

Product Guide
2015



Gas-fired and solar thermal

heating and hot water solutions

NEW
Greenstar i
series

**WORCESTER**
Bosch Group

The complete Worcester Greenstar gas-fired product range

Our market-leading Greenstar gas-fired condensing boilers are part of the total system solutions package we offer to installers wanting to fit high quality, reliable products for their customers. With state-of-the-art training facilities and award-winning technical support, we offer everything required to meet your heating and hot water needs.

In this easy-to-use pocket guide, you will find essential information on every Greenstar gas-fired heating and hot water appliance currently available from the Worcester range, as well as information about our Greenskies solar thermal solutions. This includes, technical data such as dimensions, outputs, flue options, accessories, product codes and much more – all laid out clearly and concisely with the aid of diagrams, tables and a comprehensive contents page.



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

For four consecutive years, in a survey of Which? members, the Worcester Greenstar gas-fired condensing boiler range has been presented with Best Buy awards.*

*Source: Which? 2014 survey published in Sept 2014.
Greenstar i not available at time of survey.

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Worcester and you. Making a difference.

As part of the Bosch Group,
Worcester products are
designed and manufactured



BOSCH
Invented for life

to provide customers with the highest levels of
quality and reliability which are synonymous with
the Bosch name throughout the world.

As part of Europe's largest supplier of heating
products, Worcester, Bosch Group has the
UK-based resources and support capability to
offer you the value-added solutions you deserve.
Worcester employs a nationwide network of
Service Engineers and technically trained Field
Sales Managers supported by an experienced
technical services team which is able to provide
comprehensive support and advice from designing
system layouts through to installation.



The reception and main entrance
at our Worcester headquarters

Worcester is dedicated to providing energy efficient gas- and oil-fired condensing boilers, as well as an extensive range of renewable technologies. All of our products have been developed and introduced with the aim of helping the UK to achieve the Government's efficiency targets.

"At Worcester we recognise the vital role you play in the specification and installation of energy efficient appliances in homes across the UK. We will continue to invest in our products, people, facilities and added value services to ensure you have all you require in order to deliver only the best solutions to your customers' requirements."

Carl Arntzen,
Managing Director,
Bosch Thermotechnology Ltd.

Efficiency ratings for gas-fired boilers

Appliance	ErP space heating efficiency	ErP water heating efficiency	Efficiency SEDBUK 2009 [†]
Greenstar 29CDi Classic	A / 92%	A	89.1%
Greenstar 34CDi Classic	A / 92%	A	89.1%
Greenstar 38CDi Classic	A / 92%	A	89.0%
Greenstar 42CDi Classic	A / 92%	A	89.4%
Greenstar 28CDi Compact	A / 93%	A	89.8%
Greenstar 32CDi Compact	A / 93%	A	89.8%
Greenstar 36CDi Compact	A / 93%	A	89.8%
Greenstar 25Si Compact	A / 93%	A	89.8%
Greenstar 30Si Compact	A / 93%	A	89.8%
Greenstar 25i	A / 93%	A	89.6%
Greenstar 30i	A / 93%	A	89.6%
Greenstar Highflow 440CDi	A / 92%	B	89.2%
Greenstar Highflow 550CDi	A / 92%	B	89.2%
Greenstar 30CDi Classic System	A / 92%	–	89.2%
Greenstar 35CDi Classic System	A / 92%	–	89.2%
Greenstar 9i System	A / 93%	–	89.8%
Greenstar 12i System	A / 93%	–	89.8%
Greenstar 15i System	A / 93%	–	89.7%
Greenstar 18i System	A / 93%	–	89.7%
Greenstar 21i System	A / 93%	–	89.7%
Greenstar 24i System	A / 93%	–	89.7%
Greenstar 27i System	A / 92%	–	89.0%
Greenstar 30i System	A / 92%	–	89.0%
GB162 50kW	A / 93%	–	88.7%
GB162 65kW	A / 92%	–	88.9%
Greenstar 30CDi Classic Regular	A / 92%	–	89.2%
Greenstar 40CDi Classic Regular	A / 92%	–	89.2%

[†]Natural gas ratings shown.



All products are recommended by the Energy Saving Trust.

Appliance	ErP space heating efficiency	ErP water heating efficiency	Efficiency SEDBUK 2009 [†]
Greenstar 12Ri	A / 91%	–	88.8%
Greenstar 15Ri	A / 91%	–	88.8%
Greenstar 18Ri	A / 91%	–	88.8%
Greenstar 24Ri	A / 92%	–	89.2%
Greenstar 27Ri	A / 92%	–	89.0%
Greenstar 30Ri	A / 93%	–	89.0%
Greenstar FS 30CDi Regular	A / 92%	–	88.9%
Greenstar FS 42CDi Regular	A / 92%	–	88.8%

[†]Natural gas ratings shown.

All Greenstar boilers are available as LPG options.

ErP^{easy as} ABC

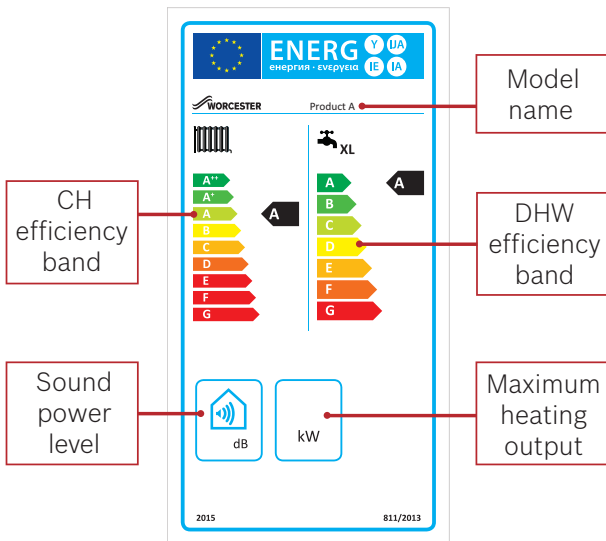
What is ErP?

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 enabling homeowners to reduce their energy bills. The ErP regulations cover boilers, combination boilers, heat pumps 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 from A++ to G alongside the existing SEDBUK rating for boilers 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 to provide 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 with a combined total output of under 70kW).

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 either 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 pages 52-53.

ErP easy as ABC with Worcester

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

- ✔ An **online tool** 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**



Condensate pipework

Important points to consider when siting a condensate drainage pipe:

- **Where a new or replacement boiler is being installed, access to an internal “gravity discharge” point should be one of the factors considered in determining boiler location**
- **The condensate pipe must be a minimum of 22mm dia. plastic pipe**
- **The condensate pipework must fall at least 52mm per metre towards the outlet and should take the shortest practicable route**
- **Ensure there are no blockages in the pipe run.**

Internal connections

In order to minimise the risk of freezing during prolonged cold spells, the following methods of installing a condensate drainage pipe should be adopted, **in order of priority**.

Wherever possible, the condensate drainage pipe should be routed and terminated so that the condensate drains away from the boiler, under gravity, to a suitable internal foul water discharge point, such as an internal soil and vent stack. A suitable permanent connection to the foul waste pipe should be used.

Alternatively, if the first option is not possible, an internal kitchen, bathroom or washing machine waste pipe, etc. can be used.

Condensate pump

Where “gravity discharge” to an internal termination is not physically possible, or where very long internal runs would be required to reach a suitable discharge point, condensate should be removed using a proprietary condensate pump, of a specification recommended by the boiler or condensate pump manufacturer.

The pump outlet pipe should discharge to a suitable internal foul water discharge point such as an internal soil and vent stack, internal kitchen,

bathroom or washing machine waste pipe, etc. A suitable permanent connection to the foul waste pipe should be used.

External connections

Greenstar CDi Classic, Greenstar i and Greenstar i System

The Greenstar CDi Classic and Greenstar i have a large capacity siphonic condensate trap reducing the risk of condensate discharge freezing up in prolonged cold temperatures.

Like the CondenseSure siphon accessory, the expanded siphonic operation discharges every 15 to 20 minutes, resulting in:

- Increased velocity and flow rate
- With only 3 to 4 siphonic actions per hour, the condensate pipework is empty for longer
- Eliminated freezing potential.

For a 48 hour period at -15°C provided the installation parameters listed below are adhered to.

To maximise the effectiveness of this product the installer should:

- Keep the external pipework as short as possible. An external run pipe diameter should be increased to a minimum of 32mm and not exceed 3 metres
- Ensure a fall of at least 2.5° over horizontal sections
- Minimise the number of bends and connectors
- Remove burrs after cutting pipe
- Remove surplus solvent from the interior of the pipe.

Greenstar CDi Compact and Si Compact

Freezing conditions

- **When the position of the boiler prevents internal routing, we recommend installing a Worcester CondenseSure siphon to minimise the risk of freezing**
- **Pipework length should be kept to a minimum and the route as vertical as possible**
- **Weather-proofing insulation must be sized when not using a CondenseSure siphon.**

Condensate waste

- **Care should be taken when siting a soak away to avoid obstructing existing services.**

If no other discharge method is possible, then the use of an externally-run condensate drainage pipe terminating at a suitable foul water discharge point, or purpose-designed soak away, may be considered. Please see installation and servicing instructions for more details.

Condensate soak away

- The condensate drainage pipe may be run above or below the ground to the soak away
- The examples shown run above ground
- The soak away must use a 100mm dia. plastic tube with two rows of three 12mm holes on 25mm centres and 50mm from the bottom of the tube. The holes must face away from the house
- The tube must be surrounded by at least 100mm of limestone chippings to a depth of 400mm
- Minimum hole size for the condensate soak away must be 400mm deep by 300mm dia.

In situations where there are likely to be extremes of temperature or exposure, the use of a proprietary trace heating system for external pipework (that incorporates an external frost thermostat) should be considered. If such a system is used, the requirement to use 32mm pipe does not apply, however all other guidance above, and the instructions for the trace heating system, should be closely followed.

Unheated internal areas

Internal pipe runs in unheated areas such as lofts, basements and garages should be treated as external runs, with consideration given to using a CondenseSure siphon.

Flue terminal positioning

1. The terminal must not cause an obstruction nor the discharge a nuisance. Particular care should be exercised with regards to the plumbing of the flue gases and any increase in noise levels.
2. If a terminal is fitted less than 2 metres above a surface to which people have access, then a guard must be fitted. The terminal guard must be securely fixed to the wall using suitable plugs and corrosion resistant screws. The guard must be symmetrically positioned about the terminal assembly and spaced such that there is a gap of 50mm between the end of the terminal and the guard.
3. In certain weather conditions, a white plume of condensation will be emitted from the flue terminal and siting where this could be a nuisance should be avoided i.e. near security lighting.
4. The air inlet/outlet duct and the terminal of the boiler must not be closer than 25mm to any combustible material. Detailed recommendations on protection of combustible materials are given in BS 5440:1.

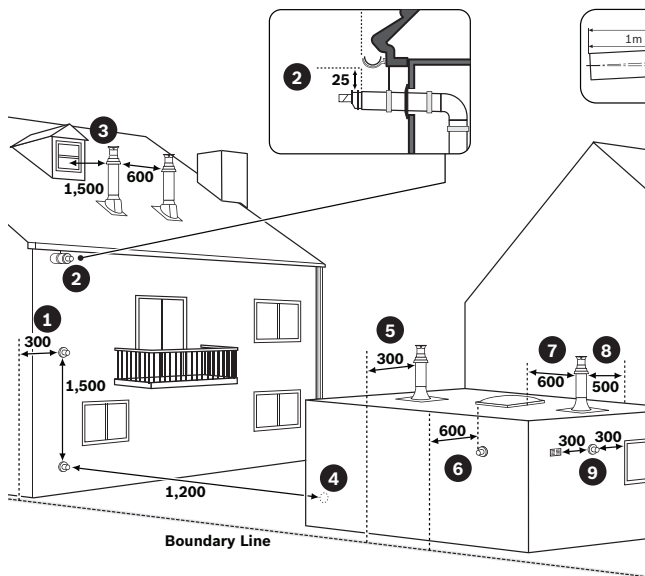
The flue system must be installed and terminated in accordance with the recommendations of BS 5440:Part 1.

Plume management

Plume management kits are available for 100mm horizontally terminated flues. Please refer to the installation instructions supplied with the plume management kits.

For more information on Worcester's plume management options, including reduced flue terminal clearances, please read the relevant boiler technical and specification brochure.

Flue terminal positioning



Note

- All measurements are the minimum clearances required
- Terminals must be positioned so as to avoid combustion products entering the building
- Support the flue at approximately one metre intervals and at a change of direction, use suitable brackets and fittings.

Flue support bracket kit part numbers:

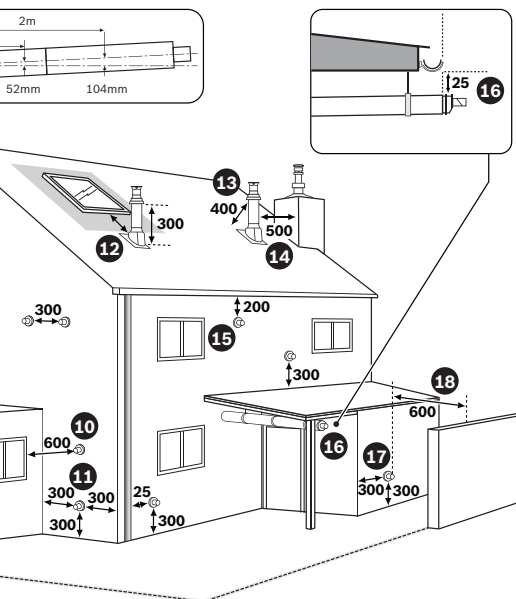
7 716 191 177 (100mm dia.)

7 716 191 178 (100mm dia. x 6)

7 716 191 179 (125mm dia.)

Key to illustration

1. 300mm adjacent to a boundary line.
2. The dimension below eaves, balconies and car ports can be reduced to 25mm, as long as the flue terminal is extended to clear any overhang. External flue joints must be sealed with suitable silicon sealant.
3. 1,500mm between a vertical flue terminal and a window or dormer window.
4. 1,200mm between terminals facing each other.
5. Vertical flue clearance, 300mm adjacent to a boundary line.
6. 600mm distance to a boundary line, unless it will cause a nuisance. BS 5440:Part 1 recommends that care is taken when siting terminal in relation to boundary lines.
7. 600mm minimum clearance from a skylight to a vertical flue.
8. Vertical flue clearance, 500mm to non-combustible building material, and 1,500mm clearance to combustible building material.
9. 300mm above, below and either side of an opening door, air vent or opening window.

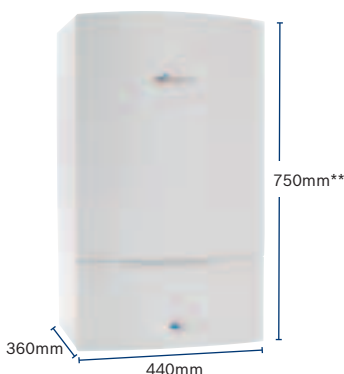


10. 600mm diagonally to an opening door, air vent or opening window.
11. 300mm to an internal or external corner.
12. 2,000mm below a Velux window, 600mm above or to either side of the Velux window.
13. 400mm from a pitched roof or 500mm in regions with heavy snowfall.
14. 500mm clearance to any vertical structure on a roof, 600mm to room sealed flue or 1,500 to an open flue.
15. 200mm below eaves and 75mm below gutters, pipe and drains.
16. The dimension below eaves, balconies and car ports can be reduced to 25mm, as long as the flue terminal is extended to clear any overhang. External flue joints must be sealed with suitable silicon sealant.
17. Flue clearance must be at least 300mm from the ground. Terminal guards must be fitted if the flue is less than 2 metres from the ground or if a person could come into contact with the flue terminal.
18. 600mm distance to a surface facing a terminal, unless it will cause a nuisance. BS 5440: Part 1 recommends that care is taken when siting terminals in relation to surfaces facing a terminal.

- **Installations in car ports are not recommended**
- **The flue cannot be lower than 1,000mm from the top of a light well due to the build up of combustion products**
- **Dimensions from a flue terminal to a fanned air inlet to be determined by the ventilation equipment manufacturer.**

Wall mounted condensing combi boilers

Greenstar CDi Classic series



Clearances

Above flue: 30mm

Left: 5mm

Right: 5mm

Below: 200mm

Front: 20mm*

*20mm from a removable cupboard door, 600mm from a fixed surface for servicing. Same clearances for ventilated and unventilated compartments.

**760mm to top of casing front.

Max DHW output (kW)	Flow rate (l/m)		CH output (kW)	Part no.
	ΔT 40°C [^]	ΔT 35°C ⁺		
Greenstar 29CDi Classic				
30.9	11	12.3	7.7 to 30	NG 7 738 100 248
				LPG 7 738 100 249
Greenstar 34CDi Classic				
35	12	14.3	7.7 to 30	NG 7 738 100 250
				LPG 7 738 100 251
Greenstar 38CDi Classic				
40	14	16.4	9.4 to 30	NG 7 738 100 252
				LPG 7 738 100 253
Greenstar 42CDi Classic				
42	15	17.2	9.4 to 30	NG 7 738 100 246
				LPG 7 738 100 247

Control options

Part no.	Description
Controls	
7 716 192 072	Wave – smart heating control
7 716 192 065#	FR10 Intelligent Room Thermostat
7 716 192 066	FR110 Programmable Room Thermostat
7 716 192 067	FW100 Weather Compensation Controller
7 733 600 003	Comfort plug-in twin channel programmer
7 733 600 001	Comfort I RF wireless room thermostat and plug-in twin channel programmer
7 733 600 002	Comfort II RF wireless programmable room thermostat and plug-in RF receiver
7 716 192 036**	MT10 Mechanical Timer
7 716 192 037**	MT10RF Mechanical RF Thermostat

#For use with MT10 only.

**These controls will not provide hot water pre-heat time control.

40°C[^] Designed operational flow rate.

35°C⁺ Values for industry comparisons.



Flue lengths



Maximum flue lengths inc. terminal (mm)					
Diameter	Direction	29CDi	34CDi	38CDi	42CDi
100mm	Horizontal	7,900	7,000	6,000	6,000
	Vertical	9,400	8,000	7,500	7,500
125mm	Horizontal	18,500	16,000	12,500	12,000
	Vertical	18,500	16,000	16,000	16,000

Horizontal and vertical fluing options

Components	Part no.	Description
100mm diameter		
	7 716 191 082	Standard telescopic flue & terminal (350 - 570mm)
	7 716 191 171	Long telescopic flue kit (570 - 790mm)
	7 719 002 430	Vertical 1,090mm BF kit (inc. adaptor)
	7 716 191 083	Extension flue kit (960mm)
	7 716 191 172	2m flue extension
	7 716 191 133	Short flue extension (220mm)
	7 716 191 084	90° flue bend
	7 716 191 085	45° flue bend
	7 719 002 432	High level horizontal flue adaptor
	7 733 600 048*	High level horizontal telescopic flue kit
	7 716 191 177	Support bracket kit
	7 716 191 178	Support bracket kit (6 pack)
	7 716 191 090	Flashing – flat roof
	7 716 191 091	Flashing – pitched roof
	7 716 191 086	Plume management kit (60mm dia.)

Note: 60/100mm - for every 90° flue bend deduct 1,500mm and 750mm for every 45° flue bend.

125mm diameter		
	7 719 003 702	Standard telescopic flue & terminal (405 - 600mm)
	7 719 002 431	Vertical 1,365mm BF kit (inc. adaptor)
	7 719 003 666	Extension flue kit (960mm)
	7 719 003 664	90° flue bend
	7 719 003 665	45° flue bend
	7 719 002 433	High level horizontal flue adaptor
	7 716 191 179	Support bracket kit
	7 716 191 090	Flashing – flat roof
	7 716 191 091	Flashing – pitched roof

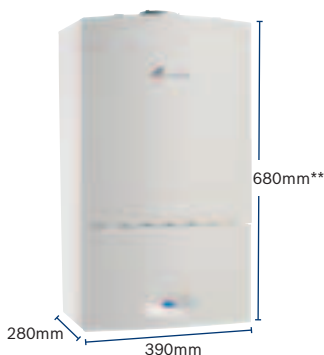
Note: 80/125mm - for every 90° flue bend deduct 2,000mm and 1,000mm for every 45° flue bend.

*For use with high level horizontal flue adaptor.

See page 42 for plume management components & accessories

Wall mounted condensing combi boilers

Greenstar CDi Compact series



Clearances

Above flue: 30mm[†]

Left: 5mm

Right: 5mm

Below: 200mm

Front: 20mm*

[†]or measured 170mm from the top of the boiler cabinet.

*20mm from a removable cupboard door, 600mm from a fixed surface for servicing. Same clearances for ventilated and unventilated compartments.

**690mm to top of casing curve.

Max DHW output (kW)	Flow rate (l/m)		CH output (kW)	Part no.
	ΔT 40°C [^]	ΔT 35°C ⁺		
Greenstar 28CDi Compact				
28	10.0	11.4	7.03 to 24	NG 7 733 600 054
				LPG 7 733 600 057
Greenstar 32CDi Compact				
32	11.5	13.1	7.03 to 24	NG 7 733 600 055
				LPG 7 733 600 058
Greenstar 36CDi Compact				
36	12.9	14.7	7.03 to 24	NG 7 733 600 056
				LPG 7 733 600 059

Control options

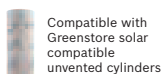
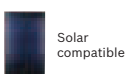
Part no.	Description
Controls	
7 716 192 072	Wave – smart heating control
7 716 192 065#	FR10 Intelligent Room Thermostat
7 716 192 066	FR110 Programmable Room Thermostat
7 716 192 067	FW100 Weather Compensation Controller
7 733 600 003	Comfort plug-in twin channel programmer
7 733 600 001	Comfort I RF wireless room thermostat and plug-in twin channel programmer
7 733 600 002	Comfort II RF wireless programmable room thermostat and plug-in RF receiver
7 716 192 036**	MT10 Mechanical Timer
7 716 192 037**	MT10RF Mechanical RF Thermostat
Accessories	
7 716 192 735	Domestic Hot Water Combi Pre-heat Accessory
7 716 192 610	Worcester Keyless Filling Link

#For use with MT10 or third party 230V timer only.

**These controls will not provide hot water pre-heat time control.

40°C[^] Designed operational flow rate.

35°C⁺ Values for industry comparisons.



Flue lengths



Maximum flue lengths inc. terminal (mm)		
Diameter	Direction	CDi Compact series
100mm	Horizontal	6,000
	Vertical	6,000
125mm	Horizontal	15,000
	Vertical	15,000

Horizontal and vertical fluing options

Components	Part no.	Description
100mm diameter		
	7 716 191 082	Standard telescopic flue & terminal (350 - 570mm)
	7 716 191 171	Long telescopic flue kit (570 - 790mm)
	7 719 002 430	Vertical 1,090mm BF kit (inc. adaptor)
	7 716 191 083	Extension flue kit (960mm)
	7 716 191 172	2m flue extension
	7 716 191 133	Short flue extension (220mm)
	7 716 191 084	90° flue bend
	7 716 191 085	45° flue bend
	7 719 002 432	High level horizontal flue adaptor
	7 733 600 048*	High level horizontal telescopic flue kit
	7 716 191 177	Support bracket kit
	7 716 191 178	Support bracket kit 6 pack
	7 716 191 090	Flashing – flat roof
	7 716 191 091	Flashing – pitched roof
	7 716 191 086	Plume management kit (60mm dia.)

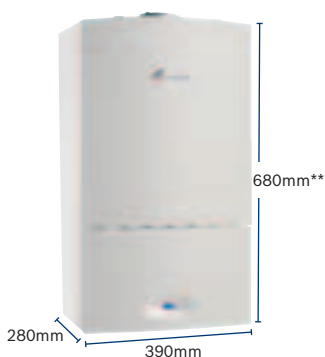
125mm diameter		
	7 719 003 702	Standard telescopic flue & terminal (405 - 600mm)
	7 719 002 431	Vertical 1,365mm BF kit (inc. adaptor)
	7 719 003 666	Extension flue kit (960mm)
	7 719 003 664	90° flue bend
	7 719 003 665	45° flue bend
	7 719 002 433	High level horizontal flue adaptor
	7 716 191 179	Support bracket kit
	7 716 191 090	Flashing – flat roof
	7 716 191 091	Flashing – pitched roof

Note: for every 90° flue bend deduct 2,000mm and 1,000mm for every 45° flue bend.

*For use with high level horizontal flue adaptor.

Wall mounted condensing combi boilers

Greenstar Si Compact series



Clearances

Above flue: 30mm

Left: 5mm

Right: 5mm

Below: 200mm

Front: 20mm*

*20mm from a removable cupboard door, 600mm from a fixed surface for servicing. Same clearances for ventilated and unventilated compartments.

**690mm to top of casing curve.

Max DHW output (kW)	Flow rate (l/m)		CH output (kW)	Part no.
	ΔT 40°C [^]	ΔT 35°C ⁺		
Greenstar 25Si Compact				
25	8.9	10.2	7.03 to 24	NG 7 733 600 050
				LPG 7 733 600 051
Greenstar 30Si Compact				
30	10.7	12.3	7.03 to 24	NG 7 733 600 052
				LPG 7 733 600 053

Control options

Part no.	Description
Controls	
7 716 192 072	Wave – smart heating control
7 716 192 065#	FR10 Intelligent Room Thermostat
7 716 192 066	FR110 Programmable Room Thermostat
7 716 192 067	FW100 Weather Compensation Controller
7 733 600 003	Comfort plug-in twin channel programmer
7 733 600 001	Comfort I RF wireless room thermostat and plug-in twin channel programmer
7 733 600 002	Comfort II RF wireless programmable room thermostat and plug-in RF receiver
7 716 192 036**	MT10 Mechanical Timer
7 716 192 037**	MT10RF Mechanical RF Thermostat
Accessory	
7 716 192 610	Worcester Keyless Filling Link

#For use with MT10 or third party 230V timer only.

**These controls will not provide hot water pre-heat time control.

40°C[^] Designed operational flow rate.

35°C⁺ Values for industry comparisons.



Flue lengths

Maximum flue lengths inc. terminal (mm)		
Diameter	Direction	Si Compact series
100mm	Horizontal	6,000
	Vertical	6,000
125mm	Horizontal	15,000
	Vertical	15,000

Horizontal and vertical fluing options

Components	Part no.	Description
100mm diameter		
	7 716 191 082	Standard telescopic flue & terminal (350 - 570mm)
	7 716 191 171	Long telescopic flue kit (570 - 790mm)
	7 719 002 430	Vertical 1,090mm BF kit (inc. adaptor)
	7 716 191 083	Extension flue kit (960mm)
	7 716 191 172	2m flue extension
	7 716 191 133	Short flue extension (220mm)
	7 716 191 084	90° flue bend
	7 716 191 085	45° flue bend
	7 719 002 432	High level horizontal flue adaptor
	7 733 600 048*	High level horizontal telescopic flue kit
	7 716 191 177	Support bracket kit
	7 716 191 178	Support bracket kit 6 pack
	7 716 191 090	Flashing – flat roof
	7 716 191 091	Flashing – pitched roof
	7 716 191 086	Plume management kit (60mm dia.)
125mm diameter		
	7 719 003 702	Standard telescopic flue & terminal (405 - 600mm)
	7 719 002 431	Vertical 1,365mm BF kit (inc. adaptor)
	7 719 003 666	Extension flue kit (960mm)
	7 719 003 664	90° flue bend
	7 719 003 665	45° flue bend
	7 719 002 433	High level horizontal flue adaptor
	7 716 191 179	Support bracket kit
	7 716 191 090	Flashing – flat roof
	7 716 191 091	Flashing – pitched roof

Note: for every 90° flue bend deduct 2,000mm and 1,000mm for every 45° flue bend.

*For use with high level horizontal flue adaptor.

See page 42 for plume management components & accessories

Wall mounted condensing combi boilers

Greenstar i series



Clearances

Above flue: 30mm

Left: 5mm

Right: 5mm

Below: 200mm

Front: 20mm*

*20mm from a removable cupboard door, 600mm from a fixed surface for servicing. Refer to Tech & Spec for unventilated clearances.

**710mm to top of casing front.

Max DHW output (kW)	Flow rate (l/m)		CH output (kW)	Part no.
	ΔT 40°C [^]	ΔT 35°C [†]		
Greenstar 25i				
25	9	10.2	7.2 to 24 [†]	NG 7 733 600 012
				LPG 7 733 600 031
Greenstar 30i				
30	10.8	12.3	7.2 to 24 [†]	NG 7 733 600 005
				LPG 7 733 600 032

Control options

Part no.	Description
Controls	
7 716 192 072	Wave – smart heating control
7 716 192 065#	FR10 Intelligent Room Thermostat
7 716 192 066	FR110 Programmable Room Thermostat
7 716 192 067	FW100 Weather Compensation Controller
7 733 600 003	Comfort plug-in twin channel programmer
7 733 600 001	Comfort I RF wireless room thermostat and plug-in twin channel programmer
7 733 600 002	Comfort II RF wireless programmable room thermostat and plug-in RF receiver
7 716 192 036**	MT10 Mechanical Timer
7 716 192 037**	MT10RF Mechanical RF Thermostat
Accessory	
7 716 192 610	Worcester Keyless Filling Link

#For use with MT10 only. [†]13kW with low NOx code plug fitted.
^{**}These controls will not provide hot water pre-heat time control.
 40°C[^] Designed operational flow rate.
 35°C[†] Values for industry comparisons.



Flue lengths



Maximum flue lengths inc. terminal (mm)		
Diameter	Direction	Greenstar i series
100mm	Horizontal	4,600
	Vertical	6,400
125mm	Horizontal	13,000
	Vertical	15,000

Horizontal and vertical fluing options

Components	Part no.	Description
100mm diameter		
	7 716 191 082	Standard telescopic flue & terminal (350 - 570mm)
	7 716 191 171	Long telescopic flue kit (570 - 790mm)
	7 719 002 430	Vertical 1,090mm BF kit (inc. adaptor)
	7 716 191 083	Extension flue kit (960mm)
	7 716 191 172	2m flue extension
	7 716 191 133	Short flue extension (220mm)
	7 716 191 084	90° flue bend
	7 716 191 085	45° flue bend
	7 719 002 432	High level horizontal flue adaptor
	7 733 600 048*	High level horizontal telescopic flue kit
	7 716 191 177	Support bracket kit
	7 716 191 178	Support bracket kit (6 pack)
	7 716 191 090	Flashing - flat roof
	7 716 191 091	Flashing - pitched roof
	7 716 191 086	Plume management kit (60mm dia.)

125mm diameter		
	7 719 003 702	Standard telescopic flue & terminal (405 - 600mm)
	7 719 002 431	Vertical 1,365mm BF kit (inc. adaptor)
	7 719 003 666	Extension flue kit (960mm)
	7 719 003 664	90° flue bend
	7 719 003 665	45° flue bend
	7 719 002 433	High level horizontal flue adaptor
	7 716 191 179	Support bracket kit
	7 716 191 090	Flashing - flat roof
	7 716 191 091	Flashing - pitched roof

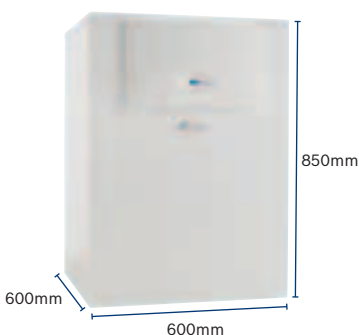
Note: for every 90° flue bend deduct 2,000mm and 1,000mm for every 45° flue bend.

*For use with high level horizontal flue adaptor.

See page 42 for plume management components & accessories

Floor standing condensing combi boilers

Greenstar Highflow CDi series



Clearances

Above:	15mm
Left:	5mm
Right:	5mm
Front:	25mm*

*600mm required for servicing.
Refer to Tech & Spec for unventilated clearances.

Max DHW output (kW)	Flow rate (l/m) ΔT 35°C*	CH output (kW)	Part no.
Greenstar Highflow 440CDi			
29.5	20	7.4 to 29.2	NG 7 738 100 589
			LPG 7 738 100 590
Greenstar Highflow 550CDi			
41.1	25	9.7 to 30.6	NG 7 738 100 591
			LPG 7 738 100 592

Control options

Part no.	Description
Controls	
7 716 192 072	Wave – smart heating control
7 716 192 065#	FR10 Intelligent Room Thermostat
7 716 192 066	FR110 Programmable Room Thermostat
7 716 192 067	FW100 Weather Compensation Controller
7 733 600 003	Comfort plug-in twin channel programmer
7 733 600 001	Comfort I RF wireless room thermostat and plug-in twin channel programmer
7 733 600 002	Comfort II RF wireless programmable room thermostat and plug-in RF receiver
7 716 192 036**	MT10 Mechanical Timer
7 716 192 037**	MT10RF Mechanical RF Thermostat

#For use with MT10 only.

**These controls will not provide hot water pre-heat time control.
35°C* Values for industry comparisons.



Flue lengths



Maximum flue lengths inc. terminal (mm)		
Diameter	Direction	Highflow CDi series
100mm	Horizontal	4,000
	Vertical	6,400
125mm	Horizontal	13,000
	Vertical	15,000

Horizontal and vertical fluing options

Components	Part no.	Description
100mm diameter		
	7 716 191 155	Standard telescopic flue kit (310 - 530mm)
	7 716 191 156	Vertical 1,140mm BF kit (inc. adaptor)
	7 716 191 083	Extension flue kit (960mm)
	7 716 191 172	2m flue extension
	7 716 191 133	Short flue extension (220mm)
	7 716 191 084	90° flue bend
	7 716 191 085	45° flue bend
	7 716 191 164	Vertical flue adaptor
	7 733 600 048*	High level horizontal telescopic flue kit
	7 716 191 177	Support bracket kit
	7 716 191 178	Support bracket kit (6 pack)
	7 716 191 090	Flashing – flat roof
	7 716 191 091	Flashing – pitched roof
	7 716 191 086	Plume management kit (60mm dia.)

Note: 60/100mm - for every 90° flue bend deduct 1,500mm and 750mm for every 45° flue bend.

125mm diameter		
	7 716 191 157	Standard horizontal flue kit (965mm)
	7 716 191 158	Vertical 1,365mm BF kit (inc. adaptor)
	7 719 003 666	Extension flue kit (960mm)
	7 719 003 664	90° flue bend
	7 719 003 665	45° flue bend
	7 716 191 165	Vertical flue adaptor
	7 716 191 179	Support bracket kit
	7 716 191 090	Flashing – flat roof
	7 716 191 091	Flashing – pitched roof

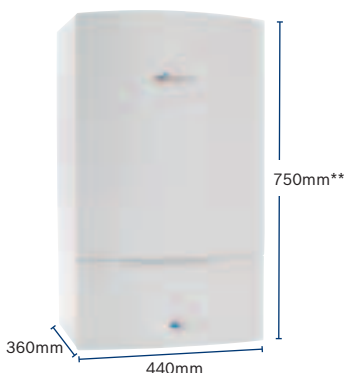
Note: 80/125mm - for every 90° flue bend deduct 2,000mm and 1,000mm for every 45° flue bend.

*For use with high level horizontal flue adaptor and flue adaptor part number 8-716682-324-0.

See page 42 for plume management components & accessories

Wall mounted condensing system boiler

Greenstar CDi Classic System series



Clearances

Above flue: 30mm

Left: 5mm

Right: 5mm

Below: 200mm

Front: 20mm*

**20mm from a removable cupboard door, 600mm from a fixed surface for servicing. Same clearances for ventilated and unventilated compartments.*

***760mm to top of casing front.*

CH output (kW)	Part no.
Greenstar 30CDi Classic System	
7.7 to 30	NG 7 738 100 244
	LPG 7 738 100 233
Greenstar 35CDi Classic System	
7.7 to 34	NG 7 738 100 236
	LPG 7 738 100 237

System boilers using a Worcester control options are compatible with Y or S plan systems provided the optional Diverter Valve Kit is fitted.

Control options

Part no.	Description
Controls	
7 716 192 072	Wave – smart heating control
7 716 192 066	FR110 Programmable Room Thermostat
7 716 192 067	FW100 Weather Compensation Controller
7 716 192 068	ISM1 Intelligent Solar Module
7 719 002 824	Intelligent System Package
7 733 600 003	Comfort plug-in twin channel programmer
7 733 600 001	Comfort I RF wireless room thermostat and plug-in twin channel programmer
7 733 600 002	Comfort II RF wireless programmable room thermostat and plug-in RF receiver
7 719 002 746	Optional Diverter Valve Kit – 30kW
7 738 112 011	Optional Diverter Valve Kit – 35kW



Solar compatible



Compatible with Greenstore unvented & solar compatible unvented cylinders

Flue lengths



Maximum flue lengths inc. terminal (mm)			
Diameter	Direction	30CDi	35CDi
100mm	Horizontal	7,900	7,000
	Vertical	9,400	8,000
125mm	Horizontal	18,500	16,000
	Vertical	18,500	16,000

Horizontal and vertical fluing options

Components	Part no.	Description
100mm diameter		
	7 716 191 082	Standard telescopic flue & terminal (350 - 570mm)
	7 716 191 171	Long telescopic flue kit (570 - 790mm)
	7 719 002 430	Vertical 1,090mm BF kit (inc. adaptor)
	7 716 191 083	Extension flue kit (960mm)
	7 716 191 172	2m flue extension
	7 716 191 133	Short flue extension (220mm)
	7 716 191 084	90° flue bend
	7 716 191 085	45° flue bend
	7 719 002 432	High level horizontal flue adaptor
	7 733 600 048*	High level horizontal telescopic flue kit
	7 716 191 177	Support bracket kit
	7 716 191 178	Support bracket kit (6 pack)
	7 716 191 090	Flashing - flat roof
	7 716 191 091	Flashing - pitched roof
	7 716 191 086	Plume management kit (60mm dia.)

Note: 60/100mm - for every 90° flue bend deduct 1,500mm and 750mm for every 45° flue bend.

125mm diameter		
	7 719 003 702	Standard telescopic flue & terminal (405 - 600mm)
	7 719 002 431	Vertical 1,365mm BF kit (inc. adaptor)
	7 719 003 666	Extension flue kit (960mm)
	7 719 003 664	90° flue bend
	7 719 003 665	45° flue bend
	7 719 002 433	High level horizontal flue adaptor
	7 716 191 179	Support bracket kit
	7 716 191 090	Flashing - flat roof
	7 716 191 091	Flashing - pitched roof

Note: 80/125mm - for every 90° flue bend deduct 2,000mm and 1,000mm for every 45° flue bend.

*For use with high level horizontal flue adaptor.

See page 42 for plume management components & accessories

Wall mounted condensing system boilers

Greenstar 9i System - 24i System series



Clearances

Above flue: 30mm

Left: 5mm

Right: 5mm

Below: 200mm

Front: 20mm*

*20mm from a removable cupboard door, 600mm from a fixed surface for servicing. Refer to Tech & Spec for unventilated clearances.

**710mm to top of casing front.

CH output (kW)	Part no.
Greenstar 9i System	
3.1 to 9.2	NG 7 733 600 011
	LPG 7 733 600 033
Greenstar 12i System	
3.1 to 12.2	NG 7 733 600 010
	LPG 7 733 600 034
Greenstar 15i System	
4.6 to 15.3	NG 7 733 600 009
	LPG 7 733 600 035
Greenstar 18i System	
4.6 to 18.4	NG 7 733 600 008
	LPG 7 733 600 036
Greenstar 21i System	
7.2 to 21.6	NG 7 733 600 007
	LPG 7 733 600 037
Greenstar 24i System	
7.2 to 24.6	NG 7 733 600 006
	LPG 7 733 600 038

System boilers using a Worcester control option are incompatible with Y or S plan systems and must have the optional Diverter Valve Kit fitted.

Control options

Part no.	Description
Controls	
7 716 192 072	Wave – smart heating control
7 716 192 066	FR110 Programmable Room Thermostat
7 716 192 067	FW100 Weather Compensation Controller
7 716 192 068	ISM1 Intelligent Solar Module
7 733 600 003	Comfort plug-in twin channel programmer
7 733 600 001	Comfort I RF wireless room thermostat and plug-in twin channel programmer
7 733 600 002	Comfort II RF wireless programmable room thermostat and plug-in RF receiver
7 733 600 089	Optional Diverter Valve Kit – 9, 12, 15, 18, 21 & 24kW



Solar compatible



Compatible with Greenstore unvented & solar compatible unvented cylinders

Flue lengths



Maximum flue lengths inc. terminal (mm)		
Diameter	Direction	9i System - 24i System series
100mm	Horizontal	4,600
	Vertical	6,400
125mm	Horizontal	13,000
	Vertical	15,000

Horizontal and vertical fluing options

Components	Part no.	Description
100mm diameter		
	7 716 191 082	Standard telescopic flue & terminal (350 - 570mm)
	7 716 191 171	Long telescopic flue kit (570 - 790mm)
	7 719 002 430	Vertical 1,090mm BF kit (inc. adaptor)
	7 716 191 083	Extension flue kit (960mm)
	7 716 191 172	2m flue extension
	7 716 191 133	Short flue extension (220mm)
	7 716 191 084	90° flue bend
	7 716 191 085	45° flue bend
	7 719 002 432	High level horizontal flue adaptor
	7 733 600 048*	High level horizontal telescopic flue kit
	7 716 191 177	Support bracket kit
	7 716 191 178	Support bracket kit (6 pack)
	7 716 191 090	Flashing - flat roof
	7 716 191 091	Flashing - pitched roof
	7 716 191 086	Plume management kit (60mm dia.)
125mm diameter		
	7 719 003 702	Standard telescopic flue & terminal (405 - 600mm)
	7 719 002 431	Vertical 1,365mm BF kit (inc. adaptor)
	7 719 003 666	Extension flue kit (960mm)
	7 719 003 664	90° flue bend
	7 719 003 665	45° flue bend
	7 719 002 433	High level horizontal flue adaptor
	7 716 191 179	Support bracket kit
	7 716 191 090	Flashing - flat roof
	7 716 191 091	Flashing - pitched roof

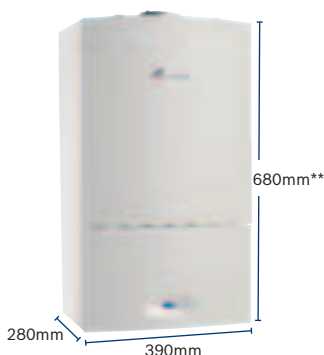
Note: for every 90° flue bend deduct 2,000mm and 1,000mm for every 45° flue bend.

*For use with high level horizontal flue adaptor.

See page 42 for plume management components & accessories

Wall mounted condensing system boilers

Greenstar 27i System - 30i System series



Clearances

Above flue: 30mm

Left: 5mm

Right: 5mm

Below: 200mm

Front: 20mm*

*20mm from a removable cupboard door, 600mm from a fixed surface for servicing. Same clearances for ventilated and unventilated compartments.
**690mm to top of casing curve.

CH output (kW)	Part no.
Greenstar 27i System	
7.03 to 27	NG 7 733 600 060
	LPG 7 733 600 061
Greenstar 30i System	
7.03 to 30	NG 7 733 600 062
	LPG 7 733 600 063

System boilers using a Worcester control option are incompatible with Y or S plan systems and must have the optional Diverter Valve Kit fitted.

Control options

Part no.	Description
Controls	
7 716 192 072	Wave – smart heating control
7 716 192 065#	FR10 Intelligent Room Thermostat
7 716 192 066	FR110 Programmable Room Thermostat
7 716 192 067	FW100 Weather Compensation Controller
7 716 192 068	ISM1 Intelligent Solar Module
7 733 600 003	Comfort plug-in twin channel programmer
7 733 600 001	Comfort I RF wireless room thermostat and plug-in twin channel programmer
7 733 600 002	Comfort II RF wireless programmable room thermostat and plug-in RF receiver
7 733 600 220	Optional Diverter Valve Kit – 27kW
7 733 600 221	Optional Diverter Valve Kit – 30kW

#Must be used with third party 230V timer.



Solar compatible



Compatible with Greenstore unvented & solar compatible unvented cylinders

Flue lengths



Maximum flue lengths inc. terminal (mm)		
Diameter	Direction	27i System & 30i System
100mm	Horizontal	6,000
	Vertical	6,000
125mm	Horizontal	15,000
	Vertical	15,000

Horizontal and vertical fluing options

Components	Part no.	Description
100mm diameter		
	7 716 191 082	Standard telescopic flue & terminal (350 - 570mm)
	7 716 191 171	Long telescopic flue kit (570 - 790mm)
	7 719 002 430	Vertical 1,090mm BF kit (inc. adaptor)
	7 716 191 083	Extension flue kit (960mm)
	7 716 191 172	2m flue extension
	7 716 191 133	Short flue extension (220mm)
	7 716 191 084	90° flue bend
	7 716 191 085	45° flue bend
	7 719 002 432	High level horizontal flue adaptor
	7 733 600 048*	High level horizontal telescopic flue kit
	7 716 191 177	Support bracket kit
	7 716 191 178	Support bracket kit 6 pack
	7 716 191 090	Flashing – flat roof
	7 716 191 091	Flashing – pitched roof
	7 716 191 086	Plume management kit (60mm dia.)

125mm diameter		
	7 719 003 702	Standard telescopic flue & terminal (405 - 600mm)
	7 719 002 431	Vertical 1,365mm BF kit (inc. adaptor)
	7 719 003 666	Extension flue kit (960mm)
	7 719 003 664	90° flue bend
	7 719 003 665	45° flue bend
	7 719 002 433	High level horizontal flue adaptor
	7 716 191 179	Support bracket kit
	7 716 191 090	Flashing – flat roof
	7 716 191 091	Flashing – pitched roof

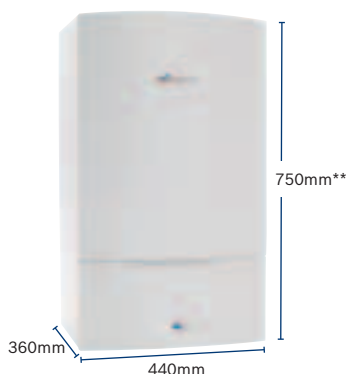
Note: for every 90° flue bend deduct 2,000mm and 1,000mm for every 45° flue bend.

*For use with high level horizontal flue adaptor.

See page 42 for plume management components & accessories

Wall mounted condensing regular boilers

Greenstar CDi Classic Regular series



Clearances

Above flue: 30mm

Left: 5mm

Right: 5mm

Below: 200mm

Front: 20mm*

**20mm from a removable cupboard door, 600mm from a fixed surface for servicing. Same clearances for ventilated and unventilated compartments.*

***760mm to top of casing front.*

CH output (kW)	Part no.
Greenstar 30CDi Classic Regular	
7.7 to 30	NG 7 738 100 245
	LPG 7 738 100 235
Greenstar 40CDi Classic Regular	
9.4 to 40.8	NG 7 738 100 232
	LPG 7 738 100 234

Control options

No Worcester controls are available for these boilers.
External controls must be used.



Solar compatible



Compatible with Greenstore unvented & solar compatible unvented cylinders

Flue lengths



Maximum flue lengths inc. terminal (mm)			
Diameter	Direction	30CDi Classic Regular	40CDi Classic Regular
100mm	Horizontal	7,900	6,000
	Vertical	9,400	7,500
125mm	Horizontal	18,500	12,500
	Vertical	18,500	16,000

Horizontal and vertical fluing options

Components	Part no.	Description
100mm diameter		
	7 716 191 082	Standard telescopic flue & terminal (350 - 570mm)
	7 716 191 171	Long telescopic flue kit (570 - 790mm)
	7 719 002 430	Vertical 1,090mm BF kit (inc. adaptor)
	7 716 191 083	Extension flue kit (960mm)
	7 716 191 172	2m flue extension
	7 716 191 133	Short flue extension (220mm)
	7 716 191 084	90° flue bend
	7 716 191 085	45° flue bend
	7 719 002 432	High level horizontal flue adaptor
	7 733 600 048*	High level horizontal telescopic flue kit
	7 716 191 177	Support bracket kit
	7 716 191 178	Support bracket kit (6 pack)
	7 716 191 090	Flashing - flat roof
	7 716 191 091	Flashing - pitched roof
	7 716 191 086	Plume management kit (60mm dia.)

Note: 60/100mm - for every 90° flue bend deduct 1,500mm and 750mm for every 45° flue bend.

125mm diameter		
	7 719 003 702	Standard telescopic flue & terminal (405 - 600mm)
	7 719 002 431	Vertical 1,365mm BF kit (inc. adaptor)
	7 719 003 666	Extension flue kit (960mm)
	7 719 003 664	90° flue bend
	7 719 003 665	45° flue bend
	7 719 002 433	High level horizontal flue adaptor
	7 716 191 179	Support bracket kit
	7 716 191 090	Flashing - flat roof
	7 716 191 091	Flashing - pitched roof

Note: 80/125mm - for every 90° flue bend deduct 2,000mm and 1,000mm for every 45° flue bend.

*For use with high level horizontal flue adaptor.

See page 42 for plume management components & accessories

Wall mounted condensing regular boilers

Greenstar 12Ri - 24Ri series



Clearances

Above flue: 30mm

Left: 5mm

Right: 5mm

Below: 200mm

Front: 20mm*

**20mm from a removable cupboard door, 600mm from a fixed surface for servicing. Refer to Tech & Spec for unventilated clearances.*

***600mm to top of casing front.*

CH output (kW)	Part no.
Greenstar 12Ri	
4 to 12	NG 7 733 600 074 LPG 7 733 600 075
Greenstar 15Ri	
5 to 15	NG 7 733 600 072 LPG 7 733 600 073
Greenstar 18Ri	
6 to 18	NG 7 733 600 070 LPG 7 733 600 071
Greenstar 24Ri	
8 to 24	NG 7 733 600 068 LPG 7 733 600 069

Control options

No Worcester controls are available for these boilers. External controls must be used.



Solar compatible



Compatible with Greenstore unvented & solar compatible unvented cylinders

Flue lengths



Maximum flue lengths inc. terminal (mm)		
Diameter	Direction	12Ri - 24Ri series
100mm	Horizontal	4,600
	Vertical	6,400
125mm	Horizontal	13,000
	Vertical	15,000

Horizontal and vertical fluing options

Components	Part no.	Description
100mm diameter		
	7 716 191 082	Standard telescopic flue & terminal (350 - 570mm)
	7 716 191 171	Long telescopic flue kit (570 - 790mm)
	7 719 002 430	Vertical 1,090mm BF kit (inc. adaptor)
	7 716 191 083	Extension flue kit (960mm)
	7 716 191 172	2m flue extension
	7 716 191 133	Short flue extension (220mm)
	7 716 191 084	90° flue bend
	7 716 191 085	45° flue bend
	7 719 002 432	High level horizontal flue adaptor
	7 733 600 048*	High level horizontal telescopic flue kit
	7 716 191 177	Support bracket kit
	7 716 191 178	Support bracket kit (6 pack)
	7 716 191 090	Flashing - flat roof
	7 716 191 091	Flashing - pitched roof
	7 716 191 086	Plume management kit (60mm dia.)
125mm diameter		
	7 719 003 702	Standard telescopic flue & terminal (405 - 600mm)
	7 719 002 431	Vertical 1,365mm BF kit (inc. adaptor)
	7 719 003 666	Extension flue kit (960mm)
	7 719 003 664	90° flue bend
	7 719 003 665	45° flue bend
	7 719 002 433	High level horizontal flue adaptor
	7 716 191 179	Support bracket kit
	7 716 191 090	Flashing - flat roof
	7 716 191 091	Flashing - pitched roof

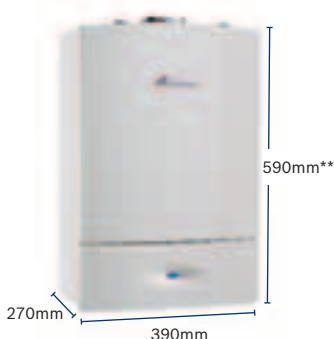
Note: for every 90° flue bend deduct 2,000mm and 1,000mm for every 45° flue bend.

*For use with high level horizontal flue adaptor.

See page 42 for plume management components & accessories

Wall mounted condensing regular boilers

Greenstar 27Ri - 30Ri series



Clearances

Above flue: 30mm

Left: 5mm

Right: 5mm

Below: 200mm

Front: 20mm*

*20mm from a removable cupboard door, 600mm from a fixed surface for servicing. Same clearances for ventilated and unventilated compartments.

**600mm to top of casing front.

CH output (kW)	Part no.
Greenstar 27Ri	
7.03 to 27	NG 7 733 600 064
	LPG 7 733 600 065
Greenstar 30Ri	
7.03 to 30	NG 7 733 600 066
	LPG 7 733 600 067

Accessory

Part no.	Description
7 738 110 116	Greenstar Wiring Centre

Wiring centre enables the Greenstar 27Ri and 30Ri models to be compatible with the Worcester controls listed below. For more information, see pages 50 and 51.

Control options

Part no.	Description
Digital & wireless programmers & room thermostats	
7 733 600 001	Comfort I RF wireless room thermostat and plug-in twin channel programmer
7 733 600 002	Comfort II RF wireless programmable room thermostat and plug-in RF receiver



Solar compatible



Compatible with Greenstore unvented & solar compatible unvented cylinders

Flue lengths



Maximum flue lengths inc. terminal (mm)		
Diameter	Direction	27Ri & 30Ri
100mm	Horizontal	6,000
	Vertical	6,000
125mm	Horizontal	15,000
	Vertical	15,000

Horizontal and vertical fluing options

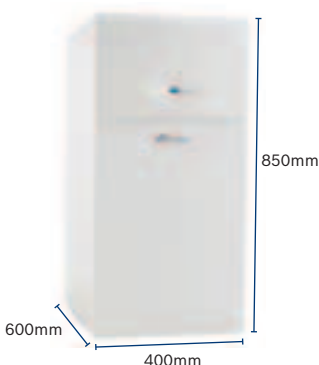
Components	Part no.	Description
100mm diameter		
	7 716 191 082	Standard telescopic flue & terminal (350 - 570mm)
	7 716 191 171	Long telescopic flue kit (570 - 790mm)
	7 719 002 430	Vertical 1,090mm BF kit (inc. adaptor)
	7 716 191 083	Extension flue kit (960mm)
	7 716 191 172	2m flue extension
	7 716 191 133	Short flue extension (220mm)
	7 716 191 084	90° flue bend
	7 716 191 085	45° flue bend
	7 719 002 432	High level horizontal flue adaptor
	7 733 600 048*	High level horizontal telescopic flue kit
	7 716 191 177	Support bracket kit
	7 716 191 178	Support bracket kit 6 pack
	7 716 191 090	Flashing - flat roof
	7 716 191 091	Flashing - pitched roof
	7 716 191 086	Plume management kit (60mm dia.)
125mm diameter		
	7 719 003 702	Standard telescopic flue & terminal (405 - 600mm)
	7 719 002 431	Vertical 1,365mm BF kit (inc. adaptor)
	7 719 003 666	Extension flue kit (960mm)
	7 719 003 664	90° flue bend
	7 719 003 665	45° flue bend
	7 719 002 433	High level horizontal flue adaptor
	7 716 191 179	Support bracket kit
	7 716 191 090	Flashing - flat roof
	7 716 191 091	Flashing - pitched roof

Note: for every 90° flue bend deduct 2,000mm and 1,000mm for every 45° flue bend.

*For use with high level horizontal flue adaptor.

See page 42 for plume management components & accessories

Greenstar FS CDi Regular series



Clearances

Above: 15mm

Left: 5mm

Right: 5mm

Front: 25mm*

*600mm to a removable door for servicing. Refer to Tech & Spec for unventilated clearances.

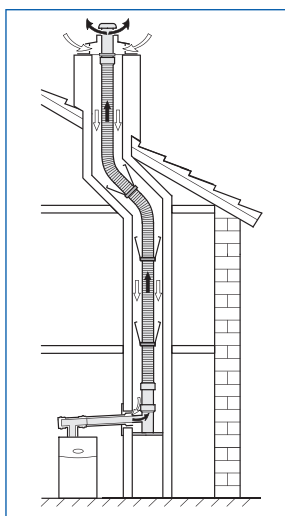
CH output (kW)	Part no.
Greenstar FS 30CDi Regular 7.7 to 30	NG 7 715 430 442
	LPG 7 715 430 450
Greenstar FS 42CDi Regular 9.6 to 40.8	NG 7 715 430 441
	LPG 7 715 430 451

Control options

No Worcester controls are available for these boilers. External controls must be used.

Flexible flue system compatibility

Compatible with 80mm flexible flue system for fluing through an existing brick chimney.





Solar compatible



Compatible with Greenstore unvented & solar compatible unvented cylinders

Flue lengths



Maximum flue lengths inc. terminal (mm)		
Diameter	Direction	FS 30CDi Regular & FS 42CDi Regular
100mm	Horizontal	4,000
	Vertical	6,400
125mm	Horizontal	13,000
	Vertical	15,000

Horizontal and vertical fluing options

Components	Part no.	Description
100mm diameter		
	7 716 191 155	Standard telescopic flue kit (310 - 530mm)
	7 716 191 156	Vertical 1,140mm BF kit (inc. adaptor)
	7 716 191 083	Extension flue kit (960mm)
	7 716 191 172	2m flue extension
	7 716 191 133	Short flue extension (220mm)
	7 716 191 084	90° flue bend
	7 716 191 085	45° flue bend
	7 716 191 164	Vertical flue adaptor
	7 733 600 048*	High level horizontal telescopic flue kit
	7 716 191 177	Support bracket kit
	7 716 191 178	Support bracket kit (6 pack)
	7 716 191 090	Flashing – flat roof
	7 716 191 091	Flashing – pitched roof
	7 716 191 086	Plume management kit (60mm dia.)

Note: 60/100mm - for every 90° flue bend deduct 1,500mm and 750mm for every 45° flue bend.

125mm diameter		
	7 716 191 157	Standard horizontal flue kit (965mm)
	7 716 191 158	Vertical 1,365mm BF kit (inc. adaptor)
	7 719 003 666	Extension flue kit (960mm)
	7 719 003 664	90° flue bend
	7 719 003 665	45° flue bend
	7 716 191 165	Vertical flue adaptor
	7 716 191 179	Support bracket kit
	7 716 191 090	Flashing – flat roof
	7 716 191 091	Flashing – pitched roof
	7 716 191 159	80mm flexible flue system (12m)

Note: 80/125mm - for every 90° flue bend deduct 2,000mm and 1,000mm for every 45° flue bend.

*For use with high level horizontal flue adaptor and flue adaptor part number 8-716682-324-0.

See page 42 for plume management components & accessories

Condensfit II™ plume management system

Part numbers

60mm dia. plume management kit






Comprises:

- 1 x terminal bend
- 1 x extension 500mm
- 1 x outlet assembly
- 1 x clamp pack

7 716 191 086

Accessories



Components	Part no.	Description
60mm diameter		
	7 716 191 086	Plume management kit (60mm dia.)
	7 716 191 087	Extension (1,000mm) kit
	7 716 191 088	90° Bend
	7 716 191 089	45° Bend (pair)
	7 716 191 176	Plume management terminal guard round

For every 90° plume management kit bend deduct 1,500mm and 750mm for every 45° plume management kit bend.

For more information refer to the relevant boiler Tech & Spec

Flexible flue system

Flexible flue system –

for Greenstar FS CDi Regular models only

Part numbers

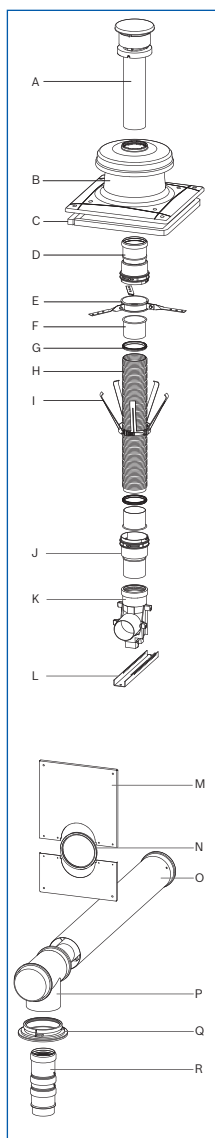
80mm flexible flue system (12m length – can be cut down to suit)

Comprises:

- 1 x flue terminal (A)
- 1 x chimney cowl (B)
- 1 x self-adhesive weather seal (C)
- 1 x terminal adaptor (D)
- 1 x support bracket assembly (E)
- 2 x liner (F)
- 2 x seal (G)
- 1 x flexible liner (H)
- 4 x centralising spacers (I)
- 1 x support bend adaptor (J)
- 1 x support bend (K)
- 1 x bend support (L)
- 2 x flue inspection plates (M)
- 1 x seal for flue inspection plates (N)
- 1 x 125mm flue extension (O)
- 1 x tee piece (P)
- 1 x 125mm flue connector (Q)
- 1 x 80/80mm flue adaptor (R)

7 716 191 159

For more information refer to
Greenstar FS CDi Regular
Tech & Spec
Part number: 8 716 115 422



Wave – smart heating and hot water control

The Wave is the first of a new generation of Worcester controls.

The Wave is a smart, internet-connected programmable control for central heating and hot water which can be operated using a smart device.

The Wave's innovative programming enables it to have an 'intelligent conversation' with the boiler and take advantage of advanced control features such as weather and load compensation.

Enhanced energy efficiency

In the ErP Directive, smart controls like the Wave is a Class VI control, adding 4%** to the overall system efficiency, resulting in lower fuel bills.

The Wave's energy efficiency features include:

- Charts of heating and hot water usage so the homeowner can easily identify where potential savings could be made.
- When the room temperature is turned down a leaf symbol will appear to indicate additional savings are being made.

Features	Benefits
Only a low voltage 2-core wire connection between the controller and the boiler	Easy to install, all other connections are via the Wi-Fi network
Remote control of heating AND hot water via app	Programme the heating system from outside the home
Load and weather compensation via the internet (no outdoor sensor required)	Allows the boiler to modulate its performance to meet the needs of each household
Intuitive and modern design	Ensures easy programming and control of the boiler, resulting in a simple hand over with the end-user
Energy graphs, home presence detection and many more features come as standard	Ensures increased comfort and energy savings
No subscription fees or chargeable app add-ons	One-off cost

***When installed with a gas-fired boiler the Wave is a Class V control giving a 3% system efficiency benefit. When the weather compensation feature is enabled it increases to 4% and becomes a Class VI control.*



Quick to install

The Wave is quick and easy to install:

- Only requires a 2-core wire connection between the control and the boiler. All other connections are via the Wi-Fi network.
- The Wave does not need an external wired sensor unlike standard weather compensation controls. Instead it uses online data which significantly reduces installation time and cost to the end user.

Simple to use, providing an easy handover

The Worcester Wave's intuitive and modern design ensures it is very simple to operate using either its in-built touchscreen or via the app on a compatible[†] device.

An installation and operating manual is provided with each control and there are a number of helpful videos to provide further detail on specific functions.

Compatibility with Worcester Greenstar boilers

Compatible with all current Worcester Greenstar gas-fired combination and system* boilers (see pages 52 and 53 for details). It can also be retrofitted for use with previous Worcester EMS-Bus appliances. See website for full details.

Part no.	Description
7 716 192 072	Wave

[†]For full details of compatible Apple iOS or Android devices see the Worcester website.

*When installed with an optional Worcester Diverter Valve.

Controls

NEW



There are a number of comprehensive, easy-to-use controls for Greenstar gas-fired boilers. All fascia-mounted controls have a simple plug-in connection to the boiler circuit board. To find out which Greenstar boilers are compatible with our range of optional plug-in controls, see pages 52 and 53.

Mechanical timers



MT10 mechanical timer

- The simplest Worcester device
- Analogue clock for setting on and off times for heating.



MT10RF mechanical RF thermostat

- Simple installation
- Analogue display has comfort and economy time and temperature periods
- No need for separate room thermostat
- No wiring.

NEW Greenstar Comfort controls



Greenstar Comfort plug-in twin channel programmer

Easy to use

- Simple menu navigation
- Heating programme visualisation bar
- 7-day time control for heating and hot water.



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

All the features of **Comfort PLUS...**

Energy saving

- Enhanced load compensation for increased efficiency.

Quick installation

- No wiring required
- Extremely reliable RF signal.



Greenstar Comfort II RF wireless programmable room thermostat and plug-in RF receiver

All the features of **Comfort & Comfort I PLUS...**

Ultimate flexibility

- 6 adjustable heating temperatures per day
- Set programme at the room thermostat
- Remote access to boiler diagnostic codes.

Intelligent wired controls



FR10 intelligent room thermostat

- Load compensation
- Boiler output automatically adjusted to precisely meet the heat demand of the property at maximum efficiency
- Maximises the condensing boiler's operation
- Compatible with Worcester time controls.



FR110 programmable room thermostat

- Intelligent programmable room thermostat
- Load compensation
- Choice of six selectable weekly programmes
- Six switching points a day for control of both CH and HW
- Boiler output automatically adjusted to precisely meet the heat demand of the property at maximum efficiency
- Maximises the condensing boiler's operation.



FW100 weather compensation controller

- Boiler output automatically adjusts to precisely meet the heat demands of the property according to outside temperature conditions at maximum efficiency
- Programmable unit with six switching points a day for control of both CH and HW
- Choice of six selectable weekly programmes
- Can be integral to the boiler or wall mounted
- Has factory set heatcurves for various different heating systems (radiators, underfloor etc.)
- Manual override that can boost or reduce heating if required.



ISM1 intelligent solar module

- Specially designed interface that integrates a solar heating system with a gas-fired system boiler
- Works in conjunction with a solar-compatible weather or load compensation unit such as the FW100 or FR110
- Ensures priority is given to satisfying hot water demand from solar input
- Manages heat from the gas-fired boiler to the absolute minimum whilst ensuring hot water comfort.



Greenstar Wiring Centre

Enabling digital timers and programmers for Greenstar 27Ri and 30Ri regular boilers

The Greenstar Wiring Centre is a major benefit for installers and end users, allowing the use of Worcester's plug-in and wireless controls. This enables digital timers and programmers to control the heating and hot water for regular boilers systems. The wiring centre clearly distinguishes whether the cylinder needs hot water or if the home needs heating and, to maximise comfort and efficiency, responds by operating the boiler at different temperatures for each.

Simple, time-saving installation

An innovative feature of the Greenstar Wiring Centre is that it allows the pump to be wired into the wiring centre, rather than going through the household between the airing cupboard and the boiler. In replacement installations, this means any existing 3-core cable between the boiler and pump can be utilised to carry communication signals (EMS-BUS) from the wiring centre to the boiler. Experience shows this can save as much as half a day of installation time.

The Greenstar Wiring Centre uses simple, clear, colour-coded connections and is supplied with a cylinder sensor and unique retaining device as standard. It also provides a selection of S plan or Y plan systems.

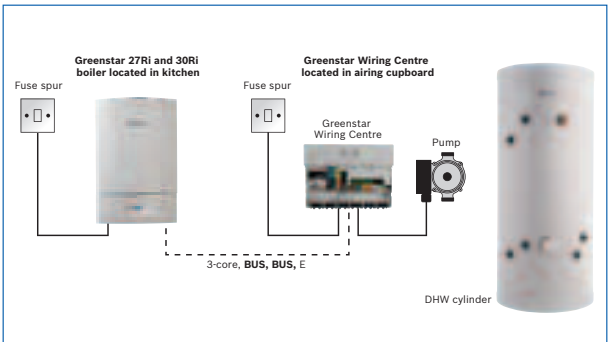
Control options

The Greenstar Wiring Centre allows the Greenstar 27Ri and 30Ri regular boilers to be compatible with the following Worcester plug-in controls:

- Comfort I RF
- Comfort II RF.

Features and benefits

- Allows digital timers and programmers to be used with a regular boiler
- Enables properties to use a wireless room thermostat
- Pump is wired directly into the Wiring Centre and not to the boiler
- Simple system-type selector (S or Y plan) – simple, clear wiring connections
- Up to three Greenstar Wiring Centres can be linked together to control up to eight zones
- Supplied complete with cylinder sensor and unique retaining device
- Compatible with Worcester Greenstore cylinders and third party unvented cylinders, please check with the manufacturer
- IP44 safety rating.



System layout with a Greenstar Wiring Centre

Part no.	Description
7 738 110 116	Greenstar Wiring Centre

Greenstar controls matrix

Control

	Part no.	ErP class	% system efficiency gain	
Mechanical timers				
MT10 mechanical timer	7 716 192 036	–	–	
MT10RF mechanical thermostat	7 716 192 037	I	1	
Digital and wireless programmers and room thermostats				
Comfort plug-in twin channel programmer	7 733 600 003	–	–	
Comfort I RF wireless room thermostat and plug-in twin channel programmer	7 733 600 001	V	3	
Comfort II RF wireless programmable room thermostat and plug-in RF receiver	7 733 600 002	V	3	
Advanced intelligent controls				
FR10 intelligent room thermostat	7 716 192 065	V	3	
FR110 programmable room thermostat	7 716 192 066	V	3	
FW100 weather compensation controller	7 716 192 067	VI	4	
ISM1 intelligent solar module	7 716 192 068	–	–	
Smart controls				
Wave	7 716 192 072	VI	4#	

Gas-fired boilers

	COMBI					SYSTEM [^]			REGULAR [*]
	CDi Classic ²	CDi Compact	Si Compact	Greenstar i	Highflow CDi	CDi Classic System	27i System and 30i System	12i System and 24i System	27Ri and 30Ri
	✓	✓	✓	✓	✓				
	✓	✓	✓	✓	✓				
	✓	✓	✓	✓	✓	✓ ¹	✓	✓ ²	
	✓	✓	✓	✓	✓	✓ ¹	✓	✓ ²	✓
	✓	✓	✓	✓	✓	✓ ¹	✓	✓ ²	✓
	✓	✓	✓	✓	✓		✓		
	✓	✓	✓	✓	✓	✓ ¹	✓	✓ ²	
	✓	✓	✓	✓	✓	✓ ¹	✓	✓ ²	
						✓ ¹	✓	✓ ²	
	✓	✓	✓	✓	✓	✓ ¹	✓	✓ ²	

^{*}With optional wiring centre (see pages 38 and 50/51).

[^]With optional integral diverter valve.

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

² Manufactured after February 2011.

[#]4% savings are achieved when weather compensation mode is enabled.

Worcester CondenseSure prevents condensate freezing

With climate change and extreme weather variations becoming increasingly common, and very cold winters with temperatures as low as -20°C being experienced, practices such as externally-run condensate discharge pipework are now being questioned.

A universal fitting for new and existing installations

The Worcester CondenseSure siphon has been designed to allow a more flexible approach to boiler siting. Although developed specifically for Worcester Greenstar gas- and oil-fired boilers, the Worcester CondenseSure can also be fitted to any make of condensing boiler for both new and retrofit installations.

Ease of installation

For maximum effectiveness, the CondenseSure should be installed immediately beneath the boiler where it is clipped on to the boiler's heating flow pipe and connected to its siphonic trap. If this is not practical, the CondenseSure can be wall-mounted away from the boiler and connected to the condensate discharge pipe. However, this will sacrifice the benefit of warming the condensate prior to discharge and therefore slightly reduce its performance.

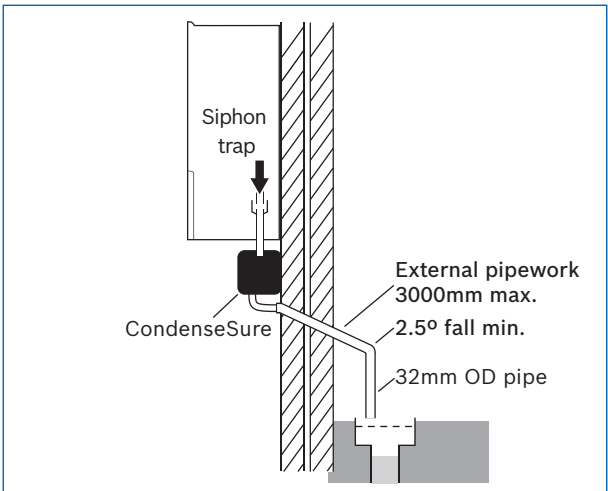
Features	Benefits
No power consumption	No electrical wiring connection or supply needed, meaning zero running costs
No moving parts	No failure of components
Can be installed on new or existing installations	Suitable for any gas- or oil-fired condensing boilers
Can be attached to 22mm heating flow pipework	Uses 'free' energy from the pipe to heat the condensate
Under boiler or remote installation	Flexibility
No electrical connections	No electrician needed
No pipe insulation needed	Cost saving and aesthetically pleasing



The CondenseSure installation parameters

The CondenseSure will protect an externally-run condensate discharge pipe from freezing for 48 hours at -15°C providing the following installation parameters are met:

- The externally-run pipe length does not exceed 3 metres
- There is a fall on the discharge pipe of at least 2.5 degrees
- The discharge pipe diameter is not less than 32mm in diameter.



A typical installation using the CondenseSure

Part no.	Description
7 716 192 746	Worcester CondenseSure

The Worcester Greenstar System Filter

Modern condensing boilers are precision-engineered and designed to run with a clean water heating system. Over time, dirty system water will damage a boiler and its components, causing failures, as well as potentially shortening the life of the system.

Damaged boiler and system components

- Blockages in primary heat exchanger
- Increased wear on pumps
- Blocked valves.

Reduced efficiency

- Energy efficiency loss equivalent to a boiler being reduced from A rated efficiency to D rated*, resulting in fuel wastage
- Blocked radiators can reduce efficiency and heating comfort.

A highly effective solution from the brand you can trust

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. The filter is suitable for any 22mm piped heating systems.

At the centre of this innovative design is a highly powerful magnet that removes the magnetic debris (magnetite) that is present in the heating system water. The central location of the magnet ensures that magnetite is collected quickly and retained, maximising the overall protection. Any non-magnetic debris is caught by the cyclonic trap, a proven technology that offers a capacity to collect up to 200g of contaminants a year.

The Greenstar System Filter has been extensively tested in simulated systems, proving its effectiveness in removing iron oxide, magnetite, limescale particles, casting sand, welding debris, non-magnetic metal flakes, paint particles and other system pollutants.



Features	Benefits
Highly effective filter	Safeguards the boiler against damage and protects the efficiency of the system. Saves up to 6% a year on energy bills*
Prevent blockages in radiators	A warmer home and quieter system
Powerful internal magnet	Proven technology that can capture up to 200g of magnetite
Twin-action – magnetic and non-magnetic filtration	Instantly effective against a wide range of system debris
No power consumption or moving parts	No electrical wiring connection needed. Zero running costs and no failure of components
Can be installed under the boiler or away from the appliance	Flexibility
One-way valve for adding system chemicals	Removes the need to isolate a section of the system when carrying out servicing and maintenance

Installation

The filter can be installed almost anywhere in a heating system, however to maximise the effectiveness, it should be placed before the boiler and after the last radiator.

Part no.	Description
7 716 192 609	Greenstar System Filter

*Independent research carried out by GASTEC at CRE



The Worcester Keyless Filling Link System filling made easy

Worcester Greenstar gas-fired combi boilers are designed to deliver maximum efficiency and performance, however the heating system will occasionally need to be re-pressurised for optimum performance.

Traditional methods involve using a built-in key or connecting an external filling loop, an operation which can be confusing for the end user.

The new Worcester Keyless Filling Link has been developed to make system filling quick and easy for both the installer and the end user. **The new Greenstar CDi Classic combi boilers have a built-in Worcester Keyless Filling Link.**



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



Fewer call-outs

Some end users find conventional filling loops and separate filling links difficult to attach and use. There is also the possibility that a separate link can be lost or mislaid, often leading to the installer being called out simply to top up the system. The innovative Keyless Filling Link relieves the end user of these problems, leading to reduced call outs.

Quick to install, easy to use

The Worcester Keyless Filling Link connects directly to the Worcester Greenstar gas-fired combi boiler wall mounting frame with no hose or key to connect, making installations quick and simple. As the Filling Link is always connected to the appliance, the end user will never need to find a key or connect a separate loop to the system.

The Worcester Keyless Filling Link has a host of benefits

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

Part no.	Description
7 716 192 610	Worcester Keyless Filling Link

Flue Gas Heat Recovery Unit

NEW

The new EcoFlo FGHR accessory unit utilises a combi boiler's hot flue gases to preheat the water coming into the boiler, reducing the energy needed to reach the required flow temperature.

- Designed for use with Greenstar Si and CDi Compact combi natural gas-fired boilers
- Recognised under SAP and Green Deal as an energy saving technology.



Part no.	Description
7 733 600 047	Flue Gas Heat Recovery Unit

Greenstar Low Loss Header

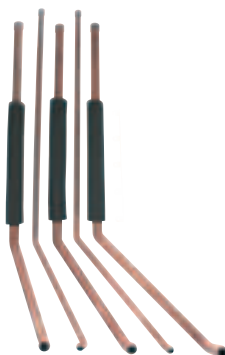
The Greenstar Low Loss Header is a ready-made solution for the connection of two Greenstar system or regular boilers on a sealed heating system with a combined output of up to 70kW.



Part no.	Description
7 716 192 614	Greenstar Low Loss Header

Vertical Pre-piping Assembly Kits and Earth Bonding strip

Our Pre-piping Assembly Kits come pre-bent and pipes have swaged-ends for easy soldering. This will save you approximately 30 minutes on installation time. Pre-piping Assembly Kits are designed for Greenstar CDi Classic, CDi Compact, Si Compact and Greenstar i boilers.



Earth Bonding Strip**

The Earth Bonding Strip not only looks neater but saves up to 20 minutes on installation compared with fitting separate earth bonding tags to each pipe.

Kit item	CDi Classic	CDi Compact, Si Compact & Greenstar i
22mm CH flow pipe	✓	✓
22mm CH return pipe	✓	✓
15mm mains water inlet pipe	✓	✓
15mm DHW outlet pipe	✓	✓
22mm gas pipe	✓	-

Part no.	Boilers	Description
7 716 192 607	CDi Classic	Vertical pre-piping assembly kit
7 716 192 651	CDi Classic System	Vertical pre-piping assembly kit
7 716 192 713	CDi Compact, Si Compact, Greenstar i, 27i System & 30i System	Vertical pre-piping assembly kit*

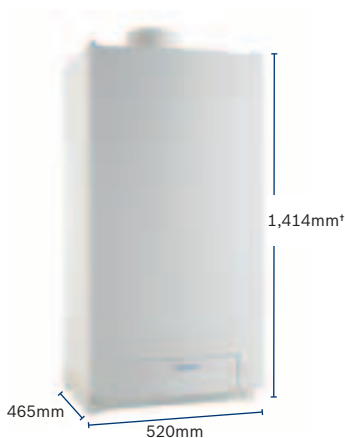
Part no.	Description
7 716 192 686	Earth bonding strip

Part no.	Description
7 716 161 071	CDi Classic, CDi Classic System, Greenstar i, Greenstar i System Remote PRV kit

*27i System and 30i System includes two 15mm copper pipes for use with an optional diverter valve. **Comes as standard with CDi Classic.

Wall mounted condensing heat only boilers

GB162 Commercial boiler series



Clearances

Above flue: 40mm

Left: 0mm

Right: 0mm

Below: 350mm

Front: 50mm*

*50mm from a removable cupboard door, 550mm from a fixed surface for servicing. Same clearances for ventilated and unventilated compartments.
*Height with pump group

Cascade options are available up to 800kW. For further information contact our sales team.

Boiler	CH output (kW)	Part no.	LPG conversion kits
GB162 50kW	15.6 to 49.9	7 736 700 642	7 746 901 190
GB162 65kW	15.6 to 65.0	7 746 900 822	7 746 901 190
GB162 80kW	20.8 to 84.5	8 747 024 8	8 718 601 980
GB162 100kW	20.5 to 99.5	8 747 025 0	8 718 601 980

Control options

Part no.	Description
7 747 312 318	RC35 digital boiler control
7 747 312 367	RC25 room thermostat

A full and comprehensive range of cascade controls and sequencers are available when cascading multiple boilers. For more information please contact our sales team.

Required installation accessories – single boiler installation

Part no.	Description	Boiler			
		50kW	65kW	80kW	100kW
7 746 901 863	Modulating pump group	✓	✓	✓	✓
7 746 901 876	Modulating pump group – low energy [^]	✓	✓	✓	✓
5 584 552	Connection set ^{^^}	✓	✓	✓	✓
89 200 972	Low loss header c/w insulation	•	•	✓	✓
3 000 845 8	WM10 Low Loss Header Module*	•	•	✓	✓

✓ Required • Optional

GB162 boilers may be installed on open vented systems, however, a plate heat exchanger **MUST** be installed to hydraulically separate the primary and secondary sides of the system. *For use with the RC35 digital boiler control.
[^]Available from July 2015. ^{^^}Required when boiler is wall hung.

Flue lengths

Maximum flue lengths inc. terminal (mm)					
Diameter	Direction	50kW	65kW	80kW	100kW
125mm	Horizontal	7,700	7,700	N/A	N/A
	Vertical	7,700	7,700	N/A	N/A
150mm	Horizontal	20,000	20,000	18,000	18,000
	Vertical	20,000	20,000	18,000	18,000

Horizontal and vertical fluing options

Components	Part no.	Description
125mm diameter		
	7 716 191 116	Horizontal flue kit
	7 716 191 115	Vertical flue kit
	7 716 191 118	1m flue extension (cutable)
	7 716 191 117	0.5m flue extension (cutable)
	7 716 191 119	90° bend
	7 716 191 120	45° bends (pair)
	T 000 082 131	Flue support bracket (3 pack)
	7 716 191 090	Flat roof flashing
	7 716 191 091	Pitched roof flashing

Note: 80/125mm: 50kW and 65kW – for every 90° flue bend deduct 1,900mm, for every 45° flue bend deduct 900mm.

150mm diameter		
	7 716 191 094	Horizontal flue kit
	7 716 191 093	Vertical flue kit
	7 716 191 096	1m flue extension (cutable)
	7 716 191 097	1m flue extension (non-cutable)
	7 716 191 095	0.5m flue extension (cutable)
	7 716 191 098	90° bend
	7 716 191 099	45° bends (pair)
	7 746 901 750	Adaptor (GB162 50kW & 65kW only)
	7 716 191 102	Flue support bracket (3 pack)
	7 716 191 103	Clamp with EPDM seal
	7 716 191 101	Flat roof flashing
	7 716 191 100	Pitched roof flashing

Note: 100/150mm: 50, 65, 80 and 100kW – for every 90° flue bend deduct 2,100mm, for every 45° flue bend deduct 1,200mm.

Wall mounted condensing heat only boilers

GB commercial plate heat exchangers

The GB commercial plate heat exchangers allow GB162 boilers to be fitted on an open-vented system.

The plate heat exchanger separates the primary (boiler) and secondary (heating system), therefore protecting the boiler's heat exchanger from system water by effectively creating its own sealed system. The plate heat exchanger can also be used to provide boiler protection when installing within an old, sealed secondary system. System cleansing is still recommended.



The plate heat exchanger is sized on the basis of a boiler ΔT of 20°C and a system ΔT of 11°C.

Sized to match all boiler outputs

Each GB plate heat exchanger has been sized to match all possible combinations of GB162 boiler single and cascade installations. This means that the pump flow rates are suitable and allow heat to efficiently transfer in the plate heat exchanger, while also ensuring that existing pumps can be used in cases of retrofit.

Features and benefits:

- Enhanced reliability and efficiency
- Maximises running hours, overall efficiency and availability of heating and hot water
- Improved installation flexibility
- Sized and matched for all boiler outputs
- Time saving when designing the heating system and easy to specify and order
- Precise energy management.

GB162	Part no.	GB162	Part no.
50kW	7 733 600 013	231-280kW	7 733 600 021
65kW	7 733 600 014	281-400kW	7 733 600 023
80-100kW	7 733 600 016	401-520kW	7 733 600 024
101-140kW	7 733 600 017	521-640kW	7 733 600 026
141-180kW	7 733 600 018	641-800kW	7 733 600 027
181-230kW	7 733 600 020		



Wall mounted condensing continuous flow water heater

Greenspring CWi47 water heater



Clearances

Left: 10mm

Right: 10mm

Front: 20mm*

*20mm from a removable cupboard door, 600mm from a fixed surface for servicing. Same clearances for ventilated & unventilated compartments.

Cascade options are available for up to 12 water heaters. For further information contact our commercial technical helpline on 0330 123 3004.

Flow rate (l/m)		Output (kW)	Part no.
ΔT 35°C	ΔT 25°C		
Greenspring CWi47 water heater			
20.6	28.8	6 to 50.3	NG 7 703 311 082
			LPG 7 703 411 078

Accessories

Part no.	Description
7 736 500 569	Wireless Remote Control Unit (master)
7 736 500 699	Wireless Remote Control Unit (additional)
7 736 500 605	Higher Temperature Set Point Kit

Flue lengths



Maximum flue lengths inc. terminal (mm)		
Diameter	Direction	CWi47
125mm	Horizontal	8,000
	Vertical	8,000

Horizontal and vertical fluing options

125mm diameter		
	7 719 003 702	Standard telescopic flue & terminal (405 - 600mm)
	7 719 002 431	Vertical 1,365mm BF kit (inc. adaptor)
	7 719 003 666	Extension flue kit (960mm)
	7 719 003 664	90° flue bend
	7 719 003 665	45° flue bend
	7 719 002 433	High level horizontal flue adaptor
	7 716 191 179	Support bracket kit
	7 716 191 090	Flashing – flat roof
	7 716 191 091	Flashing – pitched roof

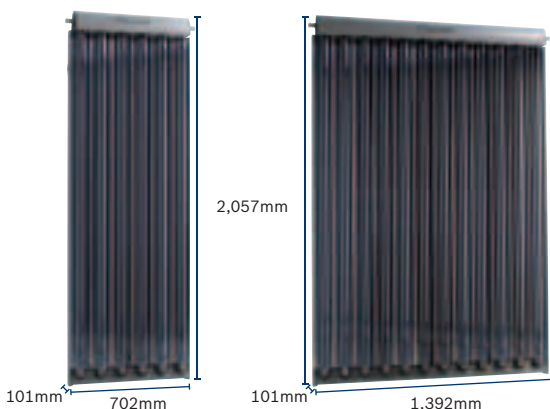
Note: For every 90° flue bend deduct 2,000mm and 1,500mm for every 45° flue bend.

Solar thermal panels

Greenskies Solar-Lux

Greenskies Solar-Lux 6

Greenskies Solar-Lux 12
















Gross area (m ²)	Aperture area (m ²)	η_0 (%)	a1 (W/m ² k)	a2 (W/m ² k ²)	Part no.
Greenskies Solar-Lux 6					
1.44	1.26	64.4	0.749	0.005	8 718 530 558
Greenskies Solar-Lux 12					
2.86	2.57	64.4	0.749	0.005	8 718 530 559

Control options

Part no.	Description
7 747 004 420	TDS100 standard controller
7 747 004 427	TDS300 advanced controller
Intelligent controls	
7 716 192 068*	ISM1 intelligent solar module


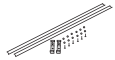
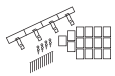




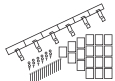




*Greenstar gas-fired system boilers must be fitted with optional diverter valve only and FR110 or FW100.

Main plumb kit accessories – Solar-Lux

Components	Part no.	Description
	7 747 009 456	AGS5e single line pump station
	7 747 009 442	AGS5 twin line pump station
	7 747 009 427	AGS10e single line pump station
	7 747 009 420	AGS10 twin line pump station
	7 747 008 776	AGS5 twin line pump station/ TDS100 controller integrated
	7 739 300 100	18L expansion vessel
	7 739 300 119	25L expansion vessel
	7 739 300 120	35L expansion vessel
	7 739 300 331	Expansion vessel connection
	7 747 010 472	5L pre-cooling vessel
	7 747 010 473	12L pre-cooling vessel
	8 718 660 946	Solar fluid glycol 'LS' 10L
	8 718 660 947	Solar fluid glycol 'LS' 20L

Solar thermal panels




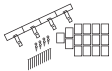

Main roof kit accessories – Solar-Lux

Components	Part no.	Description
	8 718 530 584	Connection set on-roof Solar-Lux 6/12
	8 718 530 851	On-roof set VT6/12
	8 718 530 856	Roof connection tile, 4 pcs VT
	8 718 530 857	Roof connection corrugated roof, 4 pcs VT
	8 718 530 858	Roof connection shingles, 4 pcs VT
	8 718 530 848	On-roof set 2 VT6
	8 718 530 850	On-roof set 3 VT6
	8 718 530 907	Roof connection tile, 6 pcs VT
	8 718 530 908	Roof connection corrugated roof, 6 pcs VT
	8 718 530 909	Roof connection shingles, 6 pcs VT
	8 718 530 872	Connection cover Solar-Lux
	7 747 009 880	Additional collector sensor

Greenskies solar thermal panel kits



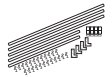
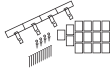


Solar-Lux kit 150: 1 x SL6 roof kit

Part number: 7 716 150 162

Components	Part no.	Quantity	Description
	8 718 530 558	1	Collector Solar-Lux 6
	8 718 530 584	1	Connection set on-roof Solar-Lux 6/12
	8 718 530 851	1	On-roof set VT6/12
	8 718 530 856	1	Roof connection tile, 4 pcs VT
	7 747 009 880	1	Collector sensor

Solar-Lux kit 200 easy lift: 2 x SL6 roof kit



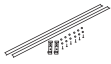
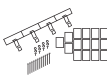

Part number: 7 716 150 161

Components	Part no.	Quantity	Description
	8 718 530 558	2	Collector Solar-Lux 6
	8 718 530 584	1	Connection set on-roof Solar-Lux 6/12
	8 718 530 848	1	On-roof set 2 VT6
	8 718 530 856	1	Roof connection tile, 4 pcs VT
	8 718 530 872	1	Connection cover Solar-Lux
	7 747 009 880	1	Collector sensor

Solar thermal panels



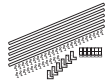
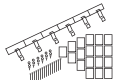


Solar-Lux kit 200: 1 x SL12 roof kit

Part number: 7 716 150 160

Components	Part no.	Quantity	Description
	8 718 530 559	1	Collector Solar-Lux 12
	8 718 530 584	1	Connection set on-roof Solar-Lux 6/12
	8 718 530 851	1	On-roof set VT6/12
	8 718 530 856	1	Roof connection tile, 4 pcs VT
	7 747 009 880	1	Collector sensor





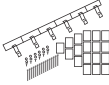


Solar-Lux kit 300 easy lift: 3 x SL6 roof kit

Part number: 7 716 150 159

Components	Part no.	Quantity	Description
	8 718 530 558	3	Collector Solar-Lux 6
	8 718 530 584	1	Connection set on-roof Solar-Lux 6/12
	8 718 530 850	1	On-roof set 3 VT6
	8 718 530 907	1	Roof connection tile, 6 pcs VT
	8 718 530 872	1	Connection cover Solar-Lux
	7 747 009 880	1	Collector sensor

Solar-Lux kit 300 Combo: SL6 & SL12 roof kit







Part number: 7 716 150 158

Components	Part no.	Quantity	Description
	8 718 530 558	1	Collector Solar-Lux 6
	8 718 530 559	1	Collector Solar-Lux 12
	8 718 530 584	1	Connection set on-roof Solar-Lux 6/12
	8 718 530 850	1	On-roof set 3 VT6
	8 718 530 907	1	Roof connection tile, 6 pcs VT
	8 718 530 872	1	Connection cover Solar-Lux
	7 747 009 880	1	Collector sensor

Greenskies solar thermal plumb kits

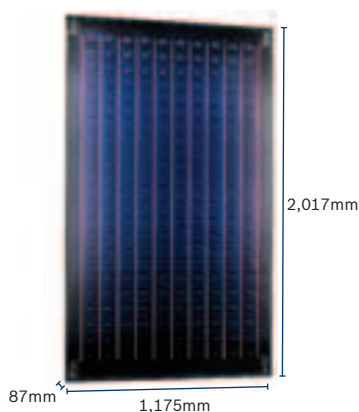
Solar-Lux plumb kit

Part number: 7 716 150 163

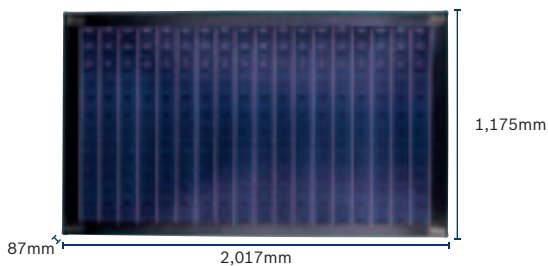
Components	Part no.	Description
	8 718 660 947	Solar fluid LS 20
	7 747 009 442	AGS5 pump station
	7 747 004 420	TDS100 controller
	7 739 300 119	25L expansion vessel
	7 739 300 331	Expansion vessel connection
	7 747 010 472	5L pre-cooling vessel

Greenskies Solar-Lifestyle

Greenskies Solar-Lifestyle Portrait



Greenskies Solar-Lifestyle Landscape
















Gross area (m ²)	Aperture area (m ²)	η_0 (%)	a1 (W/m ² k)	a2 (W/m ² k ²)	Part no.
Greenskies Solar-Lifestyle Portrait					
2.37	2.25	76.6	3.216	0.015	8 718 530 950
Greenskies Solar-Lifestyle Landscape					
2.37	2.25	76.6	3.871	0.012	8 718 530 951

Control options

Part no.	Description
7 747 004 420	TDS100 standard controller
7 747 004 427	TDS300 advanced controller
Intelligent controls	
7 716 192 068*	ISM1 intelligent solar module




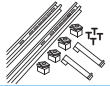



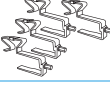


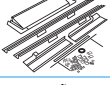
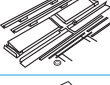

*Greenstar gas-fired system boilers must be fitted with optional diverter valve only and FR110 or FW100.

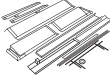
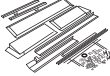
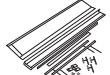


Main plumb kit accessories – Solar-Lifestyle

Components	Part no.	Description
	7 747 009 456	AGS5e single line pump station
	7 747 009 442	AGS5 twin line pump station
	7 747 009 427	AGS10e single line pump station
	7 747 009 420	AGS10 twin line pump station
	7 747 008 776	AGS5 twin line pump station/ TDS100 controller integrated
	7 739 300 100	18L expansion vessel
	7 739 300 119	25L expansion vessel
	7 739 300 120	35L expansion vessel
	7 739 300 331	Expansion vessel connection
	7 747 010 472	5L pre-cooling vessel
	7 747 010 473	12L pre-cooling vessel
	8 718 660 880	Solar fluid glycol 'L' 10L
	8 718 660 881	Solar fluid glycol 'L' 20L

Solar thermal panels

Main roof kit accessories – Solar-Lifestyle

Components	Part no.	Description
	8 718 531 445	Connection set on-roof Solar-Lifestyle
	8 718 531 447	Connection set flat roof Solar-Lifestyle
	8 718 531 446	Connection set in-roof Solar-Lifestyle
	8 718 531 017	ICD on-roof portrait rail 1st panel
	8 718 531 018	ICD on-roof portrait rail additional panel
	8 718 531 019	ICD on-roof landscape rail 1st panel
	8 718 531 022	ICD on-roof portrait rail additional panel
	8 718 531 023	ICD plain tile roof hook set
	8 718 531 024	ICD slate/crown tile roof hook set
	8 718 531 025	ICD roof mount for corrugated/tin roof set
	8 718 530 980	ICD portrait 1 panel in-roof flashing std tile
	8 718 532 910	ICD portrait 2 panel in-roof flashing std tile
	8 718 530 982	ICD portrait 1 panel extension in-roof flashing std tile


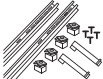
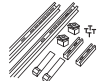
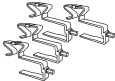


Components	Part no.	Description
	8 718 530 986	ICD landscape 1 panel in-roof flashing std tile
	8 718 530 987	ICD landscape 2 panel in-roof flashing std tile
	8 718 530 988	ICD landscape 1 panel extension in-roof flashing std tile
	7 747 009 880	Additional collector sensor
	7 739 300 432	Air vent set

Solar thermal panels

Greenskies solar thermal panel kits







Solar-Lifestyle roof kit: 2 x on-roof portrait

Part number: 7 716 150 164

Components	Part no.	Quantity	Description
	8 718 530 950	2	Solar-Lifestyle collector portrait
	8 718 531 017	1	ICD on-roof portrait rail 1st panel
	8 718 531 018	1	ICD on-roof portrait rail additional panel
	8 718 531 023	2	ICD plain tile roof hook set
	8 718 531 445	1	Connection-set on-roof Solar-Lifestyle
	7 747 009 880	1	Collector sensor


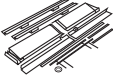


Solar-Lifestyle roof kit: 2 x on-roof landscape

Part number: 7 716 150 166

Components	Part no.	Quantity	Description
	8 718 530 951	2	Solar-Lifestyle collector landscape
	8 718 531 019	1	ICD on-roof landscape rail 1st panel
	8 718 531 022	1	ICD on-roof landscape rail additional panel
	8 718 531 023	2	ICD plain tile roof hook set
	8 718 531 445	1	Connection-set on-roof Solar-Lifestyle
	7 747 009 880	1	Collector sensor





Solar-Lifestyle roof kit: 2 x in-roof portrait

Part number: 7 716 150 165

Components	Part no.	Quantity	Description
	8 718 530 950	2	Solar-Lifestyle collector portrait
	8 718 532 910	1	ICD portrait 2 panel in-roof flashing std tile
	8 718 531 446	1	Connection-set in-roof Solar-Lifestyle
	7 747 009 880	1	Collector sensor

Solar-Lifestyle roof kit: 2 x in-roof landscape

Part number: 7 716 150 167






Components	Part no.	Quantity	Description
	8 718 530 951	2	Solar-Lifestyle collector landscape
	8 718 530 987	1	ICD landscape 2 panel in-roof flashing std tile
	8 718 531 446	1	Connection-set in-roof Solar-Lifestyle
	7 747 009 880	1	Collector sensor

Solar thermal panels

Greenskies solar thermal plumb kits






Flat plate plumb kit: standard single

Part number: 7 716 150 174

Components	Part no.	Quantity	Description
	8 718 660 881	1	Solar fluid glycol 'L' 20L
	7 747 009 456	1	AGS5e pump station
	7 747 004 420	1	TDS100 controller
	7 739 300 100	1	18L expansion vessel
	7 739 300 331	1	Expansion vessel connection






Flat plate plumb kit: standard twin

Part number: 7 716 150 175

Components	Part no.	Quantity	Description
	8 718 660 881	1	Solar fluid glycol 'L' 20L
	7 747 009 442	1	AGS5 pump station
	7 747 004 420	1	TDS100 controller
	7 739 300 119	1	25L expansion vessel
	7 739 300 331	1	Expansion vessel connection

Flat plate plumb kit: advanced single

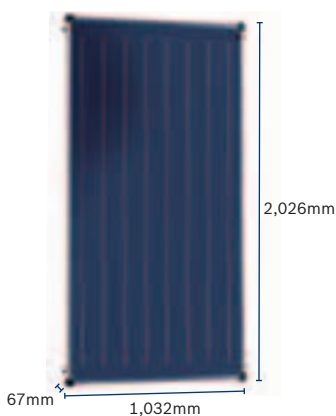
Part number: 7 716 150 173

Components	Part no.	Quantity	Description
	8 718 660 881	1	Solar fluid glycol 'L' 20L
	7 747 009 456	1	AGS5e pump station
	7 747 004 427	1	TDS300 controller
	7 739 300 100	1	18L expansion vessel
	7 739 300 331	1	Expansion vessel connection

Solar thermal panels

Greenskies Solar-Lito

Greenskies Solar-Lito
















Gross area (m ²)	Aperture area (m ²)	η_0 (%)	a1 (W/m ² k)	a2 (W/m ² k ²)	Part no.
Greenskies Solar-Lito					
2.09	1.94	76.1	4.083	0.012	8 718 532 279

Control options

Part no.	Description
7 747 004 420	TDS100 standard controller
7 747 004 427	TDS300 advanced controller
Intelligent controls	
7 716 192 068*	ISM1 intelligent solar module











*Greenstar gas-fired system boilers must be fitted with optional diverter valve only and FR110 or FW100.

Main plumb kit accessories – Solar-Lito

Components	Part no.	Description
	7 747 009 456	AGS5e single line pump station
	7 747 009 442	AGS5 twin line pump station
	7 747 009 427	AGS10e single line pump station
	7 747 009 420	AGS10 twin line pump station
	7 747 008 776	AGS5 twin line pump station/ TDS100 controller integrated
	7 739 300 100	18L expansion vessel
	7 739 300 119	25L expansion vessel
	7 739 300 120	35L expansion vessel
	7 739 300 331	Expansion vessel connection
	7 747 010 472	5L pre-cooling vessel
	7 747 010 473	12L pre-cooling vessel
	8 718 660 880	Solar fluid glycol 'L' 10L
	8 718 660 881	Solar fluid glycol 'L' 20L

Solar thermal panels






Main roof kit accessories – Solar-Lito

Components	Part no.	Description
	8 718 531 941	Connection set Solar-Lito on roof
	8 718 531 942	Connection set Solar-Lito flat roof
	8 718 531 940	Series connection set Solar-Lito
	7 709 600 087	Solar-Lito rail 1st panel
	7 709 600 088	Solar-Lito rail additional panel
	7 739 300 436	Standard roof hook plain tile
	7 739 300 281	Standard slate/crown tile hook
	7 739 300 439	Standard roof studs corrugated/ tin roof
	7 747 009 880	Additional collector sensor
	7 739 300 432	Air vent set

Greenskies solar thermal panel kits







Solar-Lito roof kit: 1 panel

Part number: 7 716 150 168

Components	Part no.	Quantity	Description
	8 718 532 279	1	Solar-Lito collector
	7 709 600 087	1	Solar-Lito rail 1st panel
	7 739 300 436	1	Standard roof hook plain tile
	8 718 531 941	1	Solar-Lito connection set on-roof
	7 747 009 880	1	Collector sensor

Solar-Lito roof kit: 2 panels

Part number: 7 716 150 169






Components	Part no.	Quantity	Description
	8 718 532 279	2	Solar-Lito collector
	7 709 600 087	1	Solar-Lito rail 1st panel
	7 709 600 088	1	Solar-Lito rail additional panel
	7 739 300 436	2	Standard roof hook plain tile FKA3
	8 718 531 941	1	Solar-Lito connection set on-roof
	7 747 009 880	1	Collector sensor

Solar thermal panels

Greenskies solar thermal plumb kits






Flat plate plumb kit: standard single

Part number: 7 716 150 174

Components	Part no.	Quantity	Description
	8 718 660 881	1	Solar fluid glycol 'L' 20L
	7 747 009 456	1	AGS5e pump station
	7 747 004 420	1	TDS100 controller
	7 739 300 100	1	18L expansion vessel
	7 739 300 331	1	Expansion vessel connection






Flat plate plumb kit: standard twin

Part number: 7 716 150 175

Components	Part no.	Quantity	Description
	8 718 660 881	1	Solar fluid glycol 'L' 20L
	7 747 009 442	1	AGS5 pump station
	7 747 004 420	1	TDS100 controller
	7 739 300 119	1	25L expansion vessel
	7 739 300 331	1	Expansion vessel connection

Flat plate plumb kit: advanced single

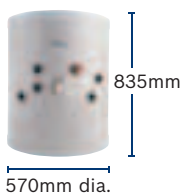
Part number: 7 716 150 173

Components	Part no.	Quantity	Description
	8 718 660 881	1	Solar fluid glycol 'L' 20L
	7 747 009 456	1	AGS5e pump station
	7 747 004 427	1	TDS300 controller
	7 739 300 100	1	18L expansion vessel
	7 739 300 331	1	Expansion vessel connection

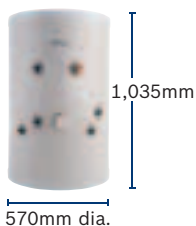
Unvented stainless steel cylinders

Greenstore unvented cylinder series

**Greenstore
SC-90 Cylinder**
7 716 842 027



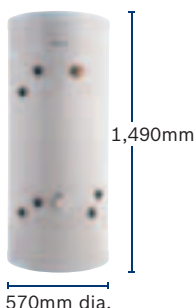
**Greenstore
SC-120 Cylinder**
7 716 842 028



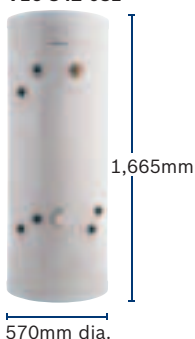
**Greenstore
SC-150 Cylinder**
7 716 842 029



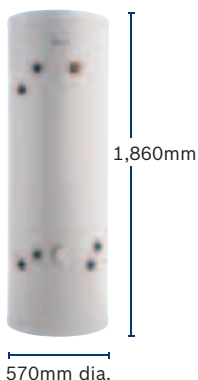
**Greenstore
SC-180 Cylinder**
7 716 842 030



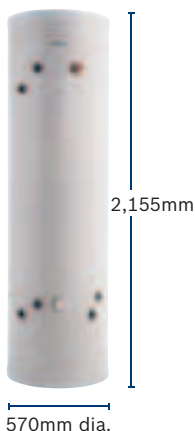
**Greenstore
SC-210 Cylinder**
7 716 842 031



**Greenstore
SC-250 Cylinder**
7 716 842 032



**Greenstore
SC-300 Cylinder**
7 716 842 033



Volume domestic hot water (litres)	Weight dry (kg)
Greenstore SC-90 Cylinder	
93	26
Greenstore SC-120 Cylinder	
123	31
Greenstore SC-150 Cylinder	
161	36
Greenstore SC-180 Cylinder	
191	40
Greenstore SC-210 Cylinder	
216	44
Greenstore SC-250 Cylinder	
246	48
Greenstore SC-300 Cylinder	
292	54

- Manufactured within the Bosch Group.
- Stainless steel cylinder (providing a 25 year guarantee*)
- Unvented, providing mains pressure hot water
- For use with Worcester system and regular boilers
- Comprehensive accessory and fittings pack
- WRAS and WRC-NSF approved
- 65mm of factory-fitted insulation
- Multiple sensor/thermostat pockets allowing flexible and easy system integration with control solutions.

Unvented stainless steel cylinders

Greenstore solar compatible unvented cylinder series

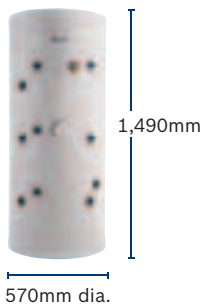
Greenstore TC-150 Cylinder

7 716 800 542



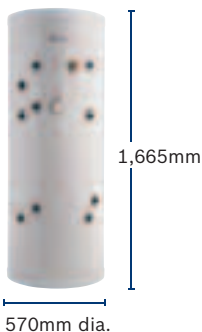
Greenstore TC-180 Cylinder

7 716 800 543



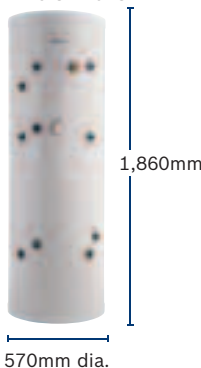
Greenstore TC-210 Cylinder

7 716 842 042



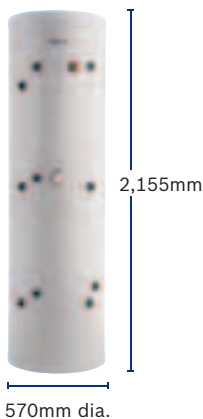
Greenstore TC-250 Cylinder

7 716 842 043



Greenstore TC-300 Cylinder

7 716 842 044



Volume domestic hot water (litres)	Dedicated solar volume (litres)	Weight dry (kg)
Greenstore TC-150 Cylinder		
158	65	41
Greenstore TC-180 Cylinder		
187	65	45
Greenstore TC-210 Cylinder		
211	105	50
Greenstore TC-250 Cylinder		
241	115	54
Greenstore TC-300 Cylinder		
287	115	60

- Manufactured within the Bosch Group.
- Stainless steel cylinder (providing a 25 year guarantee*)
- Unvented, providing mains pressure hot water
- Twin-coil for use with two fossil fuel appliances or one fossil fuel appliance and one solar installation
- Comprehensive accessory and fittings pack
- WRAS and WRC-NSF approved
- 65mm of factory-fitted insulation
- Multiple sensor/thermostat pockets allowing flexible and easy system integration with control solutions
- Dedicated solar volume in accordance with MCS scheme.

Useful contacts



Worcester, Bosch Group
Tel: 0330 123 9559
www.worcester-bosch.co.uk



Bosch Commercial and Industrial Heating
Tel: 0330 123 3004
www.bosch-industrial.co.uk



Energy Saving Trust
Tel: 020 7222 0101
www.energysavingtrust.org.uk



Gas Safe Register
Tel: 0800 480 5500
www.gassaferegister.co.uk



OFTEC
Tel: 0845 65 85 080
www.oftec.org



Institute of Domestic Heating & Environmental Engineers
Tel: +44 [0] 23 80 66 89 00
www.idhee.org.uk



Institute of Plumbing and Heating Engineers
Tel: 01708 472 791
www.ciphe.org.uk



Association of Plumbing & Heating Contractors
Tel: 02476 470 626
www.competentpersonsscheme.co.uk



Heating & Ventilation Contractors Association
Tel: 0207 313 4900
www.hvca.org.uk



Heating and Hotwater Information Council
Tel: 01926 430 486
www.centralheating.co.uk



Hot Water Association
Tel: 01926 513742
www.hotwater.org.uk



Benchmark
Tel: 0845 600 2200



Energy and Utilities Alliance
Tel: 01926 513 777
www.eua.org.uk



British Standards Institution
Tel: 0208 996 7070
www.bsigroup.co.uk

Other Bosch companies



BOSCH
Invented for life

Bosch Power Tools
Tel: 01895 834 466
www.bosch-pt.co.uk



BOSCH
Invented for life

Robert Bosch Domestic Appliances
Tel: 01908 328 200
www.bosch-home.co.uk



BOSCH
Invented for life

Bosch Lawn & Garden
Tel: 01449 742 000
www.bosch-pt.co.uk/gardentools



Bosch Car Services
Tel: 01895 838 815
www.boschcarservice.co.uk

Metric & imperial measures

Imperial to metric units

1 inch	= 25.4 mm	= 2.54 cm
1 foot	= 304.8 mm	= 0.3048 m
1 yard	= 914.4 mm	= 0.9144 m
1 mile	= 1609 m	= 1.609 km
1 square inch	= 645.2 mm ²	= 6.452 cm ²
1 square foot	= 929.0 cm ²	
1 square yard	= 0.8361 m ²	
1 acre	= 4047 m ²	= 0.4047 ha
1 cubic inch	= 16387 mm ³	= 0.016 39 dm ³
1 cubic foot	= 0.02832 m ³	= 28.3 dm ³
1 cubic yard	= 0.764555 m ³	
1 pint	= 0.5683 litre	= 568.3 ml
1 gallon	= 4.546 litre	= 4.546 kg water
1000 gallons	= 4.546 m ³	
1 grain	= 0.06480 g	
1 ounce	= 28.35 g	
1 pound	= 453.6 g	= 0.4536 kg
1 ton	= 1016 kg	= 1.016 tonne
0.1 inches water gauge	= 0.25 mbar	
1.0 inch water gauge	= 2.5 mbar	
1 atmosphere	= 1.01325 bar	
1 British thermal unit	= 1055 J	
1 therm	= 105.5 MJ	
1000 Btu/h	= 0.2931 kW	= 1.055 MJ/h
1 horsepower	= 745.7 W	= 2.685 MJ/h
1 Btu/sft ³	= 0.03796 MJ/m ³ (st)	
1 Btu/sft ³ (dry)	= 0.03723 MJ/m ³ (st)	
1 Btu/lb	= 2326 J/kg	

Metric to imperial units

1 millimetre	= 0.03937 in		
1 metre	= 39.37 in	= 3.281 ft	= 1.094 yd
1 kilometre	= 0.6214 mile	= 1094 yd	
1 square millimetre	= 0.001550 in ²		
1 square metre	= 1.196 yd ²		
1 acre	= 119.6 yd ²	= 0.0247 hectare	
1 hectare	= 11960 yd ²	= 2.471 acre	
1 cubic millimetre	= 0.000061 in ³		
1 cubic decimetre	= 61.02 in ³	= 0.035 31 ft ³	
1 cubic metre	= 35.31 ft ³	= 1.308 yd ³	= 220.0 gal
1 millilitre	= 0.001760 pint		
1 litre	= 1.760 pint	= 0.2200 gal	= 0.035 ft ³
1 gram	= 0.03527 oz	= 15.43 grains	
1 kilogram	= 2.205 lb		
1 kilowatt	= 3412 Btu/h		

Consumer and technical literature

To order any of these items please phone 0330 123 9119 or you can download literature from www.worcester-bosch.co.uk

Gas	Worcester Part No.
Consumer	
Greenstar Gas-fired Products Brochure	8-716-109-642-0
Handy Hints Promotional Brochure	8-716-104-727-0
Heating professional	
Gas-fired and Solar Thermal Heating Solutions – Product Guide	8-716-116-713-0
Greenstar Gas-fired Regular Range – Technical and Specification Guide	8-716-116-714-0
Greenstar Gas-fired System Range – Technical and Specification Guide	8-716-116-715-0
Greenstar Gas-fired Combi Range – Technical and Specification Guide	8-716-116-716-0
Greenstar FS CDi Regular – Technical and Specification Guide	8-716-115-422-0
Greenstar Highflow 440/550CDi – Technical and Specification Guide	8-716-106-250-0
Commercial	
GB162 Gas-fired Commercial Boiler Range – Technical and Specification Guide	8-716-111-872-0
Greenspring CWi47 Instantaneous Water Heater – Technical and Specification Guide	8-716-116-513-0
Greenstar Heat Interface Unit – Technical and Specification Guide	8-716-116-624-0

Oil	Worcester Part No.
Consumer	
Greenstar Oil-fired Products Brochure	8-716-110-393-0
Heating professional	
Oil-fired and Solar Thermal Heating Solutions – Product Guide	8-716-116-678-0
Greenstar Danesmoor System and Regular – Technical and Specification Guide	8-716-113-356-0
Greenstar Heatslave Combi – Technical and Specification Guide	8-716-116-677-0

Accessories	Worcester Part No.
Greenstore Unvented Cylinder Series – Technical and Specification Guide	8-716-116-617-0
Controls – Technical and Specification Guide	8-716-115-653-0
Wave – Technical Sales Brochure	8-716-117-264
CondenseSure Brochure	8-716-116-559-0
Greenstar System Filter Brochure	8-716-116-618-0
Worcester Keyless Filling Link Brochure	8-716-116-754
Flue Gas Heat Recovery Brochure	8-716-117-294
Greenstar Wiring Centre Brochure	8-716-116-915

Renewables	Worcester Part No.
Consumer	
Renewables Brochure	8-716-115-755-0
Heating professional	
Greenskies Solar – Technical and Specification Guide	8-716-110-080-0
Greenstore Ground Source Heat Pumps – Technical and Specification Guide	8-716-112-116-0
Greensource Air to Air Heat Pump – Technical and Specification Guide	8-716-115-438-0

Training	Worcester Part No.
Heating professional	
Training Brochure	8-716-116-110-0

Free Online Training Academy

Worcester's new Online Training Academy makes it easier than ever before for you to enhance your industry knowledge.

Designed to supplement hands-on training programmes, the academy is aimed at installers who wish to keep up-to-date with the latest product features, installation tips and troubleshooting advice, whenever is convenient.



Access to the academy on the move

With smartphones and tablets now being essential components of an installer's toolkit, the new online hub aims for professional development to be enhanced from the comfort of home, in the office and on the road.

Keep up-to-date with Worcester training

In addition to the range of e-learning programmes on offer, the front page of the Online Academy enables users to view any recent YouTube video from Worcester, as well as news alerts concerning any new training courses.



Suitable for small and large companies

Worcester's Online Training Academy has the following courses available:

- Greenstar CDi Compact
- Greenstar Oil-fired boilers
- Greenstore Unvented Cylinders
- GB162 commercial boilers
- Greenstore LECP ground source heat pumps.

To register for Worcester's new Online Training Academy, visit

www.worcesterbosch-academy.co.uk

Introducing the new **Greenstar i**



A new look, new features and a **new name** for the UK's best selling boiler, the Greenstar i Junior

The **Greenstar i boiler** builds on the popular features of the market-leading Greenstar i Junior and i System while introducing a host of **new features**.

For more information about the Greenstar i, visit worcester-bosch.co.uk/i



The NEW **Greenstar Comfort** intelligent heating controls



Controls that everyone will be comfortable with.

Our new easy to use, simple to install controls have a range of advanced features including:

Load compensation* which adjusts the flow temperature from the boiler, to meet the heating demand and provide significant fuel savings.

No wiring requirements* as the control communicates with the boiler via a reliable radio frequency signal.

5 year guarantee* when purchased with a Greenstar boiler.

See pages 46 and 47.



*Wireless communication and load compensation only applies to Comfort I RF and Comfort II RF.
†Terms and conditions apply.

Useful numbers

Service Enquiries

Email: service-enquiries@uk.bosch.com
or telephone 0330 123 9559

Sales

Tel: 0330 123 9669

Spare Parts

Tel: 0330 123 9779

Technical Helpline (Pre & Post Sales)

Tel: 0330 123 3366

Email: technical-advice@uk.bosch.com

Renewables Technical Helpline

Email: renewable-advice@uk.bosch.com
or telephone 0330 123 9229

ErP Technical Helpline

Tel: 0330 123 3641

Email: ErP-advice@uk.bosch.com

Training

Tel: 0330 123 0166

Literature

Email: brochure-request@uk.bosch.com or download instantly from our website or telephone 0330 123 9119.

Calls to 03 numbers cost no more than a national rate call to an 01 or 02 number and must count towards any inclusive minutes in the same way as 01 and 02 calls. These rules apply to calls from any type of line, including mobile, BT, other fixed phone line or payphone. Calls from mobiles and some other networks may vary. Calls to and from Bosch Thermotechnology Ltd may be recorded for training and quality assurance purposes.

worcester-bosch.co.uk



In partnership with



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

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