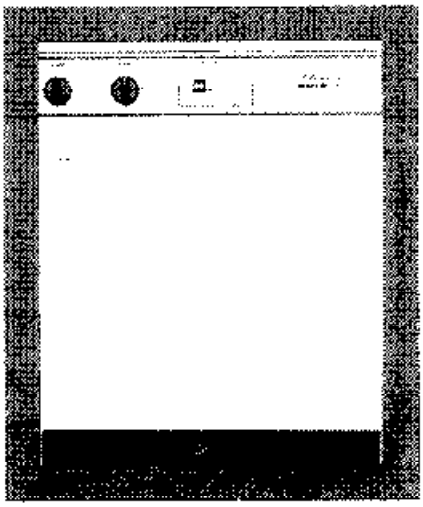
WORCESTER

Highflow 3.5 & 4.5

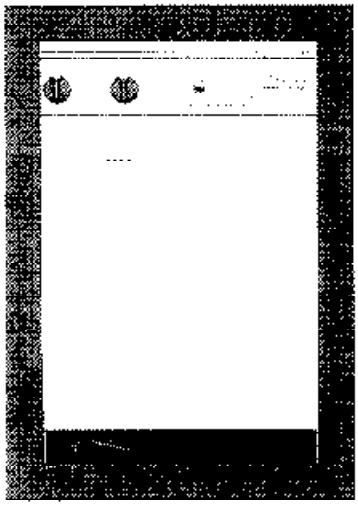
BF, OF & RSF Models

FLOOR STANDING COMBINATION BOILERS FOR CENTRAL HEATING AND MAINS FED DOMESTIC HOT WATER

USERS OPERATING INSTRUCTIONS



4.5 BF MODEL



3.5 BF MODEL

GC NUMBERS		
3.5	Balanced Flued (BF)	41 311 39
3.5	Open Flued (OF)	41 311 38
3.5	Fanned Flue (RSF)	41 311 40
4.5	Balanced Flued (BF)	41 311 42
4.5	Open Flued (OF)	41 311 41

IMPORTANT: THIS APPLIANCE IS FOR USE WITH **NATURAL GAS ONLY**

THESE INSTRUCTIONS APPLY IN THE UK ONLY

THESE INSTRUCTIONS ARE TO BE LEFT WITH THE USER OR AT THE GAS METER

WORCESTER
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Gas Safety (Installation and Use) Regulations 1984. It is the law that all gas appliances are 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 if a 13 amp plug is used. If any other type of plug is used a 5 amp fuse must be fitted either in the plug or adaptor or at the distribution board.

Electricity Supply. 240V~ 50 Hz.

IMPORTANT. To get the best from your Highflow please read these instructions carefully.

GENERAL DESCRIPTION

(See Fig. 1.)

The **HIGHFLOW 3.5 MODELS** are combined domestic hot water and central heating appliances. They consist of a gas fired boiler having a varying output of between 9kW and 22.9kW (8.8 kW and 23.4 kW for RSF appliance), a heat exchanger coil contained within a storage heat bank to provide domestic hot water via the boiler, a circulating pump, water diverting valve and all necessary controls to provide mains fed domestic hot water and central heating.

The **HIGHFLOW 4.5 MODELS** include a larger capacity heat bank, two heat exchanger coils and an additional internal water circulating pump.

The appliances are fitted with a manual Operating Switch.

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

Hot water mode

When a demand for hot water is made by the opening of a tap or shower valve it is satisfied by an exchange of heat within the heat bank.

The flow of incoming mains water past the domestic hot water thermostat activates the control circuit. The main burner will ignite, the pump, or pumps, will start and the diverter valve will allow the passage of hot water into the heat bank to continuously replenish the heat drawn off through the taps.

If no hot water demand is made then the boiler will only use enough energy to maintain the temperature of the heat bank.

The maximum temperature of the water drawn off from the heat bank is governed by the setting of the Hot Water Temperature Control Knob. (See Fig. 2.)

A flow restrictor is fitted within the **Highflow 3.5** which limits the hot water delivery rate to a maximum of 15 (+ or – 15%) litres/min. (3.3 gallons/min.).

Flow restrictors are fitted to the **Highflow 4.5** which limit the hot water delivery rate to a maximum of 20 (+ or – 15%) litres/min. (4.5 gallons/min.).

The restrictor is removed by the installer if a cistern feed hot water system is installed.

Central heating and hot water mode

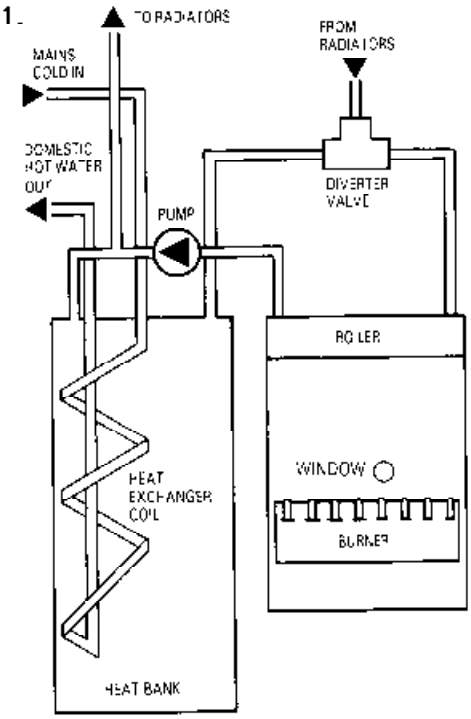
In response to a call for heat from the system controls the main burner will ignite, the pump, or pumps, will start and the diverter valve will allow the passage of hot water into the heating system. The heat output from the appliance in this mode will have been set by the installer to match the requirement of the system. The appliance will operate as necessary to maintain the temperature of the radiators at the level set by the adjustment of the Central Heating Temperature Control Knob. (See Fig. 2.)

If there is a call for domestic hot water during a demand for central heating then the output from the boiler will be diverted into the heat bank and consequently temporarily interrupt the supply of hot water to the central heating system.

Similarly the hot water is occasionally diverted from the central heating system into the heat bank to maintain the stored domestic hot water temperature.

NOTE: If in doubt about the use of the controls ask you installer to assist you.

Fig. 1.



SYSTEM DIAGRAM OF HIGHFLOW 3.5 MODELS

The HIGHFLOW 4.5 models include a larger capacity heat bank, two heat exchanger coils and an additional water circulating pump.

GENERAL NOTES

CLEARANCES

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.

Minimum clearances in millimetres

	BF Models	OF Models	RSF Models
Left hand side	5	5	20
Right hand side	5	70*	20
Front	600	600	600
Above	450	450	450

* If a standard work surface is fitted then the gap should be 100mm.

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 any water leaks be found in the system or excessive venting be required from any radiator, a service engineer should be contacted and the system corrected.

SEALED WATER SYSTEM

This paragraph refers only to appliances fitted with an expansion vessel and connected to a sealed system.

Your appliance may 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. 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.

NOTE. Some sealed systems do not require pre-pressurisation. If this type of system has been used by your installer he will advise you of any special maintenance that is required to ensure that the system is **always** kept full of water.

Should any water leaks be found in the system or excessive venting be required from any radiator, a service engineer should be contacted and the system corrected.

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 manufacturer. Refer to the instructions supplied with the room thermostat.

THERMOSTATIC RADIATOR VALVES

If thermostatic radiator valves are to be fitted the system then they must conform to the requirements of BS2767:1972. 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. The use of a thermostatically controlled shower valve will give added comfort and safeguard against flow of water at too high a temperature. If a loose head shower is fitted then the hose must be fixed so as to prevent the shower head falling closer than 25mm (1 in.) above the top edge of the bath to prevent it being immersed in the bath water. Alternatively an anti-syphonage device must be fitted. Hot and cold mains fed water can be supplied direct to an overrim flushing bidet but it is subject to local Water Authority requirements.

HOT AND COLD FLOW

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

WATER MAINS FAILURES

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

USE IN HARD WATER AREAS

If the appliance is used in very hard water areas an In-Line Scale Inhibitor should be fitted and maintained in accordance with the instructions given in Worcester Heat Systems Publication No: ISH/1/M:9/81.

AIR SUPPLY FOR OPEN FLUED (OF) 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 airways 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) annularly spaced 25 mm (1 in), 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 in the outside wall to become obstructed or damaged.

RSF appliances with a vertical flue must always have unrestricted ventilation openings within the roof space and within 250 mm (10 in.) of the diverter in all directions. Ensure that there is access to the diverter in the roof space for servicing.

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(S)

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

FROST PRECAUTIONS

If the installation is not to be used for a long period of time and there is a likelihood of freezing, then the appliance should be drained. Your Gas Region, or any service engineer will advise you on suitable frost precautions. For short periods leave the appliance on a low temperature setting.

SERVICE

Annual service is important in order to ensure continuing high efficiency and long life for your appliance. In the event of any difficulty in making a suitable service arrangements, Worcester Heat Systems Limited or your Gas Region will discuss regular servicing arrangements and offer a comprehensive maintenance contract.

WARNING

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

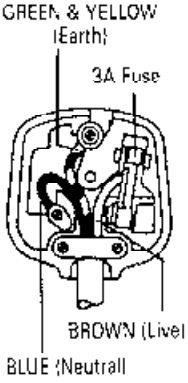
TO CONNECT A PLUG (TO BS 1363)

As the colour of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:-

The wire coloured green and yellow must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol ⏚ or coloured green or green and yellow.

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.



OPERATION OF CONTROLS

(See Fig. 2.)

Immediately mains electricty is applied to the appliance the pump delay timer is energised causing the pump to run for about 5 minutes, this occurs whether or not the controls are calling for heat. The pump will subsequently only run in the course of the normal operation of the boiler.

OPERATING SWITCH

One of three positions can be selected

WATER ONLY The appliance will operate at any time there is a demand for hot water.

OFF Both hot water and central heating will remain off.

HEATING & WATER Hot water will be supplied when a demand is made. Central heating will operate continuously in reponse to a demand from a room thermostat or thermostatic radiator valves if fitted.

NOTE: The switch is connected so that it is not possible to turn on the central heating without the hot water.

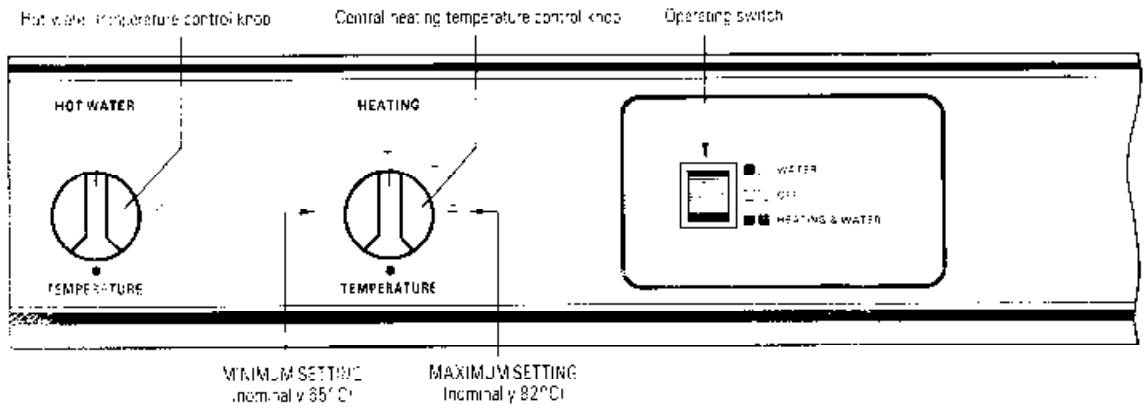
TEMPERATURE CONTROLS

The Central Heating Temperature Control Knob gives control over the temperature of the water supplied to the radiators when the boiler is serving the central heating system. This control does not influence the temperature of the domestic hot water which is set by the Hot Water Temperature Control Knob.

The control knobs have a range of adjustment as indicated in Fig. 2.

The operating temperatures may be set anywhere within the range. With a high central heating setting the radiators will get hotter and high room temperatures will be achievable. Similarly the temperature of the hot water can be controlled. With lower settings the radiators and domestic hot water will be cooler but in winter conditions the central heating and domestic hot water may not reach their design temperatures.

Fig. 2.



TO LIGHT AND STOP THE APPLIANCE

RSF model only

TO LIGHT THE APPLIANCE

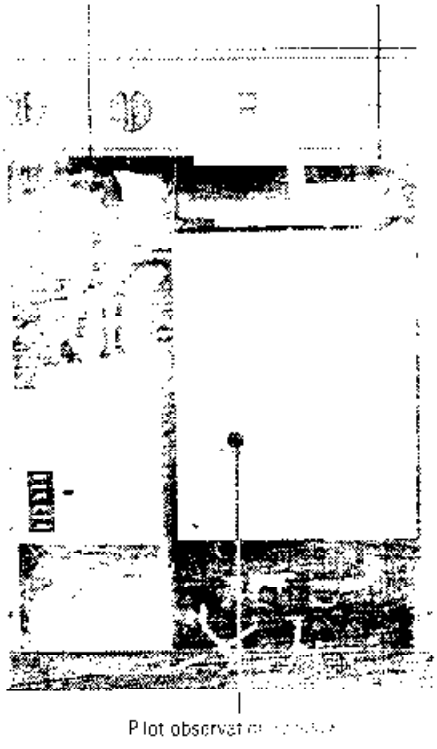
2. Set the [illegible] knobs to maximum. The pilot will now light and can be seen through the pilot observation window. Replace the pilot light cover.
4. Position the Operating Switch to HEATING & WATER.
5. Set the room thermostat control to the desired temperature. Set the HEATING and HOT WATER temperature control knobs to their desired setting.

TO STOP THE APPLIANCE

For short periods.
Position the Operating Switch to OFF.

For long periods
Position the Operating Switch to OFF. Switch off the mains electricity.

Fig. 3.



OVERHEAT THERMOSTATS

Two overheat thermostats are fitted to the appliance which interrupt the main electrical supply in the event of overheating. These thermostats are reset manually. If the appliance fails to light, check that the overheat thermostats have not operated by pressing the buttons shown in Fig. 3. Remove the cabinet front panel to gain access. If the overheat thermostats stop the boiler again call a service engineer.

Note. If the electrical supply to the appliance is interrupted at the isolation switch or a power failure occurs whilst the burner is firing, the boiler will normally relight automatically when the power is restored. However, depending upon circumstances, it may be necessary to reset the overheat thermostats before the appliance will operate.

ELECTRICITY SUPPLY FAILURE

The appliance will not operate without an electricity supply. Normal operation of the appliance will resume when the electricity supply is restored.

TECHNICAL HELPLINE

Worcester (0905) 763993 (3 lines).

TO LIGHT AND STOP THE APPLIANCE
BF & OF models only

(See Figs. 2 & 4.)

TO LIGHT THE APPLIANCE

1. Make sure the ar[illegible] Switch to **OFF** [illegible] off and gas [illegible]
2. Remove the cabinet [illegible] and lifting up [illegible]
3. Push th[illegible] same [illegible] button until the pilot lights. The pi[illegible] the pilot observation window. When the pilot lights, continue to hold the gas control knob in for a [illegible] seconds and then release it slowly.

CAUTION: If the pilot light goes out at this or any other stage, wait the gas [illegible] minutes and repeat [illegible] a little longer [illegible]

When the pilot is alight

4. Set [illegible] Switch to [illegible] Operating Switch to HEATING & WATER. [illegible] Temperature Control knob to [illegible]
5. The main burner will then light and can be seen through the pilot observation window.
6. Position the Operating Switch to the required setting.
7. Set any room thermostat if fitted to the desired temperature.
8. Replace the cabinet front panel.

TO STOP THE APPLIANCE

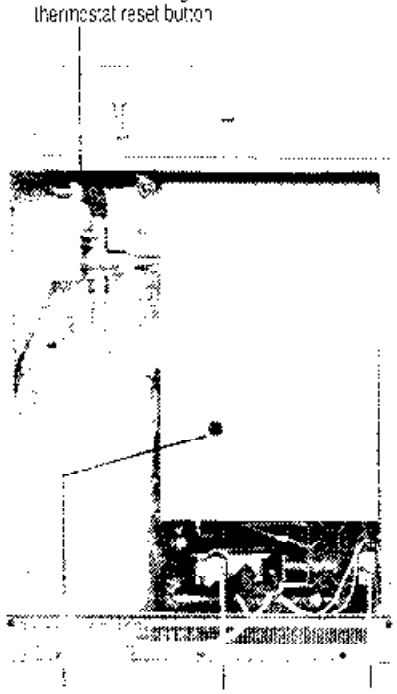
For short periods

Position the Operating Switch to OFF.

For long periods

Remove the front door panel. Position the Operating Switch to OFF. Turn the gas control knob in the direction of the arrow and release. Switch off the mains electricity supply. To relight follow the full instructions.

Fig. 4.



OVERHEAT THERMOSTATS

Two overheat thermostats are fitted to the appliance which operate independently of the electrical supply. These will cause the main gas valve to close the supply of gas to the burner if a fault occurs in the control system. Consult your service engineer if this occurs.

ELECTRICITY SUPPLY FAILURE

The appliance will not operate without an electricity supply. Normal operation of the appliance will resume when the electricity supply is restored.

TECHNICAL HELPLINE

Worcester (0905) [illegible] (3 lines).

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