INTRODUCTION
Thank you for choosing the AMBASSADOR condensing oil boiler, please read the following carefully.

To the installer
This manual must be left with the householder by the installer who will instruct the user on the boiler operation.

To the user
Please read the user section of this manual to familiarize yourself with the boiler operation.

WARRANTY

WARRANTY FOR YOUR BOILER MUST MEET THE FOLLOWING CONDITIONS OR YOUR WARRANTY MAY BE INVALID

Warranty on the Heat Exchanger: 5 Years (Excludes labour)
Warranty on Burner and Controls: 2 years

CONDITIONS OF WARRANTY:

1. Boiler MUST BE **installed** by an OFTEC registered engineer ,if not permission will be required by building control.
2. Boiler MUST BE **commissioned** after installation by an OFTEC registered engineer.
3. Boiler MUST BE **serviced** every 12 months after installation by an OFTEC registered engineer.
4. Installer MUST COMPLETE an **Installation/Commissioning Form**, which will be found along with your manual and this must then be returned to the address on the warranty form. Failure to return this form, may invalidate your warranty.

WHAT IS A CONDENSING BOILER AND HOW DOES IT WORK?
On all standard boilers the flue gases that go up the chimney have quite a high temperature (200˚C / 260˚C) and are made up of a few different types of gases. A condensing boiler is designed so that these flue gases pass through a stainless steel heat exchanger connected to the boiler. These flue gases transfer heat to the water contained in the secondary heat exchanger.

This results in (a) Increasing the temperature of the water returning to the main boiler.
(b) Converting some of the flue gases into condensate.
(c) Lowers the exit flue gas temperatures considerably (Less than 85˚C)

This all results in increased efficiency in the boiler and therefore a saving on oil.

IMPORTANT CHANGES TO BOILER MANAGEMENT
Annual service – this is very important in order to keep the flue ways clean and ensure the boiler is correctly set.

Quarterly check – empty and clean the condensing trap (Fig. 4)

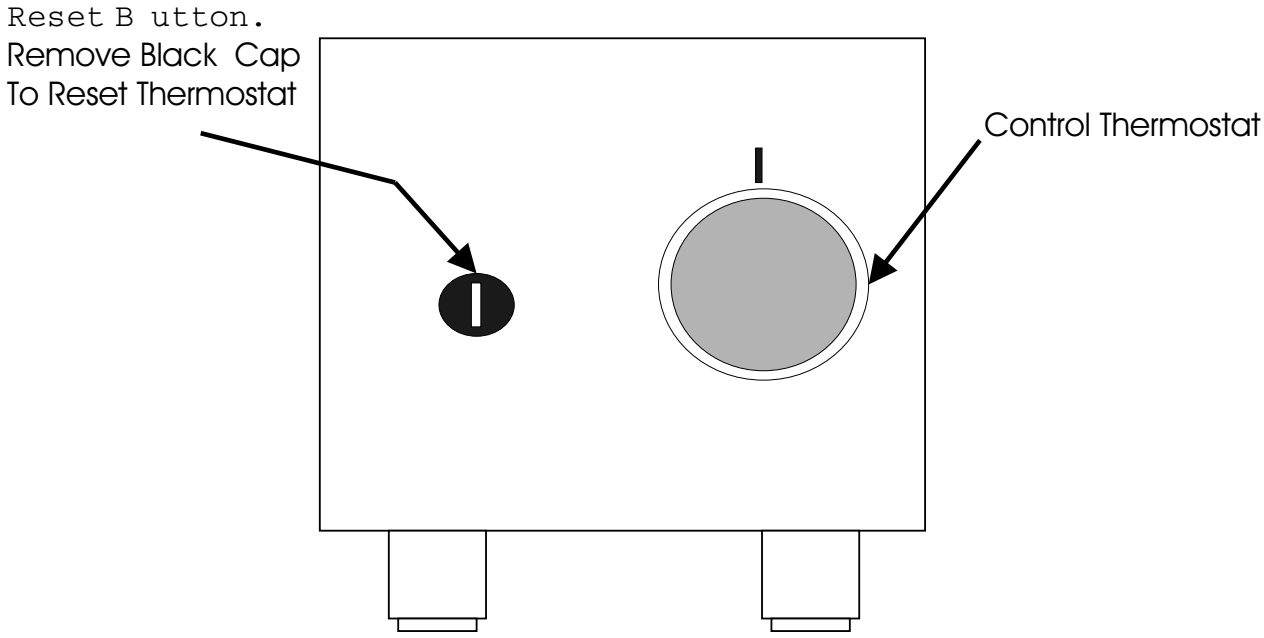
Always ensure that the condensate is flowing freely through the outlet into the drain. This can get dirty and block flow or it can freeze in extreme conditions.

Plume – A condensing boiler which produces a white plume from the flue into the air. This is caused by the low flue gas temperatures mixing with the colder air outside.

Best performance:
Radiator heating system – Flow temperature – 70˚C Return Temperature – 50˚C
Underfloor heating system – Flow temperature – 50˚C Return Temperature – 40˚C

Note: return temperature should never be less than 40˚C

USER INSTRUCTIONS



BOILER OPERATION

The Boiler Control Thermostat responds to the temperature of the water within the boiler and switches power to the burner when heat is required.

The burner has an independent control system which regulates the firing and (shut-off) of the burner.

Automatic firing of the burner will occur when the water temperature within the boiler falls below the control thermostat set point which will continue to run until the water temperature rises to the temperature (recommended) set on the boiler control thermostat.

SWITCHING THE BOILER ON

- Check there is water in the system.
- Check radiator valves are on.
- Turn on oil supply.
- Switch electrical supply to the boiler on (including time clock) and then set the boiler control thermostat to recommended setting.

BOILER CONTROLS

BOILER CONTROL THERMOSTAT
The temperature of the water within the boiler is controlled and maintained by the ***Boiler Control Thermostat*** located on the boiler control panel.

TEMPERATURE SETTINGS:
The Boiler Control Thermostat has a range of 50˚C to 80˚C. The recommended setting for the boiler control thermostat is:

WINTER
Heating and hot water supply 80˚C

SUMMER
Domestic hot water supply 65˚C

It is not recommended to operate the boiler with a thermostat setting of less than 60˚C, as this will precipitate corrosion, thus reducing the life of the boiler.

HIGH LIMIT STAT INDICATOR:
The high limit lockout will occur when the water within the boiler is or has overheated e.g. reached a temperature above that set on the high limit thermostat.

TO RESET THE BOILER
When the boiler has had time to cool, the manual reset button (coloured red) (Fig. 1) on the control panel will need to be pressed in to reset. If the high limit thermostat continues to trip, contact your installer as there may be a fault with the central heating system.

LOCKOUT INDICATOR: RED
The lock out indicator will illuminate when the burner has failed to fire, e.g. No fuel or an electrical fault.

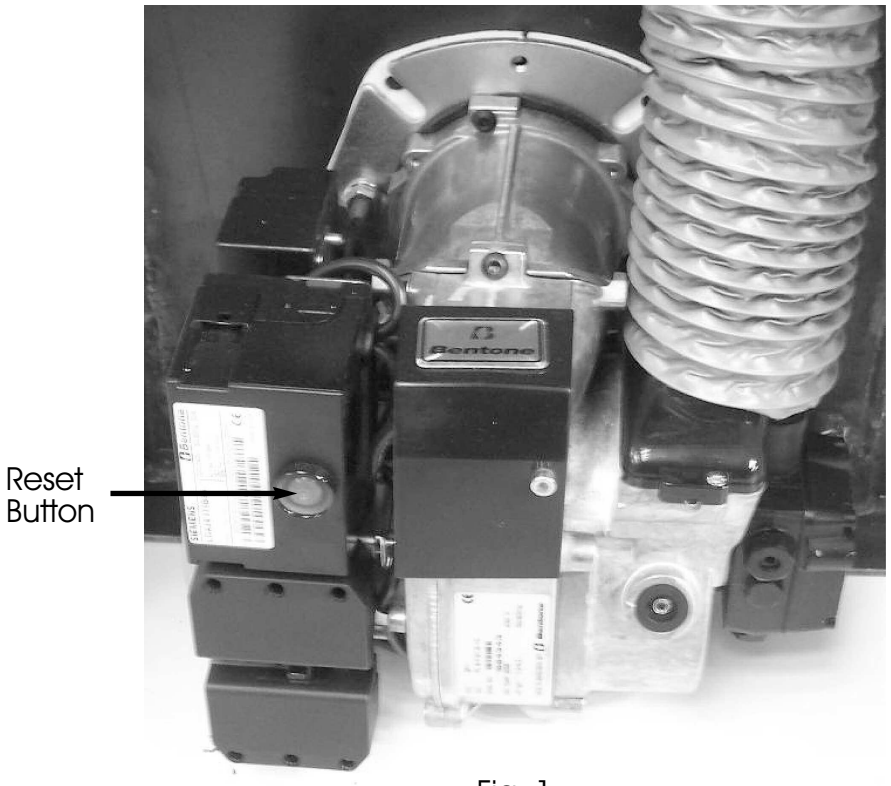


Fig. 1

SWITCHING THE BOILER OFF

The boiler can be switched off at anytime using one of the following;

- Turn the boiler control thermostat to the **OFF** position
- Switch the mains (electrical supply) to **OFF**.
- Set the control system to **OFF** (e.g. Time clock).

PLEASE NOTE: For longer periods of shutdown e.g. While away on holiday, switch **OFF** the mains (electrical supply) and turn **OFF** the OIL supply.
If shutdown occurs during cold weather ensure boiler is protected against frost damage.

BURNER LOCKOUT

The burner has an independent control system (Burner Control Box); this includes a flame detector (Photocell) which senses the presence of a flame. In the event of flame failure, the burner Control Box activates a second re-ignition sequence. Should the Photocell not detect a flame presence within 15 seconds the burner goes to LOCKOUT and shuts down.

Continued **LOCKOUTS** are a result of a fault in the operation of the boiler and can be attributed to following examples:

- An interruption of the fuel supply .
- Electrical Supply fault e.g. Extreme low voltage.
- Failure of a Burner component.
- A fault within the heating system .
- Burner combustion not being correct.

The Burner Reset button on the Control Box and the red Lockout Indicator on the boiler control panel illuminates to indicate that a lockout has occurred.

In the event of the Burner locking out, do not attempt to restart the Burner by pressing the Rest Button on the Burner Control Box for at least 2 minutes. A Bi-metallic timer within the Control Box has a minimum cooling time of 45 seconds thus the 2 minute interval will ensure that this Bi-metallic timer has cooled and is therefore in a position where it may be reset

RESTARTING AFTER LOCKOUT

When lockout has occurred, inspect for any obvious causes e.g. oil leaks.
Also check the fuel line from the tank to the boiler and that any oil shut off valve has not been inadvertently closed.

RESTART

- Check there is adequate oil in the storage tank.
- Check oil supply valves are open.
- Switch on heating system (e.g. Time clock).
- Depress the red Burner Reset Button on the burner Control Box, which will be illuminated. The Burner Reset Button (illuminated) (Fig. 1) on the Control Panel will go out and the burner will commence the ignition start sequence. After 15 seconds the Burner should fire normally.

PLEASE NOTE: Should the Burner not start, both lockout indicator, on the Control Box/Burner Reset Button will illuminate again.

- Wait at least 3 minutes and depress the Burner Rest Button again.
  Failure to start a second time indicates a fault requiring attention.
  In the event of a second failure to start:
- Switch off electrical supply.
- Call service engineer.

REGULATIONS

The installation of oil fired boilers should comply with the following standards and codes of practice.

- BS5449 Forced circulation hot water heating systems for domestic use
- BS5410-Part1 Oil installations up to 45kw.
- BS7593 Water treatment of hot water central heating systems.
- BS7671 Electrical Regulations.
- Building Regulations Part L1 and J 2002 England and Wales, Part F Scottish Regulations and Technical Booklet L Northern Ireland.
- OFTEC Codes of Practice Published or Recommended.

After installing, the system it needs to be flushed with a cleanser like Fernox Heavy Duty Restore, for fast-acting removal of lime scale, black sludge (magnetite) and other deposits from the boiler and the central heating system. Then add a Fernox protector to give long term protection of the central heating system against internal corrosion and lime scale formation.

WATER CONNECTIONS

Only two connections for the heating and hot water systems on a standard condensing boiler.
Flow from top of boiler (Fig. 2) and return to top of stainless steel heat exchanger (Fig. 2).
PVC condensate pipe (Fig. 3) from the condensate trap to the external drain.

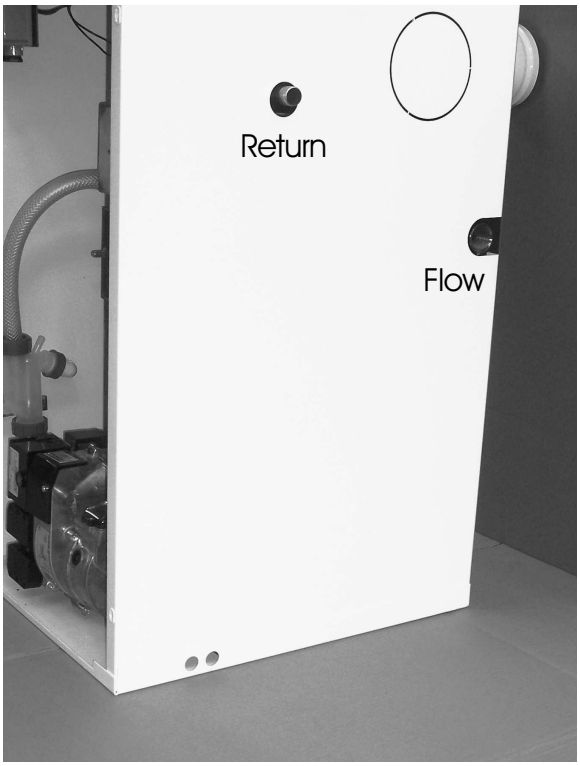


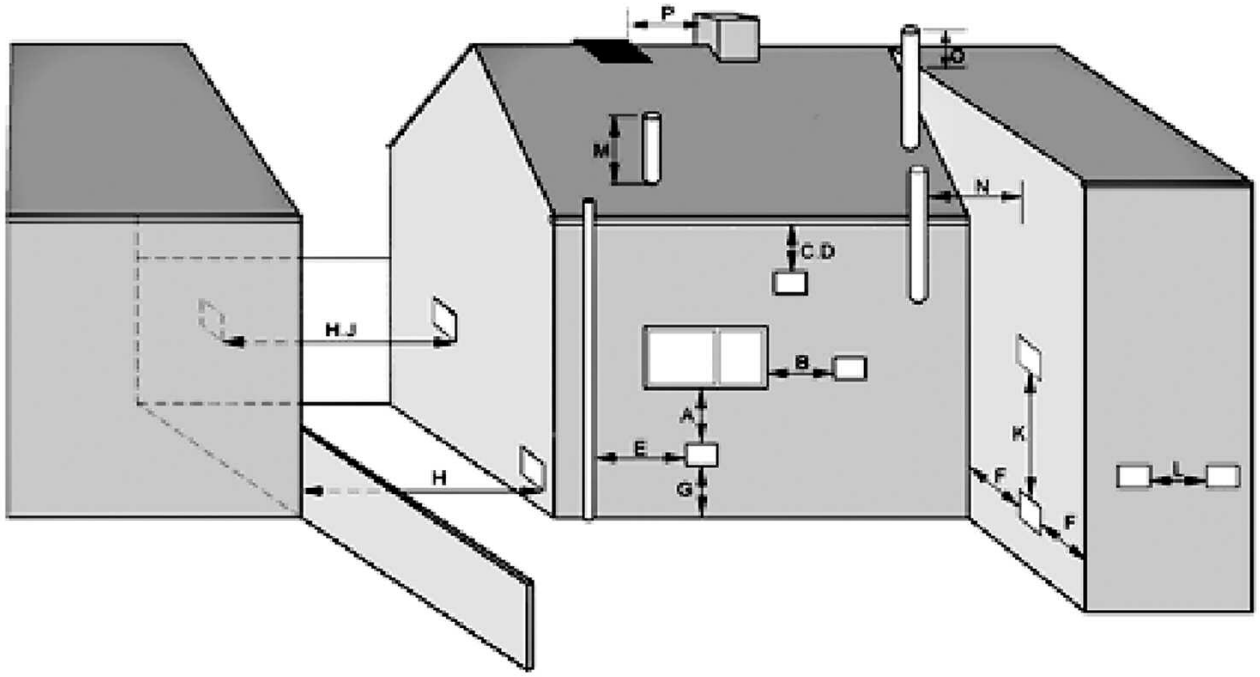
Fig. 2

Fig. 3

BOILER LOCATION

Sound levels should be discussed with the householder, as some people may be sensitive to low noise levels in a small room, as it may appear more annoying than in larger rooms. Please Note installation should take into account of flue position (see diagram).

RECOMMENDED FLUE POSITION

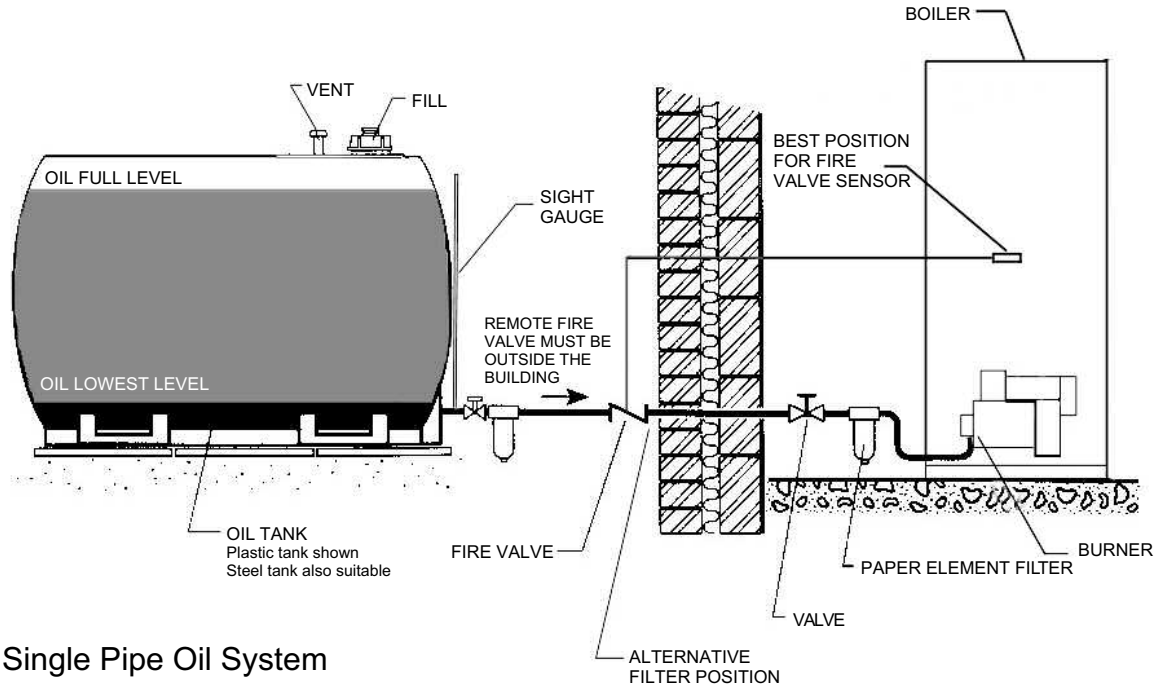


Please Note where the terminal is within 1 metre of any plastic material, such material should be protected from the effects of the combustion products of the fuel.

IMPORTANT 35 SECOND CLASS D GAS OIL MUST NOT BE USED FOR BALANCED FLUES.

Ref	Min. Position	mm
A	Directly below an opening, air brick, opening window etc.	600
B	Horizontally to an opening , air brick, opening window etc.	600
C	Below a gutter, eaves or balcony with protection.	75
D	Below a gutter or a balcony without protection.	600
E	From vertical sanitary pipework.	600
F	From an internal or external corner.	600
G	Above ground or balcony level.	600
H	From a surface or a boundary facing the terminal.	600
J	From a terminal facing the terminal.	1200
K	Vertically from a terminal on the same wall.	1500
L	Horizontally from a terminal on the same wall.	750
M	Above the highest point of an intersection with the roof.	600
N	From a vertical structure on the side of the terminal.	750
O	Above a vertical structure less than 750mm.	600
P	From a ridge terminal to a vertical structure on the roof.	1500

OIL SUPPLY

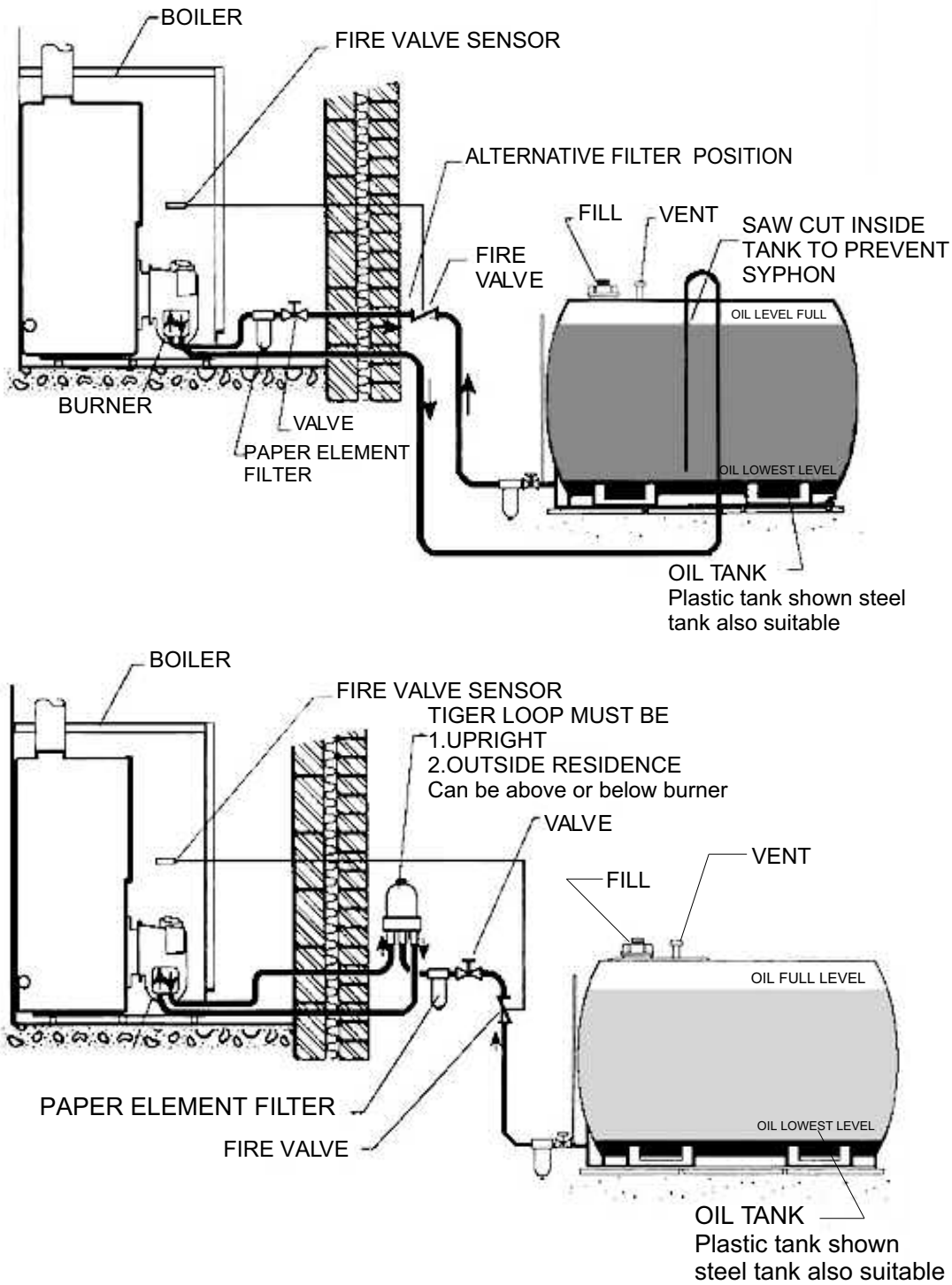


Single Pipe Oil System

TYPICAL SYSTEM SHOWN

OIL SUPPLY

Diagrams of twin pipe oil supply systems



A flexible oil pipe is supplied to connect the burner to the incoming oil supply pipe.

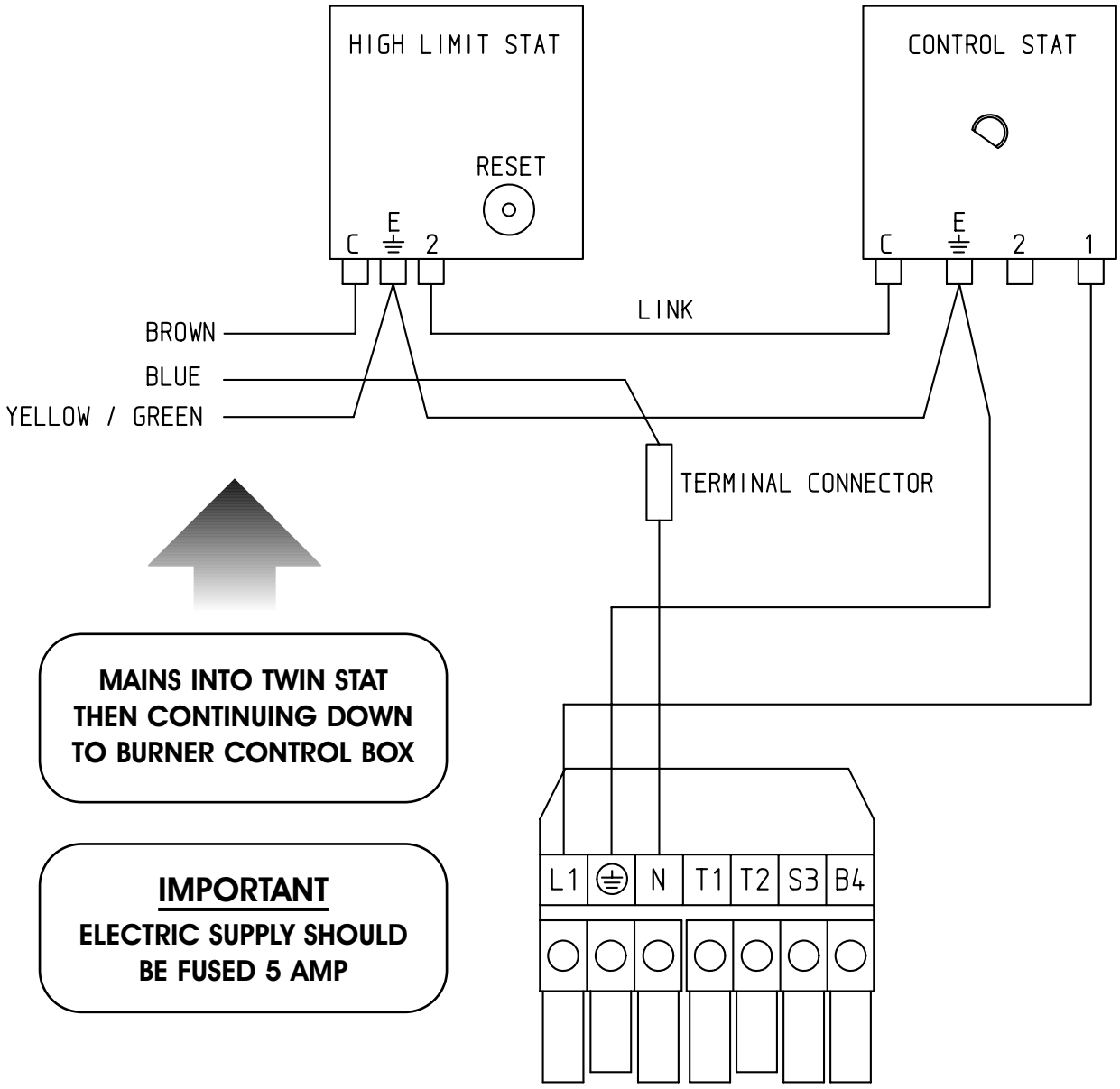
IMPORTANT NOTES

- If siting oil tank above burner height, use single supply pipe only.
- If siting oil tank below burner height, use twin pipe supply or Tiger loop.
- Please refer to Burner Manual for conversion to oil pump for two pipe system.

ELECTRICAL ENTRY

The electrical supply to the boiler must be wired using a double pole-isolating switch 230v/50hz, fused 5 amp. The mains supply must be connected with the boiler dual stat, the supply will then continue down to the burner control box. The burner is supplied with a three wire cable plug which allows disconnection for maintenance.

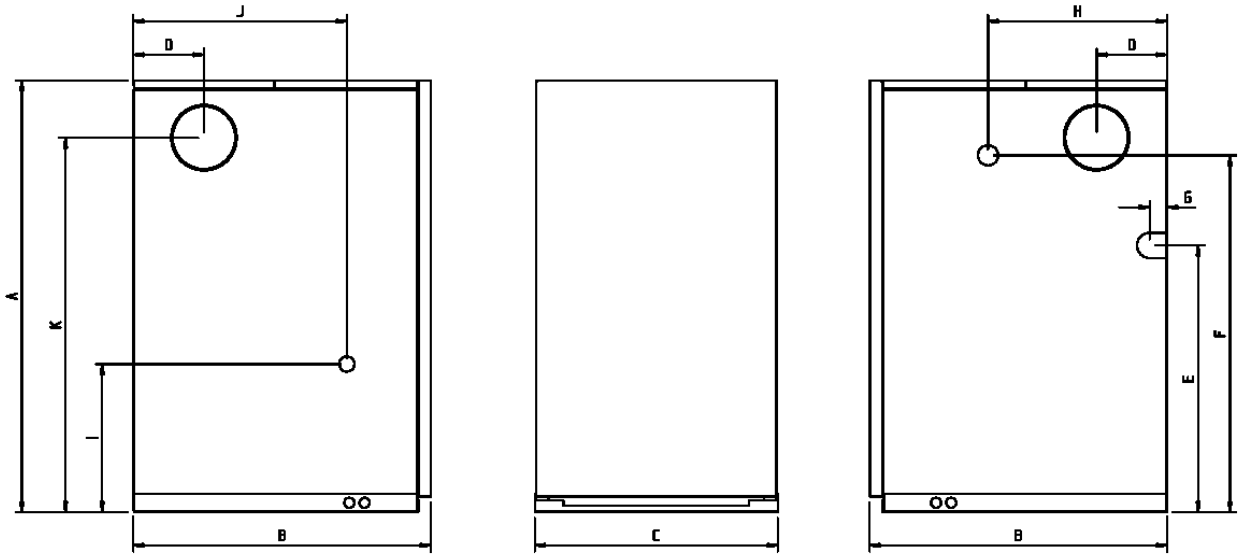
Ambassador Condensing
Wiring



BOILER SPECIFICATIONS

DIMENSION	15/21 Kw	21/27 Kw	27/38 Kw
A	854	854	854
B	589	589	589
C	421	481	481
D	140	140	140
E	496	528	528
F	706	706	706
G	35	35	35
H	355	355	355
I	293	293	293
J	423	423	423
K	741	741	741

DIMENSIONS ARE IN (mm.)



General Data

Electrical Supply: 240v ~50Hz
Fuel: 28 second or 35 Second
Maximum Control Thermostat Setting 85˚C
Maximum Operating Pressure: 3 bar-45psi - 28m static head room 92ft
Draught Limit: Min 12.5 Nm^2 - 0.05" WG
Max 33.0 Nm^2 - 0.12" WG

Oil Supply Connection ¼" BSP
High Limit Stat: Manual Reset

Note: 28 sec fuel must only be used on Countryman boiler

SERVICING INSTRUCTIONS

A competent service engineer OFTEC registered should be appointed on an annual basis.

- Remove inspection door, burner and baffle assembly.
- Brush down the inside of the heat exchanger and vacuum out debris .
- Clean baffle assembly.
- Pull out inserts from stainless steel heat exchanger and clean before replacing. Ensure stainless steel heat exchanger is thoroughly cleaned.
- Empty and clean condensing trap (Fig. 4)
- Inspect and clean burner assembly, and replace with new nozzle (see burner manual)
- Renew any insulation e.g. inspection door or inside base of heat exchanger
- Reassemble baffles and replace inspection door.
- Replace paper oil filters
- Test oil pressure and test combustion.

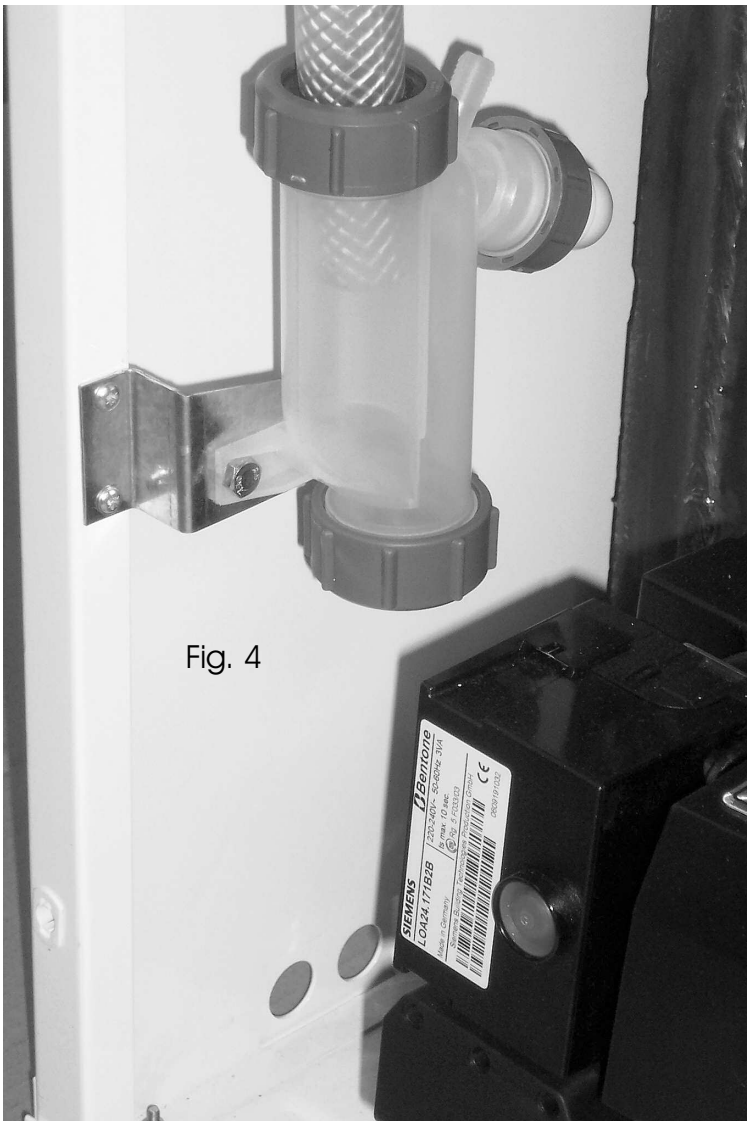
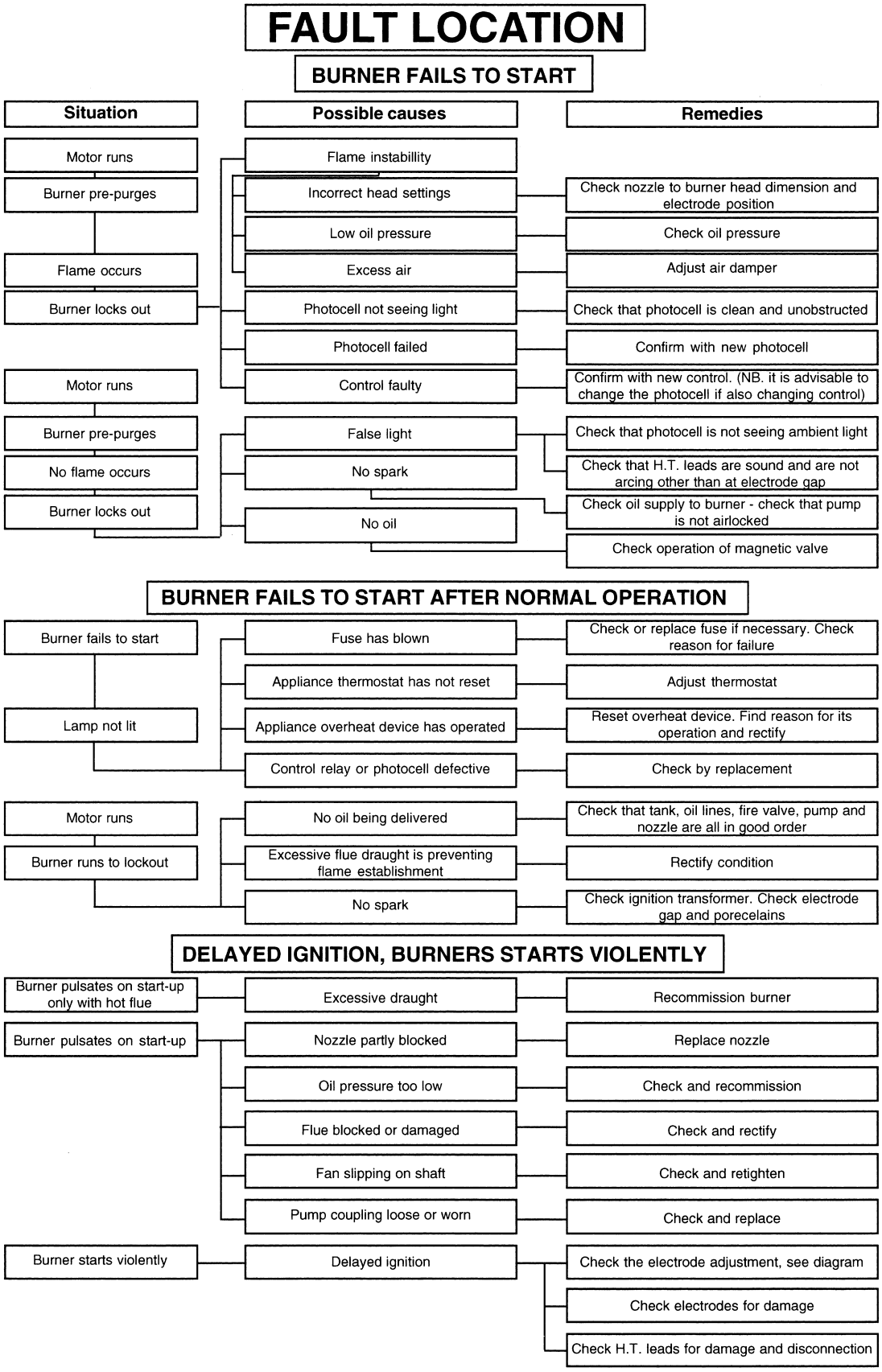
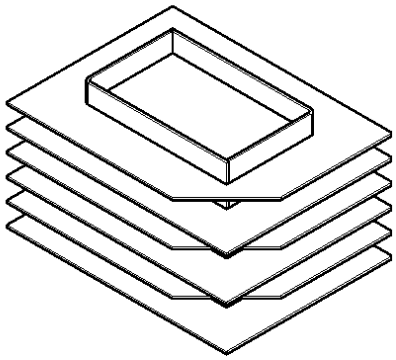


Fig. 4

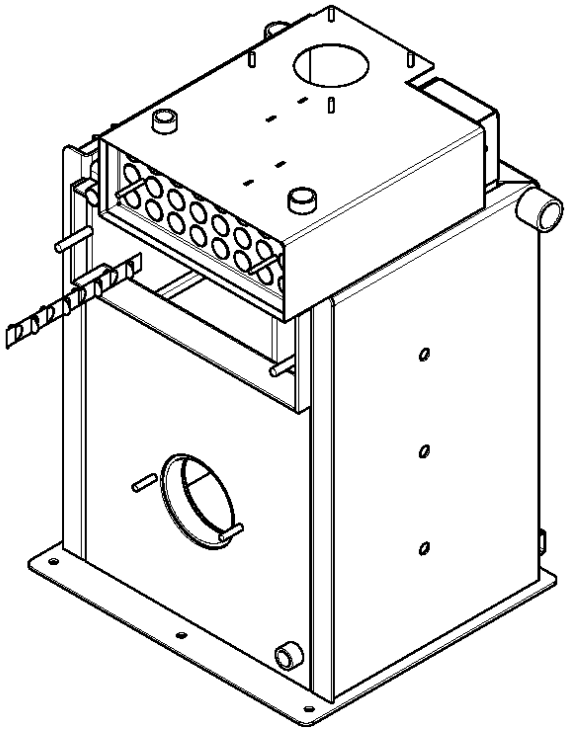
BOILER WILL NOT START

Check if mains electricity supply is reaching boiler control panel, making sure control thermostat is turned on and time clock is calling for heat.

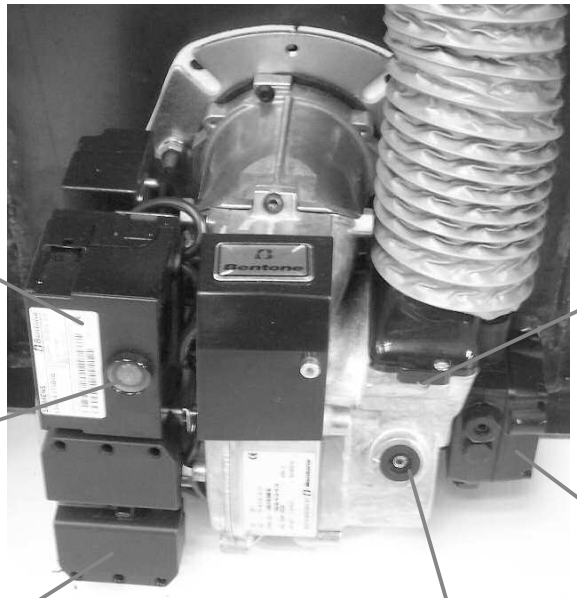




BAFFLE ASSEMBLY



BURNER



BURNER SETTINGS

BOILER MODEL		UTILITY 15/21	UTILITY 21/27	UTILITY 27/38
MAXIMUM OUTPUT	Btu/hr	72000	92000	130000
	kW/hr	21	27	38
FACTORY SETTING	Btu/hr	63000	82000	113000
	kW/hr	18.5	24	33
NOZZLE SIZE		0.55 80 deg H	0.65 80 deg H	0.85 80 deg H
OIL PRESSURE	Bar	8	8	8
BURNER AIR SETTING		7	12	16
SMOKE		0	0	0
Co^2	%	11.5	12	12
FLUE GAS TEMPERATURE	C	80	87	87
WATER INLET/RETURN	mm	22	22	28
WATER OUTLET/FLOW	mm	22	22	28
CONDENSATE FLOW	mm	22 pvc rigid pipe	22 pvc rigid pipe	22 pvc rigid pipe
ELECTRICAL POWER	230/240 volt – 50 Ho – Fused at 5 amp			
MAX OPERATING PRESS.	bar	2.5	2.5	2.5
BOILER EFFICIENCY*	%	98	99	100
SEDBUK A RATING	%	93.5	93.5	94

* Please Note - Boiler Efficiency – Schedule 2 of Rules (Efficiency) Regulation 1993.