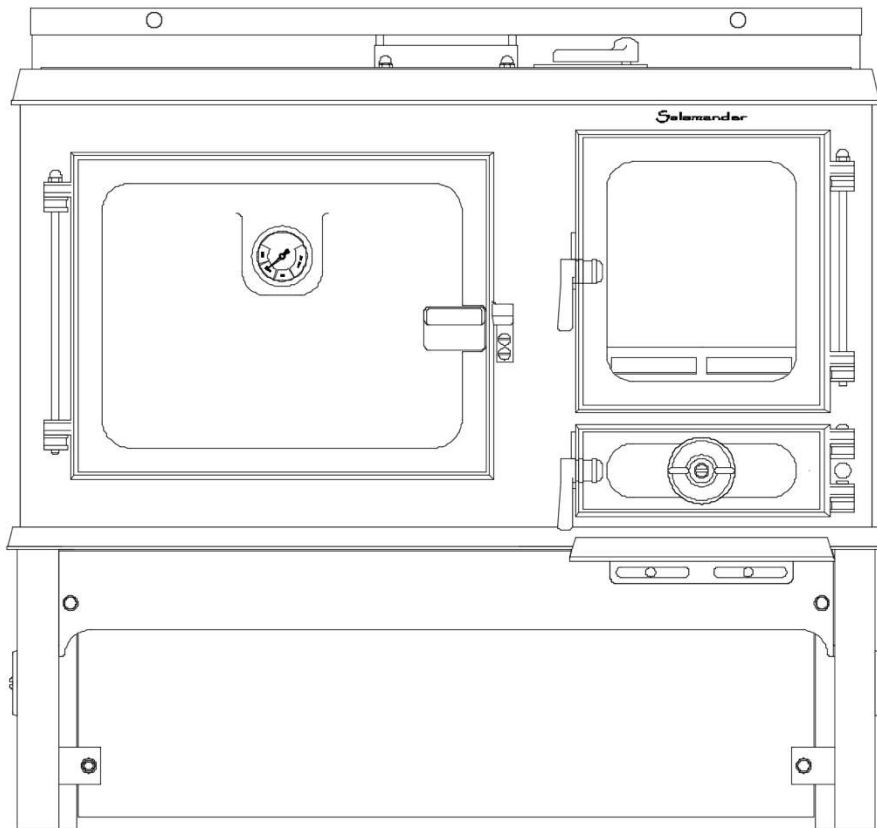


# Installation and Operating Instructions



## Salamander Range Model 1701 eco

**Installation and operating instructions for the Salamander Range  
Model 1701 Eco  
(Ref 1701 Eco Jan 2021)**

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**PLEASE READ THESE INSTRUCTIONS CAREFULLY**  
For your safety it is very important that your range is correctly installed. Take care when assembling and moving the range. It is made of cast iron and is very heavy (90kg).

## 1 - Important information about installing and using the Salamander Range

- All national and local regulations, including those referring to national and European standards need to be complied with when installing the Range.
- The Range must be installed by a registered installer or approved by your local building control officer.
- Use for domestic heating purposes only.
- Burn only approved fuels (wood or smokeless fuel). Do not use petroleum-based products or use as an incinerator.
- This Range will become very hot whilst in operation and due care should be taken. Use only the tool provided to operate the door handles, air controls, riddling control and ash pan.  
Always use a fireguard in the presence of children, the elderly or the infirm.  
Do not place flammable objects on or near the Range.
- The Range must NOT be installed into a chimney that serves any other appliance and is suitable for intermittent burning.
- There must be a suitable air supply into the room where the Range is installed and care should be taken so it is not possible to block the front or back air inlets to the Range.
- There must NOT be an extractor fan in the same room as the stove as this may cause fumes to be emitted into the room.
- Do not make unauthorised changes or modifications to the Range and use only recommended spare parts.
- The Range and chimney flue must be cleaned regularly. It is especially important to check for blockages following a prolonged shutdown period. It is recommended that the Range and flue is regularly maintained by a competent engineer.

## 2 – Unpacking the Salamander Range

### TAKE CARE

Remember the Range is made of cast iron and is very heavy.

Carefully open the firebox door and remove the packing. Inside the Range will be the following items:

#### Packing list for the Salamander Range 1701 Eco

- 1 Grate and grate centre installed.
- 2 Left Air Brick
- 3 Right Air Brick
- 4 Baffle Plate
- 5 Fire bars
- 6 Ash pan
- 7 Salamander multipurpose tool
- 8 Dustpan and brush
- 9 Magnetic stove thermometer

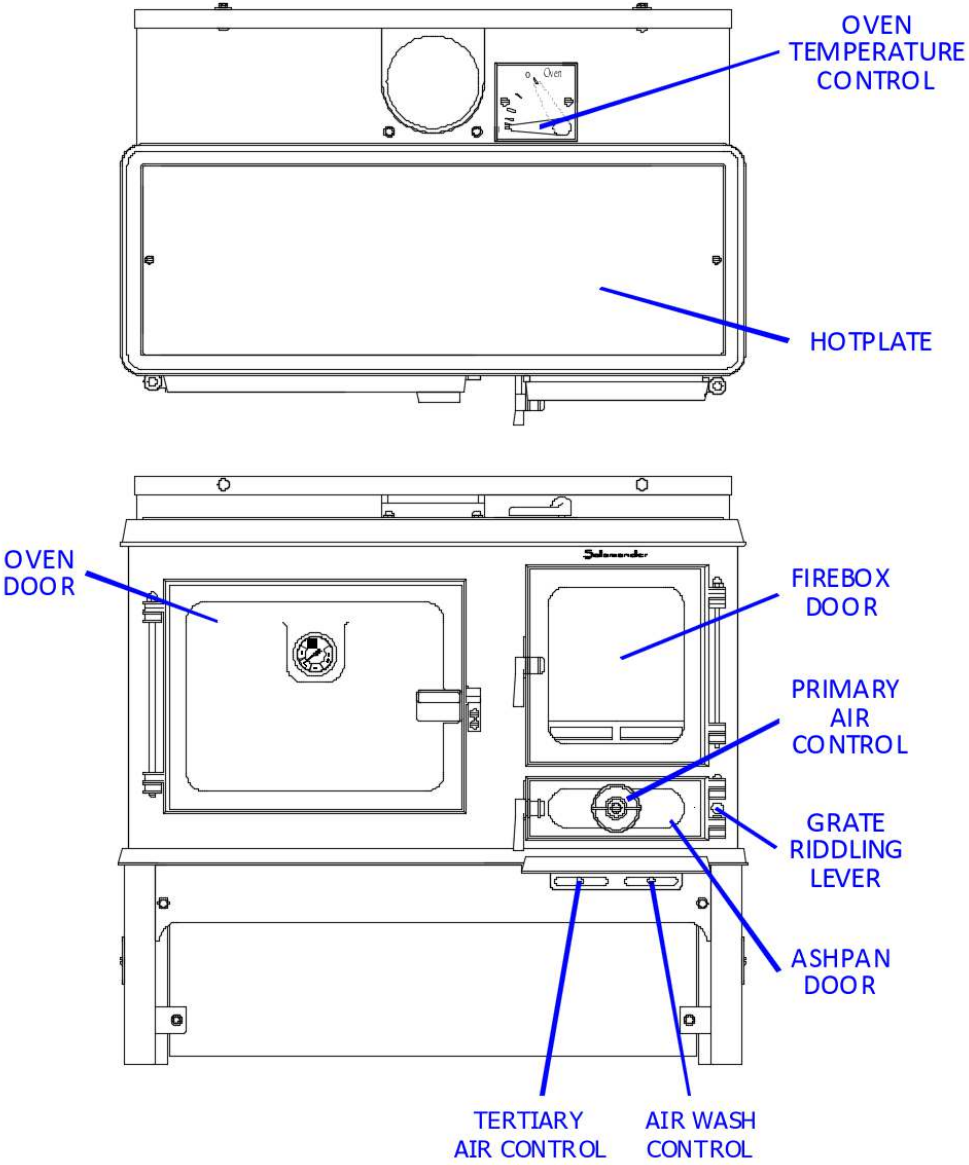
## 3 – Assembly of the Salamander Range

- 3.1** Check that the grate and grate centre is located correctly and sitting horizontally in the stove. Check the riddling mechanism operates and moves freely.



- 3.2** Build the firebox inside the stove by locating first the rear air box, then the baffle, then the left air box, followed by the right air box. The weight of the baffle holds the assembly together.

# 4 – Components of the Salamander Range



## 5 – Installation of the Salamander Range

PLEASE READ THESE INSTRUCTIONS CAREFULLY  
For your safety it is very important that your Range is correctly installed.  
Salamander Stoves cannot accept any responsibility for any fault arising through incorrect installation or use.

### 5.1 Regulations

All national and local regulations, including those referring to national and European standards need to be complied with when installing the Range.

### 5.2 Installation

The Range must be installed by a registered installer or approved by your local building control officer.

### 5.3 Safety clearances

The Range must be installed with the following minimum safety clearances from combustible materials:

Without shielding option                      Side 450mm, Rear 500mm

With shielding option installed  
on sides and rear                                  Side 250mm, Rear 200mm

If the Range is to be installed in a non-combustible recess, it is recommended that 100mm clearance is left at the back and sides for maintenance and to allow air to circulate around the Range.

Note that any connecting flue (whether single skin or insulated) used in the installation should be installed in accordance with the requirements of the applicable national and local regulations and the applicable safety distances applied to the flue. (In the UK this is the Building regulations part J)

### 5.4 Floor

National and local building regulations must be complied with when considering the floor or hearth where the Range is to be installed. The floor must be capable of bearing the weight of the Range (90kg).

### 5.5 Access for cleaning

Although access to the flue can be gained by removing the flue box cover plates on the Range, consideration must be given to installing extra access in the flue system to ensure all sections can be cleaned and maintained.

## 6 – Operating Instructions

### 6.0 Fuel

#### Wood

Use only seasoned timber with a moisture content of less than 20%. Typically, this means wood which has been cut and stored in an open dry shelter for between one and two years.

The maximum log size is 200mm x 100mm x 100mm (8" x 4" x 4").

DO NOT BURN wet or unseasoned wood, construction timber, painted or treated wood, driftwood or manufactured board products. Doing so will result in the wood burning inefficiently and excess smoke, soot and tar will be produced. This will coat and damage the internal components of the Range and flue and could result in a chimney fire.

#### Solid Fuel

Use only manufactured smokeless fuel listed as suitable for use on closed heating appliances.

DO NOT BURN bituminous coal, any petroleum based products or any liquid fuels.

### 6.1 Before lighting...

If using for the first time, or following a long period out of use, check that the flue is clear and unobstructed.

Check that the riddling control is free to move and is pushed fully in towards the Range.

Check that the ash pan is empty, in position and that the ash pan door is closed.

#### **WARNING**

During the first few times the Range is used, the heat resistant paint will be curing, and may give off small amounts of smoke and odour. This is completely normal for this type of appliance, and the room should be well ventilated.

To aid this process and prevent damage to the Range finish, the first few times a new Range is used the fire should be kept to a moderate size, and not fired vigorously.

## 6.2 Air Controls

The Salamander Eco is fitted with three air controls.

(See additional information section for the controls on the Salamander SE Eco Range which is exempt under the clean air act for use in smoke control areas)

### PRIMARY AIR CONTROL

Located on the front of the ashpan door, the primary air control directs air into the base of the fire. It is **only required when burning solid fuel**.

When burning wood, the control must be kept fully closed (rotate clockwise). Failure to do so will reduce the efficiency of the stove and increase the smoke and carbon monoxide being emitted into the atmosphere.

### AIR WASH CONTROL

Located below the ashpan door on the right hand side, the air wash control directs air down the window glass in the firebox door and onto the fire burning on the grate.

Lever to the left – minimum air wash  
Lever to the right – maximum air wash.

When burning wood, the control is used to regulate the rate of burn of the fuel on the grate.

When burning solid fuel, the control should be slightly opened just to ensure that the glass is kept clear.

### TERTIARY AIR CONTROL

Located below the ashpan door on the left hand side, the tertiary air control directs air into the space above the fire.

Lever to the left – minimum tertiary air  
Lever to the right – maximum tertiary air

When burning wood, the control is used to regulate the secondary burn of the gasses above the fire.

When burning solid fuel, tertiary air is not required and the control should be set to minimum (lever to the left). Failure to do so will reduce the efficiency of the stove and increase the smoke and carbon monoxide being emitted into the atmosphere.

## 6.3 Lighting a wood fire

- When burning wood:
  - Fully close the primary air control (Turn the wheel on ashpan door fully clockwise)
  - Fully open the Airwash control (Right hand control below the ashpan door)
  - Half open the Tertiary air control (Left hand control below the ashpan door)
- Turn the oven temperature control to "0" (All flue gasses will go directly up the chimney and reduce the time required to heat it to working temperature)
- Place 2 or 3 firelighters or screwed up newspaper onto the fire grate with about 1 kg of kindling and light the fire with a taper.
- When the firelighters or newspaper are burning, leave the door ajar about 1 to 2 cm to achieve a good draw and avoid condensation. Allow the burning kindling to warm up the chimney.



- After 2 to 5 minutes the chimney should be warm enough to create a good draw and the door can be closed.
  - Once the kindling has formed a good bed of glowing embers, the Range can be refuelled with 2 or 3 pieces of wood. *(Do not be tempted to overfill the firebox and risk fuel falling onto the glass or out of the fire as the door is opened. OVERFUELLING CAN ALSO CAUSE EXCESS SMOKE.)*
- Close the door, and once the new fuel is burning fully, the airwash and tertiary air controls can be adjusted to obtain the desired burn rate.

When opening the firebox door, always open gently for the first 2 to 3 cm to allow the pressure to equalise and stop smoke from escaping.

The Range should not be operated with either the firebox or ashpan door left open for long periods as excess smoke may be generated.

The Range firebox door should never be left open when the stove is in use.

Under normal chimney draught conditions expect to refuel every 45 to 60 minutes.

Operation with the air controls open can cause excess smoke. The Range must not be operated with the air controls or doors left open except as directed in these instructions.

## 6.4 Refuelling a wood fire

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

### Remember

Wood that is smouldering and producing smoke with no flame is burning very inefficiently and producing unburnt gases and soot that deposit on the inside of the Range, flue and the door glass.

Wood burns best when lying on a bed of about 1cm of ash.

Burning the Range too slowly (with the secondary air valve closed for too long) is not recommended as this is very inefficient and produces unburnt gases and deposits in the Range and flue. It is therefore not recommended that the Range is left lit overnight.

After refuelling, increase the amount of air to get the wood lit as quickly as possible. Once lit, reduce the air again.

It will take time to get to know your Range and how best to operate it under different conditions. The type and condition of the wood, chimney draught, weather, wind and outside temperature will all slightly change the way the wood burns and therefore how you should use the Range.

When in use, burning the Range vigorously for a short period will remove any build up of unwanted deposits on the inside of the stove and glass.

## 6.5 Lighting a solid fuel fire

- When burning manufactured smokeless solid fuel:  
Fully open the Primary air control (Turn wheel on ashpan door fully anticlockwise)  
Half open the Airwash control (Right hand control below the ashpan door central position)  
Fully close the Tertiary air control (Left hand control below the ashpan door fully to the left)
- Place 2 or 3 firelighters or screwed up newspaper onto the fire grate with about 1 kg of manufactured solid fuel briquettes and light the fire with a taper.
- When the firelighters or newspaper are burning, leave the door ajar about 1 to 2 cm to achieve a good draw and avoid condensation. Allow the fire to warm up the chimney.
- After 2 to 5 minutes the chimney should be warm enough to create a good draw and the door can be closed.
- Once the solid fuel is starting to burn, adjust the primary air control to ensure that all the fuel is lit. Once the kindling has formed a good bed of glowing embers, the stove can be refuelled with 2 or 3 pieces of wood. (*Do not be tempted to overfill the firebox and risk fuel falling onto the glass or out of the fire as the door is opened. OVERFUELLING CAN ALSO CAUSE EXCESS SMOKE.*)  
  
Close the door. Once the new fuel is burning fully, the airwash and tertiary air controls can be adjusted to obtain the desired burn rate.

## 6.6 De-ashing the Range

The action of riddling the grate will allow ash to fall from the bed of the fire into the ash pan underneath.

To riddle the grate, place the forked end of the tool in the slot in the riddling lever located between the hinges of the bottom door.

Pull and push the lever backwards and forwards and ash will fall through the grate into the ash pan.



### Remember

When burning wood, it is good to maintain a bed of ash on the grate about 1cm thick.

When burning solid fuel, the air is being supplied through the grate and therefore it should not be allowed to get completely blocked with ash.

Do not be tempted to over riddle the grate, as hot or burning fuel may fall through into the ash pan.

Do not let the ash level in the ash pan get higher than the sides of the pan. This will reduce airflow to the fire through the grate.

To remove the ash pan use the rounded end of the tool as shown.



**WARNING**

Take great care when removing and emptying the ash pan. It may be very hot and still contain burning or smouldering embers and is a fire risk.

## 6.7 Cooking on the Range

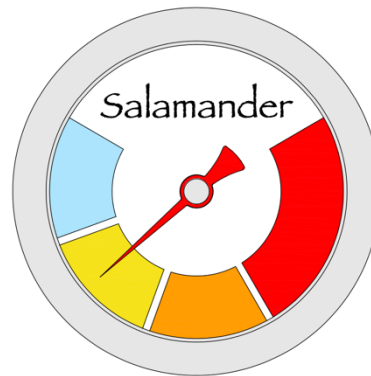
- Once the firebox section of the Range is up to working temperature it is possible to cook on the hotplate.
- The temperature of the hotplate will vary across its length. The coldest section is to the left, and the hottest section in front of the oven control.
- Adjust the position of pans from left to right to achieve low (warming), medium (simmer) or high (boil) temperatures.

## 6.8 Using the Range oven

- The oven is opened by lifting the handle on the left hand side of the door. When in use, the oven handle will become very hot and the Range multipurpose tool should be used to open and close the door.
- The oven door houses a temperature gauge which will give an indication of the oven temperature. Note that if the door is left open the temperature gauge will cool down and the oven may be hotter than indicated.
- The oven temperature is controlled by a combination of adjusting the following:
  - 1** The burn rate in the fire box
    - The type of fuel
    - The amount of fuel
    - The primary air control
    - The secondary air control
  - 2** The position of the oven temperature control
    - Position "0"  
Lower oven temperature  
(Flue gases go straight up the chimney)
    - Position "1"  
Highest oven temperature  
(Flue gases circulate past the oven)
- Note that when the oven is in use, the left hand side of the hotplate will increase in temperature as the flue gasses pass directly underneath the hotplate.

- As a helpful guide to showing the temperature range of the oven the temperature gauge has been colour coded from blue to red. Each colour represents the following approximate temperature range.

Blue	0 - 150 °C
Yellow	150 - 200 °C
Orange	200 - 230 °C
Red	230+ °C

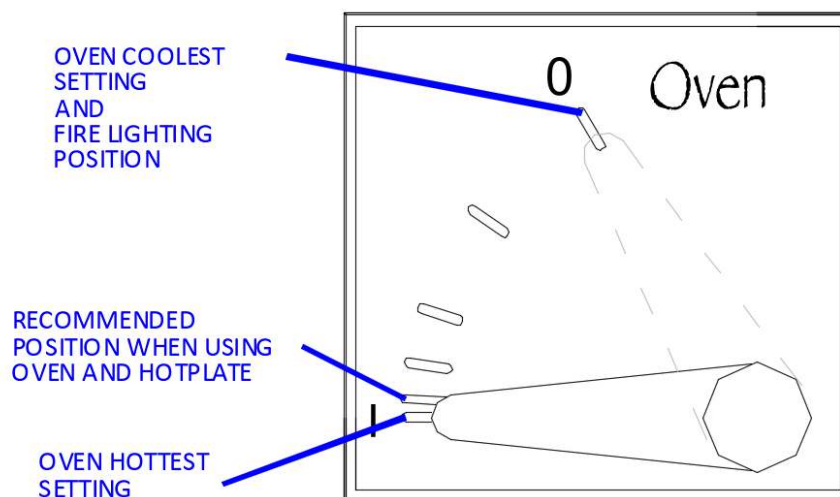


## 6.9 Maintaining the correct flue temperature for efficient, economical and safe operation

- It is very important that the flue temperature is maintained above 115 deg C (240 deg F) when operating the Range. Below this temperature tar may build up in the flue or chimney, increasing the risk of a chimney fire.
- The magnetic stove thermometer supplied with the Range should be installed on the flue and a temperature of 115 deg C (240 Deg F) or above maintained when in use.

### WARNING

It is recommended that the Oven Temperature control is used in the "1" Position (Hottest) for limited periods only. If the Range is on low fire there is an increased risk that the flue temperature may drop below 115 Deg C and tar may form in the chimney.



## OVEN TEMPERATURE CONTROL

## **7 – Guidance on safe operation**

### **Fire can be very dangerous**

During operation, the Range and all the fittings (door handles and controls) get very hot.

### **Do not overfire the Range**

It is possible to fire the Range to such an extent that damage may occur. Look out for parts of the Range or flue glowing red hot. If such a situation occurs, adjust the air supply accordingly to reduce the burning rate.

### **Chimney fire**

In the event of a chimney fire:

- Shut all air controls immediately
- Raise the alarm and evacuate the building
- Call the fire brigade
- Do not re-enter the building

### **Fumes**

If installed, operated and maintained correctly, the Range will not emit fumes into the room other than occasionally very small amounts when re-fuelling or de-ashing.

If fumes are being emitted during normal operation

- Ventilate the room by opening all doors and windows.
- Let the fire burn out.
- Leave the room.
- Check the stove, flue and chimney for blockages.
- Do not re-use the Range until the cause of the problem has been identified and rectified.
- If required seek expert help.

### **Adverse weather conditions**

In a small number of installations, very occasionally in specific weather conditions (direction of wind) the draw of the chimney may be affected, causing a downdraught and fumes to be emitted into the room.

If this is the case, the Range should not be used and advice sought from a professional flue installer who would be able to advise on possible solutions such as an anti-downdraught cowl.

### **Smoke and Carbon Monoxide detectors**

Both smoke and carbon monoxide detectors should be installed in all buildings where any solid fuel appliance is installed. The number and position of detectors required will vary depending on the design and layout of the building and manufacturer's recommendations should be carefully followed.

## 8 - Maintenance

Maintenance should only be carried out when the Range is cool.

### Before use

Between burns in the Range it is good practice to keep ash and debris to a minimum, especially the ash pan and ash pan section. Remember that if only burning wood, it is recommended to keep a bed of ash about 1cm thick on the grate.

### Cleaning the Range

Clean the outside of the Range with a soft brush.

Regularly remove and clean the baffle and firebox of soot and debris. Also clean the internal surfaces of the Range. Frequency of cleaning will be dependant on how vigorously the Range has been fired and what fuel has been used.

Any deposits allowed to build up in this area could reduce the lifespan of the Range.

Note that if required, the flue can be accessed for cleaning from inside the Range.

### Gaskets

The rope gaskets in both doors will need regular inspection to check their condition and ensure that the doors seal properly and full control of the air supply to the fire can be maintained.

### Firebox glass

Clean the firebox glass only when cool with a specialist glass cleaner. Use of any abrasive cleaner will scratch the glass and make subsequent cleaning more difficult.

### Chimney

It is important to have the chimney cleaned at least once a year.

Regular inspection and cleaning of the internal components of the Range can indicate if the chimney requires more frequent cleaning.

If the Range has been unused for an extended period (during the summer), the chimney should be checked by a competent person before use.

Note:

All parts that are in direct contact with the fire (grate, baffle, back and side air boxes) are considered as normal wear parts. Their life will be dependant on how vigorously the Range is operated and they must be inspected and maintained on a regular basis. If they become worn, damaged or not positioned correctly, the top, sides or back of the Range will be exposed to excessive heat and may be damaged.

### Remember

If the Range is not to be used for an extended period, set both air controls to half open to allow an airflow through the stove to avoid condensation.

## **9 – Fault Finding**

### **Fire will not burn**

The fuel is too wet and not suitable  
Air inlets to the Range are blocked  
The flue is blocked or restricted  
Inadequate air supply into the room

### **Soot build up on glass**

Fuel is too wet  
Fuel pieces are too large and are "smouldering" rather than burning  
The Range operating temperature is too low  
The Range is being run too "slow" with not enough air  
Poor chimney draught  
Too little secondary air washing over the window

### **Excessive wear on internal parts**

Range fired too vigorously  
Too little air passing through the bottom grate  
Use of wood that is too dry (eg wood from old furniture)

## **10 – Spare Parts**

A full range of products is available to maintain your Range, including;

Rope  
Rope glue  
Glass cleaner  
Stove paint

All individual components of the Range are available as spares.

For the complete list of available spares with prices go to [www.salamanderstoves.com](http://www.salamanderstoves.com)

## 11 - Salamander Range Eco performance results

### Output and Efficiency

*All efficiencies in table are Net values*

#### Wood Logs Results, 0.80 hour refuels

Parameter		A20/181 -1	A20/181 -2	A20/181 -3	Mean
Test duration	h	0.87	0.83	0.83	<b>0.84</b>
Total efficiency	%	86.0	86.0	85.1	<b>85.7</b>
Nominal heat output	kW	4.1	4.4	4.3	<b>4.3</b>
Mean CO emission (at 13 % O <sub>2</sub> )	%	0.06	0.06	0.06	<b>0.06</b>
Mean flue gas temperature	°C	187	193	189	<b>190</b>
Flue gas mass flow	g/s	3.4	3.4	3.8	<b>3.5</b>
Mean C <sub>n</sub> H <sub>m</sub> emission (at 13 % O <sub>2</sub> )	Nmg/m <sup>3</sup>	74	88	72	<b>78</b>
Mean NO <sub>x</sub> emission (at 13 % O <sub>2</sub> )	Nmg/m <sup>3</sup>	75	66	76	<b>72</b>
DIN Plus particulates (at 13 % O <sub>2</sub> )	Nmg/m <sup>3</sup>	18	20	15	<b>18</b>

#### Maxibrite Results, 1.0 hour refuels

Parameter		A20/179 -1	A20/179 -2	Mean
Test duration	h	1.05	1.03	<b>1.04</b>
Total efficiency	%	83.8	82.9	<b>83.4</b>
Nominal heat output	kW	4.2	4.2	<b>4.2</b>
Mean CO emission (at 13 % O <sub>2</sub> )	%	0.04	0.04	<b>0.04</b>
Mean flue gas temperature	°C	197	195	<b>196</b>
Flue gas mass flow	g/s	3.1	3.3	<b>3.2</b>
Mean C <sub>n</sub> H <sub>m</sub> emission (at 13 % O <sub>2</sub> )	Nmg/m <sup>3</sup>	33	34	<b>34</b>
Mean NO <sub>x</sub> emission (at 13 % O <sub>2</sub> )	Nmg/m <sup>3</sup>	125	105	<b>115</b>
DIN Plus particulates (at 13 % O <sub>2</sub> )	Nmg/m <sup>3</sup>	26	20	<b>23</b>

#### Distances to Combustible Materials (Twin Wall Flue)

##### Rear and side heat shields fitted:

Back wall = 200mm

Side wall = 250mm

##### Rear and side heat shields removed:

Back wall = 500mm

Side wall = 450mm



**Copy of the CE plate attached to the stove**

