ROUND STOVE

DOMESTIC

INSTALLER INSTRUCTIONS 23-09-03

www.oilstoves.co.uk

INDEX

Read in conjunction with the appropriate: -
1. Oil control valve leaflet.
If you have any difficulties please phone our technical help line on-:
01302 742520 fax 01302 750573
e mail sales@oilstoves.co.uk.
www.oilstoves.co.uk

2 HEALTH AND SAFETY

2.1 CONTROL OF SUBSTANCES.

The installer is classed as the responsible person under the health and safety at work act 1974vi.
The disturbance of an existing fireplace could create an exposure to asbestos and other hazardous materials and it is the responsibility of the installer to make sure that the persons carrying out the installation are adequately protected.
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@oilstoves.co.uk
WWW http://www.oilstoves.co.uk/

4 INTRODUCTION

The stoves are room heaters, which burn kerosene or diesel in a controlled manner utilising an open flue to discharge the products of combustion.
1. The circular shape allows the stove to be fitted with minimal use of space.
2. The top of the stove can be used for warming and cooking.
3. The stove will provide space or combined space and water heating.
4. There is a 2 Kw boiler version of the Round Bubble and there are 2 x 1" BSP female sockets for connections to be made as required at the rear of the stove.
5. The boiler is high water content and suitable for pumped or gravity systems, pressurised or open vented, provided that they are correctly designed.

The stove is equipped with-:
6. A combustion air restrictor.
7. A removable hot plate.
8. A lighting port facility
9. A flame-viewing porthole.
10. Flame failure device

The outlet adapter on the stove is designed to accept 90mm dia flue pipe.
(100mm dia copex chimney linings should be used.)
When lighting the stove it is very important that the lighting instructions are carefully followed.

Spacing from curtains or soft combustible materials should be kept a minimum of 300mm from the stove or flue pipe.

Spacing from combustibles.
a. 250 mm around the stove
b. 250 mm above the stove
c. 100 mm from the outer edge of the flue pipe
d. Beneath, the appliance has a lower heat shield built in to its base and there is very little heat radiated downwards.
The stove can stand on a suitable fireproof hearth, which must have a minimum thickness of 15mm.

To prevent the risk of injury through burning a suitable and appropriate fireguard complying with BS6539 must be fitted.
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.
If you are in doubt, phone our technical help line.

4.1 MATERIALS REQUIRED

1. 100mm dia chimney liner.
2. Suitable anti downdraft terminal.
3. 90MM dia flue pipe of suitable length.
4. Flue to Copex adaptor.
5. Suitable closure plate to close off the base of the flue.
6. Oil isolation valve
7. KBB remote sensing fire valve.
8. 10mm kutalex copper tube.
9. 22mm waste pipe (for wall sleeving.
10. Silicone sealant.
11. Stadium air vent
12. Plugs and screws.
13. 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 .06" W.G. when HOT, It is most important that any existing chimney faults
Such as: -

- Occasional or permanent down draught
- Occasional or permanent excessive up draughts
- Continuous 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.
If the chimney is on an exposed wall, always reline and 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.
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 90mm 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 2 mm minimum.

5.1.1 CHIMNEY TERMINATION

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.

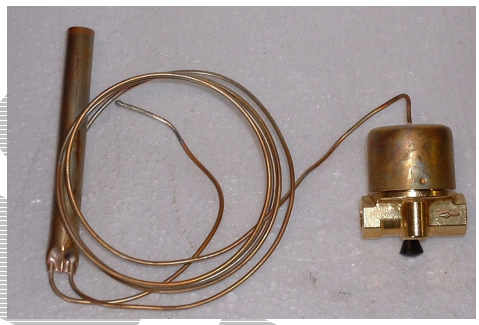
On installations where using a bend is unavoidable the maximum allowable bend angle from the vertical is 45 degrees.
45-degree runs should be kept as short as possible (less than 1 metre long) and there should never be more than two bends used.
WARNING
Horizontal flue runs are not allowed.

5.3 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

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 at the rear of the appliance and the valve being fitted at the point where the fuel line enters the property. See FIGS 7 and 8.
There is a built in KBB valve which acts as a flame failure device, this valve can also act as an isolation device.



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.
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.
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 1.5kW.
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 (1.5kW), 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.
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.

6 INSTALLATION AT A GLANCE

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

6.2 PREPARE THE LOCATION
Prepare the opening or hearth.

6.3 DROP THE LINER DOWN THE CHIMNEY.

6.4 FIT SUITABLE VENTILATION TO THE APPLIANCE SITE

6.5 RUN THE OIL SUPPLY.
Install fuel tank in line with our instructions and run a fuel line up to the rear right hand side of the appliance,
Flexible Hoses are not allowed for connections to vaporising pot burners.

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.

6.8 CONNECT THE PLUMBING (OPTION)

6.9 CONNECT THE CHIMNEY

6.10 CONNECT THE ELECTRICAL SUPPLY (OPTION)

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 valve.
The stove leaves the factory with the oil control valve correctly adjusted on the oil valve 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 (OPTION)

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.

7 LIGHTING AND COMMISSIONING

LIGHTING

WARNING FOR BOILER STOVES.
If the stove is fitted with a boiler, air locks or poor water flow through it may cause damage to the automatic thermostat of the Toby oil control valve. Make sure that the boiler has been vented of all air BEFORE ATTEMPTING TO LIGHT THE STOVE.
Lighting the stove takes a little time and patience; the following procedure should be adopted.
Remove the hotplate.
Remove the baffle plate.
Remove the inner mesh catalyser

Remove the burning ring.
Turn the oil on at full rate and allow oil to flow into the bottom of the pot to form a small pool about 3inch or 75mm diameter and then turn the oil off.
Do not allow any depth of oil to build up.
Note if the oil does not flow into the pot make sure that-:

1. The valve is tripped on DRY STOVES
2. The aqua stat safety (Red Plastic cap) is in its lifted position. BOILER STOVES
3. The fire valve behind the oil valve is tripped on (Black button Pressed IN) ALL STOVES
4. The remote sensing fire valve is tripped on (Black button Pressed IN) ALL STOVES
5. The oil valve is turned on. ALL STOVES
6. The isolation at the tank is turned on. ALL STOVES
7. There is oil in the tank. ALL STOVES

We have regular problems with air locks located in the metering stem or in the feed pipe from the oil valve to the pot.
Read the relative valve booklet supplied with the stove to find out how the valve works and specific info on air locks is given in section 3.
Replace all the inner components of the stove and refit the hotplate.
Remove the lighting port plug at the rear lower left side of the stove.
Stab a small piece of firelighter with the cocktail stick on the lighting port plug and light it, push it into the lighting port and make it drop into the bottom of the pot.
Replace the lighting port plug and after a short while you will see the flame start to establish itself and spread around the bottom of the pot, after two or three minutes it will start to die down at this stage turn the oil flow on to setting 1.
The flame should then slowly change from yellow into blue flame combustion and settle down to a steady burn.
Note there may be the occasional growl or audible vibration whilst the burner settles down into blue flame combustion.

SEC 3. COMMISSIONING.

There are two types of valve fitted to Bubble stoves and access to the low fire adjustment is different. On the Toby valve the low fire screw is clearly visible as per TOBY MANUAL FIG 2

When the burner has established good blue flame combustion turn it up to half output. (Setting 3 on the fuel flow control knob) and let it stabilize.
Allow at least half an hour for the chimney to warm up thoroughly before making any adjustments to the high or low fire screws.
Turn the stove down onto minimum firing rate and let it stabilize.
After stabilization there should be a dull red glow in the lower catalyser with wispy blue flames flicking into and just over it.
If the flame falls into a dirty rolling yellow flame and the catalyser is not dull red then the low fire will need to be increased until it can support the required blue flame combustion.
To increase the low fire oil flow, screw the adjusting

screw in by quarter turn increments.
When you are happy with the low fire, set the high fire.
Turn the oil flow knob up to setting 4, let the flame stabilize, and look at it, if it is stable and blue, turn it up slowly using the control knob, letting it stabilize after each movement, if the flame starts to go yellow with long flame combustion, it is running fuel rich and the high fire screw needs adjusting to reduce the flow of oil. (Screw the adjuster screw in to reduce the high fire oil flow.)
Before adjusting the high fire screw, turn the flame down and let it stabilize in blue flame combustion, adjust the high fire screw by half a turn in and try turning the fuel flow up, if it is still fuel rich repeat the process until the hire fire flame is running blue with just flicks of yellow in the tips.
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 stove flue ways.
Seals in stove mean:
The pot to closure plate seal.
The hotplate seal.
Check that the correct fuel oil is being used.

12. FAULT FINDING COMBUSTION.

1. RACING.

1. Audible vibrations generated by the flame caused allowing by too much oil in the pot, too quickly.
1-1. 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.

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. See fig1
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 stove flue ways.
5. Check that the correct fuel oil is being used.
6. Check the levels.

3. BURNER RUNS SOOTY.

Comments made on this subject assume that the stove has been running normally for some time.
If the stove soot's up this indicates that there is not adequate air for blue flame combustion or there is an excess of fuel.
Check that the chimney is working correctly. (This means pulling enough air into the burner to allow correct blue flame combustion to occur.
Check that the fuel is the correct type and quality.
Check that the flow rates are correct.
Where burners are run at high fuel flow rates on low chimney vacuums, long unsatisfactory yellow flame combustion and bad sooting will occur.
To rectify this problem reduce the high fire flow rate screw on the Oil Control Valve until blue flame combustion occurs.
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.

4. BURNER DOES NOT LIGHT EASILY.

Read the instructions in the lighting section of this publication.

5. OIL WILL NOT ENTER THE POT.

Is there oil in the fuel tank?
Has the fire valve tripped?
Has the isolation valve been accidentally turned off?
Is the oil turned on at the oil flow control knob on the valve?
Is the oil feed pipe from the valve to the pot?
Blocked. (Unlikely)
Has the water stat tripped off on the aqua stat?
Has the aqua-stat been damaged by overheating.
To check this out, remove the aqua-stat from the valve and remove the phial from the boiler, re cock the valve and test fire the appliance. See Fig 4 Toby Valve document.
Note this type of damage is not covered by the warranty.

6. OIL SMELLS.

Visual check on all joints for obvious leaks.
Check that the descalling lever packing gland nut is adjusted.

7. DEFLOODING A FLOODED POT.

To carry out this procedure you will need -:
a. A small leak proof plastic bag.
b. A small sponge.
c. A larger plastic bag for disposal of the residue.
d. A pair of disposable plastic gloves.
If the pot becomes flooded, de flood it is as follows -:
Put a small plastic bag into the stove and sponge from the pot into the bag, when the excess oil has been

removed put the plastic bag and sponge into another plastic bag and dispose of it.

8. OPERATING OIL FLOW RATES.

OIL Flow rates in cc per minute.

Min	Max
4cc	10cc

Oil Flow Rates In litres Per hour.

.24 litres	.6 litres

Oil Flow Rates In litres Per 24 hours.

5.76 litres	14.4 litres

Oil Flow Rates In litres Per 7 x 24 hours.

40.32 litres	100.8 litres

13. ROUTINE MAINTENANCE.

Continuous running assumed.

1. EVERY 4 WEEKS-:

Operate the descalling lever by turning it completely two or three times.

2. AS REQUIRED -:

Clean inside of door glass.

3. EVERY EIGHT WEEKS -:

Clean the burner completely by removing all the inner components as follows,

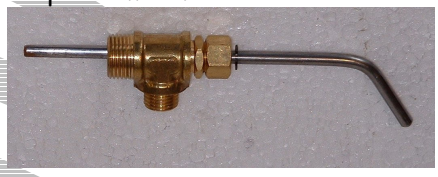
1. Open the front door.
2. Remove the coal kit if it has been supplied with the stove.
3. Remove the inner mesh catalyser.
4. Remove the lower burning ring.

Scrape the bottom of the pot and remove all carbon build up.

Reassemble in the reverse order.

4. EVERY 24 WEEKS-:

Tighten up the gland nut on the descalling device to stop oil smells.



5. ONCE PER YEAR-:

Have your service man replace or clean all the filters in the oil supply line.

6. EVERY TWO YEARS -:

Have your service man clean the filter in the Oil Control Valve and check the function of all the safety equipment associated with the stove, oil supply and plumbing system.

Remove and clean out the oil supply pipe from the valve to the pot.

7. AS REQUIRED -:

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

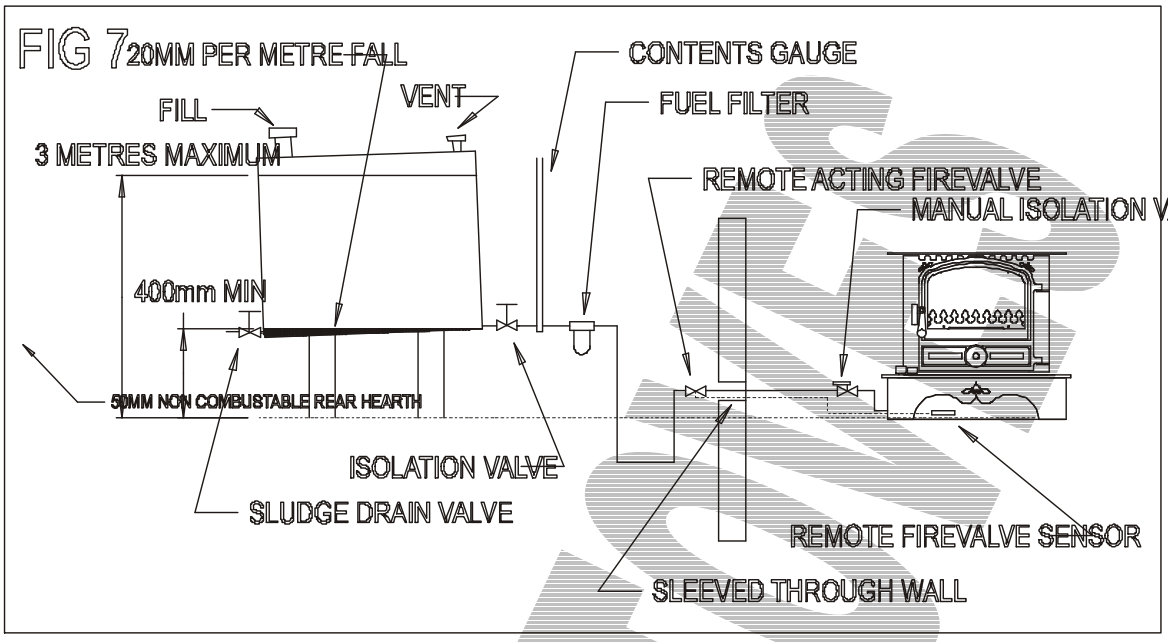


FIG 7
20MM PER METRE FALL
CONTENTS GAUGE
FILL
VENT
FUEL FILTER
3 METRES MAXIMUM
REMOTE ACTING FIREVALVE
MANUAL ISOLATION VALVE
400mm MIN
50MM NON COMBUSTABLE REAR HEARTH
ISOLATION VALVE
SLUDGE DRAIN VALVE
REMOTE FIREVALVE SENSOR
SLEEVED THROUGH WALL

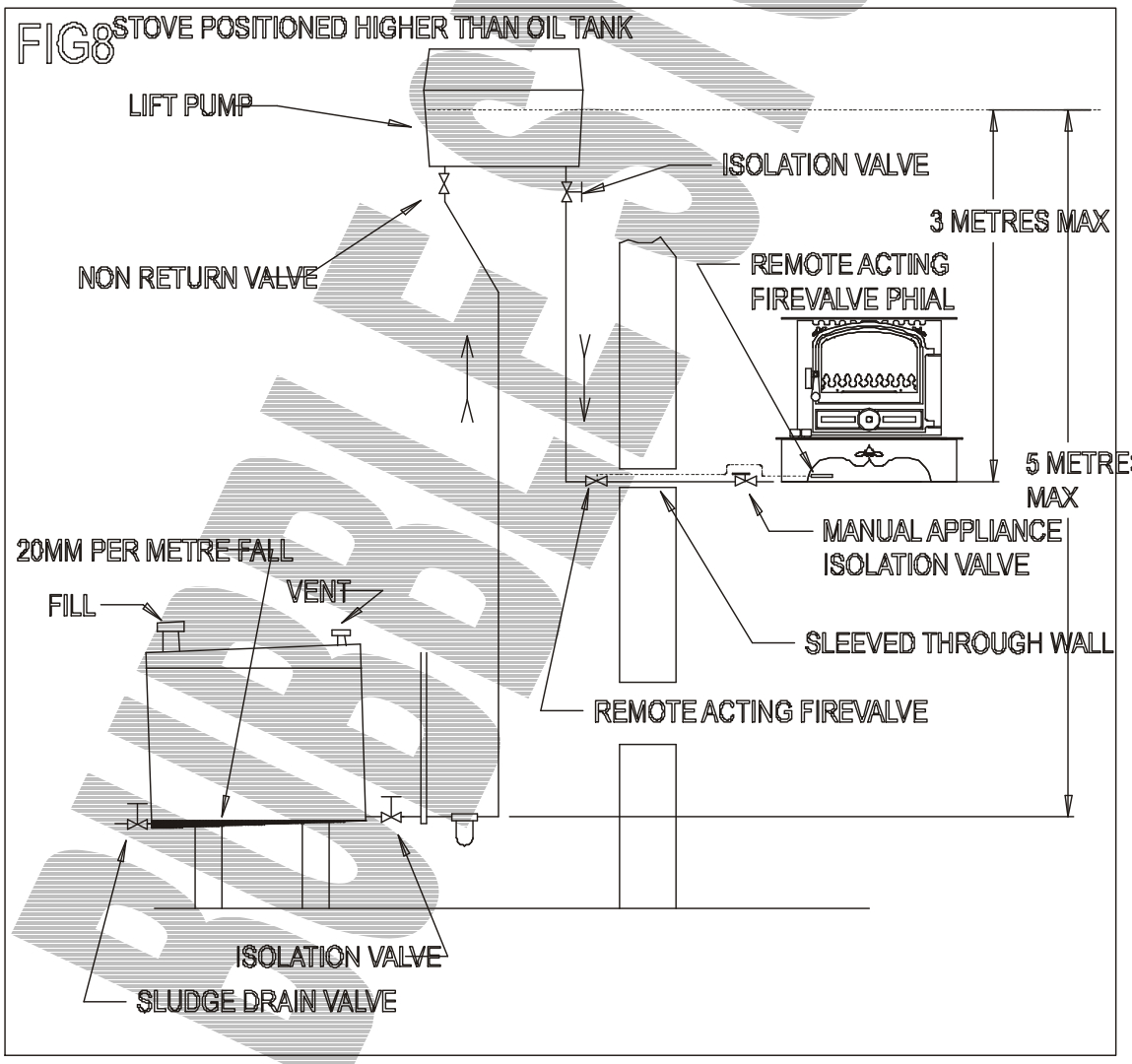
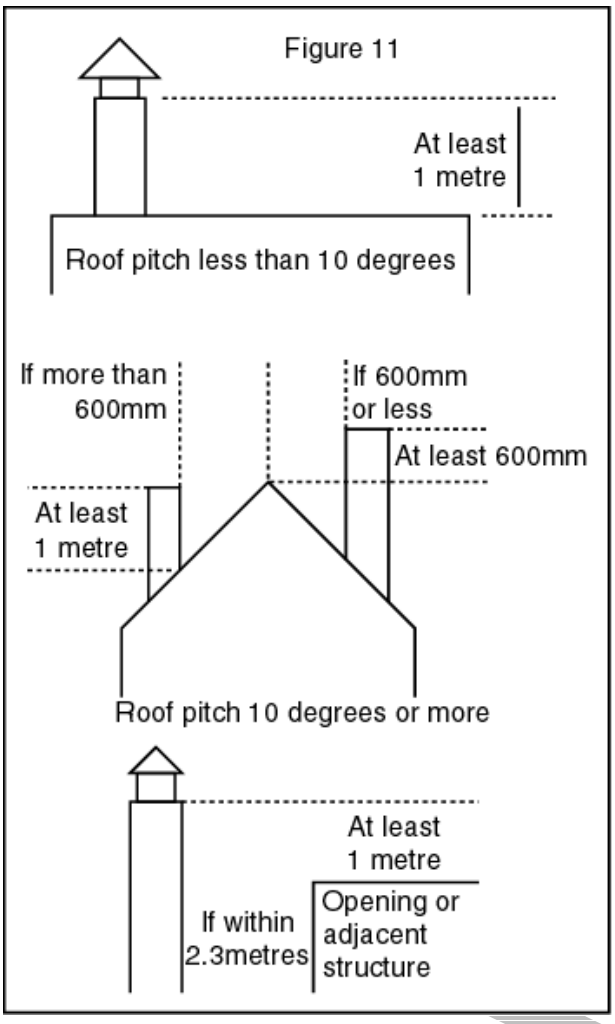
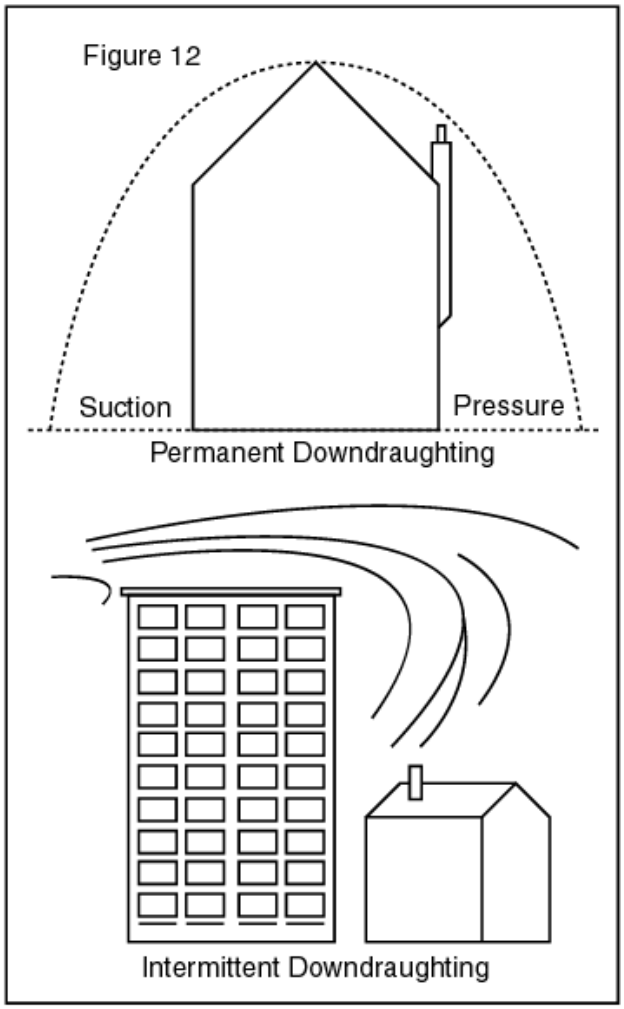


FIG8
STOVE POSITIONED HIGHER THAN OIL TANK
LIFT PUMP
ISOLATION VALVE
3 METRES MAX
NON RETURN VALVE
REMOTE ACTING
FIREVALVE PHIAL
5 METRES
MAX
MANUAL APPLIANCE
ISOLATION VALVE
20MM PER METRE FALL
FILL
VENT
SLEEVED THROUGH WALL
REMOTE ACTING FIREVALVE
ISOLATION VALVE
SLUDGE DRAIN VALVE





14. WARRANTY.

You are advised that if Harworth Heating Ltd are called out to appliances under warranty claims, where no appliance fault can be found, charges will be made at the rate of £29.00 per hour, including travelling time.
Before any site visit is arranged a £200.00 deposit will be required to be paid.
If faults are traced to components the £200.00 will be refunded, if faults are traced to bad installation or incorrect commissioning charges will be levied to cover technical staff working and travelling time at the rate specified above.
Fill 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.
Where we do not hold returned warranty forms replacement parts would only be issued when we are sure that the stove has not been damaged by improper use or installation.
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.

15. WARRANTY ITEMS NOT COVERED.

GLASS.

LABOUR COSTS.

TRAVELING COSTS.

CONSEQUENTIAL LOSS.

CONSEQUENTIAL DAMAGE.