

# Instruction Manual

## Hi-Flame R5 and R5-LS Compact

Ecodesign Ready / Defra Smoke Exempted  
Free-standing Wood Burning Stove

# hi-flame

OUTSTANDING WOOD BURNING STOVES

[www.hi-flame.co.uk](http://www.hi-flame.co.uk)

[www.hi-flame.ie](http://www.hi-flame.ie)

Please note that this appliance has been independently CE and DIN+ tested by an EU Notified Laboratory and is approved by Defra as an 'exempted appliance' to allow the burning of wood in designated UK Smoke Control Areas (see page 16). Fully seasoned wood, with less than 20% moisture content, must always be used and the appliance must also be operated at all times in accordance with these instructions to minimise the amount of smoke produced.



**R5**



**R5-LS**



# IMPORTANT: USER WARNING NOTES

**Properly installed, operated and maintained this stove should NOT emit smoke or fumes into the dwelling.**

Occasionally fumes from refuelling may occur. However, persistent smoke or fume emission is potentially dangerous and must not be tolerated. If this persists, then the following immediate action should be taken:

- Quickly open the doors and windows to ventilate the room.
- Make sure that the stove door is closed and that the combustion air control is fully open. It may be that the open door or a fully closed control have contributed to the problem. The above actions should then ensure that any remaining fuel will combust as normal and will not smoulder to create more unwanted smoke or fumes.

However, if smoke and fumes persists then leave the premises and let the fire go out.

- Wait until the room clears and the stove is cold.
- Check for a flueway, connecting flue pipe or chimney blockage and clean out if required.
- Check that the wood logs you have used are fully seasoned with a moisture content of less than 20%. Wet wood will always produce excessive smoke as well as create an acrid smell.
- Do not attempt to relight the fire until the cause of the smoke or fume emission has been identified and corrected. If necessary seek expert advice, preferably from a Hetas installer.

The most common cause of smoke or fume emission is flueway or chimney blockage. For your own safety these should be inspected regularly and must be kept clean at all times. See page 32.

If the CO alarm (which should be fitted at the time of installation) sounds, please follow the advice above.

## **A WORD ABOUT TODAY'S HIGHLY SENSITIVE SMOKE DETECTORS AND CARBON MONOXIDE (CO) ALARMS**

It's good to know that we can all depend upon today's highly efficient smoke alarms and carbon monoxide detectors to ensure our safety. However, it is worth pointing out that when you light your stove for the first five or six times the fumes from the new paintwork, as it cures, may cause the smoke alarm to sound. This can usually be prevented by greatly increasing the ventilation to the room during the paint curing process.

In new build properties smoke alarms and CO detectors are often interlinked and will sound throughout the home when either one of them detects an issue, such as fumes from paintwork curing. Again, when using the stove greatly increase the ventilation in the room to help prevent this.

Should the alarm soundings continue beyond the first five or six firings and / or not respond to increasing the ventilation then, in the first instance, please consult your stove installer or property developer.

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## R5/ R5-LS PRODUCT VERIFICATIONS

These stove models have been tested to **CE EN13240** standards and has passed the latest **EU Ecodesign 2022** emissions and efficiency requirements.

It is officially recognised and listed in the United Kingdom as a clean burning **Defra Smoke Exempted Appliance**. The CO, NOx, PM and OGC emissions, heat output and efficiency data have been independently verified by Hetas for the **SIA (Stove Industry Alliance) Ecodesign Ready** scheme. The heat output and efficiency data have also been verified by the **Sustainable Energy Authority of Ireland (SEAI)** and is officially listed on their **Home-heating Appliance Register of Performance (HARP) Database** which can be accessed for **BER** and **SAP** calculations.



This instruction manual is also used for a number of other free-standing stove models in the Hi-Flame product range and therefore some of the stove photographs, which are used for guidance purposes only, may differ slightly from your new stove. However, the principles illustrated remain the same.

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## **INTRODUCTION**

**Thank-you for purchasing this new Hi-Flame Ecodesign wood burning stove. We are confident that with its state-of-the-art combustion technology and ultra-low emissions it will not only provide you with highly efficient carbon neutral heat but also give you very many years of pleasure at it takes centre stage in your home.**

**However, before you install or operate your new stove please carefully read this booklet which contains important safety advice as well as instructions which will help you make the most of your new stove.**

**All users of this stove should be aware of the contents of this handbook and in particular how to operate the stove efficiently to help minimise smoke and emissions. If other people are going to operate the stove then please keep this booklet handy so that it can always be quickly referred to. Never let anyone use the stove who is unfamiliar with its correct operation.**

## **INSTALLER SAFETY FIRST**

### **BS 8303 Code of Practice**

Please refer to the current issue of British Standard BS8303, Code of Practice for installation of domestic heating appliances burning solid mineral fuel (this has recently been revised). Make reference to Building Regulations, Local Authority byelaws and other specifications / regulations as they affect the installation of this appliance. See page 13.

### **Health and Safety**

During the installation of this stove and any related building works you must comply with any current Health & Safety at Work regulations. When the stove is fired up always

wear protective gloves and use the tool supplied when adjusting the stove's air control.

### **Asbestos**

This stove does not contain Asbestos. However, check that there is no possibility of disturbing any asbestos-based materials during its installation. You may intend removing an older appliance prior to installing your new stove, and you should be aware that the old appliance or installation could incorporate heat protective asbestos sheet. Use appropriate protective equipment and seek specialist guidance at [www.hse.gov.uk/asbestos](http://www.hse.gov.uk/asbestos) – do not underestimate the potential dangers of Asbestos.

### **Fire Cement**

Some types of fire cement are caustic and should not be allowed to come into contact with the skin. Protective gloves and glasses should be worn when applying fire cement. In case of contact wash immediately with plenty of water. Always read and follow the fire cement manufacturer's instructions. Care should also be taken to avoid unnecessary contact between the stove's surfaces and the fire cement as this could damage the paintwork. Any excess fire cement should be quickly removed before it hardens.

### **Handling**

This stove is extremely heavy and therefore adequate facilities must be available for its safe loading, unloading and site handling. This will normally require two people.

### **Metal Parts**

When installing or servicing this stove care should be taken to avoid the possibility of personal injury from the stove's metal parts. Particular care should be taken to avoid sharp edges when handling or attaching the flue liner.

# ECODESIGN REGULATIONS PRODUCT FICHE

EU Commission Delegated Regulation 65 / 2014

# hi-flame

OUTSTANDING WOOD BURNING STOVES

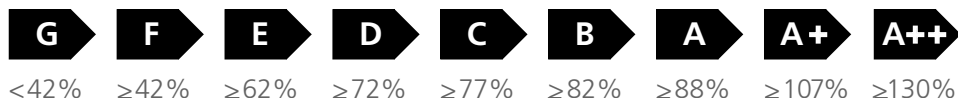
[www.hi-flame.co.uk](http://www.hi-flame.co.uk)

[www.hi-flame.ie](http://www.hi-flame.ie)

<b>Trademark</b>	Hi-Flame
<b>Product Name &amp; Model Number</b>	Hi-Flame R5 / R5-LS
<b>Product Description</b>	Solid Fuel Roomheater (Wood)
<b>CE EN Standard Type Test</b>	EN 13240:2001 + Amd 2:2004
<b>EU Notified Test Body / Number</b>	SGS Nederland BV Notified Body 0608
<b>Nominal Heat Output</b>	5.0kW
<b>Nominal Net Efficiency</b>	82.6%
<b>Nominal Gross Efficiency</b>	75.2%
<b>Seasonal Efficiency / EEI</b> <small>Under average climate</small>	109.8

**Seasonal space heating energy efficiency band**

**A+**



NB See the specific instructions for assembly, safely installing and maintaining this stove.

ERP LABEL

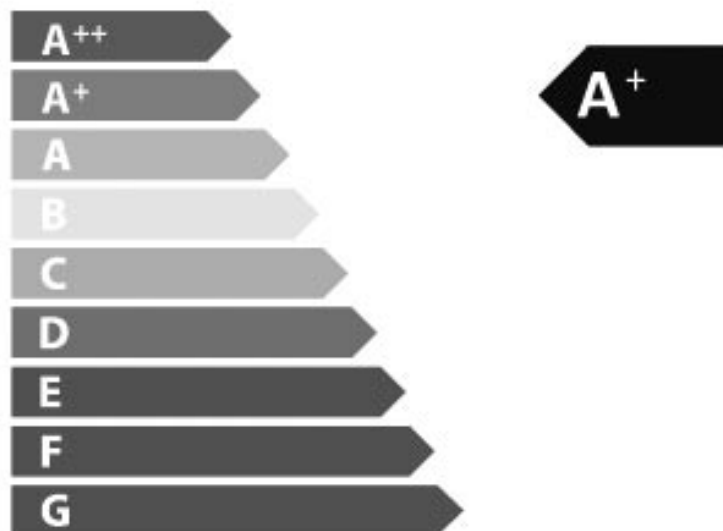


**ENERG**  
енергия · ενεργεια



**hi-flame**  
MULTI FUEL STOVES

Hi-Flame R5 / R5-LS  
Wood Burning Stove



5,0  
kW

ENERGIA · ЕНЕРГИЯ · ΕΝΕΡΓΕΙΑ · ENERGIJA · ENERGY · ENERGIE · ENERGI

2015/1186

## R5 / R5-LS TECHNICAL DATA

Hi-Flame Fireplace (UK) Limited declare that the test stove submitted for type testing of the R5 model represented the full production model specifications in all critical technical parameters needed to fulfil the requirements of the testing standard EN 13240:2001 and EN 13240-A2:2004. No modifications were required to the items tested in order to meet the requirements of the standard. All applicable criteria on the type test have been passed in respect of the materials, design and construction as well as the instructions and marking. Data shown here is derived from SGS Nederland BV (Notified Body) tests during June 2018 (report number EZKA/2018-05/00015-1).

### General Specification

Model Name	Hi-Flame R5
Model Number	R5 / R5-LS (with stand)
Dimensions (mm) R5	H528 W387 D323
Dimensions (mm) R5-LS	H680 W370 D323
Net Weight R5	45.0kg
Net Weight R5-LS	57.4kg

### Data from CE and Ecodesign Tests

Nominal Heat Output	5.0 kW
Efficiency (net)	82.6%
Mean CO Emission (at 13%) Vol%	0.08
NOx (at 13%) mg/m <sup>3</sup>	106
OGC (at 13%) mg/m <sup>3</sup>	28
PM / Dust (at 13%) mg/m <sup>3</sup>	19
Mean Flue Gas Temperature	192°C
Flue Gas Mass Flow	5.0 g/s

### Minimum Distance to Combustibles

Rear	200 mm
Sides	400 mm

### Non-combustible Hearths

When operated in accordance with these instructions at a nominal output of 5.0kW this stove is suitable for use with a 12mm non-combustible decorative hearth – subject to Building Regulations.

Tested hearth temperature on R5 38°C

Hearth temperature R5-LS log store <38°C

### Flue

This stove must not be installed in a shared flue

Flue configuration top or rear

Flue pipe diameter 125 mm

Minimum diameter required for chimney system and connecting flue pipe 125 mm

R5: Height to centre of rear flue outlet 442 mm

R5-LS: Height to centre of rear flue 596 mm

From centre of top flue to back \*150 mm

\*This excludes any gap required between the DEAS inlet and the back wall of the fireplace.

Minimum flue height required from the top of the stove 4500 mm

Minimum flue pressure 12Pa

Recommended flue pressure range 12 – 18Pa

See page 35 regarding the appropriate flue pressure and spillage tests required during commissioning for installations with DEAS.

### Air Supply

In pre-2008 dwellings a dedicated air vent' is not usually required for this stove (subject to Building Regulations). In dwellings built after 2008 then a dedicated air supply is required to ensure the safe operation of the stove. This air can either be supplied via a vent to the room or via a direct external air supply (DEAS) using the stove's air inlet and appropriate non-combustible ducting. See pages 35 – 37.

DEAS inlet external diameter 75 mm

### Fuel

Seasoned wood logs with a moisture content of less than 20%

Recommended maximum log length 250 mm

Recommended fuel load 1.0 kg

For more information about wood burning and buying seasoned wood please visit the Ready to Burn scheme (supported by Defra) [www.readytoburn.org](http://www.readytoburn.org).

### Modifications

This stove must not be modified in any way – modifications could affect its safe performance.

## CRITICAL SAFE DISTANCES

### Fireplace Openings

When this stove is installed within a fireplace opening the appropriate air space must be provided to ensure the free movement of the radiated heat and hot air. If this is restricted it could affect the stove's safe and efficient operation as well as shorten the lifespan of the stove components and, in particular, the vermiculite insulating panels and baffle plate. Reducing these distances could also create 'hot spots' which could potentially damage the fabric of the fireplace or chimney breast.

### Recommended Minimum Air Space inside a Fireplace

<b>A</b> Sides	125 mm (5")
<b>B</b> Rear	75 mm (3")*
<b>C</b> Top	200 mm (8")

\*To ensure the stove's safe operation when not using the direct external air supply (DEAS) you must allow sufficient space for the free movement of air around the rear air inlet at the base of the stove (this supplies all of the combustion air to the stove).

If space is limited between the back of the stove and the rear wall of the fireplace then, if necessary, it is acceptable for the installer to trim the air inlet to provide the required 35mm gap between the inlet and the wall to ensure an ample air supply. Under no circumstances should the air inlet butt up against the fireplace wall. When using DEAS you must allow clearance space for any non-combustible ducting.

### Always Allow Space for Maintenance

You must leave sufficient space around the stove to allow easy access for regular maintenance.



See Hearth Requirements below

This is particularly important if you intend to use the rear fitting flue option with a T-piece flue pipe as you will need to be able to access the T-piece trap and be able to easily and securely refit the cap after cleaning.

### Min' Distances to Combustible Materials

Rear	200 mm (8")
Sides	400 mm (16")

### Hearth requirements

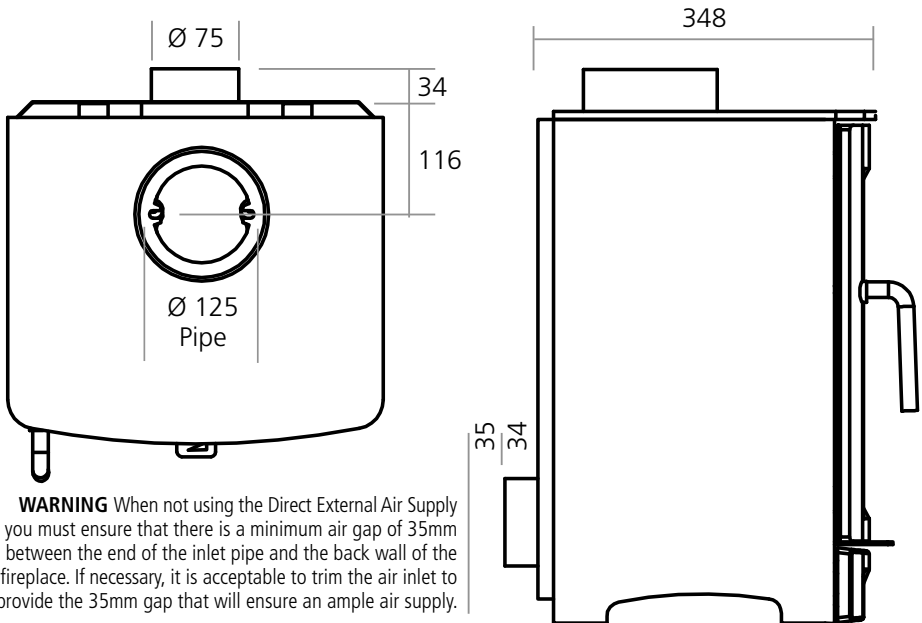
CE tested maximum surface temperatures:	
Floor below the stove	38°C
Floor 500mm in front of the stove	46°C
Floor 1,000mm in front of the stove	49°C

**NB** Temperatures above are from the R5 model tests. Temperatures for the R5-LS, with its firechamber placed much further away from the floor surface, will be less. Both the R5 and R5-LS stoves are therefore suitable to be placed on a 12mm non-combustible decorative hearth subject to Building Regulations. Please refer to current Building Regulations for all specific fireplace and hearth safety requirements.

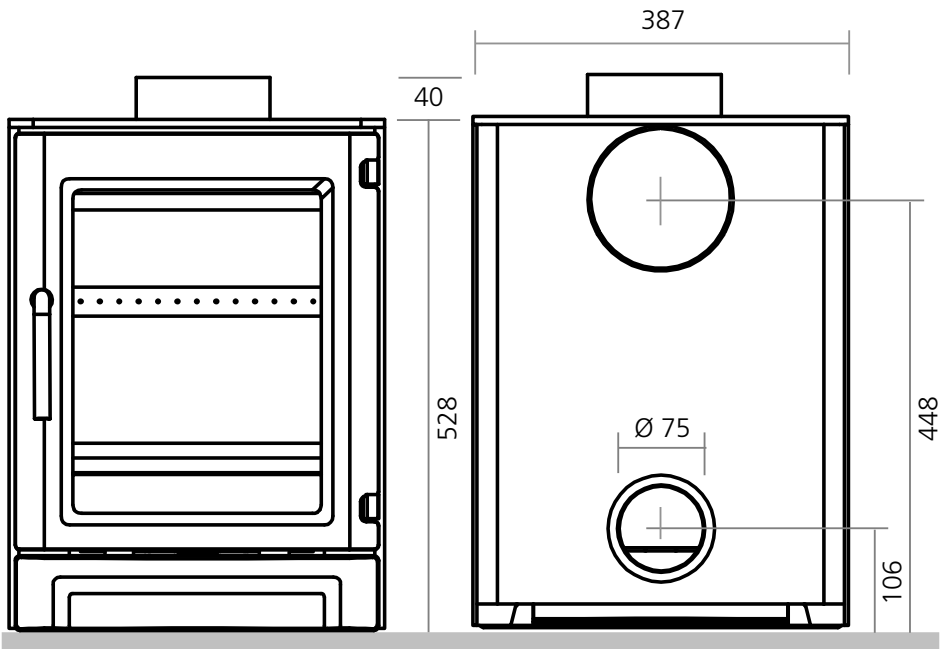


## R5 MODEL GENERAL DIMENSIONS

All dimensions in mm. Check critical dimensions on site.

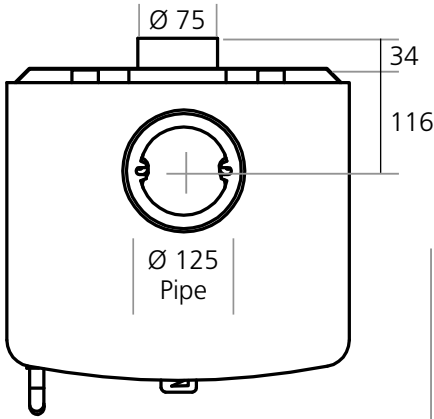


**WARNING** When not using the Direct External Air Supply you must ensure that there is a minimum air gap of 35mm between the end of the inlet pipe and the back wall of the fireplace. If necessary, it is acceptable to trim the air inlet to provide the 35mm gap that will ensure an ample air supply.

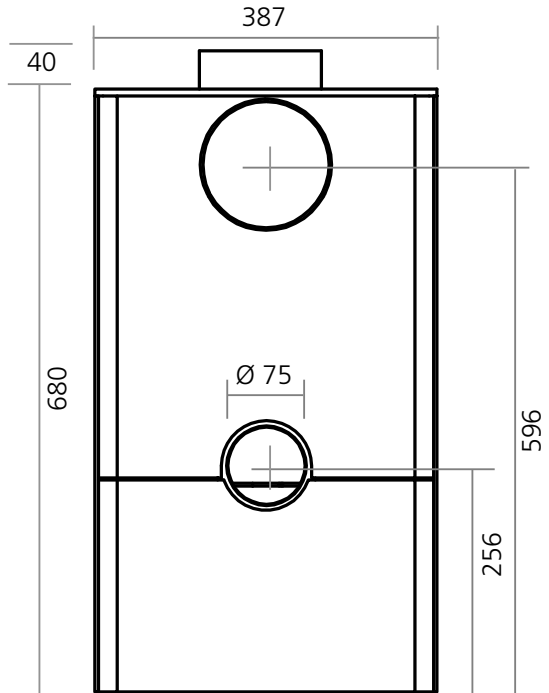
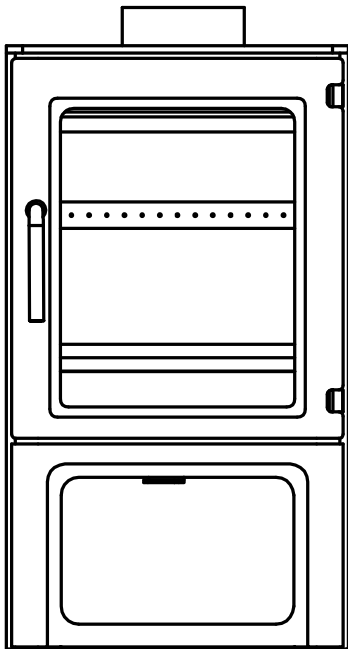
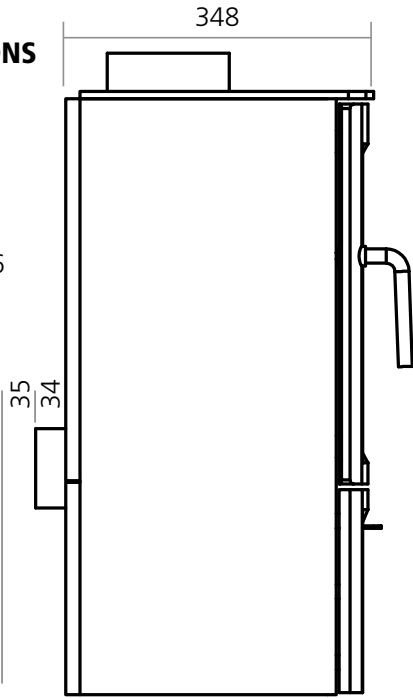


## R5-LS MODEL GENERAL DIMENSIONS

All dimensions in mm. Not to scale.



**WARNING** When not using the Direct External Air Supply you must ensure that there is a minimum air gap of 35mm between the end of the inlet pipe and the back wall of the fireplace. If necessary, it is acceptable to trim the air inlet to provide the 35mm gap that will ensure an ample air supply.



## R5 STANDARD FEATURES

### 1 Combustion Air Control

For ease of use, there is only one combustion air control on the R5 and R5-LS. This will deliver both the correct mix of primary air (required at the ignition stage) as well as the pre-heated secondary air supply which controls the airwash system and the flame pattern when the logs are fully alight. Pre-heated secondary air ensures that there is no incoming cold air to cool the firechamber and reduce the stove's efficiency.

### 2 Pre-heated Tertiary Air System

Pre-heated air enters the stove through jets in the tertiary air bar at the rear of the firechamber. By introducing a new supply of warm combustion air just as the flue gas is about to

leave through the flueway this ensures even more unwanted particulates are burned off helping to keep emissions to a minimum.

### 3 Airwash System

Part of the secondary air control system which diverts pre-heated air down along the front of the glass to burn off unwanted dry sooty particulates and help to keep it clean. Burning wet or unseasoned wood will reduce the fire-chamber temperature and cause the airwash system to fail leaving tarry condensates on the glass which will be difficult to remove if left.

### 4 Top or Rear Flue Options

Factory set for the preferred top flue outlet. However it is very simple to switch over depending on your type of installation.



## PACKING LIST

Check that you have a full set of components shown in the list below. Some components may be contained inside the firechamber. In the unlikely event of a shortage, please report this immediately to your stove dealer. Never attempt to operate the stove with missing or damaged components.

- 1 This instruction Booklet
- 1 Stove with Flue Collar
- 1 Log Retaining Bar(s)
- 1 Air Control Operating Tool

## ASSEMBLING THE STOVE

Your new Hi-Flame stove is extremely heavy. Always handle it with care and make sure that you have additional strong help when you move it. The door and door handle, should not be used to grip the stove as they could be damaged from supporting the stove's weight. If necessary, the fuel retaining bar can be removed to help reduce the weight. Under no circumstances should the door be removed as this will invalidate your Hi-Flame Warranty.

- **Unpack** Remove your new stove from its recyclable packaging. Retain this until the stove is installed and is fully operational. Unfasten retaining wires and remove any components from inside the stove.
- **Inspect** Please inspect the stove to check that it has not been damaged in transit – never attempt to install a stove which has been damaged. If damage is suspected then report this immediately to your stove dealer.
- **Baffle Plates** There are two baffle plates. The lower baffle plate is made of vermiculite and the upper baffle plate is made from plate steel. Check the position of both baffle plates to ensure that they have not moved when the stove was transported. Essentially they should be securely positioned parallel to each other. For more detailed information about fitting and removing the baffle plates see page 32.



Fully familiarise yourself with the correct location of the baffles by practising removing and re-fitting them prior to the stove's installation as you will need to regularly check this area to avoid potential soot build up and blockages.

- **Flue Outlet Options** This stove is already configured for the preferred top flue outlet, however it can easily be switched to the rear fitting flue option. To do this, firstly remove the rear heat shield using the correct sized allen key. The heat shield has a pre-cut flue outlet aperture which can be removed by using a junior hacksaw blade to carefully cut through the small retaining links. Next remove the rear flue outlet closure plate at the back of the firechamber, being careful not to damage the gasket seal or the bolts. Remove the top flue collar, again being careful not to damage the gasket seal or bolts. Swop over the flue collar and closure plate ensuring that both make a perfect all-round seal with the stove body. Lightly lubricate all bolts with machine oil to avoid damaging the screw threads. Finally, re-attach the rear heat shield. Your stove is now ready for installation.
- **Moving** Do not drag the stove. Always lift it to finally position it and use strong help. Alternatively it may be possible to place the stove on heavy-duty plastic sheeting or thick floor covering to slide the stove into position, being careful not to damage any finished hearth or floor surfaces with trapped grit or debris.

## INSTALLATION REGULATIONS

This stove must be installed by a recognised competent person who is appropriately qualified to ensure that the installation complies with all local, national and European Building Regulations. Failure to comply with this may invalidate the Hi-Flame Warranty. We therefore strongly recommend using a Hetas Registered Installer ([www.hetas.co.uk](http://www.hetas.co.uk)). Your authorised Hi-Flame dealer will also be able to help and advise you.

### Current Building Regulations

#### England & Wales

Building Regulations Document J (revised October 2010) – Combustion Appliances and Fuel Storage Systems. Download this at [www.planningportal.gov.uk](http://www.planningportal.gov.uk)

#### Scotland

Building Standards (2001) Domestic  
Download this at [www.sbsa.gov.uk](http://www.sbsa.gov.uk)

#### Northern Ireland

The Building Regulations (Northern Ireland) 2000 / Amendment No 2 2006. Download this at [www.buildingcontrol-ni.com](http://www.buildingcontrol-ni.com)

#### Isle of Man

Building Regulations (2007) – Isle of Man  
Download this at [www.gov.im](http://www.gov.im)

#### Republic of Ireland

Approved Document J – Heat Producing Appliances (Revised September 2014)  
Download this at [www.environ.ie](http://www.environ.ie)

## FURTHER INFORMATION POINTS

### The Stove Industry Alliance (SIA)

The SIA promotes and explains the benefits and environmental advantages of stoves and is a great source of well-researched information. [www.the-stove-industry-alliance.co.uk](http://www.the-stove-industry-alliance.co.uk)

### Hetas

Hetas manage the competent persons scheme for stove installations and also promote and

monitor continuous improvement in the safe installation and use of stoves. [www.hetas.co.uk](http://www.hetas.co.uk)

### The Solid Fuel Technology Institute

For additional useful information visit the SOLIFTEC website [www.soliftec.com](http://www.soliftec.com)

### Solid Fuel Association (SFA)

The SFA website is also a very good source of practical information [www.solidfuel.co.uk](http://www.solidfuel.co.uk)

### BFCMA

The British Flue and Chimney Manufacturers Association (BFCMA) website, [www.bfcma.co.uk](http://www.bfcma.co.uk) produces an authoritative and informative download guide to solid fuel flues and chimneys.

### Health & Safety at Work Act

During the installation of this stove and any related building works in your property you have certain responsibilities and must comply with all current Health & Safety at Work regulations.

### Approved Chimney Sweeps

There are number of approved chimney sweep organisations in the UK and Ireland, for example:

Hetas: [www.hetas.co.uk](http://www.hetas.co.uk)

National Association of Chimney Sweeps:  
[www.nacs.org](http://www.nacs.org)

Guild of Master Chimney Sweeps:  
[www.guildofmasterchimneysweeps.co.uk](http://www.guildofmasterchimneysweeps.co.uk)

## BUILDINGS INSURANCE

Some building insurance companies require you to inform them of the installation of any new fixed heating appliance and to produce a certificate of compliance.

## SELLING YOUR HOME

It is now common practice for purchasers' solicitors to request evidence of compliance (either Hetas or Building Control) for stove installations. **Please note** compliance will not usually be provided retrospectively by Hetas Registered Installers.

## BASIC INSTALLATION CHECK-LIST

This information is intended to outline the general principles of installing your stove. However, as each installation will vary it is unfortunately not possible for these guidelines to be comprehensive.

- Not only is it a legal requirement to ensure that your stove installation complies with all applicable Building Regulations, it is also a requirement of your Hi-Flame Warranty that the stove is installed by a competent person such as a Hetas registered installer. They will be fully aware of any building and safety regulations which apply to stove installations in your location.
  - The existing constructional hearth and back hearth upon which the stove will sit is suitably constructed and is made from a non-combustible material of the correct thickness so that it conforms to all applicable Building Regulations. The superimposed hearth (the thinner, usually decorative surface, which sits on the constructional part of the hearth) is suitably constructed and conforms to all applicable Building Regulations.
  - The fireplace recess or opening is suitably constructed and any new lintel conforms to all applicable Building Regulations. The recess should be able to accommodate the stove along with the safe minimum operating distances required (see page 8). Any fireplace lining should have the appropriate fire rating.
- NB** Plasterboard is not a suitable lining.
- Any adjacent walls, next to which a free-standing stove is installed, should be of a suitable thickness, made of an appropriate non-combustible material and conform to all applicable Building Regulations.
  - The chimney is of sufficient height and is in good condition and conforms to all applicable Building Regulations for stove installation. Please refer to the to current issues of

BS EN 15287-1:2007 Design, installation and commissioning of chimneys.

**NB** The minimum flue height required for this stove is 4.5 metres (15'). For shorter flues, the calculation procedure outlined within BS EN13384:1 may be used to determine whether a proposed flue design and height is capable of providing sufficient flue draught.

- Sweep and test the chimney prior to installation.
- The proximity of all combustible materials to the intended stove installation must conform to the minimum requirements outlined within this handbook (see page 8) as well as local, national and European Building Regulations, whichever is the greater. A combustible material is anything which can burn once it gets hot enough and includes plasterboard, skirting boards, wooden fire surrounds, wooden mantles, wallpaper, fabrics and floor coverings. Remember these materials could be concealed behind other materials which on the surface may appear to be non-combustible, for example, plasterboard and stud partitioned walls.
- You must ensure that this stove receives an adequate air supply for its safe performance. In a post-2008 home this must be from either a permanently open air vent or via the stove's direct external air supply. See panel overleaf for houses with MVHR systems. Additional information on air supply requirements is also available on page 34.

### ENSURING A SAFE AIR SUPPLY WHEN MECHANICAL EXTRACTION IS PRESENT

Potential depressurisation caused by extractor fans etc must be assessed for any risks and the appropriate 'worst case scenario' spillage tests and flue draught measurements must be undertaken by an appropriately qualified installer during the commissioning process. See the section on Commissioning on page 37.

## GENERAL INSTALLATION GUIDELINES

Due to the wide variety of installation locations and types this information should only be considered as general guidance – you must always refer specifically to current Building Regulations which apply to your country or region. For a list of these see page 13.

### The Hearth

This stove can be installed on a 12mm thick non-combustible decorative hearth subject to Building Regulations. The hearth must be capable of supporting the weight of the stove (when loaded) along with any flue components which may bear down on the stove.

In England and Wales when this stove is used in a fireplace there is a requirement for the hearth to project a minimum of 225mm (9") in front of the opening or jam and not less than 150mm (6") at each side of the recess.

When using as a free-standing stove please refer to current Building Regulations for hearth dimensions. In addition any hearth must provide protective coverage for the minimum clearance distances for this stove outlined on pages 7 and 8 and should also extend by a minimum distance of 225mm (9") from the front edge of the stove. The wall behind the stove should be non-combustible or alternatively be adequately protected from heat from both the stove and flue pipe.

### The 'Fireplace'

The stove can be sited within a brick or stone fireplace recess or used free-standing. The fireplace side and rear walls should be at least 75mm thick and made of non-combustible brick or stone. Adequate air space around the stove will allow the stove to radiate heat and circulate warm air around the room must be provided. This will also prevent any structural damage to the fireplace walls as well as help avoid potentially over-heating the stove and damaging components. For recommended safe

distances when this stove is located inside a fireplace – see pages 7 and 8. **Please note** if the fireplace interior needs to be lined you must not use standard plasterboard as this is combustible. Any sheet materials, the supports used behind it and fitting components should have the maximum possible fire rating.

### Installing inside a Mock Chimney Breast

if you propose to install this stove within a mock chimney breast and fireplace then extreme care must be taken in all instances to provide the safe minimum distances. Particular attention should be paid to ventilating the structure in order to prevent any potentially dangerous build up of heat inside the structure or to any of its metal fixings. Ideally, the use of combustible materials should be avoided and any sheet materials used should have the maximum possible fire rating. **Please note** standard plasterboard is a combustible material and should never be used.

### The Chimney, Flue and Flexible Liners

Other appliances should not share or be connected to the same flue system or chimney.

If you are using an existing chimney check its condition and suitability (see below) and, in the interests of safety, ensure that it is swept, even if the chimney has never been used before or you intend to use a flexible liner.

The minimum flue draught requirement for this stove is 12Pa and the minimum flue height required for this stove is 4.5 metres (15') from the top of the stove to the top of chimney terminal.

Alternatively, the calculation procedure outlined within BS EN13384:1 may be used to determine whether any proposed flue design and height is capable of delivering the minimum 12Pa updraught required for the safe performance of this stove. A copy of the installer's flue calculation will be needed as part of the Hi-Flame warranty registration for

an installation where the finished flue height would be less than 4.5 metres. Failure to satisfy this requirement could result in the installation failing the commissioning and spillage tests outlined elsewhere in this handbook (see pages 35 to 38) as well as invalidate your extended Hi-Flame Warranty.

This stove features optional top or rear 125mm (5") diameter flue outlets and as a Defra Approved Smoke Exempted Appliance the connecting flue pipe and stainless steel flue liner can also be of 125mm diameter (subject to Building Regulations)

Under no circumstances should the stove's 125mm diameter flue be reduced in any part of the flue system as this could cause a build up of dangerous carbon monoxide (CO) gas.

Although it is possible to sweep the flue system through this stove once the baffle plates have been removed (see page 32) it is recommended that there should be at least one additional cleaning access point within either the connecting flue pipe, twin wall chimney system or where there are bends.

### **Flexible Flue Liner**

Hi-Flame strongly recommend fitting a flue liner when installing this stove within an existing chimney for the following reasons:

- A flue liner is a major 'quantifiable' component which provides a consistent flue diameter and regular inner surface and as such will minimise interference to the updraught and help improve it. When back-filled with vermiculite insulation a liner will keep flue gases as hot as possible which will help improve the stove's operation and minimise the amount of smoke produced.
- An existing chimney could leak smoke, fumes and potentially dangerous 'invisible' carbon monoxide (CO) into other parts of the building. Condensation or creosote tar, associated with burning wood, could eventually seep through the chimney walls,

particularly if they are made of old or porous brick and / or are jointed with lime mortar, eventually causing unsightly stains on decorative coverings.

- Stoves work best with the correct draught. Pre-1965 chimneys which have been built for open fires have larger (and often irregular shaped) voids than those best suited for a modern stove and this could reduce the effectiveness of the flue draught by making the flue too cold and difficult to warm. This is a particular problem if the chimney breast is on an outside wall and / or is subject to a strong prevailing wind.
- Many houses built since 1965 with clay or concrete chimney liners suffer from these being poorly installed, either through being fitted the wrong way up or not receiving an appropriate application of mortar to make a complete seal on each of the many joints. Even though the chimney may not be particularly old, this could still potentially allow smoke and fumes or unsightly condensation stains to leak through.

### **Chimney Terminal**

The existing chimney pot or terminal must be suitable for stove installation and should not restrict the smoke and fumes from the stove. It must provide at least the same outlet area as the flue pipe. It may be that your existing chimney terminal has been replaced with a ventilating terminal if the fireplace has been closed off at some point. Your installer will be able to advise you about the appropriate specification of any new cowl or terminal. A cowl has the additional advantage of limiting rain entering the flue system which could cause the inside of the stove to rust when it is not being used, particularly during the long periods outside the heating season. It will also help to reduce odours from moisture build-up in the chimney system, through infrequent burning, as this dries out.



## **THE CLEAN AIR ACT 1993 AND SMOKE CONTROL AREAS**

Under the Clean Air Act local authorities may declare the whole or part of the district of the authority to be a Smoke Control Area.

It is an offence to emit smoke from a chimney of a building, from a furnace or from any fixed boiler if located in a designated Smoke Control Area. It is also an offence to acquire an 'unauthorised fuel' for use within a Smoke Control Area unless it is used in an 'exempt' appliance ('exempted' from the controls which generally apply in the Smoke Control Area).

The Secretary of State for Environment, Food and Rural Affairs (DEFRA) has powers under the Act to authorise smokeless fuels or exempt appliances for use in Smoke Control Areas in England. In Scotland and Wales this power rests with Ministers in the devolved administrations for those countries. Separate legislation, the Clean Air (Northern Ireland) Order 1981, applies in Northern Ireland. Therefore it is a requirement that fuels burnt or obtained for use in smoke control areas have been 'authorised' in Regulations and that appliances used to burn solid fuel in those areas (other than 'authorised' fuels) have been exempted by an Order made and signed by the Secretary of State or Minister in the devolved administrations.

Further information on the requirements of the Clean Air Act can be found at the following website:  
[www.smokecontrol.defra.gov.uk](http://www.smokecontrol.defra.gov.uk).

Your local authority is responsible for implementing the Clean Air Act 1993 including designation and supervision of Smoke Control Areas and you can contact them for details of Clean Air Act requirements.

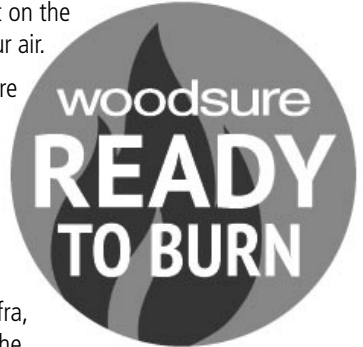
The R5 and R5-LS stove has a factory-fitted combustion air control damper designed to

ensure the correct quantity of combustion air is always delivered to keep smoke to a minimum and therefore both models have been recommended by Defra as suitable for use in Smoke Control Areas when burning wood logs.

### **Never Burn Wet Wood**

The recent media coverage of air quality has increased awareness of this important issue. Wood fuel marked with the 'Ready to Burn' label shows consumers that logs are dry and ready for use as wood fuel, and will burn more efficiently than unseasoned, green wood and will consequently reduce their impact on the quality of our air.

The Woodsure 'Ready to Burn' scheme is supported by The Mayor of London, Defra, Hetas and the Stove Industry Alliance, as well as Hi-Flame.



To find out more about the Ready to Burn scheme and the environmental benefits and potential cost savings of burning fully seasoned wood please go to:  
[www.woodsurre.co.uk/firewood-ready-to-burn/](http://www.woodsurre.co.uk/firewood-ready-to-burn/)

## RECOMMENDED FUEL

**Wood logs with a moisture content of less than 20% is the only fuel that Hi-Flame recommend for burning in this stove.**

### CE Standard and other Approvals

Please note that this appliance has been CE and Ecodesign tested for wood only and the heat output, emissions and efficiency data, as well these operating instructions and the Hi-Flame Warranty only covers the use of wood in this appliance. They do not cover the use of other fuels, either alone or mixed with wood

### Defra Smoke Exemption

This stove is officially approved by Defra as an 'exempted appliance' to allow the burning of wood in designated UK Smoke Control Areas. It must, at all times, be operated strictly in accordance with the instructions to minimise the amount of smoke produced.

### General Guidelines

Only ever use dried, fully seasoned chopped hardwood logs with a moisture content of less than 20%. Wood which is well seasoned makes a distinctive 'clack' rather than a dull 'thud' when knocked together. It will also feel much lighter than an unseasoned log. Other indicators include bark peeling away and cracking and the log splitting around the outside edge.

Ideally wood should be seasoned outdoors for between 18 to 24 months – the harder the wood then the longer the seasoning. It should be stacked off the ground with plenty of space between the logs to allow air movement and with the top covered to keep rain and snow out. Fully seasoned wood will give you approximately 50% more heat output than the equivalent unseasoned log.

Most types of hardwood, for instance Ash (generally regarded as the best), Birch, Beech,

Oak and Elm can be used. However, avoid woods with a high resin content. As a rule of thumb, the heavier the wood, then the greater the heat output and the longer burn time – the time between refills. All of this is providing it is fully seasoned wood.

Never use wet or unseasoned (green) wood as this will cause nuisance smoke and a very disappointing fire. Most importantly, it could quickly result in the build up of soot and creosote which the high temperatures of the stove flue gases could easily ignite and cause a flue or chimney fire. In addition, burning wet wood damages local air quality, produces a less efficient fuel economy and can eventually clog your flue system and cowl. It will also reduce the effectiveness of the stove's Airwash system thus causing staining and blackening of the glass.

### Wet or unseasoned wood produces the following poor performance

- Hard to light fires and fires that are also very difficult to keep burning
- Smoky fires with fewer flames which are also of a dull or dirty orange colour
- Increased dense grey or blue smoke from the chimney
- Much shorter burn times with some wood left unburned at the end
- Low heat output despite the poor flames
- Dirty brown glass and black firebricks
- Excessive and rapid creosote build-up inside the flue system and chimney
- Unpleasant acrid smoky smells inside and sometimes outside the house

Manufactured or finished wood products, such as plywood and chipboard, must also be strictly avoided because of the high chemical adhesive content used in their production which could also leave harmful residue inside the stove and flue system.

## FUELS YOU MUST ALWAYS AVOID

This wood burning stove has been emissions tested so that when correctly operated it will have a minimum impact on local air quality when only burning wood logs with a moisture content of less than 20%. It has not been tested for burning mineral fuels including smokeless coal. Burning other fuels, apart from logs, is an offence in a Smoke Control Area.

Burning the following materials could also damage your stove and flue system, and will render your Hi-Flame Warranty void.

- **Never use your stove as an incinerator**

Do not burn any household waste such as magazines, newspapers, cardboard, milk cartons, vegetable peelings, plastic and rubber etc.

- **Never burn other types of wood**

During combustion lacquered, painted or tanalised wood, MDF, plywood, chipboard and other manufactured wood could develop substances which may be hazardous to your health and also damage your stove and flue.

- **Never burn petroleum coke**

Never burn petroleum coke (aka pet coke) as this burns at a very high temperature and its continued use will almost certainly cause irreparable damage to the stove components such as the baffle plate and fire fence.

- **Never burn bituminous house coal**

This has a harmful effect on local air quality. When burned it produces excessive smoke and soot with the soot quickly building up inside the stove's flueway and flue which increases the risk of dangerous blockages and chimney fires. Smoky coal has now been banned altogether in the Republic of Ireland.

- **Never burn flammable liquids**

Methylated spirits, petrol or other flammable liquids should not be used to light the stove as these could cause an explosion in the confined spaces of the firechamber.

## WHEN YOU FIRST LIGHT YOUR STOVE

Use smaller and shorter 'gentle' fires the first five or six times, making these progressively larger. This will help temper the steel and cast iron components and avoid any potential thermal shock which could damage them.

This process will also allow the paintwork to cure. In fact, you may notice some wisps of smoke or smell a hint of paint fumes coming from the stove's painted surfaces during these early fires, however this is perfectly normal. Your smoke alarm or CO detector may also react to these. Simply ensure that the room is well ventilated until this settles down. See page 2 regarding this potential issue.

The hotter you burn the stove the more intense these fumes will be, which is one of the reasons that we advise that you use smaller fires to start with. Every time the stove reaches a new higher temperature it may still be possible to detect fumes or smoke until the paintwork is fully cured. If this persists or gets any worse beyond the first few fires then do not use the stove and immediately consult your stove installer or stove dealer as this may indicate a potential problem with the installation. Again, see page 2.

Always allow the stove to fully cool down between these first fires.

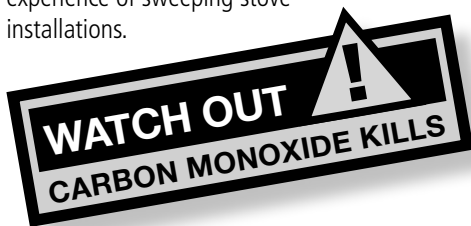
## WHEN YOU LIGHT YOUR STOVE AFTER STANDING IT DOWN

If the stove was correctly prepared for standing down (see page 39) then simply confirm that none of the components have deteriorated, paying particular attention to the vermiculite panels and baffle as these can be prone to absorbing condensation. On Initial fires (say three or four) you may again smell fumes which will most likely be this condensation (or possibly condensation within the chimney) simply drying off. Unless it persists it is not usually anything to be concerned about.

## ESSENTIAL SAFETY ADVICE

- Ensure that an approved carbon monoxide (CO) detector (BS EN50291:2001) is fitted in the same room as the stove and is regularly tested. The CO alarm must be installed strictly in accordance with the manufacturer's instructions and permanently fixed so that it is best placed to monitor the earliest signs of CO escape. It should be powered by a battery designed for the working life of the alarm (usually five years). Hi-Flame recommend Honeywell or Fire Angel models. Do not be tempted to buy a cheap alarm as recent research by the UK consumer organisation Which? has shown that many of the cheapest models simply do not work effectively.
- Never operate this stove with the door open except as directed in these instructions and when this should be kept to a minimum and the stove not left unattended.
- External surfaces including the firechamber door and handle, window, air control, flue pipes and stove bodywork will become extremely hot. Always avoid touching these parts of the stove without proper protection, such as heat resistant gloves.
- Potentially combustible material or objects such as soft furnishings should never be left on or near any of the stove's hot surfaces. Ensure that wood supplies and log baskets are kept at a safe distance from the stove. Never dry clothes on the stove.
- Never leave children unattended in the room where your stove is being operated. Ensure that children are aware of the potential danger and make sure that they keep clear of the stove when it is in operation. Where children, the elderly or the infirm are present, to prevent accidental contact with the stove, always use a safety fireguard manufactured in accordance with BS8423:2002, Fireguards for use with solid fuel appliances.

- For your safety make sure that your stove's installation complies with all local Building Regulations' ventilation requirements. Low energy houses have particular requirements and these should be strictly adhered to.
- Do not use flammable liquids to ignite the fire. In the confined space of the firechamber there is a real potential to cause a life threatening flash flame or explosion.
- Never over-fire the stove. If any external parts of your stove glow red during operation then immediate action should be taken to reduce the supply of air to the firechamber through the air control which should quickly limit the intensity of the fire. Do not open the firechamber door as this will only make the fire worse. See pages 26 and 27.
- This stove is CE approved and tested to EU EN13240 standards in Europe by SGS Nederlands BV. Alterations to its construction could be potentially dangerous and will render your Hi-Flame Warranty void.
- Do not use aerosol products in the vicinity of the stove when it is in use.
- Check and clean the stove's flueway and the top of baffle plate regularly to help avoid potential blockages (see page 32).
- Check the direct external air system's outside vent' grille to ensure there are no blockages arising from new foliage growth, wind-blown debris and leaves or snow drifts.
- Sweep your chimney or flue system regularly. Always use an approved sweep who has experience of sweeping stove installations.



## THE BETTER WAY TO BURN WOOD

Wood takes its combustion air from above the firebed and will always burn best on a bed of embers (approx 25mm deep). For this reason you don't need to clean out the ash bed, except perhaps if it overflows (and then you only need to remove some of the ash) or if you are standing down the stove at the end of the heating season (see page 39). You do not need to riddle the embers either and for this reason there is no riddle mechanism on this wood burning only stove. When lighting or refuelling gently tamp down the embers with one of the pieces of wood you are about to burn, to make a level bed – but even this may not usually be necessary.

Your new stove can burn very well, or very poorly, depending on how you light the fire, how you refuel the fire, and, of course, the type and quality of the fuel that you are burning. A flue temperature gauge and log moisture meter are both cost-effective investments and both are highly recommended if you want to maximise the efficiency of your stove and minimise the amount of logs that you use.

Always wear protective gloves when loading a burning stove and place logs and other fuels precisely where you want them by using heat-resistant tongs. Never throw them in.

When refuelling always open the stove door gently to avoid unnecessary air turbulence

**It is unsafe to operate this stove with the door open. The only exceptions to this are at the lighting phase when it can be left slightly ajar for the first few minutes to provide a boost of combustion air for a quicker start and only ever when the stove is attended or when refuelling, when this should be kept to a minimum.**

which could cause ash or small lighted embers to be drawn from the firechamber and beyond the protective hearth. Never operate the stove without the fire fence being in place.

When burning logs the end grain of a log will allow any remaining moisture and gases to escape, therefore always point log ends away from the glass to prevent the glass staining.

- **Ensure your logs are ready to burn**

Always use fully seasoned or kiln dried logs with a moisture content of less than 20%. Unseasoned logs (aka wet or green logs) do not provide the same fuel efficiency, will burn poorly, produce less heat and will also produce creosote tars which will quickly stain the glass, clog the flueway and chimney system, potentially making the stove unsafe to use. Burning wet wood produces an excessive amount of dirty smoke which will be extremely damaging to your local air quality.

- **The ideal Log**

We recommend that hardwood logs should be approximately 250mm (10") long. This provides sufficient air space at either end of the log to allow any moisture and combustion gases to escape freely. This size will also limit potential damage to the vermiculite panels from any over-sized logs knocking into them.

Do not be tempted to use over-sized logs as they could be very slow to light and could also create excessive smoke. When they eventually catch fire they could very easily over-fire the stove.

Ideally you will need three different thicknesses of wood log as you start the fire and then build it up through each lighting phase.. A detailed description of these sizes and how important they are to getting an effective fire quickly established is discussed overleaf (page 22).

## OPERATING YOUR STOVE

### General principles

When lighting your stove you will need to get the temperature in the firechamber as high as possible as quickly as possible. This is critical in creating a good updraught or 'draw' within the flue system, especially when it is particularly cold outside.

It is also important to maintain the operating temperature of the firechamber above 120°C, below which combustion is incomplete and creosote tars are formed within the combustion gases. Burning the stove like this will create dull orange flames loaded with soot and will not actually generate much heat.

Use small firelighters specifically designed for stoves and avoid trying to light the fire with paper as the ash it leaves behind can 'smother' and reduce the effectiveness of the ash bed. If you have good dry kindling or sticks then paper should not be needed.

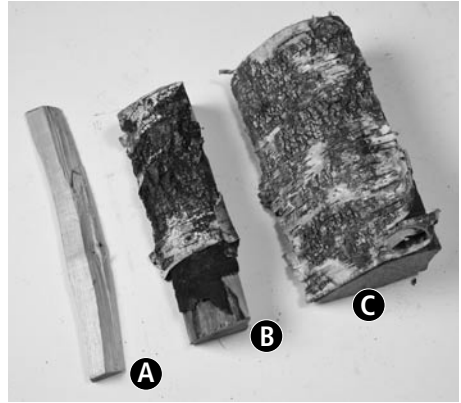
### The best sizes for the logs

The recommended log length for this stove is 250mm long, however the thickness or diameter of the logs used at each phase of lighting and refuelling is just as important. For example, if the kindling wood is too large then this will not light well and will be slow to get started. Logs that are too heavy and big when added at the wrong time can also be problematic as they can 'kill' the fire. Below is our rough guide for the various thickness of logs needed for ease of use during a complete burn cycle. See photograph right.

**Kindling (A)** This is generally finely chopped wood, approximately 5 to 10mm thick from your supply of logs. Alternatively use soft-wood, or dried twigs and small branches which have also been fully seasoned.

**Lighting Logs (B)** These are slightly thicker logs, approximately 25 to 50mm across.

**Refuelling Logs (C)** These should be approximately 75 to 100mm across. Thicker logs should ideally be split down to this size.



### 1 The Lighting Phase

**Air Control:** Fully open

**Stove Door:** Slightly ajar (optional)

**Fuel Load:** Kindling

During the lighting phase the air control should always be fully open (slide to right).

Use two handfuls of smaller pieces of kindling (equivalent to the weight of a typical log) layered criss-cross or 'wig-wam' style over one or two firelighter. This will usually get the fire well established and up to operating temperature very quickly.

A flue with a sufficient updraught will not usually require the stove door to be left ajar. However, if your fire appears to be slow at getting the kindling burning quickly then this could indicate a weak updraught, typically caused by the flue being cold. In which case the stove door should be left slightly ajar to boost the supply of combustion air which will help quickly establish the fire and warm the flue. Remember, never leave a burning stove unattended when the door is open. When the fire is burning well you must then shut the door. However, if this slows the flame pattern dramatically then continue with the door ajar

until it can be closed without significantly affecting how well the kindling is burning. After about six or seven minutes you can then add some wood...

## 2 The First Refuel Phase

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**Air Control:** Fully open

**Stove Door:** Closed

**Fuel Load:** 3 or 4 smaller logs (B)

Once the embers are starting to glow and the flames starts to calm down the first refuel can take place. For this use three or four slightly thicker pieces of wood (B) about 25 to 50mm across – thicker than the kindling, but smaller than the main refuelling wood to be used in the next phase. If unnecessarily large pieces of wood are placed on the embers at this stage and do not ignite quickly there is a risk that the firebox will cool down and the wood will start to smoke and it will actually take much longer to get the fire going.

In approximately 7 to 10 minutes you can then add the larger logs during the main firing.

## 3 The Main Firing Phase

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**Air control** Adjust to suit

**Stove Door** This remains closed

**Fuel Load:** 2 or 3 main logs (C)

Once the embers of the first refuel phase are glowing then these can be evenly spread with a poker or companion tool and the main refuelling wood can be quickly set. Always use a heat resistant gauntlet or tongs to precisely position the logs. Do not throw them into the firechamber as this could damage the vermiculite panels or stove glass. Always load the larger logs on to a bed of hot embers.

A single dense piece of wood or log will not burn as well as 2 or 3 smaller logs of equivalent mass. The more contact the wood has with each other piece, the hotter the embers will be. 3 or 4 logs tightly packed to each other will burn for longer but at a lower

temperature than loosely criss-crossed logs.

Approximately 0.50kg of logs (one or two) can be added at this stage. Be careful not to add too many logs as they may 'smother' the fire. Avoid setting the ends of the logs pointing towards the glass as this can cause staining which the airwash may not remove. Always load on to a bed of hot embers.

If the log surface is predominately black and / or the flames are lacklustre then there is still some time to go before the stove is operating at full temperature. Only reduce the air supply (slide left) when all of the wood is burning brightly and the surface of the logs are a light ash grey colour. The lighter the grey is then the better the wood is burning which means the fire- chamber is operating efficiently and is now hot enough to allow you to adjust the flame pattern and heat output to suit your requirements. This will also allow you to control fuel usage.

We recommend using a flue temperature gauge as it will show you precisely when you are burning too low (which causes creosote) or too high (which could damage the stove).

Getting the balance right between a gently burning stove and one that is burning too slow, creating smoke and causing the airwash to fail and consequently the glass to stain is very much a matter of trial and error. If you are burning well-seasoned wood then a quick 'blast' of the stove at 'full throttle', with the air fully open, should quickly burn off any deposits left from any slower burning phase.

Never leave the stove unattended after refuelling until the flames are well established.

## 4 Refuelling

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**Air control** Fully open, then adjust to suit

**Stove Door** This remains closed

**Fuel Load:** 2 or 3 main logs (C)

For best results just before you refuel, fully

open the air control (slide right). This will make any remaining embers glow red which will help the new logs to start burning quickly when they are added. Rake the embers and spread them out to make an even bed. You may need to add some kindling to re-establish the fire. Add the new wood as discussed before ensuring that the logs are not tightly packed.

After loading, and only when the new fuel is burning well and the logs have turned a light ash grey colour (see phase 3 above), adjust the air control to your requirements.

Never overfill the firechamber and also avoid over-sized pieces of wood which will 'slow' the fire down at the start but then could lead to over-firing later.

### **Specific instructions regarding operating this stove in a UK Smoke Control Area**

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To meet your legal obligations when operating this stove in a UK Smoke Control Area this stove must be operated correctly to minimise the amount of smoke it produces.

- Burn only dry fully seasoned wood with a moisture content of less than 20%. Never burn wet or green wood.
- The maximum amount of fuel specified in this manual (0.80kg) should not be exceeded – see page 7. Never overfill the stove so that you have to turn it down or slumber burn for long periods as this will create smoke and soot which is harmful to the local air quality.
- This instruction book should be left with the end-user and anyone planning on using the stove.

### **Refuelling on to a low firebed**

When refuelling you must ensure that there is a sufficient quantity of glowing embers and ash so that the new fuel charge will quickly ignite. Refuelling on an inadequate bed of

embers will create excess smoke and will take much longer. It is very much easier and quicker to 'start' again by adding a suitable quantity of kindling to the remaining embers ensuring that there are sufficient brightly burning flames before medium sized logs are added.

### **Never overload this stove**

The maximum amount of fuel specified in this manual (see page 7) should not be exceeded. Overloading can cause excess smoke and is also dangerous.

### **Never operate this stove with the door open**

This stove is not designed to be operated with the door left open, except as directed in these instructions. This can cause excess smoke and can be dangerous.

### **Avoid operating this stove with the air control left fully open**

Using this stove with the air control left fully open can cause excess smoke. This stove must not be operated with the air control or door left open, except as specifically directed in these instructions. See pages 21 to 24.



## SOME SIMPLE TIPS

- 1** When refuelling use small regular loads as this will produce a more efficient and cleaner burning performance.
- 2** If you have inadvertently let the fire burn down so that there are just a few burning embers then avoid reloading with large 'cold' logs as the fire will be very slow to re-establish itself, possibly even going out as the new load reduces the existing fire's access to a sufficient supply of combustion air.
- 3** Avoid burning large amounts of wood with the Secondary air supply turned down as this will reduce the effectiveness of the Airwash system and will result in dirty glass, as well as excessive smoke and a potential build-up of creosote tars.
- 4** Never use big, heavy logs as these will introduce a large cold spot inside the hot fire-chamber. They will be very slow to light and consequently will create unnecessary smoke over a much longer period. They could possibly even cause the stove to over-fire when they eventually catch alight. It's always safer to split these down.
- 5** Burn on a high output for approximately 30 minutes each day to 'burn off' any potential soot and creosote build-up – but be careful not to over-fire the stove. This is particularly important if you regularly burn low for long periods such as overnight burning.
- 6** Bright vibrant flames and a clean firechamber indicate that your stove is operating well. Lacklustre dirty orange flames indicate a poor performing stove which will produce excessive smoke and very little heat – see the Trouble-shooting section on pages 26 to 31.
- 7** Never overload the stove – it will be smoky and inefficient as well as very slow to establish a good burn and could possibly eventually over-fire.

## REMOVING ASH

As a wood burning-only stove this stove does not feature a removable ash pan or riddling grate. This is because fully seasoned wood, which has been efficiently burned in a stove, will produce very little ash. In addition, you do not need to clear the firebed very often, but allow the ash to build up to a depth between 25 to 30mm. This ash bed will actually help the wood to burn more efficiently and make the fuel load last for much longer.

Should there be any pieces of wood left after the fire has gone out and the stove is cold this would indicate one of two things – the original wood was wet and reduced the firechamber temperature to a point where combustion could not be completed – in which case change your fuel. Or, that the stove's air supply is insufficient and cannot promote and maintain an effective flue draught all the way to the end of the burn cycle, in which case please check the trouble-shooting section on page 26 or consult with your original installer.

You only ever need to empty the firebed if it gets too full of ash and this creates nuisance fly-ash or when standing down the stove at the end of the heating season.

Never attempt to remove the ash when the stove is hot. Always wait until you are sure that the stove is cold and there are no potential live embers. Remove the ash with a small shovel taking care to protect decorative furnishings and porous surfaces against potential ash spillage. As you remove the ash from your home ensure that it is covered to protect it from any draught or wind which could blow the ash out of its container.

Remember that you can recycle your wood ash in the garden compost.

## TROUBLE-SHOOTING

**These pages should be your first reference point if you experience any problems with the operation of your stove. Only contact your stove installer or dealer after you've read the advice here and if you still cannot resolve your particular issue.**

If your stove has been installed and operated correctly, and you have also carried out the recommended routine checks and annual servicing, as well as sweeping the chimney, then it is unlikely that you will ever experience most of the problems outlined below:

- 1** Chimney fire
- 2** Stove, flue or other components glow red
- 3** Smoke and fumes escaping into the room
- 4** Overheating or excessive fuel consumption
- 5** Stove not providing enough heat
- 6** Glass staining or blackening
- 7** Cloudy or crazed glass

### **1 Chimney Fire**

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Chimney fires can be detected by an unusual roaring sound or vibrations coming from the chimney breast, the stove or the connecting flue pipe. The sound is not to be confused with the gentle 'rushing' sound you may normally hear when a stove has a well-performing updraught. You may also see sparks or flames exiting from the chimney terminal.

#### **What you need to do in the case of a chimney fire**

If you suspect a chimney fire then immediately close off the air control to starve the flames of combustion air. DO NOT open the air control or the stove door as this will only make the chimney fire worse by providing additional combustion air. Next, evacuate the building and call the Fire Brigade. Do not re-enter the building until you have been advised by the Fire Brigade that it is safe.

Do not re-light the stove again until the flue system has been thoroughly inspected by an approved installer or chimney sweep and any necessary repairs have been carried out.

#### **Likely causes of chimney fires and how you can help to prevent them**

Chimney fires occur when soot and creosote have built up to such a level in the flue system that they eventually ignite. It is important therefore that your installation features as many cleaning access points as practicable to enable comprehensive removal of soot, creosote and other debris from every point in the system. This will also minimise the amount of time it takes for a qualified sweep to clean the system making the system safer and its cleaning more cost-effective in the long run. The Fire Service recommend that wood burning stoves ideally should be swept twice in a heating season depending on usage.

#### **Avoid continuous low burning**

To discourage the potential for such soot and creosote build-up, long periods of consistent slow or overnight burning should be avoided or at least be compensated for by regular burning on full output for short periods afterwards (eg 30 minutes per day) to help burn off any likely deposits before they become problematic.

A good flue temperature thermostat will indicate the flue gas temperature and help you avoid operating your stove at a temperature which promotes the conditions to create creosote deposits (basically operating your stove at anything less than 120C°).

#### **Never burn unseasoned or wet wood**

Unseasoned or damp wood should be avoided as this produces excessive soot and creosote and could create the conditions for a chimney fire and may also quickly 'fur up' your flue, potentially causing spillage of carbon monoxide (CO) into your living space.

## **2 The stove or flue pipe glow red with excessive heat**

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This situation could potentially cause a house fire and / or damage the stove.

### **What you need to do**

The air control should be immediately closed (slide left) to let the fire die down to an acceptable level and to reduce the heat output which will in turn eliminate the glow from the over-heated components. Over-firing is dangerous and could permanently damage or warp your stove and its components as well as invalidate your Hi-Flame Warranty.

Check the stove and the flue system for any signs of permanent damage before you re-use the stove.

### **Likely causes and how to avoid them**

Over heating (aka over-firing) your stove components is simply caused by over-filling the firebox with fuel so that your stove operates at a much higher output than it was ever designed for. See page 7 for information about the correct fuel load. The excessive heat in the flue system caused by over-firing could also increase the chances of a chimney fire (see Chimney Fires above).

Alternatively, it may be that the stove door has been left open after refuelling so that there has been an over-supply of combustion air and the fuel has been burning out of control. This stove is not designed to be operated with the stove door open except as directed when lighting the fire and refuelling (pages 21 to 25).

## **3 Smoke and fumes escaping into the living space**

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Assuming your stove has properly installed (flue height is critical) and operated your stove should not normally emit fumes or smoke into the room. When first using the stove it is normal to experience paint fumes or see light smoke rising from some of the stove's painted

surfaces, but these should eventually pass as the paint cures after four or five firings. Occasional minor smoke escape may also occur during lighting and refuelling depending on particular weather conditions. When a stove has not been used for some time fumes may also occur due to any condensation build-up within the chimney drying off.

### **What you need to do**

Persistent smoke or fumes could be dangerous and in this situation you should take immediate avoiding action by evacuating the building. See page 2 for more information. Open doors and windows to ventilate the room and let the fire go out to allow the stove to cool. Never pour water onto the fire as this could damage the components.

Most importantly, never re-light the stove until the problem has been identified and solved. If the issue cannot be resolved by following the advice below then, in the first instance, seek the expert advice of either your approved chimney sweep, approved stove installer or authorised Hi-Flame dealer.

### **Likely causes and how to prevent them**

There are a number of factors, either alone or combined, which could cause such problems:

#### **Check for blocked flueway or flue**

When safe to do so, examine the flueway above and between the baffle plates for potential blockages as well inside the flue pipe and chimney system via the appropriate inspection hatches. Clear away any soot. Excessive deposits could also indicate that the chimney or flue itself needs a full sweep (see page 32). Such soot deposits may have been caused by slumber or low burning for long periods without the required periods of burning on full power which will usually prevent this happening.

#### **Never burn unseasoned or wet wood**

This is one of the worst things that you can

do regarding the safe operation of your stove. Burning wet wood causes the incomplete combustion of the fuel and lowers the fire-chamber temperature and flue pressure so that creosote residue and heavy soot deposits are left inside the flueway and chimney. These will eventually, and usually very quickly, cause a blockage making it harder for the smoke (and CO) to take its normal safe route through the flue system so that it escapes from the stove and consequently enters the room.

### **Check there's enough room air**

Check that any permanent air vent fitted to supply the extra combustion air required for the stove has not been accidentally blocked. Alternatively, if the stove has a direct external air supply check that the outside grille has not been blocked by leaves, new plant growth or snow.

The addition of any new mechanical extraction in a nearby room could also adversely affect the flue draught pressure so that it is no longer sufficient at the start or end of the burn cycle to safely remove the combustion gases from the firechamber and consequently this will allow them to escape into the room.

A simple way of checking whether or not the stove is receiving enough combustion air is to open a window in the same room as the stove whilst the stove is operating. If this improves the problem with smoke then this would certainly indicate that the stove is being starved of combustion air and the advice of the original installer should be sought.

### **Consider any extreme weather conditions**

High winds or freezing temperatures can also temporarily affect the performance of the chimney draught and consequently its effectiveness in removing smoke and fumes from the stove's firechamber. In the case of freezing temperatures it is important to build a much larger pre-fire than normal to quickly

provide the additional heat needed to warm the flue system and to counteract the much lower temperatures at the exit point of the chimney. Please see the section on lighting your stove on pages 21 to 25.

### **Consider high winds / Prevailing winds**

If the problem is associated with high winds and it becomes a regular occurrence, then you will need to fit a specialist chimney cowl. These are designed to help provide a stable draught and prevent specific types of problems. Specifying the correct cowl should always be left to an approved installer. If your installation features a direct external air supply then check that the outside inlet grille is not subject to the adverse effect of high or prevailing winds and either take steps to relocate it or safely shield it from the wind.

### **Check if the chimney terminal has become restricted**

Check that any summer tree growth or new building work (especially at the beginning of the heating season) has not interfered with the free passage of smoke and flue gases from the flue system or chimney top. New tree growth should be cut back (ensure you comply with any local authority regulations). Where there is new building work always seek the advice of your installer as the height of your flue may need to be increased to compensate for this.

## **4 Excessive fuel consumption**

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This can be caused by a number of factors.

### **Check for faulty Door Seals**

The rope seals around the firechamber door could have become worn and may no longer provide an air-tight seal. This will allow a supply of uncontrolled combustion air which will limit the effectiveness of the actual air control, especially when you try to close it down. When the stove is cold, you can easily check this seal by placing strips of paper at various

points on all four sides between the door and firechamber front and checking that when the door is closed the paper is gripped. Any paper which can be removed easily would indicate a weakness of the door seal in that particular spot, in which case a completely new rope seal should be fitted. See the section on fitting a rope seal on page 34.

### **Consider your fuel choice**

The fuel itself may be of poor quality. For example pine and other softwoods will burn much quicker than a good hardwood log, such as Oak or Ash and although this will produce bright vigorous flames it will not produce nearly enough long-lasting heat. Please read the section on burning wood on pages 21 to 25.

### **Consider excessive chimney draught**

This limits the effectiveness of the air controls so that the fire burns with very strong bright yellow flames and with very little difference when the air controls are operated. In such circumstances an adjustable damper or draught stabiliser may need to be fitted to ensure that the stove will always operate under a stable draught which will allow the stove's controls to function correctly. These devices limit the free flow of combustion gases from the stove and so, in the interests of safety, they should only ever be specified, fitted and subsequently tested by an approved installer.

### **5 Stove not providing enough heat**

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This problem is also usually indicated by dull orange lifeless flames and wood that remains black when burning instead of light grey. You may even find that some of the wood remains unburned when you return to the stove the next day. A flue temperature gauge will provide you with the best indication of whether or not your stove is operating effectively.

### **Likely causes and how to avoid them**

Poor heat output is more than likely caused by poor fuel, such as 'green', unseasoned or wet wood. We cannot over-estimate how critical it is to use fully seasoned dry wood with a moisture content of less than 20%.

### **Never burn unseasoned or wet wood**

The easiest way to check whether your wood is fully seasoned is to invest in a moisture meter. These are relatively inexpensive and can be purchased from your stove dealer. Seasoned wood with a moisture content of less than 20% will give you approximately 50% more heat than an unseasoned wood log, a moisture meter is a modest investment which will more than pay for itself.

Unseasoned wood, not only produces very little heat, it also introduces unwanted moisture into the firechamber, reducing the stove's operating temperature and thus the effectiveness of the airwash system which will cause the glass to stain. In addition increased soot and harmful creosote deposits within the flue system are also created which could potentially lead to a chimney fire.

### **Always use the correct fuel load**

This might sound a bit obvious but for the stove to work effectively it needs to be filled with the correct amount of wood logs. Check that you're actually adding enough fuel – see pages 21 to 25 for the recommended fuel load. The maximum fuel load for this stove is 0.80kg.

### **Avoid burning too much softwood**

Softwoods such as Pine produce significantly less heat output. They will often burn away much more quickly than hardwoods, without delivering a great deal of heat, and should really only be used as kindling to quickly start the fire during the lighting phase or occasionally when refuelling to a low bed of embers. Never use all softwood for a full fuel load because, although you will quickly achieve a bright

vigorous flame, it is then hard to control the flame and extend the life of the logs because there are simply not enough calories of heat left within the remaining fuel to extend the burn cycle as well as deliver sufficient heat.

### **Check the air control is used correctly**

Ensure that you fully understand how to correctly use the air control. See the section on operating your stove (pages 22 to 25).

A stove with the air control turned down too soon in the burn cycle will cause the wood to smoke and smoulder so that it will provide limited heat output. Ensure that flames cover all of the wood and that all of the wood surfaces are ash grey before you begin to turn the stove down. Never allow the fuel to smoke as this indicates poor and incomplete combustion as well as it delivering an inefficient and ineffective heat supply.

### **Consider the combustion air supply**

Check that any permanent air vent fitted to specifically supply the combustion air required for the stove (including any external air inlet) has not been accidentally blocked and that this is consequently starving the stove of a sufficient supply of combustion air.

A simple way of confirming whether or not the stove is receiving enough combustion air is to open a window in the same room as the stove. If this improves the problem then this would certainly indicate that the stove does not have an adequate air supply and therefore the advice of the original installer should be immediately sought.

### **Check for blockages in the flueway**

When safe to do so, examine the flueway above the baffle plate as well as the flue pipe and chimney system via the appropriate inspection hatches and clear any soot blockages. Excessive deposits could also indicate that the complete chimney or flue itself also needs cleaning. If this soot produces

an acrid odour then this indicates the use of unseasoned or wet wood (see page 32).

## **6 Glass staining or blackening**

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Please note that it can be perfectly normal to see some small sooty deposits along the base of the glass after the fire has died down, simply because the airwash system is no longer hot enough to work. This should be very easy to wipe off the next time you use the stove. However, if this staining is brown or sticky and difficult to remove without the aid of stove glass cleaner, then this could indicate the use of unseasoned or wet wood. Glass can be cleaned easily if it is undertaken regularly and if the deposits are not allowed to build up. A proprietary stove glass spray or gel is strongly recommended.

### **Check the airwash is used correctly**

Ensure that you fully understand how the Airwash system works – the lower you turn down the stove then the less effective the airwash becomes as this relies on the pre-heated air being as hot as possible to keep the glass clean. As you begin to use your stove you will be able to determine, through some trial and error, the minimum air setting to ensure that the glass always stays clean. Never turn the stove down until all of the logs are fully alight and their surfaces are a light ash grey colour. Turning down the stove too soon will create sooty smoke and a cooler airwash both of which will promote smoky glass.

### **Never use unseasoned or wet wood**

Burning damp or unseasoned wood will cause the glass to stain as the moisture from the fuel considerably reduces the firechamber temperature in turn reducing the effectiveness of the Airwash system. Burning 'green' wood will also encourage sticky deposits on the glass which will prove difficult for the impaired airwash system to remove.

## Avoid continuous low burning

Continuously burning your stove with a very low flame, such as slow overnight burning will also cause the glass to get dirty because the airwash does not get hot enough and therefore some blackening of the glass should be considered a 'trade-off'. In this instance, if you're sure that the logs are fully seasoned and dry, then burning the stove at a high temperature for a short period (say 30 minutes) after a long slow burn will usually burn off any sooty deposits, especially inside the flue where they could prove more problematic in the long run (see the section on Chimney Fires)

It is worth investing in a magnetic flue pipe thermometer which when placed on the connecting flue pipe will allow you to keep the flue gas temperature from dropping below 120°C (the point at which creosote and soot are produced by the incomplete combustion of the logs) and to operate your stove more effectively when you wish to turn it down.

## 7 Cloudy or crazed glass

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Cloudy glass is only cosmetic and the glass's performance is not affected. It is definitely not faulty glass and it is much easier to replace the glass than to try to polish it clean.

### Likely causes and how to avoid them

The clouding is caused by unburned acidic condensates etching the ceramic glass. The cloudiness will usually start with a series of white deposits which if left on the glass will damage its surface. Although this problem is normally associated with burning coal it can also be caused by the incomplete combustion of wood, usually when the wood is wet and it has a high moisture content. Therefore, never burn wet wood and avoid long periods of slumber burning, even if the wood has less than 20% moisture. Always try to maintain an effective airwash flow and clean and dry the glass after every time the stove is used.

## ROUTINE CHECKS

During routine checks if you notice anything wrong with your stove then it should be rectified immediately. Never use a stove that you know is not fully functioning – this includes flue components.

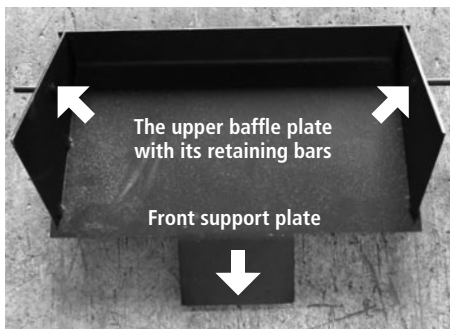
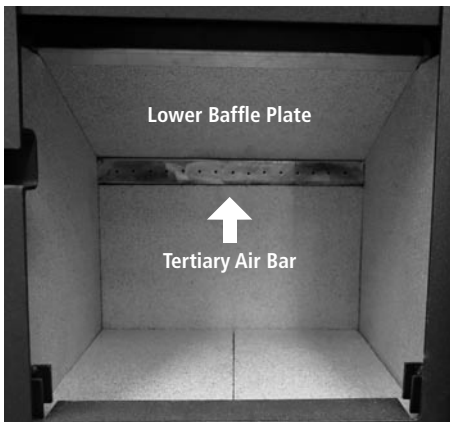
- Until you get to know your stove check your flue system at least once a month using one of the recommended inspection hatches in the flue pipe or chimney system. After a few checks you will notice a pattern of soot build-up to enable you to determine the inspection and cleaning period best suited to your stove's operation. In any event your flue should be swept at least once a year, preferably prior to a new heating season.
- Check and clear the stove's baffle plates and flueway at least once a month until you can determine a pattern of soot build-up (if any). See page 32 on how to remove the baffle plates.
- Regularly visually inspect any flue pipe joints where fire cement has been used and replace any missing or damaged cement seals using the appropriate heat-resistant fire cement.
- Make sure that the door maintains a good air-tight fit and visually inspect the door rope seals for fraying or other signs of wear. Test the seal if you suspect that it is no longer air-tight and is affecting control – see page 34.
- Check that the glass is not chipped or cracked and that the glass gasket seal is still in good condition. Replace if necessary – see page 33.
- Check the condition of the vermiculite firebricks, firebed and lower baffle plate. Replace any of these if they have been eroded by 20% (approximately 6mm) or show any damage that exposes the stove's bodywork. Cracked bricks can still be used providing they still cover the bodywork effectively.

## STOVE MAINTENANCE

### Baffle Plates and Flueway

During the heating season check the flueway and the double baffle plates at least once a month to start with and remove any soot deposits. Should these be excessive then have your chimney and flue cleaned. At the same time review your choice of fuel and the way that you operate the stove.

Regular long periods of slow or overnight burning can create excessive soot because the stove is not operating at the temperature required to burn it off before it settles. If this soot is clogged or acrid-smelling then this would indicate that you are burning unseasoned or wet wood.



To access the flueway you will need to remove both baffle plates. Once the stove has been

fired this can be quite a dirty job so protective gloves, face mask and goggles should be worn and in addition any porous hearth surfaces and floor coverings should also be protected.

Firstly, remove the firepence at the front of the stove by lifting it upwards and then, if needed, carefully take out one of the vermiculite side panels (you may have to prise this out). You should then be able to push the lower vermiculite baffle plate up and manoeuvre it downwards and out of the firechamber. This will expose the box-like heavy plate steel upper baffle plate. This baffle is held in place by bars in its sides which are slotted inside support bars on the roof of the firechamber. Pull the lower baffle towards you to release



the bars from their supports and, as the baffle is released, lower it down from the back of the stove so that the front support plate on the baffle clears the airwash ledge at the front of the stove. The upper baffle is very heavy so be prepared to support its weight with two hands. It is part of the stove's Ecodesign low emissions combustion system and is designed to provide precise control over the flow of combustion gases and can therefore be a tight fit when the stove has been used in which case you may need to use a wooden or plastic



mallet to gently tap it free. Check the baffle for wear and use a soft wire brush to remove any soot deposits from both the baffle and around the flueway. If the baffle needs replacing a genuine replacement can be obtained from your authorised Hi-Flame dealer or from [www.hi-flame.co.uk](http://www.hi-flame.co.uk). **Please note** in line with all stove manufacturers vermiculite panels, baffle plates and other internal components are regarded as consumable items and are therefore not covered under your Hi-Flame Warranty.

### **Stove and Chimney Cleaning**

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This stove can be swept through the fire-chamber by simply removing its two baffle plates – see above. The chimney should be swept before installing the stove and then a minimum of at least once a year depending on how often you use the stove – this should preferably be when you stand down the stove for the summer.

The amount of soot deposits removed each time the stove is swept is a good indication of how often you should sweep the stove and, as you begin to understand your stove and the wood you burn, you can then adjust the cleaning intervals accordingly. If in doubt seek the advice of a registered chimney sweep who has experience of sweeping stoves.

### **Vermiculite Firebricks and Panels**

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Regularly inspect the condition of the vermiculite panels used for the firebricks, firebed and lower baffle plate. Please note that some minor wear is perfectly normal due to the high temperatures created inside the stove but replace any of these if the surface has been eroded by 20% (approximately 6mm) or if any damage exposes the stove's bodywork. Cracked bricks can still be used providing they still cover the bodywork.

To replace a firebrick, first remove the lower baffle plate by pushing this up and then

dropping it down to manoeuvre it out of the firechamber. There are two loosely fitted side firebricks, which once the upper baffle has been removed, should be easy to remove and this will then release the back firebrick as well as the firebed panels. They should be returned in the correct reverse order. **Please note** vermiculite heat reflecting panels are deemed as 'consumable' and are therefore not covered under your Hi-Flame Warranty.

### **Heat Resistant Glass Maintenance**

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Using unseasoned or wet wood, small fuel loads or operating the stove at low temperatures (slumber burning) is not recommended and will reduce the effectiveness of the Airwash system causing the glass to stain. Do not allow such staining to build up as it may become more difficult to remove after each firing. When used regularly, a proprietary scratch-resistant stove glass cleaning gel or spray, which can be supplied by your stove dealer, should be sufficient to keep the glass in pristine condition. Make sure the glass is cold before you apply such cleaners, as applying a cold solution to hot glass could create a thermal shock within the glass causing the glass to crack. Always use a soft cloth to apply any cleaner. Make sure that all traces of the cleaning fluid have been removed and that the glass is thoroughly dry as any residue can be 'baked' on causing unsightly smearing.

Never use your stove if it has cracked or missing glass. Your Hi-Flame dealer can quickly supply you with a new piece of heat resistant glass should you ever need it – just let them know the stove name and model number. Only use heat-resistant ceramic glass as this is made to withstand temperatures of up to 800°C.

Remove the screws and sprung clamp washers from each corner and place them in a safe place. Always use the correct sized Phillips crosshead screwdriver and use releasing oil if

the screws prove difficult to remove. Be careful not to dislodge the ribbon seal. If this is damaged or more than a year old then always replace it completely. The resilience of a new seal will provide a much-needed expansion gap between the cast door and the glass clamp to help prevent the glass from cracking as it expands. New ribbon seal can be held in place with rope seal glue which will be available from your dealer. Lubricate the screws and holes and reverse the process, being careful not to over-tighten the screws and clamps in case you break the glass. Once the new glass is held firm and doesn't rattle in its frame then there is no need to tighten the screws further.

**Please note** ceramic heat resistant glass cannot be recycled. Your Local Authority should be able to advise you on how best to safely dispose of it.

### **Door Rope Seal**

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It is important that you maintain an air-tight door seal as this prevents unwanted air leaking into the firechamber and helps make the air control more effective in adjusting the heat output.

To check the door stove seal, when the stove is cold place strips of paper between the door and 'door frame' and close the door. If you have to pull hard to remove these or they tear, then you have an effective door seal. If any of these can be easily removed, or if they slide around, you will need to replace the door seal.

Always use protective gloves and face mask when you handle both the old and new ceramic rope and prepare the rope seal channel.

To replace the door seal, carefully remove the old seal and completely clean the seal channel of debris and old glue. Any bare metal should be resprayed with an approved heat resistant paint. Use liberal amounts of proprietary heat resistant fire rope glue to hold the rope in position and glue both ends to ensure a well-

sealed joint. The joint should be positioned in the middle of the top or bottom side channel.

The diameter of the replacement ceramic rope seal is 12mm and you'll need approx 1500mm.

### **Paint Finish**

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Your stove has been finished with heat-resistant paint and is very easy to maintain. Regularly remove any ash and dust from the stove surfaces with a soft cloth or brush. Never use a damp or wet cloth. When the stove is cold, stubborn dirt can be removed by applying a very small quantity of WD40 oil or Colloidal Black, again with a soft cloth.

Repair any worn or scratched surfaces with a proprietary heat-resistant spray paint made specially for stoves and available from your stove dealer. Never use an aerosol spray on, or near, the stove when it is burning or it is hot and be sure to protect other surfaces from residue spray spots.

### **Replacement Parts**

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In the interests of your safety, only ever use genuine Hi-Flame replacement components which you can purchase from your authorised Hi-Flame dealer or directly from:  
[www.hi-flame.co.uk](http://www.hi-flame.co.uk) or for the Republic of Ireland [www.hi-flame.ie](http://www.hi-flame.ie).

## THE DIRECT EXTERNAL AIR SUPPLY (DEAS) Ref BS8303 (2018)

**IMPORTANT** It may be, that despite installing with the DEAS, in order to avoid depressurisation and to ensure the safe operation of the stove, a dedicated air vent, as prescribed in Building Regulations Document J (or its equivalent) is the only solution to ensuring the necessary additional air for the correct operation of the stove where there is mechanical extraction. It is strongly recommended therefore that the installer makes the householder aware of this before any of the installation work proceeds.

### Installer responsibilities

- All external air ducting as well as the inlet grille must be fitted strictly in accordance with these instructions which are intended to give clear guidance to the installer on the safe installation of the stove and its DEAS.
- The person installing the appliance takes full responsibility for a safe installation (refer to Approved Document J, BS8303 (2028) and the relevant Hetas Technical Bulletins) and must ensure that the installation complies with all relevant Building Regulations.
- The installer must fully commission the appliance, including undertaking appropriate spillage tests and flue draught measurements, to demonstrate and confirm the stove's safe operation with the room in its normal state and also with doors and windows closed and any mechanical extraction in the room and the rest set of the dwelling set at maximum operation i.e. worst case scenario depressurisation conditions.
- As already required by Building Regulations a CO detector(s) must be correctly fitted and the householder made aware of the

importance of regularly testing it.

- The householder should also be made aware that the stove should never be operated with the door open except when refuelling and this should always be kept to a minimum.

### Direct air supply ducting requirements

- The external diameter of the DEAS inlet on this stove is 75mm (internal dia approx 71mm).
- Ensure that the internal diameter of the direct air ducting is at least the same size as the internal diameter of the DEAS inlet pipe.
- Do not reduce the diameter of the ducting as this will affect the safe operation of the stove. For fire safety reasons only use the appropriate metal or non-combustible ducting. Never use plastic ducting.
- The maximum recommended ducting length for the air supply to this stove is 1 metre. Longer straight lengths may be considered provided that the appropriate flue draught measurements and spillage tests are undertaken by the installer to ensure that this will not adversely affect the safe operation of the stove.
- Keep bends in the ducting to a minimum and avoid using bends greater than 60°. Ensure that there is a good air-tight seal between the ducting and the stove's inlet pipe. Use an appropriate weather-proof, non-closable, external vent grille.
- When selecting the location of the external vent grille you must ensure that it can be easily accessed so that it can be regularly checked for potential obstruction (eg foliage growth, dead leaves or snow drifts etc). Never use the stove if these conditions exist. Ensure that the external grille will not be subject to the adverse affects of prevailing wind which will affect the stove's performance.

## **SPILLAGE AND FLUE INTERFERENCE TESTS Ref BS8303 (2018)**

### **Flue pressure requirements**

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The minimum recommended flue pressure for this stove is 12Pa. Provided the flue pressure reading is within the 12Pa to 18Pa range then the stove should operate satisfactorily – subject to any spillage test outcomes. Where the flue pressure is less than 12Pa appropriate steps should be taken to improve this.

### **TEST 1 Cold Conditions Spillage Test**

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This test is used to determine that a suitable flue draught has been established which will ensure that during the start-up operation, as well as refuelling, spillage does not occur.

**1** Close all external doors and windows, as well as the internal door(s) to the room the stove is located in and ensure all closable ventilators (eg window trickle vents) are closed and all devices that extract air from the dwelling are turned off (eg bathroom, tumble drier etc).

**2** Preheat the flue to establish a sufficient updraught by either lighting a small fire burning kindling or using a blow torch or electric fan heater.

**3** Ensure that the stove's air-control is set to the maximum open position (slide right). Light a smoke pellet (preferably 5m<sup>3</sup>/30 sec) and place inside the stove firechamber and shut the stove door.

**4** Check that all of the smoke enters the flue and none of it enters the room through any part of the stove, its connecting flue pipe or the external air supply duct joint.

**5** Note: If smoke does enter the room then repeat stage 2 above. However, this time build a much greater kindling fire, or significantly increase the time the blow torch or electric fan heater is used to warm the flue so that an

improvement in the flue draught is generated. Again, light a smoke pellet and place inside the stove firechamber and close the stove door.

**6** If the second spillage test still fails, then progressively open a window in the room where the stove is installed. If the flue starts to draw the smoke, then this will indicate that the stove has not previously been provided with sufficient air for the flue to function correctly and therefore a permanently open air vent, as specified in Document J (or equivalent), may be necessary to correct the problem. When the air supply has been corrected then repeat the previous tests.

**7** If smoke continues to spill after opening a window, this would indicate a more serious problem (for example a flue blockage or insufficient flue height) which must be rectified and then the commissioning process repeated.

### **TEST 2 Hot Conditions Spillage Test (Refuelling)**

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This test requires a smoke match / pen and is used to determine that the flue draught is consistent between cold and hot operation.

**1** Once the initial flue draught has been verified as sufficient, light a good sized fire in the stove according to the instructions in this handbook, using the recommended fuel load and air control position(s). Allow the stove to reach normal operating temperature before refuelling.

**2** Close all external doors and windows, as well as the internal door(s) to the room the stove is located in and ensure all closable ventilators (eg window trickle vents) are closed and any devices that extract air from the dwelling are turned off (eg bathroom, tumble drier etc).

**3** Open the stove door, and with a smoke match / pen (15 second burn time),

pass over the top and sides of the firechamber opening and observe and record if the smoke / combustion products are drawn into the chimney or spill back into the room. Once the smoke match / pen is extinguished, close the appliance door.

**4** Next, open all internal doors which interconnect the room in which the stove is installed to rooms where any extraction fans are present and turn these on to the maximum setting and allow to run for ten minutes. Repeat the smoke match / pen test above and observe and record if the smoke / combustion products are drawn into the chimney or spill back into the room.

**5** If this spillage test fails, then progressively open a window in the room where the stove is installed. Again using a smoke match / pen observe and report. If the flue starts to draw the smoke, then this will indicate that the stove has not previously been provided with sufficient air for the flue to function correctly and therefore a permanently open air vent, as specified in Document J or equivalent regulations, may be necessary to correct the problem. When the air supply has been corrected then undertake the same test.

**6** Fit an appropriate flue draught testing device to the connecting flue pipe and re-light the fire as previously. Repeat the test(s) in points 1 – 4 above. Check that the flue pressure meets the 12Pa minimum.

### **TEST 3 Extraction Test**

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This test requires a flue draught / temperature gauge(s). This test is to ensure that Hi-Flame's recommended operational 12Pa flue draught pressure for this stove is met. In some cases spillage can still occur, so it is important to carry out other essential smoke spillage tests.

**1** Fit a flue pressure and flue gas temperature testing device(s) to the flue of the appliance.

**2** Close all external doors and windows, as well as the internal doors to the room the stove is located in and ensure all closable ventilators (eg window trickle vents) are closed and any devices that extract air from the dwelling are turned off.

**3** Light the appliance and ensure the optimum operating temperature is reached (approx 240°C).

**4** Record the flue draught and the flue gas temperature and confirm that these are within the Hi-Flame's recommended parameters.

**5** Next, open all internal doors which interconnect the room in which the stove is installed to rooms where any extraction fans are present and turn all of these on to the maximum setting.

**6** Run the extract system(s) for ten minutes, and then record the flue draught and the flue gas temperature. These should not be lower than the previous readings obtained without the extract system(s) running and should not fall below Hi-Flame's safe minimum 12Pa recommendations.

**7** Once the tests confirm the satisfactory operation, remove the test device(s) and if required seal any test point aperture in the flue pipe.

**Please note** if at any stage during commissioning the flue draught reading taken differs from the recommended minimum 12Pa, then action should be taken to improve the updraught before proceeding with further testing.

**Test results should be recorded on the Commissioning Report on page 38 as well as for any Hetas conformance.**

## COMMISSIONING

**1** Confirm that all internal parts of the stove are correctly fitted, including the baffle plates and the firefence. YES

**2** Confirm that the door closes correctly and that the latch mechanism and door seals work to make an air-tight seal. YES

**3** Ensure that the air control is fully operational and that it moves freely. YES

**4** Confirm that all appropriate smoke and spillage tests have been completed. YES

**5** Confirm that the flue draught tests have been completed and that the tested flue pressure is recorded here. Pa  YES

**6** Confirm that the safe operation of the stove and the importance of only using seasoned logs has been explained to the user. YES

**7** Installations with DEAS: Confirm that the 'worst case scenario' flue draught interference tests have been completed. YES

Indicate the action taken to remedy any problem:

**8** Confirm that the legal obligations of using an approved fireguard whenever children, the elderly or the infirm are in the vicinity of the stove have been explained to the user. YES

**9** Confirm that the customer will receive a copy of this Operators Handbook. YES

**10** Confirm that a CO detector with a minimum five-year lifespan has been fitted in accordance with the manufacturer's instructions and that the user is aware of the importance of regularly testing it. YES

**11** Confirm that the Warranty Registration has been completed for UK installations at [www.hi-flame.co.uk/pages/warranty-registration](http://www.hi-flame.co.uk/pages/warranty-registration), and for Republic of Ireland installations at [www.hi-flame.ie/pages/warranty-registration](http://www.hi-flame.ie/pages/warranty-registration). Ensure the contact details and registration number of the Hetas / INFO installer or recognised competent person who carried out the installation is included. In Northern Ireland you will have to supply details of Building Control approval for the installation works. Without this information your Warranty will be limited to one year only. YES

\_\_\_\_\_  
Installer's Signature / Date

\_\_\_\_\_  
Stove Owner's Signature / Date

## STANDING DOWN

At some point in the year you will not need to use your stove and taking care to clean it thoroughly then will save you much time and effort later. This is also a good time to have your chimney swept to prevent any soot deposits falling into the stove and potentially blocking the flueway.

- Remove the baffle plate and clean any deposits in the flueway above it (see page 32). Inspect the vermiculite panel for signs of wear and replace if necessary. Remember to protect the hearth and any soft furnishings and floor coverings from soot and debris during the cleaning process.
- Empty the fire bed of ash and thoroughly clean out the firechamber. Inspect all of the vermiculite panels including those in the firebed. Replace any that have become very thin or have crumbled to reveal the stove's metal bodywork. See page 33.
- Inspect the door rope seal. Replace if it no longer provides an air-tight fit. See page 34.
- Inspect the stove glass and thoroughly clean it using the appropriate stove glass cleaner being sure to remove any baked-on residue.
- Inspect the log retaining bars. If these are bent or warped it could be an indication of over-firing or the use of inappropriate fuels. Order genuine replacement components from your authorised Hi-Flame dealer or from [www.hi-flame.co.uk](http://www.hi-flame.co.uk) or [www.hi-flame.ie](http://www.hi-flame.ie).

### THE MOST IMPORTANT PART...

Ensuring there is some free movement of air through your stove and flue system will help prevent the build-up of condensation which could eventually damage the stove's components. Therefore, always leave the air control fully open, only closing down to 50% if a nuisance draught is being caused.

## HI-FLAME WARRANTY

Your new Hi-Flame stove has been CE EN13240 tested in Europe to ensure that it meets UK and Irish constructional performance, emissions and safety standards. It has also been tested and meets the 2022 EU Ecodesign regulations.

### IMPORTANT: PLEASE NOTE

It is not the responsibility of Hi-Flame or their distributors to ensure that the appliance is installed and operating correctly at the time of the installation. This is strictly the responsibility of the stove owner and any complaints regarding the performance of the installation should be addressed to the stove dealer or the stove installer.

Hi-Flame offers the original retail purchaser a 1 Year Warranty with a further limited 4 Year Extended Warranty (total 5 Years) subject to terms and conditions. To see these and to ensure that your stove benefits from the Hi-Flame Warranty you must register it within one week of receiving it at [www.hi-flame.co.uk/pages/warranty-registration](http://www.hi-flame.co.uk/pages/warranty-registration) or [www.hi-flame.ie/pages/warranty-registration](http://www.hi-flame.ie/pages/warranty-registration)

In the unlikely event that you need to make a claim under the Hi-Flame Warranty it must always be reported in the first instance to the dealer you purchased the stove from. The claim will only be entertained by Hi-Flame or their distributors if your stove has been registered on the Hi-Flame website and you follow the claim procedure above. You must also have complied with all of the Terms and Conditions outlined on our website. Your attention is particularly drawn to the requirement that your stove is installed by a competent installer (preferably Hetas Registered) and that the installation applies to the current Building Regulations. Your statutory rights are unaffected.

## ANNUAL SERVICE

In the interests of safety and efficient performance it is important that your stove is serviced on an annual basis in accordance with the instructions outlined below. The service should be carried out by a suitably qualified person such as your original approved installer, a Hetas or INFO registered installer, approved chimney sweep (who will also supply you with a Cleaning Certificate) or your authorised Hi-Flame dealer.

Your annual service is best undertaken at the same time as your chimney or flue system is swept. Ensure that adequate protection from soot and debris is given to porous materials such as the fireplace or hearth, as well as floor coverings and soft furnishings. Wear protective gloves and a face mask.

### Carefully remove, inspect and clean the following:

- The baffle plate inside the roof of the stove  
See page 32 on how to remove this.
- All vermiculite panelling from the sides and back wall of the firebox as well as from the fire bed.
- Remove all ash and debris and use a soft brush to clean the internal bodywork and vermiculite panels. Handle the vermiculite panels with care as they may become fragile with continuous use. Some surface wear is normal on the panels and these only need replacing when they are very thin or have crumbled to reveal the stove bodywork.
- Pay particular attention to any debris build-up in the flueway area and ensure that this is completely clear. See page 32.
- Re-fit all the internal parts.

### Stove Glass and Door Rope Seal

- Check the glass for chips or cracks and the glass seal condition and replace if necessary.

Thoroughly clean the stove glass on both sides. Check that the door seal continues to make an air-tight seal and replace if necessary. Ensure that the new rope joint is also in the middle at the base of the rope seal channel. Replacement rope should be 12mm diameter. See pages 33 and 34.

### External Bodywork

- All external surfaces should be dusted with a soft cloth or light brush.
- Examine all paintwork for signs of wear and re-paint these areas only using the appropriate heat-resistant aerosol paint. Warning: do not use the aerosol if the stove is alight or hot.
- Lightly oil the hinges and door locking mechanism.

### Air Controls

- Lightly oil the air control mechanism from underneath with a light machine oil spray being careful to protect any stone or tiled hearth.
- When standing down at the end of the heating season the air control should be left on the open position (slide right) to allow some movement of air through the stove which will help avoid condensation and moisture building up inside the stove and flue system. This can be closed up to approximately 50% (slide left) if a nuisance draught is being caused in the room.

### Flue Pipe and External Air Connections

- Check the flue collar and flue pipe for any crumbling or missing fire cement seals and where applicable check the external air ducting. Remove any failed seals and re-seal using the appropriate heat-resistant sealant.

### Important: Spare Parts

- In the interests of safety only use genuine Hi-Flame replacement parts. See the back cover.



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**FIRST SERVICE**

Additional work carried out:

Date  
\_\_\_\_\_Next Service Due  
\_\_\_\_\_

Signed \_\_\_\_\_

Print \_\_\_\_\_

Dealer's Stamp or HETAS Registration Number  
\_\_\_\_\_

---

**SECOND SERVICE**

Additional work carried out:

Date  
\_\_\_\_\_Next Service Due  
\_\_\_\_\_

Signed \_\_\_\_\_

Print \_\_\_\_\_

Dealer's Stamp or HETAS Registration Number  
\_\_\_\_\_

---

**THIRD SERVICE**

Additional work carried out:

Date  
\_\_\_\_\_Next Service Due  
\_\_\_\_\_

Signed \_\_\_\_\_

Print \_\_\_\_\_

Dealer's Stamp or HETAS Registration Number  
\_\_\_\_\_

---

**FOURTH SERVICE**

Additional work carried out:

Date  
\_\_\_\_\_Next Service Due  
\_\_\_\_\_

Signed \_\_\_\_\_

Print \_\_\_\_\_

Dealer's Stamp or HETAS Registration Number  
\_\_\_\_\_

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**FIFTH SERVICE**

Additional work carried out:

Date  
\_\_\_\_\_Next Service Due  
\_\_\_\_\_

Signed \_\_\_\_\_

Print \_\_\_\_\_

Dealer's Stamp or HETAS Registration Number  
\_\_\_\_\_

---

**SIXTH SERVICE**

Additional work carried out:

Date  
\_\_\_\_\_Next Service Due  
\_\_\_\_\_

Signed \_\_\_\_\_

Print \_\_\_\_\_

Dealer's Stamp or HETAS Registration Number  
\_\_\_\_\_

---

**SEVENTH SERVICE**

Additional work carried out:

Date  
\_\_\_\_\_Next Service Due  
\_\_\_\_\_

Signed \_\_\_\_\_

Print \_\_\_\_\_

Dealer's Stamp or HETAS Registration Number  
\_\_\_\_\_

---

**EIGHTH SERVICE**

Additional work carried out:

Date  
\_\_\_\_\_Next Service Due  
\_\_\_\_\_

Signed \_\_\_\_\_

Print \_\_\_\_\_

Dealer's Stamp or HETAS Registration Number  
\_\_\_\_\_

---

**NINTH SERVICE**

Additional work carried out:

Date  
\_\_\_\_\_Next Service Due  
\_\_\_\_\_

Signed \_\_\_\_\_

Print \_\_\_\_\_

Dealer's Stamp or HETAS Registration Number  
\_\_\_\_\_

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**TENTH SERVICE**

Additional work carried out:

Date  
\_\_\_\_\_Next Service Due  
\_\_\_\_\_

Signed \_\_\_\_\_

Print \_\_\_\_\_

Dealer's Stamp or HETAS Registration Number  
\_\_\_\_\_

**NOTES**

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Purchase Date

Installation Date

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Serial Number  
(from bar code label / packaging)

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Stove Dealer's Contact Details

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Stove Installer's Contact Details

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Notes eg Chimney Sweep / Log Supplier contact details etc

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# hi-flame

OUTSTANDING WOOD BURNING STOVES

[www.hi-flame.co.uk](http://www.hi-flame.co.uk)

[www.hi-flame.ie](http://www.hi-flame.ie)

## **HI-FLAME SPARES SERVICE**

In the interests of safety, only use genuine Hi-Flame replacement components. Once you have identified the component you need you can order it from your authorised Hi-Flame dealer or at [www.hi-flame.co.uk](http://www.hi-flame.co.uk) or if you're in the Republic of Ireland [www.hi-flame.ie](http://www.hi-flame.ie).

## **PLEASE NOTE**

**Any issues with the performance of your stove that cannot be resolved through studying the Trouble-Shooting section (page 26 to 31) should always be dealt with, in the first instance, by contacting the original installer of your stove or alternatively your stove dealer.**

## **Hi-Flame Wood Burning Stoves**

Hi-Flame Fireplace UK Limited  
Holmes Chapel Business Park, Manor Lane  
Holmes Chapel, Cheshire CW4 8AF  
United Kingdom

**[www.hi-flame.co.uk](http://www.hi-flame.co.uk) / [www.hi-flame.ie](http://www.hi-flame.ie)**

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