



# **WORCESTER**

# **9.24**

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## **ELECTRONIC BF, OF, RSF & RSF·E**

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WALL MOUNTED COMBINATION BOILER FOR CENTRAL HEATING  
AND MAINS FED DOMESTIC HOT WATER

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# **USERS OPERATING INSTRUCTIONS**

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RSF MODEL

OF MODEL

GC NUMBERS	
Balanced Flued (BF)	47 311 05
Open Flued (OF)	47 311 04
Fanned Flue (RSF)	47 311 06
Fanned Flue (RSF·E)	47 311 07

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

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**THESE INSTRUCTIONS APPLY IN THE UK ONLY**

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

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# WORCESTER

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### ELECTRONIC BF, OF, RSF & RSF-E

WALL MOUNTED COMBINATION BOILER FOR CENTRAL HEATING  
AND MAINS FED DOMESTIC HOT WATER

## USERS OPERATING INSTRUCTIONS

**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. 135—270 watts.

**IMPORTANT.** To get the best from your WORCESTER 9.24 ELECTRONIC please read these instructions carefully.

### GENERAL DESCRIPTION

The WORCESTER 9.24 ELECTRONIC is a combined domestic hot water and central heating appliance. It consists of a gas fired boiler having a varying output of between 8.8kW and 24kW, 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 is fully modulating in both the central heating and hot water modes of operation.

**Hot water mode:** The appliance will initially deliver the full heat output of 24kW (82,000 Btu/h) and then modulate downwards as necessary to maintain the temperature of the delivered water.

**Central heating mode:** The appliance will initially deliver the minimum heat output of 8.8kW (30,000 Btu/h) building up over a period of 1½—2 minutes to the maximum set output. The output will then be modulated downwards as necessary to maintain the desired room temperature.

The boiler will modulate down to the minimum output of 8.8kW (30,000 Btu/h) and the burner may extinguish, the system no longer requiring even this low level of output to maintain the desired temperature. The burner will remain off for about 1½—2 minutes before recommencing the cycle previously described. With the system hot the appliance heat output will immediately balance with the system requirement, generally at some point below the maximum set boiler output.

The appliance is supplied with a manual ON/OFF switch.  
A WORCESTER PROGRAMMER is available.

### 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

	OF Model	BF,RSF and RSF-E Models
Left/Right hand side	5	20
Bottom	280	280
Front	600	600
Top	400	50

#### INDICATOR LIGHTS

There are two indicator lights situated on the fascia panel, **STANDBY** and **DEMAND**.

**STANDBY** indicates that the electricity supply to the boiler is on and **DEMAND** indicates that either a hot water outlet is open or that the central heating is operational.

#### 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 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 this operation. If the appliance is fitted to a sealed system then refer to the section following as repeated venting of radiators will reduce the quantity of water in the system.

#### SEALED WATER 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 using the method described 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 should be fitted for control of 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 to the system then they must conform to the requirements of BS2767:1972.

#### 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 25 mm (1 in) above the top edge of the bath to prevent it being immersed in the bath water. Alternatively an anti-siphonage device must be fitted.

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 the hot and cold service outlets is dependant upon mains supply, it may not be possible in some installations to operate all outlets simultaneously.

### DOMESTIC HOT WATER

**Summer/Winter Selector** (Not fitted on model RSF-E)

A user adjustable **Summer/Winter** selector is situated underneath the fascia panel. Following adjustment, the selector will regulate the flow of domestic hot water to:-

**Summer setting**—9.0 (+ or - 15%) litres/min. (1.98 galls/min.)

**Winter setting**—7.0 (+ or - 15%) litres/min. (1.5 galls/min.)

The lower flow rate (Winter setting) ensures that satisfactory hot water outlet temperatures are achieved during the winter months when a lower cold water main temperature prevails.

### WATER MAINS FAILURE

It is important to note that in the event of a mains 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 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 purpose 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.

**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 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 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 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 appliance and consult your local Gas Region or service engineer.

### CLEANING

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

### TO CONNECT A PLUG

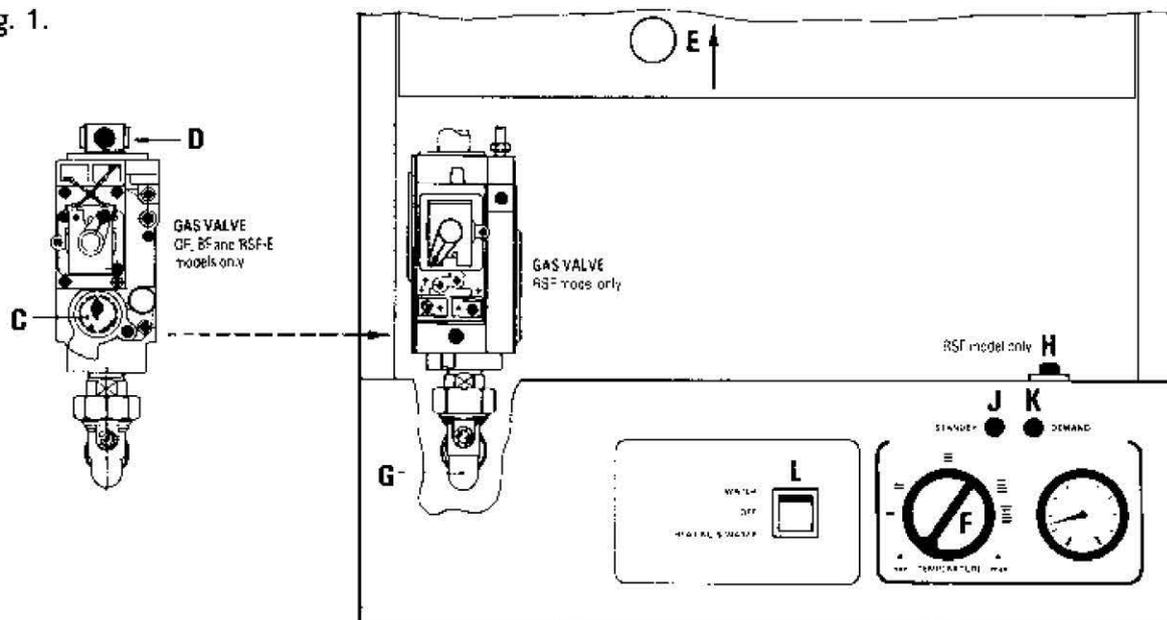
As the colour of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:-

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.

Fig. 1.



## OPERATION OF CONTROLS

(See Fig. 1)

### 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 response 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 CONTROL

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

## TO LIGHT AND STOP THE APPLIANCE RSF model only

(See Fig. 1)

### TO LIGHT THE APPLIANCE

1. Make sure the appliance is off by positioning the Operating Switch L to **OFF** and switching the mains electricity off. Turn the gas service on.
2. Switch on the mains electricity. Switch the appliance on by positioning the Operating Switch L to **HEATING & WATER**. Turn the temperature control knob F to **max**.
3. The main burner will now light, and can be seen through the window E.
4. Position the Operating Switch L to the required setting.
5. Set the room thermostat, if fitted, to the desired temperature. Set the temperature control knob F to the desired setting.

### TO STOP THE APPLIANCE

#### For short periods.

Position the Operating Switch L to **OFF**.

#### For long periods.

Position the Operating Switch L to **OFF**. Switch off the mains electricity.

### OVERHEAT THERMOSTAT

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 H shown in Fig. 1. If the overheat thermostat stops the boiler again call a service engineer.

## TO LIGHT AND STOP THE APPLIANCE. BF, OF and RSF · E models only

(See Fig. 1)

### TO LIGHT THE APPLIANCE

1. Make sure the appliance is off by positioning the Operating Switch L to **OFF** and switching the mains electricity off. Turn the gas service on.
2. Remove the cabinet front panel by lifting upwards and pulling forward at the bottom edge.
3. Push the grey knob C fully in and hold in. At the same time repeatedly press and release the red button D until the pilot lights. The pilot can be seen through the window E. When the pilot lights, continue to hold the grey knob C in for a further 15 seconds then release the knob slowly.

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

#### When the pilot is alight.

4. Switch on the mains electricity. Check that any external controls (e.g. room thermostat) are set to a high position. Switch the appliance on by positioning the Operating Switch L to **HEATING & WATER**. Turn the temperature control knob F to **max**.
5. The main burner will then light, and can be seen through the window E.
6. Position the Operating Switch L to the required setting.
7. Set the room thermostat, if fitted, to the desired temperature. Set the temperature control knob F to the desired setting.
8. Replace the cabinet front panel.

### TO STOP THE APPLIANCE

#### For short periods.

Position the Operating Switch L to **OFF**.

#### For long periods.

Remove the cabinet front panel. Position the Operating Switch L to **OFF**. Twist the grey knob C clockwise and release. Switch off the mains electricity.

### OVERHEAT THERMOSTAT

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. Call a service engineer if this occurs.

### TECHNICAL HELPLINE

Worcester (0905) 763993 (3 lines).

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