

WARRIOR Stoves Ltd.

Manual for: Gabriel Multi-Fuel Stove (Back Boiler)

Model no: WSDGABBB



Congratulations on your decision to own an advanced high quality and desirable Multi-Fuel WARRIOR Stove. This Stove has been manufactured and designed in our factory from premium grade materials to give you many years of excellent service when correctly installed, operated and maintained. The main body is constructed from premium grade cast iron, this is sand cast the traditional time honoured way by experts from freshly mined pig iron. Cast Iron is the best material known for retaining and radiating heat, recycled scrap iron is not used for any part of a WARRIOR Stove.

Please carefully and thoroughly read this manual prior to any installation or lighting of your new stove.

If you have any questions regarding this stove which are not mentioned in this manual then please contact the vendor of the stove or our head office, details below.

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Please keep this manual for future reference. It has been produced for the WARRIOR Stoves Gabriel stove and may not be copied in whole, part or be used for any purpose apart from which it is intended without express and written permission from a WARRIOR Stove employee.

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TECHNICAL DATA

WARRIOR Stoves:Gabriel C/W Boiler
Model No:WSDGABB
Continuously rated Multi-Fuel Stove
CE Approved to EN13240

WARRIOR Stoves Ltd.
Chapel Road, Tuckingmill
Camborne, Cornwall.
TR14 8QY.

Height (mm)	610	Minimum distance to Combustible surfaces.	Top 800mm
Width (mm)	470		Side 300mm
Depth (mm)	380		Rear 200mm
Height to centre of rear flue (mm)	515	Type of boiler and method of construction	Welded Stainless Steel 5mm
Depth from back to centre of flue (mm)	140	Boiler maximum operating water temperature	95 °C
Flue Diameter Req. (mm)	125	Boiler maximum operating pressure in bar.	1.75 bar
Net weight (kg)	86	Boiler test pressure in bar	2.1 bar
Gross weight (kg) [Packed]	93		

Test Type	NOMINAL OUTPUT	NOMINAL OUTPUT
When fuelled with	SOLID MINERAL FUEL	WOOD
Refuelled every	4Hrs	1Hrs
Flue Gas Mass Flow	6.4g/s	4.7g/s
With a flue draught of	12Pa	12Pa
Output to room	2.7kW	3.2kW
Output to water	2.3kW	2.4kW
Mean Efficiency	69.20%	77.10%
Mean Flue Temperature	259 °C	270 °C
Mean CO concentration at 13% O ₂	0.42%	0.55%
Test by:	GASTEC@CRE IN THE UK	GASTEC@CRE IN THE UK

This information is true.



Ricky MURRELL

WARRIOR Stoves Ltd

Authorised Signatory for this stove in the United Kingdom and Republic of Ireland

<p>Useful Information: 1Kw ≈ 3412.14BTU's (British Thermal Unit) 1cm ≈ 0.3937" / 25.4mm ≈ 1" 1Kg ≈ 2.2046 lbs.</p>

SAFETY

Safety is of paramount importance when deciding on locating, moving, installing, operating and maintaining the stove.

Ensure that this manual is read and understood prior to installation or commissioning the first fire.

This Stove must be installed in accordance with all local regulations including those referring to national and European standards. WARRIOR Stoves recommend that a competent person such as a HETAS approved installer is used for installation. HETAS details are listed near the back of this manual for further reference. Most stove retailers will be able to assist in advising a competent person for installation.

WARRIOR Stoves installation instructions cannot be taken as conforming to all standards in all areas and also cannot account for changes in legislation.

This Stove must not be modified without the express and written permission of a WARRIOR stoves employee. Alterations not authorised by WARRIOR Stoves Ltd. will terminate the guarantee and may also be potentially dangerous.

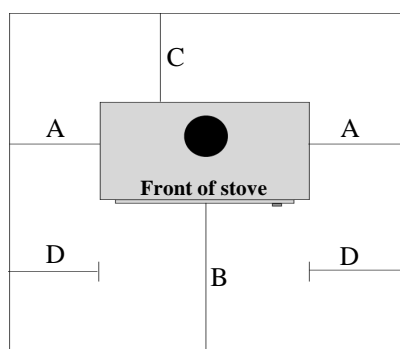
Numerous further safety procedures are listed throughout this manual specific to separate tasks of installation and usage, etc. For your safety and others around you ensure these procedures are adhered to.

STOVE LOCATION

The floor which the stove is to be located on must have an adequate load-bearing capacity. If the floor does not meet this requirement then suitable measures in accordance with building control regulations need to be taken.

This stove has passed the requirements of building regulations so that it only requires a 12mm Thickness hearth.

The stove must be located on a solid non combustible hearth/surface with the minimum dimensions extending from the perimeter of the stove as shown below:



A=150mm
B=225mm
C=150mm
D=150mm

These distances may be reduced if the Hearth adjoins a non combustible wall.

The stove surfaces must have a minimum distance away from any combustible materials as listed in the technical data section of this manual.

Single wall fluepipes must be more than three times the diameter of the fluepipe away from combustible materials i.e. 125mm (5") Fluepipe should be a minimum of 375mm (15") away. For further assistance regarding flue pipe & liners please contact your stove dealer, approved installer, building control officer or Midtherm Flue Systems Ltd. (Details listed at rear of this manual). The complete range of Midtherm flues and ancillary components are available from your stove retailer.

Further advice regarding chimney and flues for this stove is detailed in the Installation section of this manual.

This stove must have its own dedicated chimney or flueway. It is not suitable for installing into a shared flueway. The stove must always have a permanent free air supply into the room it is being installed into. For Stoves rated above 5KW a permanent unobstructed air vent is required. This vent should be in the same or adjoining room as the stove and must be connected directly to the outside air, where possible locate the vent close to the stove to confine draughts. The vent size should be a minimum of 550mm² per KW over 5 KW, i.e. A stove rated at 11kw would need a minimum vent size of 3,300mm² for modern properties (Generally only since 2008) with Design Air Permeability greater than or equal to 5.0Mtr³/(h.m²) then 550mm² is required per kW output. It is always advisable to install a vent if there is not one present for a stove rated under 5Kw and like wise it is better to install a vent larger than the minimum recommended size. This is to account for the possibility of operating the stove at more than its rated output.

Extractor fans operating in the same room or air space as the stove may cause problems with the air supply to the stove which in turn may cause problems with chimney draw.

Your approved installer or building control officer should be familiar with all these aspects of where the stove may be installed.

STOVE ASSEMBLY

Care should be taken when unpacking and assembling your stove. Stoves are heavy and therefore due consideration is required in lifting and moving into the final location. Where possible use a sack truck or trolley and obtain assistance rather than struggling or risking personal injury. You may find that it is easier to open the stove and remove loose items to reduce the weight of the stove. The following are useful techniques for manual lifting:

- Keep the stove close to your waist with your head facing forwards and your back straight.
- Do not twist at the waist, reposition your feet as necessary.
- Bend both legs to maintain stability.
- Avoid twisting your back, leaning forwards or sideways when handling the stove.
- Smooth and controlled movement will help to keep the stove under control, avoid snatching or jerking when moving the stove.
- Always grip with the palms of your hands preferably wearing gloves to provide additional grip, do not rely solely on fingertips for support.
- Wear suitable clothing, avoid wearing ties and other loose items that could get caught in the stove. The use of protective footwear with steel toecaps is advisable.

This stove requires little assembly prior to moving into it's final location.

Firstly carefully unwrap the stove and the contents either on the original packing or onto a sheet of plyboard or similar in order to minimize the risk of damage to the furnishings below.

After unpacking remove the loose items from the stove which require fixing, these parts should be: The Legs, the Stove Outlet and the Stove Outlet Blanking Plate and the Handles. These parts should be easily identifiable from the exploded parts diagram listed near the end of this manual. Attach the legs to the base of the stove with the bolts provided, these bolts are already attached at the base of the stove in the correct location. Tighten with firm pressure without over tightening.

The Stove Outlet and the Stove Outlet Blanking Plate again require bolting into the correct position, (determined by flue exit, possible from the Top or the Rear of this stove) with the bolts provided. Prior to fixing a smear of fire cement and or heat resistant rope is recommended to ensure the join is airtight. See the note in the Stove Installation Section regarding the caustic nature of fire cement, again do not over-tighten the bolts. The handles simply bolt on.

Inside the Stove there should be the following:

- Grate with Fuel Retainers.
- Ashpan & Ashpan removal Tool.
- Baffle/Throat Plate.
- Side Cast/Refractory Brick Linings.
- Rear Cast/Refractory Brick Linings, please note for Back-Boiler Model Stoves these will not be in the stove, they are replaced by the Back-Boiler.

All of these internal parts should be easily identifiable from the exploded parts diagram printed near the rear of this manual. If any parts have become dislodged during transit then it should be straightforward to re-locate in their respective places. Should parts need bolting back in place, do not over tighten.

If you have any questions regarding the parts within the stove which are not mentioned above then please contact the vendor of the stove or our head office.

STOVE INSTALLATION

Prior to any installation being undertaken ensure that all intended work conforms to Building Regulations or Standards and any local laws including those referring to national and European Standards. The following are applicable:

England & Wales > Building Regulations (2001) > Document J particularly relevant.

Scotland > Building Standards (2001) > Section F particularly relevant.

Northern Ireland > Building Regulations (1990)

Republic of Ireland > Building Regulations (1997) > Document J particularly relevant.

Isle of Man > Building Regulations (2003) > Part J particularly relevant.

The above listed Regulations and Standards are subject to change and should be confirmed prior to installation.

Installation should be carried out avoiding any risk to yourself, the occupiers and any pets etc. Fire cement used during installation should be used in accordance with the instructions on the tub or cartridge. It is classed as an irritant so protective gloves are recommended. If the stove requires touching up/repainting then ensure adequate ventilation is available as most high temperature resistant paints release unpleasant odours. Always follow the stove paint manufacturers instructions. The stove must not be alight whilst re-painting. If the stove is being installed into an existing chimney ensure that protective eye ware is worn during inspection and whilst attending to any remedial work that may be required. In the case of installing into old Chimneys particular attention should be given to the possibility of disturbing asbestos. There are many types of asbestos, the three most common are white (chrysotile), brown (amosite) and blue (crocidolite). All three types are hazardous, particularly blue and brown, however asbestos cannot just be identified by its colour. Asbestos should only be removed by a registered specialist.

Chimney & Flue Guidance

Effective Chimneys require numerous considerations. The purpose of a chimney is to provide an up draught to ensure the safe removal of the products of combustion from the stove to the outside air.

To maintain a safe and efficient up draught the chimney/flueway must conform to the following:

- The Chimney/Flue should be totally free from defects and not leak at any point through to its terminal. A smoke test should be done to confirm this, a guide to smoke testing is listed further on in this section of the manual.
- The Chimney/Flue must have a height of no less than 4.5 Meters from the top of the stove to a suitable Chimney terminal.
- The Terminal of the Chimney/Flue must be in a position where the products of combustion can freely discharge without preventing a hazard whatever the wind conditions . See the diagram further on in this section regarding flue outlet positions.

Stove Installation Continued.

- The Chimney/Flue diameter must never be decreased in size from the stove. It is good practise to increase the chimney/flue diameter by 25 or 50mm, this will maintain a suitable draw in the event of the flue way becoming partially blocked due to possible tar build up in the chimney.
- The Chimney diameter must be no less than 125mm diameter if only burning smokeless fuels, for any other fuel type this must be increased to a minimum of 150mm.
- The Chimney/Flue should be kept as straight as possible. Offsets in the flue way should be kept to a minimum and should not exceed 45 degrees except when connecting to the rear off the stove, a 45 or 90 Degree Tee should be used for these installations completed by a soot box at the base.
- No more than 4x45degree elbows should be installed, when using a 90 tee at the rear of the stove this would be classed as 2x45degree elbows.
- 90 degree elbows are not suitable for this stove.
- When connecting the flue to the rear of the stove the maximum horizontal run should not exceed 150mm.
- Provision must be made for cleaning the entire length of the chimney/flue other than through the stove.
- The Flue way must be kept warm to ensure a suitable up draught.

There are numerous ways of installing this stove including situations where a chimney is not present in the building. The Chimney/Flue used should comply with the following:

Connecting Fluepipes (For connecting directly onto the stove outlet):

- Vitreous Enamelled Steel Pipe> BS 6999: 1989 (1996)
- Stainless Steel grades 1.4401, 14404, 14432 or 1.4436(Minimum flue wall thickness of 1mm)>BS EN10088-1:1995
- Cast Iron Flue Pipes>BS41:1973 (1998)
- Mild Steel Flue Pipes (Minimum flue wall thickness of 3mm)>BS 1449:Part1:1991

Fluepipe/Chimney Linings:

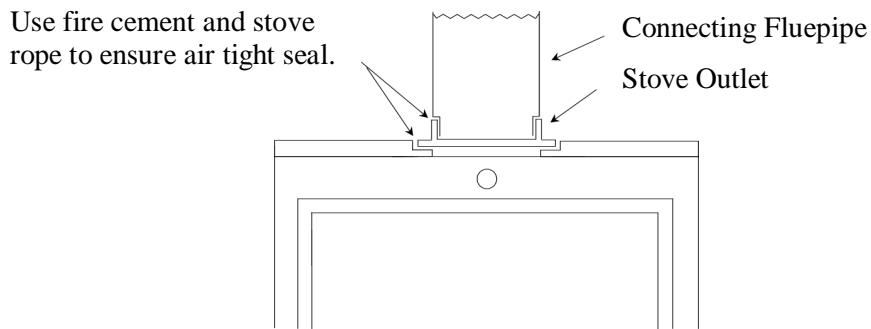
- Concrete Chimney Blocks> BS EN 1858: 2003
- Clay Chimney Blocks> BS EN 1806: 2000
- Concrete Flue Linings> BS EN 1857: 2003
- Clay Flue Linings> BS EN 1457: 1999
- Factory Manufactured Metal Chimney> BS EN 1856-1: 2003
- Tested Linings approved by a Notified Body.

Where applicable the Midtherm Flue Pipe available from WARRIOR Stoves dealers conforms to the above standards.

Stove Installation Continued.

All Installations:

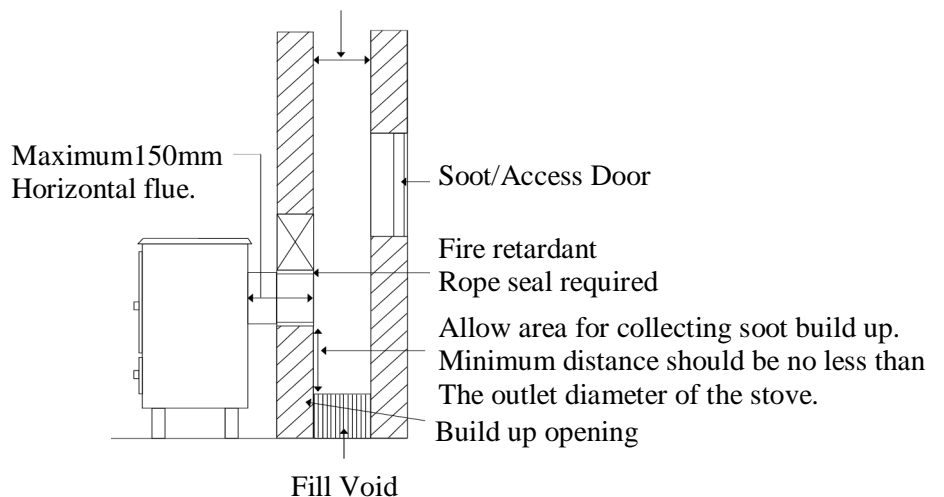
Place the stove carefully on its hearth and ensure it is stable and level. The spigot (male) end of the Connecting Flue Pipe must fit inside the stove outlet and be sealed with fire cement. The socket (female) end faces away from the stove. This is to ensure that any condensate, etc. will run into the stove and dissipate rather than spoil the appearance of the final installation. See diagram below:



For connecting into existing Chimney:

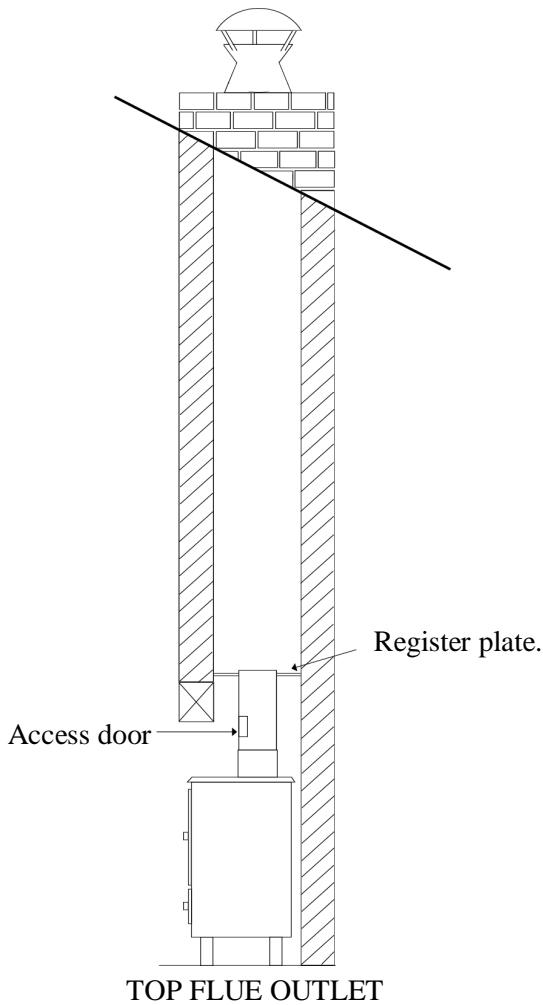
The Chimney should be swept prior to installation and smoke tested to ensure it is sound. The Chimney must not have any hollow sections present, these should be filled to ensure that any soot or tar, etc. does not build up which may present problems when sweeping the chimney. Hollow sections within the chimney may also present problems with the chimney draw. The connecting flue pipe must be sealed to the chimney with fire cement and high temperature resistant rope as required. This is usually done into a register (Blanking) plate with an access door/hatch to enable chimney sweeping. Particularly large chimneys may require lining as the flue temperature may not get warm enough to provide a suitable up-draught.

Minimum diameter should be no less than the outlet size of the stove, 25 to 50mm larger is ideal. Where the stove outlet is less than 150mm this diameter should be no less than 125mm when only burning smokeless fuels or a minimum of 150mm for any fuel types.

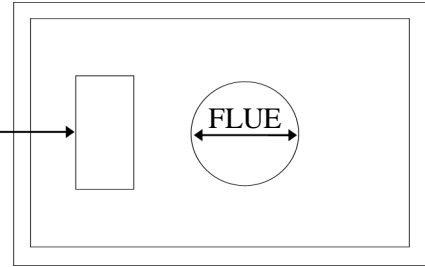


Stove Installation Continued.

Some typical installations are shown as following:

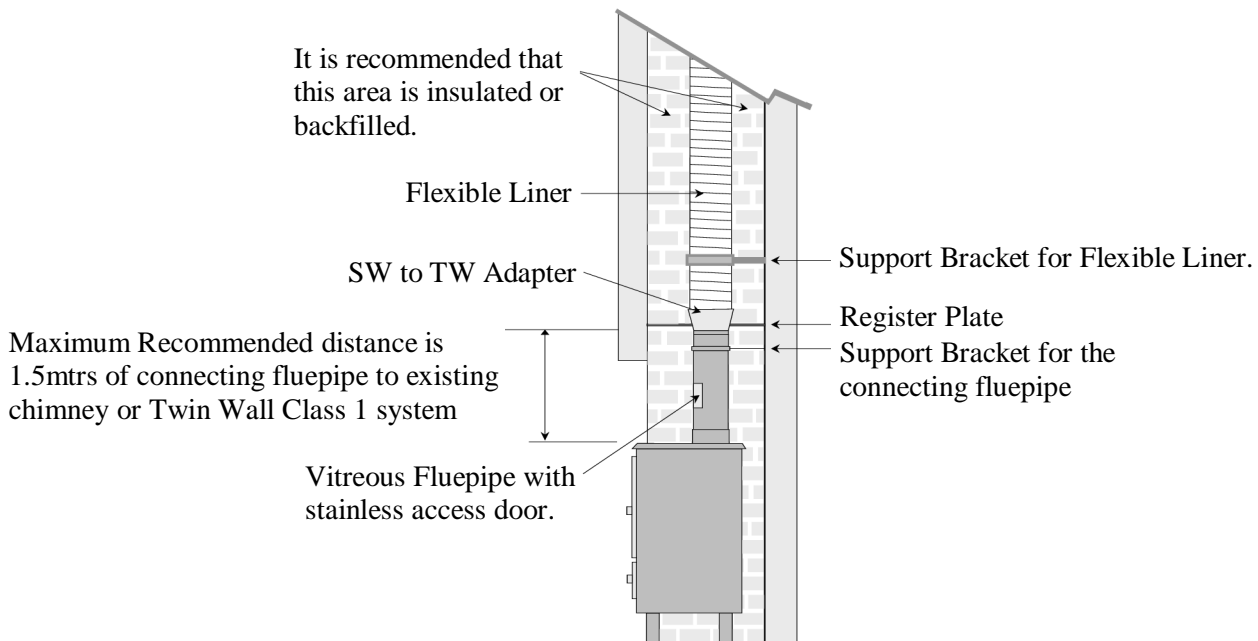


Sealed door to access chimney for sweeping & inspecting.



The register plate must be 1.5mm thick rust resistant steel or heat resistant board. The Flue Pipe must be 3 times it's diameter away from combustible materials. For example 150mm Flue Pipe must be 450mm away from combustible materials.

If the chimney is not sound, i.e. found to be leaking after a smoke test then the chimney must either be repaired or a flexible liner may be used, ensure the liner is the correct type for Multi-Fuel applications. See diagram below:

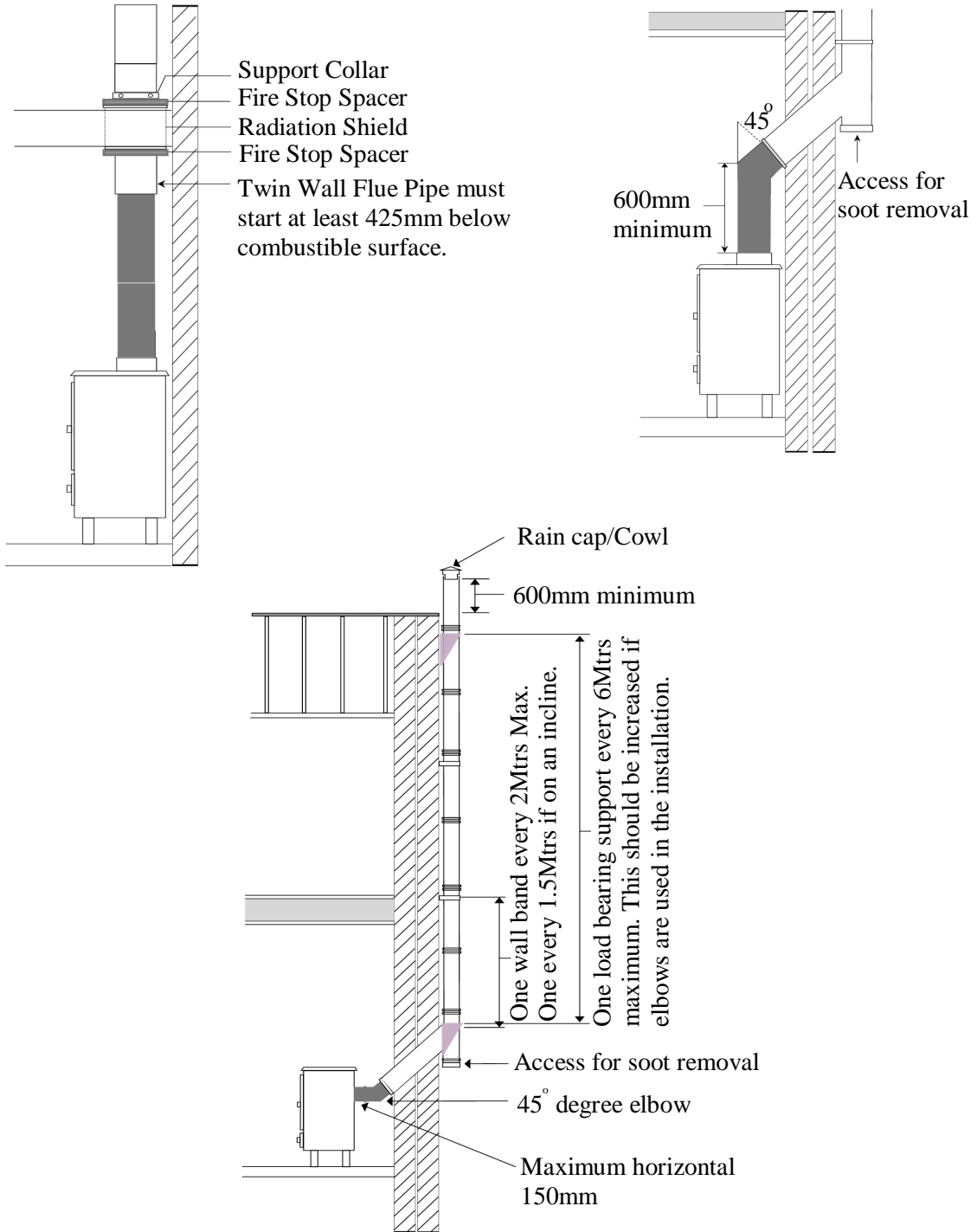


Stove Installation Continued.

For Installations where no Chimney exists:

The Connecting flue pipe from the Stove should connect to the Twin Wall Insulated flue pipe, ensure this flue pipe is the correct type for Multi-Fuel applications. The HT-Plus flue pipe manufactured by Midtherm is suitable and available from WARRIOR Stoves dealers. This flue pipe requires a minimum 50mm clearance from combustible materials and should not be joined in a wall or floor. Where this flue pipes passes through a combustible floor a ventilated fire stop kit must be used.

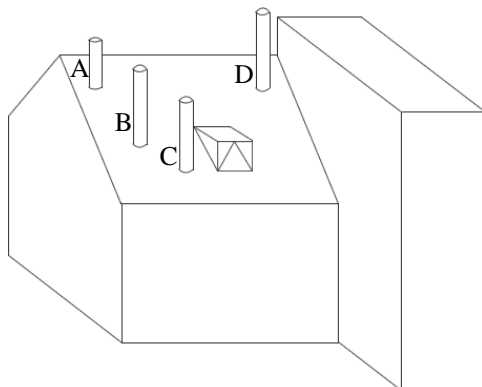
Some typical installations are shown as following:



Stove Installation Continued.

All Installations:

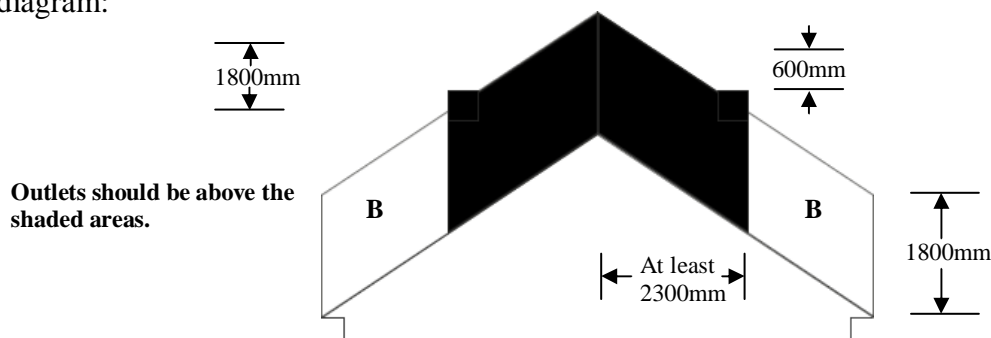
The Chimney/Terminal Outlet must be no lower than the minimum positions shown in the diagram below:



Point where flue passes through weather surface (Notes 1,2)		Clearance to flue outlet
A	At or within 500mm of the ridge.	At least 600mm above the ridge.
B	Elsewhere on a roof (Whether pitched or flat)	At least 2300mm horizontally from the nearest point on the weather surface and: A) at least 1000mm above the highest point of intersection of the chimney and the weather surface; or B) at least as high as the ridge
C	Below (on a pitched roof) or within 2300mm horizontally to an open able roof light, dormer window or other opening . (Note 3)	At least 1000mm above the top of the opening.
D	Within 2300mm of an adjoining or adjacent building, whether or not beyond the boundary. (Note 3)	At least 600mm above the adjacent building.

Notes
 1) The weather surface is the building external surface, such as its roof, tiles or external walls.
 2) A flat roof has a pitch less than 10° degrees
 3) The clearance given for A or B, as appropriate, will also apply

For terminations above easily ignited surfaces i.e. thatched roofs then minimum outlet positions are shown below, this diagram needs observing in conjunction with the above diagram:



Area	Location of flue outlet
	At least 1800mm vertically above the weather surface and at least 600mm above the ridge
B	At least 1800mm vertically above the weather surface and at least 2300mm horizontally from the weather surface.

Upon completion of the installation the Chimney/Flue must be smoke tested prior to the stove being lit. Smoke pellets are available from your WARRIOR Stoves dealer.

Following is a complete Smoke Test Guide:

Smoke Test Guide

These are two Primary purposes for smoke testing, the first test is to discover any major defects which can cause leakage of fumes through a chimney or flue structure during normal operation. The second is to test the draw in the appliance.

If in doubt about the condition of a chimney, especially when an old chimney is to be used after a long period of being unused, it is recommended to have it smoke tested. This is particularly relevant for chimneys constructed prior to the 1965 Building Regulations which require all new chimneys to be built with a suitable flue liner to protect the chimney structure. Smoke Testing should also be carried out during construction of traditional masonry chimneys and on all completed chimney installations.

A smoke test should be done by a competent person using the following procedures which are based on recommendations in British Standard BS5440-1:2008. A slightly different procedure is required for testing flues for gas appliances.

It should be remembered that the pressure of smoke from a test is far greater than that of a chimney during normal use. Consequently minor smoke leakage may occur in joints of a traditional masonry chimney or connections between prefabricated metal chimneys and flue pipes. Minor leakage detected should not be a major risk when the appliance is used, providing that it does not indicate a fault that could get worse. Remedial work will be required if heavy leakage is seen. The most likely problems are broken components, incorrect fitting or incomplete joining of flue liners.

Smoke Test 1: Testing Air Tightness of Chimney

- Ensure appliance is not alight and all doors and windows in the room are closed.
- If there is a solid fuel appliance or open fire appliance fitted at the base or the bottom of the chimney, heat the inside of the Appliance/Fireplace chamber with a blow Lamp, gas stove or similar device for approx 10 minutes, a longer warming up time may be needed with wet or cold flues. This will establish a flue draw to stimulate real conditions. It should be realised that neither of these methods create the same temperatures or volume of hot gases that would normally be created whilst the appliance is in use. If the flue is to be used with a gas burning appliance, the smoke test should be carried out before the fire is fitted and the flue warmed with a blow lamp for only 5 minutes, or longer if the flue is cold.
- For testing flues to be used with a solid fuel appliance place one smoke pellet with a minimum burn time of 60 seconds producing 15 Mtr³ of smoke on a flat surface that cannot be harmed by heat in the opening at the base of the flue or in the appliance if it is fitted. Always follow the pellet manufacturer's safety instructions.
- Ignite the top edge of the pellet and when smoke appears seal the opening with a board or plate sealed at the edges. If a solid fuel appliance is fitted, close all doors, ash pit covers and vents. Do not seal off the base of the flue or opening if testing a flue for a gas appliance.
- Check that the smoke rises freely out of the correct flue. When smoke begins rising out of the top of the chimney, seal the top of the flue, terminal or pot, if appropriate use an inflated football, bladder or plastic bag sealed in position with tape. Do not seal the top of the flue if it is to be used with a gas appliance.
- Examine the full length of the chimney for any leakage of smoke such as the joints for metal flues. If possible check for signs of leakage from wall cavities at the sides and back of the chimney, if it is built into a wall, also check for leakage at openings around windows near to the chimney and the roof space area

Stove Installation Continued.

- If smoke is seen establish the point of leakage and carry out remedial work to correct any faults.
- After completing the remedial work repeat the testing procedure until no major leakage or fault is apparent. Remove the closures at the top and bottom of the chimney.

Smoke Test 2: Appliance Draw Test

- Ensure appliance is not alight and all doors and windows in the room are closed.
- If there is a solid fuel appliance or open fire appliance fitted at the base or the bottom of the chimney, heat the inside of the Appliance/Fireplace chamber with a blow Lamp, gas stove or similar device for approx 10 minutes, a longer warming up time may be needed with wet or cold flues. This will establish a flue draw to stimulate real conditions. It should be realised that neither of these methods create the same temperatures or volume of hot gases that would normally be created whilst the appliance is in use. If the flue is to be used with a gas burning appliance, the smoke test should be carried out before the fire is fitted and the flue warmed with a blow lamp for only 5 minutes, or longer if the flue is cold.
- For testing flues to be used with a solid fuel appliance place one smoke pellet with a minimum burn time of 60 seconds producing 15 Mtr³ of smoke on a flat surface that cannot be harmed by heat in the opening at the base of the flue or in the appliance if it is fitted. Always follow the pellet manufacturer's safety instructions.
- Ignite pellet and open all vents to stove or fireplace opening. Close the door to the stove unless these can be correctly operated with the fire doors open.
- For the first 30 seconds visually inspect that all smoke remains in the appliance or fireplace opening and ensure that none of the smoke enters the room. Open a window and check if smoke speeds up or is drawn quicker into the chimney. If either of these two scenarios are noticed then there is insufficient ventilation, the appliance must be closed down and further ventilation must be provided.
- After checking internally go outside whilst pellet is still burning and observe the smoke exiting the chimney. Ensure smoke is only exiting from correct chimney. If its leaking from any brick work or any other chimney close the appliance or fireplace down and attend to remedial repair prior to smoke testing again.

For complete peace of mind it is recommended that a Carbon Monoxide detector approved to BS EN 50291:2001 is fitted in the same room as the stove. This detector should be fitted in accordance with the manufacturers instructions. Carbon Monoxide is produced by the incomplete combustion of fuels, it is extremely harmful and without a detector it is impossible to detect as it has no colour, odour or taste.

Boiler Connection

The Back-Boiler fitted in your WARRIOR Stove must be installed in Compliance with all relevant Building Regulations and in accordance with Central Heating Standard EN 12828 whilst complying with local Water Supply Regulations. Guidance and further information is available from your Local Water Supplier or the Water Regulations Advisory Scheme (WRS), details listed at the rear of this manual. The Stove must NOT be operated until the back-boiler is connected and has water connected to it, operating the stove before the Back-Boiler is connected may cause damage to the boiler and stove alike, this will also terminate the guarantee. A suitably qualified water heating engineer is recommended for connecting the Boiler of the Stove, this may be a separate installer to that of the Chimney/Flueway. This Back-Boiler may be effectively installed or linked in with an existing gas or oil circuit if a neutralising vessel is installed.

Your WARRIOR Stoves dealer should be able to advise a suitably competent person to undertake this work.

The ready fitted boiler connections have 1" Male BSP Threads and a double female adapter for optional connection. The Back-Boiler in your WARRIOR Stove is only suitable for Indirect Closed Circuit Systems for heating Domestic Hot Water and Radiators, the quantity of which will require calculating by your installer and is largely dependant upon the size of radiators, pipe work length and pipe work diameter. When the Back-Boiler is heating domestic hot water an Indirect Domestic Hot Water Cylinder with an integral heat exchanger is required, this is readily identified on the Cylinder as the protruding threads are male fitting, do NOT confuse this with an unsuitable Direct Cylinder which has female threads. Pipe work where applicable from the Back-Boiler to the open vented gravity Feed & Expansion Tank must rise continuously and will require a 25mm water clearance from below the warning pipe. All pipe work and fittings must comply with all relevant fitting and European standards.

A Drain Off Cock must be fitted to all low points of the system. A method of allowing complete drainage of water from the system must be incorporated. An adequate means for preventing backflow of water into other parts of the system must be provided.

The Indirect Closed Circuit System may also require, (dependant upon type of installation):

- A thermostatic valve to be fitted to all radiators (unless heat leak).
- A Heat Leak radiator , towel rail or similar appliance fitted into the primary flowing circuit to dissipate excess heat from the Back-Boiler. This appliance must be at least 10% of the Back-Boiler output and must **NOT** be fitted with a control valve.
- A pump in the primary system to assist the flow.
- Pipe thermostats to prevent over heating or cold water flowing through the circuit.
- Injector Tees to assist the circulation.
- Central Heating Inhibitor available from you WARRIOR Stoves dealer to assist in maintaining the water in the system, the inhibitor helps to prevent corrosion whilst disintegrating scale and dispersing sludge.

The Back-Boiler must be tested upon completion of installation.

STOVE OPERATION

Prior to lighting your new stove, ensure that this Manual has been read and completely understood.

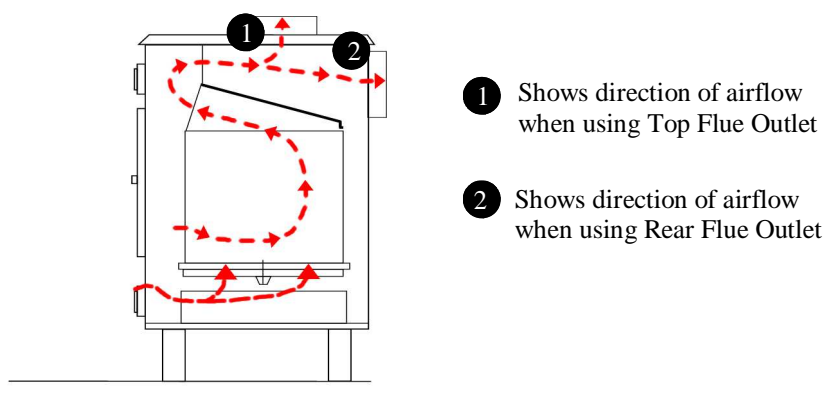
This Stove can get EXTREMELY hot, it is intended to!. If Children, Elderly, Infirm people or pets will be in the presence of this stove whilst alight then a Fire Guard conforming to BS 8423: 2002 should be fitted in place, these will be available from your WARRIOR Stoves retailer. This Stove should NOT be operated with the doors open.

AIR CONTROLS:

Your Gabriel WARRIOR Stove is manufactured with Two air controls:
Primary and Secondary.

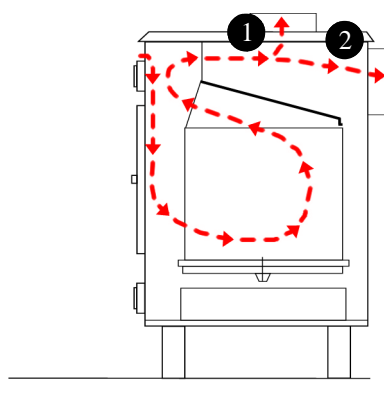
Primary:

This control as suggested by its name is the most important. It should be readily identified by the parts diagram and is located on the lower section of the stove. Air enters the stove by this control and it is the amount of air allowed to enter the stove that controls the burning rate. The further open this control is then the more heat the stove will produce. See the diagram below:



Secondary:

This control is also known as the 'Air Wash', it is located above the Fuel Door and should be readily identified by the parts diagram. The Air is drawn in through this control and then deflected down the stove behind the glass, this assists in keeping the glass clean and also provides a secondary air for combustion. See the diagram below:



Stove Operation Continued.

Flue Damper:

A flue damper may be put in-line in the flue pipe to assist the regulation of the flue draw, these will be available from your WARRIOR Stoves dealer. Fit in accordance with manufacturers fitting instructions. If any smoking does occur whilst the stove is burning then open the damper more fully. Particular care using the damper must be exercised when burning overnight or whilst the stove is burning unattended, if too far closed then smoking may occur through the stove controls.

Experience will be the essence of perfection in controlling the Stove. The control settings required will depend on the chimney type, location and the fuel being used along with the heat output desired.

First Firing:

This stove is cast iron and should be seasoned. Seasoning is the process of gradually warming through the castings of the stove to allow all components to heat up and cool down together without causing any damage to the stove. Seasoning should be done with the first five or six firings. The fire size for seasoning should be kept small and allowed to die down straight after the stove has got to the point of being barely touchable. Particular care must be taken to ensure the fire does not get too hot whilst seasoning the stove. Whilst seasoning the stove surfaces may smoke slightly as the high temperature paint begins to cure. During this period ensure that the vicinity of the stove is kept well ventilated, the odour produced is not harmful however some individuals may find it nauseous.

Lighting the Fire:

Ensure matches, fire lighters and any other combustible articles are not in proximity of the stove. Check the Ashpan is in the stove and open all the air vents. Place tightly wrapped paper and kindling wood in the centre of the fire box. Fire lighters may also be used which will assist in lighting the fire, follow the manufacturers instructions. Caution: Do **NOT** use liquid fuels for lighting the fire or at any time whilst burning, they can be extremely dangerous. Immediately after lighting close the fire door or doors. Once the fire has been established add more fuel to the fire bed and adjust the air controls according to your requirements.

Fuel Types:

Wood:

All natural wood is suitable for burning on this stove, provided that it is well seasoned and has a moisture content below Twenty Percent. The maximum suitable log length for this stove is 30cm. Beware of using manmade woods i.e. Chipboard or Plywood which have a high content of adhesive which can cause damage to the Stove and the Chimney. Manmade woods are also now available manufactured primarily from plastic, these must not be burnt in the stove. Recently felled generally green in colour or wet wood must not be burnt as this can produce excessive tar and creosote which can damage the fire and chimney, in extreme instances it could potentially cause a fire in the chimney. If you find that the wood is burning very quickly reduce the primary air intake and increase the air through the secondary (and tertiary) air inlets.

Stove Operation Continued.

Solid Fuels:

Most Solid Fuels are suitable for burning on your stove, check with your fuel provider as to the type that will suit best. Petroleum based solid fuels must NOT be used in your stove, the use of such fuel will invalidate your guarantee as will the use of smaller sized fuels that can clog the grate. Fuels which have a maximum dimension of less than 35mm are NOT suitable. The larger the fuel size then the greater the draught will be in the fire box, this will speed up the rate of combustion. i.e. The stove will burn more quickly. Household coal is not particularly suited as it produces excessive ash and chimney deposits. Recommended fuels are listed on the Hetas Ltd. website that is listed at the rear of this manual .

Peat:

Compressed peat is a suitable fuel where available, it must not be used in its original form which is primarily water. Ensure from the supplier that the moisture content is low.

A combination of the above fuels may be used to best suit individual requirements.

Do NOT burn household waste or plastics in the stove. Burning plastic can produce toxic fumes and some articles of waste may possibly explode as well as produce fumes. Burning such products will also invalidate the guarantee.

Ash Removal:

Ash should frequently be removed, preferably before the ashpan is full and certainly before the ash reaches the underside of the grate. If ash is allowed to build up close to the underside of the grate then the life expectancy of the grate will be severely reduced as it will be burning hot on both sides.

Some ash will automatically fall directly into the ash pan below the fire grate, more will fall through when the grate is agitated by the riddler, this is the sliding arm connected directly to the grate, ensure the door/s are closed prior to doing this. Do not exercise excessive force when agitating the stove. If the grate will not move it could be due to small pieces of fuel being stuck so removal will be required with a poker, tongs or similar tool. The ashpan is easily removed using the operating tool. Use extreme caution when emptying as the ashes are generally very hot and must only be emptied into a non combustible container. If emptying outside beware of any draughty conditions that could cause the ashes to escape and start a fire or cause an injury. Purpose made Ash Carriers are available from your WARRIOR Stoves dealer that will assist in the safe removal and storage of ash until cold.

Overnight Burning:

This stove has been tested and approved as a continuously rated appliance when burning solid mineral fuel. It will burn overnight so long as it has been correctly installed and operated. For overnight burning follow the procedure below:

- Empty the ashpan.
- Load the fire with fuel and ensure the door/s are closed.
- The Air inlet vents should be nominally open to allow only a small amount of air for combustion to the stove.

Stove Operation Continued.

Should the fire not stay in overnight and there is unburnt fuel in the stove then open the air controls slightly more so extra air is available, conversely if the fire has burnt away too quickly adjust the controls so that less air is available. If an optional flue damper has been fitted then this should be regulated similarly to the air inlet controls, the further closed then the slower the fire burn rate will be. Observe the note in the Air control section regarding use of damper whilst the stove is unattended. The stove may also stay in overnight when using wood or a mixture of fuels, experience and experimentation with the air inlet controls will best teach you how to regulate the stove for burning at extended periods without refuelling.

Slow overnight burning in your stove can produce excess tar deposits and soot build up in the chimney, it is recommended that before and after overnight burning that the stove is operated at high output for short periods. This will assist in reducing the build up of the products of combustion in the chimney.

To restart the fire in the morning follow the procedure below:

- Empty the ashpan.
- Load the fire with fuel and ensure the door/s are closed.
- Open air inlets and damper if fitted to re-establish fire.
- Once the fire is established add more fuel to the fire bed as necessary and adjust the air controls according to your heat requirements.

This stove must not be over fired, operating at extreme temperatures can damage the stove and the chimney it is connected to and possibly cause a chimney or house fire. If any part of the stove or chimney starts to glow red then the stove is being over fired. If this situation does arise the air inlets should be swiftly closed, this will reduce the air for combustion in the stove. If a chimney fire should ensue evacuate all members of the property and alert the Fire Brigade immediately. The stove must not be reused after a chimney fire until the entire flueway has been inspected by a competent person or installer such as a HETAS approved engineer. Damaged sections will need to be repaired or replaced as necessary.

The stove and chimney must be inspected, maintained and kept clean for safe and efficient operation. All maintenance and cleaning should be done when the stove is cold and NOT alight.

STOVE AND CHIMNEY MAINTENANCE

Chimney/Flueway Sweeping:

The entire chimney/flueway should be swept frequently from top to bottom to keep clean and prevent the build up of the products of combustion. The frequency required is difficult to gauge due to the nature of varying flue conditions and fuels burnt, we therefore suggest that the chimney is swept within the first 4 to 6 weeks of use to reasonably establish the frequency required. In any case the chimney/flueway should be swept at least twice a year, generally best before and after the main winter burning season. The sweeping should be done by a competent and qualified chimney engineer, a member of the National Association of Chimney Sweeps (N.A.C.S.) or Guild of Master Sweeps. They will provide a certificate for sweeping, both their details are listed at the rear of this manual under useful addresses. The chimney/flueway should be inspected for blockage prior to lighting after a prolonged period of not being used. Numerous chemical chimney cleaners are available to help reduce the build up of the products of combustion. Ensure the cleaner is suitable for the intended chimney type as many are not suitable for use with Stainless Steel flues and liners due to their highly corrosive nature. The flue cleaner available from your WARRIOR Stoves dealer supplied by WARRIOR Stoves is suitable for all chimney/flue types. Follow the manufacturers instructions with regards to usage.

Stove Maintenance:

Internal:

The frequency required for cleaning your stove will vary considerably dependant upon usage and fuel type. The inside of the stove should be cleaned at least Monthly during peak usage to remove any build up of deposits from the products of combustion, experience will advise whether this needs doing more or less often. It is advisable to wear goggles or safety glasses as well as a dust mask and protective gloves when cleaning.

Use a stiff brush combined with a vacuum cleaner and start at the top underside of the stove and work down to the bottom. Particular attention should be given to cleaning above the baffle plate and the air inlet controls which are both important and often get overlooked.

Your stove should be inspected every year by a competent person who should thoroughly strip down and clean the inside of the stove as well as visually checking components.

Damaged or broken parts should immediately be repaired or replaced with authorised spares, your WARRIOR Stoves dealer will be able to obtain these for you. The use of spare parts not supplied by WARRIOR Stoves may invalidate the stove guarantee.

External:

The outer surface of the stove body can periodically be cleaned as required with a soft dry brush. When the stove surface needs retouching or rejuvenating use high temperature resistant paint available from your WARRIOR Stoves dealer. The paint is available in liquid or aerosol form, both are easy to use but ensure the manufacturers instructions are strictly adhered to. The rope door seals need constant checking to ensure there is an air tight seal between the door and the main body of the stove. If the rope comes loose then it is easy to stick back with stove rope adhesive or it may need replacing if it has frayed or started to disintegrate. The high temperature resistant adhesive and rope will be available from your WARRIOR Stoves dealer.

Stove and Chimney Maintenance Continued.

Stove Glass:

The stove glass should remain clean during normal daily use, however if the stove is being operated at a slow burning rate for extended periods or with damp fuels then the glass can become blackened. This blackening may be removed by burning the stove at a much higher temperature for a short period or may require a special glass cleaner available from your WARRIOR Stoves Dealer. If the glass ever breaks in your stove then it is quite easy to replace. Ensure that the replacement glass is the heat resistant variety which will be available from your WARRIOR Stoves dealer. Fitting should be done with the door removed from the stove.

The glass is held in by clips that are screwed to the stove door, undo the machine screws that hold the clips and safely dispose of all the old glass and any fragments. Penetrating oil may assist in removing the machine screws if they are proving difficult to undo. If the rope seal that the glass rests on is undamaged then the glass can be placed on top and the glass retaining clips carefully screwed back down, ensure they are evenly and lightly tightened otherwise this can cause the glass to break. Replace stove rope, retaining clips or machine screws as necessary, all will be available from your WARRIOR Stoves dealer.

Where air intake vents which provide external air for combustion are fitted then these need to be inspected Once a Month to ensure they have not been blocked or partially blocked.

During prolonged periods of not lighting a fire it is recommended that the stove door/s are left slightly ajar and the air inlets are kept open to allow air to circulate in the stove and flueway. This will help prevent excessive moisture and condensation forming in the stove that may lead to rusting.

TROUBLESHOOTING

If your WARRIOR Stove has been correctly installed, operated and maintained as outlined in this Manual then it should perform extremely well for a great number of years. Like most products the better it is looked after and the less it is abused then the longer it will last. Unless the stove is damaged or requires new parts or servicing it will invariably be an oversight during installation, poor fuel, extremities of location or adverse weather conditions.

If your stove does not function satisfactorily from the initial installation, we suggest you have the installation checked by an approved installer such as a Hetas engineer. Your Stove dealer may be able to offer advice, however without viewing the installation or location of the stove they will not find it quite so easy to remedy.

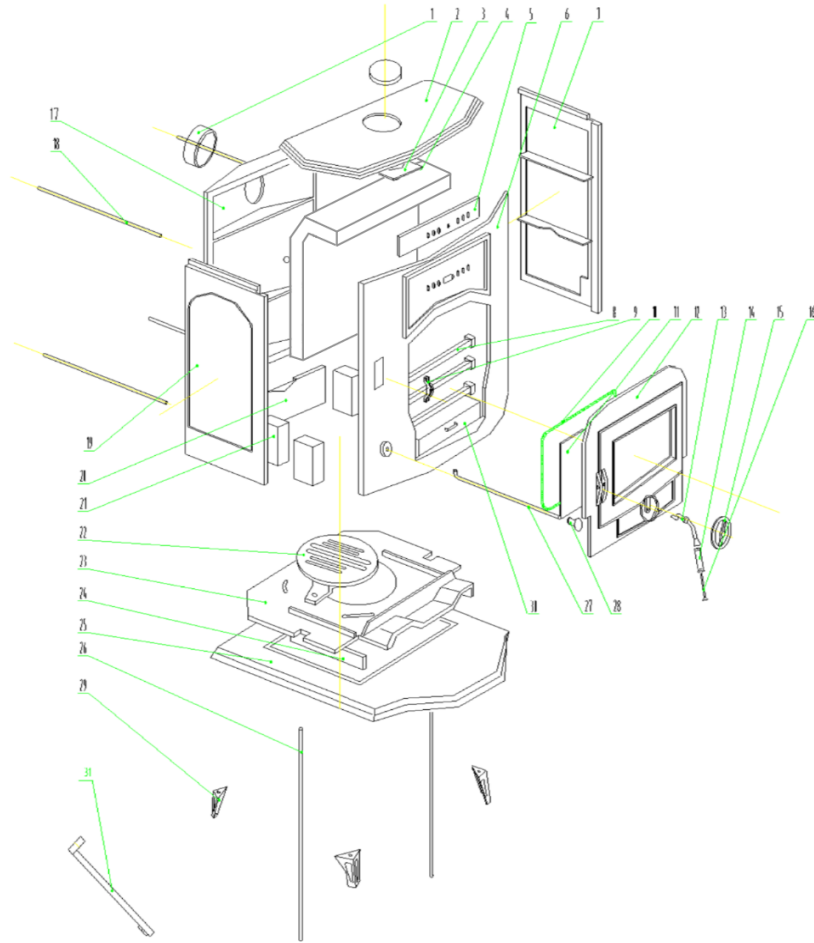
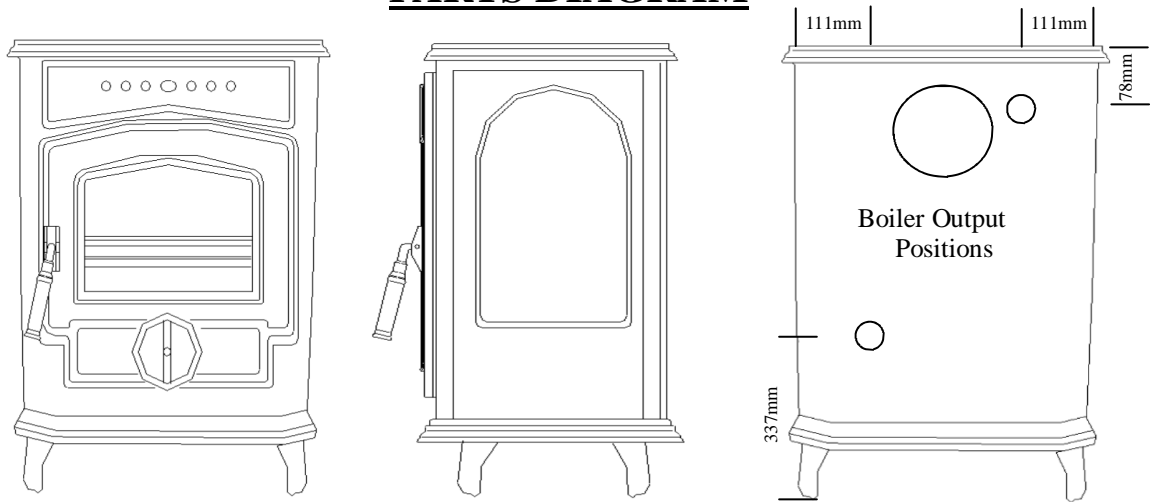
If your stove functions satisfactorily from the outset but later on subsides in performance it will be the chimney or stove that require attention. Ensure the procedures in the Stove and Chimney Maintenance section are adhered to.

During operation nominal fume and smoke emission may occur when refuelling or emptying the ashes from the stove, following the procedures in this manual will assist in keeping these emissions to a minimum. If the stove is correctly installed, operated and serviced then smoke and fumes should not be released into the surrounding area where the stove is located. If fumes or smoke are noticed coming from the stove then the following procedure should be followed:

- Put out the fire or allow it die out naturally if unsafe to extinguish.
- Open all windows and doors in the immediate vicinity to allow the fumes or smoke to disperse as quickly as possible. If necessary evacuate the area.
- Do not relight the stove until cause of the emission has been rectified.

The leakage may be caused by many circumstances, it may be due to a blocked or partially blocked chimney/flueway or may even be due to down draught. An approved installer such as a Hetas engineer would be best deployed to identify the cause and rectify the situation.

PARTS DIAGRAM



1	Flue Outlet	11	Stove Glass 250x195mm	21	Refractory Fire Brick Shaped	31	Ashpan Removal Tool
2	Top Plate	12	Door	22	Grate Inner		
3	Baffle Inner Plate	13	Door Handle & Catch	23	Grate Outer		
4	Back Boiler	14	Door Wooden Handle	24	Grate Support Plate		
5	Secondary Air Slide	15	Air Vent Wheel	25	Base Plate		
6	Front Plate	16	Machine Screw M6x70	26	Vertical Tying Rods		
7	Side Plate Right	17	Back Plate	27	Grate Shaker Rod		
8	Fuel Retaining Bars	18	Horizontal Tying Rod	28	Knob Stainless Steel		
9	Door Catch Reciver	19	Side Plate Left	29	Leg		
10	Stove Rope	20	Refractory Fire Brick Shaped	30	Ashpan		

LIST OF USEFUL ADDRESS'S

Midtherm Ltd

New Road
Netherton
Dudley
West Midlands
DY2 8SY

T 01384 458800
F 01384 458811
W www.midtherm.co.uk
E sales@midtherm.co.uk

Gastec CRE Ltd

Orchard Business Centre
Stoke Orchard
Cheltenham
Gloucestershire
GL52 7RZ

T 0845 6345626
W www.hetas.co.uk
E info@hetas.co.uk

NACS National Association of Chimney Sweeps

Unit 15 Emerald Way
Stone Business Park
Stone
Staffordshire
ST15 0SR

T 0800 833464
F 01785 811712
W www.nacs.org.uk
E nacs@chimneyworks.co.uk

Guild of Master Sweeps

The Bungalow
London Road
Attleborough
Norfolk
NR17 2DE

T 01953 451322
W www.guild-of-master-sweeps.co.uk
E contactus@guild-of-master-sweeps.co.uk

Solid Fuel Association

7 Swanwick Court
Alfreton
Derbyshire
DE55 7AS

T 0845 6014406
F 01773 834351
W www.solidfuel.co.uk
E sfa@solidfuel.co.uk

Solid Fuel Technology Institute

White House
All Saints
South Elmham
Suffolk
IP19 0PA

W www.soliftec.com

National Fireplace Association

PO Box 583
High Wycombe
Buckinghamshire
HP15 6XT

T 0121 288 2196
F 0870 130 6747
W www.nfa.org.uk
E enquiry@nfa.org.uk

Irish Nationwide Fireplace Organisation

162 Capel Street
Dublin 2

T 01 801 5959
F 01 801 3645
W www.fireplace.ie
E info@eircom.net

LIST OF USEFUL ADDRESS'S

Water Regulations Advisory Scheme,

Fern Close
Pen-Y-Fan Industrial Estate
Oakdale
Gwent
NP11 3EH

T 01495 248454
F 01495 249234
W www.wras.co.uk
E info@wras.co.uk

Teddington Appliance Controls Ltd

Holmbush
St Austell
Cornwall
PL23 3HG

T 01726 222505
F 01726 222502
W www.tedcon.com
E info@tedcon.com

INSTALLATION RECORD

This Installation Record helps you to ensure the hearth, Stove, and chimney/Flueway are satisfactory. If you have been directly engaged, copies should also be offered to the client and to the Building Control Body to show what you have done to comply with the requirements of part J. If you are a sub-contractor, a copy should be offered to the main contractor.

1	Building address, where work has carried out.....	
2	Identification of hearth, fireplace, Chimney or flue.	
3	Firing capability:solid fuel/gas/oil/all.	
4	Intended type of appliance. State type or make. If open fire give Finished opening dimensions.	
5	Ventilation provisions for the appliance: State type and area of permanently open air vents.	
6	Chimney or flue construction	
A)	State the type or make and whether new or existing.	
B)	Internal flue size (and equivalent height, where calculated-natural draught gas appliance only).	
C)	If clay or concrete flue liners used confirm they are correctly jointed with socket end uppermost and state jointing materials used.	
D)	If an existing chimney has been refurbished with a new liner, type or make of liner fitted.	
E)	Details of flue outlet terminal and diagram reference. <p style="text-align: center;">Outlet Detail:</p> <p style="text-align: center;">Complies with:</p>	
F)	Number and angle of bends.	
G)	Provision for cleaning and recommended frequency.	
7	Hearth. Form of construction. New or existing?	
8	Inspection and testing after completion Tests carried out by: Tests (Appx E in AD J 2002 ed) and results Flue visual Inspection sweeping coring ball smoke Appliance (where included) spillage	

I/We the undersigned confirm that the above details are correct. In my opinion, these works comply with the relevant requirements in part J of schedule 1 to the Building Regulations.
 Print name and title..... Profession.....
 Capacity.....Tel no.....
 Address.....Postcode.....
 Signed.....Date.....
 Registered membership of (e.g. CORGI, OFTEC, HETAS, NACE, NACS,NAPIT)

MAINTENANCE RECORD

Date	Company Name & Address	Registered Member of	Work Conducted	Installation & Chimney Safe Y/N	Sign Name & Print

Please kindly ensure this Maintenance Record is completed by the engineer every time work is completed on either the stove or the chimney.

GUARANTEE

WARRIOR Stoves thank you for purchasing One of our high quality multi fuel stoves. Where correctly installed, operated and maintained as detailed in this manual you can expect many years of trouble free service.

Your WARRIOR Stove is Guaranteed against defective manufacture or workmanship for a non transferable period of Five years from date of purchase. Consumable parts are excluded from this guarantee, which includes the following:

Stove Glass
Stove Rope
Grate (Inc. Fuel Guard)
Ashpan
Cast/Refractory Linings
Baffle Plate

In the highly unlikely event of a fault or problem developing with your WARRIOR Stove, you should advise the stove dealer where you purchased your stove. They have the competence and experience to assist you, furthermore your Contract of Sale is with the Stove dealer and not the Manufacturer WARRIOR Stoves Ltd. The stove dealer will require the model, receipt/invoice, the installation and service records, your full contact details, description of the fault and the fuel type/brand used where applicable. Should your stove require return to WARRIOR Stoves for analysis, repair or replacement the cost of insured transit will be at the expense of the stove owner.

WARRIOR Stoves will not be accountable for any loss, damage or injury resulting from your stove. Please also note that the Assembly, Installation and the Operation of this stove are not covered by the guarantee as they cannot possibly be governed by WARRIOR Stoves Ltd.

WARRIOR Stoves decision will be final in all eventualities.

The use of any spare parts other than those originally supplied by WARRIOR Stoves will invalidate the guarantee. The Guarantee will also be deemed void if your WARRIOR Stove is not correctly installed, operated and maintained as detailed in this manual.

This WARRIOR Stoves guarantee is additional to your standard statutory rights.

OTHER PRODUCTS

Fluepipe



Fireside Accessories



Garden Collection



To view our full range of products please visit our website at:

WWW.WARRIORSTOVES.CO.UK

OR

E-mail us to find your nearest stockist at:

info@warriorstoves.co.uk