year after year.

Modern efficiencies

With over 90% efficiency, Greenstar regular boilers will help reduce your energy bills and your carbon footprint. They can enhance heating and hot water performance in all sizes of homes, including those with two or more bathrooms, and where mains water pressure is low.

Small in stature

The compact size and smart design of Greenstar regular boilers means that they will look great in any home, with several options readily fitting into a standard kitchen cupboard. Replacement installation is often simple and straightforward, which keeps costs down and disruption to a minimum.

Worcester regular boilers also perfectly meet the need for large hot water requirements. For example, two bathrooms can be comfortably used at once with no loss of pressure or temperature. They can also be combined to cater for high water demand in properties with three or more bathrooms. In this scenario, two boilers would work together to ensure a rapid re-supply of hot water despite the large volumes of water involved.

Solar compatible

All of our regular boilers are compatible with our Greenskies solar water heating systems which can help to reduce your energy bills whilst also benefitting the environment.



Greenstar CDi Classic Regular series

These top-performing, wall-mounted boilers have impressive heating outputs making them an excellent choice for larger properties.

MODEL	30CDi CLASSIC REGULAR	40CDi CLASSIC REGULAR
Central heating output	30.0kW	40.0kW

All figures are maximums

- Stored hot water can be rapidly replenished with high output options
- The CDi Classic has set the heating industry benchmark for efficiency, helping to reduce gas bills.



Greenstar Ri (27kW and 30kW)

The higher output wall-mounted Greenstar Ri 27kW and 30kW boilers meet all the heating and hot water needs of medium to large properties, whilst their compact size makes them small enough to be installed in a standard kitchen cupboard.

MODEL	27Ri	30Ri
Central heating output	27.0kW	30.0kW

All figures are maximums

- User-friendly displays make the boiler easy to operate
- Can be installed in a kitchen cupboard
- High efficiency, greater reliability and durability is achieved by the innovative new heat exchanger
- Compatible with a choice of Worcester controls*.
- Suitable for homes where the heating system includes a hot water storage cylinder
- Can be installed in a kitchen cupboard
- Frost protection is also included on the Ri, reducing frost risk if installed in a garage or loft.



Greenstar Ri series

These compact, wall-mounted boilers are small enough to be installed in a standard kitchen cupboard and are a great option for small and medium-sized homes.

MODEL	12Ri	15Ri	18Ri	24Ri
Central heating output	12.0kW	15.0kW	18.0kW	24.0kW

All figures are maximums



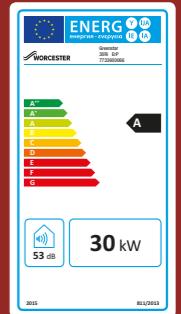
Greenstar FS CDi Regular series

The floor-standing Greenstar FS CDi Regular boiler series are an ideal replacement for older floor-standing boilers, offering high levels of heating comfort where a wall mounted boiler is not an option.

MODEL	FS 30CDi	FS 42CDi
Central heating output	30.0kW	40.8kW

All figures are maximums

- Stored hot water can be rapidly replenished with high output options
- Frost protection and condensate pump reduces frost risk if installed in a garage or cellar.



Further technical and ErP information for the Greenstar regular range can be found on page 50.



Greenskies solar thermal panels and Worcester regular boilers are perfect partners for efficient hot water.

Why a regular boiler?

1. Compatible with older pipework and radiators
2. Options for very compact spaces
3. Improved heating and hot water performance
4. High efficiency for lower energy bills and reduced carbon footprint
5. Simple and straightforward installation
6. Compatible with Greenskies solar hot water systems



We always recommend you consult a qualified Gas Safe installer prior to choosing your boiler.

Want hot water provided by the sun?

For more information on **Greenskies solar thermal panels** see page 47 or visit our website.

For more information on **Greenstore cylinders** see pages 30-31.





Super efficient cylinders can help lower your energy bills and carbon emissions. They are highly insulated to reduce heat loss and energy wastage.

Greenstore cylinders – transforming hot water storage.

When a system or regular boiler is installed, there will always be a requirement for a hot water cylinder. Hot water is provided by taking heat from the boiler and pumping it through the central heating system to the cylinder where the heat is transferred via the cylinder's heat exchange coils. This water is then stored ready to be passed through taps and showers when required.

Older, non-insulated cylinders tend to lose a considerable amount of heat and are likely to have a build-up of limescale, which reduces efficiency and makes water heat-up times longer. Even insulated cylinders over 10 years old lose more heat than modern ones.

Greenstore unvented cylinders have been designed to offer significant performance improvements over traditional cylinders. They combine rapid re-heat times with high heat retention and are guaranteed for 25 years*. They also come in a wide range of capacities, from 90 to 300 litres, so you can be sure of a size that's exactly right for your home and lifestyle.



Greenstore unvented cylinders: made for modern living

The Greenstore unvented cylinder range is a perfect complement for Greenstar regular or system 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 without the hot water running out. If your mains water pressure is low, you can still benefit from the high performance, fast re-heat times and energy savings of Greenstore cylinders. A trained Worcester installer will be able to provide solutions to increase your water performance if needed.

Greenstore unvented solar cylinders: the future-proof choice

Greenstore solar-compatible unvented cylinders are specifically designed to work with our Greenskies solar water heating systems. With all the same benefits as our standard unvented range, they enable you to add solar water heating to your system at a later date with no need to replace the cylinder. Available in five capacities, from 150 to 300 litres, they provide highly efficient storage for both boiler and solar-heated hot water.



With 65mm of Expanded Polystyrene, the insulation level on Greenstore cylinders is one of the thickest in the UK market.

**Worcester keeps
you in control.**



Boiler controls make a big difference to your heating system. With our condensing boilers already operating at peak efficiency, our range of controls give you an additional way of boosting your system's overall performance.

Worcester boiler controls give you ability to precisely manage your system, as opposed to older controls which simply turn your boiler on and off. By completing your Worcester system with a matching Worcester control, you can fine tune your comfort levels whilst also working to reduce your gas use, so that you only pay for what you need when you need it.

Options for everyone

Our easy to use controls include everything from traditional mechanical clock timers to internet-connected smart controls that can be managed from anywhere in the world. Simple mechanical

clock timers switch your boiler on and off at the times you select, with the same times repeated every day. Digital controls give you more options, enabling you to set different times for different days of the week, which can be particularly useful for weekends.

Intelligent controls achieve considerable energy savings and therefore lower bills. As well as responding to your time settings, they include clever features such as an ability to monitor outdoor temperatures and adjust the boiler's output to make it more fuel-efficient. The Wave, our new smart control, has even more control and efficiency features that can be operated remotely using a compatible smart device.



Worcester controls are designed to not only enhance a boiler's efficiency but incorporate features that work around your lifestyle.

Controls for a heating and hot water system typically include two main elements: a time clock or programmer and a room thermostat. Here we explain the different types that we offer and what they do. We also highlight what load and weather compensation mean – two key features of Worcester intelligent and smart 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 typically repeated every day. A boiler programmer allows you to set your heating (and sometimes hot water) to switch on and off at different times, and on different days, so your boiler best suits your lifestyle.



Mechanical timer.

Room thermostats

A room thermostat monitors the air temperature and enables you to set the level you find comfortable. If the room temperature drops below this level, the thermostat switches your boiler on and if gets too hot in the room, it turns it off.



Programmable room thermostat.

Programmable room thermostats

A programmable room thermostat is both a boiler programmer and a room thermostat; it 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, with the boiler simply 'topping up' the temperature, which saves energy and improves comfort.

We also offer a range of wireless programmable room thermostats. These are a good option if you prefer not to have wires running between your thermostat and boiler or if the boiler is not readily accessible, such as in a loft space or garage.



Weather compensation control.

Load compensation

The load compensation feature adjusts the temperature of the heat going to your radiators. When a room is cold the temperature will be high, but as the room warms up and less heat is needed, it lowers the temperature so that comfort is maintained but energy use is reduced.

Weather compensation

The weather compensation feature also adjusts the temperature of the heat going to your radiators. However, it does so in keeping with the outside temperature. An outdoor sensor or an internet location post code search (Worcester Wave only) allows the control to monitor the weather, with the radiators running hotter if temperatures outside drop, ensuring a comfortable home.



Wave. Actual size.

Wave. Control on the go.

The Wave is part of Worcester's new generation of smart central heating and hot water controls that can be operated from a compatible smart device using a wireless internet connection.

Enhanced energy efficiency and comfort

Advanced programming enables the Wave to interact with your boiler and take advantage of clever control features such as load and weather compensation. This ensures that the boiler adapts its performance to meet your heating and hot water preferences and to reflect weather changes. It also enables you to achieve an A+ ErP system efficiency. As a Class 6 weather compensating control, the Wave will boost your system efficiency by 4%, which when combined with a Greenstar i, Si or CDi Compact boiler means you can achieve 98% (A+) efficiency.

Adaptable and intelligent

Supplied with a pre-set programme that can be easily changed to suit your needs, the Wave can 'pair' with up to eight smart devices and automatically senses when people are at home. The Wave is also ideally suited for holiday homes enabling you to remotely bring your property up to temperature before your arrival. In addition the

control includes a holiday setting that switches off your heating system during your away dates but automatically turns it on if the temperature drops, to guard against freezing.

Full control wherever you are

Intuitive and simple to operate through its built-in touch screen or via the free downloadable Wave app, you can manage your heating and hot water from anywhere in the world using an internet connection. The app includes an at-a-glance check of your home's current temperature as well as information on your heating and hot water usage. Even if you temporarily lose internet connection, the Wave continues normal operations by using your last saved settings.

Privacy

Privacy and security of data was a key consideration when the Wave was designed. With the Wave you can be assured that none of your personal data will be shared.



Wave.

Simple to fit.

Simple to use.

Simply smarter.



Mechanical timers

① MT10 plug-in mechanical timer

- The simplest Worcester control device for setting heating start and stop times
- Analogue display.

② MT10RF mechanical wireless thermostat

- Programmable room thermostat
- Set daily start and finish times for your heating as well as different temperatures
- Wireless system – no wiring required
- Simple installation
- Analogue display.

Digital, wireless programmers and room thermostats

③ Greenstar Comfort plug-in programmer

- Simple menu navigation
- Heating programme visualisation bar
- Control heating and hot water 7 days a week.

④ Greenstar Comfort I RF wireless room thermostat and plug-in programmer

- All the features of the **Comfort** plus...
- Load compensation feature for increased efficiency
- Wireless system – no wiring required
- Extremely reliable Radio Frequency (RF) signal.

⑤ Greenstar Comfort II RF wireless programmable room thermostat

- All the features of the **Comfort** and **Comfort I** plus...
- 6 adjustable heating temperatures per day
- Programmers can be set at the room thermostat rather than on the boiler
- Back lit display.

Intelligent wired controls

⑥ Sense I intelligent room thermostat

- Ideal to replace an existing, less energy efficient wired room thermostat
- Load compensation feature for increased efficiency.

⑦ Sense II weather compensation control

- Intelligently interacts with your boiler to provide weather compensation via a wired outdoor sensor
- Stylish design with clear back-lit display and touch sensitive buttons
- Service reminder function.

⑧ MS100 solar module

- Integrates Greenskies solar heating system with Sense II programmable room thermostat (solar performance is displayed via the Sense II control)
- Optimises the hot water system to ensure the maximum benefit is received from the solar hot water panels.

Smart control

⑨ Worcester Wave

- Operated using a compatible smart device or from the wall mounted unit with easy to use intuitive touch screen controls
- Allows you to set separate times and temperatures for your heating and hot water. The times can be different for each day of the week
- Holiday mode setting
- Intelligently interacts with your boiler to provide load and weather compensation features
- Enables an A+ ErP system efficiency to be achieved when installed with any Greenstar i, Si or CDi Compact combi boiler
- Downloadable app with features such as usage information to help you identify energy saving opportunities
- Uses online data to determine local weather conditions so no outdoor sensor needs to be installed.

Why use a boiler control?

- Significant improvements to your system's overall performance
- Efficient management of your energy usage
- Potential to lower energy bills
- Heating and hot water precisely when you want them
- Freedom to choose times and temperatures to suit your lifestyle
- A choice of clever features to optimise system performance
- Options to control your heating and hot water away from home

To see which control is compatible with your preferred boiler, please see page 51.



See our YouTube channel for more information - youtube.com/WorcesterBoschGroup

In addition to fitting a system filter it is always recommended (as per Building Regulations) that your central heating system is flushed and cleansed to remove any system contaminants before your new boiler is installed.

Keeping your system working efficiently.

Good water quality.

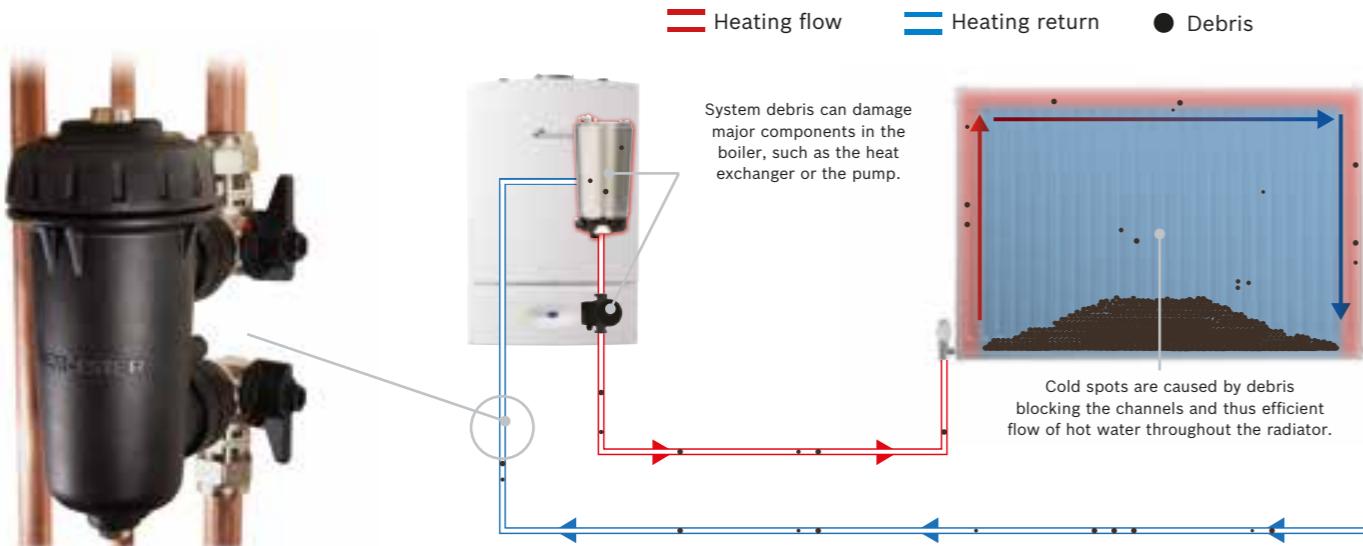
Over time, central heating system water accumulates harmful dirt and debris, such as rust and solder fragments shed by older radiators and boilers, as well as limescale deposits from mains water, all of which can cause considerable problems.

Reduced efficiency

Condensing boilers are precision-engineered and designed to run with clean water in the system. When system water becomes contaminated it can quickly cause radiator blockages as well as damage to key components in the boiler and heating system. This leads to a loss of radiator heat, increased system noise and potentially failures. It also means a shorter life for the overall system and a dramatic reduction in the boiler's efficiency, which affects comfort and adds to your energy bills.

A perfect safeguard

The Worcester Greenstar System Filter has been specifically designed to combat the damaging effects of system debris and pollutants by capturing contaminants before they reach your boiler. Using powerful and innovative magnet-based technology, it is instantly effective at protecting the performance of your heating and hot water system, ensuring a warm and quieter, blockage free system.



The Greenstar System Filter simply connects to the pipework flowing back to the boiler to filter out debris and dirt before it causes damage or radiator blockages.



See our YouTube channel for more information -
youtube.com/WorcesterBoschGroup

Preventing frozen condensate pipework.

With climate change and extreme weather variations becoming increasingly common, and very cold winters with temperatures as low as -20°C being experienced, Worcester has developed a sure solution for externally run condensate pipework.

Frozen boiler condensate pipes

In the early days of condensing boilers, when the installation standards were being created, there was no great concern that externally routed condensate discharge pipework would present major problems.

Whilst average temperatures have not changed significantly, the extremes of temperatures have. The winter of 2010/2011 was the coldest since accurate records began with the CET (Central England Temperature) for the month of December averaging -1°C. Consequently there were many boiler installations which although installed to British Standards, still experienced a frozen condensate pipe causing an interruption to their boiler's operation.

A sure solution

The CondenseSure Auxiliary Siphon has been designed to allow a more flexible approach to boiler siting and enable condensate discharge pipes to be installed externally when an internal route is not practical. The large capacity of the CondenseSure Auxiliary Siphon increases condensate discharge volume, significantly reducing or even eliminating the risk of freezing. The CondenseSure has been extensively tested under simulated extreme weather conditions and proved its effectiveness in preventing frozen condensate at -15°C for a sustained period of 48 hours.



The CondenseSure clips onto the 22mm heating flow pipe allowing it to use free heat to raise the condensate temperature before it leaves your property.



See our YouTube channel for more information -
youtube.com/WorcesterBoschGroup

With over 120,000 Gas Safe registered installers in the UK, finding a local professional installer is simple.

How can I get a Worcester boiler installed?

Modern heating systems are sophisticated and complex, and it's vital to have them professionally installed, which is why **we don't sell our products direct to householders**.

There are three straightforward ways to find local professional installers...



The internet

You can do a general search for local Gas Safe registered installers on the internet. Some might have a showroom, giving you the opportunity to meet them first before you make a home visit appointment.

For your peace of mind, all Gas Safe registered installers carry a Gas Safe Register ID card, which you should ask to see when they arrive.



Gas Safe registered installers

You can search for Gas Safe registered installers on the Gas Safe Register website at gassaferegister.co.uk. You can find local professionals by entering your postcode.

The website also allows you to check individuals and companies to see if they are registered and includes information on what Gas Safe registered engineers are, why it's important to use them and how to check their ID card.

Worcester Accredited Installers

Worcester Accredited Installers are installation companies that we consider to be reputable, quality-conscious and provide value for money. They must have attended our training courses and hold all the required approvals for carrying out work at your home, such as Gas Safe accreditation, before we list them.

As well as advising, installing and providing servicing and maintenance, some also offer extended guarantees on our products.

To find a local Worcester Accredited Installer simply go to the 'Find an Installer' page at worcester-bosch.co.uk and enter your postcode.



*Guaranteed products as well as
the help and advice you need
for complete peace of mind.*



Supporting you from the start.

When you choose Worcester, you'll be in the company of millions of people across the UK who value the quality, reliability and comfort of our boilers.



Our guarantee

Every one of our products is manufactured to the highest quality standards and undergoes stringent and continuous testing.

We want you to have the same confidence in our boilers as we do, which is why they come with a full parts and labour guarantee including a 10 year guarantee* on the primary heat exchanger – the heart of the boiler. We also guarantee the boiler as a whole for a minimum of 5 years as standard*.

When you buy one of our boilers, don't forget to register your guarantee, which you can do quickly and easily online at worcester-bosch.co.uk/registration or by telephone on **0330 123 2552**.



Greenstar gas-fired boilers come with a 10 year guarantee* on the primary heat exchanger as standard.

Service and support

Whether you are thinking about buying a Greenstar boiler or you've owned one for a long time, we are always here to help.

Our award-winning support team can advise you on any aspect of your boiler. Friendly and knowledgeable, they'll give you all the help you need, from choosing the right controls to technical queries, such as combining your boiler with renewable systems like solar water heating. We also have over 300 service engineers working across the country to ensure that our products always deliver high performance year after year.

We also publish a useful heating and hot water 'handy hints' guide, which includes helpful tips for boilers, radiators, controls and system care. You can download the guide at worcester-bosch.co.uk/handyhints or call our brochure line on **0330 123 9119** for a printed copy.



In addition to our gas-fired boiler range we offer heating and hot water solutions that use renewable sources. We also look after homes that don't have a mains gas supply, with our high performance oil-fired boilers making all the difference in keeping your energy bills low.

Other technologies from Worcester for your home.

Greenstar oil-fired boilers

Our energy-efficient Greenstar oil-fired boilers have all the benefits of our gas-fired range.

Available as combi, system or regular boilers, they are at least 90% efficient, with options for installation inside or outside your home.

All Greenstar oil-fired system and regular boilers are compatible with our Greenstore unvented cylinders, and are compatible for use with Greenskies solar water heating systems.



Greenskies solar thermal panels

Greenskies solar 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.

*Source: Energy Saving Trust.

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 to air heat pump

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.

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





Other products from Bosch for your home and garden.

White goods

Bosch appliances are built with precision German engineering to deliver quality and efficient performance. From large home appliances such as washing machines and ovens to small appliances from kettles to vacuum cleaners, Bosch has consistently been recognised for the highest levels of quality and reliability.

This year and for the 4th year running Bosch has received the prestigious award of Which? Best Home Appliance Brand.

See more at bosch-home.co.uk



Lawn and garden

Bosch is the largest brand within the Garden Power market and is at the forefront of driving forward product innovation and development. With a complete range of tools and accessories to suit most gardening needs, you can be sure to experience effortless gardening that will help you make your outdoor living area your own.



See more at bosch-garden.com

Power tools

The Bosch Group is the world leader for power tools. By continually innovating and launching new power tools for DIY'ers and professionals alike, Bosch has become renowned for quality, reliability and precision.



With many new tool introductions every year, including award-winning cordless tools and lightweight lithium-ion technology, you can be sure to find the right tools for your next project.

See more at bosch-do-it.com

These handy comparison tables list some key technical information about our products.



	Wall hung	Floor standing	Height (mm)	Width (mm)	Depth (mm)	ErP – Seasonal Space Heating energy efficiency class	ErP – Water Heating energy efficiency class	SEDBUK 2009 (%) Natural Gas	SEDBUK 2009 (%) LPG	Domestic hot water flow rate @ 35°C ΔT* (litres per min)	Central heating output (kW)
COMBI BOILERS											
29CDi Classic	•		760	440	360	A	A	89.1%	90.1	12.3	7.7-30.0
34CDi Classic	•		760	440	360	A	A	89.1%	90.1	14.3	7.7-30.0
38CDi Classic	•		760	440	360	A	A	89.0%	90.0	16.4	9.4-30.0
42CDi Classic	•		760	440	360	A	A	89.4%	90.4	17.2	9.4-30.0
28CDi Compact	•		690	390	280	A	A	89.8%	90.9	11.4	7.03-24.0
32CDi Compact	•		690	390	280	A	A	89.8%	90.9	13.1	7.03-24.0
36CDi Compact	•		690	390	280	A	A	89.8%	90.9	14.7	7.03-24.0
25Si Compact	•		690	390	280	A	A	89.8%	90.9	10.2	7.03-24.0
30Si Compact	•		690	390	280	A	A	89.8%	90.9	12.3	7.03-24.0
25i	•		710	400	330	A	A	89.6%	90.6	10.2	8.2-24.0
30i	•		710	400	330	A	A	89.6%	90.9	12.3	8.2-24.0
Highflow 440CDi		•	850	600	600	A	B	89.2%	90.2	20	7.4-29.2
Highflow 550CDi		•	850	600	600	A	B	89.2%	90.2	25	9.7-30.6
SYSTEM BOILERS											
30CDi Classic System	•		760	440	360	A	N/A	89.2%	90.2	N/A	7.7-30.0
35CDi Classic System	•		760	440	360	A	N/A	89.2%	90.2	N/A	7.7-34.0
9i System	•		710	400	330	A	N/A	89.8%	90.9	N/A	3.1-9.2
12i System	•		710	400	330	A	N/A	89.8%	90.9	N/A	3.1-12.2
15i System	•		710	400	330	A	N/A	89.7%	90.7	N/A	4.6-15.3
18i System	•		710	400	330	A	N/A	89.7%	90.7	N/A	4.6-18.4
21i System	•		710	400	330	A	N/A	89.7%	90.7	N/A	7.2-21.6
24i System	•		710	400	330	A	N/A	89.7%	90.7	N/A	7.2-24.6
27i System	•		690	390	280	A	N/A	89.0%	90.0	N/A	7.03-27.0
30i System	•		690	390	280	A	N/A	89.0%	90.9	N/A	7.03-30.0
REGULAR BOILERS											
30CDi Classic Regular	•		760	440	360	A	N/A	89.2%	90.2	N/A	7.7-30.0
40CDi Classic Regular	•		760	440	360	A	N/A	89.2%	90.2	N/A	9.4-40.8
12Ri	•		600	390	270	A	N/A	88.8%	89.8	N/A	4.0-12.0
15Ri	•		600	390	270	A	N/A	88.8%	89.8	N/A	5.0-15.0
18Ri	•		600	390	270	A	N/A	88.8%	89.8	N/A	6.0-18.0
24Ri	•		600	390	270	A	N/A	89.2%	90.2	N/A	8.0-24.0
27Ri	•		600	390	270	A	N/A	89.0%	90.0	N/A	7.03-27.0
30Ri	•		600	390	270	A	N/A	89.0%	90.0	N/A	7.03-30.0
FS 30CDi Regular	•	•	850	400	600	A	N/A	88.9%	89.9	N/A	7.7-30.0
FS 42CDi Regular	•	•	850	400	600	A	N/A	88.8%	89.9	N/A	9.6-40.8

* Boiler flow rates limited by regulators to give 40°C ΔT. Minimum operating pressure required.



We always recommend you consult a qualified Gas Safe installer prior to choosing your boiler.

Greenstar boiler controls compatibility*

	COMBINATION				SYSTEM*		REGULAR^
	CDi Classic	CDi Compact	Si Compact	i	Highflow CDi	CDi Classic System	
MT10	•		•	•	•		
MT10RF	•		•	•	•		
Comfort	•		•	•	•	•	
Comfort I	•		•	•	•	•	•
Comfort II	•		•	•	•	•	•
Sense I**	•		•	•	•	•	•
Sense II	•		•	•	•	•	•
MS100 Solar Module						•	•
Worcester Wave	•		•	•	•	•	•
Wiring Centre							•

*All compatible controls must be used with optional internal diverter valve. ^Controls only compatible with 27Ri and 30Ri models via a Worcester Greenstar Wiring Centre.
^Please note this table does not apply when retrofitting a control. Please speak to your installer. **Must be used with proprietary 230V timer.

Greenstore cylinder technical information

	GREENSTORE UNVENTED CYLINDERS						
	Greenstore SC-90	Greenstore SC-120	Greenstore SC-150	Greenstore SC-180	Greenstore SC-210	Greenstore SC-250	Greenstore SC-300
Height	835mm	1,035mm	1,285mm	1,490mm	1,665mm	1,860mm	2,155mm
Diameter	570mm	570mm	570mm	570mm	570mm	570mm	570mm
Weight – dry	26kg	31kg	36kg	40kg	44kg	48kg	54kg
Volume domestic hot water	93 litres	123 litres	161 litres	191 litres	216 litres	246 litres	292 litres
Standing heat loss – 24hr	1.008kWh/24hrs	1.296kWh/24hrs	1.632kWh/24hrs	1.824kWh/24hrs	1.944kWh/24hrs	2.136kWh/24hrs	2.304kWh/24hrs
ErP energy efficiency class/ Standing heat loss	B / 42W	C / 54W	C / 68W	C / 76W	C / 81W	C / 89W	C / 96W

	GREENSTORE SOLAR COMPATIBLE UNVENTED CYLINDERS				
	Greenstore TC-150	Greenstore TC-180	Greenstore TC-210	Greenstore TC-250	Greenstore TC-300
Height	1,285mm	1,490mm	1,665mm	1,860mm	2,155mm
Diameter	570mm	570mm	570mm	570mm	570mm
Weight – dry	41kg	45kg	50kg	54kg	60kg
Volume domestic hot water	157 litres	187 litres	211 litres	241 litres	287 litres
Dedicated solar volume	65 litres	65 litres	105 litres	115 litres	115 litres
Standing heat loss – 24hr	1.632kWh/24hrs	1.824kWh/24hrs	1.944kWh/24hrs	2.136kWh/24hrs	2.304kWh/24hrs
ErP energy efficiency class/ Standing heat loss	C / 68W	C / 76W	C / 81W	C / 89W	C / 96W



We always recommend you consult a qualified Gas Safe installer prior to choosing your boiler.



Worcester, Bosch Group,
Cotswold Way, Warndon,
Worcester, WR4 9SW

Useful numbers

Consumer Technical Helpline (Pre & Post Sales)

Tel: 0330 123 3366
Fax: 01905 752741
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
worchester-bosch.co.uk/registration
or telephone 0330 123 2552

Share

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@WorcesterBosch (Installers)



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facebook.com/WorcesterBoschProfessional (Installers)



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

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8 716 109 642 N 10/16