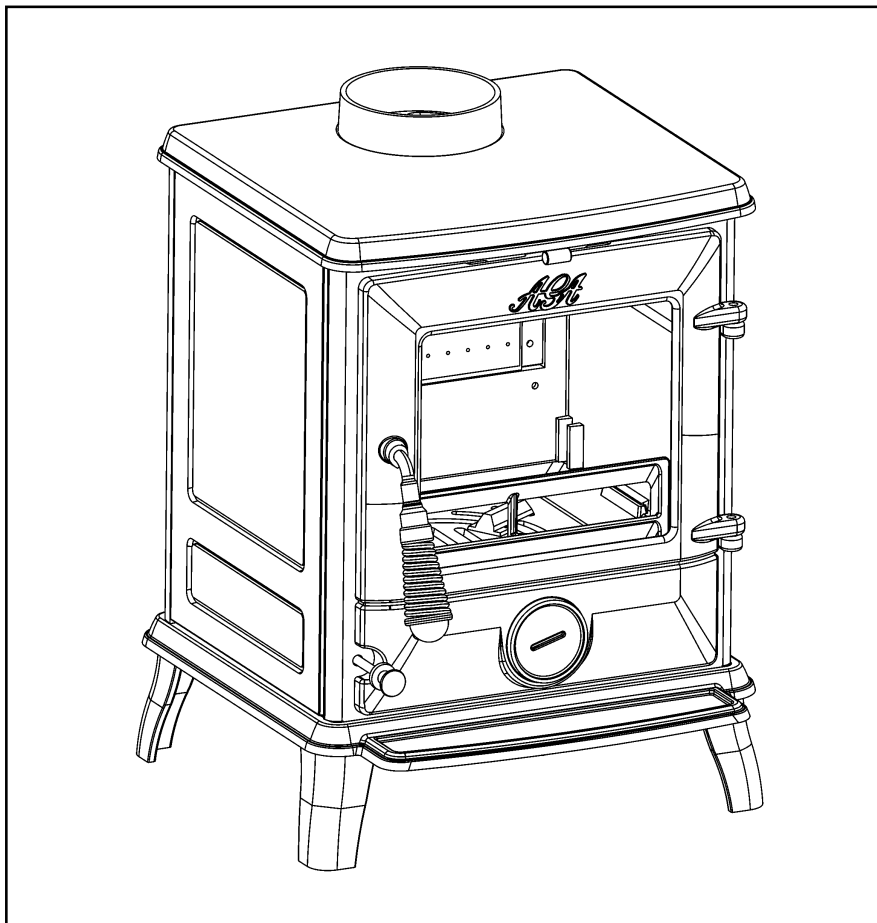




# Ludlow Wood Burning Smoke Exempt Stove



**This appliance is hot while in operation and retains its heat for a long period of time after use. Children, aged or infirm persons should be supervised at all times and should not be allowed to touch the hot working surfaces while in use or until the appliance has thoroughly cooled.**

***When using the stove in situations where children, aged and/or infirm persons are present a fireguard must be used to prevent accidental contact with the stove. The fireguard should be manufactured in accordance with BS 8423:2002.***

***WHEN READING THESE INSTRUCTIONS REFER TO THE SECTIONS ON LIGHTING THE FIRE & REFUELLING***

## **INSTALLATION AND OPERATING INSTRUCTIONS**

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# LUDLOW WOOD FUEL NON-BOILER STOVE INSTALLATION & OPERATING INSTRUCTIONS

**NOTE:** Please note that it is a legal requirement under England & Wales Building Regulations that the installation of the stove is either carried out under Local Authority Building Control approval or is installed by a Competent Person registered with a Government approved Competent Persons Scheme. HETAS Ltd operate such a Scheme and a listing of their Registered Competent Persons can be found on their website at [www.hetas.co.uk](http://www.hetas.co.uk).

**IMPORTANT WARNING:** This stove must not be installed into a chimney that serves any other heating appliance. There must not be an extractor fan fitted in the same room as the stove as this can cause the stove to emit fumes into the room.

The installation must be completed in accordance with current National and European Standards and Local Codes. It should be noted that the requirements and these publications may be superseded during the life of this manual.

## GENERAL

When installing, operating and maintaining your stove respect basic standards of fire safety. Read these instructions carefully before commencing the installation. Failure to do so may result in damage to persons or property. Consult your local Municipal office and your insurance representative to determine what regulations are in force. Save these instructions for future reference.

Special care must be taken when installing the stove such that the requirements of the Health & Safety at Work Act are met.

## Handling

Adequate facilities must be available for loading, unloading and site handling.

## Fire Cement

Some types of fire cement are caustic and should not be allowed to come into contact with the skin. In case of contact with the skin wash immediately with plenty of water.

## Asbestos

This stove contains no asbestos. If there is a possibility of disturbing any asbestos in the course of installation then please seek guidance and use appropriate protective equipment.

## Metal Parts

When installing or servicing this stove care should be taken to avoid the possibility of personal injury.

## 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).

## PRE-INSTALLATION ASSEMBLY

1. After removing the stove from the packaging, open the fire door and remove all contents from inside.
2. Fit the fire door handle using the screw provided.
3. Remove the stove from the pallet and fit the legs. Position it in the final installation position (See Location & Clearance to Combustibles Section).

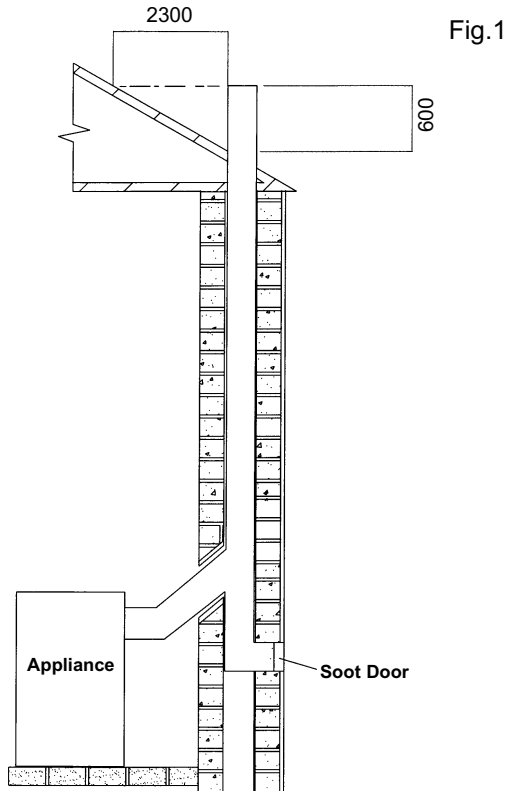
## FLUES

Flues should be vertical wherever possible and where a bend is necessary, it should not make an angle of more than 45° with the vertical. Horizontal flue runs should be avoided except in the case of a back outlet from the appliance, when the length of the horizontal section should not exceed 150mm.

In order to minimise flue resistance and to make sweeping easier it is recommended to use 2 x 45° bends rather than a 90° bend.

The flue termination point must be located to minimise any wind effects. Wind effects of suction, pressure zones and turbulence can be created by the roof and adjacent objects. Wind effects can also be created by natural land contours.

To minimise the wind effects, the flue termination point should be located a minimum of 600mm from the roof measured vertically and 2300mm measured horizontally. Where this termination point does not suffice it may be necessary to extend the flue pipe so that the termination point is above the apex. See Fig.1 and 3.



## CHIMNEY

The stove is a radiant room heater and must be connected to a chimney of the proper size and type.

The main chimney must have a cross sectional area of at least 176cm<sup>2</sup> or a diameter of at least 150mm. Never connect to a smaller chimney. It is acceptable to use a length of pipe (125mm diameter) up to 50cm in length from the top flue outlet spigot if required.

Following that an increaser must be used to increase the flue/chimney diameter to a minimum of 150mm. For rear outlet connection it is advised to use an increaser direct from the flue spigot to increase the flue diameter to a minimum 150mm diameter.

Do not connect to a chimney serving another appliance. The minimum chimney height, 4.5 meters from the floor on which the stove is installed.

A flue that has proved to be unsatisfactory, particularly with regard to down draught should not be used for venting this appliance until it has been examined any faults corrected.

An existing masonry chimney should be inspected and if necessary repair by a competent mason or relined using an approved lining system. The stove must be connected to a chimney with a minimum continuous draught of 15 Pascal's (.06" WG). Poor draught conditions will result in poor performance. All register plates, restrictor plates, damper etc., which could obstruct the flue at a future date should be removed before connecting this appliance. If connecting to an existing chimney with a flue diameter of more than 150mm it is necessary to line the flue using a suitable stainless steel flue liner. Where a masonry chimney is not available a proprietary type 125 - 150mm twin wall, fully insulated pipe may be used.

The pipe must terminate at a point no lower than the main ridge adjacent outside obstructions. With such installation, access to the chimney must be provided for cleaning purposes. (See Fig.1)

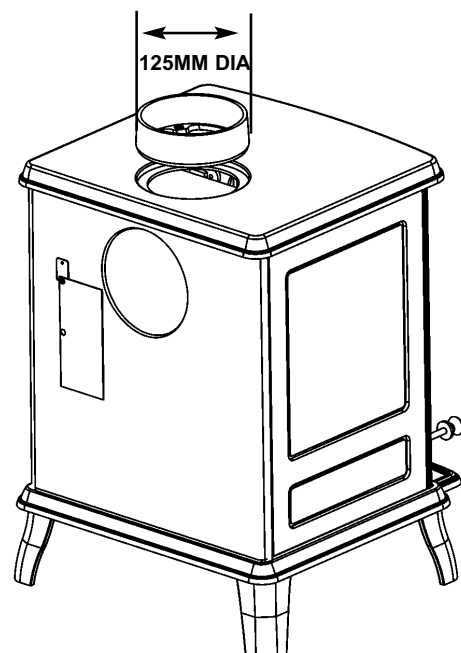
When flue piping passes through a closure plate with a sliding door, ensure that the pipe continues up and is ultimately connected to the flue liner and well sealed with fire cement.

Any existing chimney must be clear of obstruction and have been swept clean immediately before installation of the stove. If the stove is fitted in place of an open fire then the chimney should be swept one after installation to clear any soot falls which may have occurred due to the difference in combustion between the stove and the open fire.

Refer to BS EN 15287-1:2007, Design Installation and Commissioning of Chimneys; Part 1: Chimneys for non-room sealed heating appliances, for guidance.

## TOP FLUE EXIT

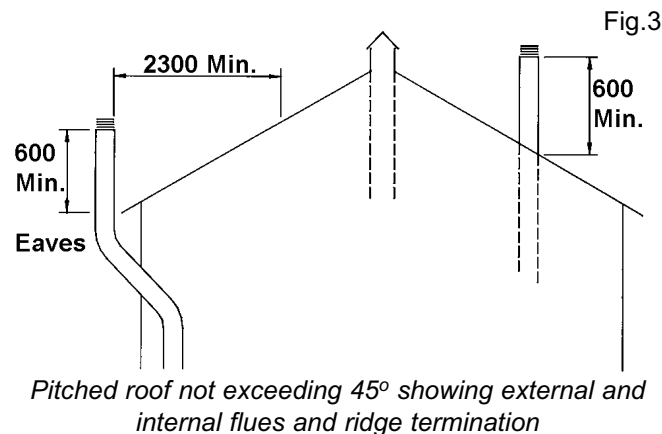
Fig.2



For the top flue outlet configuration, remove the blanking plate from the hob, remove the flue spigot from the back plate and fix it to the hob. Fix the outlet blanking plate to back plate (see Fig.2). Push the flue outlet connector pipe (not supplied) into the flue spigot and cement into place using approved fire cement, ensuring that no fire cement is blocking the flue passageway.

## REAR FLUE EXIT

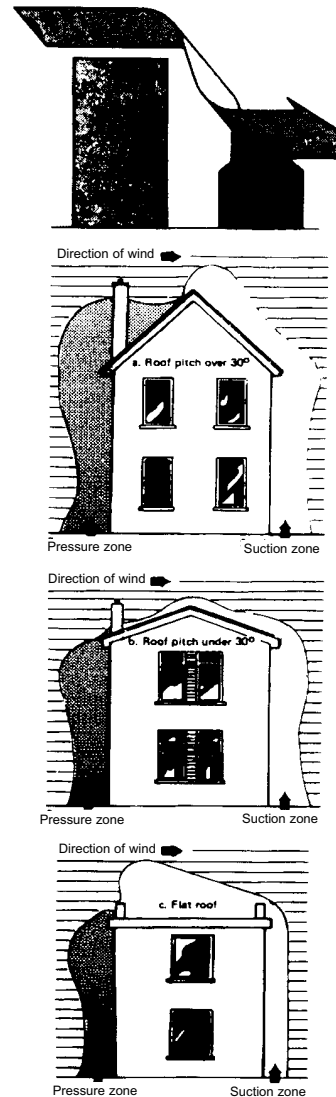
Push the flue connector pipe (not supplied) into the flue spigot and cement into place using approved fire cement ensuring that no cement is blocking the flue passageway.



## DOWN DRAUGHTS

However well designed, constructed and positioned, the satisfactory performance of the flue can be adversely affected by down draught caused by nearby hills, adjacent tall buildings or trees. These can deflect wind to blow directly down the flue or create a zone of low pressure over the terminal. A suitable anti-down draught terminal or cowl will usually effectively combat direct down blow but no cowl is likely to prevent down draught due to a low pressure zone (See Fig.4)

Fig.4



## VENTILATION AND COMBUSTION AIR REQUIREMENTS

This appliance is rated at 6.6kW and requires a free air vent of 8.8cm<sup>2</sup>. If a flue draught stabiliser is fitted the air requirement is 28.6cm<sup>2</sup>. When calculating combustion air requirements for this appliance use the following equation: 550mm<sup>2</sup> per each kW of rated output above 5 kW should be provided, where a flue draught stabiliser is used the total free area shall be increased by 300mm<sup>2</sup> for each kW of rated output. If there is another appliance using air fitted in the same or adjacent room, it will be necessary to provide an additional air supply.

For newer build properties the ventilation requirements may need to be higher if the designed permeability of the home is less than 5m<sup>3</sup>/h.m<sup>2</sup>. Approved Document J of the building regulations gives more detailed information.

All materials used in the manufacture of air vents should be such that the vent is dimensionally stable, corrosion resistant, and no provision for closure. The effective free area of any vent should be ascer-

tained before installation. The effect of any grills should be allowed for when determining the effective free area of any vent.

Air vents direct to the outside of the building should be located so that any air current produced will not pass through normally occupied areas of the room. An air vent outside the building should not be located less than the dimensions specified within the Building Regulations and B.S. 8303: Part 1 from any part of the flue terminal. These air vents must also be satisfactorily fire proofed as per Building Regulations and B.S. 8303: Part 1.

Air vents in internal walls should not communicate with bedrooms, bedsits, toilets, bathrooms or room containing a shower.

Air vents traversing cavity walls should include a continuous duct across the cavity. The duct should be installed in such a manner as not to impair the weather resistance of the cavity.

Joints between air vents and outside walls should be sealed to prevent the ingress of moisture. Existing air vents should be of the correct size and unobstructed for the appliance in use. If there is an extraction fan fitted in adjacent rooms where this appliance is fitted, additional air vents may be required to alleviate the possibility of spillage of products of combustion from the appliance/flue while the fan is in operation. Refer to B.S. 8303 Part 1.

Where such an installation exists, a test for spillage should be made with the fan or fans and other appliances using air in operation at full rate, (i.e. extraction fans, tumble dryers) with all external doors and windows closed.

If spillage occurs following the above operation, an additional air vent of sufficient size to prevent this occurrence should be installed.

## **PERMANENT AIR VENT**

The stove requires an adequate air supply in order for it to operate safely and efficiently. The installer may have fitted a permanent air supply vent into the room in which the stove is installed to provide combustion and/or ventilation air. This air vent should not under any circumstances be shut off or sealed.

## **Extractor Fan**

There must not be an extractor fan fitted in the same room as the stove as this can cause the stove to emit smoke and fumes into the room.

## **CO ALARMS:-**

**Building regulations require that when ever a new or replacement fixed solid fuel or wood/bio-mass appliance is installed in a dwelling a carbon monoxide alarm must be fitted in the same room as the appliance. Further guidance on the installation of the carbon monoxide alarm is available in BS EN 50292:2002 and from the alarm manufacturer's instructions.**

**Provision of an alarm must not be considered a substitute for either installing the appliance correctly or ensuring regular servicing and maintenance of the appliance and chimney system.**

## **COMMISSIONING & HANDOVER**

On completion of the installation allow a suitable period of time for any fire cement and mortar to dry out, when a small fire may be lit and checked to ensure the smoke and fumes are taken from the stove up the chimney and emitted safely to the atmosphere. **Do not run at full output for at least 24 hours.**

On completion of the installation and commissioning ensure that the operating instructions for the stove are left with the customer. Ensure to advise the customer on the correct use of the appliance with the fuels likely to be used on the stove and warn them to use only the recommended fuels for the stove.

Advise the user what to do should smoke or fumes be emitted from the stove. The customer should be advised to use a fire guard to BS 8423:2002 in the presence of children, aged and/or infirm persons.

## **LOCATION**

There are several conditions to be considered in selecting a location for your stove.

- A. Position in the area to be heated - central locations are usually best. If situated in an alcove, site as far forward as possible, to provide more heat to the room.
- B. Allowances for proper clearances to combustibles.

## **CLEARANCE TO COMBUSTIBLES**

It is recommended that this appliance is sited next to and on a non-combustible surface. A minimum all round clearance of 100mm will allow air circulation and not impede the performance of the stove. If it is necessary to site the stove near to a combustible surface a minimum clearance of 700mm to side walls and rear walls must be maintained. The connector may pass through walls or partitions

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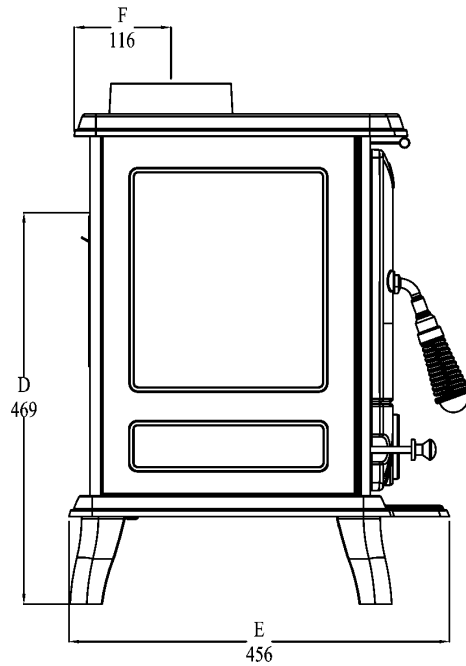
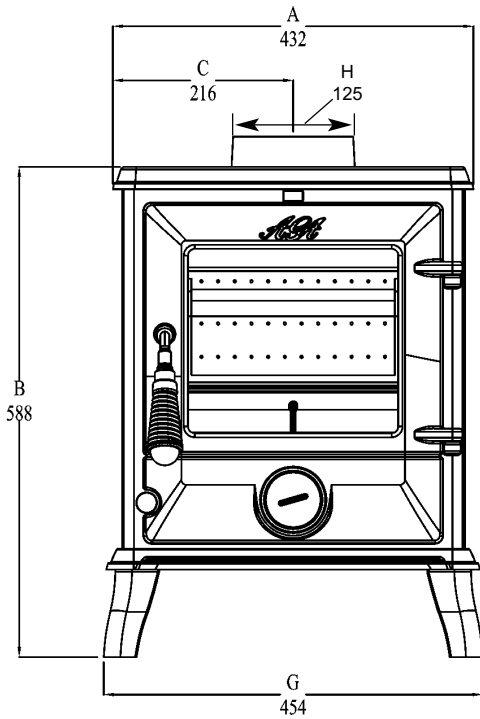
constructed of combustible materials provided the connector is either listed for wall pass-through or is routed through a device listed for a wall pass-through and is installed in accordance with the conditions of the listing. Any unexposed metal that is used as part of a wall pass-through system is exposed to flue gases shall be constructed of stainless steel or other equivalent material that will resist corrosion, softening, or cracking from flue gas at temperatures up to 982°C.

## **FLOOR PROTECTION**

It is recommended that this appliance is installed on a solid, level, non combustible hearth conforming to current Building Regulations.

## STOVE DIMENSIONS

Fig.5



### OPERATING

Check that all controls and catches are operating correctly and ensure that all flue connections are thoroughly sealed. Set all air controls to fully open.

Secondary Air Control – slider (Fig.6)  
 Primary Air Control – spin wheel (Fig.7)

Open the secondary air control situated over the door fully by sliding to the right. Slide the control to the left for minimum secondary air, this will leave the slots approximately 10mm open. The marks situated nearby are indicators for the amount of opening ranging from a short bar - less air to a long bar - more air. About three quarters open should be a good guide for normal running. The spin wheel on the front will allow additional air into the fire and should only be used on start up or if a boost is needed.

**To keep smoke emission to a minimum follow these tips:-**

Add fuel little and often, rather than in large pieces.

As a rough guide the fire will use about 2 kgs of fuel per hour. Do not over fuel.

Do not allow the bed to become too small before adding more fuel. It is better to refuel little and often and keep the fire hot.

**THIS STOVE IS ONLY APPROVED TO BURN WOOD LOGS. DO NOT BURN OTHER FUELS.**

Fig.6

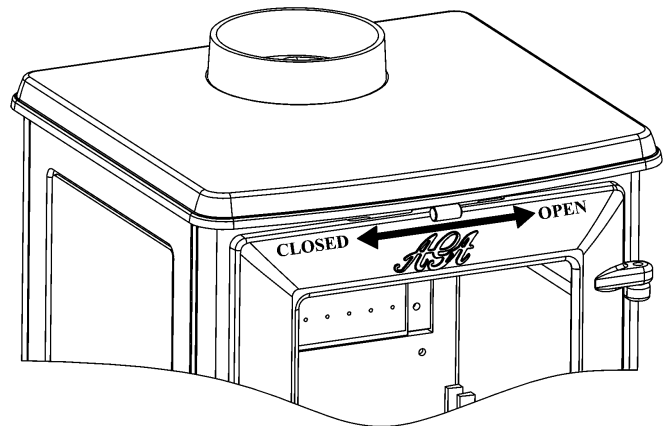
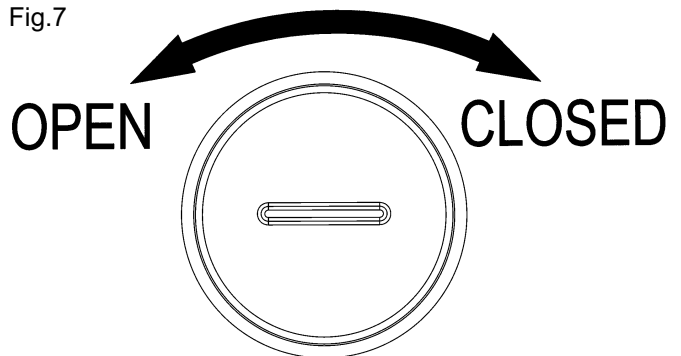


Fig.7





## RECOMMENDED FUEL

This appliance has been tested using seasoned wood logs only. These should be stored under cover and kept as dry as possible prior to use. Do not use solid mineral fuels.

### Outputs

#### Nominal heat output

Wood logs 6.6kW

Wood logs should be split up to 25cm long and 10cm in diameter.

#### Typical refuelling intervals to obtain nominal output:

Wood Logs 1.5 hr

<b>Stove Weight:</b>	<b>Gross</b>	<b>Net</b>
	77 kgs	69 kgs

Mean Flue Gas Temp. downstream of spigot at nominal heat output	313°C
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Flue Gas Mass Flow	5.1 g/s
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## RE-FUELLING

### Refuelling onto a low fire bed

If there is insufficient burning material in the firebed to light a new fuel charge, excessive smoke emission can occur. Refuelling must be carried out onto a sufficient quantity of glowing embers and ash that the new fuel charge will ignite in a reasonable period. If there are too few embers in the fire bed, add suitable kindling to prevent excessive smoke.

Do not riddle the fire with the spin valve open, fully open the secondary air control instead. Never overload the firebox, maximum 3kgs of wood approx 4 logs. See Fig.8.

When refuelling open the spin valve 5 - 6 turns for two minutes before refuelling. Add the fuel load, leave the spin valve at 5 - 6 turns open for 5 minutes until the fuel load is well alight. The spin valve can then be closed and secondary air used to control the heat output.

### Fuel overloading

The maximum amount of fuel specified in this manual should not be exceeded, overloading can cause excess smoke.

### Operation with door left open

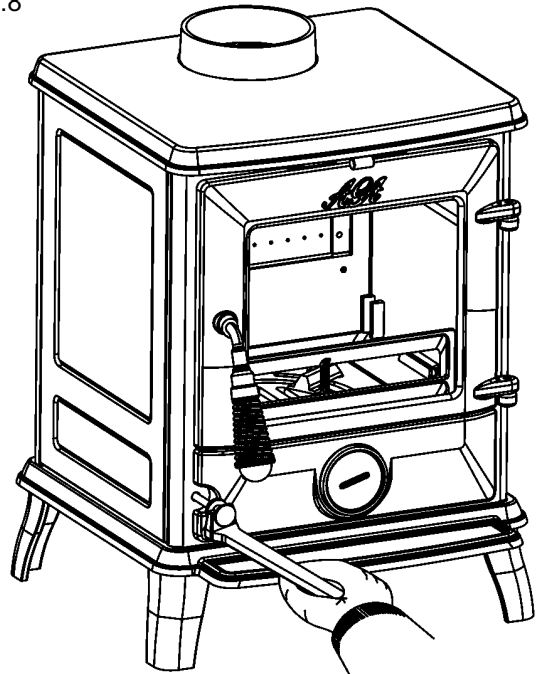
Operation with the door open can cause excess smoke. The appliance must not be operated with

the appliance door left open except as directed in the instructions.

### Dampers left open

Operation with the air controls or dampers open can cause excess smoke. The appliance must not be operated with air controls or dampers door left open except as directed in the instructions.

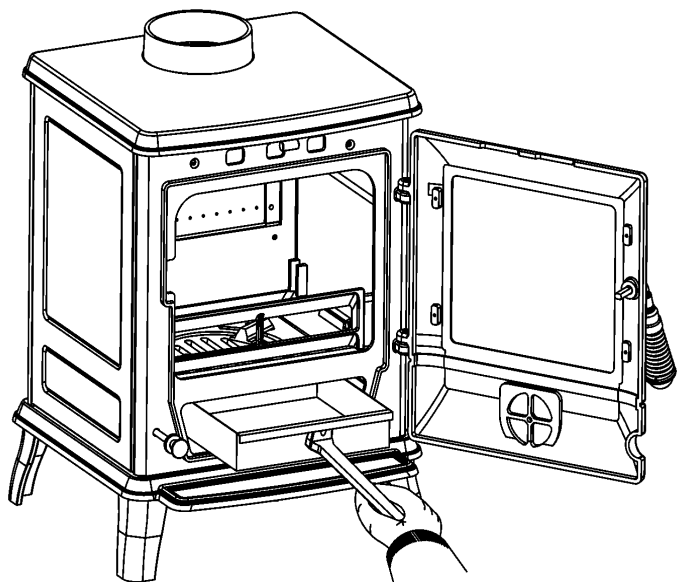
Fig.8



## DE-ASHING

Never allow the ashpan to over fill as it will cause damage to the grate. Open the fire door and remove ashpan using the operating tool. Close the fire door. When the ash is disposed of, replace the empty ashpan. (See Fig.9) Do not leave the fire unattended with the fire door open, even for a minute.

Fig. 9



## DISPOSAL OF ASH

Ashes should be placed in a metal container with a tight fitting lid. The closed container of ashes should be on a non-combustible floor or on the ground well away from all combustible materials pending final disposal. If the ashes are disposed of by burial in soil or otherwise locally dispersed they should be retained in the closed container until all cinders have thoroughly cooled.

## MAINTENANCE

### CREOSOTE: Formation and Need for Removal

When fuel is burned slowly, it produces tar and other organic vapours, which combine with expelled moisture to form creosote. The creosote vapours condense in the relatively cool chimney flue of a slow-burning fire. As a result, creosote residue accumulates on the flue lining. When ignited creosote makes an extremely hot fire.

### CHIMNEY CLEANING

Chimney and connector should be cleaned at least twice a year. Once before heating season and once after. The chimney connector and chimney should be inspected at least monthly during the heating season to determine if a creosote build-up has occurred. Remove the cast iron baffle plate located at the top end of the firebricks before chimney cleaning.

When inspecting a masonry chimney, start at the cleanout door, normally found at the base of the chimney, or on the outside. If your chimney does not have a clean-out door one should be provided.

### CO ALARMS

**Building regulations require that whenever a new or replacement fixed solid fuel or wood/biomass appliance is installed in a dwelling a carbon monoxide alarm must be fitted in the same room as the appliance. Further guidance on the installation of the carbon monoxide alarm is available in BS EN 50292:2002 and from the alarm manufacturer's instructions.**

**Provision of an alarm must not be considered a substitute for either installing the appliance correctly or ensuring regular servicing and maintenance of the appliance and chimney system.**

### WARNING NOTE

Properly installed, operated and maintained the stove will not emit fumes into the dwelling. Occasional fumes from de-ashing and re-fuelling may occur. However, persistent fume emission is potentially dangerous and must not be tolerated. If fume emission does persist, then the following immediate action should be taken:

- (a) Open doors and windows to ventilate room and then leave the premises.
- (b) Let the fire out.
- (c) Check for flue or chimney blockage and clean if required.
- (d) Do not attempt to relight the fire until the cause of the fume emission has been identified and corrected. If necessary seek expert advice.

### CO ALARM

Your installer should have fitted a CO alarm in the same room as the appliance. If the alarm sounds unexpectedly, follow the instructions given under "Warning Note" above.

The most common cause of fume emission is flue-way or chimney blockage. For your own safety these must be kept clean at all times.

### FIRE SAFETY

To provide reasonable fire safety the following should be given serious consideration:

1. The installation of smoke detectors.
2. A conveniently located fire extinguisher to contend with small fires resulting from burning embers.
3. A practical evacuation plan.
4. A plan to deal with a chimney fire as follows:
  - a. Notify the fire department.
  - b. Prepare occupants for immediate evacuation.
  - c. Close all openings into the stove.
  - d. While awaiting the fire department watch for ignition to adjacent combustibles from overhead stove pipe or from embers or from sparks from the chimney.

### IMPORTANT NOTES

Now that your Wood Burning stove is installed and no doubt you are looking forward to many comforts it will provide, we would like to give you some tips on how to get the best results from your stove.

1. We would like if you could take some time to read the operating instructions/hints, which we are confident, will be of great benefit to you.
2. Do not burn fuel with a high moisture content, such as damp or unseasoned timber. This will only result in a build up of tar in the stove and in the chimney and the possibility of a chimney fire.
3. **CLEAN THE FLUE-WAYS OF THE STOVE EVERY WEEK AND ENSURE THAT THERE ARE NO BLOCKAGES. CHECK FLUEWAYS BEFORE LIGHTING ESPECIALLY AFTER A SHUT-DOWN PERIOD. PLEASE REFER TO MANUAL FOR INSTRUCTIONS.**
4. Do not allow the fire to die down too much before adding fresh fuel. Riddling is not always necessary when wood burning.
5. Never allow a build up of ashes in the ash pan, as this may cause the grate to burn out prematurely.
6. Allow adequate air ventilation for combustion.
7. Do not burn rubbish/house hold plastic.
8. Clean the chimney at least twice a year.
9. Keep all combustible materials a safe distance away from the appliance, please see section for clearances to combustibles.
10. For safety reasons never leave children or the elderly unaccompanied while stove is in use. Use a fireguard.
11. Avoid contact with appliance when in use as the stove reaches very high operating temperatures.
12. This appliance should be regularly maintained by a competent service engineer. Use only replacement parts recommended by Aga Rangemaster. Using alternatives will invalidate your guarantee and may cause damage or injury.
13. Do not use an aerosol spray on or near the stove when it is alight.

**AN ODOUR WILL EMIT FROM STOVE ON FIRST FIRING, WHEN FIRE REACHES MAXIMUM TEMPERATURE OVER A NUMBER OF HOURS THIS ODOUR WILL SUBSIDE. IT IS BEST ADVISED TO OPEN WINDOWS DURING THIS PERIOD.**

**THIS ODOUR IS UNPLEASANT BUT NOT TOXIC. YOU MAY WISH TO VACATE THE ROOM WHILE THE PAINT CURES.**

## LIGHTING

*Before lighting the stove check with the installer that the installation work and commissioning checks described in the installation instructions have been carried out correctly and that the chimney has been swept clean, is sound and free from any obstructions. As part of the stoves commissioning and handover the installer should demonstrate how to operate the stove correctly.*

**IMPORTANT: The first few fires should be relatively small to permit the refractory to set properly and to season the stove.**

1. Before lighting the stove, ensure that any build-up in the firebox has been removed and that the ashpan has been emptied.
2. Open the spin valve a minimum of 5 turns. Open the secondary air to maximum open.
3. Lay some firelighters on the grate with two handfuls of kindling. The kindling (approx 1kg) must be cut into thin lengths and laid across each other in layers to allow for a quick lightup.
4. Light the firelighters and push the door closed leaving an approx opening of 10mm on the left hand side.
5. When the firebed has fully ignited and is starting to die back add 3 small logs (approx 1kgs).
6. Approximately 2 minutes after adding the logs the door can be closed, but air settings remain unaltered.
7. When the fire from the 3 logs is dying back a normal fuel load of approx 2.2kg - 3 logs are to be added to the fire. The door can now be closed, the spin valve can be closed after approx. 2 minutes when the logs are blackened and burning well. The fire can be left to burn down to glowing embers for a normal refuel, using the secondary air control to control the heat output.

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## GLASS

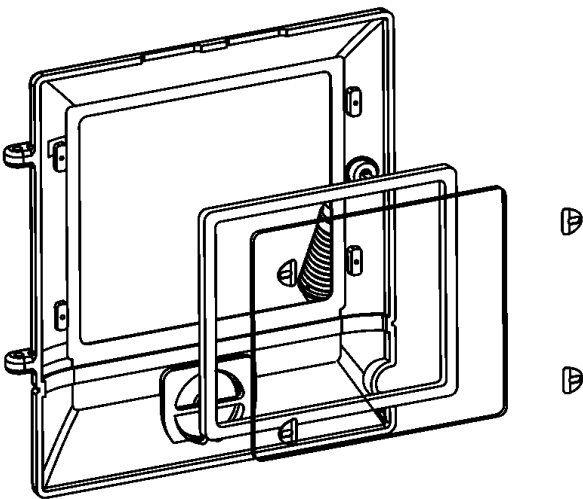
### 1. How to clean:

The glass will clean itself when there is sufficient heat generated by burning fuel. If a build-up of creosote occurs on the glass it may be due to draft conditions, poor quality fuel or very slow burning for along time. Only clean glass when the stove is thoroughly cooled. Clean with a liquid detergent taking care not to scratch the glass.

### 2. Glass Replacement: (See Fig.10)

- a. Open the door fully.
- b. Remove the four corner screws and clips and carefully remove the broken glass.
- c. Clean the glass recess in the door.
- d. Attach adhesive thermal tape to the perimeter of the replacement glass.
- e. Place the thermal tape side of the glass into the door recess and replace the four corner clips.
- f. Tighten screws.
- g. Replace glass only with ceramic glass 5mm thick.

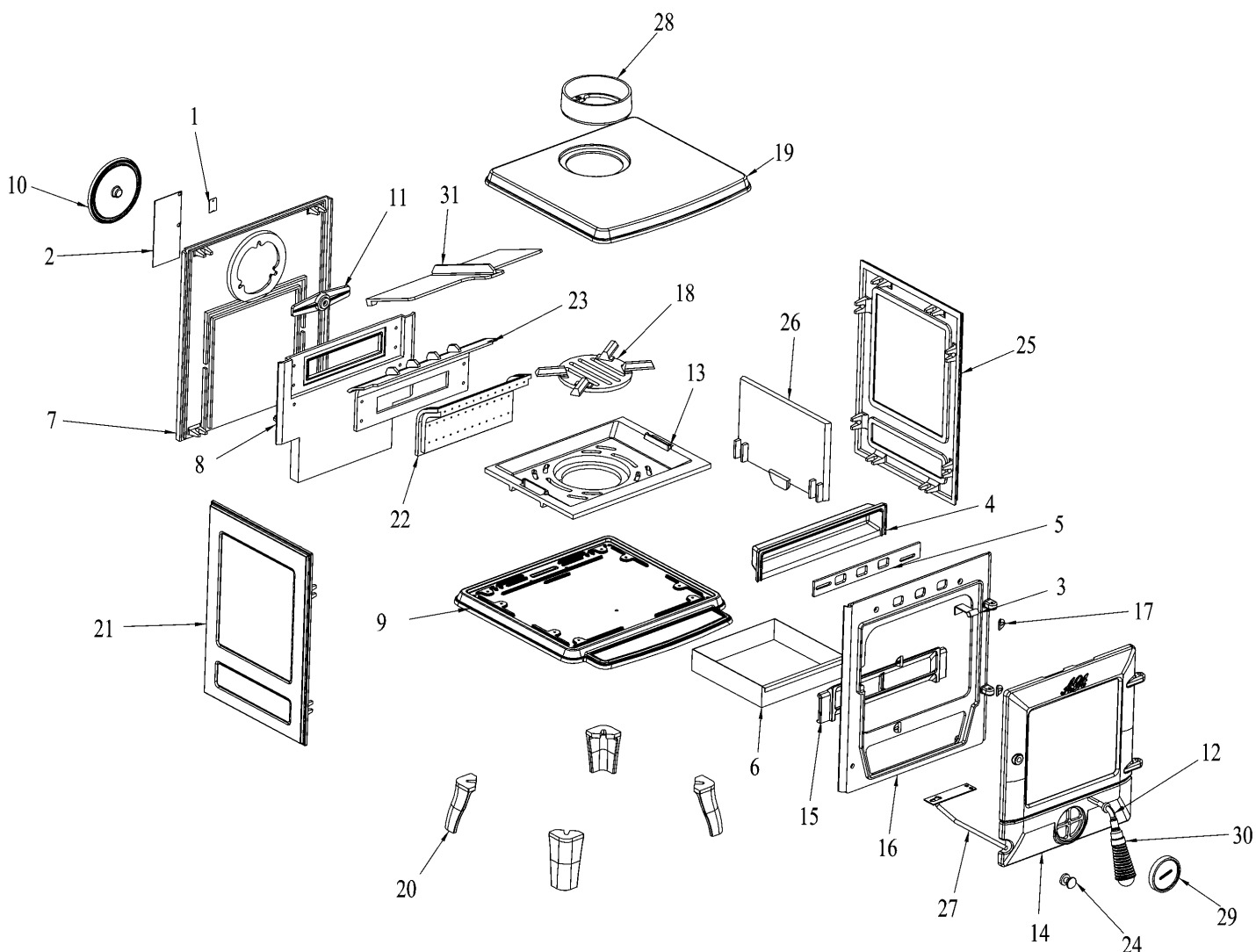
Fig.10



## SUMMER SHUTDOWN

For summer shutdown of the stove, ensure all ashes have been cleaned from the ash compartment and that the air control is fully open, to avoid condensation in the stove firebox and possible corrosion during this shutdown period.

## LUDLOW WOOD BURNING SMOKE EXEMPT STOVE EXPLODED VIEW



- |                                |                        |
|--------------------------------|------------------------|
| 1. RATING PLATE BRACKET        | 16. FRONT FRAME        |
| 2. DATA PLAQUE                 | 17. GLASS CLIP         |
| 3. AIR WASH CONTROL LEVER      | 18. GRATE              |
| 4. AIR WASH COVER              | 19. HOB                |
| 5. AIR WASH SHUTTER            | 20. LEG                |
| 6. ASHPAN                      | 21. LHS PANEL          |
| 7. BACK                        | 22. LOWER BAFFLE       |
| 8. BACK BRICK                  | 23. MIDDLE BAFFLE      |
| 9. BASE                        | 24. PULL ROD KNOB      |
| 10. BLANKING PLATE             | 25. RH SIDE PANEL      |
| 11. BLANKING PLATE LOCKING BAR | 26. RHS BRICK          |
| 12. DOOR HANDLE AXLE           | 27. RIDDLING ROD       |
| 13. FIRE BED                   | 28. SPIGOT             |
| 14. FIRE DOOR                  | 29. SPINVALVE          |
| 15. FIRE FENCE                 | 30. SPRING HANDLE ASSY |
|                                | 31. TOP BAFFLE         |

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