THE

Ultimate

COLLECTION

AUSTRALIAN DESIGNED AND MANUFACTURED WOOD HEATING APPLIANCES

OPERATING AND INSTALLATION INSTRUCTION MANUAL FOR ALL MODELS

MANUFACTURED BY ULTIMATE ENGINEERING AUSTRALIA PTY. LTD.
35 GREENS RD. DANDENONG VICTORIA AUSTRALIA 3175

KEEP THESE INSTRUCTIONS FOR FUTURE REFERENCE

THE ULTIMATE VALUE IN WOOD HEATING

APRIL 2006 REVISION

FOREWORD

At Ultimate we are totally committed to design quality and value into our Australian made wood heating products. With this dedication, Ultimate has designed and constructed one of the most clean burning and problem free heaters in the world.

The efficient burning properties of our wood heaters, along with our modern and innovative styling will ensure a long and hassle free life for your Ultimate woodheater.

DISCLAIMER

Ultimate Engineering Australia Pty. Ltd. does not accept any responsibility whatsoever for errors and omissions regarding building codes. It is the responsibility, entirely, of the purchaser to investigate local council requirements to ensure the Ultimate woodheater is installed correctly.

All Installations must be approved and a certificate of compliance issued by the installer. Should the contents of the manual, and the relevant Australian standards not be adhered to, a hazardous situation may result. Ultimate Engineering Australia Pty. Ltd. accepts no responsibility for printing errors or ommissions within this document.

IMPORTANT

ALWAYS INSTALL YOUR APPLIANCE IN ACCORDANCE WITH AUSTRALIAN STANDARD AS/NZS 2918.
Local council approval may be required to install this appliance.

SAFETY PRECAUTIONS

For your protection as well as the safety of others, please observe the following safety precautions.

1. Before starting a fire in the heater make sure the immediate area is clear of combustible materials such as clothes, newspaper, furniture etc.
2. Never allow anyone to operate the heater if they are unfamiliar with the unit or the contents of this manual.
3. Never use petrol, kerosene or similar liquids to start or ‘freshen up’ a fire. Keep all such liquids well away from the heater.
4. Do not over fire the heater. Always operate with the door closed except when lighting or refueling.
5. Keep toddlers and children away from the heater while it is operating.
5. Do not burn rubbish in the heater, as its contents are usually unknown and could damage the unit. The resulting fumes may also be dangerous to your health.
7. Do not burn wet or green wood.
8. Do not install the unit closer to combustibles than shown on the compliance plate or a hazardous situation may result

WARNING

1. WARNING: ANY MODIFICATION OF THE APPLIANCE THAT HAS NOT BEEN APPROVED IN WRITING BY THE TESTING AUTHORITY IS CONSIDERED AS BREACHING AS/NZS 4013.

2. WARNING: DO NOT USE FLAMMABLE LIQUIDS OR AEROSOLS TO START OR RE-KINDLE THE FIRE.

3. WARNING: DO NOT USE FLAMMABLE LIQUIDS OR AEROSOLS IN THE VICINITY OF THIS APPLAINCE WHEN IT IS OPERATING.

4. WARNING: DO NOT STORE FUEL WITHIN HEATER INSTALLATION CLEARANCES.

5. WARNING: WHEN OPERATING THIS APPLIANCE AS AN OPEN FIRE USE A FIRE SCREEN.

6. WARNING: OPEN AIR CONTROL (AND DAMPER WHEN FITTED) BEFORE OPENING FIRING DOOR.

7. CAUTION: THIS APPLIANCE SHOULD NOT BE OPERATED WITH A CRACKED GLASS.

8. CAUTION: THIS APPLIANCE SHOULD BE MAINTAINED AND OPERATED AT ALL TIMES IN ACCORDANCE WITH THESE INSTRUCTIONS.

9. CAUTION: THE USE OF SOME TYPES OF PRESERVATIVE TREATED WOOD AS A FUEL CAN BE HAZARDOUS.

10. THIS APPLIANCE AND ITS FLUE SYSTEM SHOULD NOT BE MODIFIED IN ANY WAY WITHOUT WRITTEN APPROVAL FROM THE MANUFACTURER.

SUITABLE FUEL TYPES

BURN ONLY WOOD

All Ultimate wood heaters have been designed to burn common Australian timbers, preferably hardwoods.
Some woods are preferable to others however most dry Australian hardwoods will produce good results.
The rate of burning is inversely related to the density of the timber used,for example, to maintain a fire burning Pine, double the amount of stoking is required to produce similar heat output as a Box wood. (Refer to Table 1. at the rear of this manual.)

ULTIMATE WOOD HEATERS HAVE NOT BEEN DESIGNED TO BURN BRIQUETTES OR COAL
The use of these fuels may damage the appliance and/or void the warranty.

LIGHTING AND MAINTAINING A FIRE

A WOODHEATER IS ONLY AS GOOD AS THE FUEL USED.

ONLY USE GOOD DRY WOOD THAT HAS BEEN STORED IN A WELL VENTILATED COVERED AREA

IMPORTANT!

DO NOT BURN A LARGE FIRE UNTIL THE HEATER PAINT HAS CURED!

This usually takes only 1 firing of the heater. It is recommended that windows be left open whilst the paint cures, as the heater may produce a light smoke, however this is no cause for alarm and in most cases will quickly dissipate.

LIGHTING INSTRUCTIONS

1. Open the door by turning the handle anti clock wise. As the catch releases, open the door fully.
2. Set the primary air control knob to maximum (to the right).

3. Place sevaral balls of crumpled newspaper directly on the base of the firebox.
4. Add plenty of small dry kindling and then more newspaper on top of the kindling.
5. Light both the top and bottom newspaper and leave the door slightly ajar to allow extra air for the initial combustion.
6. Allow a few minutes for the kindling to become well alight, then add some larger split wood.
7. Return the door to the ajar position until the split wood is well alight, then close the door.
8. After approximately 30 minutes the firebox should be up to temperature and the fan can be set to the desired position. i.e. LOW, HIGH or BOOST.
9. Once the fire is well established with a good coal base, the air control can be adjusted to maintain the desired comfort level.
10. Re-fuel as required with large split wood.
11. It is not advisable to burn the heater hot with out using the fan (**unless the heater is not a fan forced model**). Doing so may damage the heater baffle plate and/or painted surfaces of the appliance.

MAXIMISING BURN TIME

WITH EXPERIENCE, IT IS POSSIBLE TO OBTAIN A BURN DURATION OF UP TO 8 HRS ON A SINGLE FUEL LOAD.

1. Approximated 1/2 Hour before you intend to close down the heater, load the firebox with large dry pieces of firewood.
2. Set the primary air control knob to maximum (to the right).
3. When the wood has been burning for 15 - 20 minutes, slowly adjust the air control to the left until it is fully closed.
4. In accordance with Emissions Control Standard AS 4013-1999, it is important to make sure the fan is OFF when the heater is set to burn overnight.

NOTE: The procedure for extended burn is also relevant for normal re-fueling. This method allows the wood to be well alight and the majority of moisture and impurities to be burnt in the firebox, thus reducing the buildup of creosote within the flue or on the door glass.

REMEMBER THE HOTTER THE FIRE, THE CLEANER THE HEATER WILL BURN.

- Your wood heater should be serviced once a year and have your flue cleaned regularly by your local chimney sweep.
- Creosote is a substance formed by solid fuel combustion. Creosote and resin build-up can cause flue fires. Check the flue prior to each winter.
- Make it a habit to look outside and check your flue for smoke. If it is smoking excessively, you are wasting fuel and heat and may be causing unnecessary emissions. You need to increase the air supply to the fire. A little air avoids a lot of smoke.

OPERATION AND MAINTENANCE

DO NOT THROW WOOD INTO THE FIREBOX!
Throwing wood into the firebox may damage the firebrick lining. (Where fitted)

It is worth noting that the firebricks will develop small cracks during use however this is quite normal and will not affect the performance of the heater.

A firebrick should be replaced if significant pieces have broken away. Although extremely hardy, care should be taken to avoid breakages when handling firebricks as they are not covered by warranty.

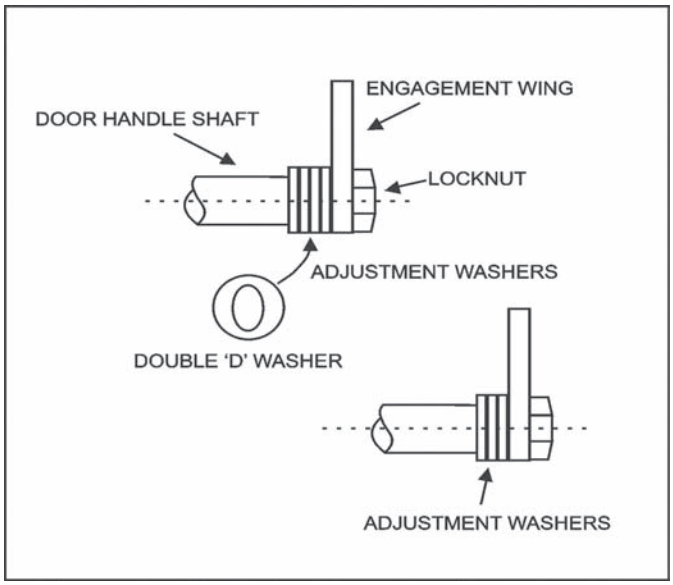
DO NOT SLAM THE FIREBOX DOOR!
Wood may be protruding from the firebox and a broken door glass may result.

DO NOT BURN WET OR TREATED WOOD!
Fire wood not stored under cover can contain large amounts of water which will cause poor heating performance, abnormal build up of creosote with the heater and flue system (A potential fire hazard) and increased smoke emissions.

Treated pine may contain the chemicals Chromium, Copper and Arsenic and it is **illegal and potentially dangerous** to burn timber which has been treated with CCA.

DOOR HANDLE ADJUSTMENT

Adjusting the door handle latch may be necessary from time to time as the door sealing rope beds in. This is easily accomplished by removing the nut and engagement wing from the end of the handle shaft, removing one of the adjustment washers and replacing the engagement wing and nut. This will make the door close more tightly against the rope seal.
Alternatively the rope seal can be removed and replaced with a new seal, (available from any Ultimate Wood Heater Dealer) or, if the old seal is merely compacted but otherwise in good condition, it can be taken outside and shaken up to loosen the fibres then re-fitted to the door.



GENERAL MAINTENANCE

PAINTED SURFACES
Clean the heater with a damp cloth only. (Do not use abrasive cleaners) Ultimate wood heaters are painted with the highest quality heat resistant paint available. It can be expected however, to lighten over time. Small scratches and marks can be touched up with Aerosol spray cans which are readily available from your Ultimate Dealer.

FLUE MAINTENANCE

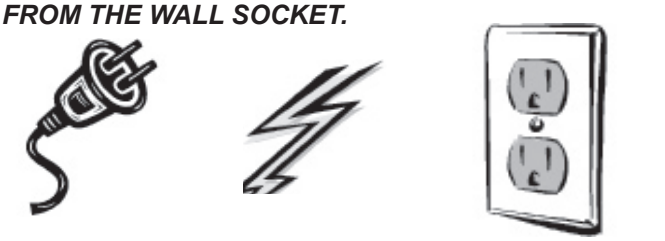
Your new ultimate heater is a wood burning appliance.
When wood is burnt it gives off gases and moisture as steam which, if not burnt in the firebox will exhaust into the flue system and may cool and condense, forming creosote on the walls of the flue pipe. (Especially during low burn)
When dry, creosote is highly flammable and a potential fire hazard if not attended to. A flue fire can occur when creosote buildup within the flue has dried out. The temperatures generated in a flue fire have the potential to damage the flue system or possibly the home.
Your flue system should be regularly checked before and during the heating season and cleaned when necessary.
You can perform the cleaning yourself with a suitable flue brush, or arrange for a chimney sweep to do the job.
IF A FLUE FIRE SHOULD OCCUR, IMMEDIATELY SHUT DOWN THE AIR CONTROL AND ENSURE THE HEATER DOOR IS CLOSED. CONTACT THE FIRE BRIGADE AND FOLLOW THEIR INSTRUCTIONS. AFTER ANY FLUE FIRE THE FLUE SYSTEM MUST BE INSPECTED BY A CERTIFIED INSTALLER AND REPLACED IF NECESSARY.

Aside from the potential for a flue fire, a buildup of creosote within the flue will reduce the ability of the flue system to exhaust the flue gases, creating poor heater performance and increased emissions.
In the past we have found that most cases of poor heater performance requiring servicing are a direct result of poor flue maintenance.
Time and money can be saved by regularly checking the flue system and keeping it clean.
ULTIMATE RECOMMENDS CLEANING THE FLUE PRIOR TO EACH HEATING SEASON AND AT 3 MONTHLY INTERVALS OR MORE IF LOW QUALITY FUEL IS USED.
Flue brushes may be purchased from your local Ultimate wood heater dealer, or alternatively they can supply the details for recommended chimney sweeps.

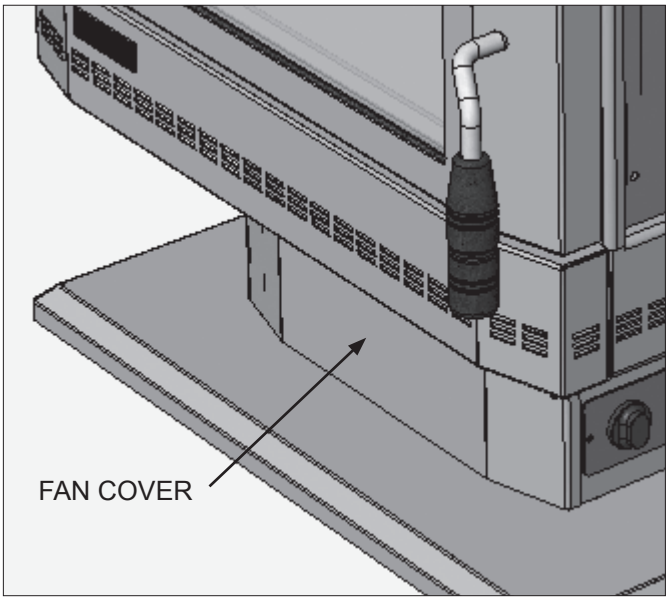
OPERATION AND MAINTENANCE

GENERAL MAINTENANCE (cont.)

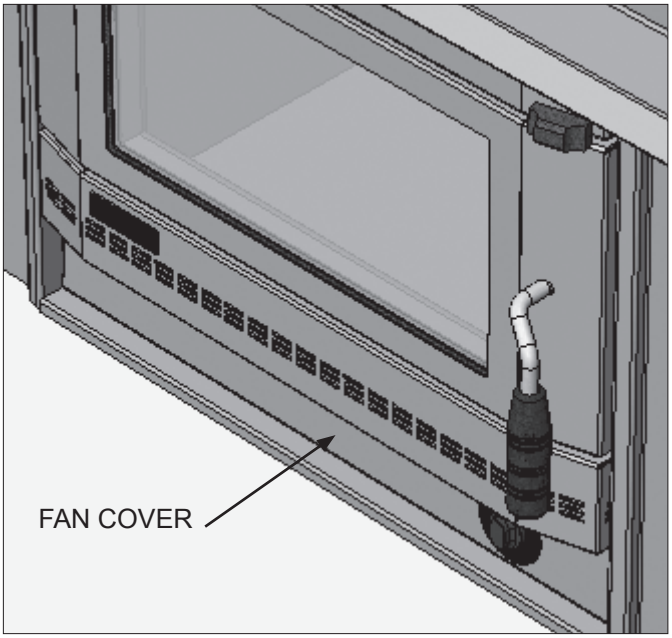
FAN MAINTENANCE
The fan blower (If fitted) should be inspected prior to the start of each heating season.
BEFORE ANY FAN MAINTENANCE IS PERFORMED, MAKE SURE THE POWER LEAD IS DISCONNECTED FROM THE WALL SOCKET.



On freestanding models remove the fan cover plate by unscrewing the 2 star screws from each side.
(See Below)



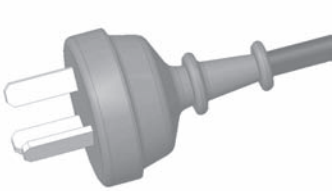
On Inbuilt models it may be necessary to remove the lower trim cover (Directly below the door) before removing the fan cover. (See Below)



ASH REMOVAL

With our advanced triple burn system, ash build up is greatly reduced. When the ash has reached the point where spillage from the firebox may occur, place ash in a metal container with a tightly fitting lid and move outside to a location clear of combustible materials. It is important to use a metal container for ash removal as ash and coals can remain hot for several days.

REPLACING THE POWER LEAD



Should the power lead become damaged in any way, disconnect it from the wall socket immediately. Replacement power cords can be obtained from your Ultimate dealer.

DOOR GLASS CLEANING

A dirty or stained door glass is usually the result of creosote build up on the inner face of the glass.

This can occur if the flue is poorly maintained (See flue maintenence at left) or if the heater is not drawing sufficiently.
It also occurs when the fuel used is wet or green.

Creosote is flammable and can generally be burnt off the glass with a good hot fire.

Overnight or extended burning on low fire setting may also cause some build up on the door glass.

It is always preferable to try to burn the glass clean with a hot fire burning dry hardwood, rather than attempting to clean the glass manually.

Abrasive cleaners should **NEVER** be used because they will scratch the glass surface and only compound the problem.

Many people have ideas on the best way to clean the glass, but aside from burning it clean, we have found that a wet cloth and razor blade scraper is the most effective method. Using wet newspaper rubbed in the ashes of the fire is **NOT** recommended because it **WILL** scratch the glass.

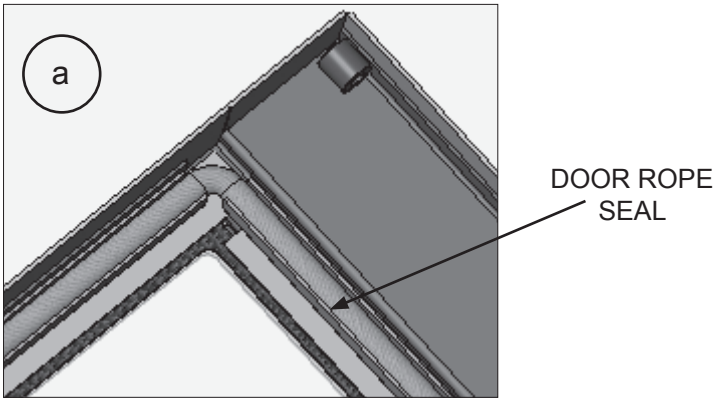
GENERAL MAINTENANCE (cont.)

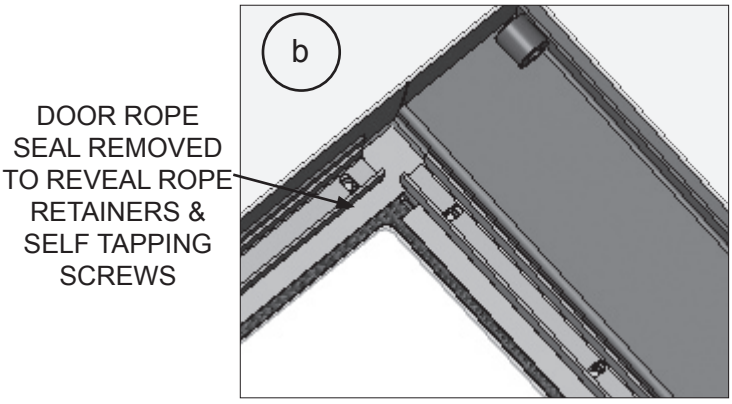
DOOR GLASS REPLACEMENT

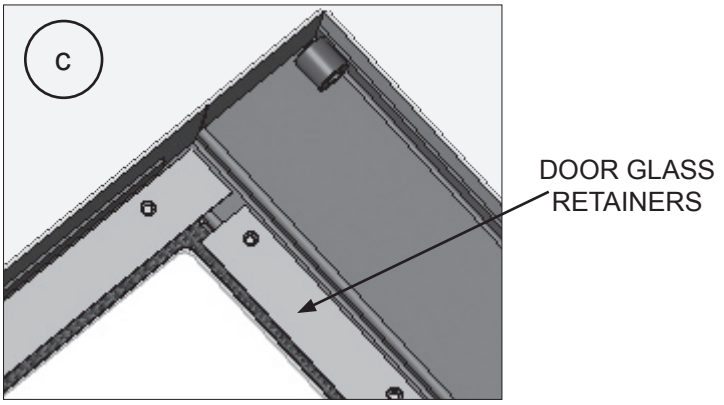
The door glass on your heater is a special heat resistant ceramic glass. **ONLY** this type of glass can be used for a wood heater. **NO OTHER TYPE** of glass can be used and doing so may cause a hazardous situation.
If the door glass should become cracked or broken during use, shut down the fire and allow it to cool before removing the door assembly. The door glass is fixed to the frame underneath the fibreglass rope seal.
You can return the door to your dealer for a replacement or you can purchase the parts and fit the glass yourself
TIP. *The glass is quite expensive and we advise that the job is left to the experts as we cannot warrant glass fitted by anyone other than an authorised Ultimate dealer.*
If you wish to fit the new glass yourself, ask the dealer for advice and ask him to fit the glass tape to the glass. This will make the job much easier.
To replace the glass-

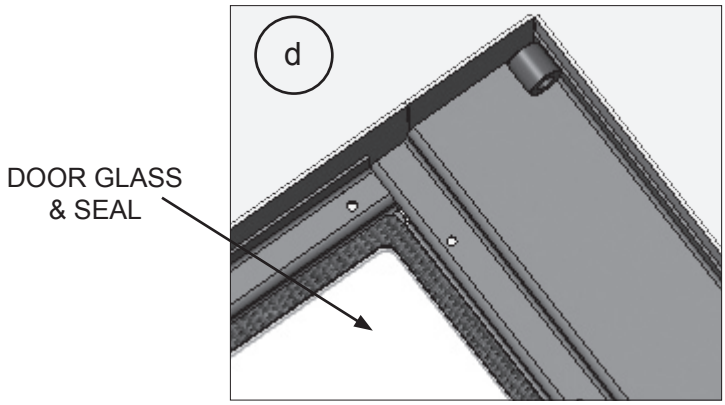
1: Determine the model of your wood heater from the badge on the front, and/or your invoice.
2: Obtain a new door glass, glass seal and door rope seal from your Ultimate dealer.
3: Remove the door assembly by opening the door then lift it up on the hinge pins. On some models it may be necessary to lift the top cover panel to facilitate removal of the door.
4: Lay the door flat on a table or bench with a protective carpet or mat to avoid scratching the paint finish. You might need to remove the door handle or let it hang over the end of the bench so that the door sits flat.
5: Remove the fibreglass rope seal **(a)** starting at the point where the two ends meet. Underneath the rope, the star screws holding the rope channels in place **(b)** will now be visible.
6: Using a medium star screwdriver (Also called a Phillips) remove all the screws holding the rope channels in place and store them in a safe place. Remove the rope channels.
7: Underneath the rope channels you will see the flat glass retainers **(c)**. Remove these, then carefully lift out the broken glass & its seal **(d&e)** and discard.
Keep the glass retainers to one side for re-assembly.
8: Brush off any dirt or ash from the frame, then fit the new glass in place. It should be a reasonably snug fit. Place the flat glass retainers in position, the put the rope channels over the top of them and fit the screws back into the holes making sure to pass through the matching holes in the glass retainers and the door frame. Tighten the screws starting with one corner, then diagonally accross to the opposite corner and so on.

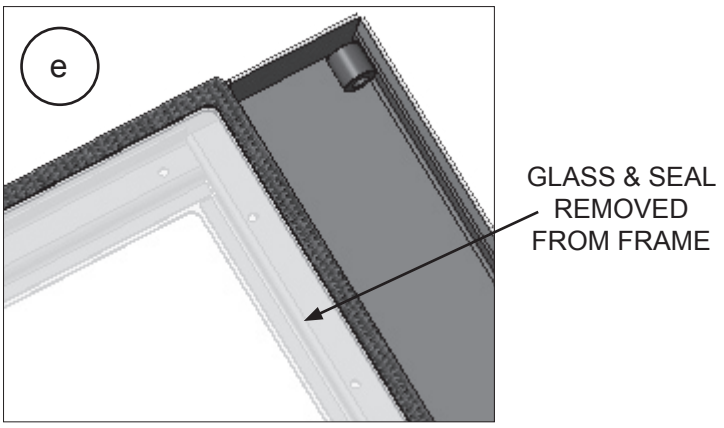
TIGHTEN SCREWS SLOWLY & EVENLY or the glass will break. Fit the new door rope seal and trim off excess rope. Re fit the door and adjust the handle washers if the door is too loose or tight. (See door handle adjustment.)











INSTALLATION

ULTIMATE RECOMMENDS THAT ONLY QUALIFIED PERSONS SHOULD INSTALL THESE APPLIANCES

If you wish to carry out the installation work on your heater yourself, you will need to obtain a copy of AS2918-2001, have the technical expertise to understand it, and be capable of performing the necessary work.

If you engage an installer, you should ensure that the person is recognised as being suitably qualified to competently and safely carry out installations.

WARNING

WARNING: THE APPLIANCE AND FLUE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH AS/NZS 2918 AND THE APPROPRIATE REQUIREMENTS OF THE RELEVANT BUILDING CODE OR CODES.

WARNING: APPLIANCES INSTALLED IN ACCORDANCE WITH THIS STANDARD SHALL COMPLY WITH THE REQUIREMENTS OF AS/NZS 4013 WHERE REQUIRED BY THE REGULATORY AUTHORITY, I.E. THE APPLIANCE SHALL BE IDENTIFIABLE BY A COMPLIANCE PLATE WITH THE MARKING 'TESTED TO AS/NZS 4013'

ANY MODIFICATION OF THE APPLIANCE THAT HAS NOT BEEN APPROVED IN WRITING BY THE TESTING AUTHORITY IS CONSIDERED TO BE IN BREACH OF THE APPROVAL GRANTED FOR COMPLIANCE WITH AS/NZS 4013

CAUTION: MIXING OF APPLIANCE OR FLUE SYSTEM COMPONENTS FROM DIFFERENT SOURCES OR MODIFYING THE DIMENSIONAL SPECIFICATION OF COMPONENTS MAY RESULT IN HAZARDOUS CONDITIONS. WHERE SUCH ACTION IS CONSIDERED, THE MANUFACTURER SHOULD BE CONSULTED IN THE FIRST INSTANCE.

CAUTION: CRACKED AND BROKEN COMPONENTS, e.g. GLASS PANELS OR CERAMIC TILES, MAY RENDER THE INSTALLATION UNSAFE.

APPROVED FLUE SYSTEMS

Ultimate Freestanding wood heaters have been tested and approved for use with the following flue systems:

Valley Flues Single Flue kit, consisting of Stainless steel active flue pipe with single outer galvanised casing.

Valley Flues Double Flue kit, consisting of Stainless steel active flue pipe with 2 outer galvanised casings.

COMPONENTS REQUIRED

The following components are required for a standard freestanding Ultimate woodheater installation.

1. Approved flue kit. (Valley Flues Flue Kit)
2. Flashing suitable for the type of roofing at the job site, e.g. Dektite rubber or lead flashing etc.
3. Floor protector or hearth if required as per AS/NZS 2918 3.3.2
4. Any extra flue or flue parts as determined at the initial site inspection.

TOOLS REQUIRED

Installers usually carry a wide variety of the tools necessary to install a wood heater however the basic requirements are listed below.

- Safety glasses & hearing protection
- Tape measure or builders rule.
- Sharp bladed knife.
- Compass or similar means to scribe large circles.
- Woodsaw.
- Plaster cutting saw.
- Tinsnips & hacksaw.
- Star and flat screwdrivers.
- Plumb bob.
- Angle grinder with tile & metal cutting blades.
- Drop sheet to protect appliance while working
- Electric Drill and drill bits or cordless drill.
- Pop rivet gun and stainless steel pop rivets
- Stainless steel self tapping screws (no: 8 or 10)
- Silicone sealant.

IN SOME INSTANCES YOU MAY REQUIRE OTHER TOOLS WHICH ARE NOT LISTED ABOVE.
When in doubt, consult your Ultimate dealer.

INSTALLATION

CONSOLE MODELS

FOR YOUR SAFETY ALL WOOD HEATER INSTALLATIONS MUST CONFORM TO AS/NZS 2918-2001 AND WHEN REQUIRED THE INSTALLATION SHALL BE APPROVED BY THE REGULATORY AUTHORITY. THE APPLIANCE SHOULD BE ASSEMBLED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS. ALL MANUFACTURERS INSTALLATION, OPERATION, AND MAINTENANCE INSTRUCTIONS SUPPLIED WITH THE APPLIANCE SHOULD BE LEFT WITH THE APPLIANCE AFTER WORK ON THE INSTALLATION HAS BEEN COMPLETED.

FLOOR PROTECTION

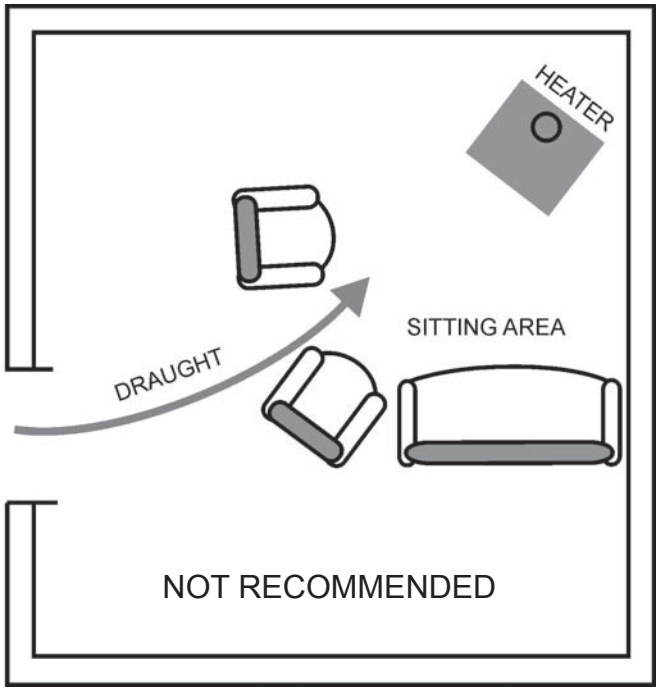
When installing an Ultimate freestanding wood heater on an unprotected combustible floor e.g. timber or carpet, it is not necessary to remove the carpet or protect the floor under the heater. **(See NOTE below)**

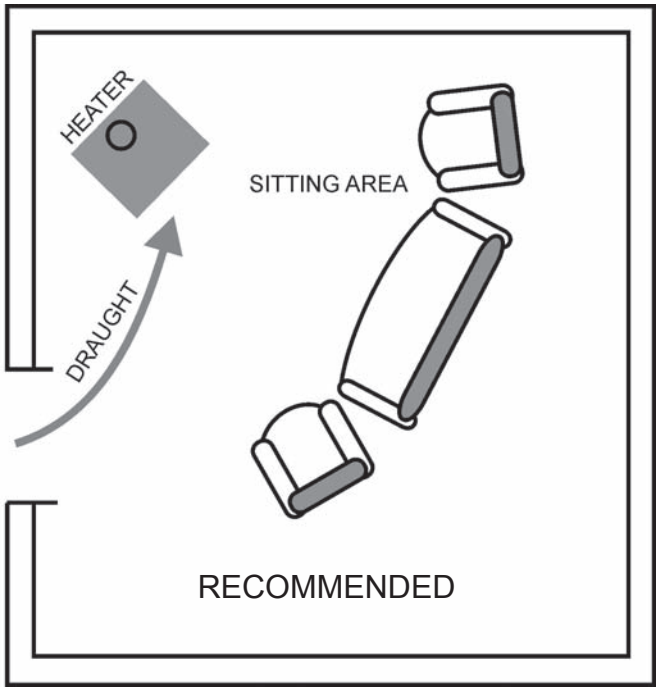
However an embers tray or hearth is required, **(which must be sealed to the front of the pedestal)** protruding 400mm from the front of the pedestal base and 200mm either side of the fuel loading opening.
(See CLEARANCES for more detail.)

The minimum requirement is that this embers tray or hearth shall be constructed of not less than 6mm F/C (Fibre Cement) sheet with 6mm (MIN) thick ceramic tiles attached to the upper surface.
NOTE: ***The above regulation does not apply to the models Cosy and Cottage. These models require full hearths underneath the heaters. (See CLEARANCES)***

POSITIONING THE HEATER

1. The first step with any wood heater installation is to detemine the best location for the heater. All heaters disperse warm air from the heater towards the ceiling and pull cooler air towards the heater near floor level. Try to locate the heater so that the cool draught does not flow across the main sitting area.
(See diagram below)





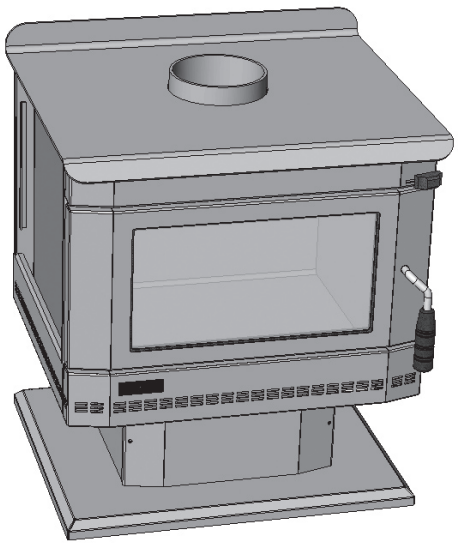
2. Once the optimal position for the heater has been decided, the installer will need to check the roof above to ensure that the flue pipe will pass through the ceiling and roof cavity centrally between rafters and clear of any main roofing timbers such as ridge beams. It is also a good idea to check the flue position outside in relation to surrounding buildings i.e. second storey extensions, or neighbouring buildings in close proximity to the desired flue termination as this can be influential in determining the required height overall of the flue system. (REFER TO FIGURE 4.9 Extract from AS/NZS 2918.)

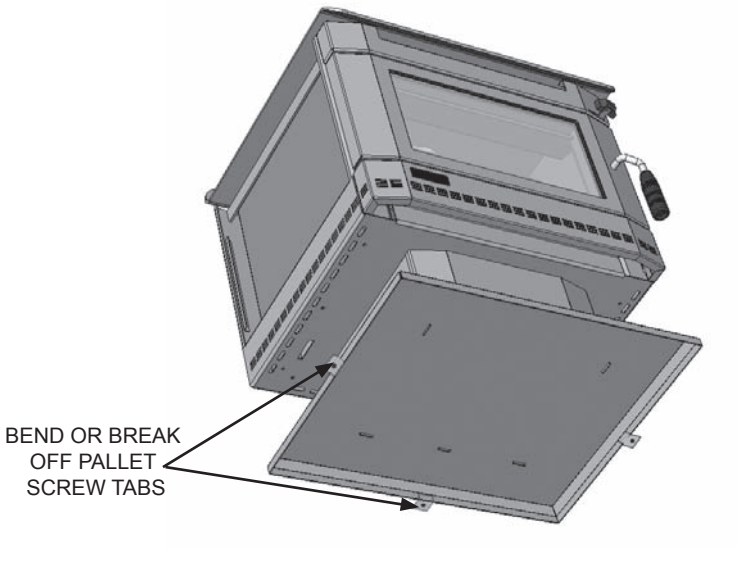
INSTALLATION

CONSOLE MODELS

3. **IMPORTANT - CHECK TO ENSURE THAT MINIMUM DISTANCES TO COMBUSTIBLES ARE MAINTAINED THROUGHOUT THE INSTALLATION. (See page 15.)**
Mark the position of the centre of the flue on the ceiling and make a small hole through the ceiling material. ***(The hole should be big enough to push a large nail or a screwdriver through so that the hole centre can be checked within the roof cavity before continuing.)***

4. Remove the carton and packaging from the heater.(Leave the plastic bag on to protect the heater during installation.)

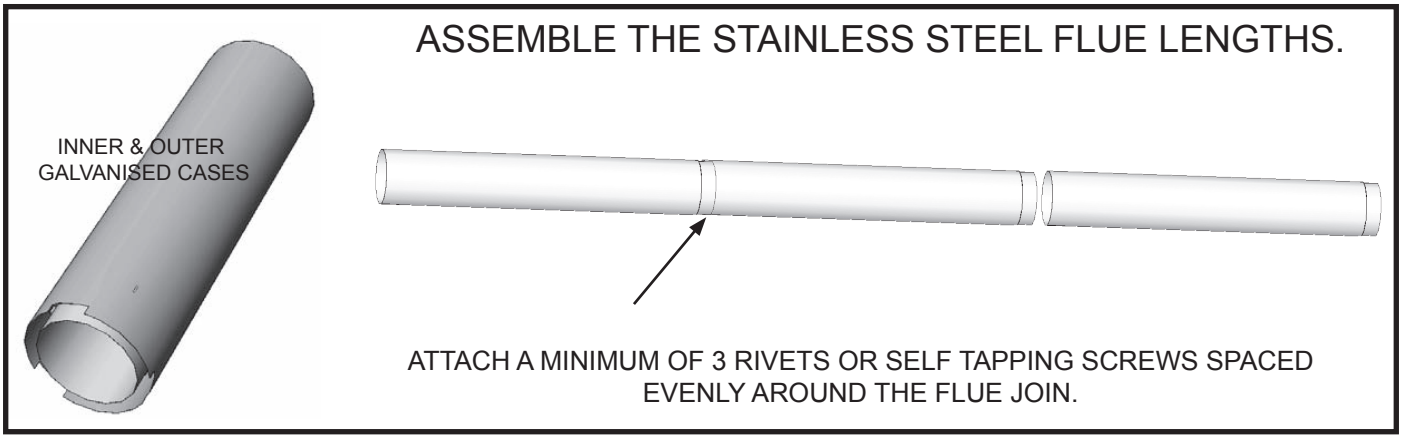




5. Remove the pallet screws (8mm hex head) and fold the tabs under the pedestal base or break them off (taking care not to damage the pedestal base.) Remove the heater from the pallet. The pallet can be chopped up and used as kindling for the first fire provided it is not made from treated pine.
6. If the heater is to be placed on a hearth or floor protector, the hearth or floor protector should be fitted now. Be sure to allow for the minimum required clearance to combustibles for the heater and hearth because it will be next to impossible to move the hearth once the heater is in position.
7. Place the heater in position and drop a plumb bob down from the small hole in the ceiling to align it with the flue spigot centre on the heater. Adjust the heater, or the hole position as necessary but make sure the heater stays the required distance away from combustible walls etc.
8. When satisfied with the heater and flue alignment, the hole for the ceiling ring can be marked and cut with a suitable saw or knife. Make sure hole size is as per the flue kit instructions.
9. Fit the ceiling ring from below, pushing it through the hole and then bending the three tabs down so that they catch firmly on the ceiling material. Ensure the ceiling ring is centrally located within the hole, with the required clearance between the ceiling ring vertical riser and the edge of the hole.
10. Use the plumb bob again to mark the centre point of the flue on the underside of the roofing material.
11. Drill a small hole through the roofing material at the centre point, then from outside, mark the hole size required for the outer flue case on to the roofing material. (The outer flue case can be used as a template.)
12. Cut out the hole through the roofing material for the outer case to pass through.
13. Inside the roof cavity place the two galvanised angle brackets across the roof joists on either side of the ceiling ring. Do not fit to joists yet. These brackets will be attached to the outer flue case to support the weight of the flue and prevent the outer case pushing the ceiling ring down.)
14. Assemble four lengths of stainless steel flue with stainless steel self tapping screws or rivets.
15. For a triple skin flue (Two outer galvanised cases) take the bottom length of outer (260mm dia. with three cutouts as shown next page) and attach to the inner (210mm dia with 3 spacer brackets) by drilling through the outer into the bracket and securing with a rivet or screw.

INSTALLATION

(CONTINUED FROM PAGE 10.)



16. Attach the previously joined length of inner & outer galvanised casing (vented end down, crimped end up)to the galvanised angle brackets with screws or rivets so that the vented end is approx 6mm short of touching the ceiling ring plate. This will prevent the outer flue assembly bearing down on the ceiling ring and possibly dislodging it when all the outer cases are attached.
17. Now remove the decorative cases from their plastic sleeves and push the top decorative length (NO LUGS) to the bottom section with the lugs. Keep the pattern aligned so that the solid section is at the rear and carefully push up through the ceiling ring until the bottom length with lugs can sit flat on the heater flue spigot. For high ceilings add more decorative flue above the first length.
18. Check for vertical alignment using a spirit level if necessary.
19. From the roof, lower the joined lengths of stainless steel flue crimped end DOWN through the galvanised casings and into the heater flue spigot.
20. Fit the flashing loosely over the outer cases, attach extra outer galvanised cases as necessary to satisfy the requirements of AS/NZS 2918 (FIG 4.9) then fit the cowl supplied with self tapping screws. Ensure the stainless steel riser on the cowl fits snugly into the last length of stainless steel flue pipe. Loose fitting cowls will not vent properly and may rattle during use.
21. After securing the flashing it is good practice to seal the vertical joins in the outer galvanised cases with a thin bead ofsilicone from the cowl to the flashing.
22. Finally check inside the roof cavity to ensure all clearances are correct and make sure no roof insulating material is close to the flue pipes. (Fitting a metal guard around the flue pipe will prevent loose insulation from coming in contact with the flue outer pipe. Details on requirements for a suitable guard can be found in AS/NZS 2918) Re-check the heater to combustible clearances, flue pipe alignment within the room and remove the protective plastic bag from the heater.
23. Check that the heater baffle plate is in position and any firebricks are correctly fitted.

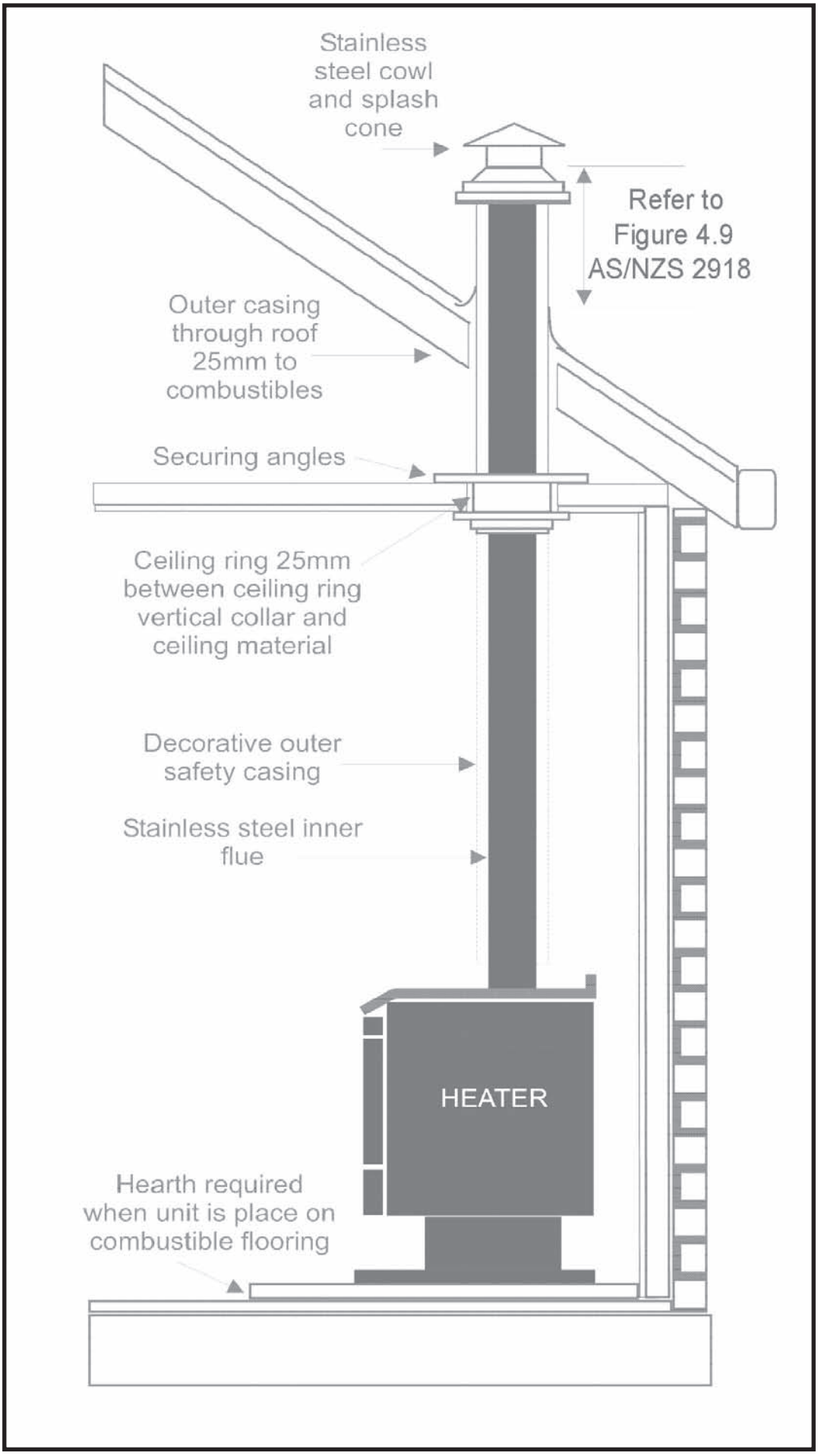
WARNING

THE FOLLOWING PAGES CONTAIN DIAGRAMS TO ASSIST IN THE INSTALLATION OF FREESTANDING ULTIMATE WOODHEATERS. THESE DIAGRAMS ARE INTENDED AS A GUIDE AND SHOULD ONLY BE USED IN CONJUNCTION WITH AS/NZS 2918.

ULTIMATE ENGINEERING AUSTRALIA PTY. LTD. AND ITS ASSOCIATED COMPANIES TAKE NO RESPONSIBILITY FOR THE INSTALLERS INTERPRETATION OF AS/NZS 2918 AND ANY OTHER RELEVANT CODES. QUERIES OR PROBLEMS WITH THE INSTALLATION OF AN ULTIMATE WOODHEATER SHOULD BE TAKEN UP WITH THE PERSON INSTALLING THE WOOD HEATER IN THE FIRST INSTANCE. ULTIMATE DOES NOT WARRANT ANY INSTALLATION PERFORMED BY PERSONS OTHER THAN AN ULTIMATE APPROVED INSTALLER. IT IS IN THE BEST INTERESTS OF THE OWNER THAT ANY WOODHEATER INSTALLATION IS PERFORMED BY AN APPROVED WOODHEATER INSTALLER.

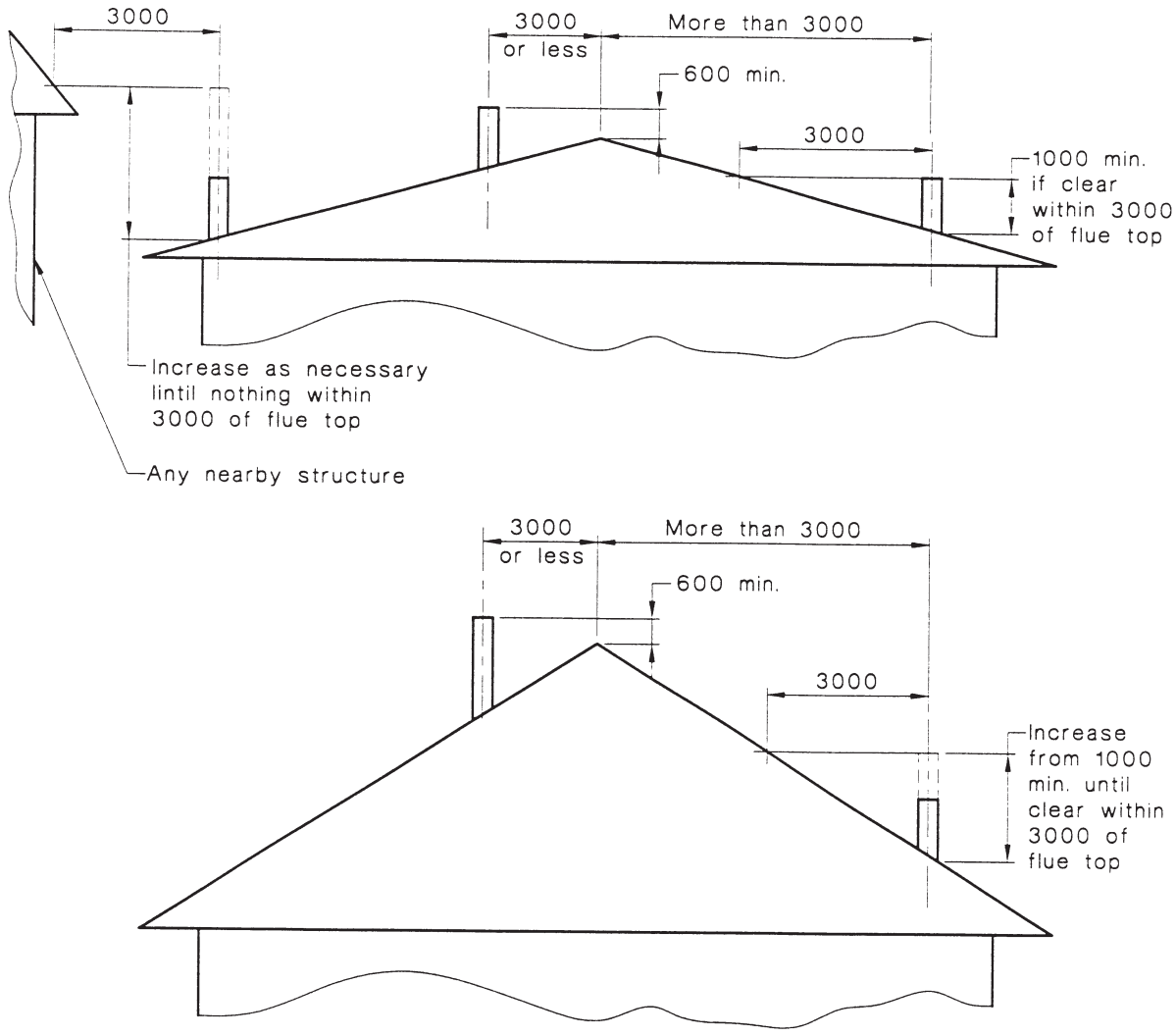
INSTALLATION

TYPICAL FREESTANDING INSTALLATION



INSTALLATION

FIGURE 4.9 EXTRACT FROM AS/NZS 2918



DIMENSIONS IN MILLIMETRES

MINIMUM HEIGHT OF FLUE SYSTEM EXIT

TEXT EXTRACT FROM AS/NZS 2918

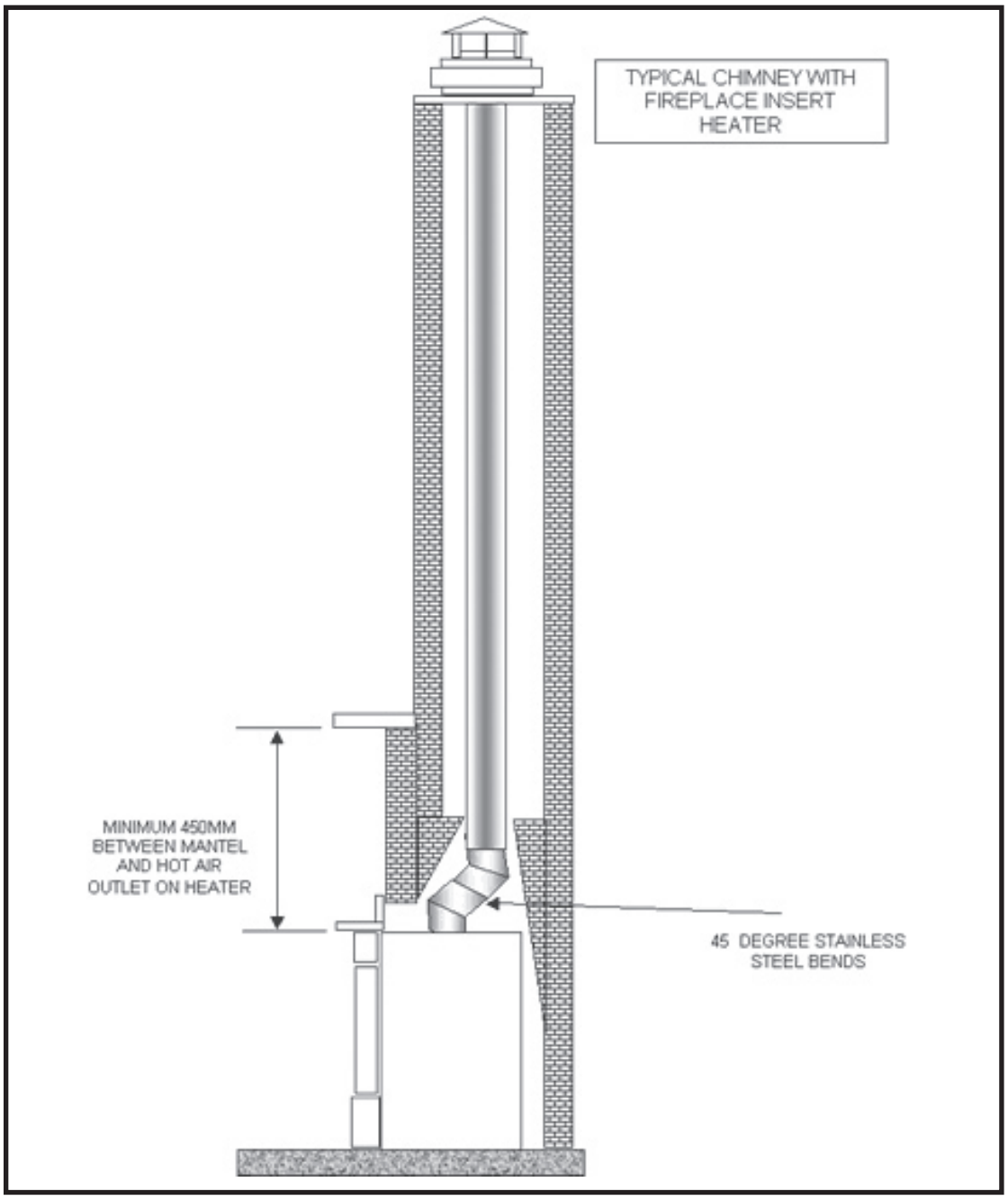
The flue exit shall be located outside the building (See Above) in which the appliance is installed so that-

(a) The flue pipe shall extend not less than 4.6m above the top of the floor protector.
(b) The minimum height of the flue system within 3m distance from the highest point of the roof shall be 600mm above that point.
(c) The minimum height of a flue system further than 3m from the highest point of the roof shall be 1000mm above the roof penetration.
(d) No part of any building lies in or above a circular area described by a horizontal radius of 3m about the flue system exit.
(e) Termination of the flue system does not constitute a risk of fire to heat sensitive materials.
(f) There is no foreseen risk of penetration of flue gases through nearby windows or other openings, fresh air inlets, mechanical ventilation inlets or exhausts, or the like.

INSTALLATION

INBUILT MODELS

IT IS A REQUIREMENT OF AS/NZS 2918-2001 THAT:
BEFORE INSTALLING THE APPLIANCE , THE FIREPLACE AND CHIMNEY SHALL BE THOROUGHLY CLEANED AND INSPECTED TO ENSURE IT IS IN A SOUND CONDITION.
The relevant building code should be used as a guide when assesing the condition of the fireplace and chimney.
IN AUSTRALIA, A FLUE PIPE SHALL BE INSTALLED WITHIN THE CHIMNEY IN ACCORDANCE WITH THE REQUIREMENTS OF AS/NZS 2918-2001 CLAUSE 4.11



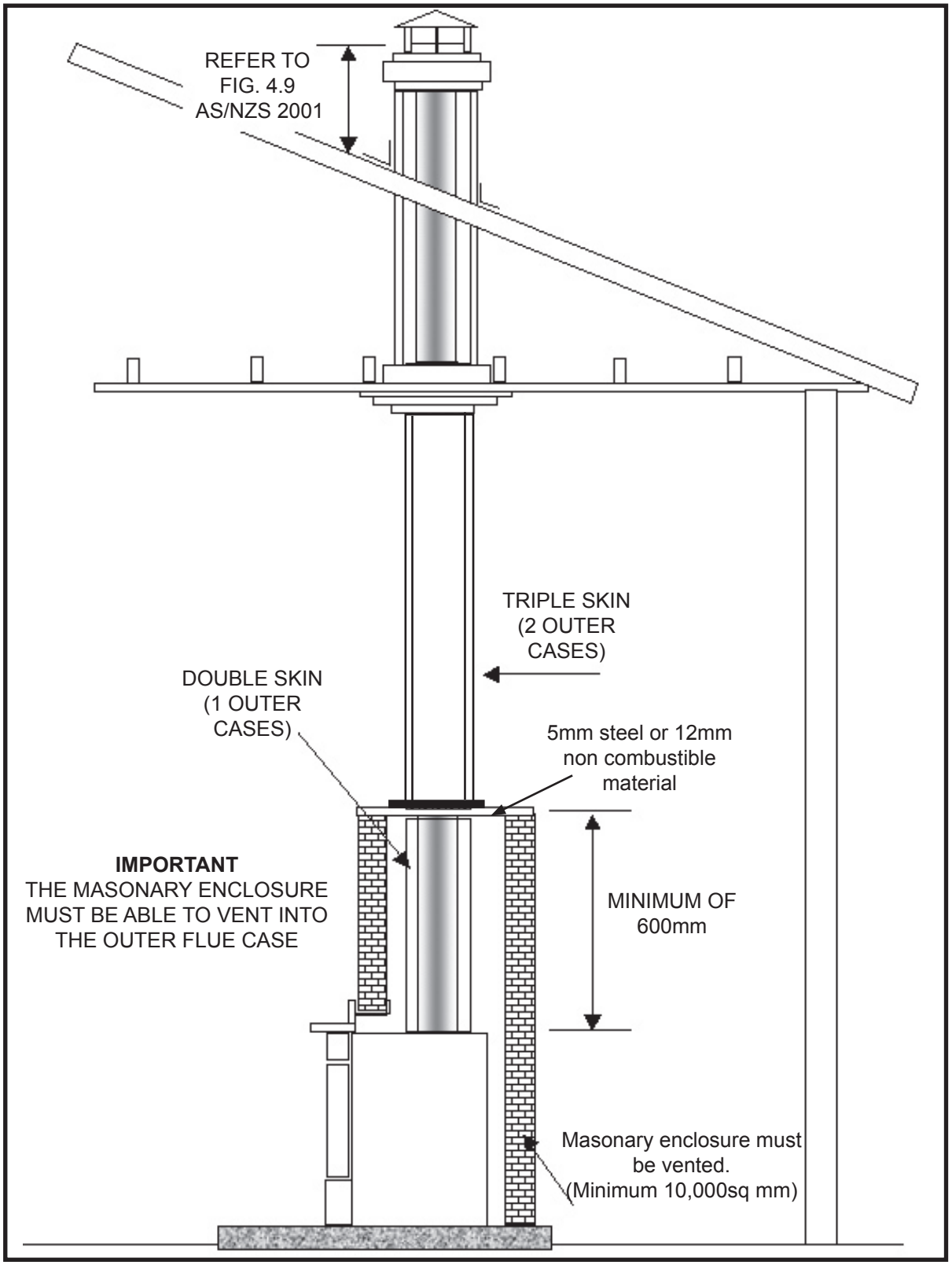
THE FLUE PIPE MUST EXTEND FROM THE HEATER OUTLET AND TERMINATE OUTSIDE THE CHIMNEY IN ACCORDANCE WITH AS/NZS 2918-2001 - CLAUSE 4.11
IN MANY CASES, OFFSETS OR BENDS WILL BE REQUIRED TO CLEAR OBSTRUCTIONS WITHIN THE CHIMNEY THROAT.
ANY OFFSETS OR BENDS USED MUST NOT IMPEDE NORMAL CLEANING OF THE FLUE PIPE.

A FLUE DAMPER MUST NOT BE FITTED TO THIS APPLIANCE.

INSTALLATION

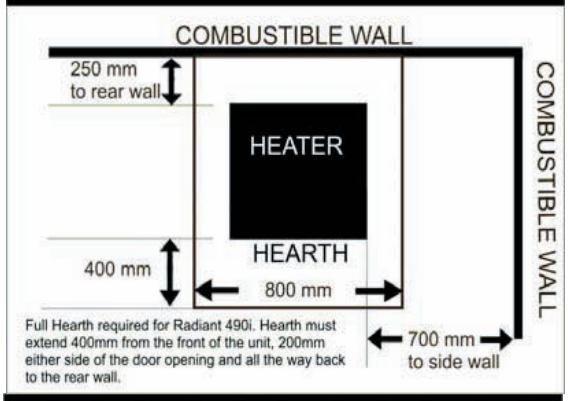
INBUILT MODELS IN MASONARY ENCLOSURES

A solid brick or masonary enclosure surrounds the heater on all sides and a minimum of 600mm above the heater outer case. an outer galvanised case (81/4" diameter) fits around the active stainless steel flue pipe within the enclosure. The enclosure is capped with either 5mm thick steel (MIN) or 12mm thick heat resistant material (MIN). Where the flue system passes through the capping of the enclosure (See Diagram) the flue shall be double cased (Triple skin) and ventilated through the capping, the ventilation coming from inside the enclosure.
Ventilation of not less than 10000 sqmm shall be provided near the base of the enclosure to permit a through flow of cooling air into the enclosure and up through the flue casing (See Diagram). The outer casing shall have the usual clearances to combustible materials.

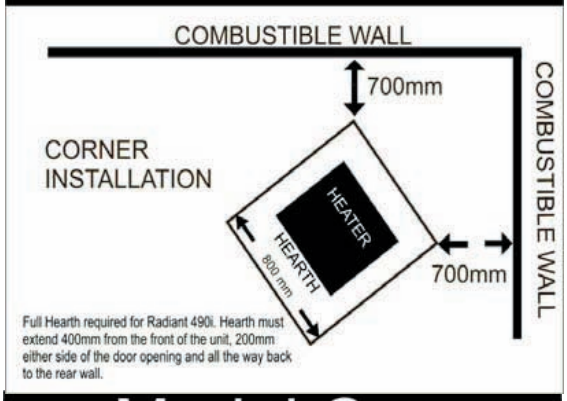


CLEARANCES

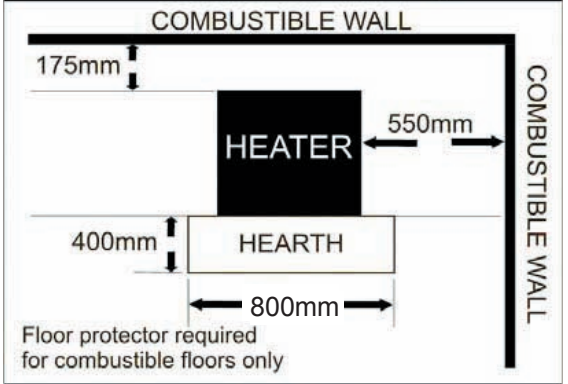
Model Radiant 490i



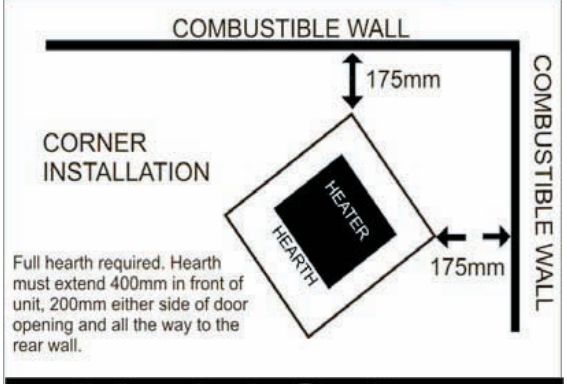
Model Radiant 490i



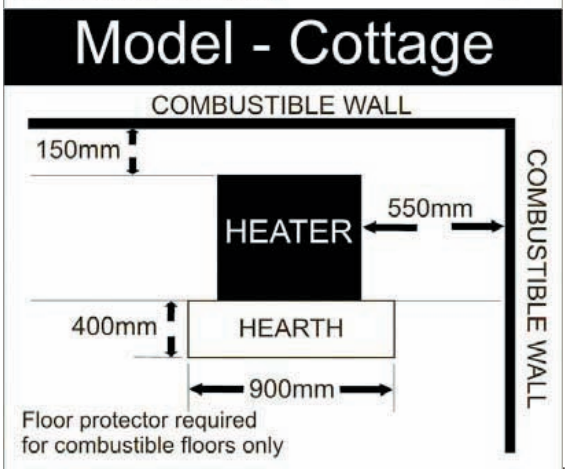
Model - Cosy



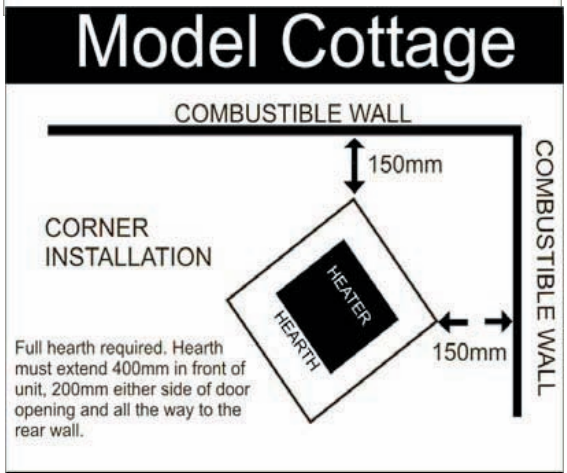
Model Cosy



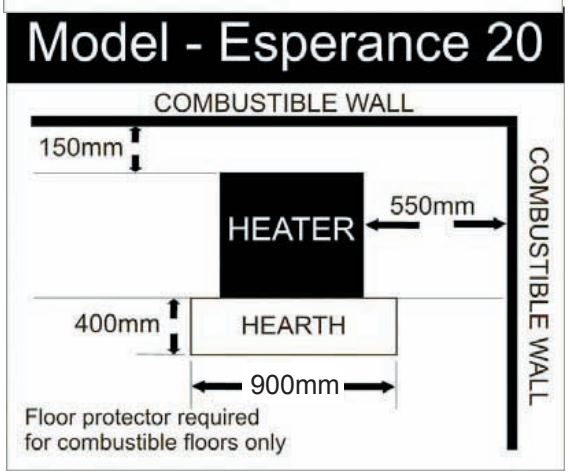
Model - Cottage



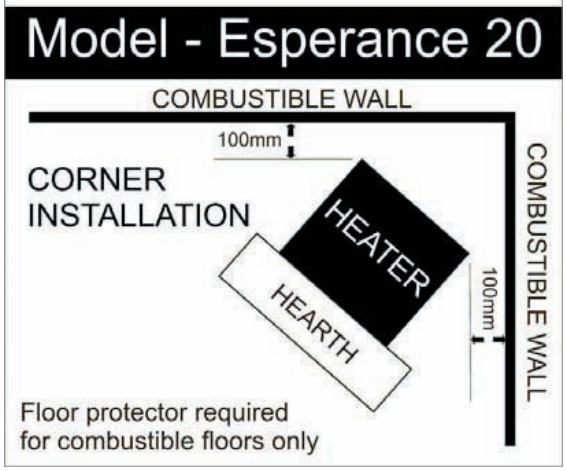
Model Cottage



Model - Esperance 20

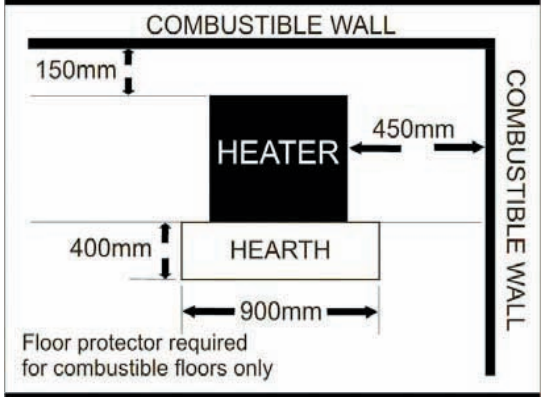


Model - Esperance 20



CLEARANCES CONT:

Model - Esperance 28



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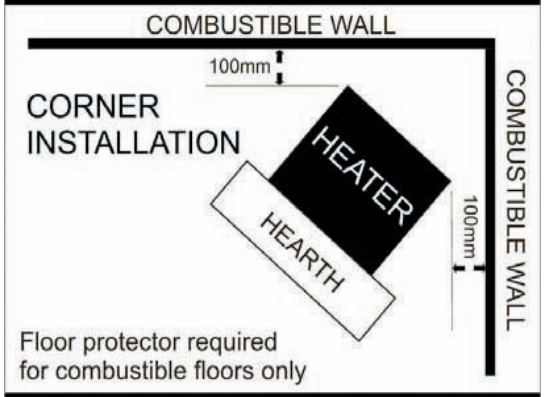
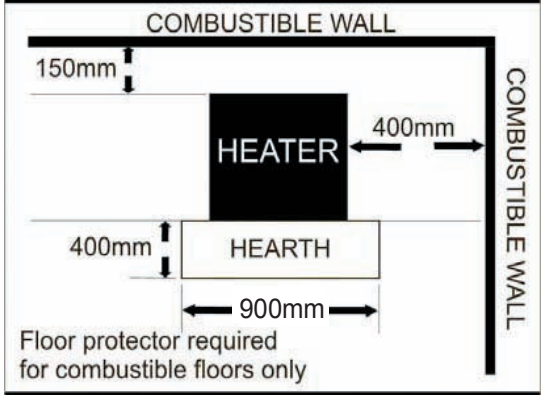
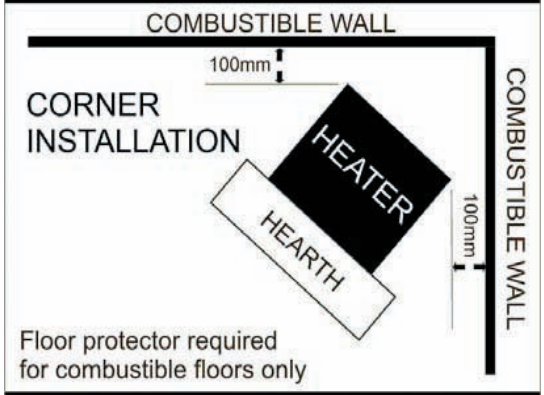


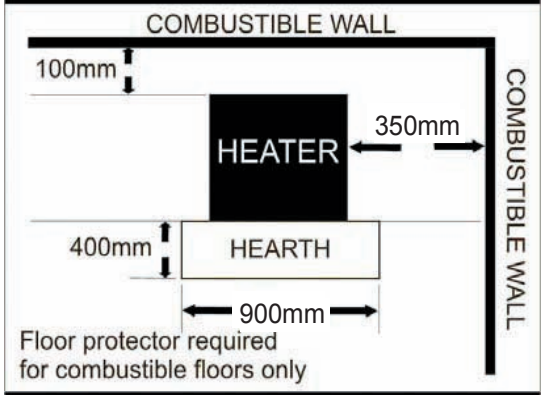
Model - Supreme 12



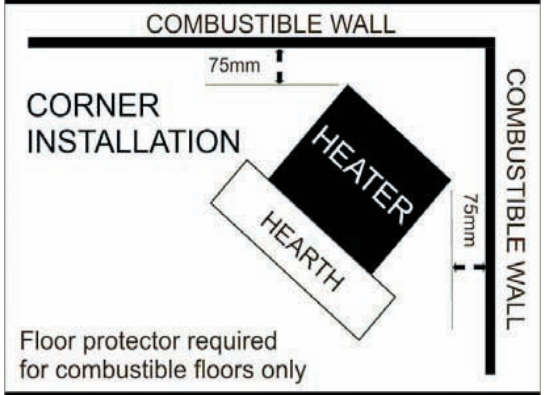
Model - Supreme 12



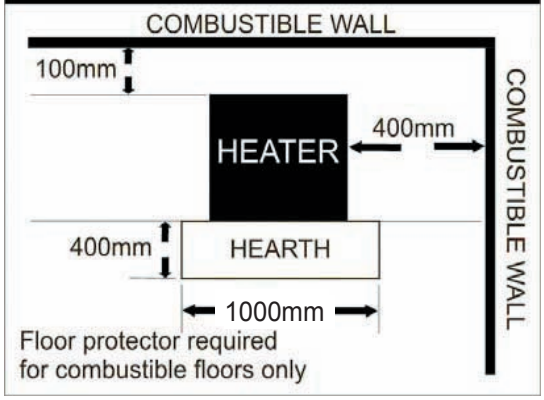
Model - Supreme 18



Model - Supreme 18



Model - Supreme 25



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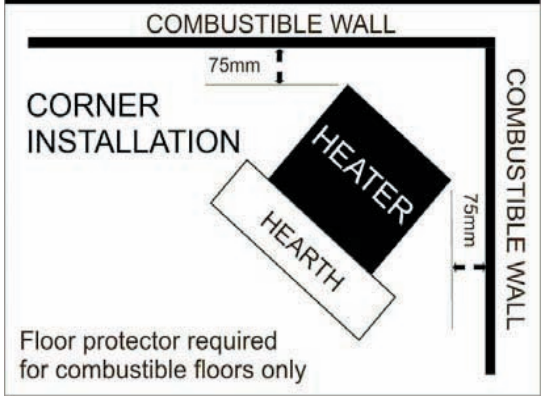
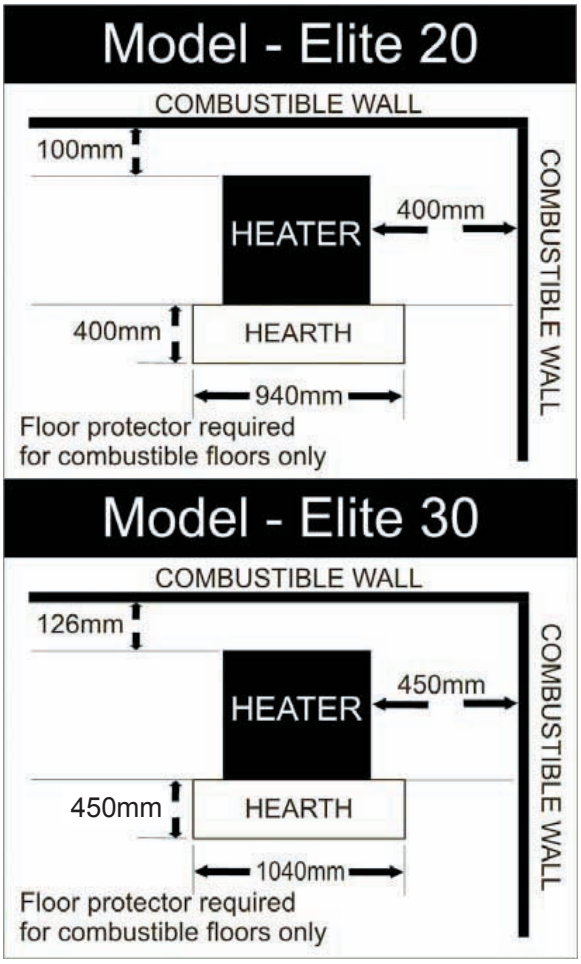
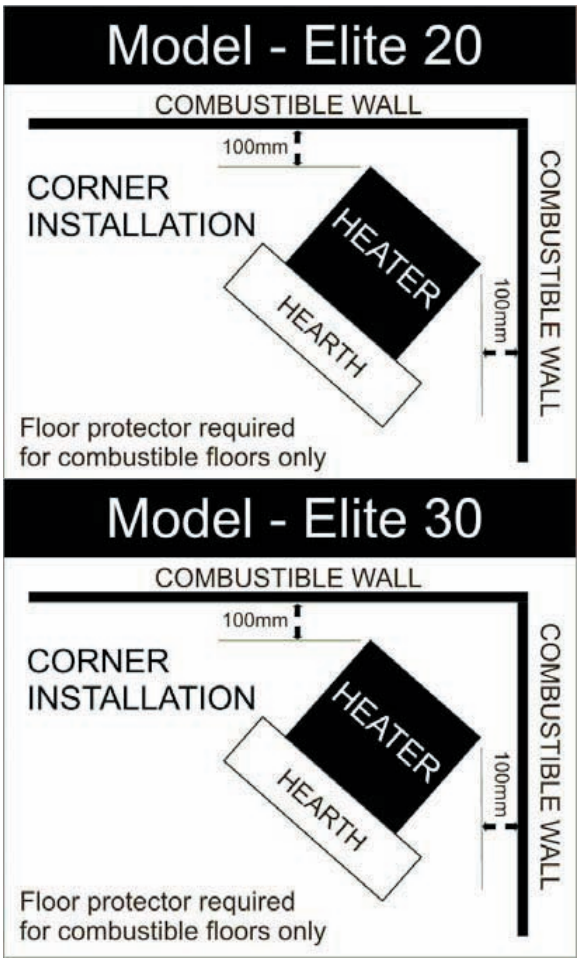


CLEARANCES CONT:





TROUBLE SHOOTING

PROBLEM: **Heater is burning too much wood**.
CAUSE: Primary air draft control open too far or low-density wood being used.
SOLUTION: Change to hardwood i.e. box gum

PROBLEM: **Heater produces drafty areas.**
CAUSE: Drafts are usually movements of cold air, as warm air circulation is not normally noticed. Using the fan before the heater is fully hot will cause drafts.
SOLUTION: Wait at least 30 minutes before turning the fan on. Make sure the primary air control is open fully.

PROBLEM: **Heater will not heat.**
SYMPTOM 1: Thick creosote on door glass.
CAUSE: Creosote is formed through moisture in the wood combining with gases. Wet wood will not produce a hot fire and should not be used.
SOLUTION: Change to dry wood.
SYMPTOM 2 **Fan blowing cold air.**
CAUSE: If the fan is switched on when the fire is not hot enough,air will pass over the firebox without being heated.
SOLUTION: Always wait at least 30 minutes After lighting the fire before switching on the fan. By doing so, the heater will be hot enough to heat the air being circulated by the fan and the problem of cold air will be eliminated.
PROBLEM: **Heater will not draw.**
SYMPTOM 1 Blocked flue.
CAUSE: The flue has become restricted due to the buildup of creosote which is usually the result of burning wet or green wood.
SOLUTION: Clean the flue. A chimney sweep may do this for you, or flue brushes can be obtained from your Dealer.

SYMPTOM 2 Deposits of ash or creosote on top of the baffle plate inside the heater.
CAUSE: Ash is drawn to the top of the firebox and settles on the baffle plate building up and restricting the flue outlet. Alternatively creosote deposits fall down the flue and settle there.
SOLUTION: This is quite normal. The flue should be inspected regularly & cleaned if necessary.
PROBLEM: **Heater creates a lot of ash.**
CAUSE: Some woods produce more ash than others . A heater burning hardwood such as box or redgum will require less cleaning than a heater burning pine. Experience will help determine how often the heater requires cleaning.
NOTE: Firewood that has had the bark removed will produce less ash .
SOLUTION: Change to hardwood.
PROBLEM: **Heater won't burn overnight.**
SYMPTOM 1 Deposit of unburnt wood in the firebox.
CAUSE: Green or wet wood being used.
SOLUTION: Change to dry wood & experiment with the primary air control in different positions until overnight burn is achieved.
SYMPTOM 2 Wood burnt completely away.
CAUSE: If the primary air control is open too wide, the wood will burn too quickly. Remember the less air reaching the fire, the longer the burn.
SOLUTION: Adjust the primary air control and try fitting some more wood in the firebox, or larger more solid pieces of timber.

Know Your Wood

(Forestry Commission of Victoria)

FIREWOOD DENSITY IN RELATION TO HEAT OUTPUT.

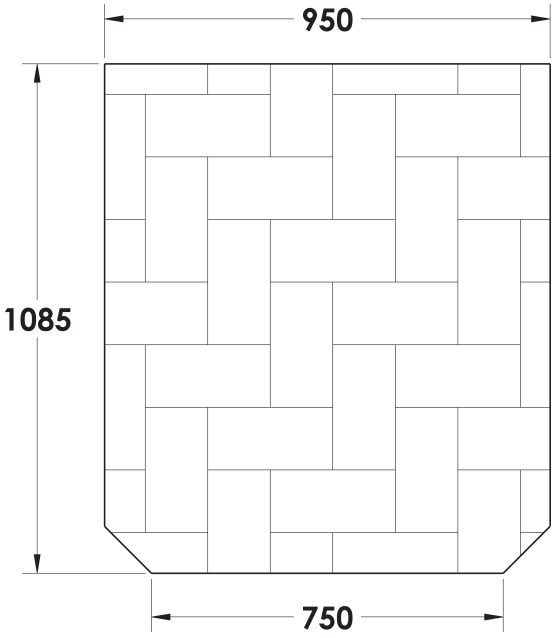
The denser the firewood, the more btus' (megajoules) it can produce provided moisture content & mass are relative. Australian hardwoods such as Grey Box, Mallee Roots and Black Box have a very high density and burn exceptionally well. Dry box wood has 2.25 times the density of Pine so double the volume of Pine is required to provide a similar amount of heat. As an example to show how different firewood can affect the performance of a heater, consider that dry Grey Box will produce around 85% more heat than the same amount of wet Radiata Pine. The following chart will give a good indication of heat output from various common firewoods.

Firewood Species (Botanical and Common Names)	Forest Type	Heat Available Per Unit Volume (%)	Density (Air Dry)	Splitting	Ignitability	Coals	Sparks	Availability	Calourific Value (Air Dry)
			lb/ft' kg/m,						B.T.UAb Mykg
Eucalyptus spp.Mallee Roots	Mallee	100	N.A.	Difficult	Poor	Excellent	Few	Limited	
Casuarina spp. Belah, Buloke	Mallee Box-Ironbark	100	70 1121	Good	Poor	Excellent	Few	Limited	7400 17.2
Eucalyptus microcarpa Grey Box	Box-Ironbark	100	70 1121	Difficult	Poor	Excellent	Few	Good	7400 17.2
Eucalyptus Laryiflorens Black Box	Box-Ironbark	100	69 1005	Difficult	Poor	Excellent	Few	Limited	
Eucalyptus sideroxylon Red Ironbark	Box-Ironbark	97	69 1005	Difficult	Poor	Excellent	Few	Good	
Eucalyptus melliodora Yellow Box	Box-Ironbark	91	65 1041	Difficult	Poor	Excellent	Few	Good	
Eucalyptus Polyanthemos Red Box	Box-Ironbark	91	67 1073	Difficult	Poor	Excellent	Few	Good	7400 17.2
Eucalyptus Leucoxylon Yellow Gum	Box-Ironbark		62 993	Difficult	Poor	Excellent	Few	Good	
Eucalyptus camaldulensis River Red Gum	River Red Gum	80	56 897	Difficult	Poor	Excellent	Moderate	Good	7600 17.7
Eucalyptus globulus Blue Gum	Foothill	80	61 977	Fair	Fair	Good	Few	Good	
Eucalyptus macrorhyncha Red Stringybark	Foothill	72	54 865	Good	Good	Good	Few	Good	
Eucalyptus radiata Narrow Leafed Peppermint	Foothill	68	50 801	Excellent	Good	Good	Few	Good	
Eucalyptus obliqua Messmate	Foothill	68	45 721	Good	Good	Good	Few	Good	
Eucalyptus regnans Mountain Ash	Mountain	53	42 673	Excellent	Excellent	Fair	Moderate	Good	
callitris columellaris White Cypress Pine	Box-Ironbark	60	42 673	Good	Excellent	Poor	Many	Limited	8000 18.6
Pinus Radiata Radiata Pine	Foothill Plantations	45	32 512	Fair	Exc		Many	Good	7700 17.9

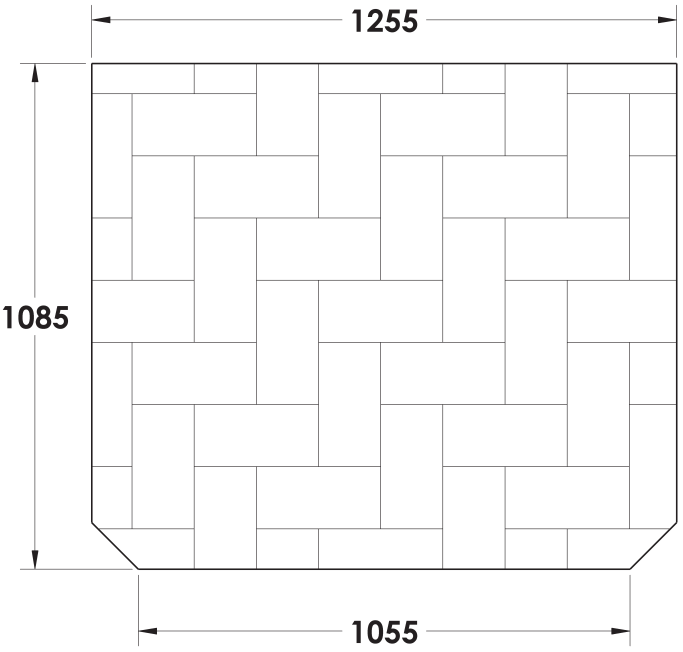
Extract From Victorian Solar Energy Council

STANDARD HEARTH SIZES

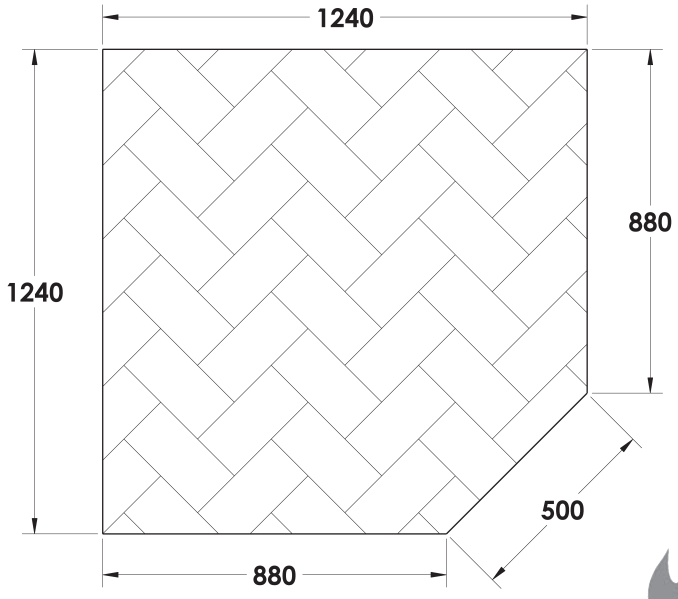
SMALL



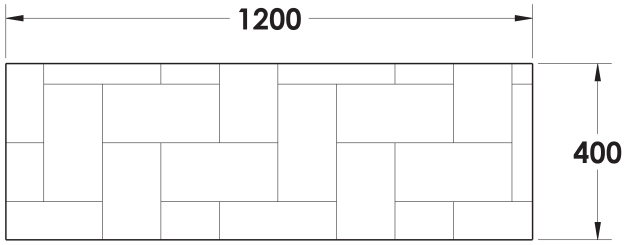
LARGE



CORNER



EMBER TRAY



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