

Heating and hot water solutions for the specification market

**From concept to completion.
Today, tomorrow, together...**



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



Book a factory visit at Worcester

See first hand why Worcester is a brand you can trust by visiting our factory.

For more information on our factory visits, please contact your local specification manager. To find your local technical specification manager please visit **worcester-bosch.co.uk/mytsm**

Alternatively, for more information please email **worcester.specification@uk.bosch.com**

A photograph of a modern industrial building with a prominent red upper section. The word 'WORCESTER' is written in large, white, 3D block letters on the red facade, with 'Bosch Group' in smaller white letters below it. The building has large glass windows reflecting the sky. In the foreground, there are some plants with reddish-purple leaves.

WORCESTER
Bosch Group

Our factory visit includes:

- 1. CPD & Product Training**
- 2. Factory Plant Tour**
- 3. Department & Product Overview**
- 4. Market Updates**
- 5. Tour our New Distribution Centre**
- 6. Tour our state-of-the-art Training Academy**
- 7. Contact Centre Overview**

Worcester, Bosch Group – the perfect partner

Here at Worcester, Bosch Group, we are committed to the design and manufacture of highly efficient heating and hot water technologies for a wide variety of residential and commercial applications.

Worcester has been manufacturing efficient, innovative heating and hot water solutions since 1962. The company employs more than 1,500 people, including a network of over 300 service engineers and 30 dedicated specification sales team members.

We are currently manufacturing in the region of 450,000 boilers a year across our sites including Worcester and Clay Cross.

From our established award-winning Greenstar range of gas and oil-fired boilers, to our portfolio of renewable heating and hot water technologies, we have invested heavily in the development of complete system solutions to meet the users need for comfort, performance and quality.

Our expertise also extends to the support we can offer to those tasked with the specification, installation, and maintenance of domestic heating and hot water technologies. Thanks to our experienced field support team, engineering services department, and training initiatives, we have a wealth of industry expertise on offer to help improve home efficiency levels in the domestic sector.

As debate surrounding the use of energy in domestic buildings continues to give us plenty to consider, Worcester is extremely well placed to offer you the products and support you need – no matter what your requirements.

Paul Soper
National Specification Director
Worcester, Bosch Group.

1,500
people employed
by Worcester

30
dedicated specification
sales team members

300
service
engineers



Corporate responsibility

Corporate Social Responsibility is an intrinsic part of our business that extends beyond our products to encompass environmental commitment, social community and the workplace.

Environment

Worcester is an environmentally responsible, ISO 50001 certified manufacturer that continually strives to reduce consumption of resources and production of waste and emissions through a BS EN ISO 14000 Environmental Management System.

Worcester are proud winners of the Energy and Environment Category of the British Factory Awards 2014.

Our manufacturing initiatives include:

- Minimising carbon footprint without offsetting
- Zero waste to landfill
- 100% recyclability of all products since 2010.

Worcester hold annual Environment 2020 Awards to celebrate and promote awareness of energy efficiency as well as activities which help the environment for future generations. Awards are divided into four categories: children's art competition, product installations, self-build projects and specifications.

Environment
2020

Community

Worcester is the largest private employer in Worcester and Clay Cross, Derbyshire and is actively involved in the local communities. This involvement includes school visits, support for young entrepreneurs, sponsorship of local sports and arts activities and fundraising for local charities.

Investment in People

Holding Investor in People status, Worcester recognises the importance of developing the key skills and futures of the people it employs. With this in mind, every year we undertake 30 apprenticeships & 70 internships within our organisation.

Workplace

Worcester has an ethnically diverse workforce and a very low staff turnover thanks to high levels of employee satisfaction. Our commitment to staff is recognised in our Investors in People status, which is based on a comprehensive package of staff benefits combined with ongoing skills development to support career progression.

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.

The Robert Bosch Foundation donates to a wide range of causes, including:

- Academic and medical research
- Healthcare and welfare work
- Training and education
- International relations
- Community projects
- Humanities, natural and social sciences.



Robert Bosch

£50,000

raised for local
charities in 2013

25%

targeted reduction in
CO₂ emissions by 2020

30

apprenticeships
per year





“Product innovation is something we really value with Worcester specifications”
Tony Warbrook, Mechanical and Electrical Manager.

Case study: Broadacres

Products used

- **Greenstar i Junior gas-fired condensing boilers**

Project overview

"At the beginning of the project Broadacres considered the specification of heating products across our entire housing stock of 5,600 homes in the North Yorkshire area. We identified that one of our supported housing schemes, Kirk House, was suffering high levels of component failure in comparison with the rest of our stock and we needed to rectify this. We looked at the scheme as a whole and worked with Worcester, Bosch Group to retrofit the entire project with twenty six Greenstar 24i Junior combi boilers."

Why do you choose to work with Worcester, Bosch Group?

"Since installing the specified Worcester products, we've seen a 98% reduction in repairs compared to the previous systems. This is a significant cost saving and also crucial for our service provision to an area of our stock that houses some of our most vulnerable tenants.

Following on from this project, Broadacres has committed to a partnership with Worcester to replace our entire on-gas housing stock with the Greenstar 24i Junior combi boilers. Working with a company on a long term basis was crucial during specification. We weren't seeking a temporary solution that would be in place for a few years then replaced. Additionally, we wanted to avoid a mismatch of products across our patch and needed to streamline the whole stock with one manufacturer capable of supporting us throughout an entire process to deliver a quality product. The service we have received has been fantastic.

Ultimately, with a 98% reduction in repairs to Kirk House, the products are delivering above and beyond what has been guaranteed. Investing in high quality Worcester boilers now, will help to make greater savings in the longer term. We are ambitious as we're now aiming to increase our life cycle from 12 years to 15 years and we have no doubts that Worcester are the best possible partner to deliver this level of reliability.

Worcester have a complete product range and standardisation is key when working in a housing association set up. We have a wide variety of tenants and Worcester have offered a one-package solution that fits them all.

Innovative solutions

Additionally, product innovation is something we really value with Worcester specifications. Worcester were quite proactive in identifying a solution for the problem of frozen condensate pipes with the CondenseSure accessory – a device which is located externally on the condensate pipe that can prevent it from freezing and leading to boiler shut down. It's such a simple and affordable idea and we're now specifying this as standard.

Training has been crucial as Worcester have facilities where all our engineers can go to learn and also get hands on with the products. If one of our engineers has forgotten something or needs to re-cap, Worcester will always oblige with support. Worcester has also provided technical hand outs containing support information which has been useful.

As a large housing organisation, we want to deal with businesses that are customer focused, with high standards and defined ISO Accreditations. At Broadacres we believe it's not just about the bricks, it's about the tenants and we welcome any company which has that same ethos and puts the customer first."

Tony Warbrook, Mechanical and Electrical Manager, Broadacres.

KEY TECHNICAL DATA	Greenstar 24i Junior
NOx classifications	38 mg/kWh, Class 5
SAP 2009 seasonal efficiency	89.1%
SEDBUK 2005 Value/band	90.1/Band A*
DHW flow rate @ 35°C rise	9.8 ltr/min
Output to central heating	7.2 - 24kW†

*SAP 2005 efficiency. †13kW with low NOx code plug fitted.

98%
reduction in repairs

Case study: **Liberty Gas**

Products used

- **Greenstar i Junior**
gas-fired condensing boilers

Project overview

“We worked with Worcester, Bosch Group to install Greenstar 28i Junior boilers in properties throughout the Leeds area, as part of our partnership with Leeds City Council.”

Why do you choose to work with Worcester, Bosch Group?

“When looking for a boiler manufacturer we sought a business that could provide a high quality product that would benefit both the installer and end-user. From evaluating the Worcester product range against other brands we knew that installing a boiler from its award-winning range would meet the needs of end-users.

Further to this, we also like to work closely with companies that match our values and are committed to giving the end-user the best possible service. Worcester is always striving to develop the most innovative products and developing ways to solve common problems. This commitment is something we appreciate, as we know our customers will benefit as a consequence.

Long term partnerships

A long term relationship is key with all of our suppliers, as this continuity ensures we can rely on them and trust their knowledge over an extended period. In the unlikely event that something goes wrong with any of the boilers, we know that Worcester will be on hand to help, especially with such a dedicated spares and after sales support team.

Worcester are always on hand to help with any issues we have and we look forward to continuing to work with them for years to come.”

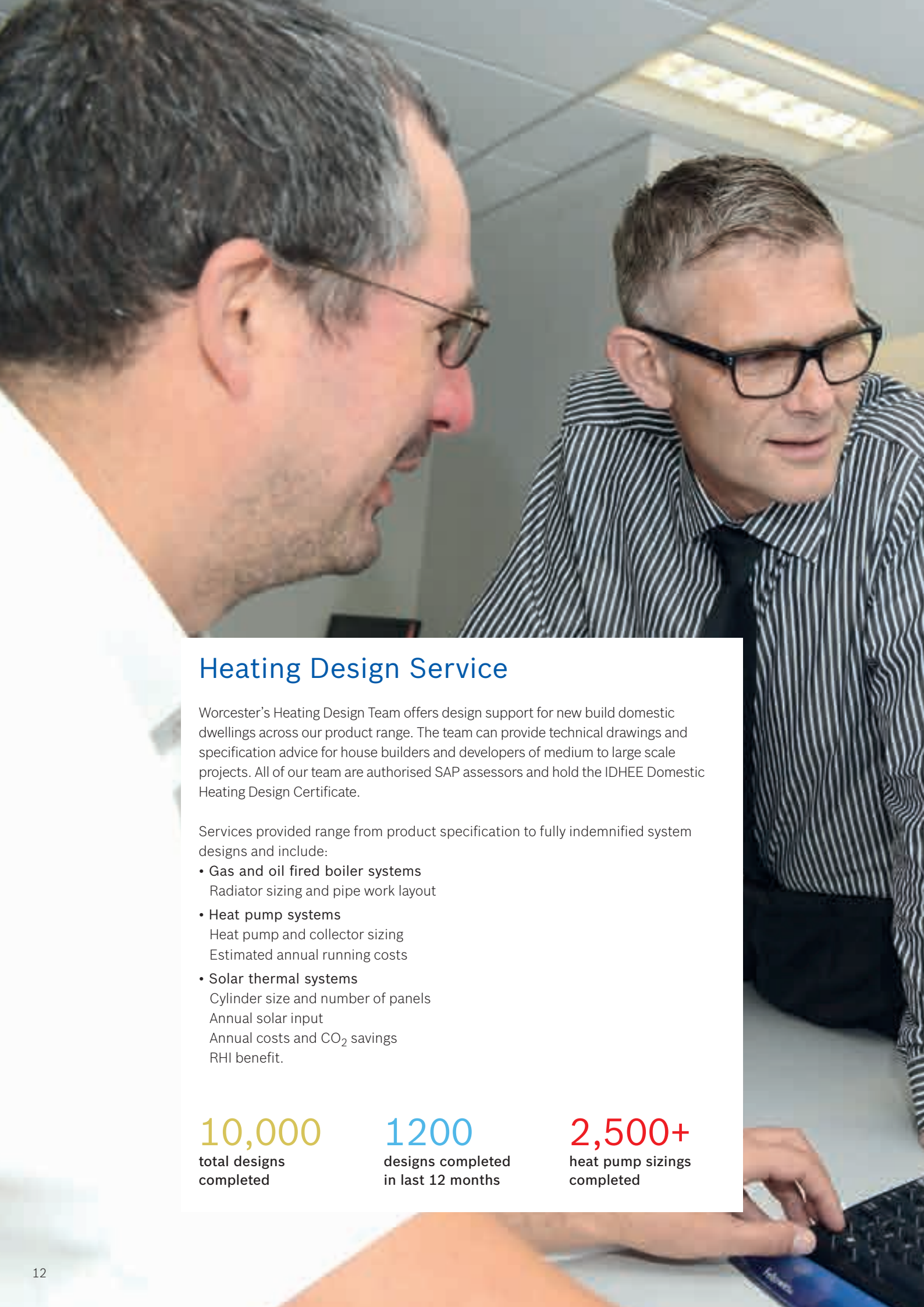
Tony Moore, Gas Manager, Liberty Gas.





“A long term relationship is key
with all of our suppliers”

Tony Moore, Gas Manager.



Heating Design Service

Worcester's Heating Design Team offers design support for new build domestic dwellings across our product range. The team can provide technical drawings and specification advice for house builders and developers of medium to large scale projects. All of our team are authorised SAP assessors and hold the IDHEE Domestic Heating Design Certificate.

Services provided range from product specification to fully indemnified system designs and include:

- **Gas and oil fired boiler systems**
Radiator sizing and pipe work layout
- **Heat pump systems**
Heat pump and collector sizing
Estimated annual running costs
- **Solar thermal systems**
Cylinder size and number of panels
Annual solar input
Annual costs and CO₂ savings
RHI benefit.

10,000

total designs
completed

1200

designs completed
in last 12 months

2,500+

heat pump sizings
completed





New Build Case Study: **Leeds Federated Housing Association Ltd**

Products used

- **Greenstar i Junior gas-fired condensing boilers**

Project overview

“We are currently installing Worcester’s Greenstar 28i Junior into a range of properties from one bedroom flats to four bedroom houses as part of a longstanding relationship with the manufacturer.”



“ We both have a commitment to giving the end user the best possible product ”
Peter Thirtle, Statutory Services Programme Manager.





Leeds Federated Housing Association Ltd

Why did you choose to work with Worcester, Bosch Group?

“When the need for a new partner was identified, we went through a rigorous testing process involving discussions with both tenants and installers to find the best solution possible. This included evaluating a range of factors such as installation costs, failure rates, warranty cover, life expectancy of the boiler and ease of installation.

Throughout, Worcester, Bosch Group outperformed against competitors and this led to the decision of having Worcester as our partner of choice. We have been working together on ongoing projects, with a programme in place to install over 200 boilers every year.

Strong relationships

We couldn't be happier with the relationship we have with Worcester. Looking back at the previously installed products we constantly faced issues with call outs and repairs, which was not only costly but was also negative for the tenant.

Since working with Worcester several members of the team at Leeds Federated Housing, including myself, have attended training courses at the Wakefield Training Academy. This opportunity has helped everyone to gain an understanding of the products, their USP's and how they will work within our tenant's homes.

Away from the product requirements we strive to associate ourselves with companies that have good CSR policies and are dedicated to sustaining their future. Worcester has a strong commitment to the wider community so we are proud to be associated with them on our projects.

We both have a commitment to giving the end user the best possible product, therefore ensuring the heating systems we install are of a high quality and deliver the best possible performance.

**Peter Thirtle, Statutory Services Programme Manager,
Leeds Federated Housing Association Ltd.**

Programme to install over **200** Worcester boilers per year

KEY TECHNICAL DATA	Greenstar 28i Junior
NOx classifications	38 mg/kWh, Class 5
SAP 2009 seasonal efficiency	89.1%
SEDBUK 2005 Value/band	90.1/Band A (SAP 2005 efficiency)
DHW flow rate @ 35°C rise	11.4 ltr/min
Output to central heating	7.2 - 24kW*

*13kW with low NOx code plug fitted.

“The strong relationship we have established means we are confident about working with Worcester for years to come”

Ashok Singh, Technical Assistant & Tenant Liaison Officer.



Leeds Federated Housing Association Ltd

Why did you choose to work with Worcester, Bosch Group?

Ongoing advice and product support

"The after sales support is another reason why Worcester stood out to us as the preferred manufacturer. We have found confidence in knowing that they are only a phone call away and can offer us support on any issues we have. It is reassuring that if an engineer is needed they will offer a quick response which ensures we can maintain customer satisfaction. We also appreciate their proactivity, and know that they will quickly update us on any new products which may improve our homeowners heating systems."

We have maintained a great ongoing relationship with Worcester. Specification Managers have attended progress meetings and also supported us with any upcoming projects we have in the pipeline. We are constantly being informed by our Worcester Specification Manager about new products and advised on innovative solutions, which we can introduce to work we carry out.

A prime example of this is the introduction of the Keyless Filling Link accessory. The close relationship we have with our representative meant they informed us about this product as soon as it came onto the market, therefore our homeowners were able to instantly benefit from its ease of use.

Overall when looking at Worcester, the boiler represented value for money due to the longevity and quality of the product, making them the perfect partner. The strong relationship we have established means we are confident about working with Worcester for years to come."

**Ashok Singh, Technical Assistant & Tenant Liaison Officer,
Leeds Federated Housing Association Ltd.**

Keyless Filling Link

Features and benefits

- Quick to install and operate
- Reduced risk of call-outs to top up the system
- Added value for the end user
- Guaranteed Worcester quality
- WRAS approved
- Simple lever operation, no key or hose required
- No risk of the end user losing or misplacing the filling link
- Easy to maintain optimum boiler performance
- Peace of mind
- For safe use as a filling link with the domestic water supply.



Whenever the system needs to be re-pressurised, the blue lever is simply pulled down until the correct pressure is achieved.



Products to rely on

All of the materials and components used in Worcester products are designed and manufactured to provide the highest quality, managed through a comprehensive programme of tests and quality checks. Use of the JIDOKA principle of manufacture ensures that product defects do not currently exceed 3.3 per million parts.

All appliances undergo three levels of testing prior to leaving our factories. Worcester also implements a Total Quality Initiative (TQI) to ensure that all employees are quality-orientated and a commitment to excellence is inherent in every part of the business.

All products are regularly reviewed by the Lifecycle Product Management Team to realise new ideas, exploit new technologies and innovate current products and processes.

Guarantees

Worcester offers extremely competitive product guarantees and also offers extended warranties by contractual arrangement.

A brand you can trust

We are honoured to have received a Royal Warrant in recognition of supplying goods to Her Majesty The Queen. As a market leader, Worcester is a brand that is trusted by millions of homeowners across the UK.

For six consecutive years, in a survey of Which? members, the Worcester Greenstar gas-fired condensing boiler range has been presented with Best Buy awards. In the latest survey,* no other manufacturer scored higher for reliability.

Product environmental sustainability

As well as being inherently energy-efficient, Worcester products are designed to have minimum environmental impact. Through a comprehensive range of both traditional and renewable technologies we are also able to provide integrated systems that minimise energy costs and carbon emissions.

Field trials

All appliances are installed in a range of property types and subjected to an array of operating conditions to simulate real-life situations. All of this work is undertaken before new products are introduced to the market. We also subject our products to extensive field trials with a variety of installers who have differing levels of experience.



Winner of Which?
Best Buy awards in
2010, 2011, 2012,
2013, 2014 and 2015.



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

* Source: Which? 2015/16 survey published in Oct 2015.



Product availability

Worcester's annual UK production capacity is in excess of 450,000 boilers per annum. The supply chain holds an estimated 25,000 boilers at any one time and stock profiling is in place with major merchants to ensure off-the-shelf availability for the most popular appliances.

The internal sales department is strongly focused on timely delivery of products and spares:

- 99.97% sales order accuracy
- 96% call reachability
- 99.9% product orders logged and in progress by 5pm on same day
- 99.6% spares orders logged and in progress by 5pm on same day.

Product continuity

Worcester has put contingencies in place to ensure a robust supply chain and to maintain customer satisfaction through the life of the products.

- Multiple supply options for components and whole products.
- Wide-ranging network and spares stockists holding the majority of the spares range.
- Spare parts stocked for a minimum of 10 years after a product has ceased production.
- Social housing providers are provided with extensive guidance on stocks and relevant contractors are issued with 'hospital kits' to ensure fast repairs.

Technical support

Available six days per week, the OFTEC award-winning Technical Helpline employs highly skilled and experienced technical staff covering all of our product types. We aim to respond to calls within 20 seconds.

Further support is available from Technical Liaison Officers. These expert technicians have direct involvement in Product Development, R&D, Quality and Product Management.







Case study: **Redrow Homes**

Products used

- **Greenstar CDi Compact LPG-fired condensing boilers**
- **Greenstore solar compatible unvented cylinders**

Project overview

“When the local planning authority implemented a 10% renewable policy we considered different technologies for our off-mains properties. We worked with Worcester, Bosch Group’s Heating Design Team and after a comprehensive specification process, we decided to install Greenstar CDi Compact LPG condensing boilers with solar compatible unvented cylinders. An additional solution also had to be created for the larger houses within the project as at 3,000sq ft, the renewable solution was not appropriate. We installed 19 Greenstar CDi Compact LPG boilers alongside 19 Greenstore unvented hot water storage cylinders.”

Redrow Homes

Why did you choose to work with Worcester, Bosch Group?

“At the very beginning of the project one of our main aims was to identify ways of achieving energy reduction on site. Worcester’s Heating Design Team had numerous ideas as to how we could achieve this as well as a range of quality products to provide a complete package for the affordable homes on the site, including boilers and heat pumps. Worcester also offers a range of products suitable for use alongside LPG, which was essential for the houses located off the main gas grid. Working with one manufacturer was hugely beneficial, not just because of the robust systems available but also for consistency across the development.

Having a complete system solution is a bonus from the specification perspective as it’s good to have a holistic solution that is covered by one warranty. It also helps the installers as the products are streamlined and designed to form a complete solution. I know this particular project ran smoothly from start to finish as a result. With Worcester, we know we’re working with a reputable brand.

Supporting CSR requirements

We place a lot of emphasis on Corporate Social Responsibility (CSR) and aim to work with businesses that possess their own environmental management systems and conduct their work in a responsible manner. We also place a large focus on this in our supply chain and look to streamline work and deliveries wherever possible. We continually aim to build on our CSR, the sustainability of our business and understand that it’s not all about profit, but also how our work has an effect on others. For this reason, we do consider how our partners do business and this is a reason we choose to work with Worcester and will continue to do so.

The backing of the Worcester brand re-affirms quality and this is something that cannot be said for every manufacturer, which is why we continually choose to work with Worcester. At Redrow we certainly see ourselves working with Worcester for the foreseeable future.”

Jonathan Moss, Research and Sustainability Manager, Redrow Homes.

KEY DATA	Greenstore solar compatible unvented cylinder
Domestic hot water volume	From 157 to 287 litres
Dedicated solar volume	From 65 to 115 litres
Guarantee	25 years*
	Greenstar 36CDi Compact (LPG)
NOx classifications	46 mg/kWh, Class 5
SAP 2009 seasonal efficiency	90.9%
ErP Seasonal space heating energy efficiency class	A / 93%
ErP Water heating energy efficiency class	A
DHW flow rate @ 35°C rise	14.7 ltr/min
Output to central heating	7.03 - 24kW

*Terms and conditions apply.





“The backing of the Worcester brand re-affirms quality and this is something that cannot be said for every manufacturer”

Jonathan Moss,
Research and Sustainability Manager.



Experienced in partnering

Talking to our partners, understanding their needs and challenges, exceeding their expectations and adding value at every level are simply part of everyday business for us.

Worcester partnerships work for all partners, not just in terms of supplying and maintaining products for heating and hot water comfort but also in related areas such as legislative compliance, sustainability and support at every level.

Contract administration

Each contract has a nominated Specification Manager, who is supported by a Regional Specification Manager and National Specification Director. These, in turn, are supported by an award-winning technical support team comprising of 300 directly-employed service engineers across the UK and Ireland.

- Each Worcester engineer carries over 600 Worcester parts.
- Guaranteed first time fix in 98% of cases.
- Van stocks replenished overnight.
- Used spares replenished free of charge during warranty period
- Worcester also offers a commissioning service on our Greenskies solar thermal range.

Administration packages are available for customers who have their own service teams.

Key performance indicators (KPIs)

Worcester can offer KPIs tailored to the needs of each client, underpinning diligent monitoring and highlighting areas for improvement.



Case study: London Borough of Barking and Dagenham Council

Products used

- **Greenstar Si Compact gas-fired condensing boilers**
- **Greenstar CDi Compact gas-fired condensing boilers**

Project overview

“We worked with Worcester on a project in the Barking and Dagenham area, which required installing twenty five Greenstar 30Si Compact and one 36CDi Compact gas-fired boilers.”

Why do you choose to work with Worcester, Bosch Group?

“Worcester has always had a brilliant reputation for manufacturing products which are high quality and durable, with the added benefit of extensive training and after sales support.

Worcester’s investment in the next generation of heating and hot water technologies means we can ensure that we are fitting only the most innovative products. For us this is great, as we have just started to venture into renewables and knowing Worcester are investing time in developing products within this sector means we can rely on the support we need on these projects.

Support for residents

Since the development has been completed we are confident that in the unlikely event a problem should arise we can turn to Worcester’s support team. When each product was first installed they helped residents master the controls and offered advice on how best to use their boiler.

Like Barking and Dagenham Council, Worcester places a strong emphasis on meeting all their stakeholders needs and are always keen to ensure that everyone from the specifier through to the end-user is satisfied with the product and ultimately this is why we wanted to work with them.”

**Michael Waring, Compliance and Improvement Manager,
London Borough of Barking and Dagenham Council.**

KEY TECHNICAL DATA	Greenstar 30Si Compact	Greenstar 36CDi Compact
NOx classifications	35 mg/kWh, Class 5	
SAP 2009 seasonal efficiency	89.8%	
ErP Seasonal space heating energy efficiency class	A / 94%	
ErP Water heating energy efficiency class	A	
DHW flow rate @ 35°C rise	12.3 ltr/min	14.7 ltr/min
Output to central heating	7.03 - 24kW	



“Worcester places a strong emphasis on meeting all their stakeholders needs”
Michael Waring, Compliance and Improvement Manager.





Comprehensive training provision

All Worcester engineers are fully trained and qualified and undertake regular 'refresher' courses to ensure they are up to speed with the latest technologies and legislation. Non-engineering staff are also encouraged to undertake ongoing training to improve their own career development and to raise their skill levels.

Associate training

Worcester offers extensive training for all operatives, on the customer's site or at one of our training academies. Many of our training courses are accredited externally to national standards and provide extensive training on all types of relevant products, not just Worcester products.

Training options:

- Worcester-owned and managed Schools of Excellence
- Training opportunities through college links programme
- On-site group training with training van facility
- Online training academy and distance learning option
- Shadow commissioning at installation site
- Mobile training vehicles
- Bespoke packages
- Tenant liaisons.

Training helpdesk staff

Worcester offers special training for customers' helpdesk staff, enabling them to resolve many tenants' issues negating a service visit.

Health & Safety

All Worcester staff are trained to be Health and Safety conscious with an emphasis on anticipating and preventing accidents to themselves or others. Worcester provides regular training for staff on a wide range of Health and Safety areas, including:

- First aid training
- Fire warden training
- Work-related upper limb disorders
- Manual handling
- Control of substances hazardous to health (COSHH).

Training locations:

- Worcester, Worcestershire
- Clay Cross, Derbyshire
- West Thurrock, Essex
- Wakefield, West Yorkshire
- Around 200 colleges as part of our college links programme.



“Worcester, Bosch Group has a great reputation for quality and reliability”

Michael Gurton,
Building Design & Specification Surveyor.

Case study: Worsnop House

Products used

- **GB162 condensing boilers**
- **Greenstar Heat Interface Unit (HIU)**
- **Greenskies solar thermal panels**
- **Bosch Commercial and Industrial Heating Gas Absorption Heat Pump**

Project overview

"The project involves major refurbishment and alterations to a Sheltered Housing scheme including completely new M&E installations. We were looking for new systems to improve heating, reduce maintenance and running costs, and ultimately provide comfort for all residents in a smart new environment. We opted for a communal heating system to avoid individual boilers and gas supplies in flats through installing a cascade of GB162 boilers and a Greenstar Heat Interface Unit (HIU) within each property. To supplement the systems, we also specified Greenskies solar thermal panels and a Gas Absorption Heat Pump to enhance the overall efficiency."

Why do you choose to work with Worcester, Bosch Group & Bosch Commercial and Industrial Heating?

"We chose Worcester for the Worsnop House project due to our existing relationship with the manufacturer which can only be described as excellent. We'd recently worked with Worcester through our replacement gas boiler programme, and Bosch Commercial and Industrial Heating, a sister company to Worcester had recently introduced their Gas Absorption Heat Pump system, which met the energy efficient targets we were looking to achieve."

We are always looking for long product life spans and reduced annual maintenance costs so the products scored highly with us. Additionally, Worcester, Bosch Group has a great reputation for quality and reliability.

We have been working with Worcester on the current boiler programme since 2009 and have maintained a strong relationship with Worcester's team, providing seminars and training as well as working with our installation contractors. This has been very important to us and means we'll continue to work with them for years to come. Additionally, rapid service and ease of obtaining spares is critical for us, especially when dealing with heating for our residents during winter months. Our contractors are given a fixed time period to repair boilers so a company that can supply spares without causing delays is invaluable.

A complete system from a single manufacturer

We needed a complete system from one manufacturer to avoid conflict and design issues. Worcester, Bosch Group, alongside Bosch Commercial and Industrial Heating, provided the whole system design.

As a management organisation for local authority housing, we have strong policies on the environment, protection and welfare of our residents, and regularly carry out events in the community. As a result of this, we are keen to work with organisations such as Worcester that have policies which match ours and we were particularly pleased to have won a Worcester Environment 2020 award for our commitment to energy efficiency."

Michael Gurton, Building Design & Specification Surveyor, Worsnop House.



Worcester, Bosch Group and Bosch Commercial and Industrial Heating can provide complete energy-efficient heating solutions up to 38,000kW.

ErP easy as ABC

What is ErP?

The ErP Directive, which is a new regulation set by the European Union, is designed to drive improvements in the efficiency and performance of heating and hot water products. Its purpose is to ensure that end users are aware of the level of energy efficiency inherent within their appliances. As such, the Directive will help improve the overall efficiency of the housing stock, while helping homeowners to reduce their energy bills. The ErP regulations cover boilers, combination boilers, water heaters and other heating appliances up to 400kW.



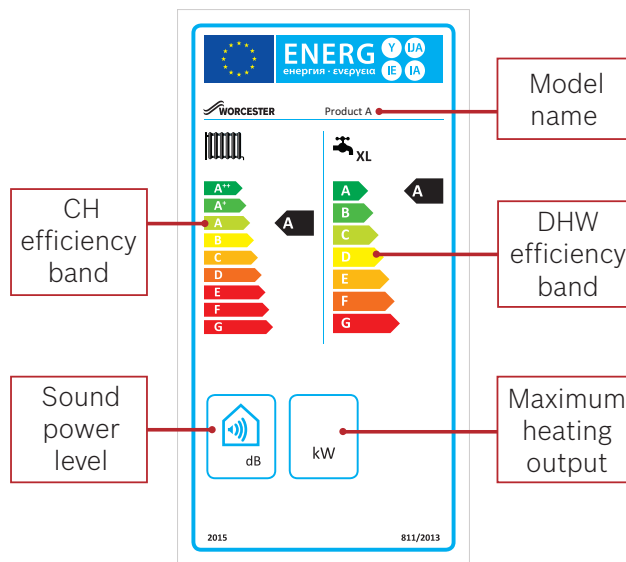
What is Energy Labelling?

The Energy Labelling involves a label which we are familiar with today on washing machines and televisions at the point of sale. The Energy Labelling regulations introduce Europe-wide energy labelling requirements for boilers, combination boilers, water heaters and other heating products up to 70kW and hot water cylinders under 500 litres.

How will the labelling scheme work?

The new Energy Labelling Directive will introduce new efficiency classes with from A++ to G alongside the existing SEDBUK rating for products in the domestic and light commercial sectors.

Most condensing boilers will fall within the A band, which requires them to achieve more than 90% seasonal efficiency, while renewable technologies such as heat pumps will likely be in the A+ or A++ bands (depending on flow temperature).



What about systems that contain different products?

In these circumstances, there is a responsibility for providing a package label when combining a heating appliance with a temperature control and/or solar device, cylinder or a supplementary heating appliance (for example, a two boiler cascade).

The person who puts that package together will need to produce a package document known as a fiche (data table) and label that provides the combined energy efficiency rating rather than ratings of each individual component.

For example, this could be the merchant's responsibility if they supply a complete package under one part number or the installer if the items are bought individually under separate part numbers.

In this circumstance, Worcester will provide an online tool that makes calculating the overall package efficiency of a Worcester system effortless.

What about controls?

The ErP Directive covers all products that consume energy, such as boilers, heat pumps, solar thermal etc. It also includes controls, which are defined using 'classes'. These run from Class I (a simple on/off room stat) through to Class VIII (multi-sensor room control for use with modulating heating appliances).

Each control class equates to a certain percentage uplift in system efficiency e.g. a class VI weather compensating control and room thermostat will add 4% efficiency to the heating system. Details of the controls class for each Worcester control can be found on page 46.



ErP easy as ABC with Worcester

The Energy Labelling obligation under the Energy Related Products (ErP) Directive came into force on the 26th September 2015. Worcester has a number of measures in place to support you including:

- ✔ An **online label generator** which creates product and heating system labels
- ✔ ErP will be covered in all **Worcester training courses**
- ✔ **ErP experts** – our technical and customer support teams can answer all your questions.

ErP Technical Support: **0330 123 3641**
Email: **ErP-advice@uk.bosch.com**



Introducing the Greenstar i

The successor to the best selling Greenstar i Junior with greater efficiency and improved performance. From the class leading SEDBUK 2009 to a 6% increase in comparative Domestic Hot Water efficiency for SAP targets, every component is working to increase performance, meet environmental targets and exceed expectations.

Features...

Higher hot water outputs

Available in outputs of 25kW and 30kW, giving higher hot water flow rates of 10.2 and 12.3 litres per minute.

Eliminates condensate freezing

A larger condensate siphon removes the need for an external trace heating device or the need to insulate external condensate pipework.

User friendly control panel

Provides information on the boiler operation and allows flow and hot water temperature to be adjusted using simple up and down buttons.

Low cost weather compensation option

Further increased efficiency can be achieved with the installation of a simple optional weather sensor.

Improved SAP efficiency

The inclusion of a low energy modulating pump ensures the Greenstar i complies with the ErP directive. Further improvements to the components have led to a 6% increase in DHW efficiency when compared to the i Junior and a class leading SAP heating efficiency.

More system boiler choices

Two new outputs have been introduced – 9kW and 21kW – providing a comprehensive range of outputs across the range from 9kW to 24kW, with lower output models being particularly suitable for homes with high levels of thermal insulation.



Intuitive control panel with extra features



Information at your fingertips

The scrolling digital display includes a 'quick info' button to provide information on:

- Boiler status
- DHW and flow temperature
- Last fault code displayed
- Weather compensation information (when fitted)
- A key feature is the use of plain text descriptions as well as error codes for easier diagnosis of faults.



Quickly set economic heating and hot water

Holding down the up and down buttons together, the central heating flow temperature can be adjusted to the economical flow temperature. The hot water temperature can also be quickly adjusted using the same process.

	Greenstar 25i	Greenstar 30i
Boiler efficiency (SEDBUG 2009)	89.6% / Band A	89.6% / Band A
ErP Seasonal space heating energy efficiency class	A / 94%	A / 94%
ErP Water heating energy efficiency class (declared load profile XL)	A	A
Central heating output	7.2-24kW	7.2-24kW
DHW flow rate @ 35°C rise	10.2 l/min	12.3 l/min
Central heating output at 50/30°C	24.8kW (13.6kW with Low NOx setting)	
Height	710mm (max)	710mm (max)
Width	400mm	400mm
Depth	330mm (max)	330mm (max)
Weight – lift	31.7kg	31.7kg
NOx classification with low NOx code plug	39mg/kWh	39mg/kWh

The Greenstar gas-fired boiler range



Greenstar combi boilers

Model	DHW flow rate*	Max DHW output	ErP Seasonal space heating energy efficiency class	ErP Water heating energy efficiency class
25i	10.2 l/m	25kW	A / 94%	A
30i	12.3 l/m	30kW	A / 94%	A
25Si Compact	10.2 l/m	25kW	A / 94%	A
30Si Compact	12.3 l/m	30kW	A / 94%	A
28CDi Compact	11.4 l/m	28kW	A / 94%	A
32CDi Compact	13.1 l/m	32kW	A / 94%	A
36CDi Compact	14.7 l/m	36kW	A / 94%	A
29CDi Classic	12.3 l/m	30.9kW	A / 92%	A
34CDi Classic	14.3 l/m	35kW	A / 92%	A
38CDi Classic	16.4 l/m	40kW	A / 92%	A
42CDi Classic	17.2 l/m	42kW	A / 92%	A
440 Highflow CDi	20 l/m	29.5kW	A / 92%	B
550 Highflow CDi	25 l/m	41.1kW	A / 92%	B

Greenstar system boilers

Model	CH output	ErP Seasonal space heating energy efficiency class
9i System	3.1 - 9.2kW	A / 93%
12i System	3.1 - 12.2kW	A / 94%
15i System	4.6 - 15.3kW	A / 94%
18i System	4.6 - 18.4kW	A / 94%
21i System	7.2 - 21.6kW	A / 94%
24i System	7.2 - 24.6kW	A / 94%
27i System	7.03 - 27kW	A / 92%
30i System	7.03 - 30kW	A / 92%
30CDi Classic System	7.7 - 30kW	A / 92%
35CDi Classic System	7.7 - 34kW	A / 92%

Greenstar regular boilers

Model	CH output	ErP Seasonal space heating energy efficiency class
12Ri	4.0 - 12kW	A / 91%
15Ri	5.0 - 15kW	A / 91%
18Ri	6.0 - 18kW	A / 91%
24Ri	8.0 - 24kW	A / 92%
27Ri	7.03 - 27kW	A / 92%
30Ri	7.03 - 30kW	A / 93%
30CDi Classic Regular	7.7 - 30kW	A / 92%
40CDi Classic Regular	9.4 - 40.8kW	A / 92%
FS 30CDi Regular	7.7 - 30kW	A / 92%
FS 42CDi Regular	9.6 - 40.8kW	A / 92%

*DHW rate at 35°C rise.

The Greenstar oil-fired boiler range



Greenstar combi boilers

Model	DHW flow rate*	Max DHW output	ErP Seasonal space heating energy efficiency class	ErP Water heating energy efficiency class
Heatslave II 12/18	15 l/m	12 - 18kW	A / 91%	B
Heatslave II 18/25	18 l/m	18 - 25kW	A / 90%	B
Heatslave II 25/32	22 l/m	25 - 32kW	A / 91%	B
Heatslave II External 12/18	15 l/m	12 - 18kW	A / 91%	B
Heatslave II External 18/25	18 l/m	18 - 25kW	A / 90%	B
Heatslave II External 25/32	22 l/m	25 - 32kW	A / 91%	B

*Maximum flow rate to produce a 40°C temperature rise over a 90l draw off

Greenstar system boilers

Model	CH output	ErP Seasonal space heating energy efficiency class
Danesmoor System 12/18	12 - 18kW	A / 91%
Danesmoor System 18/25	18 - 25kW	A / 90%
Danesmoor System 25/32	25 - 32kW	A / 91%
Danesmoor System Utility 12/18	12 - 18kW	A / 91%
Danesmoor System Utility 18/25	18 - 25kW	A / 90%
Danesmoor System Utility 25/32	25 - 32kW	A / 91%
Danesmoor System External 12/18	12 - 18kW	A / 91%
Danesmoor System External 18/25	18 - 25kW	A / 90%
Danesmoor System External 25/32	25 - 32kW	A / 91%

Greenstar regular boilers

Model	CH output	ErP Seasonal space heating energy efficiency class
Danesmoor 12/18	12 - 18kW	A / 91%
Danesmoor 18/25	18 - 25kW	A / 90%
Danesmoor 25/32	25 - 32kW	A / 91%
Danesmoor Utility 12/18	12 - 18kW	A / 91%
Danesmoor Utility 18/25	18 - 25kW	A / 90%
Danesmoor Utility 25/32	25 - 32kW	A / 91%
Danesmoor External 12/18	12 - 18kW	A / 91%
Danesmoor External 18/25	18 - 25kW	A / 90%
Danesmoor External 25/32	25 - 32kW	A / 91%
Utility 32/50	32 - 50kW	B / 89%
Utility 50/70	50 - 70kW	B / 89%

Greenstore unvented cylinders



Greenstore unvented cylinders

Model	Volume domestic hot water	ErP energy efficiency class/Standing heat loss
Greenstore SC-90	93 litres	B / 42W
Greenstore SC-120	123 litres	C / 54W
Greenstore SC-150	161 litres	C / 68W
Greenstore SC-180	191 litres	C / 76W
Greenstore SC-210	216 litres	C / 81W
Greenstore SC-250	246 litres	C / 89W
Greenstore SC-300	292 litres	C / 96W

Greenstore solar compatible unvented cylinders

Model	Volume domestic hot water	Dedicated solar volume	ErP energy efficiency class/Standing heat loss
Greenstore TC-150	157 litres	65 litres	C / 68W
Greenstore TC-180	187 litres	65 litres	C / 76W
Greenstore TC-210	211 litres	105 litres	C / 81W
Greenstore TC-250	241 litres	115 litres	C / 89W
Greenstore TC-300	287 litres	115 litres	C / 96W

Features and benefits

- Manufactured by Bosch.
- Complies and exceeds Building Regulations 2010 Part L.
- The stainless steel construction is guaranteed for 25 years*.
- MCS certified for quality assurance and eligibility for RHI funding.
- Greenstore unvented cylinders feature high-quality heat exchange coils maximising heat transfer and providing quick hot water replenishment.
- The 65mm insulation provides outstanding heat retention.

*Terms & conditions apply.

Save energy and reduce CO₂ emissions with the EcoFlo FGHR unit

Understanding the need for specifiers and house builders to have a cost effective method of achieving SAP target emission rates, Worcester has introduced the EcoFlo Flue Gas Heat Recovery (FGHR) unit which is compatible with the latest range of Greenstar CDi Compact and Si Compact combi boilers.

How the FGHR works

The FGHR is connected directly to the flue of the Greenstar boiler. Its heat exchanger extracts residual energy from the flue gases exiting from the boiler. This energy is then used to pre-warm the water that is fed into the combi boiler reducing the amount of gas required to reach the desired hot water temperature.

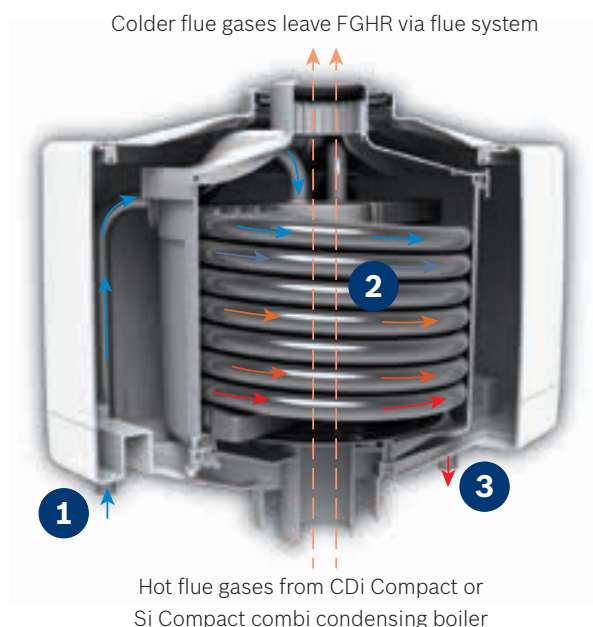
The table below highlights the positive impact that the specification of an EcoFlo FGHR unit can have on a property's SAP assessed Dwelling Emission Rate (DER), allowing the example Target Emission Rate (TER) to be met and exceeded.

	TER	DER	% Difference from TER
Worcester Si Compact	15.47	15.56	-0.58
Worcester Si Compact + EcoFlo	15.47	14.96	+3.30

SAP 2009 calc based on: Mid terrace house (3 bed) – 100m²
 Cavity wall – 0.25 W/m²; K Roof – 0.1 W/m²; K Floors – 0.12 W/m²; K; Openings – 1.4 W/m².
 K Accredited thermal bridges
 Q50 – 5; 3 intermittent fans; Standard programmer, room thermostat and TRV with radiators



A highly efficient solution



- 1 Cold mains water enters the EcoFlo unit.
- 2 Cold water passes through the heat exchange coil and is heated by the hot waste flue gases from the boiler.
- 3 Pre-heated water leaves the EcoFlo speeding up the heating of hot water, reducing gas consumption and CO₂ emissions.

Benefits to Specifiers

SAP listed FGHR unit enables the heating system to meet SAP target emission rates for new build properties.

More cost-effective than other solutions such as solar thermal or heat pumps and savings on building fabric such as insulation can be achieved.

FGHR can be used as an energy saving measure to improve domestic EPC ratings.

Property receives a higher energy rating and occupier achieves lower fuel bills.

Product info

Part number 7 733 600 047

SAP Assessors select Muelink & Grol EcoFlo as the FGHR unit



The NEW Greenstar System Filter

Available in 22mm and 28mm, the Worcester Greenstar System Filter has been specifically designed to combat the damaging effects of system debris and pollutants, allowing homeowners to protect their boiler or heat pump for a fraction of its cost.

Inspired by installer feedback, the new filter has been designed to make installation and servicing simpler than ever before. In addition the performance has been improved resulting in a greater collection of debris from the system.

Please note: CIBSE heating guide recommends, for a condensing boiler system, anything running continuously over 23kW is likely to require 28mm pipework and therefore a 28mm filter. However, this will be dependent on the system layout and pressure drop.



NEW features and improvements



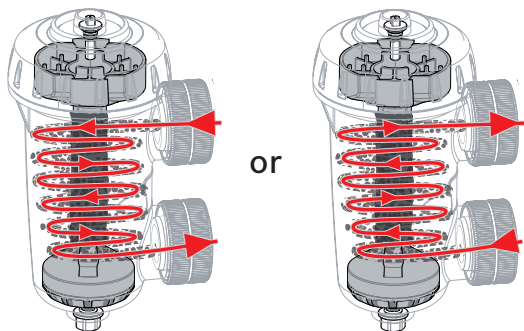
✔ Over-tightening prevention feature

The removable lid has been designed to prevent over-tightening and damage to the O-ring seal, eliminating the risk of leaks.



✔ Isolation valve indicators

The isolation valves can be opened using a single 90° turn, with red and green indicators showing when the filter is in operation.



✔ Bi-directional flow

Engineered to allow a bi-directional flow, enabling it to be installed anywhere along the return circulation pipework between the last radiator and the boiler.



✔ Stronger magnet

A larger powerful internal magnet safeguards the boiler and wider system components.



✓ 28mm version now available

A larger version is now available for use in larger heating systems.



✓ Pipe cut template

A cutting guide is supplied with the filter for use in measuring exact lengths of pipe to cut at the point at which the filter is being installed.



✓ Easy to fit

Although the Greenstar System Filter shares its name with our high efficiency gas and oil-fired boilers, it can also be fitted to any typical domestic heating system.

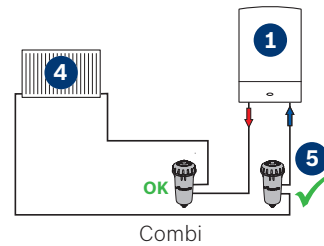
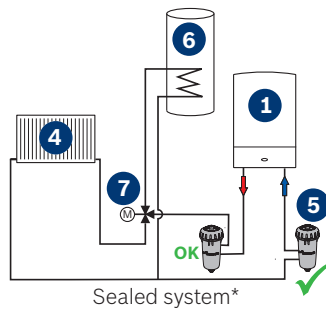
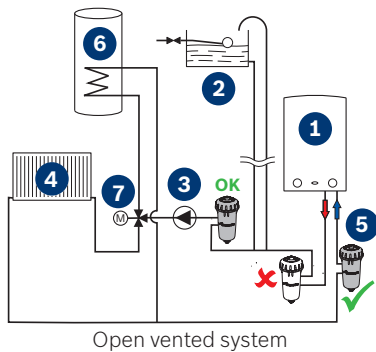


✓ Easy to service

The Greenstar System Filter has been designed to make servicing and maintenance simple by using the special spanners supplied and a radiator bleed key.

Installation

The filter can be installed anywhere in a heating system, except between the boiler and on the feed and expansion pipes on an open vent system. To maximise the effectiveness it should be placed on the primary heating return before the boiler and after the last radiator.



1. Boiler
2. Open vent tank
3. Pump
4. Radiator
5. System filter
6. Cylinder

*When a system boiler has an internal diverter valve and two returns, the system filter should be put on the heating return and not the cylinder return.

Product info

Part number	7 733 600 236 (22mm)
	7 733 600 237 (28mm)



MAGNETIC FIELD.
Can be harmful to
pacemaker wearers.

Worcester controls



Control

Control

		Gas-fired boilers											Oil-fired boilers					
		ErP Class	% system efficiency gain	COMBI					SYSTEM^			REGULAR*	ErP Class	% system efficiency gain	COMBI		SYSTEM	REGULAR
				CDi Classic ¹	CDi Compact	Si Compact	Greenstar i	Highflow CDi	CDi Classic System	27i System and 30i System	9i System – 24i System				Heatslave II	Heatslave II External	Danesmoor System	Danesmoor
Mechanical timers		Part no.																
MT10 mechanical timer	7 716 192 036	–	–	✓	✓	✓	✓	✓						–	–			
MT10RF mechanical thermostat	7 716 192 037	I	1	✓	✓	✓	✓	✓						–	–			
Comfort controls																		
Comfort plug-in twin channel programmer	7 733 600 003	–	–	✓ ¹	✓	✓ ²	✓	✓	✓ ¹	✓	✓ ²			–	–	✓	✓ ³	
Comfort I RF wireless room thermostat and plug-in twin channel programmer	7 733 600 001	V	3	✓ ¹	✓	✓ ²	✓	✓	✓ ¹	✓	✓ ²	✓		I	1	✓	✓ ³	
Comfort II RF wireless programmable room thermostat and plug-in RF receiver	7 733 600 002	V	3	✓ ¹	✓	✓ ²	✓	✓	✓ ¹	✓	✓ ²	✓		I	1	✓	✓ ³	
Digital control																		
7-day twin channel digital programmer	7 716 192 033	–	–											–	–		✓	✓
Advanced intelligent controls																		
Sense I intelligent room thermostat ⁴	7 738 110 054	V	3	✓	✓	✓	✓	✓		✓ ⁴	✓ ⁴			I	1	✓ ⁴	✓ ⁴	
Sense II weather compensation controller	7 738 111 064	VI	4 ⁶	✓	✓	✓	✓	✓	✓ ¹	✓	✓ ²							
MS100 intelligent solar module	7 738 110 144	–	–						✓ ¹	✓	✓ ²							
Outdoor weather sensor	7 716 192 764	II	2				✓				✓			III	1.5	✓ ⁴	✓ ⁴	
Smart control																		
Wave	7 716 192 072	VI	4 ⁵	✓ ¹	✓	✓ ²	✓	✓	✓ ¹	✓	✓ ²			–	–			

*With optional wiring centre.

[^]With optional integral diverter valve.

1 Manufactured after 16th January 2007 with software version CF12.10 onwards.

2 Manufactured after February 2011.

3 Should be used with Comfort wall plate kit (7 733 600 039) to allow the plug-in programmer or RF receiver to be wall mounted and hard-wired to the boiler.

4 Must be used with an external propriety 230V timer.

5 4% savings are achieved when weather compensation mode is enabled.

6 4% saving is achieved when installed as a room thermostat; 2% when installed in the boiler fascia.

Renewables range



Our range of renewable energy products comprises solar thermal water heating, ground source heat pumps and air source heat pumps.

Solar thermal water heating

Greenskies Solar-Lifestyle panels

Solar-Lifestyle panels provide a high level of efficiency and versatile siting options - they are the optimum choice for all lifestyle requirements. The range includes portrait and landscape options.

Greenskies Solar-Lito panels

Solar-Lito panels offer affordable solar hot water comfort. Versatile panel sizes combine to fit awkward roof shapes and spaces and can be accurately sized to suit our cylinder sizes.

Heat pumps

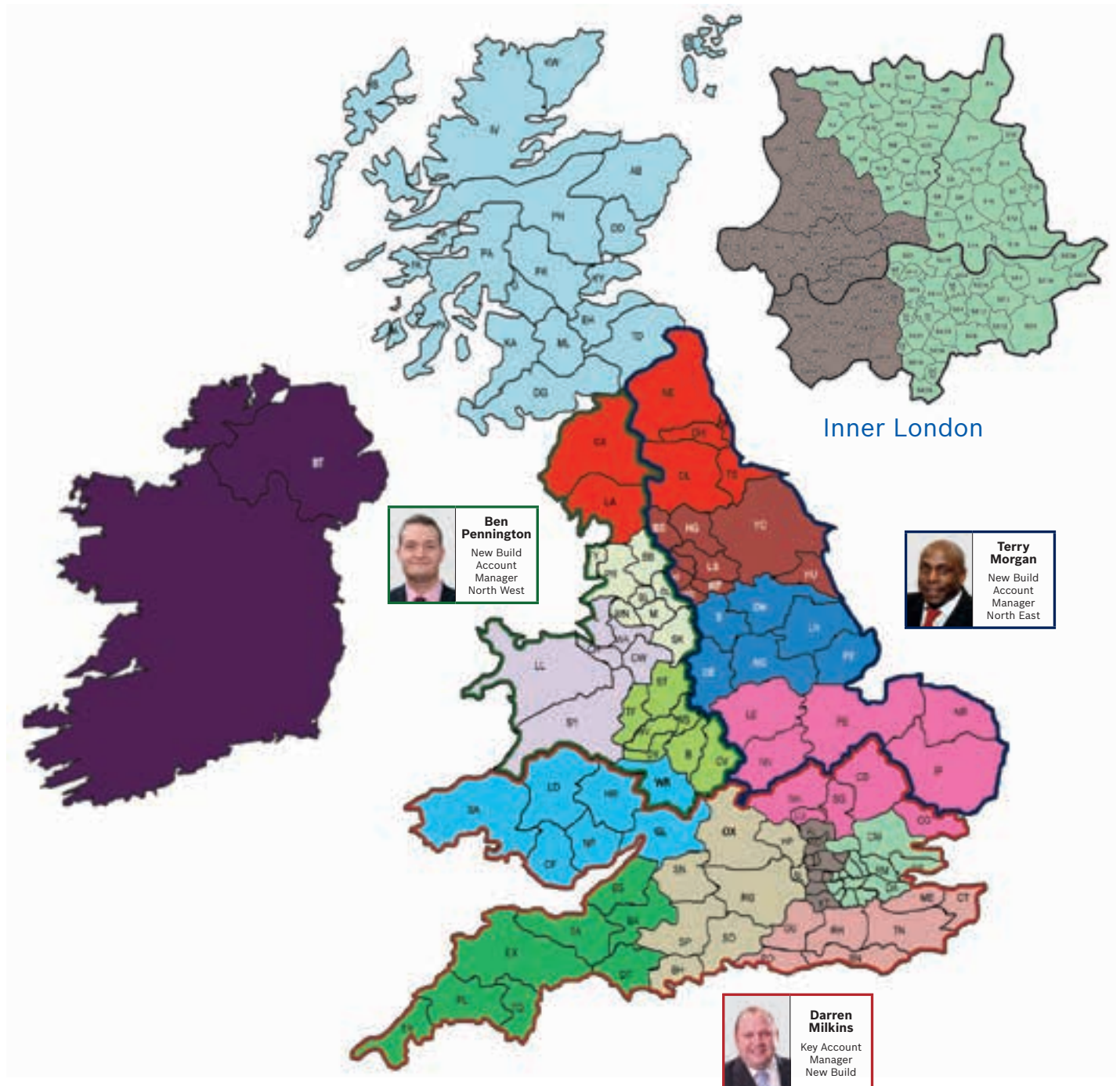
Greensource air to air heat pumps

Air to air heat pumps can provide heating and cooling, they're ideal for heating spaces such as apartments, smaller homes and conservatories. They can create hot or cool air to be distributed within a property. Air to air heat pumps also feature advanced air purification technology which is particularly beneficial to allergy sufferers. The units provide up to 6kW heating and 4kW cooling.

Greenstore ground source heat pumps

Ground source heat pumps use the latent energy in the ground to provide low cost heating and hot water for virtually any type of property. They are available in Combi and System variants with outputs of 6kW, 7kW, 9kW and 11kW.


Useful contacts




Northern

	Mervyn Thomas Regional Specification Manager
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	John Jackson
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	Matt McGann
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Ireland

	Ray McClay Ireland
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Regional KAMs

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	07790 489966

	Rich Dyer Energy Company Obligation
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	Terry Morgan New Build Account Manager North East
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	Ben Pennington New Build Account Manager North West
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Notes

Notes

Useful numbers

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