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Part No. 8 716 109 213 Issue B

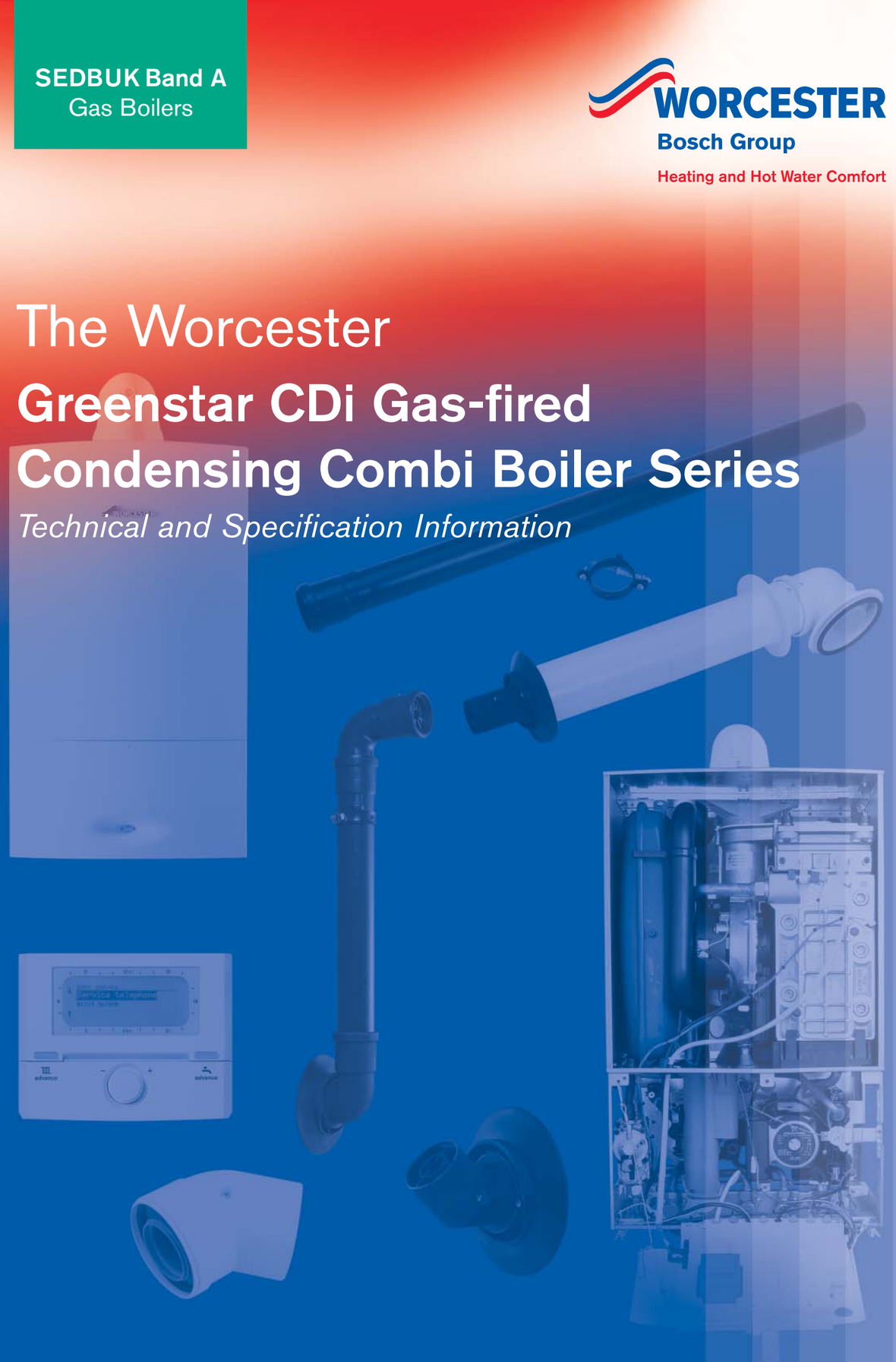
BBT180

SEDBUK Band A
Gas Boilers

WORCESTER
Bosch Group
Heating and Hot Water Comfort

The Worcester
Greenstar CDi Gas-fired Condensing Combi Boiler Series

Technical and Specification Information



The Greenstar CDi condensing combi boiler series
Total heating and hot water comfort

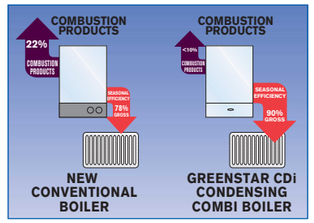
The Greenstar CDi combi series

Features	Benefits
Adjustable hot water control.	User comfort & economy.
Aluminium silicon heat exchanger.	High efficiency.
Boiler keep hot facility.	Instantly heated hot water.
SEDBUK Band A.	High efficiency.
Wall mounting jig.	Allows pre-fabrication of system.
Compact dimensions.	Space saving, ease of siting.
Modulation control.	Energy saving.
Filling link supplied as standard.	Labour saving.
Anti-cycle control.	Energy saving.
Electronic ignition.	Energy saving.
Built-in frost protection.	Money saving, economical protection.
Multi-directional fluing.	Siting flexibility.
No ventilation grilles required for compartment installations.	Money and labour saving.
Fault finding diagnostics & service modes displayed.	Time saving.
Operational status indicator.	Consumer friendly.
No bypass required.	Labour & money saving.
Pump seizure protection.	Prevents callbacks.
Holiday function.	More economical.
Service mode.	Ease of servicing.
Variable speed pump.	Automatically adjusts to meet system flow demand – energy saving.
Condensing in DHW mode.	Energy saving.
Optional mechanical & digital timeclocks.	Eliminates the need for external wiring.
Radio frequency controlled room thermostat.	Eliminates wiring, helps comply with part L of Building Regulations and meets the requirements of Part P.
Text display option.	Intelligent control.
Plug-in RF optimising controls.	Easy to install.

It's often said that you can't please everybody all of the time – but the advanced new series of Greenstar CDi condensing combi boilers from Worcester has so much to offer that it's already disproving such a notion.

Here is a ground-breaking range of energy-saving boilers which is very good news for the environment and excellent news for specifiers, developers, installers and consumers alike.

HE stands for Higher Efficiency and for Highly Cost Effective

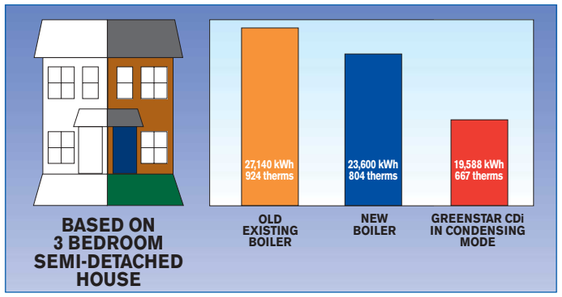


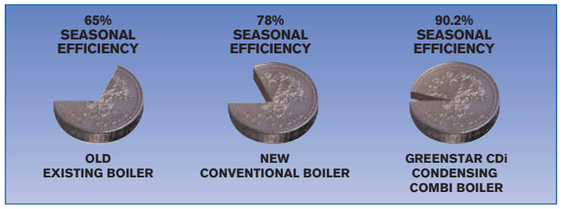
The Greenstar CDi condensing combi boilers have an average annual efficiency (SEDBUK value) of over 90%, efficiently producing heat for your heating and/or hot water system. Other types of boiler achieve around 78% efficiency. Therefore, compared with a new conventional boiler, Greenstar CDi condensing combi boilers can cut heating and hot water bills and it's cheaper to run than an older boiler.

Hence SEDBUK Band A ratings for all models in the new Greenstar CDi condensing range.

Greenstar CDi condensing combi boilers deliver this energy-saving performance by ingeniously recycling exhaust gases to extract and re-use the latent heat – a highly efficient use of energy which also significantly reduces carbon dioxide emissions into the atmosphere.

To all these major benefits you can add yet more: superlative Worcester quality and reliability; a range of outputs to satisfy the heating demands of a range of households; and truly exceptional all-round value for money.





The Greenstar CDi series at a glance

		25CDi	30CDi	35CDi	40CDi
Output kW to DHW	Min	7.7kW	7.7kW	7.7kW	8.6kW
	Max	25kW	30kW	35kW	40kW
Flow rate at 35°		10.2 lt/min	12.3 lt/min	14.3 lt/min	16.3 lt/min
CH temperature control		✓	✓	✓	✓
DHW temperature control		✓	✓	✓	✓
Modulating control		✓	✓	✓	✓
Natural gas		✓	✓	✓	✓
LPG		✓	✓	✓	✓
Electronic ignition		✓	✓	✓	✓

The Greenstar CDi condensing combi boiler series

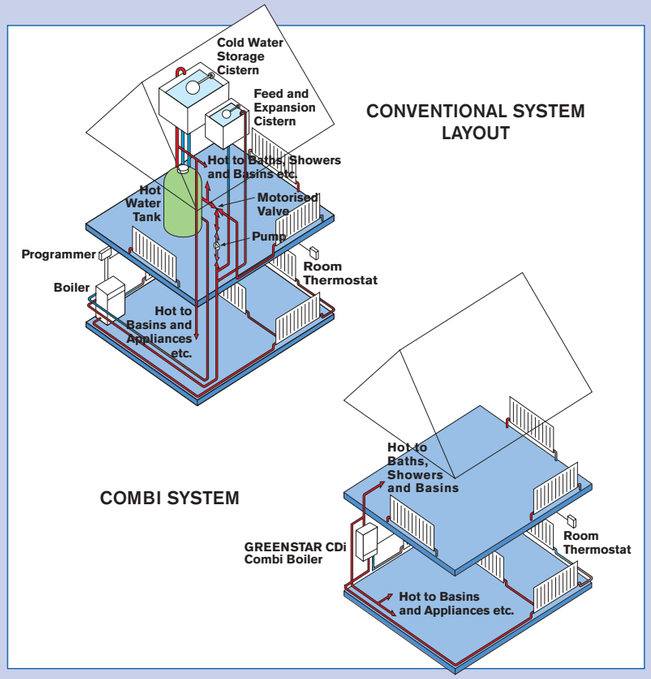
The advantages of a combi boiler

A combi (or combination boiler) is a compact and highly efficient unit giving all the heating and hot water you need, with significant savings on running and installation costs.

Unlike a conventional heating and hot water system, a combi boiler system does not store domestic hot water. It heats water directly from the cold mains – as you use it. There's no hot water cylinder, no tank in the loft (and so less risk of freezing and flooding),

and none of the connecting pipe work. So you not only save space, but also reduce hot water costs – which can account for up to 60% of a typical domestic fuel bill.

A combi also supplies hot water at mains pressure, giving you exhilarating power showering without the need for a pump. And as, on average, a shower uses considerably less water than a typical bath, the savings on hot water costs and water consumption can be significant.



A condensing boiler is more efficient due to its ability to extract more heat from the flue gases normally lost to the environment through the flue system.

All the Greenstar CDi models use the same Aluminium-Silicon heat cell with an extra large surface area.

As the flue gases pass through the heat exchanger this extra surface area cools the flue gases to around 55°C whereupon the latent heat within, which would normally be lost to the atmosphere, is instead released and applied to the system.

It is this ability to extract as much heat as possible from the gas it burns that gives the Greenstar CDi series an exceptionally high level of operating efficiency.

This higher efficiency is recognised within section L of the Building Regulations, subsequently achieving a higher SAP or NHER rating.

Key features of the Greenstar CDi condensing boilers include the separate plate domestic hot water heat exchanger, which is guaranteed for 5 years.*

This, combined with the 'keep hot' facility, ensures that hot water is delivered instantly to the tap.

*Subject to conditions

The CDi series design benefits in operation

Hot water mode

Whenever a hot water tap is turned on the incoming mains water will activate a flow turbine which, via the electronic control system, ignites the pre-mix burner. Boiler output is automatically boosted to maximum to heat the incoming cold water as it passes through the heat exchanger. Electronic controls modulate the boiler output downwards to ensure the hot water temperature remains between 40 and 60°C (as set by the consumer).

Keep hot facility

All the Greenstar CDi combi models have an in-built keep hot facility which will keep the primary water within the heat cell hot. This will ensure that hot water is delivered instantly to the opened outlet.

Eco mode

With the Eco mode button activated the keep hot facility is de-energised and the hot water will be heated from cold. A slight delay should be expected before the hot water is at full temperature when in the Eco mode.

Central heating mode

On a Central Heating demand, the boiler will initially fire at minimum output before modulating upwards to meet the actual system requirement. Electronics within the boiler continually monitor the heating flow temperature increasing or decreasing output on demand. An anti-cycling device makes the Greenstar CDi range particularly suitable for use on systems with TRV's (Thermostatic Radiator Valves).

Options

Fluing

The Greenstar CDi series features 2 different sizes of multi-directional RSF flue systems, 100mm or 125mm.

The flue can be run horizontally or vertically with additional 90 or 45 degree in-line bends allowing changes of route or direction, providing an extremely flexible and versatile fluing system enabling the appliance to be sited virtually anywhere.

More details are shown on page 13.

Versatility

Gas

The Greenstar CDi series is manufactured in both natural gas and LPG variants (40CDi LPG launch date to be confirmed).

Controls

The CDi Series feature:

- Power on/off switch.
- Central heating variable temperature control selector.
- An integral facia with status display lights and a digital display which also operates as a fault diagnosis display.

Optional plug-in controls

The Greenstar CDi series of condensing combi boilers is available with a comprehensive range of easy-to-use controls, ranging from a simple mechanical timer to a choice of sophisticated radio-frequency digistats. All fascia mounted controls offer simple plug-in connection to the boiler circuit board.

MT10 mechanical timer

A simple easy-to-operate mechanical timer with 15 minute switching points over a 24 hour period. The timer features a clock face with raised hands to facilitate setting by visually impaired users.

MT10RF mechanical RF thermostat

A simple, easy-to-operate 24 hour mechanical timer combined with a radio frequency room thermostat. The thermostat features individual higher and lower temperature sensors.

DT20RF digital RF thermostat with twin channel programmer

A wall-mounted RF room thermostat with digital display, combined with a twin channel digital timer in the boiler fascia. The fascia mounted programmer benefits from automatic time and date setup, automatic summer/wintertime changeover and a backlight for use in low light conditions.

DT20 twin channel digital programmer

A versatile, easy-to-learn, 7 day, digital programmer offering up to 3 on/off settings per day. The programmer has a host of innovative features including automatic setup, which sets the correct time and date at power-up, automatic summer/wintertime changeover and a green backlight for use in low light conditions.

DT10RF digistat

A familiar wall-mounted 24 hour programmable RF digital thermostat combined with a fascia mounted single channel programmer to time the hot water cylinder or combi preheat functions. The programmer includes a built-in receiver for the room thermostat and all of the functionality of the DT20.

DT10RF optimiser

A seven day digital programmable RF thermostat with a seven day programmer/receiver in the boiler fascia. The transmitter is the tried and tested Optimiser as available with other Worcester boilers. The optimum start feature, where the thermostat delays the firing of the boiler until necessary, is a useful energy-saving option.

TD200 text display

A seven day programmer with easy-to-use text display with automatic time and date setup, automatic summer/winter time changeover and a backlight for use in low light conditions. Three on/off periods can be set per day. The TD200 can be fascia mounted or hard wired outside the boiler using the optional wall mounting socket. The TD200 features an easy-to-use full text display providing more information than standard digital controls. A hard wired room thermostat is available to provide optimum start functionality.

RT10 room thermostat

A hard wired optimising room temperature controller with digital display for use with the TD200. The display shows current and desired temperature and an advance button allows the user to move to the next heating switch point on the TD200.

TD200 wall mounting socket

A Worcester branded wall mounting socket which allows the TD200 to be hard wired away from the boiler.

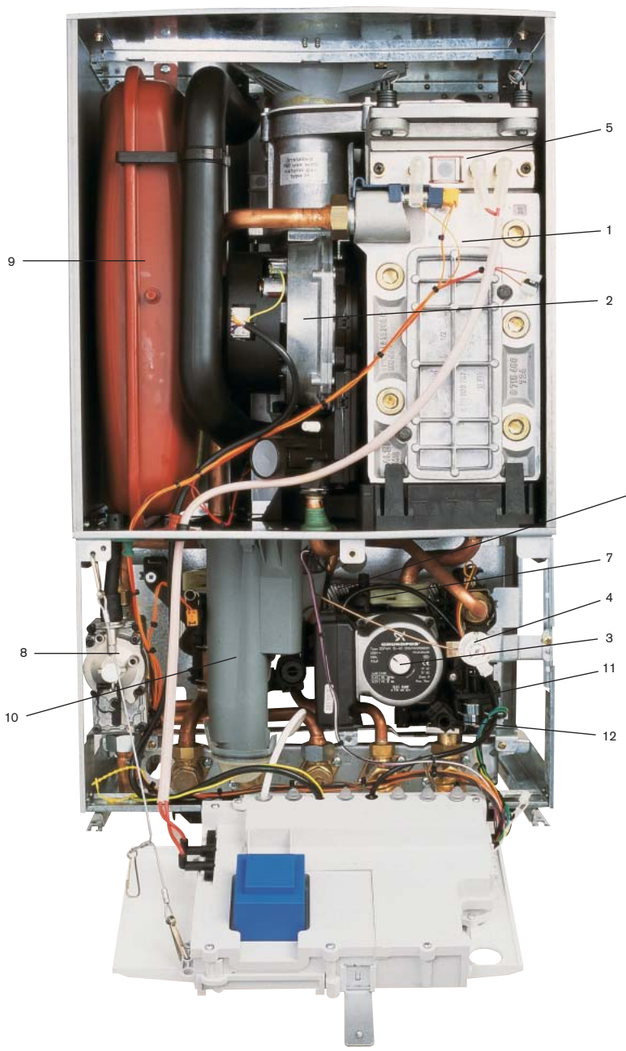
Increased SAP ratings

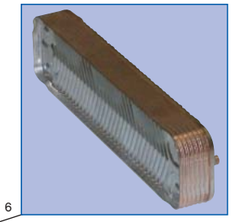
As well as the CDi models achieving very high SAP ratings for dwellings, the addition of the optimising temperature controller further increases these ratings as well as being part of the recommended best practice, as covered by the CHESS design standard.

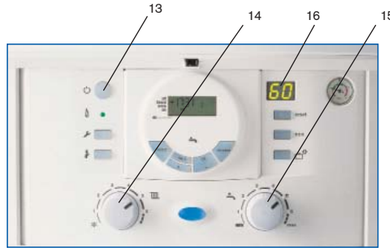
Technical data – CDi series

Model	*Greenstar 25CDi* *(25kW) Combi Boiler*	*Greenstar 30CDi* *(30kW) Combi Boiler*	*Greenstar 35CDi* *(35kW) Combi Boiler*	*Greenstar 40CDi* *(40kW) Combi Boiler*
Height (mm)	750 (max)	750 (max)	750 (max)	750 (max)
Width (mm)	440	440	440	440
Depth (mm)	360 (max)	360 (max)	360 (max)	360 (max)
Weight – dry (kg)	48.5	48.5	48.5	48.5
Heating Flow/Return Connections	22mm compression	22mm compression	22mm compression	22mm compression
Hot/Cold Water Connections	15mm compression	15mm compression	15mm compression	15mm compression
Pressure Relief Valve (mm Ø)	15	15	15	15
Condensate Connection	22mm Plastic Pipe	22mm Plastic Pipe	22mm Plastic Pipe	22mm Plastic Pipe
Gas Connection	22mm compression	22mm compression	22mm compression	22mm compression
Primary Water Content (litres)	3.75	3.75	3.75	3.75
Minimum Domestic Inlet Pressure For Maximum DHW Flow Rate (bar)	1.2	1.4	1.5	1.7
Minimum Domestic Inlet Pressure To Operate The Appliance (bar)	0.2	0.2	0.2	0.2
Maximum Domestic Inlet Pressure (bar)	10	10	10	10
DHW Flow Rate @ 35°CΔT (l/min)	10.5	12.6	14.3	16.3
DHW Flow Rate @ 40°CΔT (l/min)	9.2	11.1	12.5	14.3
Output To Central Heating kW (Btu)	7.7 - 25 (26,272 - 85,300)	7.7 - 30 (26,272 - 102,360)	7.7 - 30 (26,272 - 102,360)	7.7 - 30 (26,272 - 102,360)
Wall Mounting Jig	Yes	Yes	Yes	Yes
Filling Loop	Yes	Yes	Yes	Yes
Plug-In Timers	Yes (Optional)	Yes (Optional)	Yes (Optional)	Yes (Optional)
Optimising Room Temperature Controller	Yes (Optional)	Yes (Optional)	Yes (Optional)	Yes (Optional)
Intelligent Controls	Yes (Optional)	Yes (Optional)	Yes (Optional)	Yes (Optional)
Condensing In DHW Mode	Yes	Yes	Yes	Yes
Maximum Vertical Flue (mm) (100mmØ) inc. terminal	11,500	9,400	8,000	4,900
Maximum Horizontal Flue (mm) (100mmØ)	10,000	7,900	6,500	2,600
Maximum Horizontal Flue (mm) (125mmØ)	23,000	18,500	16,000	12,500
Maximum Vertical Flue (mm) (125mmØ) inc. terminal	23,000	18,500	16,000	16,000
SEDBUK Value %/Band	90.3%/Band A	90.3%/Band A	90.3%/Band A	90.2%/Band A
NOX Classification	Class 5	Class 5	Class 5	Class 5

The Greenstar CDi condensing combi boiler – inside story







Key to components

1. Aluminium/Silicon WB5 Heat Exchanger
2. Pre-mix Fan
3. Circulating Pump
4. Pressure Gauge
5. Down Firing Low Nox Burner
6. Plate DHW Heat Exchanger
7. Automatic Air Vent
8. Gas Valve
9. Expansion Vessel
10. Syphon
11. Diverter Valve
12. Drain Point
13. On/Off Button
14. Central Heating Temperature Control
15. Domestic Hot Water Temperature Control
16. Digital Display

Installing the Greenstar CDi series

All combi boilers require less installation time than a conventional boiler, for these reasons:

1. All the major components, including the pump, are contained within the boiler casing and do not need to be fitted separately.
2. The boiler comes pre-wired and pre-plumbed.
3. There is no need to install a hot water cylinder.
4. There is no need to install a storage tank in the roof space.
5. There is less pipe work.

However, the Greenstar CDi series is exceptional for its number of additional time-saving installation features:

- Automatic gas pressure adjustment
- Unique and highly versatile multi-directional fluing system
- Combined ignition and control board means less connections
- Plug in filling loop as standard
- Optional plug in timers
- No bypass required
- Optional Intelligent Combi Package

Siting of appliance

General

The appliances are not suitable for external installation.

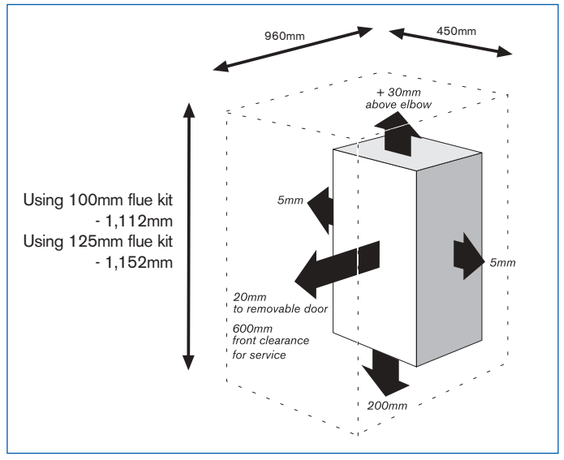
The wall on which the boiler is to be mounted should be capable of supporting an overall weight of approximately 50 kg.

The wall does not require special protection. However, if the appliance is to be fitted in a timber frame building the guidelines laid down in BS 5440:Part 1:2000 and the gas installer manual Chapter 11, “Gas in Timber Frame Housing” should be adhered to.

The appliances may be installed into an airing cupboard if required. Use a non-combustible perforated material (max. hole sizes of 13mm) to separate the boiler from the airing space.

Clearances

The minimum clearances shown below should be allowed for installation, servicing and ventilation-free compartment installations.



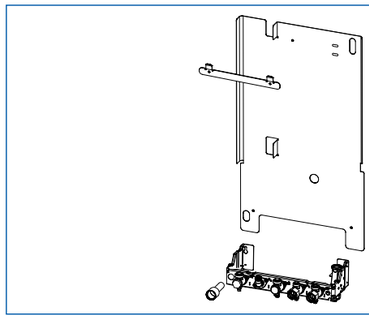
Compartment installation

The appliance may be installed in any room, although particular attention is drawn to the requirements of the IEE regulations applicable and in Scotland the electrical provisions with respect to installation in a room containing a bath or shower.

Wall preparation

The picture shows the CDi wall mounting jig which enables a simple and straightforward method of attaching the boiler to the wall surface.

After fixing the jig to the wall, the appliance can be lifted onto the jig and the union connections tightened. The pipe work can be routed behind the boiler without the need for an additional wall spacing frame.



Condensate disposal

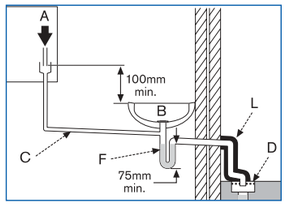
All condensing boilers generate condensate discharge which needs to be piped away from the appliance in via a plastic pipe.

The amount of condensate generated depends on the efficiency and operating status of the appliance. The boilers will generally only produce condensate whilst operating in central heating mode. Some models will condense in both heating and hot water modes and can generate up to 2 litres of condensate water an hour.

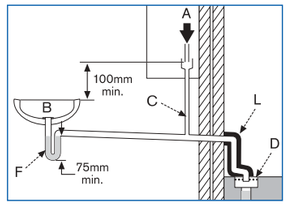
Condensate termination and route

The condensate connection on the Worcester appliances is in 22mm plastic. The pipe should be extended and run away from the appliance with a constant fall of 2.5 degrees or 50mm in every metre.

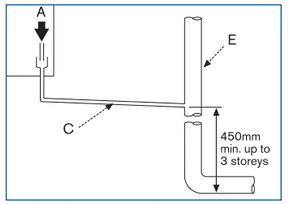
The condensate pipe can terminate into any one of five areas:



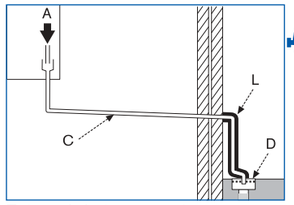
Internal sink/washing machine drain



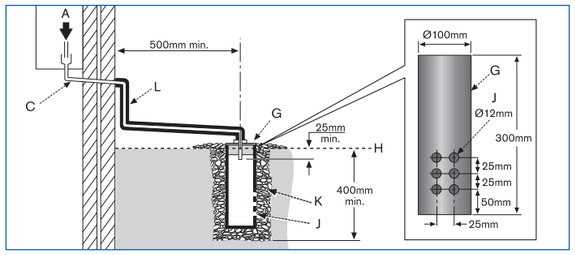
Internal waste drainage system



Soil and vent stack



External drainage system



External condensate absorption point (unsuitable for clay soil types)

A - Condensate from boiler syphon/trap
B - Sink with integral overflow
C - 21.5mmØ plastic condensate pipe
D - External drain or gully
E - Internal soil and vent stack
F - Serviceable condensate trap (75mm min.)
G - 300mm x 100mmØ sealed plastic tube
H - Ground level
J - Drainage holes 50mm facing away from building
K - Limestone chippings
L - Weather resistant insulation

Whilst all of the above methods are acceptable it is always the best practice to terminate the condensate pipe via an internal waste system. This will eliminate the need for any external condensate pipe runs which can be susceptible to freezing in extreme weather. Best practise is not to run external condensate pipe any further than 3m. If it is necessary to run more than 3m externally increase pipe size to 35mm.

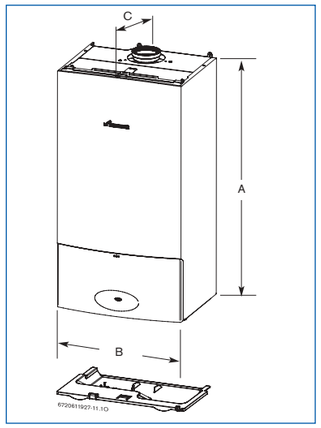
External condensate pipe work

All Worcester condensing boilers have within a syphonic condensate trap. Rather than the condensate constantly dripping into the discharge pipe, the condensate is collected into a trap which releases it in 100ml quantities. This will help prevent freezing occurring.

Wherever possible the condensate discharge pipe work should be routed and terminated internally. Should this not be possible, and the only available route is external, the following conditions should be observed:

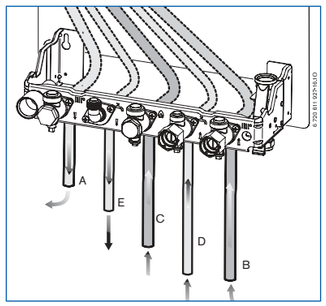
- The pipe work length should be kept to a minimum and the route as vertical as possible
- Where pipe work could be subjected to extreme cold or wind chill, a weather proof insulation should be used. **Alternatively, the condensate pipe work could be increased to a minimum 32mm without the requirement to insulate**

Pipe work connections and casing dimensions



Cabinet dimensions	
A	750mm*
B	440mm
C	360mm

*760mm to top of casing front.

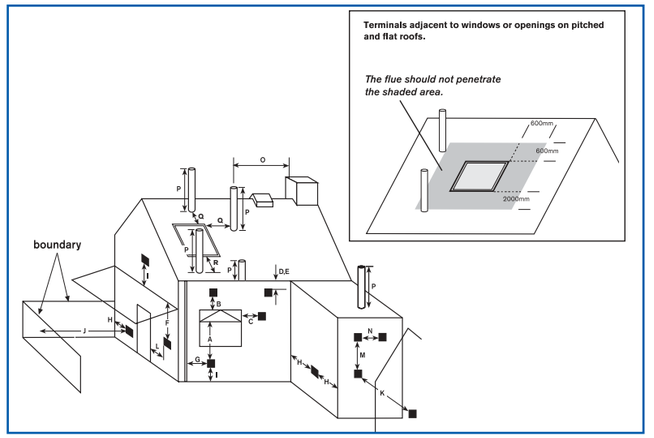


Pipe work connections		
A	CH Flow	22mm
B	CH Return	22mm
C	Gas Inlet	22mm
D	Mains Water Inlet	15mm
E	DHW Outlet	15mm

Flue terminal positioning

RSF horizontal and vertical

Minimum dimensions of flue terminal positions for balanced room sealed flues with fanned draught:



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

Key to illustration

	Terminal Position	*Min Distance*
A[1]	Directly below an opening, air brick, opening windows etc.	300mm
B[1]	Above an opening, air brick, opening window etc.	300mm
C[1]	Horizontally to an opening, air brick, opening window etc.	300mm
D	Below gutters, soil pipes or drain pipes	75mm
E	Below eaves	200mm
F[2]	Below balconies or car port roof (lowest point)	200mm
G	From a vertical drain pipe or soil pipe	150mm
H	From an internal or external corner or to a boundary alongside the terminal	300mm**
I	Above ground, roof or balcony	300mm
J	From a surface or boundary facing the terminal	600mm**
K	From a terminal facing the terminal	1,200mm
L[2]	From an opening in the car port (e.g. door, window) into the dwelling	1,200mm
M	Vertically from a terminal on the same wall	1,500mm
N	Horizontally from a terminal on the same wall	300mm
O	From a non-combustible vertical structure on the roof	*
P	Above intersection with the roof	*
Q	Adjacent to windows or openings on pitched and flat roofs	600mm
R	Below windows or openings on pitched roofs	2,000mm

[1] In addition, the terminal should not be nearer than 150 mm (fanned draught) to an opening in the building fabric formed for the purpose of accommodating a built-in element such as a window frame.

[2] Not recommended.

* See instructions supplied with vertical flue kits.

** Care should be taken to ensure terminal siting does not cause a nuisance to adjacent properties.

General position

1. The terminal must not cause an obstruction nor the discharge a nuisance. Particular care should be exercised with regards to the pluming 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. A terminal protective guard is available from Tower Flue Components, Vale Rise, Tonbridge. Tel No. (01732) 351555. The terminal guard must be securely fixed to the wall using suitable plugs and corrosion resistance 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, i.e. near security lighting, should be avoided.
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.

Boiler location & clearances

Bathrooms

The boiler can be installed in zones 2 or 3. If a mechanical or RF mechanical timer or text display with room thermostat (IP 20 only) is fitted the boiler can only be installed in zone 3.

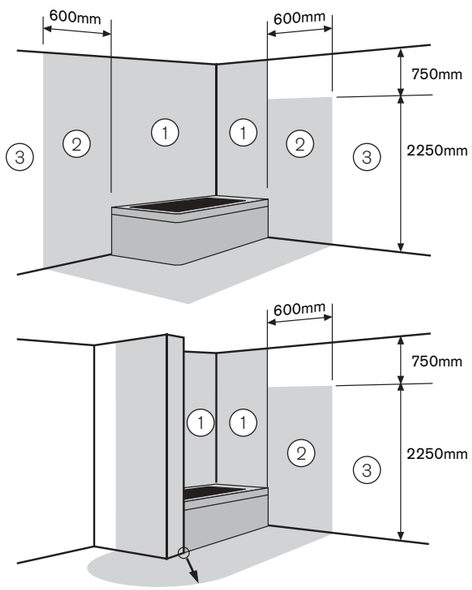
A non mechanical timer can be installed in zone 2.

See IEE wiring regulations. (See Technical Data for IP ratings).

IMPORTANT: any switch or appliance control using mains electricity must not be able to be touched by a person using the bath or shower.

Electrical switches, fused spur and socket outlets must not be situated in the bathroom.

All pipe work to the appliance must be cross bonded.



Greenstar CDi combi boiler series horizontal fluing options

The Greenstar CDi series has the choice of 2 differently sized horizontal RSF flue systems, 100mm and 125mm. Both systems have different maximum lengths. Options 1 to 6 detail the permissible lengths.

Condensfit II

Horizontal RSF Flue

Flue Diameter	100mm	125mm
Minimum Flue Length	342mm	250mm
Maximum Flue Length - 25CDi	10,000mm	23,000mm
30CDi	7,900mm	18,500mm
35CDi	6,500mm	16,000mm
40CDi	2,600mm	12,500mm

Standard flue kit

Comprises:

1 x Flue Turret Elbow

600mm (100mm dia) of flue duct

1,030mm (125mm dia) of flue duct including terminal (as measured from centre of flue outlet)

Part No. 7 719 002 345 (100mm dia)
Part No. 7 719 002 497 (100mm dia)
Part No. 7 719 002 350 (125mm dia)

	Worcester Part No.	
	100mm	125mm
Extension Flue Kit	7 719 002 349 (960mm long)	7 719 001 892 (1,000mm long)
90° Elbow	7 719 002 348	7 719 001 891
45° Elbow	7 719 002 347	7 719 001 899
Vertical Adaptor	7 719 002 432	7 719 002 433

Accessories

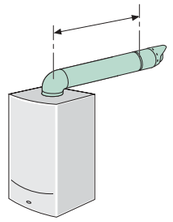
The following criteria should be noted when planning the installation.

– The flue system inclines 2½" (44mm per metre) from the appliance, to prevent condensation from dripping from the flue terminal.*

– Because the appliance operates at high efficiency a white plume of condensation will be emitted from the terminal. Care must be taken when selecting the flue terminal position.

*The 100mm flue system exhaust pipe inclines 2 degrees within the 100mm air duct.

Option 1
STANDARD HORIZONTAL FLUE ASSEMBLY



Maximum total straight flue length	100mm	125mm
25CDi	686mm	1,070mm
30CDi	686mm	1,070mm
35CDi	686mm	1,070mm
40CDi	686mm	1,070mm

Flue Components Required

25CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
125mm	Standard Flue Kit	1	7 719 002 350

30CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
125mm	Standard Flue Kit	1	7 719 002 350

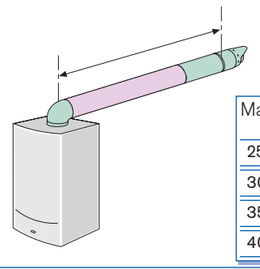
35CDi

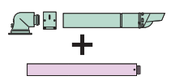
Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
125mm	Standard Flue Kit	1	7 719 002 350

40CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
125mm	Standard Flue Kit	1	7 719 002 350

Option 2
EXTENSION FLUE HORIZONTAL





Maximum total straight flue length	100mm	125mm
25CDi	10,000mm	23,000mm
30CDi	7,900mm	18,500mm
35CDi	6,500mm	16,000mm
40CDi	2,600mm	12,500mm

Flue Components Required

25CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
100mm	Extension Flue Kit	up to 10	7 719 002 349
125mm	Standard Flue Kit	1	7 719 002 350
125mm	Extension Flue Kit	up to 23	7 719 001 892

30CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
100mm	Extension Flue Kit	up to 8	7 719 002 349
125mm	Standard Flue Kit	1	7 719 002 350
125mm	Extension Flue Kit	up to 18	7 719 001 892

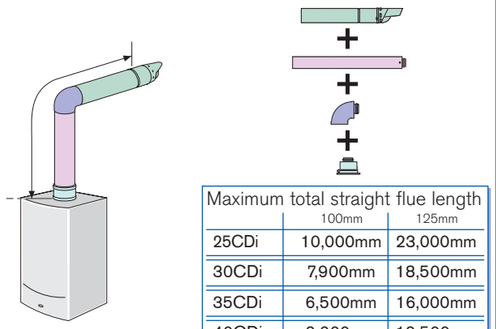
35CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
100mm	Extension Flue Kit	up to 6	7 719 002 349
125mm	Standard Flue Kit	1	7 719 002 350
125mm	Extension Flue Kit	up to 15	7 719 001 892

40CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
100mm	Extension Flue Kit	up to 2	7 719 002 349
125mm	Standard Flue Kit	1	7 719 002 350
125mm	Extension Flue Kit	up to 12	7 719 001 892

Option 3
EXTENSION FLUE HORIZONTAL AND UPWARDS



Maximum total straight flue length		
	100mm	125mm
25CDi	10,000mm	23,000mm
30CDi	7,900mm	18,500mm
35CDi	6,500mm	16,000mm
40CDi	2,600mm	12,500mm

Flue Components Required

25CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
100mm	Extension Flue Kit	up to 11	7 719 002 349
100mm	90° Elbow	1	7 719 002 348
100mm	Vertical Adaptor	1	7 719 002 432
125mm	Standard Flue Kit	1	7 719 002 350
125mm	Extension Flue Kit	up to 23	7 719 001 892
125mm	90° Elbow	1	7 719 001 891
125mm	Vertical Adaptor	1	7 719 002 433

30CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
100mm	Extension Flue Kit	up to 9	7 719 002 349
100mm	90° Elbow	1	7 719 002 348
100mm	Vertical Adaptor	1	7 719 002 432
125mm	Standard Flue Kit	1	7 719 002 350
125mm	Extension Flue Kit	up to 19	7 719 001 892
125mm	90° Elbow	1	7 719 001 891
125mm	Vertical Adaptor	1	7 719 002 433

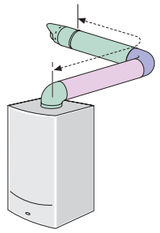
35CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
100mm	Extension Flue Kit	up to 7	7 719 002 349
100mm	90° Elbow	1	7 719 002 348
100mm	Vertical Adaptor	1	7 719 002 432
125mm	Standard Flue Kit	1	7 719 002 350
125mm	Extension Flue Kit	up to 16	7 719 001 892
125mm	90° Elbow	1	7 719 001 891
125mm	Vertical Adaptor	1	7 719 002 433

40CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
100mm	Extension Flue Kit	up to 3	7 719 002 349
100mm	90° Elbow	1	7 719 002 348
100mm	Vertical Adaptor	1	7 719 002 432
125mm	Standard Flue Kit	1	7 719 002 350
125mm	Extension Flue Kit	up to 13	7 719 001 892
125mm	90° Elbow	1	7 719 001 891
125mm	Vertical Adaptor	1	7 719 002 433

Option 4
EXTENSION FLUE HORIZONTAL USING A SECOND 90˚ BEND



Maximum total straight flue length		
	100mm	125mm
25CDi	8,000mm	21,000mm
30CDi	5,900mm	16,500mm
35CDi	4,500mm	14,000mm
40CDi	600mm	10,500mm

Flue Components Required

25CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
100mm	Extension Flue Kit	up to 9	7 719 002 349
100mm	90° Elbow	1	7 719 002 438
125mm	Standard Flue Kit	1	7 719 002 350
125mm	Extension Flue Kit	up to 21	7 719 001 892
125mm	90° Elbow	1	7 719 001 891

30CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
100mm	Extension Flue Kit	up to 7	7 719 002 349
100mm	90° Elbow	1	7 719 002 438
125mm	Standard Flue Kit	1	7 719 002 350
125mm	Extension Flue Kit	up to 17	7 719 001 892
125mm	90° Elbow	1	7 719 001 891

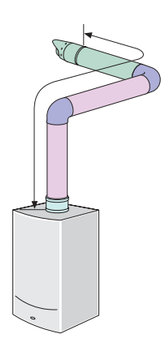
35CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
100mm	Extension Flue Kit	up to 5	7 719 002 349
100mm	90° Elbow	1	7 719 002 438
125mm	Standard Flue Kit	1	7 719 002 350
125mm	Extension Flue Kit	up to 14	7 719 001 892
125mm	90° Elbow	1	7 719 001 891

40CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
100mm	Extension Flue Kit	1	7 719 002 349
100mm	90° Elbow	1	7 719 002 438
125mm	Standard Flue Kit	1	7 719 002 350
125mm	Extension Flue Kit	up to 11	7 719 001 892
125mm	90° Elbow	1	7 719 001 891

Option 5
EXTENSION FLUE UPWARDS AND HORIZONTAL USING A SECOND 90˚ BEND



Maximum total straight flue length		
	100mm	125mm
25CDi	8,000mm	21,000mm
30CDi	5,900mm	16,500mm
35CDi	4,500mm	14,000mm
40CDi	N/A	10,500mm

Flue Components Required

25CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
100mm	Extension Flue Kit	up to 10	7 719 002 349
100mm	90° Elbow	2	7 719 002 348
100mm	Vertical Adaptor	1	7 719 002 432
125mm	Standard Flue Kit	1	7 719 002 350
125mm	Extension Flue Kit	up to 22	7 719 001 892
125mm	90° Elbow	2	7 719 001 891
125mm	Vertical Adaptor	1	7 719 002 433

30CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
100mm	Extension Flue Kit	up to 8	7 719 002 349
100mm	90° Elbow	2	7 719 002 348
100mm	Vertical Adaptor	1	7 719 002 432
125mm	Standard Flue Kit	1	7 719 002 350
125mm	Extension Flue Kit	up to 18	7 719 001 892
125mm	90° Elbow	2	7 719 001 891
125mm	Vertical Adaptor	1	7 719 002 433

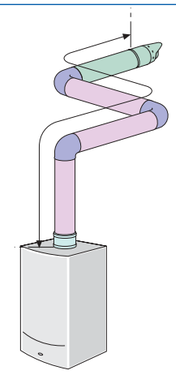
35CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
100mm	Extension Flue Kit	up to 6	7 719 002 349
100mm	90° Elbow	2	7 719 002 348
100mm	Vertical Adaptor	1	7 719 002 432
125mm	Standard Flue Kit	1	7 719 002 350
125mm	Extension Flue Kit	up to 15	7 719 001 892
125mm	90° Elbow	2	7 719 001 891
125mm	Vertical Adaptor	1	7 719 002 433

40CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
125mm	Standard Flue Kit	1	7 719 002 350
125mm	Extension Flue Kit	up to 12	7 719 001 892
125mm	90° Elbow	2	7 719 001 891
125mm	Vertical Adaptor	1	7 719 002 433

Option 6
EXTENSION FLUE UPWARDS AND HORIZONTAL USING A THIRD 90˚ BEND



Maximum total straight flue length		
	100mm	125mm
25CDi	6,000mm	19,000mm
30CDi	3,900mm	14,500mm
35CDi	2,500mm	12,000mm
40CDi	N/A	8,500mm

Flue Components Required

25CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
100mm	Extension Flue Kit	up to 9	7 719 002 349
100mm	90° Elbow	3	7 719 002 348
100mm	Vertical Adaptor	1	7 719 002 432
125mm	Standard Flue Kit	1	7 719 002 350
125mm	Extension Flue Kit	up to 21	7 719 001 892
125mm	90° Elbow	3	7 719 001 891
125mm	Vertical Adaptor	1	7 719 002 433

30CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
100mm	Extension Flue Kit	up to 7	7 719 002 349
100mm	90° Elbow	3	7 719 002 348
100mm	Vertical Adaptor	1	7 719 002 432
125mm	Standard Flue Kit	1	7 719 002 350
125mm	Extension Flue Kit	up to 17	7 719 001 892
125mm	90° Elbow	3	7 719 001 891
125mm	Vertical Adaptor	1	7 719 002 433

35CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Standard Flue Kit	1	7 719 002 497
100mm	Extension Flue Kit	up to 5	7 719 002 349
100mm	90° Elbow	3	7 719 002 348
100mm	Vertical Adaptor	1	7 719 002 432
125mm	Standard Flue Kit	1	7 719 002 350
125mm	Extension Flue Kit	up to 14	7 719 001 892
125mm	90° Elbow	3	7 719 001 891
125mm	Vertical Adaptor	1	7 719 002 433

40CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
125mm	Standard Flue Kit	1	7 719 002 350
125mm	Extension Flue Kit	up to11	7 719 001 892
125mm	90° Elbow	3	7 719 001 891
125mm	Vertical Adaptor	1	7 719 002 433

Greenstar CDi combi boiler series vertical fluing options

The Greenstar CDi series have the choice of 2 differently sized vertical RSF flue systems, 100mm and 125mm. Both systems have different maximum lengths. Options 1 to 3 detail the permissible lengths.

Vertical RSF Flue

Flue Diameter		100mm	125mm
Flue Terminal Assembly Diameter		135mm	135mm
Maximum Flue Length (inc terminal)	25CDi	11,500mm	23,000mm
	30CDi	9,400mm	18,500mm
	35CDi	8,000mm	16,000mm
	40CDi	4,900mm	16,000mm
Flue Terminal Assembly Length		1,140mm	1,365mm

Vertical balanced flue kit

Comprises:

1 x Flue Terminal Assembly
1 x Weather Sealing Collar
1 x Fire Stop Spacer
1 x Vertical Adaptor

} Part No. 7 719 002 430 (100mm dia)
Part No. 7 719 002 431 (125mm dia)

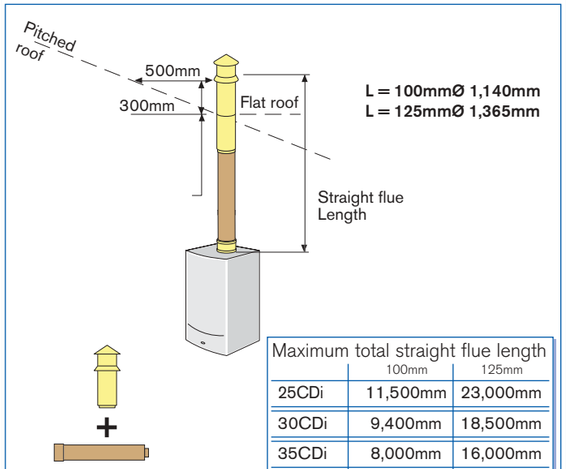
Accessories

	Worcester Part No.	
	100mm	125mm
Extension Flue Kit	7 719 002 349 (960mm long)	7 719 001 892 (1,000mm long)
90° Elbow	7 719 002 348	7 719 001 891
45° Elbow	7 719 002 347	7 719 001 899

Note: The roof flashing is not supplied by Worcester.

Option 1

VERTICAL BALANCED FLUE SYSTEM MAXIMUM HEIGHT



Maximum total straight flue length	100mm	125mm
25CDi	11,500mm	23,000mm
30CDi	9,400mm	18,500mm
35CDi	8,000mm	16,000mm
40CDi	4,900mm	16,000mm

Flue Components Required

25CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Vertical Flue Kit	1	7 719 002 430
100mm	Extension Flue Kit	up to 11	7 719 002 349
125mm	Vertical Flue Kit	1	7 719 002 431
125mm	Extension Flue Kit	up to 23	7 719 001 892

30CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Vertical Flue Kit	1	7 719 002 430
100mm	Extension Flue Kit	up to 9	7 719 002 349
125mm	Vertical Flue Kit	1	7 719 002 431
125mm	Extension Flue Kit	up to 18	7 719 001 892

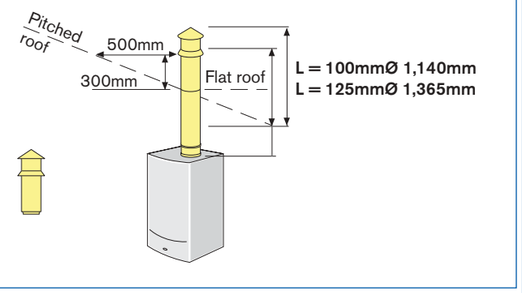
35CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Vertical Flue Kit	1	7 719 002 430
100mm	Extension Flue Kit	up to 8	7 719 002 349
125mm	Vertical Flue Kit	1	7 719 002 431
125mm	Extension Flue Kit	up to 16	7 719 001 892

40CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Vertical Flue Kit	1	7 719 002 430
100mm	Extension Flue Kit	up to 5	7 719 002 349
125mm	Vertical Flue Kit	1	7 719 002 431
125mm	Extension Flue Kit	up to 16	7 719 001 892

MINIMUM HEIGHT



Flue Components Required

25CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Vertical Flue Kit	1	7 719 002 430
125mm	Vertical Flue Kit	1	7 719 002 431

30CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Vertical Flue Kit	1	7 719 002 430
125mm	Vertical Flue Kit	1	7 719 002 431

35CDi

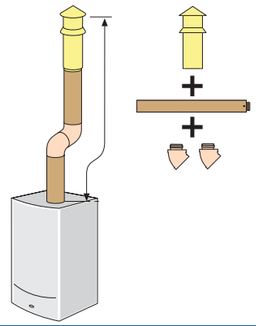
Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Vertical Flue Kit	1	7 719 002 430
125mm	Vertical Flue Kit	1	7 719 002 431

40CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Vertical Flue Kit	1	7 719 002 430
125mm	Vertical Flue Kit	1	7 719 002 431

Option 2

VERTICAL BALANCED FLUE SYSTEM WITH TWO 45° BENDS



Maximum total straight flue length	100mm	125mm
25CDi	9,500mm	21,000mm
30CDi	7,400mm	16,500mm
35CDi	6,000mm	14,000mm
40CDi	2,900mm	14,000mm

Flue Components Required

25CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Vertical Flue Kit	1	7 719 002 430
100mm	Extension Flue Kit	up to 10	7 719 002 349
100mm	45° Elbow	2	7 719 002 347
125mm	Vertical Flue Kit	1	7 719 002 431
125mm	Extension Flue Kit	up to 21	7 719 001 892
125mm	45° Elbow	2	7 719 001 899

30CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Vertical Flue Kit	1	7 719 002 430
100mm	Extension Flue Kit	up to 8	7 719 002 349
100mm	45° Elbow	2	7 719 002 347
125mm	Vertical Flue Kit	1	7 719 002 431
125mm	Extension Flue Kit	up to 17	7 719 001 892
125mm	45° Elbow	2	7 719 001 899

35CDi

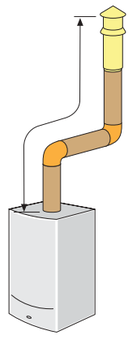
Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Vertical Flue Kit	1	7 719 002 430
100mm	Extension Flue Kit	up to 6	7 719 002 349
100mm	45° Elbow	2	7 719 002 347
125mm	Vertical Flue Kit	1	7 719 002 431
125mm	Extension Flue Kit	up to 14	7 719 001 892
125mm	45° Elbow	2	7 719 001 899

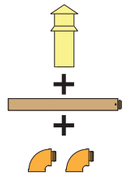
40CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Vertical Flue Kit	1	7 719 002 430
100mm	Extension Flue Kit	up to 3	7 719 002 349
100mm	45° Elbow	2	7 719 002 347
125mm	Vertical Flue Kit	1	7 719 002 431
125mm	Extension Flue Kit	up to 14	7 719 001 892
125mm	45° Elbow	2	7 719 001 899

Option 3

VERTICAL BALANCED FLUE SYSTEM WITH TWO 90° BENDS





Maximum total straight flue length		
	100mm	125mm
25CDi	7,500mm	19,000mm
30CDi	5,400mm	14,500mm
35CDi	4,000mm	12,000mm
40CDi	N/A	12,000mm

Flue Components Required

25CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Vertical Flue Kit	1	7 719 002 430
100mm	Extension Flue Kit	up to 9	7 719 002 349
100mm	90° Elbow	2	7 719 002 348
125mm	Vertical Flue Kit	1	7 719 002 431
125mm	Extension Flue Kit	up to 20	7 719 001 892
125mm	90° Elbow	2	7 719 001 899

30CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Vertical Flue Kit	1	7 719 002 430
100mm	Extension Flue Kit	up to 7	7 719 002 349
100mm	90° Elbow	2	7 719 002 348
125mm	Vertical Flue Kit	1	7 719 002 431
125mm	Extension Flue Kit	up to 16	7 719 001 892
125mm	90° Elbow	2	7 719 001 899

35CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
100mm	Vertical Flue Kit	1	7 719 002 430
100mm	Extension Flue Kit	up to 5	7 719 002 349
100mm	90° Elbow	2	7 719 002 348
125mm	Vertical Flue Kit	1	7 719 002 431
125mm	Extension Flue Kit	up to 13	7 719 001 892
125mm	90° Elbow	2	7 719 001 899

40CDi

Flue Diameter	*Description*	*Quantity*	*Worcester Part No.*
125mm	Vertical Flue Kit	1	7 719 002 431
125mm	Extension Flue Kit	up to 13	7 719 001 892
125mm	90° Elbow	2	7 719 001 899

Installation requirements

Installation of the Greenstar CDi Series must be in accordance with the relevant requirements of the Gas Safety (Installation Use) Regulations (as amended), current IEE Wiring Regulations, local Building Regulations, Building Standards (Scotland) (Consolidation) regulations and bylaws of the local Water company and Health and Safety Document No. 635 (Electricity at Work Regulations 1989). It should be in accordance with the relevant recommendations of the following British Standards:

BS 6798; BS 5449; BS 5546:1; BS 5440:1; BS 5440:2; BS 6891.

Gas Safety (Installation and Use) Regulations. All gas appliances must be installed by a Corgi registered person in accordance with the above regulations. Failure to install appliances correctly could lead to prosecution.

The manufacturers notes must not be taken in any way as overriding statutory regulations.

Sealed primary systems

Worcester Greenstar CDi combi boilers are supplied complete with all the necessary components to form a sealed primary system. Included are a pre-plumbed expansion vessel, a pressure relief valve (set at 3bar), an automatic air vent and a pressure gauge.

With an initial system pressure of 0.5bar a system capacity of approximately 83 litres can be accommodated. Refer to BS 7074:Part 1 for more information. The charge pressure can be increased by with a decrease in system volume.

It is important with an Aluminium Heat Exchanger that the pH level of the water does not exceed 8. Levels in excess of this could be detrimental to the Heat Exchanger.

The use of a suitable inhibitor will provide a resistance to this. Contact Betz Dearborn (Tel: 0151 4209595) or Fernox (Tel: 01799 521133) for further details.

System filling and make-up

The supplied plug in filling loop simply connects between the cold main connection and the heating return circuit on the wall mounting jig.

Valves and joints

It is very important that all valves and joints are able to sustain a working pressure of up to 3bar (45psi). Particular care should be exercised when fitting radiator valves and only those of high quality to BS 2767:10 should be used. All other valves and fittings should comply with BS 1010.

Loss of water pressure from a sealed system will require continuous recharging with fresh water and consequential introduction of air. Air is highly corrosive and will considerably reduce life expectancy of radiators, pumps etc.

Plastic pipe work

The use of plastic pipe work is acceptable. However, some plastics are permeable to oxygen and must be avoided. Only pipe work with a polymeric barrier should be used. Please note that the first 600mm of pipe work connected to the boiler must be of copper or steel.

Natural gas supply

The appliances when on a hot water or full output demand will require up to 2.6m³/hr of gas (25kW). The gas meter and supply pipes must be capable of supplying this quantity of gas in addition to the demand from any other appliance being served. It is important that a gas supply pipe of at least 22mm diameter is used. Under no circumstances should the size of the gas supply pipe be less than that of the appliance inlet connection. The meter outlet governor should be capable of ensuring a dynamic pressure of 20mbar (8in wg) at the appliance. Particular consideration should be given to the resistance to gas flow created by elbows, bends etc. Pipe work should be sized to overcome this resistance and details of this are given in the table below.

	Total length of Gas Supply Pipe (metres)			*Pipe Diameter (mm)*
	3	6	9	
Gas Discharge Rate m³/h	2.9	–	–	15
	8.7	5.8	4.6	22
	18.0	12.0	9.4	28

Approximate Additional Length to be Allowed (Natural gas)

Elbows or Tees		*90° Bends*	
Metres	*Feet*	*Metres*	*Feet*
0.5	2	0.3	1

Installation requirements *continued*

Propane gas supply

The Greenstar CDi Series is available in a propane gas version. The appliance when on a hot water or full output demand will require up to 2.0 kg/h of gas (25kW). The gas tank or bottles must be capable of supplying this quantity of gas at a nominal pressure of 37mbar (14.8in wg) at the appliance. The table below shows the propane gas discharge through varying lengths of pipe and the resistance to flow created by elbows, bends etc. Pipe work should be sized to overcome this resistance.

	Total length of Gas Supply Pipe (metres)			*Pipe Diameter (mm)*
	3	6	9	
Gas Discharge Rate m^3/h				
1.5	1.01	–	15	
8.0	5.2	4.2	22	
15.9	8.9	8.3	28	

Approximate Additional Length to be Allowed (LPG)

Elbows or Tees		*90° Bends*	
Metres	*Feet*	*Metres*	*Feet*
0.6	2	0.3	1

Electricity supply

A 3amp fused three pin plug and unswitched shuttered socket outlet (both complying with BS 1362) or preferably a double pole isolator with a contact separation of 3mm in all poles supplying the appliance should be used.

The appliance electrical circuits are also protected by an internal 2amp fuse. The appliance must be earthed.

Mains cold water supply

Water Authority requirement

A direct mains cold water connection is permitted by Water Authorities. However, it is recommended that reference be made to local requirements. In the event of difficulty contact Worcester Technical Department.

Pipe sizing

Unless the mains pressure is low, a standard 15mm diameter service pipe is normally suitable. A 15mm hot water distribution pipe to the first branch is recommended thereafter 15mm and/or 10mm to all draw off points.

Cold water connection

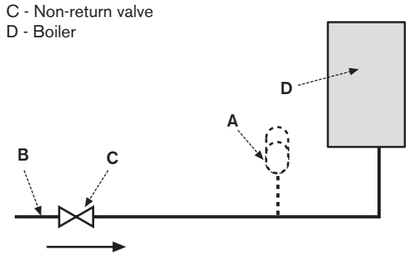
Connection should be made as shown in the pipe work detail and the appliance installed generally in accordance with the layout shown on page 10.

Wherever possible the cold supply to the appliance should be the first connection off the mains supply, in order to minimise hot water flow reduction when cold water services are operated. The final 600mm of piping to the appliance should be of copper only.

Cold water pressure

To achieve the stipulated flow rate a working cold water mains pressure of between 1.2 and 1.7bar is required (dependent on model). The appliance will operate at a minimum working pressure of only 0.2bar (3psi) however a reduced hot water flow rate should be expected. Where back-flow prevention devices, including water meters, are fitted the expansion of hot water into the cold water main can be prevented. This can result in a pressure build-up that may cause damage to the boiler and household devices such as showers, washing machines etc. In these cases we recommend that a mini-expansion vessel (Part No. 7 716 192 105) be fitted adjacent to the boiler in the cold water main.

MAINS WATER EXPANSION VESSEL:
A - Mini expansion vessel, Part No. 7 716 192 105
B - Mains water inlet pipe
C - Non-return valve
D - Boiler



Hot water supply

A domestic hot water flow regulator, set to give an optimum flow rate of between 10.2 and 16.3lts/min ±15% (dependent on model) is fitted to the cold supply of the hot water heat exchanger.

As with all mains fed systems, the flow rate of water obtainable from individual taps will vary in relation to the number of taps operating simultaneously, and will depend upon the cold mains supply available to the property.

Therefore, in order to avoid excessive starvation of flow to individual taps, flow balancing may be required by the use of proprietary constant volume flow regulators or Ball-o-Fix valves.

Hot water systems

Taps and valves

Hot and cold taps and mixing valves used with the Greenstar CDi Series appliance must be suitable for operating at a mains pressure and temperatures of 65°C (150°F).

Showers

When a loose head shower with a flexible hose is used over a bath or shower tray, the hose must be fixed so that the head cannot fall closer than 25mm (1in) above the top edge of the spill over level of the relevant bath or shower tray. Alternatively, the feed pipes to the shower should incorporate a double check valve assembly or a check valve and vacuum breaker.

With fixed head showers no provision is necessary.

The use of a thermostatically controlled shower will give added comfort and safeguard against high hot water temperatures. Alternatively, a pressure balancing shower valve specifically designed for constant temperature water heaters would be suitable.

Bidet

The supply of hot and cold water mains direct to a bidet is permitted provided that the bidet is of the overrim water feed type. The outlet(s) should be shrouded and not to have any temporary hand held spray attached. No other anti-syphonage arrangements are necessary.

Use in hard water areas

As the maximum temperature of the domestic hot water heat exchanger is limited by the electronic control circuit, there is normally no need for water treatment to prevent scale accumulation.

In areas where exceptional water conditions prevail, consideration may need to be given to the fitting of a device capable of preventing scale. In such circumstances the advice of the local water authority should be sought.

Warranty

Worcester Greenstar CDi appliances are offered with a full 2 year guarantee* on parts and labour. Ongoing service may be arranged through the Worcester Customer Service Department.

*Subject to conditions.

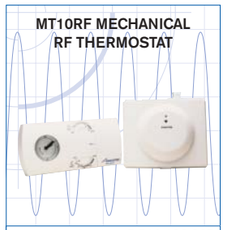
Notes

Notes

The Greenstar CDi series accessories


MT10 MECHANICAL TIMER

Worcester Part No. 7 716 192 036


MT10RF MECHANICAL RF THERMOSTAT

Worcester Part No. 7 716 192 037


DT20 TWIN CHANNEL DIGITAL PROGRAMMER

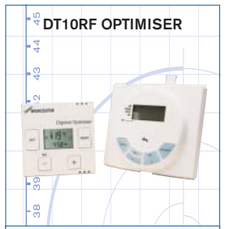
Worcester Part No. 7 716 192 038


DT20RF DIGITAL RF THERMOSTAT WITH TWIN CHANNEL PROGRAMMER

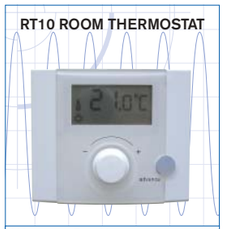
Worcester Part No. 7 716 192 041


DT10RF DIGISTAT

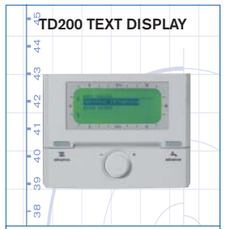
Worcester Part No. 7 716 192 039


DT10RF OPTIMISER

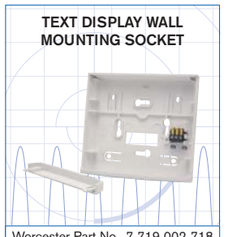
Worcester Part No. 7 716 192 040


RT10 ROOM THERMOSTAT

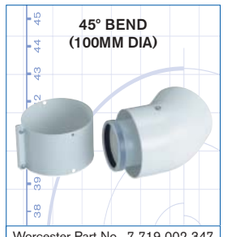
Worcester Part No. 7 719 002 505


TD200 TEXT DISPLAY

Worcester Part No. 7 719 002 506


TEXT DISPLAY WALL MOUNTING SOCKET

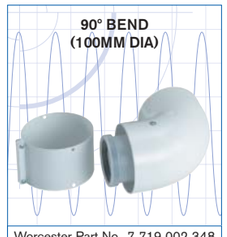
Worcester Part No. 7 719 002 718


45° BEND (100MM DIA)

Worcester Part No. 7 719 002 347


45° BEND (125MM DIA)

Worcester Part No. 7 719 001 899


90° BEND (100MM DIA)

Worcester Part No. 7 719 002 348


90° BEND (125MM DIA)

Worcester Part No. 7 719 001 891


1M EXTENSION (100MM DIA)

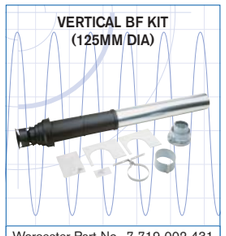
Worcester Part No. 7 719 002 349


1M EXTENSION (125MM DIA)

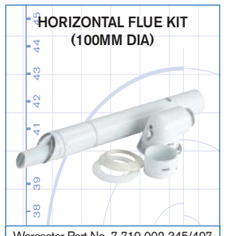
Worcester Part No. 7 719 001 892


VERTICAL BF KIT (100MM DIA)

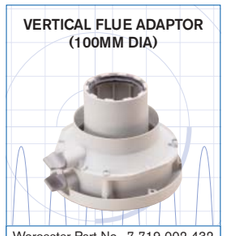
Worcester Part No. 7 719 002 430


VERTICAL BF KIT (125MM DIA)

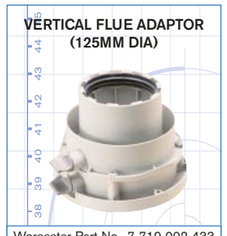
Worcester Part No. 7 719 002 431


HORIZONTAL FLUE KIT (100MM DIA)

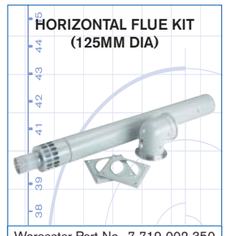
Worcester Part No. 7 719 002 345/497


VERTICAL FLUE ADAPTOR (100MM DIA)

Worcester Part No. 7 719 002 432


VERTICAL FLUE ADAPTOR (125MM DIA)

Worcester Part No. 7 719 002 433


HORIZONTAL FLUE KIT (125MM DIA)

Worcester Part No. 7 719 002 350

Note: For information on the Condensfit II Telescopic Flue System and Plume Management Kit, please see dedicated flue Technical and Specification leaflet.

A Complete After-sales Service

As part of the worldwide Bosch Group, Worcester strives to maintain the highest possible standards of after-sales care.

In addition to the no-nonsense parts and labour warranty applicable to all Worcester boilers, you and your customers have the assurance that every Worcester boiler is manufactured to both the appropriate British and European standards.

Worcester Contact Centre

Should you require support, our fully trained Contact Centre staff, based at our head office in Worcester, are ready to take your calls. Whatever your query our contact centre operators along with our nationwide team of engineers are ready to help you.

Boiler Protection Options

To protect and maintain your boiler it is recommended that you invest in a comprehensive maintenance contract. For more information please discuss with your CORGI/OFTEC registered installer or alternatively contact Worcester Service Contracts Team on 01905 754 624.

Contact Centre
Tel: 08457 256 206
Fax: 01905 754 701

Opening Times
Monday – Friday: 7.00am – 8.00pm
Saturday: 8.00am – 5.00pm
Sunday: 9.00am – 12 noon

All the Technical Advice You Need

Spares

Genuine replacement parts for all Worcester boilers are readily available from stock, on a next day delivery basis. For more information please call your local stockist.

Customer Technical Support

The Worcester Technical Helpline is a dedicated phone line – committed to providing a comprehensive service to complement the brand name and quality of our boiler products. Our experienced team of technical experts provide the answers to queries of a technical nature across the entire Worcester range.

Worcester also has a pre-sales department, which provides assistance in selecting a boiler system to suit a particular application, along with full guidance on installation. As well as this we will also assist in finding a recommended installer. For more information please contact the Technical Hotline or alternatively visit our website where literature can be downloaded www.worcester-bosch.co.uk

Technical
Tel: 08705 266 241
Fax: 01905 752 741

Opening Times
Monday – Friday: 8.00am – 6.00pm
Saturday: 8.30am – 1.00pm

The very best training programmes from Worcester

Worcester has always placed great emphasis on technical support and training for installers and service engineers. Today this need is greater than ever. The differences between a combi, conventional and condensing boiler are substantial, and the technology of each continues to advance at a rapid pace.

To ensure the highest levels of competence and expertise in the installation of all Worcester products, the company runs intensive training courses for installers, commissioning engineers and engineers involved with servicing and fault finding.

Courses available

Our training facilities offer a number of courses suitable for the installer and commissioning engineers, and a more in-depth course for the servicing and fault finding engineers.

Training Centres throughout the UK

Worcester's network of regional training centres are strategically located across the country to help put you within convenient travelling distance of the courses you wish to attend.

In addition to the outstanding facilities at the company's headquarters in Worcester, there are centres at Clay Cross in Derbyshire, Rochester in Kent, West Thurrock in Essex and Bangor, Northern Ireland. A new centre is also due to open* in north west England. There are also additional training opportunities available throughout the UK. Please phone 01905 752526 for more information about a course near you. Each course is run by specialist trainers and is superbly equipped to deliver a combination of classroom theory and practical hands-on experience that's second to none.

New Product Advance Training

Exclusive to Business Initiative members, these invaluable courses give you an introduction and insight into new Worcester products as soon as they are released on to the market.

College-linked learning

A number of the UK's leading proactive technical colleges are equipped with Worcester products and offer excellent practical tuition on a more local level.

Distance Learning

Worcester has produced a selection of Distance Learning CD ROMs/DVDs which are packed with information. Call 01905 752556 for your copies.

Get on course for a more profitable future now

Call now for more information

01905 752526

*Open Autumn/Winter 2006

www.worcester-bosch.co.uk

Worcester Training Courses

Greenstar CDi, Highflow 440 and HE Plus gas-fired condensing combi boilers

Models covered	Greenstar 25/30/35/40CDi Greenstar Highflow 440 Greenstar 30/35/40 HE Plus
Duration	1 day

Greenstar i Junior and Si gas-fired condensing combi boilers

Models covered	Greenstar 24/28i Junior Greenstar 25/30Si
Duration	1 day

Greenstar system and regular gas-fired condensing boilers

Models covered	Greenstar 12/15/18/24Ri Greenstar 30/40CDi Conventional Greenstar 30CDi System Greenstar 12/24i System
Duration	1 day

Standard efficiency boiler course: i/Si/CDi (non condensing)

Models covered	24/28i Junior 24/28Si II 24/28/35CDi
Duration	1 day

Greenstar oil-fired condensing boilers

Models covered	Greenstar Heatslave Greenstar Danesmoor Greenstar Utility
Duration	1 day

Danesmoor and Heatslave oil-fired boilers

Models covered	Danesmoor Heatslave
Duration	1 day

OFTEC Training

OFTEC 101

Covering	Domestic/Light Commercial Pressure Jet Commissioning and Servicing
Duration	3 day course (2 days training plus 1 days assessment)

OFTEC 105e

Covering	Domestic/Light Commercial Pressure Jet Boiler installation
Duration	1 day assessment

OFTEC 101 & 105e

Covering	Domestic/Light Commercial Pressure Jet Installation, Commissioning and Servicing
Duration	3 day course (2 days training plus 1 days assessment comprising 2 theory and 1 practical)

OFTEC 600a

Covering	Oil Tank Installation and Associated Controls
Duration	1 day assessment course

OFTEC 101/105e/600e

Covering	Domestic/Light Commercial Pressure Jet Boiler Installation, Commissioning, Servicing and Oil Tank Installation and Associated Controls
Duration	4 days (2 days training and 2 days assessment)

Camray oil-fired combi, regular and system boilers

Models covered	External Utility System Combi
Duration	1 day

Certificate in Energy Efficiency for Domestic Heating Course

Covering	Key elements of energy-efficient heating and hot water systems and products, compliance with the latest Building Regulations, how condensing boilers work and how they differ to non condensing products.
Duration	1 day

Unvented Cylinder Course

Covering	All G3 Regulations for the Installation, Servicing and Commissioning of Unvented Cylinders. The course includes recognised accreditation by Logic Certification.
Duration	1 day

Greenskies Solar System

Covering	Installation, Commissioning and Servicing
Duration	1 day