

SANDYFORD
AND
MARSHALL
RANGE COOKERS

User and Installation Manual

OIL-FIRED MANUAL



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The Marshall and Sandyford Range Cooker must be installed strictly to the installation manual. The instructions under Marshall or Sandyford regarding statutory considerations are:-

- Ventilation
- Health and Safety
- Flue Systems
- Technical Specifications
- Specifications
- Electrical Installation
- Oil Storage Tanks
- The Heating System
- User Instructions
- Flue Gas Sampling Points
- Servicing
- Control Panel
- Warranty Registration

All the above are appropriate to both Marshall and Sandyford Range Cookers and should all be read before installing the cooker/boiler.

The installation of this cooker/boiler must conform to building rules and regulations and British Standards. Central Heating Engineers must be OFTEC approved for oil and an oil filter must be fitted to the oil supply and a fire valve situated at the point of entry to the building. DO NOT RUN the cooker or boiler until it has been commissioned by an OFTEC Engineer.

A Heat leak radiator is not required.

PLEASE NOTE – IF THE BOILER BURNER IS FIRED WITHOUT WATER BEING IN THE BOILER, THE GUARANTEE OF THIS UNIT WILL BE INVALID.

INTRODUCTION

Thank you for buying the Sandyford Cooker

IMPORTANT NOTICE – THIS APPLIANCE MUST BE EARTHED

- The Sandyford Cooker must be commissioned by an authorised engineer and not by a plumber or yourself. No responsibility or liability can be assumed by Sandyford Cookers for any fault arising from poor or incorrect installation.
- Please ensure that a suitably sized air brick(s) is fitted. It should be sufficient for free air ventilation based on a requirement of 1 square inch per 4000 BTU/H. (If in doubt contact your local agent or installer).
- An indirect type copper cylinder is required with a minimum capacity of 35 gallons.
- The Sandyford Cooker must be sited on a non-combustible hearth.
- To use gravity feed (DHW), all pipework from boiler to cylinder must have a minimum diameter of 28 mm and pipe run must not exceed 12 metres in length. On fully pumped systems pipework must be 28 mm diameter to first branch, from where it may be reduced to 22 mm diameter.
- We recommend the use of a proprietary corrosion inhibitor in the system (BS7953).
- Before firing the burners, ensure the boiler is full of water and that the oil lines have been bled of air. Make sure mains power is connected.

STATUTORY CONSIDERATIONS

The installation of the Sandyford Cooker must comply with the following Regulations:-

- The Building Regulations:-
 - Part S – England and Wales
 - Part L – Northern Ireland
 - Part J – Ireland
 - Part F, Section III – Scotland
- BS 4814 – Sealed Systems
- BS 5440 Parts 1 & 2 – Installation of Flues and Ventilation
- BS 7074 Parts 1 & 2 – Hot Water Supply
- BS 7671 – Requirement for Electrical Installations
- BS 5449 – Forced Circulation Hot Water Central Heating System for Domestic Installation
- BS 7593 – Treatment of Water in Domestic Hot Water Systems
- DM2 – Installation in Timber Framed Buildings

SITE PREPARATION AND LOCATION

A floor base of solid non-combustible material is required, which is capable of holding the weight of the appliance (480 kg). If a non-combustible floor surface is not available, it is recommended the SANDYFORD Cooker Range is installed onto a concrete base of not less than 100 mm thickness. The hearth is to extend 100 mm beyond the sides and the front of the cooker.

When deciding the location of the SANDYFORD Cooker Range, consideration should be given to allowing room for maintenance and general access. There should also be a clearance around the cooker, which is not less than 25 mm. Work surfaces made from combustible materials should not be closer than 10 cm to the cooker.

COMMISSIONING CHECKS

BY AUTHORISED ENGINEER

BOILER AND COOKER

- Check that the system is full of water.
- Check all seals to access covers, doors and flue connections.

THE BURNER

- Please follow notes on page of the Ecoflam Handbook (inserted) for oil pump modification of 1 and 2 pipe systems.
- Check correct nozzle is fitted with the correct pump pressure for the output required – see section 5 of this manual.
- Check available air to the cooker and boiler – see section 2 of this manual.

FLUE AND CHIMNEY

- Check that the chimney has been lined/insulated to prevent condensation. Also, that it is the correct size and has no obstructions to restrict the flow of gases. If in doubt, please contact your local Sandyford agent.

ELECTRICAL

- Check that the wiring circuit is correctly fused.
- Check lockout function of the control box and ensure you explain this operation to the customer.
- Check the operation of the limit stats – one each for cooker and boiler.

COMBUSTION TEST

- This must be carried out using an approved test kit.
- Two test point holes (with plugs) are situated on the flue outlets – one each on boiler and cooker outlets – top right and left. Re-fit the plugs after use.

This manual and the burner details must be left with the customer, together with a copy of the completed warranty form.

- Routine cooker service must be carried out once a year and boiler service every 3 years.

See Fault Finding, page 26, Ecoflam Handbook (inserted)

- The burners are located behind the bottom left door panel (3 screws). Remember to take great care of live wiring when this panel is removed.
- If the lockout light is glowing, press the reset button on the burner control box once only.
- If the burner fails to re-light after two attempts, switch off the unit at the mains and call the engineer. If lockouts occur regularly, contact the installer.
- Always turn off the oil supply and switch off and disconnect the electrical supply before working on the boiler.

VENTILATION AND COMBUSTION AIR REQUIREMENTS

- In order to permit the correct combustion of the gases, it is fundamentally essential for the air supply to the appliance to be stable and sufficient.
- We recommend that the air intake grill situated on the rear of the appliance is installed on an outside wall with the extension tubing provided.
- This grill is fully weatherproof. It is designed in such a way that, it can be unscrewed from the rear of the appliance, and relocated on the outside wall using the extension tubing provided (see Appendix 1).
- If it is impossible to follow this recommendation, then it is essential that the conditions laid down in BS 5440 Part 2 are fulfilled.
- The effective area of any vent required should be accurately calculated and established in accordance with BS 5440 Part 2. There should be no communication between internal air vents and kitchens, toilets or bedrooms.
- Air vents to the outside of the building should be located only where there is no possibility of air currents propelling the products of combustion into general occupied areas or rooms.
- There should be a minimum of 750 mm between exterior air vents and any part of a flue terminal.
- Air vents through cavity walls should be a continuous duct across the cavity and joints between the vent inlet and, the wall should be sealed to prevent ingress of water.
- In ALL cases where an air supply is demanded by other appliances such as extractor fans, tumble dryers, etc. additional allowances must be made to eliminate the possibility of air starvation to the burner, or the spillage of combustion products into the room.

Any restriction to the free flow of intake air may cause condensation and burner lockout.

If the room in which the Sandyford Cooker is fitted there is an Extractor Fan,
A COMBUSTION INTERFERENCE TEST SHOULD BE CONDUCTED.

AIR SUPPLY Size of Vent – VENTILATION

All Sandford Range Cookers have input rating in excess of (25,000 BTU/HR) 7 kW. Therefore, the room or internal space containing it must have an air vent of a minimum effective area of 4.5 cm² for every 1 kW in excess of 7 kW – (for every 5,000 BTU in excess of 25,000 BTU/HR). The air vent should be direct to outside air or to an adjacent room that has an air vent to the outside.

VENTILATION MEANS PERMANENT VENTILATION

Permanent ventilators of adequate free area MUST BE INSTALLED.

Air must be introduced into the building, so as to cause the least possible discomfort to the occupiers, so as to avoid the air patch being blocked off to prevent draughts. Provision of air into the room can be from below floor space or in an adjacent room. See Appendix 1.

HEALTH AND SAFETY CONSIDERATIONS

It is the responsibility of the user/installer to ensure that the necessary personal protective clothing is worn, when handling materials known to be injurious to health. Working areas should be well ventilated during the installation process.

A suitable face mask should be worn when working with insulating materials e.g. ceramic blanket of glass fibre, to prevent inhalation of harmful fibres.

Failure to install the cooker/boiler correctly will automatically invalidate any guarantee or claim against Sandyford Cookers for incurred damages.

The Ecoflam Oil Burner Handbook inserted with this manual should be read in conjunction with this manual.

PLEASE NOTE

Sandyford Cookers are only sold through selected agents. The company do not sell direct to the public. Therefore, this boiler/cooker unit should only have been purchased from a Sandyford Cooker agent.

Parts of this unit are subject to rights and patents.



IMPORTANT NOTICE

CONTROL OF SUBSTANCES HARMFUL TO HEALTH

It is the user/installer's responsibility to ensure that the necessary personal protective clothing is worn when handling materials known to be injurious to health and safety.

Avoid inhalation when working with the following products, as they are known to be harmful:

Insulation materials i.e. ceramic board, blanket – glass fibre and mineral wool.

Avoid contact with eyes, skin, throat and use disposable protection.

FLUE SYSTEMS

Local expert advice should be obtained on flue systems and flue termination for your gas Sandyford Cooker.

Flues that are wholly constructed of a single skin material, and are not insulated, SHOULD NOT be used. Their inability to retain heat will give rise to condensation.

An existing chimney must be lined, using rigid or flexible stainless steel liner (Class 1 or 2 liner, in accordance with BS 715 – BS 4543, Parts 1 and 2).

The Sandyford Cooker has been designed to operate with a flue system conforming to the minimum dimensions of 125 mm diameter, and a height of no less than 3 metres from the cooker. This is necessary to permit flue gases to vent into the clear air away from turbulence that may be caused by other structures.

All flue connections must be fully sealed and inspected by the installer.

The flue termination of an open flue natural draught system, must be so located that it is unlikely to be subject to wind pressure, which could reverse the flow of combustion products through the flue. All terminals should be in accordance with BS 5440. The terminal must be positioned, so that it is shielded by any roof structure that could create undesirable pressure regions around the terminal.

A flue terminal must provide an extraction aspect under all wind conditions.

Negative Flue Pressure - In certain circumstances, it may not be possible to avoid down draughts in the flue arrangement, due to surrounding terrain or building. In these circumstances a suitable anti-down draught cowl may be effective.

If it is necessary to offset the chimney, the recommended angle is 60 degrees to the horizontal. Horizontal runs in excess of 450 mm should be avoided.

Do not connect to a flue serving any other appliance.

Flue/Chimney to comply with EN1443 1999 Chimneys. General Requirements. T400 PI O.W. R22. C50.

ACCESS must always be provided for cleaning the flue. A flue cleaning door can be sited in either a bend or straight section of accessible flue.

The oven vent pipe located on the back of the cooker (flexible stainless steel) should preferably be taken through the wall to the outside. This should have a suitable joint fitted to stop ingress of water. This vent pipe should not run downwards, but should be horizontal through the wall. This will prevent water condensing and running back into the oven.

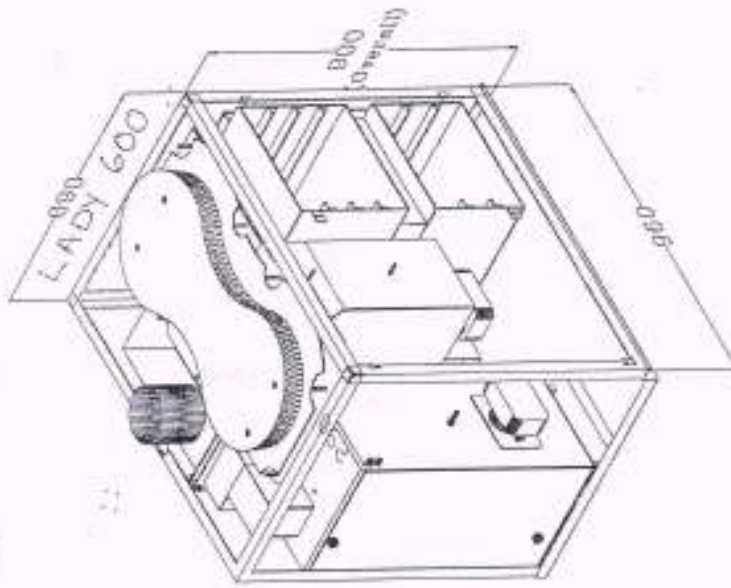
SEE DATA PLATE FOR FLUE MODEL I.E. TWIN FLUE OR CONVENTIONAL

80K OR 100K.

IF TWIN FLUE/LOW LEVEL, THEN IT IS IMPERATIVE THAT ALL JOINTS

ARE SEALED. SEE DRAWINGS.

Sandyford Classic Cooker



Isometric View open file

Drawn: October 2009

Units in Millimeters

Forward Fabrications Ltd

44-46, Victoria Road, Sandyford, Little Eaton, Derby

TECHNICAL SPECIFICATIONS

APPLIANCE TYPE: Oil-fired

FUEL: Commercial Kerosene 28 sec to BS 2869
1983 Class C2
10.200 Visc. Max 1.50E at 20 Degrees C

BURNER: Twin Pressure Jet

CONNECTIONS: *Boiler 2 x 1 inch BSP female flow and return.
Position of 1 inch BSP sockets, base to centre of flow 655 mm.
Base to centre of return 65 mm, from back of cooker to centre of sockets 110 mm. Sockets are on the left-hand side of the cooker looking from the front of the cooker.

FLUE: 125 mm (5 inch) internal diameter.
Minimum chimney height 4.5 m, terminating above the ridge. (Must be of sound construction).

BOILER: Minimum test pressure – 40 psi. Maximum working pressure – 15 psi.

OIL INLET: ¼ inch BSP

ELECTRICAL SUPPLY: 240V – 50 Hz – 2.5 amp fused.

If the Sandyford or Marshall Cooker is NOT connected to a 3 way programmer (cooker and boiler), then it must have an independent OFF switch for the cooking side.

INSTALLATION – COMMISSIONING

- We highly recommend that installation is carried out by an OFTEC trained and registered technician. It is the responsibility of the installer to ensure that the appliance is correctly commissioned, in accordance with BS5410, Part 1.
- If the commissioning is not carried out by a trained technician, the manufacturer's 1 year warranty will be invalidated.
- For safe operation an in-line oil filter and fire valve must be fitted.
- We recommend the fitting of the Teddington Controls KBB Fire Valve which is OFTEC approved.

See Heating System page 21

SPECIFICATIONS

OVERALL DIMENSIONS

WIDTH	-	1000 mm
HEIGHT	-	975 mm (top of flue collar)
DEPTH	-	735 mm
BASE	-	Footprint – 970 mm x 670 mm (Classic)

ELECTRICAL INSTALLATION

WARNING: This appliance must be earthed and electrical installation must be carried out by a QUALIFIED ELECTRICAL ENGINEER.

Two x 2.5 amp fuses are located in the front control panel. These are marked: Cooker Fuse and Boiler Fuse. Both fuses should be removed before carrying out any work on the appliance. Power must be disconnected.

The Sandyford Cooker – must be connected to a fixed fuse spur (5 amp rating) with a disconnect device in the fixed wiring which must employ a 3 mm disconnect separation in all poles.

The Control Thermostats and circulating pump used for fitting must be compliant with all current regulations in force.

If the Sandyford Cooker is NOT connected to a 3way programmer (Cooker and Boiler), then it must have an independent OFF switch for the cooking side.

FOR BOILER AND COOKER

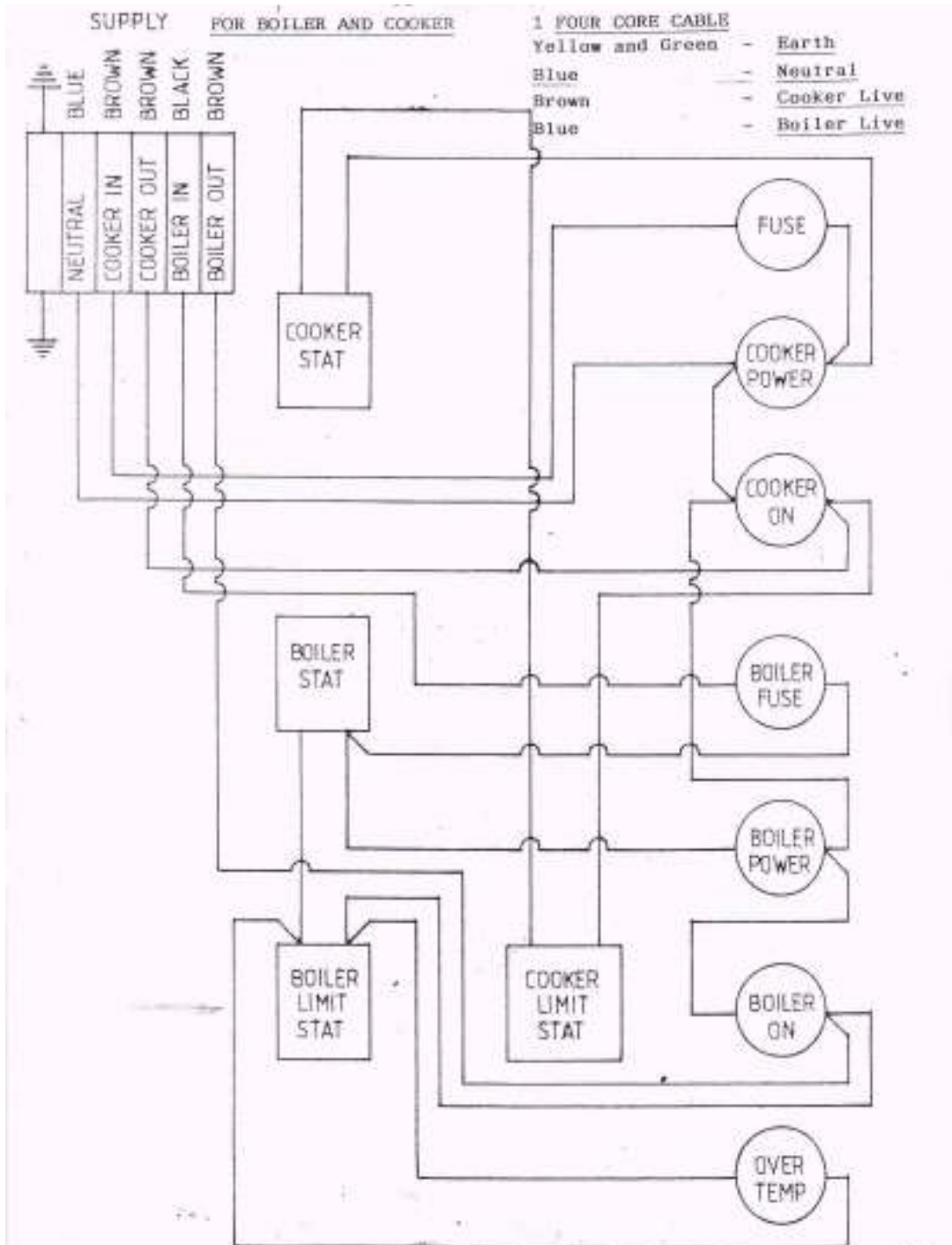
1 FOUR CORE CABLE

Yellow and Green - Earth

Blue/Grey - Neutral

Brown - Cooker Live

Black - Boiler Live



SANDYFORD COOKER WIRING DIAGRAM

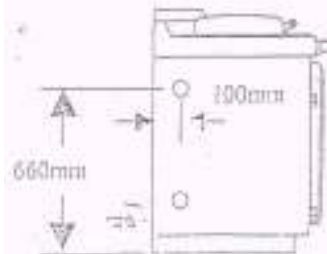
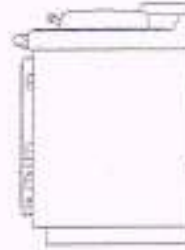
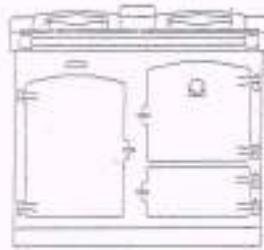
Sandyford Cooker – LADY model

Size of main Oven

350mm Wide
370mm High
310mm Deep

Size of Warming Oven

250mm Wide
210mm High
510mm Deep



View showing socket locations on left hand side of cooker

STATELY 3 AND 4 OVEN COOKER AND BOILER

Electric and oil connections are on the left-hand side of the cooker.

Boiler tapping 1 inch BSP are on the right-hand side of the cooker.

The Stately is approximately 1490 mm wide (left to right) and flue details including balanced twin flues, etc., shown for Marshall and Sandyford, should be followed.

THE STATELY BOILER MODEL MUST HAVE A 6 INCH MINIMUM FLUE.

SPECIFICATION SHEET FOR Marshall Range Cookers

The Marshall 120,000/140,000/150,000 BTU's

Pipe Fittings 1.1/2 BSP

Flow and return – 42 mm copper for the first 4 metres minimum and then reduce to 28 mm.

This is to ensure adequate water flows through the boiler to avoid kettling and hot spots.

The flue, for models 120/150,000 BTU, must be minimum 6 inch. 150 mm suitable for oil fired appliances. It must be insulated and terminated with an appropriate cowl. The oil line is to be 10 mm copper for all Marshall Cookers.

The boiler has 4 x 42 mm sockets, 2 on the left-hand side of the boiler and 2 on the right-hand side of the boiler. The 2 on the right-hand side are plugged off, but can be used if required. Should these be used, you will need to drill the right-hand side panel or the rear panel to pass the pipes through. (When the unit is commissioned make sure that the plugs fitted on the right-hand side of the boiler do not leak).

A Heat Leak radiator is **NOT** required on **ALL** models.

The Marshall 30,000/60,000/80,000/106,000 BTU's

The 30/60,000 BTU boiler has 2 x 1 BSP sockets on the left-hand side of the boiler.

The 80/106,000 BTU boiler has 4 x 1 BSP sockets. 2 on the left-hand side of the boiler and 2 on the right-hand side of the boiler. The 2 on the right-hand side are plugged off, but can be used if required. Should these be used you will need to drill the right-hand side panel or the rear panel to pass the pipes through. Position of 1 BSP and 42 mm sockets, base to centre of flow 660 mm, base to centre of return 65 mm, from back of cooker to centre of sockets 110 mm.

The flue, for models 30/106,000 BTU, must be minimum 5 inch. 125 mm suitable for oil-fired appliances. It must be insulated and terminated with an appropriate cowl. The oil line is to be 10 mm copper for all Marshall Cookers.

MARSHALL RANGE COOKER

THE OVEN DIAL ON THE MARSHALL COOKER SHOWS A WHITE DOT. THIS IS APPROX 200°C. THE BOTTOM OVEN WILL BE APPROX 60% THE HEAT OF THE TOP OVEN. THE HOTPLATE WILL BE HOTTEST IN THE MIDDLE AND THE LEFT-HAND SIDE, THE COOLEST PART WILL BE THE RIGHT-HAND SIDE.

WHEN THE MARSHALL TOP OVEN DOOR IS OPENED THE TWIN JET BURNER WILL FIRE UP RETAINING THE TEMPERATURE OF THE OVENS WITHIN MINUTES.

WHEN USING THE MARSHALL TO IT'S FULL POTENTIAL, LIFT UP THE LIDS AND REMOVE THE CENTRE COVER WHEN COOKING ON THE HOTPLATE. THIS WILL NOT AFFECT THE TEMPERATURE ON EITHER THE HOTPLATE OR IN THE OVENS.

PLEASE NOTE – THE TOP IS LOOSE AND MUST BE REMOVED BY TWO PEOPLE. NO BOLTS HOLD THIS ON. **REMOVE THE SPLASHBACK BEFORE REMOVING THE TOP.**

WARNING – WHEN THE COOKER IS SWITCHED ON, THE MIDDLE COVERPLATE WILL BE VERY HOT.

GLOVES MUST BE WORN TO REMOVE THIS PLATE.

ALL OTHER DETAILS IN THIS MANUAL (INCLUDING THE ECOFLAM BURNER DETAILS) WILL RELATE TO THE MARSHALL COOKER.

OIL STORAGE TANKS

- The size and site of the tank should be chosen to be the least intrusive, with consideration given to access for delivery of fuel. To obtain the best fuel price, a purchase delivery of 500 gallons plus is normally required.

STEEL TANKS

- The oil tank should be mounted on suitable supports. It should slope 20 mm per 1 metre of length downward from the outlet to the sludge cock, situated at the opposite end. It should be complete with following sludge cock, outlet valve, contents indicator, hinged fill and vent cover (or a separate fill connection and vent). The fill vent should be suitably capped to prevent ingress of water, or fitted with return bends.

PLASTIC TANKS

- Tanks made of polyethylene are becoming popular. Polyethylene tanks are normally placed at ground level – refer to BS5140, Part 1 and OFTEC Technical Book 3 for further information on tank installation.
- Now that virtually all new oil-fired appliances have pressure jet type burners, which incorporate oil pumps, it is not always necessary to locate the oil tank higher than the boiler. Two pipe oil supply systems or single pipe systems with Tigerloop aeration device (available from good plumbing merchants), used with pressure jet burners, enable the tank to be positioned lower than the burner. The Tigerloop must be fitted upright, close to the boiler, and must be outside the property. Please refer to manufacturer's instructions.
- Oil supply pipes are normally run in an annealed copper tube, which is easily worked around bends and enables the line to be run in continuous lengths. Galvanised pipes and fittings **MUST NOT** be used.

OIL SUPPLY LINE

- A filter must be fitted outside the building. All joints must be air-tight with no soldered joints in the supply pipe. Always flush the oil supply before connecting to the burner.

THE HEATING SYSTEM

- This should be installed in accordance with current good practice and advice from a **qualified Heating Engineer/Plumber** taken.
- It is neither proposed nor feasible to adequately deal with the subject in this manual.
- When designing and installing the controls of the heating system, it must be remembered, that if, the control system is such that the water circulation through the boiler can be totally or substantially reduced, whilst the gas burner can still fire, the water in the boiler will reach very high or boiling temperature before the boiler thermostat can sense it and switch off the burner. If this condition is likely, it is necessary to wire the controls, in such a way, that the electrical supply to the burner is switched off simultaneously with the stopping of circulation pumps or, the closing of motorised valves.
- **Electricity supply** = 240V, 1 Phase.
- All wiring should be to **IEE Regulations** and to be carried out by a **qualified Electrical Engineer**.
- It is recommended that the boiler is installed, so that the system controls prevent the burner firing, unless there is demand for heat from a room or cylinder thermostat.
- The minimum pipe size to the first major tee and to the hot water cylinder is to be 28 mm. If the Sandyford Cooker is to an existing heating system, it is advisable to have a qualified Heating Engineer to check out the system for suitability.
- The Sandyford Range Cooker should be connected to an insulated indirect hot water cylinder (35 gallons). The Sandyford Range Cooker can be used on a fully pumped or sealed system.

NOTE:

BEFORE FILLING THE SYSTEM WITH WATER, PLEASE CHECK THAT BOILER TAPPINGS, THAT ARE NOT IN USE, HAVE HAD PLUGS FITTED. AFTER FILLING, CHECK FOR LEAKS.

4 x 1 inch BSP tappings are set on the boiler, 2 have plugs fitted (tested to 60 psi) Classic only, 2 tappings only on Icon, Cottage and Lady models.

ALL MATERIALS used should be **Fire Resistant** and conform to the following standards:

NON FERROUS IS 239 – BS 1552 IS 238 and EN29453 (SOLDER)

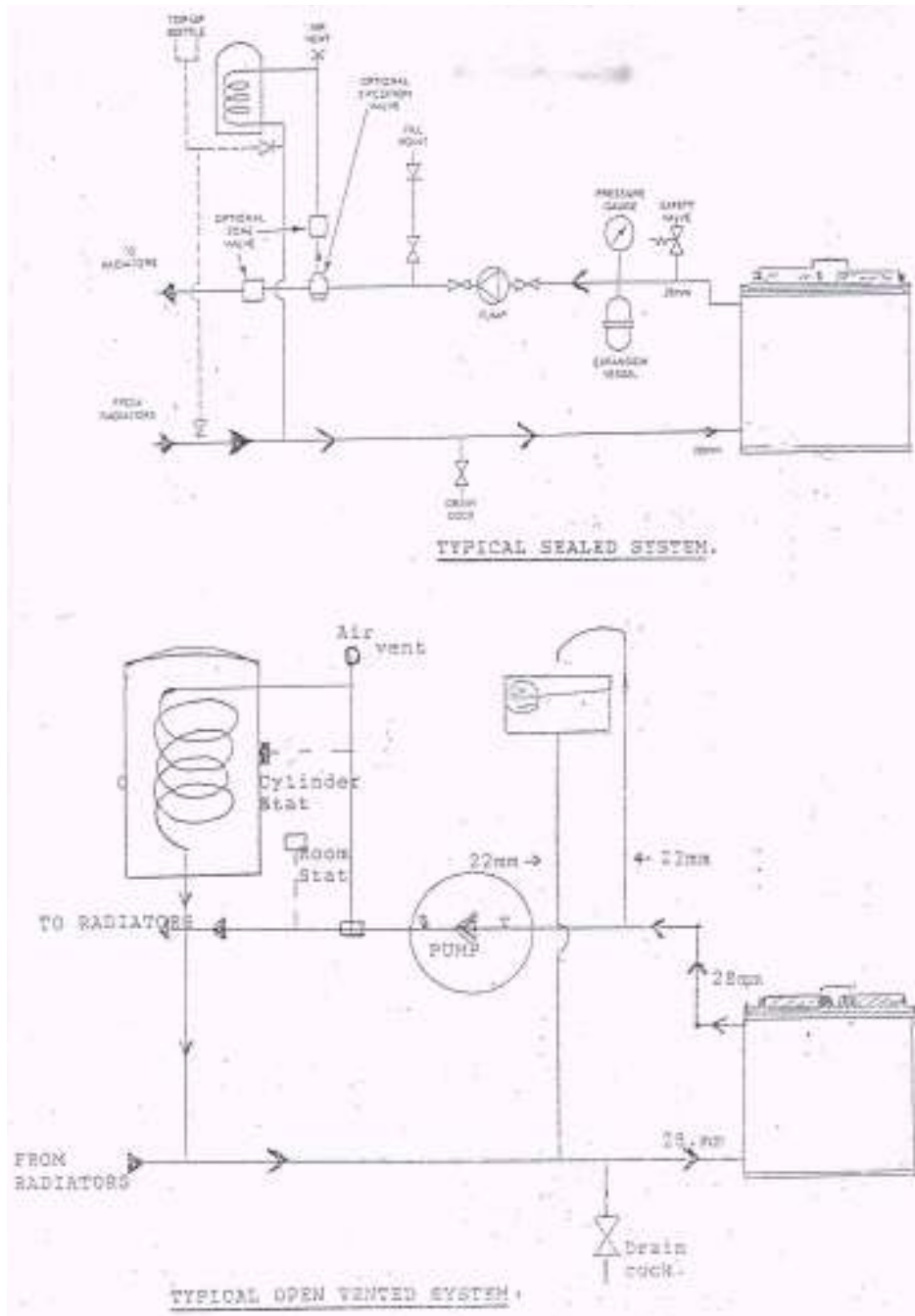
FERROUS BS 4127 – BS 1740 BS 1387 – BS 5295 and BS 6956

We recommend the use of a proprietary corrosion inhibitor in the system (BS 7953). Systems must be flushed out, after installation work, to avoid corrosion problems. When using chemicals to flush the system, manufacturer's instructions **must be followed**.

Do not fire burner in boiler, unless boiler is full of water.

If your existing heating system has not previously been corrosion proofed, then it is **essential** to thoroughly clean it, as the new and older metal found in your existing system, can often accelerate the corrosion process, unless you take steps to prevent it. Chemicals are available.

Quantities and flushing arrangements, as specified by the manufacturer. (Obtainable from your local plumbing merchants).



IMPORANT – BEFORE FIRING BURNERS

- CHECK** TIGHTNESS AND SEALS OF ALL OIL FITTINGS.
IF GAS, THAT ALL GAS PIPE JOINTS ARE SEALED AND SECURE.
- CHECK** ALL PLUMBING FITTINGS FOR LEAKS AND THAT THE SYSTEM HAS BEEN FULLY PURGED OF AIR AND IS FULL OF WATER.
- CHECK** ALL AIR IS PURGED FROM OIL LINES.
- CHECK** THAT ALL FLUE JOINTS ARE SEALED.

ENSURE THAT THE CHIMNEY LINER CONFORMS WITH NATIONAL HOUSE BUILDING REGULATIONS

NOTE

TWIN BURNER COOKERS **DO NOT** REQUIRE A HEAT LEAK RADIATOR. SINGLE BURNER COOKERS WITH BOILER **REQUIRE** A HEAT LEAK RADIATOR.

ENSURE THAT YOUR SANDYFORD COOKER IS COMMISSIONED BY AN AUTHORISED OFTEC (FOR OIL) OR GAS SAFE (FOR GAS) ENGINEER.

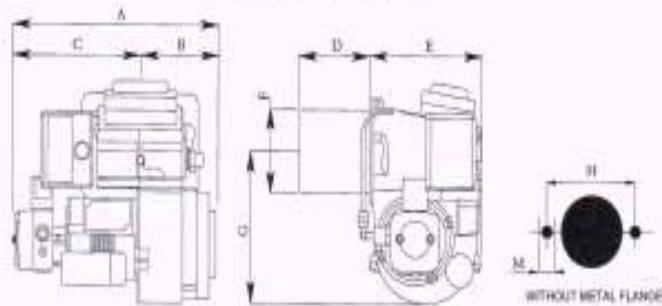
FAILURE TO IMPLEMENT THE ABOVE COULD INVALIDATE YOUR GUARANTEE.

SANDYFORD OR MARSHALL RANGE COOKERS **MUST NOT** BE FIRED, UNLESS COMMISSIONED BY A HEATING ENGINEER.

TECHNICAL DATA

MODEL	MINOR 1 BOILER 60-80-100K FORWARD E	
Thermal power input	kW	29,92
	Btu/h	102,119
Oil flow-kerosene	kg/h	2,48
Voltage single phase 50 Hz	Volt	240
Motor	W	75
Capacitor	µF	5,5
RPM	N°	2.800
Ignition transformer	kV/mA	E8/20
Control box	Landis	LOA 24
Fuel :	Kerosene	MJ/kg 45,3, visc.28 sec at 20°C

OVERALL DIMENSIONS




MODEL	A	B	C	D	E	F	G	H	M
MINOR 1	300	140	160	52	165	89	160	125	M8

BURNER START - UP

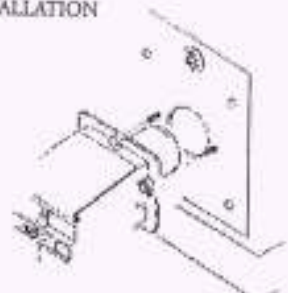
Make sure there are no leaks on flexible oil line connections. Bleed air from the pump.
 Install a suitable nozzle for the required output. Turn the thermostat to the required setting. The burner will purge for approximately 13 seconds. At this point the oil valve opens and oil is ignited. Regulate the pump pressure. Regulate the air. In case of no ignition the burner goes to lock-out in 10 seconds.

ECOFLAM

AIR REGULATION



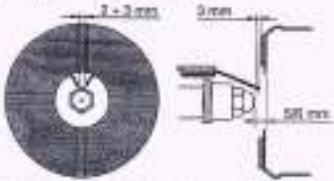


INSTALLATION



NOZZLE REPLACEMENT

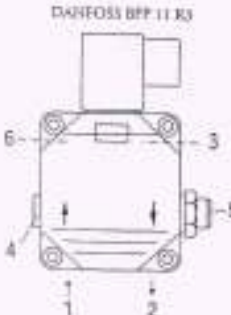
Remove the nozzle carefully taking great care not to damage the electrodes.
Fit the new nozzle with the same care.
Notice : Always check the position of the electrodes after replacing the nozzle (see plan).

Ignition electrodes setting on firing head

Nozzle USgal/h	Spray angle	Spray pattern	Pump pressure	Air damper adjustment
0.75 (C.E.N.)	80°	Danfoss ES	9.1 bar (130 p.s.i.)	-
0.85 (C.E.N.)	80°	Danfoss ES	9.82 bar (140 p.s.i.)	-

PRIMING AND ADJUSTMENT OF THE PUMP

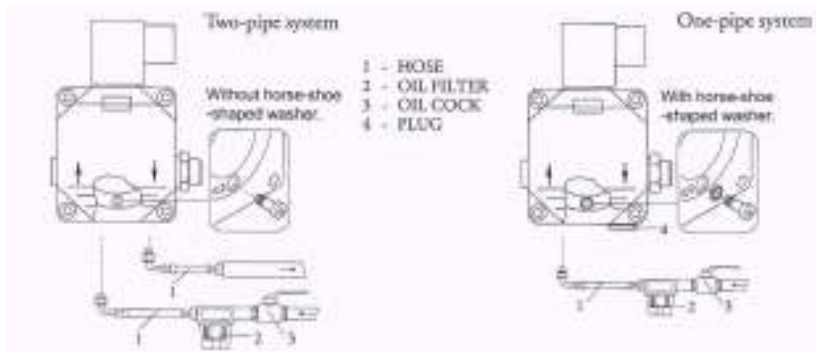


- 1 - INLET
- 2 - RETURN
- 3 - BLEED AND PRESSURE GAUGE PORT
- 4 - VACUUM GAUGE PORT
- 5 - PRESSURE ADJUSTMENT
- 6 - NOZZLE OUTLET

The pump setting indicated by client is carried out in the factory during testing. To prime the pump first of all start the burner and bleed air from the pump through the gauge port. If the burner goes to lock-out after the prepurging time due to lack of pressure in the oil pump, restart the burner.

NOTE : before starting up the burner, make sure that the return pipe is clear. Check that the pipes do not leak. It is advisable to use copper pipes. Do not exceed the depression limit of 4 mt.(0,45 bar) to keep low noise levels. The return pipe must reach the same level as the check valve at the bottom of the oil tank.

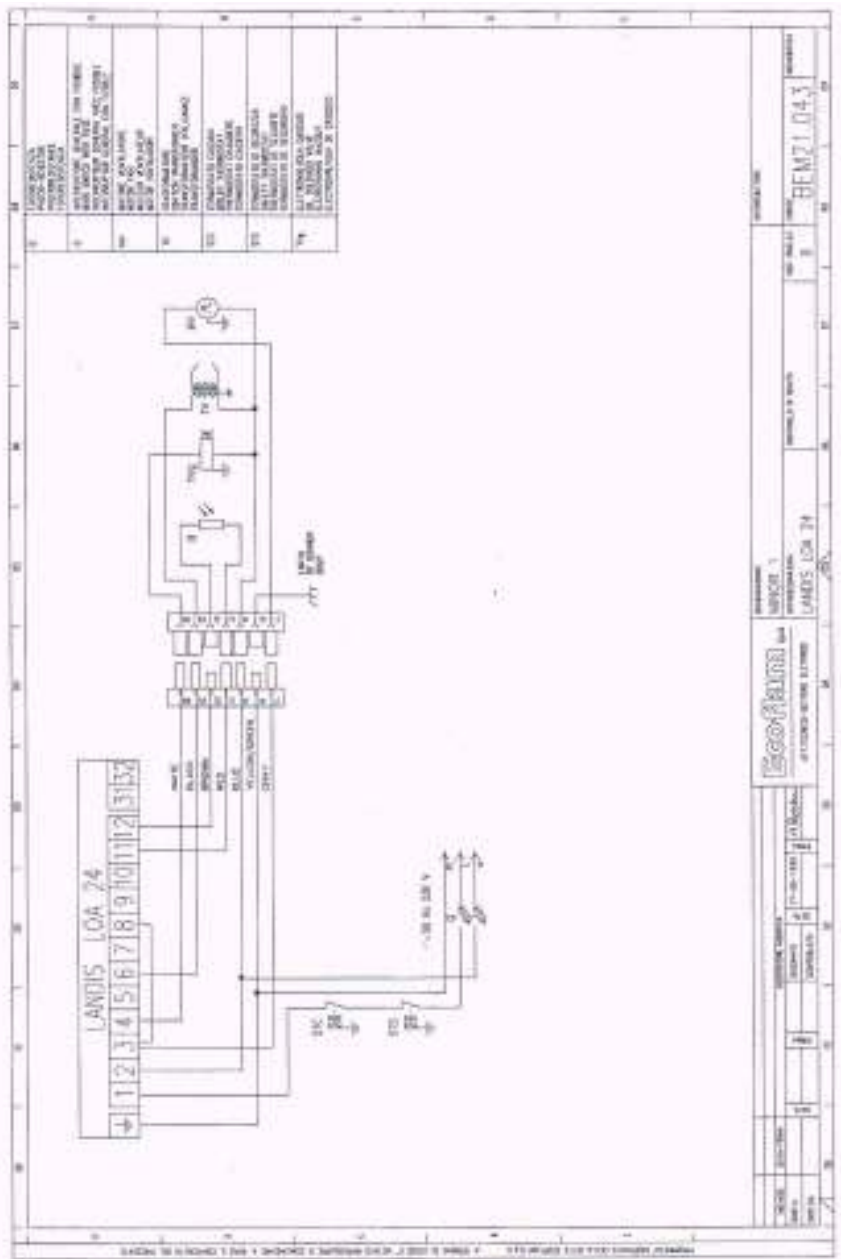
ECOFLAM



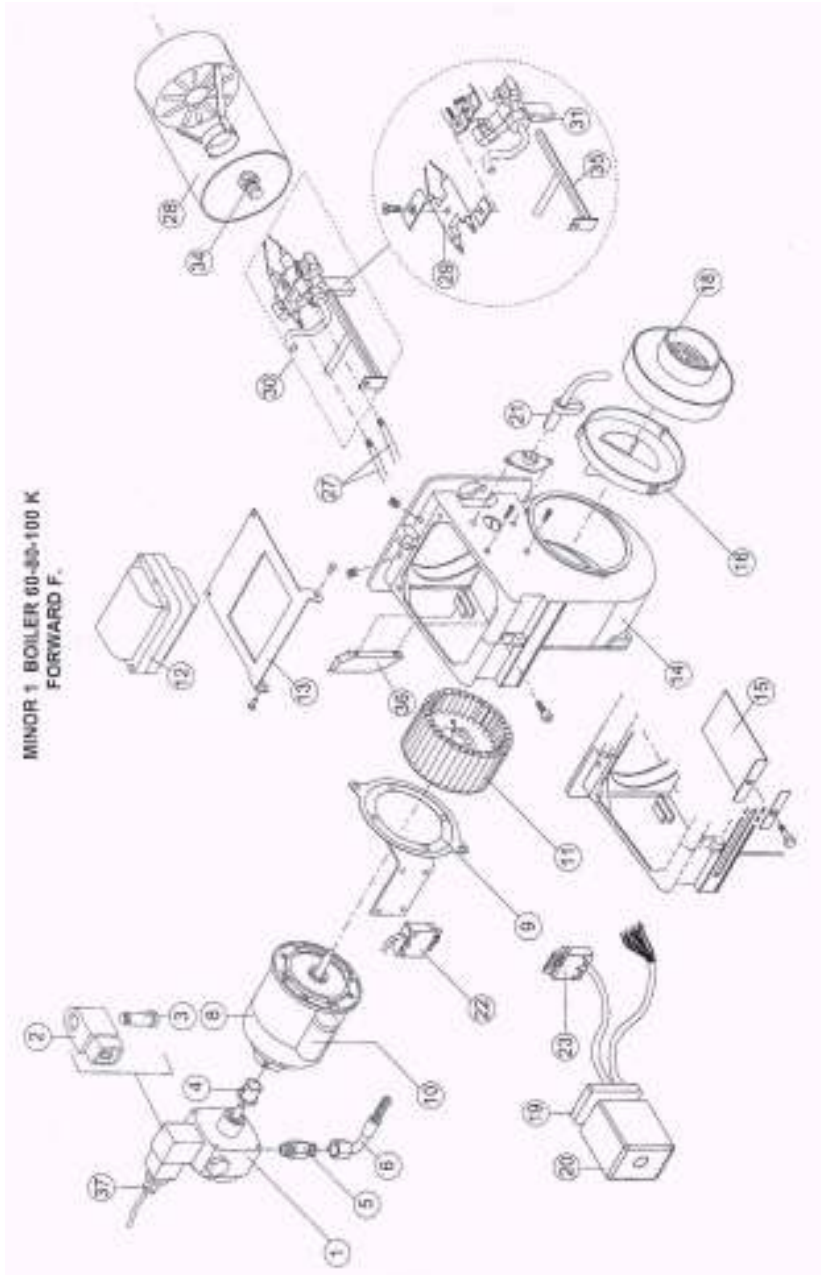
FAULT FINDING

<u>Burner does not start up</u>	<ul style="list-style-type: none"> - Mains switch not on. - Blown fuse. - Boiler thermostats not made. - Fault in control box.
<u>Burner pre-purges and stops</u>	<ul style="list-style-type: none"> - Fault in control box.
<u>Burner does not ignite during cycle and stops</u>	<ul style="list-style-type: none"> - Fault in control box. - Fault in photo-resistor.
<u>Burner does not ignite</u>	<ul style="list-style-type: none"> - Dirty ignition electrodes. - Fault at electrodes. - Electrodes installed wrongly. - Faulty ignition transformer. - Blocked nozzle. - Nozzle needs replacing. - Oil pressure too low. - Blocked oil filter. - Excessive combustion air for nozzle capacity. - Fault in control box.
<u>Burner ignites and then stops</u>	<ul style="list-style-type: none"> - Faulty nozzle. - Photo-resistor does not "see" flame. - Excessive combustion air for nozzle capacity. - Fault in control box. - Oil pressure too low. - Blocked oil filter.

ECOFLAM



ECOFLAM



ECOFLAM

N°	DESCRIPTION	MINOR 1 Boiler 40 K Forward F. code	MINOR 1 Boiler 80 K Forward F. code	MINOR 1 Boiler 100 K Forward F. code
1	- OIL PUMP DANFOSS BFF11 R3	P121/2	P121/2	P121/2
2	- COIL DANFOSS	V510/2	V510/2	V510/2
3	- OIL VALVE DANFOSS	V412/1	V412/1	V412/1
4	- COUPLING	MP501/5	MP501/5	MP501/5
5	- NIPPLE	BFR01103/001	BFR01103/001	BFR01103/001
6	- HOSES TN 6X700	S931	S931	S931
7	- SUPPORT	-	-	-
8	- MOTOR 75 W	M110/3	M110/3	M110/3
9	- SUPPORT	BFF03004/001	BFF03004/001	BFF03004/001
10	- CAPACITOR 3,5 µF	C107/8	C107/8	C107/8
11	- FAN 99 x 45	BFV10001/001	BFV10001/001	BFV10001/001
12	- TRANSFORMER COFH E820 CM	T123/2	T123/2	T123/2
13	- COVER	BFC09002/011	BFC09002/011	BFC09002/011
14	- FAN HOUSING	BFF04316/011	BFF04316/011	BFF04316/011
15	- AIR DAMPER	BFS01002/001	BFS01002/001	BFS01002/001
16	- AIR CONVEYOR	GRM0002	GRM0002	GRM0002
17	- AIR DAMPER SCREW	-	-	-
18	- COVER AIR INLET	BFC03006	BFC03006	BFC03006
19	- CONTROL BOX BASE LANDIS	A402	A402	A402
20	- CONTROL BOX LANDIS LOA 26	A117/1	A117/1	A117/1
21	- PHOTORESISTOR LANDIS	A207/3	A207/3	A207/3
22	- PLUG WIELAND 7 pin	E225	E225	E225
23	- SOCKET WIELAND 7 pin	E225/1	E225/1	E225/1
24	- GASKET	-	-	-
25	- FLANGE	-	-	-
26	- O-RING	-	-	-
27	- CABLES TC	BFE01401/1	BFE01401/1	BFE01401/1
28	- BLAST TUBE TC	BFB01002/002	BFB01002/002	BFB01033/102
29	- ELECTRODES	BFE01102	BFE01102	BFE01102
30	- FIRING HEAD TC	-	-	-
31	- NOZZLE HOLDER TC	GRCR009/10	GRCR009/10	GRCR009/10
32	- DIFFUSER	-	-	-
33	- REAR DISC	-	-	-
34	- NOZZLE	U1085/80E5	U1075/80E5	U1085/80E5
35	- ROD	BFA05102/001	BFA05102/001	BFA05102/001
36	- FAN SCOOP	BFC02040	BFC02040	BFC02040
37	- CABLE DANFOSS	E1103	E1103	E1103

TC = SHORT HEAD TL = LONG HEAD

ECOFLAM

BURNER SETTINGS

Fire the burners and allow 15 minutes to warm up. Then check combustion flue gases.
2 x 10 mm bolts on flue outlets.

Adjust the air level on the burner to obtain a CO₂ of 11-12, whilst maintaining 0-1 smoke level.

Standard Cooker Burner Upfiring

Nozzle 0.5 80° EH

Pump pressure 120 psi. 8.4 bar

Air setting as required 3-9

Cooker Burner Upfiring – Cottage

Nozzle 0.50 60° ES

Pump pressure 120 psi. 8.4 bar

Air setting as required 3-9

65,000 BTU Boiler Burner

Nozzle 0.65 80° ES

Pump pressure 110 psi. 7.5 bar

Air setting as required 3-9

80,000 BTU Boiler Burner

M1763 72 mm Blast Tube

Nozzle 0.75 x 80° ES

Pump pressure 120 psi

No smoke – Air setting 6

100,000 BTU Boiler Burner

M578 72 mm Blast Tube

Nozzle 0.85 x 80° ES

Pump pressure 140 psi

No smoke – Air setting 5

MARSHALL BURNER SETTINGS

*Fire the burners and allow 15 minutes to warm up. Then check combustion flue gases (2 x 10 mm bolts on flue outlets).

Cooker Burner

Nozzle 0.50 60° ES

60 Danfoss ES

120 psi Pump Pressure

55 mm Stainless Steel Blast Tube

Small Fan

Air setting as required – Factory set, but may require adjustment during commissioning. SEE ECOFLAM BOOK WITHIN THE MANUAL.

150 BTU Boiler Burner

Nozzle 1.35 60W

9 bar – 131 psi Pump Pressure

CO₂ – 11

Air Setting – 4.5

140 BTU Boiler Burner

Nozzle 1.35 60W

7.35 bar – 110 psi Pump Pressure

CO₂ 10.0

Air Setting – 4.25

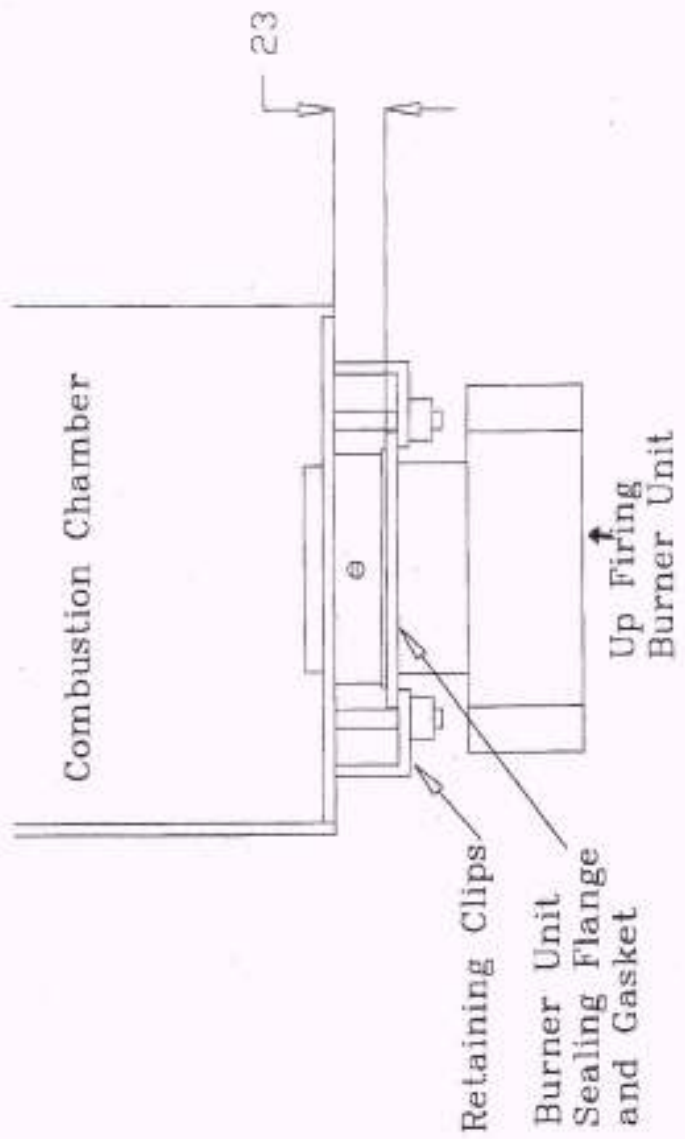
This burner is an Ecoflam MAX. See Figure 1 Burner as mounted to the boiler, always make sure air tube is connected (blue/grey plastic pipe). This pipe must be extended through outside wall. See Appendix 1. Also read Ecoflam Book for MAX 4 burner inserted within this manual.

THESE BURNERS MUST NOT BE FIRED BEFORE BEING COMMISSIONED BY AN OFTEC ENGINEER.

FAILURE TO IMPLEMENT THIS INSTRUCTION WILL INVALIDATE THE GUARANTEE.

***Firing the burners will result in manufacturing oils and sprays, etc. being burnt off. This will create fumes and smoke, so we recommend the unit is run for the first hour after commissioning with some ventilation.**

Sandyford Classic Cooker



Combustion Chamber Burner Detail

Drawn: October 2009
Scale: As Manufactured
Forward Fabrications Ltd
144-16, Old Hall Lane, Castle Road, Lymm, Cheshire, Cheshire

USER INSTRUCTIONS

DO NOT allow the cooker/boiler to exceed it's service interval. It must be serviced at least once a year.

This cooker is only to be used on oil.

Before starting the appliance, set the programmer to the desired on/off times. Make sure thermostats are set of OFF position.

Ensure all gas isolating valves are open.

To start the Sandyford cooker/boiler, set the thermostat to the required temperature (see panel details) and switch on electricity supply.

If the cooker/boiler fails to start and the Red lockout buttons are lit, then re-check all above procedures. Wait 3-4 minutes and re-set the Red lockout buttons. (Bottom left-hand door).

If the cooker/boiler still fails to start. Check for brown fuse or that the high limit stat has not operated. See cooker control page. Then, wait 3-4 minutes and re-set the Red lockout buttons – **ONCE MORE ONLY**.

Should the burners still fail to start. **TURN OFF POWER AND OIL AND CONSULT A SERVICE ENGINEER.**

COOKER CONTROL

- The lower oven will be approximately half the temperature of the top oven plus 10°.
- The hotplate is hottest on the left-hand side, near the middle of the cooker.
- Be prepared for a few failures with your new cooker in the early stages. However, as it is so easy to use, you will soon become very proficient in using it, then you won't want to go back to an ordinary cooker.
- The temperature of the oven is controlled by a thermostat. This is adjusted by turning the control knob clockwise to increase the temperature, and anti-clockwise to reduce the temperature.
- **300°C SHOULD ONLY BE USED FOR QUICK HEAT BOOST AND FOR A MAXIMUM OF 7 MINUTES ONLY.**

PLEASE NOTE

Should the oven temperature go above 300°C, the limit stat will trip in.

- The settings are only approximate, as every cooker is hand-built and therefore unique.
- The RED neon mains indicator lamps (cooker power and boiler power) tells you that the appliance has mains power supply to the control panel unit. When the cooker or boiler is switched on the GREEN neon indicator lamps will be illuminated.
- The boiler and cooker are fitted with a cut-out safety device to prevent temperatures reaching in excess of the minimum setting on the boiler thermostat. If this happens, the red 'over temp' neon light will come on and the boiler will automatically shut down. You must then check to establish the reason for the high limit thermostat operating. The limit stat can be reset by pressing the red reset button situated on the front of the control panel. See Control Panel page.

CLEANING THE APPLIANCE

- As a guide for buying cleaners for vitreous enamel, look for the approval logo “VEDC” i.e. Vitreous Enamel Development Council.
- Cleaning off the Sandyford cooker should be carried out when the unit has cooled.
- The Sandyford cooker should be wiped over daily with a damp soapy cloth. The enamel should then be polished with a clean, dry duster. Any spillages should be wiped up immediately to prevent hardening of deposits, which would make removal difficult at a later stage. If spills do become baked on the surface, an appropriate cream cleaner can be used (ASTONISH). **DO NOT** use abrasive pads or oven cleaners that contain citric acid on the enamel surface of the cooker.
- If acidic products or products with a high sugar content are spilt, then wipe off immediately, as they can permanently damage the enamel.
- Use a light suede wire brush to keep the hotplates clean.
- Spillages in the oven can become carbonised at high temperatures. Therefore, the oven should be cleaned at regular intervals with a stiff brush.

TEMPERATURE CONTROL IN THE TOP OVEN

The temperature in the top oven is controlled by a thermostat and is variable over the range 50°C to 300°C.

The temperature indicated refers to the case side of the oven and top of the oven.

The variation between top and centre, and centre to bottom, will vary, but could be 20 plus degrees.

Good use can be made of the temperature variation in several dishes requiring different temperatures may be cooked at the same time. In this way maximum benefit can be obtained from the gas/oil used to heat the oven.

A GUIDE TO COOKING WITH THE SANDYFORD COOKER

CENTIGRADE

SUITABLE FOR

150	COOL – MERINGUES, QUICHE LORRAINE, MEAT CASSEROLES, BAKED FISH
160 – 170	CHOPS MEAT LOAF CUSTARDS – MILK PUDDINGS PIZZA
170 – 190	CASSEROLES – STEWS CAKES – BREAD DEEP PAN PIZZA TOPSIDE OF BEEF PER 20 MINS/LB. PLUS 20 MINS OVER + PORK, CHICKEN AND TURKEY
200-220	ROAST POTATOES YORKSHIRE PUDDINGS FLAKY PASTRY

REMOVING THE TOP PLATE

CLASSIC AND MARSHALL COOKERS

Before removing the top plate, carefully remove the splashback. This locates into 2 holes drilled in the hotplate. Care must be taken when putting the splashback back into place, because if you do not line the bolts with the holes, you will chip the enamel.

The top plate should be carefully removed by two persons.

NO bolts hold this top down. The weight of the top plate keeps the plate in position. **DO NOT** tilt backwards or hob lids will fly back and cause damage.

DO NOT lift cooker with the handrail or try and push the cooker in position with top plate/handrail.

CLASSIC COOKER

The top plate should be carefully removed by two persons.

NO bolts hold this top down. **DO NOT** tilt backwards or hob lids will fly back and cause damage.

LADY/ICON/COTTAGE COOKER

To remove top, slacken bolts under front (holding top to front). **DO NOT** remove bolts. Remove chimney cowl (flue cover) and slacken screw on flue outlet, then top plate should be carefully removed by two persons, tilt slightly forward.

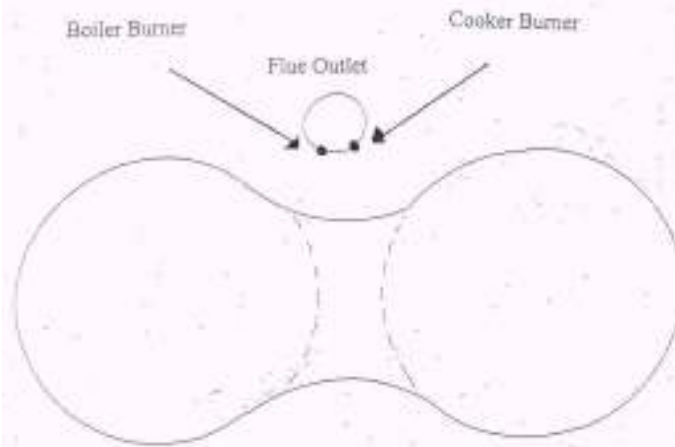
DO NOT LIFT COOKER BY TOP PLATE

DO NOT tilt top backwards or hob lids will fly back and cause damage.

FLUE GAS SAMPLING POINTS

The gas flue sampling points (with plugs) are located on the flue outlets-
One each on boiler and cooker outlets (cooker on right hand side):

RE-FIT PLUGS AFTER USE



REMOVE FLUE COWL *****
DO NOT REMOVE TOP PLATE

SERVICING

- FUEL – 28 second Class C Kerosene – once a year.
- Always turn off the oil supply and switch off and disconnect the electrical supply before working on the boiler.
- The top plate should be carefully removed by two persons.
- The elements of the paper element type filters should be changed. Mesh type filters should be washed in Kerosene.
- The oil tank should be de-sludged.
- Remove the burners and thoroughly clean, check, and replace, if necessary, the blast tube.
- Check and replace, if necessary, electrodes and nozzle.
- Clean fan and photocell.
- Flexible oil lines should be inspected and new ones fitted if in any doubt.
- Thoroughly vacuum clean the flueways of the ovens, exit flue, service door, top of lower oven and top of exit flue (right-hand side top of ovens).
- It is important that all flueway doors have a good rope seal and are tightened correctly.
- Inspect and replace, if necessary, Kaowool blanket in burner chamber to ovens/hob (remove hob plate). 3 year service only.
- Unbolt top boiler access door to remove baffles. Baffles should be lifted out to enable the heat exchanger to be vacuum cleaned (3 year service only).
- Reseal with a good rope seal.
- Run the cooker and boiler. Check for combustion leaks, oil leaks and any unusual noises from the burners or system.
- Run combustion test. *This must equate to the data in the manual.*

Forward Fabrications Ltd
 Appor House
 Duffield Road Ind Est
 Duffield Road
 Little Eaton
 Derby
 DE21 5EG

SERVICE RECORD

Appliance Model:		
Serial Number:		
Date of Service:		
<u>CUSTOMER DETAILS</u>		
Address:		
Town:		
County:		
Postcode:		
Customer's Signature:		
<u>ENGINEER DETAILS</u>		
Engineer's Name: (BLOCK CAPITALS)		
Address:		
Town:		
County:		
Postcode:		
Engineer's Signature:		
<u>COMBUSTION ANALYSIS</u>		
	<u>COOKER</u>	<u>BOILER</u>
Gas Head Pressure:		
CO2% :		
O2% :		
CO ppm :		
F G Temp :		
Gas Rate		
Efficiency % :		
Engineer's Comments:		
Engineer's Signature:		
Date:		

PARTS REPLACED:-

WARRANTY REGISTRATION

GUARANTEE

- The Sandyford Cooker now has a 1 year guarantee on all parts (excluding labour).
- The boiler has a 5 year replacement guarantee (excluding labour).
- Providing it is serviced at the recommended service intervals.
- It is the responsibility of the installer to ensure that the boiler and cooker are properly commissioned.
- It is essential that the commissioning procedures, detailed in this manual, are carried out by a qualified Engineer, using recognised test equipment and, that the relevant section of the latest edition of BS 5410, Part 1, is read and fully adhered to.
- The following Warranty Registration page (Appendix 8) should be completed by the installer, signed by the customer and returned to Sandyford Cookers. The installer should re-check the cooker and ensure everything is completely satisfactory before demonstrating the operation of the boiler and cooker to the householder.

WARNING

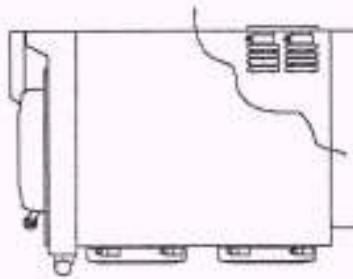
Failure to return the Warranty Registration will render the guarantee null and void.

THIS MANUAL, COMPLETE WITH BURNER DETAILS, MUST BE LEFT WITH THE HOUSEHOLDER

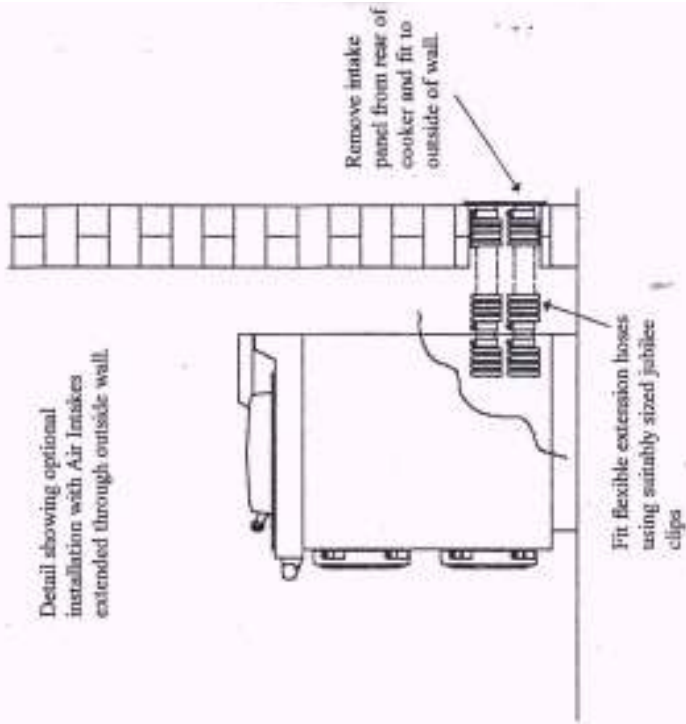
THIS GUARANTEE IS FOR THE MARSHALL, SANDYFORD AND ABA COOKERS

INSTALLATION DETAILS

Detail showing Air Intakes to Burners, as delivered.

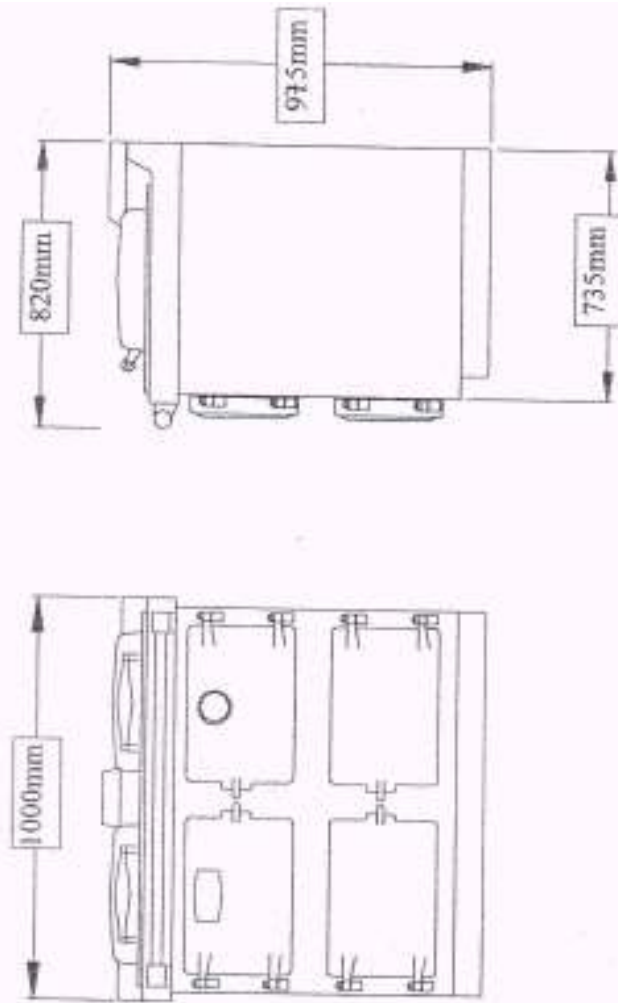


Detail showing optional installation with Air Intakes extended through outside wall.



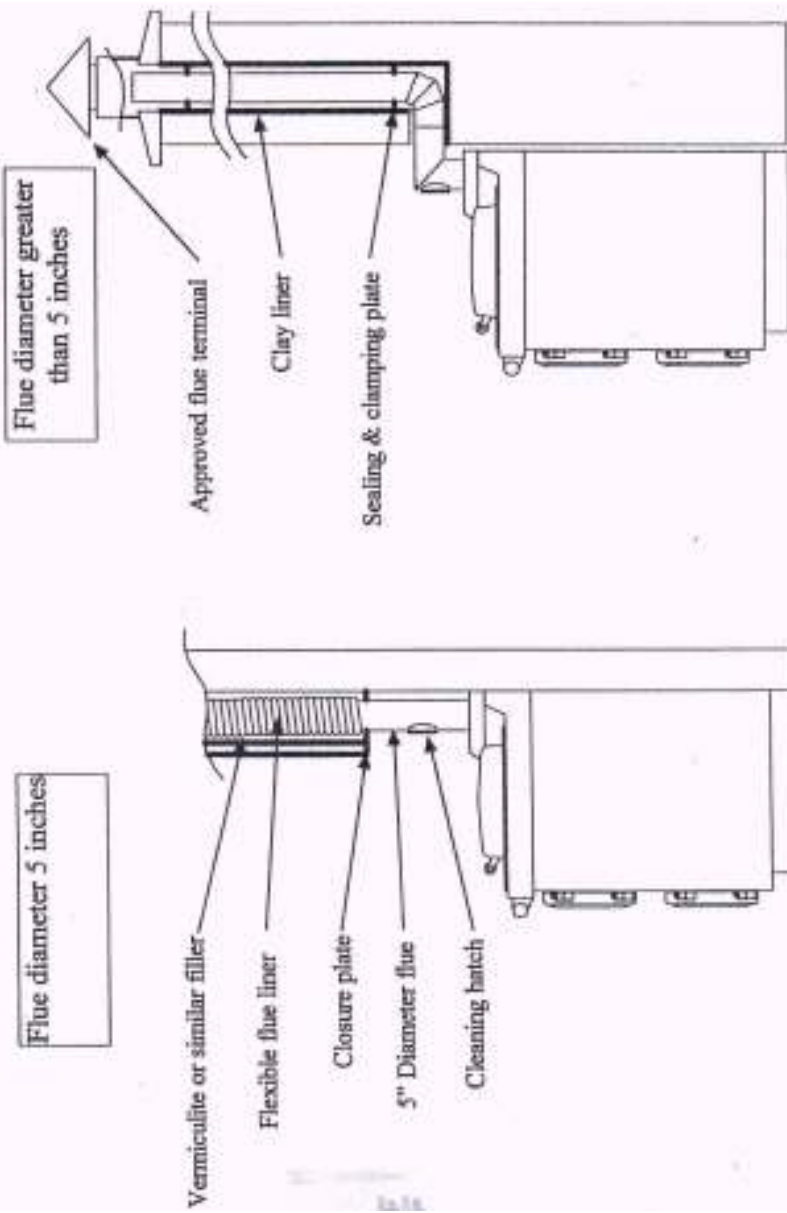
Appendix t

DIMENSIONS & SPECIFICATIONS



Appendix 3

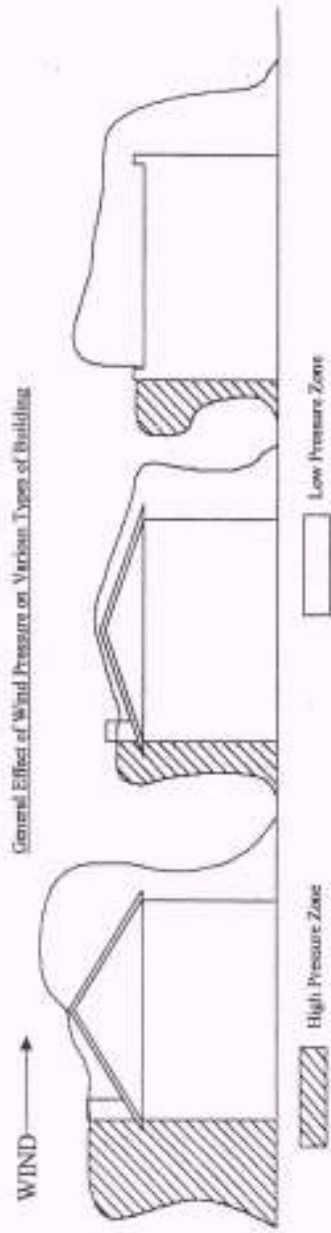
TYPICAL FLUE ARRANGEMENT



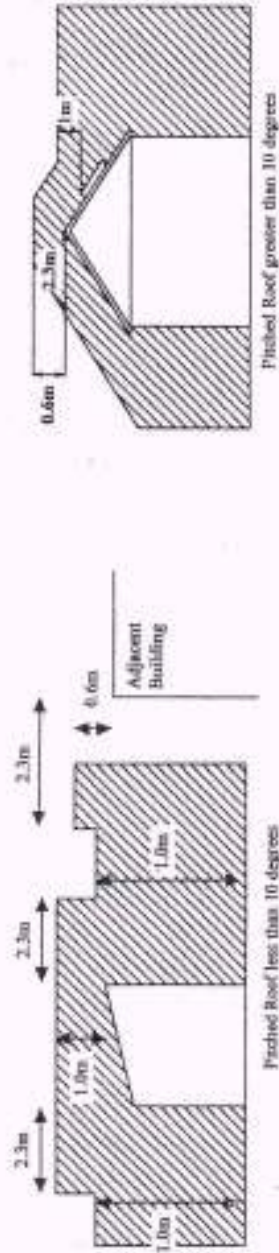
Appendix 4

FLUE TERMINATION

General Effect of Wind Pressure on Various Types of Building



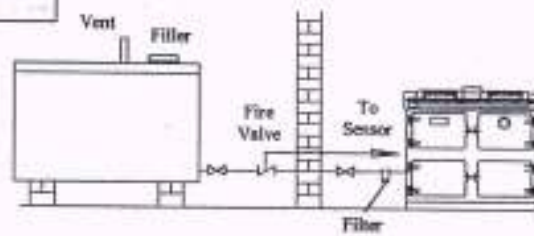
General Effect of Wind Pressure on Flues



Appendix 5

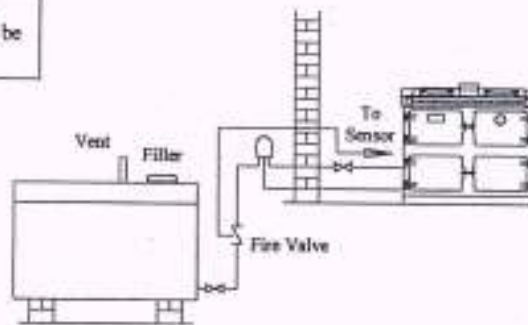
TYPICAL OIL TANK INSTALLATIONS

Simple Single Pipe Installation



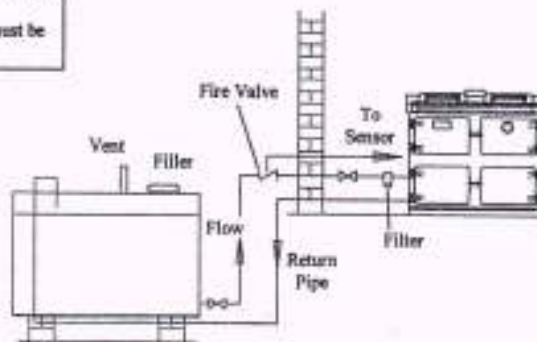
Tiger Loop Installation

The burner bypass screw must be fitted in this installation



Twin pipe Supply with Tank Below Burner Level

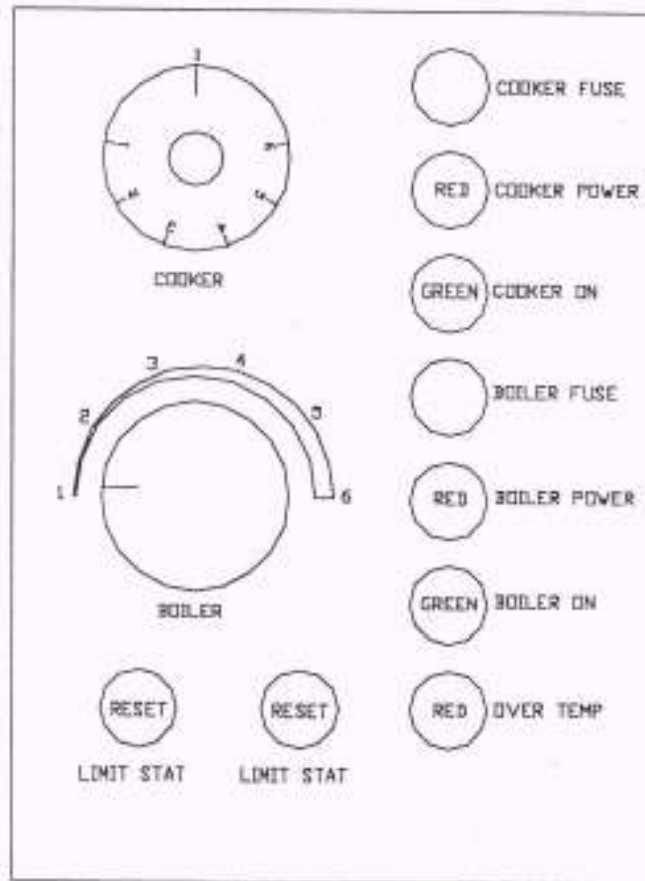
The burner bypass screw must be fitted in this installation



Appendix 6

CONTROL PANEL

THE OVEN DIAL ON THE MARSHALL COOKER SHOWS A WHITE DOT THIS IS AROUND 200° THE BOTTOM OVEN WILL BE AROUND 60% THE HEAT OF THE TOP OVEN



Appendix 7

Return this completed page to:
 Forward Fabrications Ltd
 Appor House
 Duffield Road Ind Est
 Duffield Road
 Little Eaton
 Derby DE21 5EG

WARRANTY REGISTRATION

Appliance Model:	
Serial Number:	
Date of Commissioning:	
<u>CUSTOMER DETAILS</u>	
Address:	
Town:	
County:	
Postcode:	
Customer's Signature:	
<u>ENGINEER DETAILS</u>	
Engineer's Name: (Block Capitals)	
Address:	
Town:	
County:	
Postcode:	
Engineer's Signature:	

<u>COMBUSTION ANALYSIS</u>		
	COOKER	BOILER
Oil Pressure:		
CO2%:		
O2%:		
CO ppm:		
FG Temp:		
Nozzle size:		
Efficiency %:		
Engineer's Comments:		
Engineer's Signature:		
Date:		



Boiler Manufacturers
Manufacturers of Sandyford Traditional Cookers

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Our products are subject to continuous development and improvement and it is consequently acknowledged that errors and omissions may occur.

This publication is intended only to assist the reader in the use of our products. Forward Fabrications Ltd will not accept any liability for any loss or damage whatsoever arising from the use of any information, error or omission found in this guide.

Maintenance on our products must only be carried out by approved personnel.

WHILST MARSHALL COOKERS AND SANDYFORD COOKERS ENDEAVOUR TO ENSURE THAT THE COLOUR OF THE ENAMELLED LIDS AND DOORS MATCH THE COLOUR OF THE BODY OF THE APPLIANCE, AS A RESULT OF TEMPERATURE CONDITIONS IN THE COOKER AND ARTIFICIAL LIGHTING OCCASSIONALLY, SLIGHT VARIATIONS IN COLOUR MAY OCCUR. AS A RESULT OF THESE UNAVOIDABLE CONDITIONS, WE CANNOT IN ANY WAY ACCEPT RESPONSIBILITY FOR ANY ALLEGED VARIATIONS IN COLOUR BETWEEN ENAMELLED LIDS, DOORS AND THE REST OF THE APPLIANCE.

SMALL MARKS OR DENTS MAY BE IN OR UNDER THE ENAMEL. THIS IS BECAUSE THE CASTINGS AND ENAMELLING PROCESS IS ALL HAND PRODUCED, JUST LIKE IT WAS ORIGINALLY IN THE 19TH CENTURY. THIS IS WHAT MAKES YOUR RANGE COOKER UNIQUE.

SERIAL NO.

QUALITY INSPECTED BY

DATE

**EVERY PIECE OF CAST IRON IS UNIQUE AND HAS ITS OWN
INDIVIDUAL CHARACTERISTICS, WHICH DO NOT IMPAIR ITS
QUALITY OR LIFE EXPECTANCY IN ANY WAY.**

**ENAMELLING EMPHASISES THIS UNIQUE QUALITY AND IT
MEANS THAT EVERY MARSHALL OR SANDYFORD COOKER HAS
ITS OWN DISTINGUISHING MARKS AND FEATURES.**