Meg 4.5 Inset / Sirius 450 Inset
Range of Inset Clean Burn Stoves

This document is to be left with the householder after installation.
All Meg stoves exceed the safety and performance requirements of European Standards.
Independently tested by SGS (Notified Laboratory No: 0608) in 2010.
Intermittent burning solid fuel roomheaters for installation with a single dedicated chimney.

	Meg 4.5 /	Sirius 450
Fuel	Wood (Beech)	Mineral Fuel (Anthracite)
Test Standard	EN13229	EN13229
Test Cycle	1.36kg over 0.83hrs	0.9kg over 1hr
Settings	Primary 0%, 2nd 0%	Primary 50%, 2nd 0%
Flue Draft Pa (ins WG)	12 (0.05)	12 (0.05)
Efficiency %	81.0	81.2
Recommended Rating kW	4.5	4.5
Mean Flue Gas Temp Rise °K	248	294
Minimum air entry requirement	2500 mm²	2500 mm²
Minimum clearance to combustibles	150mm at sides, 400mm above fireplace.	when fitted in masonry
Weight	60	kg
Flue outlet size	125	mm
Emissions as if O2 = 13%		
Nox mg/m³	105	
CO %	0.2	0.03
CxHy mg/m²	231	
Gas Flow g/sec	4.1	3.7
Smoke emission mg/m³	89	32

Read these instructions! Use only recommended fuels!

This stove must be installed and commissioned by a fully qualified registered engineer, or the building inspector must be informed. For more details contact your local authority.

This document, when completed by the installer, constitutes part of a 'Hearth Notice' for purposes of Building Law. It must be left with the householder and placed where it can easily be found.

Installed at Location: ..... By:.....

I definitively assert that this installation is safe, has been lit and demonstrated to the householder, conforms with current building regulations and with these instructions.

Signed:..... Date:.....

Flue Draught measured on commissioning: .....

Fuel used on commissioning:.....

Installers; Please return the transit skids to the retailer so they can be returned to the manufacturer for re-use.

The Clean Air Act 1993 and Smoke Control Areas

Under the Clean Air Act local authorities may declare the whole or part of the district of the authority to be a smoke control area. It is an offence to emit smoke from a chimney of a building, from a furnace or from any fixed boiler if located in a designated smoke control area. It is also an offence to acquire an "unauthorised fuel" for use within a smoke control area unless it is used in an "exempt" appliance ("exempted" from the controls which generally apply in the smoke control area).
The Secretary of State for Environment, Food and Rural Affairs has powers under the Act to authorise smokeless fuels or exempt appliances for use in smoke control areas in England. In Scotland and Wales this power rests with Ministers in the devolved administrations for those countries. Separate legislation, the Clean Air (Northern Ireland) Order 1981, applies in Northern Ireland. Therefore it is a requirement that fuels burnt or obtained for use in smoke control areas have been "authorised" in Regulations and that appliances used to burn solid fuel in those areas (other than "authorised" fuels) have been exempted by an Order made and signed by the Secretary of State or Minister in the devolved administrations.
Further information on the requirements of the Clean Air Act can be found here: http://smokecontrol.defra.gov.uk/
Your local authority is responsible for implementing the Clean Air Act 1993 including designation and supervision of smoke control areas and you can contact them for details of Clean Air Act requirements
The Meg 4.5 / Sirius 450 stoves may be used in smoke control areas strictly in accordance with these instructions, when burning:
UK: Untreated wood logs, natural anthracite or authorised smokeless fuels (authorised under s20(6) of the clean air act 1993)
RoI: Wood logs, smokeless fuels or peat briquettes, but not petroleum coke (Control of Atmospheric Pollution Regulations 1970)

This appliance becomes extremely hot and can produce poisonous gases. A fire guard should be used if children or the infirm are present. The installer is required to exactly follow these instructions and to completely comply with all relevant local, national and international standards.

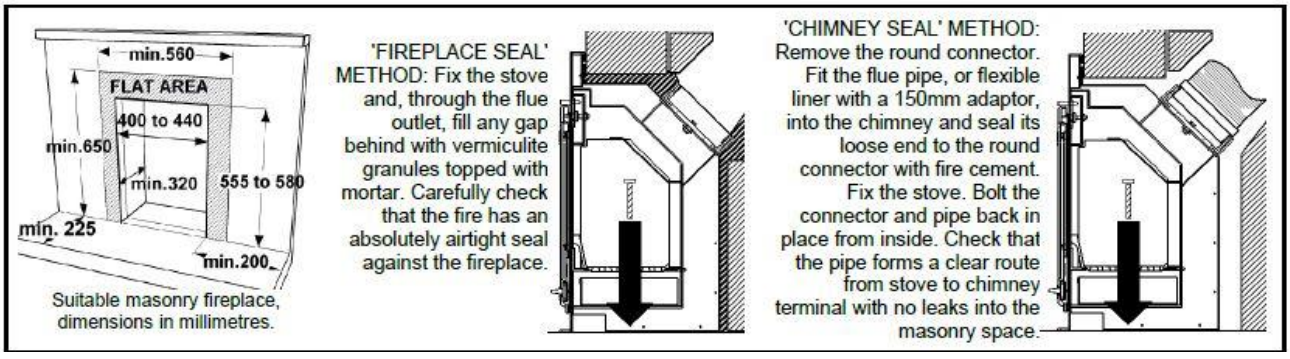
Installing a stove is a 'controlled service', the law expects that it is either supervised by a qualified installer or that the building inspector is informed. Check with your local authority.
Asbestos: Your stove does not contain asbestos, but take care to avoid asbestos in an old installation.
Weight: Your stove is heavy – take great care when moving it and ensure that the intended fireplace can support the weight – consider fitting a load distributing plate.

Your Chimney
Once warm, your chimney makes the gas inside it rise, pulling fresh air into the stove to make it work. Your chimney must:

- Generate a draught in use of at least 12 Pa (0.05ins wg).
- Be capable of withstanding the temperatures generated.
- Be absolutely incapable of leaking fumes into the dwelling – this will commonly be achieved by it:
- Being at least 5m high.
- Terminating at least 1m above any roof ridge.
- Having an internal cross-section not less than 0.018m² (e.g.: 150mm dia) and never more than 0.14m² (e.g.: 375 x 375mm).
- Being free from even the slightest crack or source of leakage.
- Having no bends sharper than 45°.
- Being entirely free of obstructions and swept by a qualified chimney sweep.
- Being connected to only this stove.
- Being of thick masonry or otherwise adequately insulated.
- Conforming to local building regulations.
- Special rules apply where the flue passes through timber, thatch or other vulnerable materials – take specialist advice.

Your Fireplace
Stoves become very hot, the setting must be made entirely of durable fireproof materials. Thin (<50mm) stone slabs risk cracking unless cut into sections to allow for expansion and backed with a heat resistant concrete. Even beyond the safety clearance , items can become very hot - take great care in siting vulnerable materials like wax, textiles, paper etc.
Air Supply
Your stove needs air to breathe – there must be a permanent fresh air supply into the space in which it is installed equal to the size given on page 1. This can often be provided by air leaking around door frames etc. (it is commonly accepted that this alone may suffice for appliances <c5kW) but in case of any doubt, fit a purpose made air vent. An extractor fan, or another fuel using appliance in the same building, can remove this air.
Fit a Carbon Monoxide alarm near to the stove.

Fitting
Place the stove on a solid non-combustible hearth conforming to building regulations, noting the distances to combustible materials given in the table on the front of this document.
Inset stoves deliver very hot air into the room so the 400mm clearance above to combustible materials must be strictly observed.
Prepare to fix the stove in place by drilling two 6mm diameter holes at the fixing centres, 60mm deep into the hearth. Fix the soft seal to the back seating surface of the stove and push stove into opening. Screw to the masonry of the fireplace hearth at the two points arrowed and proceed with the fix as shown below.
When fitting this stove with a trim, a gap will be required between the flange and back panel to allow the trim to be attached, please see the relevant trim instructions for further guidance.



Whichever method is used it is imperative that:
1) The route for gases from the stove to the chimney terminal is completely air-tight; even the tiniest gap or crack can spoil the updraught. Seal all joins with fireproof cement and/or heatproof rope.
2) It is possible to sweep the entire length – access doors may be required.
3) The entire construction is of durable fireproof materials.

Check the Installation
Once installed, light the fire, demonstrate it to the householder and check that:
1) It burns controllably and does not emit fumes to the room.
2) The route for gases from the stove to the chimney terminal is completely airtight, unobstructed and able to be swept.
3) The entire construction is of durable fireproof materials.
4) The flue presents a draught in use of at least 12Pa.

Living with your stove

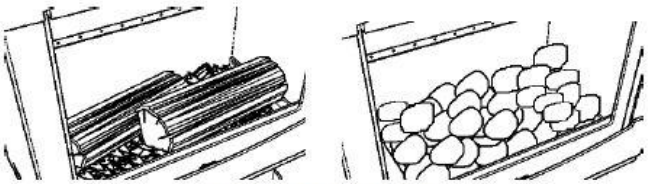
Every fuel, chimney and condition of use is different. Only experience will show which are the best settings for you.

Lighting

If lighting after a period of non-use, do check that the flueways and chimney are completely clear Place two or three firelighters close together, or screwed-up paper covered with dry sticks, at the back of the grate and light them. When they are burning well gently cover them with very dry fuel, close the door and set the air controls to the 'high' position (see '**Control**'). When the fire is burning well, move the controls to the lowest practical setting.

Filling

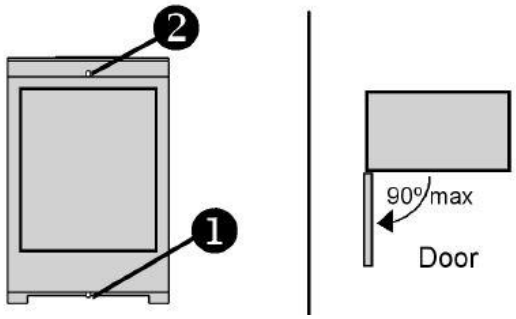
Meg are very efficient stoves, you don't have to pile them up with huge amounts of fuel. Just one or two logs of about 1kg each, or mineral fuel mounded up in the centre is all that is needed. Don't fill above the level shown in the diagram below.



Correct fuelling level

Control

How fast the fire burns depends on how much air reaches the fuel. The stove has two air controls, one below the window ('primary' ❶) and one above ('airwash control' ❷). Move the slides left for 'high' and right for 'low' on the Contemporary model. Turn the dial anti-clockwise and position the top slide to the right for 'high' and turn the dial clockwise and position the top slide to the left for 'low' on the Traditional model. They can get very hot so move them with the poker tool supplied or use a glove. When using wood it is usually best to have the primary control ❶ completely closed and adjust the burning rate using the airwash ❷ control. Hard fuels like anthracite work best with the airwash closed and the primary open.



Emptying Ashes

Only empty ashes when the fire is cold. Use the tool or a glove to open the door. Stir the fire with a poker before lifting out the ashbin. Remember to let ash cool before disposing in plastic sacks or dustbins. There is no need to empty every last speck but ash from mineral fuels should never be allowed to build up so that it comes into contact with the underside of the grate.

Extended Burning

Meg stoves are intended for quick heat-up intermittent use. While well capable of lasting for many hours, they are not designed for overnight burning. For best extended burning results allow the fire to burn down to a low, hot, firebed and fully fill with a hard fuel such as anthracite (c30mm size is best) and set the air controls to 'low'.

Keeping the window clean

Simply operating the stove for a few minutes at high output will often burn off any deposits left by tarry or wet fuels. Severe stains can be removed when cold with a domestic bleach cleaner. The window is not glass but a transparent ceramic, it may develop tiny hairline cracks, these are harmless and a characteristic of the toughest heat-resistant material known. Reduce the risk of staining by using only very dry fuel and keeping the airwash ❷ control at least a little open.

Opening the door

This stove is designed to be operated only with the door closed. The door handle can get very hot so use the poker tool or a glove. Open the door very slowly to minimise fume emission and prevent hot fuel falling out.

Summer shut down

Before a long period of non-use, empty fuel and ash, remove the throat plate and leave all air controls open to allow ventilation and reduce condensation.

Fuels

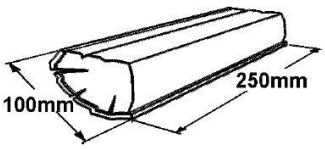
There is no 'perfect' fuel so we strongly recommend that you try a selection of fuels (or mixtures) to find which suits you best. Do avoid dusty materials such as sawdust, they can burn far too violently.

Smoke Control

In certain areas special rules apply to reduce smoke nuisance. Check with your local authority.

Wood

Wood only emits as much carbon to the atmosphere as the tree took in when growing so wood is considered the 'carbon neutral' fuel. When wood is cut down its cells are full of water. Burning such wet or 'green' wood wastes heat in making steam and produces flammable acidic tars which will cling to, and rapidly damage, your stove and chimney. Split logs will typically take two years to become reasonably dry, round logs much longer. Cracks in the ends, a hollow sound when tapped and bark falling away are all signs that a log may be ready for use. The fine, white residue produced when wood burns is not ash, but the remains of cell walls which can burn if kept hot enough, so don't de-ash a fire until absolutely necessary when using wood.



Kiln dried beech logs of around 1.2kg are recommended for optimum performance.

Meg appliances are authorised for use in smoke control areas of the UK when burning wood. For best performance, and always for low smoke emission:

- Split logs lengthways for drying
- Use logs no bigger than about 100mm x 250mm
- Ensure logs are absolutely dry (less than 15% moisture)
- Fill the stove 'criss-cross' so air can circulate between logs
- Fill 'little & often'
- Always have the airwash control ❷ at least a little open
- When first lighting, or reviving a fire from embers, use only very small, thin, dry, sticks
- Never operate with the door open
- Don't overfill the firebox

Joinery Waste
Dry wood offcuts will burn well, but don't expect softwood waste to burn as cleanly or for as long as hardwood logs.
Peat
(Not smokeless in the UK. Smokeless in the RoI) Sod turf must be thoroughly dry.
Lignite
(Not smokeless) A natural mineral, between peat and coal. It lights easily and burns well, but produces much ash.
Housecoal or Bitumous coal
(Not smokeless) Makes a lot of tarry smoke and large volumes of flammable gas which makes it difficult to control and risk explosions. Despite its low cost it rarely represents good value for money**. Never use housecoal.**
Anthracite
(Smokeless) A natural hard, shiny form of coal. Slow to light, it can burn for very long periods with great heat. Despite its high price per bag it generally works out to be one of the cheapest of all fuels. Use the small 'nuts' size.
Coke
(Smokeless) Coke is coal from which the smoke has been removed. Sometimes difficult to light, it burns very cleanly.
Briquettes
Compressed blocks of fuel, generally able to burn for long periods and remarkable for their consistency. 'Homefire' and 'Phurnacite' are smokeless types while other brands are made from lignite, peat or housecoal.
Petroleum Coke
(Smokeless in the UK, forbidden in smokeless zones in the RoI) Sold as 'Petcoke', 'Longbeach' and under various proprietary names, is made from oil. Easy to light and control, its exceptional heat and lack of protective ash mean that it MUST NOT be used unless mixed with another fuel. Grate and liner life will be drastically reduced when using petroleum coke.
Household Wastes
Some plastics give off toxic fumes when burned and remember that batteries and aerosols explode! The stove is not an incinerator, so only use the recommended fuels and NEVER use liquid fuels in any form.

Problems?
Problems like those listed here are usually due to some difficulty with the installation, chimney or fuels, so please check back through these instructions carefully. If necessary seek specialist advice.
Smoke from the chimney
It is quite normal for a little smoke to be emitted from the chimney when the fire is cold, so start the fire using only a very little fuel. When using wood always ensure that the primary control ❶ is completely closed and adjust the burning rate using the airwash ❷ control. Use only very dry wood or smokeless fuels.
Poor Heat Output
A stove can heat a typical room of about 12m³ volume for each kW of output, so a 5kW model can heat up to (12 x 5) 63m³, a room of about 5m square. The actual size depends on the insulation and air-change ratio of the room. To attempt to heat a larger room will result in excessive fuel consumption and damaging overheating.
Lack of Controllability
Wood and some other fuels may burn excessively until the gasses in them have been used up. You can reduce this effect by making sure that the fire is set to 'low' for a while before refuelling and checking that the door seals fully.
Condensation
Condensation onto cool surfaces inside the stove can be severe if fuel is in any way damp, use only very dry fuel.
Over-Firing
It is possible to leave the fire too long with the controls set too high leading to 'over-firing' seen as glowing metal parts, excessive chimney temperature and risk of parts failing or chimney fires. Always set controls to the lowest practical setting. A chimney thermometer, from your local stove shop, can help.
Smoke Coming Into Room
Fumes are poisonous – smoke emission must never be tolerated, causes might be:

- New stove: There is often a smell and sometimes visible fumes as the paint cures. This normally stops after an hour or so and we advise that you open a window when firing up a new stove for the first time.
- Inadequate seals: Are all flue pipes and connectors absolutely gas tight? Even the tiniest crack or gap can spoil the draught. Does an inset appliance fully seal against the fireplace?
- Blocked throat plate: Has soot or ash collected on the throat plate above the inner back part of the firebox?
- Unsuitable, blocked or un-swept chimney: The first requirement for correct operation is a sound chimney. Check the requirements earlier in this document and in case of any doubt engage a professional sweep or chimney engineer.
- Poor air supply: Lack of air to the fire is a common cause of smoking and poor performance. Air supply problems may be worse in certain wind conditions (often incorrectly ascribed to 'downdraft' which is in fact very rare), where air can be sucked out of the room. The answer is to fit an air vent, as near to the fire as possible, facing into the usual wind direction.
- Downdraught: Wind can blow down a chimney if there is something higher nearby such as a tree, hill or high building. Fitting an anti-downdraught cowl to the chimney top can cure this. Types which cannot be swept through are not recommended.
- Poor chimney draught: Chimney draught in use MUST be at least 12Pa.

Chimney Fire
In the rare event of deposits inside the chimney igniting (roaring sound + dense smoke and sparks from the chimney) immediately close the door, shut all air controls, evacuate the premises and call the fire brigade. Prevent fires by using very dry fuel and having your chimney swept regularly.

Maintenance
Monthly: Check that the flue is clear and unblocked, and that the door seals are sound.
Annually: Sweep the chimney, the entire length of the chimney from stove to outlet should be swept.
New Parts: Your stove has been extensively tested for safety – please don't try to modify it and always obtain genuine spare parts from your stove shop or the manufacturer.
Surface Finish: Wipe the stove body with a slightly damp cloth when cool. Never use aerosol spray or wax near the hot fire – they can ignite. Painted steel parts can be refurbished using special stove spray paint.
Your stove generates very high temperatures; eventually the internal parts will require replacement.

Designed and hand built in England

Meg Stoves
Station Works
Hooton Road
Hooton
CH66 7NF
www.megstoves.com
info@megstoves.com
+44(0)151 328 0191

meg stoves