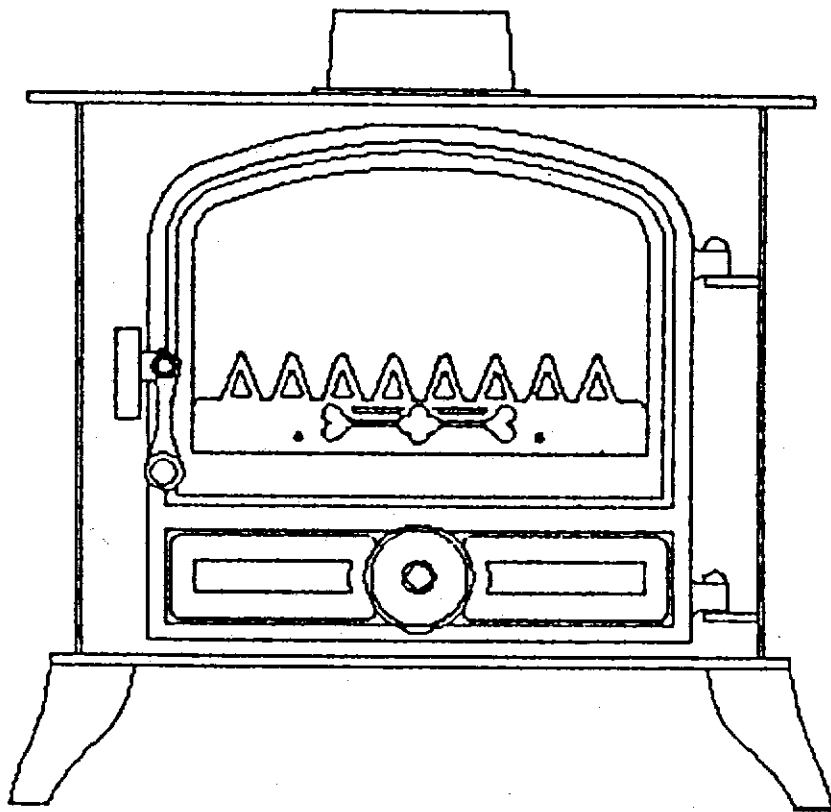


# ***bubble*** **STOVES**



***BUBBLE 2***

***INSTALLATION INSTRUCTIONS***

# BUBBLE STOVES © OIL BUBBLE NO2

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

## INSTALLATION INSTRUCTIONS

FUEL  
PUB REF  
DATE

28 Sec Kerosene  
Instb2-1, CHP  
4-3-98 Issue 1

OIL VALVE  
O.V Serial No

O.C.I.

### READ FIRST

These instructions have been laid out as follows.  
(For electric ignition stoves read these instructions in conjunction with electric ignition addendum sheet).

- 1-0 HEALTH AND SAFETY
- 2-0 APPLICABLE REGULATIONS
- 3-0 INTRODUCTION
- 4-0 CRITICAL ELEMENTS OF INSTALATION
- 4-1 POSITIONING OF THE STOVE
- 4-2 CHIMNEY AND CHIMNEY VACUUM
- 4-3 OIL SUPPLY LINE AND TANK LOCATION
- 4-4 VENTILATION REQUIREMENTS
- 4-4a WATER HEATING
- 4-4a1 SMALL BOILER stoves
- 4-4a2 CENTRAL HEATING stoves
- 5-0 INSTALLATION
- 9-0 LIGHTING & COMMISSIONING
- 10-0 FAULT FINDING

- Safety precautions are covered in the following notes and are highlighted with a square in front of the relative text.

### 1-0 HEALTH AND SAFETY

Control of Substances.

- Take great care when handling materials such as insulation boards, glass fibre ropes, ceramic wool, artificial fuel and kerosene 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.

### 2-0 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.

Failure to comply with the relevant requirements listed above can be hazardous and could lead to prosecution under the law.

If you have any difficulties please phone our sales department on

PHONE 01302 742520. (3 lines.)

FAX 01302 750573

email harhtg@globalnet.co.uk

www.emnet.co.uk/harworth-heating

### 3-0 INTRODUCTION

The stoves are room heaters which burn kerosene in a controlled manner utilising an open flue to discharge the products of combustion.

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).

#### INSTALLATION POTENTIAL

Bubble stoves can be installed in a variety of ways as follows:-

1. Direct replacement of existing solid fuel appliances on gravity primaries and pumped secondaries as detailed above.

2. As new installations as per fig15 or with fully pumped primaries and secondaries as per figs 16,17,18,19 and 20.

Where fully pumped systems are used it is important to use motor valves which fail open and always have a non valved, heat leak capacity capable of dissipating heat at the minimum stove output through the primary circuit.

3. Twinned in with other appliances using a suitable neutralizer, twin coil cylinder or a correctly designed system.

There are three versions as follows:-

- 1. DRY STOVES.
- 2. SMALL BOILER STOVES.
- 3. LARGE BOILER STOVES.

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)
<b>STOVES WITH SMALL BOILERS</b>		
B2 -2/3	42 cubic metres	(12 ft x 15ft x 8 ft)
B2 -2.5/3.5	49 cubic metres	(15ft x 14ft x 8 ft)
B2-3/5	65 cubic metres	(12ft x 20ft x 8 ft)
<b>CENTRAL HEATING STOVES</b>		
B2 -7/2	35 cubic metres	(12 ft x 14ft x 8 ft)
B2 -9/2	35 cubic metres	(12ft x 14ft x 8 ft)

- For spacing from combustables and fireguarding this range of stoves must be treated in the same way as a **SOLID FUEL APPLIANCE** and as such will become very hot and must not be touched.
  - To prevent the risk of injury through burning it is strongly recommended that a fireguard complying with BS6539 is 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 bung fitted.
  - Before starting this installation you must make absolutely sure that the chimney does not have a history of downdraughting either intermitant or permanent, see figs 11 and 12.

#### 4-0 CRITICAL ELEMENTS OF INSTALLATION

- 1 POSITIONING OF THE STOVE
- 2 CHIMNEY AND CHIMNEY VACUUM
- 3 OIL SUPPLY LINE AND TANK LOCATION
- 4 VENTILATION REQUIREMENTS
  - 4a WATER HEATING
    - 4a-1 SMALL BOILER stoves
    - 4a-2 CENTRAL HEATING stoves
- 5 SETTING UP THE BURNER
- 6 COMMISSIONING

#### 4-1 POSITIONING AND FITTING OF THE STOVE

The room or space into which the stove is to be fitted must be of a suitable volume if a continuous coal effect is required. see figs 3,4,5 and6.

The stove is designed as a free standing appliance, and can be fitted on a suitable hearth or in a suitable recess, in each case the hearth must be stable and level.

#### WARNING

Take great care when using marble hearths or slips, although they may be classed as non combustable 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.

Provision must be made for :-

#### ADEQUATE CLEARANCES

1. From combustables for safety.
2. For service access to the oil control valve, swinging barometric damper, ignition system and glow plug.  
(Min of 125mm at either side of the appliance)
3. For adequate and safe user access to the control knobs at the rear of the stove.  
(Minimum of 200mm over the appliance)

#### INSTALLATION FREE STANDING ON A HEARTH

The hearth on which the appliance stands must be of solid non combustable material extending to a minimum of 150mm in front and 150mm at either side. (see FIGS 3,4,5 and6)

The rear wall must be made of solid non combustable material.

If there is a wooden fire surround or wooden shelf fitted over or around the appliance, it must comply with the clearances stipulated (see FIGS 3,4,5 and6) and the relevant section of your local building regulations relating to solid fuel appliance installation.

#### INSTALLATION IN A RECESS

If the appliance is installed in a recess the gap behind the oil control valve must be increased to allow for the increased back radiation from enclosed hearth walls. There must be adequate space around the stove to allow for adjustments to be made to the oil control valve whilst the appliance is running. (see FIGS 3,4,5 and6)

The hearth on which the appliance stands must be of solid non combustable material extending to a minimum of 150mm in front and 150mm at either side. (SEE BUILDING REGS. SEC. 2) and (see FIGS 3,4,5 and6)

There must be clearance of at least 450mm over the top of the appliance from combustables. see (see FIGS 3,4,5 and6)

#### 4-2 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 .08" W.G. when HOT, to achieve this the chimney needs to be about 20 feet high minimum and must terminate as per our recommendation. (see FIGS 5 and6)

It is most important that any existing chimney faults such as :-

- \* Occasional or permanent down draught see illustrations
- \* Excessive up draughts
- \* Fume leaks
- \* Regular blockages

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

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

Make sure that any remedial work (which may include re lining with a liner of 5" (125mm) dia minimum, ) is carried out.

If the chimney is on a gable wall, backfill around the lining with vermiculite to keep it warm and prevent condensation. 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 and6)

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

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.

#### CHIMNEY TERMINATION

See FIGS 5 and6.

The chimney must be terminated with a suitable anti down-draught 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.

#### 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) and there should never be more than two bends used.

## WARNING

Horizontal flue runs are not allowed except where rear flue stoves are installed.

In this case the maximum length of horizontal run is 1 X the flue pipe diameter i.e.

125mm dia flue = 125 max horizontal flue run.

## 4-3 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 pipework 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 a 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 100 micron filter must be fitted and the minimum fuel line diameter is 10 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 behind the appliance, clipped to the rear wall 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.

## 4-4 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 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.

### 4-4a 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 an unvalved radiator or radiators with an output of at least equal to the minimum water heating output of the stove.

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, this is to prevent boiling in case of pump failure.

All pipework 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 15,16,18,19 and 20.

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.

On large boiler stoves, fitting a radiator in the same room as the stove is recommended as it will allow greater flexibility in the way that the system is operated as well as ensuring that there is sufficient heat to the room.

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.

### SYSTEM CONTROLS

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

Where thermostats are used a high limit safety stat must always be fitted on the hot water outlet from the boiler to turn the central heating pump on should the water overheat if the stove version does not have the non electric, thermostatically controlled oil valve model no 240 VRW02

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.

#### 4-4a-1 SMALL BOILER STOVES

##### Applications

Small boiler stoves can be used where space and some water heating is required.

The heating circuit to which they are attached will conform to all of the specifications detailed earlier reference gravity and heat leak systems. (FIGS 15,16 and 20)

Space and Water Heating output figures  
(stove running at full output)

model	water	space	roomsizes
B2-2/3	2kW	42 cubic metres	(12 ft x 15ft x 8 ft)
B2-2.5/3.5	2.5kW	49 cubic metres	(15ft x 14ft x 8 ft)
B2-3/5	3kW	65 cubic metres	(12ft x 20ft x 8 ft)

#### 4-4a-2 CENTRAL HEATING STOVES

##### Applications

An equivalent size for size Bubble water heating 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 for details.)

Unlike pressure jet boilers Bubble stoves can run at maximum output continuously if required, with very few detrimental side effects.

A 7kW water heating stove will replace a 10kW solid fuel stove

A 10 kW water heating stove will replace a 13kW solid fuel stove

The heating circuit to which they are attached will conform to all of the specifications detailed earlier reference gravity and heat leak systems. (SEE FIGS 15 to 20)

Space and Water Heating output figures  
(stove running at full output)

model	water	space	roomsizes
B2-7/2	7kW	35 cubic metres	(12 ft x 15ft x 8 ft)
B2-9/2	9kW	35 cubic metres	(12ft x 15ft x 8 ft)

### 5-0 MAIN STEPS INSTALLATION

#### SERVICES

##### CHIMNEY

Clean chimney, check and adjust the chimney vacuum (0.02" - 0.07" w.g.) and provide a cleaning access (min diameter 5" for linings.) see section 4-2.

##### FUEL

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 firevalve phial as low as possible behind the appliance, 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 firevalve body.

Fit the isolation valve see figs 7 and 8.

Flexible Hoses are not allowed for connections to vapourising pot burners

##### VENTILATION

Fit suitable ventilation into the appliance site see sec 4-4.

##### HEARTH

Provide adequate hearth and site as per our illustrations in figs 5&6.

##### APPLIANCE.

See Figs 1 & 2

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

Undo the door.

Check that the lighting port cover is in situ.

Check that the two lower heat shield side pieces are correctly fitted.

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

COAL KIT see illustrations.

#### UPPER CATALYSER AND RING

#### LOWER CATALYSER

Check that the lighting wick has not been dislodged.

**TAKE GREAT CARE WITH HANDS INSIDE THE POT THERE MAY BE SOME SHARP EDGES.**

Check that the swinging barometric damper is swinging freely and closing properly.

Temporarily fit the appliance into the required position and temporarily make up the oil feed connection into the oil control valve, take care to make an accurate job of the pipework so as not to transfer any undue pressure on to the O.C.V.

It is then possible to check that this level has not been disturbed in transit, if it has re adjust it before carrying out too much work.

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

The depth of oil in the burner pot should be stable at a depth of 15 mm, generally this should not need adjustment but it is wise just to check.

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 to the oil depth, the appliance has levelling bolts in each front leg for this purpose.

If adjustment to the oil depth is required, it can be made via the slots on the O.C.V. support bracket.

When the oil depth is accurately established permanent installation can proceed.

Site the appliance on the hearth and check the levels in both directions.

Connect up the flue pipe to the chimney, spigot down 5" (125mm) minimum dia.

Connect the oil supply pipe up to the O.C.V.

Connect the water heating circuit as detailed earlier making sure that you have fitted a drain cock at the lowest point on the system in a convenient location for future draining down.

Carefully refit the internals of the burner.

Do not fit the coal kit until the flame picture has been checked but make sure that the coals are positioned as per the illustration.

### 5-1 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.

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 following the coal layout illustrations.

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, 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 UNTILL THE FLAME HAS BEEN ADJUSTED AS PER THE FOLLOWING INSTRUCTIONS.**

### 9-0 LIGHTING AND COMMISSIONING

#### NOTE:-

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:-

**OIL check everything is in order and in line with section 4-3**

- Tank- check for leaks-stability-height-position-vent.
- Fuel- check for correct grade
- Filter- is it fitted-check for function and leaks.
- 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.
- Chimney system should be checked to make sure that it complies with the relative standards, regulations and all other instructions given in sections 4-2 and 4-4
- Check the appliance is fitted with adequate clearances from combustibles and to allow essential maintenance as per illustrations.
- Check high and low fire as per section 9-0
- Check action of barometric damper.
- Check correct hot condition functioning of water heating system and all controls. as per section 4-4a.
- 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.

### CONTROLS

Each version of the appliance can be controlled manually or automatically

via :-

#### 1. MANUALLY OPERATED OIL CONTROL VALVE.

#### 2. DIFFERENT BUT WITH THE ADDITION OF A FLEXA-TEMP 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.) which 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 operated oil cut off device.

##### 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 a 243 volt supply will put the valve into its high fire mode, the valve will then modulate, from high to low fire, in line with demand, if wired through a thermostat.

##### 3. The non electric operates as follows (wet stoves)

It has the same 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, in addition it also has a water sensing thermostat and an automatic safety oil cut off device should the appliance water temperature exceed 85 degree C.

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.

It is operated by a control knob situated alongside the oil flow control knob.

**If the stove is fired up at full output it will run on full flame until it achieves the target water temperature, set by rotating the stat knob to the desired position, ( clockwise to reduce temperature, anti clockwise to increase temperature)**

**The flame then drops to it's low fire position, from there on it will automatically modulate the flame from high to low in line with the heating load demand.**

**Set point can be adjusted as follows.**

The thermometer drive knob has a plastic push on cover which slips over it and grips it acting as an adjustable driver.

The plastic driver has a dead stop which acts against a small brass screw so restricting the rotational movement to one full turn, thus allowing adjustment of water temperature from mini to maxi through one full turn.

If the water temperature settings are not as required remove the plastic push on cover and rotate the aluminium knob anticlockwise until the weight comes off, allow the stove to come up to the required temperature (say 65 deg c) and then rotate the aluminium knob until the fire starts to reduce, refit the plastic push on cover with the scale set as required.

The safety stat can also be adjusted if it does not trip off at the desired temperature of 85 deg C.

To adjust the set point on the safety stat the aluminium top cover of the oil valve is removed to reveal the operating bellows of the safety stat, on the end of the bellows is a straight knurled nut which if screwed in will decrease the temperature set point and if screwed out will increase the temperature set point.

The Oil Controls International oil control valve has a second safety float chamber designed as a safety back up to the first one. It is possible during installation to accidentally flood the second chamber, if this occurs it will not be possible to trip the safety cut off knob as the flooded safety float disarms the trip mechanism. To re establish the action of the safety cut off knob the second float has to be depressed a few times to remove some of the excess oil. This can be done using a small screw driver, access to the float is obtained by removing the 10mm dia plastic cap pressed into the top of the O.C.V.

**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.

On non electric valves make sure that the stat is calling.

##### CHECK FOR OIL LEAKS.

Check that oil does not leak from the pot, valve, descaling device or pipework.

If no leaks proceed as follows :-

Turn the oil flow off.

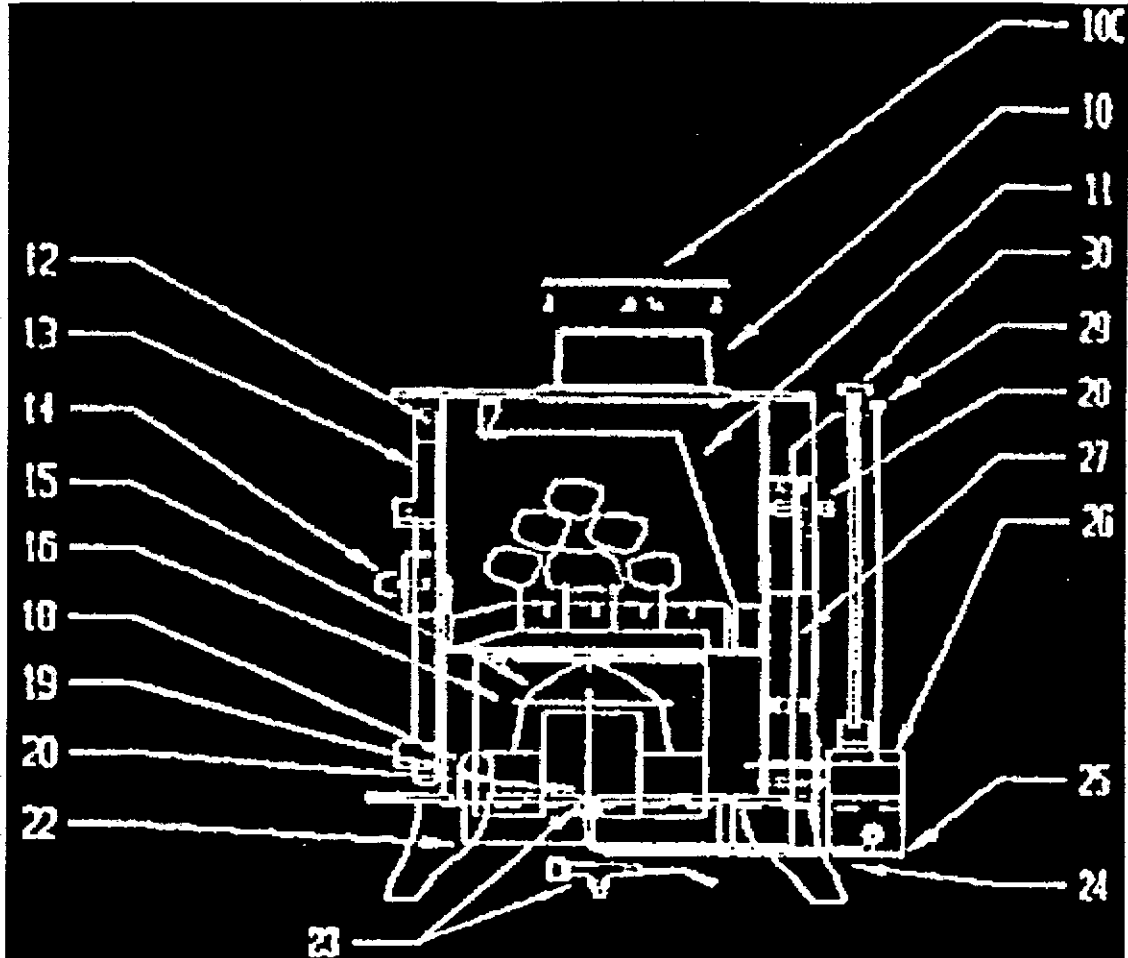
Empty the pot of all oil.

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.

# Bubble 2

Spares Parts listing issue 1



# Bubble Stove Spares

## Bubble 2

Below is a table of all spares available for the Bubble 2. Below the table, an appliance diagram is available for you to check part numbers. Click on a part number in the table or on the diagram for more information.

[Return to the main menu](#)

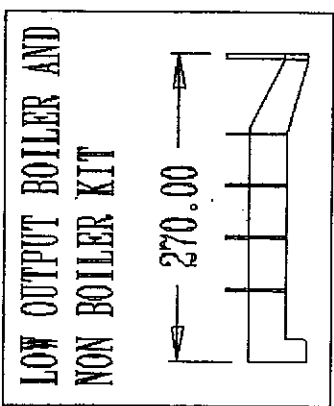
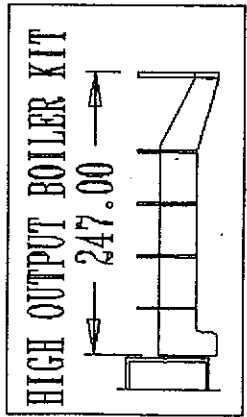
Item Number	Part Number	Description
10	503860 59 B	B1 2 BLACK COLLAR
11	87-01-600 27	B2 COAL SUPPORT BARS
12	CERAMIC012 1	12MM X 1M ADHESIVE DOOR SEAL (B2)
13	GLASS B2-S	B2 GLASS STRIP SET
14	158541 B	B2 3 THREADED HANDLE BRASS
14	301515 66 B	B2 THREADED DOOR LOCK
15	194401 B	B1 2 CATALYSER COVER
16	198205 B	B1 2 BURNER RING
19	87-01-501LWA	LIGHTING WICK ASSY SKW POT
20	194403 B	B1 2 SKW CATALYSER BODY
22	87-01-600 21	B2 LOWER HEATSHIELD
23	78-01-100	DESCALING ATTACHMENT REF NUMBER 2
24	87-01-600BT	BUNDI TUBE SKW POT 500MM
25	87-01-600 17	B2 O.C.V BRACKET
26	78-01-019	240VR 4/16 4 CST OIL CONTROL VALVE
26	78-01-016	240VRW02 4 20 1.8CST OIL CONTROL VALVE
26	78-01-017	240VRW02 4 20 4 CST OIL CONTROL VALVE
26	78-01-014	240VR 4/16 1.8 CST OIL CONTROL VALVE
27	87-01-600 24A	B2 REAR H SHIELD SMALL BOILER
27	87-01-600 24B	B2 REAR H SHIELD LARGE BOILER
27	87-01-600 24	B2 REAR H SHIELD DRY
28	78-01-200	" DRAFT REGULATOR"
29	RS686-400	BLACK BALL KNOBS 16MM D X 15MM L
30	RS125-1044	KNOB



**FIG 2A**

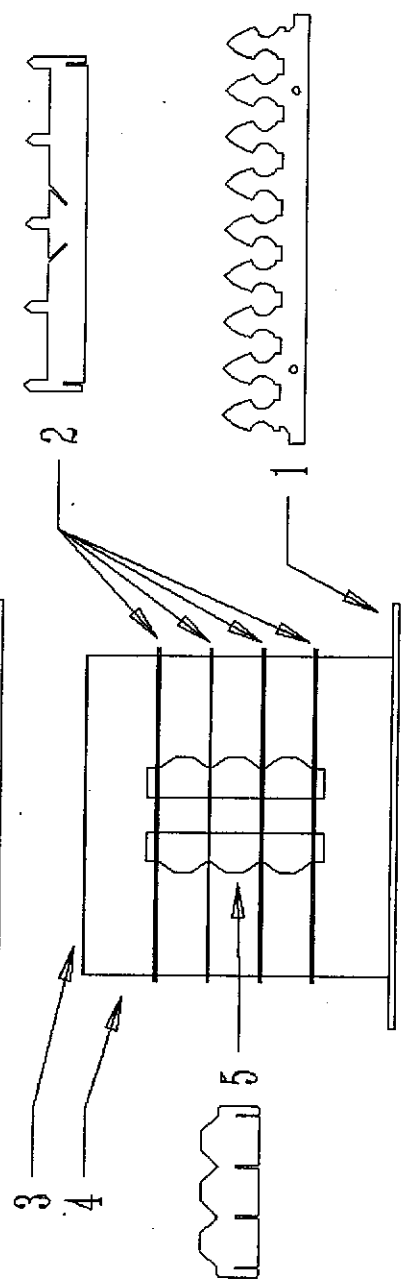
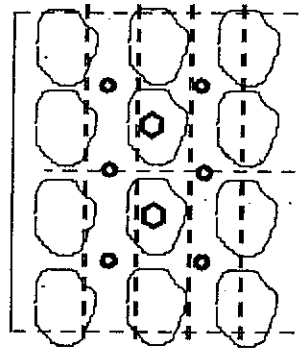
# BUBBLE 2 STOVES COAL KIT DETAILS ©

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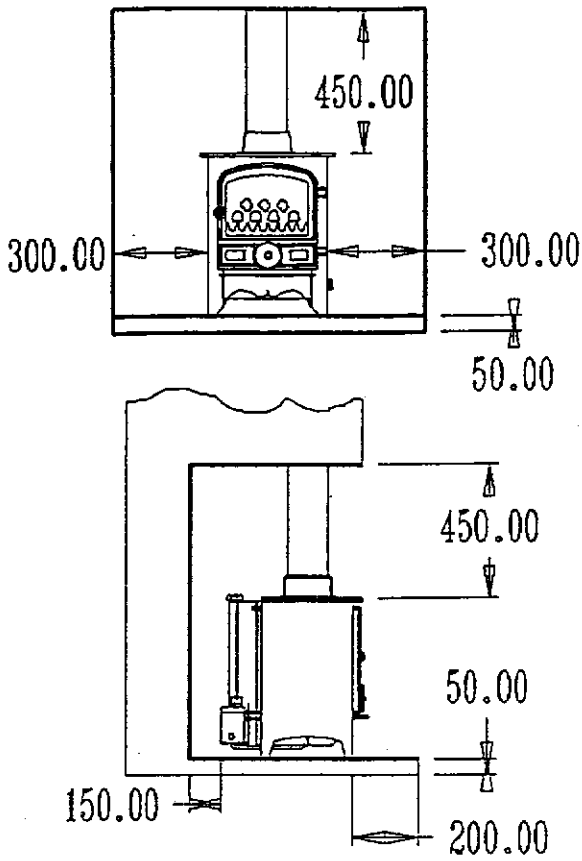


**NOTE**

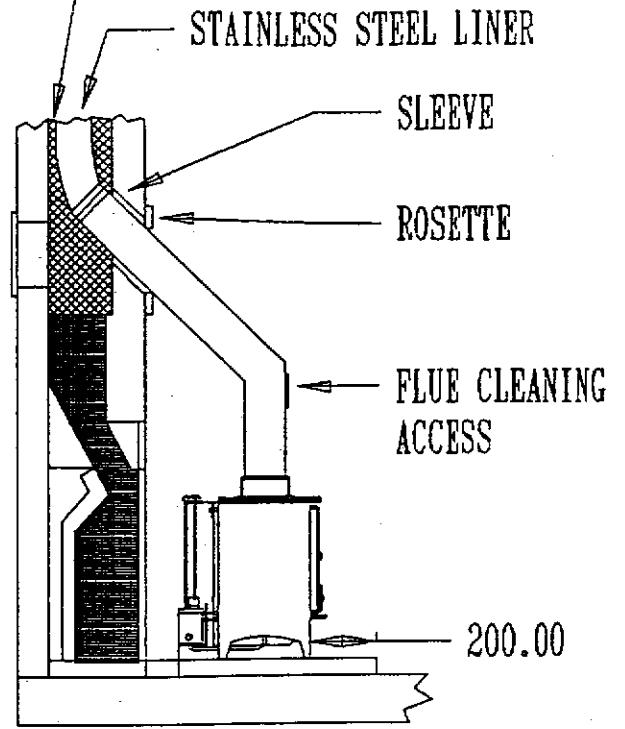
BASE LAYER OF COALS ARE SHOWN  
CIRCLES INDICATE SECOND ROW COALS  
HEXAGONS INDICATE TOP COALS



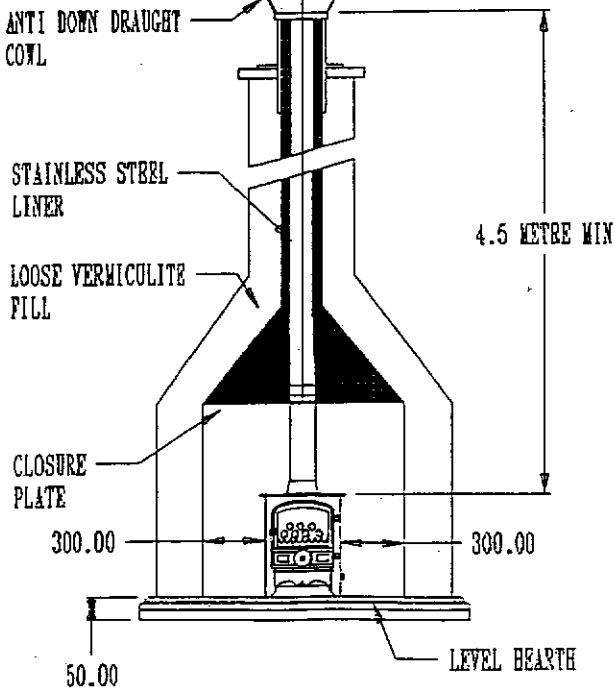
**FIG 3**  
MINIMUM CLEARANCES FROM COMBUSTIBLES



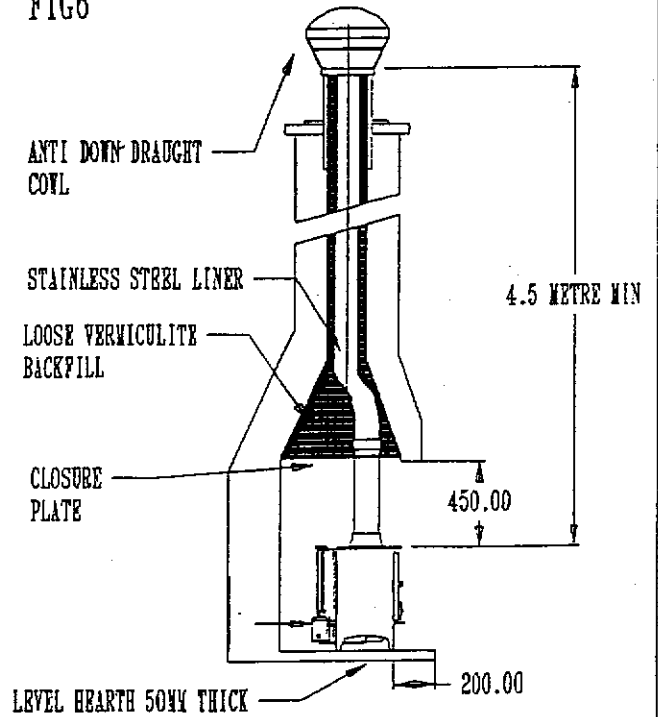
**FIG 4** VERMICULITE INFILL



**FIG 5**



**FIG 6**



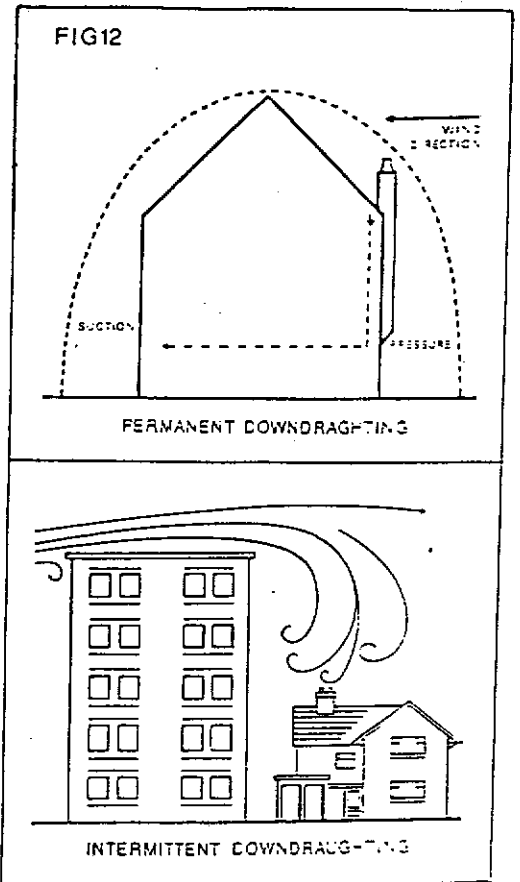
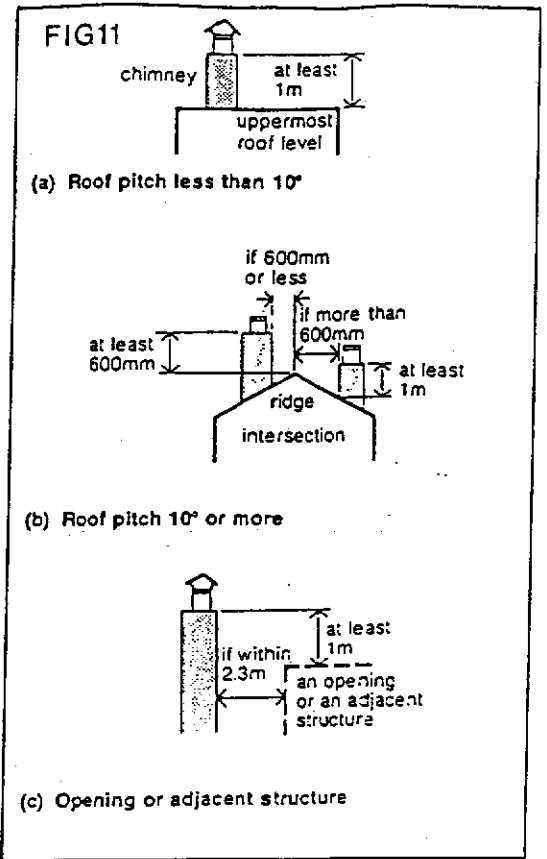
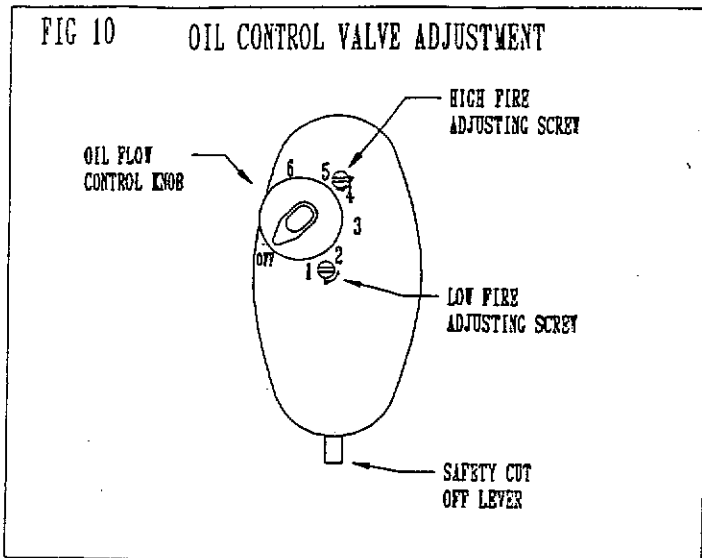
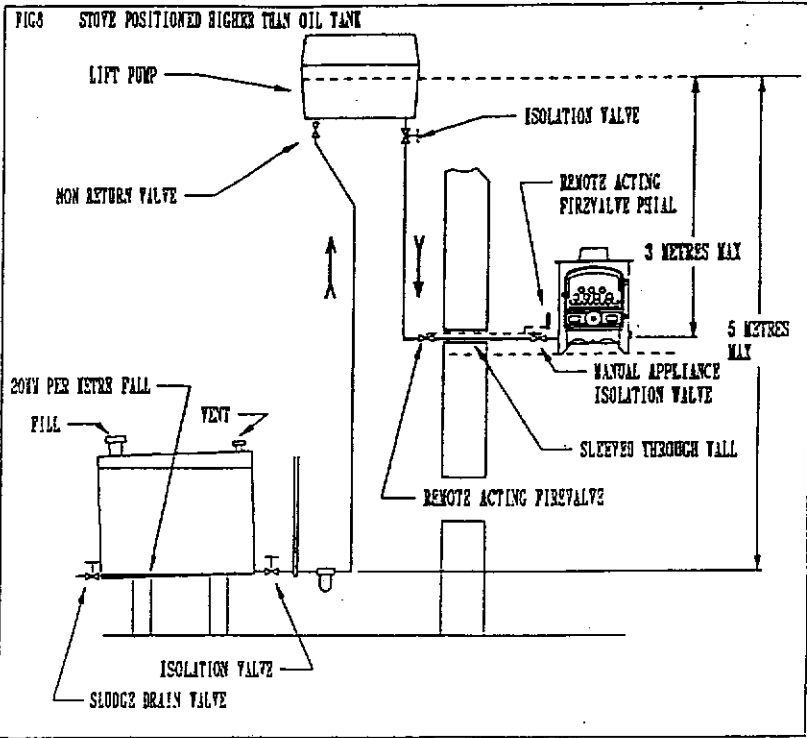
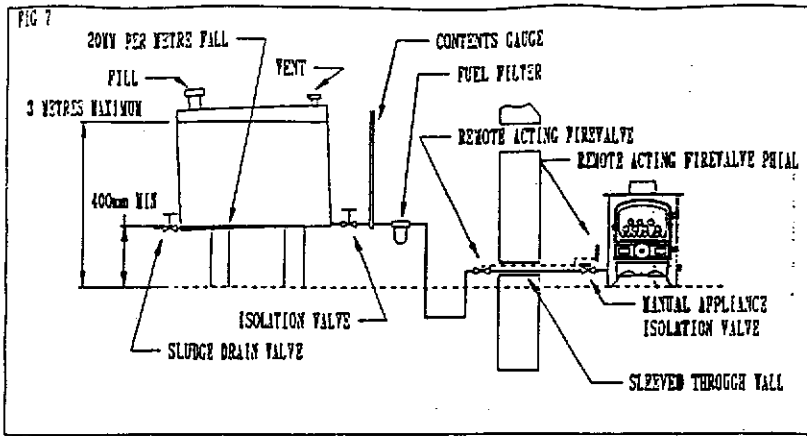
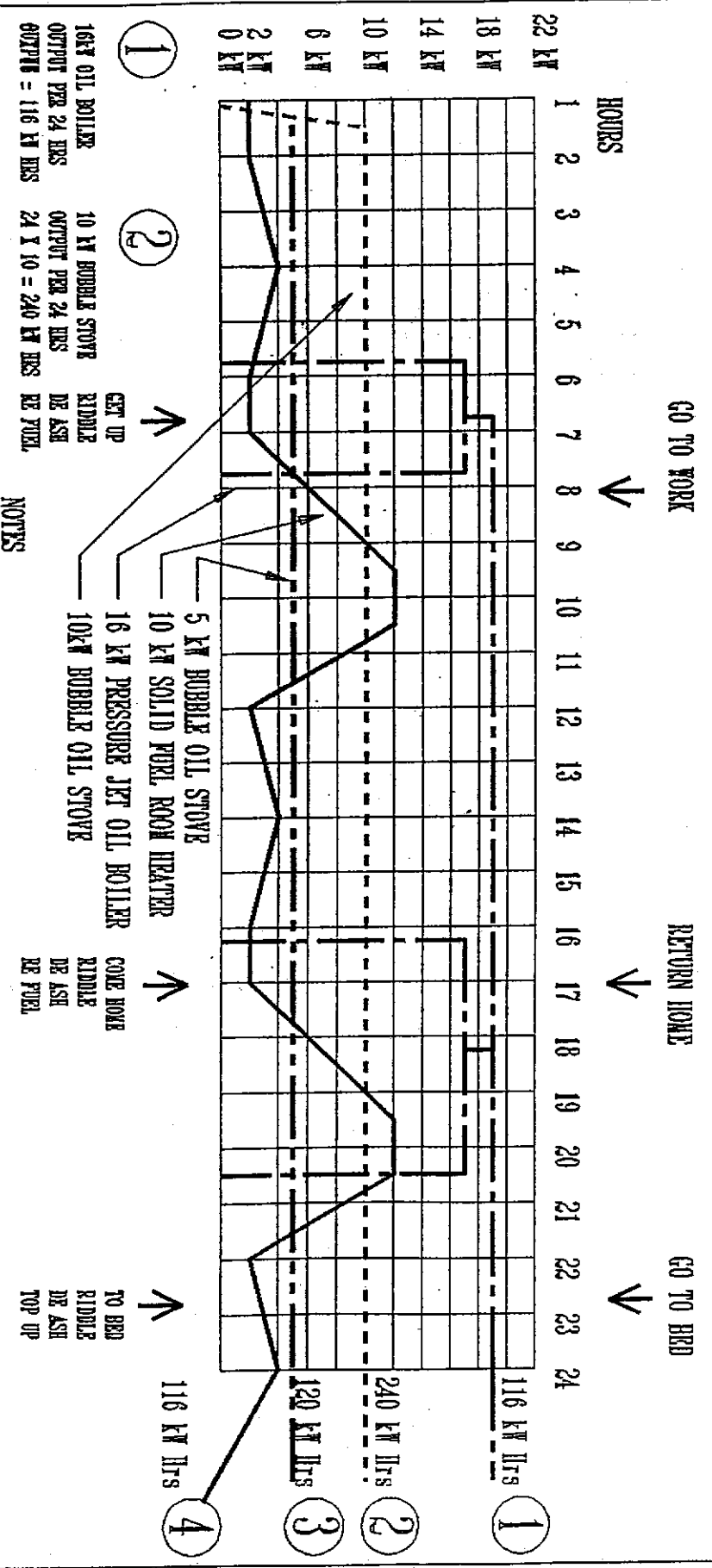


FIG 14

GRAPH TO ILLUSTRATE THE CONTINUOUS POTENTIAL HEATING OUTPUT OF BUBBLE OIL STOVES

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- ① 16kW OIL BOILER  
OUTPUT PER 24 HRS  
OUTPUT = 116 kW HRS
- ② 10 kW BUBBLE STOVE  
OUTPUT PER 24 HRS  
24 X 10 = 240 kW HRS
- ③ 5 kW BUBBLE STOVE  
OUTPUT PER 24 HRS  
24 X 5 = 120 kW HRS
- ④ SOLID FUEL STOVE  
OUTPUT PER 24 HRS  
14HR AT 3kW  
4HRS AT 11kW  
6HRS AT 5kW  
TOTAL 116 kW HRS

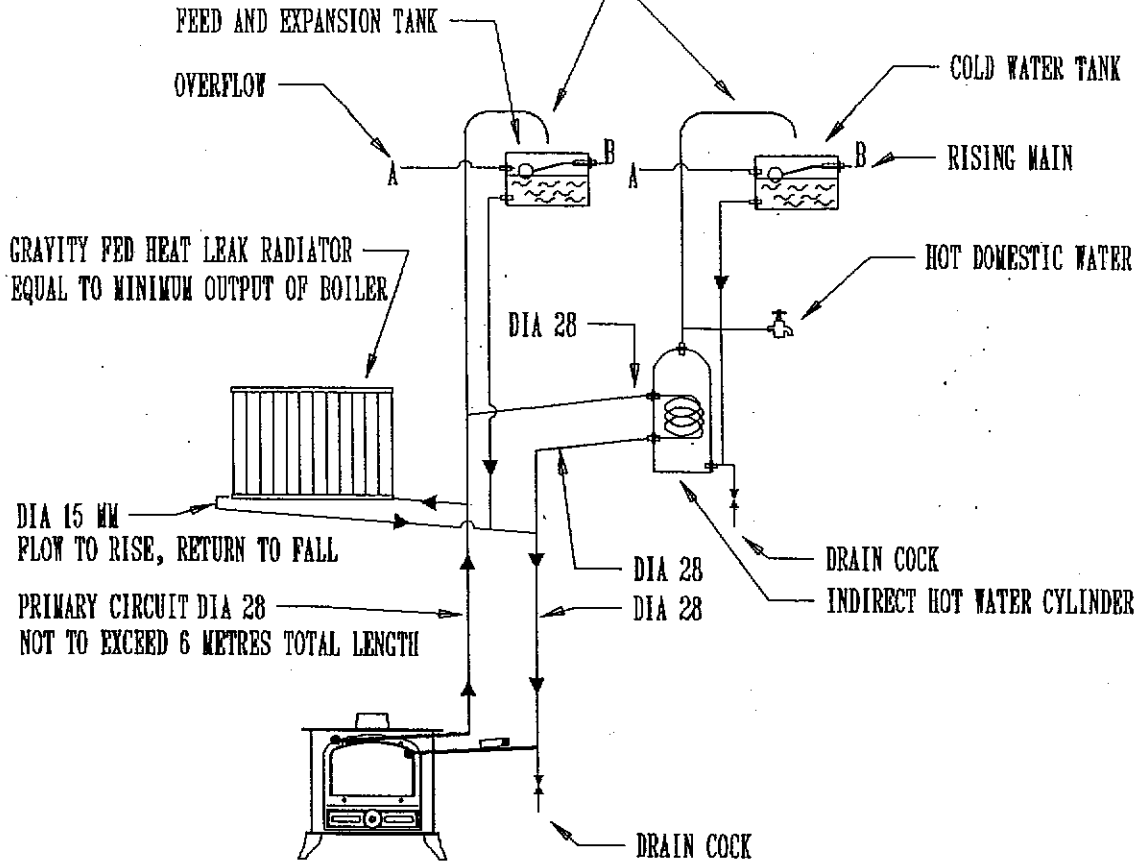
NOTES

- HEATING OUTPUT FIGURES FOR SOLID FUEL STOVES ARE GENERALLY STATED BASED UPON REPELLING THE STOVE EVERY 4 HOURS, OBVIOUSLY THROUGH THE NIGHT AND DURING UNATTENDED BURNING HOURS THE STOVE WOULD HAVE TO BE RUN AT A LOW OUTPUT, OTHERWISE IT WOULD BURN OUT.
- A 5 kW OIL STOVE RUNNING CONTINUOUSLY CAN GIVE THE SAME 24 HR OUTPUT OF (5 X 24) 120kW HRS AS A 10 kW VOOD OR MULTI FUEL STOVE WHEN REPLACING SOLID FUEL STOVES WITH BUBBLE OIL STOVES CAREFULLY CONSIDER THE REQUIREMENT.
- BECAUSE OF EXCESSIVE MECHANICAL WEAR AND EXCESSIVE SERVICING COSTS IT WOULD BE UNREASONABLE TO SHOW PRESSURE JET BOILERS AS HAVING A CONTINUOUS FULL OUTPUT BURNING POTENTIAL.

**FIG 15**

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22 MM DIA OPEN VENTS



**FIG 16**

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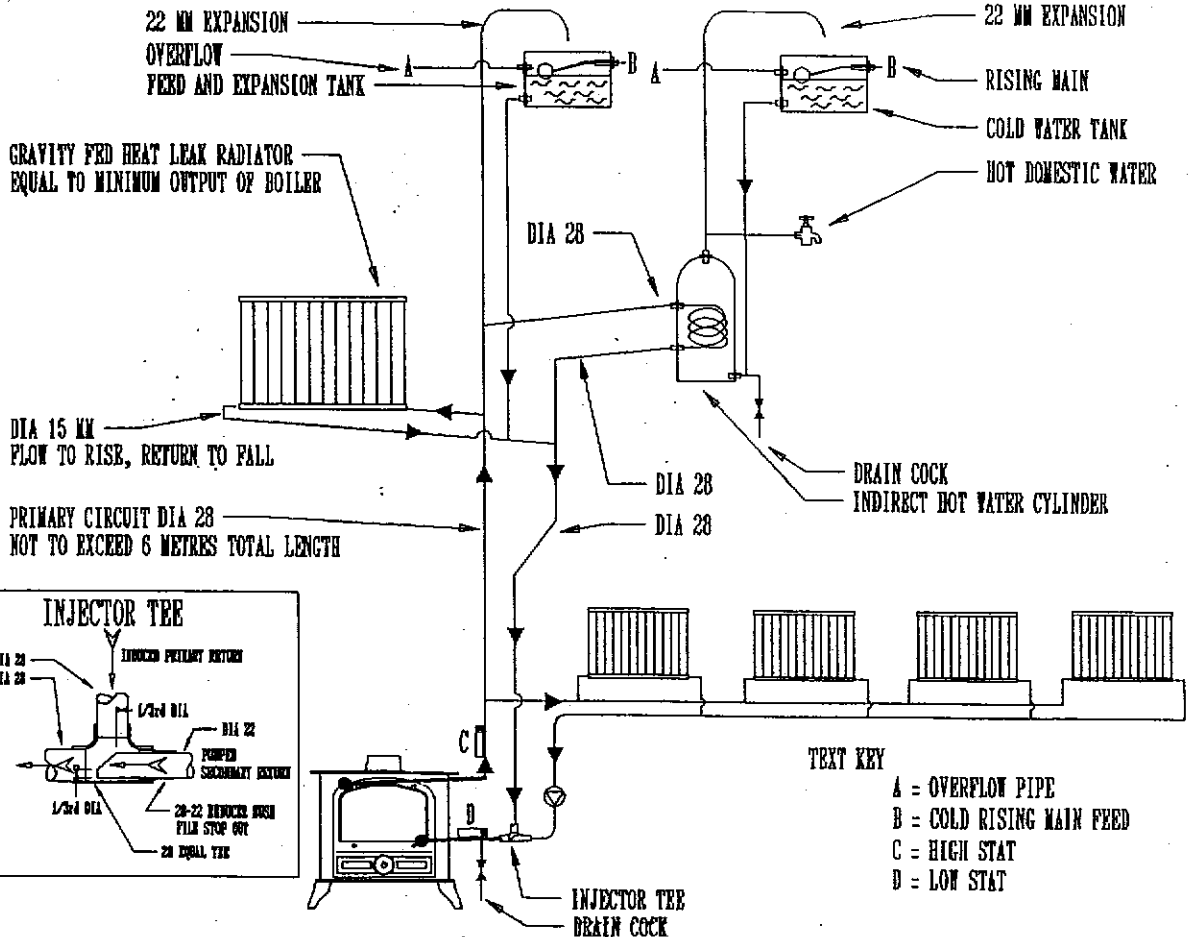


FIG 17

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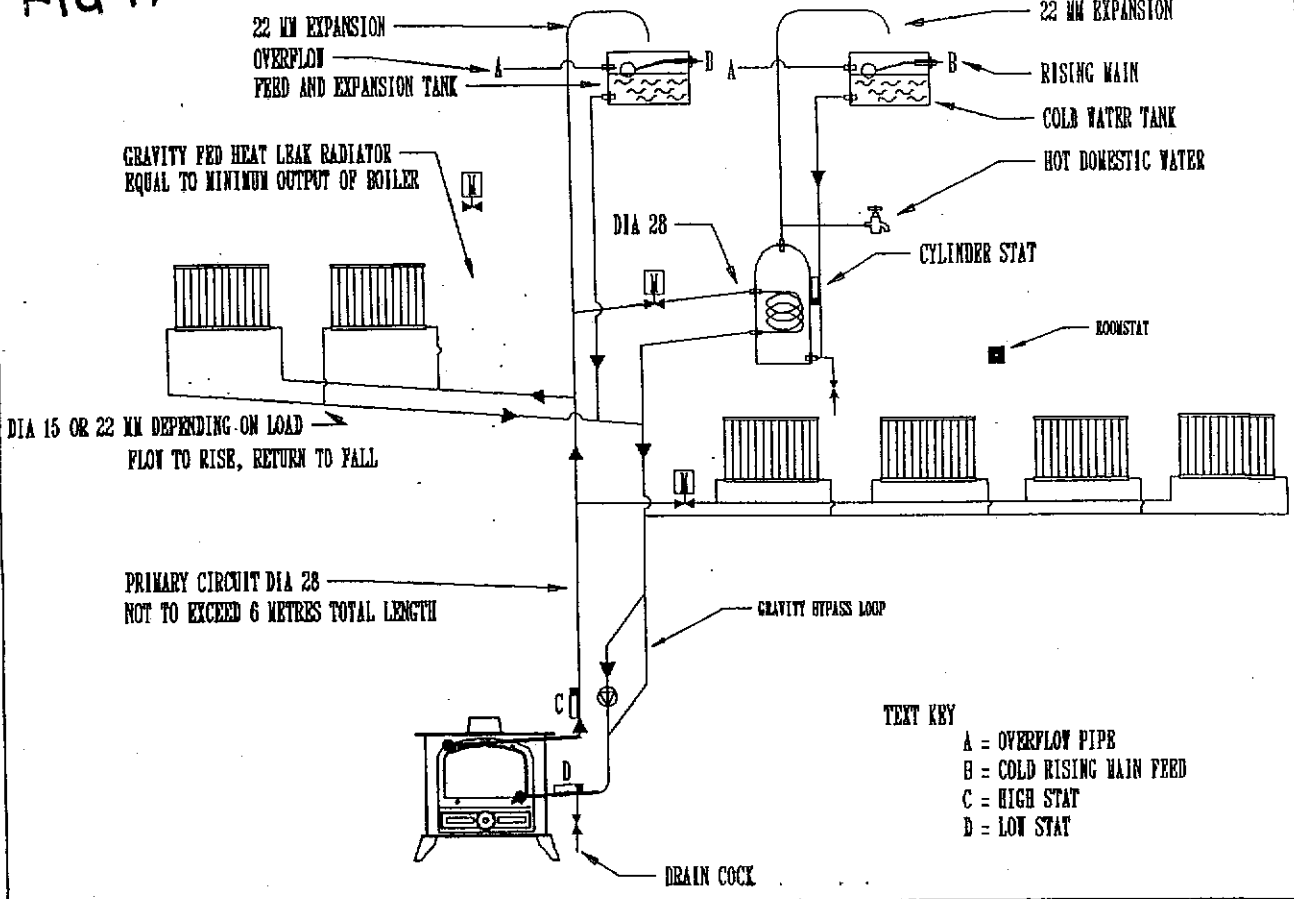


FIG 18

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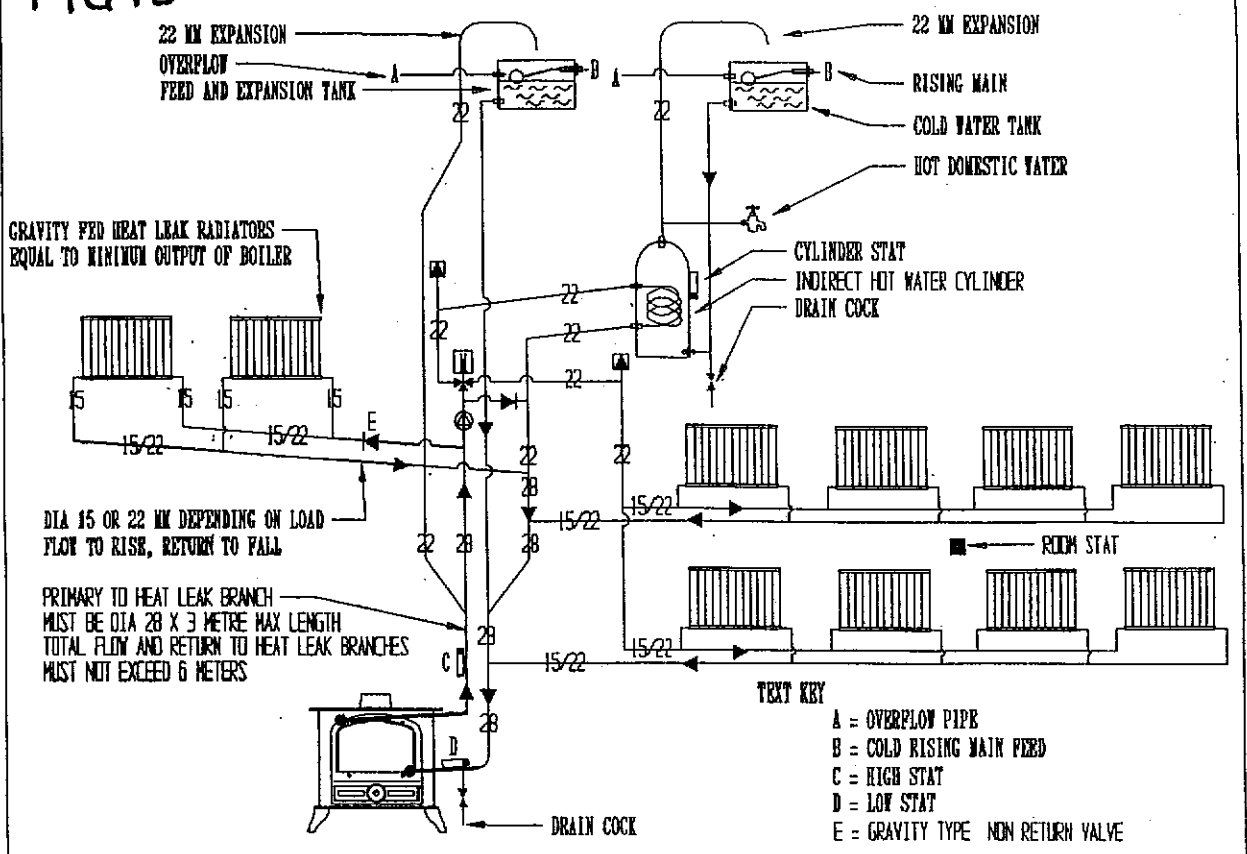


FIG 19

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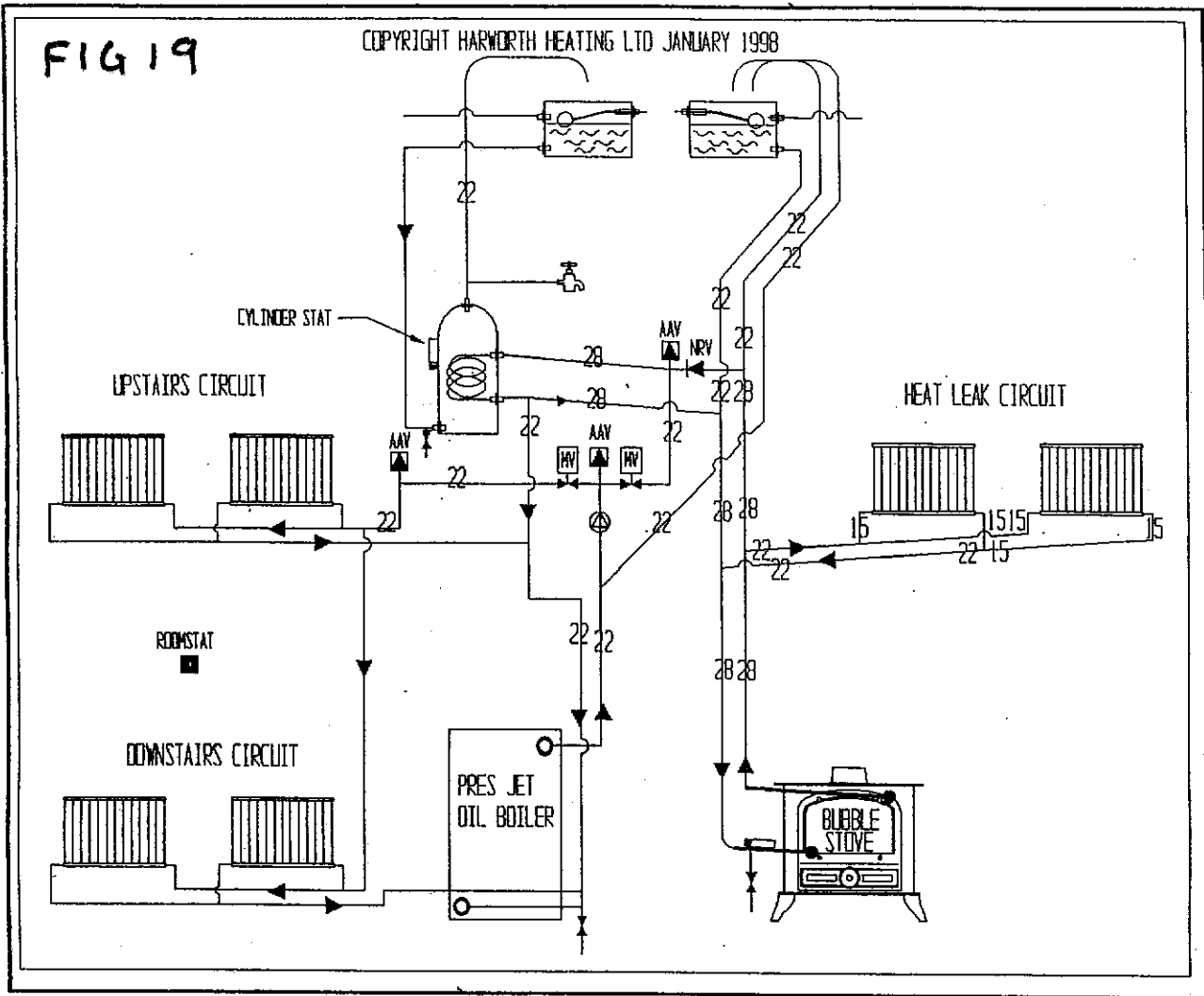
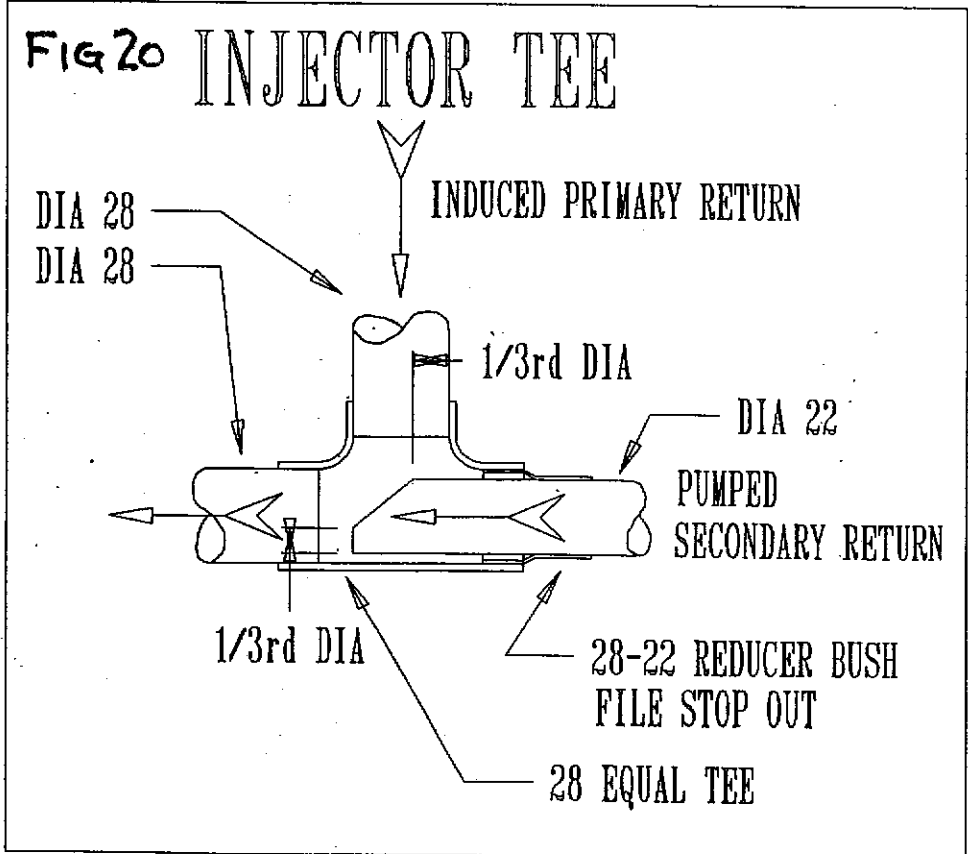


FIG 20 INJECTOR TEE



# Harworth Heating

***bubble***  
STOVES



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