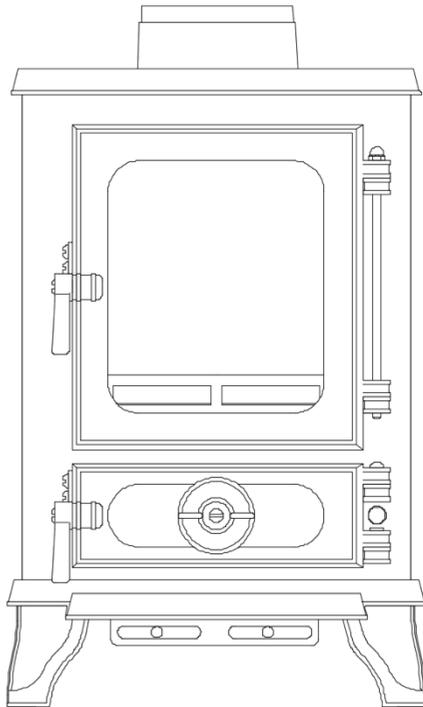


Installation and Operating Instructions



Salamander Eco Stove
Model 1901 eco

Installation and operating instructions for the Salamander Eco model 1901 eco (Ref 1901 eco Dec 2019)

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1 - Important information about installing and using the stove

PLEASE READ THESE INSTRUCTIONS CAREFULLY

For your safety it is very important that your stove is correctly installed. Take care when assembling and moving the stove. It is made of cast iron and is very heavy (47kg)

- All national and local regulations, including those referring to national and European standards need to be complied with when installing the stove.
- The stove must be installed by a registered installer or approved by your local building control officer.
- Only use for domestic heating purposes.
- Burn only approved fuels (wood or smokeless fuel). Do not use petroleum-based products or use the stove as an incinerator.
- This stove 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 stove.
- The stove 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 stove is installed, and care should be taken not to block the front or back air inlets to the stove.
- 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 stove and use only recommended spare parts.
- The stove and chimney flue must be regularly cleaned. It is especially important to check for blockages following a prolonged shutdown period. It is recommended that the stove and flue is regularly maintained by a competent engineer.

2 – Unpacking

TAKE CARE

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

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

Packing list

- 1 Stove body with grate and grate centre installed.
- 2 Legs x 4
- 3 Leg bolts with washers x 4
- 4 Left Air Brick
- 5 Right Air Brick
- 6 Baffle Plate
- 7 Fire bars
- 8 Ash pan
- 9 Salamander multipurpose tool
- 10 Dustpan and brush

3 – Assembly

The stove is supplied with the flue collar fitted to the top. If the installation requires the flue to exit from the rear of the stove, swap the collar for the blanking plate on the back before assembling the firebox as described below.

- 3.1 Lay the stove carefully on its side and attach one leg to each corner of the base using the bolts and washers. Carefully lift the stove back upright to rest on its feet.

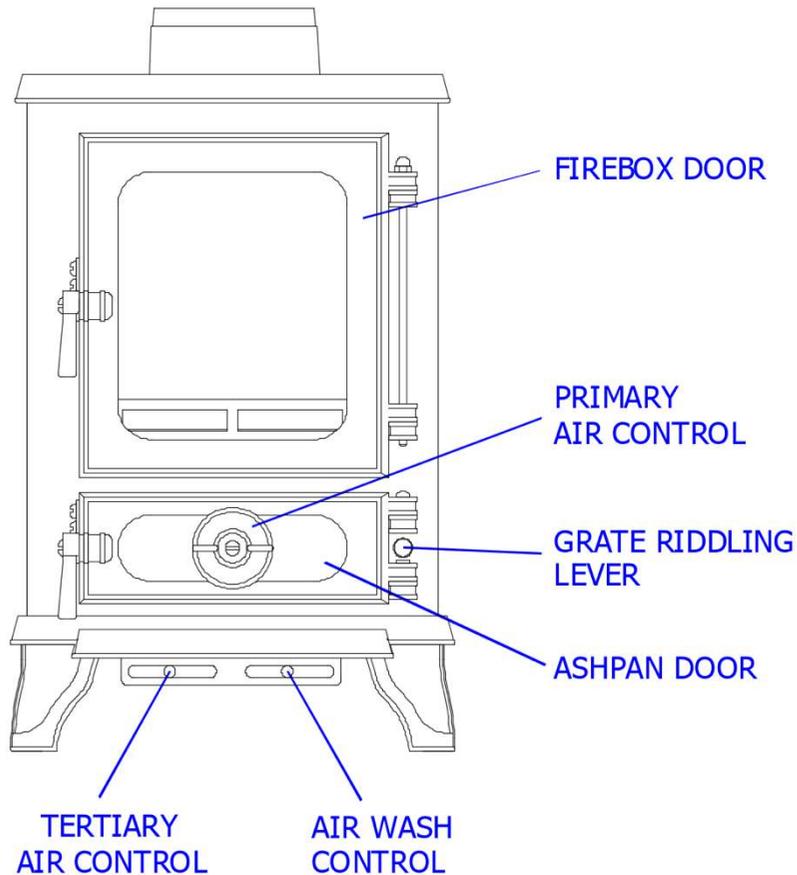


- 3.2 Check that the grate and grate centre is located correctly and sitting horizontally in the stove. Check the riddling mechanism operates and moves freely.



- 3.3 Build the firebox inside the stove by locating first the baffle, then the left fire brick, followed by the right fire brick. The weight of the baffle holds the assembly together.

4 – Components



5 – Installation

PLEASE READ THESE INSTRUCTIONS CAREFULLY
For your safety it is very important that your stove 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 stove.

5.2 Installation

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

5.3 Safety clearances

The stove must be installed with the following minimum safety clearances from combustible materials.

Salamander eco	Side	400mm
	Rear	450mm

Salamander eco Fitted with side and rear optional heat shields	Side	150mm
	Rear	100mm

If the stove 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 stove.

5.4 Floor

National and local building regulations must be complied with when considering the floor or hearth where the stove is to be installed. The floor must be capable of bearing the weight of the stove and the hearth temperature which on test was measured at 66.4 deg C on full fire.

5.5 Access for cleaning

Although access to the flue can be gained by removing the stove firebox components, consideration must be given to installing extra access in the flue system to ensure all sections can be cleaned and maintained.

6 – Operating Instructions

6.1 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 stove 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 products or liquid fuels.

6.2 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 stove.

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

WARNING

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

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

6.3 Air Controls

The Salamander Eco is fitted with three air controls.

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 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.

6.4 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)
- 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 create a good draw and the door can be closed.
- 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 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 door, always open gently for the first 2 to 3 cm to allow the pressure to equalise and stop smoke from escaping.

The stove should not be operated with either door left open for long periods as excess smoke may be generated.

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

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

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

Refuelling

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 stove, flue and the door glass.

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

Burning the stove too slowly is not recommended as this is very inefficient and produces unburnt gases and deposits in the stove. It is therefore not recommended that the stove 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 stove 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 stove.

When in use, burning the stove 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 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 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 stove

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.

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 tool as shown.



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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.

7 – Guidance on safe operation

Fire can be very dangerous

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

Do not overfire the stove

It is possible to fire the stove to such an extent that excess smoke may be generated or damage may occur. Look out for parts of the stove 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 stove 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 stove 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 stove should not be used and advice should be sought from a professional flue installer who would be able to advise on possible solutions such as an anti-downdraught cowl.

8 - Maintenance

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

Before use

Between fires in the stove it is good practice to keep ash and debris to a minimum. Especially empty 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 stove

Clean the outside of the stove with a soft brush.

Regularly remove and clean the baffle and back and side air bricks of soot and debris. Also clean the internal surfaces of the stove. The frequency of cleaning will be dependant on how vigorously the stove has been fired and what fuel has been used.

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

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

Gaskets

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

Stove glass

Clean the stove 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 stove can indicate if the chimney requires more frequent cleaning.

If the stove 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 bricks, and underside top airbox) are considered as normal wear parts. Their life will be dependant on how vigorously the stove is operated and they must be inspected and maintained on a regular basis. If they become worn, damaged or not positioned correctly, non wear parts such as the stove top and sides will be exposed to excessive heat and may be damaged.

Remember

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

9 – Fault Finding

Fire will not burn:

The fuel is too wet and not suitable
 Air inlets to the stove 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 "smouldering" rather than burning
 The stove operating temperature is too low
 The stove is being run too "slow" with not enough air
 Poor chimney draw
 Too little secondary air washing over the window

Excessive wear on internal parts

Stove 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 are available to maintain your stove including;

Rope
 Rope Glue
 Glass cleaner
 Stove paint

All individual components of the Salamander eco stove are available as spares.

For the complete list of available spares with prices, go to www.salamanderstoves.com

11 - Salamander Eco Stove Performance Results

Wood Logs Results, 0.80 hour refuels

Parameter		A19/135-1	A19/135-2	A19/135-3	Mean
Test duration	h	0.75	0.78	0.75	0.76
Total efficiency	%	80.1	79.0	79.2	79.4
Nominal heat output	kW	4.2	4.0	4.2	4.1
Mean CO emission (at 13% O ₂)	%	0.11	0.08	0.08	0.09
Mean flue gas temperature	°C	277	269	276	274
Flue gas mass flow	g/s	3.5	3.8	3.8	3.7
Mean C _n H _m emission (@13% O ₂)	Nmg/m ³	114	107	94	105
Mean NO _x emission (@13% O ₂)	Nmg/m ³	103	88	87	93
DIN Plus particulates (@13% O ₂)	Nmg/m ³	28	22	20	23

Maxibrite Solid Fuel Results, 1.00 hour refuels

Parameter		A19/265-1	A19/265-2	Mean
Test duration	h	1.05	1.05	1.05
Total efficiency	%	79.9	82.8	81.4
Nominal heat output	kW	3.9	4.2	4.1
Mean CO emission (at 13 % O ₂)	%	0.09	0.09	0.09
Mean flue gas temperature	°C	257	223	240
Flue gas mass flow	g/s	3.0	3.1	3.1
Mean C _n H _m emission (@13% O ₂)	Nmg/m ³	26	58	42
Mean NO _x emission (@13% O ₂)	Nmg/m ³	75	64	70
DIN Plus particulates (@13% O ₂)	Nmg/m ³	29	17	24

All efficiencies in are Net values

CE Plate



EN 13240:2001 / A2:2004
Roomheater fired by solid fuel

Salamander Model 1901 eco Ecodesign Multifuel Stove

Fuel types Wood, Manufactured Smokeless Fuel

Nominal Heat Output

Wood	4.1 kw
Manufactured Smokeless Fuel	4.1 kW

Total net energy efficiency

Wood	79.4 %
Manufactured Smokeless Fuel	81.4 %

Distance to adjacent combustable materials (Without heat shields)

Side	400 mm
Rear	450 mm

Distance to adjacent combustable materials (With heat shields)

Side	150 mm
Rear	100 mm

Emission of CO in combustion products

Wood	0.09 %
Manufactured Smokeless Fuel	0.09 %

Flue gas temperature

Wood	274 °C
Manufactured Smokeless Fuel	240 °C

The appliance is capable of intermittent operation
The appliance cannot be used in a shared flue
Follow the users manual and only use recommended fuel

Salamander stoves Ltd
Rosemount, Canada Hill
Ogwell, Devon, TQ12 6AF