



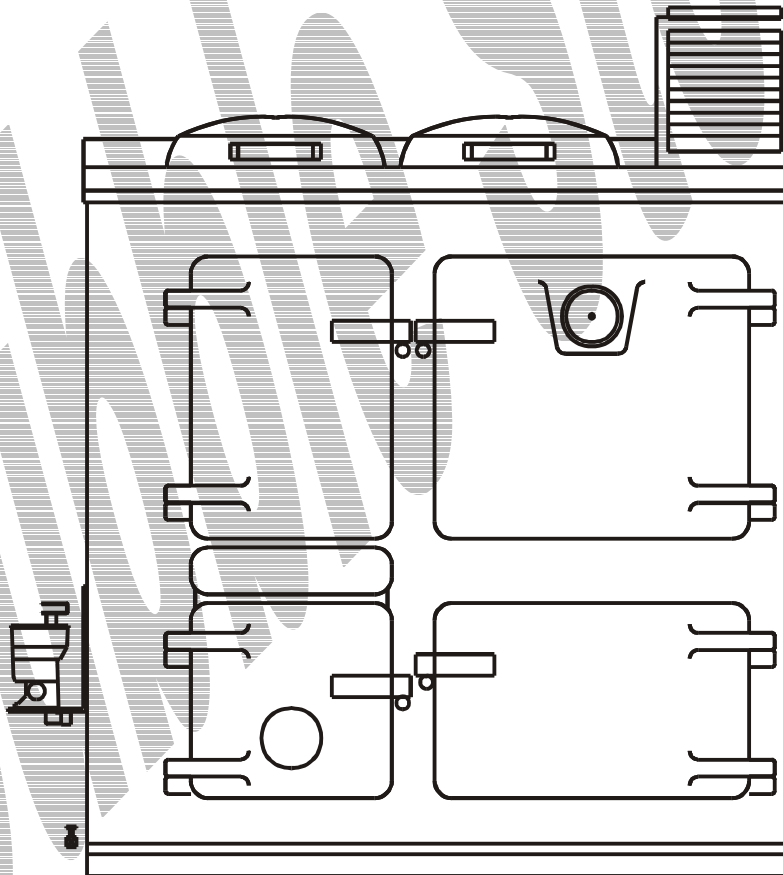
VAPORISING POT CONVERSION

Rayburn M.F. 20-05-04

Installer information.

To be read in conjunction with:-

Vap. General Service Document.



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

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11. FITTING THE KIT.

Before starting any work, check off the contents of the packing list with the kit contents and make sure that everything is complete.

Clean chimney, check and adjust the chimney vacuum (0.02" - 0.06" w.g.) and provide a cleaning access (min diameter 5" for linings.)

If applicable, check out the existing hot water system.

Install fuel tank and run a fuel line up to the firebox side of the appliance.

If necessary, modify the electrical supply.

Fit suitable ventilation into the appliance site.

Remove the hot plate

1. REMOVING THE FIREBRICKS.

Fig 1 Shows the internals of a typical, left hand oven MF, the opposite oven fire bricks are still in situ and the oven side casting is badly damaged.

This appliance is typical of the degree of damage which can be inflicted by incorrect use and lack of adequate maintenance.

This appliance was used for photographic purposes only and was not in a good enough condition to be recommissioned.

Fig 1



1A. REMOVE THE THICK FRONT FIREBRICK BENEATH THE FUEL-LOADING DOOR.

(This is a time consuming job, don't rush and take care not to apply too much pressure as the front casting of the appliance is only thin and can be easily broken.)

2. REMOVE THE OVEN SIDE BRICKS.

Damaged opposite oven firebrick

Fig 2



3. REMOVE THE OPPOSITE OVEN FIREBRICKS.

These firebricks should be fitted for summer time cooking only and removed in wintertime to allow more heat from the fire to the water heating.

Many users are unaware of this and leave the firebricks permanently in situ.

Scale build up behind them and makes the removal very time consuming and difficult, if you encounter this situation, take great care not to damage the boiler during the removal process.

Typical Damaged and scaled up, opposite oven firebrick.

Fig 3



Damaged oven side casting

Fig 4



4. REMOVE FUEL LOADING DOOR INNER CAST IRON PROTECTIVE PLATE.

Fig 5



Remove the fuel-loading door and remove the cast iron protection plate attached to it.

(Note it may be necessary to drill the head off the old fastener and use stillsons on the stub to remove it.)

Clean the door inner surface and paint it with heat resistant matt black paint.

5. REMOVE THE ASH PAN.

6. REMOVE THE GRATE CARRIER.

View through ash pit door showing damaged grate assembly in position

Fig 6



FIG 7. REMOVE THE RIDDLING GRATE BARS.



Fig 8. Remove the grate bars by lifting them up from the back support.



FIG 9. REMOVE THE RIDDLING GRATE SUPPORT FRAME.



FIG 10. REMOVE THE SECONDARY AIR CHAMBER CASTING.

View thro ash pit door showing secondary air casting attached to front plate.



FIG 11. REMOVE THE SECONDARY AIR CHAMBER FASTENERS.

There are two fasteners, one at the oven side and one at the opposite oven side.

If it is not possible to unscrew them, it may be necessary to grind the heads off.



Fig 12. Secondary air chamber casting removed.



Vac The Debris Out.

Thoroughly vacuum out all the dust and debris from the appliance and the ash pan area.

Fig 13. Remove the ash pit base plate casting.



14. CHECK THE HOT PLATE SEAL.

Make sure that the ceramic rope seal, on to which the hotplate sits, is in good condition and not over compressed, if it is not forming a good airtight seal with the closure plate, renew it.

15. REMOVE THE FLUE BOX DAMPER PLATE.

Remove the sliding damper in the flue box and seal the opening left by the sliding damper with fire cement.

Check that there are no potential for air leaks in or around the flue box.

Check the rear outlet cover plate, as these are prone to leaking.

16. LOCK THE AIR VALVE OPEN.

It is essential that as much cooling and combustion air as possible be allowed to circulate around the burner.

A permanent free air supply must be established, as the burner cannot function correctly without it.

To achieve this it is necessary to fully open the spin valve which is located in the ash pan access door and lock it permanently in this position by use of either a lock nut, or a (suitably positioned) drilled hole and split pin.

17. FITTING THE BOARDS AND POT.

Before permanently fitting the boards, **try a dummy run**, to make sure everything fits before final permanent fitting and fire cementing.

Remember that the pot must be fitted in to the cooker before the closure plate is finally fitted.

The pot is pushed thro the fuel loading door and rested beneath the closure plate, when the closure plate is fitted and in position, the pot is lifted up to it and bolted into position with the oil inlet to the front.

Note,

Make sure that the base closure plate is levelled so that oil will flow very slightly towards the base of the lighting port tube.

Make sure that the pot is sealed up to the closure plate.

Fit the baseboard into the bottom of the ash pit and fire cement it in place. See Fig 18

Fit the opposite oven closure plate support. See Fig 18

Fit the rear closure plate support board. See Fig 18

Fig 18.



Fit the metal base closure plate by pushing it across the diagonal of the door opening and resting it onto the two support boards and the oven side casting.

On final assembly make sure that the pot is fitted before the closure plate, as it has to be pushed up to the closure plate from below it.

Note at fig 19 stage on final assembly the pot should have been fitted under the closure plate as per fig 19a.

Fig 19.



Fig 19a

Fit the pot under the closure plate and rest it on the ash pit base, bolt it up into position, after the boards have been fitted.



Fit the short front board above the front of the closure plate, to fill the gap above it.

Fig 20.



Fit the upper and lower small side boards to wedge the short front board in place and fill the gap to the sides of the large front board.

Fig 21.



Oven side upper and lower small side boards.

Fig 22.



Fit the large front board in between the two pairs of upper and lower side boards and on top of the short base board

Fig 23



Note; **Make sure that the base closure plate is levelled so that oil will flow very slightly towards the base of the lighting port tube.**

Fit the Pot

Note the pot comes with the descaling device pre fitted, remove it before fitting the pot, and refit it afterwards.

Fasten the pot to the closure plate with the M5 fasteners provided.

Fit the Front Board

Fit the Side Boards

Fit the fuel-loading door masking plate and using it as a template mark out and cut a circle through both boards to accommodate the barometric damper and mounting plate as shown in Fig 12

Fig 11

Shows the damper fitted to the damper plate



Fig 12

Shows a left hand oven Regent with the damper plate and burner fitted.

Carefully seal around the damper plate with a neat fillet of silicone.



WHEN YOU ARE HAPPY WITH THE DUMMY RUN PROCEED AND FIT EVERYTHING PERMANENTLY FIRE CEMENTING ALL THE BOARDS IN PLACE AND FILLING ANY GAPS AS YOU GO.

Note

- 1. Take care not to get fire cement into any of the holes in the burner pot.**
- 2. Make sure that the base closure plate is levelled so that oil will flow very slightly towards the base of the lighting port tube.**

Fit the descaling device ready to accept the oil supply pipe work.

FIT THE OIL CONTROL VALVE.

After fitting the pot, it will then be possible to fit the oil control valve bracket to the oil level mark established as follows.

Measure the 20 mm from the bottom of the pot and make a mark on the side of the pot.

Fig 14



Measure from the floor to the 20mm mark on the pot and transfer this total dimension round to the OPPOSITE OVEN side of the appliance.

Fig 15



Mark out and fit the oil control valve bracket using the large dia self tapping screws provided, by lining the oil level notch on the side of the bracket with the transferred mark on the side panel.

Make sure that the valve is fitted about 150mm back from the front casting.

Fig 16 Left hand oven Royal



Using the two M8 setscrews fit the oil control valve to the bracket and check that everything lines up.

Level the oil control valve in both directions and carefully pipe up to the burner pot, making sure that the pipe work is accurate so as not to transfer any lifting or twisting moments on to the oil control valve or pot, subsequently disturbing the now established levels,

To get the oil feed pipe work through the side of the appliance it will be necessary to mark out and drill through the inner and outer skins of the appliance, this is an awkward job requiring some patience.

When this is done pipe up from the oil valve in to the descaling device.

FIT THE BAFFLE KIT.

Fig 18



MF cookers can have right or left ovens, to allow for this handing, the baffle kit has a detachable plate, which must be fitted to suit.

When assembled, the baffle kit is awkward to fit as the detachable lower flat plate of the baffle has to be fitted diagonally across the firebox and then rotated down into its final position with the upper part fitting over the oven top casting and pushed under the hob and then secured by an M4 fastener.

Note

It may be necessary to trim both the back edge of the baffle to allow it to go under the hob and the baffle plate which fits down into the combustion chamber.

12. COMMISSIONING AND FINISHING OFF.

Commissioning takes the form of separate activities as detailed -:

1. Lighting and setting up the burner to give good combustion.
2. Setting up the appliance to perform as per the customer's requirements.
3. Showing the customer how to -:
 - 3a Operate the appliance controls.
 - 3b The fuel supply system,
 - 3c. All of the safety features, isolation devices, and resetting procedures.

BEFORE TEST FIRING THE BURNER.

Note

(When first lighting the burner, it will be necessary to remove the baffle, in order to see the flame, when the flame is set and running correctly, the baffle must be refitted.)

Remove the hot plate

Remove the Baffle plate

Remove the internals of the burner if they have been fitted already.

Vac out the base of the burner.

Remove the barometric damper and tape (gas tape) a piece of ceramic glass up to the damper opening in the front of the fuel loading door so that you can see the flame throughout the ignition and commissioning process.

TO TEST FIRE.

1. Turn on the oil supply to the oil valve.

2. Turn on the electrical supply. (For optional extras only)

We supply more than one type of oil control valve with conversions and normally we supply a separate specific booklet relative to the valve fitted.

Refer to this booklet for all information relative to the operation, servicing and adjustment of the particular valve used on this appliance.

Make sure that the valve is activated and turned on to allow oil to flow at its lowest setting.

Wait a few minutes until fuel starts to flow into the pot.

Look through the hot plate aperture and down in to the base of the pot to see if the oil is running into it.

Make sure that the oil is running towards the bottom of the lighting port tube and not away from it.

(The oil must gather in a small pool, at the bottom of the lighting port tube, no bigger than a small biscuit.)

When you can see the pool is formed turn the oil off, refit the burner inners

Refit the hot plate but not the baffle kit.

Remove the lighting port plug and impale a small piece of fire lighter onto the spike.

Remember that there is a skill involved when lighting oil burners, you must make sure that the pot stays alight during the lighting process and you must also carefully control the flow and build up of oil in the pot.

If there is a decent chimney vacuum, oxygen in air will be drawn into the pot to keep it alight, if there is no or very little chimney vacuum there is a possibility that the burner could rapidly go out by consumption of available oxygen in the pot and consequently extinguish itself.

If this occurs turn the oil off to the pot and start again after the pot has cooled down.

DO NOT ATTEMPT TO RE LIGHT A HOT BURNER.

Therefore the skill is -:

Make sure that there is a chimney vacuum.

Make sure that the right quantity of oil is in the right place.

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.

Make sure that the oil is running towards the bottom of the lighting port tube.

It should gather in a small pool, at the bottom of the lighting port tubes, no bigger than a small biscuit.

When the oil has formed the small pool, turn the oil **off**.

Fit a small piece of firelighter on to the lighting port plug spike, light it and push it down into the oil at the bottom of the lighting port tubes making sure that it drops into the oil.

Look through the ceramic glass and watch for signs of flames.

You should be able to see small yellow flames in bottom of the pot.

When you are sure that the pot is alight, turn the fuel flow on again at the lowest setting for 30 seconds and then, turn it off again.

Allow another 30 seconds to elapse and when you are sure that the pot is alight turn the oil **on** to the pot and let the flame establish on low fire.

When the pot is running on low fire gradually turn the oil flow up to setting 3 and let the chimney warm up.

When the pot is running on setting 3 and the chimney has warmed up check the chimney vacuum and make sure that it is between .02" W.G. minimum and .06"W.G. maximum

When you are happy with the flame picture check the high and low fire running.

LOW FIRE ADJUSTMENT.

When the burner has been running for five minutes on position 1 LOW FIRE the lower catalyser will be glowing dull red, with blue flame hovering above the catalyser, if this is not the case adjust the low fire screw accordingly.

HIGH FIRE ADJUSTMENT.

When you are happy with the low fire running turn the burner slowly and progressively up to full fire, this 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 on high and low fire you must then check the action of the APPLIANCE TEMPERATURE CONTROL mechanism if it is fitted.

When you are happy that everything is in order, turn the burner off and let it cool down.

SHUTTING DOWN.

Turn the oil flow control knob fully clockwise until it is in the "0" position

Raise the safety lever of the regulator to cut off the oil flow.

Turn the power off to the appliance.

Rebuild the appliance refitting the damper and baffle and explain to the customer how it all works.

CONTROLS.

See the specific sheet supplied with the equipment for valve type details.

13. SPECIFICATIONS.

Oil Control Valve

Oil Flow Rate 4cc - 16cc (Vacuum Dependant)

Burner Gross Output 2 - 12 kW (Vacuum Dependant)

Nett Heat output 1.6 - 10 kW (Vacuum Dependant)

Flue Gas Flow .0025 m/s.

15. SERVICING.

NEVER TRY TO RELIGHT A HOT BURNER, WAIT UNTIL IT HAS COOLED DOWN.

Full Servicing should be carried out at six monthly intervals.

The pot should be cleaned out every 8 weeks.

A copy of the servicing schedule is provided as part of the literature kit.

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

16. PACKING LIST MAJOR ASSEMBLIES.

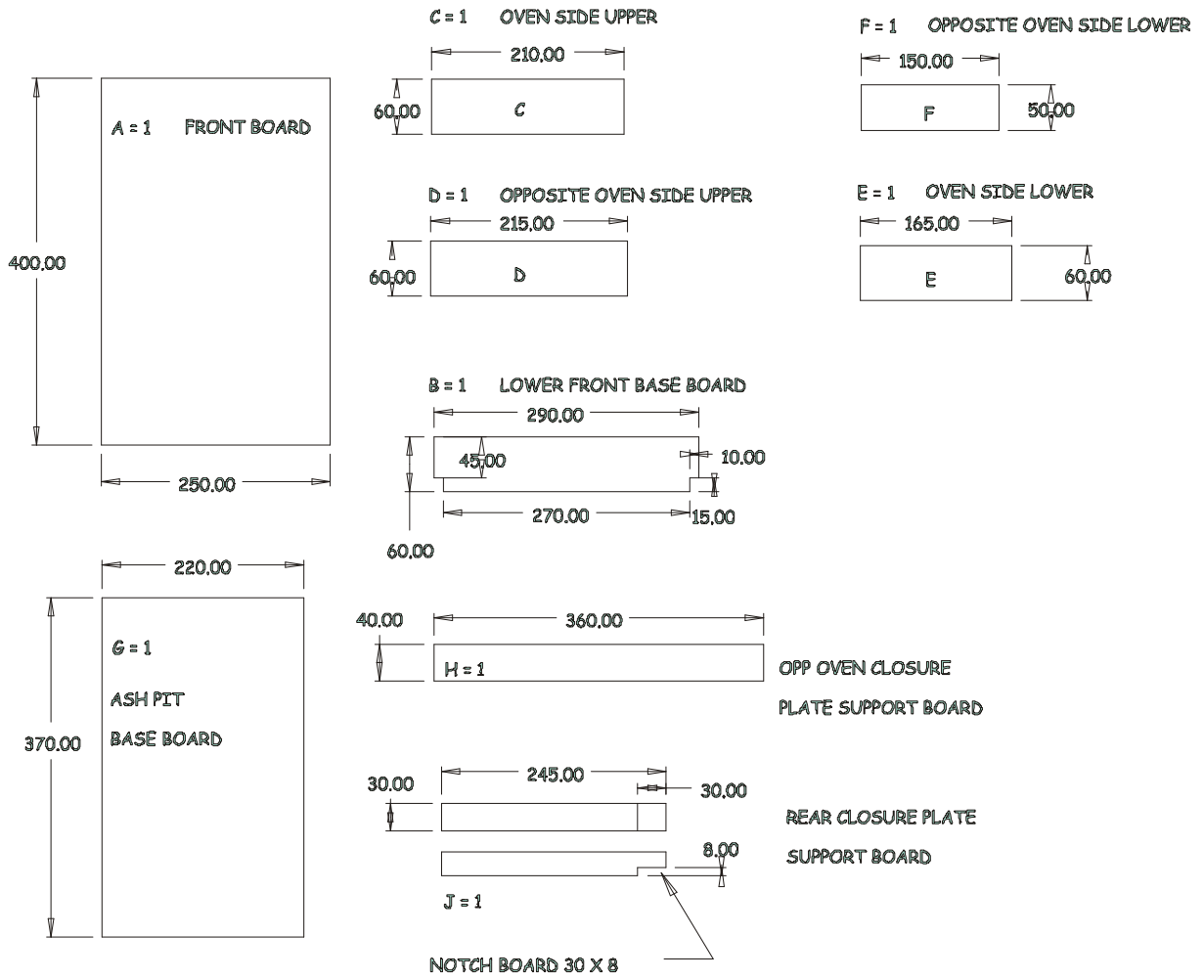
Item No	Description	PART NUMBER	Qty	Check
1	Baffle and Damper Kit		1	
2	Plate Kit		1	
3	Pot Assembly Complete		1	
4	Oil Control Valve Assembly Complete		1	
6	Oven Stat Assembly (Option)			
7	Board Kit Complete		1	
8	Sundries Pack		1	

17. PACKING LIST SUB ASSEMBLIES.

Description	PART NUMBER	Qty	Check
Burner Pot 12 Kw Franco		1	
Upper catalyser		1	
Lower catalyser			
Burner ring		1	
Descalling Attachment	78-01-100	1	
Oil Control Valve		1	
8mm x 8mm straight compression	77-01-717	2	
Self Tapping screws	77-02-151	4	
Oil Control Valve Support Bracket	87-01-501/16	1	
M8 Setscrews	77-02-028	2	
Repair Washer	77-02-111	2	
Closure plate		1	

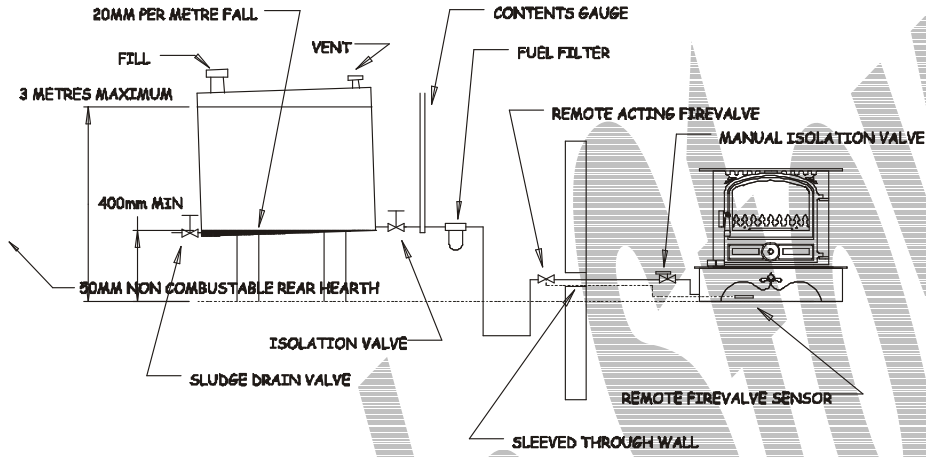
Long closure plate support board	1
Short closure plate support board	1
Short Front base board	1
Upper and lower side boards	4
Front Insulation Board	1
Barometric Damper mounting plate	1
Barometric damper	1
Baffle and handing plate	1
Fire Valve	1
	77-07-004/C
Installer instructions, appliance specific	1
All Vap Service and Fault Finding Inst.	1
All Vap Conversions Statutory Req's Inst.	1

18. BOARD KIT 25MM THICK.



19. ILLUSTRATIONS.

FIG 19 OIL FEED DETAILS.
STOVE POSITIONED LOWER THAN OIL TANK



STOVE POSITIONED HIGHER THAN OIL TANK

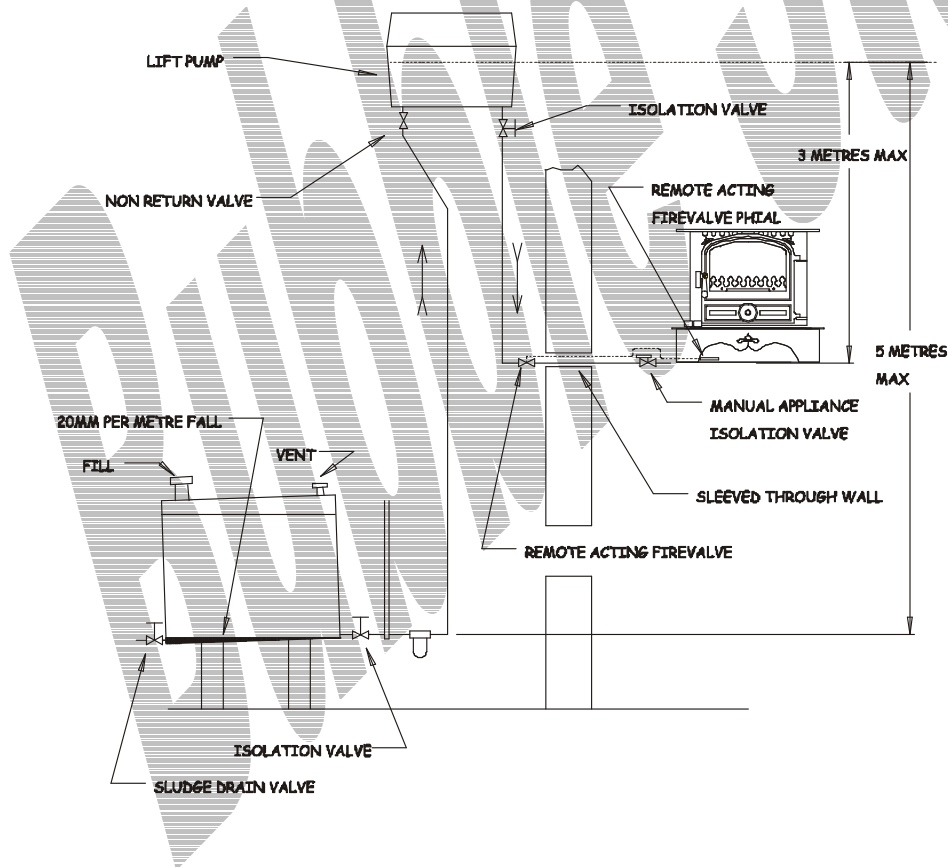
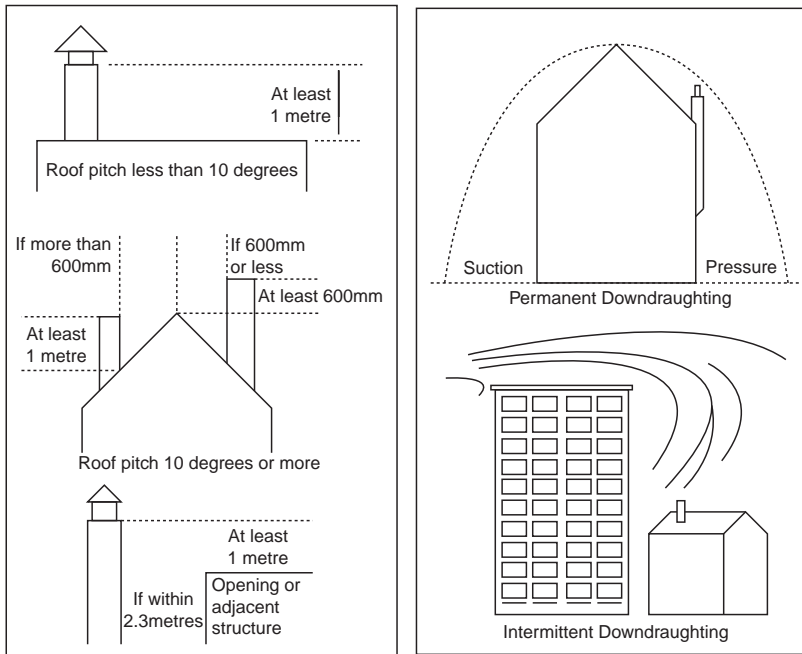


FIG 21 CHIMNEY TERMINAL DETAILS.



19. OPTIONAL EXTRAS.

THE OVEN STAT.

The oven stat is wired in series with the water stat and mounted in a plastic enclosure fitted to the top, opposite oven, side panel.

The installer has to drill a 5mm dia hole in the top front corner of the appropriate panel to allow the phial and capillary to be fed into the oven and fixed to the small stainless steel bracket provided

The oven stat has a sensing bulb and a small diameter capillary tube which should be carefully unwound and neatly fitted, making sure that the capillary tube and bulb cannot be bent, trapped or damaged.

Remember damage to the tube or bulb will prevent the thermostat from functioning.

Obviously the bulb is fitted in a support bracket at the front of the oven as illustrated below.

Note the photo is of a Rayburn Supreme.

Fig 22



The capillary runs across the front of the appliance through a guide tube located across the front of the refuelling door.

Care must be taken when fitting the guide tube which is positioned so as to allow the subsequent, convenient replacement of the stat should it ever fail.

The bundi guide tube is fitted into a trough, which the installer has to cut into the front board above the cut out for the swinging barometric damper.

When the damper and plate are fitted it should cover the bundi conduit tube.

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