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Welcome

from Steve Lister

Welcome to our bumper edition of Installer's Choice, where we shine the spotlight on all things oil; notably our new range of Greenstar oil-fired boilers, which launches this summer following a period of extensive research and development.

The launch of our two new boilers; the Greenstar Heatslave II and the new Greenstar Danesmoor regular; is our latest commitment to supporting those of you who are active in the oil sector, which is set to be governed by the new requirements of the Energy related Products (ErP) Directive from next year onwards. It is this, coupled with your feedback, that has enabled us to bring our most advanced oil-fired boilers yet to the market. To find out more about our new additions, turn to pages 6 to 9.

Despite the oil sector having to respond to a number of challenges posed by outside factors ranging from volatile fuel costs, to the Government's renewable initiatives, industry sales figures for the early part of this year were extremely positive. Turn to page 10 to read Jeremy Hawksley, Director General at OFTEC's account of the efforts which

are being made to secure a successful future for the industry.

With much of the work in the oil sector coming from off mains gas properties in rural locations, we recognise that access to training facilities can often be difficult. This is just one of the reasons why we have invested in four mobile training vehicles, to allow you to familiarise yourself with our products no matter where in the UK you are based. To read more, turn to page 11.

Finally, given the development of our new Greenstar oil-fired range of boilers, this issue also sees us take a closer look at our oil manufacturing facility at Clay Cross, Derbyshire. Our Clay Cross site has been key to our offering in the oil sector for over 30 years. Turn to pages 14 and 15 to take a look at the work that goes on behind the scenes to make us one of the biggest suppliers of oil-fired boilers in the UK.

We hope you enjoy this special edition of the magazine.

Steve Lister
Sales and Marketing Director



"The launch of our two new boilers; the Greenstar Heatslave II and the new Greenstar Danesmoor regular; is our latest commitment to supporting those of you who are active in the oil sector."

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Unveiling the new Greenstar Heatslave II

Maintaining our commitment to acting on the valuable feedback we receive from those of you who install our products, we have re-designed our established Greenstar Heatslave boiler. This offers you our greenest oil-fired boiler yet, with a whole host of innovative features.

As the UK's largest supplier of oil-fired combination boilers, we have invested heavily in the improvement of our products to maintain our commitment to quality, reliability and innovation. This investment sees the Greenstar Heatslave II benefit from **improved installation and servicing features**, future proofing against forthcoming European energy efficiency legislation and enhanced reliability, without compromising on the high specification you have come to expect from our Greenstar oil-fired boiler range.

Engineering excellence

Acting on the feedback you have given us, we have **re-introduced a Heatslave where the burner is cross firing**, giving you the assurance of improved access to key components and connections for installation and maintenance. This improved access also **allows the oil line to be installed from the front of the boiler** without having to dismantle the cabinet.

In addition, our introduction of a **single piece baffle** which is manufactured from high temperature stainless steel, improves the speed at which this component can be removed and replaced during servicing and maintenance. The one-piece design also means the new baffle retains more energy, reducing the loss into the boiler's heat exchanger, which improves efficiency for end-users.

Another significant improvement is the **relocation of the boiler's expansion vessel**, which is now located above the burner. This new position, combined with the **vessel being connected to a hinge**, allows you to swivel it from its position for easier access to central components.

The **compact modular hydraulic system** included within the Greenstar Heatslave II has been adopted from our Greenstar gas-fired CDi Compact boiler and brings with it easy maintenance and proven levels of reliability. Our **installer connections at the rear of the boiler** meanwhile, have been optimised for simpler connection as a direct result of installer feedback.

Intelligence Built In

For the first time, our new Greenstar Heatslave II features an **adaptive hot water system**, which adjusts the use of energy from the primary thermal store in line with individual customer's requirements. The result of this is a constantly regulated hot water provision for maximum efficiency.

In addition, **built-in weather compensation** capability allows you to offer your customers the full benefits of weather compensation with the only additional requirement being the installation of an outdoor temperature sensor on a north-facing wall of a property.

The flexibility of the Greenstar Heatslave II is further improved thanks to its **ability to accept pre-heated**

water from a solar thermal source. This brand new feature means there is no need for additional components, to compensate for the hot water provided by solar thermal collectors.

Display

The Greenstar Heatslave II follows the lead of our revolutionary Greenstar gas-fired CDi Compact by offering you our most intuitive control system yet. Bringing **digital electronic control** to

our oil-fired boiler range for the first time, our **Heatronic interface** offers precise electronic control of central heating and hot water production and also accepts our complete range of plug-in electronic controls. Located in a **pull-out drawer**, for easy access, all controls are now hidden away providing a clean, modern cabinet finish.

The temperature control of the appliance now takes the form of precise thermistor control, replacing the less accurate mechanical thermostats typically used on oil-fired appliances. This, in conjunction with the Heatronic control system, reduces boiler cycling and demand on the burner, particularly during short draws of hot water.

Overall the Greenstar Heatslave II has been developed with installer preferences at the heart of its design. With kitchen and external variants, class-leading compact dimensions, improved hot water and heating

response and more accessible components, we are confident you will be able to use this premium oil-fired boiler technology to bring clean, high performance and efficient heating into your customers' homes.

For more information on the Greenstar Heatslave II, visit www.worcester-bosch.co.uk/heatslave

Key features of the Greenstar Heatslave

- Cross-firing burner
- Introduction of a single piece baffle
- Relocation of the boiler's expansion vessel
- Inclusion of a compact modular hydraulic system
- Inclusion of an adaptive hot water system
- Optional weather compensation
- A digital electronic control system



The new ground-breaking Greenstar Danesmoor Regular

As one of the most established within our Greenstar range, the Danesmoor oil-fired boiler brand has proven itself as one of the most reliable on the market. Continuing our pledge to act on your feedback, this summer also sees the Greenstar Danesmoor regular boiler revolutionised with the introduction of a series of new features.

Most notably, our Greenstar Danesmoor boiler has been enhanced to offer **compliance with** the efficiency requirements of the forthcoming new Energy Related Products (ErP) Directive policy. The new Directive, which is due to be introduced next year, will see more stringent efficiency levels and, later on, tighter emissions targets introduced, which will be made mandatory. This has prompted us to develop an oil-fired boiler that exceeds these new efficiency requirements.

Improved efficiency

Within the new Greenstar Danesmoor is a **brand new primary heat exchanger**, which not only improves efficiency levels, but is also smaller, which makes access to the boiler's interior components easier than before. Every surface inside the new combustion chamber is energy absorbing, which creates a better distribution of heat and a more efficient use of energy. Heat distribution is further enhanced by an **upgraded secondary heat exchanger**, which is individually designed to fit each particular model from our 12/18, 18/25 and 25/32 variants.

Servicing and maintenance

As with our new Greenstar Heatslave II, the new Greenstar Danesmoor features our **single piece primary baffle**, made from high temperature stainless steel. Thanks to its single piece design, it is capable of gathering more energy to distribute, and can also be removed or replaced with ease – limiting time spent on installation and maintenance.



Another new design feature within the Greenstar Danesmoor is the inclusion of a **brand new inspection hatch**.

Future legislation

With the new ErP Directive requiring greater efficiency levels from oil-fired boilers, the inspection hatch has been designed and manufactured in a smaller form than its predecessor, which reduces heat losses.

The Greenstar Danesmoor boiler can also **run as part of a low temperature system**, meaning it can accept very low return temperatures; once again underlining its suitable credentials under the ErP Directive. Its efficient operation under low temperatures also makes the Greenstar Danesmoor suitable for installing into underfloor heating for those of your customers looking to bring a complete system solution to their property.

A familiar footprint

The extensive list of market leading features has been adopted by our new Greenstar Danesmoor without changing the dimensions of the boiler. This makes it the perfect solution for both replacement and brand new installations – particularly in kitchen and utility environments where customers are increasingly demanding space-saving appliances.

Available in kitchen, utility and external design variants, the fascia of the new model is the same its predecessor and is also compatible with the twin channel plug in programmer, enabling time control of

the heating and hot water system to take place on the boiler fascia.

For customers who are keen to save space and take their heating and hot water appliance outside of their property, our ever-popular external variant features a **hermetically-sealed casing**, which prevents any water ingress.

Key features of the Greenstar Danesmoor Regular

- Cross firing burner
- New primary heat exchanger
- Advanced secondary heat exchanger
- Single piece primary baffle
- Brand new inspection hatch
- A hermetically-sealed casing to prevent any water ingress
- Reduced boiler weight - up to 17kg lighter than the Greenstar Camray
- A flue kit included as standard (External model only)

For the first time, the boiler's external model will also have a **flue kit included as standard**, to ensure you can provide your customers with the full boiler package without the need for additional parts.

We will soon be further enhancing the Greenstar Danesmoor by offering a new system variant to complete our range. For more information on the Greenstar Danesmoor, visit www.worcesterbosch.co.uk/danesmoor

CLAIM A FREE WORCESTER JACKET

We will be offering those of you who buy and install one of our oil-fired boilers a free Worcester jacket* to protect you against the elements this winter (also known as British Summer Time). **To claim your free jacket, simply purchase and install ANY Greenstar oil-fired boiler between 22nd July and 31st December 2013.**

*subject to availability



Jeremy Hawksley, Director General for OFTEC, looks at the important role that oil plays in heating off mains gas homes.



THE FUTURE FOR OIL HEATING

2012 was a challenging year for the heating industry in general, but so far the first few months of 2013 have shown encouraging signs that the market is improving. Following an upturn at the end of last year, oil boiler sales increased by 22% in the first quarter of this year, compared with the same three months last year. The prolonged cold spell that we had at the start of the year was no doubt a contributing factor, and confirms that most sales are distress purchases.

However, there seems to be a feeling of optimism for oil heating and the further delay of the Government's domestic Renewable Heat Incentive (RHI) has encouraged the industry to stop being in limbo and make plans for the future. The vast majority of oil heating customers are in rural areas and live in older properties. Many of these are not suitable for renewables without significant modification to their property or heating systems and for them, oil heating remains a good, reliable choice.

This is why we launched a joint initiative with the Federation of Petroleum Suppliers (FPS), to tell householders about the benefits of oil heating. The Oilsave campaign promotes the advantages of oil heating and encourages householders to upgrade their existing standard efficiency boilers to condensing ones. Over 8,000 Oilsave leaflets and booklets with advice on energy saving have already been given out free of charge to installers to hand to their

customers. Visits to the Oilsave.org website are increasing each month, and new initiatives are being planned for later this year.

Behind the scenes

OFTEC has continued to work hard – often with the industry's manufacturers – to ensure the continued survival of a healthy oil heating industry. At European level, OFTEC works together with a European wide body called Eurofuel. Both organisations have just spent five years campaigning against the introduction of unrealistic NOx levels proposed by the Energy Related Products (ErP) Directive. In March 2013 the European Commission confirmed that a level of 120mg per kWh for NOx emissions from domestic oil heating boilers would be acceptable. If the original proposed lower limit had been imposed, this would have destroyed the oil heating industry in the UK and Ireland. Thanks to OFTEC the new realistic levels will not be introduced until 2018.

OFTEC continues to support installers in the field with the introduction of new registration initiatives. We were one of the first competent persons schemes to gain UKAS accreditation, which will be mandatory Government requirement from 2014. We are now able to offer Green Deal registration for installers; covering oil condensing boilers, heating controls and insulation. The Government's Green Deal initiative aims to retrofit 14 million homes with energy efficiency

improvements by 2020, which represents a great opportunity for installers to generate new business. Existing OFTEC registrants can extend their scope to include Green Deal without any additional qualifications – all it requires is an inspection visit from OFTEC.

OFTEC continues to campaign for the inclusion of bio-liquids in any future domestic RHI. A specification for the fuel already exists, which is a blend of 30% FAME (Fatty Acid Methyl Ester), made from waste oil and kerosene. Field trials held at both domestic and commercial installations proved successful, and existing oil heating installations can be adapted to use bio-liquids with very few modifications. For the time being, they have been excluded from the RHI proposals, but at an appearance before the Energy Select Committee in March, OFTEC put forward the view that switching to bio-liquids would be a low cost way of lowering carbon emissions for oil heating customers. Furthermore, it would generate work for oil installers too.

Far from being a declining industry, oil continues to have a major part to play in providing reliable heating and hot water for nearly two million households in the UK and Ireland. It's cheaper than some off gas competitors, such as LPG, and replacing an old conventional boiler with a high efficiency condensing one could save householders around 25% on their fuel bills.

A closer look at our mobile training vehicles

We pride ourselves on offering you all the training you need to ensure you can carry out efficient and successful installations. As well as offering regular courses at our Worcester and Clay Cross Training Academies, we also offer mobile training for those who can't get to one of these centres. Here, our Training Manager, Phil Bunce, offers an update on our mobile training initiative.

"We have been able to offer mobile training for over five years now, and throughout that time, we have seen nearly 6,000 installers use this option as a means to increase their product knowledge and expertise.

"We have four fully kitted out vehicles which cover the whole of the UK, ensuring you are always able to access a training facility no matter where you are located.

"As our new gas and oil products are launched, they will be added to our vehicles to ensure you have the opportunity to get to grips with every product in our portfolio.

"Within each vehicle there are three working and two dry boilers. The inclusion of the dry boilers allows

you to take a hands on approach to installation techniques, allowing you to familiarise yourself with situations that might occur in day-to-day activities.

"As well as being an educational tool, we have also made our training vehicles as comfortable as possible, with the seating and exhibition area being climate controlled via a Greenstore air to air heat pump, which can keep the room at a constant temperature.

"Within our fleet of vehicles we also have a 7.5 tonne lorry to demonstrate Greenstar oil-fired boiler installations, further raising awareness of our entire product range. This is essentially a mobile workshop with four working oil-fired appliances fitted within.

"Our fleet of training vehicles enhances what is already a comprehensive training offering, set to be improved once again this summer. The forthcoming opening of our state-of-the-art training academy in Wakefield will give us a stronger presence in the North of England – allowing us to extend our reach to a greater number of you."

To find out about the mobile training and the courses in your area, please contact your local Technical Sales Manager or visit www.worcester-bosch.co.uk/training.





Installer's Voice

1. **Jamus Price (JP)**
J Limited, Bromyard
2. **Daniel Hird (DH)**
P & D Heating & Bathrooms Ltd, Bolton
3. **Andrew Burnham (AB)**
BBB Plumbing Ltd, Swindon
4. **John Horodin (JH)**
Heatsource Boilers Ltd, Winchester
5. **Peter Thomas (PT)**
Gas Service Ltd, Stafford
6. **Tony Cochrane (TC)**
A Cochrane Ltd, Newport
7. **William Davies (WD)**
Currently moving roles, Llanymynech
8. **David Christian (DC)**
D Christian Gas Heat Plumbing, Birmingham

As the oil heating sector faces up to the challenges posed by rising fuel costs and the push for renewables, we speak to eight installers on one of our recent OFTEC training courses, about their thoughts on the industry:

1. Oil-fired boilers have a reputation for durability, but has this hindered your opportunities for new business? Or are these customers' regular servicing schedules providing enough business opportunities?

DH – I don't think the durability of an oil boiler is a negative thing, instead I think the cost of a service and the overall running of a boiler can act as a deterrent. For instance my service charge for oil is dearer than gas as it can take longer which can put customers off carrying it out on a regular basis. For this reason, just focusing on this sector wouldn't be enough and I have decided to venture into gas-fired boilers as well, as this helps me to pick up more installation work.

JH – It could, but there are other people within my region who solely focus on it so for me it isn't a logical step. I believe your ability to solely focus on oil depends on the demographics of the area you operate in.

WD – I agree with that. The opportunities for oil-fired business are still present, in different areas. Oil is predominately popular in countryside areas which are off main gas, and therefore offers the best solution.

DH – I think that if those who use oil could go to gas, they would - but there will always be a number of homeowners who are restricted to oil, which provides us with business opportunities.

2. What do you perceive to be the biggest threat to the oil-fired sector?

DH – In my opinion the biggest threat is the price of oil. All my customers say that when they decided on an oil-fired boiler it was much cheaper, but since then the prices have sky rocketed.

PT – I agree. The prices have rocketed which is deterring people from incorporating oil-fired boilers in new build properties. My customers are always shocked when they get the bill at the end of the year, compared to gas where you receive a monthly notification which can help you track your usage.

WD – I'm not sure if there is much difference between the cost of a condensing oil and condensing gas boiler throughout the lifetime, but I think there is a preconception that the costs of running an oil boiler are higher.

PT – People also move to gas for aesthetic reasons. When they commit to an oil-fired boiler, they don't take into consideration the other requirements such as the look and size of the oil tank or the external installation of the fire valve which can sometimes detract from the appearance of the house. I have had a few customers who are unhappy with the appearance of these products being fitted to or in the gardens of their expensive properties.

JH – Again, I think it comes down to demographics. Within the area I operate in, business is still strong. If people want to install oil they will regardless of the cost.

3. How receptive are your oil customers to the incorporation of renewable heating and hot water technologies?

PS – I have customers who have fitted a twin coil cylinder into their property, but years later they still

haven't added renewables. I think the thought is there, but when it comes to the practicalities they aren't in a position to commit - perhaps because of concerns over cost or convenience.

AB – To be honest, customers are reluctant to spend money at the best of times so spending more on renewables isn't going to be high on their agenda at this point in time.

DH – Customers who have the money to spend have done their research and decided to install renewables. However, for a lot of people, I think it is about keeping up with the Jones's rather than being environmental and seeing a return on investment.

4. Do you think there is a future for combined oil and renewable solutions?

DH – I think it might be the way forward but there are barriers which need to be overcome first.

DC – There is no incentive scheme for the combination of oil and renewable solutions, which would show the benefit to the homeowner. If we are to see renewables being incorporated, more needs to be done to make the initial financial outlay more attractive.

5. Should more be done to recognise the role of bio-oil within the RHI?

JH – I think the Government needs to do more to promote the role of bio-oil and educate the homeowner on the benefits of it.

JP – The costs of the bio fuel is more than normal heating oil and people need to understand how it will benefit them. With that in mind, encouraging people to invest in bio-oil needs to be linked to a greater incentive.

AB – Oil is regarded as an expensive fuel. If bio-oil is to become a viable alternative the Government needs need to overcome this challenge.

6. Do you think measures should be introduced to preserve the market? Such as incentives or funding from the Government, OFTEC, or other industry bodies.

DH – I think if people start to see more of their income go on heating and lighting their homes then it will become more important for the Government to step in to preserve the market. For instance, a saving package for people to pay into in instalments could help them to overcome financial challenges.

JP – The choices for those with oil-fired boilers is limited. I think perhaps more should be done to make oil heating more affordable, which would incentivise people to stay in the market.

DC – I think there is a need for homeowners, to be better educated on the benefits of oil, to perhaps change their mindsets towards it.

7. Where do you see the oil industry in 5 years time?

DH – I don't think the market will change. My perception of the oil market is that it takes a long time for anything to change as it has always been a slow burner. Discussions like this will still be going on in five years time and the Government will still be debating the role of oil.

AB – I think the split between gas and oil will stay the same as oil will still have a role to play in locations which don't have access to gas.

TC – The situation will only change with Government intervention, but I think it will continue to operate at a steady rate.



Manufacturing excellence at **Clay Cross**

Key to the development of our long-established range of oil-fired boilers is our dedicated manufacturing facility at Clay Cross in Derbyshire. Here, Bob Murdoch, our manufacturing director, explains how Clay Cross has enabled us to establish the Worcester brand as market leading in the oil heating sector:

“Since being bought by Worcester founder, Cecil Duckworth, in 1977, Clay Cross has been central to the development of our now established range of Greenstar oil-fired boilers. Once the headquarters of R.H. Ingham, a successful manufacturer of radiators and oil-fired boilers, Clay Cross rapidly became synonymous with the Danesmoor brand name and has embraced German manufacturing influences since we became part of the Bosch Group in 1992.

“As the largest supplier of oil-fired combi boilers in the UK, we have equipped Clay Cross with the technology and processes required to fulfil our commitment to **manufacturing an average of 125 boilers per day**, each of which comprises some **50 components**. Our aim is to **manufacture and deliver each boiler within 24 hours**,

which allows us to meet the demand from installers who regularly fit our oil-fired boilers into their customers’ homes.

Dedicated to excellence

“Our manufacturing facility at Clay Cross **employs 190 people** and is supported by hundreds more at our HQ in Worcester, each of whom plays a key part in ensuring we are able to maintain high levels of quality and reliability across all products manufactured on site. The factory is made up of four key areas, with each one responsible for a very specific part of our manufacturing process.

“From the press shop; where components are cut, bent, painted and verified to ensure consistent quality, through to final assembly; where each boiler is formed and stringently tested, each and every

stage of our manufacturing process has been developed with the best interests of the installer and their customers in mind.

“This longstanding commitment to quality sees each and every component that makes up a Greenstar oil-fired boiler stamped and labelled once passing our testing procedures. By treating each and every component as a vital product in its own right, and allocating it with its own individual identity and reference code, we are able to track the exact date and time of production and assembly. This eye for detail even runs as deep as the tools we use to manufacture our components, to the extent that every spanner at Clay Cross is calibrated each and every day, so we know which components have been fastened to which pressures.

“Upon completion of the final boiler and burner assembly, every single boiler is given a ‘birth certificate’, which records the figures taken during testing. This means that further along the boiler’s lifespan, those installers who service these boilers can compare performance figures with those which were recorded when it came off the production line.

“Once each boiler is boxed up, it is immediately loaded onto one of our delivery lorries rather than being held in storage. This speeds up the rate at which we can despatch the boilers manufactured on site, and it is usually the case that the boiler is installed

in a customer’s property just weeks and sometimes days after leaving our production line.

Quality Audit/Testing

“All in all, every single one of the Greenstar boilers manufactured at Clay Cross is subject to **over 40 quality checks** at various stages of its production. This commitment to what would typically be considered an automotive level of testing and our measurement of faults per million underlines the emphasis we place on reliability.

“In addition to the series of tests carried out during the manufacture

of each boiler, we also take an **additional 1.25% sample** to run a series of extra machine checks on. By populating a product audit test sheet, which is then compared against industry standards, we can give installers the strongest possible assurance that every one of our products delivers on the performance levels intended by its design. In the unlikely event that a discrepancy occurs during this quality audit, this information is fed back into our system to ensure that another boiler from the same batch is also checked for the same fault and that ultimately, the discrepancy is resolved. Our stringent product testing procedure is in place to give both installers and their customers best possible peace of mind when it comes to using our boilers in a working environment.

“Having been in operation for over 30 years, Clay Cross remains as essential to our production of market-leading oil-fired boilers as ever. Our latest generation of Greenstar oil-fired boilers underlines the way in which we use the feedback installers gave us to implement the manufacture of products they are happy to install, service and maintain on a daily basis.”



WIN A DANESMOOR REGULAR BOILER



To celebrate with the launch of our new oil-fired boiler range, this month, we're giving away a NEW Greenstar oil-fired Danesmoor boiler to one lucky winner.

To enter our latest competition all you need to do is correctly answer the following three questions before sending your completed entry form to the address below. For those of you who also work with gas-fired appliances, don't forget, this month's bumper issue also gives you the chance to win a Greenstar gas-fired Si Compact. See the opposite page for more details.

Good luck!

Questions

Where are our oil-fired boilers manufactured?

The Greenstar Danesmoor boiler features a new, single piece _____?

What is the name of the policy that will be introduced next year and require oil-fired boilers to be more efficient?

Send your entry back to our editorial office: **Installer's Choice, August Competition**, Willoughby PR, 43 Calthorpe Road, Edgbaston, Birmingham, B15 1TS.

Closing date: Friday 30th August 2013. Terms and Conditions apply.

Name:

Business Name:

Business Address:

Daytime Telephone Number:

Email:

Closing date: Friday 30th August 2013. Terms and Conditions apply.

Send your entry back to our editorial office: **Installer's Choice, August Competition**, Willoughby PR, 43 Calthorpe Road, Edgbaston, Birmingham, B15 1TS.

Email:

Daytime Telephone Number:

What is the name of our new digital boiler display?

Which DHW outputs is our new Greenstar Si Compact available in?

What is the name of our new state of the art heat exchanger?

Questions

Good luck!

To enter our latest competition all you need to do is correctly answer the following three questions before sending your completed entry form to the address below. For those of you who also work in off mains gas areas, this month's issue of Installer's Choice also gives you the chance to win one our new Greenstar oil-fired Danesmoor boilers. See the opposite page for more details.

To celebrate the launch of our next generation of gas-fired boilers, we're giving away a Greenstar gas-fired Si Compact to one lucky reader.



WIN A GREENSTAR SI COMPACT

Introducing the **ALL-NEW Greenstar Si** Compact combi



Featuring easy access hydraulics, a clear LCD display and a standard wall mounting frame that allows pipes to go behind the boiler, the innovative Si Compact (25kW and 30kW) is simple to install and quick to service. Its space saving, state-of-the-art WB7 heat exchanger also means the Greenstar Si Compact is small enough to fit within a standard kitchen cupboard.

Be part of a revolution in heating by visiting
www.worcester-bosch.co.uk to find out more.



Now extended
on Greenstar gas-fired boilers* until
31st December 2013

*Terms & conditions apply. Does not apply to Greenstar i Junior.

 **WORCESTER**
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Everything you need...
backed up with a 5 year guarantee

STRONG BRITISH BRAND
SUPERIOR QUALITY
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SUSTAINABLE
SYSTEM
SOLUTIONS

SERVICE
EXTENDED

VALUE FOR
MONEY

TRAINING
SUPPORT
ADVICE
GUARANTEE
DURABLE
EFFICIENCY

GREENER
QUALITY
PEACE OF MIND
PROVEN

Purchase and install any Greenstar gas-fired CDi, Si, i System or Ri condensing boiler, before **31st December 2013**, and your customers will receive a 5 year guarantee for the boiler and 5 years' peace of mind.

Call 0845 313 0058
or visit www.worcester-bosch.co.uk/5year
to find out more.



**OFFER
EXTENDED
until 31st
December
2013**

Terms and conditions apply.

 **WORCESTER**
Bosch Group

Welcome

from Steve Lister

Welcome to our special edition of Installer's Choice, which, this month, will give you an insight into the ongoing revolution of our Greenstar gas-fired boilers, as we introduce more new boilers to our range.

The launch of our Greenstar gas-fired CDi Compact earlier this year represented the beginning of a new chapter for Worcester; bringing with it a series of innovative features we will use to improve our wider boiler range. This has resulted in new innovations to four more of the key products within our Greenstar portfolio, which are covered in detail in this issue. To take a look at each of these products in focus, turn to pages 6 to 13. We also give an insight into the development of our Si Compact series on pages 18 and 19.

You will no doubt be aware of Worcester's commitment to making sure we can offer you complete system solutions which benefit

both you and your customers. Our latest move in this direction sees us introduce our very own Greenstar Wiring Centre, to assist those of you who install our regular boilers. Turn to page 14 to read how this new addition can simplify the installation of our new Greenstar Ri Compact.

As you will be aware, the commissioning of gas-fired boilers requires a number of mandatory processes. This issue sees Roger Webb, director at the Heating and Hotwater Industry Council (HHIC) outline the organisation's new procedure for checking and recording the CO level and combustion ratio. Turn to page 16 to find out more.

We hope you enjoy this edition of Installers Choice.

Steve Lister
Sales and Marketing Director



"The launch of our Greenstar gas-fired CDi Compact earlier this year represented the beginning of a new chapter for Worcester; bringing with it a series of innovative features we will use to improve our wider boiler range."

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HHIC Director

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Win with Worcester



A new generation of Greenstar boilers - The Greenstar Si

Following the launch of our revolutionary Greenstar gas-fired CDi Compact boiler at the start of this year, we are pleased to unveil a whole new generation of boilers featuring our 2013 design. The improvements to our Greenstar range this summer mean we are now able to offer you and your customers the new Si Compact combi boilers and new high output additions to the well established i System and Ri Regular boiler ranges; each of which offer high performance within class-leading dimensions.



The key features of the new Greenstar Si Compact

- WB7 heat exchanger
- Heatronic 4i digital display
- The inclusion of new intuitive boiler software
- Comprehensive fault diagnostics
- Increases in flue lengths
- Compatibility with keyless filling link

Training

The launch of the Greenstar Si Compact means those of you who book yourselves onto our brand new one day Greenstar CDi Compact training course, will also be able to gain an insight into the specification, installation, commissioning, servicing and maintenance of our brand new gas-fired boiler.

For more information on our training and assessment programmes and to book a place on our CDi & Si Compact course, visit www.worcester-bosch.co.uk or call 01905 752526.

Reinforcing our commitment to our established range of combi boilers, the all-new Greenstar Si Compact brings our state of the art **WB7 heat exchanger**, **Heatronic 4i digital display** and new **compact hydraulic group** to our mid-range combi boiler.

2013 design features

With **dimensions of 690 x 390 x 280mm**, the new model is smaller than ever before and, like our Greenstar CDi Compact, has been designed to fit inside a typical kitchen cupboard. The **WB7 heat exchanger** is our smallest high performance heat exchanger to date and has been manufactured using the friction stir welding* process typically associated

with the military and aerospace industry. As the only UK manufacturer to offer a heat cell made with this advanced process, the inclusion of the WB7 within our new Greenstar Si Compact also results in very low NOx and CO emissions.

The latest addition to our Greenstar combi range is capable of delivering the following Domestic Hot Water flow rates;

- 25 kW – 10.2 l/min (35°C temp. rise)
- 30 kW – 12.3 l/min (35°C temp. rise)

Another key element of our 2013 design sees the Greenstar Si Compact adopt our intuitive **Heatronic 4i digital**

display. This intelligent control module enables you to gauge figures ranging from temperature outputs to hot water flow rates; aiding commissioning and servicing procedures without the need for additional measuring equipment. **The inclusion of new, intuitive boiler software** also offers **comprehensive fault diagnostics** and the ability to complete the relevant sections of the benchmark commissioning checklist using the integrated control panel. This integrated intelligent control fascia is also supplied with the cabling already attached for ease of installation.

Our improved model also sees **increases in the maximum**

permissible flue lengths for both horizontal and vertical applications, as well as compatibility with our flue plume re-direction system.

The Greenstar series of combi boilers is unique in that the boilers essentially require a two stage installation process, with the wall mounting jig being the major interface for the installer. **All 7 pipework connections can be made to the jig, with the capability of passing concealed pipework up the back of the appliance without any optional wall spacing frame, which is typically required with most other boilers on the market.**

The pipework can be pre-filled and tested prior to the boiler being lifted onto the wall mounting jig for final connection, via the vertical union connections.

Tried and tested

As well as introducing a whole host of premium features, we have retained all of the key elements which have already established the Greenstar Si Compact as an extremely popular product. The new model is **fully compatible with our keyless filling link**, which is set to launch later in the year, as well as our complete range of existing flues, Greenstar system filter, CondenseSure anti freezing device and of course,

the 9 different plug-in time and temperature control modules.

With DHW outputs of 25 and 30kW, the new Greenstar Si Compact sees us bridge the gap between the Greenstar i Junior and the Greenstar CDi Compact, giving you full flexibility when selecting the right boiler for your customer's requirements.

The Greenstar Si Compact is available in both natural gas and LPG variants. For more information on the Greenstar Si Compact, visit www.worcester-bosch.co.uk/sicompact

*provided by the Cambridge welding institute

Coming
Soon

GAS

The next generation of boilers

The Greenstar i System

The decision to invest in a new range of boilers to complement our existing Greenstar range will also see us introduce higher output additions to the well established i System series.



The i System range is available in **12kW, 15kW, 18kW, 24kW, and soon 27kW and 30kW outputs**. This will allow those of you who require extra output from a system boiler to fulfil this requirement without having to consider using a regular boiler with a sealed system kit.

New system generation

As with the Greenstar CDi Compact and Greenstar Si Compact, the new additions to our system boiler range will enable you and your customers to benefit from the **WB7 heat exchanger**; our **industry-exclusive friction stir welded* heat cell**, which is our most efficient yet compact heat exchanger to date. Like its counterparts from our combi range, the all-new Greenstar

i System Compact models will also be equipped with our cutting-edge **Heatronic 4i digital display** to give you access to easy-to-use commissioning and service menus, plus built-in diagnostics.

The new high output additions to the existing series result from installer demand, where there is an increasing requirement for higher output system models in larger properties, particularly in conjunction with a Greenstore single or twin coil unvented hot water storage cylinder.

The existing models in the range from 12 to 24kW feature our WB6 heatcell, whilst the two new high

output variants feature our WB7 heat exchanger.

Each model within the i System series features our **wall mounting frame as standard**, allowing the full pre-fabrication and installation of pipework before the boiler is mounted onto the jig. Pipework can then be routed behind the boiler without the need for any optional spacing frame.

All models have the well established Heatronic series of electronic controls and a compact hydraulic block housing the primary water components. In addition, the **ability to connect the optional in-built 3 way diverter valve** eliminates the need for externally sited zone valves.

The complete system solution

The imminent introduction of the new additions to the Greenstar i System series, coupled with the growth of our Greenstore cylinder range earlier this year, underlines our commitment to providing you and your customers with a complete domestic heating and hot water system.

Our commitment in creating mains pressure hot water systems makes the development of our system boiler range and accompanying cylinders a key area of focus for 2013. Each cylinder within our Greenstore series is a natural partner for our range of regular

and system boilers and balances rapid re-heat with high insulation to maximise efficiency.

The Greenstar i System Compact's **compatibility with our range of intelligent controls** also allows a complete system solution to be enhanced by the inclusion of a Greenskies solar thermal installation, which is the perfect way to take advantage of the boiler's 'solar optimisation' capability.

For more information on the Greenstar i System Compact, visit www.worcester-bosch.co.uk/newsystem

*provided by the Cambridge welding institute

The key features of the new Greenstar i System

- Greater outputs of 27kW and 30kW
- WB7 heat exchanger
- Heatronic 4i digital display
- Wall mounting frame included as standard
- Optional 3 way diverter valve connection
- Full compatibility with our range of intelligent controls

Coming
Soon



The new revolutionary Ri Regular boiler

The third new addition to our Greenstar gas-fired boiler offering will see us bring our revolutionary compact design principles to our range of regular boilers. The new Greenstar Ri will be available in high output additions of 27kW and 30kW. These additions will complement our existing range and bring wider installation possibilities.

The Ri series is presently available in 12kW, 15kW, 18kW and 24kW outputs; all of which feature our WB6 heatcell, whilst the new additions will feature the WB7 heat exchanger. This enables high output requirements to be met from a model with compact dimensions, rather than perhaps having to go with a boiler with larger dimensions, or in some cases, two smaller models working in tandem.

Pioneering controls

The Greenstar Ri 27kW and 30kW models will bring with them the

same heating and hot water control intelligence as the Greenstar CDi and Si Compact and enable you to offer your customers the option of plug-in control modules for one of our regular boilers for the first time. This will give you the option of customising the controls for your customer's heating system, in line with their personal preferences and heating and hot water requirements. A version of the Heatronic 4i has been developed specifically for the new Greenstar Ri.

Brand new accessory

In support of the new Greenstar Ri models, later this year we will also be introducing our new Greenstar wiring centre accessory, which will make wiring much simpler for those of you tasked with the installation of our Regular boilers. For more information on the innovative Greenstar wiring centre, turn to pages 12 and 13.

For more information on our new Greenstar Ri models, visit www.worcester-bosch.co.uk/newri



Domestic Solar Hot Water Pre-heat accessory

Continuing with our scheduled introduction of accessories to enhance your installation flexibility, we have launched a domestic hot water preheat accessory. The simple-to-install attachment is compatible with our Greenstar CDi Compact, enabling it to accept pre-heated cold mains water.

Adaptive cold water inlet

The accessory's kit contains all the necessary parts to enable an installer to adapt the existing domestic cold water inlet assembly to accept pre-heated cold mains water. This is done through the addition of a pre-heat NTC sensor that connects to the spare harness already provided as part of the boiler.

The accessory allows pre-heated mains water from a secondary source, such as a Greenskies solar thermal installation, to be directly fed into the boiler. It is important that the installation of the secondary heat source is in compliance with all necessary local Regulations

and Standards, independent of the boiler, with regard to mains pressure unvented cylinders and effective thermostatic control of the heat source's input into the cylinder.

Modulation

With the accessory installed, the Greenstar CDi Compact is able to account for changes in the domestic

cold mains inlet temperature supplied by the secondary heat source. The boiler's modulation is enhanced to accommodate fluctuations in the pre-heated mains water temperature and deliver safe temperatures at maximum efficiency, by reducing the gas-fired output as the pre-heated water temperature increases.

An additional benefit of the accessory is its seasonality adjustment for summer temperatures of the cold mains. This means the boiler doesn't automatically raise the water temperature by a full 40°CΔT.

For more information on the new preheat accessory for our Greenstar CDi Compact, visit www.worcester-bosch.co.uk



Give gas the green light with the new Greenstar i Junior

Worcester remains committed to ensuring that all of our boilers can offer premium functionality for your customers. In light of this, we have also re-designed our best selling and ever popular combi boiler, the Greenstar i Junior, to allow you to offer your customers improved hot water control.

The versatile Greenstar i Junior commonly installed in small to medium sized properties with a single bathroom. With compact dimensions, the Greenstar i Junior combi boiler can be fitted in a variety of locations and is compatible with a choice of optional heating controls.

Upgraded control

This year, we have upgraded the fascia of the boiler, with the addition of a hot water temperature controller. This will allow the end-user to benefit from additional functionality by being able to control both the heating and hot water from the boiler's interface. The new control offers temperature control between 40°C and 60°C (Currently pre-set to 55°C).

Cross-compatibility

The improved interface complements another improvement, which sees the Greenstar i Junior now compatible with EMS-BUS to prompt greater control of heating systems comprising multiple technologies. This will allow integration of the i Junior boiler as part of a Greenstar Hybrid installation.

Cross-compatibility is further enhanced by the boiler's suitability

for connection to our next generation of heating controls. Our range of intelligent controls offers a series of options for the customer, giving them additional heating flexibility and a more sophisticated method to maintain heating and energy usage in the home. By making our new Greenstar i Junior compatible with these intelligent control modules, we are ensuring that the performance of our entry level boiler can also be optimised by greater functionality.

We have also replaced the boiler's transformer with a switch mode power supply, which ensures lower standby electrical losses of just 3.5 watts, compared to 9 watts. The change means the boiler has a reduced lift weight of just 26.2kg - 0.9kg lighter than its predecessor.

The new enhancements of the Greenstar i Junior improve what is already an established line-up of features at an affordable price. The boiler will continue to offer low NOx and CO₂ emissions, plus a metal wall mounting frame that allows pipework to be hidden from view. The Greenstar i Junior is, like all other products in the series, compatible

with the Greenstar system filter, the CondenseSure anti freezing device and our soon to be launched keyless filling device.

For more information on our Greenstar i Junior, visit www.worcester-bosch.co.uk/ijunior

Key features of the Greenstar i Junior

- Upgraded fascia with the addition of a hot water temperature controller.
- Now compatible with EMS-BUS
- Boiler is suitable for connection to the next generation of heating controls.
- Replace boiler's transformer with a switch mode power supply.
- Reduced lift weight of just 26.2kg - 0.9kg lighter than its predecessor.

Compatible with Worcester intelligent controls

Less than **1kW** electrical standby consumption

Now with **DHW control**

Higher SAP ratings with optional weather compensation



Coming
Soon

The all-new Greenstar Wiring Centre

The Greenstar Wiring Centre will allow optional Worcester plug-in timers to be used with the new Greenstar 27kW & 30kW Ri Compact models and optional plug-in controls to operate external components such as the pump.

Installer feedback revealed that there was a demand for a product which avoids the pump having to be wired directly into the boiler, which minimises disruption for the homeowner and speeds up installation time.

Installation simplicity

The Greenstar Wiring Centre will allow optional Worcester plug-in timers to be used with the new Greenstar Ri Compact models and will operate by allowing optional plug-in controls to operate external components such as the pump. With this product you will be able to carry out replacement boiler installation with greater ease as it will enable you to use the existing cable rather than routing an additional cable through the property. The result of this is less time spent on installation,

and minimal disruption for the homeowner.

The other main advantage of the product is that it will provide intelligent control of heating and hot water, ensuring the boiler can perform to its full capability.

Product features include; domestic hot water cylinder temperature control, low voltage electrical connections and also removable colour coded grommets for installer ease of use in installer connections.

The dimensions of the product are 151 x 184 x 61mm which means, once fitted, it will be a discreet addition to the heating system and have minimal impact on the homeowner's space. The Greenstar Wiring Centre will be compatible with the Greenstar Ri



27kW and 30kW models only and will require one of the following Worcester plug-in controls to be specified:

- DT20 Twin Channel Digital Timer
- DT20RF Digital RF Thermostat with Twin Channel Programmer
- DT10RF Digistat
- DT10RF Optimiser

The Greenstar Wiring Centre and Greenstar Ri Compact will both require a 230V AC mains supply.

Our estimates predict that the simple integration of our Greenstar Wiring Centre could sometimes save up to half a day on replacement installation work.

For more information on the Greenstar Wiring Centre, visit www.worcester-bosch.co.uk

Installation Example

Greenstar Ri Compact boiler located in kitchen

- Existing cable is only to carry EMS-BUS data between the new Greenstar Ri Compact and Greenstar Wiring Centre.
- A new local fuse spur is required for the Greenstar Ri Compact.
- Simple replacement boiler installation.
- No need to install additional cable between boiler location and airing cupboard.

Fuse Spur



3-core, BUS, BUS, E

Greenstar Wiring Centre located in airing cupboard

Greenstar Wiring Centre (case off)

Fuse Spur



DHW Cylinder



Pump



- Clear wiring connections within Greenstar Wiring Centre.
- Pump wired to Greenstar Wiring Centre and not directly to the boiler.
 - No external programmer
 - DT20RF room thermostat not shown
 - motorised valve(s) not shown

Facia mounted DT20RF thermostat with twin channel programmer

Cylinder temperature sensor (supplied) replaces 230v cylinder thermostat



Roger Webb, Director at the HHIC, provides an insight into a new procedure introduced as part of the condensing boiler commissioning process.



NEW EMISSIONS AND COMBUSTION RATIO PROCEDURE

Checking and Recording

Following concerns arising from a very small number of carbon monoxide (CO) incidents involving pre-mix burners, the Heating and Hotwater Industry Council (HHIC) has developed a procedure for checking and recording the CO level and combustion ratio (CO/CO₂) of the boiler flue gases as part of the commissioning process.

Boiler manufacturers despatch all appliances with the combustion settings precisely set to tolerance. Therefore when the appliance has been installed to the manufacturer's installation instructions there is no need for adjustment of the air/gas ratio valve during the installation and commissioning procedure. However they do not have any control over the integrity of the flue to which the boiler is attached, or of other situations which may arise during installation. For this reason it has been agreed that at the end of the commissioning process a final ECGA check of flue gas CO level and combustion ratio must be carried out.

It is important to note that the procedure is intended as a simple commissioning check and does not apply to service or maintenance activities which may involve

adjustment of the air/gas ratio control valve.

The checking procedure, which will shortly be published by Gas Safe Register as a new Technical Bulletin (TB), is illustrated in the form of a flowchart, designed to ensure that ECGA measurements are carried out in a consistent and technically correct manner so that accurate readings are obtained for recording purposes. The TB and flowchart are intended as a generic guide, however all HHIC boiler manufacturers have agreed that they will also form the basis of guidance given in their own installation instructions. The boiler manufacturer's instructions must be followed if available.

In the absence of these instructions, manufacturers have agreed that the action levels given in the TB - flue gas CO level less than or equal to 350ppm AND Combustion Ratio less than or equal to 0.0040 - will ensure that the installation can be considered safe.

Revised Benchmark Commissioning Checklist

Assuming they are within expected limits, CO level and combustion ratio must be recorded on the Benchmark Commissioning Checklist provided

with every new boiler. This will give both the customer and the installer confidence (and evidence) that the heating system has been left in a safe and efficient working condition. HHIC boiler manufacturers have agreed that completion of the Benchmark Commissioning Checklist is regarded as a condition of manufacturer's warranty - hence failure to record CO level and combustion ratio on commissioning may affect warranty provision for the customer.

Gas Safe Register will defect an installation for Building Regulations non-compliance if CO and combustion ratio are not correctly recorded on the commissioning documentation.

2014 Requirements

HHIC will shortly issue a revised version of the Checklist with a formal requirement to record CO and combustion ratio. This version will be used by all HHIC boiler manufacturers from April 2014 - at which time the measurement and recording of CO and combustion ratio on commissioning will be a requirement. From April 2013 it is a recommendation that existing Benchmark Checklists should be used for recording purposes.



Innovative system solutions from Worcester

Greenstar System Filter

High performance system protection

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 and the wider central heating system.

- High powered internal magnet
- Twin-action - magnetic and non-magnetic filtration
- No power consumption or moving parts
- Can be installed under the boiler or away from the appliance
- One-way valve for adding system chemicals.

Worcester CondenseSure Auxiliary Siphon

A universal solution to frozen condensate

The Worcester CondenseSure helps prevent external condensate pipes freezing, even in the harshest winter weather conditions.

- Proven to prevent condensate freezing down to -15°C
- Low cost
- Easy to install
- No power consumption or moving parts
- Can be installed on new or existing installations
- Works with any condensing boiler.



For more information about our new range of innovative system solutions, call 0844 892 3366 or visit www.worcester-bosch.co.uk/solutions



Technological first for the UK



With over 50 years' experience in boiler manufacturing, we are well known for producing high-efficiency gas, LPG and oil-fired condensing boilers. Designing and manufacturing a reliable, good quality new product is not something that just happens overnight. From the initial design of a product, right through to development of a prototype, testing and final production for release to market – we work very hard at achieving high standards every step of the way.

Here, Martyn Bridges, our director of marketing and technical support, outlines some of the innovative manufacturing processes introduced to bring you a premium quality product range:

Over the years there have been significant changes to the way our products are manufactured, in response to market and technological developments. At the start of this year, we launched the Greenstar CDi Compact, which includes our revolutionary WB7 heat exchanger – manufactured using the state-of-the-art friction stir-welding process*.

Friction stir welding

The ultra-compact heat exchanger is constructed using a friction stir welding procedure. This is a solid-state fusing process where metal is not melted, but softened, improving the overall strength of the weld. The heat generated by the mechanical mixing process causes the stirred

metals to be softened; allowing for an easy navigation along the weld lines, that in its crystallised state, forms the weld. Use of this technology is a first for the UK heating industry, having previously only been used in the aerospace and military sectors.

We adopted this approach after recognising the benefits of greater quality, reliability and performance it can offer you, showing how our production processes are designed with various customer needs in mind.

Lean line manufacturing

A further enhancement of our manufacturing processes is our migration from bulk to flexible manufacturing. Most recently, we

have adopted a lean manufacturing approach - a strategy driven by our Bosch counterparts. Consequently, the efficiency at which we create our products has evolved, which better equips us to quickly respond to your needs.

Our manufacturing processes are now geared towards treating every order as an individual product, rather than just one of a mass consignment. To facilitate this, we hold no more than 4 hours' worth of raw materials on site and finished goods leave our factory as soon as they are produced. This removes the need for any storage and allows our skilled workforce to focus on creating the products you require.

*provided by the Cambridge welding institute



Other applications that use friction stir welding...



Aeroplane wings, cryogenic fuel tanks, military and scientific rockets.



High speed trains and underground carriages.



Marine – panels for decks, hulls and helicopter landing platforms.

Installer Feedback

One of the common factors maintained throughout our manufacturing processes, is the priority we give to your preferences as an installer. The vast majority of our product enhancements, from the dimensions of the Greenstar gas-fired CDi Compact, to our new Heatronic 4i digital interface, stem from the feedback you give us on a regular basis. We invest a significant amount of our turnover in Research and Development (R&D), to ensure that while you are installing our products, we are putting the wheels in motion on our next generation of products and supporting accessories.

Our Greenstar system filter and CondenseSure accessories are two very recent examples of products we

have developed to help our new and established boiler ranges as a direct result of feedback from those of you trying your utmost to avoid some of the challenges typically encountered during the installation and maintenance of a heating system. By accompanying our Greenstar boiler range with the accessories required to safeguard against potentially damaging contaminants, you can leave your customers assured that they will be able to benefit from premium performance and efficiency levels with added peace of mind.

Throughout our entire production process, from R&D through to the final despatch of each product, our focus is on manufacturing boilers that you feel comfortable installing, servicing and maintaining; which we

also support with extensive training and customer care offerings.

To view our friction stir welding manufacturing process in action, visit our YouTube channel at www.youtube.com/worcesterboschgroup

