

# ESSE

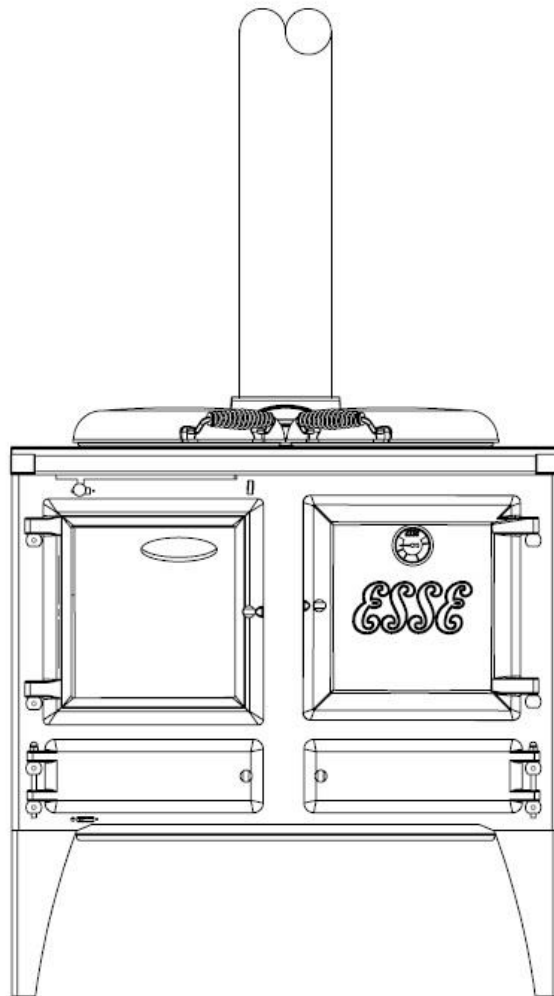
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## Ironheart

Model EW

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### Wood Fired Cook Stove North American Instructions



THIS APPLIANCE MUST BE COMMISSIONED BY A QUALIFIED INSTALLER  
THE WARRANTY CARD MUST BE RETURNED TO ENSURE GUARANTEE VALIDITY

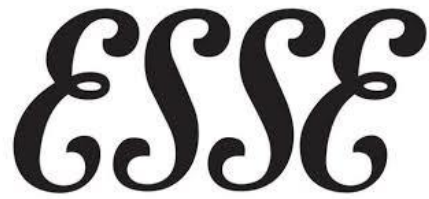


224-S-06-2

Les instructions en français sont disponibles en ligne à [www.essestoves.ca](http://www.essestoves.ca)

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# Ironheart

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## OPERATING INSTRUCTIONS

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READ FULLY BEFORE OPERATING THIS APPLIANCE

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### INTRODUCTION

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Thank you for choosing an ESSE cook stove. Please read these instructions carefully to ensure your safety and enjoyment whilst using this product. Correctly installed and operated, your ESSE cook stove will provide faithful service indefinitely. We feel certain that like countless ESSE owners since 1854, you will be truly satisfied by the warmth and comfort it will provide and the taste of your food cooked within its oven.

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### BEFORE USING YOUR COOK STOVE

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Ensure that all protective packaging has been removed. The hotplate has been oiled at the factory to prevent rusting and therefore will require wiping with a damp cloth and drying with a tea towel or kitchen roll.

During the first few operations of the cook stove there may be some ticking and fumes emitted. This is normal and part of the initial expansion & material curing process.

This appliance is suitable for burning wood only.

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## YOUR COOK STOVE

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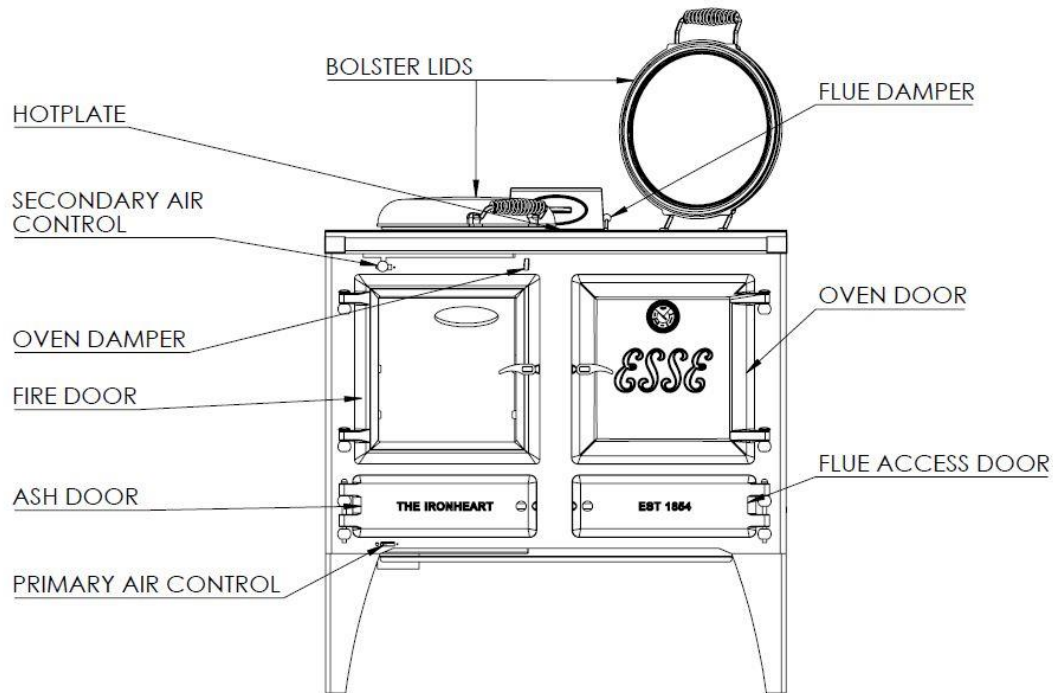


Figure 1 Ironheart Cook stove

Figure 1 shows the cook stove and it's controls. The fire is loaded, refuelled, and emptied through the large glass fire door.

A flue damper is fitted in the bottom of the flue box and is in the open position when the lever is pointing to rear of cook stove. This is used on initial light up and also gives a cooler oven temperature when open. It can also help to control excessive flue draught. This is done by pointing the lever to the front of the cook stove.

The controls are operated in the following ways:

Primary Air Control	Slide LEFT to open
Secondary Air Control	Slide LEFT to open
Oven Damper	Turn COUNTER-CLOCKWISE to open
Flue Damper	PUSH back to open

Included inside your cook stove is a multi-purpose Operating Tool – for adjusting the air supply and operating the door. A glove is also provided to protect the user’s hand. (Figure 2)

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**WARNING**

Do not place towels on the handrail, keep pets and children away and ensure that any drapes near the appliance cannot ignite even when displaced.

Surfaces will be hot when in use.

An extractor fan **MUST NOT** be fitted in the same room as the appliance.

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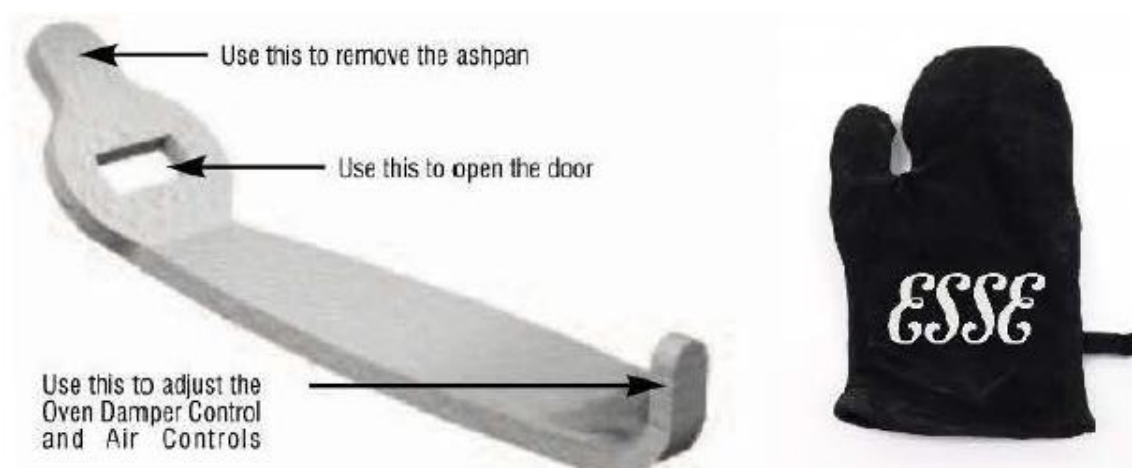


Figure 2 Operating Tool and Glove

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## LIGHTING AND CONTROLLING THE FIRE

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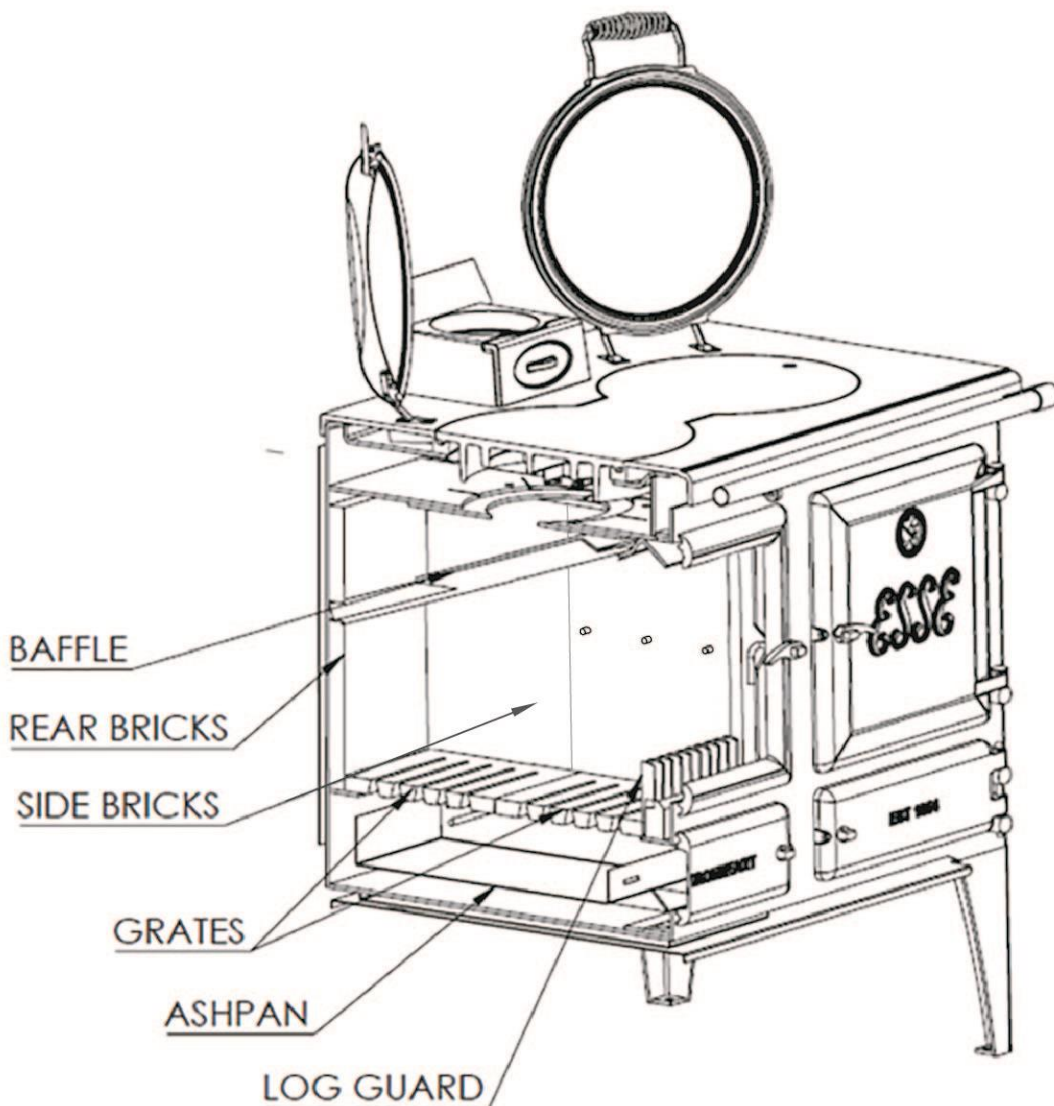


Figure 3 Multi-fuel Grate Firebox Parts

Before lighting the fire ensure that all parts are in the correct position, see Figure 3.

Ensure both air controls are in the open position by moving the controls to the LEFT, the oven damper is opened by rotating the control COUNTER-CLOCKWISE, and the flue damper opened by pushing the lever to the REAR of the cook stove.

Open the fire door and lay two logs along the base of the fire box forming a space between them.



*Figure 4 Logs Laid in Fire Box*

Place a firelighter in the space and surround with a small amount of kindling.



*Figure 5 Fire Lighter and Kindling in Place*

Lay a third log over the top of the space perpendicular to the other logs.



*Figure 6 Final Log in Position*

When you are ready to light the fire all that needs to be done is light the firelighter.

Once the fire has been lit leave the door partially open to allow additional airflow until the fire has become established. When the fire is established the fire door can be fully closed. The air controls can be moved towards the closed position once the sooting has burnt off the brickwork. To control the fire the secondary air control should be used, the primary air control should be kept closed.



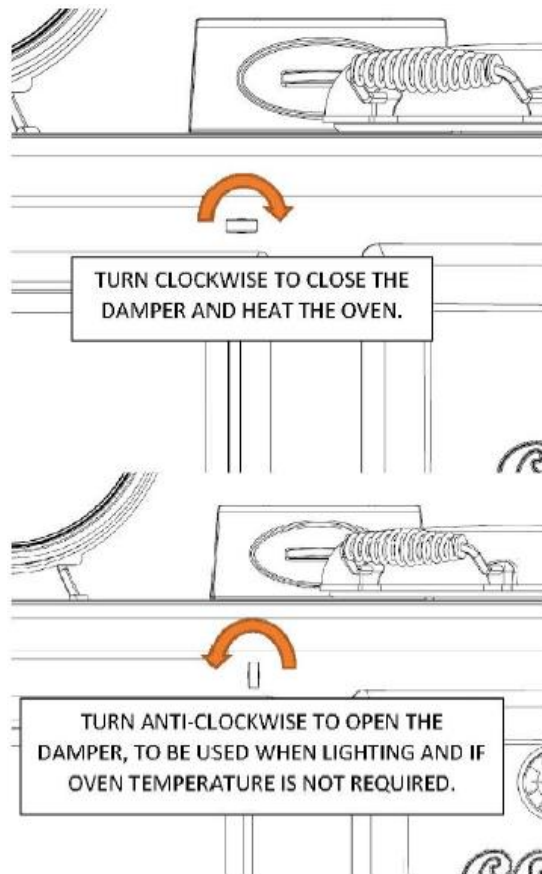


Figure 7 Oven Damper Controls

Once the fire has been established the oven damper control may be used to regulate the oven temperatures along with the burning rate of the cook stove.

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**WARNING**

When the cook stove is running ALL HANDLES become hot and the operating tool or glove provided should be used to open or close the doors (Figure 2)

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The burning rate of the stove can now be regulated by the rate at which fuel is added and use of the air control. The maximum amount of fuel to be loaded during normal operation is 2kg per hour in order to achieve nominal heat output.

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**NOTE**

This appliance is not an incinerator and only dry well seasoned wood or other approved solid fuels should be used.

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If the cook stove is being used primarily to heat the room it is recommended that the bolster lid is kept in the raised position to allow heat from the hotplate to radiate into the room.

When refuelling the cook stove it is recommended that the logs are placed running front to back as in Figure 4 as this leads to the cleanest combustion.

Before lighting a full fire in the cook stove for the first time it is recommended that 3 smaller fires are lit first to ensure that any moisture is driven out.

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### **WARNING**

Never use gasoline, gasoline-type lantern fuel, kerosene, charcoal lighter fluid or similar to start or 'freshen up' a fire in this appliance. Keep all such liquids away from the appliance when it is in use.

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## **NOTES ON WOODBURNING**

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Wood burns most efficiently when the air for combustion is supplied from above the fire bed. This air supplies the oxygen necessary for the volatile gasses given off by the wood as it is heated to combust which increases efficiency and reduces heat being wasted up the chimney.

Running the cook stove with the air control open will provide oxygen for the wood to burn on the fire bed and should be used to control the fire when lighting or refuelling. The cook stove should ideally be run with the air control in the closed position for the majority of the time in use. If the fire appears to die down too low then opening the air control slightly for a short period can help revive it.

To get the best results from your cook stove it is recommended that a wood stove thermometer be fitted to the flue pipe above the cook stove. This allows you to monitor the temperature of the flue gasses leaving the cook stove.

### **Below 115°C**

This is below the condensation point of wood gasses and may cause the build-up of tar in the chimney, dirty the fire door glass and result in the inefficient burning of fuel.

### **115°C – 260°C**

The flue gasses should be in this temperature band for the safest, most efficient operation of your cook stove.

### **Above 260°C**

Too hot. Heat will be wasted up the chimney. Excess heat may damage the cook stove or ignite an existing accumulation of tar resulting in a chimney fire. In the event of a fire, close the air controls on the appliance and call the fire brigade for assistance.

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## **LONG TERM SHUTDOWN**

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If the cook stove is to be shut down for long periods i.e. during summer months or if the appliance is in a second home that is not used all the time, precautions should be taken to avoid damage from condensation and corrosion.

First ensure that the cook stove is fully cleaned and all ash removed. The ovens and hotplate can then be treated with a light coating of flax oil to help prevent moisture damaging the surfaces. The air control is to be left in the open position, the doors slightly ajar, and the bolster lid left raised to allow for ventilation.

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## **FIREWOOD AND THE WOODBURNING PROCESS**

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### **Seasoning and Storing Firewood**

Wood, which has recently been cut and is still full of sap and water is known as "green" wood.

Green wood will generally burn poorly and inefficiently, because it can have over 50% water in its cells. It may be hard to light, smoulder, not put out any heat and cause more than the usual amount of creosote to build up in your chimney.

So your aim should be to dry the wood out to below 20% moisture content, this process is called seasoning. As the name implies, you should store your wood for a season or so, while it dries, but there are things you can do to speed up seasoning by cutting the wood now rather than just before you use it.

Wood is composed of bundles of microscopic tubes that were used to transport water from the roots of the tree to the leaves. These tubes will stay full of water for years even after a tree is dead. This is why it is so important to have your firewood cut to length for 6 months or more before you burn it, giving the water a chance to evaporate since the tube ends are finally open and the water only has to migrate a small distance to escape. Splitting the wood helps too by exposing more surface area to the sun and wind, but cutting the wood to shorter lengths is of primary importance.

Here's how you can tell whether your wood is ready or not: Well seasoned firewood generally has darkened ends with cracks or splits visible, it is relatively lightweight, and makes a clear "clunk" when two pieces are struck together. Green wood on the other hand is very heavy, the ends look fresher, and it tends to make a dull "thud" when struck.

Another thing you can do to help is store your wood properly. Store it off the ground by building the pile on some longer logs (or whatever method you can devise). A shed or shelter with an open side makes an ideal storage place, as the air can circulate around the logs and help to dry them out. Unventilated spaces or plastic tarps, which never get taken off will prevent the drying and evaporation process and cause moulds and rot. So, if a tarp is your only option, take it off frequently to air the wood on fine days. And remember to put it back on again. Seasoned firewood will reabsorb large amounts of water if exposed to rain, snow and excessive dew, which is liable to make it rot and be unfit for making a good fire.

When you build up a store of firewood, remember that the wood may start to deteriorate after 4 to 5 years, although this is of course variable and depending on storage conditions and species involved.

### **What Type of Wood is Best?**

The difference between 'hard' and 'soft' woods is the density of their cells or fibres.

As a general rule, the deciduous trees (those that lose their leaves in the fall) are usually thought of as hardwoods and the evergreen trees (such as pines, firs and larches) as the softwoods. But generalizations are of course always subject to many exceptions. Some evergreens may well be harder than some deciduous

trees. Birch, for example, is not very hard at all. So we should understand that there is a whole range of densities amongst our tree species, including medium dense woods, which cannot be satisfactorily classed as hard or soft.

Firewood tends to be sold by volume rather than weight. Assuming that the wood is reasonably dry, the weight of a square metre of good hardwood may be double of that of a square metre of softwood. This means that the same volume of hardwood will provide you with more fuel to burn than an equal amount of softwood, simply because it contains more substance.

**(N.B.** The price of hardwood will normally not be double that of softwood, because it took the same amount of labour to prepare. So, if a trailer full of hardwood costs more than the same size trailer full of softwood, the more expensive option may well be the most economical.)

The other advantage of good hard firewoods is that the cook stove does not need to be fed as often and the charcoal-beds made by the glowing wood may burn more easily overnight.

However, the ideal situation would be to have a store of both hard and soft woods, because the softer woods also have distinct advantages. They light more easily than the slower burning hardwoods and if the softwoods are dry, they create a hotter, more intense fire. The draught created by the hotter fire moves the air up the chimney faster.

After reading the notes opposite about the burning process, you will understand that means less pollution in the form of smoke and less creosote condensation in your chimney.

The denser hardwoods tend to smoulder more easily when the fire is first lit, so their flue gas temperature will be much cooler.

Because softwoods like pine and larch contain a lot of resins and pitch, a popular misconception is that they will fur up the chimney with creosote more easily than a hardwood like oak. This is not necessarily true at all. It is not the pitch that is the problem, it's the water IN the pitch. Once the water in the wood has evaporated, that pitch becomes high octane fuel. When dry, softwoods burn extremely hot.

There is also the matter of seasoning to be considered. When you buy wood, it will usually have been cut in the winter of the year you buy it. Hard woods tend to take longer than softwoods to fully dry out.

Softwoods cut in the previous winter should, with proper storage, be ready to burn the next fall, whereas many hardwoods may take a bit longer than that. Oak, for example, is very slow to dry out and should ideally be left for two years. It is also possible to purchase pre seasoned wood or kiln dried wood.

Summarising we can say that it is always sensible to buy this year for next years fuel supply and that it is very handy to have both soft and hardwoods. You can use the softwoods to start a good fire and you will have additional control over the fire (in addition to the cook stoves controls) by adding slower burning wood to fast ones if you want to leave the cook stove without tending it for a while. Alternatively you can add some fast burning softwood logs to the slower hardwood logs to instantly revive a fire, which has been neglected.

### **The Wood Burning Process**

Understanding what happens when wood is burnt will enable you to burn wood in a more environmentally friendly way, reduce the maintenance required for your chimney and get more out of your wood. There are 3 stages in the wood-burning process:

#### **Evaporation**

When you light the cook stove a lot of energy will be needed at first to boil away any moisture, which is left in the wood. Using energy to drive off excess water in firewood robs the cook stove of energy needed for an efficient and clean burn. Also, much of the energy wasted in evaporating water is energy that could have heated the hotplate and oven. This is a waste of wood, money and effort. The presence of all that moisture tends to keep "putting out" the fire, and therefore making it burn very poorly, which tends to produce a lot of creosote and pollution.

#### **Emissions**

As the heat of the fire intensifies, waste-gases (smoke) are released from the wood.

Unburned smoke is emitted into the air either as pollution, or condensed in the chimney causing creosote build-up. It takes time for the air in your chimney to heat up. When it is still cold you get an effect similar to the condensation of hot breath on a colder window or mirror. So when the by-products of combustion (smoke in the form of gases) exit the cook stove, and flow up into the relatively cooler chimney, condensation occurs.

The resulting residue that sticks to the inner walls of the chimney is called creosote. Creosote is formed by unburned, flammable particulates present in the smoke. It is black or brown in appearance. It can be crusty and flaky, tar-like, drippy and sticky or shiny and hardened. Quite often, all forms will occur in one chimney system.

The chimney and chimney connector should be inspected at least once every two months during the heating season to determine if creosote build up has occurred. If creosote has accumulated, it should be removed to reduce the risk of a chimney fire.

If the wood you are using is water logged, or green, the fire will tend to smoulder and not warm the chimney sufficiently. Wet wood causes the whole system to be cool, and inefficient. In contrast: dry wood means a hot fire, which results in a hot flue, and a hot flue means much less creosote clogging up your chimney.

The cook stove's firebox is designed to operate at very high temperatures to burn the gases and particles released from the wood, which means less air-pollution.

### **Charcoal**

When most of the tar and gasses have burned, the remaining substance is charcoal (ash in it's finer form). A hot bed of charcoals and ash can enhance the combustion process when burning larger pieces of wood. Start with a small fire to develop a bed of glowing embers. As the charcoal bed develops and the cook stove heats up, slowly add larger and larger pieces of wood. It takes time to build a good charcoal bed, but it is well worth the effort. Only empty excess ash periodically and always leave a bed of ash on which to light the next fire. When wood burns it gives off volatile gases which contain calorific heat value.

### **Peat**

Peat is a fuel conveniently available in some areas and should be burned in the same manner as wood.

### **Ash Removal**

Wood burns best on its own ash and a manageable layer of ash on the grate is a benefit to the efficient running of your cook stove. To empty the ashes from the ash pan below the grate, open the door at the bottom left of the cook stove using the Operating Tool by connecting the tool to the door handle and turning counter-clockwise. Insert the tool into the slot on the ash pan and pull forwards

and lift to remove. Care should be taken when disposing of ashes that are still warm. They should not be put into a plastic receptacle or anything that might melt in contact with heat.

Always use the Operating Tool to open the ash door and remove the ash pan. Use the Operating Tool to securely lock the door and ensure the door is closed properly.

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**NOTE**

The above text is a guide only. The ideal operation of your cook stove depends on a number of factors which vary with each installation. Gaining experience on your cook stove is the only way to learn its best operation.

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## COOKING WITH THE COOK STOVE

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The oven and hotplate are heated directly by the fire. In order to heat up the oven and hotplate, the fire should be lit as described on page 8.

The temperature of the hotplate is graduated from left to right. The left side is hotter and so is used for boiling and the right side for simmering. The oven door and the fire door are opened by lifting the handle either manually or using the Operating Tool provided.

The oven and hotplate are heated directly by the fire. In order to heat up the oven and hob the fire should be lit as described above. Once the fire is established the oven damper should be turned clockwise to close. This will allow the hot fumes from the fire to circulate around the inner cavity between the cook stove and the oven thus heating up both the hotplate and the oven.

The bolster lids can be left down when not in use, in order to keep the hotplate warm. In the up position they will allow more heat into the room.

To reduce the heat going to the oven when the cook stove is up and running, the oven damper knob can be turned counter-clockwise. This will allow the hot fumes to escape directly up the chimney via the boiling side of the hotplate, thus reducing the heat to the oven but maintaining a hot hotplate.

To maintain a good cooking temperature in the oven the cook stove requires only a small amount of fuel. To reduce the effective size of the firebox, the fuel



bar can be moved towards the back and thus used to hold a smaller amount of fuel at the rear of the firebox. This also has the advantage of reducing the heat radiated through the window, making life easier for the cook. Also the fire guard can be slid in front of the fire door in order to reduce the heat through the glass and protect the operator whilst cooking.

The temperature gauge on the oven door provides an indication of the oven temperature. It should be noted however that since the gauge is attached to the door, the indicated temperature will drop if the door is left open for any prolonged period, in which case, the oven may be hotter than it is indicated on the dial. Once the door is closed again, the gauge will come back to temperature.

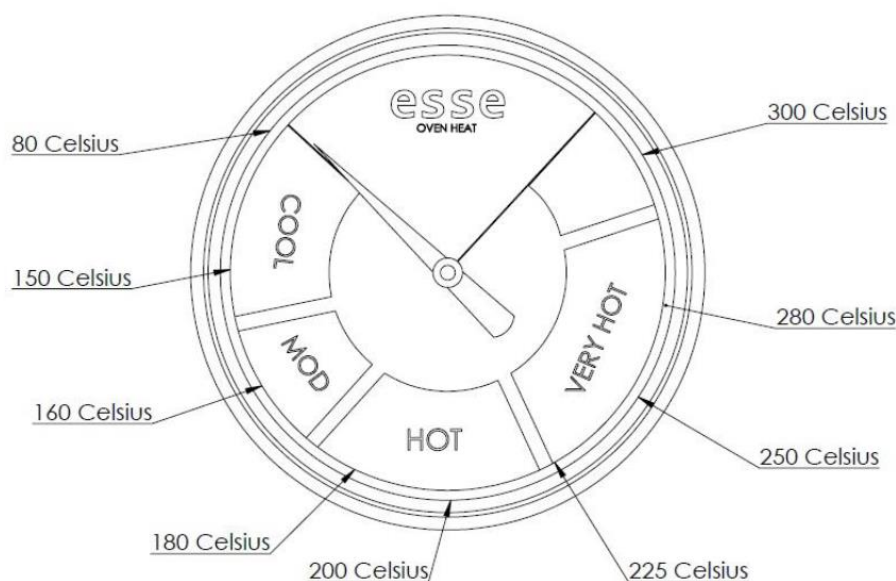


Figure 8 Temperature Gauge Approximate Temperature Guide

The oven is equipped with a wire shelf which can be set to the desired height. The shelf has anti-pull out stops to prevent it from being pulled out inadvertently; to remove a shelf, pull forward until the stop is reached, then lift at the front and pull out of the oven. Use reverse procedure to refit. If the shelves pull straight out then they are in back to front!

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### **WARNING**

If any part of the stove begins to glow it is being over fired. Stop use immediately and allow to cool. If this occurs it is recommended that the cook stove is cleaned and inspected before further use and any warped baffles straightened.

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## EXTENDED WOODBURNING

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This appliance has not been certified as a slow combustion stove. Loading a large amount of wood into the cook stove all at once will reduce the temperature inside. If the temperature is too low, the gases given off from the wood will be too low to combust, resulting in a lot of smoke which will cover the inside of the cook stove, including the glass, with soot.

In order to avoid adverse combustion conditions it is a good idea to increase the temperature of the cook stove before loading more wood by further opening the air control. Load the wood and leave the air control open until the moisture is driven out of the wood and the cook stove is up to an efficient operating temperature. The air control and the bolster lid can then be closed to hold the temperature of the cook stove.

The cook stove can be set up to burn overnight if desired.

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## CLEANING AND MAINTAINANCE

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The successful operation of your cook stove is entirely dependent on the adequate performance (pull) of the chimney or flue to which it is connected. The following maintenance guidelines will be pointless unless the flue is also maintained and cleaned regularly. How often it needs cleaning will depend on the quality and moisture content of the wood you burn but an annual clean is recommended. A partially blocked or dirty flue can have disastrous implications for an otherwise perfectly installed cook stove.

A healthy flue draught should read between 12 – 25 pascals. A flue draught reading below this value will result in poor smoky performance

Always carry out cleaning procedures when the cook stove is unlit and has been allowed to cool sufficiently to avoid burns. With time and experience you will be able to gauge the intervals between cleaning more accurately. It will vary depending on the quality of your firewood and performance of your flue. Take time to get to know your cook stove and inspect it at regular intervals for the first 6 months.

As the cook stove top is used for cooking, normal wear and tear will occur. Spills should be mopped up immediately with a damp cloth, but oven cleaners should not be used on the hotplate surface.

The oven and hotplate will rust if surface moisture is left on. Remember to always light the cook stove to warm and dry these after cleaning. To season the oven or hotplate, we recommend a light vegetable oil spray is used. Remove any stubborn stains with the wire brush.

To clean the glass of any built up residue, special cleaning solutions can be used, or a ball of newspaper dampened and passed through the ash can be used. Do not use abrasive or chemically aggressive cleaning products on the glass as this can weaken or stain it.

If any of the chromed components become blue due to excess heat they can be restored using a chrome cleaner.

The exterior of the cook stove is painted with high temperature resistant cook stove paint and from time to time it may become necessary to renovate the

exterior by repainting. The surface must be prepared by rubbing down with a wire brush. The cook stove paint will not key to the surface if there are fat deposits or food particles on the area to be resprayed. High temperature resistant cook stove paints are available in aerosol form from your cook stove dealer, or from [www.esse.com/spareparts/](http://www.esse.com/spareparts/). Do not use this paint until the cook stove is completely cold and always follow the instructions on the container before starting to paint. The usual precautions should be taken, such as covering adjoining surfaces and protecting the bolster lids.

The bolster lids are chrome plated. These can be wiped clean with a damp cloth and a chrome cleaner may be used.

When de-ashing the cook stove only remove small amounts of ash leaving ideally 30mm (approx. 1") depth of ash in the bottom for best performance.

To clean the flue way of the cook stove the hotplate must be removed. With the hotplate removed the flue brush can be used to brush around the ovens and beneath the top. Once the exterior of the ovens has been brushed the flue access plate behind the lower right door can be removed and any loose debris can be raked out using the flue rake. A vacuum can also be used for this process.

All panels should be replaced after cleaning.

### **Cleaning the Flue**

It is recommended that the flue is cleaned at least every 12 months to maintain a suitable flue draught and prevent poor performance of the cook stove. It is essential to maintain the integrity and cleanliness of the flue to ensure that your cook stove continues to perform at its best. When your cook stove was installed the main flue should have been equipped with an inspection hatch. These hatches are designed to allow periodic access to the flue for inspection & cleaning.

If the chimney was previously used for an open fire, ensure any obstructions or dampers are removed or locked open. The cook stove operates at higher flue gas temperatures, deposits of soot and debris that were firmly adhered to the inside of the chimney, when it was used with an open fire, can loosen and cause a blockage. We recommend that in such a situation a second sweeping of the chimney should be carried out within one month of regular use of the cook stove after installation.

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## CONDITIONS OF WARRENTY

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Your ESSE is warrantied against defects arising from faulty manufacture for 2 years when supplied by an ESSE Specialist.

Upon registration of the warranty, ESSE will extend the warranty period to 5 years from purchase. Your details must be registered with us by either returning the completed warranty card or by completing registration on-line at [www.esse.com](http://www.esse.com). The warranty must be registered within 1 month of installation to qualify for the 5 year warranty.

The appliance must be only used for normal domestic purposes and in accordance with our instructions, be correctly installed and serviced.

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## EXCLUSIONS

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This warranty does not cover:

- Installation
- Wear & tear
- Parts deemed to be replaceable in the normal usage of the cook stove. These parts are listed herewith: all firebricks, woodburning box, oven accessories, hotplate and door seals, door glass.

This warranty is personal to the original purchaser and not transferable.

Any cook stove or defective part replaced shall become the Company's property.

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## CUSTOMER CARE

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In the event you should require spare parts, please order through your ESSE dealer or by contacting ESSE via telephone ((250) 748 2255) or our website, [www.essestoves.ca](http://www.essestoves.ca)

Should you have cause for dissatisfaction with your cook stove, you should contact your ESSE dealer, who will, in most instances, be able to offer you immediate assistance. You will be required to give the following details.

- Your name, address and postcode.
- Your telephone/contact details.
- Clear and concise details of the fault.
- Model and serial number of the cook stove (found on panel at rear).
- Purchase date (please note that a valid purchase receipt or guarantee documentation is required for in-guarantee service calls).

We will then check that we have an accurately completed warranty card, if not then any work carried out may be charged.

We will assess the nature of the complaint and either send replacement parts for your dealer to fit, send an engineer to inspect & report, or send an engineer to repair. If the fault is not actually due to faulty workmanship but some other cause such as misuse or failure to install correctly, a charge will be made to cover the cost of the visit and any new parts required, even during the warranty period.

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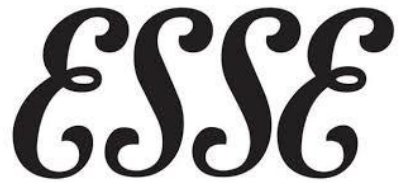
## SAFETY NOTES

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- Properly installed, operated and maintained, this appliance will not emit fumes into the dwelling. However, occasional fumes from de-ashing and re-fuelling may occur.
- Persistent fume emission is potentially dangerous and must not be tolerated. If fume emission does persist, open doors and windows to ventilate the room. Let the fire burn out or eject and safely dispose of fuel from the appliance. Once the fire is cold, check the flue and chimney for

blockages and clean if required. Do not attempt to relight the fire until the cause of the fume emission has been identified and corrected.

- Seek expert advice if necessary.
- An adequate air supply for combustion and ventilation is essential. Air openings provided for this purpose must not be restricted.
- Should it be likely that children, aged, or infirm people approach the appliance whilst the fire door is open, then a fireguard should be used. Also warn children not to sit or stand on the appliance or use it as a 'step-stool' for access to cupboards or shelves etc. above the appliance.
- Avoid the use of aerosol sprays in the vicinity of the cook stove when it is in operation and do not heat any unopened airtight containers.
- Ensure that precautions are taken when deep fat frying, never leave the appliance unattended and ensure you have fire safety equipment available, such as a fire blanket, in case of emergency.
- When operating the cook stove use the tools provided and follow these instructions carefully.
- Attention is drawn to the fact that fire cement is caustic and hands must be washed thoroughly after use.
- The appliance is heavy and care must be taken during handling.
- Although the appliance does not contain asbestos products, it is possible that asbestos may be disturbed in existing installations and every precaution must be taken.
- These instructions give a guide for the installation of the appliance but in no way absolve the installer from responsibilities to conform to applicable standards relating to the installation of solid fuel appliances. All local regulations including those referring to national standards need to be complied with, when installing this appliance.
- Do not fit an extractor fan in the same room as the appliance.
- Do not install in a mobile home.
- Do not connect to or use in conjunction with any air distribution ductwork unless specifically approved for such installations.
- Do not use chemicals or fluids to start the fire.
- Do not burn garbage or flammable fluids such as gasoline, naphtha, or engine oil.
- Hot while in operation, keep children, clothing, and furniture away. Contact may cause skin burns.



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# Ironheart

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## INSTALLATION INSTRUCTIONS

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### GENERAL SAFETY INFORMATION

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It is recommended that a smoke alarm and appropriate fire safety equipment such as a fire extinguisher and fire blanket are installed in the kitchen as a safety precaution and also a carbon monoxide detector.

An adequate air supply for combustion and ventilation is required. A purpose provided air vent maybe necessary. Air openings provided for this purpose must not be restricted.

If this stove is not properly installed, a house fire may result. To reduce the risk of fire, follow the installation instructions below. Contact local building or fire officials about restrictions and installation requirements in your area.

Please read this entire manual before installation of this appliance. Failure to follow these instructions may result in property damage, bodily injury, or even death.

**For the US** this appliance must be connected to:

- A chimney complying with the requirements for Type HT chimneys in the Standard for Chimneys, Factory-Built, Residential Type and Building Heating Appliance, UL 103.

OR

- A code-approved masonry chimney with a flue liner.



**For Canada:**

- The authority having jurisdiction (such as municipal building department, fire department, fire prevention bureau, etc.) should be consulted prior to installation to determine the need to obtain a permit.

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## DIMENSIONS AND CLEARANCES

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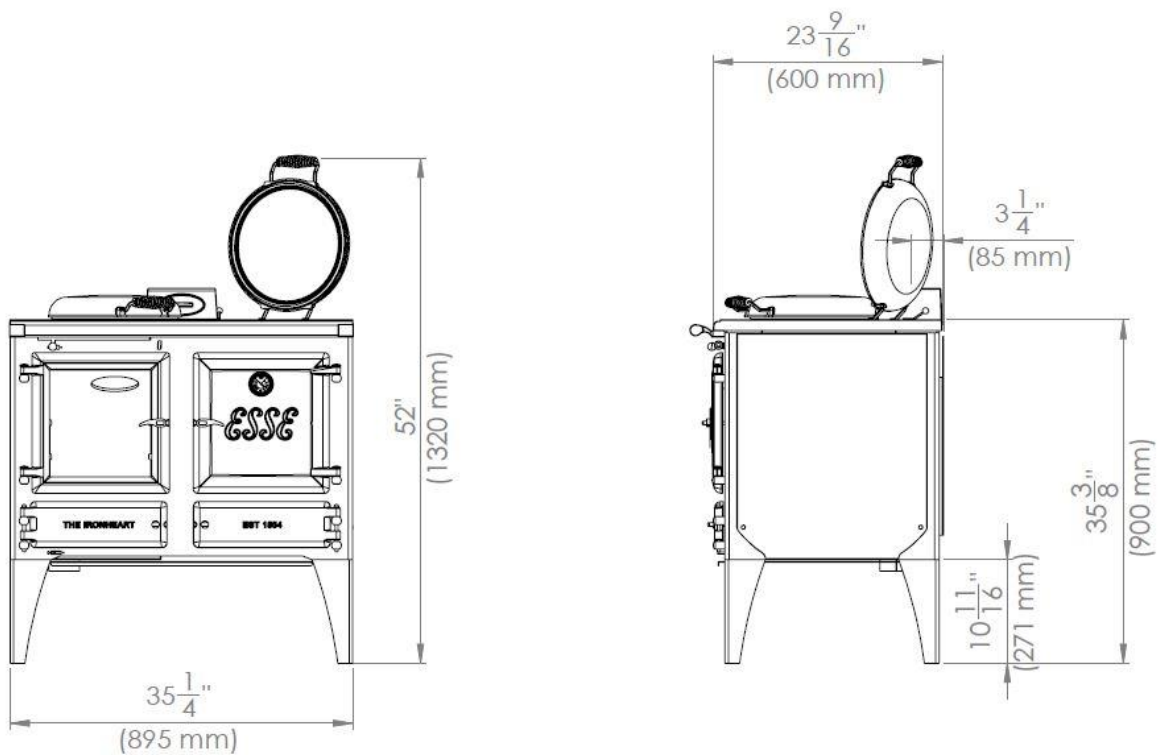


Figure 9 Ironheart Dimensions

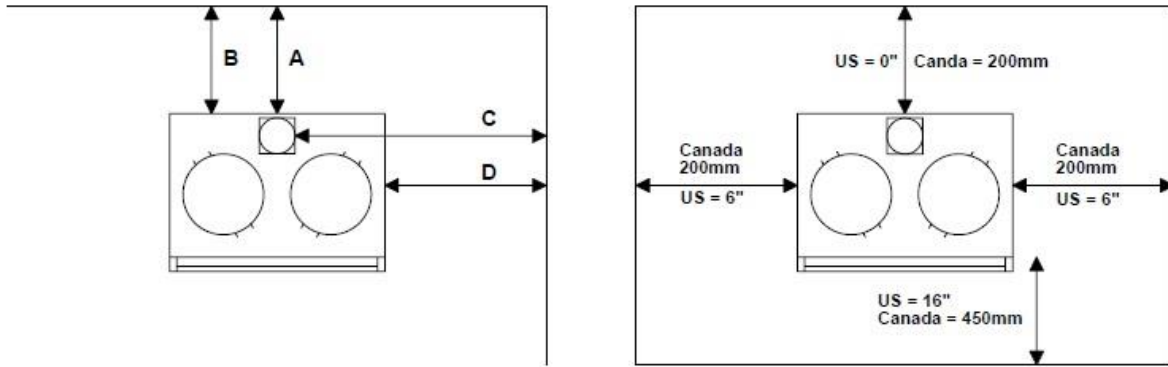


Figure 10 Clearances Diagram

Clearances		
	USA	Canada
A – Back Wall to Connector	13.5"	15.5"
B – Back Wall to Stove	13"	15"
C – Side Wall to Connector	26"	30"
D – Side Wall to Stove	11"	15"

The floor protector must be 0.5" minimum thickness, non-combustible material having equal or better insulating value of  $k=0.84$ . It must extend beneath the appliance, and to the front/sides/rear as indicated in Figure 10.

Wood is not to be stored within the clearance area.

If the chimney connector goes horizontally through a wall, the floor protection must extend under the connector and 50mm (2") beyond each side.

**For Canada:** Clearances may only be reduced by means approved by the regulatory authority.

Due to the hand crafted nature of the products all dimensions are  $\pm 2\text{mm}$  (0.1")

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## CHIMNEY AND FLUE INFORMATION

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The successful operation of the cook stove relies on the adequate performance of the chimney to which it is connected. The following chimney guidelines must be followed:

- It should have an internal cross section of no less than 320cm<sup>2</sup> (200mm/8" dia.) (If a flue liner is used, it should be 150mm (6") diameter and be made of suitable material for burning wood). A Flue with a diameter of 150mm (6"), is required to connect to the cook stove.
- Voids in the chimney should be avoided, as these will prevent a steady flue draught. The appliance flue pipe should pass beyond the narrowing of the chimney.
- Terminate at least 1m (40") above roof level so that the chimney does not terminate in a pressure zone.
- Be a minimum of 4.6m (15') high from hearth level to pot.
- If the appliance is installed as a freestanding appliance, it should not support any part of the chimney.
- Be free from cracks, severe bends, voids, and obstructions.
- Be connected to this one appliance only.
- New chimneys must be in accordance with local regulations.
- The chimney must be capped to prevent ingress of rain.
- A flue/chimney access point is required so that the state of the chimney can be checked and any fallen soot removed.
- External flues must be insulated to prevent heat loss.
- Do not fit an extractor fan in the same room as the appliance.
- It is recommended that an inspection hatch is fitted to the chimney as this will make future cleaning easier.
- A single wall starter length with a single to twin wall adapter will be needed to use twin wall insulated flue. The stove will need to be moved away from the wall to accommodate use of twin wall flue.
- Where passage through a wall or partition of combustible construction is desired, the installation shall conform to NFPA 211 or CAN/CSA-B365, Installation Code for Solid-Fuel-Burning Appliance and Equipment (Canada).

- Do not connect this appliance to a chimney flue serving another appliance.
- Do not connect to any air distribution duct or system.

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**NOTE**

The chimney/flue to which this appliance is being connected must be swept and examined for soundness prior to installation. Remedial action should be taken if required, seeking expert advice if necessary. Where the chimney is believed to have served an open fire installation it is possible that a higher flue gas temperature from a closed appliance may loosen deposits that were firmly adhered, with the consequent risk of flue blockage. It is therefore recommended that the chimney be swept a second time within a month of regular use after installation.

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### Chimney Connection

The chimney connector is a single walled pipe used to connect the stove to the chimney. The chimney connector **MUST** be 150mm (6") in diameter, with a minimum thickness of 24 gauge black steel, or 26 gauge blued steel.

Aluminium and galvanized steel pipe is not acceptable for use with this appliance. These materials cannot withstand the temperatures of a wood fire and can give off toxic fumes when heated.

#### **Do not use the connector pipe as a chimney.**

Each chimney connector or stove pipe section must be installed to the flue collar and to each other with the male (crimped) end towards the appliance.

This prevents any amount of condensed or liquid creosote from running down the outside of the pipe or the stove top. All joints, including to the flue collar connection must be secured with three sheet metal screws to ensure that the sections do not separate.

No part of the chimney connector may pass through an attic or roof space, closet or other concealed space, or through a floor ceiling. All sections of the chimney connectors must be accessible for cleaning.

## Chimney

DO NOT CONNECT THIS APPLIANCE TO A CHIMNEY FLUE SERVICING ANOTHER APPLIANCE. DO NOT CONNECT TO ANY AIR DISTRIBUTION DUCT OR SYSTEM.

This appliance must be connected to a factory built UL 103 HT chimney (ULC S629, in Canada) or a code approved masonry chimney with a flue liner.

### Masonry Chimney:

Ensure that a masonry chimney meets the minimum standards of the National Fire Protection Association (NFPA) by having it inspected by a professional. Make sure there are no cracks, loose mortar or other signs of deterioration and blockage. Have the chimney cleaned before the appliance is installed and operated. When connecting the appliance through a combustible wall to a masonry chimney, special methods are needed.

### Factory Built Chimney:

When a metal prefabricated chimney is used, the manufacturer's installation instructions must be followed. You must also purchase (from the same manufacturer) and install the ceiling support package or wall pass-through and "T" section package, firestops (where needed), insulation shield, roof flashing, chimney cap, etc. maintain proper clearances to the structure as recommended by the manufacturer. The chimney must be the required height above the roof or other obstructions for safety and proper draft operation.

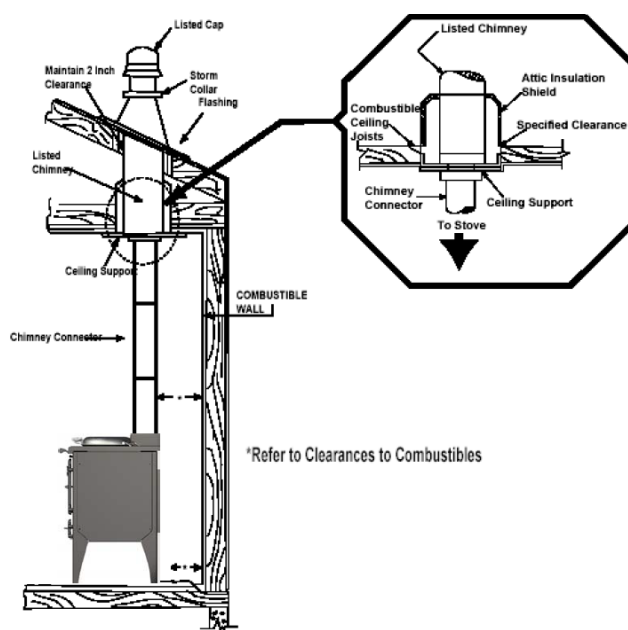


Figure 11 Chimney Installation

## Combustible Wall Chimney Connector Pass-Through

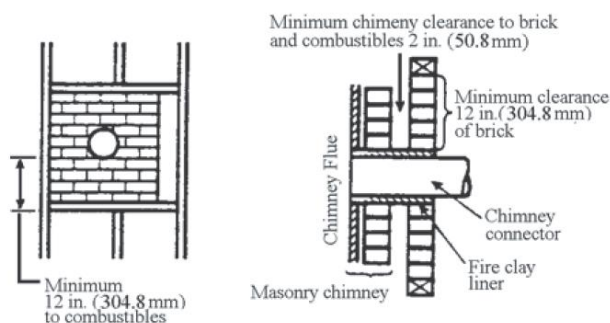


Figure 12 305mm (12") Clearance To Combustible Wall Member

### Method A

Using a minimum thickness 90mm (3.5") brick and a 16mm (5/8") minimum wall thickness clay liner, construct a wall pass-through. The clay liner must conform to ASTM C315 (Standard Specification for Clay Fire Linings) or equivalent. Keep a minimum of 305mm (12") of brick masonry between the clay liner and wall combustibles. The clay liner shall run from the brick masonry outer surface to the inner surface of the chimney flue liner but not past the inner surface. Firmly grout or cement the clay liner in place to the chimney flue liner.

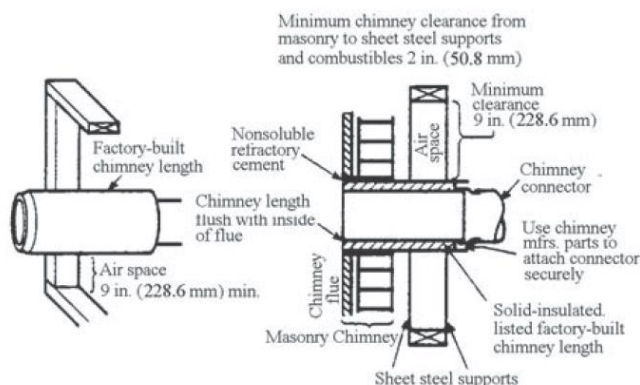


Figure 13 229mm (9") Clearance To Combustible Wall Member

### Method B

Using 152mm (6") inside diameter, listed factory-built Solid-Pak chimney section with insulation of 25mm (1") or more, build a wall pass-through with a minimum 229mm (9") air space between the outer wall of the chimney length and wall combustibles. Use sheet metal supports fastened securely to wall surfaces on all sides to maintain the 229mm (9") air space. When fastening supports to chimney length, do not penetrate the chimney liner (the inside wall of the Solid-

Pak Chimney). The inner end of the Solid-Pak chimney section shall be flush with the inside of the masonry chimney flue, and sealed with a non-water soluble refractory cement. Use this cement to also seal to the brick masonry penetration.

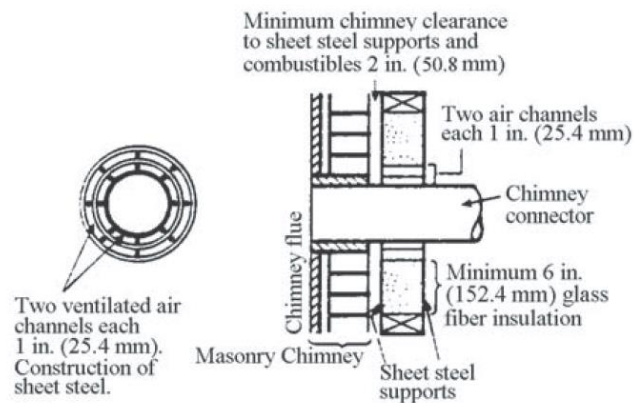


Figure 14 152mm (6") Clearance to Combustible Wall Member

### Method C

Starting with a minimum 24 gauge (0.6mm (0.024")) 152mm (6") metal chimney connector, and a minimum 24 gauge ventilated wall thimble which has two air channels of 25mm (1") each, construct a wall pass-through. There shall be a minimum 152mm (6") separation area containing fiberglass insulation from the outer surface of the wall thimble to wall combustibles. Support the wall thimble, and cover it's opening with a 24 gauge minimum sheet metal support maintaining the 152mm (6") space. There should also be a support sized to fit and hold the metal chimney connector. See that the supports are fastened securely to wall surfaces on all sides. Make sure fasteners used to secure the metal chimney connector do not penetrate the chimney flue liner.

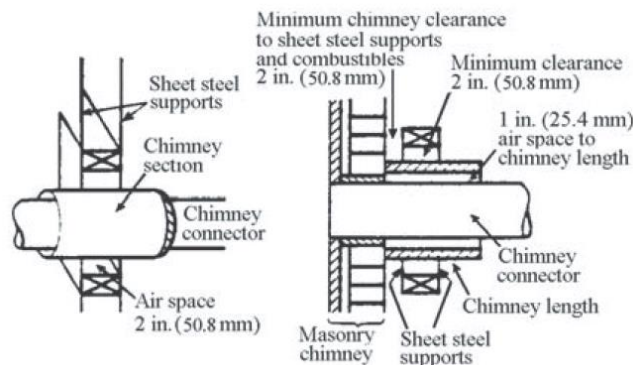


Figure 15 50mm (2") Clearance to Combustible Wall Member

## Method D

Start with a Solid-Pak listed factory built chimney section at least 305mm (12") long, with insulation of 25mm (1") or more, and an inside diameter of 203mm (8") (50mm (2") larger than the 152mm (6") chimney connector). Use this as a pass-through for a minimum 24 gauge single wall steel chimney connector. Keep the Solid-Pak section concentric with and spaced 25mm (1") off the chimney connector by way of sheet metal support plates at both ends of the chimney section. Cover openings with and support the chimney section on both sides with 24 gauge minimum sheet metal supports. Ensure that the supports are fastened securely to wall surfaces on all sides.

## Notes:

- Connectors to a masonry chimney, excepting method B, shall extend in one continuous section through the wall pass-through system and the chimney wall, up to but not past the inner flue liner face.
- A chimney connector shall not pass through an attic or roof space, closet or similar concealed space, floor, or ceiling.

## Chimney Height

A masonry chimney or a listed factory-built chimney must be the required height above the roof and any other nearby obstructions. The chimney must be at least 90cm (3') higher than the highest point where it passes through the roof and at least 60cm (2') higher than the highest part of the roof or structure that is within 3m (10') of the chimney measured horizontally.



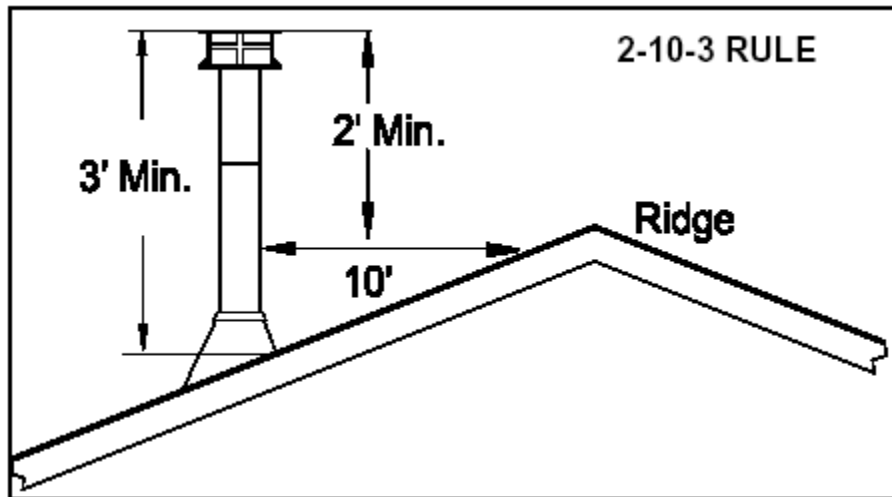


Figure 16 Chimney Height Diagram

### Flue Draught

The chimney can be checked before the appliance is installed with a smoke match. If the chimney doesn't pull the smoke, it may suggest the chimney needs attention.

This test is only a guide as an apparently poor flue may improve once the appliance is installed, lit and the flue is warmed. Once the appliance is installed a flue draught reading should be taken as detailed below.

Two flue draught readings should be taken, one with the appliance at minimum burning rate and one at maximum burning rate. The flue draught reading can be taken behind the flue box door on the top of the cook stove.

Minimum reading: The appliance should be lit and allowed to warm the flue thoroughly. Close the air controls, and ensure firebox door is fully closed. Allow the burning rate to become steady. The flue draught reading should now be taken; the minimum required is 12 Pascals [Pa] (0.05" w.g.).

Maximum reading: The air controls can now be opened to allow the appliance to burn at maximum rate. Take a flue draught reading.

Ideally, the flue draught readings should range between 12Pa, 0.12mm (0.05" w.g.) and 25Pa, 2.5mm (0.1" w.g.). Any readings significantly outside this range may indicate the need for remedial action. Low flue draught symptoms: difficult to light and smoke coming into the room. High flue draught symptoms: fuel burns away very quickly, over firing which may damage the appliance & invalidate the warranty.

A flue stabilizer can be fitted to reduce the draught through the appliance if the draught may exceed 25Pa. The flue stabiliser should be fitted in the same room as the appliance and be the same size as the flue pipe. Consult building regulations regarding additional ventilation.

A fan flue booster can also be fitted if the flue draught is poor. This should be fitted according to the instructions supplied with the booster. An electrical supply will be needed.

<b>Low flue draught symptoms: difficult to light and smoke coming into room</b>	
<b>CAUSE</b>	<b>REMEDY</b>
Cold chimney	Line the Chimney
Chimney too short	Extend the chimney
Down draught	Relocate/extend chimney terminal. Fit an anti-down draught cowl
Chimney diameter too large	Line the chimney
Chimney obstruction	Clear/sweep the chimney
Restricted air supply	Check for competing draughts (other Chimneys, extractor hoods/fans). Fit an air vent if the room is sealed.
<b>High flue draught symptoms: fire difficult to control, fuel will not last, stove too hot, stove damage, chimney fire</b>	
<b>CAUSE</b>	<b>REMEDY</b>
External wind conditions combined with chimney terminal	Fit stabiliser cowl Fit flue draught stabilizer

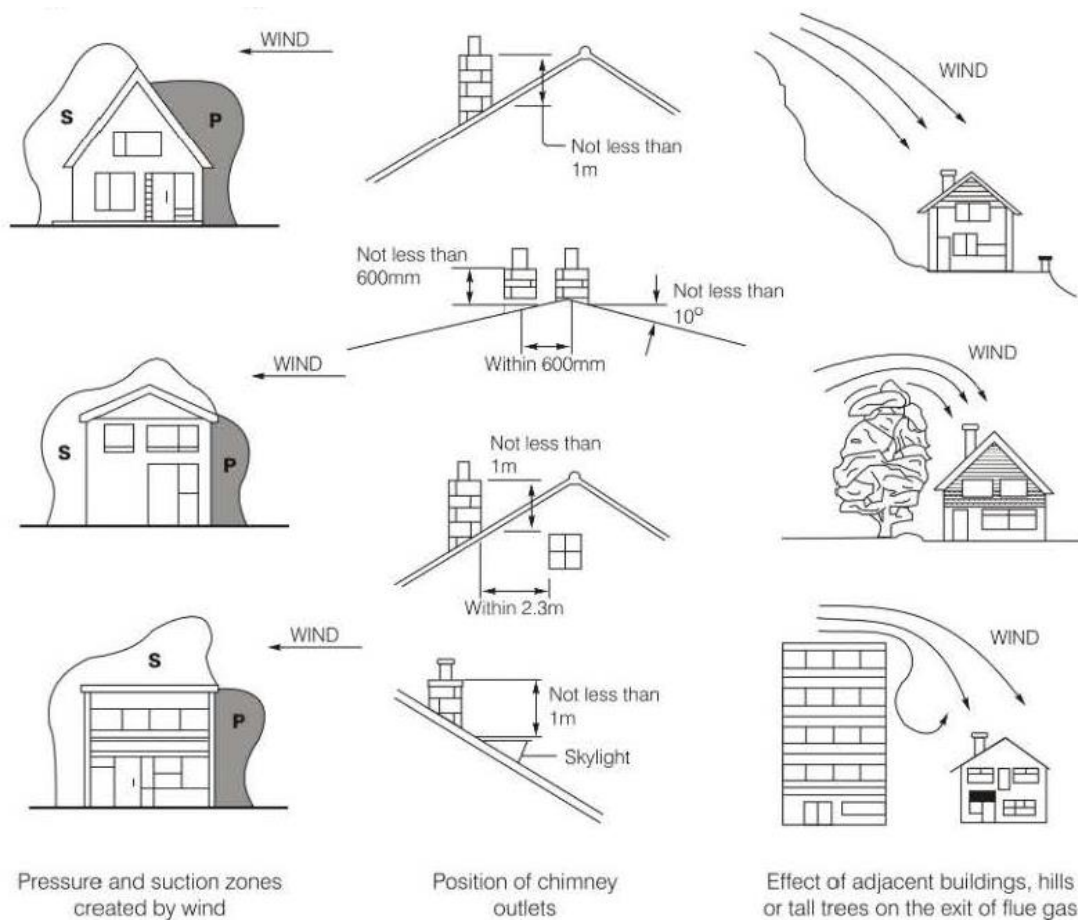


Figure 17 Chimney Location and Flue Performance

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## INSTALLING THE APPLIANCE

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### Flue Connection

The flue pipe used to connect the appliance to the chimney is 6" (150mm) in diameter. (The flue connection is on the top of the appliance, in the centre at the back.)

### Important Installation Notes

- The installation must allow access for adequate chimney sweeping and flue cleaning.
- Avoid using bends greater than 45° to the vertical. All flue pipe sections should be as close to the vertical as possible.
- All joints in the flue system must be effectively sealed.

- All flue sockets must face upwards. On completing the installation of the appliance, the chimney, hearth and walls adjacent to the cook stove must conform to local or national regulations currently in force. In the United Kingdom, the appropriate sections of the Building Regulations must be conformed to.
- Air inlet grilles should be positioned so that they are not liable to blockage.
- An air extraction device shall not be used in the same room as the appliance unless adequate additional ventilation is provided.
- A flue cleaning hatch should be fitted to provide access for cleaning the flue and chimney.
- Check the appliance for soundness of seals between main components and that all supplied parts and fittings are correctly fitted.
- Upon successful installation, using a 5mm Allen key, remove the two M6 transit socket screws in the hotplate. Using a 4mm Allen key, insert the two M8x8 grub screws supplied with the cook stove into the holes in the hotplate and adjust until the head of the grub screw is level with the surface of the hotplate. These grub screws can be removed and re-fitted during and after cleaning of the appliance.
- Ensure the appliance is left operational and hand over the operating instructions and operating tools supplied.
- Before leaving the installation demonstrate the operation of the appliance to the user. Explain all controls and flue way access for cleaning.

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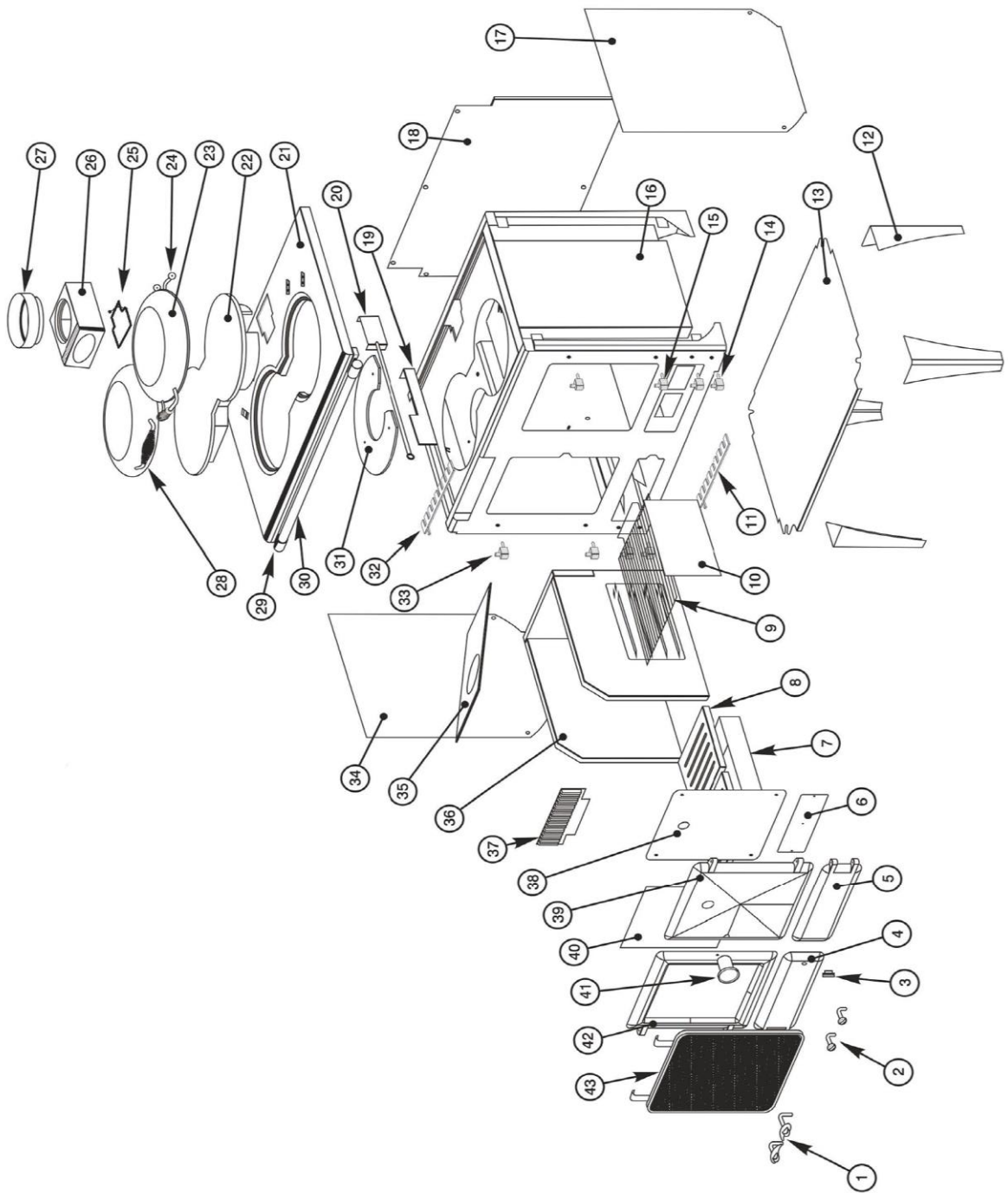
## COMMISSIONING THE APPLIANCE

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- Measure and record flue draught
- Check ventilation
- If applicable check plumbing circuit
- Check no extractor fan, other appliance or other flue interferes
- Complete commissioning card and return to ESSE to validate warranty

## REPLACEMENT PARTS

1. Upper Door Handles	EW-062	23. Bolster Lid Assembly	WCKLIDSET-002
2. Lower Door Handles	ES-006	24. Hinge Assembly	CENT-022
3. Magnet Catch	EW-042	25. Flue Damper	EW-048
4. Ash Door	EW-005	26. Cast Iron Flue Box	EW-036
5. Flue Access Door	EW-009	27. 5" to 6" Flue Adaptor (Optional Extra)	VIA50CG
6. Flue Access Plate	EW-013	28. Bolster Lid Handle	2023-814X BO CH
7. Ash Pan	EW-014	29. Towel Rail Bracket	LHTRB or RHTRB
8. Cast Iron Grates	WC BG1	30. Towel Rail	CENT-090 BO
9. Wire Shelf	EW-020	31. Flue Heat Shield	EW-023
10. Oven Shelf Support	LHTOSR or RHTOSR	32. Upper Air Slider	EW-022
11. Lower Air Slider	EW-017	33. Fire Door Hinge	ECS00572
12. Legs	EW-033	34. L/H Side Panel	EW-026R
13. Bottom Heat Shield	EW-032	35. Baffle Plate	FC-012
14. Lower Door Hinge	EW-064	36. Fire Brick Set	EW-100
15. Oven Door Hinge	EW-064A	37. Fuel Guard	FC FG
16. Stove Body	EW-031A	38. Oven Door Liner	EW-010
17. R/H Side Panel	EW-026R	39. Cast Oven Door	EW-040
18. Rear Heat Shield	EW-034	40. Glass Window	FC-045
19. Flue Restrictor Guide	EW-035	41. Thermometer Dial	x812/C BO CH
20. Flue Restrictor	FC-023Q	42. Cast Fire Door	EW-004
21. Cast Iron Top	EW-029 FA	43. Fire Guard	EW-003F
22. Hotplate	CENT-073 F		



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## COMMISSIONING CHECKLIST

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To assist with any potential guarantee claim please complete the following information:-

**To be completed by the installer.**

**Dealer the appliance was purchased from:**

Name: .....

Address: .....

Telephone No: .....

**ESSENTIAL information:**

Date Installed .....

Model Description: .....

Serial No: .....

**Installation Engineer:**

Company Name: .....

Address: .....

Telephone No: .....

**Commissioning Checks – to be completed and signed:**

Has the use of the appliance, operation and controls been explained?	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Instruction book handed to the customer?	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>

Signature:.....

Print Name:.....



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## TECHNICAL INFORMATION

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	EW
Nominal Heat Output (kW)	9.7
Combustion Air Requirements (m <sup>3</sup> /h)	40
Air Vent Size (cm <sup>2</sup> )	30
Weight of Appliance (kg)	370
Minimum Chimney Draught (Pa)	12
Mean Flue Gas Temperature (°C)	250
Flue Gas Mass Flow (g/s)	18.5







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