

# Greenstar Xtra Flue Gas Heat Recovery Unit



**NEW**

 **WORCESTER**  
Bosch Group

# Save energy and reduce CO<sub>2</sub> emissions with the Greenstar Xtra 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 Greenstar Xtra Flue Gas Heat Recovery (FGHR) unit.

## How the FGHR works

The unit is connected directly to the flue of the Greenstar boiler. Its highly efficient plate 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 Greenstar Xtra 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 CDi Compact	19.47	20.19	-3.70
Worcester CDi Compact + Xtra	19.47	19.45	0.10
Worcester Si Compact	19.47	19.93	-2.36
Worcester Si Compact + Xtra	19.47	19.21	1.33
Worcester Greenstar i	19.47	19.83	-1.85
Worcester Greenstar i + Xtra	19.47	19.11	1.85

SAP 2012 calc based on: top floor flat (3 bed) – 63m<sup>2</sup>  
Cavity wall – 0.25 W/m<sup>2</sup>.K; Roof – 0.10 W/m<sup>2</sup>.K; Floors – 0.12 W/m<sup>2</sup>.K; Openings – 1.4 W/m<sup>2</sup>.K; Accredited thermal bridges  
q50 – 5; 3 intermittent fans; Standard programmer, room thermostat and TRV with radiators



# Compact design

The Greenstar Xtra incorporates a compact design to assist installation flexibility.

The unit's optimised height clearances offer greater siting options when installed with one of our gas combi boilers.

Designed and built by Bosch, the unit is fully compatible with the latest range of Greenstar i, Si Compact and CDi Compact combi boilers.

## Product info

Part number

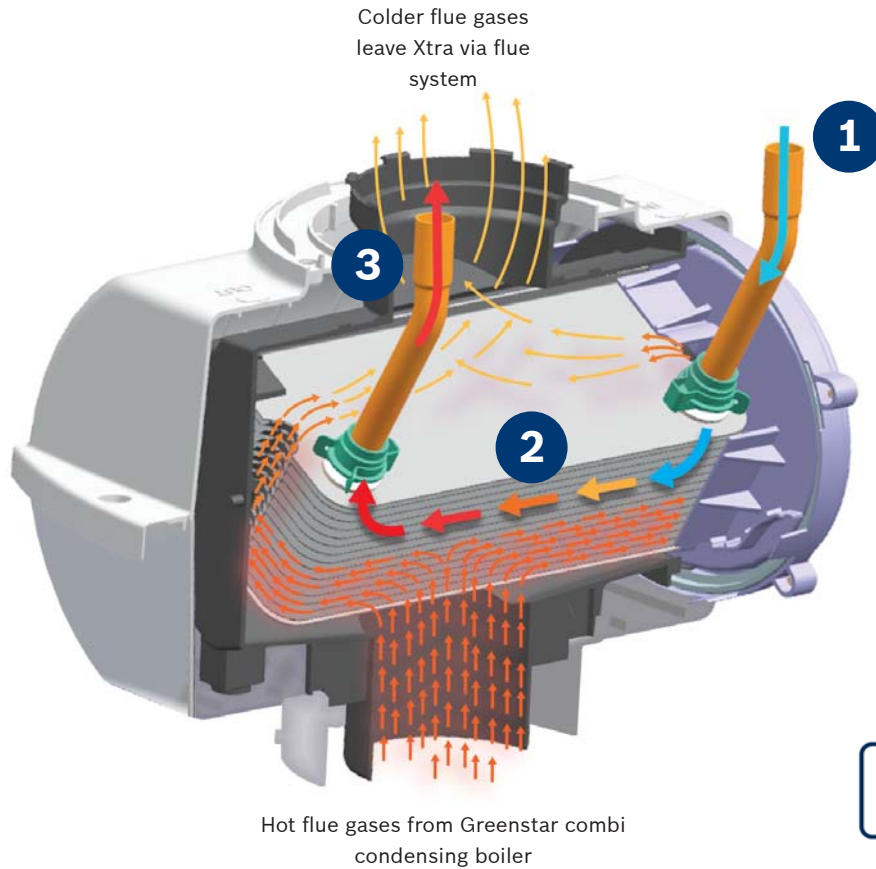
7 736 900 525

SAP ID

60035 NG, 60036 LPG



# A highly efficient solution



**1** Cold mains water enters the Xtra unit.

**2** Cold water passes through the heat exchanger and is heated by the hot waste flue gases from the boiler.

**3** Pre-heated water leaves the Xtra speeding up the heating of hot water, reducing gas consumption and CO<sub>2</sub> emissions.

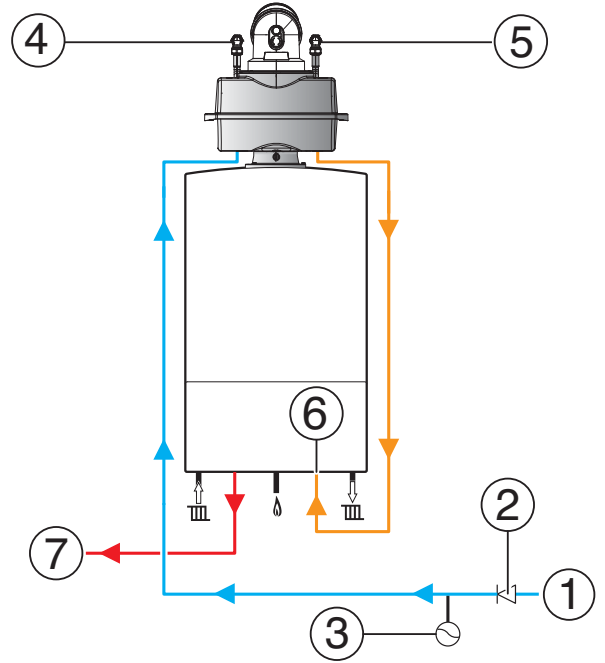
Feature	Benefit
<b>For the Specifier...</b>	
SAP listed FGHR unit enables the heating system to meet SAP target emission rates for new build properties	More cost-effective than other solutions such as solar thermal or heat pumps
	Savings on building fabric such as insulation can be achieved
Can be used as an energy saving measure to improve domestic EPC (Energy Performance Certificate) ratings	Property receives a higher energy rating and occupier achieves lower fuel bills
<b>For the Installer...</b>	
Ease of installation	Compact design for flexible installation
	Does not require blending valve or additional mounting plate reducing installation time and cost
	Pipes positioned for easy connections
	No additional training required for a qualified gas installer
Flexible fluing options	Compatible with both 60/100mm and 80/150mm flues offering freedom of siting
<b>For the End User...</b>	
When fitted to a Greenstar combi, it reduces the amount of gas used to provide hot water	Reduction in gas bills and carbon emissions

# Installation considerations

- The Greenstar Xtra unit is only suitable for use with Condensfit II 60/100mm or 80/150mm flues.
- The maximum flue length permitted for the boiler should be reduced by 3m when a Greenstar Xtra unit is fitted.
- Compatible with the following Condensfit II flues:

Part Number	Description
7 733 600 048	High Level Horizontal Flue Kit
7 719 002 430	Standard Vertical Flue Kit

	Greenstar Xtra
<b>Weight</b>	3.0kg (dry) / 3.4kg (wet)
<b>Flue reduction</b>	3m
<b>Dimensions (HxWxD)</b>	216x311x233mm
<b>Water connections</b>	15mm
<b>Maximum main inlet pressure</b>	10bar
<b>Minimum mains inlet pressure (working) for operation with Compact combi appliances</b>	0.25bar
<b>Minimum mains inlet pressure (working) for maximum flow with Compact combi appliances</b>	2.4bar



- 1** Cold mains supply
- 2** Non-return valve (may be present, see notice below)
- 3** Mini expansion vessel (may be required, see notice below)
- 4** DW Inlet – Xtra
- 5** DW Outlet – Xtra
- 6** DHW Inlet – Boiler
- 7** DHW Outlet – Boiler

Where the mains water supply has a non-return, back flow prevention valve fitted, a mini expansion vessel [3] (part number 7 716 192 105) should be connected to the mains water inlet pipe [1] as shown above.

# Step by step installation instructions



**1** Disassemble the adaptor from the Greenstar Xtra by removing the front fixing screw. Using the three screws provided secure the adaptor to the boiler.



**2** Slide the Greenstar Xtra into the adaptor and rotate to correctly position it.



**3** Attach the Greenstar Xtra to the adaptor using the included unit fixing screw.



**4** Connect the water pipes using the 90° compression joint elbow.



**5** Fit the horizontal or vertical flue adaptor into the Greenstar Xtra flue connection point. Secure the unit with the three fixing screws provided.



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