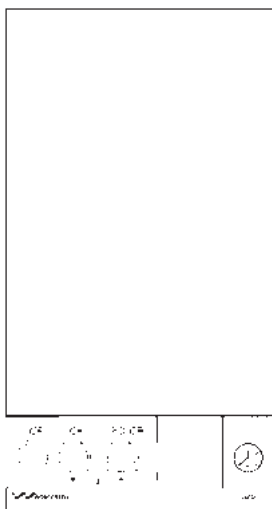




Bosch Group



# 24CDi, 28CDi & 35CDi II COMBI



*Worcester Bosch supports the  
Benchmark code of practice*

## G.C. NUMBERS

APPLIANCE	NATURAL GAS	L.P.G.
24CDi Fanned Flued (RSF)	47 311 30	47 311 31
24CDi Balanced Flued (BF)	47 311 29	
24CDi Open Flued (OF)	47 311 32	47 311 33
28CDi Fanned Flue (RSF)	47 311 34	47 311 35
35CDi II Fanned Flue (RSF)	47 311 58	47 311 59

# USER INSTRUCTIONS & CUSTOMER CARE GUIDE

# EXCELLENCE COMES AS STANDARD

Thank you for purchasing a Worcester CDi gas-fired combination appliance.

Worcester CDi appliances are made by Worcester Heat Systems and the strictest quality control standards are demanded throughout every stage of production.

Indeed, Worcester Heat Systems have led the field in

innovative appliance design and performance for more than 30 years.

The result is that your new Worcester CDi appliance offers you the very best of everything - quality, efficiency, economical running costs, proven reliability and value for money.

What's more, you also have the assurance of our no-nonsense 1 year parts and labour guarantee.

And, to keep your boiler operating at peak condition and efficiency, an optional maintenance scheme is available from Worcester Heat Systems Ltd. Contact our Service Contracts team on 01905 754624 for further details.



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# GENERAL INFORMATION

## GAS SAFETY (INSTALLATION AND USE) REGULATIONS 1998

It is the law that all gas appliances must be installed by a competent person in accordance with the above regulations. Failure to install appliances correctly could lead to prosecution. It is in your interest and that of safety to ensure compliance with the law. The manufacturers notes must not be taken, in any way, as overriding statutory obligations.

**WARNING:** This appliance must be earthed and protected by a 3 amp fuse.

**ELECTRICITY SUPPLY:** 230V ~ 50Hz

**IMPORTANT:** To get the best from your Worcester CDi please read these instructions carefully.

**NOTE:** In the event of a fault the appliance should not be used until the fault has been corrected by a competent person.

## BENCHMARK

The Benchmark initiative is a code of practice to encourage the correct installation, commissioning and servicing of domestic central heating boilers and system equipment.

A 'log book' is dispatched with every appliance. **This is a vital document that needs to be completed by the installer at the time of installation. It confirms that the boiler has been installed and commissioned according to the manufacturers instructions.**

All CORGI Registered Installers carry a CORGI ID card and have a registration number. Both should be recorded in your central heating log book. You can check that your installer is CORGI registered by calling CORGI on 01256 372300.

Without the completion of the log book, manufacturers may refuse to respond to a call-out request. It is important that your installer has given you the fully completed log book.

## GENERAL DESCRIPTION

(See Fig.1.)

The WORCESTER CDi MODELS are combined domestic hot water and central heating appliances. They consist of a gas fired boiler having a varying output of between:

	CH	DHW
24CDi	9.0 - 24kW	9.0 - 24kW
28CDi	9.0 - 24kW	9.0 - 28kW
35CDi II	10.5 - 27.5kW	9.5 - 35.3kW

a heat exchanger to provide domestic hot water via the boiler, circulating pump and water diverting valve. All the necessary controls to provide mains fed domestic hot water and central heating.

The appliances are supplied as standard with a manual operating switch. Alternatively a fascia mounted programmer may have been fitted.

The appliances can operate in one of two modes. Hot water only or hot water and central heating.

## Hot Water Mode:

When a demand is made for hot water by opening a tap or shower, the flow switch will energise the pump and circulate primary hot water around the boiler and water to water heat exchanger. The burner will light to its maximum setting.

When hot water is no longer required the appliance pump (or fan) may continue to operate to dissipate the residual heat within the boiler. A flow restrictor is fitted within the appliance which limits a hot water delivery rate to a maximum of:

24CDi	9.0 ( $\pm 15\%$ ) litres/minute
28CDi	10.0 ( $\pm 15\%$ ) litres/minute
35CDi II	12.0 ( $\pm 15\%$ ) litres/minute

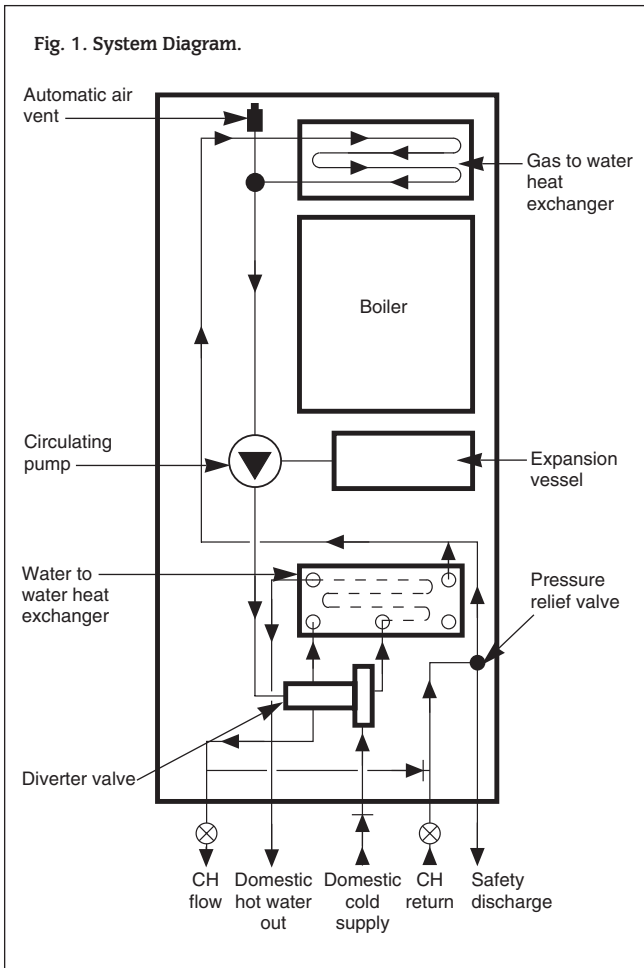
## Hot Water and Central Heating mode:

When a demand is made for heating by the system controls (i.e. a programmer or room thermostat), the pump will energise, circulating primary water around the heating system and the burner will light.

The heat output from the appliance in this mode has been factory set to maximum. The appliance will operate as necessary to maintain the temperature of the radiators at the level set by the adjustment of the Heating Temperature Control Knob. (See Fig. 2.)

If the system no longer requires output to maintain the desired room temperature, the burner will extinguish. The pump will continue to run for a short period to dissipate the residual heat from the appliance and then switch off.

The appliance will supply heat to the central heating system as required. A demand for hot water at a tap or shower will override the central heating function for the period of the domestic hot water demand.



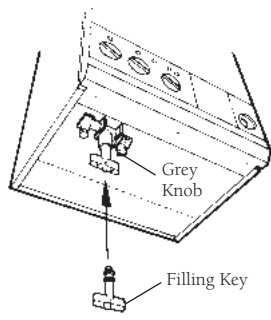
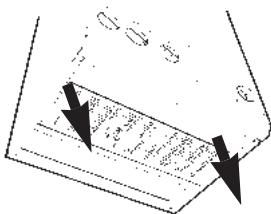


# GENERAL NOTES

## CENTRAL HEATING SYSTEM

During the first few hours of operation of the central heating system, check that all radiators are being heated at an even rate. Should the upper area of a radiator be at a lower temperature than the base of the radiator, it should be vented by releasing air through the venting screw at the top of each radiator. Make sure your installer shows you how to carry out the operation. Repeated venting will reduce the quantity of water in the system and this must be replenished for safe and satisfactory operation of the appliance. Should water leaks be found in the system or excessive venting be required from any radiator, your installer or heating engineer should be contacted and the system corrected.

Fig. 1a.



## SEALED HEATING SYSTEM

The appliance can be fitted to a sealed heating system which is pre-pressurised. In this case your installer will advise you on the minimum and maximum pressure that should be indicated on the pressure gauge. See Fig. 2. Check regularly that this pressure is maintained and contact your installer or maintenance engineer if there is a permanent significant drop in pressure indicated on the gauge. If the system loses pressure it should be re-pressurised as instructed by the installer (**N.B. Maximum operating pressure 2.5 bar**).

### **Re-pressurising The System** (See Fig. 1a). (If in doubt leave this procedure to your installer).

Remove the bottom panel to gain access to the filling loop assembly.

Insert the bayonet end of the filling key into the corresponding cut outs in the filling loop housing and twist to lock the key in place.

Turn the grey knob anti-clockwise to allow water ingress and fill until the required pressure is reached.

Turn the grey knob clockwise to stop filling and remove the filling key by lining up the bayonet end of the key with the cut outs in the filling loop housing and withdrawing the key.

**N.B. The key must always be removed from the filling loop housing after the system has been filled to prevent accidental filling and to comply with Bylaw 14 of the Water Bylaws Scheme.**

Store the key in a safe place for future use and refit the bottom panel.

## OPEN VENTED HEATING SYSTEM

The appliance may be fitted to an open vented heating system your installer will advise you. There is no need to observe the pressure gauge.

## CLEARANCES

	24.28CDi RSF	35CDi II	24CDi OF	24CDiBF
Left-hand side	10	10	10	10
Right-hand side	10	10	10	10
In Front	600	600	600	600
Above	180	180	300	100
Below	200	200	200	200

Minimum clearances in millimetres.

Your installer will have provided adequate space around the appliance for safety and servicing. Do not restrict this space by the addition of cupboards, shelves etc. close to the appliance.

## ROOM THERMOSTAT

A room thermostat may be fitted for control of the central heating temperature. It will be located in one room of the home. The method of setting a room thermostat varies with the type and manufacture. Refer to the instructions supplied with the room thermostat.

## THERMOSTATIC RADIATOR VALVES

If thermostatic radiator valves are fitted to the system then they must conform to the requirements of BS2767:10. It is advisable to leave one valve permanently set at maximum to prevent the boiler short cycling.

## SHOWERS, BIDETS, TAPS AND MIXING VALVES

Standard hot and cold taps and mixing valves used with the appliance must be suitable for operating at mains pressure. Thermostatically controlled shower valves will guard against the flow of water at too high a temperature.

If using a pressure equalising valve, set the Domestic Hot Water temperature control knob to the 'MAX' position.

Hot and cold mains fed water can be supplied direct to an overrim flushing bidet subject to local water company requirements.

With all mains fed systems the flow of water from the individual taps will vary with the number of outlets operated simultaneously and the cold water mains supply pressure to the property. Flow balancing using 'Ball-o-Fix' type valves is recommended to avoid an excessive reduction in flow to individual outlets.

For further information contact Worcester Heat Systems Technical Helpline. 08705 266241

## HOT AND COLD FLOW

The flow of water demanded from both hot and cold service outlets is dependent upon mains supply, it may not be possible in some installations to operate all outlets simultaneously.

## WATER MAINS FAILURE

It is important to note that in the event of a mains water supply failure, no tap water will be available until the mains supply is restored. The appliance can still be used for heating provided that the system is of the sealed system type. Open vent central heating systems should be turned off until the supply is restored.

## USE IN HARD WATER AREAS

Normally there is no need for scale protection. However, in areas of exceptionally hard water supply it is recommended that an In-Line scale inhibitor be fitted.

Installation should be strictly in accordance with the requirements of the local Water Company. An isolating valve to facilitate servicing should be incorporated.

The water hardness may be determined using the standard test paper or by reference to the local Water Company.

Further information may be obtained from Worcester Heat Systems Technical Helpline.

## **AIR SUPPLY FOR OPEN FLUED (O.F.) APPLIANCES**

Your installer will have made arrangements for an adequate supply of fresh air to the appliance. Fresh air is required for combustion. Do not block up any air ways which may be let into a wall or door. Do not hang clothes or other combustible materials over the appliance or against the flue pipe.

**NOTE:** Do not place anything on top of the appliance. If the appliance is fitted in a compartment do not use the compartment for storage purposes unless it conforms to the requirements of BS 6798:1987: Section 6. In particular, the flue pipe should not pass through an airing cupboard space unless protected by a guard (such as wire mesh) concentrically spaced 13mm (1/2in), as described in BS 6798:1987.

## **VENTILATION OF BALANCED FLUED (BF) AND ROOM SEALED FANNED FLUE (RSF) APPLIANCES**

These are room sealed appliances and any ventilation openings in a wall or door must not be obstructed. Do not allow the flue terminal fitted on the outside wall to become obstructed or damaged.

**NOTE:** Do not place anything on top of the appliance. If the appliance is fitted in a compartment do not use the compartment for storage purposes unless it conforms to the requirements of BS 6798:1987: Section 6. It is essential that the airing space is separated from the boiler space by a perforated non-combustible partition as described in BS 6798:1987.

## **CIRCULATING PUMP**

This may be fitted with a speed adjuster. If so it will be factory set at maximum and should not be changed.

## **FROST PRECAUTIONS**

If the appliance is not to be used for a long period of time and there is a likelihood of freezing, then the appliance should be drained. The Worcester Heat Systems Technical Helpline will advise you on suitable frost precautions. For short periods, the built-in frost protection of the appliance will be adequate.

## **SERVICE**

Annual servicing is important to ensure continuing high efficiency and long life of your appliance. Suitable servicing arrangements should be made with a competent third party. In the event of any difficulty in making suitable service arrangements, Worcester Heat Systems Ltd. will be happy to discuss regular servicing and offer a comprehensive maintenance contract.

**IMPORTANT: Do not touch or adjust any sealed component.**

## **WARNING**

If a gas leak exists, or is suspected, turn off the gas supply to the appliance at the service cock and consult your local service engineer.

Do not touch any electrical switches to turn them either on or off. Open all windows and doors. Do not smoke. Extinguish all naked lights.

## **CLEANING**

Do not use abrasive cleaners on the outer casing. Use a damp cloth and a little detergent.



# OPERATION OF CONTROLS

## OPERATING SWITCH

In the '☼' position there is no mains electricity to the appliance.

In the 'I' position mains electricity is connected to the appliance.

## CENTRAL HEATING TEMPERATURE CONTROL

The position of this knob will determine the temperature of the water delivered to the radiators between the 'I' and 'MAX' position. When the knob is turned anti-clockwise past the 'I' position towards the '☼' (Summer Position), then the appliance will operate in the HOT WATER mode only and no heat will be delivered to the radiators.

## DOMESTIC HOT WATER TEMPERATURE CONTROL

The position of this knob will determine the temperature of the water delivered at the domestic hot water taps between the '☼' and the 'MAX' position.

By slightly reducing the flow of domestic water from the tap, the delivery temperature of the water will be further increased. This is of particular advantage in the winter, for example to increase bath water temperature. Also this will provide an added advantage of reducing the delay before hot water is obtained.

## FACIA MOUNTED PROGRAMMER (if fitted)

Your installer may have mounted either a mechanical or an electronic programmer into the fascia of your appliance. Operating instructions are supplied with the programmer.

## RESET BUTTON

Press this button in for five seconds if any of the indicator lights are flashing slowly.

## SYSTEM PRESSURE GAUGE

The red needle has been set to show the sealed system pressure which is required for the appliance to operate effectively. The grey needle will show the actual pressure in the system. This does not apply to any open vent system.



## INDICATOR LIGHTS



**Mains electricity indicator:**

**OFF** : No mains electricity to the appliance

**ON** : Mains electricity is connected to the appliance



**Central heating demand indicator:**

**OFF** : No demand for heat to the central heating circuit

**ON** : Central heating demand

**FLASHING SLOW** : Ignition lockout  
(once per second)

**FLASHING FAST** : Appliance fault (other than ignition lockout)  
(five times per second)



**Domestic hot water demand indicator:**

**OFF** : No demand for domestic hot water

**ON** : Domestic hot water demand

**FLASHING FAST** : Air flow fault (RSF). Flue gas spillage (OF)  
(five times per second)



**Central heating and domestic hot water demand indicators:**



**BOTH FLASHING SLOW** : Overheat cut-off  
(once per second)

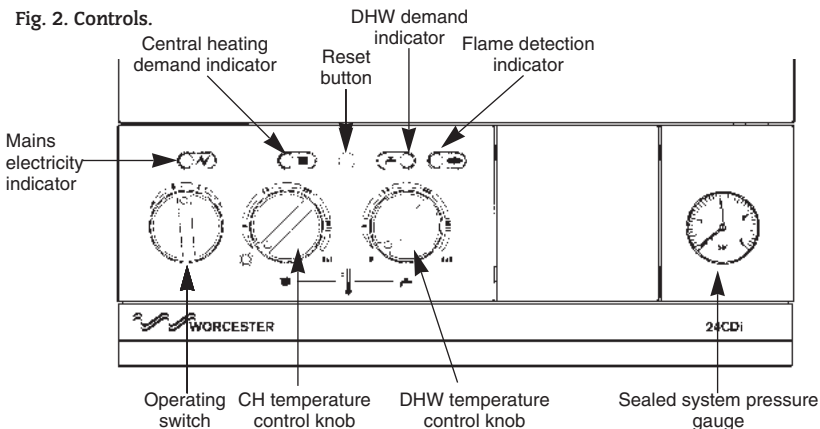


**Flame detection indicator:**

**OFF** : Burner off

**ON** : Burner on

**Fig. 2. Controls.**





# TO LIGHT AND STOP THE APPLIANCE

## TO LIGHT THE APPLIANCE

Check that the water valves to the central heating circuit are open.

On sealed systems check that the grey needle on the pressure gauge is not below the required pressure.

Switch on the mains electricity. The green power on indicator will light. Set the room thermostat, if fitted, to maximum. Turn the central heating temperature control knob to 'MAX'. The red central heating demand indicator will light.

The burner will light and the red flame detection indicator will light.

Set the central heating and hot water temperature control knobs and the room thermostat, if fitted, to the desired temperature.

## TO STOP THE APPLIANCE

### For Short Periods

Turn the central heating temperature control knob fully anti-clockwise to the '☼' position.

### For Long Periods

Turn the operating switch to the '☼' position. Switch off the mains electricity.

A fascia mounted electronic programmer will retain its settings for about two weeks, after which it will return to the factory set

programme. The display will disappear after approximately 12 hours.

A fascia mounted mechanical programmer will require resetting once the operating switch has been set to 'O', or the mains supply has been disconnected.

## ELECTRICITY SUPPLY FAILURE

If the electricity supply fails the appliance will not operate. Once the supply is restored the appliance will return to normal operation. If a programmer is fitted, check that the settings have been maintained.

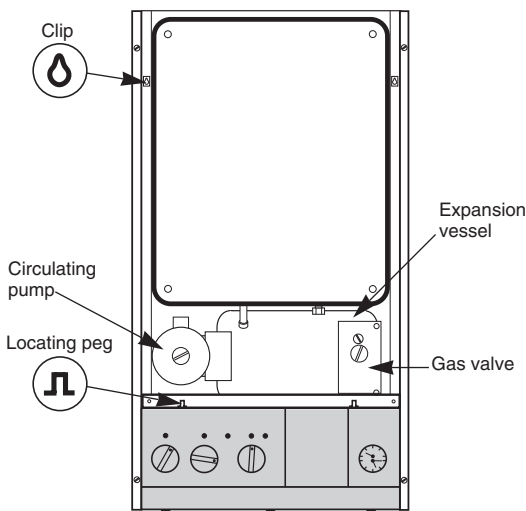
## OVERHEAT CUT-OFF THERMOSTAT

The appliance will enter a lockout condition in the event of overheating.

An overheat cut-off thermostat is fitted to the appliance which will interrupt the electricity supply to the gas valve.

If the overheat cut-off has operated, both the central heating and the hot water demand indicators will flash together.

Fig. 3. CDi with front panel removed.



The appliance can be reset by pressing the reset button and holding in for 5 seconds.

## **IGNITION LOCKOUT**

The appliance will enter a lockout condition in the event of the burner failing to ignite.

If the burner fails to light within a preset time of 10 seconds the electricity supply to the gas valve will be interrupted.

If ignition lockout has occurred, the central heating demand indicator will flash slowly (approximately once per second).

The appliance can be reset by pressing the reset button and holding in for 5 seconds. Check that the gas supply has not been interrupted.

If this condition continues to occur, then call a service engineer.

## **AIR FLOW DEVICE (RSF ONLY)**

The appliance will enter a lockout condition in the event of an air flow fault.

If the controls fail to detect the correct air flow through the appliance the electricity supply to the gas valve will be interrupted.

If an air flow fault has occurred, the domestic water demand indicator will flash (approximately five times per second).

The appliance will try to re-light after a waiting period of approximately 4 minutes. Check that the flue terminal has not been obstructed or damaged. If this condition continues to occur, then call a service engineer.

## **FLUE SPILLAGE DEVICE (OF ONLY)**

The appliance is fitted with a device which detects the spillage of combustion products from the draught diverter. In the event of the flue becoming wholly or partly blocked this device will cut the gas supply to the burner. If the device has activated, the D.H.W. demand indicator will flash (approximately 5 times per second).

The device automatically resets after a waiting period of approximately 20 minutes. If the blockage remains the appliance will re-light briefly before the device operates again. Should the problem persist consult your service engineer.

## **REMOVAL AND REPLACEMENT OF THE FRONT PANEL (See Fig. 3)**

### **Removal:**

Holding the panel at the edges, slide it upwards to disengage the clips and ease the top edge forwards and upwards to raise it clear of the two pegs on the top edge of the fascia.

### **Replacement:**

Locate the two holes in the bottom edge of the front panel over the two pegs on the top edge of the fascia and reverse the removal procedure.

**WARNING: Do not touch any component within the appliance when it is running as some may be very hot.**



## APPLIANCE FAILS TO OPERATE

A diagnostic system is provided which gives a flashing light display on the fascia panel. Press the reset button to attempt to restart the appliance. If the appliance does not return to normal operation then contact your installer or Worcester Heat Systems.

More than 30% of all calls made to Worcester Heat Systems to report appliance faults or breakdowns prove to be false alarms, as there is often a simple explanation for the apparent malfunction.

So, to help you save time and money – not to mention frustration and inconvenience – please refer to the General Information, Notes and Lighting Instructions ensuring all controls are set correctly.

If, after following the instructions the appliance still fails to operate correctly call the Worcester Heat Systems Service Centre on 08457 256206. Arrangements will be made for an engineer to call as soon as possible.

### CALL-OUT CHARGES

All of our field service engineers are factory trained.

If you request a visit from an engineer and your appliance has been installed within the last 12 months, no charge will be made for parts and/or labour, providing:

- The appliance was commissioned correctly on installation.
- An appliance fault is found and the appliance has been installed within the past 12 months.

A call-out charge will be made where:

- The appliance has been installed for over 12 months, or
- Our Field Service Engineer finds no fault with the appliance (see note), or
- The cause of breakdown is with other parts of your plumbing/heating system, or with equipment not supplied by Worcester.

**NOTE:** Invoices for attendance and/or repair work carried out on your appliance by any third party will not be accepted.

# MAINTAINING YOUR APPLIANCE

Your new Worcester CDi gas-fired appliance represents a long-term investment in a reliable, high quality product.

In order to realise its maximum working life, and to ensure it continues to operate at peak efficiency and performance, it is essential that your boiler receives regular, competent servicing and annual maintenance checks beyond the initial 12 month guarantee period.



Regular service contracts can be arranged with your installer – however if you have difficulty making a satisfactory arrangement simply contact Worcester Heat Systems Contract department on **01905 754624** for help.



### **CONTACT NUMBERS:**

UK Call Centre	Tel.	08457 256 206
UK Call Centre	Fax.	01905 757536
Scotland only	Fax.	01506 441 687

### **OPERATING HOURS:**

Mon - Fri	8.00am to 6.00pm
Sat	8.30am to 1.00pm

Please contact our UK Call Centre number where our friendly operators will book your call with one of our team of nationwide engineers.

### **NOTE:**

Sunday and Bank Holiday cover is not available



# YOUR WORCESTER CDi COMBI GUARANTEE

This appliance is guaranteed against faulty materials or workmanship for a period of twelve calendar months from the date of installation subject to the following conditions and exceptions.

1. That during the period of this guarantee any components of the unit which are proved to be faulty or defective in manufacture will be exchanged or repaired free of material charges and free of labour charges by Worcester Heat Systems Limited.
2. That the householder may be asked to prove the date of installation, that the appliance was correctly commissioned and, where appropriate, the first 12 month service has been carried out to the satisfaction of Worcester Heat Systems Limited when requested.
3. That any product or part thereof returned for servicing under the guarantee must be accompanied by a claim stating the Model, Serial Number, Date of Installation.
4. That Worcester Heat Systems Limited will not accept responsibility for damage caused by faulty installation, neglect, misuse or accidental damage, the non-observance of the instructions contained in the installation and Operating Instructions Leaflets.
5. That the appliance has been used only for normal domestic purposes for which it was designed.
6. That this guarantee applies only to equipment purchased and used in mainland Great Britain.

This guarantee is given in addition to all your normal statutory rights.



# GUARANTEE REGISTRATION

You should complete and return the postpaid Guarantee Registration Card within 14 days of purchase.

The card will register you as the owner of your new Worcester CDi appliance and, while this will not affect your statutory rights in any way, it will assist us to maintain an effective and efficient customer service by establishing a reference and permanent record for your boiler.

**IMPORTANT: SERIAL NUMBER.** Copy the number off the Guarantee Card.

## FOR YOUR OWN RECORD

MODEL

SERIAL NUMBER

(See identity label inside appliance casing)

TYPE/SIZE

DATE OF INSTALLATION

Do not forget to keep the  Log book in a safe place.

## CORGI CONTACT

All **CORGI Registered** installers carry a **CORGI ID** card and have a registration number. Both should be recorded in your central heating log book. You can check your installer is **CORGI Registered** by calling **CORGI** on **01256 372300**



# WORCESTER

## Bosch Group

**EXCELLENCE COMES AS STANDARD**

Worcester Heat Systems Limited. Cotswold Way, Warndon, Worcester WR4 9SW.

Telephone: (01905) 754624. Fax: (01905) 754619.

Technical Service Helpline 08705 266241.

[www.worcester-bosch.co.uk](http://www.worcester-bosch.co.uk)