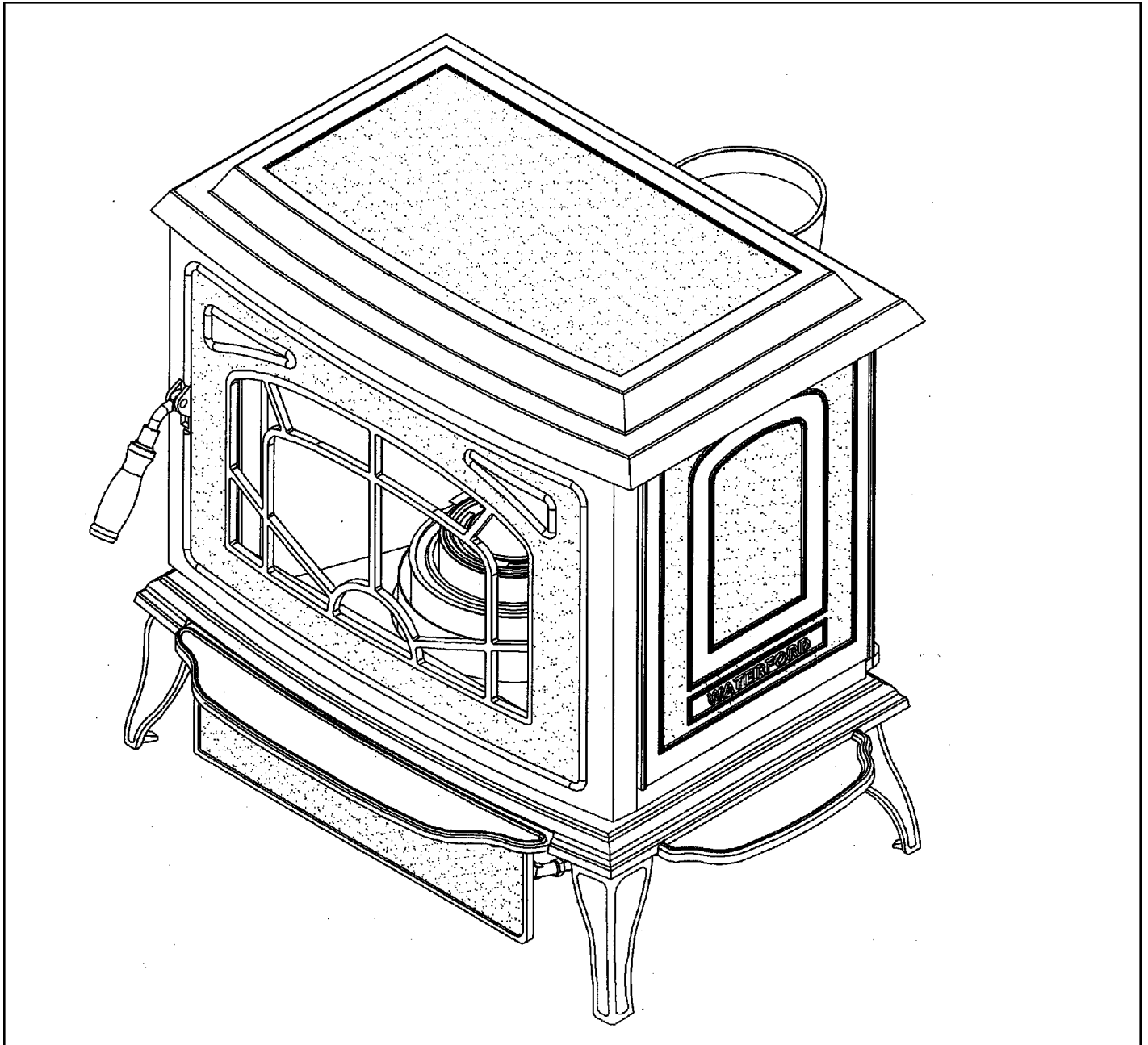


---

# STANLEY

TURNING YOUR HOUSE INTO A HOME

## Ashling Oil Boiler & Non Boiler Stove



### **INSTALLATION AND OPERATION INSTRUCTIONS**

To ensure safety, satisfaction and reliable service this stove should be installed by a suitably qualified and competent person.

To be left with end user.

---

---

## TABLE OF CONTENTS

1.	Introduction . . . . .	2
2.	Technical Data . . . . .	2
3.	Stove Dimensions . . . . .	3
4.	Installation . . . . .	4
5.	Location . . . . .	4
6.	Hearth Construction . . . . .	4
7.	Electrical Supply . . . . .	4
8.	Fuel Supply/Installation . . . . .	5
9.	Oil Storage Tanks . . . . .	5
10.	Fuels . . . . .	5
11.	Fuel Supply Line . . . . .	5
12.	Clearance to Combustibles . . . . .	6
13.	Flue Systems . . . . .	7
14.	Use of Existing Flues & Chimney's . . . . .	7
15.	Suitable Materials . . . . .	7
16.	Flue Liner . . . . .	8
17.	Flue Materials . . . . .	8
18.	Sealing . . . . .	8
19.	Flue Height . . . . .	8
20.	Factory Made Insulated Chimneys . . . . .	8
21.	Connections . . . . .	8
22.	Draught Requirements . . . . .	8
23.	Down Draughts . . . . .	9
24.	Ventilation and Combustion Air Requirements . . . . .	9
25.	Plumbing - Boiler Model . . . . .	9
26.	Regulations . . . . .	9
27.	Gravity Circuit . . . . .	9
28.	Injector Tee . . . . .	10
29.	Water Circuit Temperature . . . . .	10
30.	Pipe Thermostat . . . . .	10
31.	Pre-Installation Assembly . . . . .	10
32.	Exploded View - Non Boiler Model . . . . .	11
33.	Exploded View - Boiler Model . . . . .	12
34.	Barometric Damper . . . . .	13
35.	Commissioning . . . . .	14
36.	Burner Assembly . . . . .	15
37.	Fuel Bed Assembly . . . . .	16
38.	Flame Pattern . . . . .	17
39.	Stove Operation . . . . .	17
40.	Servicing . . . . .	18
41.	Control Valve Rating . . . . .	18
42.	Vitreous Enamel Cleaning . . . . .	19
43.	Wiring Diagram . . . . .	20
44.	Fault Finding . . . . .	21

## INTRODUCTION

To ensure safety, satisfaction and reliable operation, this stove should be installed and commissioned by a trained and competent person.

### IMPORTANT NOTICE

As manufacturers of heating appliances we take every possible care to ensure, as reasonably practicable, that these appliances are so designed and constructed as to meet the general safety requirements when properly used, installed and maintained.

#### Control of substances harmful to health :

- \* It is the users/installer responsibility to ensure that the necessary personal protective clothing is worn when handling materials that could be interpreted as being injurious to health and safety. See below.
- \* When handling firebricks, fire cement or fuels use disposable gloves.
- \* Exercise caution, use disposable masks and gloves when handling glues and sealants. When working with kerosene oil, fibre glass or mineral wool. Avoid contact with skin, eyes, nose and throat, use disposable protection.

**Installation should be carried out in a well ventilated area.**

**Any alterations to this appliance that are not approved in writing by Waterford Stanley will render the guarantee void.**

**This appliance is hot while in operation and retains its heat for a long period of time after use. Children, aged or infirm persons should be supervised at all times and should not be allowed to touch the hot working surfaces while in use or until the appliance has thoroughly cooled.**

**The front door should only be opened if it is necessary to clean the glass. This should only be done when the stove is cold. The ceramic coal set-up must not be interfered with.**

**This stove is designed for continuous or intermittent use -When stove is in continuous use it should be serviced at least every 6 months. If it is not used for extended periods (i.e. during the summer months) the service period can be extended to 9 - 12 months.**

**The complete installation must be done in accordance with current Standards and Local Codes. It should be noted that the requirements and these publications may be superseded during the life of this manual.**

### TECHNICAL DATA

<b>Fuel:</b>	Kerosene 28 sec
<b>Mains Current:</b>	220V - 240V, 50Hz, A.C.
<b>Supply Fuse Rating:</b>	3 amp
<b>Chimney Draught:</b>	1mm - 1.5mm wg
<b>Flue Diameter:</b>	6" (152.4mm)
<b>Test pressure of boiler (if applicable):</b>	3 bar
<b>Max permissible boiler operating pressure (if applicable):</b>	2 bar
<b>Max permissible boiler operating temperature (if applicable):</b>	90°C

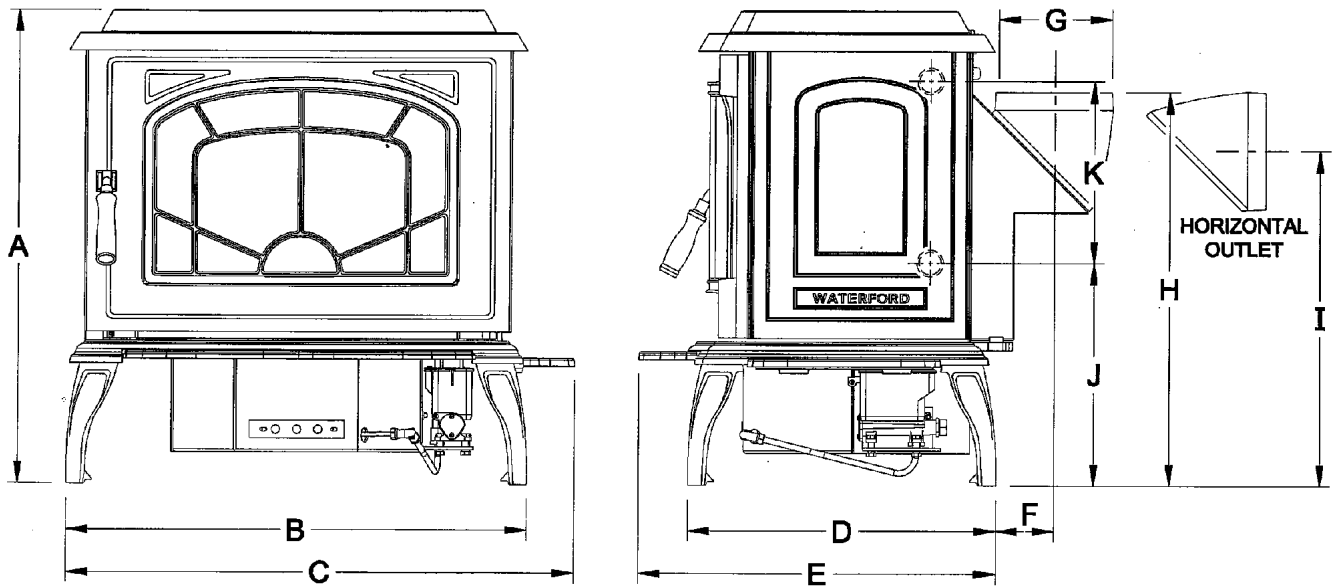
	<u>Boiler Model</u>		<u>Non Boiler Model</u>	
<b>Total Output:</b>	8.3 kW	28,300 Btu's	6.2 kW	21,100 Btu's
<b>Output to Water:</b>	6.3 kW	21,500 Btu's	N/A	
<b>Max Consumption:</b>	0.912 kg/h	19cc's/min	0.67 kg/h	14cc's/min
<b>Min Consumption:</b>	0.29 kg/h	6 cc's/min	0.24 kg/h	5cc's/min

**Weight Gross:** 165kgs (363 lbs)

All technical data are taken under laboratory conditions and may vary in use.

The manufacturers reserve the right to make alterations to design, materials or construction for manufacturing or other reasons subsequent to publication.

## STOVE DIMENSIONS



**NOTE:** Dimensions stated below may be subject to a slight +/- variation.

DIMENSIONS	A	B	C	D	E	F	G	H	I	J	K
METRIC (mm)	675	685	745	435	505	95	153	540	475	265	295
IMPERIAL (inch)	26 <sup>1</sup> / <sub>2</sub>	27	29 <sup>1</sup> / <sub>3</sub>	17 <sup>1</sup> / <sub>8</sub>	20	3 <sup>3</sup> / <sub>4</sub>	6	21 <sup>1</sup> / <sub>4</sub>	18 <sup>3</sup> / <sub>4</sub>	10 <sup>1</sup> / <sub>2</sub>	11 <sup>5</sup> / <sub>8</sub>

**NOTE: ALL INSTALLATION WORK MUST BE CARRIED OUT BY A TRAINED AND COMPETENT PERSON.**



## INSTALLATION

The installation shall comply with the following:

B.S. 5410 Part 1 Oil Installations

The Building Regulations: Part J England, Wales.  
Part F Section III Scotland  
Part L Northern Ireland  
Part J Ireland

The Control of Pollution (Oil) Regulations:

B.S. 7671: Requirements for Electrical Regulations

Safety Document 635: The Electricity at Work Regulations.

Safety, Health and Welfare at Work Act for Ireland, England, Wales and Scotland.

### LOCATION

When choosing a location for this appliance you must have the following:

- A. Sufficient room for installation and servicing.
- B. Adequate clearance to combustibles (see section Clearance to Combustibles).
- C. A satisfactory flue system (See Flue Systems).
- D. Fixed fuel supply line and shut off valve (See Fuel Supply).
- E. Adequate air supply to support combustion (See Ventilation & Combustion Air Requirements).
- F. Proper fused power point (See Electrical Supply).
- G. Allow for adequate air circulation around stove.
- H. Solid floor or base of non-combustible material which is capable of supporting the total weight of the stove. (See Hearth Construction).
- I. Position in the area to be heated - central locations are usually best.
- J. Avoid installing the stove near door ways, windows, walkways and areas with air stream passing through.

**NOTE:** When passing through walls or ceilings with the flue system:

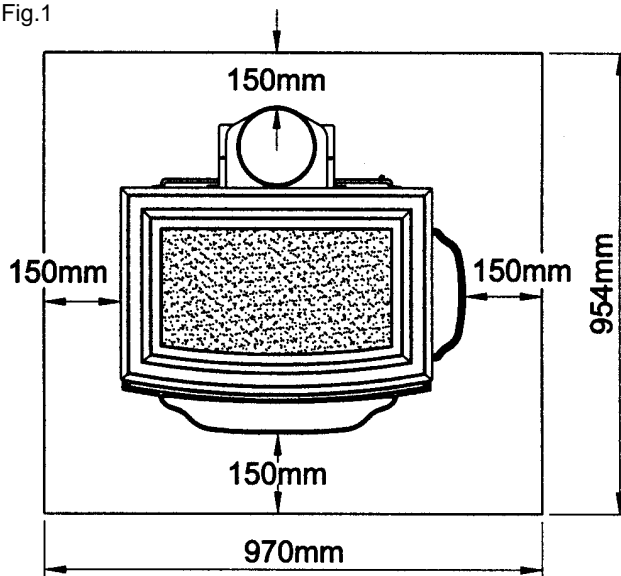
- K. Always check for obstructions for example electrical fittings, wiring, ducting, plumbing and fixed furnishings.

### HEARTH CONSTRUCTION

The stove must be installed on a concrete construction hearth or a non-combustible hearth slab capable of supporting the weight of the stove and installation.

Minimum hearth size: = (970mm) 38" wide, (954mm) 37.5" deep with the fireplace opening centrally located if applicable. Avoid running carpets, or other floor covering under the stove as it is recommended to have the hearth at least (50mm) 2" above floor level. (See Fig.1).

Fig.1



### ELECTRICAL SUPPLY

All wiring external to the appliance must conform to the current B.S. 7671 (UK) B.S.7462 Safety Document 635: ETC Part 1 Section 5.4.6 & The Electricity at Work Regulations.

The stove requires a 220 V - 240 V 50Hz supply. Connection of the appliance and any system controls to the mains supply must be through a moulded on plug top which is fitted to the appliance in accordance with EN 60335 and Consumer Protection S.I. 1994 No. 1768 Plug and Sockets (Safety) Regulations 1998.

**NOTE:** Always install in accordance with current local wiring regulations.

**WARNING:** THIS SUPPLY MUST BE EARTHED (Refer to B.S. 7430: Code of Practice for Earthing).

**IMPORTANT:** The appliance plug must be accessible and so, must not be obstructed and close to the stove. To isolate the stove, completely unplug from the mains socket. Persons in charge of this stove should be aware of this socket outlet position.

## FUEL SUPPLY / INSTALLATION

### OIL STORAGE TANKS:

Oil storage tanks made of steel and all connecting equipment (e.g. filling pipes, and vent pipes) should comply with B.S. 799 Part 5. Galvanised steel must not be used. Polyethylene (Plastic) tanks should comply with OFTEC standard OFS T100 and or equivalent. Oil should never be stored in translucent plastic containers.

In order to enable sediment and water to be removed from steel tanks a drain valve must be fitted.

An isolating valve should be fitted at the tank outlet, in an accessible position so that the oil supply to the appliance can be shut off if required. This isolating valve must be of a type suitable for use with oil. (see Fig.2)

Oil storage tank support must be carried out in accordance with the tank manufacturers recommendations. Tanks should be located in the most unobstructive position possible having taken safety, filling, maintenance and the need, to provide a head of oil for the burner into consideration.

### FUELS

**USE ONLY 28 SECOND VISCOSITY KEROSENE FUEL OIL TO B.S. 2869 PART 2 CLASS C2 OR EQUIVALENT.**

### FUEL SUPPLY LINE

The oil supply line from the oil storage tank to the appliance should be of an approved and suitable pipe with a minimum internal diameter of 8mm (5/16") and connected to the oil control valve.

Oil supply pipes are normally run in annealed copper tube complying to EN 1057, it can be obtained in coil or half hard form for use with bending machines. This pipe can also be obtained with protective plastic sheathing applied. Fittings for copper pipe should be compression of the flared manipulative type to B.S. 864: Part 2 1983. Steel pipes complying with B.S. 1387: 1985, if used, must be protected from corrosion. Galvanised pipe and fittings must not be used.

Screwed joints must only be made with taper threads complying to B.S. 1740 : Part 1 1971.

Jointing materials must be of types intended for use with oil fuel. Special petroleum resisting compounds and PTFE tape are suitable. External pipes should preferably be run with a continuous rise towards the direction of flow, so that air can be vented off. It is important to avoid high points which could cause air locks.

Exposed lengths of oil supply pipe must be properly supported by purpose made clips securely fixed in place. Metal clips formed so as to hold the pipe on to a saddle are preferred. Consideration should be given to avoiding routes which expose the pipe to severe chilling which could cause freezing of the oil. Where pipes are buried, they must be protected from accidental damage. The use of joints underground should be avoided if at all possible. If joints have to be fitted in pipes laid below ground, access to them must be provided.

An oil filter (5 - 10 micron) and a stop valve must be fitted to the fuel feed line and located near the supply tank and facilities should be provided to enable it to be serviced without draining down the oil supply system. (See Figs. 2 & 3).

At the point where the oil line enters the building, the oil line must be fitted with an approved remote acting fire valve which meets the requirements of B.S. 5410 : Part 1, fitted with the appropriate length of capillary. The temperature rating limit should be 90°C. The heat sensing phial of the fire valve must be fitted to the clip provided underneath the back of the stove. It is absolutely essential that the fire valve is located externally and is as close as possible to the appliance. For existing installations where the oil supply is built into the structure internally, the remote acting fire valve should be fitted where the oil supply line is first exposed internally. This type of layout is not recommended for new installations.

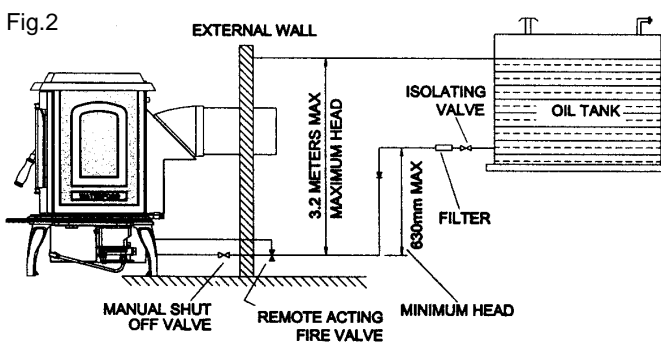
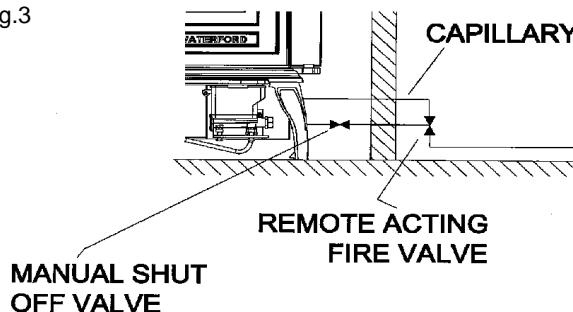


Fig.3



These requirements are in accordance with the following relevant sections of BS 5410: Part 1 O.F.S. A105 Oil Stove Standard. The Building Regulations for Scotland, Ireland, Northern Ireland, England & Wales.

**NOTE:** Fuel to the appliance should be gravity fed only.

If there are other oil fired appliances connected to the oil storage tank especially appliances with oil pumps e.g. oil fired boilers or range cookery, it is recommended that a separate oil supply line is taken from the oil tank to the stove. The separate oil supply line to the stove will avoid the possibility of the pumped appliance taking oil from the stove burner and control valve. A suitable shut off valve should be fitted near the stove and be accessible at all times.

**CLEARANCE TO COMBUSTIBLES**

(See Figs. 4, 5, 6 & 7).

**Minimum Clearance to Combustible Materials:**

- From the front of stove: 1220mm - 48"
- Left side wall looking from front: 200mm - 8"
- Right side wall looking from front: 200mm - 8"
- From back of stove horizontal: 75mm - 3"
- Mantle clearance: 510mm - 20"
- Corner clearance from hearth cast: 75mm - 3"

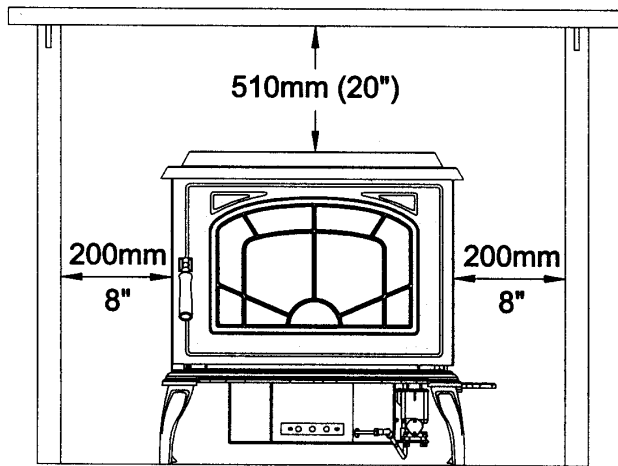


Fig.4

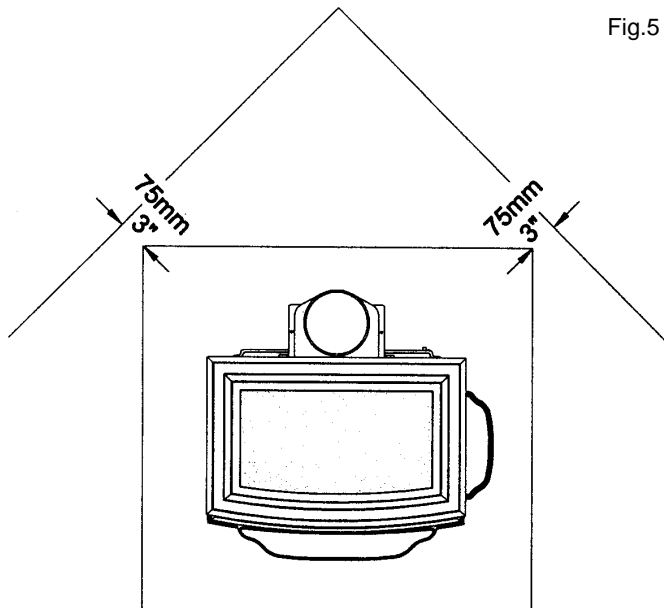
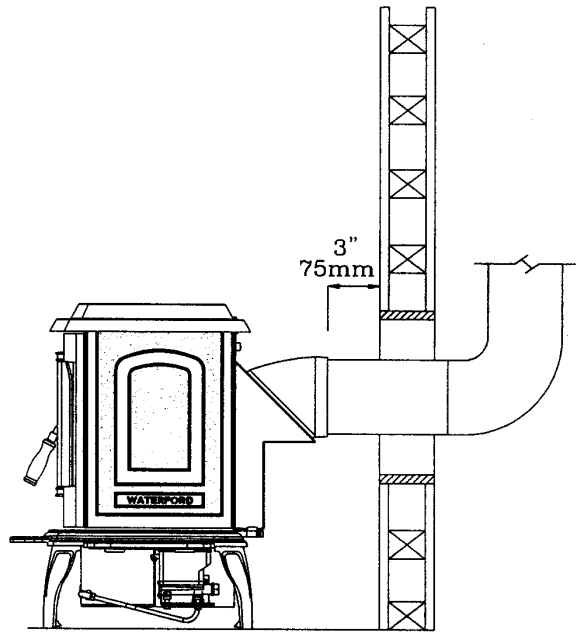


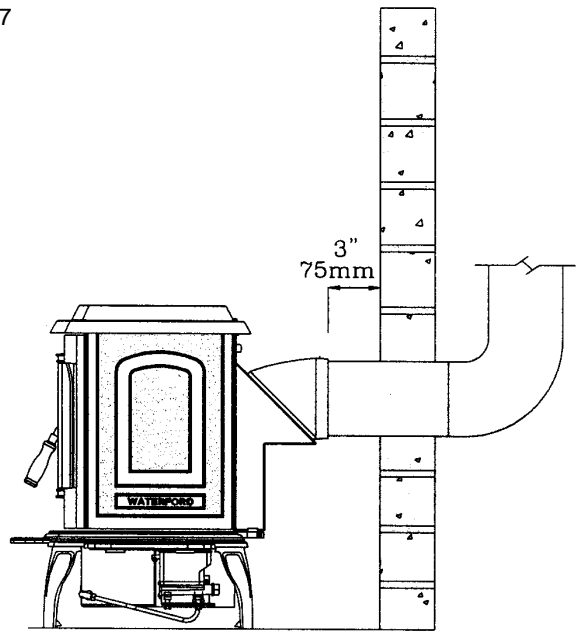
Fig.5

Fig.6



When installing the stove against a non-combustible wall have a minimum distance of 75mm - 3" between the wall and the stove.

Fig. 7



**IMPORTANT**

NEVER OBSTRUCT FREE AIR CIRCULATION AROUND SIDES, BACK, TOP, UNDERNEATH, AND FRONT OF STOVE, EVEN IF IT IS INSTALLED AGAINST NON-COMBUSTIBLE WALLS.

NEVER BUILD STOVE INTO FIREPLACES ETC..IF AIR FLOW IS RESTRICTED AROUND THE STOVE, THE REMOTE ACTING FIRE VALVE PHIAL WILL OVER-HEAT AND SHUT OFF THE OIL SUPPLY. THE OIL CONTROL AND THE IGNITION SYSTEMS WILL OVERHEAT.

## FLUE SYSTEMS

**WARNING:** Only operate this appliance if connected to a properly installed and maintained chimney system.

This stove must be connected to a flue system capable of providing a continuous negative pressure of at least 0.04" wg draught.

This appliance should be connected to a 153mm (6") flue system. Before installation check that the chimney is clean and clear of obstructions. Cracked brickwork and leaking joints must be made good.

Do not connect to a flue serving another appliance. Always ensure that connection is to a chimney of the same size - never connect to one of smaller dimensions.

All chimneys and flue systems must have a cleaning door fitted. Where a flexible flue liner is fitted, the liner must be rigidly fixed at the top and bottom of the flue. The liner should be cleaned lightly with any soot removed through a suitable cleaning door. **BLOCKED CHIMNEYS ARE DANGEROUS. THE FLUE MUST BE INSPECTED AT LEAST EVERY SIX MONTHS AND CLEANED WHEN NECESSARY.**

STANLEY CAST IRON PIPES AND BENDS ARE HIGHLY RECOMMENDED FOR INTERIOR USE.

### USE OF EXISTING FLUES & CHIMNEYS

An existing flue pipe or chimney that has proved to be satisfactory when used for solid fuel can normally be used for this appliance provided that its construction dimensions and condition are acceptable.

Flues that have proved to be unsatisfactory, particularly with regard to down draught should not be considered for this appliance until they have been examined and any faults corrected.

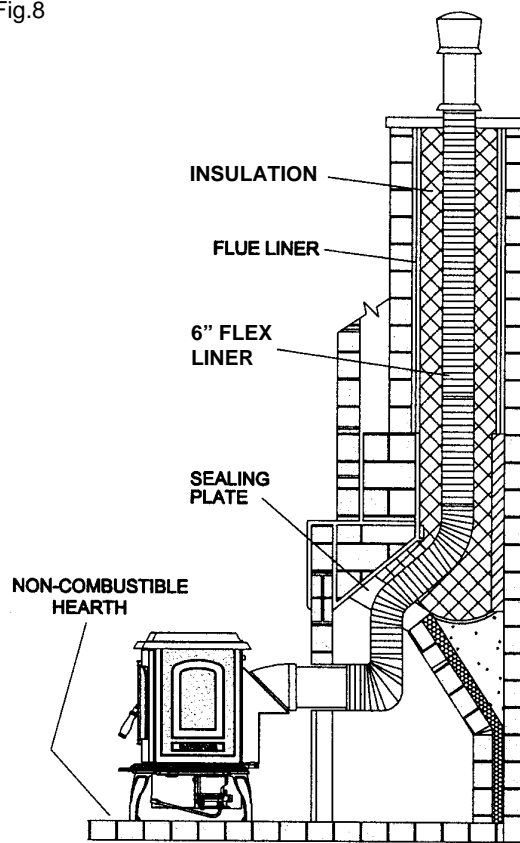
Before connecting this appliance to a chimney or flue pipe which has previously been used with another fuel, the chimney or flue should be thoroughly swept and lined accordingly.

The combustion products of oil burning appliances will have a descaling effect on hardened soot deposits left from burning solid fuels.

**ALTHOUGH THE FLUE MAY HAVE BEEN CLEANED OF LOOSE SOOT PRIOR TO INSTALLATION, IT IS IMPERATIVE THAT THE CHIMNEY IS INSPECTED FOR SCALED SOOT PARTICLES AFTER THE FIRST MONTH OF OPERATION AND ANY LOOSE MATERIALS REMOVED TO AVOID BLOCKAGE.**

**NOTE:** Never connect to a chimney or flue system serving another appliance.

Fig.8



If connecting to an existing oversized chimney it is necessary to line the flue using 153mm - 6" rigid or flexible preferably rigid stainless steel class 1 or class 2 flue liner that comply with B.S. 4543 Part 1 & 3.

Use single skin pipe for the purpose of flue lining. Due to their inability to retain heat never use single skin pipe as the flue system only.

### SUITABLE MATERIALS

- \* Mineral Fibre cement pipes conforming to B.S. 7435.
- \* Sheet metal conforming to B.S.4076.
- \* Insulated metal chimneys conforming to B.S. 4543 and B.S. 5410 (a galvanised finish is not suitable).
- \* Clay flue linings conforming to B.S. 1181.
- \* Pre-cast concrete chimney blocks, incorporated into the building structure. It is particularly important that the correct connection block be provided at the base of the flue, B.S. 3572.
- \* Cast Iron or acid resistant vitreous enamel lined mild steel to B.S. 41.

## FLUE LINERS

Chimneys lined with salt glazed earthenware pipes are acceptable if the pipes comply with B.S. 1181 and must be 153mm (6") diameter. When using an existing chimney, a liner approved to B.S. 4543 Part 1,2,3 should be used. The liner should be secured at the top and bottom using closure clamping plates firmly sealed and secured, and an approved terminal used at the top. See Fig. 8.

It is essential that every flue system be inspected and tested by the installer, to ensure that all the combustion products are completely discharged to the outside atmosphere.

Blank off the entrance and exit of the chimney around the flue liner, trapped air will help to insulate the flue. With a chimney system where it is not possible to trap air then it is best to back fill with an approved insulating material.

## FLUE MATERIALS

Salt glazed earthenware flue and purposely made pre-cast sealed concrete chimneys or a rigid or flexible stainless steel liners suitable for oil firing.

## SEALING

As the stove operates under negative pressure it is essential that all flue joints are tightly sealed against flue gas leakage.

## FLUE HEIGHT

The flue must be high enough (3.35 meters / 11 ft. min) to allow the flue gases to vent into the clear air. It must be away from turbulence that may be caused by roof structures, other chimney stacks etc.. The venting position should be 1 meter (3' 3") above any obstruction within a 600mm (24") radius of the vent termination. (Refer to Building Regulations).

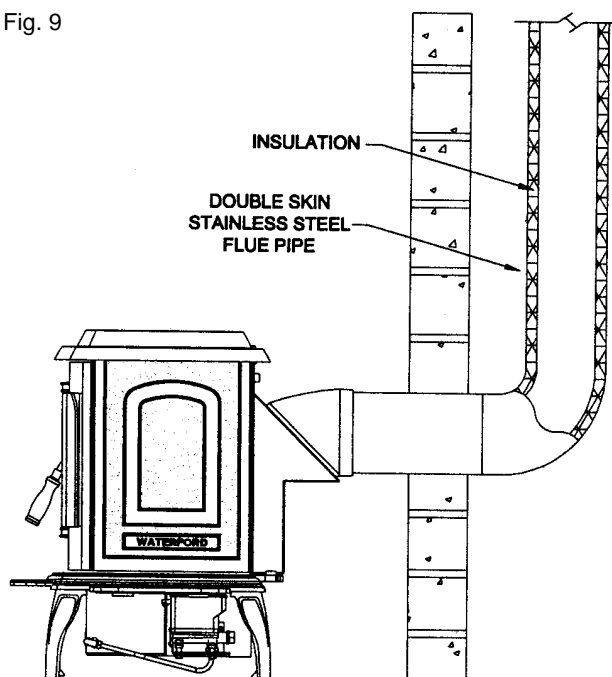
Where a standard lined masonry chimney is not available, a proprietary type of non-combustible or non-corrosive 153mm (6") twin wall fully insulated pipe may be used. The pipe must terminate at roof point not lower than the main ridge or adjacent structures. With such installation, access to the chimney must be provided for cleaning purposes.(See Fig. 9)

If it is necessary to offset the chimney the recommended angle is 60° to the horizontal and the statutory minimum is 45°. (See Fig. 10).

## FACTORY MADE INSULATED CHIMNEYS

Factory made insulated chimney systems should be constructed and tested to meet the relevant standards and recommendations given in B.S. 7566, B.S. 4543 and any other current regulation or local requirements having jurisdiction

Fig. 9

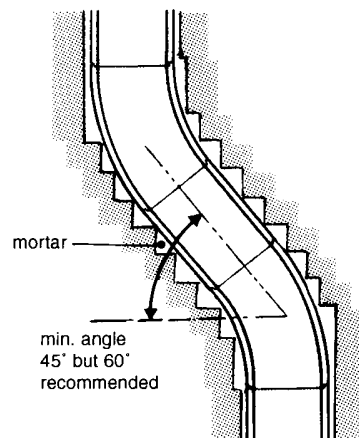


## CONNECTIONS

Horizontal runs more than 300mm (12") and 90° bends numbering more than 2 per installation should be avoided.

Fig.10

Offset using prefabricated bends



## DRAUGHT REQUIREMENTS

The Ashling Oil Stove requires a steady draught of between :

0.04" w.g. - 0.06" w.g.  
(1.0mm w.g. - 1.5mm w.g.)

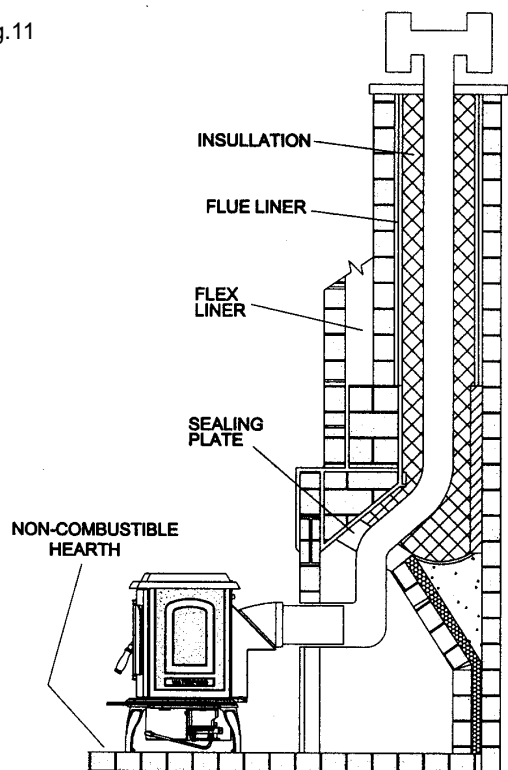
Installations which are prone to down draughts should be fitted with an anti-down draught cowl. For correct flue installation, refer to Flue Section in this manual.

## DOWN DRAUGHTS

However well designed, constructed and positioned, the satisfactory performance of the flue can be adversely affected by down draught caused by nearby hills, adjacent tall buildings or trees. These can deflect wind to blow directly down the flue or create a zone of high pressure over the terminal.

A suitable anti-down draught terminal or cowl will usually effectively combat direct down draught (see Fig. 11) but no cowl is likely to prevent down draught when the pressure in the building is lower than that at the flue terminal exit.

Fig.11



## VENTILATION AND COMBUSTION AIR REQUIREMENTS

It is imperative that there is sufficient air supply to support proper combustion.

The air supply to the appliance must comply with B.S. 5410 : Part 1 and the relevant sections of OFTEC Technical Book No: 3.

If there is an air extraction fan/s, tumble dryer or any other air using appliance fitted in the room or adjacent rooms to where this appliance is installed additional air vents must be provided to prevent the performance of the appliance being affected when the fan/s are running at their maximum setting with all external doors and windows closed.

We recommend that air supply to extract fan/s be located where it can serve the fan/s, without the air supply passing through the area where the appliance is installed.

The provision of an adequate combustion and ventilation air supply is vital for the safe operation of the stove.

The combustion air must be provided in the room containing the appliance through purpose made non-closable openings having a total free area of 49 cm<sup>2</sup>.

All materials used in the manufacture of air vents should be such that the vent is dimensionally stable and corrosion resistant.

The effective area of any vent should be ascertained before installation. The effect of any screen should be allowed for when determining the effective free area of any vent.

The air vents must be satisfactorily fire proofed as per Building Regulations.

Air vents in internal walls should not communicate with toilets, bathrooms or rooms containing a shower.

Air vents traversing cavity walls should include a continuous duct across the cavity. The duct should be installed in such a manner as not to impair the weather resistance of the cavity.

Joints between air vents and outside walls should be sealed to prevent the ingress of moisture. Existing air vents should be of the correct size and unobstructed for the appliance in use.

## PLUMBING (BOILER MODEL)

### REGULATIONS

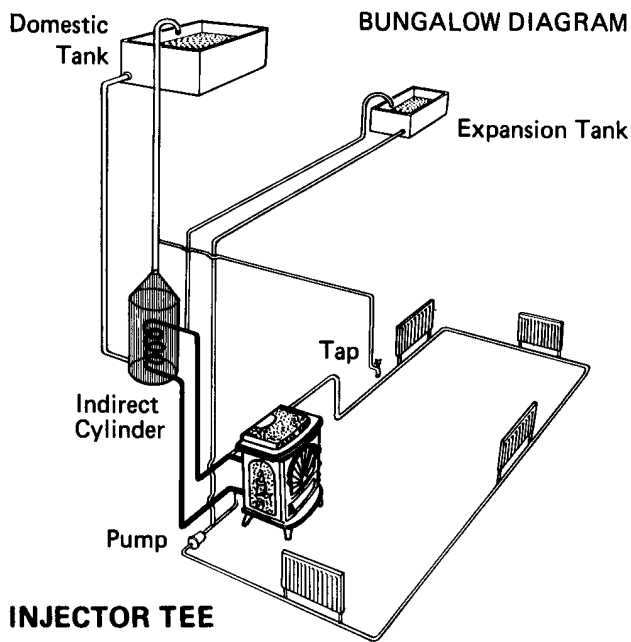
The plumbing must be in accordance with all relevant regulations and practices. It must include a gravity circuit with expansion pipe, open to the atmosphere. The central heating will normally be pump-driven as with other types of boilers.

### GRAVITY CIRCUIT

The gravity circuit consists of the domestic hot water tank of 135 litres indirect cylinder, fixed in an upright position, recommended for hot water storage and it should be connected to the boiler by 28mm diameter flow and return piping. The pipes should not exceed 7.8 meters (25ft) in length and cylinder and pipework should be fully lagged. The shorter the run of pipe work the more effective the water heating.

There must be no gate valves on this circuit and it must have an expansion pipe exhausting to atmosphere. Cylinder and pipe work should be lagged to minimise heat loss.

Fig.12



### INJECTOR TEE

Where the gravity and central heating circuits join together to return to the stove we recommend the use of an injector tee connection, situated as close to the unit as possible. This type of tee encourages a stable flow of water through both circuits and helps to prevent priority being given to the stronger flow, which is most commonly the pumped central heating circuit.

### WATER CIRCUIT TEMPERATURE

The return water temperature should be maintained at not less than 40°C so as to avoid condensation on the boiler and return piping. Fitting a pipe thermostat to the flow pipe of the gravity circuit and wiring it into the pump control will ensure rapid circulation of the hot water.

### PIPE THERMOSTAT

The fitting of a pipe thermostat to the flow pipe is essential in order to activate the water circulation pump when the water reaches the selected temperature.

When the water temperature falls below the selected temperature the pipe thermostat will cut off the water circulation pump in order to allow the boiler to recover.

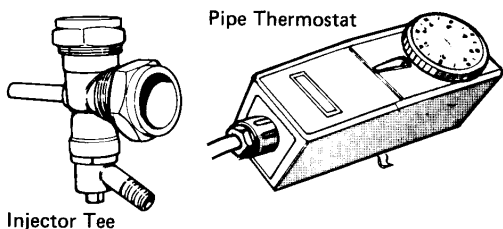


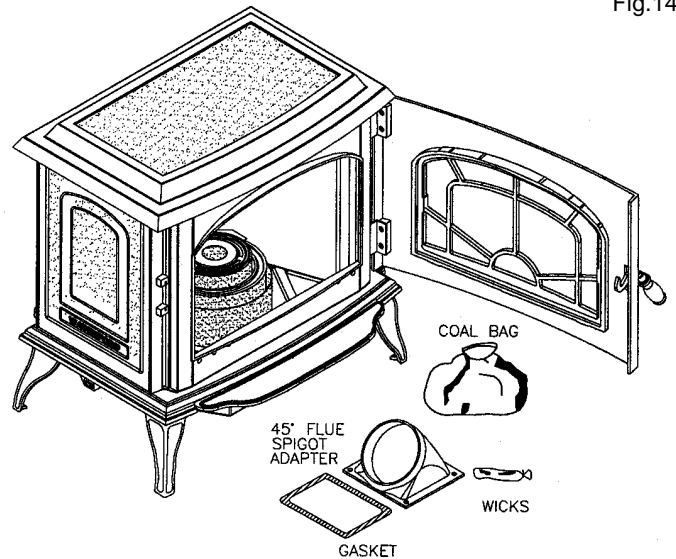
Fig.13

### PRE-INSTALLATION ASSEMBLY

**IMPORTANT:** When working on/handling this stove, great care must be taken to ensure that the oil connections are not altered or damaged.

1. Remove all packaging from the stove. (See Fig.14).

Fig.14



- Fit the flue adaptor to the back casting using the gasket provided. Fig. 15 shows connection to top outlet while fig. 16 shows connection to back outlet.

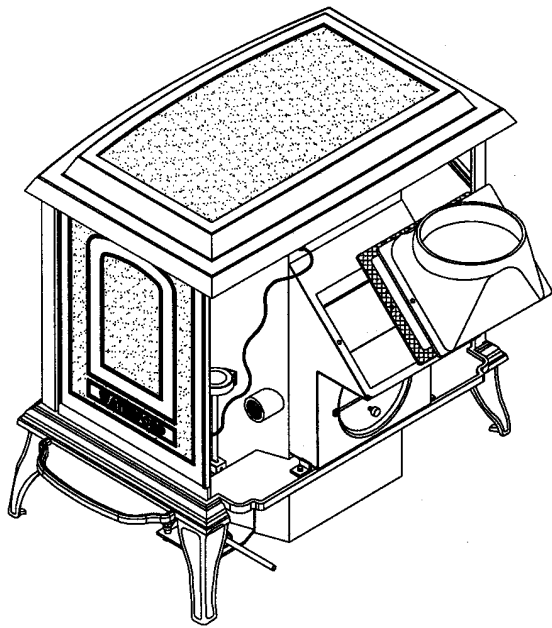


Fig.15

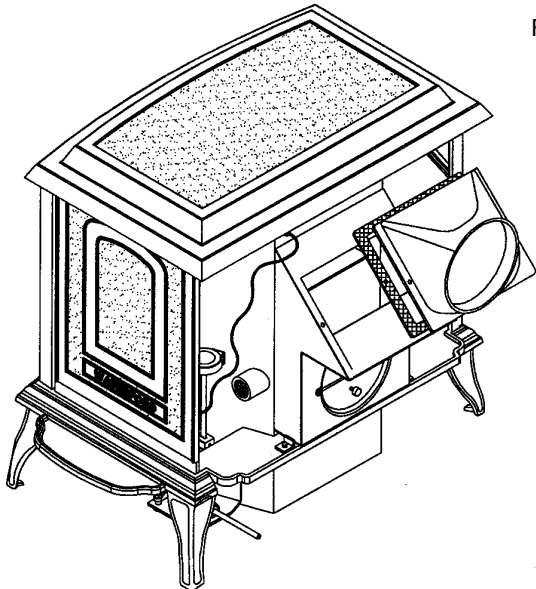


Fig.16

- Reset the control valve trigger as shown in Fig.17. Once this trigger is reset, sudden jolts to the stove can cause it to revert to the off position.

(Boiler Model Only)

Reset the trigger on the aquastat by pulling up the red lever as shown in Fig.18.

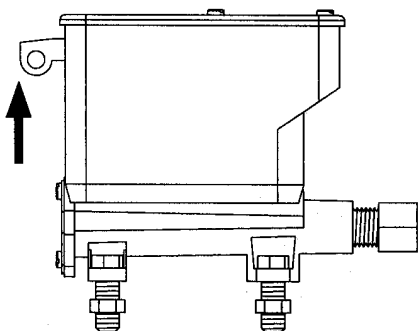
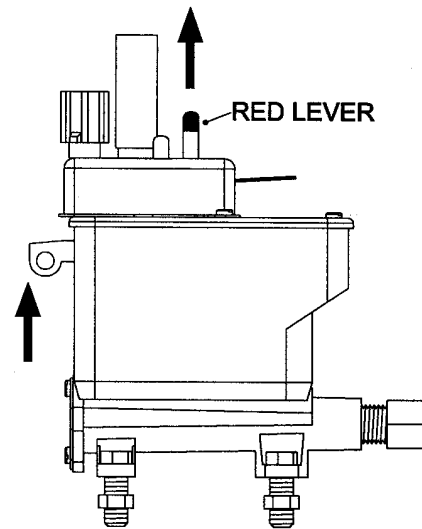


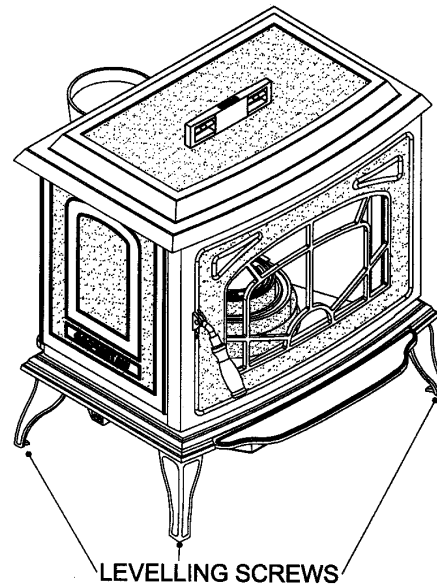
Fig.17

Fig.18



- Position the stove in its final location. Refer to sections D,E,F,G,H, and I to ensure that all requirements have been met.
- Level the stove in all directions using the levelling screws on the stove legs. (See Fig.19)

Fig.19



- Connect the fuel line to the oil control valve.
- Check all joints on fuel line for leaks upon completion of installation.
- Connect and seal the flue to the flue spigot.

**IMPORTANT: ANY FACTORY MADE JOINTS THAT HAVE BEEN MOVED MUST BE RESEALED WITH A KEROSENE RESISTANT SEALANT.**

### **BAROMETRIC DAMPER**

This stove is fitted with a barometric damper which, when set correctly, will ensure a stable draught over the burner. It compensates for gusting wind and varying flue draughts to ensure that the stove combustion efficiency is consistent. The commissioning procedure for the damper can be found in the commissioning section. The barometric damper must have access to an adequate air supply.

## COMMISSIONING

**IMPORTANT:** Do not allow glo-plug leads to come in contact with each other.

### Burner Set-Up

1. Ensure that the stove is plugged out.
2. Remove the hob (Top Casting) and using spirit level ensure the stove is level from side to side by placing the level on the steel area behind the front casting. Adjust the levelling screws on the stove legs if necessary. Also ensure the stove is level from front to back.
3. Check that the oil control valve is level in all directions. Adjust the locking nuts on the valve legs if levelling is necessary. (see Fig. 20)

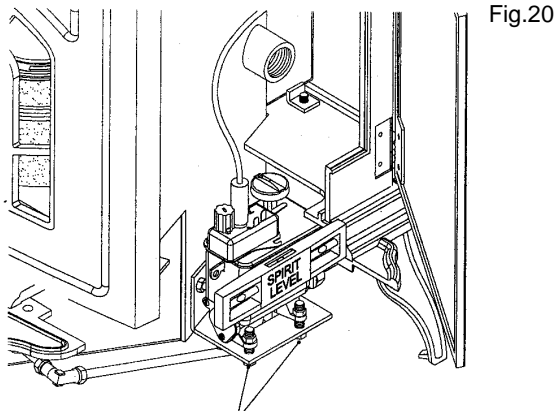


Fig.20

### LEVELLING SCREWS

4. Check the high and low flow rates from the control valve (see control valve rating section).
5. Disconnect the glo-plug leads on the left hand side and remove the glo-plug. Remove the coal tray, burner rings, wicks, ceramic and cast iron centre well caps. See Fig 21.

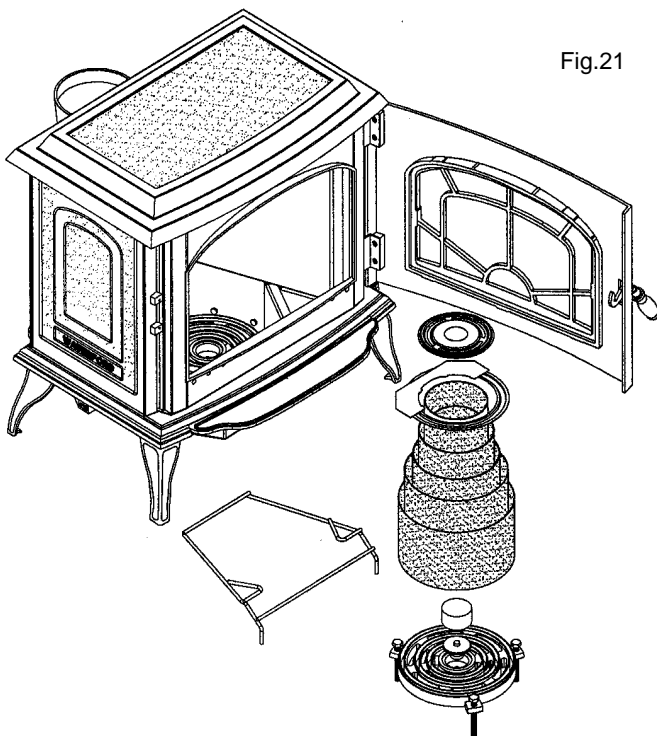
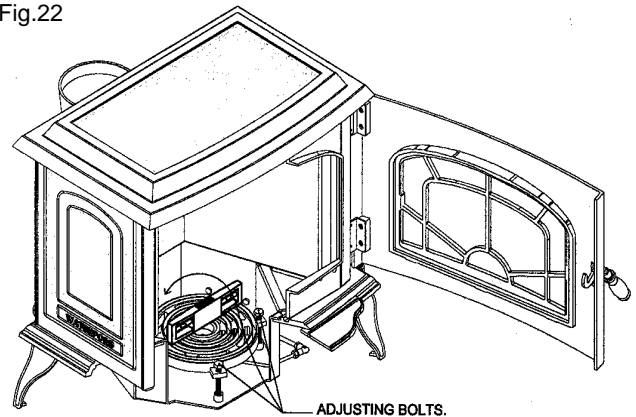


Fig.21

6. Using a small spirit level, check that the burner base is level in all directions. If not, adjust the burner base legs until the base is level. (see Fig. 22)

Fig.22

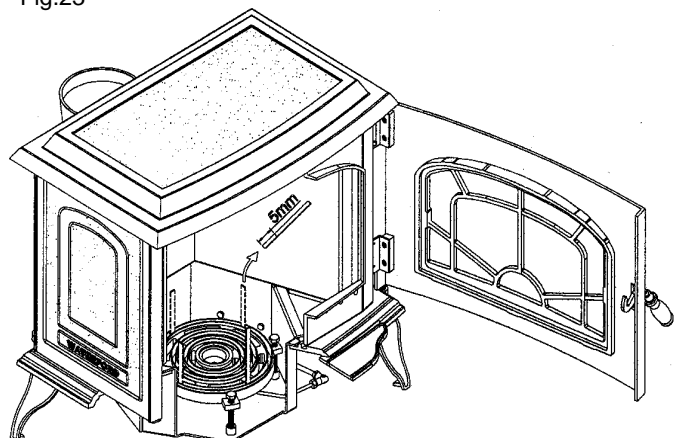


7. Turn the control knob to max (anticlockwise) for 15 minutes to commence filling the burner. If oil does not flow to the central reservoir after 5 minutes, it may be necessary to bleed the oil line at the 90° elbow at the front of the stove. (See Fig.23)
8. After the 15 minutes, check the oil levels in the inner and outer burner rings. The oil level should be 4mm (see Fig. 23). If the level is greater than that required, the burner should be raised until the oil level is correct. If the level is less than that required, the burner should be lowered until the oil level is correct.

**Note:** If the required oil depth cannot be achieved by raising or lowering the burner within the range of movement afforded by the clearance between the glow plug and the hole in the shell. The oil control valve should be adjusted accordingly.

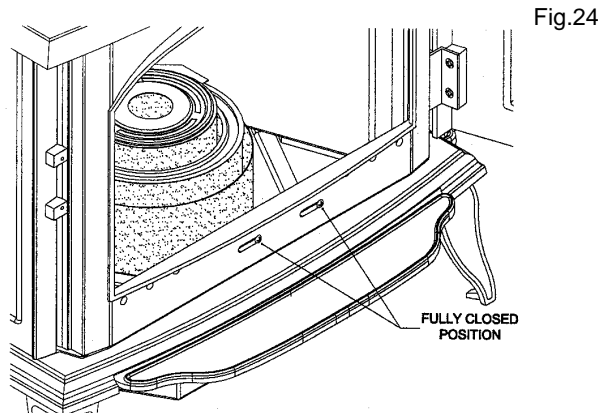
9. Each time an adjustment is made to the height of the burner, the oil in the central reservoir and in the burner rings should be soaked up with an absorbent paper and the filling process (steps 7 & 8) should be repeated.

Fig.23

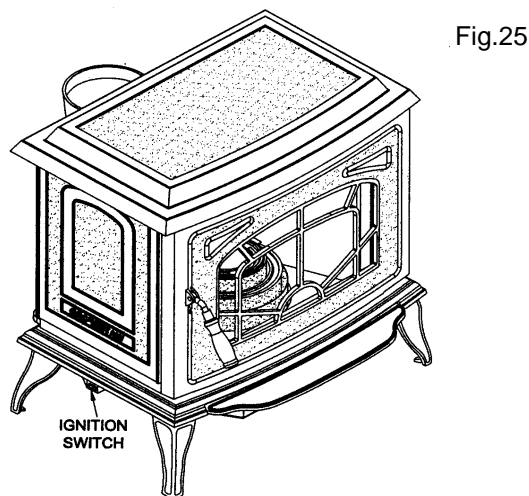


**NOTE: Do not check oil depth adjacent to fuel ports.**

10. After any adjustments to the burner height, check that the burner is level in all directions.
11. Once the oil depth and burner level are set, the burner can be re-assembled. Refer to Burner Assembly section.
12. Install the ceramic coal fuel bed as described in Fuel Bed Assembly section.
13. Loosen the screws on the secondary air adjuster (see Fig. 24) and close the secondary air adjuster fully.



14. Turn the control knob to max for 12 minutes. Press the ignition switch and hold it until a flame appears. This should take approximately 20-30 seconds. (See Fig.25)



15. Once the stove has stabilised at max setting, open the secondary air adjuster until an acceptable flame pattern is achieved. The flames should be spread evenly throughout the burner and short enough so that only the tips of the flames touch the baffle overhead the burner. If any flames are excessively long it may be necessary to adjust the position of the coals slightly to shorten the flames. Once a satisfactory flame pattern is achieved lock the secondary air adjuster in position.
16. Close the draught regulator, on the back of the stove completely by turning the counter

balance weight on the regulator clockwise to its limit (see Fig. 26). Remove the screw from the sampling point, on the back casting and measure the draught in the flue way using a manometer or draught gauge (see Fig.27). Adjust the counter balance weight anticlockwise until a draught of 0.04" (1mm w.g.) is obtained .

17. using the sampling point check that the Bacharach smoke number is  $\leq 2$  and replace the screw in the sampling point when finished.

Fig.26

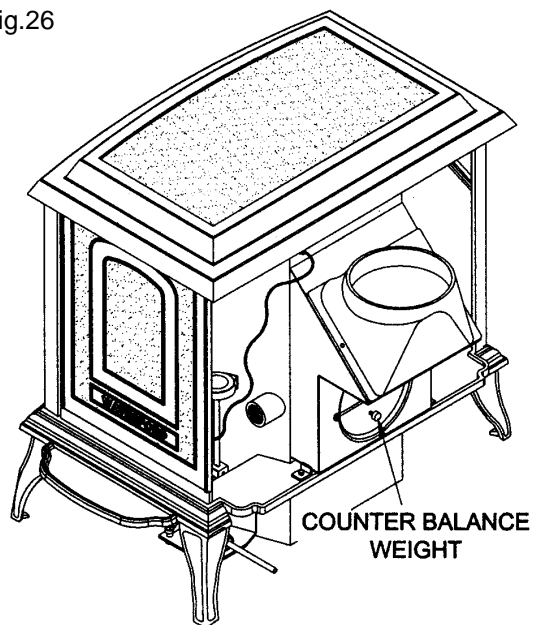
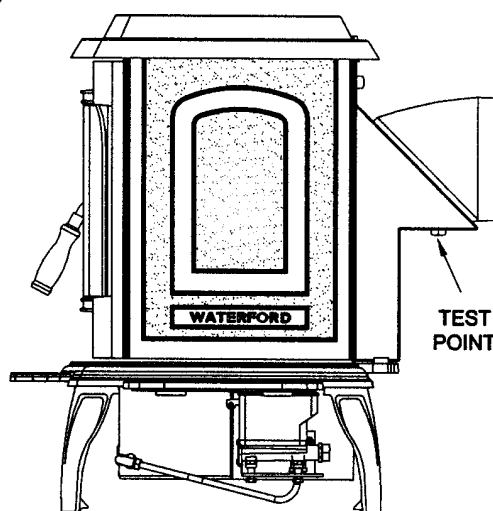


Fig.27

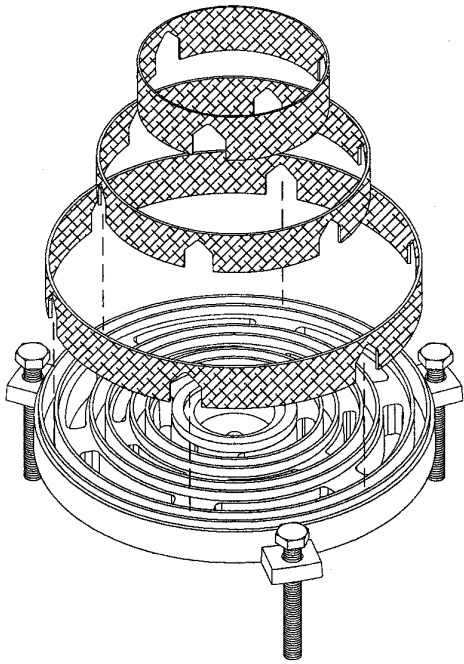


## BURNER ASSEMBLY

With the burner base level and the correct depth of oil in the burner rings, the following steps should be followed for assembling the burner.

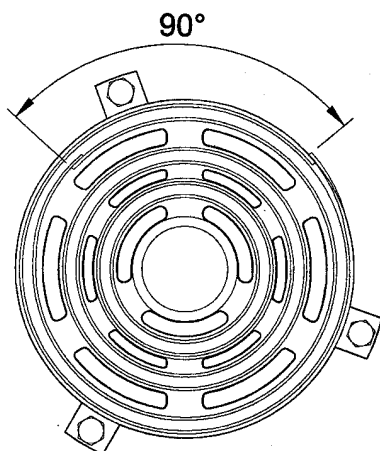
1. Replace the wicks in the burner rings as per Fig. 28. Ensure that the cut-outs in the wicks line up with the fuel ports between the central reservoir and inner ring and between the inner and outer rings.

Fig.28



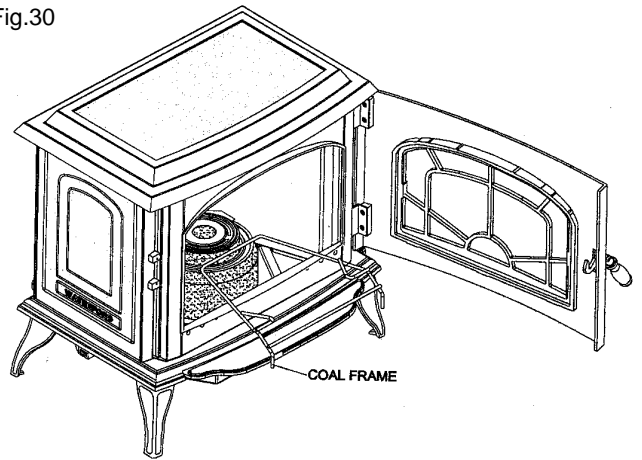
2. Replace the vapour chamber lid and ceramic cap as per Fig.28. When replacing the vapour chamber lid, grind into position to ensure it sits down properly.
3. Replace the outer shell. Ensure the glo-plug and leads are properly connected. Ensure that the shell sits down firmly on the burner base and that it does not interfere with the outer wick.
4. Replace the remaining burner shells ensuring that the fabrication seams are staggered by 90°. Ensure all shells sit down firmly on their grooves and that they do not interfere with the inner wick. Replace the inner and outer lids ensuring that the larger section of the outer ring is put to the back of the stove.

Fig.29



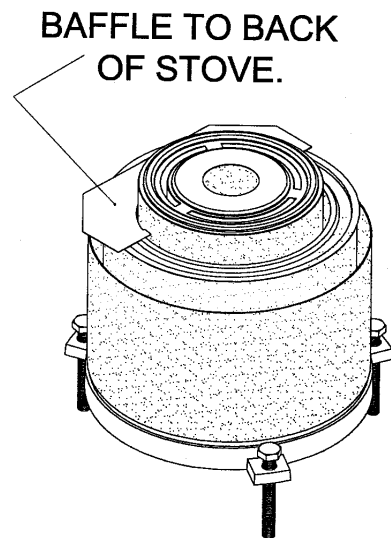
**SEAMS ON ALL SHELLS  
STAGERED AT 90°**

Fig.30



5. Fit the fuel bed support frame as shown in Fig. 31.

Fig.31



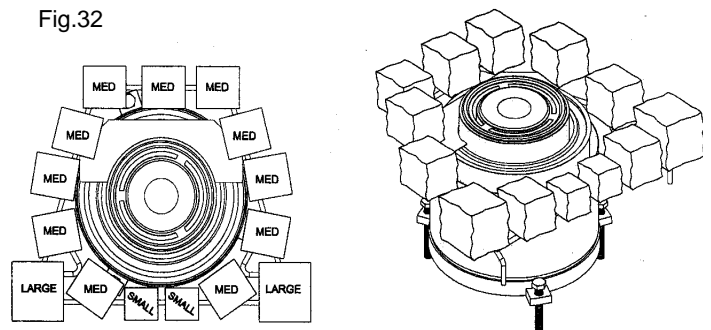
### FUEL BED ASSEMBLY

Variations in the set-up of the coals lead to different flame patterns. The following guidelines should be adhered to when setting up the coals to ensure minimal variation from the optimal flame pattern.

**NOTE:** When positioning the coals it is imperative that there are sufficient gaps between the coals to allow adequate gas flow through the burner.

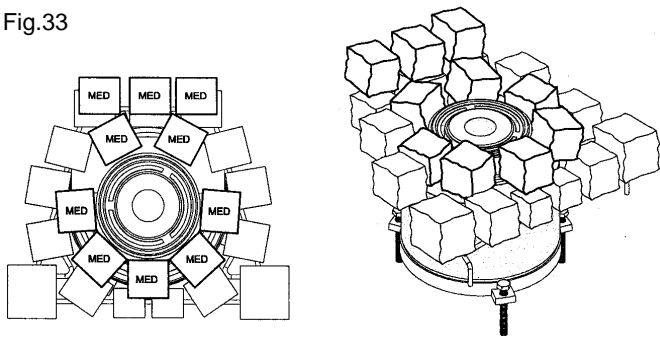
1. Place the first layer of coals in the stove as per Fig.32. Place one large coal in each of the front corners. Place eleven medium coals on the coal frame and on the outer ring of the burner. Place two small coals in the front also on the outer ring.

Fig.32



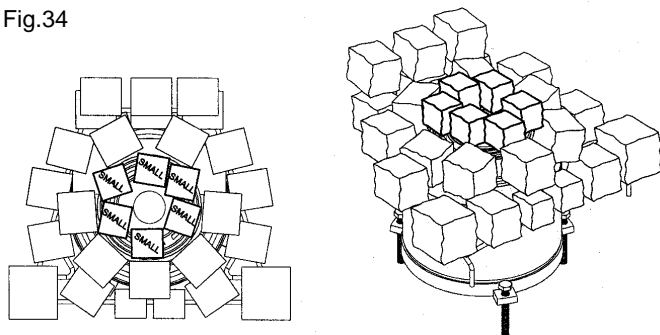
- Place seven medium coals on the second ring of the burner as per Fig.33. Also place 3 medium coals at the back of the stove.

Fig.33



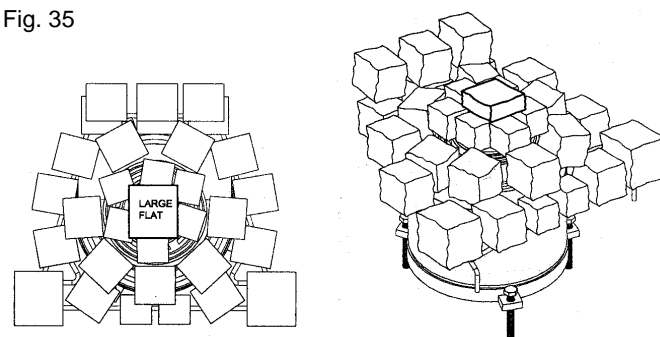
- Place six small coals on the top surface of the burner around the large hole in the centre as per Fig.34.

Fig.34



- Place the large flat coal (centre coal) on the six small coals directly overhead the large hole but approximately 25-30mm above it.

Fig. 35



- Small adjustments to this pattern can be made to enhance the flame pattern but care should be exercised when making any changes. The final flame effect will only become apparent after the second or third firing.

## FLAME PATTERN

The flame picture should consist mainly of short blue flames, some of which will terminate in a yellow tip.

When the stove has reached a stable condition, the burner shells should glow red as should the coals nearest the shells.

If all flames are yellow/orange in colour, there is not a sufficient air supply to the burner and the spin

valve on the front door should be adjusted.

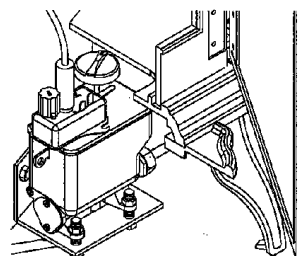
If after adjusting the spin valve, there are still excessively long yellow flames striking the top baffle, consult the Fault Finding section of this manual.

## STOVE OPERATION

### Lighting the Stove

#### STOVE IN START/MAXIMUM POSITION

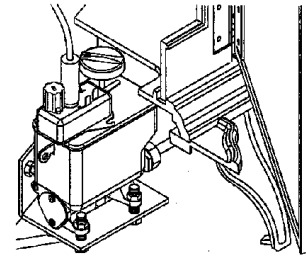
Fig.36



#### MAXIMUM

#### STOVE IN OFF POSITION

Fig.37



#### MINIMUM

- Plug in the stove and turn the control knob to max for 12 minutes.
- Inspect door glass and clean if required. Ensure door is properly closed afterwards.
- Press the ignition switch and hold it in until a flame appears (This takes between 20-30 seconds).
- Turn the control knob down to max setting 2 for 30 minutes until the stove is up to operating temperature and then turn the control knob to the desired setting.

### Boiler Model Only

The boiler model has a knob to control the water temperature see Fig. This controls the temperature of the water leaving the boiler by adjusting the oil flow rate to the burner. Setting 1 will keep the water temperature to a minimum and setting 8 will keep the water temperature setting to a maximum. If the water temperature reaches 90oC then the aquastat will shut down the burner. It can be reset by pulling up the red lever (see Fig.) when the water and the burner have cooled down.

### Turning the Stove Off

- When the control knob is turned to 0 from any position, the oil feed to the stove is closed and the stove goes out. (See Fig.38).

**NOTE: ONCE THE STOVE IS HOT, IT MUST NOT BE RE-STARTED UNTIL IT HAS COMPLETELY COOLED DOWN.**

### Power Failure

A break in the electrical supply while the stove is lighting will have no effect on the stove. However, an electrical supply is necessary for lighting the stove.

## SERVICING

This stove should be serviced at least every 6 months. However if the stove is not used for long periods of time, i.e. during the summer months, the service period can be extended to 9-12 months.

**Flexible oil lines should be inspected at each and every service visit. There are varying types of line with guarantee periods between 1 and 5 years. It is important in the interest of safety that flexible lines are changed at regular intervals. Inspect for date code stamp and if the line is out of its guarantee period or shows signs of being kinked or damaged, replace immediately.**

### THE STOVE MUST BE COLD BEFORE SERVICING. ALLOW 3-4 HOURS FOR THE STOVE TO COOL.

1. Ensure that the electrical supply to the stove is turned off and that the control knob is turned to the off position (0).
2. Inspect the inside of the door and clean the glass if required.
3. Remove the fuel bed and clean coals as necessary.
4. Remove the fuel bed support frame and burner assembly. Clean as necessary.
5. Remove the ceramic and cast iron caps from the centre
6. Remove the cast iron top and clean underneath if necessary. Replace when cleaned. (See Fig 38)

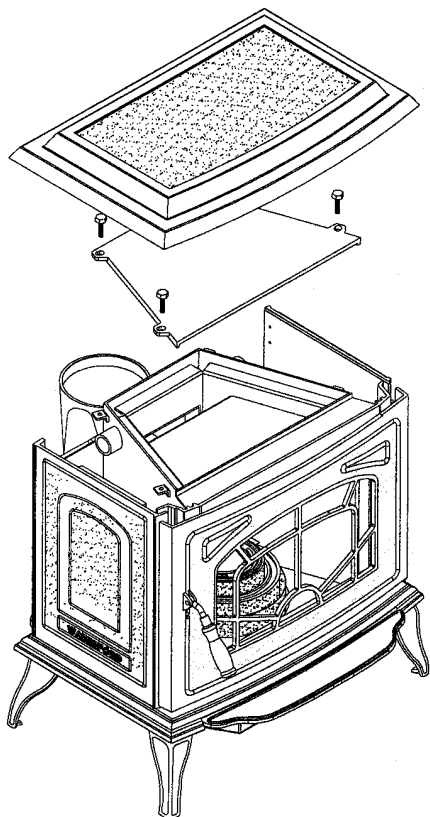


Fig.38

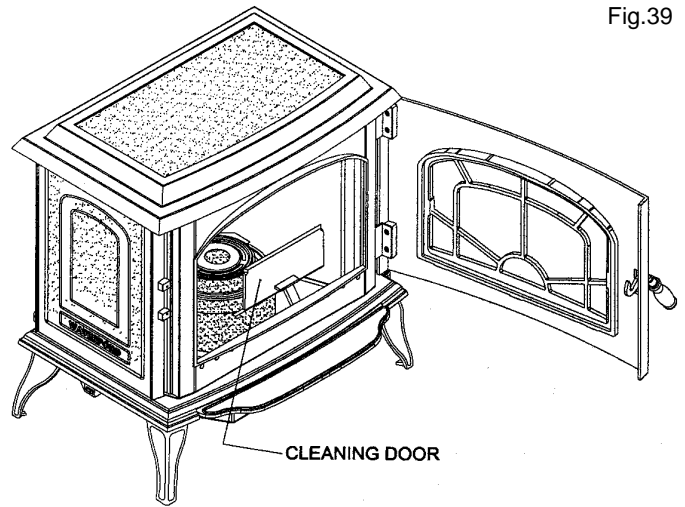
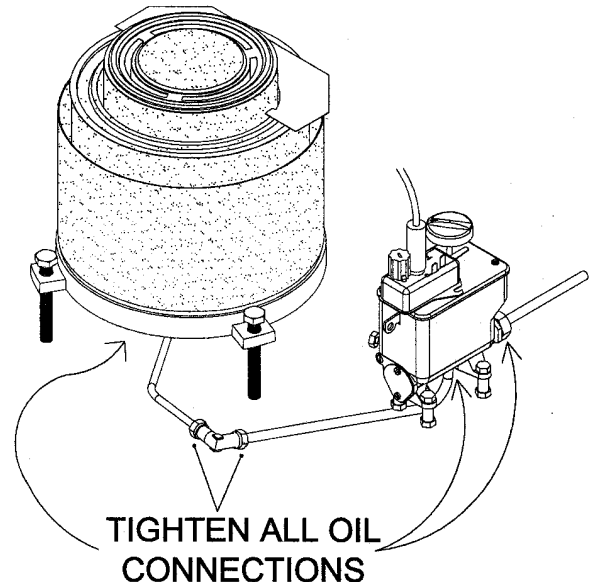


Fig.39

7. Remove the wicks and any soot or dirt from the burner rings.
8. Vacuum any dust or soot from the burner carrier tray.
9. Check that the burner and oil valve are level.
9. With the wicks removed turn the control knob to max to fill the burner. Check that the correct level of oil is present. (See Commissioning Section). Make adjustments if necessary.
10. Check for oil leaks at all fittings. See indicated fittings in Fig. 40.

Fig.40



### CHECK THAT ALL CONNECTIONS ARE TIGHT

11. Fit the burner with new wicks if necessary. Usually the wicks should be replaced every 12 months.
12. Replace the burner and coal assemblies as described in Fuel Bed Assembly section.
13. Check that the ignition system operates correctly.
14. Light the stove and check the flame pattern. (See Commissioning Section).
15. Check that the barometric damper is setup and operates correctly.

## CONTROL VALVE RATING

The control valve is set by the manufacturer to give the required fuel input for the shire oil stove.

To ensure that a satisfactory flame pattern will be obtained, the oil flow rate must be checked before initial lighting of the stove. As the oil flow rate is very low, great care should be taken with this procedure to ensure the accuracy of the flow rate.

### Apparatus Required:

- Collection vessel
- Stopwatch
- Graduated cylinder (capable of measuring 50ml and graduated to the nearest ml)
- Very small flat screwdriver.

1. Disconnect the oil feed line at the 90° compression fitting at the front of the burner carrier tray. (See Fig.41)
2. Place a collection vessel beneath the oil line to catch the oil. Turn the control knob to max. When the first drop of oil falls into the vessel, start the stopwatch. Time the oil flow for a minimum of 5 minutes.
3. Measure the oil gathered in 5 minutes. The flow rate on max for boiler models should be 19cc/min. The flow rate on max for non boiler models should be 14cc/min.
4. Turn the control knob to 1. Using the same procedure as outlined in 2 & 3 above, measure the minimum feed rate. The flow rate on min for boiler should be 6cc/min. The flow rate on min for non boiler models should be 5cc/min.
5. If either of the above input rates are not correct, the control valve can be adjusted to give the required rate. The high fire screw is to the right of the knob when looking at the valve from behind, while the low fire knob is to the left of the knob (see Fig.42). They should only require slight adjustment and the measurement procedure described in 2, 3 & 4 above should be followed to check each adjustment.
6. When the required input rate is achieved, reassemble the compression fitting ensuring that there are no leaks and that the burner is level.

Fig.41

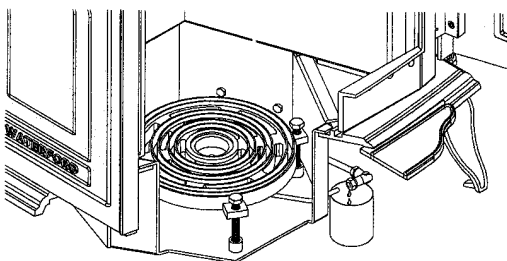
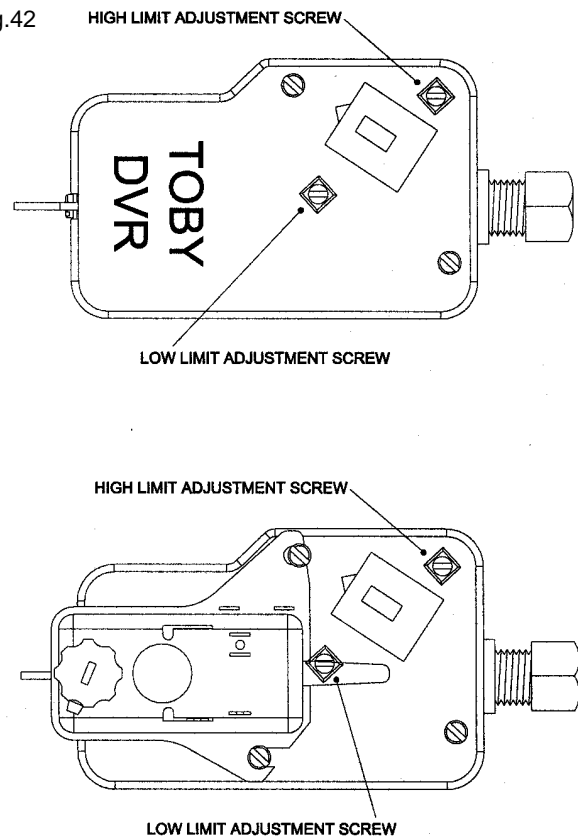


Fig.42



**NOTE:** It is imperative that the stove is not rated above the maximum flow rate as to do so will raise the operating temperature of the stove which could damage the control equipment or the stove itself.

## VITREOUS ENAMEL CLEANING

General cleaning must be carried out when the stove is cool.

If the stove is finished in a high gloss vitreous enamel, to keep the enamel in the best condition observe the following tips:

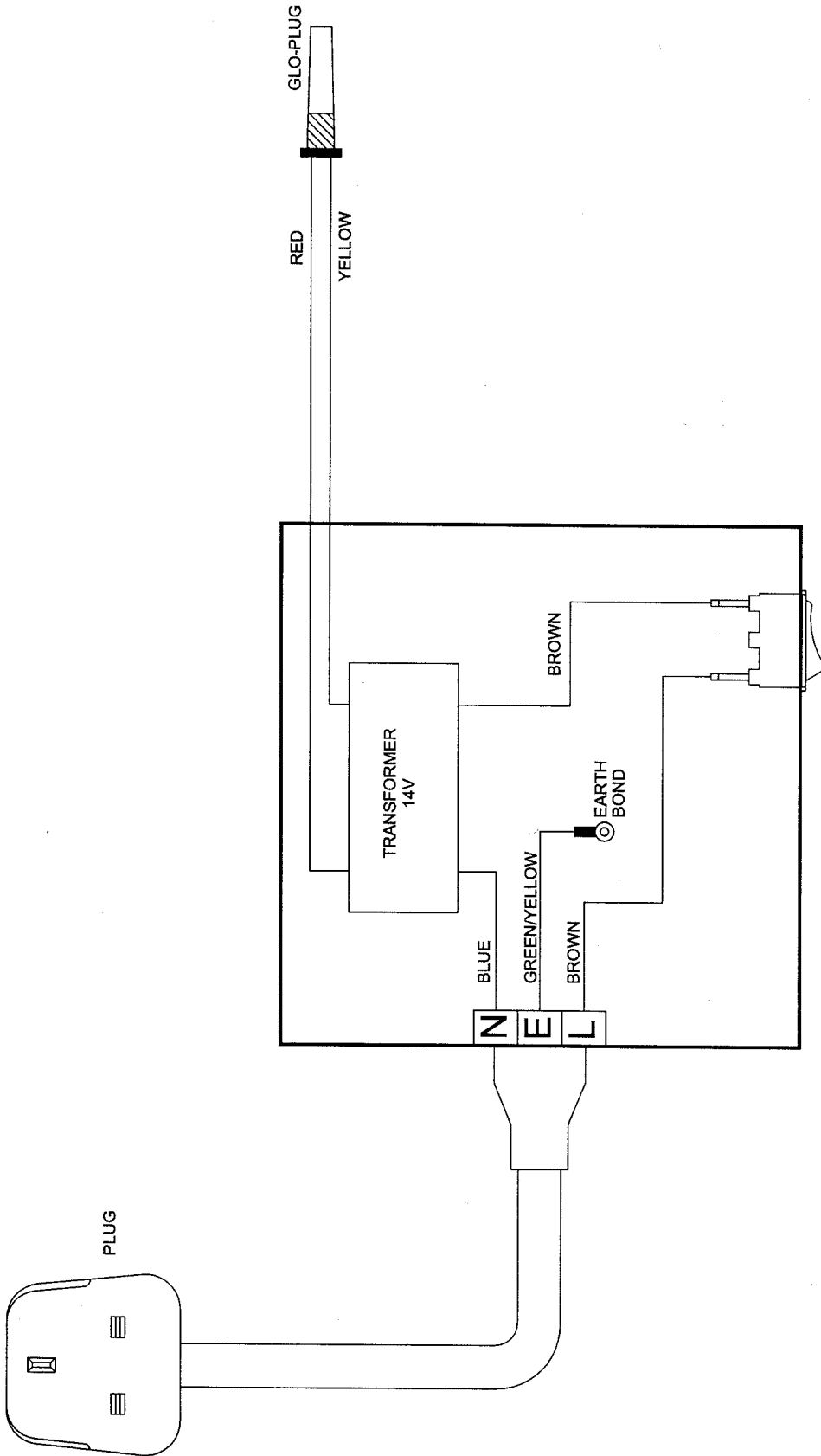
1. Wipe over daily with a soapy damp cloth, followed by a polish with a clean dry duster.
2. For stubborn deposits a soap impregnated pad can be carefully used on the vitreous enamel.
3. Use only products recommended by the Vitreous Enamel Association, these products carry the vitramel label.



4. **DO NOT USE ABRASIVE PADS OR OVEN CLEANSERS CONTAINING CITRIC ACID ON ENAMELLED SURFACES. ENSURE THAT THE CLEANSER MANUFACTURERS INSTRUCTIONS ARE ADHERED TO.**

WIRING DIAGRAM

Fig.47



## FAULT FINDING

If the stove exhibits any of the following conditions, call your commissioning engineer.

SYMPTOM	POSSIBLE CAUSES	REMEDY
Stove will not light	No electrical supply to the stove	Check Plug Top Fuse or connector block fuse.
	No Oil in tank	Fill Tank
	Manual or fire valves off	Open or reset valves. Check for cause of over temperature if necessary.
	Control valve trigger down (off)	Reset trigger.
	Thermal fuse in transformer blown	Replace transformer.
	Oil feed line filter blocked	Free oil filter
	Fuel line air locked	Bleed fuel line
Flames burning under burner	Incorrect chimney draught	Check joint seals, increase height of chimney, adjust draught regulator
	Down draught	Fit suitable cowl
	Oil level too high in burner rings	Check oil level, adjust if necessary.
Stove taking excessively long time to light	Oil level too low in burner	Check oil level, adjust if necessary
Excessive flame noise	Incorrect chimney draught	Check joint seals, increase height of chimney adjust draught regulator
	Incorrect oil level	Check oil level, adjust if necessary
	Incorrect fuel input rate	Check fuel input rates, adjust if necessary
Dirty or Unstable flame	Incorrect flue draught	Check joint seals, increase height of chimney, adjust draught regulator
	Incorrect secondary air adjuster setting	Adjust secondary air
	Incorrect fuel input rate	Check fuel input rates, adjust if necessary
	Down draughting	Fit suitable cowl
	Incorrect fuel bed set-up	Adjust coal positions
Door glass sooting up excessively	Incorrect flue draught	Check joint seals, increase height of chimney, adjust draught regulator
	Airwash interrupted	Ensure that no coals have fallen against the door
	Poor door seal	Replace door seal
	Fuel input rate too high Incorrect secondary air adjuster setting	Check fuel input rates, adjust if necessary Adjust secondary air

**Waterford Stanley Ltd.,**  
 Bilberry, Waterford, Ireland.  
 Tel: 051-302300  
 Fax: 051-302399

  
**STANLEY**  
TURNING YOUR HOUSE INTO A HOME