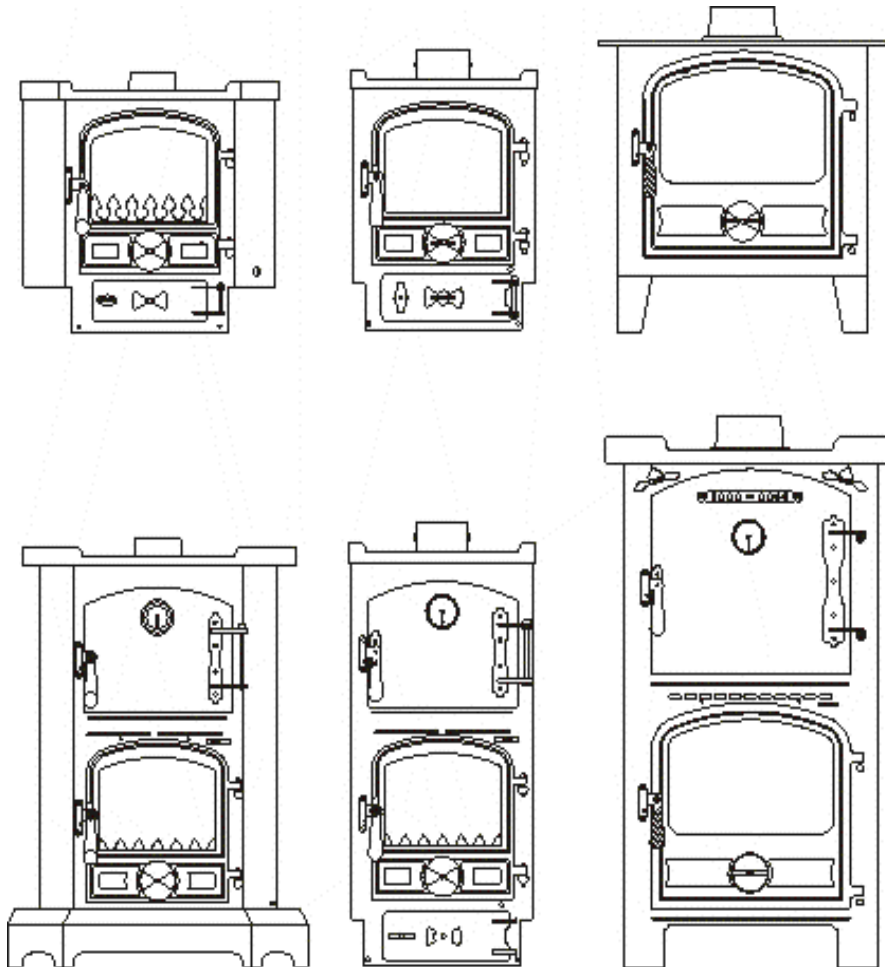




BUBBLE PRODUCTS
WOOD BURNING STOVES AND OVEN STOVES
PRE PURCHASE INFO

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FITTING A WOOD STOVE

In many cases, fitting a wood or multi fuel stove is **not** a simple matter; there are a variety of reasons why a stove can't be fitted.

If you are lucky enough to live in a traditional home with an existing chimney breast and a chimney which runs up through the roof and terminates with a traditional chimney stack and chimney pot or pots then fitting a stove is a relatively straight forward job.

Consideration needs to be given to the following:-

WHERE CAN IT BE FITTED?

DO I HAVE A SUITABLE CHIMNEY?

PROTECTION FROM INJURY (FIREGUARD)

PROVISION OF AIR FOR COMBUSTION (VENTILATION)

The following is a list of scenarios with which an installing engineer will be faced.

Scenario 1

The best case scenario is to locate the stove in an existing chimney breast served by and existing chimney in a two story house. See 4 in fig 1

Scenario 2

The next case is ditto in a bungalow because in general the flue height will be lower than that in a two story house.

Scenario 3

If it is not possible to fit a stove under an existing chimney then there are several chimney construction options each with its own technical requirements:-

- 1. TRADITIONAL BRICK CASE WITH TRADITIONAL LINERS.**
- 2. PRE CAST CHIMNEY BOCKS.**
- 3. TWIN WALL STAINLESS STEEL CHIMNEYS**

STOVES - BASIC KNOWLEDGE

To make fire all you need is AIR - FUEL and HEAT generally in the form of a match. Don't be confused by all the information you may read about stoves, remember, all you are doing is lighting a fire, in a steel or cast iron box.

Once you have ignited the fire in the box, to make it work it needs a hole in the top to let the smoke out, a hole in the bottom to let the air in and a door through which fuel can be loaded.

The hole in the top is connected to a chimney.

Before air can go into the stove it has to first get into your house.

Provision of adequate air for combustion is very important and you may have to provide an additional non hit or miss air vent into the room where the appliance is located.

CHIMNEYS BASICS

An efficient wood burning stove is one of the most effective ways to improve the energy efficiency & reduce the CO₂ emissions produced generated by your house.

To achieve its optimal performance an efficient appliance needs an efficient chimney system and the key to a well performing chimney is consistent insulation along the entire length of the flue without any cold spots.

In general solid fuel appliances need class 1 chimneys which are designed to deal with flue gas temperatures in excess of 260 deg C.

Class 1 chimneys can be of lined, masonry construction or of prefabricated insulated metal construction.

The job of the chimney is two fold:-

1. To safely remove the products of combustion (SMOKE)
2. To generate suck (VACUUM) to provide the fire with an adequate supply of air.

The power, (*suck or vacuum the chimney can develop*) depends upon the following:-

- THE HEIGHT.
- THE POSITION OF THE TERMINAL RELATIVE TO OTHER LOCAL OBJECTS.
- THE DIAMETER.
- THE TEMPERATURE OF THE GASSES IN IT. (lining and insulation may come in to this)
- THE RESISTANCE OF THE INNER SURFACE OF THE CHIMNEY.
- THE AVAILABILITY OF ADEQUATE VENTILATION.
- THE HEIGHT ABOVE SEA LEVEL.
- ATMOSPHERIC CONDITIONS.
- LOCAL TOPOGRAPHY.

Any bend in any part of the chimney or roughness on the internal chimney wall will slow down the velocity of rising gasses and reduce the effectiveness of the chimney.

Any slight reduction in the flue gas temperature will reduce the chimney vacuum or pull, hence when the stove is slowed down for all night burning, as the flue gas cools down the chimney vacuum reduces and as the chimney vacuum drops, the stove may well go out. This problem is highlighted even more during very cold weather when the chimney can cool down even faster.

BEWARE, no one can guarantee that a chimney will work without the occasional downdraft even after relining has been carried out.

Check out your chimney; look around your locality at other chimneys to see if there is a

localised problem of down draughting.

If you have bought a house and have no experience as to the performance of the chimney be very careful, ask the previous owners and try to gather as much information as possible before you commit yourself.

LINING OF EXISTING CHIMNEY'S

Most old, leaking chimneys need lining and insulating with special materials designed to:-

1. Cure Leaks.
2. Reduce the build up of tar and soot on the walls of the flue.
3. Withstand the tremendous heat generated when tar and soot catch fire.
4. Generate a steady and controlled flue vacuum.

Old unlined chimneys are not suitable, if wood burning appliances are used on these chimneys the following may happen:

Tar builds up on the brick faces of the internal chimney walls.

This build up can take from 12 months to 5 years, and as time passes the tar gets thicker and thicker, in really bad cases the tar can work its way through the chimney walls into the plasterwork of adjoining rooms staining the wallpaper or plaster and causing a pungent wood smoke smell which can contaminate the affected rooms.

If a chimney in this state catches fire the results are severe causing bricks and mortar to crumble and drop down the chimney, and tar to ooze through the affected walls.

Often, with a chimney fire of this nature it could well be necessary to remove the complete stack taking out and replacing all the walls affected by the tar impingement.

Severe damage can also occur on some types of twin wall stainless steel chimneys, causing distortion and leaks of flue gases.

CHIMNEY HEIGHTS AND TERMINAL POSITIONS

Fig 1 is a rough guide about chimney heights and terminal positions; it shows how masonry chimneys terminate through the ridge see 4 and also shows how prefabricated stainless steel flues can be fitted.

Chimney heights and locations are graded on a scale of 1 to 4

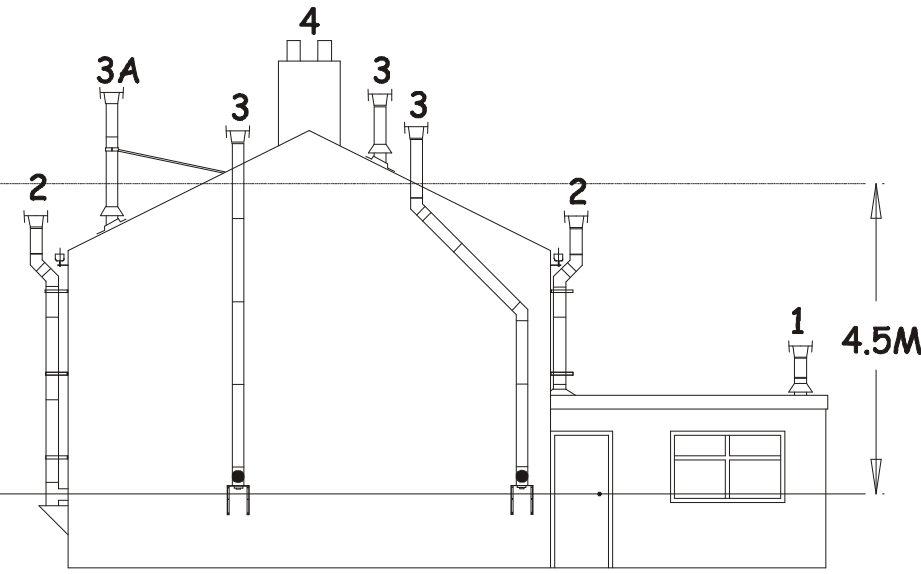
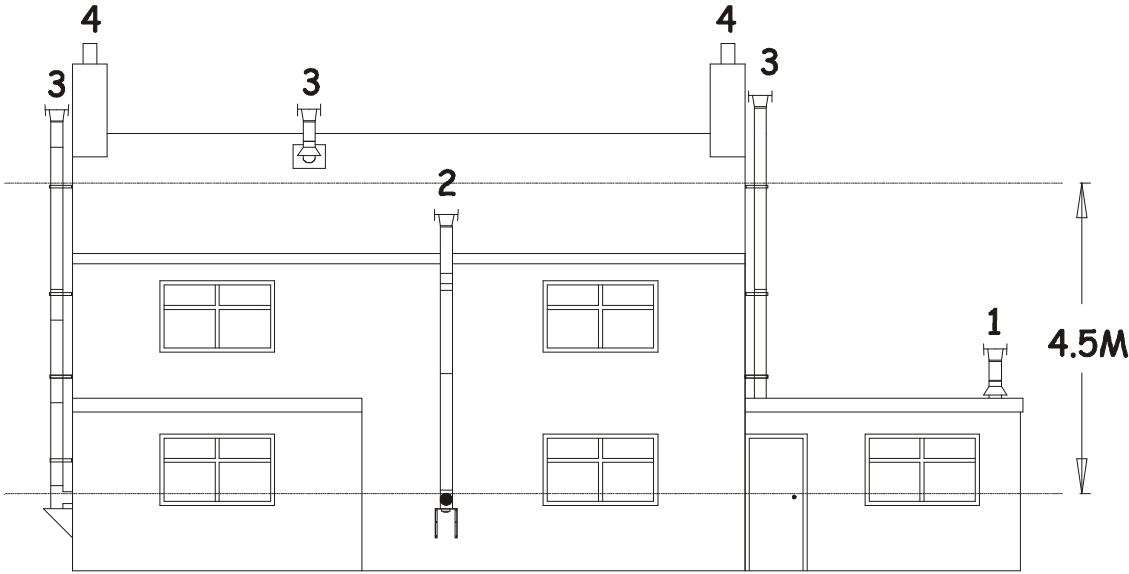
4. The optimum position.
3. The next best.
2. Not very good and likely to cause problems such as downdrafting.
1. Not capable of complying with current legislation because it is less than 4Meters in altitude.

Document J of the building regulations provides details of the required statutory flue heights and terminal positions; the British Standard for chimney height calculations is BS5854:1980. (1996) and before any installation work is carried out, accurate compliance with Doc J of the Building Regs should be ensured.

It would be illegal to install any appliance in a residential dwelling without complying with Document J or the manufacturer's instructions.

Fig 1

TWO STORY INSTALATIONS



PRE FABRICATED CHIMNEYS

FIG 2 SINGLE STORY INSTALATIONS INTERNAL

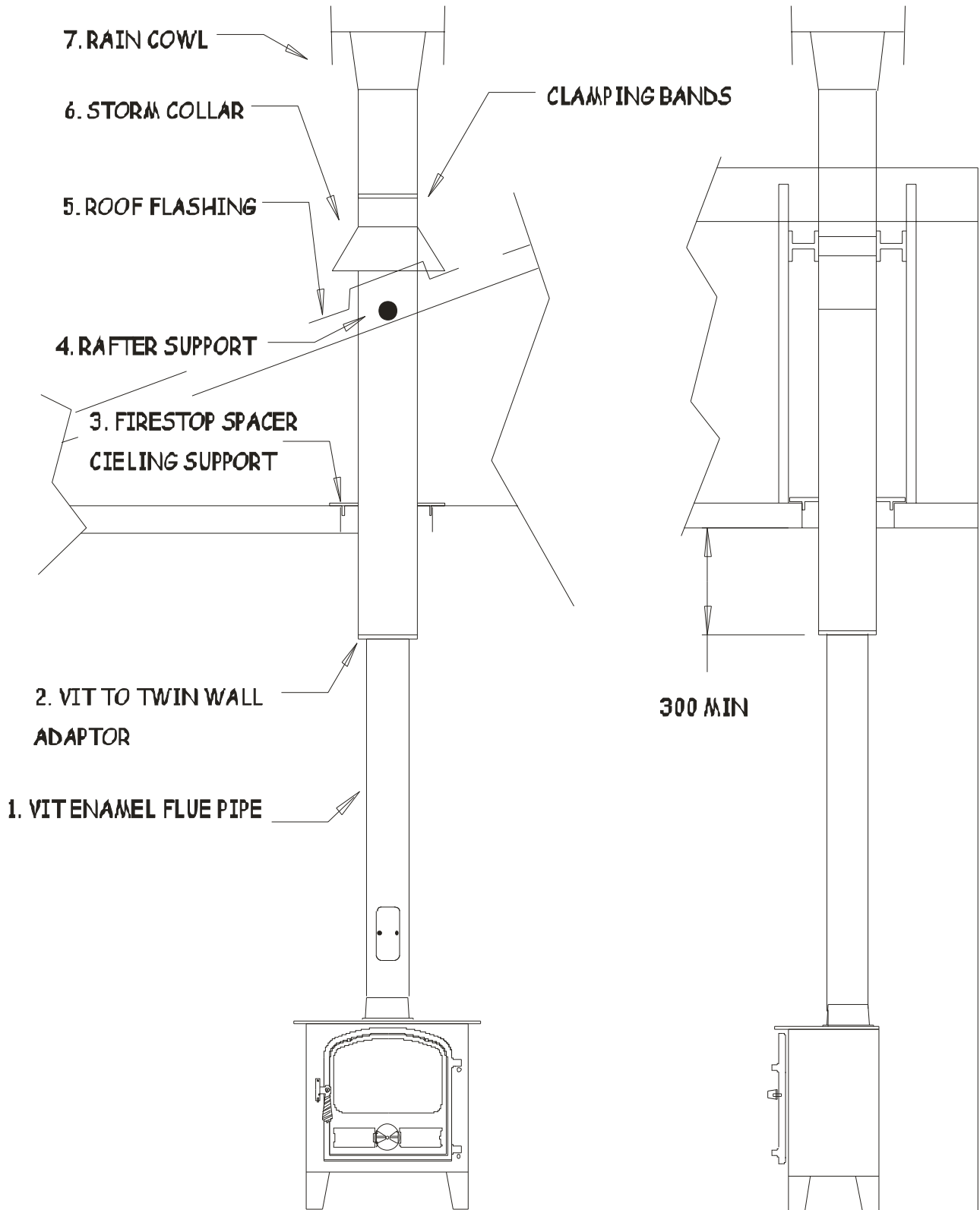
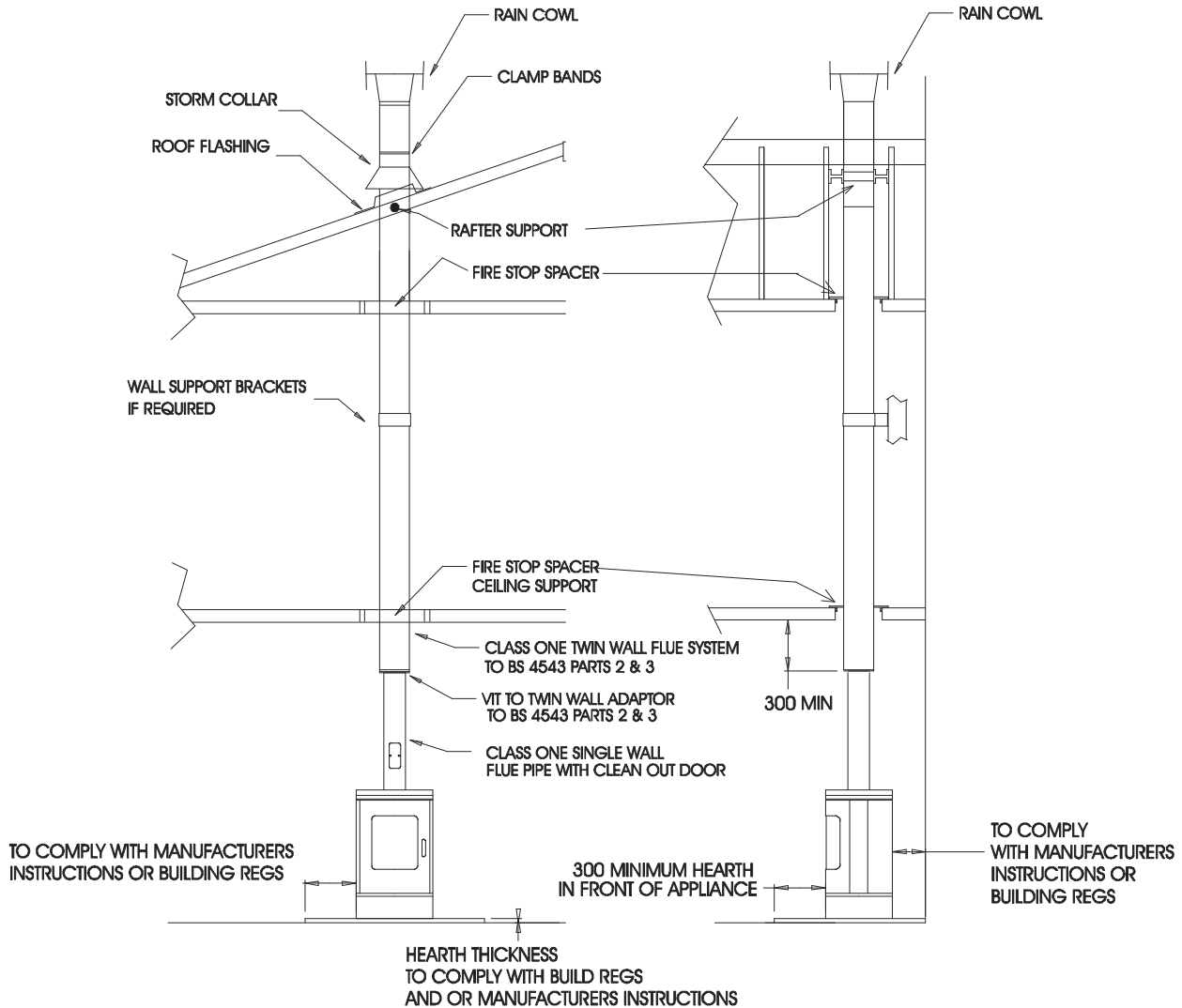


FIG 3 TWO STORY INSTALATIONS INTERNAL



ABOUT THE BURNING OF WOOD

Firstly and most importantly we must say that you cannot burn wood on any appliance in a smoke controlled area unless the appliance is specially designed and approved according to statutory requirements.

Before you attempt a wood burning installation ask yourself the following questions.

- Do I have a chimney suitable for wood burning?
- Do I know how much wood I will need to burn?
- Do I know how much dry storage space for the wood?
- Do I have a reliable and proven supplier of wood and do I know the cost?
- Do I know about drying of wood before burning?

Before installing or using a wood burning appliance, read carefully the installation procedure or if you are in any doubt as to the soundness of your chimney, call us and we will be pleased to advise you. **ALL WORK MUST COMPLY WITH CURRENT BUILDING REGULATIONS.**

HOW BUBBLE STOVES WORK.

If you walk into a dark room at night with a wood stove burning, what do you look at?

Yes, the flames from the fire, not the appliance or fire surround, just the flames.

Open fires provide a totally uninterrupted view of the flames and this is one of the design targets that we, as stove designers, seek to emulate.

Bubble wood stoves are designed to generate and maintain high combustion temperatures. This is achieved by the use of high performance insulation panels which fit on the inside of the firebox designed to allow the combustion chamber to achieve and maintain its high operating temperature as quickly as possible.

All the stoves incorporate an air wash system operated by a simple lever control and a primary air control system operated by a simple rotary valve.

The Multi-Fuel stoves, Corner and 4B have an additional under fire air inlet for burning smokeless fuel.

All the stoves have a beautiful airtight cast iron door with a panoramic glass panel and simple, effective door fastening.

Bubble Stoves are clean and easy to use.

Some stoves are messy and not easy to use, with doors that are difficult to open and close, in some cases ash traps on the inner door castings and comes spilling from the appliance every time the door is opened, these are practical and day-to-day problems, which can become a nuisance when using a wood stove.

Bubble stoves have a special front fender designed to keep ash spillage to a minimum.

Always use an optional temperature gauge to ensure that you are operating your stove at the correct running temperature.

LIGHTING STAGE

The fire is ignited as per the user instructions supplied with the stove and maximum air is admitted via the air control valve and air wash control lever.

As the flames grow and exit the stove the high performance insulating panels rapidly bring the combustion chamber up to its working temperature.

The insulating panels will go sooty during the lighting stage and then become clean and light coloured when the combustion chamber is up to its working temperature.

VAPOURISING STAGE

When the combustion chamber is up to working temperature the magic kicks in, the wood oil starts to vaporise from the wood, and rises into the top of the combustion chamber.

Air is drawn through the air wash system and allowed to mix with the vaporised wood oils and hey presto you have a wonderful gas fire, dancing effortlessly across the top of the panoramic picture window, it's delightful.

LONG BURN STAGE

This is when the long burn kicks in because now the stove is up to temperature and it can be turned down by simply reducing the incoming air and just using the air wash air control.

As the stove is slowed down it then eaks out every last drop of wood oil until the wood is left in its final burn phase, charcoal.

FINAL BURN STAGE

As the stove approaches this stage the wood is now burning as charcoal, the charcoal slowly decomposes as very light grey coloured ash and most of the flames have died down.

By delicate adjustment of the air wash control this decomposition can be made to last for a considerable period of time and because the incoming air is pre heated, the charcoal suffers

no chilling effects from cold incoming air thus keeping the burn in a state of almost suspended animation.

Because of the high combustion chamber temperature, a fresh charge of fuel can be made to toast away in the base of the stove just giving off its volatiles as opposed to bursting into flames and burning at a faster burn rate than required.

Bubble Stoves

Can significantly reduce your running costs.

Produce the most amazing pyrotechnics, which demonstrate technology at work.

For enthusiasts of sustainable living, Bubble Products are a must, the wood stoves will give you warmth, pleasure and many years of trouble free service, the oven stoves will provide even more for the same cost with cooking thrown in for free.

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