BUBBLE STOVES ©

OIL BUBBLE NO2

Patent Application No,s 8919163.9 - 9208473.0 - 9307898.8 - 9315756.8 -

USER INSTRUCTIONS

FUEL	28 Sec Kerosene
PUB REF	BUB2USER.CHP
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READ FIRST

These user instructions have been laid out as follows

☐ **Safety precautions are covered through the following notes, and are highlighted with a sqare in front of the relative text.**

1-0 INTRODUCTION

The stove is a room heater which burns kerosene in a controlled manner utilising an lined ordinary chimney to discharge the products of combustion.

☐ **The stove must not be run with the door open or with a cracked or damaged door glass, or without the lighting port bung fitted back into it's tubular socket.**

☐ **DO NOT ATTEMPT TO RE LIGHT A HOT STOVE, LET IT FULLY COOL DOWN FIRST.**

This stove is designed to run with or without a coal fired effect kit.

If the kit is fitted it 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 at the output levels detailed below.

COAL EFFECT AVAILABILITY

DRY STOVES & SMALL BOILER STOVES

	(coal effect min - max)
B2 with 5kW Output	(Between 4 and 5kW)
B2 with 6kW Output	(Between 4 and 6kW)
B2 with 8kW Output	(Between 5 and 8kW)

CENTRAL HEATING STOVES

B2 - 7/2	(Between 6 and 9kW)
B2 - 9/2	(Between 6 and 11kW)

The stove incorporates a cut out behind the front door which is used to gain access for lighting

☐ **For spacing from combustibles and fireguarding this stove must be treated in the same way as a SOLID FUEL APPLIANCE and as such, whilst it is running, will become very hot and must not be touched.**

☐ **Fireguards must be fitted and only British Standard 6539 or 6778.**

☐ **To prevent the risk of injury through burning it is strongly recommend that a fireguard complying with BS6539 is fitted.**

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

Unlike oil fired stoves, due to the constraints of refueling, COAL fired stoves can neither maintain a constant active live fuel effect or provide a constant level of heat output, therefore it is most important that careful consideration is given to the size of the room in which the stove is to be fitted

APPROXIMATE room size needed to run Bubble 2 stoves in on full output with the outside temp at 0 deg C. and Inside Temp at 22 deg C

DRY STOVES

B2 -5	**65 cubic metres**	**(12 ft x 20ft x 8 ft)**
B2 -6	**80 cubic metres**	**(15ft x 20ft x 8 ft)**
B2 -8	**108 cubic metres**	**(20ft x 20ft x 8 ft)**

STOVES WITH SMALL BOILERS

B2 -2/3	**42 cubic metres**	**(12 ft x 20ft x 8 ft)**
B2 -2.5/3.5	**49 cubic metres**	**(15ft x 15ft x 8 ft)**
B2-3/5	**65 cubic metres**	**(12ft x 20ft x 8 ft)**

CENTRAL HEATING STOVES

B2 -7/2	**35 cubic metres**	**(12 ft x 15ft x 8 ft)**
B2 -9/2	**35 cubic metres**	**(12ft x 15ft x 8 ft)**

2-0 HOW IT WORKS

YOUR stove generates heat from burning oil mixed with air in a vapourising pot located in the bottom of the stove.

Once lit, oil goes into the pot at a steady and controlled rate via a gravity flow, metered by the OIL CONTROL VALVE the oil flow can be controlled from minimum to maximum or any setting in between determined by where you set the oil flow control knob.

Air is sucked into the pot by the natural action of the negative pressure in the chimney and to allow the chimney to work correctly it is essential that you have adequate ventilation into the room where the stove is situated.

The amount of oil which can be successfully burned is directly proportional to the amount of air that the chimney can draw into the pot and so to achieve adequate combustion we must have a balanced and appropriate flow of both oil and air.

The air side of the equation can vary wildly with the changing performance of the chimney and so to compensate for this the appliance has a built in swinging barometric damper designed to spill air into the chimney should the vacuum suddenly increase.

The flow of oil into the pot can be adjusted via the knob on top of the oil control valve.

With the increased flow of oil extra heat is generated which in turn stimulates the chimney to work harder and consequently draw more air into the pot to maintain an adequate fuel air ratio.

3-0 FUEL SUPPLY INFORMATION

Your Fuel is stored in an oil tank which should incorporate the following features.

1 A fuel gauge which can be in the form of a numbered circular dial or a site glass into which oil is fed so as to indicate the amount of oil in the tank.

2 An manually operated isolation valve on the tank, usually a gate valve.

3 A fuel filter to filter out any small particles of dirt or contamination which may get into the oil or tank.

4 An automatically operated safety valve designed to shut off the oil supply should a fire occur near to the stove.

5 A manually operated isolation valve near to the stove to allow you or the service man to turn the oil off should the need arise.

- ☐ **If you allow the stove to run the oil tank dry it will obviously go out.**
- ☐ **Before filling the fuel tank you must make sure that the oil valve is tripped to it's off position, otherwise the pot will flood.**
- ☐ **If the pot floods do not attempt to light the stove until the excess oil has been removed from it.**

4-0 CONTROLS

Each version of the appliance can be controlled manually or automatically

via -:

1. Manually operated oil control valve

2. Ditto but with the addition of a Flexatemp control unit.

3. Oil control valve fitted with non electric thermostat and safety shut off.

1. Manually operated oil control valve (Dry stoves)

The performance of the stove is regulated by the amount of oil allowed to go into it.

This function is controlled by the -:

OIL CONTROL VALVE (O.C.V.) situated at the rear right of the stove.

The valve has oil flow control potential from mini to maxi via six graduations and so the appliance can be manually controlled from MINI to MAXI by simply turning the flow control knob as required, in addition there is also a manually or automatically operated safety oil cut off device. The two brass knobs are mounted on extension shafts located by a metal bracket extending from the rear top right hand side of the stove..

THE SMALLER of the brass knobs is a safety fuel cut off button. PULL FOR OFF & PUSH FOR ON and is designed to either manually or automatically cut off the fuel supply into the oil control valve, consequently stopping the stove.

(If this knob refuses to reset, call your serviceman to investigate.)

THE LARGER of the knobs controls the flow of oil into the pot and can be rotated to adjust the flow of oil from minimum to maximum or any setting in between, determined by where you set it.

FULLY CLOCKWISE TURNS THE APPLIANCE OFF,

FULLY ANTICLOCKWISE IS FULL OUTPUT,

(Your installer will have set these settings up for you during the commissioning stage.)

2. The electric control (Dry or wet stoves)

Uses a normal oil control valve as detailed above, with the addition of a flexatemp thermo - mechanical switch which upon receipt of an impulse from a room or water stat will put the valve into its low fire mode and then modulate, from high to low fire, in line with demand.

3. The non electric (wet stoves)

The appliance is controlled by the oil control valve which operates as follows

It has flow control potential from mini to maxi via six graduations and so the appliance can be manually controlled from 2kW to 10kW by simply turning the flow control knob, in addition it also has a water sensing thermostat and an automatic safety oil cut off device should the appliance water temperature become too high.

The water sensing thermostat will automatically control the boiler water temperature at what ever setting is required up to a maximum of 70 degree C.

If the stove is fired up at full output it will run on full flame until it achieves the target water temperature and then drops the flame onto mini, from there on it will automatically modulate the flame from high to low in line with the heating load demand.

CONTROLS LIST

1. Oil flow control knob	**(you to set)**
2. Water temp. control knob	**(you to set)**
3. Safety stat	**(automatic)**
4. Oil trip button.	**(you to set and automatic)**

The performance of the stove is regulated by the amount of oil allowed to go into it.

This function is controlled by the -:

OIL CONTROL VALVE (O.C.V.) situated at the rear right of the stove.

The oil control valve is operated by three control knobs mounted on extension shafts located by a metal bracket extending from the rear top right hand side of the stove..

THE SMALLER of the brass knobs is a safety fuel cut off button. PULL FOR OFF & PUSH FOR ON and is designed to cut off the fuel supply into the oil control valve either manually or automatically consequently stopping the stove by shutting off the oil supply from the oil control valve.

The button is also designed to warn you of a problem with the oil control valve, if the stove goes out unexpectedly and you can't get the trip button to trip on there are 2 possible causes

1. The water temperature has become too hot and caused the safety stat to shut off the oil supply.

2. Oil has entered the safety float chamber thus automatically shutting off the oil supply into the stove.

If item 1 has caused a shut down you will have to wait for the water temperature to drop before you will be able to reset the valve.

If item 2 has caused the problem you will have to seek help from your serviceman.

OIL FLOW CONTROL KNOB

One of the larger knobs (black plastic) controls the flow of oil into the pot and can be rotated to adjust the flow of oil from minimum to maximum or any setting in between, determined by where you set it, calibrated from off through 1 to 6.

Fully clockwise turns the appliance off,

Setting No 1 is minimum

Setting No6 is maximum

WATER TEMPERATURE CONTROL KNOB

also controls the flow of oil but this control is different in as much as it is related to the water temperature.

FULLY CLOCKWISE is for low water temperature

FULLY ANTICLOCKWISE is for high water temperature.

The water sensing thermostat will automatically control the boiler water temperature at what ever setting is required up to a maximum of 70 degree C.

If the stove is fired up at full output (oil control turned to 6) it will run on full flame until it achieves the target water temperature as set on the stat knob, and then automatically

drop the flame onto mini, from there on it will automatically modulate the flame from high to low in line with the heating load demand.

This means that when the target water temperature is achieved it will not be possible to turn the flame up via the oil flow control knob because the water temperature control has priority.

5-0 THE COAL KIT

The key to the success of the coal effect is the patented coal support system specially developed by HARWORTH HEATING LTD.

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.

The front fret is designed to allow incandescent glow and flicker through to add to the effect.

Care must be taken when positioning the coals on the spikes.

Do not fit any extra coals as this will invalidate the product warranty.

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

To remove it turn the stove off and when it is cooled down, undo the front door knob, open the door and lift it out using the front fret.

Take care not to drop any coals into the pot.

6-0 LIGHTING AND ADJUSTING

The skill involved in lighting is making sure that just enough oil is allowed into the pot to get the wick going, turn the oil on and just allow enough oil into the pot so as to dampen the wick and the turn the oil off.

Light the wick and when it is well alight allow a little more oil into the pot on setting no 1 only, too much oil at start up will flood the pot and cause racing when the burner eventually gets going.

THERE ARE THREE WAYS TO LIGHT THE STOVE -:

Option 1.

Through the front door, directly into the base of the pot.

Option 2. Through the lighting port.

Option 3. Via Electric ignition kit.

OPTION 1

On the first light up you may find the first option easier, as you can see the oil trickle in to the pot more easily.

You must use a heat proof glove when putting the catalysers back into the pot and it is important to replace them quickly whilst the flame is small.

Make sure that the oil safety cut off knob is lifted (tripped off) via an audible click.

Check that the isolation valve is turned on.

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

Open the front door.

Carefully remove the coal kit,

Remove the upper catalyser and ring,

Remove the lower catalyser,

Light a small piece of firelighter and drop it into the oil, allow a few seconds for it to get going and then replace the catalysers and coal kit, and close the door.

OPTION 2

Make sure that the oil safety cut off knob is lifted (tripped off) via an audible click.

Check that the isolation valve is turned on.

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

Open the front door.

Remove the lighting port cover

Turn the oil on to the first position via the flow control knob.

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.

When the wick is well alight replace the lighting port cover,

Close the front door,

Turn the fuel flow on again at the lowest setting,

OPTION 3

If your stove is fitted with an electric ignition kit lighting is simply a matter of turning on the oil to minimum and fully pressing the ignitor button as follows.

Make sure that the oil safety cut off knob is lifted (tripped off) via an audible click.

Check that the oil isolation valve is turned on.

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

Press the push button ignition and turn the oil on to minimum flow.

When ignition has occured gradualy increase the flow of oil as per instructions in OPTION 1

☐ **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 wait a few minutes untill 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.**

When the burner has been running for ten to fifteen minutes move the oil flow control knob round to position 3 and leave for another ten minutes after which it will be safe to run the burner up to full output.

When the burner is running correctly on position 1 (LOW FIRE) the lower catalizer will be glowing dull red. Keep an eye on the low fire and if a dirty yellow flame can be seen, call back your service man to re adjust the oil flow.

On full output, after approximately ten minutes, the coals should begin to glow red and there should be whispy blue flames 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 call back your service man to re adjust the oil flow.

When correctly adjusted, on maximum setting, the effect should be bright incandescence with slight touches of whispy 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.

ON HIGH FLAME, (POSITION 6) there may be some yellow in the flame, excessive yellow or sooty orange flames indicate that the chimney is not generating .06" W.G. vacuum or the fuel flow rate is too high.

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

7-0 EXTINGUISHING

All stoves

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.

Lift the safety cut off knob to lock the fuel supply off.

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

☐ **DO NOT TOUCH THE STOVE UNTIL IT HAS COMPLETELY COOLED DOWN.**

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

ELECTRIC IGNITION STOVES

☐ **On electric ignition stoves it will not be possible to light the stove untill it has completely cooled down as there is a safety thermostat which will not allow the glow plug to energize untill the pot has cooled down to a safe temperature.**

DO NOT TURN OIL ON UNDER ANY CIRCUMSTANCES WHILST THE STOVE IS STILL HOT OR WARM.

8-0 ROUTINE MAINTENANCE

EVERY 4 WEEKS -:
Operate the descaling lever by turning it completely two or three times.

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

.Lightly clean the inside of the door glass using dry cloth.

Do not attempt to clean the glass whilst it is hot or warm. This will cause the gl;ass to craze.

EVERY 8 WEEKS -:
Clean the burner completely by removing all the inner components as follows,

Open front door.

Remove coal kit.

Remove upper catalyser and upper ring.

Remove the lower catalyser.

Scrape clean the bottom of the pot and remove all carbon build up taking care not to disturb the lighting wick and carrier.

Reassemble in the reverse order.

ONCE PER YEAR -:
Have your service man replace or clean all the filters in the oil supply line.

EVERY TWO YEARS -:
Have your service man clean the filter in the Oil Control Valve.

AS REQUIRED -:
Keep the Coals, Coal kit, and burner inners in good condition, replace as necessary.

9-0 FAULT FINDING

1. RACING
Audible vibrations generated by the flame caused by too much oil in the pot or excessive chimney draught.

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 re ignition is attempted.

2. FLUE VACUUM
The pot type burner is extremely sensitive to flue vacuum variations.

Good combustion will not be possible unless the chimney is working correctly.

If the burner does not run well check -:

1 The seals in the stove are good and that there is no ingress of air into the appliance flue ways.

2 The correct fuel oil is being used.

3 The chimney is free FROM blockages and pulling as normal.

4. That the pot doesn't need cleaning.

A longer burner life will be achieved if the regulator is moved only by one number at a time leaving approx two minutes between each setting change.

3. BURNER SHUTS DOWN AND STOVE GOES OUT
Oil tank empty

Oil in tank at low level.

Water temperature safety stat shut down

Secondary float chamber in oil control valve flooded

Safety trip button accidentally caught and tripped off.

Fire valve tripped off.

Damaged oil feed pipe.

Height of oil control valve has been disturbed.

4. OIL TRIP BUTTON WILL NOT RESET
Water temperature safety stat shut down. (non electric central heating stoves)

Secondary float chamber in oil control valve flooded. (all stoves)

5. BURNER WILL NOT COME ON TO HIGH FIRE
Water temperature has reached the required setting and is under the control of the thermostat. (non electric central heating stoves)

Flexatemp heater element has failed putting flexatemp into permanent low fire mode irrespective of stat condition.

(Try lifting the flexatem operating arm manually to check this out)

Pipe or roomstats have failed.

Fuse blown in switch fuse isolator >

Oil in storage tank is low or about to run out.

Height of oil control valve has been disturbed.

6. OIL WILL NOT FLOW INTO THE VAPOURISING POT
Oil tank empty

Water temperature safety stat shut down

Secondary float chamber in oil control valve flooded.

Safety trip button accidentally caught and tripped off.

Fire valve tripped off.

Damaged oil feed pipe.

Height of oil control valve has been disturbed.

7. BURNER STARTS TO RUN SOOTY OR WITH WITH DIRTY YELLOW FLAMES
This indicates that the fuel air ratio is disturbed and the burner is running fuel rich. There are two main possibilities when fault finding, either too much fuel or not enough air.

Air is leaking into the combustion chamber.

Check out seal of pot to closure plate.

Check out door seal.

Check out chimney vacuum

Check for downdruaght.

Check out prevailing wind conditions

Check for correct grade of fuel.

Check out oil flow rate.

Check for chimney blockage or partial blockage

Burner air inlet holes have become blocked due to lack of service.

Oil control valve is faulty. (unlikely)

8. DOOR GLASS GETS SOOTY
Can be caused by reasons mentioned in 7. or 2.

10-0 FILL IN THE WARRANTY FORM

Make sure that your installer has filled in the warranty form and returned it to us, the information recorded on the warranty form helps us to deal with any problems you may encounter.

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 ARE NOT COVERED.

ARRANGE FOR SERVICE visits with a local service engineer.