Pellet Fire Solutions

Ravelli

visible flame | user friendly | leading design | healthy home | clean air approved | economical

Amalfi Wood Pellet Burning Heater Owner's & Installation Manual

PLEASE READ THIS ENTIRE MANUAL BEFORE INSTALLATION AND USE OF THIS PELLET BURNING ROOM HEATER. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN PROPERTY DAMAGE, BODILY INJURY, OR EVEN DEATH.

Contact your local building or fire official about restrictions and installation inspection requirements in your area.

Owner's Section

Table of Contents

1. Introduction

This manual is designed for both the technician and the home owner.

Please read this entire manual before installing or operating your Ravelli Amalfi Freestanding Wood Pellet Burning Heater. Failure to follow these instructions may result in property damage, bodily injury or even death. Any unauthorized modification of the appliance or use of replacement parts not recommended by the manufacturer is prohibited. All national and local regulations shall be complied with when installing this appliance. Your local dealer will be happy to assist you in obtaining information with regards to your local building codes and installation restrictions.

1.1 Specifications

1.1.1 Rating label Location

Ravelli Amalfi Freestanding: The rating label is located on the back of unit.

1.1.2 Specifications

Classification	Testing Standard	Description
Class I IP-20	Efficiency: AS/NZS 4012:1999 Appliance: AS/NZS 4013:1999	Residential Wood Pellet Heater
Voltage 220- 240 Volt	Current: 2.92 – 3.18 Amps	Frequency: 50Hz
Max Power Requirement 550 watts	Unit with full hopper: 185kg	Hopper Capacity: 25kg
Mean Flue Gas Temp – High: 181.5 degrees	Mean Flue Gas Temp- Medium: 153 degrees	Mean Flue Gas Temp- Low: 112 degrees
Fuel Consumption – High: 2 kg per hour	Fuel Consumption – Medium: 1.4kg per hour	Fuel Consumption – Low: 0.8kg per hour
Heat/Power Output – High: 8.4kw	Heat/Power Output – Medium: 5.9kw	Heat/Power Output – Low: 3.4kw
Average Particular Emissions (dry weight) 0.5gms per kg	Average Emissions Rate 29.9mg/MJ	Average Efficiency 79.8%
Gross Calorific Value of pellets (dry weight) 20.1MJ/kg	Fuel Type: Wood pellets – 6mm dia, - complying with draft standard AS/NZS 4014.6 2008	

*Note: Consumption will vary with the type of fuel used.

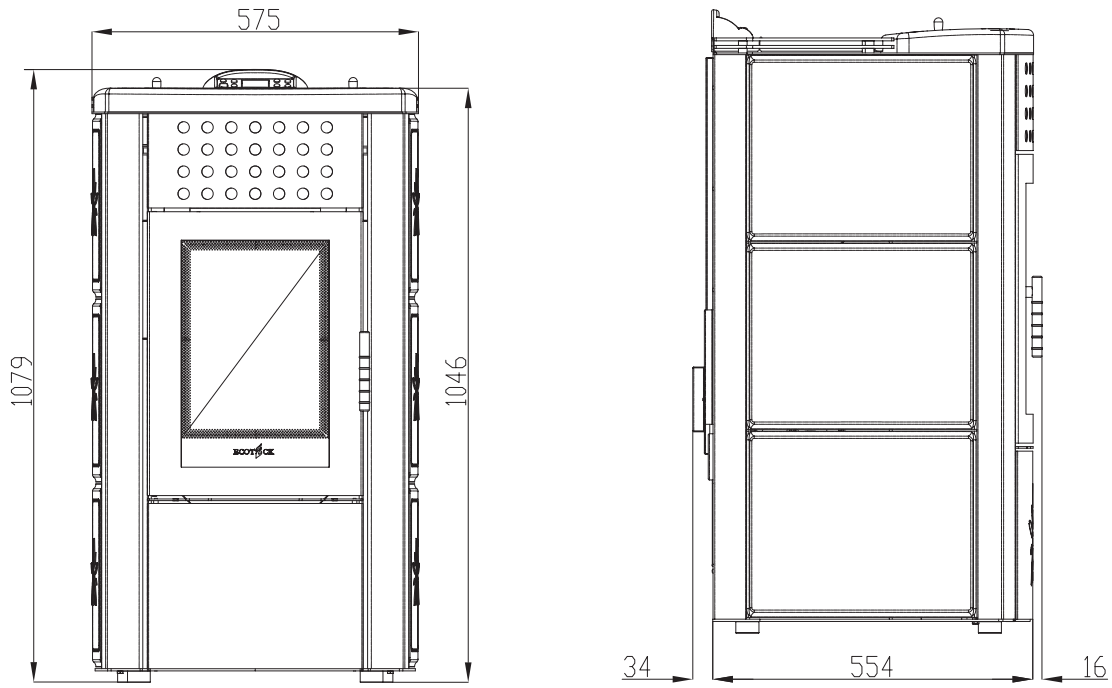
IMPORTANT: The above values were found during testing and may vary with the fuel type, climate and installation style.

1.1.3 Floor Protection

This pellet heater requires floor protection which must be non-combustible, extending beneath the stove the full width and depth of the unit including (150mm) in front for ember protection.

AS/NZS 2918:2001 states that a 300mm forward projecting and 200mm side projecting floor protector must be used from any door opening extremity as an absolute minimum. Due to the operating nature of the Amalfi pellet heater where opening the door causes a loss of vacuum and the fire will shut down completely, meaning the likelihood of any hot embers or burning fuel escaping from the combustion chamber is extremely minimal, a 150mm forward projecting floor protector will be sufficient.

1.2 Measurements



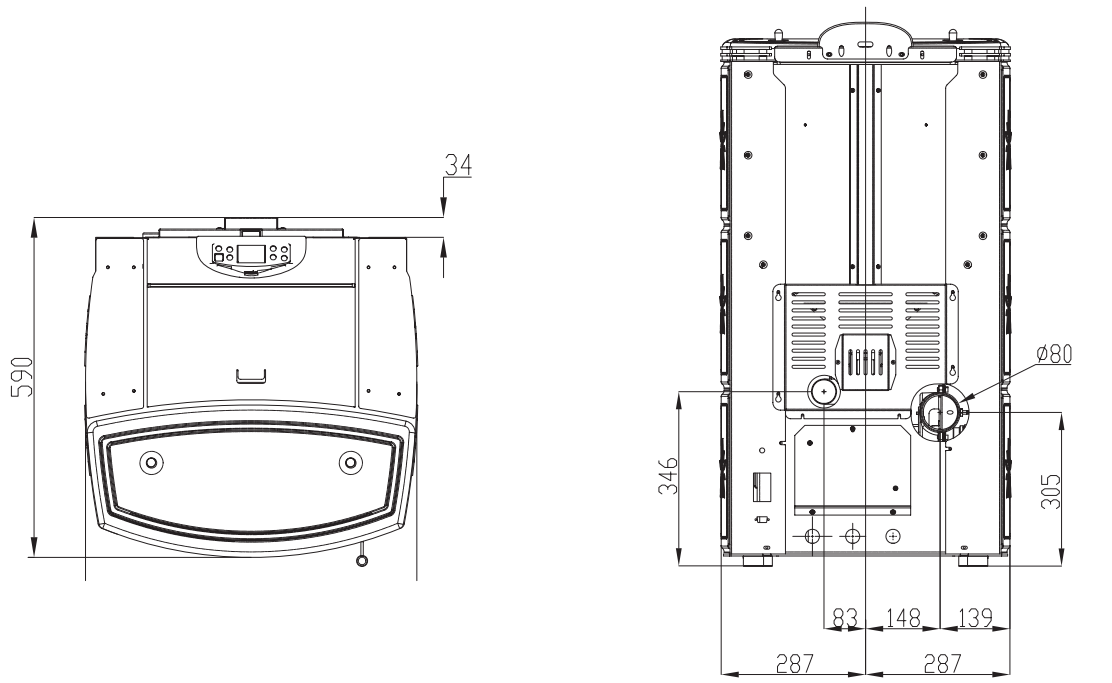


Figure 1.

2. Safety Warnings & Recommendations

Pellet quality is important, please read the following:

Your pellet heater has been designed to burn ¼" (6mm) diameter wood pellets, manufactured to the AS/NZS 4014.6 only.

DO NOT use this appliance as an incinerator.

DO NOT use unsuitable and non recommended fuels, including liquid fuels as this will void any warranties stated in the manual.

The performance of your pellet heater is greatly affected by the type and quality of wood pellets being burned. As the heat output of various quality wood pellets differs, so will the performance and heat output of the pellet stove.

Caution: It is important to select and use only pellets that are dry and free of dirt or any impurities such as high salt content. Wood pellets manufactured to the AS/NZS 4014.6 standard are recommended. Dirty fuel will adversely affect the operation and performance of the unit and will void the warranty. The Pellet Fuel Industries (PFI) has established standards for wood pellet manufacturers. We recommend the use of pellets that meet or exceed these standards. Ask your dealer for a recommended pellet type.

2.1 Deciding where to locate your wood pellet burning heater

1. Do not install the pellet heater in a bedroom or room where people sleep.
2. Locate the pellet heater in a large and open room that is centrally located in the house. This will optimize heat circulation.
3. Check clearances to combustibles (refer page 30).

2.2 Ash

The ash content of the fuel and operation of your stove will directly determine the frequency of cleaning. The use of high ash fuels may result in the stove needing to be cleaned daily. A low ash fuel may allow longer intervals between cleaning.

2.3 Clinkering

Clinkers are silica (sand) or other impurities in the fuel that will form a hard mass during the burning process. This hard mass will block the air flow through the Burn Pot Liner and affect the performance of the stove. Any fuel, even approved types, may clinker. Check the Burn Pot Liner daily to ensure that the holes are not blocked with clinkers. If they become blocked, remove the liner (when the unit is cold) and clean/scrape clinkers out. Clean the holes with a small pointed object if required. Refer to the section Routine Cleaning and Maintenance.

2.4 Filling Fuel Hopper

Check hopper for foreign objects, then empty the bag of pellets into the hopper (see "Figure 18." on page 23). DO NOT OVER FILL as miscellaneous pellets could smoke if left to rest on an operating heater.

Store pellets at least one metre (1m) away from the pellet stove.

Warning: parts of the appliance, especially the external surfaces, will be hot to touch when in operation so use due care.

2.5 Flammable Liquids

Never use gasoline, gasoline – type lantern fuel, kerosene, charcoal lighter fluid or similar liquids to start or “freshen up” a fire in the heater. Keep all such liquids well away from the heater while it is in use.

2.6 Installation

The stove must be installed and tested by specialised approved personnel only. Please read this manual before installing or operating the stove. If you require further information, please contact your dealer. Installation must be performed by authorized personnel, who must give the purchaser a declaration of conformity of the appliance, and who will assume all responsibility for the final installation and consequent correct functioning of the product installed. It is also necessary to take into consideration all the laws and national, regional, provincial and local regulations present in the country in which the appliance has been installed. In the event of failure to respect these precautions, Pellet Fire Solutions declines all responsibility.

IMPORTANT:

- The place of installation of the heater must comply with local & national regulations. The stove must be fuelled only with quality pellets manufactured to standard AS/NZS4014.6. The stove cannot operate with traditional wood.
- The heater must not be used as an incinerator.
- Before connecting the heater electrically, the connection of the exhaust spigot must be completed (specifically for pellet stoves, not made from aluminum) with the flue. (All flue joins must be sealed with maniseal exhaust cement).
- The protection grill inside the pellet tank must never be removed.
- There must be sufficient circulation of air in the room where the stove is installed. Never open the door of the stove whilst it is functioning.
- When the heater is operating, the surfaces, the glass, the handle and the pipes become overheated: during functioning, these parts must only be touched with the adequate protection.
- Do not light the heater without having first performed the daily inspection as described in the MAINTENANCE & CLEANING chapter of this manual (see page 18).
- Scrupulously follow the maintenance program.
- Do not turn the heater off by disconnecting the electricity mains supply (use the control panel or remote control).
- Do not clean the heater until the structure and the ashes have cooled down completely. Carry out all operations in maximum safety.

Amalfi requires a power source to function. This is standard mains feed 240v plug - if this is unavailable in close proximity a grounded extension lead may be used.

Amalfi is to be installed on a non-combustible surface which must have a forward projection of a minimum of 150mm from the glass door.

Please check all clearances to combustibles as listed on page 30 of this Owner’s/Technical manual.

In accordance with the requirements of AS/NZS 2918:2001 Amalfi must be secured by seismic restraint.

2.7 Operating Instructions

The heater is completely automated and will self-regulate the ignition phase, five levels of power and

the switching off phase, guaranteeing safe functioning. The burn pot used for combustion allows most of the ashes produced by the combustion of the pellets to fall into the collection drawer. However, it is recommended that you check the burn pot every day, as not all pellets have high standards of quality and could leave residue that is difficult to remove. The glass has special air circulation for self-cleaning, however, a slight greyish film cannot be avoided after a few hours of functioning. Pellets with a diameter of 6mm, manufactured to the AS/NZ4014.6 or higher must be used with the stove.

2.8 Safety Devices

The heater is fitted with sophisticated safety systems so that, in the case of breakage of one of the individual parts or defects in the flue, no damage will be caused to the stove and the room in which it is installed. In any case, when a problem arises, the pellets stop falling immediately and the switch off phase is activated. The corresponding alarm will be shown on the display. The details can be seen in the chapter on the alarms (page 16).

2.9 Responsibility

Pellet Fire Solutions declines all responsibility, both civil and criminal, with the delivery of this manual, for any accidents deriving from partial or total failure to observe the instructions it contains.

Pellet Fire Solutions declines all responsibility deriving from the improper use of the stove, from its incorrect use by the user, by unauthorised modifications and/or repairs or from the use of spare parts which are not original. The manufacturer declines all direct civil or criminal responsibility due to:

- Poor maintenance.
- Failure to observe the instructions in the manual.
- Use not compliant with the safety instructions.
- Installation that is not compliant with the regulations in force in the country.
- Installation by personnel who are not qualified or authorized.
- Modifications and repairs that are not authorized by the manufacturer.
- Use of spare parts that are not original.
- Exceptional events.

2.10 Spare Parts

Use original spare parts only. Do not wait for the components to be worn before replacing them. Replace a worn component before it is completely broken to prevent any accidents caused by the sudden breakage of components. Perform the periodic maintenance checks as described in the dedicated chapter on “Maintenance and Cleaning” on page 18

3. Operating your Pellet Fire

3.1 Description of the Controls

P1 : Turns heat level down
P2 : Turns heat level up
P3 : Turns fiire on-off
P4 : Turns thermostat down
P5 : Turns thermostat up
P6 : Decrease water temperature
P7 : Increase water temperature

Figure 2.

3.2 Switching on the Stove

1. Before switching the stove on, proceed as follows:
2. Plug in the power lead.
3. Put the switch at the back of the stove in position 1.
4. Check that the plant is connected to the flue.
5. Make sure that the hydraulic plant has been installed correctly by a technician and that the boiler has been filled with water and bled correctly as described in chapter 2.9.3 of the Installation Section at the back of this manual.
6. Fill the tank with 6-mm pellets as described in “Figure 18.” on page 23.
7. Load the screw as described in chapter “3.4 Priming of the Screw (Auger)” on page 10.
8. Press key P3 for 3 seconds.

At this point the thermostove will carry out the ignition phase. The following messages will appear on the screen:

- ON
- LOAD PELLET
- WAIT FOR FLAME
- FLAME PRESENT
- WORK

During the working phase, you must check the following settings:

- POWER SETTING as described in chapter 3.10.1 on page 14.
- ROOM TEMPERATURE SETTING as described in chapter 3.11.1 on page 14.
- BOILER WATER TEMPERATURE SETTING as described in chapter 3.12 on page 15.

3.3 Operating Precautions

- In case of faulty operation turn the stove off pressing button no. 3.
- Do not manually load the fire pot with pellets.
- Any build up of unburned pellets inside the fire pot after repeatedly trying to light the stove, must be removed before further attempts.
- Do not use any fuels other than wood pellets.
- Should the ignition system be faulty, do not attempt to light the stove using flammable materials.

3.4 Priming of the Screw (Auger)

To prime the screw/auger (when the stove is new or has been completely run out of fuel, the loading screw/auger is empty), proceed as follows:

1. Turn the stove off completely, using the general switch on the back
2. The display will show FINAL CLEANING and then OFF.
3. Turn the the power back on, using the general switch on the back.
4. Keep button P4 pressed for 2 seconds. CLOCK SETTING MENU will appear.
5. Press button P5 until the display shows STOVE STATUS MENU

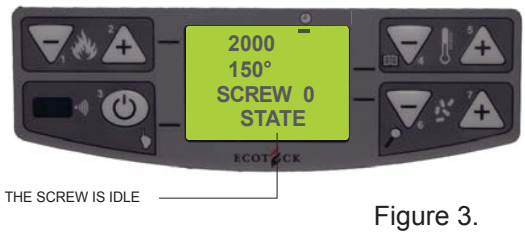


Figure 3.

PRESS BUTTON P5 TO ACTIVATE THE SCREW (AUGER)

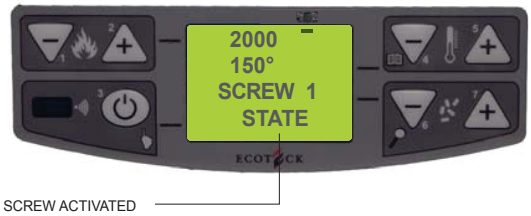


Figure 4.

Repeat the operation several times until you can see the pellets fall into the fire pot.

This operation is possible only if the stove is in final cleaning or shut down

IMPORTANT	**AFTER LOADING THE SCREW/AUGER, EMPTY THE FIRE POT INTO THE HOPPER BEFORE SWITCHING ON.**

3.5 Description of Menus

The stove has various functions, available in its individual programming menus. Some of these menus are accessible by the user, others are protected by a password and accessible only by a Service Technician.

The menus are as follows:

- CLOCK SET Menu
- TIME SET Menu
- LANGUAGE Menu
- STOVE STATUS Menu
- WORKING HOURS Menu
- SEE CALIBRATIONS Menu
- DATABASE Menu (protected by password)
- TIME CANCELLATION Menu (protected by password)
- FACTORY CALIBRATIONS (protected by password)

3.6 Setting the Clock (Clock Set Menu)

Proceed as follows to set the current time:

1. Switch the power supply to the thermostove on and off using the main switch at the back of the stove.
2. The display will display FINAL CLEANING and then OFF.
3. Keep key P4 pressed for 2 seconds. The message CLOCK SET MENU will appear. Confirm with key P6 to gain access.
4. The message UT01 CLOCK DAY will appear on the screen and a day of the week (from DAY1 to DAY7): using keys P4 and P5 set the current day and press key P6 to confirm.

Display	Meaning
Day 1	Monday
Day 2	Tuesday
Day 3	Wednesday
Day 4	Thursday
Day 5	Friday
Day 6	Saturday
Day 7	Sunday

If OFF is set, the chronothermostat will be disconnected.

5. The message UT02 CLOCK TIME will appear on the screen together with the current time: using keys P4 and P5 adjust the time and confirm with key P6
6. The message UT03 CLOCK MINUTES will appear on the screen: using keys P4 and P5 adjust the minutes and confirm with key P6.
7. To return to the initial menu press key P3.

3.7 Chronothermostat Setting Menu

With the chronothermostat function, switching on and off the stove for each day of the week can be programmed in two independent time intervals (PROGRAMME 1 and PROGRAMME 2). To enter this menu, proceed as follows:

1. Keep button P4 pressed for 2 seconds, CLOCK SETTING MENU will appear,
2. Press button P4 once; the display will show CHRONOTHERMOSTAT SETTING MENU
3. Access with button P6: the display will show the screen desired.

If this black segment is not lit on the display corresponding with the clock symbol, no programming will be possible.

To activate it refer to the chapter dedicated to setting the current day, since the value must not be OFF.

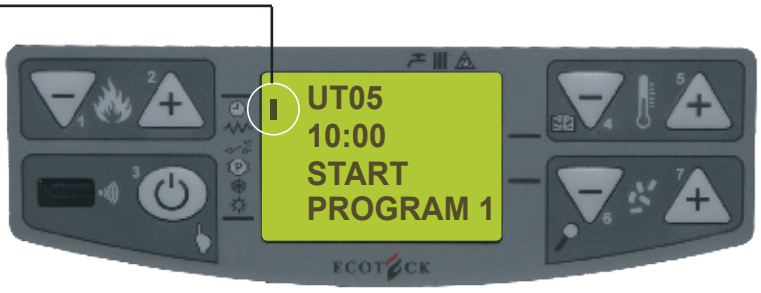


Figure 5.

The strings that appear on the display go from UT05 to PR40. A setting from a program corresponds to each string.

Strings	Description	Values that can be set
UT05	START PROGRAM 1	From 00:00 to 23:50 at steps of 10’
UT06	STOP PROGRAM 1	From 00:00 to 23.50 at steps of 10’
UT07	DAYS ON 1	Between on/off for days 1 to 7
PR36	POWER PROGRAM 1	From 1 to 5
UT09	START PROGRAM 2	From 00:00 to 23:50 at steps of 10’
UT10	STOP PROGRAM 2	From 00:00 to 23:50 at steps of 10’
UT11	DAYS ON 2	Between on/off for days 1 to 7
PR40	POWER PROGRAM 2	From 1 to 5

3.7.1 Description Of The Strings

UT05: This parameter shows the switch ON time of Programme 1.

UT06: This parameter shows the switch OFF time of Programme 1 (this must be at least 60 minutes after UT05)

UT07: With this parameter we set which day you want Program 1 and 2 to be active.To set this parameter, proceed as follows: set with button P5 the days desired (Monday is 1, Tuesday is 2, etc) and with button P4 select ON or OFF; if you select OFF the programming set will not be activated on the days desired; if you select ON the programming will be valid. At the and of this setting, press P6 to go to next programme.

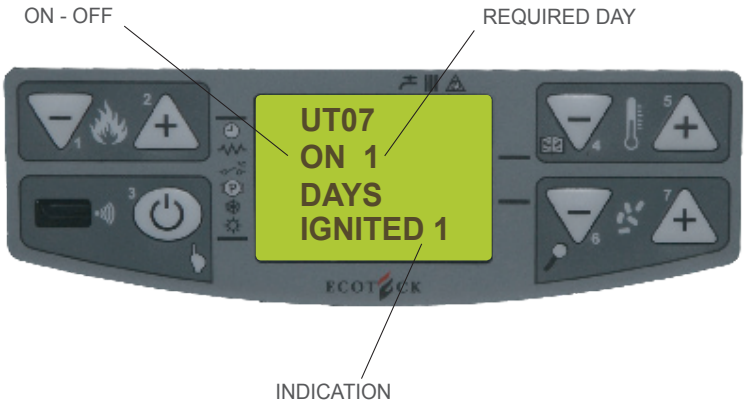


Figure 6.

PR36 Parameter shows the operting power when PROGRAM 1 is being executed

UT09 This parameter shows the time PROGRAM 2 comes on.

UT10 This parameter shows the time PROGRAM 2 goes off (it must be at least 60 minutes after UT05)

UT011 This parameter we decide on which days we want PROGRAM 2 to be on.

PR40 This parameter shows the operating power when PROGRAM 2 is being executed.

Example

Display this screen as described in chapter 3.7. Set the time you want PROGRAM 1 to come on with keys P4 and P5. Press key P6 to confirm and go on to string UT07. (if you make a mistake, press key P7 to go back one step)

Figure 7.

Set the time you want the PROGRAM 1 to go off with keys P4 and P5. Press key P6 to confirm and go on to string UT07.

Figure 8.

Let us suppose we want to turn the stove on at 06:00 and switch it off at 08:30 (PROGRAM 1) and that we want to switch it on again at 16:00 and switch it off at 22:00 (PROGRAM 2). Programming will be as follows:

Set the days you want PROGRAM 1 to be on or off using key P5. At this point set the on/off value that switches PROGRAM 1 on or off using key P4. Repeat this operation for every day of the week.

Figure 9.

At this point you must decide on which days you want the programming carried out above to be active. Let us pretend that PROGRAM 1 is active on Mondays and Wednesdays, while it is off on all the other days. Programming will be as follows:

		Day 1 Monday	Day 2 Tuesday	Day 3 Wednesday	Day 4 Thursday	Day 5 Friday	Day 6 Saturday	Day 7 Sunday
PROGRAM 1	UT07	ON1	OFF2	ON3	OFF4	OFF5	OFF6	OFF7

At this point we select the power of PROGRAM 1.

Set the required power for PROGRAM 1 using keys P4 and P5.

Figure 10.

Carry out the same operations, changing the times and days the stove is on for PROGRAM 2 also.

3.8 Setting the Language (Language Menu)

To set the language, proceed as follows:

4. Remove and reset the electricity supply of the stove using the general switch on the back.
5. The display will show FINAL CLEANING and then OFF.
6. Keep button P4 pressed for 2 seconds, CLOCK SETTING MENU will appear.
7. Press button P4 twice; the display will show LANGUAGE MENU.
8. Access with button P6: the display will show the language selected.
9. With buttons P4 and P5, select the language desired.
10. Confirm with button P6 to return automatically to MENU' 03 SELECT LANGUAGE MENU.

3.9 Settings Menu

In this menu you can check the values of the parameters set in the control unit. This menu is used when a Service Technician has to understand the parameters set in the machine, to find any modifications to improve the functioning of the stove.

To enter this menu, proceed as follows:

1. Keep button P4 pressed for 2 seconds: CLOCK SETTING MENU will appear.
2. Press button P4 3 times; the display will show SEE SETTINGS MENU.
3. Access with button P6: the display will show the screen desired.
4. Scroll using the button P6 to display the parameters set.
5. Scroll till last parameter to return automatically to MENU' 04 SEE SETTINGS MENU'.

3.10 Description of Functions

3.10.1 Change of Operating Power

To change the operating power, press key P1 to enter the appropriate menu and with keys P1 and P2 adjust the required power from 1 to 5. Ravelli recommends that you leave the stove power at power 5 so that the boiler water temperature setting is reached as soon as possible; in this way the thermostove may operate in modulation, decreasing pellet consumption. The power setting cannot be changed during the MODULATE WORK phase.

3.11 Modifications of the room temperature setting

3.11.1 Room temperature functioning procedure

The stove functioning procedures when the room thermostat is on can be divided into 3 types:

- using the supplied room sensor
- with external thermostat

PROCEDURE WITH SUPPLIED ROOM SENSOR

If the room sensor supplied is used, the room temperature will be shown on the display.

To set the desired temperature (modification of the room temperature setting), press button P4 to enter the appropriate menu and with buttons P4 and P5 adjust the desired value. When temperature is reached on the display, MODULATION WORK will appear on the screen and the stove will reduce the consumption of pellets to a minimum, reducing heating power.

Figure 11.
External Thermostat

EXTERNAL THERMOSTAT PROCEDURE

If an external thermostat is used, correctly connected to the mother board as shown in the electrical circuit diagram, the message T ON will be shown on the display instead of room temperature. Room temperature will be adjusted directly by the thermostat mounted on the wall. When the temperature shown on the display is reached, the message WORK MODULATION will appear on the screen. In this case the thermostove will stop sending hot water to our plant.

3.12 Modification of the boiler water temperature setting

To change the boiler water temperature setting, press key P6 to enter the appropriate menu and with keys P6 and P7 adjust the required value.

3.13 Stove Status Menu

In this menu, you can check the correct functioning of the most important components of the pellet stove.

To enter this menu, proceed as follows:

1. Keep button P4 pressed for 2 seconds, CLOCK SETTING MENU will appear.
2. Press button P4 4 times: the display will show STOVE STATUS MENU.
3. Access using button P6: the display will show the desired screen.
4. Confirm with button P6 to return automatically to MENU' 05 STOVE STATUS. This menu is for use by a service technician to diagnose performance issues and for the customer when loading pellets into the pellet hopper when the stove has been completely run out of fuel.

3.14 Working Hours Menu

The WORKING HOURS Menu shows the total hours of work done by the stove. In some cases, the working hours may not be zeroed. i.e. numbers similar to 5000/15000/25000 may be shown. The technician will zero set these numbers when lighting the stove for the first time. A non-zero number does not mean that the stove has worked for all those hours. It is only a setting given by the programme during first inspection at Ravelli before the stoves are packaged and sent.

To enter this menu, proceed as follows:

1. Keep button P4 pressed for 2 seconds: CLOCK SETTING MENU will appear.
2. Press button P4 5 times: the display will show WORKING HOURS MENU.
3. Access with button P6: the display will show the screen desired.
4. Confirm with button P6 to return automatically to MENU' 06 WORKING HOURS MENU'.

3.15 Description of Screen Displays & Symbols

3.15.1 <u>Screen Displays</u>

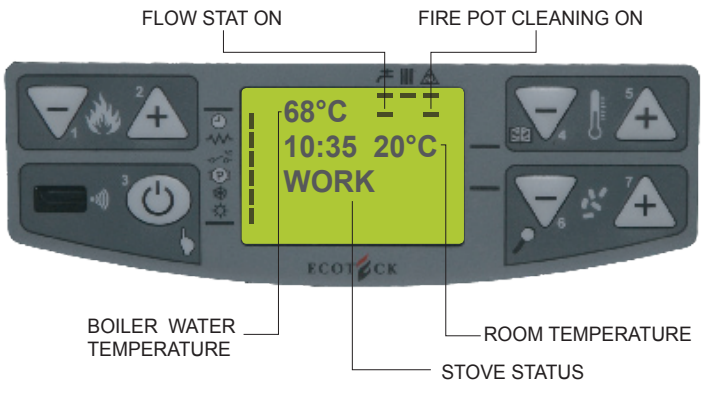


Figure 12.

3.15.2 Symbols

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	Chronothermostat On		Winter Setting On (Always)
	Resistance On		Three-Way Valve Positioned On Radiators
	Water Temperature Lower Than Set Temperature		Water Pressure Anomaly
	Pump On		

3.16 Description of Alarms

WARNING	REASON	SOLUTION
SMOKE PROBE ALARM	• Fault in the sensor recording flue temperature	• CONTACT YOUR LOCAL SERVICE TECHNICIAN.
	• Sensor is faulty or disconnected	
HOT SMOKE ALARM	• Smoke sensor detects a temperature over 280ºC	• Press the off button and repeat switching on the stove.
		• IF THE PROBLEM CONTINUES, CONTACT YOUR LOCAL SERVICE TECHNICIAN.
NO IGNITION ALARM	• The pellet hopper is empty	• Check whether there are pellets in the hopper and refill if necessary. IF THE PROBLEM CONTINUES, CONTACT YOUR LOCAL SERVICE TECHNICIAN.
	• Firebox is dirty	• Switch fire off, empty firebox and try to light it again. IF THE PROBLEM CONTINUES, CONTACT YOUR LOCAL SERVICE TECHNICIAN.
PELLETS HAVE RUN OUT ALARM	• The pellet hopper is empty	• Fill the tank with pellets and carry out the automatic auger loading procedure.
RESET THERMAL ALARM	• Thermostat sensor records a temperature above the trip threshold.	• Reset the thermostat and switch the fire back on. IF THE PROBLEM CONTINUES, CONTACT YOUR LOCAL SERVICE TECHNICIAN.
DEPRESSION ALARM	• The combustion chamber is dirty	• Follow the cleaning operations of the stove as per the instructions manual
	• The flue is blocked	• Check that the flue is clear and clean
	• The vacuum switch is malfunctioning	• Contact local Service Technician
THERMAL ALARM WITH RESET	• The thermostat with manual reset has intervened	• Reset the thermostat pressing the button on the back of the stove (see Figure below this table)
	• The centrifugal fan is defective	• Contact local Service Technician
	• Combustion in the fire pot is not optimal	• Switch off the stove, clean the fire pot and regulate combustion with the setting of the pellets
WATER PRESSURE ALARM	• Water pressure is too high or too low.	• Refill the water or bleed it to return the pressure to normal values. IF THE PROBLEM CONTINUES, CONTACT YOUR LOCAL SERVICE TECHNICIAN.
BLACK OUT ALARM	• There is a power black out while the fire is being used. When the power comes back on the display will indicate “BLACK OUT”.	• The smoke fan will automatically switch to maximum speed and the auger will switch off. When the flue temperature goes below the ignition threshold, the fire will start the ignition process.
VENTILATION	• The fire is in cooling phase.	• Wait until flue temperature goes below the minimum operating threshold before attempting to re-ignite.

EVERY ALARM CONDITION CAUSES THE FIRE TO SWITCH ITSELF OFF IMMEDIATELY

3.17 Amalfi Electrical Circuit Diagram

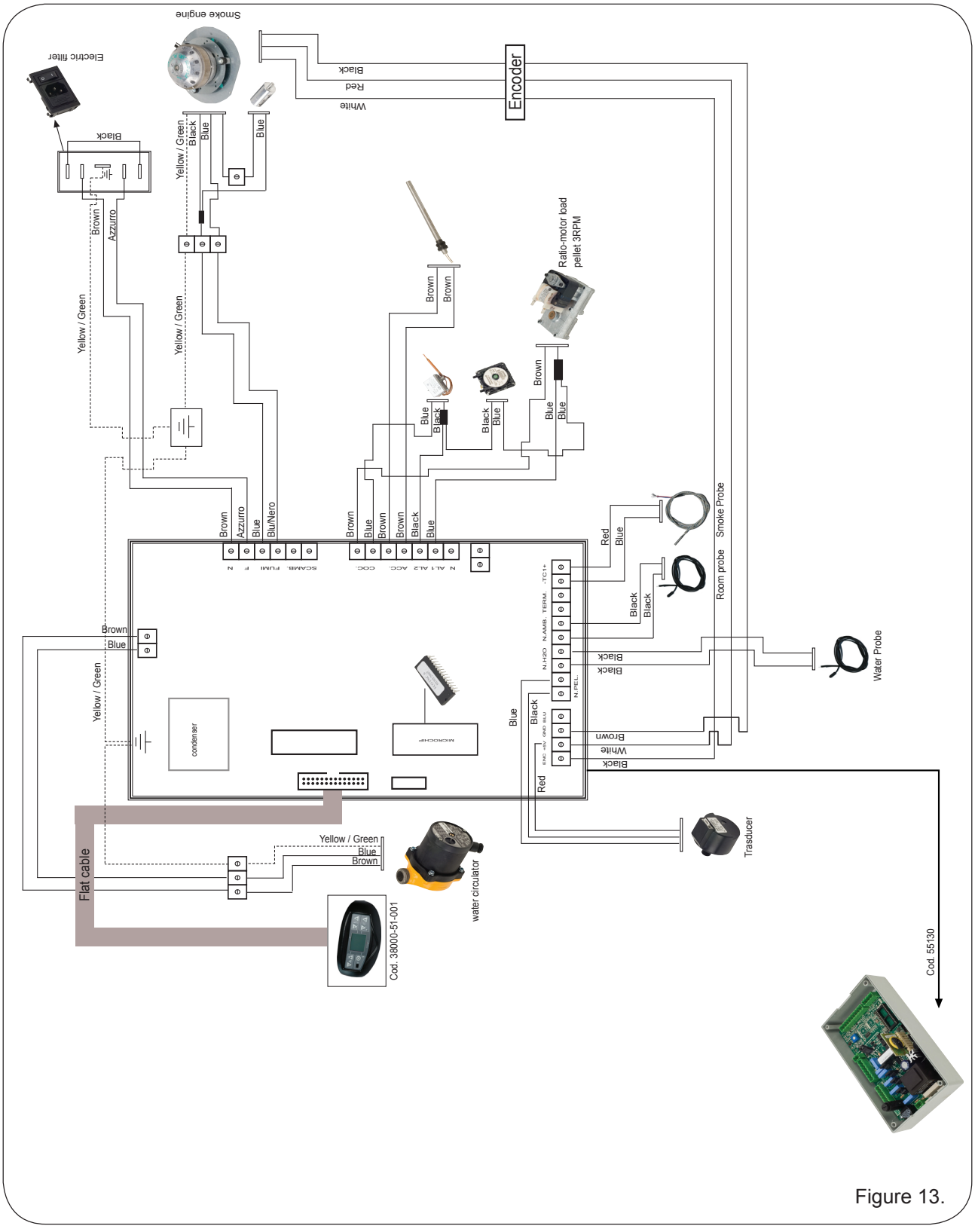


Figure 13.

4. Maintenance and Cleaning

Before carrying out any maintenance take the following precautions:

- Make sure that the fire has been turned off, and that the general power supply has been disconnected (Ensure that the plug is disconnected from the socket, thus avoiding accidental electric shocks).
- Make sure that all parts of the pellet heater are cold.
- Make sure that the ashes have cooled completely.
- Make sure that the general switch is in the zero position (off).
- Always use appropriate tools for maintenance.
- When you have finished re-install all safety guards before using the pellet heater again.

The pellet heater requires little maintenance if quality wood pellets are used which is why we recommend pellet fuel that is manufactured to the AS/NZS 4014.6.

4.1 Cleaning the surfaces

To clean the surfaces on the painted metal parts, use a damp cloth.

Important: the use of aggressive detergents or abrasive cleaners can damage the surfaces of the stove.

4.2 Cleaning the fire pot before and after each lighting

You must check that the fire pot, where the combustion takes place, is clean and that no waste or residue blocks the holes, in order to always guarantee excellent combustion of the stove. This will help avoid possible overheating, which could causes changes in the colour of the paint, as well as failure to light the stove.

Only a clean fire pot can guarantee that the pellet stove will function without problems. During functioning, deposits may be formed, which have to be immediately eliminated. It is easy to see when the fire pot has to be cleaned! It only needs a glimpse, each day, before switching on. For minor cleaning, it can be left in the stove, but if the residue is difficult to remove, it has to be extracted from its housing and the waste scraped out.

Clean basket with all the holes clearly visible

Basket needing cleaning with the holes blocked by ashes

Figure 14.

The residue of ash depends on the quality of pellets used.

Important: even with a new batch of pellets, although using the same brand, there may be differences during combustion and therefore they may burn more or less cleanly.

Correct daily cleaning will allow the pellet heater to burn properly with high performance avoiding problems in the long term which could require the intervention of a technician to repair the pellet heater.

4.3 Description of Inner parts of the Ravelli Amalfi

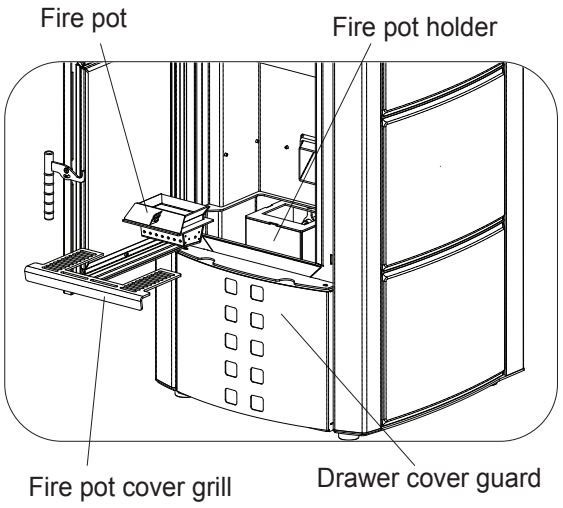


Figure 15.

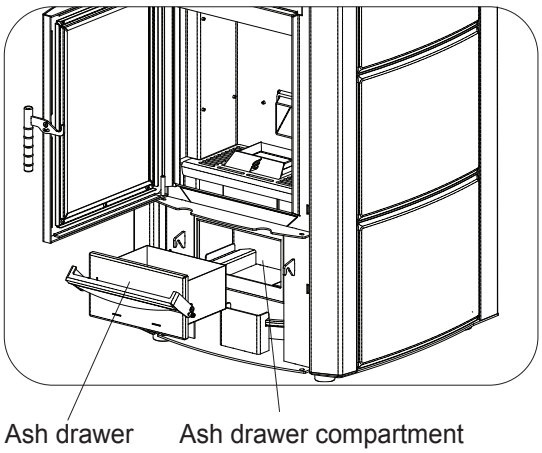
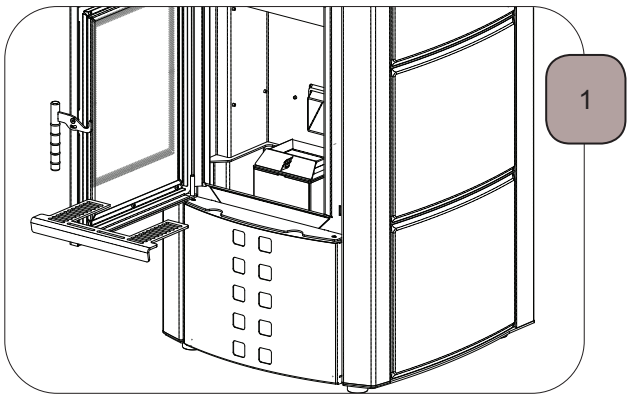
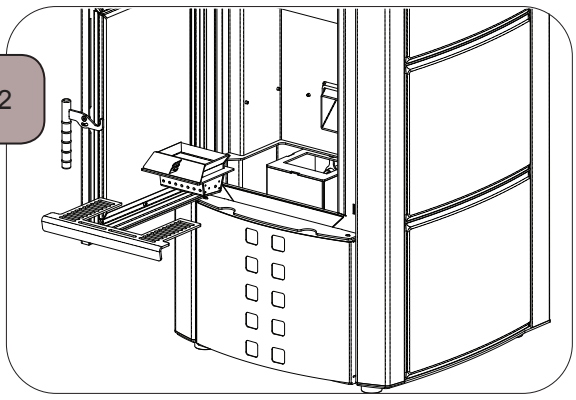


Figure 16.

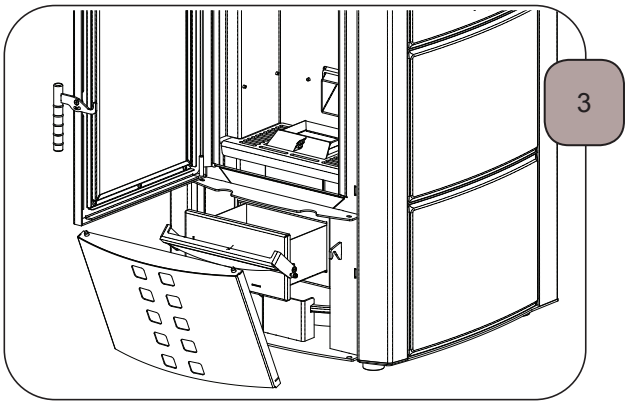
4.4 Routine Cleaning (every two - three days)



Remove the fire pot cover grill so that the drum is clearly visible



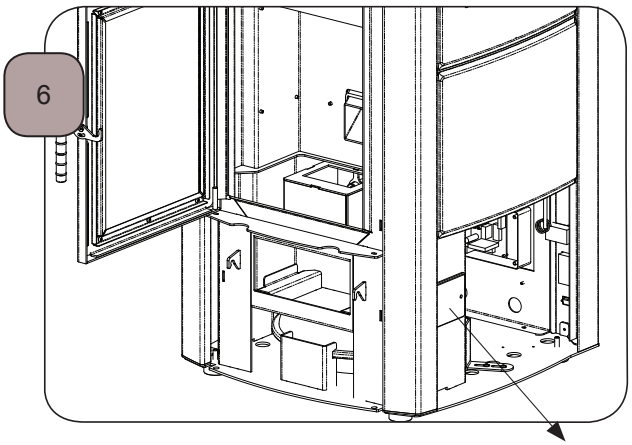
Remove the fire pot to check how clean it is and to be able to reach the fire pot holder.



Press the drawer cover guard down to reach the ash draw. Pull the lever up to remove the drawer.

Vacuum the ash deposited in the drawer with a vacuum cleaner.

Vacuum the ash deposited in the compartment under the drawer with a vacuum cleaner.



Unscrew the side ceramic brick to reach the smoke duct cleaning plates. Unscrew and vacuum the deposited ash.

Before carrying out the operation described above, clean the tube bundle with the cleaning rods, as shown in the following figure. Carry out this movement 3-4 times until the rods run without friction.

Lift up the cleaning rods

Lower the cleaning rods

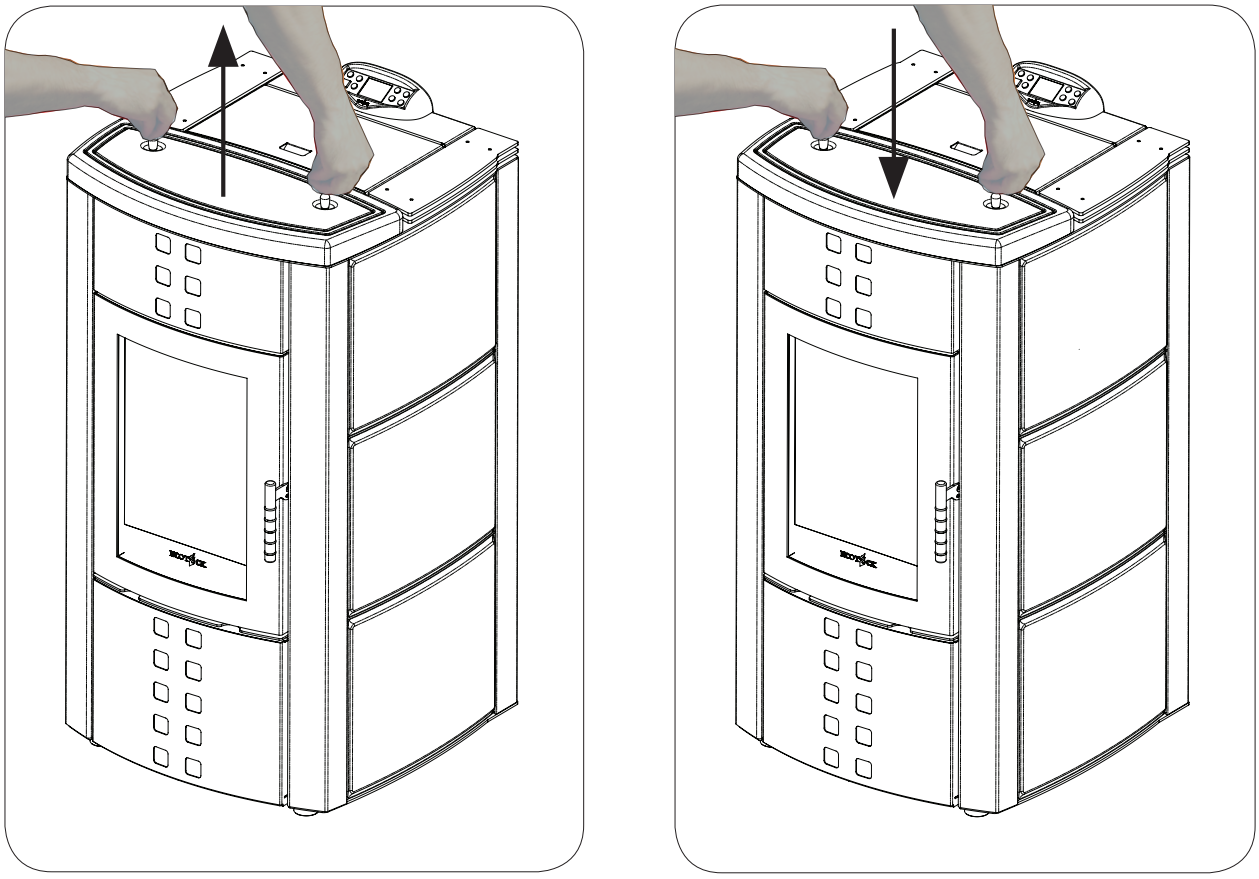


Figure 17.

The thermostove is a solid fuel heat generator and as such must be checked by a qualified technician at least once a year at the beginning of the season. The purpose of this maintenance is to make sure that all the components are in good working order. You are advised to agree an annual contract for the product with your installer/dealer.

4.5 Cleaning the glass

The glass is self-cleaning, therefore while the stove is in operation, a flow of air runs along the surface of the glass keeping ash and dirt away. However, a greyish patina will form after a few hours and this must be cleaned once the stove has been turned off. The glass must be cleaned only when the stove is cold, using a cotton duster, kitchen paper, newspaper or window-cleaner. Sometimes it is best to dirty the duster slightly with ash from the stove itself to create a slightly abrasive action with which to remove the ash from the glass.

N.B. Do not attempt to light the stove if the glass is broken.

4.6 Cleaning the Flue

The flue will require cleaning only once each winter providing that the correct fuel is used. You should arrange for this when booking your annual service with your local service agent. Use a drum type vacuum cleaner only.

4.7 Access to the inspection hatches for cleaning the smoke

Remove the pellet heater and release the two screws that secure the hatches to the body of the pellet heater. Clean the inside using a drum type vacuum cleaner.

4.8 Frequency of Component Cleaning

Parts/Frequency	1 Day	2-3 Days	30 Days	Yearly	Performed By
Burn pot	•				Owner
Burn pot grill		•			Owner
Glass		•			Owner
Flu				•	Technician
Door gasket				•	Technician
Heat Exchanger	•				Owner
Combustion chamber		•			Owner
Vacuum Hopper			•		Owner
Clean T discharge				•	Technician

5. Guarantee

5.1 Certificate of Guarantee

Ravelli thanks you for the confidence you have placed in it with the purchase of one of our pellet stoves and invites the purchaser to:

- examine the instructions for the installation, use and maintenance of the stove.

- examine the conditions of guarantee shown below.

The form provided by the installer must be filled in and stamped by the installer. If this does not occur, the product will not be covered by the guarantee.

5.2 Conditions of Guarantee

The limited guarantee covers defects of manufacturing materials, on condition that the product has not been broken due to an incorrect use, carelessness, wrong connections or errors of installation.

The following are not covered by guarantee:

- the glass of the door;

- the fibre gaskets;

- the painting;

- the stainless steel combustion basket;

- the resistance;

- the cast majolica

- any damage caused by inappropriate installation and/or handling of the stove and/or shortcomings by the consumer.

The use of poor quality pellets or of any other material could damage components of the stove causing the termination of their guarantee and the annexed responsibility of the manufacturer.

All damage caused by transport are not acknowledged, therefore please carefully check the goods on receipt, immediately advising the dealer of any damage.

The guarantee form must be sent to the following address within eight days of purchase:

Pellet Fire Solutions
PO Box 11-245
Christchurch 8140

6. What are Wood Pellets?

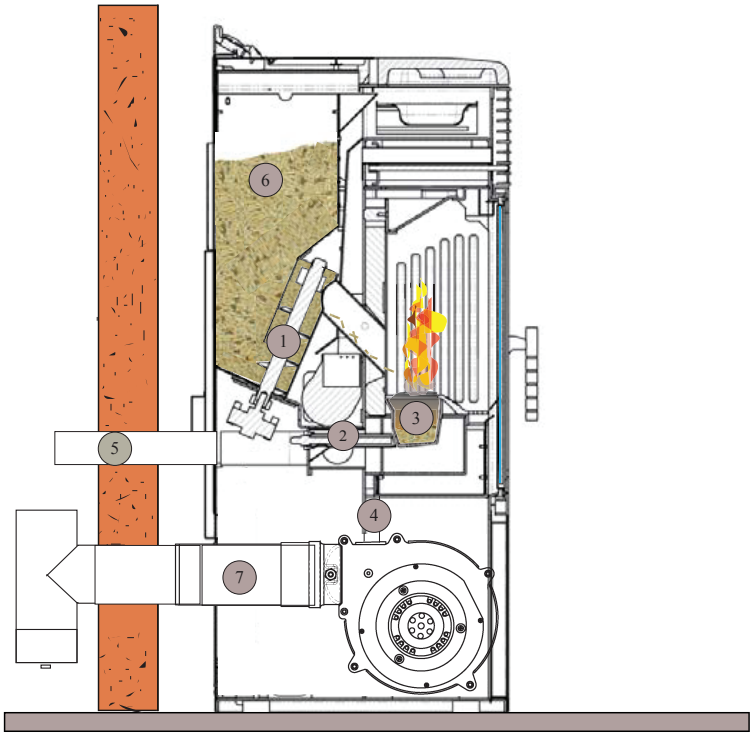
Wood pellets are made from sawdust and wood shavings. The material used cannot contain any foreign substance such as glue, varnish or synthetic substances. Subjecting it to high pressure, the wood is pressed through a plate with holes and due to the high pressure the sawdust is heated activating the natural binders of the wood. Thus, the pellets keep their shape even without the addition of bonding substances. The density of the wood pellet varies according to the type of wood and can be 1.5 – twice greater than that of natural wood. The diameter of the cylindrical rods is 6-10 mm and their length can vary between 10 and 50 mm. Their weight is equal to about 650 kg/m. Due to the low content of water (approx 8%) they have a high energy content. The standards AS/NZS 4014.6 define the quality of the pellets:

Figure 18.

Do not put the bag of pellets on the ceramic parts during the loading operations.

The pellets must be transported and stored in a dry place. They swell on contact with damp, and cannot be used, They must always be protected from the damp both during transport and in storage. Ravelli recommends using a pellet with a diameter of 6 mm for the stove.

7. The Components of the Stove



1. Pellet loading screw
2. Resistance unit for ignition
3. Combustion fire pot
4. Tube for passage of smoke
5. Air intake tube (optional)
6. Pellet hopper
7. Smoke exhaust tube

This drawing shows the internal parts of a pellet stove. By filling the hopper (6), the pellets are loaded into the fire pot (3) through the loading screw (1). Ignition is by means of the resistance (2), which overheats the air from the special entrance (5) which on contact with the pellets will allow the development of the flame. At this point the fire will begin to heat the water, and the exhaust smoke is deviated through the smoke extraction tube (4) it is released into the flue, through the connection with the smoke exhaust pipe. (7).

Installation Section

Table of Contents

NOTE TO INSTALLER - PLEASE ENSURE THE "INSTALLATION DATA SHEET" ON page 38 IS COMPLETED ONCE THE UNIT IS INSTALLED.

1. Dimensions (Ravelli Amalfi)

	Unit of Measurement	
Height	mm	1079
Width	mm	575
Depth	mm	604
Weight	Kg	130
Diameter of smoke exhaust duct	mm	80
Min.-max. calorific power	Kw/h	3.4 - 8.4
Min.-max. hourly consumption of pellets	Kg/h	0.8 - 2
Electrical power absorbed during operation	W	550 MAX
Supply	V - Hz	220 - 240
Tank capacity	Kg	25
Space Heating Efficiency	%	79.8%

The data shown above are indicative and not binding. Ravelli reserves the right to make any modifications for the purpose of improving the performances of the product.

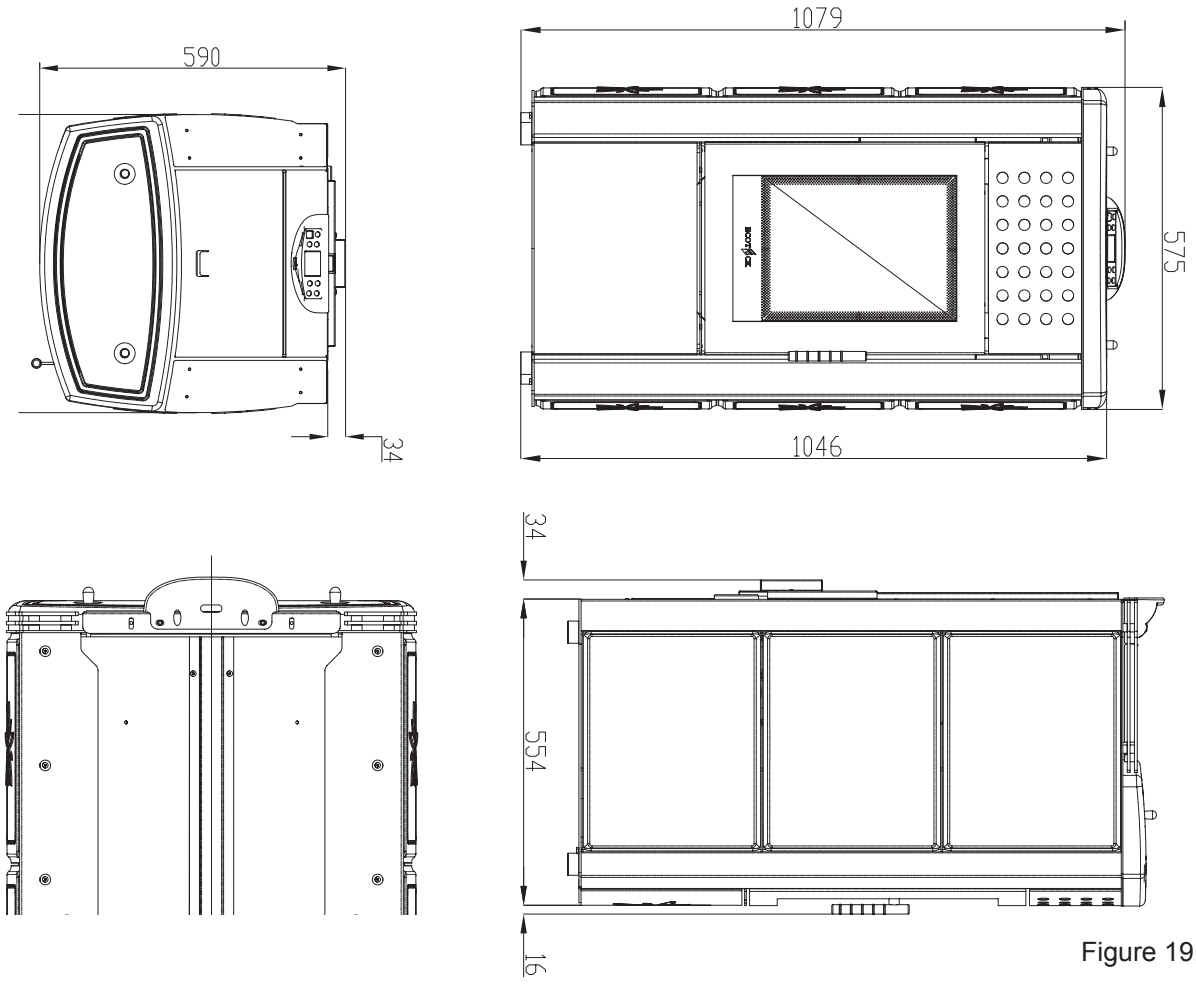


Figure 19.

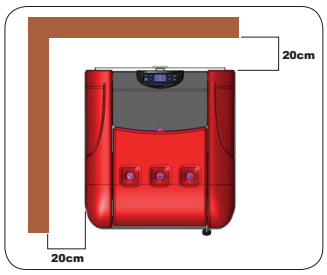
1.1 Deciding where to locate your wood pellet burning heater:

1. Do not install the pellet heater in a bedroom or room where people sleep.
2. Locate the pellet heater in a large and open room that is centrally located in the house. This will optimize heat circulation.
3. Check clearances to combustibles.

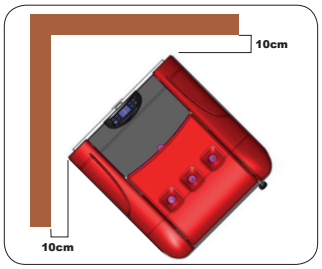
1.2 Clearances to Combustibles – Ravelli Amalfi Freestanding

This pellet heater requires floor protection which must be non-combustible, extending beneath the stove the full width and depth of the unit including (150mm) in front for ember protection.

AS/NZS 2918:2001 states that a 300mm forward projecting and 200mm side projecting floor protector must be used from any door opening extremity as an absolute minimum. Due to the operating nature of the Amalfi pellet heater where opening the door causes a loss of vacuum and the fire will shut down completely, meaning the likelihood of any hot embers or burning fuel escaping from the combustion chamber is extremely minimal. Therefore a 150mm forward projecting floor protector will be sufficient.
Hearth testing of the Ravelli Amalfi showed that on exposed combustible surfaces in front of the freestanding heater. No measured locations exceeded the temperature limits specified in AS/NZS 2918:2001



If positioned this way, you must keep at least 20cm from the walls of the room,



If positioned this way, you must keep at least 10cm from the walls of the room,

Figure 20.

From the body of the heater to the side wall	200mm
From the rear of the heater to wall (external flue)	200mm
From the rear of flue to wall (internal flue)	50mm
Rear corners to wall (corner installation)	100mm
Alcove Height from Heater	200mm

1.3 Exhaust and Fresh Air Intake Locations

Exhaust

Hearth to centre of flue	305 mm
Left Side of unit to centre of flue	139 mm
Centre of unit to centre of flue	148 mm

Fresh Air Intake

Hearth to centre of intake	346 mm
Left Side of unit to centre of intake	370 mm
Centre of unit to centre of intake	83 mm

INSTALL VENT AT CLEARANCES SPECIFIED BY THE VENTING MANUFACTURER

1.4 Safety devices for closed expansion tank system

Systems with closed expansion tank must be fitted with:

- Safety valve
- Circulator control thermostat
- Acoustic alarm activation thermostat
- Temperature gauge
- Pressure gauge
- Acoustic alarm
- Automatic thermal regulation switch
- Automatic thermal blockage switch (blockage thermostat)
- Circulation system
- Expansion system (the expansion vessel on the fire is sufficient for the fire. An extra vessel may be required depending on the total water volume)
- Safety dissipation system incorporated in the generator with thermal discharge valve (self-operated), if the device is not fitted with a temperature self-regulator.

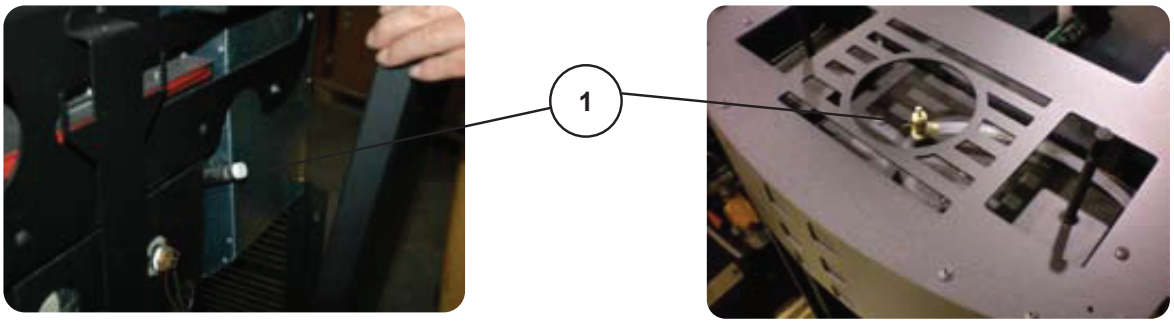
Automatic filling domestic-type heating devices must be fitted with a fuel-blocking thermostat or with a cooling circuit set by the device's manufacturer, activated by a thermal safety valve that guarantees that the highest temperature established by law is not exceeded. The connection between the supply unit and the valve must be with cut-off devices. The pressure up-stream from the cooling circuit must be at least 1.5 bars.

Installation recommendations

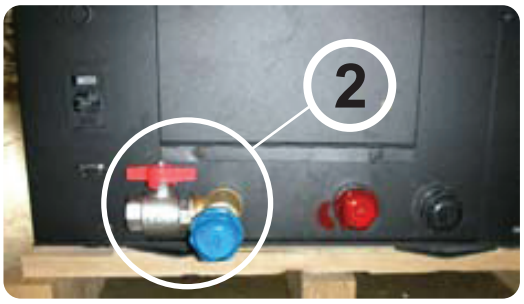
Warning: Our thermal stoves are fitted with 3-litre (Genova, Pisa) and 6-litre (Venezia, Amalfi) expansion tanks. For thermal stoves with a 3-litre expansion tank a further expansion tank with a capacity of at least 15 litres must be installed in the circuit.

Stoves with a 6-litre expansion tank do not need a further expansion tank if the plant has a maximum capacity of 60 litres of water; otherwise, in this case also an expansion tank with a capacity of at least 10 litres must be installed.

After positioning the thermal stove and installing all the smoke discharge pipes, the hydraulic plant can be connected. First of all make sure that the bleeder valve (1), on the top right-hand side of the boiler (see images below) is closed when the water is filling as shown in the figure below.



IMPORTANT	**FILLING MUST BE CARRIED OUT VIA THE "T" PIPE FITTING LOCATED ON THE WATER DELIVERY, FILLING AT A MAXIMUM OF 1.2 BAR (see 2 below)**

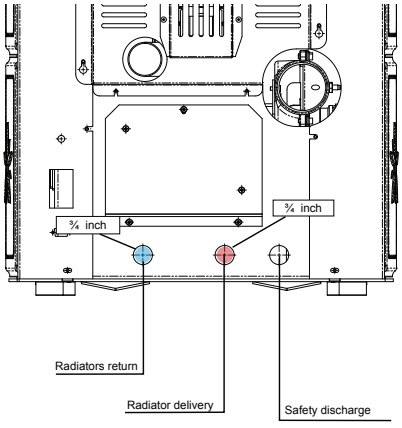


Connect the boiler connections (see figures below) to the water plant, bringing the plant's pressure from 1 to 1.3 bar when the thermal stove has not yet been lit.

Now proceed with bleeding the water plant from the valve fitted on the boiler or from the valves fitted on the radiators. This operation can be carried out several times even after the boiler has been switched on since, when the water temperature starts to increase, the air bubbles move towards the upper part of the boiler itself.

When bleeding the boiler, make sure that the electrical parts near the valve do not get wet! If this should happen, do not switch the boiler on but use a hair-dryer to dry the electronic board.

Figure 22.



2. Installation

2.1 Dimensions – Amalfi Freestanding

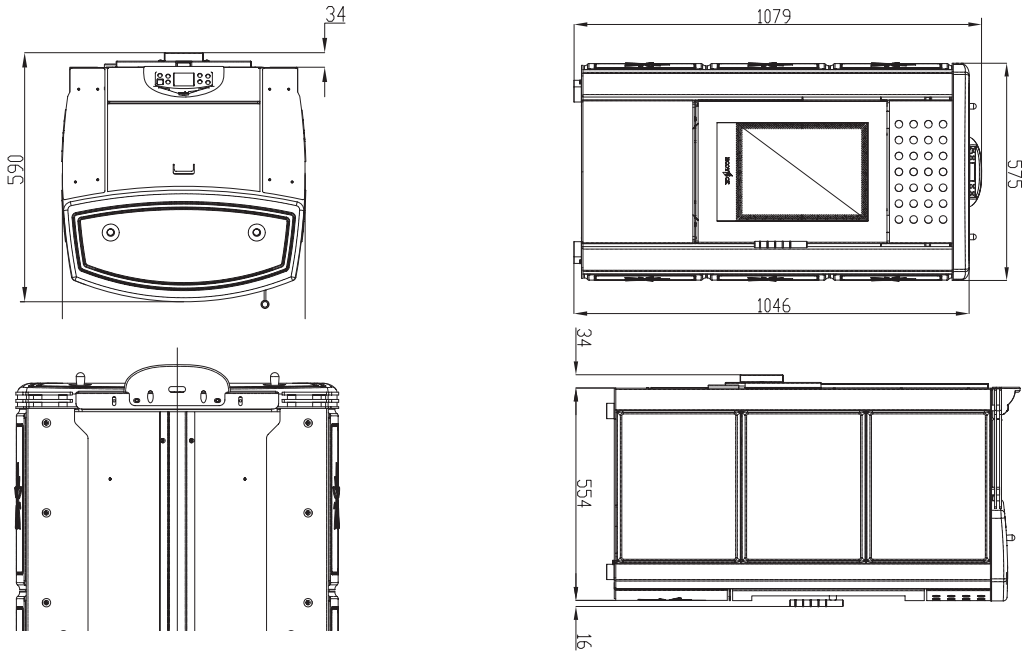


Figure 23.

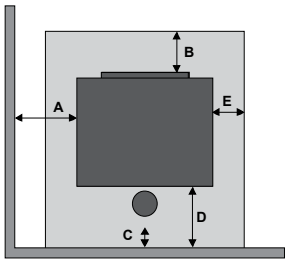
Refer to CRL Safety Test 09-41044 for all clearances to combustible.

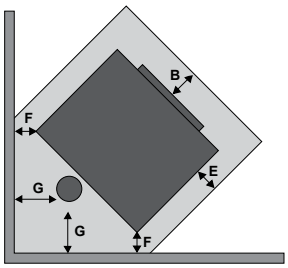
2.2 Clearances & Specifications

Minimum clearances shown are in millimetres. All Ravelli fires are tested to AS/NZS 2918:2001. Specifications were correct at time of printing but may alter and those detailed below should be used as a guide only. Refer to the Installation and Operation Manual supplied with every Ravelli Pellet Fire or if in doubt, consult your Retailer.

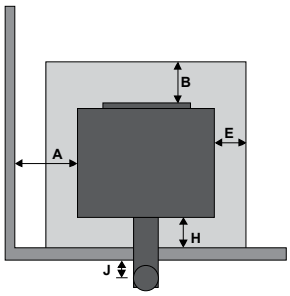
Amalfi Pellet Fire
Clearance to Combustibles

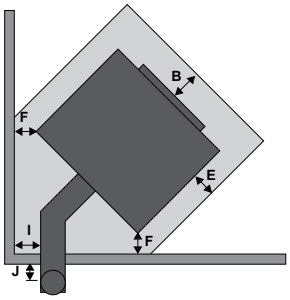
Internal Flue





External Flue





Freestanding Clearances

Location	Dimension (mm)
A	200
B	150
C*	50
D	200
E	n/a
F	100
G*	50
H	200
I*	50
J*	25

* from shielded flue
* 75mm to unlined flue

Note: AS/NZS 2918 requires a minimum of 100mm clearance for any side requiring access.

Note: These are minimum clearances to combustibles. Actual installation distances may be greater.

Note: The above clearance to combustibles on the flue are only applicable within the fire envelope. Clearance outside this e.g.at a ceiling / wall thimble reverts to 25mm as per ARS flue test 05/1185.

2.3 Minimum Clearance to Combustibles

Side of Unit (A)	200
Rear wall to Lined Flue (C, G, I)	50
Rear wall to Unlined Flu (C, G, I)	75
Rear of Unit (D)	200
Rear corners (Corner Installation) (F)	100
Floor protection (from glass) (B)	150

2.4 Location of the Pellet Fire

Installation of the Ravelli Amalfi Freestanding Wood Pellet Burning Heater should be undertaken by an experienced installer. Please read the Amalfi Owners' and Installation Manual thoroughly before commencing installation as failure to follow the instruction could cause damage to the pellet fire or property.

2.5 Positioning the fire:

Generally Amalfi should be installed in a centrally located position within the home. When deciding where to position the appliance in your room you need to consider the following:

- Location of a power source
- Amalfi must be installed on a non-combustible surface. This surface must protrude 150mm from the front of the closed pellet fire door.
- Amalfi has been Safety Tested to AS/NZS 2918:2001 using the Davins manufactured flue. Test Report ARS 05/1185. Installation is not exclusive to these nominated kits, though alternative flue should only be considered following consultation with your local council.
- Please consult page 30 for the required clearances to combustible material also ensure the position of structural elements near the proposed flue.
- Because of the positive pressure in the flue, sealing of all 75mm stainless joints is mandatory – use high temperature Maniseal. Both inner and outer flue joints must be riveted.
- Seismic Restraint: Please view page 35 for requirements.
- Warranty: To validate warranty following installation a copy of the completed Warranty/ Producers Statement must be forwarded to: info@pelletfiresolutions.co.nz

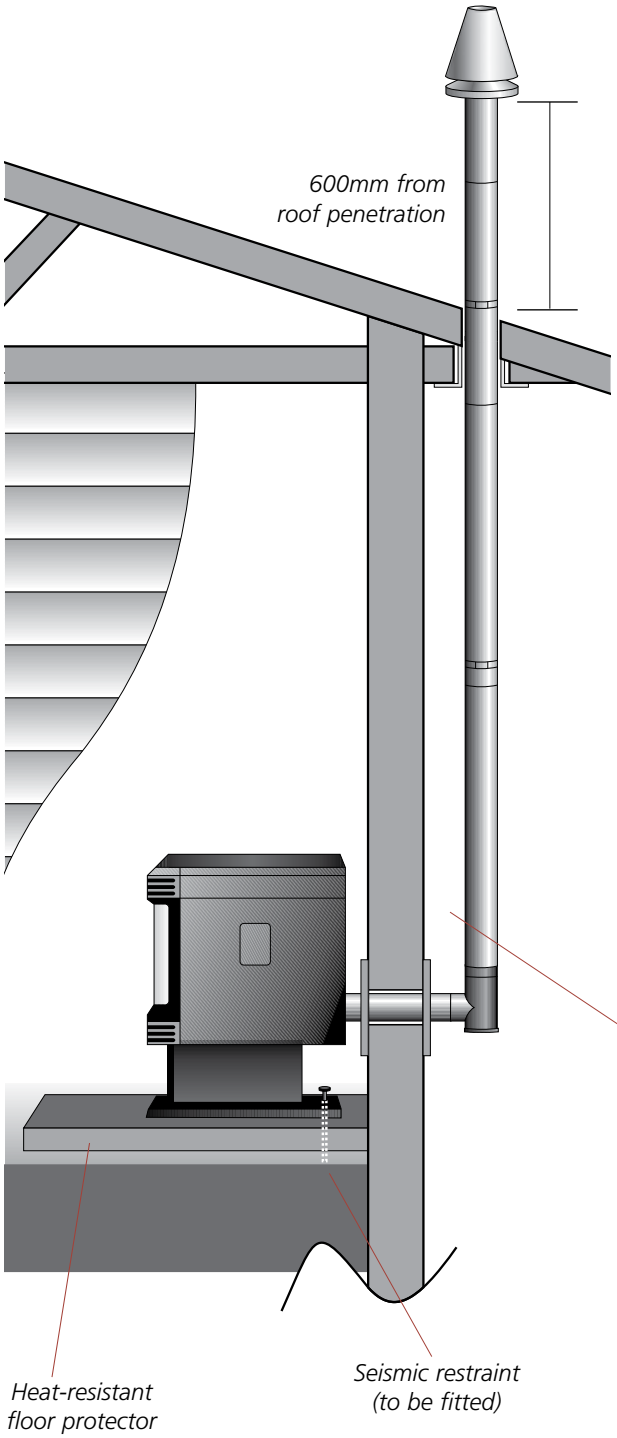
2.6 Installation of the Flue

The gas outlet system functions by depression in the combustion chamber and by a slight pressure in the gas outlet pipe. Therefore it is very important that the gas outlet system is hermetically sealed with special pipes (in steel, not aluminium) containing special silicon gaskets.

The gases must be conveyed outside and they must not come out in closed or semi-closed areas such as garages, attics or any other place where gases may build up.

The smoke discharge pipe must be constructed in observance of standards UNI7129/92, UNI 10683 and EN14785

51ita External Standard Flue Kit *Ravelli*



This flue kit may be used in new and replacement applications with the flue penetrating the wall behind the fire, running vertically up an outside wall and penetrating the soffit. The overall height of the flue is 3.6m. All visible flue has a galvanised finish, and can be powdercoated on request. Kit is supplied in a carton.

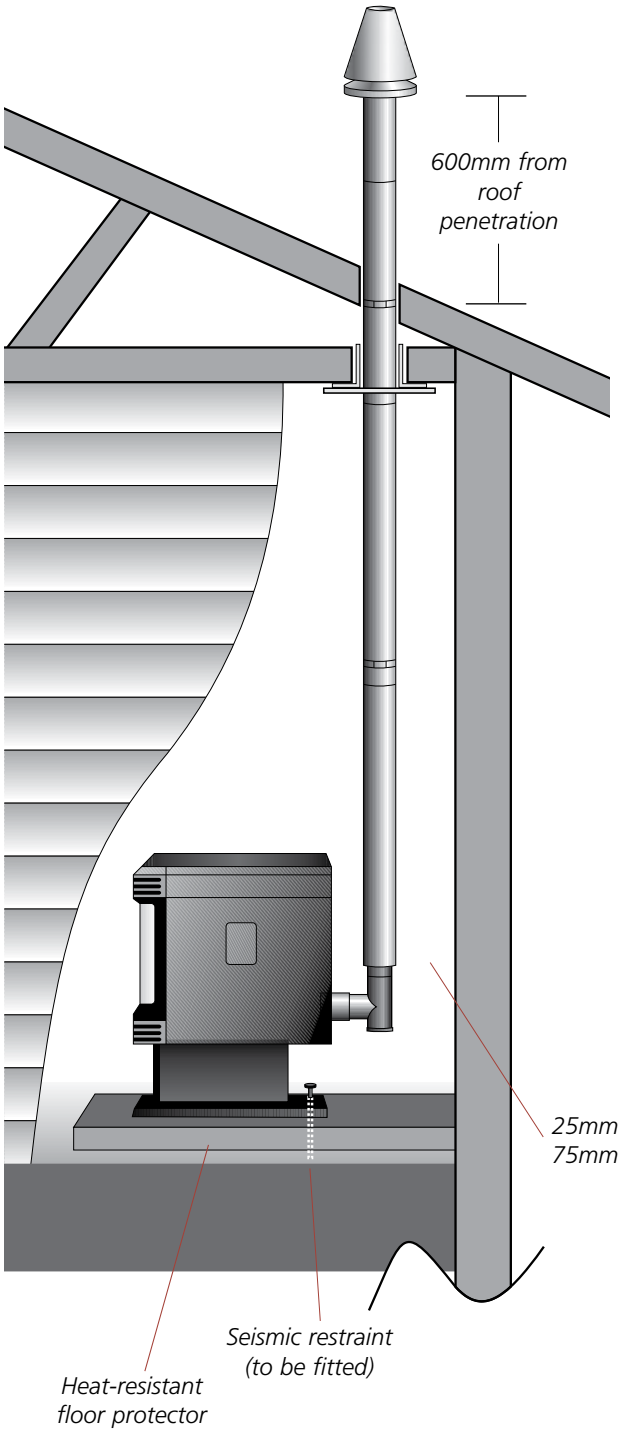
Each 51 External Standard Flue Kit (Ravelli) contains:-

Part No	Description	Quantity
1	Galvanised outer liner ø100mm x 900mm long	4
2	Stainless steel inner liner ø75mm x 900mm long	4
5	Inner/outer flue liner spacer	2
6w	Wall thimble – 2 pieces ø102mm holes	1
6s	Soffit thimble ø102mm hole	1
7w	Wall decor plate ø102mm hole – white	1
46	Velocity cone	1
9	Rain Cap 100mm	1
26	Lined T-adaptor	1
18	76-80mm Adaptor	1

Note: The Davin 51 External Standard Flue Kit complies with AS/NZS 2918:2001 as per Applied Research Test Report 05/1185, dated 15 September 2005.

All fires must be installed by a qualified installer as per the manufacturer's instructions and AS/NZS 2918:2001.

50SB Internal Standard Flue Kit



This flue kit may be used in new and replacement applications in rooms with stud height of 2.4m. The overall height of the flue is 3.6m. The visible flue is finished in black and the ceiling plate is white. The support angles for securing the liner to the ceiling are not shown. Kit is supplied in a carton.

Each 50SB Internal Standard Flue Kit contains:-

Part No	Description	Quantity
1	Galvanised outer liner ø100mm x 900mm long	1
1sb	Black Stovebright outer liner ø100mm x 900mm long	3
2	Stainless steel inner liner ø75mm x 900mm long	4
5	Inner/outer flue liner spacer	2
6c	Ceiling thimble ø107mm hole	1
7c	Ceiling decor plate ø107mm hole – white	1
46	Velocity cone	1
9	Rain Cap 100mm	1
15sb	Elbow 45° – ø75mm stainless – black *(painted)*	1
13sb	T-adaptor/cleanout – ø75mm – black *(painted)*	1
702	Support angle 950mm long – 40mm x 40mm sides	2

Note: The Davin 50 S/B Internal Standard Flue Kit complies with AS/NZS 2918:2001 as per Applied Research Test Report 05/1185, dated 15 September 2005.

All fires must be installed by a qualified installer as per the manufacturer's instructions and AS/NZS 2918:2001.

2.9 Hydraulic Installation

Closed vase plant safety devices

According to standard UNI 10412-2 (2006) in force in Italy, systems with close expansion vases must be fitted with:

- Safety valve
- Circulator control thermostat
- Acoustic alarm activation thermostat
- Acoustic alarm
- Temperature indicator
- Pressure indicator
- Automatic thermal regulation switch
- Automatic thermal blocking switch (blocking thermostat)
- Circulation system
- Expansion system
- Safety dissipation system built into the generator with thermal discharge valve (automatic), if the device is not fitted with a self-adjusting temperature system.

Automatic loading domestic heating devices must be fitted with a fuel blocking thermostat or with a cooling circuit provided by the device's manufacturer, activated by a thermal safety valve that guarantees that the top temperature established by the standard is not exceeded. The connection between the feed unit and the valve must be without any cut-offs. The pressure upstream of the cooling circuit must be at least 1.5 bar.

Recommendations for installation

The hydraulic plant can be connected after positioning the thermostove and installing all the smoke discharge pipes.

First of all check that the relief valve (1), situated on the upper right hand side of the boiler (see Figure 24 and Figure 25) is open once the water has been filled as shown in the figure below.

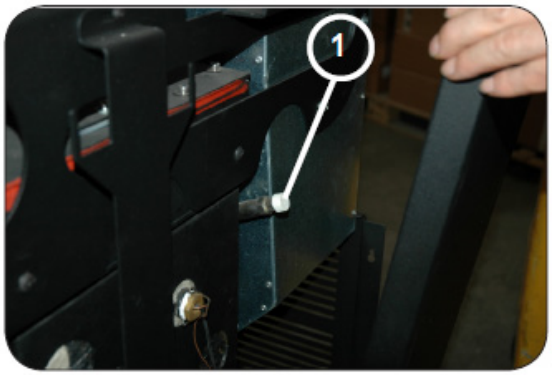


Figure 24.

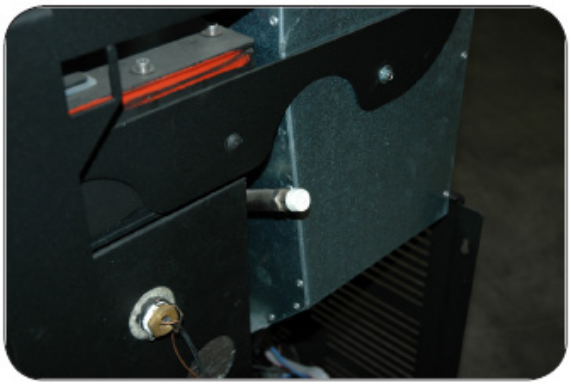


Figure 25.

Connect the boiler connectors correctly (see Figure 26) to the hydraulic plant, bringing the plant pressure between 1.0 – 2.5 bar

Now bleed the hydraulic plant from the valve fitted on the boiler or from the valves fitted onto the radiators. This operation can also be carried out several times after the boiler has been started, since the air bubbles will tend to go up to the top of the boiler when the water temperature starts increasing.

While the boiler is being bled, make sure that the electrical parts near the valve do not get wet!

If this should happen, do not light the boiler but proceed with drying the electronic mother board using a hair dryer.

Hydraulic installation examples

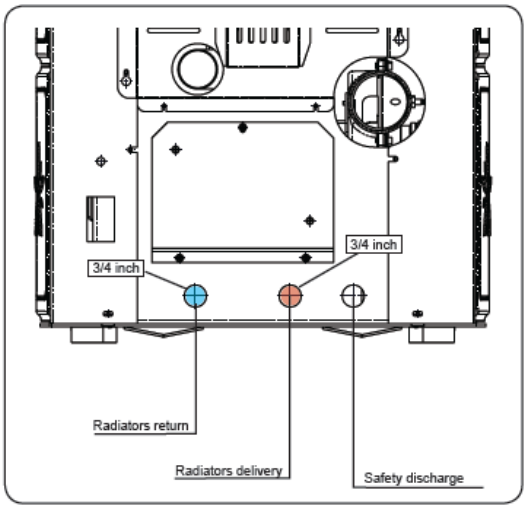


Figure 26.

Legend			
RA	: Radiators	CI	: Plant manifold
AL	: Feed from water mains	VM	: Mixer valve
MI	: Plant manifold	ACS	: Hot sanitary water
RI	: Plant return	T	: Thermostat graduated up to 120°C
V1	: Outward valve	M	: Radial manometer scale 0 - 4 bar
V2	: Return vale	SP	: Plate exchanger
V	: Ball valve	RP	: Pressure reducer

2.9.4 Hydraulic plant Thermostove for heating

This diagram is given as an indication only. Installation must be carried out by a plumber.

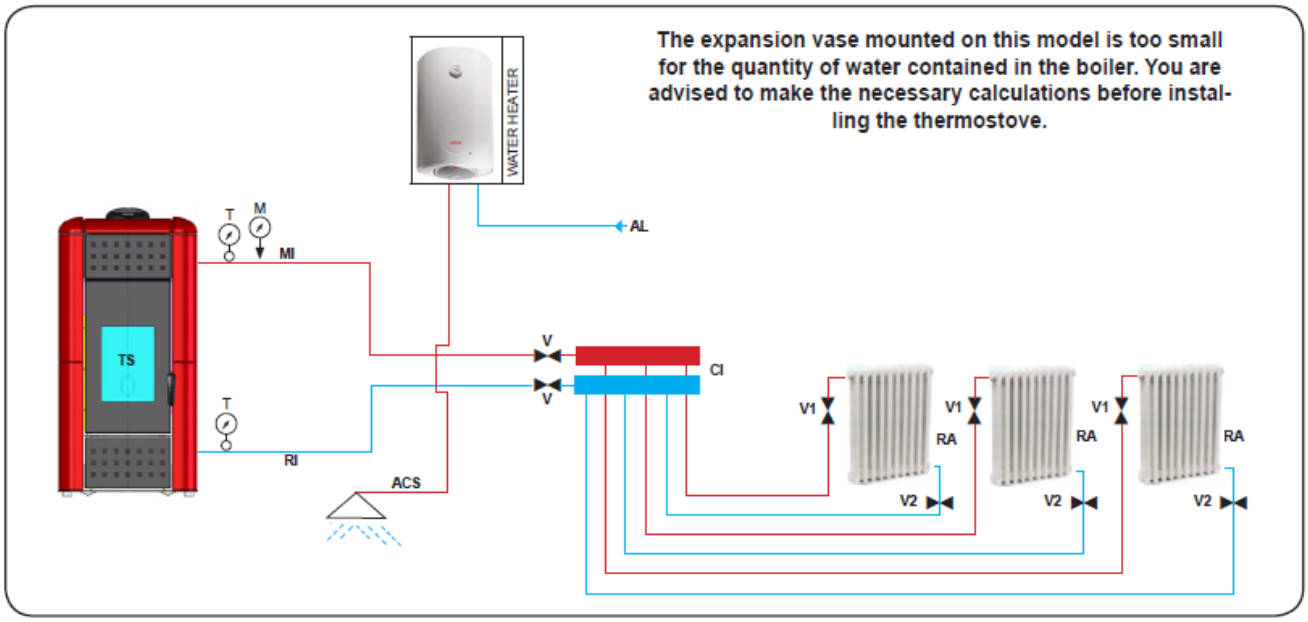


Figure 27.

2.10 Seismic Restraint

All installation scenarios for Amalfi require the use of hold-down anchors (one on each side).

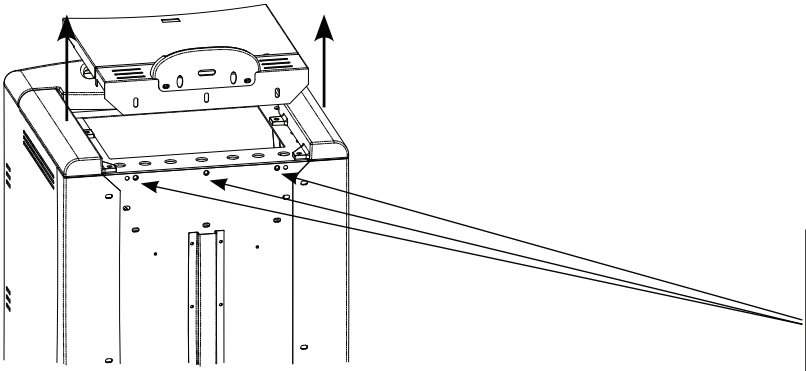
Fixing to Concrete Floor:

- Minimum M8 expansion anchors (M10 recommended) or min M8 epoxy- set anchors.
- Approved Anchors: Expansion Anchors-Ramset Dynabolt and Trubolt, Hilti HAS.
- Epoxy-set Anchors – Ramset Epcon, Ramset Chemset and Hilti HVU.

2.11 Fixing to Timber Floor Framing

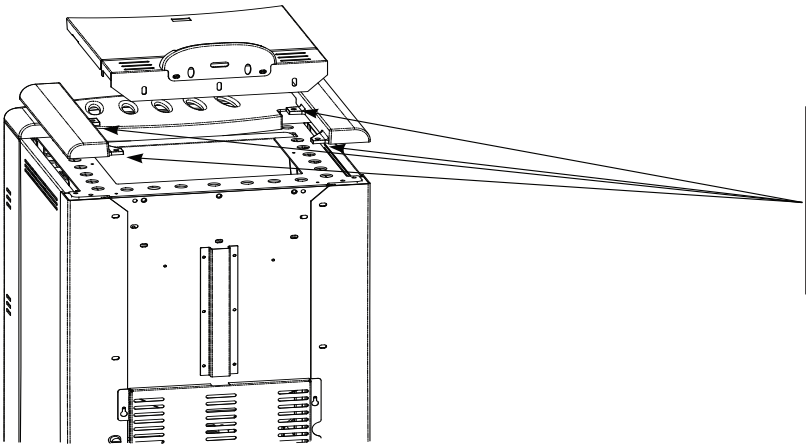
Minimum 14g x 60 screws (6.3mm diameter) or M10 X 90 coach-screws. These shall be fixed a minimum of 40mm into the centre-line of the existing floor joists. If screws cannot be installed directly into an existing floor joist, solid blocking between joists (min size 90x45) shall be provided.

2.12 How to remove the side panels



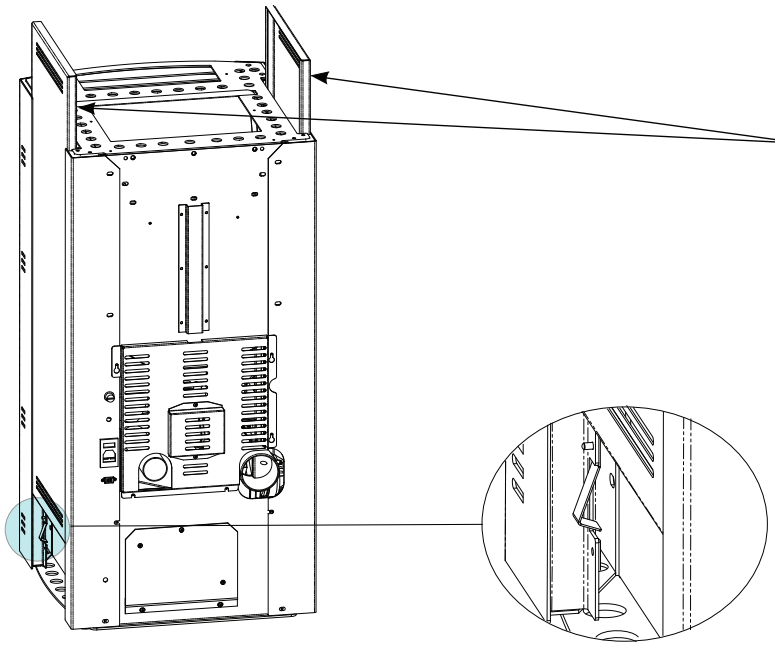
SLACKEN THE THREE SCREWS TO DISMANTLE THE PELLET DOOR.

Figure 28.



REMOVE THE SCREWS ON THE TOP PLATE TO DISMANTLE THE SIDES.

Figure 29.



REMOVE THE SIDE PANELS.

Figure 30.

2.13 Seismic Restraint Locations

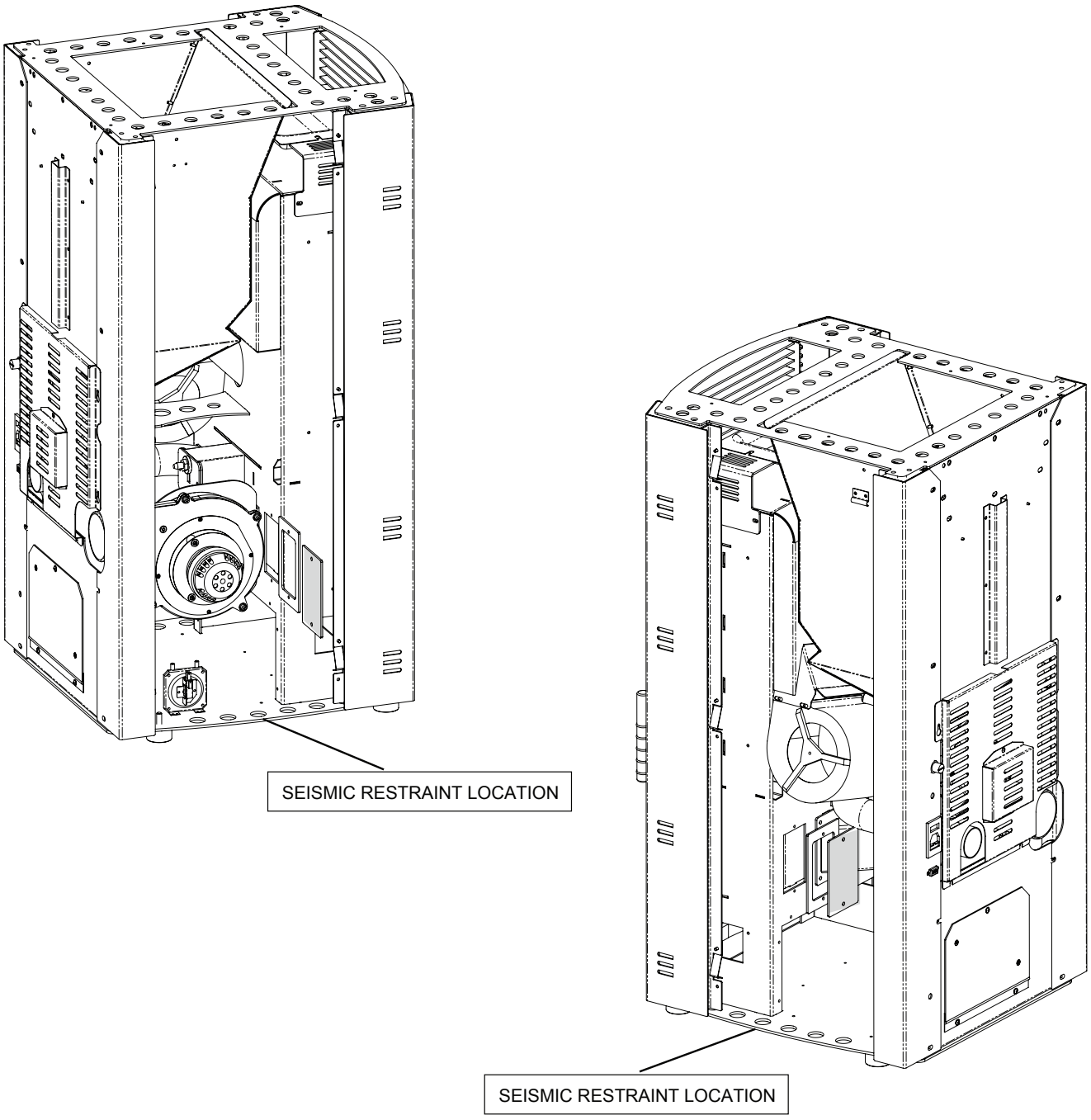


Figure 31.

3. Installation Data Sheet

Name of Owner:

_____

Address:

_____

_____

_____

_____

Phone:

_____

Name of Dealer:

_____

Address:

_____

_____

_____

_____

Phone:

_____

Model: _____

Serial Number:_____

Date of Purchase: _____ (dd/mm/yy)

Date of Installation: _____ (dd/mm/yy)

Magnehelic at Install:_____

Installer's Signature:

_____

Name of Installer:

_____

Address:

_____

_____

_____

_____

Phone:

_____

WARRANTY: If you have concerns with your unit please contact the dealer where you purchased the stove.

4. Maintenance Record

DATE	WORK CARRIED OUT	SIGNATURE