Greenstar oil-fired condensing boilers from Worcester.

Save energy and money wherever you are.





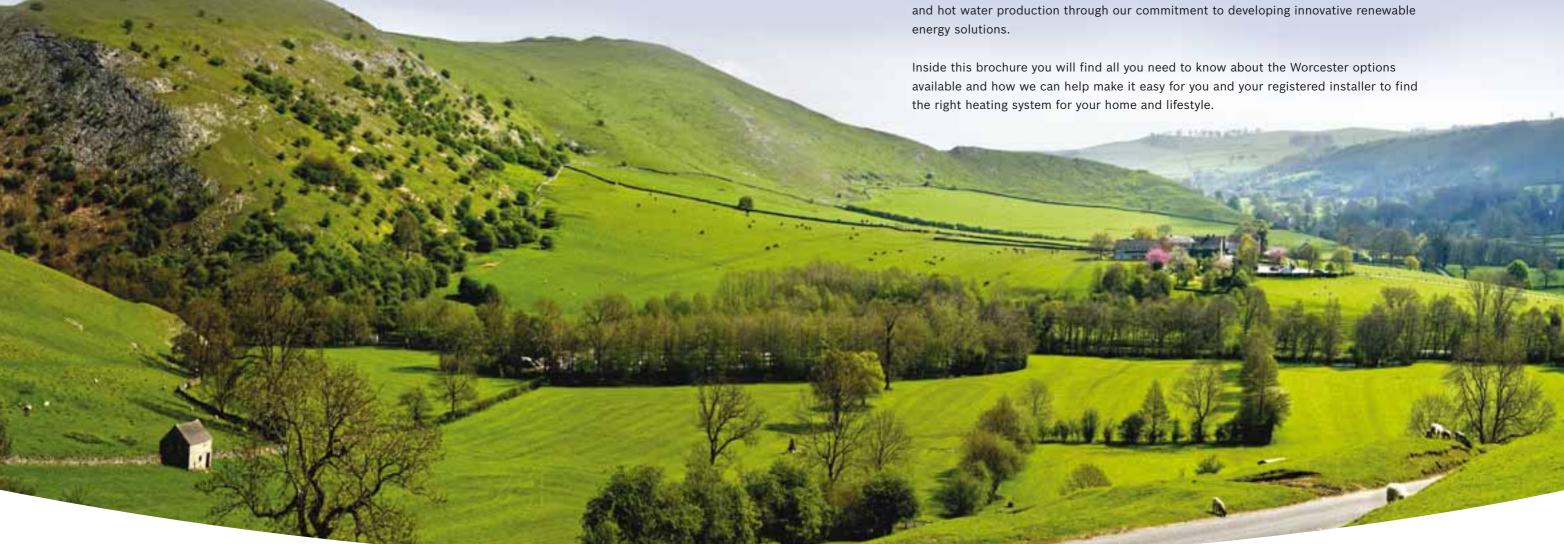
Dedicated to heating comfort



Up hill or down dale, our off-mains heating solutions can provide heat and hot water anywhere.

Worcester is a market leader in high efficiency, condensing boiler technology and all of our products are designed to deliver heating and hot water comfort.

Our Greenstar range of oil-fired condensing boilers can help reduce your fuel bills and your carbon footprint. We are also leading the way in environmentally friendly heating and hot water production through our commitment to developing innovative renewable energy solutions.



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2

Wherever you live, Worcester keeps it feeling like home.

It only feels like home if it's warm and comfortable

Which is why the boiler you choose is so important.

With Worcester, you have a boiler you can rely on year in, year out. As part of the Bosch Group, our products are designed and built to exacting standards, and constructed with only the highest quality materials, to provide the levels of quality and reliability which are synonymous with the Bosch name throughout the world. Every boiler is rigorously tested before it leaves the factory, to ensure that it is fit for everyday use and meets our customer requirements.

So with annual maintenance, a Worcester condensing boiler will provide you and your family with warmth, comfort and all-important peace of mind.





The Robert Bosch Foundation

As part of the Bosch Group, 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. 92% of Bosch Group shares are held by the Robert Bosch Foundation, helping the organisation as a whole to focus on long term activities, rather than concentrating on share dividends. It means that you won't see any companies associated with the Bosch Group on any stock markets. Since its founding in 1964, the Robert Bosch Foundation has spent £757 million on funding for social improvement initiatives.

Worcester. Trusted for half a century.



Worcester is the choice of millions of quality-and value-conscious households all over the UK – and it's the choice of the heating industry too.

And a recent survey revealed that 9 out of 10 professional installers would choose Worcester for their own homes*. All of which gives you the reassurance of knowing that when you invest in a Worcester product, its quality is endorsed by the professionals.

Quality is the bedrock of the Worcester brand

Since 1962, when Worcester pioneered domestic oil-fired boilers, the company's commitment to excellence hasn't changed.

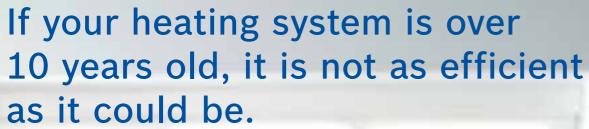
And that commitment has only strengthened

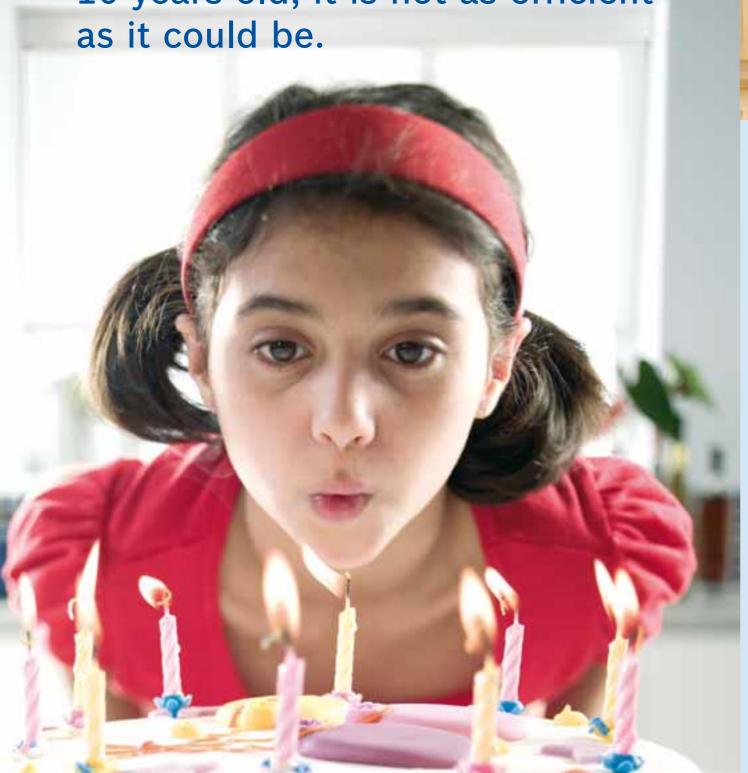
since Worcester became a part of the Bosch Group – one of the world's leading names in innovative technology.

Today, many years and millions of boilers later, Worcester is the market leader in domestic heating and hot water appliances, employing over 1,800 people at our headquarters and manufacturing plants in Worcester and at Clay Cross in Derbyshire – including a nationwide network of over 300 directly employed Service Engineers and over 40 technical support advisors based at Worcester.

All of this makes Worcester a name that stands for reliability, quality, efficiency and value for money; a name you can trust.











Why should I consider changing my boiler?

It's surprising but true; older boilers can be as little as 60% efficient and even many comparatively modern boilers

	SEDBUK Range
Α	90% and above
В	86% - 90%
C	82% - 86%
D	78% - 82%
E	74% - 78%
F	70% - 74%
G	Below 70%

are not as efficient as Worcester Greenstar condensing boilers which are SEDBUK⁺⁺⁺ A-rated for their efficiency and more than 90% efficient.

Put another way, with our condensing boilers more than 90p of every £1 you spend on fuel for your boiler is used effectively for your heating and hot water.

What makes a condensing boiler so efficient?

Condensing boilers work by recovering the waste heat which is expelled through the flue system of a non-condensing boiler and passing it through a second heat exchanger where it extracts additional heat*.

This is why it makes such good sense to switch to an award-winning Worcester boiler. With a boiler that's 10 years old or more, which doesn't have the benefit of today's condensing technology, as much as 30%** spent on fuel for your heating and hot water is wasted. It could make a big difference to your household energy bills, saving you money and help to reduce your carbon footprint at the same time.

And by combining a new condensing boiler with the latest in digital and intelligent heating controls, you can make your money go even further.

Measure	Annual saving (£/yr)	CO ₂ saving a a year
Condensing boiler & heating controls upgrade	Around £225	Up to 1,100kg

Source: www.energysavingtrust.org.uk/cym/Energy-saving-assumptions

Changes to the Building Regulations in recent years mean that in virtually all new and replacement boiler installations[†] a high efficiency condensing boiler must be used.

Your home's energy rating

The Energy Performance Certificate (EPC) is required by anyone selling a home. It rates a home's energy efficiency, giving potential buyers an idea of how green, or how costly, their new home will be. It is widely recognised that installing a high efficiency condensing boiler will improve your home's rating.

One more way to help improve the energy efficiency rating of your home, and to significantly reduce your fuel bills and carbon dioxide emissions, is to install a solar water heating system. All Greenstar regular and system boilers can be used with a Worcester Greenskies solar water heating system to generate your hot water (see page 19). Depending on the positioning of the solar panels, they could provide up to 60%^{††} of your annual hot water free of charge from a clean, renewable source of energy. Look for the symbol to indicate boilers which are solar compatible.

Worcester Energy Houses

Worcester's Energy Houses are real-life case studies which show the difference that switching to Worcester products can make to your bills, your lifestyle and the environment.

You can see how we could help you reduce your energy consumption by visiting www.worcester-bosch.co.uk/energyhouses

^{*} When operating in a condensing mode a visible plume is generated from the flue terminal. Consideration should be given to this when siting the boiler. Further details can be found within our Technical and Specification brochures on condensing boilers

^{**} Source: Energy Saving Trust † Exceptions can apply # Energy Saving Trust (Publication CE102) ## 2005 SEDBUK database

Which type of condensing boiler is right for you?

It's so simple to make your mind up

Because every household is different – the heating and hot water needs of someone living in an apartment will be very different from those with a large family home. Worcester offers both internal and external boiler options for added installation flexibility and our Greenstar range is available in three boiler types: 'combi', regular and system.

Each of the three types of boiler delivers all the benefits of high efficiency technology, so you just need to weigh up which suits your needs, the size of your home and your lifestyle and it's easy to come to a decision on what's best for you.

The easy way to choose

It's important that you find out as much as you can before you decide on the boiler that's right, so why not try the helpful 'find a boiler' tool you'll find on our website at

www.worcester-bosch.co.uk/findaboiler

It is essential that you consult your professional oil installer to help advise you on what boiler is most suitable for your property. Alternatively you can call our customer helpline on **0844 892 3366.**

The lifetime of your boiler

All Worcester Greenstar boilers are engineered to last – meaning you can think ahead about how your heating and hot water needs may change. Whether you have a growing family or are thinking about adding solar water heating in the future, you can choose the right Greenstar boiler now, secure in the knowledge that it will still be performing if your circumstances change.

Guarantees and spare parts



All Worcester Greenstar oil-fired boilers come with a 2 year* guarantee as standard, a 10 year* guarantee on the secondary heat exchanger and a 5 year guarantee on the primary heat exchanger.



For added peace of mind we also hold spares for our boilers for at least 10 years after they have been discontinued.

Considerations for choosing a new boiler

Consideration	Most suitable boiler								
You want to use your loft space for a room conversion or other purpose	Combi or System (unvented cylinder)								
You live in a flat or bungalow (i.e. have very little or no roof space)	Combi or System (unvented cylinder)								
Your home has more than 2 bathrooms	Regular, System or Combi								
Your mains water pressure is low	Regular or System								
You want to replace an old boiler to improve an existing conventional central heating system	Combi, Regular or System								
There is a need to have hot water available on tap without waiting for it to heat up	Combi								
If you need to discuss your boiler requirements, call our customer helpline on 0844 892 3366									

What is a 'combi' boiler?

A 'combi' or combination boiler is a high efficiency water heater and a central heating boiler combined (hence the name) within one compact unit. Water is heated directly from the mains eliminating the need for a hot water storage cylinder and the associated cold water storage cistern in the roof space. Because your hot water is delivered to your taps or shower at mains pressure it's very convenient and can save on your hot water costs. As an added benefit, showers from a 'combi' can be comparable with the performance of a power shower.

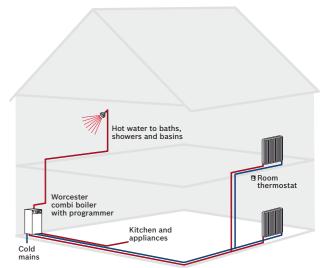
So a 'combi' can also give you a little extra room to play with, making it ideal for a flat or a bungalow with very little or no roof space and it's also the right choice if you want to use your loft space for a room conversion. Another 'combi' benefit is that it can generally save you money on installation time and costs as well installation materials.

What is a regular boiler? 🎇

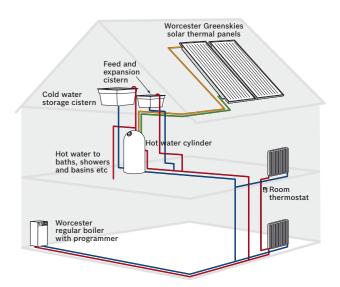
Regular boilers – sometimes referred to as traditional or conventional boilers – are suitable for homes that already have a traditional heating and hot water system that requires a separate hot water cylinder. Regular boilers also require a cold water storage cistern to feed the hot water cylinder and an expansion cistern in the loft. They are a good option for any home where a large volume of stored hot water is required e.g. homes with two or more bathrooms, or in areas where the water pressure is low. A regular boiler may be the best option when replacing an existing boiler in a property with an old radiator system which might not be able to cope with the higher pressure of a combi system. Regular boilers are compatible with solar water heating systems to bring you the added benefits of environmentally friendly hot water and further cost savings.

What is a system boiler?

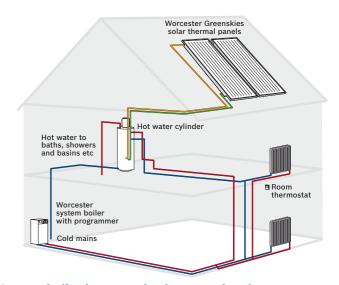
Both a system boiler and a regular boiler work on the principle of stored hot water – but a system boiler is different in two important ways. Firstly, many of the components of the heating and hot water system are built into the boiler itself, making it quicker and easier to install. Secondly, it doesn't need a feed and expansion vessel in the loft. There are two kinds of cylinder which this type of system may have – a mains pressure hot water cylinder or a low pressure hot water cylinder. They are also compatible with solar water heating systems to bring you the added benefits of environmentally friendly hot water and reduced hot water and heating costs.



Combi boiler layout



Regular boiler layout and solar water heating system



System boiler layout and solar water heating system

(System boiler with unvented hot water cylinder)

* Terms and conditions apply

Drawings are for illustrative purposes only



Greenstar condensing oil-fired combi boiler range.





Greenstar Heatslave series

Central heating outputs: 18, 25 & 32kW

Maximum hot water flow rates: 15*, 18* & 22* litres per minute

- Our top of the range floor standing oil boiler range, Heatslave combis offer a wide choice of operating features
- The higher output models are suitable for larger two bathroom properties
- Heatslave combis are suitable for kitchen installation
- Optional 7 day twin-channel digital programmer available to provide fully automatic control.



Greenstar Heatslave External series

Central heating outputs: 18, 25 & 32kW

Maximum hot water flow rates: 15*, 18* & 22* litres per minute

- Heatslave External appliances are the perfect choice for those wanting a combi boiler but where it's not feasible or desirable to have the boiler inside the property
- Higher output models are suitable for larger two bathroom properties
- Robust, insulated, weather-proof cabinet designed to withstand the elements.

Please see page 16 for compatible optional control

We always recommend you consult a registered installer prior to choosing your boiler.



Greenstar condensing oil-fired system boiler range.





Greenstar Camray Kitchen and Camray Utility System series

Central heating outputs: 18, 25 & 30kW

- A range of compact and highly efficient appliances which are a good option for small to medium-sized homes with a heating system that includes stored hot water
- Ideally suited for either kitchen or utility room installation
- An optional 7 day twin-channel digital programmer is available for Camray Kitchen System appliances to provide greater system control.

Greenstar Camray External System series

Central heating outputs: 18, 25 & 30kW

- Ideal for use where space in the kitchen or utility room is at a premium
- Suitable for small to medium-sized properties with stored hot water
- Robust external cabinet design ensures full weather-proofing.



Please see page 16 for compatible optional control

We always recommend you consult a registered installer prior to choosing your boiler.



Greenstar condensing oil-fired regular boiler range.







- Camray Kitchen and Camray Utility models have been designed to fit neatly between standard kitchen units and are therefore suitable for both kitchen and utility room installation
- They are highly efficient and extremely quiet in operation
- An optional 7 day twin-channel digital programmer available for Camray Kitchen appliances.



Greenstar Camray External series

Central heating outputs: 18, 25 & 30kW

- An excellent choice for a regular heating system where interior space is at a premium
- Wide range of outputs makes Camray External appliances suitable for smaller, medium and larger properties
- Robust construction includes an insulated, weather-proof cabinet.



Greenstar Danesmoor WM series

Central heating outputs: 18 & 25kW

- A choice of two high efficiency wall mounted boilers for smaller and medium-sized properties where insufficient floor space is available or a wall mounted appliance is preferred
- Boiler size designed for ease of installation in a new or existing kitchen
- A 7 day twin-channel digital programmer is available as an optional extra.



Greenstar Danesmoor Utility series

Central heating outputs: 50 & 70kW

• The Danesmoor Utility 32/50 and 50/70 models are designed for installation into non-kitchen areas such as boiler rooms or garages in larger properties.

Please see page 16 for compatible optional control

We always recommend you consult a registered installer prior to choosing your boiler.

Efficiency that today's energy-conscious homeowner demands.

Over the last few years boilers have become increasingly efficient and, with condensing boilers already offering typical efficiencies of over 90%, there is little scope for significant developments in boiler efficiency.

But the one area of the system where we can help improve performance even further is in the controls.

More effective controls can improve the overall performance of your heating system by as much as 13%*, dramatically reducing the amount of fuel you use – and the amount you pay.

Greenstar oil-fired boiler control option

Worcester offers a digital control for compatible oil-fired boilers.

It is designed to be easy-to-use to make sure you get the benefit of being in full control of your heating and hot water.

For further information on this control please visit **www.worcester-bosch.co.uk**

Greenstar oil-fired boiler control option

Twin channel digital programmer (for use with Greenstar Heatslave, Greenstar Camray Kitchen regular and system and Greenstar Danesmoor wall-mounted models only)

• Plugs into the boiler fascia panel and offers 3 separate time periods for both heating and hot water.

						FEATURES								ELI	ECTRIC	AL	BOILER TYPE				
	TYPE MOUNT				UNT	TIME CONTROL					TEMPERATURE CONTROL				CONNECTION TYPE			COMBI	SYS	REGI	JLAR
Oil Control	Mechanical	Digital	Intelligent	Fascia mounted	Wall mounted	Central heating	Hot water	24 hour	7 day	Auto switch – BST/GMT	Room thermostat	Programmable room thermostat	Optimum start	Boiler flow temp compensation	Plug in	Radio frequency	Hard wired	Heatslave	Camray Kitchen	Danesmoor WM	Camray Kitchen
Twin Channel		•		•		•	•		•						•			•	•	•	•



The Greenstar condensing oil-fired boiler range. Technical specification and features overview.

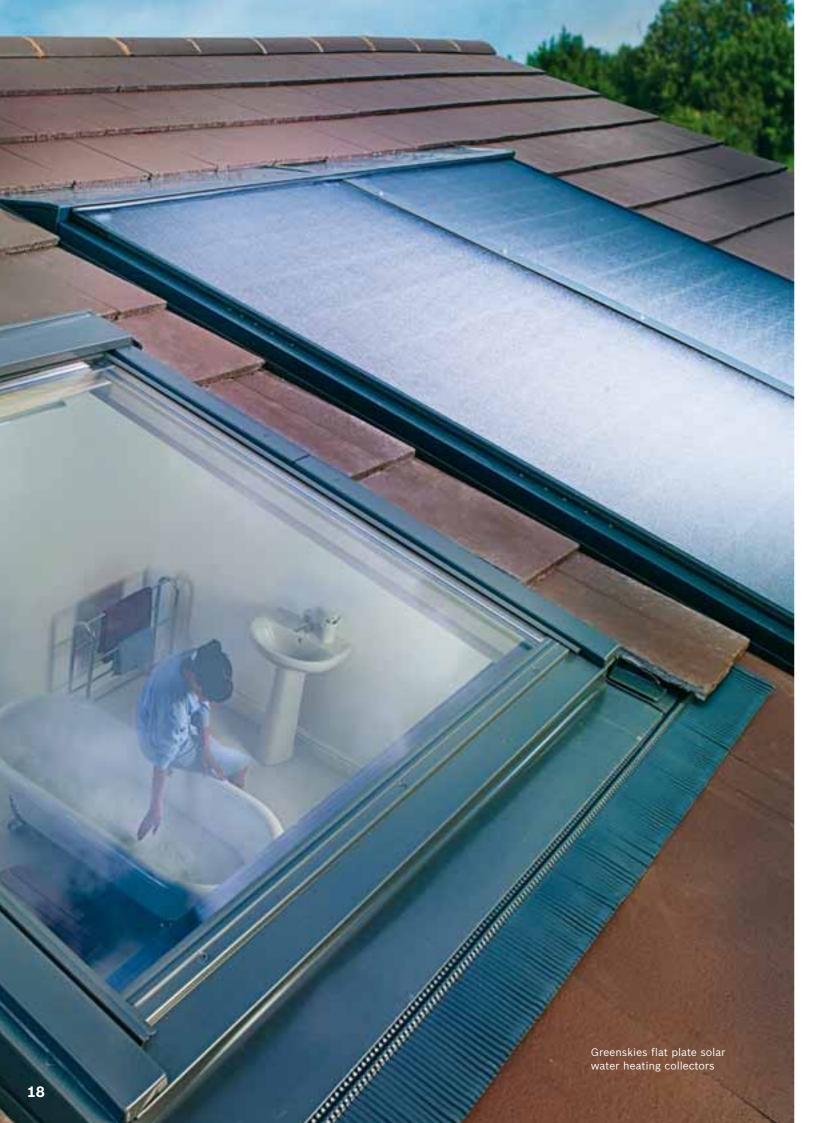
	REGULAR													
Feature	Danesmoor WM 12/18	Danesmoor WM 18/25	Danesmoor Utility 32/50	Danesmoor Utility 50/70	Camray Kitchen 12/18	Camray Kitchen 18/25	Camray Kitchen 25/32	Camray Utility 12/18	Camray Utility 18/25	Camray Utility 25/32	Camray External 12/18	Camray External 18/25	Camray External 25/32	
SEDBUK (%)	92.6	92.8	93	92.5	93.1	93.2	94.2	93.1	93.2	94.2	93.1	93.2	94.2	
Height (mm)	880	880	1012	1012	855	855	855	855	855	855	950	950	950	
Width (mm)	600	600	520	520	370	370	370	370	370	370	565	565	565	
Depth (mm)	380	380	815	815	600	600	600	600	600	600	780	780	780	
Max. CH output (kW)	18	25	50	70	18	25	30	18	25	30	18	25	30	
Room sealed flue	•	•	•	•	•	•	•	•	•	•	•	•	•	
Open flue	•	•	•	•	•	•	•	•	•	•	N/A	N/A	N/A	
Maximum straight length RS horizontal flue (inc. terminal)*	4,000	4,000	3,000	3,000	4,000	6,000	4,000	4,000	6,000	4,000	2,000	5,000	2,000	
Maximum straight length RS vertical flue (inc. terminal)*	6,000	6,000	6,000	6,000	8,000	10,000	8,000	8,000	10,000	8,000	7,000	9,000	7,000	
Weight (kg)	72	72	270	280	100	102	108	101	103	110	114	115	122	
Optional plug-in timeclock	•	•			•	•	•							

					SYSTEM	COMBINATION									
Feature	Camray Kitchen System 12/18	Camray Kitchen System 18/25	Camray Kitchen System 25/32	Camray Utility System 12/18	Camray Utility System 18/25	Camray Utility System 25/32	Camray External System 12/18	Camray External System 18/25	Camray External System 25/32	Heatslave 12/18	Heatslave 18/25	Heatslave 25/32	Heatslave External 12/18	Heatslave External 25/32	Heatslave External 18/25
SEDBUK (%)	93.1	93.2	94.2	93.1	93.2	94.2	93.1	93.2	94.2	90.2	90.1	90.3	90.2	90.1	90.3
Height (mm)	855	855	855	855	855	855	950	950	950	855	855	855	950	950	950
Width (mm)	370	370	370	370	370	370	565	565	565	520	520	520	640	640	640
Depth (mm)	600	600	600	600	600	600	780	780	780	600	600	600	770	770	770
DHW flow rate**	N/A	N/A	N/A	15	18	22	15	18	22						
Max. CH output (kW)	18	25	30	18	25	30	18	25	30	18	25	32	18	25	32
Room sealed flue	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Open flue	•	•	•	•	•	•	N/A	N/A	N/A	•	•	•	N/A	N/A	N/A
Maximum straight length RS horizontal flue (inc. terminal)*	4,000	6,000	4,000	4,000	6,000	4,000	2,000	5,000	2,000	4,000	6,000	4,000	2,000	5,000	2,000
Maximum straight length RS vertical flue (inc. terminal)*	8,000	10,000	8,000	8,000	10,000	8,000	7,000	9,000	7,000	6,000	12,000	6,000	5,000	11,000	5,000
Weight (kg)	110	112	119	109	111	118	133	134	152	177	177	179	195	195	206
Optional plug-in timeclock	•	•	•							•	•	•			

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^{*} Check maximum flue length with installer.

^{**} Maximum hot water to provide an average 40°C temperature rise on a 90 litre draw off.





Greenskies solar thermal water heating – proven technology to provide you with total hot water comfort.

If you'd like to save money and reduce the amount of fossil fuels on which you depend and at the same time, significantly lower your carbon dioxide emissions, why not consider installing a Worcester Greenskies solar thermal water heating system?

Solar thermal water heating systems work by absorbing solar energy. The energy is transferred from the solar collector to heat the water in your hot water cylinder. Highly efficient, completely controllable and low maintenance, a solar thermal water heating system is easiest to install if you already have a conventional 'system' or 'regular' boiler and could provide up to 60%* of your annual hot water from a clean, renewable source of energy.

Works come rain or shine

Worcester offers two types of solar water heating collectors – evacuated tube and flat panel. They do not require high temperatures or even direct sunlight to work.

Unless your home is a listed building or in a conservation area, planning permission for solar water heating panels is unlikely to be required. However it is always best to check with your local planning office. For renewables planning guidance visit www.energysavingtrust.org.uk

Greenskies features and benefits:

- Sustainable energy. As solar energy harnesses the energy from the sun, the CO₂ emissions from use of fossil fuels is avoided
- Environmentally-friendly. Greenskies solar thermal panels can be fully recycled
- **Proven technology.** Greenskies is based on technology that has been working for more than 20 years
- Suitable for many locations. Greenskies can be installed on or in[†] a sloping roof, on flat roofs, or even on a wall or floor
- You're in control. The Greenskies system includes a control which allows you to monitor the temperature generated
- Easy to look after. Greenskies requires minimal maintenance and is extremely robust
- **Guarantee.** Greenskies panels come with a 10 year guarantee and a 2 year guarantee on accessories.



* Source: Energy Saving Trust. † Flat plate only.





Greenstar mains gas and LPG-fired boilers

In addition to oil-fired boilers, Worcester manufactures a range of high-efficiency gas-fired Greenstar boilers for mains gas that are also available as LPG models, giving you an alternative to our oil-fired range. They provide the same cost saving benefits and can help reduce your fuel bills and your carbon footprint.



Greenstore ground source heat pumps

Greenstore ground source heat pumps can meet your total heating and hot water needs by using the latent heat stored in the earth. Ground source heat pumps are perfect for use with under floor heating systems and can also be used with appropriately sized radiators.

Greensource air to water and air to air heat pumps

These clever devices are used extensively in Scandinavia and use latent energy stored in the air to provide heating and hot water for the home.

Information whenever you need it

To help you make the most of your heating and hot water system, Worcester has produced an informative 'handy hints' guide. To obtain a copy or to find out more about Worcester's full range of heating and hot water solutions, visit www.worcester-bosch.co.uk or call our literature line on 0844 892 9800.



We're always on hand to help, whether you're just starting to think about buying a Worcester boiler or you've owned one for years. We have over 300 Service Engineers to ensure our products deliver energy-saving performance year after year.



Our experienced and award-winning technical support team is also available on the phone or via email to offer help with any aspect of your Worcester boiler. They can help with choosing the right controls, as well as advising on combining your boiler with environmentally-friendly, cost-saving renewable systems like solar water heating. We are placed in the top 10 of the top 50 UK call centres.

Of course, the advice of a registered installer is also essential, and we can also help you find a professional installer who's local to you. Just call **0844 892 3366** or visit www.worcester-bosch.co.uk/findaninstaller

Guarantees for extra peace of mind

To give you even more reassurance, we offer comprehensive guarantees on all our products. To find out more, visit **www.worcester-bosch.co.uk/guarantee**

Installation of Greenstar oil-fired boilers

Worcester recommends that
Greenstar boilers are installed
by an OFTEC registered
technician who has the
appropriate accreditation
for oil boiler installations.
To find an OFTEC
registered technician
visit www.oftec.org



Member



* Source: Energy Saving Trust (Publication CE102)

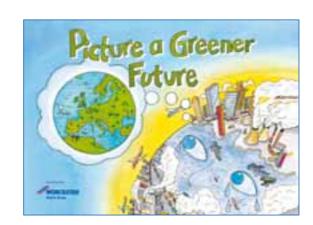


Whether it's energy efficient boilers, or sustainable heating solutions, Worcester's commitment to the environment goes back many years.

The greatest contribution we make is by ensuring every one of our products is as fuel efficient as technology will allow, or uses completely sustainable fuel like solar energy.

But that's not all. In 2000, The Environment 2020 Awards were initiated to celebrate and promote activities dedicated to conserving the environment for future generations. The initiative includes an annual children's art competition. For more information visit our website.

Worcester is also behind a forward-looking scheme to educate younger generations on environmental issues. A free book, 'Picture a Greener Future', is available from our website at **www.worcester-bosch.co.uk/greenerfuture** and, through a fun story, shows how we can all reduce our energy consumption and shrink our carbon footprint.



In addition, a partnership has been set up with a Swansea-based company which now transforms Worcester's previously non-recyclable waste, including some plastics, into an eco-friendly concrete replacement which is now used in housing, meaning that Worcester's range of Greenstar gas-fired boilers are now 100% recyclable.

Making a difference

Since 1996, the combined energy savings of all the products we've sold have helped reduce our company's carbon footprint by 20%, making a significant difference to the UK's impact on the environment.

As domestic boilers currently account for 21% of the UK's total CO_2 emissions, the fact that a Worcester condensing boiler also delivers dramatically reduced emissions of both CO_2 and NOx (Nitrogen Oxide) helps in the battle against climate change. All Worcester Greenstar boilers are within UK Class 5 – the lowest of the 5 categories – for NOx emissions.

* Source: Energy Saving Trust

Useful numbers

Consumer Technical Helpline (Pre & Post Sales)

Tel: 0844 892 3366 Fax: 01905 752741

Renewables Technical Helpline

Email: renewable.energy@uk.bosch.com or telephone 0844 892 4010

Literature

Email: literature@uk.bosch.com or download instantly from our website or telephone 0844 892 9800

Customer Service

Engineer Appointments

Email: appointment.worcester@uk.bosch.com or telephone 0844 892 3000

Enquiries

Email: service.mailbox@uk.bosch.com or telephone 0844 892 3000

Guarantee Registration

To register your Worcester guarantee, please visit our website or telephone 0844 892 2552

Calls to the listed 0844 numbers are charged at up to 3 pence per minute from BT land lines.

Calls from mobiles and some other networks may vary. Calls to and from Bosch Thermotechnology Ltd

may be recorded for training and quality assurance purposes.

www.worcester-bosch.co.uk













Worcester, Bosch Group is a brand name of Bosch Thermotechnology Ltd.

This leaflet is accurate at the date of printing, but may be superseded and should be disregarded if specification and/or appearances are changed in the interest of continued improvement. The statutory rights of the consumer are not affected.

Part No. 8 716 110 393 F 02/12







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