

990

HYBRID

ESSENTIALS

INSTRUCTIONS

## CONTENTS.

Statutory Warnings	Pg2	Spacing and Dimensions	Pg15
Technical Data	Pg5	Control Panel	Pg18
Chimney and Flue Information	Pg6	Electric Ovens, Grill, and Hotplate	Pg19
Flue Draught	Pg9	Lighting and Controlling the Fire	Pg23
Unpacking Your New Cooker	Pg9	Cooking on the Wood Burning Section	Pg25
Installation	Pg10	Notes on Wood Burning	Pg27
Connecting Your Cooker	Pg11	Caring for Your ESSE	Pg32
Before Using Your Cooker	Pg12	Guarantee	Pg33
Hot Water System	Pg12	Commissioning Checklist	Pg35
Your Cooker	Pg14		

## STATUTORY WARNINGS

This appliance must be commissioned by a registered installer or plumber.

Warranty form must be completed to ensure guarantee validity.

Please read these operating instructions carefully for full information on the safe installation, use and care of your new ESSE appliance.

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 AS/NZS Standards, in particular AS/NZS 2918:2018, 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.

Any adjacent combustible material should be far enough away from the appliance so as not to raise 60°C above the room temperature when the appliance is in operation. If necessary, any adjoining walls should be protected from the effects of heat. Clearances from combustible materials are:

- Rear clearance of 175mm with heat shield
- Side Clearance of 20mm below the hob/100mm above the hob

It is also 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 is necessary. Air openings provided for this purpose must not be restricted.

This appliance must be correctly installed in accordance with the manufacturer's instructions by a suitably qualified person.

We cannot accept responsibility for damage to persons or items due to poor or incorrect installation of this appliance.

Make sure that the voltage and frequency of the mains supply correspond to the details on the cooker data plate which is located behind the control panel.

Maintenance and servicing work must only be carried out after the power supply has been disconnected by switching off at the socket and unplugging the cooker.

Due to our policy of continuous innovation, we reserve the right to adjust or modify our product without prior notification.

Do not let children near the oven during use to avoid the danger of burns or injury. Use of the appliance by the elderly or infirm should be supervised.



The appliance and its accessible parts become hot during use. Care should be taken to avoid touching heating elements. Children less than 8 years of age shall be kept away unless continuously supervised.

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This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.



Unattended cooking on a hob with fat or oil can be dangerous and may result in fire, **NEVER** try to extinguish a fire with water, instead switch off the appliance, cover the flame with a lid or use a fire blanket.

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Danger of fire: do not store items on the cooking surfaces.

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Metallic objects such as knives, forks, spoons and lids should not be placed on the hob surface since they can get hot.

Any spillages on the heat conserving bolster lid should be removed from the lid before opening.

Do not use steam cleaners to clean any part of this appliance.

This appliance is not intended to be operated by means of an external timer or separate remote-control.

This appliance can slip if placed on a raised platform.

If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

During cooking, food naturally produces steam, which is vented away to prevent excessive build-up within the ovens. As steam can condense to water droplets on the cooler outer trim of the oven, it may be necessary during cooking to wipe away any moisture with a soft cloth. This will also help to prevent soiling and discolouration of the oven exterior by cooking vapours.

## TECHNICAL DATA

ESSE ENGINEERING LTD, BARNOLDSWICK, ENGLAND

MODEL	990 HYBRID	SERIAL No	1908002
TESTED BY: ASFT	TYPE	FREESTANDING COOKER	
3 GARDEN STREET, MORWELL, VIC, 3840		TEST REPORT No:	ASFT18055-2
ABN: 46 610 154 768		DATE TESTED:	08/06/2018
WHEN TESTED IN ACCORDANCE WITH:			
AS/NZS 4012:4014 & AS/NZS 4013:2014		VOLTAGE	230v
MAXIMUM AVERAGE HEAT OUTPUT BURNING HARDWOOD 5.0kW		FREQUENCY	50Hz
OVERALL AVERAGE EFFICIENCY BURNING HARDWOOD EXEMPT		INPUT	1 X 13AMP
PARTICULATE EMISSIONS FACTOR - EXEMPT			
CATALYTIC COMBUSTER: NO - INSTALLED INTO A SHARED FLUE: NO			
DISTRIBUTOR: ESSE AUSTRALIA, 120 VICTORIA STREET, NORTH GEELONG, VIC			

*Figure 1 990 Hybrid Data Plate*

The cooker data plate is located behind the control panel.

**Warning: This appliance is not suitable for installation in a shared flue system**

### TECHNICAL INFORMATION

Nominal heat output	5.0 kW	Minimum draught	chimney	12Pa
Combustion requirements	air 29 m <sup>3</sup> /h	Mean temperature	flue gas	170°C
Weight of appliance	400kg	Flue gas mass flow		10g/s

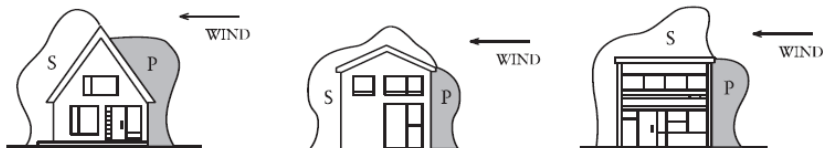
## CHIMNEY AND FLUE INFORMATION

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

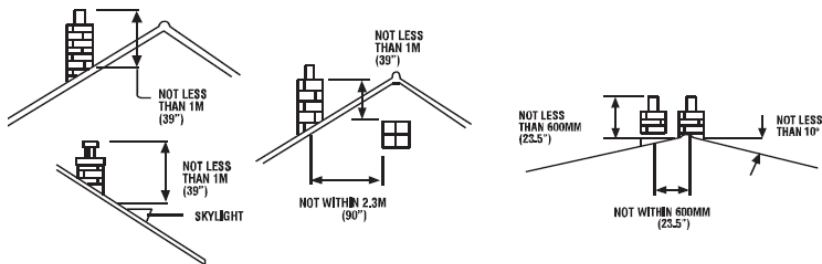
- If a flue liner is used, it should be 150mm (6") diameter and be made of suitable material for burning wood. A Flue with a diameter of 150mm (6"), is required to connect to the cooker.
- Voids in the chimney should be avoided, as these will prevent a steady flue draught. The appliance flue pipe should pass beyond the narrowing of the chimney.
- The flue needs to be a minimum of 4.6m in height and terminate in accordance with AS/NZS2918
- 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.

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.

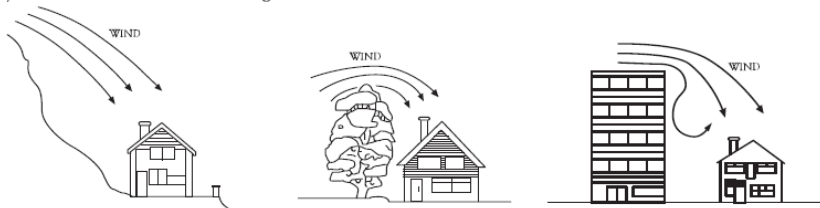
1) Pressure and suction zones created by wind



2) The position of chimney outlets



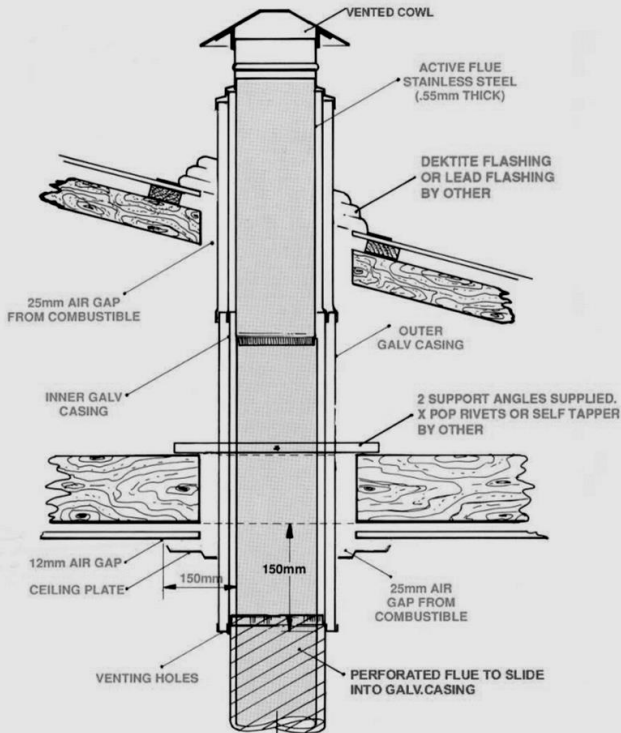
3) Potential causes of down draught



LOW FLUE DRAUGHT SYMPTOMS: DIFFICULT TO LIGHT AND SMOKE COMING INTO THE ROOM	
CAUSE	REMEDY
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 hood/fans). Fit an air vent if the room is sealed.
HIGH FLUE DRAUGHT SYMPTOMS: FIRE DIFFICULT TO CONTROL, FUEL WILL NOT LAST, COOKER TOO HOT, APPLIANCE DAMAGE, CHIMNEY FIRE.	
External wind conditions combined with chimney terminal	Fit stabiliser cowl. Fit flue draught stabiliser.

Figure 2 Chimney and Flue Performance

# Standard 6" Default Kit



## COMPONENTS:-

- 1 x VENTED COWL
- 1 x 10" GAL WITH CAP
- 1 x 10" GAL FLUE
- 2 x 8" GAL FLUE
- 4 x 6" STAINLESS FLUE
- 1 x 8" PERF
- 1 x 8" PERF WITH RING
- 2 x SUPPORT ANGLES
- 1 x CEILING PLATE

## NOTE:

- A. Cut correct hole in plaster.
- B. Put ceiling plate in position.
- C. Insert bottom outer galv. Crimped end up in position on joists using angles.
- D. Now proceed to join the outer flues in their positions ensuring all gaps are complied with.
- E. Stainless steel flues crimped end face down.
- F. Galv. Flue crimped and face up.
- G. All stainless steel joins to be pop rivetted or self tapped.

## IMPORTANT INFORMATION

1. A permit from your local council must be obtained prior to installing your heater.
2. In most normal installations a triple skin flue should be used where installation is in close proximity to combustible materials, e.g. Where the flue kit above the ceiling continues through another storey or if the flue kit is within a cupboard.
3. Correct installation is the responsibility of the person installing the flue kit. NOT the manufacturer of the kit.
4. Regular inspection of your flue for creosote deposit or damage, and cleaning with a flue brush will ensure continuing good surface. The cowl is to be attached with 2 self tapping screws, and can be removed for cleaning.

Figure 3 Supplied Chimney Kit



## FLUE DRAUGHT

The flue draught should be checked before installation to ensure that the flue is free of obstructions.

After installation two flue draught readings should be taken and recorded in these instructions, one with the appliance at minimum burning rate and one at maximum burning rate.

**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 24Pa, 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 stabiliser can be fitted to reduce the draught through the appliance if the draught is too high. 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.

## UNPACKING YOUR NEW COOKER.

Unpack your new ESSE Cooker, removing all of the outer packing and accessories from the top and bottom ovens, including protective film on the door liners. At this time please examine the cooker for any damage to the enamel finish.

Any damage to the cooker or anything missing, please contact your supplier for advice.

We ask that you dispose of any packaging in a safe responsible manner and recycle where possible.

## INSTALLATION.

### **You must be aware of the following safety requirements & regulations:**

This appliance shall be installed in accordance with the regulations in force and in a well-ventilated space.

Read the instructions before installing or using this appliance.

The cooker must be installed in accordance with: All relevant AS/NZS Standards / Codes of Practice and the relevant Building / IEE regulations

Do not use the towel rail as a lifting aid as damage will occur.

### **Location of the Oven**

The appliance should be sited on non-combustible material.

This appliance is designed for domestic cooking only. Use for any other purpose could invalidate any warranty or liability claim.

### **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 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 cooker must conform to local or national regulations currently in force. (AS/NZS 2918/2018)
- 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 door should be fitted to provide access for cleaning the flue and chimney.
- Check the appliance for soundness of seals between casing and main components and that all supplied parts and fittings are correctly fitted.
- 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.

## **CONNECTING YOUR COOKER**

For your own safety we recommend that a competent person installs your cooker. This cooker is designed to be installed using a standard 15 Amp plug. A qualified electrician is not required.

### **Electrical connection**

Ovens with a three-pole power supply cable are designed to operate with alternated current at the supply frequency and voltage indicated on the data plate (located behind the control panel).

### **Connecting the power supply cable to the mains**

The appliance is supplied fitted with a 1.5 metre cable and a normalized 13 amp plug which correspond to the load indicated on the data plate. Before making the connections check that: the circuit breakers or fuses of the home system can support appliance load (see data plate), the power supply system has a sufficient earth connection which complies with the provisions of current regulations and the law, and there is easy access to the socket. Do not use reducers, adapters, or coiled extensions as these could cause heating or burning.

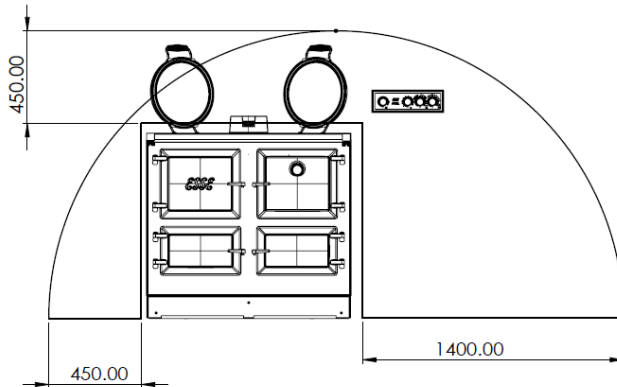


Figure 4 Possible Plug Locations

## BEFORE USING YOUR COOKER

Remove plastic protective covers from inner door panels and lift up lid.

Before you cook for the first time, it is recommended that both ovens be switched on to the highest setting for about an hour to burn off any initial odours

The grill should also be turned on for 15 minutes with the top oven door left open, before it is used for the first time.

## HOT WATER SYSTEM

- A. If a boiler is fitted to this system it must be connected to a heating system otherwise the warranty is void.
- B. There are two connections, both 1" BSP Female on the left hand side. Follow general notes below.
- C. The D boiler is of stainless steel construction for use on an open vented indirect system.
- D. It is recommended that the system is connected using flexible connectors and/or shut off valves which will allow the cooker to be moved forward for maintenance

E. General Notes on Water System: -

1. The cooker will produce hot water at differing rates depending on how it is operated. Heating control is manual, no thermostat is fitted.
2. The system must be designed to cope with loads between the maximum and minimum output. There must be sufficient gravity load to absorb 250L low pressure hot water output.
3. This unit is not approved for use with hydronic heating systems.
4. Whichever system is chosen the layout must follow established heating engineering practice. To avoid trapping air in the boiler a 1" BSP connection must be used on the flow and return tapping, and any reduction in pipe size thereafter being made on a vertical rising pipe. The cooker must be level when fitted and the flow pipe must rise from the boiler.
5. The cylinder and pipe work should be lagged to avoid heat loss.
6. The static head must not exceed 18 meters.
7. A drain cock should be fitted to the lowest part of the circuit.
8. The total water capacity of the boiler is 4 litres.
9. A heat leak radiator should be fitted to absorb any excess heat that may be produced.
10. The system must be open vented.
11. It is recommended that the system is sealed with hemp & paste or equivalent which can withstand temperatures exceeding 100°C

## YOUR COOKER.

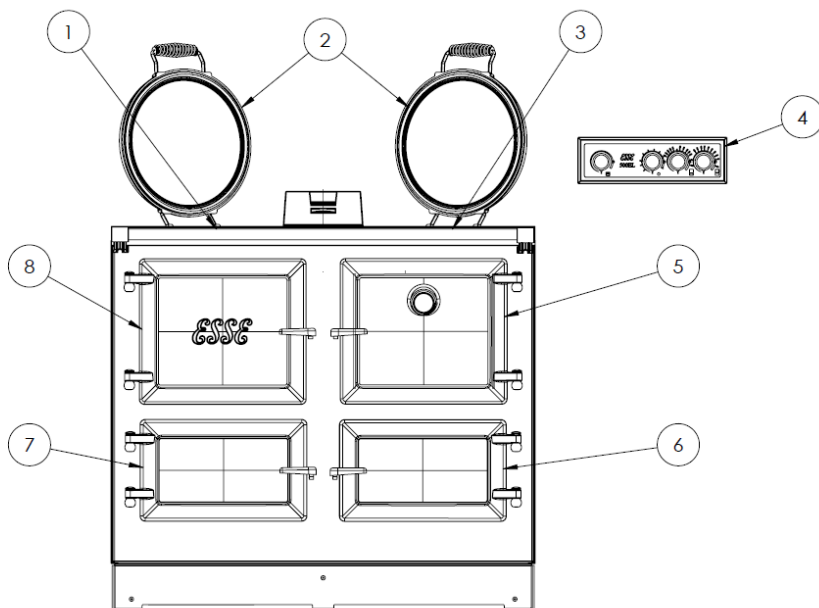
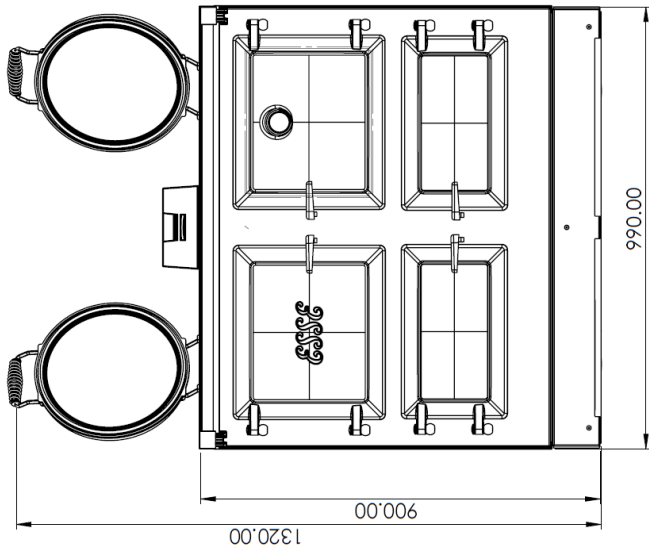
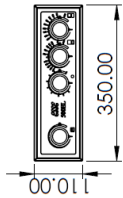
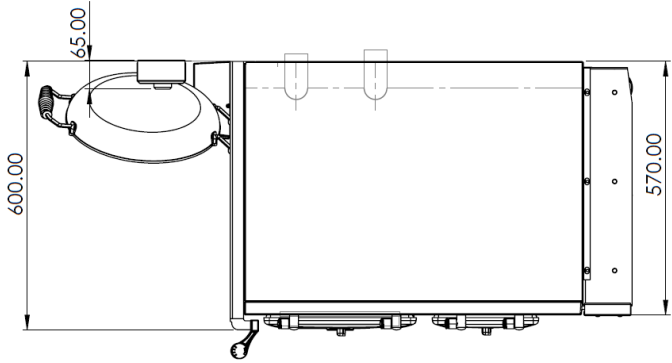


Figure 5 990 Hybrid Cooker

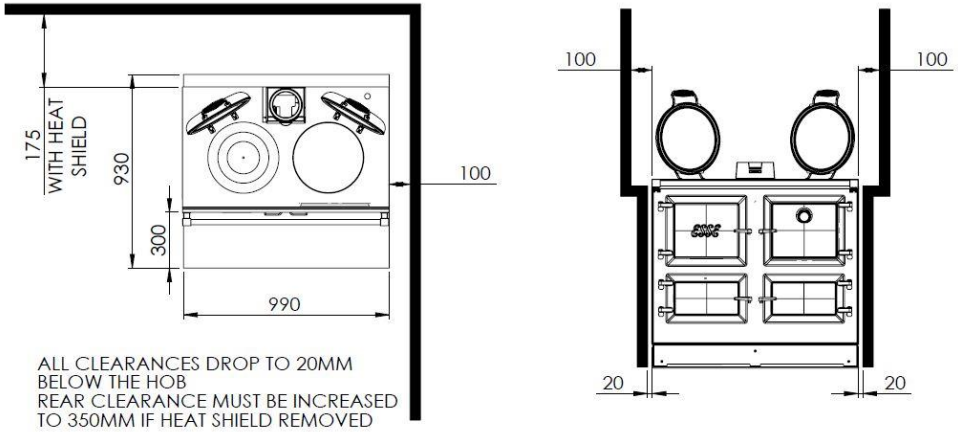
1	WOOD FIRED HOTPLATE
2	HEAT CONSERVING LIDS
3	ELECTRIC HOTPLATE
4	CONTROL PANEL
5	ELECTRIC TOP OVEN AND GRILL
6	ELECTRIC BOTTOM OVEN
7	WOOD FIRED BOTTOM OVEN
8	FIREBOX

**SPACING AND DIMENSIONS.**



*Figure 6 990 Hybrid Dimensions*

**All dimensions are in mm**



*Figure 7 Clearances to Combustable Surfaces*

### General Information

The cooker is not to be grouted or sealed at the back or sides of the worktop as if any maintenance is required the cooker will have to be pulled away from the wall at the rear.

The cooker weighs 400kg and so the floor must be capable of withstanding the load.

### Hearth requirements

A minimum 930mm deep x 990mm wide x 9mm thick floor protector (Bellis Board) should be used under and in front of the appliance base when installing the appliance (see joint AS/NZS 2918:2001 3.3.2).

The floor protector should extend 300mm in front of the appliance fuel loading door and be placed centrally in the 990mm width.

The Thermal conductivity of the floor protector is 0.1m<sup>2</sup>.K/W for 9mm thick sheets.



## Clearances

- Combustible Rear Clearance : 175mm
  - Using a 6" Stainless ( painted Stainless or enamel flue is also approved ) with a 180o Stainless Heat shield extending to the 900mm high
  - Non Combustible Rear Clearance : 30mm
- Side Clearance
  - To Combustible ( below hob / bench height ) 20mm
  - To Non Combustible ( below hob / bench height ) 10mm
  - To Combustible wall ( above hob ) 100mm
  - To Non Combustible wall ( above hob )10mm

Due to the hand crafted nature of the cooker all dimensions are  $\pm 2$ mm.

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Before using your cooker remove plastic protective covers from inner door panels and lift up lids.

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## CONTROL PANEL

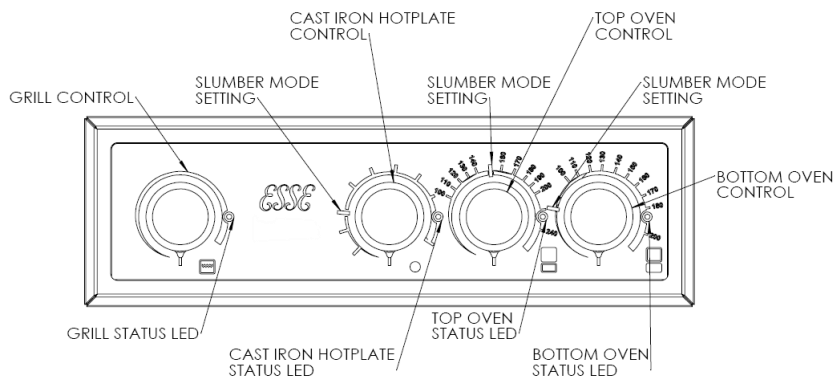


Figure 8 990 Hybrid Control Panel



The control panel cable is to be kept accessible and not recessed into the wall if wall mounted

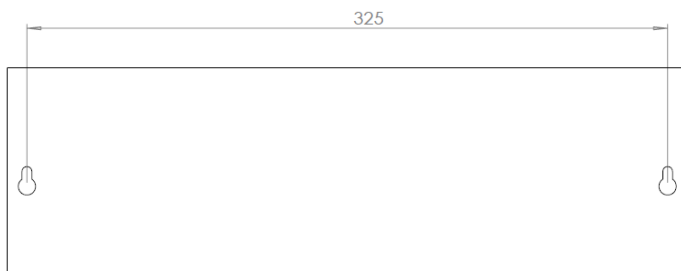


Figure 9 Control Panel Mounting Holes

Drill and plug the wall with suitable plugs. Ensure that the screws will fit the back plate before drilling any holes. Ensure that the screw head remains proud of the wall to allow the back plate to engage.

## ELECTRIC OVENS, GRILL, AND HOTPLATE

The electric ovens work by modulating the power between the cast iron hotplate, the top oven, and the lower oven. If both ovens and the hotplate are on, the cooker will modulate the power to reach the selected temperatures, but if only one oven or the hotplate is turned on it will heat up more quickly.

The cooker is designed to be used on slumber mode for the majority of the day giving off a constant background heat and can then heat up quickly to the required cooking temperatures when required. However the cooker can simply be used as an On/Off appliance if required.



The cooker consumes less than 1kW/Hr in slumber mode at a room temperature of 18°C.

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The top and bottom oven are controlled thermostatically and the temperature markings on the controls are in °C. To switch one of the ovens on, turn the corresponding knob clockwise to the desired temperature. The indicator light will glow red to show that the oven is heating up and will glow green when the oven has reached selected temperature. Similarly when the control is moved to a lower temperature the red light will flash until the oven has reached the selected temperature, once the selected temperature is reached the LED will glow green again. The control shows a red flashing light after the oven has been switched off to indicate residual heat.

### The top oven

This oven has a patented 3kW wrap around element and a 3kW grill element. **The grill is a full width grill and takes priority over the top oven control.** The Top oven and grill can never be on together, if the grill control is on at any position, then the top oven will not work until it the grill is switched off.

The thermometer in the top oven door is only a guide to actual oven temperature. The reading will be incorrect when the door is or has been opened and will recover once the door closed.

### The lower oven

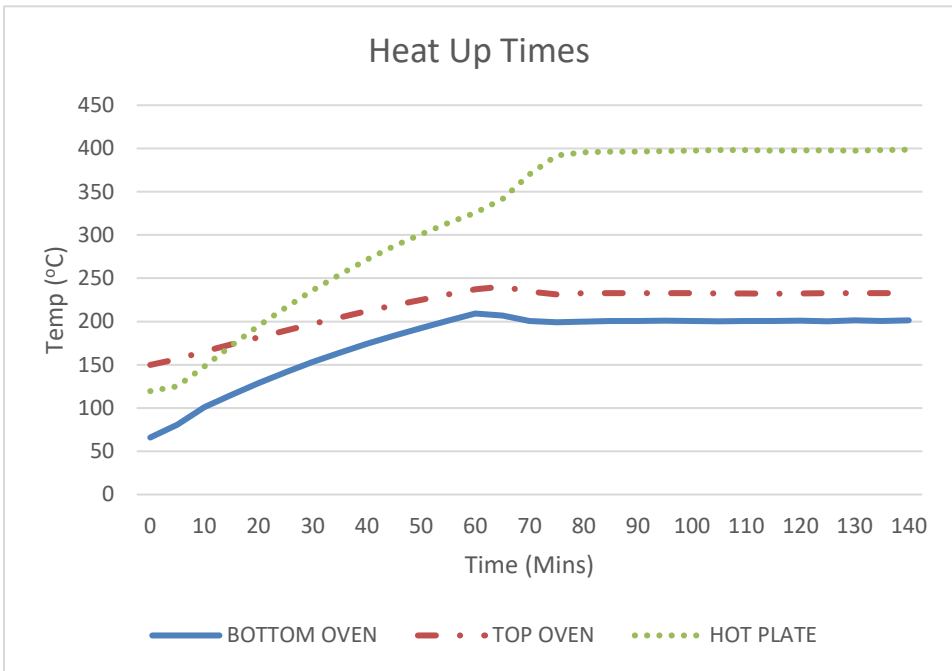
This oven has a patented 3kW wrap around element and is used as a smaller capacity, high or low temperature oven.

**SAFETY POINTS**

- When using the oven shelves ensure they are placed correctly between the shelf runners.
- Always use oven gloves when removing food from either oven or the grill.

**Cooker heat up times**

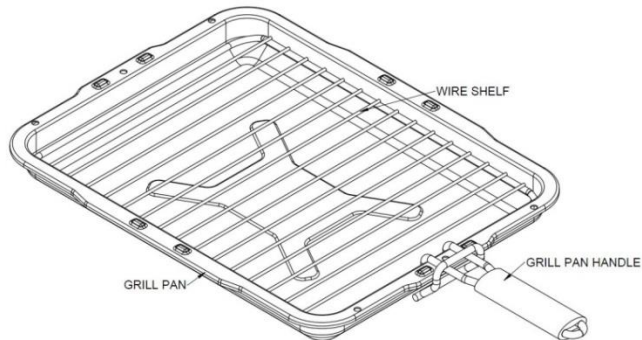
From slumber the heat up times can be seen in the table below. These times have been measured with all elements heating at once, if only fewer elements are heated the time will be reduced.



	Maximum Temp (°C)	Time Taken (Mins)
<b>Top Oven</b>	<b>240</b>	<b>60</b>
<b>Bottom Oven</b>	<b>210</b>	<b>65</b>
<b>Hotplate</b>	<b>400</b>	<b>80</b>

## The grill

The grill has a 3kW element fixed in the top of the top oven. Turn the control clockwise to turn the grill on and increase the temperature. The grill can take up to four minutes to reach full operating temperature from cold. The neon indicator will remain red for this time until the temperature is achieved. When grilling place the grill pan and wire shelf onto an oven shelf which is already pre-positioned height wise in the top oven. The grill pan should be handled using the tool provided, locate the tool around the rim then move to locate it in the centre of the pan



*Figure 10 Grill Pan*

### GRILL SAFETY POINTS,

- When attaching the grill pan handle make sure it is in the middle of the grill pan,
- Do not leave the grill pan handle attached to the grill pan whilst grilling, as it will become hot. Use only when moving the grill pan,
- **Only operate the grill with the top oven door open.**
- Ensure the oven shelf height is correctly positioned before placing the grill pan on it.
- The towel rail may become **HOT** after long periods of using the grill.
- Do not place towels or any other items over the towel rail when grilling.
- Do not line the grill pan with Aluminium foil.

## Cast Iron Hotplate

The cast iron hotplate is Ø330mm and has a 3kW Element.

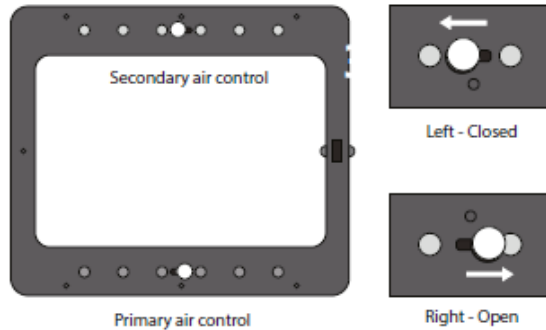
From the OFF setting it takes approximately 40 minutes to reach 400°C, or 31 minutes from 150°C to 400°C when in slumber mode. Heat up times were checked with the heat conserving lid down and at a room temperature of 18°C

Always use solid machined flat base pans to ensure the best contact on the hotplate and subsequent heat transfer. Cast iron pans usually work well.

- Never use utensils with rough bases.
- It is important that any spillage is dealt with before the hob is used again, otherwise it may become baked on solid and difficult to remove.
- Always keep the hotplate cover down when the hob is not in use to conserve energy.

## LIGHTING AND CONTROLLING THE FIRE

The air controls for the fire box are located on the glass and steel fire door behind the top left cast iron door of the cooker.



*Figure 11 Firebox Controls*

Before lighting the fire ensure that all vermiculite bricks are in the correct position. Ensure the air controls are in the open position by moving the controls to the right hand position.

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



*Figure 12 Logs Laid in Firebox*

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



*Figure 13 Fire Lighter and Kindling in Place*

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



*Figure 14 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 primary air control can be moved towards the closed position once the sooting has burnt off the brickwork. The secondary air flow can be reduced by moving the control to the left once the fire has become established which should be used to control the fire during normal operation.

If the cooker is being used primarily to heat the room it is recommended that the bolster lids are kept in the raised position to allow heat from the hotplates to radiate into the room.

When refuelling the cooker it is recommended that the logs are placed running front to back as in Figure 12 as this leads to the cleanest combustion.

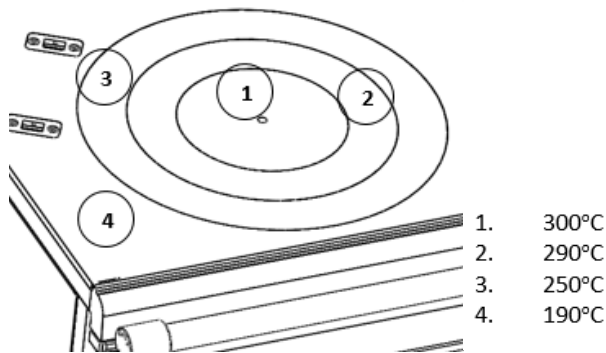


Before lighting a full fire in the cook stove for the first time it is recommended that 3 smaller fires are lit first to ensure that any moisture is driven out.

## COOKING ON THE WOOD BURNING SECTION

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 23.

The temperature of the hotplate is graduated from the inside out, see Figure 15 for approximate temperatures. Machined base pans are essential as heat is transferred to them via conduction.



*Figure 15 Approx. Working Temps 30 Mins. After Refuelling*

Food may be cooked directly on the hotplate if desired. The bolster lid may be left down when the hotplate is not in use in order to keep it at a cooking temperature.

To increase oven temperatures, refuel the cooker, increase the burning rate of the fuel by use of the secondary air control, and regulate to the desired temperature.

The shelf in the bottom oven has anti-pull out stops on the ends 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.

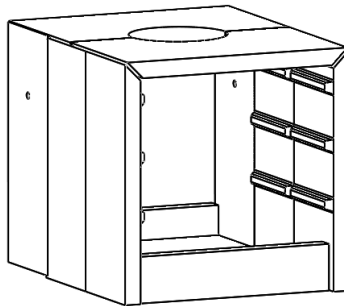


If any part of the cooker begins to glow it is being over fired. Stop use immediately and allow to cool before further use.

### **Cooking in the Firebox (Optional)**

If you have purchased the additional firebox cooking kit then it is possible to cook in the firebox over the glowing embers of the fire for a barbecue effect.

The ribbed bricks replace the 4 front bricks in the firebox and allow for the additional wire shelf to be positioned above the embers.



*Figure 16 Ribbed Fire Bricks in Position*

ESSE appliances are designed to be run with the firebox door closed. Opening the door for in firebox cooking (barbecue) should be done only when the fire has died down and cooking is done over hot embers.

Opening the door for long periods of time with the fire roaring will result in enamel damage.

## NOTES ON WOOD BURNING

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 cooker 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 cooker 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 cooker it is recommended that a wood stove thermometer be fitted to the flue pipe. This allows you to monitor the temperature of the flue gasses leaving the cooker.

### **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 cooking stove.

### **Above 260°C**

Too hot. Heat will be wasted up the chimney. Excess heat may damage the cooking 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.

## **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, it gives this 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 autumn) are usually thought of as hardwoods and the evergreen trees (such as pines, firs and larches) as the softwoods. But generalisations 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 are that the cooker 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 autumn, whereas many hardwoods may take a bit longer than that. Oak, for example, is very slow to dry out and ideally 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 cookers controls) by adding slower burning wood to fast ones if you want to leave the cooker 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 cooker 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 cooker 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 cooker, 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.

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 cooker'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 its 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 cooker 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.

Your ESSE cooker is very easy to keep clean.

The cast iron hotplate helps to keep its self-clean, by carbonising cooking spills and splashes. Just brush off the carbon dust. For stubborn stains, don't be afraid to use a wire brush on the cast iron hotplate and inside the ovens.

Splashes and spills on the vitreous enamel should be wiped away as soon as possible, using a damp soft cloth. Micro-fibre cloths are especially good for this. Never use a cold wet cloth on any enamelled surfaces as the thermal shock can cause crazing.

If spills have become baked on to the enamel, use a soap filled pad, not too coarse, so as to avoid scratching enamel. DO NOT use oven cleaners.

Likewise the inner door panels and inner bolster lids can be cleaned with a cream cleanser or for more stubborn marks, a soap filled pad. The linings will show marks and discolour with use, but with regular cleaning will maintain its look for longer.

The stainless steel bolster lids and handrail can be cleaned with a damp soapy cloth, followed by a wet cloth, finishing by polishing with a clean dry cloth.

The enamelled surfaces can be cleaned with glass cleaner to help get a good streak free shine. Any spillage of milk or fruit juices on to the enamelled surfaces must be wiped up straight away, as the acidity may stain the front.

Some components such as the side panels are powder coated (painted) and nothing abrasive should be used on them. Use a soap filled pad instead.

If the cooker is finished in the 'Matte Black' painted finish, additional care must be taken not to use any chemicals or abrasive cleaners. Use a light brush or lint free cloth instead.

If the cooker is not going to be used for an extended period of time, we advise that the cooker be cleaned thoroughly, the ovens and hotplate can be wiped over with a light coating of rapeseed oil, the bolster lids left up and the doors left slightly ajar. If any rust does form it can be removed with a wire brush and a fresh coating of rapeseed oil should be applied.

During the life of your cooker it may be necessary to adjust the door handles and change the door ropes. The door handles can be adjusted using the adjustment screw on the lift up latch part of the handle. A video on how to adjust the door



handle is on the ESSE TV section of [www.esse.com](http://www.esse.com). Replacement door ropes can also be purchased from [www.esse.com](http://www.esse.com)

## **GUARANTEE.**

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

Your details must be registered with us by completing registration on-line at [www.esse.com](http://www.esse.com). The warranty must be registered within 1 month of installation.

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

### **The guarantee does not cover:**

- Installation
- Wear and tear
- Parts deemed to be replaceable or service parts including electrical components that may be replaced during the normal usage of the appliance.
- Enamel damage caused by impact, spillage, or water ingress.
- This guarantee is personal to the original purchaser and not transferable.
- Any stove or defective part replaced shall become the Company's property

### **INTERMITTENT USE OF YOUR COOKER**

In the event of intermittent use and prolonged shutdown, it should be noted that in some circumstances enamel may be displaced due to ingress of damp. Whilst this is rare, it is most likely to occur in situations where the unused cooker remains in an unheated property. There is a layer (known as the ground coat) between the vitreous enamel surface and the cast iron. Ground coat is porous and if exposed (e.g. after a chip in the vitreous enamel coat), may allow damp to penetrate behind the vitreous enamel and spread through the ground coat. Surface oxidation of the cast iron may thereafter occur, causing the vitreous enamel to fall off. Such damage will not be covered by your warranty. We recommend that a light coating of petroleum jelly be applied to any damaged areas when the cooker is not in use to help keep out the

damp, in addition to following the 'caring for your Esse cooker' instructions on page 32

## **CUSTOMER CARE**

In the event you should require spare parts, please order through your ESSE dealer or by contacting ESSE via our website, [www.esse.com](http://www.esse.com).

Should you have cause for dissatisfaction with your cooker, 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 cooker (found behind the control panel).
- 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 form, 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. Home visits are made between 08.30-1700 hrs Monday to Friday, and are arranged for either a morning or afternoon appointment.

## COMMISSIONING CHECKLIST

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

No

Instruction book handed to the customer?

Yes

No

Signature:.....

Print Name:.....

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