PUBLICATION NO ZKLIT 390 OCT.88
THESE INSTRUCTIONS APPLY IN THE U.K. ONLY

These instructions are to be left with the user or at the gas meter

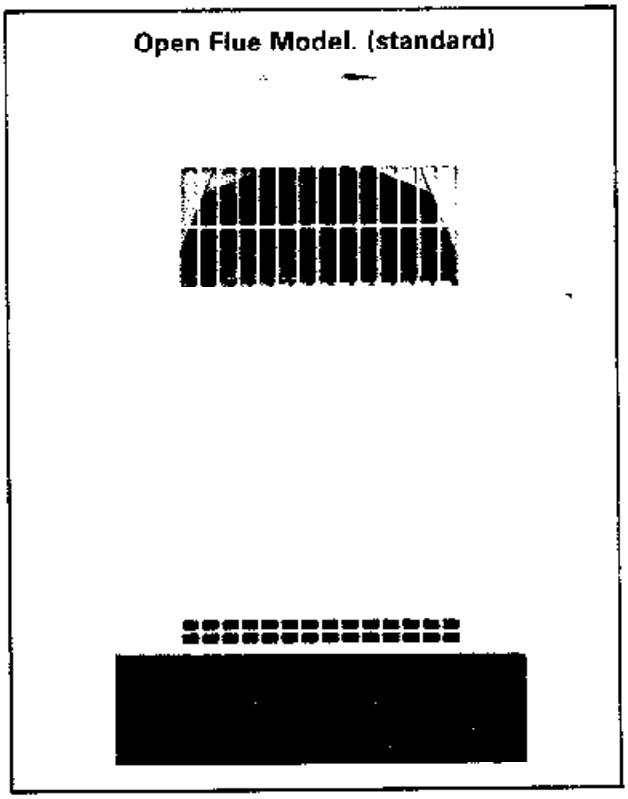
WORCESTER
HEAT SYSTEMS

HEATSLAVE 9.24–MODELS OF, BF & RSF

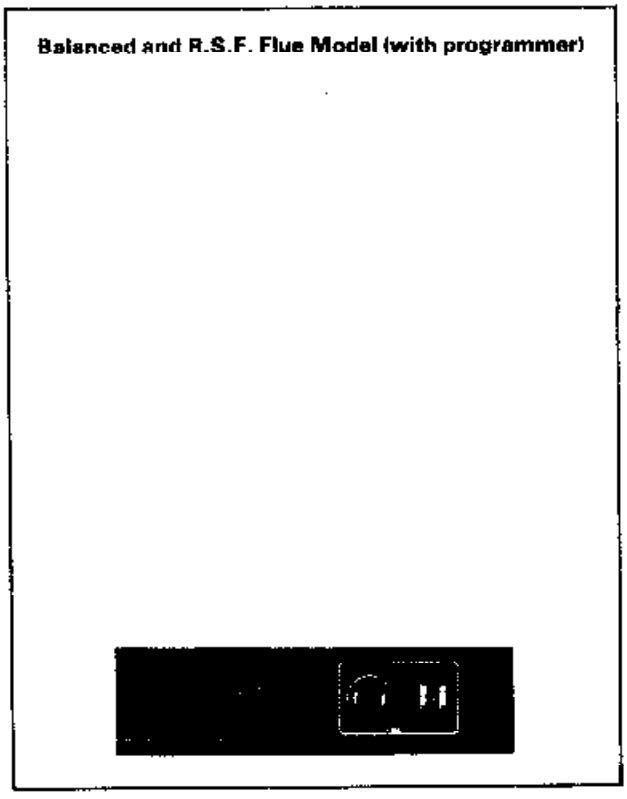
Wall Hung Combination Boiler for Central Heating and Mains Fed Domestic Hot Water.

User's Operating Instructions

Open Flue Model. (standard)



Balanced and R.S.F. Flue Model (with programmer)



G.C. NUMBERS:
OPEN FLUED 47.311.01
BALANCED FLUED 47.311.02
R.S.F. 47.311.03

IMPORTANT

To get the best from your Heatslave 9.24 please read these instructions carefully.

GAS SAFETY (INSTALLATION & USE) REGULATIONS 1984

In your own interest and that of safety, it is the law that all gas appliances are installed by competent persons in accordance with the above regulations.

WARNING

THIS APPLIANCE MUST BE EARTHED AND PROTECTED BY A 3 AMP FUSE IF A 13 AMP PLUG IS USED, OR, IF ANY OTHER TYPE OF PLUG IS USED, BY A 5 AMP FUSE EITHER IN THE PLUG OR ADAPTOR OR AT THE DISTRIBUTION BOARD.
THE ELECTRICITY SUPPLY REQUIRED IS 240V ~ 50 HZ.

WORCESTER HEAT SYSTEMS LIMITED
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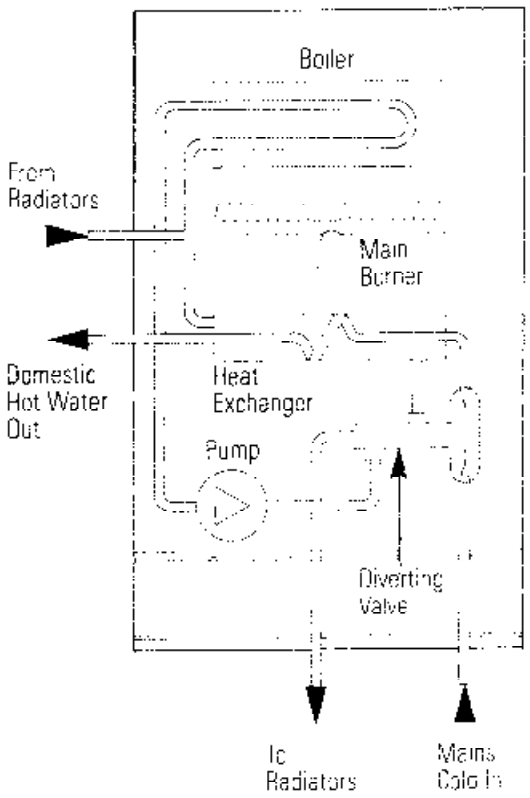
Fig. 1



GENERAL DESCRIPTION

The Heatslave 9.24 is a combined domestic hot water and central heating appliance. It consists of a gas fired boiler having a varying output of between 9 kW and 24 kW, a heat exchanger 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 full central heating.

The appliance may be either a standard model or can be fitted with an optional programmer assembly. Read the particular sections dealing with the controls you have fitted.

THE CONTROL SYSTEM

When hot water only is selected, if no hot water demand is made, the boiler will not operate. It may be found quite convenient, therefore when a programmer is fitted to select the 24 hrs setting on the hot water selector.

When a demand is made for hot water the water flowing through the appliance operates the control circuit igniting the main burner, starting the circulating pump and diverting the water flowing from the boiler around the domestic hot water heat exchanger. After a short time during which the heat exchanger within the appliance pre heats, hot water is delivered to the tap. Initially the boiler is automatically set to maximum output but the hot water outlet temperature is continuously monitored and as this rises the boiler output is automatically reduced to prevent overheating. Controlled in this way the domestic hot water temperature is limited to approximately 57°C (135°F).

A flow restrictor is contained within the appliance which limits the maximum hot water delivery rate of approximately 8.5 ± 15% litres per minute (1.9 gallons/minute) and at this flow rate the temperature of the hot water will be 40°C (72°F) above that of the cold water main (based upon an assumed temperature of 10°C (18°F)).

If the hot water only is selected the appliance will revert to its standby condition as soon as the demand for hot water ceases.

If **central heating and water** is selected and no demand for hot water is made then the main burner will ignite, the circulating pump will run and the boiler output will be diverted around the radiator circuit. In this condition the boiler will initially supply the minimum output to the system automatically increasing as required up to the maximum heating output of the boiler.

The output is then automatically modulated to supply the heating system with the appropriate amount of heat as indicated by the system controls. If during a demand for central heating, hot water is called for then the central heating will be temporarily interrupted and priority given to the hot water supply, initially at the maximum output of the appliance.

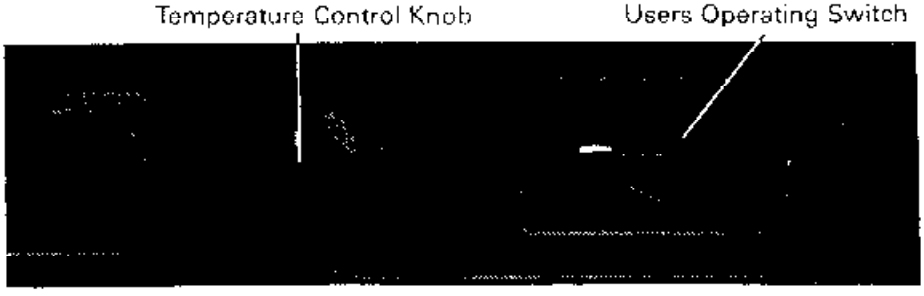
The appliance may be either a **STANDARD** model having a manual **ON/OFF** switch or fitted with the optional **WORCESTER 425 PROGRAMMER KIT.** Read the section applicable to the controls you have fitted.

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

1. OPERATION OF CONTROLS

STANDARD MODEL WITH USERS OPERATING SWITCH

Fig. 2.



THE USERS OPERATING SWITCH (See Fig. 2)

The users operating switch is situated on the front facia panel and any one of the 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 response to a demand from a room thermostat or thermostatic raditor valves if fitted.

TEMPERATURE CONTROL (See Fig. 2)

The 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 pre-set at the factory and has no user adjustment.

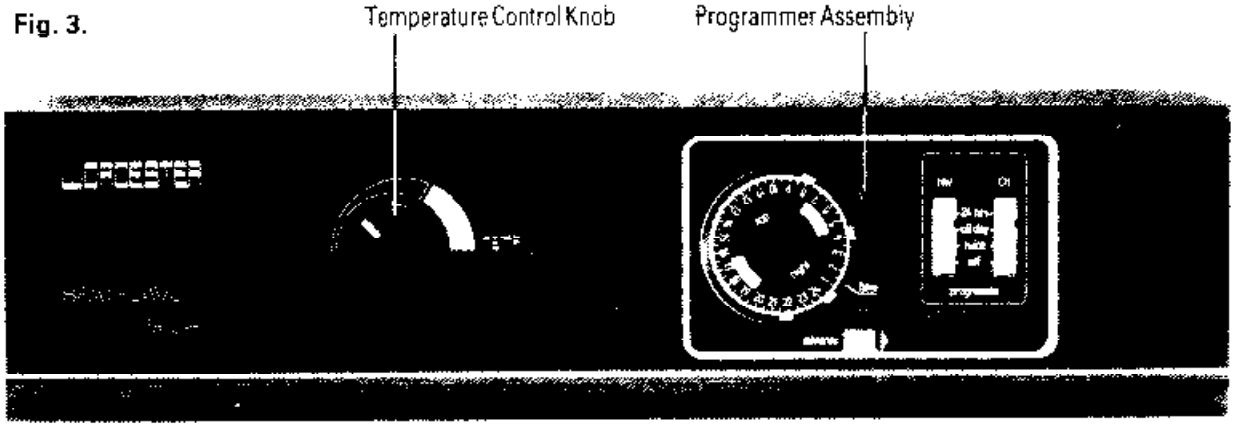
The control knob has a range of adjustment as indicated by the symbol.

The operating temperature may be set anywhere within the range, with a high setting the radiators will get hotter, and higher room temperature will be achieveable. With lower settings the radiators will be cooler but in winter conditions the rooms may not reach their design temperature.

2. OPERATION OF CONTROLS

PROGRAMMER MODEL (See Fig. 3)

Fig. 3.



With this model selection of hot water or hot water and central heating is achieved by the use of a programmer.

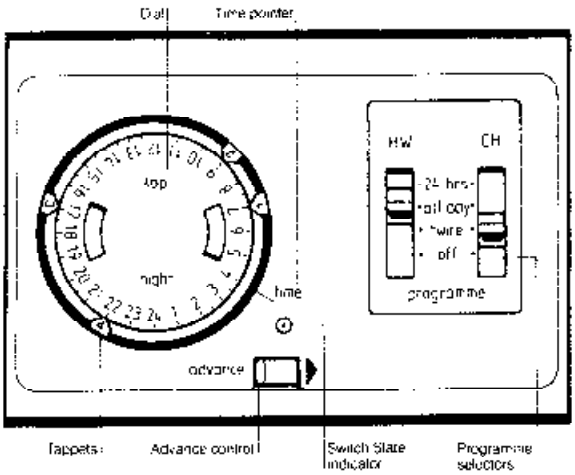
The programmer will switch both the hot water and central heating functions independently, although it is not possible to select central heating **ON** when the hot water is **OFF**.

When a **HOT WATER** programme is selected the appliance will operate at times dictated by the programmer when there is a demand for hot water.

When a **HOT WATER** and **CENTRAL HEATING** programme is selected, the appliance will operate at times dictated by the programmer to produce both hot water on demand and central heating as required.

PROGRAMMER OPERATING INSTRUCTIONS (See Fig. 4)

Fig. 4.



DIAL

The dial moves clockwise and makes one revolution every 24 hours. To set the time,turn the dial **clockwise** by hand until the correct time of day is against the line marked **time**.

Note.The dial must **never** be turned anti-clockwise.

TAPPETS

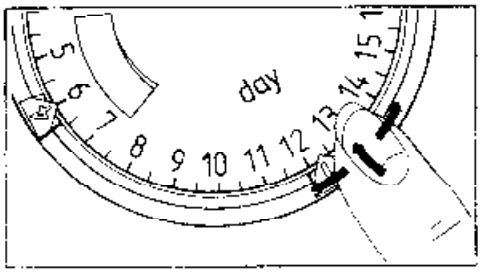
The four setting tappets, coloured orange and blue, are moved around the circumference of the dial to set your required **ON** and **OFF** times.

The orange tappets, numbered **1** and **3**, turn the system **ON**. The blue tappets, numbered **2** and **4**, turn the system **OFF**.

To set a tappet, press the coloured pointer lightly and slide it—in either direction—to the required time. For a normal daily heating programme, orange tappet **1** is set to the first **ON** operation of the day, and the others set in order so that blue tappet **4** is the last **OFF** operation of the day.

Note: Tappets cannot be moved across the time line, so you may have to turn the dial to a suitable position to set a time.

After setting your **ON** and **OFF** times, check that the dial is set to the correct time of day.



SWITCH STATE INDICATOR

Located above the advance switch, the switch state indicator shows you the number of the tappet which operated last, eg. if the system was switched on by tappet **1** at 7.00 a.m. and it is now 9.00 a.m., **1** will show in the aperture.

To ensure that the switch state indicator is set to the correct position in relation to the tappets, rotate the dial one whole turn and reset to the correct time of day.

PROGRAMME SELECTORS

When **24 HOURS** is selected the system is permanently on and there is no automatic timed control.

When **OFF** is selected, the timer continues to operate but the system will not switch **ON**.

When **ALL DAY** is selected the system switches on at the time selected by orange tappet **1** and off at blue tappet **4**. Tappets **2** and **3** are ignored.

When **TWICE** is selected the system switches **ON** at orange tappet **1**, **OFF** at blue tappet **2**, **ON** again at orange tappet **3** and **OFF** at blue tappet **4**.

Note:- The selectors are interlocked so that it is not possible to turn on central heating without hot water.

ADVANCE CONTROL

The advance control allows you to start an **ON** or **OFF** period early without altering the tappet, time or programme selection settings. Moving the advance control to the extreme right brings forward the operation of the next tappet. The switch state indicator then changes to the appropriate number.

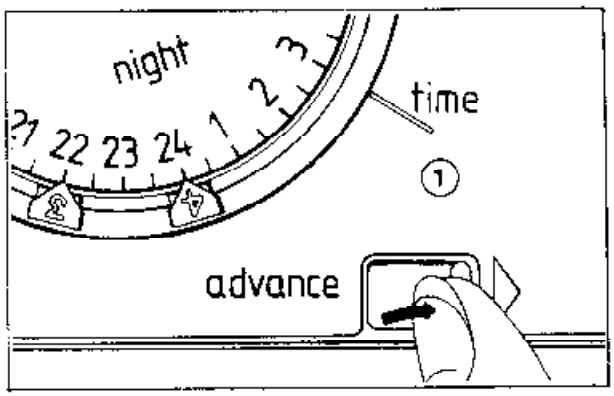
When the next tappet passes the time line, normal operation returns.

Note. When the programme selectors are at **HW** and **CH ALL DAY**, tappets **2** and **3** do not operate. If you want to switch the system **OFF** for the day, after the morning switch-on, you will need to step forward with the advance switch until the number **4** comes up in the switch state indicator.

If you wish to switch **ON** and **OFF** by hand, or vice versa, before the next automatic switching operation, the **ADVANCE CONTROL** must be operated until the Switch State Indicator is returned to the correct automatic sequence.

For example, if you turn the system on again after the preset night shut down time, when you turn it off before retiring make sure to operate the advance switch again until **4** shows in the switch indicator so that orange tappet **1** will switch the system on in the morning.

Do not operate the advance switch when a tappet is against the time line.



TEMPERATURE CONTROL (See Fig. 3)

The 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 pre-set at the factory and has no user adjustment.

The control knob has a range of adjustment as indicated by the symbol.

The operating temperature may be set anywhere within the range, with a high setting the radiators will get hotter, and higher room temperature will be achieveable. With lower settings the radiators will be cooler but in winter conditions the rooms may not reach their design temperature.

3. TO LIGHT AND STOP THE APPLIANCE (See Fig. 5)

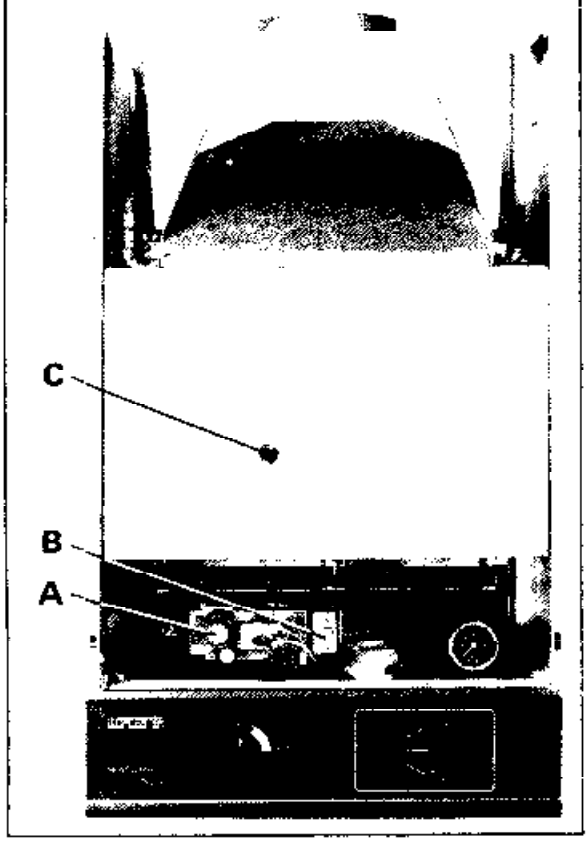
BALANCED AND OPEN FLUED MODELS ONLY— STANDARD OR WITH PROGRAMMER

TO LIGHT THE APPLIANCE (See Fig. 5)

1. Make sure the appliance is off by positioning the users operating switch to **OFF** or if a programmer is fitted the selector switches to **OFF**, electricity is switched off and gas service is on.
2. Remove the front door panel by pulling forward at the bottom edge and unhooking from the side panel top edges.
3. Push the grey knob (**A**) fully in and hold in. At the same time repeatedly press and release red button (**B**) until pilot lights. Pilot can be seen through window (**C**). When pilot lights, continue to hold grey knob in for a further 15 seconds then release knob slowly.

CAUTION: If the pilot light goes out at this, or any other stage, twist grey knob (**A**) clockwise and release. Wait 3 minutes, then repeat operation 3, holding in the grey knob (**A**) for a little longer than before after the pilot has lit.

Fig. 5. (Open Flue Model Shown)



WHEN THE PILOT IS ALIGHT

4. Switch on the mains electricity. Check that any external controls e.g. room thermostats, are set to a high position. Switch the appliance '**ON**' by positioning the users operating switch to '**HEATING AND WATER**'. If a programmer is fitted set to the correct time of day and position the selectors to 24 hrs. Turn the temperature control knob to HIGH.
5. The main burner will then light.
6. Position the users operating switch to the required setting or if a programmer is fitted select the required programme as described under **Programmer Operating Instructions**.
7. Set any room thermostat, if fitted, to the desired temperature.
8. Replace the front door panel.

TO STOP THE APPLIANCE

FOR SHORT PERIODS:-
Position the users operating switch to **OFF** (standard model) or slide the programme selectors to **OFF** (programmer model).

FOR LONG PERIODS:-
Position the users operating switch to **OFF** or if a programmer is fitted slide the programme selectors to **OFF**. Switch **OFF** the mains electricity.

OVERHEAT THERMOSTAT – Balanced and Open Flued Models

An overheat thermostat is fitted to the appliance which operates independently of the electrical supply. This 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.

4. TO LIGHT AND STOP THE APPLIANCE

R.S.F. MODELS ONLY – STANDARD OR WITH PROGRAMMER

TO LIGHT THE APPLIANCE

1. Make sure the appliance is off by positioning the users operating switch to **OFF** or if a programmer is fitted the selector switches to **OFF**, electricity is switched **OFF** and gas service is **ON**.
2. Switch **ON** mains electricity. Switch the appliance **ON** by positioning the users operating switch to **HEATING AND WATER**. If a programmer is fitted set to the correct time of day and position the selectors to **24 HOURS**. Turn the temperature control knob to **HIGH**.
3. The main burner will now light.
4. Position the users operating switch to the required setting or if a programmer is fitted select the required programme as described under 'Programmer Operating Instructions'.
5. Set the room thermostat, if fitted, to the desired temperature.

TO STOP THE APPLIANCE

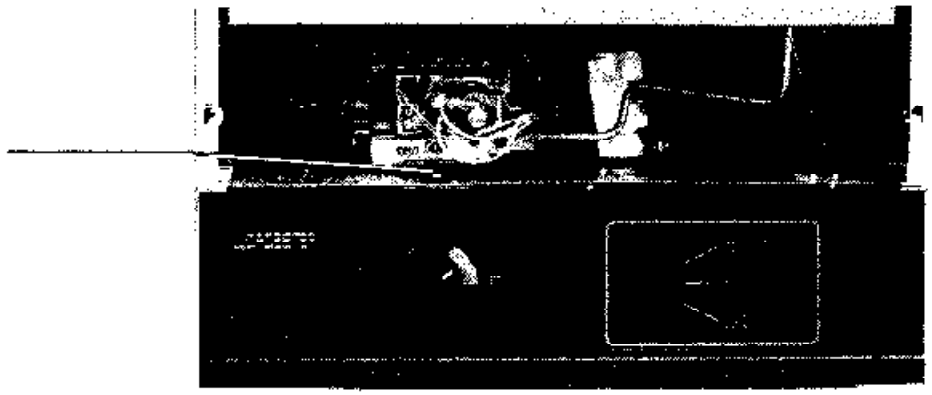
FOR SHORT PERIODS:-
Position the users operating switch to **OFF** (standard model) or slide the programme selectors to **OFF** (programmer model).

FOR LONG PERIODS:-
Position the users operating switch to **OFF** or if a programmer is fitted slide the programme selectors to **OFF**. Switch **OFF** the mains electricity.

OVERHEAT THERMOSTAT – R.S.F. MODEL: (See Fig. 6)

An overheat thermostat is fitted to the appliance which interrupts the main electrical supply in the event of overheating. This thermostat is reset manually. If the appliance fails to light, check that the overheat thermostat has not operated by pressing the button shown in Fig. 6. If the overheat thermostat stops the boiler again CALL A SERVICE ENGINEER.

Fig. 6.



5. GENERAL NOTES

CENTRAL HEATING SYSTEM

During the first few hours of operation of the central heating system, checks should be made that all radiators are being heated at an even rate. Should the upper area be at a lower temperature then 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 this operation.

ROOM THERMOSTAT

The room thermostat should be fitted for control of central heating temperature. It will be located in one room of the home. Its method of setting varies with the type and manufacture. (See separate instructions supplied with the room thermostat.)

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 a flow of water at too high a temperature.

Hot and cold mains fed water can be supplied direct to an over rim flushing bidet, but is subject to Local Water Authority requirements.

HOT AND COLD FLOW

As the flow of water demanded from both hot and cold service outlet is dependant 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 supply failure, no water will be available for use until the supply is restored. The appliance can still be used for central heating.

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 publication No: ISH/1/M:9/81.

OPEN FLUED APPLIANCE

Your installer will have made arrangements for an adequate supply of fresh air to the appliance, for combustion. Do not block up these 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.

BALANCED FLUED & R.S.F. 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.

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.

SEALED WATER SYSTEM

Your appliance may be fitted to a sealed heating system which is pre-pressurized, if this is so a pressure gauge will be fitted and your installer will advise you on the minimum and maximum pressure that should be indicated. If the system loses pressure it should be re-pressurized using the method described by the installer.

Note: Some sealed systems do not require pre-pressurization. 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.

Do not operate the appliance if the pressure has dropped to zero.

WARNING

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.

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

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 application 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 servicing is important in order to ensure continuing high efficiency and long life for your appliance. In the event of any difficulty in making suitable service arrangements, Worcester Engineering Company Limited or your gas region will discuss regular servicing arrangements and offer a comprehensive maintenance contract.

CLEANING

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

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.

FLOW PUMP

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

TO CONNECT A PLUG

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.