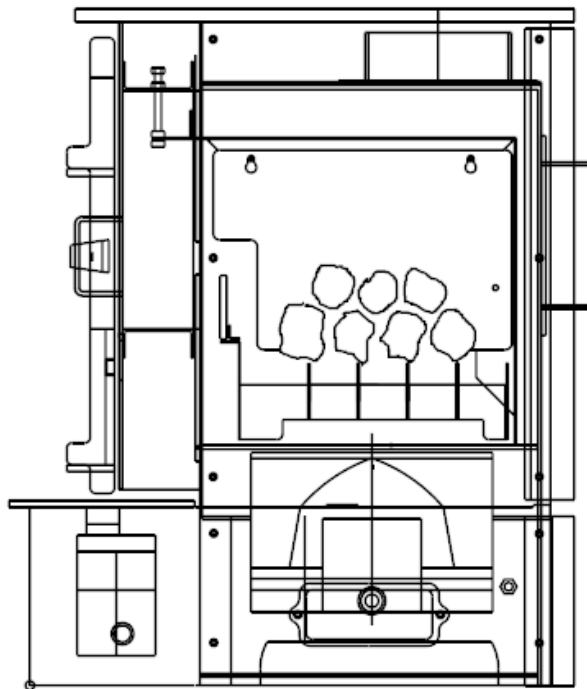
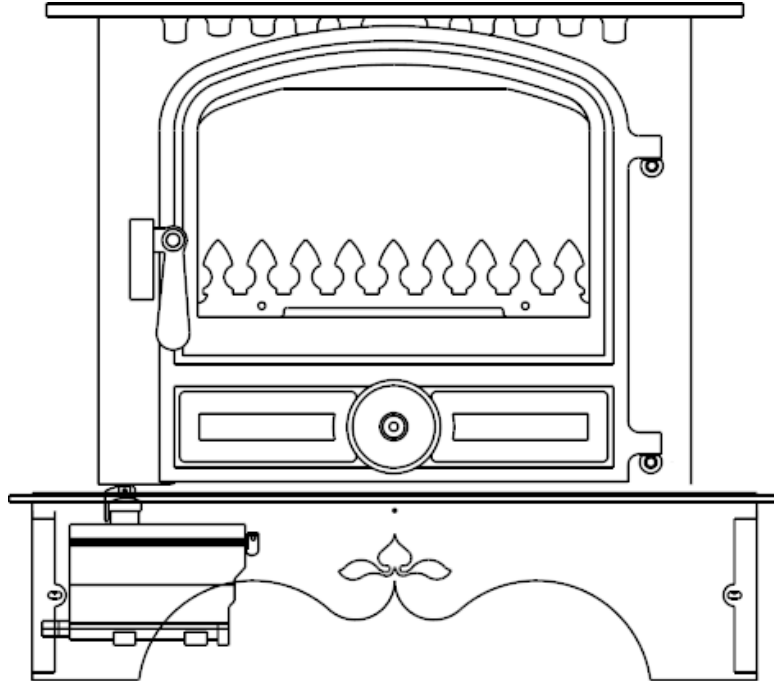




BUBBLE 2 FRONT CONTROL INSTALLER INSTRUCTIONS ISSUE 1



<http://www.oilstoves.co.uk/>

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2 HEALTH AND SAFETY

2.1 CONTROL OF SUBSTANCES.

Take great care when handling materials such as insulation boards, glass fibre ropes, ceramic wool, artificial fuel and kerosene oil, diesel oil, they are all irritants and suitable protective clothing such as disposable gloves dust masks and protective goggles should be worn.

Wash off thoroughly after handling any of these materials.

Carefully dispose of redundant or surplus materials and always vac up after service or installation work.

3 APPLICABLE REGULATIONS

The installation of an oil fired BUBBLE appliance must be carried out by a technically competent person, experienced in both solid fuel and oil-fired installation and capable of installing, commissioning and servicing to the current requirements of the relevant local building regulations:

- In England and Wales these are J 1-2-3 Provision for introduction of air supply and discharge of products of combustion.
- Provision for protection against fire and heat.
- In Scotland Part F sec 3.
- In Northern Ireland Part L.
- In Ireland Part J.
- British IEEE wiring regulations, latest edition.
- Codes of practice which apply in the UK are -:
- BS5410, installation of oil fired space heating and hot water supply Part 1, boilers of rated output not exceeding 44KW
- BS4543, Specification for chimney for oil fired appliances. Part3.

- BS5449 central heating for domestic premises Part 1 Forced circulation hot water systems.
- BS 5601, BS8303 & BS6461 Pts 1 & 2 1984,
- BS7566 Parts 1 to 4

The installer should have passed the OFTEC course OFT101, or attended specialist training available at this company.

If you have any difficulties please phone our sales department on:

Phone 01302 742520. (3 lines.)
Fax 01302 750573
Email sales@bubble-stoves.co.uk
WWW <http://www.bubble-stoves.co.uk/>

4 INTRODUCTION

The stoves are central heating/room heaters, which burn kerosene or diesel in a controlled manner utilising an open flue to discharge the products of combustion.

The stove is normally supplied without the front or side skirts fitted and with all the component parts packed separately for on site assembly.

The top plate of the stove is held in place via an m6 countersunk allen screw at the front top of the stove.

The side skirts are fastened to the lower front ending plates via the m4 c.s. allen screws.

The removable skirt tops are positioned on to the fixed skirts and located via the black rivets supplied in a separate pack.

The oil valve controls are covered via a right hand lift off cover, which locates on to the peg attached to the right hand removable fret top.

For safety and ease of use all the controls are front mounted.

For future servicing it is advisable to leave at least 100mm clearance at either side of the stove.

There are twin combustion air restrictors fitted which are capable of controlling high flue vacuums.

The outlet adapter on the stove is 125mm dia.

125mm dia copex chimney linings should be used. When lighting the stove it is very important that the lighting instructions are carefully followed.

The stoves are designed to run with or without a coal fire effect kit which when fitted will partially create the effect of a coal fired stove with all the pleasure that this can bring, but remove the need to constantly refuel and de ash.

It must be clearly understood that coal effect will only be available when the stoves are running at maximum or near maximum performance (as per information given in our sales literature).

For spacing from combustibles and fire guarding this range of stoves must be treated in the same way as a SOLID FUEL APPLIANCE.

To prevent the risk of injury through burning a fireguard complying with BS6539 must be fitted

The stove must not be operated with the glass front door opened or cracked.

(The door glass may require light cleaning occasionally depending upon the continuous running time of the stove.)

The stove must not be operated without the lighting port plug fitted.

Before starting this installation you must make absolutely sure that the chimney does not have a history of downdraughting either intermittent or permanent, see figs 11 and 12.

On low fire the appliance will generate 3kW of continuous output.

You may well have to modify the gravity side of the system to make extra provision to allow for adequate dissipation of the 3kW.

Make sure that you make provision for carrying out any modifications that may be required.

If it is not possible to fit the heat leak required, then it may be possible to fit a fully-pumped system with the pump continuously running, or fit an overheat thermostat to bring the pump on should overheating occur. If this is done then you should instruct the user where to set the oil flow and thermostat controls to achieve the most efficient running.

If you are in doubt, phone our technical help line.

4.1 MATERIALS REQUIRED

1. 125mm dia chimney liner
2. Suitable anti downdraft terminal.
3. 125MM dia flue pipe of suitable length.
4. Suitable closure plate to close off the base of the flue.
5. Oil isolation valve
6. KBB remote sensing fire valve.
7. Boiler unions 4 x 1" B.S.P. Male.
8. 10mm kutalex copper tube.
9. 22mm waste pipe (for wall sleeving).
10. Silicone sealant.
11. Stadium air vent
12. Plugs and screws.
13. Switch fused neon isolator. (Electric ignition appliances)
14. Suitable compression fittings.

5 GENERAL INFORMATION

5.1 CHIMNEY

To ensure satisfactory performance from the BUBBLE STOVE hot and cold condition chimneys must be capable of maintaining a constant steady vacuum of not less than .02" W.G. when COLD or more than .07" W.G. when HOT, to achieve this the chimney

needs to be about 7-8 metres high x 125 dia minimum and must terminate as per our recommendation. It is most important that any existing chimney faults

Such as :-

- Occasional or permanent draught
- Excessive up draughts
- Fume leaks
- Regular blockages

are established and corrected before any installation work is carried out.

Excessive wear will occur to the catalysers and burner if the appliance is subjected to conditions of continuous or intermittent high flue vacuum.

If you are unsure about the condition of the chimney, have it thoroughly cleaned and checked by a suitably qualified person.

If the chimney is on an exposed wall, always reline and backfill around the lining with vermiculite to keep it warm and prevent condensation. (Lining dia 125mm)

The chimney should terminate 2 feet above the ridge of the main or highest roof, in compliance with relevant legislation.

For a guide to terminal positions (see FIGS 5 and 6)

Provision must be made to allow adequate and easy access into the chimney for cleaning purposes.

The flue pipe from the stove must not be less than 5" diameter and must comply to one of the following:

- Acid resistant vitreous enamelled flue pipe to BS 1344 Part 2.
- Stainless steel to BS1449 Part 2.
- Cast iron to BS41.
- Mild steel with a wall thickness of 3 mm minimum.

5.1.1 CHIMNEY TERMINATION

See FIG 11.

The chimney must be terminated with a suitable anti downdraft cowl such as a VEDETTE or EUROCOWL ETC.

WARNING.

Abnormal chimney terminal locations are very likely to cause problems under certain windy weather conditions.

For details see Figs 11 and 12.

5.1.2 BENDS IN FLUES AND CHIMNEYS

Flues and chimneys should always be vertical wherever possible.

On installations where using a bend is unavoidable the maximum allowable bend angle from the vertical is 45 degrees.

45-degree runs should be kept as short as possible (less than 1 metre long) and there should never be more than two bends used.

WARNING

Horizontal flue runs are not allowed.

5.2 THE COAL KIT

The coals are located on the coal support bars, which are designed to glow bright red in the flame, passing on the incandescence into the coals.

Care must be taken when positioning the coals on the spikes following the coal layout illustrations.

The whole system is designed so that it can be removed in its entirety, by lifting out via the front fret, without the need to disturb the coals making routine cleaning and servicing very easy.

Do not fit the coal kit until the flame has been correctly adjusted.

5.3 OIL FEED AND STORAGE REQUIREMENTS

NOTE

28 Second Commercial Kerosene to BS2869 Part 2: 1988 Class C2 is suitable for use with this appliance.

35-second versions are available.

Installation of all oil feed pipe work and storage equipment should be in line with:

- BS5410 Part1
- Steel oil storage tanks to BS799 Part 5, if there is any doubt consult the tank manufacturer.
- OFTEC requirements book T3 July 1995 rev.7.95

Minimum size storage tank should be 300 gals.

The burner can be supplied with oil via gravity or pumped oil feed system, see FIGS 7 and 8

If a gravity system is used the base of the tank must not be less than half a metre or more than three metres above the burner.

Where the tank will be fitted at a lower level than the stove a lift pump must be used with max head above the burner base of 3 metres, the max head of the lift pump over the oil supply tank must not exceed 5 metres.

A suitable filter must be fitted and the minimum fuel line diameter is 8 mm but this is dependant upon the length of run.

If other appliances are being supplied from the same oil supply allowance must be made when pipe sizing to ensure that an adequate supply of oil be maintained for each appliance.

The oil line must be sleeved and sealed in a plastic tube where it passes through any brickwork. See FIGS 7 and 8.

A remote acting fire valve such as a Teddington KBB C 150 deg F must be fitted with the phial bulb being mounted under the front fender and the valve being fitted at the point where the fuel line enters the property. See FIGS 7 and 8.

There must also be an isolation valve fitted in the same room as the appliance in a

conveniently accessible place. See FIGS 7 and 8.

Environment protection is of paramount importance. Where properties are prone to be at risk from flooding take great care when fitting oil storage tanks. Make sure that they are supported on reinforced concrete walls, which are built high enough to keep the tank well above any potential flood level and strong enough to withstand swollen river current or flood tide conditions. Make sure that the tank is firmly fixed to the supporting walls so as not to be washed away.

Tall, slim line plastic oil tanks must be secured to a substantial base to prevent them from being blown over when they are empty or have low oil content.

5.4 VENTILATION REQUIREMENTS

Air Supply To The Burner.

See Building Regulations J1/2/3 section 4 and BS5410 part1.

Calculate air requirements at 5.5 cm sq per kW of output.

It is most essential that a permanent free air supply is established, as the burner cannot function correctly without it.

Provision for an adequate FREE air supply in to the room and house where the appliance is fitted is required and can be established by multiplying the maximum output kW oil input of the appliance by 5.5cm sq.

The air supply will take the form of a purpose designed, NON hit or miss, air vent of correct cross sectional area.

If an extractor fan is fitted in the same room as the appliance or if there is an open fire in an adjoining room then extra compensatory air must also be made available for both these extra requirements.

Minimum extra requirement for extractor fans is 55 sq cm and it is preferred if the extra air supply can be positioned in such a

way as it can supply air to the extractor fan without the air stream passing the stove.

Minimum ventilation requirement for open fires is 212 sq cm

Test for adequacy of air supply is to:

- Set the oil fired appliance going,
- Close all doors and windows in the room,
- Turn on the extractor fan to its maximum capacity,
- Light the open fire and let it get well established,

Test for adequate maintenance of chimney vacuum on the stove, both before and after the extractor fan is turned on, with the open fire going.

During the tests the flue vacuum of the oil-fired stove should be measured to see if there is any noticeable reduction beyond that called for in these instructions.

WARNING

Instructions on ventilation must be adhered to.

5.5 WATER HEATING

Bubble stoves are all high water content boilers and as such can easily replace solid fuel installations with the minimum of complication.

An equivalent size for size Bubble stove is capable of giving approximately twice the output of a similar solid fuel appliance over a 24 hr period. (Refer to our output graph FIG 14 for details.)

Before you start to install a water heating Bubble stove remember that the central heating system must comply with BS: 5449 part 1.

If a combined heating and domestic hot water system is to be used, then a double feed indirect hot water storage cylinder to BS: 1556 part 1 should be used.

In order to prevent the build up of scale and corrosion a suitable inhibitor should be used.

The system must be correctly vented.

The height differential between the header tank and the appliance must not exceed 15.2 metres (50 feet)

Where a common return is used an injector tee must be incorporated into the system to ensure adequate primary circulation when the circulating pump is operating. (See detail in FIG16)

The system must incorporate a gravity circuit, which will normally heat the domestic hot water and unvalved radiators with a combined unvalved output of at least equal to the minimum water heating output of the stove, which is a minimum of 3kW.

When the appliance is not connected to a domestic hot water system a gravity system must still be used with the unvalved radiator(s) on the gravity circuit having an output of at least the minimum output of the stove (3kW), this is to prevent boiling in case of pump failure.

All pipe work in the primary circuit must be 28mm diameter and the gravity flow pipe must rise continuously from the boiler to the open vent. Typical systems are shown in illustrations FIGS 15,16.

If the appliance is used to heat a small central heating system then the heat output to the room from the fire will be reduced.

Connect the heating system to the boiler ensuring that the primary flow pipe rises continuously from the appliance to the vent.

Fill the system with water and check for leaks and air locks.

5.6 APPLIANCE CONTROLS

For individual components, please see the relevant booklet, which will describe the correct operation of that component in detail.

5.6.1 SYSTEM CONTROLS

The circulating pump may be controlled by means of time switches, or room thermostats.

Radiators may be either manually or thermostatically controlled.

These controls will all work in conjunction with the thermostat on the appliance and the low limit pipe thermostat.

We recommend fitting a pipe thermostat onto the gravity return to act as low limit thermostat. This should be wired into the mains supply to the pump so that if the gravity return temperature drops below 45 deg C, the pump will cut out.

This will help to prevent condensation forming on the boiler faces and will thereby increase the life of the boiler. It will also ensure that priority is given to the domestic hot water. These thermostats are available from ourselves if you are unable to obtain them locally.

5.6.2 THE APPLIANCE

The appliance has the oil valve situated under the front lower fender to the left hand side.

The fender has three removable top panels.

The centre panel gives access to the oil trip lever.

The right panel gives access to the optional ignition transformer and houses the ignition push button.

The front fender is hooked to the stove via two m6 fasteners situated in the angle returns and can be easily lifted away from the appliance after first removing fender tops.

Behind the fender and the front door are three heat shields, the first is in the centre and behind it are the other two one right and one left.

The heat shields are hooked over M6 cap head screws and are simply lifted for removal.

Access for manual ignition is gained behind the front door.

6 INSTALLATION AT A GLANCE

Make sure that you are fully aware of the heat leak requirements of the stove read section 4-8.

6.1 FIRE SURROUND

Before starting to fit the appliance you must take care and make sure that you are aware of the following important points.

WARNING

Take great care when using marble hearths or slips, although they may be classed as non combustible they are prone to cracking with the effects of either radiated or convected heat, always carefully consult the fireplace or marble supplier for advice on this matter.

6.2 PREPARE THE OPENING

Prepare the opening and hearth.

6.3 DROP THE LINER DOWN THE CHIMNEY.

6.4 FIT SUITABLE VENTILATION TO THE APPLIANCE

6.5 RUN THE OIL SUPPLY.

Side or alternatively rear access is provided for oil line entry.

For rear entry lines use 2 x 22mm conduit pipes, one for the oil line and one for the KBB bulb, remember that the KBB may well need in service replacement and an allowance must be made for this to be easily carried out, should the need arise.

Install fuel tank in line with our instructions in sec 4-3 and run a fuel line up to the rear right hand side of the appliance, fit the remote fire valve phial under the lower fender, if it is located in a position where the temperature can exceed 150 deg F, it will trip and need to be reset on the fire valve body.

Fits the isolation valve see figs 7 and 8.

Flexible Hoses are not allowed for connections to vaporising pot burners

6.6 RUN THE ELECTRICAL SUPPLIES (OPTIONAL)

6.7 TEMPORARILY FIT THE APPLIANCE

Before attempting to fit the appliance make sure that it has not suffered any damage in transit particularly around the oil control valve area.

Ensure that when the stove is fitted it is levelled in such a way as to ensure that when oil runs into the pot it must always run to the lighting port to allow the oil to stay around the lighting wick, to achieve this it may be necessary to pack up the back of the appliance, spill a small amount of fuel into the pot to check that it runs to the front of it. If this is not done it will not be possible to light the stove in line with our instructions. For convenience remove the front lower fender.

Undo the door.

Check that the lighting port plug is in situ.

Check that the heat shields are correctly fitted.

Take great care with hands inside the pot there may be some sharp edges.

Remove all the burner components, through the front door opening as follows:

- Coal Kit
- Catalyser and Ring

Check that the swinging barometric dampers are swinging freely and closing properly.

Level the appliance in both directions adjusting the level to make sure that the oil runs very slightly towards the lighting wick or glow plug which ever is used.

6.8 CONNECT THE PLUMBING

6.9 CONNECT THE CHIMNEY

6.10 CONNECT THE ELECTRICAL SUPPLY

6.11 CONNECT THE OIL SUPPLY

Make up the oil feed connection into the oil control valve, take care to make an accurate

job of the pipe work so as not to transfer any undue pressure on to the O.C.V.

The stove leaves the factory with the oil control valve correctly adjusted on the O.C.V. bracket clamping bolts.

Using a small spirit level both the STOVE and the Oil Control Valve must be made level in both directions before any adjustments are carried out.

6.12 FILL THE HEATING SYSTEM WITH WATER AND CHECK FOR LEAKS

6.13 FIT ANTI-DOWNDRAUGHT COWL AND FIT FLAUNCH CHIMNEY TOP

6.14 MAKE UP THE OIL SUPPLY AND PURGE THE LINE

6.15 RE-FIT ALL THE INTERNALS AND EXTERNALS OF THE APPLIANCE.

6.16 TEST FIRE AND COMMISSION

7 LIGHTING AND COMMISSIONING

7.1 LIGHTING

If during the lighting stage, excess oil is allowed to build up in the pot, the burner will race and generate quite loud audible vibrations, if this occurs don't panic, turn the oil off, and wait a few minutes until the burner flames reduce in size and eventually go out.

If the flame is allowed to get too large during the lighting stage, it is possible to damage or break the glass door panels.

Before lighting and adjusting the flame make sure that the coal effect kit has been removed, this will allow you to see the flame and the effects of any adjustments much better.

Refit the coal effect kit after the flame has been correctly adjusted and then fine-tune the flow rates to achieve the desired effect

Turn on the oil at the isolation valve.

Press the oil safety cut off knob down to trip the oil on via an audible click.

Make sure that the stat is calling.

Check for oil leaks

Check that oil does not leak from the pot, valve, decaling device or pipe work.

If no leaks proceed as follows -:

Turn the oil flow off.

Check that the oil is in the correct place.

Make sure that the oil is not running away from the oil inlet, it should gather in a small pool no bigger than a small biscuit, around the oil inlet at the bottom of the lighting tube, if it does not do this pack the back of the stove up until it does.

When you are happy that the oil pool is forming in the correct position.

Empty the pot of all oil and proceed as follows:

Open the door and remove the lighting port cover.

Turn the oil on to the first position via the flow control knob and when oil can be seen to trickle into the pot turn it off so as not to allow an excessive build up.

Light the wick, and when it is alight replace the lighting port cover and close the front door.

Turn the fuel flow on again at the lowest setting.

NOTE

If during the lighting stage, excess oil is allowed to build up in the pot, the burner will race and generate quite loud audible vibrations, if this occurs don't panic, lift the oil cut off knob and if necessary slightly open the front door to take the pull off the burner, wait a few minutes until the burner flame starts to reduce in size, at this stage depress the lever to restart the flow of oil so allowing the burner to run correctly at its low speed and close the door if you had opened it. If the flame is allowed to get too

large during the lighting stage, it is possible to damage the glass panels.

When the burner has been running for five minutes on position 1 LOW FIRE the lower catalyser will be glowing dull red, with very little blue flame, if this is not the case adjust the low fire screw accordingly, when you are happy with the low fire turn the burner slowly and progressively up to full flow, which after 5 minutes, should produce a conical wispy blue flame with just the odd touch of yellow. If there is excessive yellow reduce the high fire accordingly.

When you are happy with the flame picture extinguish the stove and after it has cooled down sufficiently refit the coal kit.

Relight the stove and recheck the flame picture allowing adequate time for the coals to get going (10 minutes)

On full output, after approximately ten minutes, the coals should begin to glow red and there should be wispy blue flames just licking through them, to get the maximum effect the stove will need to be left for half an hour or so, if there are yellow flames reduce the high fire adjuster screw by quarter turn increments, allowing one minutes for the burner to stabilise after each quarter turn adjustment.

When correctly adjusted, on maximum setting, the effect should be bright incandescence with slight touches of wispy blue flame just penetrating through odd spots in the coals.

Excess oil flow, poor flue vacuum, and bad coal positioning will cause rapid sooting of the glass and coals.

When you are happy with the flame temperature on high and low fire you must then check the action of the APPLIANCE TEMPERATURE CONTROL mechanisms.

Check the appliance controls are working correctly

See section on:

- Adjustment of the Operating Thermostat

- Adjustment of the Safety Thermostat

(Stove shut off due to incorrect adjustment of the safety stat is the biggest cause of call back on bubble stoves, to avoid this unnecessary inconvenience, you must make sure that the safety stat does not shut the valve off when the appliance is working on gravity flow only without the pump running.)

To make this task as quick as possible for the commissioning engineer.

Turn the pump off and the immersion heater on.

If possible, isolate the rest of the heat leak circuit to allow the boiler temperature to build up rapidly.

Fit a pipe thermometer to the hot flow and observe the temperature at which the safety cut off occurs.

Adjust as required to 85 degree C.

NEVER TRY TO RELIGHT A HOT BURNER, MAKE SURE THAT THE BURNER IS COMPLETELY COOLED DOWN BEFORE RE LIGHTING.

7.2 EXTINGUISHING

Shutting the burner off is a very simple manoeuvre.

Turn the oil flow control knob fully in a clockwise direction until you feel it stop in its off position.

After a few minutes, the flame will die down and eventually extinguish itself.

7.3 INSTRUCT THE USER

1. Lighting Procedure
2. Position of oil cut-off safety devices
3. On the principals of control and the importance of adequate heat leak equipment.
4. The importance of regular maintenance.

FILL IN THE WARRANTY FORM

The warranty covers PARTS ONLY for a period of ONE YEAR and is conditional upon all the requirements of our installation instructions being fully adhered to.

Labour, travelling or consequential loss or damage is not covered.

Arrange an appointment for servicing 6 monthly.

7.4 COMMISSIONING

Once the installation is completed it should be inspected to make sure that the work is of a satisfactory standard.

Commissioning should not be signed off unless the commissioning engineer is satisfied that all the work done complies with the relative standards and regulations detailed within this document.

Checks should be carried out on the following:-

Tank: check for leaks-stability-height-position-vent.

Fuel: check for correct grade

Filter: is it fitted-check for function and leaks.

Tank Site Glass- check for function and leaks

Oil line: check for function, positioning, material suitability and leaks.

Fire valve: check for function and leaks.

Through Wall Sleeving: Check that it is fitted and sealed

Isolation valve: check for function, convenience of positioning and leaks.

Flush at least 5 litres of oil through the line to check for contamination and to clear the oil line of installation debris and trapped air.

Electrical: check for correct fusing, location and specification of any isolation devices.

Ventilation make sure that ventilation is provided in line with O.F.T.E.C requirements.

Water system should be pre-checked for leaks and satisfactory functioning and safety of all or any control devices.

Make sure that the heat leak circuit is adequate and unvalved. (This means that it must be equal to the minimum low fire output of the stove which can be calculated by using the minimum flow rate of the appliance printed on the oil control valve aluminium cover plate. All stove flow rates are stated on our price lists. To help with calculation there are 35,000 BTUs per litre (1000ccs) of oil.

Chimney system should be checked to make sure that it complies with the relative standards, regulations and all other instructions given.

Check the appliance is fitted with adequate clearances from combustibles.

Check high and low fire.

Check action of barometric damper.

Check correct hot condition functioning of water heating system and all controls.

Ensure that the customer is instructed on the basic use of the appliance, timers, controls and oil/electrical isolation devices if fitted.

Ensure that the warranty registration documentation is returned to Harworth Heating Ltd.

8 FAULT FINDING

8.1 RACING

1. Audible vibrations generated by the flame caused by too much oil in the pot.
2. Turn off the oil flow until the burner has settled down to a steady burn rate and then turn the fuel on again but don't let the flame go out otherwise the burner **MUST** be allowed to cool down fully before a resignation is attempted.

8.2 FLUE VACUUM

1. The pot type burner is extremely sensitive to flue vacuum variations.

2. Good combustion will not be possible unless our instructions on chimneys and flue vacuum are followed.

3. If the burner does not burn with a blue flame, recheck the chimney vacuum and oil flow rate.

4. If the burner does not run well check that the seals in the stove are good and that there is no ingress of air into the appliance flue ways.

5. Check that the swinging dampers are not jammed open.

6. Check that the correct fuel oil is being used.

7. Check the levels of the oil valve to pot,

8.3 BURNER RUNS SOOTY

1. If the problem has just started it may be:
 - a. The fuel,
 - b. An unusual wind condition,
 - c. Obstruction in the chimney causing a loss of vacuum.
 - d. Burner to closure plate seal U.S.
 - e. Door not sealing.
 - f. Damaged door glass.
 - g. burner carboned up.
 - h. Carbon deposits in the oil inlet pipe.
 - i. (Remove the feed pipe between the pot and the oil valve and clean it out.)
 - j. Excessive fuel flow on high fire m. inadequate fuel flow on low fire.
 - k. Inadequate air for blue flame combustion.
1. Check that the chimney is correctly lined and backfilled with vermiculite, particularly important on exposed gable end chimneys.
2. Check that the fuel is the correct type and quality.
3. Check that the flow rates are correct.

4. Check the flue vacuum and all these potential problems, before carrying out any adjustments to the flow rates.
5. Where burners are run at high fuel flow rates on low chimney vacuums, long unsatisfactory yellow flame combustion and bad sooting will occur.
6. To rectify this problem reduce the high fire flow rate screw on the Oil Control Valve until blue flame combustion occurs.
7. Never switch from low settings to high settings; a longer burner life will be achieved if the regulator is moved only by one number at a time leaving approx one minute between each setting change.

8.4 BURNER DOES NOT LIGHT EASILY

1. Check the level of the bottom of the pot and make sure that the stove is levelled so that the oil flows very slightly towards the ignition wick.
2. Check the chimney vacuum cold.
3. Check that all the seals in the stove are sound.
4. Check that the swinging dampers are not jammed open.
5. Check that oil is flowing freely into the pot.

8.5 OIL WILL NOT ENTER THE POT

1. Check that the safety cut out lever has not been accidentally shut off.
2. If it is not possible to reset the safety cut out lever phone us for advice. In case of failure of the first float the second one catches the excess oil and trips the safety cut out lever, making it impossible to reset.
3. Simulated failure can occur if a full oil control valve is disturbed causing the secondary float chamber to flood.
4. Disconnect the outlet from the valve and check for oil flow.

5. Disconnect the inlet to the descaling device and check for oil flow.
6. Remove the descaling spindle and check for obstructions.

8.6 STOVE GOES OUT WHEN THE CENTRAL HEATING PUMP IS OFF

1. Generally this is caused by the high stat bellows shutting off the oil trip lever, in the valve.
2. To check this out feel the trip lever to see if it has tripped off.

Unwanted trip offs can be caused by one of the following-:

1. The flow to the heat leak rad is inadequate.
2. The size of the heat leak rad is inadequate.
3. The safety stat set point needs increasing.
4. The heat leak circuit has been reduced via the turning off of the upstairs radiators, (as would be the case in summer time running.)

8.6.1 OPERATING FLOW RATES

Flow rates are shown in cc per minute.

	Min	Max
8kW Dry	4cc/min	16cc/min
3kW/5kW	4cc/min	16cc/min
10kW/1kW	4cc/min	22cc/min

To achieve optimum burner performance at these flow rates you will need to have matching flue vacuums as stated.

If the chimney does not generate enough vacuum, the flow rates will have to be adjusted so that the burner maintains equilibrium, i.e. blue flame combustion.

This will result in lower output from the appliance.

8.7 OIL SMELLS

Visual check on all joints for obvious leaks.

Check that the descaling lever packing gland nut is adjusted.

If there is a slight lingering smell with no obvious visual signs of a leak, this will be attributable to the descaling lever packing gland nut requiring adjustment or possibly a new seal.

9 SERVICING

Servicing should be carried out at six monthly intervals.

Service engineers should request a copy of the servicing schedule from our sales desk.

Schedules will also be available from our web site: <http://www.bubble-stoves.co.uk/>

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Maintenance on this product must be carried out only by approved personnel.

10 Figures

Bubble Stoves