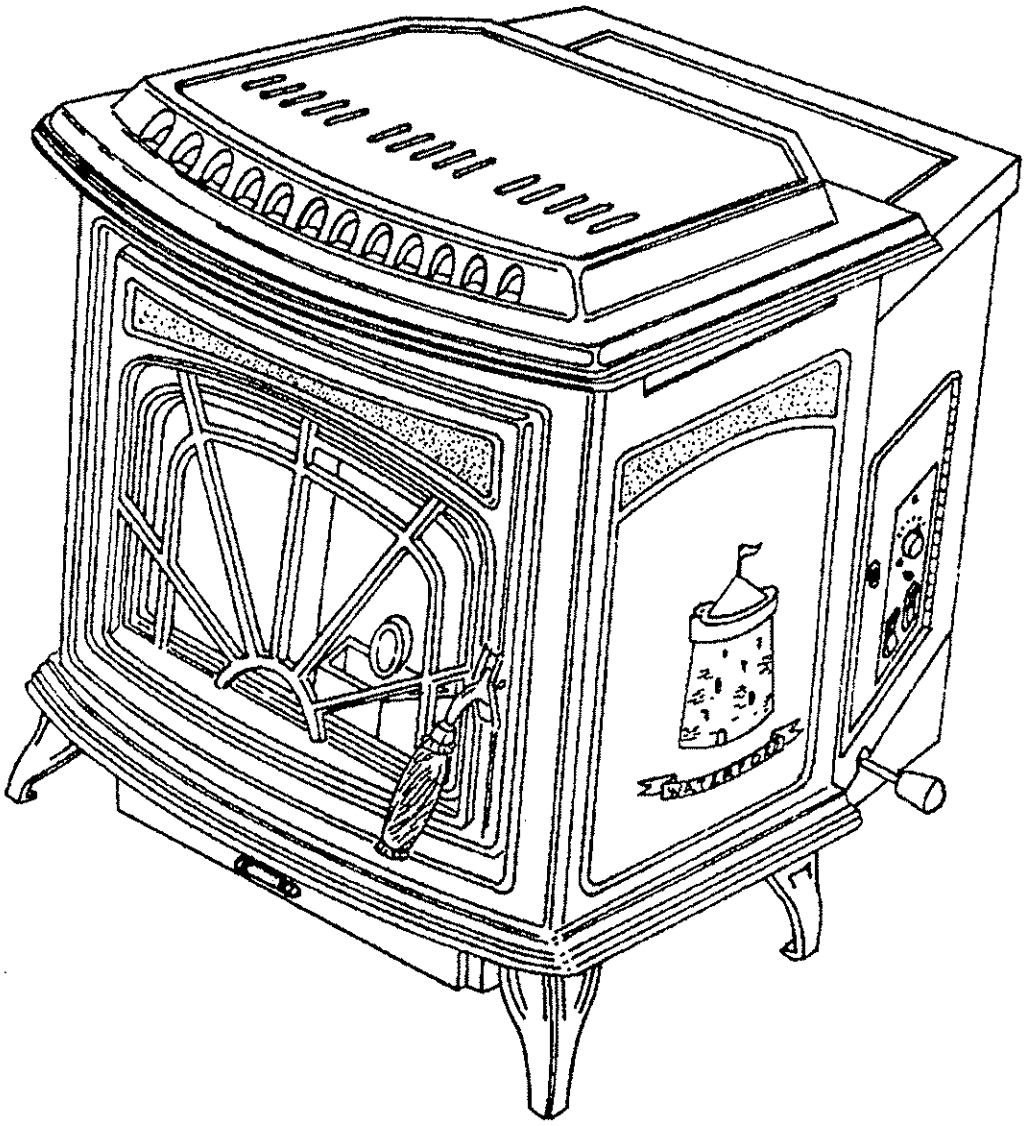
WATERFORD
EMERALD DV PELLET STOVE



Installation and Operating Instructions

SAFETY NOTICE

Please read this entire manual before you install and use your new heater. Failure to follow instructions may result in property damage, bodily injury or even death.

If this stove is not properly installed and maintained a house fire may result, for your safety follow the installation directions. Contact local building or fire officials about restrictions and installation inspection requirements in your area.

MANUFACTURED BY: WATERFORD STANLEY LTD, BILBERRY, WATERFORD, IRELAND.

TABLE OF CONTENTS

PAGE

SCHEMATIC DRAWINGS

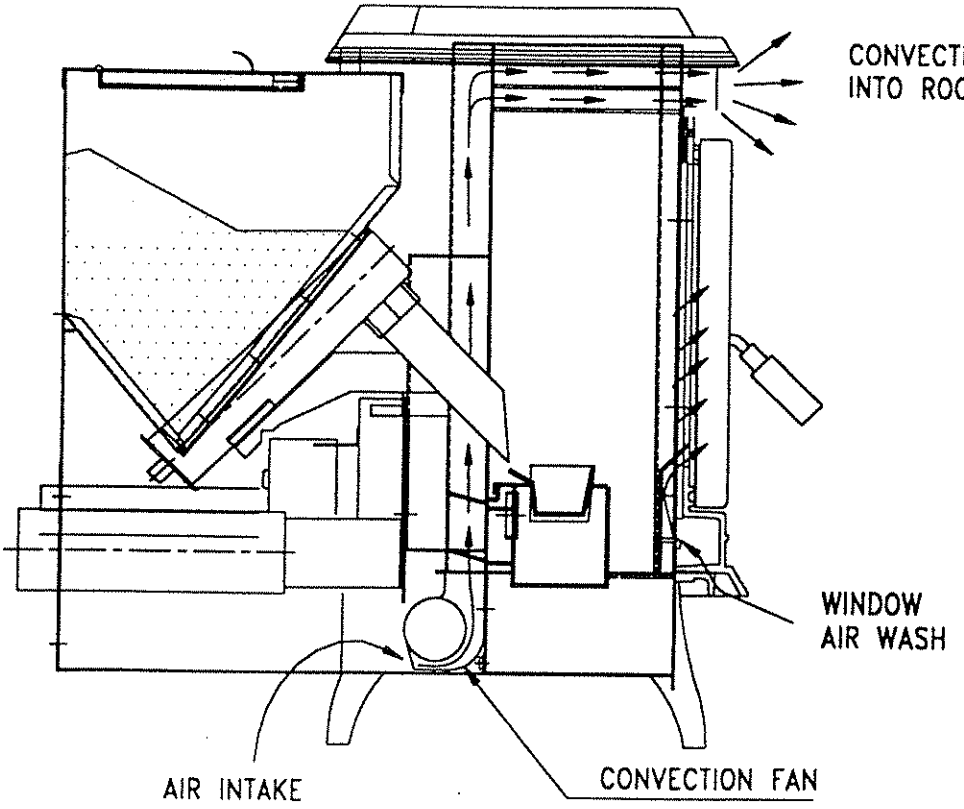


Fig. 1

WIRING DIAGRAM

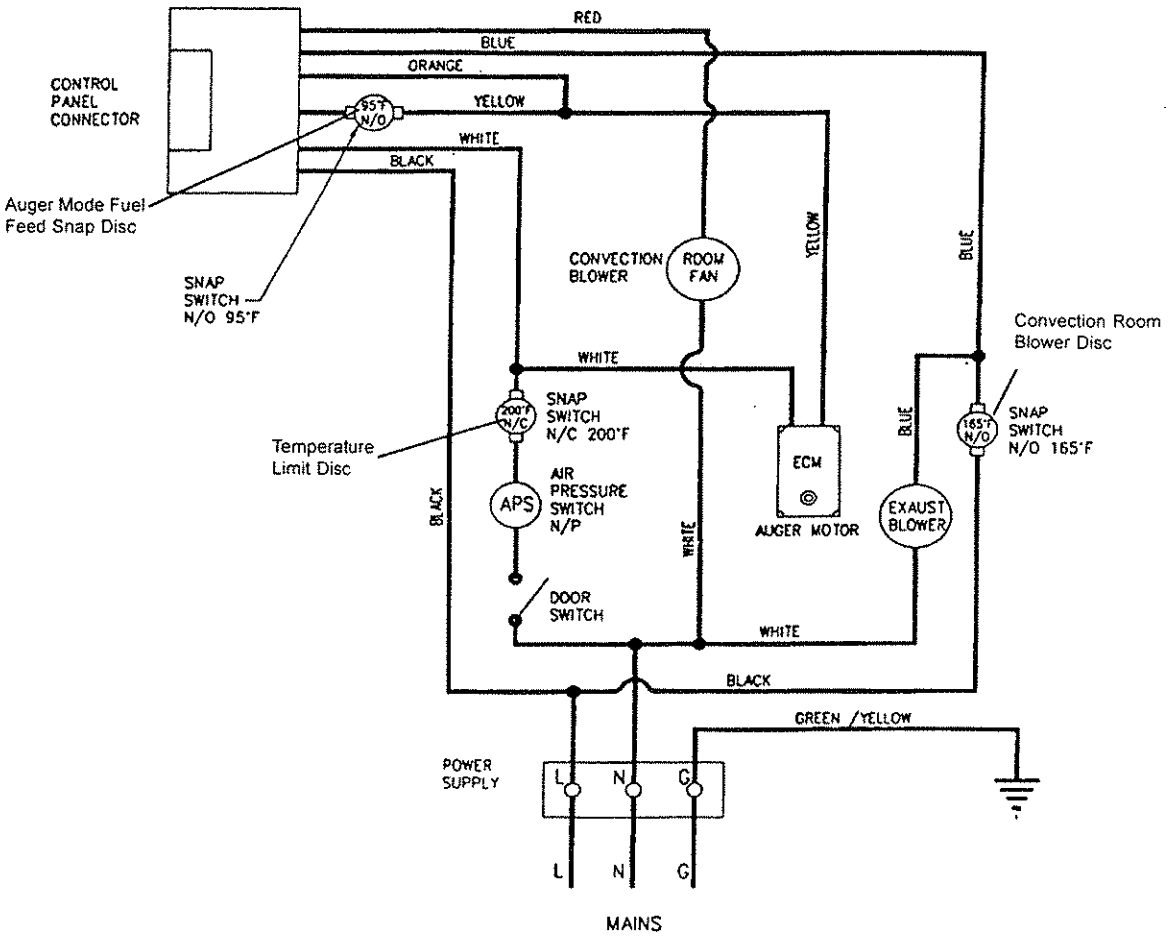


Fig. 2

SAFETY PRECAUTIONS

DETAILED SAFETY PRECAUTIONS

Please read this entire manual before installation and use of this pellet fuel-burning room heater. Failure to follow these instructions could result in property damage, bodily harm or even death.

Contact local building or fire officials about restrictions and installation inspection requirements in your area. Save these instructions.

Fuel - The Waterford Emerald DV Pellet Stove is designed and approved for the burning of premium grade pelletized wood fuel only. The burning of solid fuel other than in pellet form is not permitted. Failure to comply with this restriction will void all warranties and the safety listing of the stove.

Cleaning - There may be some build-up of dust and small quantities of soot in the exhaust vent over the season. Although this will be minimal under correct operation, a precautionary inspection (and cleaning if needed) on repair basis, is advisable.

Continuous Operation - Under correct operation, the Waterford Emerald DV Pellet Stove cannot be over-fired. Continuous operation at the maximum burn rate can, however, shorten the life of the electrical components (blower, motors, and electronic controls), and is not recommended.

Flammable Liquids - Gasoline or other flammable liquids must NEVER be used to start or "freshen up" the fire. Keep all such liquids well away from the stove at all times. Use only approved fire starter.

Ashes - Any ashes removed from the Waterford Emerald Pellet DV Stove must be deposited in a metal container with a tight-fitting lid. The closed container of ashes should be placed on a non-combustible surface until cooled pending final disposal.

Power - The appliance is provided with a grounded electrical cord. This cord should be connected to a standard, 110 volt, 60 Hz electrical outlet. The approximate power requirement is **200** watts. The power supply cord must be routed to avoid contact with any part of the stove surface thats likely to get hot while in operation.

Soot Formation - Burning with insufficient combustion air will result in the formation of soot, which will be deposited in the exhaust system and heat exchanger. This is a hazardous situation, in addition to being inefficient and a wasteful use of pellets. Insufficient combustion air can be detected by means of the flame colour which will be red/orange with visible soot formation at the top of the flame. Check your stove frequently, and adjust as required. Call your dealer for more assistance if necessary.

Auger - Pellet fuel is fed to the burn pot by means of an auger. This auger is driven by a high torque motor. The auger is capable of doing serious harm to fingers. Keep pellets in hopper at all times and keep fingers away from auger. The auger can start unexpectedly when the stove is running.

Smoke Detector - A smoke detector MUST be installed in the vicinity of the stove.

PLEASE NOTE: Disconnect power before doing any maintenance on the stove.

SAFETY TESTING

The Waterford Emerald DV Pellet Stove has been independently tested by Warnock Hersey in accordance with A.S.T.M EI509, U.L. 1482, U.L.C. S627 & U.L.C. S628 dealing with performance and safety. (see fig. 3).

The safety listing label is located on the hopper door and on the right hand access door looking from the front of the stove. Please read these safety labels carefully. They contain important information about the installation and operation of your Waterford Emerald DV Pellet Stove. This Owner's manual is intended to supplement, not replace or update the information contained on the safety labels.

This appliance is suitable for mobile home installation according to current National Building Codes. Consult with your insurance representative and local authorities to determine what local regulations are in force in your area.

The Waterford Emerald DV Pellet Stove will not operate using natural draft, nor without a power source to blowers and fuel feed systems. The appliance must be connected to or 3" 'PL' pellet vent exhaust system. (See exhaust installation). Although the Waterford Emerald DV Pellet has been listed for horizontal direct venting it is recommended that 6ft. of vertical type PL vent be connected to the stoves exhaust system. In the event of a power outage, this vertical length of vent will help to exhaust remaining products of combustion from the stove.

SAFETY LABEL

150

180

SAFETY LABEL

WARNING DO NOT REMOVE OR COVER THIS LABEL

Warnock Hersey

Listed Pellet Fuel
Burning Room Heater
Model: Emerald Pellet Stove D.V.
Also for use in Mobile Homes

Serial no. [ ]
Issue 97/001

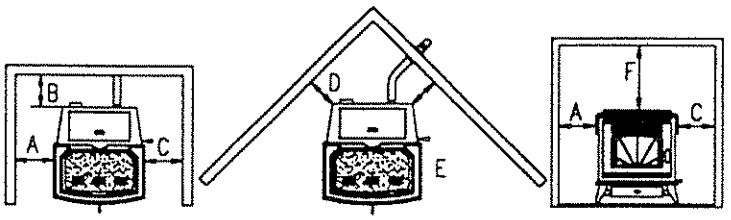
Tested to: ASTM E1509, UL1482, ULC S627, ULC S628
Maximum input rating 4.8lbs/hrs 2.2kg Electrical Rating : 115v. 60Hz 6 Amp

Install and use only in accordance with the installation and operating instructions.
Contact local building or fire officials about restrictions and installation inspecrtion in your area. use only listed 4ins/100mm diameter type "PL" vent complete with components 4in/100mm diameter.
Type "PL" vent maybe used for horizontal portion of installation. See manufacturers installation instructions for precautions required for passing a vent through a combustible wall or ceiling.
Do not connect this appliance to a vent serving another appliance.

This pellet fired appliance has been tested and listed for use in manufactured homes in accordance with Oregon Administrative rules 814-23-900 through 814-23-909

Minimum Clearance to Combustible Materials (Measured to Stove Top) for Mobile Home or Residential Installation.

Left sidewall	A	3in/75mm
Right sidewall	B	3in/75mm
Back wall	C	1in/25mm
Corner	D	1in/25mm
Floor pad extending at least 6" to the front	E	6in/150mm
Mantle	F	12in/300mm



Although the minimum clearance to the mantle is 12in/300mm it is recomended to maintain a distance of 24in/610mm for ease of loading into hopper.
Maximum alcove depth 24in/610mm, minimum ceiling height 44in/1120mm. combustible floor must be protected by noncombustible material extending to the front (E) 6in/150mm and to the sides and rear 0in/0mm. floor protector must extend to areas beneath vent pipe.

For use with 1/4in/6mm to 3/8in/9.5mm diameter pelletized wood fuels only. Replace glass only with 6mm ceramic glass. Do not route power cord beneath heater. The space beneath the heater must not be obstructed. do not obstruct combustion air openings.
Operate only with viewing door and ash removal door tightly closed.
Keep all furnishings well away from heater.

Manufactured By: Waterford Stanley Ltd.
Billberry.
Waterford. Republic of Ireland.
Tel: (051) 302300
Fax: (051) 302315

INSTALLATION DISCLAIMER

THIS STOVES EXHAUST SYSTEM WORKS WITH NEGATIVE PRESSURE IN THE COMBUSTION CHAMBER AND POSITIVE IN THE EXHAUST SYSTEM. THEREFORE IT IS IMPERATIVE THAT THE SYSTEM BE AIRTIGHT AND INSTALLED CORRECTLY SINCE WATERFORD IRISH STOVES INC., HAS NO CONTROL OVER THE INSTALLATION OF YOUR STOVE, WATERFORD IRISH STOVES INC. GRANTS NO WARRANTY, IMPLIED OR STATED FOR THE INSTALLATION OR MAINTENANCE OF YOUR STOVE, AND ASSUMES NO RESPONSIBILITY FOR ANY CONSEQUENTIAL DAMAGE(S).

PELLETS -

IMPORTANT PLEASE READ

GENERAL INFORMATION

The Waterford Emerald DV Pellet Stove has been designed to burn wood pellets only. Dirty fuel will adversely affect the performance of the stove.

CAUTION: The use of dirty or wet fuel will render the warranty void.

Only wood pellets manufactured to the Association of Pellet Fuel Industries (A.P.F.I.) standard for residential pellet fuels are recommended for use with the Waterford Emerald DV Pellet stove. Look for the A.P.F.I. registration number on the bag of fuel to ensure compliance with the standard. Contact your local dealer for more information on A.P.F.I. approved wood pellet fuels.

The A.P.F.I. standard for residential pellet fuel is as follows:

Heat Content:	8200 Btu/lb min.
Bulk Density:	40 lb/cu.ft min
Moisture Content:	8% max.
Ash Content:	1% max.
Size:	1/4" to 3/8" diameter
	1 1/2" long max.
Fires:	1% max. through a 1/8" screen

CLINKERING

Silica (or sand) in the fuel, along with other impurities, can cause clinkering. Clinkering, a hard mass of silica, is a function of the fuel, not the stove. It adversely affects the performance of the stove by blocking off the air holes in the grate. Even an approved pellet fuel may tend to clinker. A clinker can be removed from the burn grate and placed in the ash pan with the use of the grate scraper/ash pan tool. (See routine maintenance for more information on cleaning).

ASH

The frequency of ash removal and maintenance required on the stove is directly proportional to the ash content of the fuel. A stove burning fuel with a 0.25% ash content may only need to be cleaned out once every 1 to 2 weeks. However, a stove burning a fuel with a 1.0% ash content may need cleaning every 1 to 2 days.

FUEL FEED RATE

Different brands of pellets will feed at varying rates due to their size and density. This may cause the stove to burn differently. Therefore, a slight adjustment to the factory settings may be necessary.

PLEASE NOTE: Waterford Irish Stoves Inc, has no control over the manufacturing of pellet fuel and will not be held responsible for poor stove performance or any damage caused as a result of burning inferior quality fuels.

PRE-INSTALLATION ASSEMBLY

A. After removing the packing from around the stove, open the ashpit door/pan (item 5), fire door (item 11), and the hopper feed door (item 40) and remove the contents.

B. Remove the loose fitting hob (item 36) and place on a non-abrasive surface. The burn pot and grate must be removed to prevent damage to side bricks during installation. (see fig. 4)

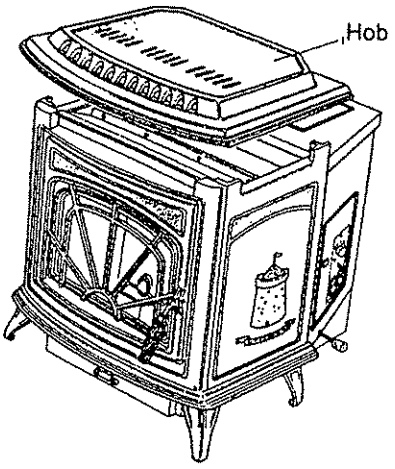


Fig.4

C Place the plastic packaging on the ground at the side of the stove and lay the stove over on its side on top of the packaging (fig. 5).

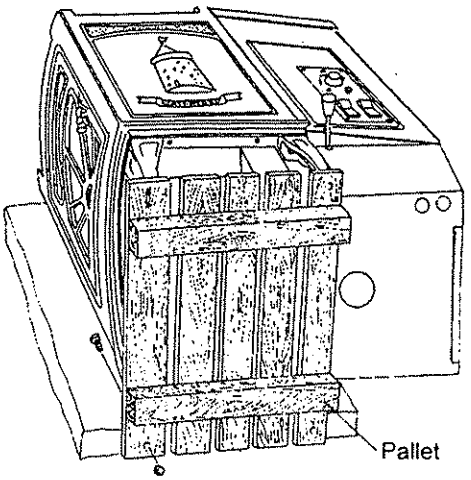


Fig. 5

D Remove the wooden pallet by taking out the retaining screws from the base of the stove. Stand the stove upright taking care not to strain the leg bolts (fig. 6).

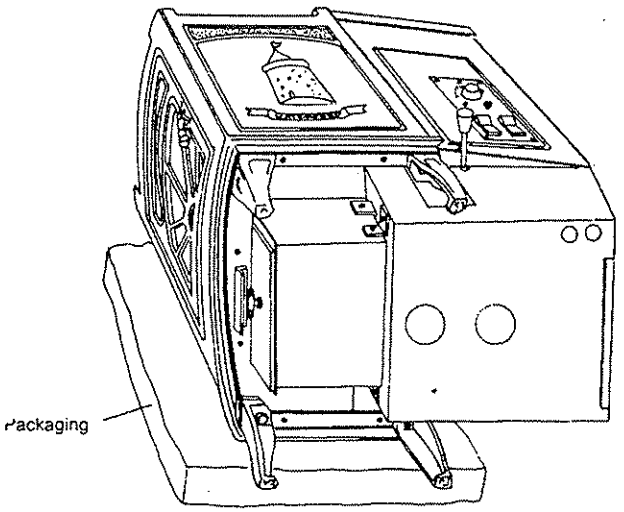


Fig. 6

IMPORTANT: BE CAREFUL NOT TO STRIKE ANY PORCELAIN SURFACES WITH THE TOOLS YOU ARE USING AS THIS WILL CHIP THE PORCELAIN.

E Replace ashpan (item 5).

F Replace the burn pot (item 6) and grate (item7) in the combustion chamber.

G. Check the hopper (item38) and make sure it is empty. Check that there are no nuts, bolts, etc.. lodged in the auger at the bottom of the hopper.

H. Attach the wooden handle (item 59) to the door (item 11). This can be done using a standard Philip's screwdriver. (See fig.7)

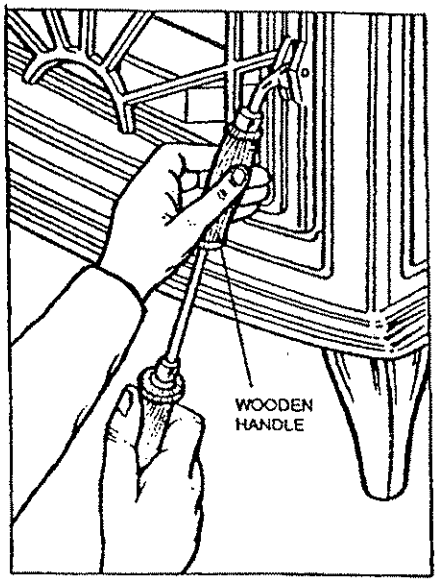


Fig. 7

INSTALLATION

LOCATING YOUR STOVE

There are several conditions to be taken into consideration when selecting a location for your Waterford Emerald DV Pellet Stove:

a. Position in the area to be heated - central locations are usually best.

b. Allowance for proper clearances to combustibles.

c. For safety, and to avoid drafts, avoid location near an exit.

d. Obstructions in the ceiling, upper roof, or floor, for example, ducting, plumbing, electrical fittings and wiring over head fixed furnishings. On the outside check that trees, plants and shrubs will be at least 2ft. (610mm) away from vent termination.

e. The exit termination must be located no less than 4ft. (1.2m) away from any openings through which combustible products could enter the building (i.e. windows and doors), and not less than 4ft (1.2m) from an adjacent building.

FLOOR PROTECTION

When installing the Waterford Emerald DV Pellet Stove on a combustible floor, a floor protector, consisting of a layer of non-combustible material at least 3/8" (10mm) thick or alternatively 1/4" (6mm) thick covered with 1/8" (3.2mm) sheet metal, must be used. It is required to cover the area under the heater and extend to a minimum of 6" (152mm) in front. (see fig.8)

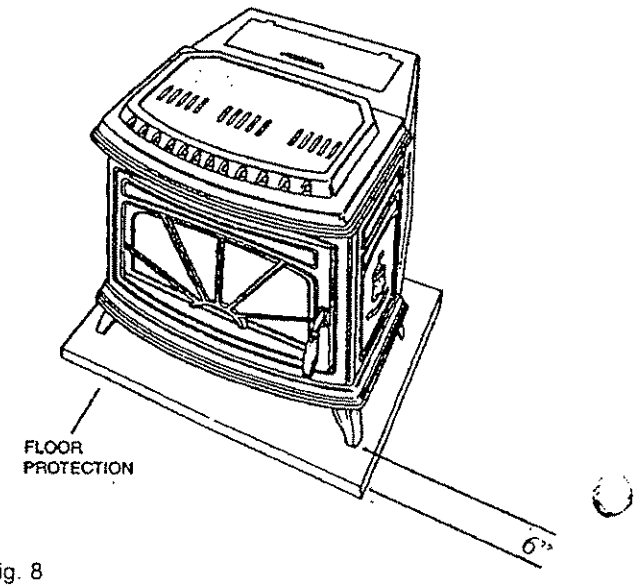


Fig. 8

CLEARANCES TO COMBUSTIBLES

Installation Clearances: Maintain at least the following minimum clearances to all combustible materials: (See figs. 9, 10, 11, 12 & 13)

Left Side	3"	75mm
Right Side	3"	75mm
Back Wall	1"	25mm
From Overhead (top of stove)	12"	300mm
Corner	1"	25mm

Note: Loading - Although the minimum clearance to mantle is 12" (305mm) it is recommended to maintain a distance of 24" (610mm) for ease of loading pellets into hopper.

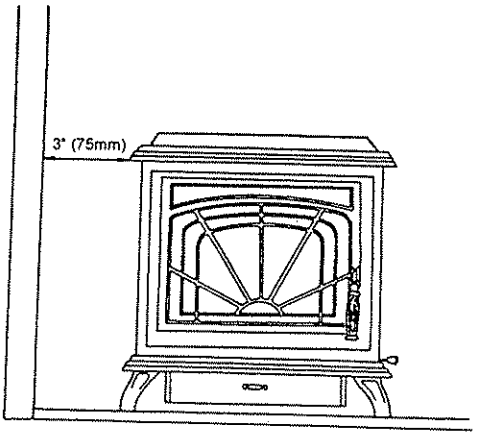


Fig. 9

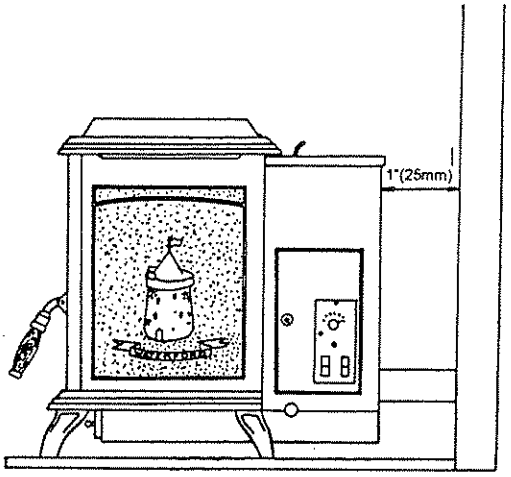


Fig.10

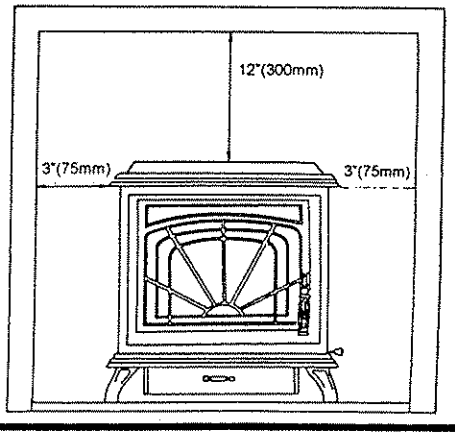


Fig. 11

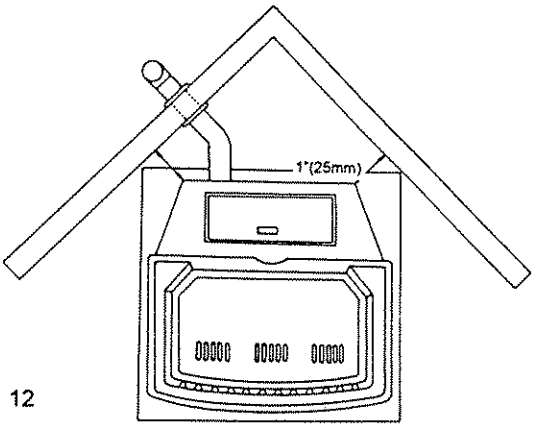


Fig. 12

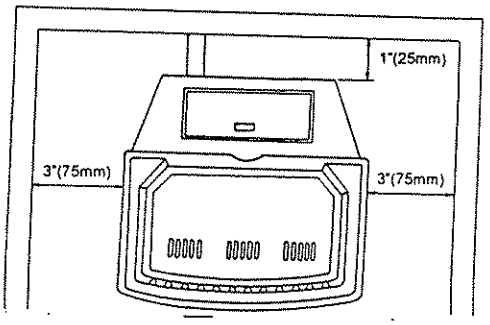


Fig. 13

This stove has been tested and approved for horizontal exhaust installation, however connection to a fully functional vertical flue system is recommended.

IT IS RECOMMENDED: THAT ONLY AUTHORISED WATERFORD DEALERS INSTALL YOUR PELLET STOVE. THE FOLLOWING INSTALLATION GUIDELINES MUST BE FOLLOWED TO ENSURE CONFORMITY WITH BOTH THE SAFETY LISTING OF THE STOVE AND TO LOCAL BUILDING CODES.

CHIMNEY/VENTING

Install vent at clearances specified by the vent manufacturer.

NOTE: As this appliance operates at positive pressure it is most important to seal all joints on the exhaust system using high temperature RTV silicone or a comparable sealing material.

HORIZONTAL EXHAUST TERMINATION

1. Locate the proper position on the wall for a "PL" vent wall thimble. Use a sabre saw or key hole saw to cut hole through the wall for the "PL" vent pipe. (See pipe manufacturer's instructions for further information on fitting details, and hole size). (see fig.14)

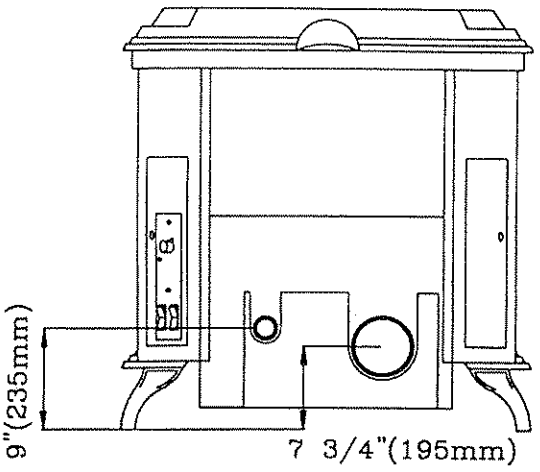


Fig.14

2. Position the stove approximately 12" (305mm) from the wall on the floor pad. Push the type "PL" pipe through wall thimble. Squeeze a bead of high temperature silicone (RTV) sealer around the end of the connector.

3. Move the stove (with pipe attached) towards the wall. The pipe will go through the wall thimble. Position the rear of the stove no closer than 1" (25mm) to a combustible material. Note: If the pipe is running vertical up the side of the wall, you must maintain minimum clearance specified by the pipe manufacturer.

A. Install PL exhaust system in accordance with the manufacturers. We recommend the use of a termination cap.

B. If connecting to an outside air supply cut a separate hole through the wall for the fresh air tube, this tube must be 1 - 15/16" (27mm) minimum diameter steel only (straight or flexible). PVC pipe or aluminium pipe should never be used. (see Fig 15).

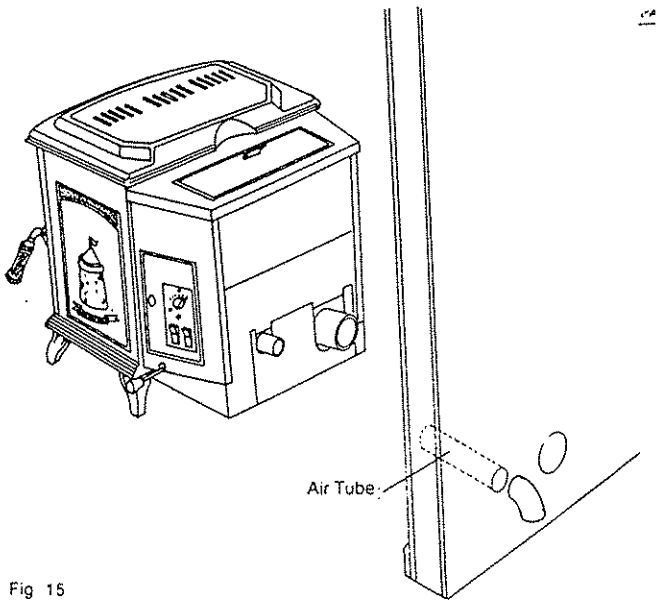


Fig 15

C. Mesh or cap required to prevent rodents accessing primary air tube.

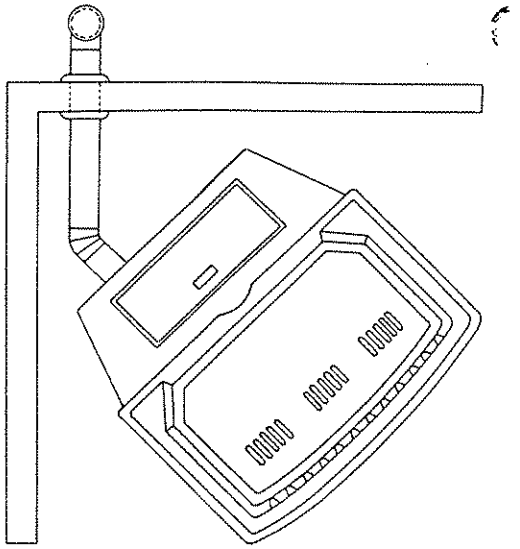


Fig. 16

WARNING: When connecting to a fully functional vertical exhaust termintation ensure that the installation conforms wiht both the safety listing of the stove and to local building codes

VERTICAL EXHAUST TERMINATION

As the appliance operates at positive pressure it is most important to seal all joints in the exhaust system using high temperature RTV silicone or a comparable sealing material.

Installation configuration with vertical exhaust termination. (see figs. 17, 18, 19 & 20).

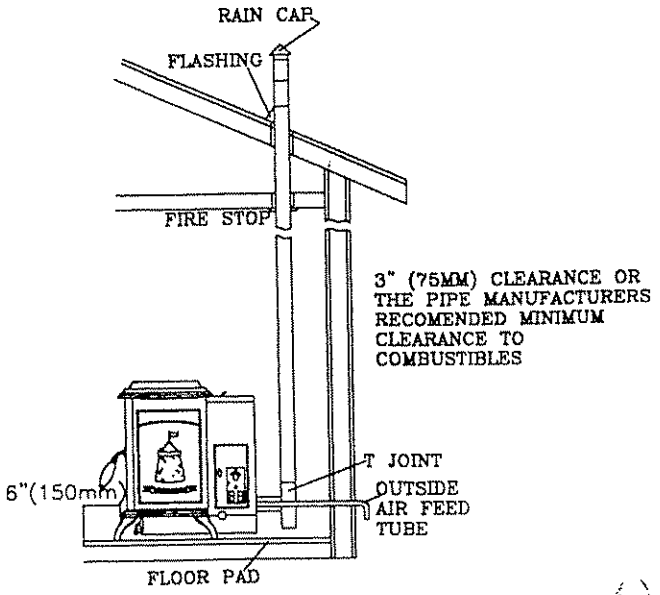
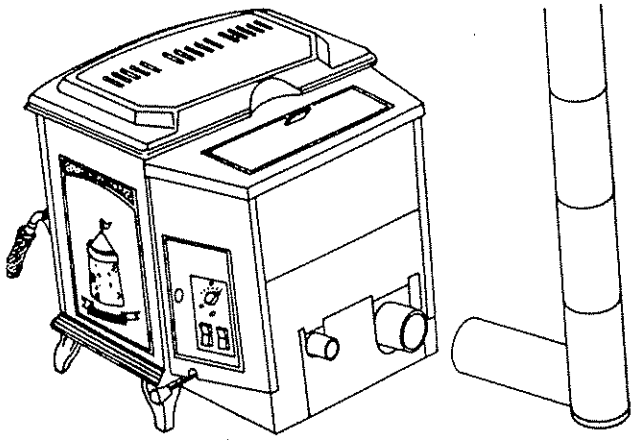


Fig. 17



Installation configuration through wall and with termination through roof.

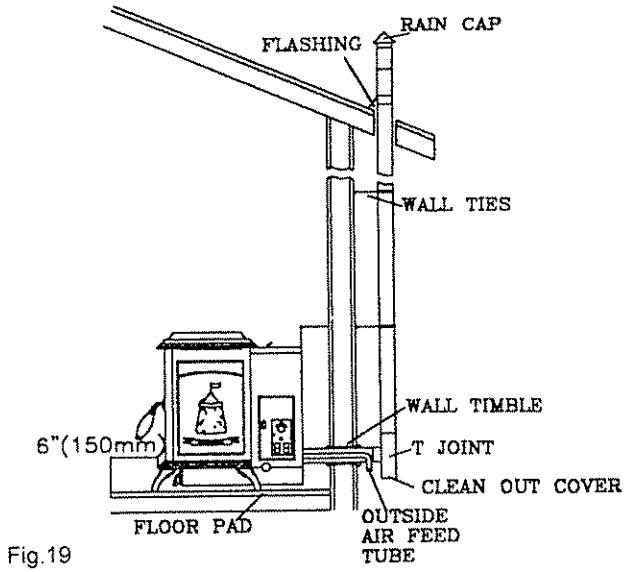


Fig.19

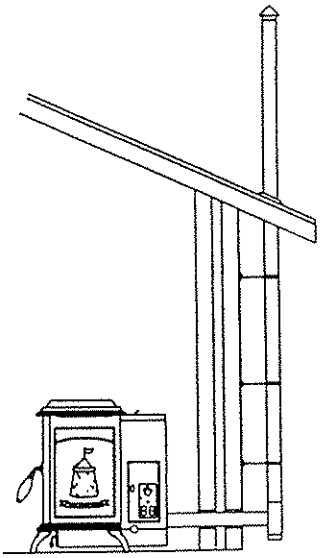


Fig. 20

CONNECTION TO A FACTORY BUILT OR MASONRY CHIMNEY

Do not connect this unit to a chimney flue servicing another appliance or install a flue damper in the exhaust venting system.

The Waterford Emerald DV Pellet may be installed in a suitably lined masonry or factory built fireplaces. (see Figs. 21 & 22)

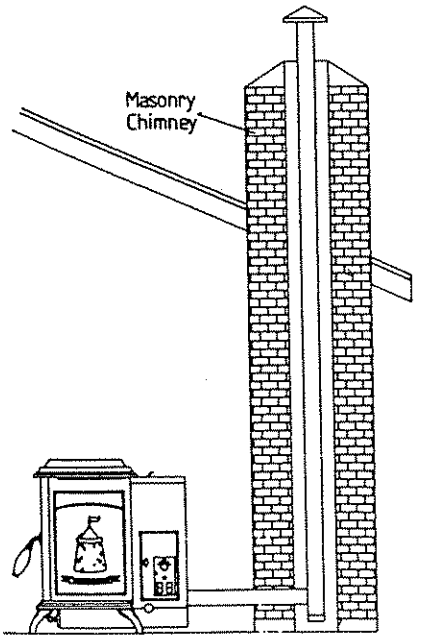


Fig. 21

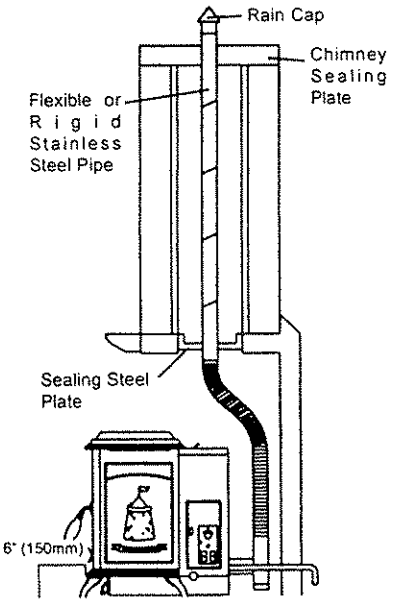


Fig. 22

VENT TERMINATION REQUIREMENTS FOR FORCED DRAUGHT PELLET BURNING APPLIANCES

A: Do not terminate vent in any enclosed or semi-enclosed area, such as; carports, garage, attic, crawl space, under a sundeck or porch, narrow walkway or closely fenced area, or any location that can build up a concentration of fumes such as a stairwell, covered breezeway etc...

B: Vent surfaces can get hot enough to cause burns if touched by children. Non combustible shielding or guards may be required.

C: Termination must exhaust above air inlet elevation. It is recommended that at least six feet of vertical pipe be installed when appliance is vented directly through a wall to create some natural draft to prevent the possibility of smoke or odour during appliance shutdown, and to keep exhaust from causing a nuisance of hazzard from exposing people or shrubs to high temperatures. In any case the safest and preferred venting method is to extend vent through the roof.

D: A clear out tee should be installed on every installation to facilitate cleaning.

E: Distance from doors and windows, or grilles or ventilation air into building:

Not less than 4ft/1.2m below

Not less than 4ft/1.2m horizontally from

Not less than 1ft/305mm above

F: Minimum distance from bottom of termination and grade maybe 12"(305mm). This is conditional upon the plants and nature of grade surface. The grade surface must not be a lawn, grass, plants or shrubs. Distance from bottom of termination and public walkway 7ft/2.1mm minimum.

G: Distance to combustible materials - 2ft/610mm. This includes adjacent buildings, fences, protruding parts of the structure, roof overhang, plants and shrubs etc...

MOBILE HOME INSTALLATION

In addition to the standard installation instructions listed in this manual, the following requirements are mandatory for mobile home installation. (see fig23)

a. Stove must be permanently bolted to the floor.

b. Stove must have a permanent outside air source.

c. Stove must be permanently electrically grounded to the steel chassis of the mobile home.

WARNING: DO NOT INSTALL IN A SLEEPING ROOM.

CAUTION: THE STRUCTURAL INTEGRITY OF THE MANUFACTURED HOME FLOOR, WALL AND CEILING/ROOF MUST BE MAINTAINED.

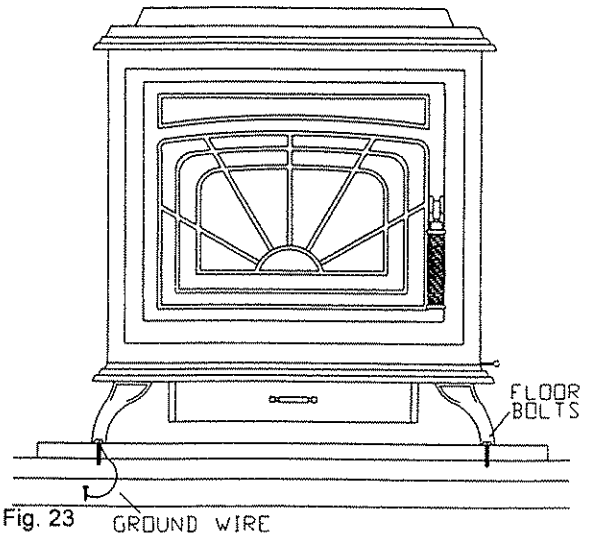


Fig. 23

OPERATIONS

STOVE OPERATING CONTROL PANEL

The control panel is located on the right hand side of the Waterford Emerald DV Pellet Stove looking from the front. Familiarise yourself with the workings of this control well in advance of operating the stove. Please refer to fig.24

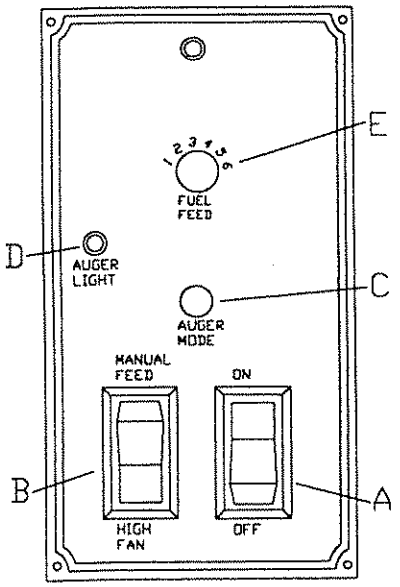


Fig. 24

CONTROL PANEL CONSISTS OF THE FOLLOWING:

a. On/Off switch located on the lower right corner. (A)

b. Manual feed and high fan switch located on the lower left corner. (B)

c. Auger mode button located centre of board. (C)

d Auger run light located left and above the auger mode button. (D)

e. Fuel feed rate selector switch located centrally and near the top. (E)

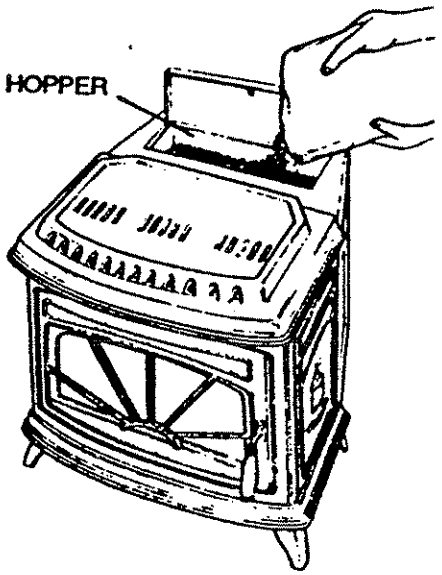


Fig. 25

PRE - LIGHTING INSTRUCTION

When lighting your Waterford Emerald Pellet Stove for the first time the auger feed has to be primed full with pellets.

1. Fill the hopper with the recommended pellet fuel. (See Fig. 25)
2. Plug the stove into the wall outlet.
3. Turn the ON/OFF switch in the control panel to the ON position and turn fuel feed control knob (heat output selector switch) to max (6). Press and hold the manual feed button (B) to prime auger.
4. Look through the combustion chamber door and when you see the first pellets dropping into the burn pot the auger is then fully primed. The amount of time needed to prime the auger depends on the size of the pellets being used. It could take up to 15 minutes for the auger to be fully primed. (Priming of the auger is only necessary the first time you use your stove or if you happen to run completely out of fuel).
5. Press the auger mode button in the centre of the control panel. Once the flue has heated up, the snap disc will engage. This will activate the auger motor, and pellets will begin to feed into the burn grate. The stove should be left on position 6 long enough to allow heat up of the stove and exhaust system (approx 30 mins).
6. After the pellets are burning well and the stove has heated up, adjust the FUEL FEED selector to the desired setting. Combustion air, convection air and pellet fuel feed will adjust automatically as the FUEL FEED selector switch is turned. The flame should be yellow/ white in colour and there should be no evidence of soot formation at the top of the flame.

LIGHTING YOUR PELLET STOVE - MANUAL

1. Ensure pellet fuel is present in hopper and add fuel if necessary. (see fig. 25).
2. Either manually or by using the fuel feed button (B) located on the bottom/left of the control panel, put a small amount of pellets in the grate (item6). (see fig. 25)
3. Open the fire door (item no. 11) "unit will not work with the door open".
4. Place an approved fire starter on top of the pellets.
5. Put approximately a fistfull of pellets over the fire starter, light the fire starter. (see fig.26)
6. Close the door (item no. 11)
7. Turn on the on/off switch (A).
8. When the pellets in the grate (item no.. 6) have ignited, press auger mode switch (C) located in the centre of the PCB and set the fuel feed to be required heat output (1-6) (E).
9. Keep viewing and ash removal doors tightly closed during operation.

NOTE: The auger mode button must be pressed each time the door is opened.

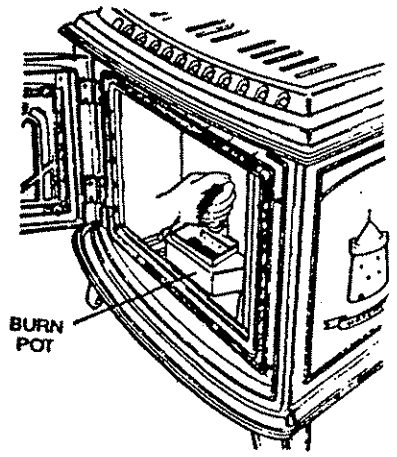


Fig. 26

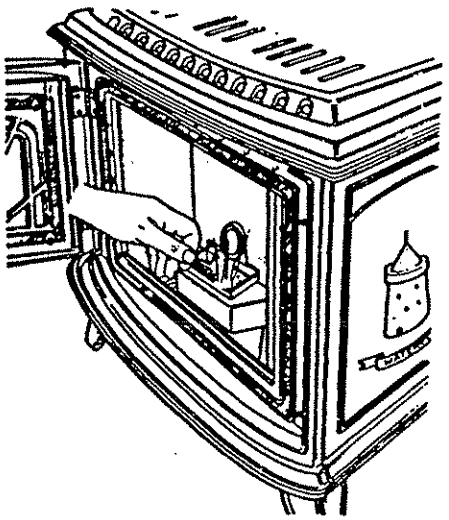


Fig. 27

FITTING AND WIRING ROOM STAT (NOT SUPPLIED)

1. Disconnect from mains.
2. Mount stat in its chosen location taking into consideration all the manufacturers requirements. Electrical rating, contacts - 1.2amps "24 VAC Temperature range 50 f to 90 f.
3. Using a flat head screwdriver open the right hand side access panel by turning the panel screw.
4. Thread thermostat cord through inlet located above the mains cord inlet.
5. Ground yourself, when handling the PCB to avoid static discharge and damage to the board.
6. Remove pins from t-stat 1, and place them in t-stat 2, centre pin being common. (see fig. 28)
7. When the stove is fitted with a room thermostat the stove will modulate. On the burn feed rate, as the thermostat senses hot or cool ambient. Set the fuel feed to 6 (max) and set the room thermostat to your required temperature. Air adjustment should be set at 2 or 3. Due to air density and attitudes over 2,000 ft air setting may need adjusting.
8. Connect cord to thermostat connectors (Orientation does not matter)
9. When all connections are complete close the side panel securely.

NOTE: Both blowers will remain on for a period after the stove has been shut down.

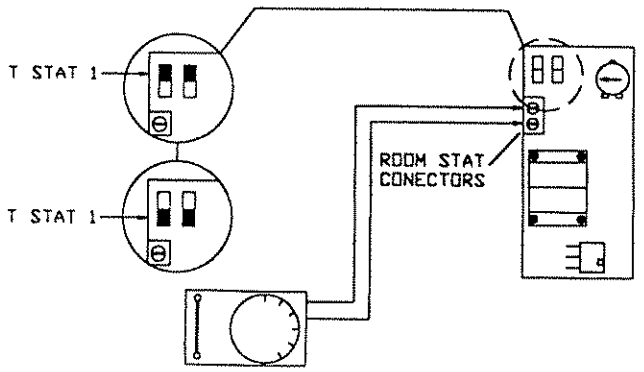
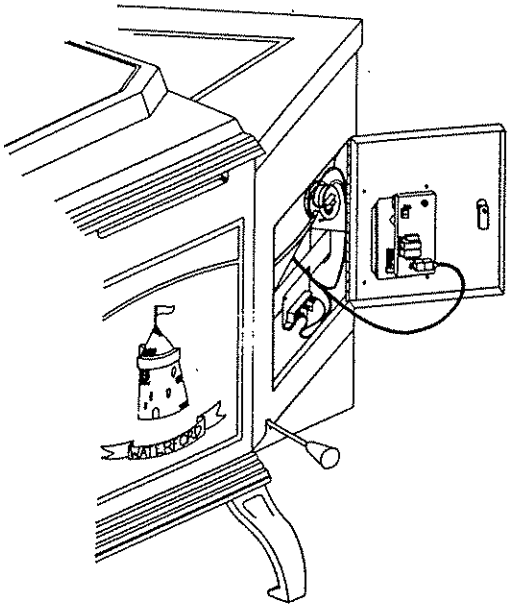


Fig. 28

OPTIONAL AUTOMATIC IGNITION -

FITTING & WIRING OPTIONAL IGNITION SYSTEM

1. Disconnect from mains.
2. Remove the back/bottom panel (item no.50) by undoing the six screws, four on the back panel and two on the bottom panel.
3. Disconnect the blue and white power cord from the convection blower (item no.41).
4. Remove the combustion blower by unscrewing the three fixing screws located on the top and the bottom of the blower housing. The blower can now be left to one side. (Fig.31A).
5. Place the igniter through the cleaning port and onto the fixing point on the he back of the fire box, and fit shield. (see fig. 31B).
6. Remove the screw from the opening on the base of the chamber and allow the two power wires from the lighter to be pushed through it and when this is done seal around it with (RTV) high temperature silicon sealer.
7. Fit the igniter system circuit board to the bracket plate located inside the right hand side door on the base panel using the four push on tabs supplied with the igniter. (See Fig. 30)



ig. 29

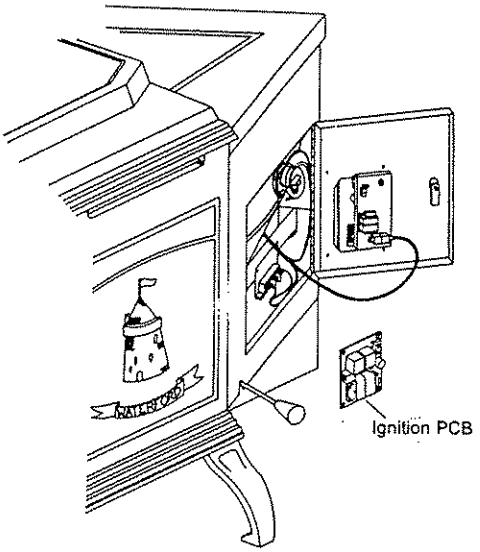


Fig. 30

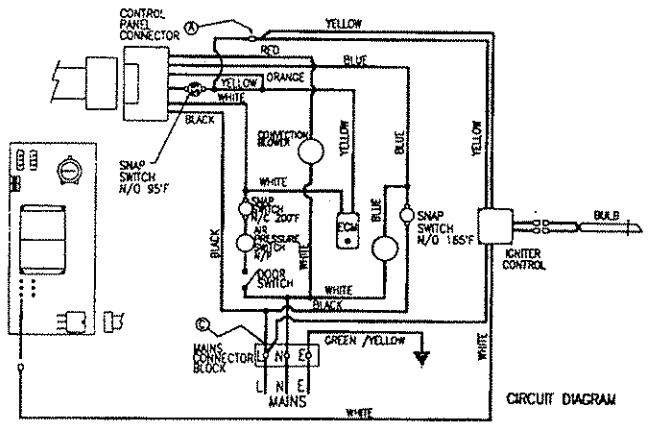


Fig. 31

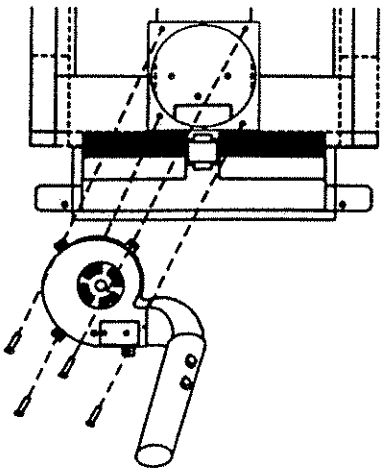


Fig. 31A

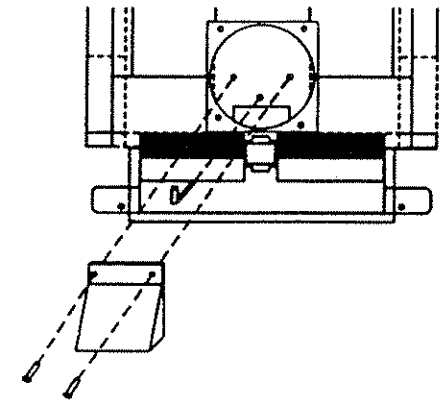


Fig. 31B

8. Connect ignition lighter wiring to loom as shown in the circuit diagram.
9. With the ignition circuit board mounted, wire as follows:

   Red (1) - Igniter

   Red (2) - Igniter (The orientation of these two wires does not matter)

   Yellow - onto the snap disc nearest the exhaust blower, marked orange/yellow using the spade connector on the ignition loom.

   White - Male spade on control panel.

   Black - Black on power supply terminal block.
10. Replace combustion blower (item no.41) and re-connect power wires, orientation does not matter.
11. Replace back/bottom panel (item no.. 50) making sure that all screws are tight.

LIGHTING YOUR PELLET STOVE WITH OPTIONAL AUTOMATIC SYSTEM FITTED.

1. Ensure pellet fuel is present in hopper and top up/add fuel if necessary. (see fig. 25)
2. Switch on pellet stove at the controller main switch (A), located on the right hand side of the unit.
3. Press the manual feed button in, until about 1/3 of the grate (item no. 6) is full of pellets, approximately 10 secs then release. Press the auger mode button (C) The ignition system will heat for 10 minutes, but fuel ignition may take place from 5 minutes.
4. However, if the fire does not develop during this time, the stove should be shut down for at least 3 minutes before attempting to re-light.
5. **IMPORTANT:** The ignition system will only accept one start pulse at approximately 3 minutes.

NOTE: Appliance will not operate if door is open.

STOVE OPERATING CONTROLS

HIGH FAN

On the bottom left side of the control panel is a dual switch, manual feed and high fan (B). When pressed in the high fan position, it will allow the convection blower to operate at full speed on the lower fuel feed setting 1 to 3. On fuel feed setting from 4 - 6 the convection blower will automatically run on high.

FUEL FEED CONTROL OPERATION

The fuel feed control knob is located at the right hand side looking at the stove. There are six separate fuel feed rate settings. (E)

Setting 1 - 1lb approx. per hour

Setting 2 - 1.7 lbs approx. per hour

Setting 3 - 2.5 lbs approx. per hour

Setting 4 - 3.4 lbs approx per hour

Setting 5 - 4.1 lbs approx. per hour

Setting 6 - 4.9 lbs approx. per hour

AIR CONTROL OPERATION

NOTE: Fuel feed rate will be affected by the size of the fuel.

There are six settings marked on the push pull air control lever (item no. 28) located on the right hand side of the stove. The air control push pull lever should be set in conjunction with the fuel feed control as follows:

Fuel Feed Setting at:	Air Control Push Pull Setting at:
1	1
2	2
3	3
4	4
5	5
6	5

Due to air density at altitiudes over 2,000 ft. setting 6 on the air control push pull lever (item no. 28) may be required at maximum fuel feed setting.

NOTE: If there is excessive turbulence in the grate air settings can be reduced.

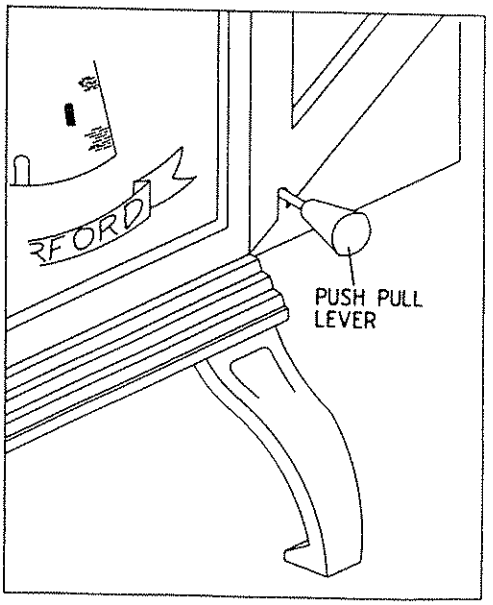


Fig. 32

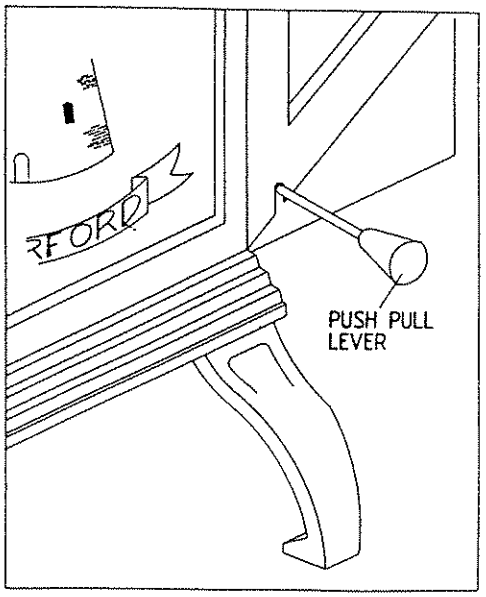


Fig. 33

ON/OFF SWITCH

There are 2 positions on the ON/OFF switch on the control panel. When the ON/OFF switch is moved from the OFF position the combustion/blower and convection blower will be activated, the auger mode button in the centre of the control panel must be pressed to begin fuel feed. The auger light will flash green when there is power to the auger motor.

POWER LATCH OUT/DOOR SWITCH

The stove is fitted with a power latch out system, which means that if any of the following circumstances occur you will need to reset your stove by pressing the auger mode button which has a six second delay:

1. If your electricity supply is interrupted due to a power failure.
2. If the fire door is opened.

MAINTENANCE

DANGER: RISK OF ELECTRIC SHOCK - BEFORE CARRYING OUT ANY MAINTENANCE/SERVICE MAKE SURE TO DISCONNECT THE STOVE FROM MAIN POWER SUPPLY AND ALSO ENSURE THAT THE STOVE IS THOROUGHLY COOLED.

CLEANING THE STOVE

It is important to clean your Waterford Emerald DV pellet stove and flue regularly. Frequent cleaning will ensure proper working and service, and prevent a fire.

REGULAR CLEANING

Scrape grate and burn pot (items no's 6 & 7) every day.

Emptying of ash pan (item no.5) every 4 - 5 days. Glass (item no. 14) every 2 - 3 days.

CAUTION:

MOVING PARTS AND HOT PARTS MAY CAUSE INJURY, DO NOT OPERATE WITH ANY CASTINGS OR OUTER STEEL CASTINGS REMOVED.

CLEANING THE GRATE/BURN POT

First open the fire door (item no. 11) fully.

Lift the burn pot (item no. 6) and then the grate (item no. 7) up and out towards the front (see fig. 34).

Empty the burn pot (item no. 6) making sure that all air holes are clear.

Empty the grate (item no. 7) by holding it over a suitable ash container pending final disposal.

Replace in reverse order making sure that the burn pot is fitted correctly. (see fig. 35)

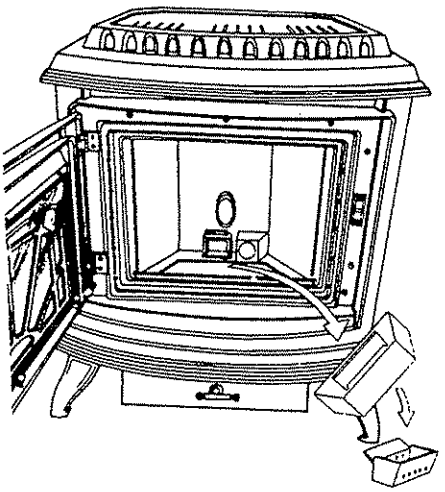


Fig.34

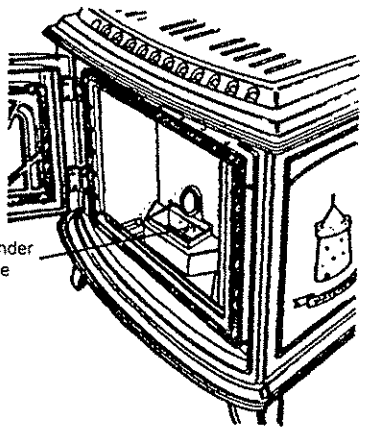


Fig. 35

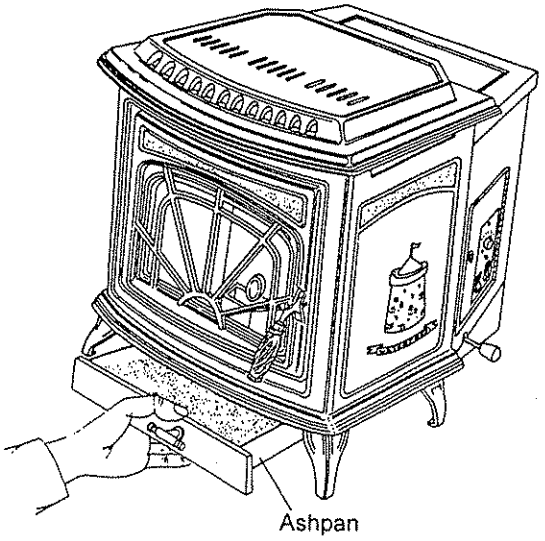
EMPTYING THE ASHPAN

CAUTION: Make sure the ashpit door handle is cool before attempting to open.

1. Unlock the ash pan (item no.5) by turning the knob anticlockwise.
2. Pull out and empty into a suitable ash container. (see safety precautions)
3. Replace in reverse order making sure that the ash pan (item no. 5) is locked closed.

DISPOSAL OF ASHES

Ashes should be placed in a metal container with a tight fitting lid. The closed container of ashes should be placed on a non combustible floor or on the ground well away from all combustible materials pending final disposal. (see figs. 36 & 37)



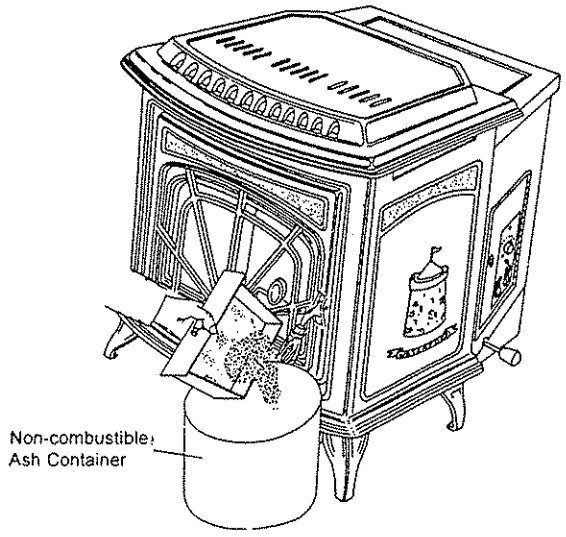


Fig. 37

SOOT AND FLYASH: FORMATION AND NEED FOR REMOVAL

The products of combustion will contain small particles of flyash. The flyash will collect in the exhaust venting system and restrict the flow of the flue gases. Incomplete combustion, such as occurs during startup, shutdown, or incorrect operation of the room heater will lead to some soot formation which will collect in the exhaust venting system. (see fig. 38)

HEAT EXCHANGER SCRAPER ROD

To remove the fly ash from the heat exchanger, use the cleaning tool supplied. Slot the tool up onto the scraper rod. Fig. 38 and gently pull forward and back, the fly ash will pull down into the fire box and can be removed when emptying the ashpan.

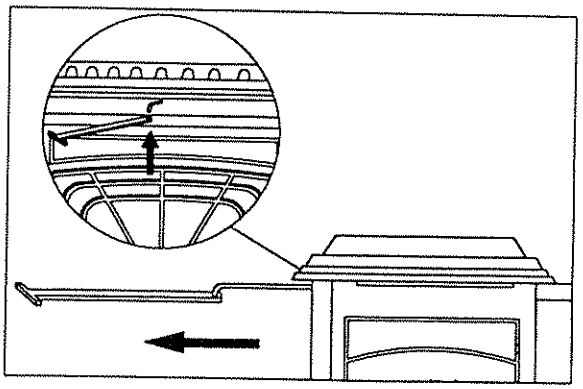


Fig. 38

IMPORTANT: It is recommended that the stove has an annual service and flue clean by suitably qualified personnel only.

CLEANING THE GLASS

1. Open the fire door (item no. 11).
2. Using a very fine steel wool gently wipe the glass from left to right until deposits are removed. (see fig.39)

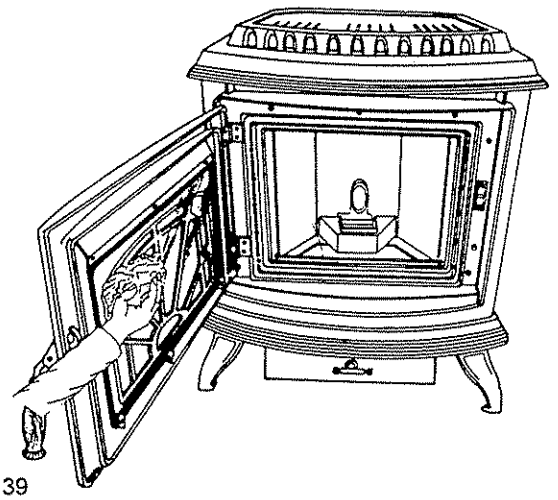


Fig. 39

GENERAL CLEANING

Every 24 - 40 days depending on usage.

General cleaning of the stove involves complete cleaning of all deposit build up in the flue passageways and combustion chamber surfaces.

1. Open the fire door (item no.11).
2. Remove the burn pot and grate (item no. 6) then the grate (item no. 7) (See Fig. 40)
3. Remove the front air baffle (item 26) located inside the stove front below the window glass.
4. Remove all the combustion chamber liners (item no's 18, 19, 20) by pushing up on the tung located on the top of each side baffle starting with the left hand side, then the right and finally the back panel. (See Fig. 41, 42, 43).

CAUTION: Fragile, combustion chamber liners will brake if extreme care is not taken.

NOT COVERED BY WARRANTY

5. Remove the ash pan (item no. 5) by turning the knob anticlockwise and pull out towards the front.
6. Remove the steel baffles from the fire box using the cleaning brush supplied, vigorously clean all passageways until deposits have been removed.
7. Brush down the inside of the combustion chamber.

   Rake out all the loose deposits now lodged in the ports low down at either side and the back of the ash pan chamber.
9. Place ash pan (item no. 5) slightly under the stove and leave projecting out in front of ashpit, rake all the loose deposits into the ash pan.
10. Store in a suitable container pending final disposal.
11. Refit combustion chamber liners (item no's 18, 19, 20) grate/burn pot (item no's 6 & 7) and ash pan (item 5). It is important that (items 6 & 7) grate and burn pot are fitted correctly.

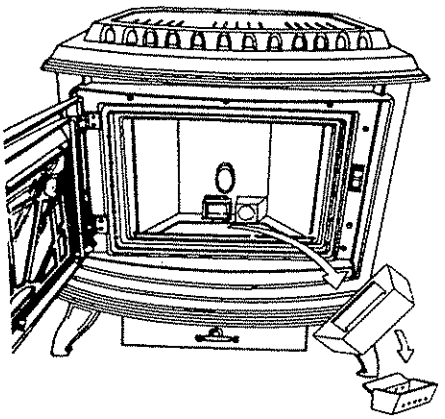


Fig.40

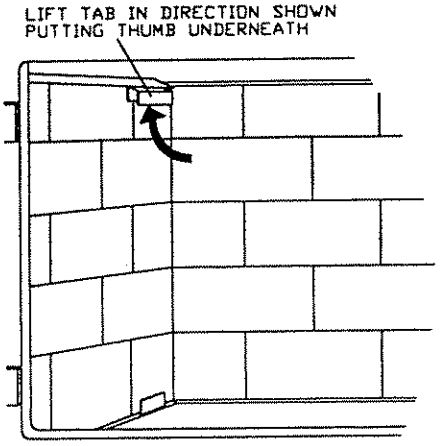


Fig. 41

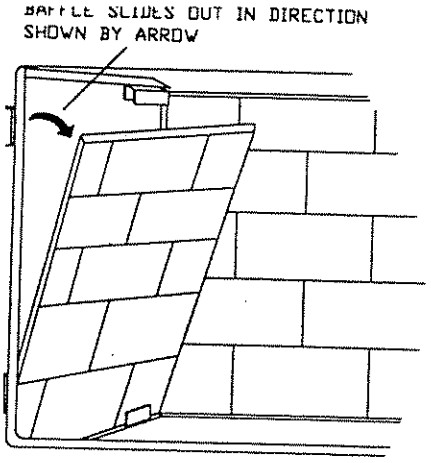
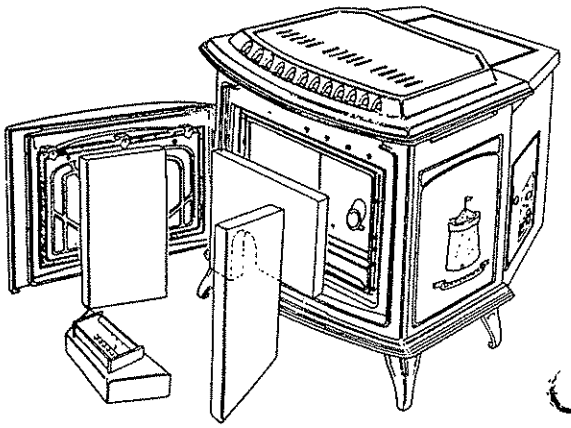


Fig. 42



Ceramic Liners
Assembly

Fig. 43

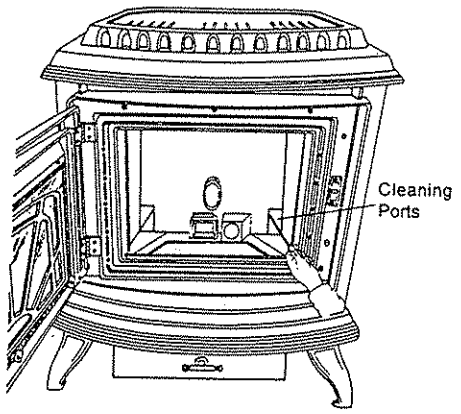


Fig. 44

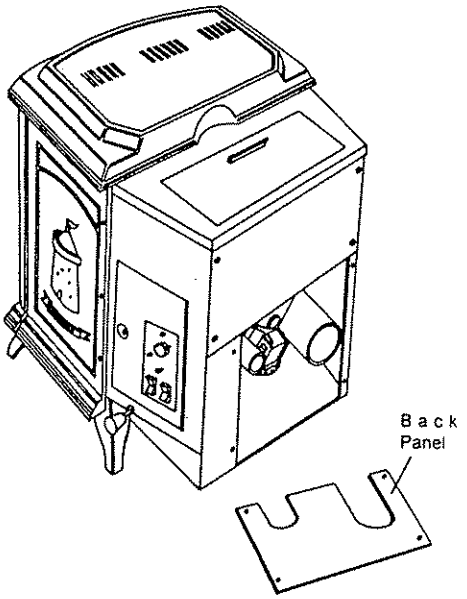


Fig. 45

AUGER REMOVAL

WARNING: UNPLUG THE STOVE

A. Remove the back panel (item no. 50) by undoing the fixing screws located on each side and front (see fig.45)

B. Empty hopper fully.

C. Disconnect Auger motor (item no. 57) from wiring loom " White & Orange".

D. Place all the screws etc.. in a small container so they won't be lost or misplaced.

E. Place Allen key (not supplied) into motor fixing screw, then turn anticlockwise to loosen motor from bushing, drop out motor when loose. (see fig.46)

F. Remove the next two screws from the bracket (item no.55) on the end of the Auger Tube (item no.52). Place a large tray under the auger tube (item no. 52) as build up of pellets and dust will come down with unit. (see fig.47).

G. Undo the remaining two screws from the side of the auger bracket (item no. 47)

H. The Auger spiral (item no. 53) can be removed by pulling it down and out and free from unit (see fig. 48).

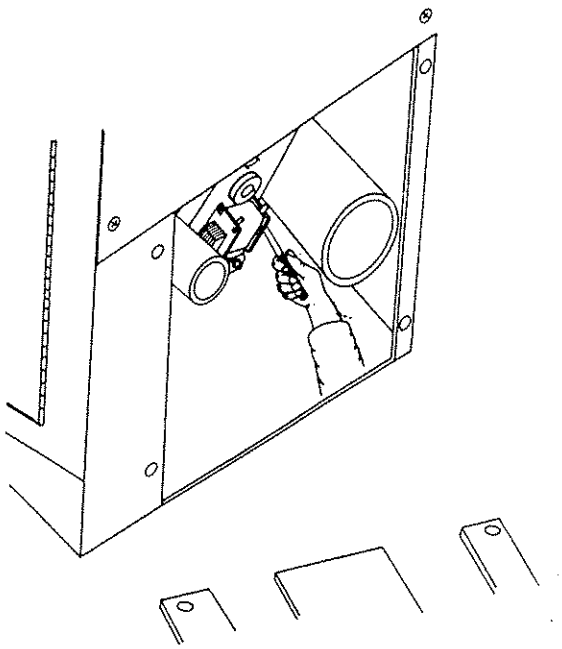


Fig. 46

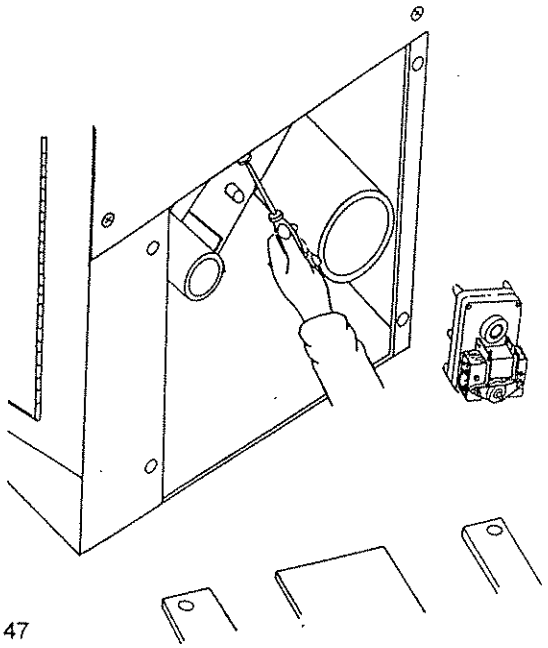


Fig. 47

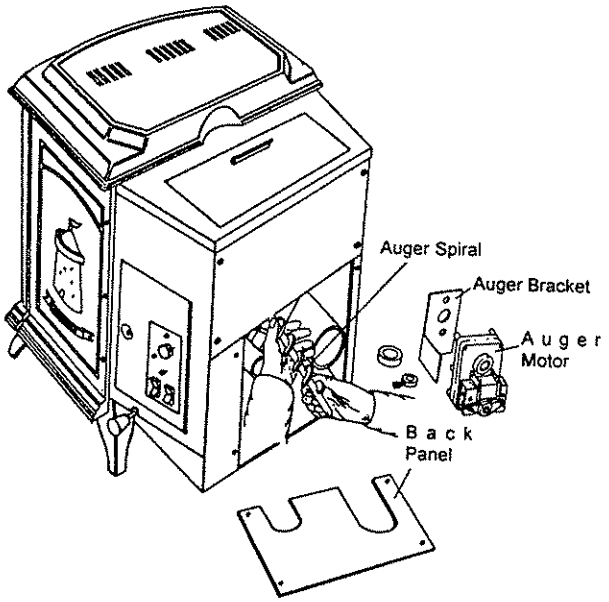


Fig. 48

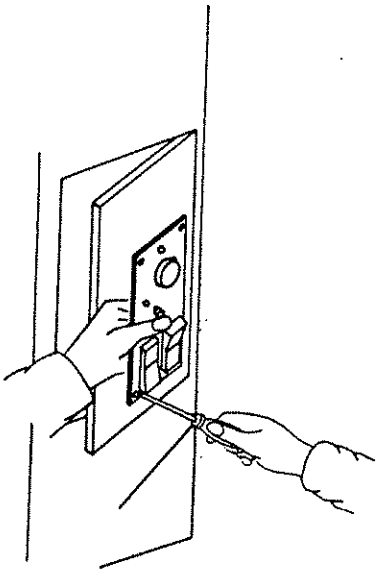
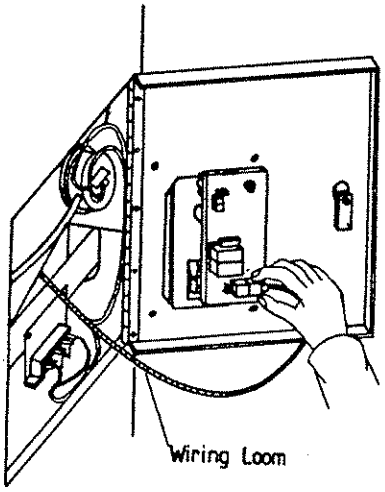


Fig. 50



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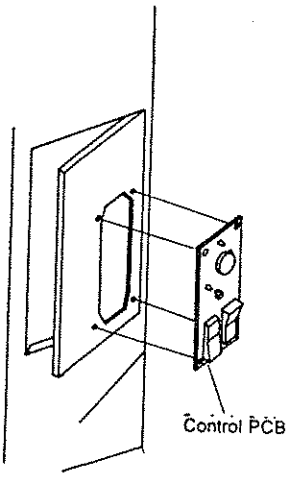

Fig. 51

REMOVING THE CONTROL PANEL

WARNING: Unplug the stove from outlet

The control panel (item no. 34) is located on the service door, which is on the right hand side of the stove and can be removed for replacement as follows:

1. Open the door (item no. 34) with a screwdriver by turning it anti-clockwise, then open fully.
2. Ground yourself to avoid static discharge.
3. Un-plug the controller (item no. 35) from the loom by pressing down on the joiner and removing it to right (see fig. 49).
4. Undo the controller from its housing by removing the four screws from each side of the unit (see fig. 50)
5. Remove controller free from stove (see fig 51).
6. Replace in the reverse order.

REMOVING SNAP DISCS

WARNING: Unplug the stove

There are three snap discs (item no's 46,47,61) wired into the electrical circuitry. Two in the exhaust duct controlling the convection and exhaust blower 165F normally open located towards the back and one at 95F normally open located nearest the exhaust blower. One located at the back of the fire box acting as a high limit shutdown 200F normally closed. To remove any of the snap discs simply disconnect the push on connectors and remove the two mounting screws holding the discs in place. Replace snap disc in reverse order with the proper type and rating.

EMERALD DV PELLET STOVE TROUBLESHOOTING GUIDE

PROBLEM	CAUSE(S)	SOLUTIONS
Fire burns with a lazy orange flame. Pellets build up in grate and the window gets sooted up.	Insufficient combustion air.	Adjust primary air control.
	Misplaced burn pot.	Locate burn-pot in its proper position.
	Clinker and ash build up in the burn pot.	Remove ash and clinker from burn pot.
	Fire door or ashpit door not locked fully.	Lock fire door or adjacent door fully.
	Leaking door or window glass gasket.	Replace gasket.
	Leaking air into exhaust system.	Seal exhaust system.
	Blockage in the exhaust system.	Clear blockage.
	Exhaust blower defective.	Replace exhaust blower.
Fire goes out or stove shuts down automatically.	The hopper is empty.	Refill hopper.
	Fuel feed rate is too low or air control set too low.	Increase the fuel feed or air setting.
	Primary air setting too high for fuel fuel feed rate.	Reduce primary air setting.
	High limit temperature switch tripped off.	Allow stove to cool for 1 hour then re-light. If this problem persists have your stove checked by a Waterford Dealer.
	Power outage has occurred.	Re-light stove when power supply has returned.
Pellets will not feed.	The hopper is empty.	Refill hopper.
	Auger Jammed.	Free auger.
	No power to auger motor.	Check power supply to auger motor with a volt meter across terminal.
	Loose auger set screw.	Tighten set screw.
	The auger motor, circuit board air pressure switch, high limit switch may be defective.	Have your Waterford Dealer diagnose the problem and replace any parts if necessary.
Blowers will not operate when the start switch is pressed.	No power to the stove.	Plug the stove into the wall outlet.
	No power to the control.	Check wiring.
	Faulty snap disc.	Have your Waterford dealer diagnose the problem and replace any parts if necessary.

PROBLEM	CAUSE(s)	SOLUTIONS
Pellets feed at maximum rate on all settings.	Fuel feed control knob loose on spindle.	Tighten fuel feed control knob set screw.
	Control board faulty.	Replace control board.
Stove shuts automatically when operating at low burn setting.	High limit snap switch breaking contacts at too low a temperature.	Replace high limit snap switch.
Blower will shut down after the fuel feed has been switched off and the stove has cooled, this could take up to 40 mins.	Low end limit snap switch has failed.	Replace low end limit snap.
	Control is defective.	Replace control board.
Exhaust blower will not run when the control board switch is depressed.	No power to the stove.	Plug stove into wall outlet.
	Power cord not connected to the terminal block.	Check terminal block connection.
	Blower wires are not connected.	Check blower wires.
	Control board defective.	Replace control board.
	Blower defective.	Replace exhaust blower.
Convection blower will run when the control board switch is depressed.	Low end limit snap switch has failed.	Replace snap switch.
	Control board defective.	Replace control board.
Soot, flyash or dust in the room.	Leaking joints in the exhaust system.	Turn off exhaust blower and check all joints in the exhaust system from through to the terminal.
	Cleaning the window or combustion Chamber especially when the stove is running.	Do not clean out stove when running.
	Leaking pellet dust from hopper or fuel feed system.	Seal hopper joints.
	Leaking door seals.	Replace door seal.
	Control faulty.	Replace control board.
Fire very erratic.	Auger screw sticking.	Empty hopper and free out auger.
	Excessive amount of dust in the hopper.	Clean out hopper.
Fire burns with white spiky flame.	Excessive primary air to the burn pot.	Reduce air shutter opening.

1 LEGS 4
2 BASE FRAME BRACKET 1
3 BASE FRAME RIGHT SECTION 1
4 BASE FRAME LEFT SECTION 1
5 ASH PIT DOOR 1
6 BURN POT GRATE 1
7 BURN POT 1
8 LEFT HAND SIDE CASTING 1
9 RIGHT HAND SIDE CASTING 1
10 FRONT CASTING 1
11 FIRE DOOR CASTING 1
12 DOOR GRILLE CASTING 1
13 DOOR GLASS GASKET 1
14 DOOR GLASS 1
15 DOOR GLASS CLIPS 3
16 DOOR GASKET 1
17 DOOR HINGES 2
18 LEFT HAND FIRE BOX LINER 1
19 RIGHT HAND FIRE BOX LINER 1
20 BACK FIRE BOX LINER 1
21 LEFT HAND STEEL BAFFLE 1
22 RIGHT HAND STEEL BAFFLE 1
23 BURN SYSTEM GASKET 1
24 BURN SYSTEM 1
25 BURN SYSTEM TOP CLEANING PORT COVER 1
26 BURN SYSTEM GLASS AIRWASH 1
27 BURN SYSTEM CONTROL KNOB 1
28 BURN SYSTEM CONTROL LEVER 1
29 GLASS DUCT PLATE 1
30 BACK RIGHT HAND SIDE PANEL 1
31 BACK LEFT HAND SIDE PANEL 1
32 WHITE INSULATION 1
33 LEFT HAND SIDE DOOR 1
34 RIGHT HAND SIDE DOOR 1
35 CONTROL BOARD(P.C.B.) 1
36 HOB CASTING 1
37 AUGER ASSEMBLY 1
38 HOPPER 1
39 HOPPER TOP PLATE 1
40 HOPPER LID 1
41 COMBUSTION BLOWER 1
42 COMBUSTION BLOWER GASKET 1
43 COMBUSTION BLOWER EXHAUST DUCT 1
44 CONVECTION BLOWER 1
45 DOOR SWITCH 1
46 SNAP DISC 95f 1
47 SNAP DISC 165f 1
48 DOOR SWITCH ARM 1
49 DOOR SWITCH BRACKET 1
50 BOTTOM / BACK PANEL 1
51 BACK COVER PANEL 1
52 AUGER TUBE 1
53 AUGER SPIRAL 1
54 AUGER BEARING 1
55 AUGER MOUNTING BRACKET 1
56 AUGER MOUNTING BUSHING 1
57 AUGER MOTOR 1
58 BRACE BAR 1
59 WOODEN DOOR HANDLE 1
60 MAINS POWER CORD 1
61 SNAP DISC 200f 1
62 EXHAUST DUST INSULATION 1
63 AIR PRESSURE SWITCH 1
64 CONVECTION PATH CASTING 1
65 POWER CORD TERMINAL BLOCK 1
66 CLEANING BRUSH
67 SCRAPER