



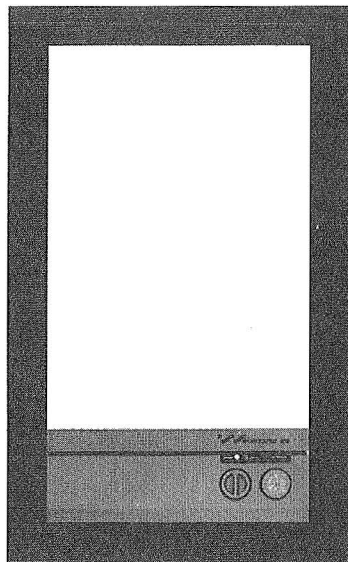
WORCESTER

Bosch Thermotechnik

350 Combi

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

USERS OPERATING INSTRUCTIONS



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

System Operation

SEALED WATER SYSTEM

The Worcester 350 is designed to operate on a sealed system only. To ensure that the appliance operates correctly a minimum water operating pressure must be maintained.

The minimum pressure required for your appliance is indicated by the green needle on the pressure gauge, which is located on the fascia panel.

If the pressure falls below this level to the minimum the red indicator light on the fascia panel will light.

In the event that the red light operates, the system must be re-pressurised using the method described by your installer.

To ensure that the boiler and system are full of water and pressurised, check the white pressure needle on the pressure gauge. Contact your installer or maintenance engineer if the system continues to lose pressure as this may indicate a leak.

CENTRAL HEATING SYSTEM

During the first operation of the heating system, check that all radiators are heated evenly. If the top of the radiator is at a lower temperature than the bottom, then vent it by releasing air through the vent screw at the top of each radiator. Please refer to the preceding paragraph as excessive venting may cause a drop in system pressure.

FLUE OPERATION

In cold weather, vapour may be emitted from the flue. This is a normal operating characteristic and no remedial action is necessary.

Siting Considerations

CLEARANCES

Your Installer will have provided space around the appliance for safety and servicing. It is important that you do not restrict this space.

The minimum clearances are:

Left-hand side	5 mm.
Right-hand side	5 mm.
Top	35 mm.
Below	200 mm.
In front	600 mm.

If the flue is connected to the side of the appliance then a clearance of 25 mm is required at that side.

VENTILATION

This is a room sealed appliance and ventilation openings provided by the installer in a wall or door must not be blocked.

The flue terminal in the outside wall must not be obstructed or damaged.

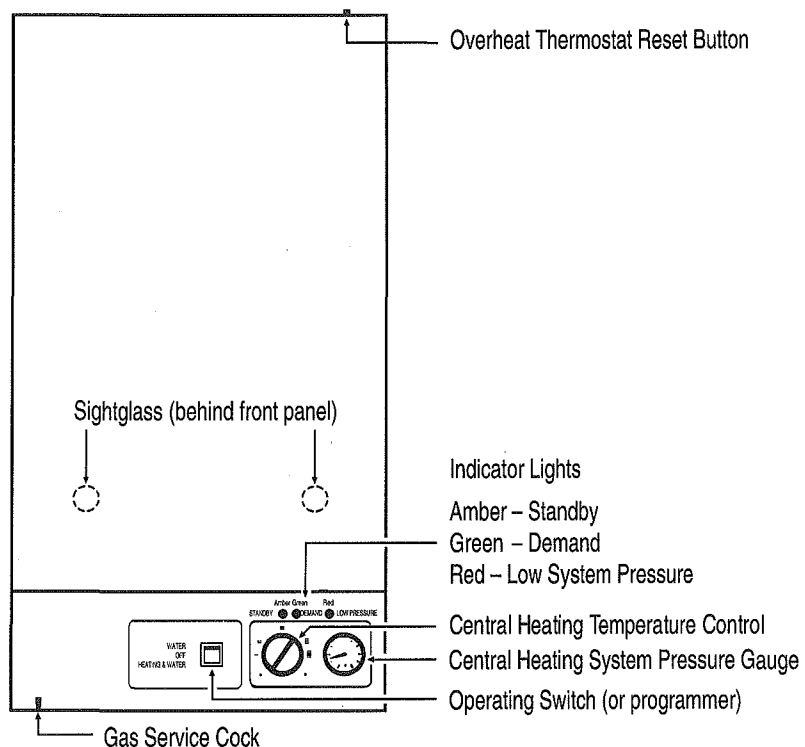
Do not place any combustible material on or around the appliance.

CUPBOARD INSTALLATION

If the appliance is fitted in a cupboard and the cupboard is to be used for storage, as in an airing cupboard for clothes, the airing space must be separated from the boiler and flue so that no combustible material may come into contact with the appliance or the flue, or restrict any permanent air vent which may have been installed.

Please consult your Gas Region or Worcester Heat Systems Ltd. for advice should you wish to fit a compartment around the appliance after installation.

Fig. 1.



General Description

The Worcester 350 is a combination boiler which will supply mains fed domestic hot water plus central heating at an output of between 9.0 and 25 kW.

HOT WATER PROVISION

When a tap is turned on the appliance will begin to operate. Hot water will become available at the tap in a continuous supply at a constant temperature, after a short delay, depending on when the appliance was last fired. The fan will continue to run for a few seconds after the tap has been turned off, to remove any residual heat from the appliance.

CENTRAL HEATING AND HOT WATER PROVISION

A demand for hot water will take priority over the supply of heat to the central heating system. The burner will remain off for approximately three minutes after the demand for hot water is completed before automatically returning to central heating operation.

CENTRAL HEATING PROVISION

When a demand is made for central heating the burner will light at its minimum output before rising to the preset maximum output. The appliance will then automatically match output to the system load. In the event of the system requiring less than 9 kW, the burner will light only periodically to maintain system temperature. When the automatic controls close the burner down, the fan will continue to operate for a few seconds.

Serial Number

The appliance Serial Number must be quoted in any correspondence. It will comprise C350RSF and a 10-digit number. It can be seen through the lower opening in the inner cover panel accessible by removing the cabinet front panel.

User Controls

CENTRAL HEATING AND HOT WATER PROGRAMME CONTROL

Your Worcester 350 is fitted with either a 3-position Operating Switch or an Electronic Programmer on the fascia panel for the control of domestic hot water and central heating.

OPERATING SWITCH

The switch offers the following positions:

- | | |
|----------------------------|--|
| WATER | The appliance will provide hot water when a tap or shower is turned on. |
| OFF | Both the central heating and domestic hot water will remain off. |
| HEATING & WATER | The central heating will operate in response to any system controls and domestic hot water will be supplied when a tap or shower is turned on. |

ELECTRONIC PROGRAMMER

Your Installer may have mounted the optional electronic programmer on the appliance fascia panel. For full details on how to operate the Programmer please refer to the Operating Instructions which are supplied with the Programmer.

CENTRAL HEATING TEMPERATURE CONTROL

The temperature control knob on the fascia panel allows control of the water temperature to the radiators.

INDICATOR LIGHTS

There are three indicator lights on the fascia panel.

The red light when on indicates that the system pressure is too low (see System Operation). The amber light when on indicates that the mains electricity to the appliance is on. The green light when on indicates that the appliance is supplying either domestic hot water or central heating.

PRESSURE GAUGE

A pressure gauge is located on the fascia panel. The green pressure needle has been preset to show the water pressure which is required for the appliance to operate effectively. The white pressure needle will show the amount of water pressure in your particular system. If the pressure drops below the required minimum pressure the red indicator will light. For remedial action please refer to System Operation.

Hot Water Temperature Control

By slightly reducing the flow of domestic hot water from the tap, the temperature of the water will increase. This is of particular advantage in the winter, for example to increase bath water temperature and to remove heavy grease deposits on plates, etc. Also this will provide an added advantage of reducing the delay before hot water is obtained.

The maximum discharge temperature of hot water to the taps is preset at the factory.

To Light and Stop the Appliance

TO LIGHT THE APPLIANCE

Make sure that the appliance is off by:

- Positioning the Operating Switch or Programmer to **OFF**.
- Switching the mains electricity off.

Turn the gas service cock on and check that all the water valves to the central heating supply are open. Check that the white needle on the pressure gauge is not below the required pressure. See Fig. 1.

Switch on the mains electricity and turn the central heating temperature control knob to **max**. Set the Operating Switch (or Programmer) to **HEATING & WATER**. This will light the main burner.

The burner can be seen through the sightglass which is accessible by removing the cabinet front panel. To remove the panel, pull it away at the bottom and lift it off the top support.

Set the Operating Switch (or Programmer) to the required position.

If a room thermostat is fitted to the system, set to the desired temperature. Set the central heating temperature control knob to the required position.

FAILURE TO LIGHT

If the appliance fails to light or it locks out during operation, switch the operating switch to **OFF** and then to **ON**. If the appliance fails to light after several attempts at ignition check the overheat thermostat by pressing the reset button.

In the event that the problem continues call a Service Engineer.

TO STOP THE APPLIANCE

For Short Periods

Set the Operating Switch (or programmer) to **OFF**.

For Long Periods

Set the Operating Switch (or programmer) to **OFF**.

Switch off the mains electricity. The fascia mounted programmer will retain its settings for about four weeks after which it will return to the factory set programme. The display will disappear after approximately 12 hours.

Appliance and System Care

SERVICE

Annual servicing of your 350 is important to ensure efficiency and prolong the life of your appliance. Worcester Heat Systems or your Gas Region can offer service contracts for the maintenance of your appliance.

CLEANING

To clean your appliance use a damp cloth and a little detergent. Do not use abrasive cleaners on the casing.

FROST PRECAUTIONS

A frost thermostat, suitable for mains voltage, may have been fitted by your installer. If the 350 has not been fitted with a frost thermostat and is not to be used for a long time in a period of cold weather then the appliance and the system should be drained. For short periods leave the appliance on a low temperature setting.

USE IN HARD WATER AREAS

The 350 has been designed to overcome scale accumulation in most normal conditions. However, in exceptionally hard water areas a Worcester scale inhibitor can be fitted to prevent scale formation.

System Fitting

ROOM THERMOSTAT

A room thermostat, suitable for mains voltage, can be fitted for improved control of the room temperature.

THERMOSTATIC RADIATOR VALVES

Thermostatic radiator valves fitted to your central heating system must conform to BS2767.10.

SHOWERS, BIDETS, TAPS AND MIXING VALVES

Taps and mixing valves used with the 350 must be suitable for operating at a mains pressure.

Thermostatically controlled shower valves will give added comfort and safeguard against excessive temperatures.

Hot and cold mains fed water can be supplied direct to an over-rim flushing bidet subject to local Water Company requirements.

If a loose-head shower with a flexible hose is to be used over a bath, the hose must be fixed so that the head cannot fall closer than 25 mm (1 in.) above the top edge of the bath to prevent its immersion in bath water. Alternatively the shower must incorporate or be fitted with an anti-siphonage device at the point of the flexible hose connections.

HOT AND COLD FLOW

The flow of water from the hot and cold taps depends on the mains water pressure and it may not be possible, in some homes to operate a number of taps simultaneously.

To ensure an even supply of water to all outlets individual flow regulators may be fitted to the supply pipes to provide an even water distribution.

Mains Service Interruptions

GAS LEAK

If you suspect a gas leak, turn off the appliance and call your local Gas Region.

WATER MAINS FAILURE

In the event of mains water supply failure no domestic hot water will be available from the appliance. However, the central heating will continue to operate.

ELECTRICITY SUPPLY FAILURE

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

To Connect a Plug

The colour of the wires in the mains lead of the appliance may not correspond with the coloured markings identifying the terminals in your plug. In this case please proceed as follows:

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

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

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

Mandatory Requirements

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 over-riding 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 in the plug or adaptor or at the distribution board.



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All goods sold are subject to our official Conditions of Sale, a copy of which may be obtained on application.