



HOUNSFIELD
BOILERS

HANDBOOK - CONDENSING MODELS

WITH BENTONE BF1 BURNER

Tuscan Kitchen Model:

12/19

20/25

26/30

Serial number:



Dear Householder

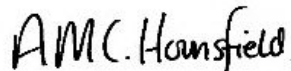
Thank you for selecting a Hounsfield boiler, the culmination of many years experience in the design, development and manufacture of oil fired boilers.

To claim your **FREE** 5 year extended warranty complete and return the enclosed registration document, alternatively register on line at www.hounsfieldboilers.co.uk. Following registration you will receive a warranty certificate and for the duration of the warranty, a reminder each year that a boiler service is due.

Familiarise yourself with the controls and operation of the boiler, if you have any queries please contact us.

Our greatest sales generator has proved to be “word of mouth” if you are happy with the product and service, we provide please tell others; if you are not tell us.

Yours faithfully

A handwritten signature in black ink that reads "A.M.C. Hounsfield". The signature is written in a cursive, slightly slanted style.

Andrew Hounsfield

Managing Director

E-mail: andrew@hounsfieldboilers.co.uk

CONTENTS

HOUSE HOLDER INFORMATION:

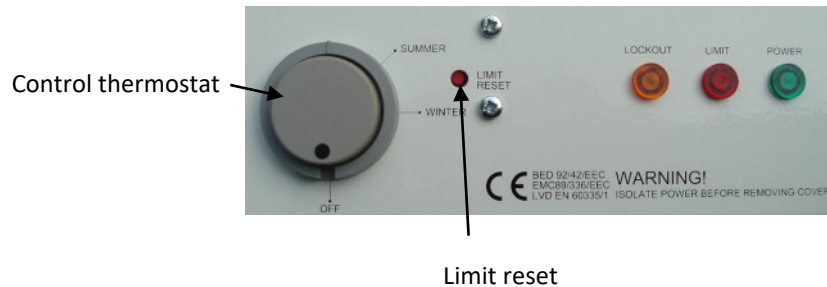
| | Page |
|-----------------------|------|
| Controls | 2 |
| If you run out of oil | 3 |

TECHNICAL

| | |
|-----------------------|---|
| Boiler specifications | 4 |
| Burner settings | 5 |
| Fault diagnosis | 6 |
| Boiler parts list | 7 |
| Burner parts list | 8 |

HOUSEHOLDER INFORMATION

Controls



Control thermostat

Controls the temperature of water within the boiler, set to the following positions:

- Winter when central heating and domestic hot water heating is required.
- Summer for domestic hot water only.

Power neon

Is illuminated when there is mains power to the boiler and the programmer or time clock is calling for heat.

Limit neon and limit reset button

Is illuminated when the boiler has over heated; to reset wait for the boiler to cool down then press the red reset button.

IMPORTANT: If overheating occurs regularly consult your boiler engineer; there may be a fault with the central heating system.

Lockout neon and lockout reset button

Is illuminated when burner ignition has failed; it indicates a fault with the burner which may be caused by a lack of fuel.

To reset the burner, wait for two minutes, this allows a bimetallic strip to cool; press the lockout reset button to restart the burner ignition sequence. Note. The reset button also acts as an on/off switch for the burner; press once for off, press again to switch on.

IMPORTANT: If you experience continued or frequent lockouts contact your boiler engineer.

Reset button:



Exhaust plume

It is normal for a condensing boiler to produce a plume of water vapour from the flue terminal; it demonstrates the boiler is working extremely efficiently and may be more prevalent when the boiler starts up. Dependant on the heating system about 1 litre of condensate per hour is produced; condensate will have a PH value in the range of 3.5-5; about the same acidity as tomato juice.

Check the condensate trap periodically to ensure it contains water, top up with fresh water if necessary.

Switching on the boiler

- Turn on the oil supply.
- Switch on the electricity supply.
- Set the programmer to "on".
- Ensure the control thermostat is set as appropriate.
- The power neon on the boiler will now be illuminated and the burner will start to operate.

Holidays and extended periods of shutdown:

- **Turn off the oil supply at the tank**, just in case there's an oil leak when the property is unattended
- Have the boiler serviced.
- Switch off the electrical supply.

If you run out of oil

Refer to the fuel supply section – priming the burner.

Oil delivery

Over time sediment will build up in the bottom of an oil tank; to prevent its ingress into the fuel line switch off the boiler during an oil delivery and allow the fuel to settle for a period before switching on the boiler.

Maintenance

Your boiler should be serviced annually. Failure to comply with this requirement could lead to inconvenient breakdown and will invalidate your warranty.

If you have difficulty in locating an engineer contact our service department who will be able to provide the name of an engineer in your area.

Warranty

Your boiler is guaranteed for one year from the date of installation.

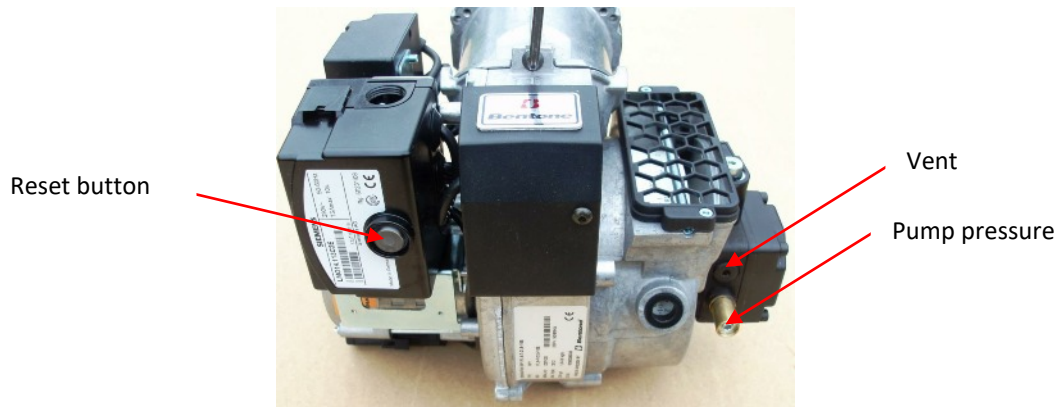
Warranty Conditions

The boiler must be installed and commissioned in accordance with this handbook and appropriate regulations.

The boiler shall not be repaired, modified or tampered without the authorisation of Hounsfield Boilers Ltd... Charges incurred for any unauthorised "in warranty" work will not be accepted.

Priming the burner

Press the burner reset button, the firing sequence will commence. During the firing sequence slacken the vent plug to purge air from the oil line. If ignition fails the burner will go to lockout; the reset button will be illuminated. Press the reset button to restart the firing sequence. The reset button also acts as an on/off switch; press once for off, press again to switch on.



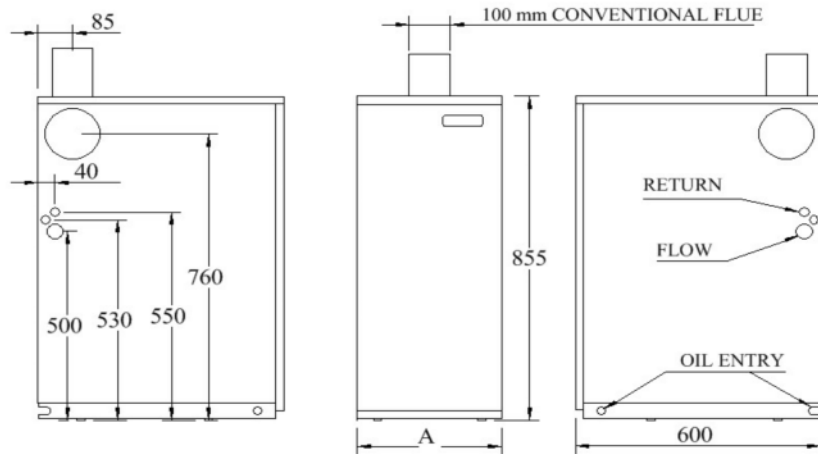
Testing the fuel supply

For wall mounted boilers fitted with a clear oil line, with the burner operating it is normal for a static air bubble to remain at the highest point of the clear flexible oil line; a continuous stream of bubbles indicates that air is being drawn in. This must be cured check all joints above the oil level in the tank.

If a non-return valve is installed, test its function by releasing the flexible oil line connection onto the pump, hold the oil line vertically; the oil level should be maintained.

TECHNICAL

Boiler specifications



| Model | Condensing model | Output kW. | Output Btu/hr. x 1000 | BED Full load Efficiency | Dim. A | Water connections | | |
|------------------------------------------|------------------|------------|-----------------------|---------------------------------------------|--------|-------------------|--------|--------|
| | | | | | | Flow | Return | Drain |
| Tuscan 12-19 | Yes | 12-19 | 41-65 | 96-97% | 350mm | ¾" BSP | 22mm | 21.5mm |
| Tuscan 20-25 | Yes | 20-25 | 68-85 | 96-97% | 350mm | ¾" BSP | 22mm | 21.5mm |
| Tuscan 26-30 | Yes | 26-30 | 90-100 | 96-97% | 460mm | ¾" BSP | 22mm | 21.5mm |
| Electrical: | | | | | | | | |
| Electrical Supply | | | | 230V 50Hz, - fused 5amp | | | | |
| Burner motor | | | | 90W | | | | |
| Fuel: | | | | Class C2 (28 second kerosene) | | | | |
| Oil supply connection | | | | 10mm compression | | | | |
| Heating system requirements | | | | Fully pumped, open vented or sealed system. | | | | |
| Operating conditions: | | | | | | | | |
| Maximum operating pressure | | | | 3 bar static head 28 metres (92feet) | | | | |
| Operating temperature | | | | 50 to 80°C maximum | | | | |
| Thermostats: | | | | | | | | |
| Control thermostat | | | | Range 50 to 88°C | | | | |
| Limit thermostat | | | | Manual reset, set point 100 - 4°C | | | | |
| Weight empty: | | | | 12/19= 82kg, 20/25=89kg, 20/25=113kg | | | | |
| Water capacity: | | | | 12/19= 14ltrs, 20/25=20ltrs, 20/25=23ltrs | | | | |
| Flue requirement: | | | | | | | | |
| Conventional flue socket | | | | To suit 100mm flue | | | | |
| Draught limits (floor standing boilers): | | | | 12 – 30 Nm2 (0.04" – 0.11" WG) | | | | |

Service schedule

To ensure continued safe and efficient operation of the heating system the boiler should be serviced annually. Servicing should be undertaken by a competent person / OFTEC registered engineer; they will have the appropriate combustion analysis and test equipment to ensure accurate set up and efficient operation of the boiler.

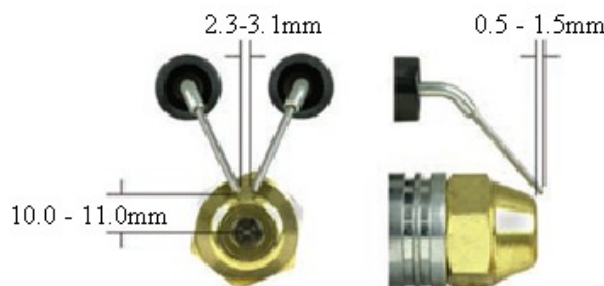
Check list summary:

1. Carry out a pre-service combustion / operation check noting any faults.
2. Remove primary and secondary heat exchanger baffles, clean components scrape residue from the heat exchange surfaces and vacuum.
3. Check the condition of combustion chamber insulation and door seals.
4. Clean the burner and replace the injector nozzle.
5. Ensure the condensate trap is full of water.
6. Replace / clean oil filter elements as appropriate.
7. Carry out a combustion analysis test, check pump pressure, CO₂ & air intake settings.
8. Complete the service log.

Burner setting

| BOILER MODEL | | 12/19 | | | | 20/25 | | | 26/30 | | |
|--------------------------------------------------------|-----------|----------------|------------------------|----------------|----------------|----------------|------------------------|----------------|----------------|------------------------|----------------|
| OUTPUT | kW | 12 | 14 | 16 | 19 | 20 | 23 | 25 | 26 | 28 | 30 |
| | Btu/hr | 41,000 | 48,000 | 55,000 | 65,000 | 68,000 | 78,000 | 85,000 | 89,000 | 96,000 | 102,000 |
| SEDBUK | Band | A | A | A | A | A | A | A | A | A | A |
| NOZZLE | Danfoss | 0.40/80° EH | 0.40/80° EH | 0.45/80° EH | 0.55/80° EH | 0.60/80° EH | 0.65/80° EH | 0.75/80° EH | 0.75/80° EH | 0.75/80° EH | 0.85/80° EH |
| OIL PRESSURE | PSI | 100 | 115 | 115 | 115 | 110 | 120 | 105 | 115 | 135 | 120 |
| FIRING RATE | kg/hr | 1.02 | 1.19 | 1.36 | 1.63 | 1.73 | 1.99 | 2.16 | 2.25 | 2.42 | 2.63 |
| | Litres/hr | 1.29 | 1.5 | 1.72 | 2.06 | 2.19 | 2.52 | 2.74 | 2.85 | 3.07 | 3.32 |
| AIR SETTING | | 1.8 | 2 | 2.5 | 3 | 3.2 | 4 | 5 | 4 | 5 | 7 |
| SMOKE NO. | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CO ² % | | 11.5-12 | 11.5-12 | 11.5-12 | 11.5-12 | 11.5-12 | 11.5-12 | 11.5-12 | 11.5-12 | 11.5-12 | 11.5-12 |
| EFFICIENCY NETT % | | 96-97 | | | | 96-97 | | | 96-97 | | |
| FLUE GAS TEMP. Deg.°C @ nom. 50oC return, 70oC Flow | | 67 | 69 | 75 | 82 | 75 | 80 | 85 | 80 | 82 | 85 |
| FLUE GAS TEMP. Deg.°C @ nom. 60oC return, 80oC Flow | | 60 | 61 | 67 | 75 | 68 | 74 | 79 | 72 | 74 | 76 |

Electrode setting



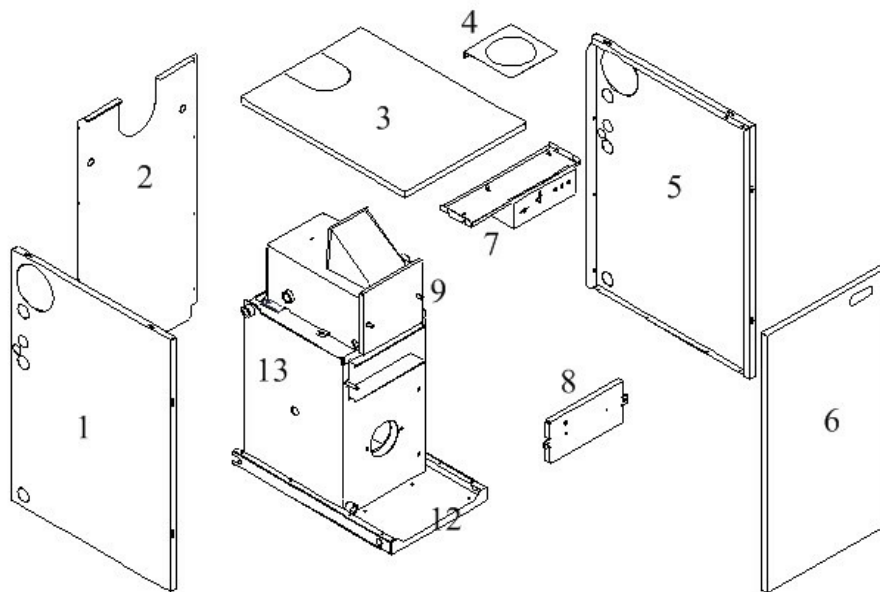
Fault diagnosis

ELECTRICITY SAFETY - Before making any electrical checks, switch off mains supply to boiler.

The list below is not intended to be a comprehensive guide to fault analysis but resolution to identify some of the more common faults, the services of a competent boiler service engineer equipped with appropriate tools must be used.

| Fault | | Possible fault |
|-------------------------------------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High limit thermostat neon is illuminated. | | Control thermostat. Lack of water circulation. |
| The mains neon is not illuminated. | | Blown fuse. Time clock or programmer fault. |
| Boiler lockout lamp is illuminated. | Lack of fuel supply. | Is there fuel in the tank? |
| | | Air in the fuel line; see bleeding the oil line section of handbook. |
| | | Solenoid coil. |
| | | Supply line valves closed. |
| | Flame goes out after a short period. | Injector nozzle. |
| | | Fuel starvation. |
| | | Photocell. |
| | Lack of ignition spark. | Control box. |
| | | Control box. Ignition transformer. |
| Electrodes. H.T. leads. | | |
| Burner lockout after a period of shutdown. | | Air in the supply line; see bleeding the oil line section of the handbook. Non return valve. |
| Burner does not operate. | | Oil pump seized or has a tight spot. Motor. Control box. Capacitor. |
| Radio or T.V. interference | | Electrode setting. Ignition transformer. Poor earth bonding. |
| Sooty exhaust. | | Injector nozzle. Incorrect combustion settings. |
| Burner ignites violently; caused by delayed ignition. | | Electrode setting. Burner air setting too high. |
| Oil or exhaust gas odours. | | Incorrect combustion settings. Fuel leak. Gaskets or seals have degraded. |
| Kettling boiler; sounds like a kettle boiling. | | Lack of water circulation. Lack of pressure in a sealed system. Contamination of water side surfaces of the heat exchanger; a chemical clean of the system will be required. |

Boiler parts list



| ITEM | DESCRIPTION | 12/19 | 20/25 | 26/30 |
|------|----------------------------|----------|---------|---------|
| 1 | LHS Panel | PW50002L | | |
| 2 | Rear panel | PW50003 | PW20003 | |
| 3 | Top panel | PW20005 | PW20005 | |
| 4 | Flue trim plate | PW20009 | | |
| 5 | RHS Panel | PE50002R | | |
| 6 | Front panel | PW50004 | PW20004 | |
| 7 | Control panel | PW20006 | | |
| 8 | Heat exchanger access door | HE40016 | HE50016 | HE20016 |
| 9 | Condenser unit | CN40000 | CN50000 | |
| 10 | Top baffle | HE40019 | HE50019 | HE80019 |
| 11 | Bottom baffle | HE40011 | HE50011 | HE80011 |
| 12 | Base frame | PW50001 | PW50001 | PW50001 |
| 13 | Heat exchanger | | HE40014 | HE50014 |
| | HE80014 | | | |
| | Limit thermostat | | EL006 | |
| | Control Thermostat | | EL023 | |

Burner parts list

| | | | |
|----------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <p>Blast tube Pt.no.BPPL6-7-21.5-10E 80mm</p> |  | <p>Danfoss Pump BFP11L3 Pt.no.BP71N0142- (1pipe)</p> |  |
| <p>Monoblock electrode Pt.no. BP21593702</p> |  | <p>Control box Pt.no.BPLM014.113C2E</p> |  |
| <p>Burner flange gasket Pt.no. BP11883002</p> |  | <p>Blast tube gasket Pt.no.BP11883101</p> |  |
| <p>Capacitor Pt.no. BP11596501</p> |  | <p>Oil line Pt.nos. braided: BP11946501 Clear: BP12745601</p> |  |
| <p>Drive coupling Pt.no. BP11407204</p> |  | <p>Transformer Pt.no. BP12043201</p> |  |
| <p>Fan Pt.no.BP12051601</p> |  | <p>Solenoid Pt.no. BP21587101</p> |  |
| <p>Motor Pt.no. BP12048902</p> |  | <p>Photocell Pt.no. BP11992402</p> |  |

