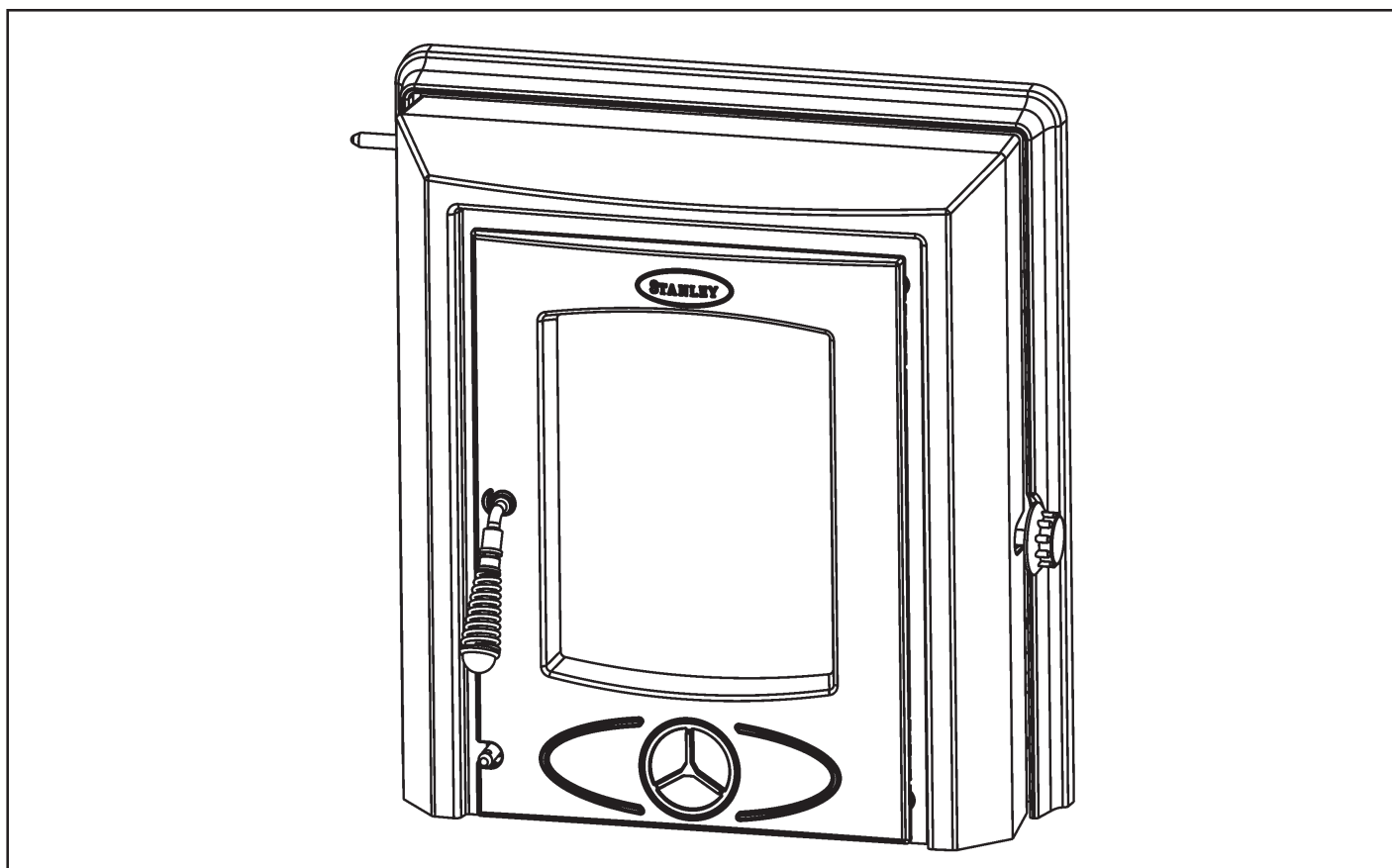


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PLEASE RETAIN



# Cara+ Solid Fuel High Output Boiler Insert Stove



## **INSTALLATION AND OPERATING INSTRUCTIONS**

*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 8423:2010.*

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## STANLEY SOLID FUEL STOVE WARRANTY

### CONDITIONS OF WARRANTY

Your Stanley Solid Fuel Stove is guaranteed against any part that fails (under normal operating conditions) as detailed in the following table with timelines specified from the date of installation of the appliance. If the unit is not installed within six months of date of purchase, the warranty will commence six months from the date of purchase.

Warranty Period	Parts Covered (Parts & Labour unless Stated)
Up to 1 Year	<ul style="list-style-type: none"><li>Refractory materials (supply only)</li><li>Rope seals, glass seals and cement seals.</li><li>Surface Finish on Seno models.</li><li>Grates and fire bars.</li><li>Ceramic glass is covered for Thermal breakage (supply only).</li><li>Rust (if reported before installation)</li><li>Aesthetic Damage (provided reported on date of receipt)</li></ul>
Up to 5 Years	<ul style="list-style-type: none"><li>All external castings &amp; enamel finishes (excluding impact damage or damage caused by overfiring). Pictures of damage must be submitted to WS Service Department.</li></ul>
Up to 3 Years	<ul style="list-style-type: none"><li>Boiler - A Leaking Boiler Report must be conducted by an Authorised Stanley Service Engineer and submitted to WS Service Department for review.</li></ul>

All warranty claims must be reported to the Waterford Stanley Service Department and must be submitted with the product serial number (located on the front casting), date of purchase, proof of purchase (if requested) and details of the specific nature of the problem.

The warranty is given only to the original consumer/purchaser only and is non-transferable. The appliance must be installed by a suitable qualified person and installed as per the requirements of the manual. Failure to comply with the Installation requirements or Building Regulations will void your warranty. Waterford Stanley reserve the right to replace any part due to manufacturing defect that fails within the warranty period under the terms of the warranty. The unit must be used for normal domestic purposes only and in accordance with manufacturer's operation instructions.

### LIMITS OF LIABILITY

The warranty does not cover:

- \* Special, incidental or consequential damages, injury to persons or Property, or any other consequential loss.
- \* Any issue caused by negligence, misuse, abuse or circumstances beyond Waterford Stanley's control.
- \* Any issue with wear and tear, modification, alteration, or servicing by anyone other than an authorized service engineer.
- \* Installation and operational related problems such as draught related issues external to the stove, inadequate venting or ventilation, excessive flue offsets, negative air pressure caused by insufficient burning of improper fuel.
- \* Damage caused to the unit while in transit.
- \* Enamel discolouration due to over firing, enamel damage caused by impact, damage to baffles caused by over firing and fading of surface finish on casting.
- \* Stress fractures on bricks.
- \* Rust on cast iron parts unless reported prior to unit being installed.
- \* Aesthetic damage, rust & missing parts on units purchased off display.

**Note:** Adequate clearance must be maintained around the appliance to ensure the ease of part removal in the possible event of their damage/failure. Waterford Stanley are not responsible for any costs incurred in the removal of items installed in the vicinity of the appliance that have to be moved to facilitate a part replacement.

## INSTALLATION CHECK LIST

Tick

### *Flue System*

1. Minimum Flue Height of 4.6 metres (15 feet).
2. Appliance should be connected to a 125mm (5") flue pipe within a metre and then the flue size increased to a minimum of 150mm (6") diameter.
3. The horizontal flue run should not exceed 150mm (6")
4. All flue pipework passing through walls must be sleeved & adequately insulated in line with current Building Regulations.
5. Appliance should be connected to a chimney of less than 200mm (8") in diameter (otherwise the chimney must be lined with a 6" flue liner).
6. The chimney/ flue termination must be located in accordance with building regulations part J.
7. The chimney serving this appliance should not serve any other appliance.
8. Access should be provided to the chimney serving the appliance to allow for cleaning.
9. It is a requirement by Building Regulations to have a carbon monoxide alarm fitted to any room with a solid fuel appliance.

### *Location*

10. Clearance to combustible materials must be adhered to as described in the Clearance to Combustible section.
11. The stove must be installed on a floor protector that covers the area under the stove and extends 14" to the front and 6" to the sides.
12. Clearance must be maintained to allow for maintenance and part replacement.

### *Ventilation & Combustion Air Requirements*

13. The room in which the appliance is located should have an air vent of adequate size to support correct combustion (see Ventilation & Combustion Air Requirement Section for specific details).
14. The stove must not be installed in the same room as an extractor fan.

### *Plumbing and Electrical Requirements*

15. All plumbing and electrical work associated with the appliance must be conducted in accordance with current Building Regulations, Maintenance Instructions and Best Practice Guidelines.



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## IMPORTANT OPERATION / MAINTENANCE NOTES

Now that your Stanley Solid Fuel 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 a damp peat or unseasoned timber. This will only result in a build up of tar in the stove and in the chimney.

<b>FUEL CALORIFIC VALUES - SOLID FUELS</b>		
Anthracite 25-50mm	C.V.: 8.2kW/Kg	14,000 BTUs/lb
House Coal 25-75mm	C.V.: 7.2kW/Kg	12,000 BTUs/lb
Timber - Firebox size	C.V.: 5.0kW/Kg	8,600 BTUs/lb
Peat Briquettes	C.V.: 4.8kW/Kg	8,300 BTUs/lb

3. **IMPORTANT:** The first few fires should be relatively small to permit the refractory to set properly and season the stove. During these firings it is recommended to ventilate the room as an unpleasant (not toxic) odour may be emitted as the paint is completing curement.
4. **Inspect the flue-ways of the stove weekly and ensure that there are no blockages. Check flue ways before lighting especially after a shut down period. Please see chimney cleaning section.**
5. Before loading fresh fuel into the firebox, riddle fully to remove all ashes. This will allow better and cleaner burning. See Re-Fuelling section.
6. Never allow a build up of ashes in the ash pan, as this will cause the grate to burn out prematurely. Empty the ashpan when refuelling.
7. Avoid slow burning of damp or unseasoned fuel as this will result in tarring flue ways and chimney i.e. peat or timber.
8. Allow adequate air ventilation to ensure plenty of air for combustion.
9. Do not burn rubbish/household plastic.
10. Clean the chimney at least twice a year.
11. Burning soft fuels such as timber and peat will stain the glass. Regular cleaning will prevent permanent staining. Clean with soapy water when cool.
12. Keep all combustible materials a safe distance away from unit, please see section for clearances to combustibles.
13. Never use aerosol spray near the appliance when it is in operation.
14. For safety reasons never leave children or the elderly unaccompanied while stove is in use. Use a fire guard.
15. Avoid contact with the appliance when in use as stove reaches very high operating temperatures.
16. This appliance should be regularly maintained by a competent service engineer.

## THE CARA+ SOLID FUEL BOILER STOVE INSTALLATION & OPERATING INSTRUCTIONS

### GENERAL

When installing, operating and maintaining your Cara + 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 and property. Consult your local Municipal office and your insurance representative to determine what regulations are in force. Save these instructions for future reference.

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).

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 specialist 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.

### “IMPORTANT WARNING”

This stove must not be installed into a chimney that serves any other heating appliance.

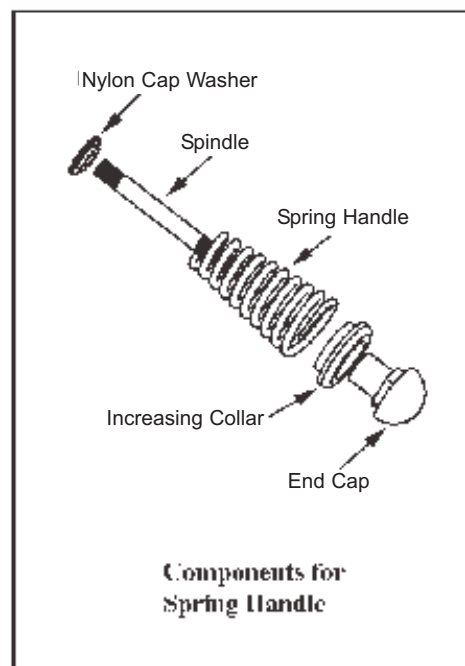
The complete installation must be done in accordance with current Standards and Local Codes. It should be noted that the requirements and these publications may be superseded during the life of this manual.

Please refer to the current standards, BS EN 15287-1:2007 Design, Installation and Commissioning of chimneys. BS EN 14336:2004: Heating Systems in Buildings. Installation & Commissioning of Water Based Heating Systems. BS EN 12828: 2003; Heating Systems in Buildings. Design of Water Based Heating Systems. BS EN 12831: 2003; Heating Systems in Buildings. method for calculation of the design heat load.

Your Cara + stove is supplied with the following items:

- Handle Assembly (See Fig. 1)
- Ashpan
- Operating Tool
- Glove
- Touch-Up Paint (Enamel Only)
- Flue Collar Grub Screw
- Clay Adaptor
- Rigid Pipe
- 15° Adaptor

Fig.1



### ELECTRICAL CONNECTIONS

The installation of any electrical services during the installation of this stove must be carried out by a registered competent electrician and in accordance with the requirements of the latest issue of BS 7671.

## 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 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.

## CHIMNEY

**Do not connect to a chimney serving another appliance.**

The stove is a radiant room heater and must be connected to a chimney of the proper size and type. The chimney must have a cross-sectional area of at least 30 square inches 19350sq. mm or a diameter of at least 6" (150mm). It is best to connect to a chimney of the same size, as connection to a larger size may result in a somewhat less draught.

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 and any faults corrected. An existing masonry chimney should be inspected and if necessary repaired 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 0.06" w.g. Poor draught conditions will result in poor performance.

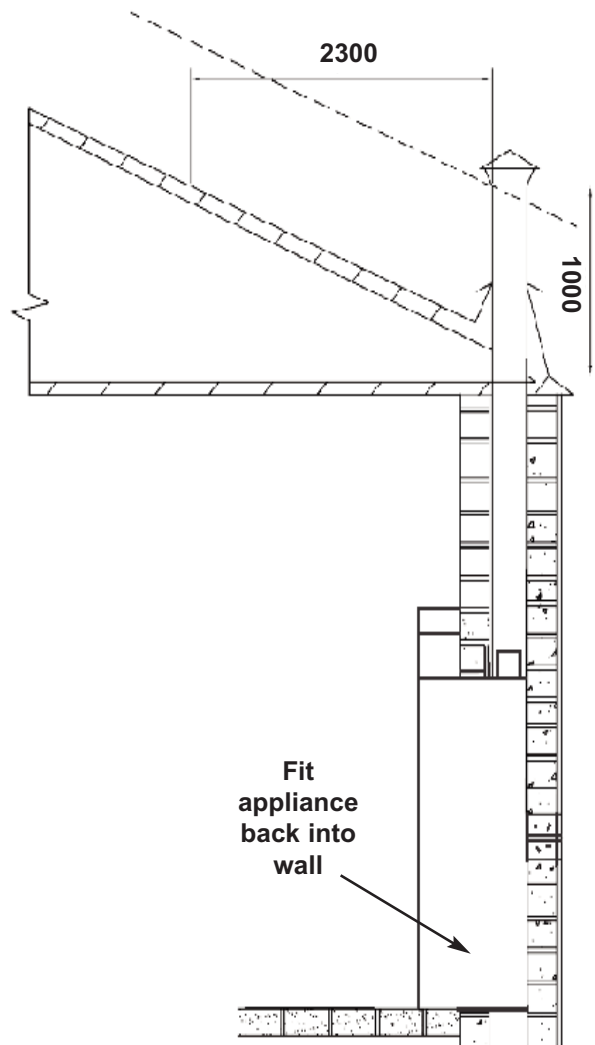
All register plates, restrictor plates, damper etc., which could obstruct the flue at a future date should be removed before connecting this appliance.

If connecting to an existing chimney with a flue diameter of more than 8" it is recommended to line the flue using a suitable stainless steel flue liner.

Where a masonry chimney is not available a proprietary type of 6"/150mm - twin wall, fully insulated pipe may be used.

A chimney / flue termination must be located to minimise wind effects, a basic guide is that the distance from the termination to the roof should be at least 2300mm when measured horizontally and at least 1000mm when measured vertically, (see Fig.2). In circumstances where there are adjoining buildings/ structures/ roof openings there are additional requirements, please refer to building regulations part J.

Fig.2



The liner should be approved for use with solid fuel. (See Fig. 3)

Fig.3

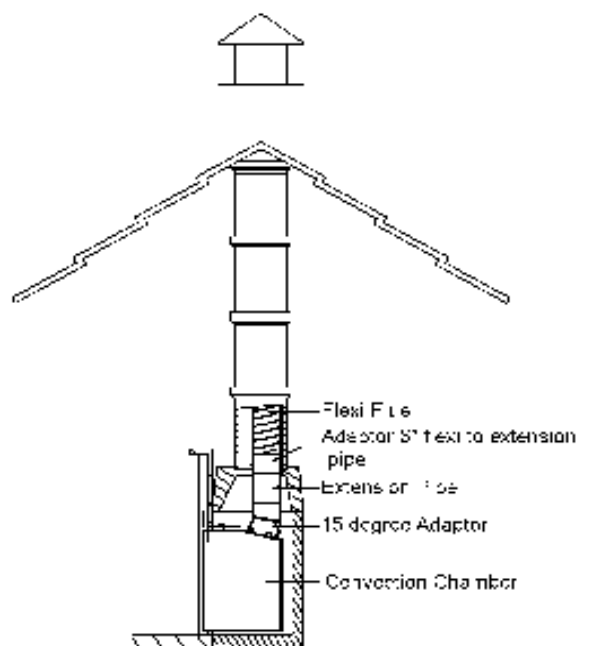
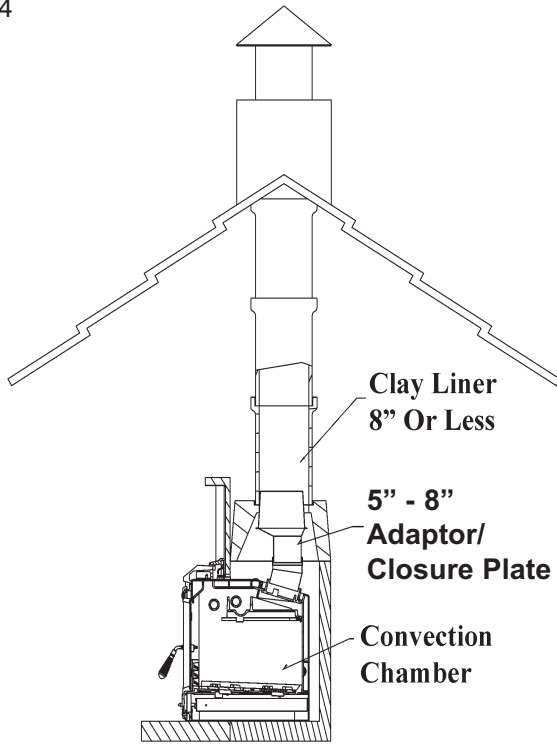




Fig.4

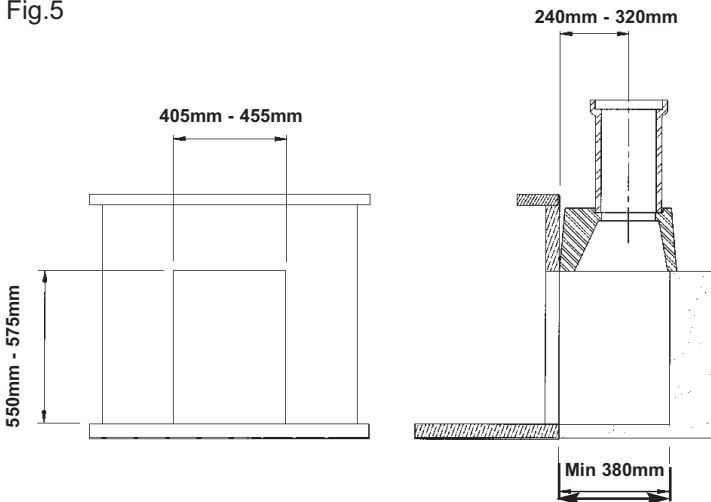


### FITTING INSTRUCTIONS

#### Step 1

Prepare the fireplace area. Ensure the opening is suitable for fitting of the insert stove opening required, i.e. remove fire surround trim if fitted. See Fig.5.

Fig.5



#### Step 2

Ensure the floor area is level with the hearth, this area needs to be level as the insert fire is screw fixed to the floor.

#### Step 3

Decide which boiler tappings are to be used to connect the boiler. Remove the temporary plugs from the other two connections and replace with permanent boiler plugs.

#### Step 4

Remove all internal parts as per pre-assembly instructions prior to lifting it.

#### Step 5

Inset the stove to its final position.

### USING CLOSURE PLATE - (Skip to Step 10)

#### Step 6

Drop the 150mm twin wall flexi flue liner down through the chimney and into the stove.

#### Step 7

Lay the sealing gasket on to the flue spigot, connect the flue spigot to the flexi pipe using a 5" extension pipe and a 5" - 6" adaptor. It is not recommended to fit a flexi flue liner within 600mm of the stove flue spigot.

#### Step 8

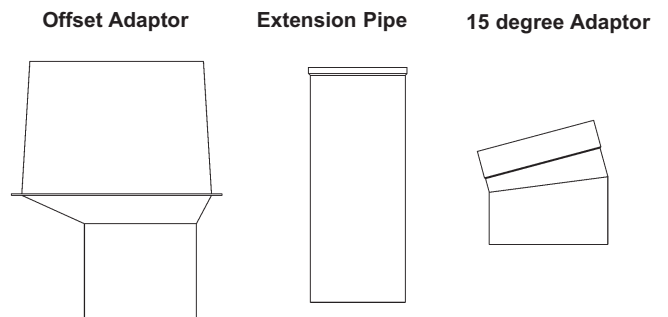
Pull the flexi liner back up through the flue outlet and fix the flue spigot into position using the M8 bolts provided. It may be necessary to cut a prop to hold the spigot in place while the fixings are being attached.

#### Step 9

Complete the installation of the flexi liner at the top of the chimney in accordance with the manufacturers instructions.

### USING FLEXIBLE LINER - (Skip to Step 16)

Fig.6 Chimney Connectors



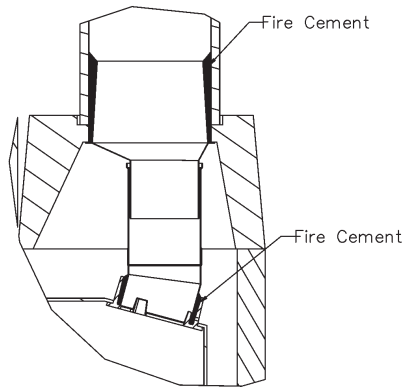
#### Step 10

Measure the distance to the flue outlet of the stove and compare to the chimney, decide on best orientation of the offset adaptor.

#### Step 11

Push the offset adaptor into position and make a seal using approved fire cement between the adaptor and the clay liner. The seal should be tapered to allow any condensation that may occur in the chimney flow back into the flue. See Fig.7.

Fig.7



**Step 12**

Measure and cut the extension pipe at the straight end to the required dimension using the guide collar provided.

**Step 13**

Lay the flue gasket onto the flue spigot and then fit the extension pipe to the spigot using the grub screws provided and seal using fire cement.

**Step 14**

Fit the spigot, 15° Adaptor and extension pipe so that it completes the flue installation between the stove adaptor (closure plate).

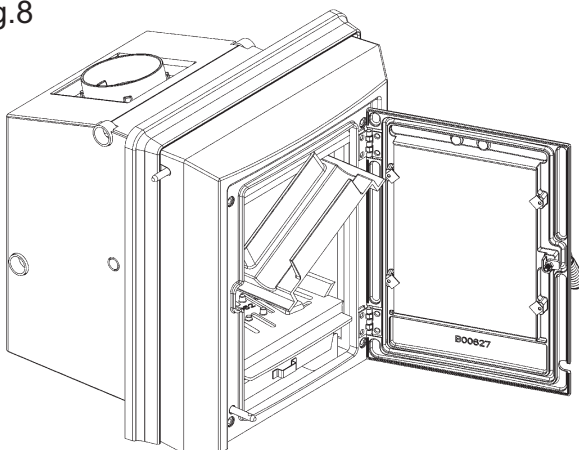
**Step 15**

Bolt the spigot to the stove and re-apply fire cement to the seals where it may have been disturbed during the installation.

**Step 16**

Replace the baffle by inserting it at an angle into the stove as shown in Fig.8. Then lift the baffle up into the top of the stove while maintaining it at an angle. Twist the baffle so that it is above the support rail. Then lift the back edge and slide the baffle back to the rear of the stove so that the tab on the baffle drops into the corresponding slot on the support rail.

Fig.8



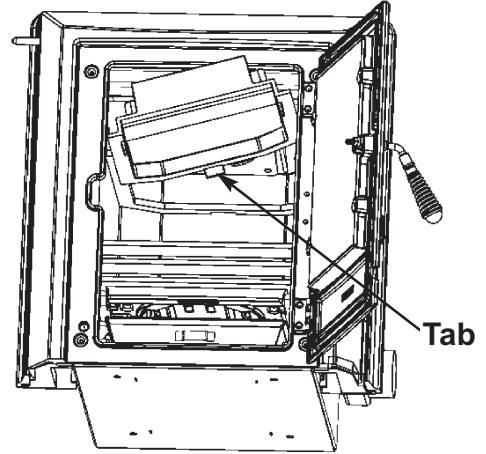
**Step 17**

Plumb the boiler - See Plumbing Section. Check all connections for leakage before insulating the boiler and infilling the system.

**Step 18**

Fill the void around boiler with fire retardant insulating wool.

Fig.9



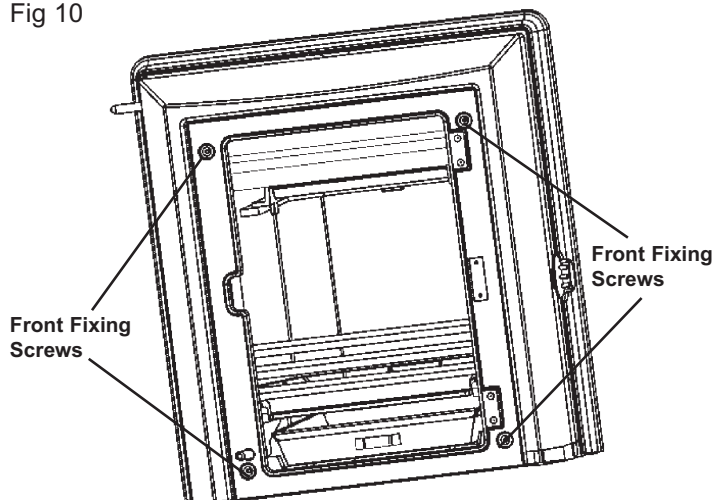
**FRONT REMOVAL & FITTING**

If necessary the front casting can be removed to improve access at the side of the product when making the connections. First remove the screws fixing the door to the hinges while supporting the door and ensuring the surface does not get damaged (extra care is needed on enamel finish).

Then remove the 4 front fixing screws (see Fig.10) which will allow the front casting and the surrounding shroud to be removed from the boiler by sliding it to the left to clear the secondary air control rod and then pulling it forward, in some circumstances it may be necessary to unscrew the secondary air control rod before removing the front.

Make the required connections and replace the front in reverse order making sure that the front seals fully to the boiler.

Fig 10

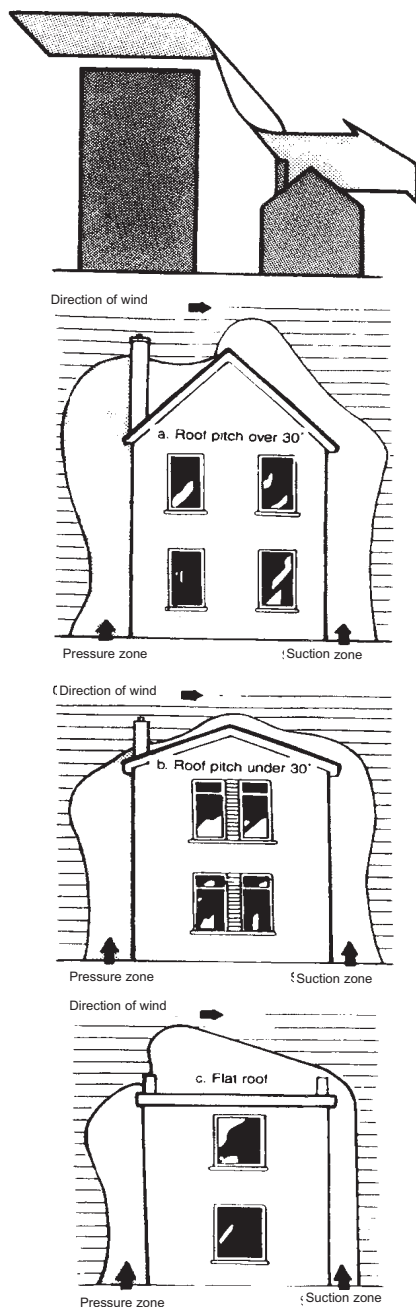


## DOWN DRAUGHTS

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 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.11).

Fig 11



## VENTILATION & COMBUSTION AIR REQUIREMENTS

It is imperative that there is sufficient air supply to the stove in order to support correct combustion. The air supply to this appliance must comply with current Building Regulations Part J, Heat Providing Appliances. If another appliance is fitted in an adjacent room it will be necessary to calculate an additional air supply.

The minimum effective air requirement for this appliance is 66cm<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.

### Note:

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.

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

Air vents should be positioned so that they are not liable to blockage.

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 any 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 rooms 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.

### **Especially Airtight Properties:-**

If the stove is being fitted in a property where the design air permeability is less than  $5\text{m}^3 / (\text{h}.\text{m}^2)$  (normally newer properties built from 2006), then a permanent ventilation must be fitted to provide  $550\text{mm}^2$  of ventilation for each kW of rated output. If a draught stabiliser is also fitted then the requirement is  $850\text{mm}^2$  per kW of rated output.

## **EXTERNAL DUCTED AIR**

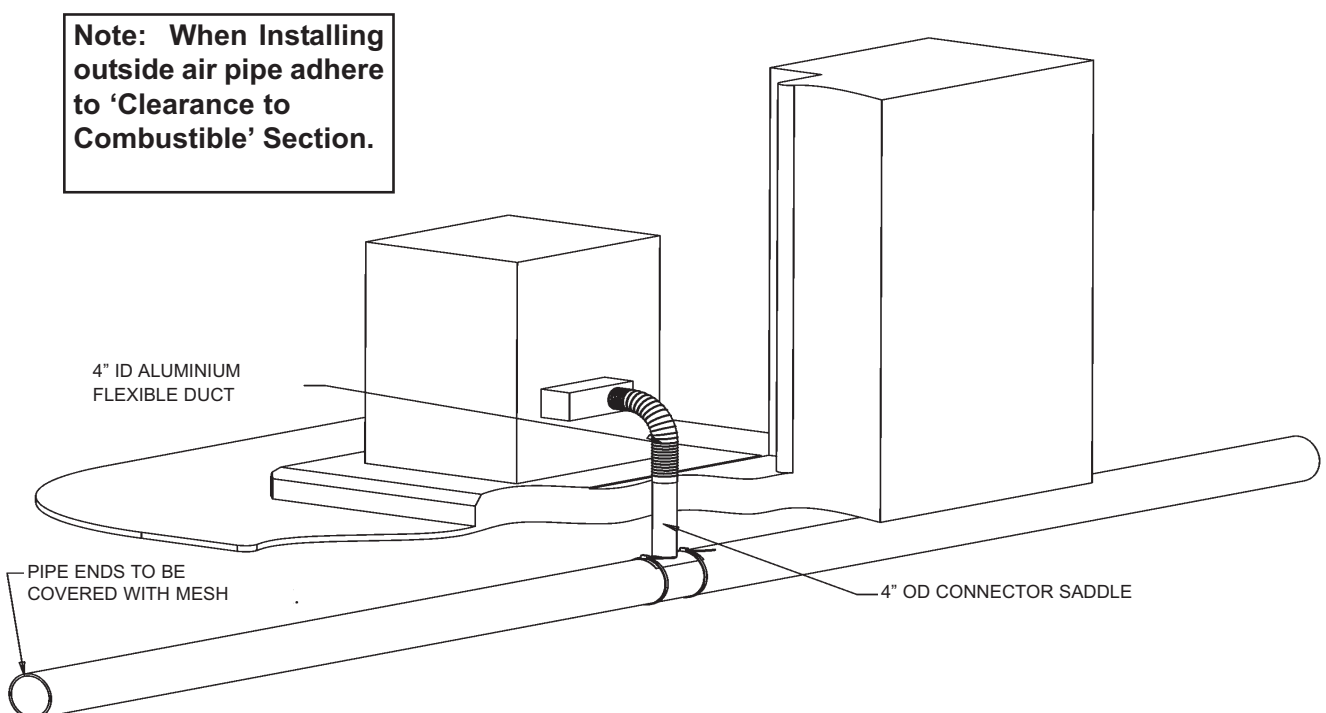
An outside air kit complete with primary air supply can be ducted from outside and is available to order for connection to the stove.

It is recommended to bring the air supply for the stove into the house using a 4" plastic pipe. Where the pipe meets the outside wall make sure a vent cover is fitted properly to ensure no rodents can enter via the vent pipe.

The vent pipe should be located to prevent the ingress of moisture and in a location where it will not get blocked with leaves or any other debris. As wind effects can create suction and pressure zones of opposite sides of the dwelling it is recommended to run the air vent from opposite poles (North, South, East & West) of the dwelling and tee off for the air supply to the stove. This should negate the effect of suction and pressure zones. See Fig. 12

*'HETAS product approval covers this appliance when installed in accordance with the manufacturer's instructions and relevant standards. As there is currently no standard for Ducted Combustion Air Supply this does not fall within the remit for HETAS product approval. Responsibility for the specification of this and for appropriate manufacturer's instructions is carried by the appliance manufacturer, as allowed for under the Building Regulations.'*

Fig.12



## HEAT RECOVERY VENTILATION

Where a stove is to be installed in a dwelling with *Heat Recovery Ventilation* (HRV) a number of precautionary measures must be undertaken:

Where the product is to be installed with a Mechanical ventilation, the stove must be connected to an external air supply, The ductwork for the external air supply must be no longer than 6 metres and the air inlet terminal to the ductwork must have a cross sectional area of at least 80cm<sup>2</sup>.

## LOCATION

There are several conditions to be considered in selecting a location for your Cara + Insert Stove.

- Position in the area to be heated, central locations are usually best.
- Allowances for proper clearances to combustibles.
- Allowances for proper clearances for maintenance work.

## Clearances to Combustibles

This appliance must be installed in a recess, the recess should not contain any combustible material. Wood battens and plaster board should not be used within the clearance to combustibles. The minimum clearance to combustibles required is as follows:

To the Top	200mm (8")
To the Front	550mm (22")
From the Sides	150mm (6")
To Combustible Flooring	350mm (14")

Fig 13

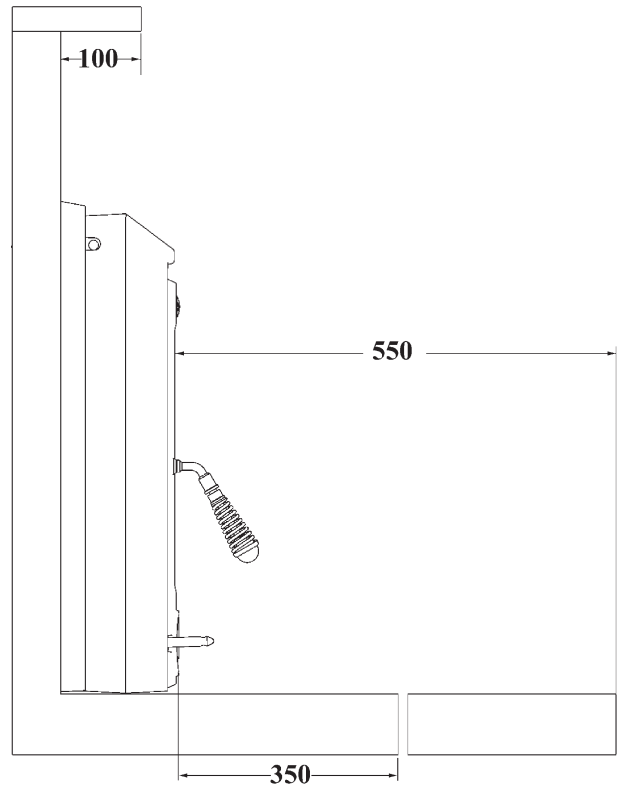
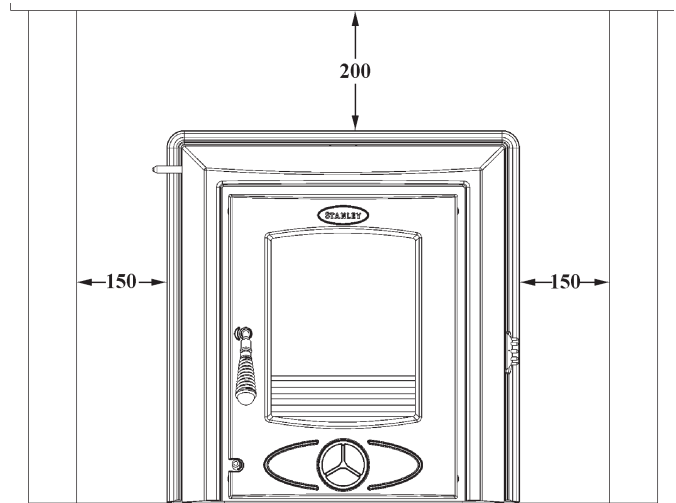


Fig 14



If the mantelpiece protrudes further than 100mm from the fireplace, then it will be necessary to have further clearance to the top of the stove. The distance the mantle protrudes past the 100mm should be added to the clearance.

For example, if the mantle protrudes 200mm, the clearance to the mantle should be 300mm. (See Figs 13 & 14).

## FLOOR PROTECTION

It is recommended that the appliance is installed on a solid, level, concrete base of non combustible hearth conforming to the current Building Regulations must extend 350mm in front of the unit and 350mm from the sides of the front edge. This will provide protection from sparks and embers which may fall out when stoking on refuelling.

## PLUMBING

### PIPE THERMOSTAT

The fitting of a pipe thermostat to the flow pipe is essential in order to activate the water circulation pump when the water reaches the selected temperature.

When the water temperature falls below the selected temperature the pipe thermostat will cut off the water circulation pump in order to allow the boiler to recover.

Fig 15

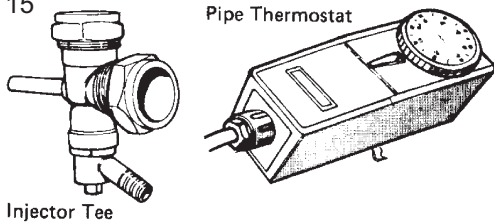
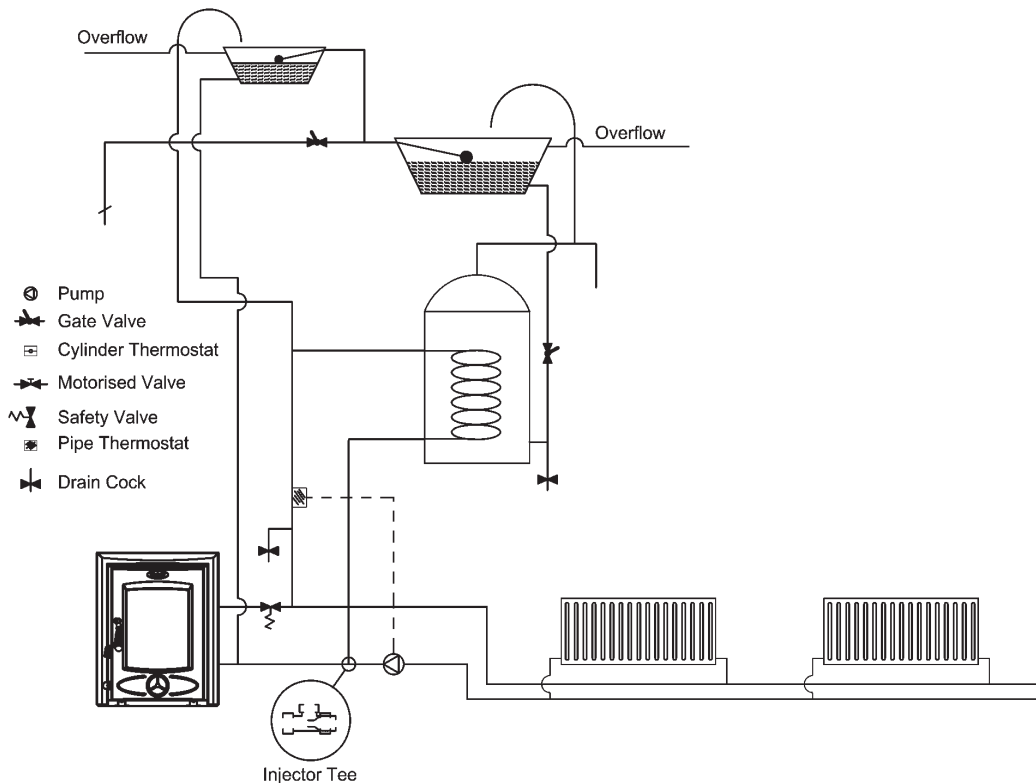


Fig.16



## REGULATIONS

The plumbing must be in accordance with all relevant regulations and practices. It must include a gravity circuit with expansion pipe, open to the atmosphere. The central heating will normally be pump-driven as with other types of boilers.

### GRAVITY CIRCUIT

The gravity circuit consists of the domestic hot water tank of 135 litres indirect cylinder, fixed in an upright position, recommended for hot water storage and it should be connected to the boiler by 28mm diameter flow and return piping. The pipes should not exceed 7.8 meters (25ft) in length and cylinder and pipework should be fully lagged. The shorter the run of pipe work the more effective the water heating.

There must be no gate valves on this circuit and it must have an expansion pipe exhausting to atmosphere. Cylinder and pipe work should be lagged to minimise heat loss.

Fig. 16 illustrates the basic principal of water heating systems and must not be regarded as a working drawing.

## INJECTOR TEE

Where the gravity and central heating circuits join together to return to the stove we recommend the use of an injector tee connection, situated as close to the unit as possible. This type of tee encourages a stable flow of hot water through both circuits and helps to prevent priority being given to the stronger flow, which is most commonly the pumped central heating circuit. This way, there will be no shortage of hot water to the taps when the heating is on.

Where the appliance is to be interlinked with another boiler it will be necessary to use a double feed indirect cylinder in accordance with BS 1566. (See Fig 17 for an illustration)

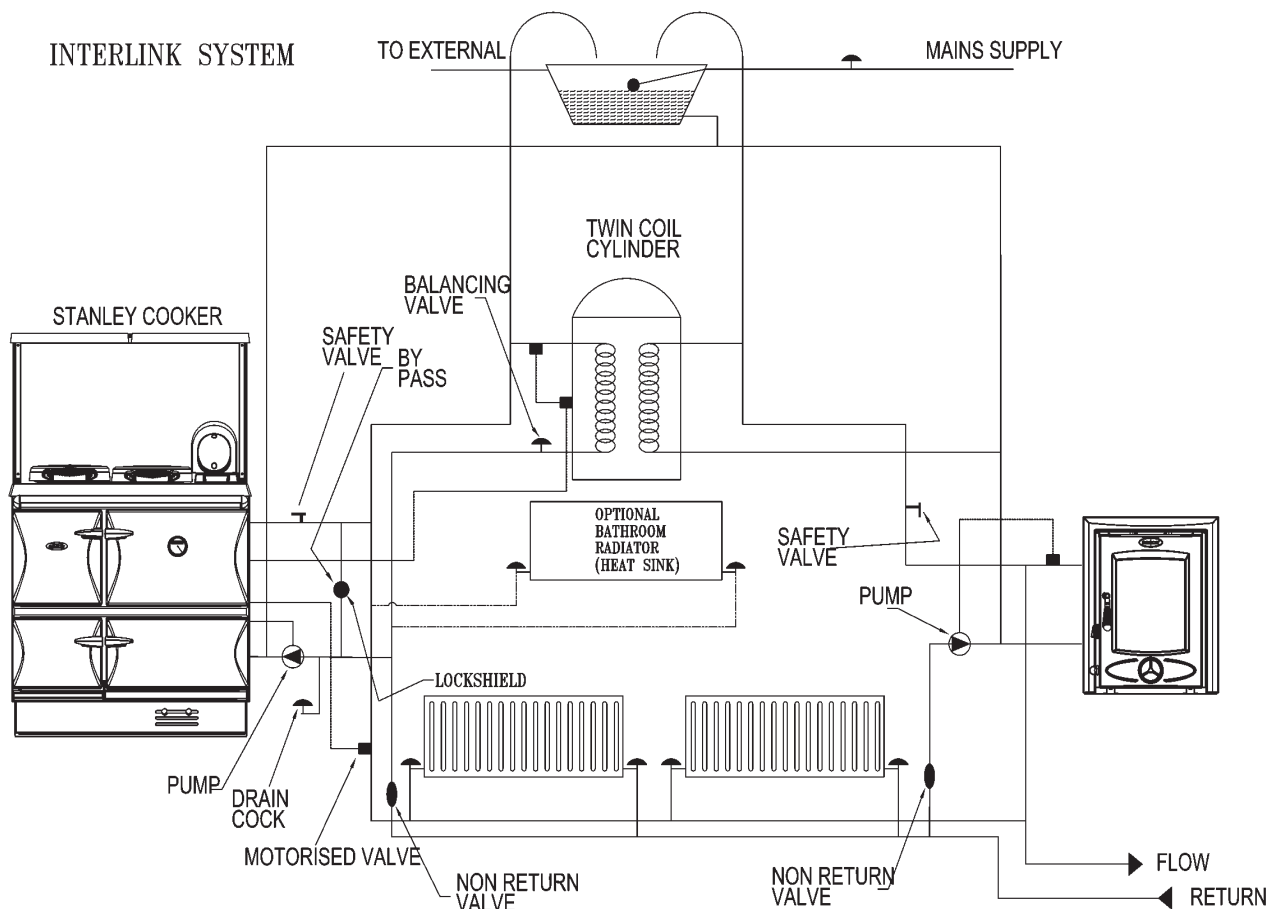
## WATER CIRCUIT TEMPERATURE

The return water temperature should be maintained at not less than 40°C so as to avoid condensation on the boiler and return piping. Fitting a pipe thermostat to the flow pipe of the gravity circuit and wiring it into the pump control will ensure rapid circulation of the hot water.

In some circumstances it may be possible to over-heat the appliance and the water inside will boil. This will be evident by the sound of a knocking noise coming from the appliance and pipes around the house. If this occurs close off all air controls and manually start the central heating pump if fitted. One radiator on the heating circuit should be uncontrolled to act as a heat leak in the event that the appliance overheats and has nowhere to discharge a build up of hot water should the heating circuit be satisfied. Be aware that steam and boiling water will be expended from any open vent from the heating system probably in the roof space at the expansion tank.

In the unlikely event that the appliance is not operating in freezing conditions the water must be drained from the boiler to prevent frost damage.

Fig.17

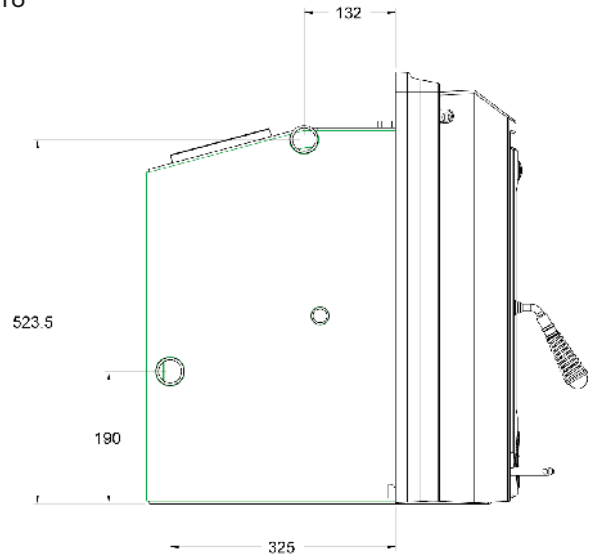


## FLUE & WATER PIPE LOCATIONS (See Fig. 19)

Flue outlet to suit 125mm (5") internal diameter flue pipe, which must be increased to 150mm (6") within a metre of the flue outlet.

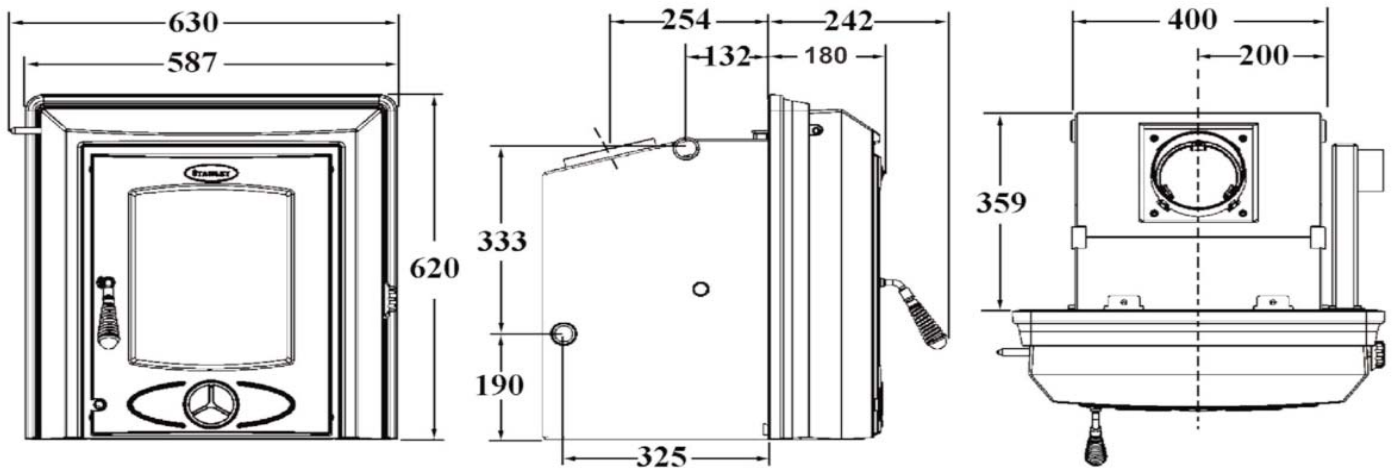
Water connections 25mm (1") B.S.P.

Fig.18



## STOVE DIMENSIONS

Fig.19



**WARNING: DO NOT OBSTRUCT PRIMARY AIR SUPPLY TO THE STOVE**

**Note:** Dimensions stated are in millimetres unless otherwise stated and may be subject to a slight +/- variation.

## COMMISSIONING AND 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.**

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 warned to use a fireguard to BS 8423:2010 in the presence of children, aged and/or infirm persons.

## OPERATION

Check that all dampers and catches are operating correctly and ensure that all flue connections are thoroughly sealed.

## AIR CONTROLS

The stove has two independent air controls:

1. The thermostat knob (see fig. 20) which controls the primary air. Rotate clockwise to open and anticlockwise to close.
2. The secondary air control which is located on the LHS. Pull to open and push to close (see fig. 21).



Fig.20

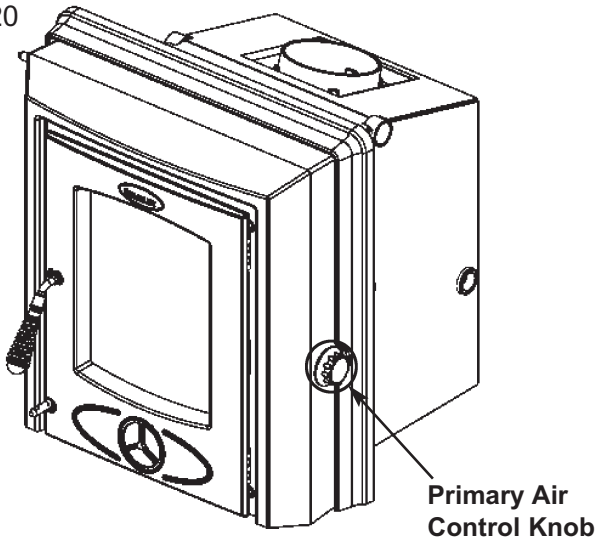
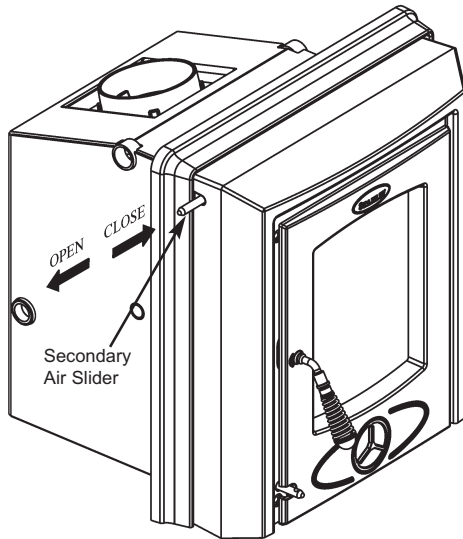


Fig 21



**NOTE:-**

The controls may become hot when the stove is in operation, use tools or glove provided to adjust the controller when the stove is hot.

A boiler model stove will provide heat into the boiler and also to the room in which it is situated. The heat to room is in a fixed relationship with the heat to the boiler.

The heat to the boiler is controlled by the air supply to the stove which is required to have a thermostatic damper for safety reasons. When the temperature of the water in the boiler exceeds 55 °C the thermostatic damper will begin to shut off the air supply, should the water temperature continue to rise the thermostatic damper will continue to close and if the water temperature reaches 85°C the thermostatic damper closes the primary air supply fully.

In the event where a stove is fitted to a central heating system which is undersized in relation to the nominal heat output to boiler then the stove will operate satisfactorily but will be unable to achieve the nominal heat output to room as the thermostatic damper will shut off the air supply to prevent an overheat situation in the boiler.

**For example:-** Where a stove provides 2kW to the room and 8kW to the boiler and if the thermostatic damper shuts down the air supply to provide 4kW to the boiler, then the heat to room will decrease proportionally to 1kW.

**RECOMMENDED FUELS**

**All fuels should be stored under cover and kept as dry as possible prior to use.**

This appliance has been tested using seasoned wood logs and manufactured briquetted smokeless fuel (Ancit) for closed appliances, sized between 20g and 140g. Other fuels are commercially available and may give similar results. Wood logs up to 380mm long are suitable. All fuels should be stored under cover and kept as dry as possible prior to use.

Do not use fuels with a Petro-coke ingredient as this may cause the grate to overheat, causing damage. Reduced outputs will result when fuels of lower calorific values are used. Never use gasoline or gasoline type lantern fuel, kerosene, charcoal lighter fluid or similar liquids to start or freshen up a fire in this heater. Keep all such liquid well away from the heater at all times. Operate the stove only with the fuelling door closed except for re-fuelling.

This stove has obtained HETAS Ltd approval for burning natural and manufactured smokeless fuels only as detailed in recommended fuels below. HETAS Approval does not cover the use of other fuels either alone or mixed with the recommended fuels listed, nor does it cover instructions for the use of other fuels.

## TECHNICAL DATA

	MANUFACTURED SMOKELESS FUEL			WOOD		
	Room	Water	Total	Room	Water	Total
Max Output: (kW)	3.7	13.2	16.9	5	8	13
Nominal Output: (kW)	2.8	12	14.8	4.2	6.9	11.1
Typical refuelling intervals to obtain nominal outputs:	MSF 1.5 hr			WOOD 1 hr		
Flue Gas Mass Flow:	8.0g/s			8.0g/s		
Flue Gas Mass at nominal output:	427°C			270°C		
Gross Weight:	165 kgs					
Flue Outlet Diameter:	125mm					
Flue Draught:	12 Pa					
Boiler Tappings:	1" BSP					
Boiler Capacity	10 Litres					
Max Water Pressure:	2 Bar					
Efficiency:	73.6 %			77.3%		
Log Size:	N/A			420mm		

Model	Energy Efficiency Class	Heat Output to Room	Heat Output to Water	Energy Efficiency Index	Preferred Fuel	Nominal Heat Output	Net Efficiency
Cara + SF Stove	A	4.2	6.9	103.09	Wood	11.1	77.3

### LIGHTING

Before lighting the stove check with the installer that the installation work and commissioning checks described previously 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.

### LIGHTING THE STOVE

1. Open the firebox door and remove all debris from the grate and ashpan.
2. Open the primary air control by turning it clockwise fully (see Fig. 21).
3. Set the secondary air slider to the required position depending on the fuel being burned i.e. open when burning wood and closed when burning coal/ anthracite (see Figure 22).
4. Place pieces of paper & kindling on the top of the grate and add a small quantity of fuel. Light the fire and close the firebox door.
5. When a good fire is established, open the fire door and load the fuel as required.
6. Adjust the primary air control & the secondary air slider as required depending on the fuel type being used & the heat output as required (see table below). Both controls should be adjusted in conjunction with each other to get the appropriate burn rate with exact settings on each control depending on the draught conditions of the chimney to which the unit is connected.

FUEL	PRIMARY AIR	SECONDARY AIR
Anthracite	Adjust for Desired Heat Output	Fully Closed
Coal	Adjust for Desired Heat Output	Fully Closed
Turf/ Wood	Fully Closed	Slightly Open

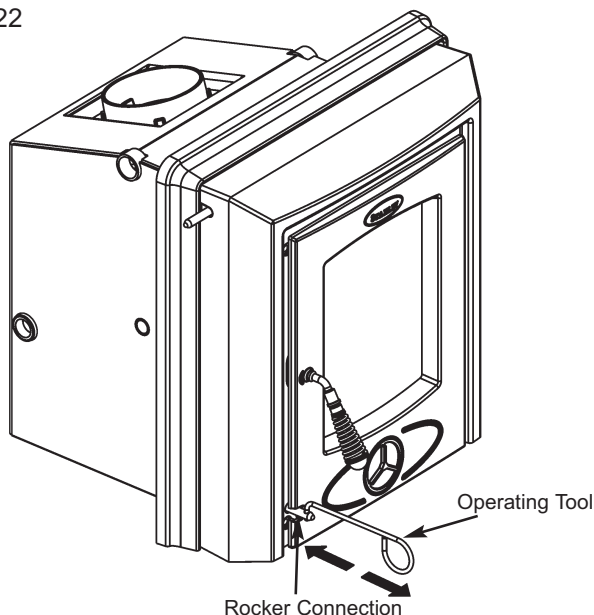
**WARNING: DO NOT LEAVE BOTH AIR CONTROLS FULLY OPEN AS THIS CAN CAUSE THE STOVE TO OVERHEAT, DAMAGING THE INTERNAL COMPONENTS.**

## RE-FUELLING

When refuelling with manufactured smokeless fuel riddle the fire by connecting the grate operating tool onto the rocker connection located at the bottom front of the stove. Then gently pull and push the rocker arm until all dead ash has fallen through into the ashpan. Before opening the door, open the primary air by turning the knob clockwise, as this will help to eliminate any smoke or fly ash resident in the combustion chamber. Add fuel to fire, taking care not to overfill higher than the front firebars. Close fire door and re-set control knob to required setting. Do not operate this appliance with the fire door open. (See Fig.22)

When burning wood the requirement to riddle the fire is much less. Do not riddle the fire with the primary air open but fully open the secondary air control instead. Remember to reset the controls after refuelling.

Fig.22



## SLOW BURNING

To achieve slow burning when burning wood close the secondary air slide and open a few millimetres. Slow burning will cause the window glass to blacken and should not be used for a long period as it will leave sooty deposits in the flueways. Opening the air slide will increase the heat output and will clear the glass.

To obtain slow burning when burning coal, close the secondary air fully and partially open the primary air control.

## DE-ASHING

Never allow the ashpan to over fill as it will cause damage to the grate. Empty the ashpan before lighting. Always ensure that ashes have thoroughly cooled before removing the ashpan. 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. Do not leave the fire unattended with the fire door open, even for a minute.

## DISPOSAL OF ASHES

Your stove is provided with a stainless steel ashpan. This ashpan should be emptied every day.

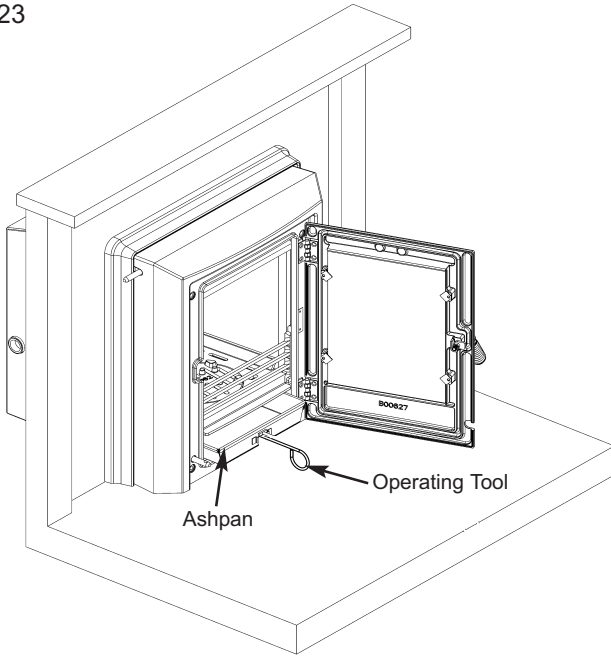
If ashes are allowed to build to grate level you could damage the firebars by overheating. We recommend that you remove ashes after you have riddled the fire when the stove is thoroughly cooled.

Ashes should be placed in a metal or other non-combustible container with a tight fitting lid. The closed container of ashes should be placed on a non-combustible material, pending final disposal. If ashes are buried in soil, or otherwise dumped they should be retained in the closed container until they are thoroughly cooled.

Open the fire door and remove the ashpan using the tool provided, see Fig 23. Close the fire door. When the ash is disposed of replace the ashpan.

## REMEMBER COAL GASES ARE TOXIC

Fig.23



## MONTHLY MAINTENANCE

### *Cleaning Stove Flue Pathways*

It is recommended that the flue pathways in the stove are cleaned on a monthly basis (or less depending on the soot build-up created by the fuel being used) and the chimney cleaned annually. To access the chimney pathways, use the following procedure:

1. The bottom baffle should be removed from the stove through the fire door opening and cleaned thoroughly. For ease of removing the baffle from the firebox, remove the fire bars. Remove the bottom baffle by lifting up the front of the baffle and sliding it forward (see Fig. 24).
2. When it is clear of the support rib, lift one side of the baffle which will allow the opposite side to drop down into the centre of the stove (see Fig. 25). Remove the baffle from the stove by holding it at an angle allowing for it to pass through the opening on the front casting.

Fig 24

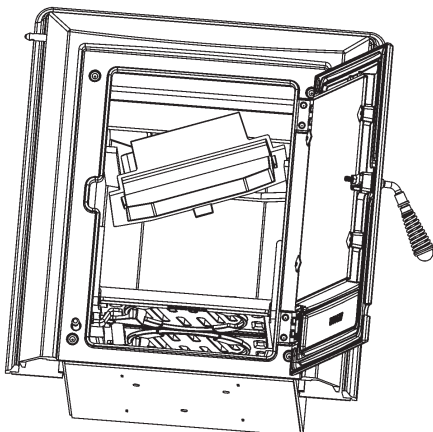
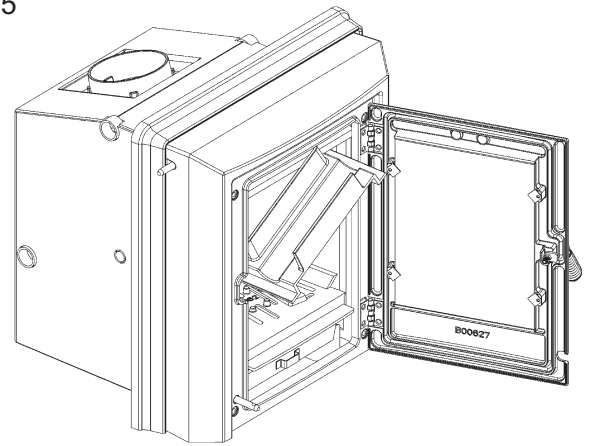


Fig 25

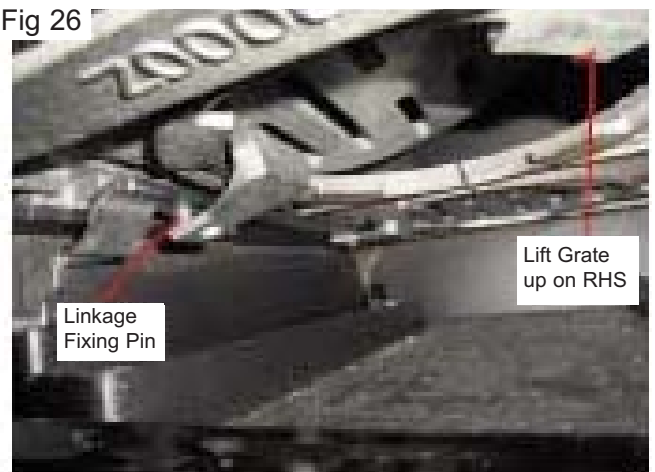


## GRATE REMOVAL & CLEANING

Over time fuel deposits, clinker & ash can lodge between the grate and grate support which can cause difficulties when moving the grate during de-ashing. To help reduce this occurrence, it is recommended that the grate is cleaned on a monthly basis when undertaking the general cleaning of the flue pathways using the following procedure:

1. The grates are removed, by removing the ashpan and then lifting the grate up from underneath on the RHS to release it from the grate linkage (see Fig. 26). Replace the ashpan and clean all ash from the grate insert & underside of the grate.
2. When replacing the grate, the grate linkage will need to be lifted and for ease of fit, the front grate should be replaced first. When both grates have been fitted, pull the grate pull rod to check that the grate is riddling.

Fig 26

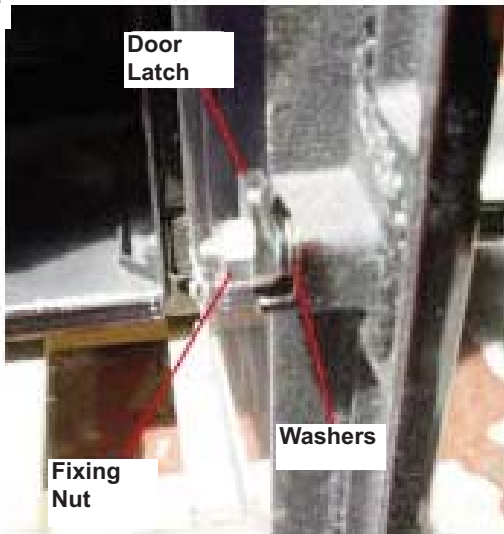


## PERIODIC MAINTENANCE

### ADJUSTING THE DOOR CATCH

Over time, the fire door latch can loosen due to the continual compression and hardening of the rope seal between the door and the front casting. The position of the latch can be easily adjusted (in order to tighten the door closure) by removing the nut holding on the door latch and repositioning the washers between the latch & the door casting to allow the latch to be positioned closer to the back of the door casting (see Fig. 27). The tightness of the door seal should be checked after each adjustment is made. It is recommended that the rope seals on the stove are changed at least every two years or sooner if the seal loses its integrity.

Fig.27



### CHIMNEY CLEANING

The chimney should be cleaned twice annually or if the stove is not used for a prolonged period during the summer period, it should be cleaned prior to commencement of usage. The chimney can be cleaned through the stove depending on the flue configuration and the flue liner should be cleaned in accordance with manufacturer's instructions. Always use a brush with plastic bristles that is the correct size to reach all areas of the flue.

### GLASS CLEANING

The stove glass will self-clean when there is sufficient heat generated by the burning fuel i.e. when the unit is operated at the maximum air settings. If a build-up of creosote occurs on the glass it may be due to low draft conditions, poor quality fuel or operating the stove at the minimum air settings for long periods of time. The glass should be cleaned when cool and cleaned with a non-abrasive cloth using warm soapy water. For stubborn deposits, a grade 0 steel wool can be used whilst taking care not to scratch the glass with any coal/ash deposits.

## VITREOUS ENAMEL CLEANING

General cleaning must be carried out when the stove is cool.

If this stove is finished in a high gloss vitreous enamel, to keep the enamel in the best condition observe the following tips:

1. Wipe over daily with a soapy damp cloth, followed by a polish with a clean dry duster.
2. For stubborn deposits a soap impregnated pad can be carefully used on the vitreous enamel.
3. Use only products recommended by the Vitreous Enamel Association, these products carry the Vitramel label.

A detailed list of the approved cleaners can be found on their website [www.vea.org.uk/enamel-care/](http://www.vea.org.uk/enamel-care/)

**DO NOT USE ABRASIVE PADS OR OVEN CLEANSERS CONTAINING CITRIC ACID ON ENAMELLED SURFACES. ENSURE THAT THE CLEANSER MANUFACTURERS INSTRUCTIONS ARE ADHERED TO.**

**NOTE:** Small impact marks on the enamel finish can be repaired using an appropriate enamel touch up (a touch up bottle is included with the stove packaging) but it should not be used to cover marks greater than  $\varnothing 10\text{mm}$  or multiple marks on the same casting/area.

### CLEANING A MATT BLACK/ SENOTHERM STOVE

Cleaning should be done when the stove is cold by removing any dust or dirt using a dry cloth. Do not use any water on the matt black/senotherm finish as this will cause it to rust.

### PROLONGED PERIODS OF NON USE

If the stove is to be left unused for a prolonged period of time then it should be given a thorough clean to remove ash and unburned fuel residues. To enable a good flow of air through the appliance to reduce condensation and subsequent damage, leave the air controls fully open.

It is important that the flue connection, any appliance baffles or throat plates and the chimney are swept prior to lighting up after a prolonged shutdown period.

### WARNING NOTE:

Properly installed, operated and maintained this stove will not emit fumes into the dwelling. Occasional fumes from the 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.
- (b) Let the fire out or eject and safely dispose of fuel from the stove.
- (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.

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

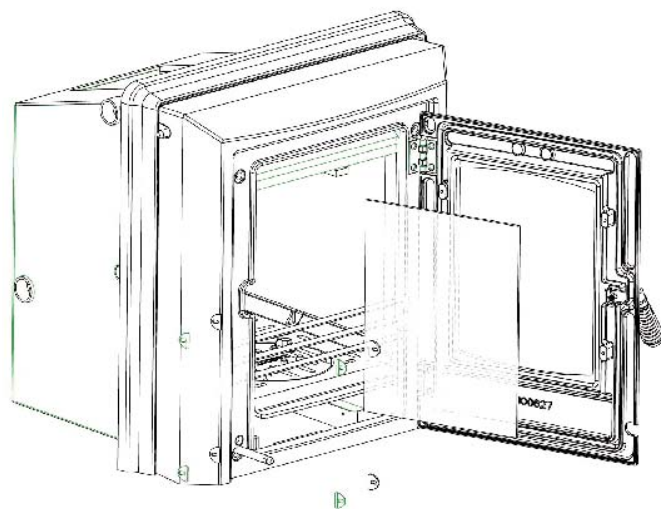
To provide reasonable fire safety, the following should be given serious consideration.

1. Do not over fire the stove.
2. Over-firing will also damage painted or enamel finish.
3. Install a smoke detector in the room.
4. A conveniently located class A fire extinguisher to contend with small fires resulting from burning embers.
5. A practical evacuation plan.
6. 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 overheated flue pipe or from embers or sparks from the chimney.

### GLASS REPLACEMENT

- (a) Open the door fully.
- (b) Remove the clips and carefully remove the broken glass.
- (c) Clean the glass recess in the door.
- (d) Place the glass into the door recess and replace the four corner clips.
- (e) Replace the sealing rope in the door if necessary
- (f) Tighten screws.
- (g) Replace glass only with ceramic glass 5mm thick. (See Fig. 28).

Fig 28



### CO ALARM

The fitting of CO Alarms in the same room as the appliance is a compulsory requirement under current Building Regulations. For ROI an additional CO Alarm must be fitted either inside each bedroom or within 5 metres of the bedroom door, refer to Building Regulations Part J. Further guidance on the installation of a carbon monoxide alarm is available in BS EN 50292:2002 and from the alarm manufacturers instructions.

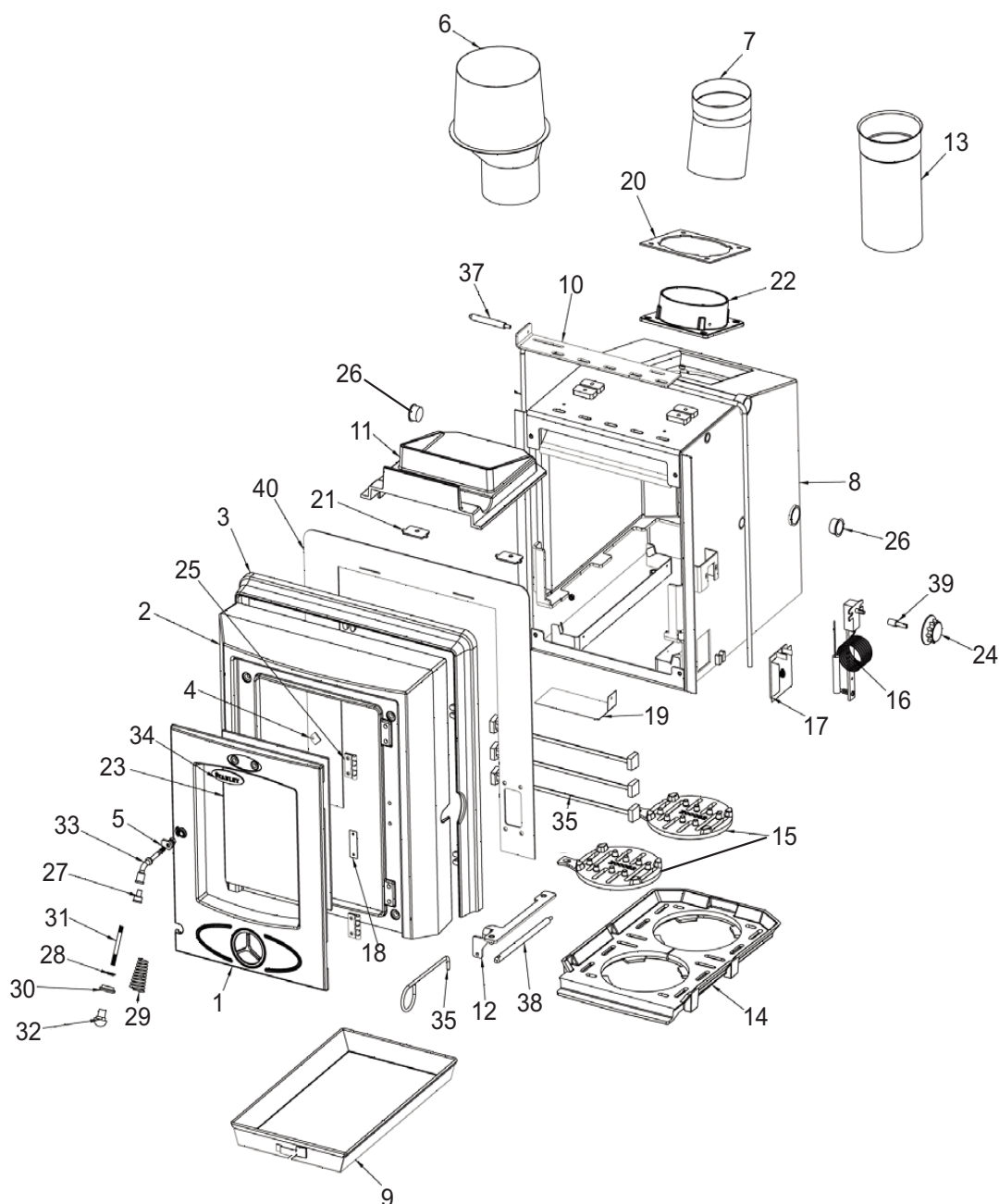
**Provision of an alarm must not be considered a substitute for either installing the appliance correctly or ensuring regular servicing and maintenance of the appliance and chimney system.**

### WARNING:-

**If the CO Alarm sounds unexpectedly:-**

1. Open Doors and windows to ventilate the room and then leave the premises.
2. Let the fire go out.

## EXPLODED VIEW



- |   |   |
|---|---|
| 1. FIRE DOOR - <b>B00627AZZ</b>                 | 21. WALL FLANGE FIXING PLATE - <b>F01265AXX</b>   |
| 2. FRONT CASTING - <b>B00628AZZ</b>             | 22. 5" FLUE - <b>Q00752AXX</b>                    |
| 3. FRONT CASTING SHROUD - <b>B00632AZZ</b>      | 23. 16" DOOR GLASS - <b>T00098AXX</b>             |
| 4. DOOR GLASS CLIP - <b>F00003AXX</b>           | 24. AIR CONTROL KNOB - <b>U00006AXX</b>           |
| 5. DOOR CATCH - <b>F00928AXX</b>                | 25. HINGE - <b>U00153AXX</b>                      |
| 6. 8 - 5"ADAPTOR - <b>F01201AXX</b>             | 26. BOILER PLUG - <b>V00016AXX</b>                |
| 7. 15 DEG ADAPTOR - <b>F01200AXX</b>            | 27. SPIGOT TO DOOR HANDLE - <b>V00021AXX</b>      |
| 8. BOILER ASSEMBLY - <b>F01106AXX</b>           | 28. BLACK NYLON CAP WASHER - <b>V00669AXX</b>     |
| 9. ASH PAN - <b>F01137AXX</b>                   | 29. BLACK COIL SPRING HANDLE - <b>V00806AXX</b>   |
| 10. AIR WASH SLIDER PLATE - <b>F01143AXX</b>    | 30. BLACK INCREASING COLLAR - <b>V00807AXX</b>    |
| 11. TOP BAFFLE - <b>Z00064AXX</b>               | 31. BLACK M8 X 80 SPINDLE - <b>V00808AXX</b>      |
| 12. LINKAGE ASSEMBLY - <b>F01181AXX</b>         | 32. BLACK HANDLE END CAP - <b>V00850AXX</b>       |
| 13. 5" X 250MM STRAIGHT PIPE - <b>F01199AXX</b> | 33. DOOR AXLE - <b>V00857AXX</b>                  |
| 14. GRATE HOLDER - <b>Z00063AXX</b>             | 34. BADGE - <b>V00912AXX</b>                      |
| 15. GRATE - <b>Z00062AXX</b>                    | 35. FIRE FENCE - <b>Z00020AXX</b>                 |
| 16. THERMOSTAT - <b>G00001AXX</b>               | 36. ASHPAN TOOL - <b>V01019AXX</b>                |
| 17. DAMPER PLATE ASSY - <b>L00667AXX</b>        | 37. AIR WASH PULL ROD - <b>V01021AXX</b>          |
| 18. SERIAL NUMBER PLATE - <b>N00234BXX</b>      | 38. RIDDLE PULL ROD - <b>V01030AXX</b>            |
| 19. DATA PLAQUE - <b>N00580AXX</b>              | 39. THERMOSTAT CONNECTOR SHAFT - <b>V01039AXX</b> |
| 20. FLUE GASKET - <b>P00102AXX</b>              | 40. WALL FLANGE PLATE - <b>F01264AXX</b>          |

<b>SYMPTOM</b>	<b>POSSIBLE CAUSES</b>	<b>REMEDY</b>
<b>Stove Difficult To Light</b>	Air controls set incorrectly	Air controls must be set to maximum settings on initial light-up
	Moisture content of fuel too high	Ensure fuel is sufficiently dry
<b>Fire Burns Too Quickly</b>	Air controls set incorrectly	Adjust Air controls
	Rope seals perished/worn	Replace rope seals
	Excessive Chimney Draught	Seek professional chimney advice
<b>Fire Burns Too Slowly/Low Heat Output To The Room</b>	Air controls set incorrectly	Adjust Air controls
	Insufficient flue draught	Seek professional chimney advice
	Ash buildup	Do not allow ashpan to overflow
	Thermostat shutting down as hot water is not being dissipated from the boiler	<ol style="list-style-type: none"> <li>1. Unit not connected to enough radiators</li> <li>2. Ensure all radiators valve turned on</li> <li>3. Check pump operation &amp; associated pipe stat position</li> </ol>
<b>Fire Bricks Cracked</b>	Normal wear and tear	Replace firebricks when they begin to crumble as opposed to showing minor cracks
<b>Grate Cracked</b>	Build up of ash causing overheating	Replace the grate and do not allow ashpan to overflow
	Operation with the ash door open	While the stove is in operation the door should be closed
	Burning non approved fuel	Burn the correct fuel
<b>Glass Sooting Up</b>	Air wash not working	Open the air wash control
	Moisture content of fuel too high	Ensure fuel is sufficiently dry
	Fuel excessively dirty	Use smokeless fuel
	Insufficient flue draught	Seek professional chimney advice
	Air controls set to minimum settings	Operate the stove at or close to the nominal output
<b>Smoking On Refuelling</b>	Air controls set incorrectly	Air controls should be fully open prior to refuelling
	Insufficient flue draught	Seek professional chimney advice
	Chimney or flueways in stove have become partially blocked	Clean the flueways in the stove. If problem persists have the chimney cleaned by a suitable competent person
	Lack of combustion air	Ensure adequate sized air vent / air supply to the room
	Top baffle fitted incorrectly	Consult instructions to ensure baffle fitted in correct orientation



<b>SYMPTOM</b>	<b>POSSIBLE CAUSES</b>	<b>REMEDY</b>
<b>Creosote/Tar Build-up in Firebox and on Flue Pathways</b>	Insufficient flue draught	Seek professional chimney advice
	Moisture content of fuel too high	Ensure fuel is sufficiently dry
	Fuel excessively dirty	Use smokeless fuel
	Air controls set to minimum settings	Constant low burning can produce excessive soot
<b>Smells From Stove/Installation</b>	Final cure of the painted surfaces	This odour is unpleasant but not toxic. It is best advised to ventilate the room and leave unoccupied.
	Incorrect sealant used	All flue Joints must be sealed with fire cement only
	Flue gather not cleaned prior to installation	Soot deposits on existing fireplace/flue gather could possibly burn off when the unit & the surrounding area is heated up.
	Insufficient flue draught	Seek professional chimney advice
<b>Water In Base Of Stove</b>	Condensation on light up	It is acceptable to have a little condensation on start up, when the fire is established condensation should not be present
	Condensation as the circulation pump is not properly controlled.	The pump should be controlled by a pipe stat attached to the flow (or return) pipe to the cylinder.
	Moisture content of fuel too high	Use seasoned wood logs
	Leak in boiler	Replace the boiler



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## NOTES

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## NOTES

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**Manufactured by**  
**Waterford Stanley Ltd.,**  
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Waterford, Ireland.  
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