STANLEY

TURNING YOUR HOUSE INTO A HOME

BRANDON

60K/80K/100K OIL FIRED COOKER

TO BE INSTALLED BY A TRAINED COMPETENT PERSON

Installation and Commissioning Instructions

This Manual is to be left with end user.

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Introduction

Congratulations on purchasing this fine Irish made Oil-fired Central Heating Cooker. It is built to exacting standards and it will give you every satisfaction in use.

Please read the following information before operating this excellent product.

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.

To ensure safety, satisfaction and reliable operation, this quality cooker should be installed by a trained and competent person. The central heating facility and the hot water systems involved must conform fully to good plumbing practice, established Standards/Regulations and OFTEC recommendations.

As manufacturers and suppliers of cooking and 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 and installed.

* Section 10 of the Consumer Protection Act 1987.
* Safety, Health and Welfare at Work Act.

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 It should be noted that the requirements and these publications may be superseded during the life of this manual.

IMPORTANT NOTICE: Any alteration to this appliance that is not approved in writing by Waterford Stanley will render the guarantee void.

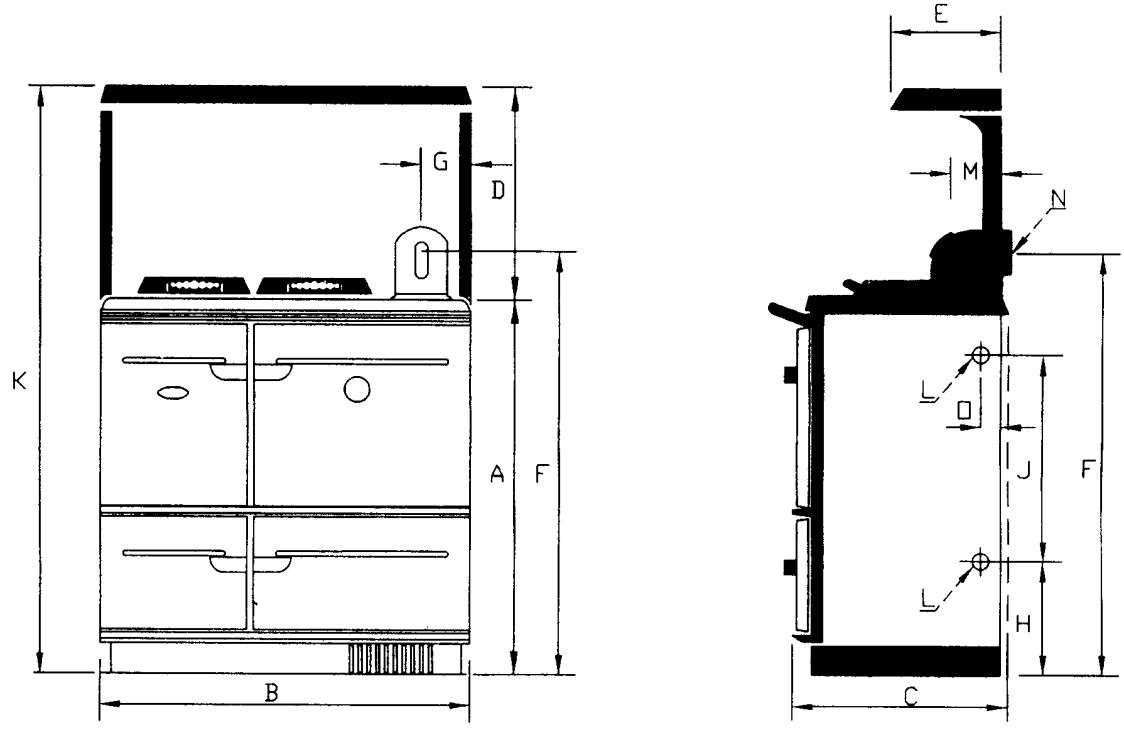
IMPORTANT — Control of Substances Harmful to Health:

It is the Users/Installers 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.

When handling Firebricks, Fire Cement or Fuels, use disposable gloves.
Exercise caution and use disposable masks and gloves when handling glues and sealants.
When working with fibre glass, mineral wool, insulation materials, ceramic blanket/board or kerosene fuel oil, avoid inhalation as it may be harmful. Avoid contact with skin, eyes, nose and throat. Use disposable protection. Installation should be carried out in a well ventilated area.

SPECIFICATION

Fig. 1



Dimensions	A	B	C	D	E	F	G	H	J	K	L	M	N	O
Metric (mm)	920	920	630	560	300	1047	130	250	540	1480	N/A	115	150	45
Imperial (inches)	36 1/4	36 1/4	24 3/4	22	11 3/4	41 1/4	5 1/8	9 7/8	21 1/4	58 1/4	1"BSP Female	4 1/2	6	1 3/4

FEATURE	METRIC (mm)	IMPERIAL (inches)
Hot Plate	550W x 323L	21 5/8W x 12 3/4L
Roasting Oven	390W x 310H x 406D	15 1/4W x 12 1/4H x 16D
Simmering Oven:	390W x 220H x 406D	15 1/4W x 8 3/4H x 16D

Note: Dimensions stated above may be subject to a slight +/- variation.

TECHNICAL DATA

FUEL: 28 Sec Kerosene
MAINS CURRENT: 230v - 240v, 50 Hz A.C.
I.P. PROTECTION: IP 20
ELECTRICAL INPUT: 90 Watts
SUPPLY FUSE RATING: 3A

MAX BOILER WORKING PRESSURE: 1.9 bar 27.3 P.S.I.
TEST PRESSURE OF BOILER: 2.7 bar 40 P.S.I
OPERATING TEMPERATURE LIMIT IN BOILER: 96°C (205°F)

100K

BOILER OUTPUTS: 29.3kW - 100,000 BTUs/Hr.
RADIATOR SURFACE: 53 m^2 (571 $ft.^2$) heating surface only.
48 m^2 (514 $ft.^2$) heating surface and domestic hot water.
FLUE GAS FLOW: Boiler: 0.005m^3/s Oven: 0.0026m^3/s.
SPACE HEATING: 2.91 kW (10,000 BTU/hr) cooking mode / 0.7 kW (2,500 Btu/hr) boiler mode.
FLUE GAS TEMPERATURE: Boiler: 180°C (356°F) Cooker: 250°C. (482°F)
BOILER CAPACITY: 17 litres (3.74 Gal.).
BOILER MATERIAL: Mild steel.
COOKER WEIGHT: 385Kg (850 lbs).

80K

BOILER OUTPUTS: 23.45kW - 80,000 BTUs/Hr.
RADIATOR SURFACE: 42.5 m^2 (457 $ft.^2$) heating surface only.
37.2 m^2 (400 $ft.^2$) heating surface and domestic hot water.
FLUE GAS FLOW: Boiler: 0.0044m /s Oven: 0.0026m /s.
SPACE HEATING: 2.91 kW (10,000 BTU/hr) cooking mode /0.68 kW (2,300 Btu/hr) boiler mode.
FLUE GAS TEMPERATURE: Boiler: 200°C (392°F) Cooker: 230°C. (446°F)
BOILER CAPACITY: 17 litres (3.74 Gal).
BOILER MATERIAL: Mild Steel.
COOKER WEIGHT: 380Kg (838 lbs).

60K

BOILER OUTPUTS:	17.58kW - 60,000 BTUs/Hr.
RADIATOR SURFACE:	32 m^2 (344.45 $ft.^2$) heating surface only.
	26.5 m^2 (285 $ft.^2$) heating surface and domestic hot water.
FLUE GAS FLOW:	Boiler: 0.0031m^3/s Oven: 0.0026m^3/s.
SPACE HEATING:	2.91 kW (10,000 BTU/hr) cooking mode / 0.7 kW (2,500 Btu/hr) boiler mode.
FLUE GAS TEMPERATURE:	Boiler: 170°C (356°F) Cooker: 250°C. (482°F)
BOILER CAPACITY:	17 litres (3.74 Gal.).
BOILER MATERIAL:	Mild steel.
COOKER WEIGHT:	385Kg (850 lbs).

THIS APPLIANCE MUST BE CONNECTED TO A FULLY PUMPED SYSTEM.

BURNER SPECIFICATION

	BOILER BURNER			COOKER BURNER
	100K	**80K**	**60K**	**100K/80K/60K**
Burner Input				
(kW) Continuous Running	34.2	27.7	21.4	19.5
(kW) Cycling	N/A	N/A	N/A	4.4
(Btu's) Continuous Running	116,760	94,600	73,000	66,875
(Btu's) Cycling	N/A	N/A	N/A	14,950
Boiler Output				
(kW) Continuous Running	29.3	23.5	17.6	2.1
(kW) Mean Cycling	N/A	N/A	N/A	1.2
(Btu's) Continuous Running	100,000	80,000	60,000	7,000
(Btu's) Mean Cycling	N/A	N/A	N/A	4,000
Nozzle	0.85 80°S (C.E.N)	0.65 80°S (C.E.N)	0.55 80°S (C.E.N)	0.5 60°S (C.E.N)
Pressure				
(Bar)	7.4	7.4	7.1	7.1
(PSI)	107	108	103	110
Fuel Consumption				
(L/Hr) Continuous Running	3.6	2.9	2.2	2.1
(L/Hr) Cycling	N/A	N/A	N/A	0.47
US Gal/Hr				
Continuous Running	0.95	0.77	0.58	0.55
US Gal/Hr Cycling	N/A	N/A	N/A	0.12

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

Differential Pressure Across the Boiler

Design flow rate through the boiler	38.2 L/min / 8.4 Gpm
Static differential across the boiler	52.4 mbar / 21" wg
Dynamic pressure differential across the boiler	33 mbar / 13.23" wg

Note: Design temperature differential across the boiler = 11°C (20°F)

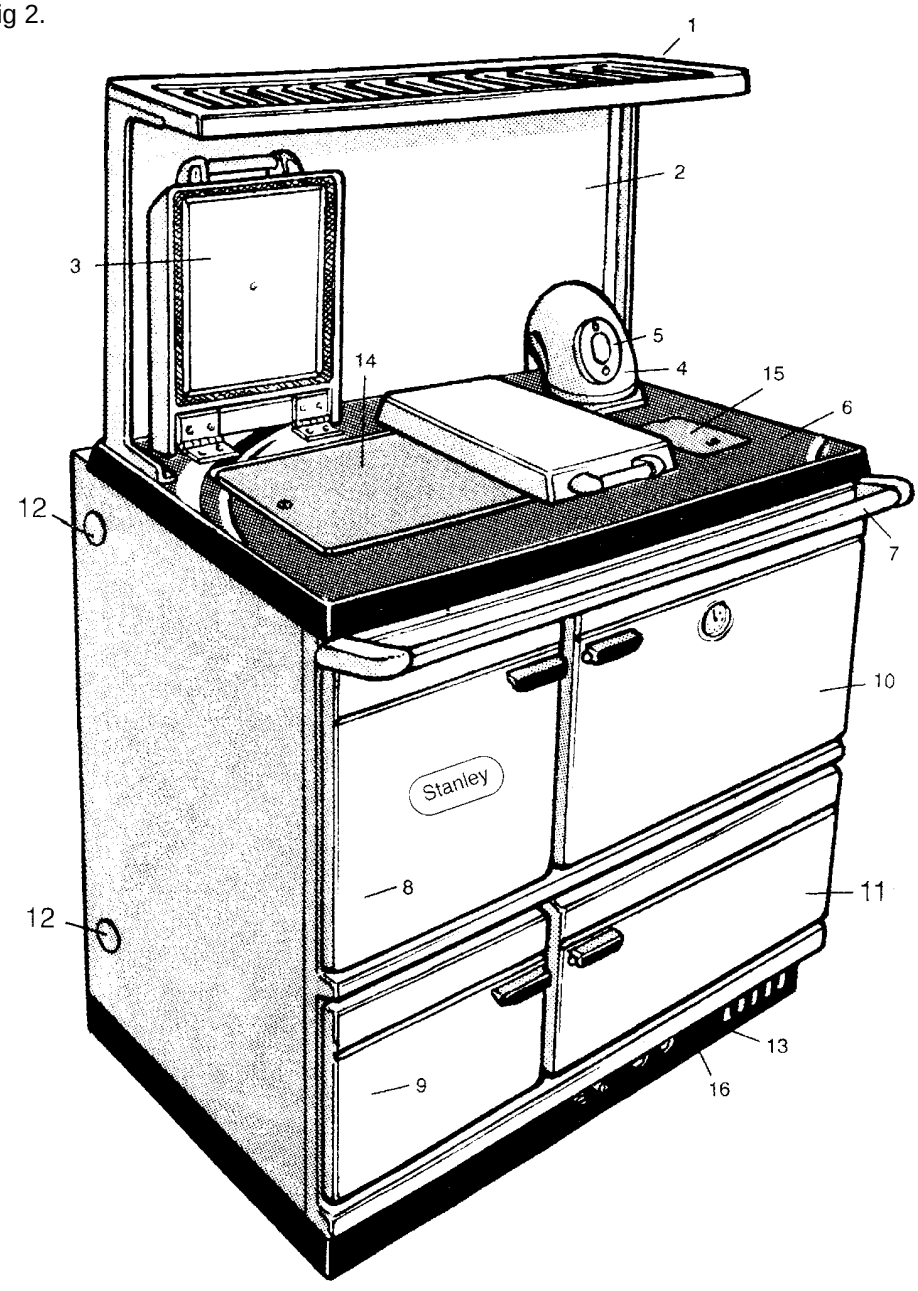
REGULATIONS

The installation must comply with the current editions of the following:

BS 5410: Oil Installations Part 1 under 45kW.
The Building Regulations: Part J England, Wales,
Part F Section 4 Scotland, Part L Northern Ireland and Part J Ireland.
The Control of Pollution (Oil) Regulations.
BS 5449: Forced circulation hot water central heating systems for domestic installations.
Health and Safety at Work Act.
BS 7671: Requirements for Electrical Regulations. Safety Document 635: The Electricity at Work Regulations.
BS 7593: Treatment of Water in Domestic Hot Water Systems.
BS 7074 Part 1 & 2: Hot Water Supply.
BS 4814: Sealed System.

SCHEMATIC

Fig 2.



1. Platerack (to order)
2. Splashback (to order)
3. Hotplate Covers
4. 150mm (6") 90° Bend
5. Bend Cleaning Plate
6. Hob
7. Towel Rail
8. Firedoor
9. Burner Door
10. Main Oven Door
11. Simmer Oven Door
12. Boiler Tappings
13. Base Frame
14. Hotplate
15. Simmer and Cleaning Plate
16. Control Box Cover

guaranteed irish

OFCERT
LICENCE NO.:042199603 (100K)
042199602 (80K)
CERTIFIED TO: OFSA101

LOCATION

When choosing a location for this appliance you must have:

(a) Sufficient room for the installation (see clearances), a satisfactory flue (see flue system), and an adequate air supply for correct combustion and operation (see Ventilation and Combustion air supply).

(b) Adequate space for maintenance and air circulation.

(c) Solid floor or base of non-combustible material which is capable of supporting the total weight. (see Technical Data).

Note: Installation should be carried out in a well ventilated area.

HEARTH CONSTRUCTION

When a non-combustible floor surface is not available then the cooker must be placed on other insulating material. We recommend a slab of precast concrete 40mm ($1^1/_2$) inches deep. If other insulating material is being used, the dimensions of the slab of this insulating material must afford similar protection. This hearth must extend 150mm (6 inches) to either side of the appliances and 225mm (9 inches) to the front.

ELECTRICAL SUPPLY

All wiring external to the appliance must conform to the current BS 7671 (U.K.), & Safety Document 635, ETC: Part 1 Section 5.6.4. The Electricity at Work Regulations. The cooker requires a 230V–240V, 50 Hz supply. Connection of the appliance and any system controls to the mains supply must be through a moulded on plug top, (which is fitted with a 3 amp fuse) which is fitted to the appliance in accordance with EN 60335, Consumer Protection, SI 1994 No. 1768, plug and sockets etc. (safety) Regulations 1994.

Always install in accordance with current local wiring regulations.

You should always, when either exposing or working with wiring, consult a qualified electrician.

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

Where a risk of low voltage can occur, a voltage sensitive device should be fitted to prevent start up of the burner so as not to endanger the installation.

The primary fuse is located in the control box tray.

To isolate the appliance completely unplug from the mains socket. Always ensure that this socket is easily accessible and close to the appliance.

Persons in charge of this appliance should be aware of this socket outlet position.

TO ACCESS THE CONTROL PANEL (See Fig.3)

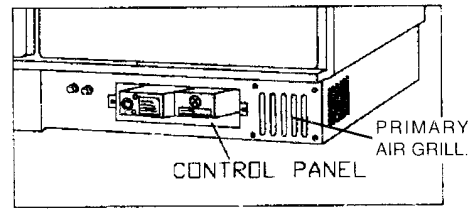
a. Remove the 6 screws which hold the kicker panel in place.

b. Remove the 2 retaining screws on either side of the Control Consul.

c. Carefully withdraw the Control Consul, ensuring that no strains are subjected to the wiring.

d. Connection to be carried out in accordance with the Label marked on the PCB. (See fig's 25 to 32 inclusive)

Fig. 3



CLEARANCES TO COMBUSTIBLES

When bringing your kitchen units up to the sides of the cooker leave a 10mm gap between the Stanley and adjacent units, this gap can be reduced by fitting an optional hob side filler strip to the Stanley leaving a 5mm gap (see fig. 4 & 5). Likewise the base of your units can be brought up flush to the Stanley's built-in plinth.

When bringing the work top up to the side of the hob leave a 10mm gap to combustible material (see fig. 4).

Fig 4

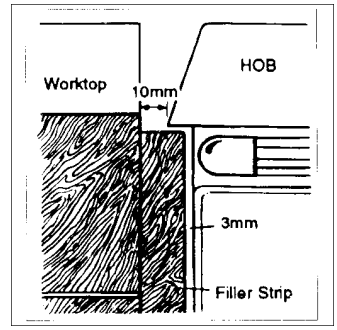
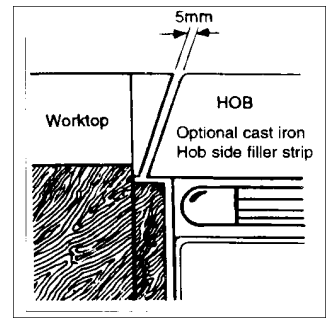


Fig 5



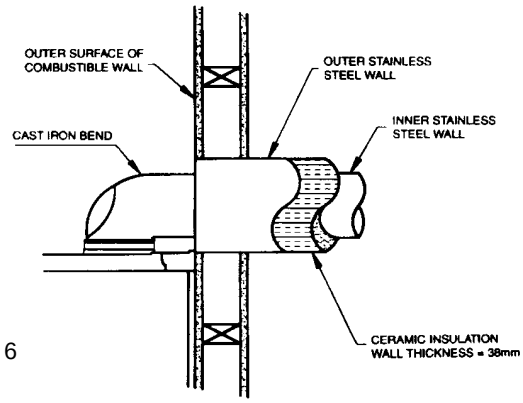


Fig. 6

Where the flue passes through a combustible material a twin wall solid packed insulated chimney connector must be used and must come flush with the outer surface of the material and run all the way to the masonry chimney or to the point of termination of the factory made chimney. (See Fig.6)

(You should discuss the installation of your Stanley cooker with your builder in this regard in the case of a newly fitted kitchen.

FLUE SYSTEMS

PRE-INSTALLATION CHECK

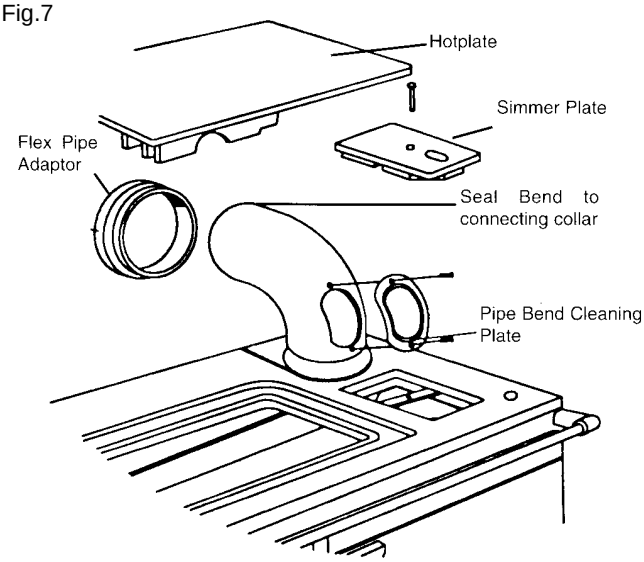
Before installing the cooker, check that the chimney is clean and clear of obstructions. Cracked brickwork and leaking joints should be made good.

You must reassure yourself (with the benefit of professional advice) that the brickwork and system generally is of the standard suitable to support the cooker in a safe and efficient manner.

Where flue piping passes through a closure plate with a sliding door, ensure that the pipe continues up and is ultimately connected to the flue liner and well sealed with fire cement.

Do not connect to a flue serving another appliance. Always ensure that the connection is to a chimney of the same size - never connect to one of smaller dimensions. Flues wholly constructed of single skin pipe are not recommended under any circumstances. Due to their inability to retain heat such flues will inevitably give rise to the formation of condensation.

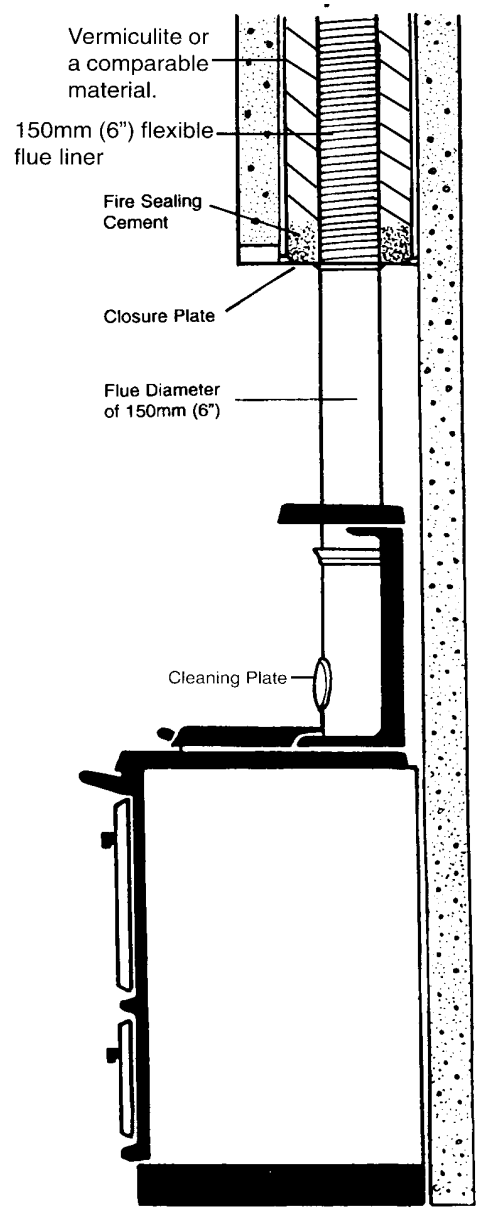
Fig.7



IT IS NOT RECOMMENDED TO CONNECT TO A FLUE SMALLER THAN 150mm (6") OR IN EXCESS OF 175mm (7") DIAMETER.

150mm (6") Diameter Flue Liner

Fig. 8.



Note:

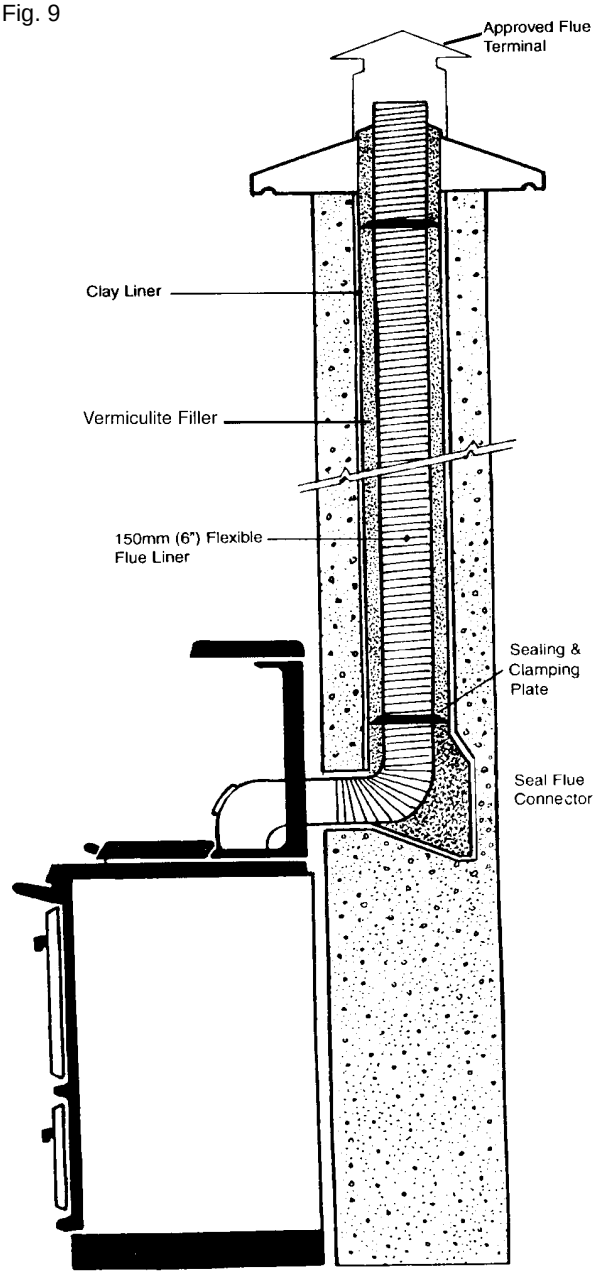
Fill voids and area around liner with vermiculite or a comparable approved material. (See Fig. 8)

CHIMNEY

Generally the most effective chimney for oil is one that is straight, avoid offsets and terminate with a straight sided pot.

Flue greater than 150mm (6”) Diameter

Fig. 9

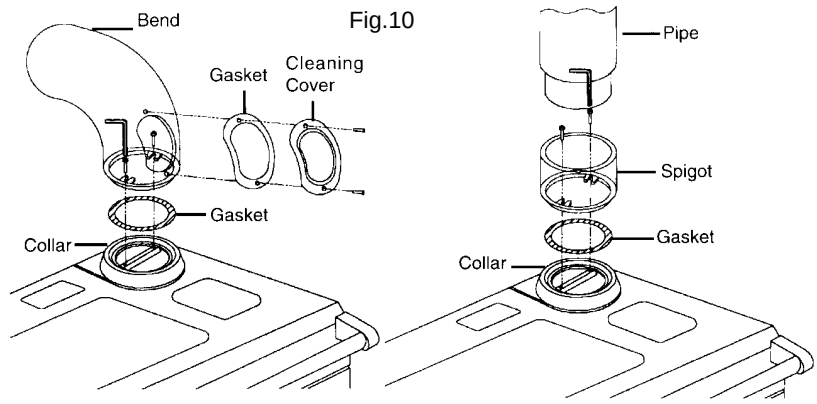


SEALING

This cooker and flue system operate under a positive pressure. It is essential that all flue joints are tightly sealed against flue gas leakage and tested accordingly. (See fig. 7, 8, 9, & 10)

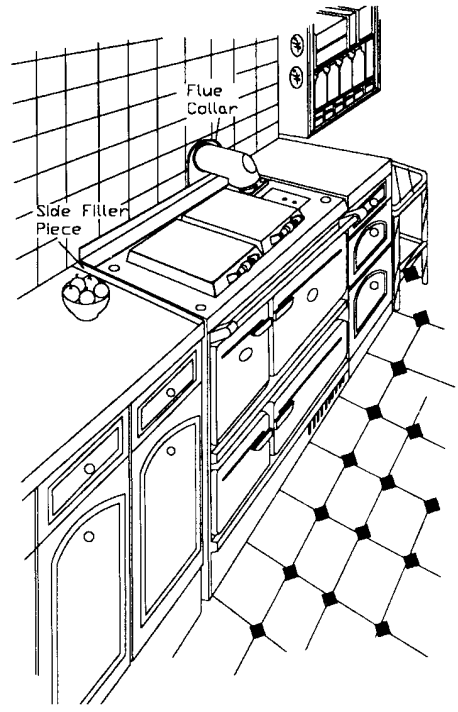
There is a flue pipe collar available which surrounds the flue pipe where it meets the wall, giving a tidier finish to a tiled background. The hob back filler piece and flue collar rosette are available as an optional extra. (See Fig.11)

Fig.10



Refer to Flue Assembly Instruction sheets

Fig.11



FLUE HEIGHT

The flue must be high enough 4.5 mts (15ft) minimum measured vertically from the appliance outlet to the top of the flue terminal to allow the flue gases to vent into the clear air, away from the turbulence that may be caused by roof structures, other chimney stacks, etc. The terminal position should be in accordance with the relevant Building Regulations.

FLUE SYSTEM

Where the standard masonry chimney is not available, a proprietary type of non-combustible or non-corrosive material 150mm (6”) twin wall fully insulated pipe may be used. The pipe must terminate at a point not lower than the main ridge or adjacent outside obstructions. With such installations, access to the chimney must be provided for cleaning purposes.

Horizontal runs more than 450mm (18”) and 90° bends numbering more than 2 per installation should be avoided.

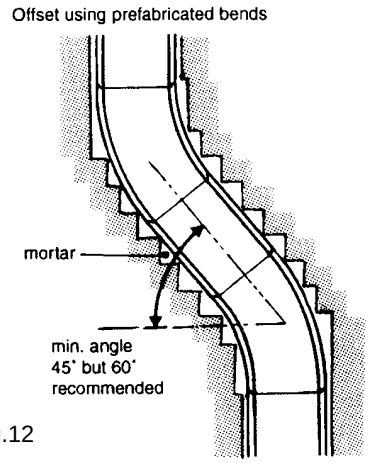


Fig.12

If it is necessary to offset the chimney the recommended angle is 60° to the horizontal and the statutory minimum is 45°. (See Fig.12)

CONNECTIONS

Stanley produces the appropriate pipes and bends used in conjunction with this cooker. Waterford Stanley Limited will accept no liability whatsoever ever in the event that alternative pipes and bends are used in the installation. A cast iron 90° bend with cleaning door is provided with the cooker. A vertical cast iron outlet pipe with cleaning door is also available. A flexible flue adaptor is supplied, this is to connect the cooker 150mm (6") bend or straight pipe to the 150mm (6") chimney liner.

ALL FLUE CONNECTIONS MUST BE THOROUGHLY SEALED. Blocked chimneys are dangerous, keep chimneys and flue ways clean, read the operating instructions.

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

WHERE THE APPLIANCE SPIGOT OR FLUE PIPE PROTRUDES INTO THE CHIMNEY, CARE SHOULD BE TAKEN TO ENSURE THAT IT DOES NOT BLOCK THE CHIMNEY.

SUITABLE MATERIALS

* Mineral Fibre cement pipes.
* Insulated metal chimneys conforming to B.S. 4543. (a galvanised finish is not suitable for exterior use).
* Clay flue linings.
* 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.
* Cast iron or acid resistant vitreous enamel lined mild steel to B.S. 41.
* Sheet metal.

FLUE CLEANING

The flue pipe must be fitted with a cleaning plate. The flue must be inspected annually and cleaned when necessary.

USE OF EXISTING FLUES AND CHIMNEYS

When connecting to an existing chimney it is necessary to line the flue using approved 150mm (6") rigid or flexible stainless steel flue liner.

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, condition and dimensions are acceptable. Flues that have proved to be unsatisfactory, particularly with regard to down draught, must not be considered for this appliance until they have been examined and any faults corrected. If there is any doubt about an existing chimney a smoke test should be carried out.

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

All register plates, restricter plates and dampers etc. which could obstruct the flue at a future date should be removed before connecting this appliance. Where a chimney is not required to be lined a suitable void should be provided at the base to contain any debris which might fall from the inside wall, so as to prevent that debris from obstructing the appliance flue outlet. (Removal of debris should be facilitated by the provision of an access door). This void should have a depth of not less than 250mm (10") below the appliance connection.

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

ALTHOUGH THE CHIMNEY 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.

DRAUGHT REQUIREMENTS

While inadequate draught can seriously effect the efficient operation of the appliance, chimney's over 5.4m (18ft) for houses built on high ground can experience excessive draught. A steady draught of between 1mm (.04) and 1.5mm (.06) inches W.G. is required for satisfactory operation.

FLUE LINERS

Chimney's lined with salt glazed earthenware pipes are acceptable if the pipes comply with BS EN 1457 and must be 150mm (6"). When lining an existing chimney, a liner approved to BS 4543, Parts 1, 2 &

3 should be used. The liner should be secured at the top and bottom by using closure/clamping plate firmly sealed and secured and an approved low resistance terminal used at the top.

It is essential that every flue system be inspected and tested by a competent person for its correct effectiveness, to ensure that the combustion products are completely discharged to the outside atmosphere.

FACTORY MADE INSULATED CHIMNEYS

Factory-made insulated chimneys should be constructed and tested to meet the relevant standards and recommendations given in:

* B.S. 7566 - Installation of factory-made chimneys conforming to B.S. 4543 for domestic appliances.
  Part 1: Method of specifying installations design information.
  Part 2: Specification for installation design.
  Part 3: Specification for site installation.
  Part 4: Recommendation for installation design and installation.

VENTILATION & COMBUSTION AIR REQUIREMENTS

1. It is imperative that there is sufficient air supply to the burners of the cooker in order to support correct combustion.
2. The air supply to this appliance must comply with BS 5410 Part 1.
3. The minimum effective air requirement for this appliance is 215 cm^2 (100K), 193 cm^2 (80K) or 155cm^2 (60K). When calculating combustion air requirements for this appliance use the following equation: 550mm^2 per kW of maximum rated output above 5kW. These requirements are illustrated in OFTEC Technical Book No. 3 & B.S. 5410.
4. If there is another appliance using air fitted in the same or adjacent room, it will be necessary to refer to B.S. 5410 to calculate the additional air supply.
5. All materials used in the manufacture of air vents should be such that the vent is dimensionally stable and corrosion resistant.
6. The effective free area of any vent should be ascertained before installation. The effect of any screen or grill should be allowed for when determining the effective free area of any vent.
7. Air vents direct to the outside of the building should be located so that any air current produced will not pass through normally occupied areas of the room.
   An air vent outside the building should not be located less than the dimensions specified within the Building Regulations (See Technical Data) from any part of any flue terminal. These air vents must also be satisfactorily fire proofed as per Building Regulations.
8. Air vents in internal walls should not communicate with bedrooms, bedsits, toilets, bathrooms or rooms containing a shower.
9. 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.
10. 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.
11. If there is an air extraction fan fitted in the room or adjacent rooms where this appliance is fitted, additional air vents will be required to eleviate the possibility of spillage of combustion products from the appliance/flue while the fan is in operation. (Refer B.S. 5410).
12. Where such an installation exists, a test for spillage should be made with the fan or fans and other burning appliances in operation at full rate (i.e. extraction fans, tumble dryers) with all external doors and windows closed.
13. If spillage occurs following the above operation, an additional air vent of sufficient size to prevent this occurrence should be installed.

OUTSIDE AIR CONNECTION

If this option is used additional air as indicated in BS 5410 is not required.

1. This appliance may be connected direct to the outside of the house for its combustion air supply.
2. Remove the blanking plate located at the back right hand corner and remove the primary air grill located at the front right hand corner (See Fig.3) Fix the blanking plate over the front primary air inlet. (See fig. 14)
3. Connect the optional 125mm (5”) spigot to the base. (See fig. 14a).
4. To connect this appliance to an outside air supply use either 125mm (5”) rigid or flexible stainless steel pipes or non-combustible corrosion-resistant materials not more than 965mm (38”) in length and having no sharp bends or corners other than the down turn at the terminus.

5. Air inlets 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.
6. Joints between air vents and outside walls should be sealed to prevent ingress of moisture.

Fig.13

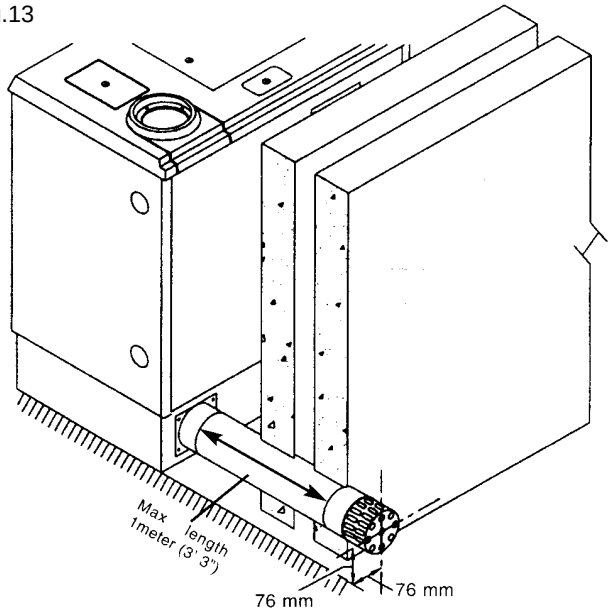


Fig.14

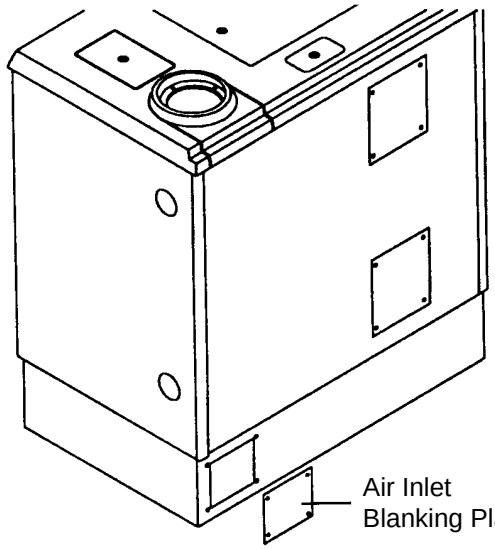
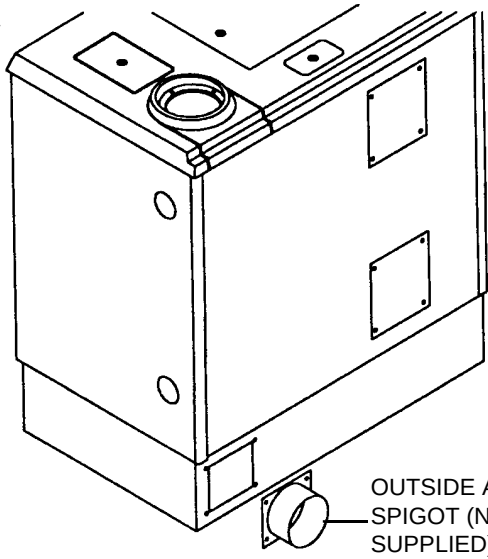


Fig.14a

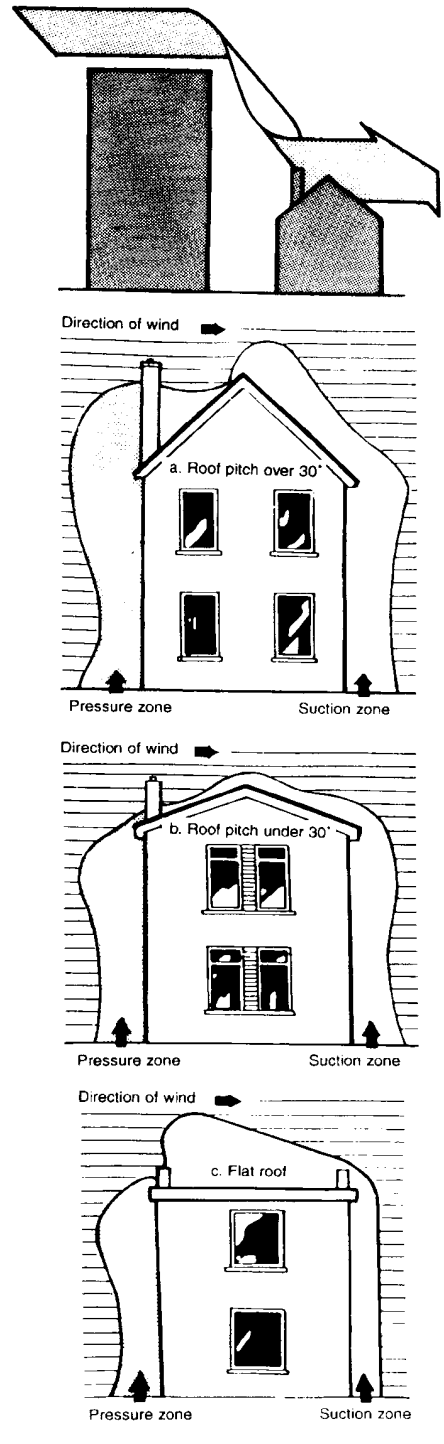


DOWN DRAUGHTS

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 blow but no cowl is likely to prevent down blow due to high pressure zone. Ensure that any cowl used will not restrict the flue exit, or cause excessive back draught. (See Fig.15)

Fig.15



HEATING

PIPE FITTINGS

Materials used for insulation work should be fire resistant. Standards should conform to all appropriate regulations in force at the time and place of installation.

1.1 Ferrous Materials

BS 1387 Steel tubes.
BS 1740 Steel pipe fittings.
BS 4127 Stainless steel tubes.
BS 6956 Jointing Materials.

1.2 Non-Ferrous Materials

EN 29453 Soft Solder Alloys.
BS 864 Compression tube fittings.
BS 2871 & BS EN 1057 Copper & Copper Alloys.

WATER PIPE SIZE

The flow and return pipe must be 28mm diameter. Care should be taken to ensure that the heating system is correctly installed and that it complies with all relevant codes of practice. If this appliance is being connected to an existing system, we strongly recommend that you engage an appropriately qualified person to check the following:

(a) That the system is sound.

(b) That pipework is adequately insulated (where applicable).

(c) Check all controls, i.e. pump, motorised valves, time control etc. are operating satisfactorily and are compatible with the requirements of the cooker.

(d) Are any modifications necessary to make the heating system more efficient?

(e) Cleanse the system and add suitable inhibitor.

The use of motorised valves, room thermostats, radiator thermostatic valves, domestic hot water controllers, etc, can greatly enhance a heating system and we recommend their use.

Only competent personnel should be employed to carry out your heating installation.

It is important that no external control devices e.g. economisers be directly fitted to this appliance unless covered by these installation instructions or agreed with the manufacturer in writing. Any direct connection of a control device not approved by the manufacturer could make the guarantee void.

The flow and return can be taken either side of the cooker. (See Fig.16)

1. To take off from the left simply connect directly onto the exposed boiler connection.
2. To take off from the right side:

a. Remove the two blanks on the right hand side of the cooker. Then remove the two cover plates from the cooker's back panel.

b. Remove the plugs from the boiler connections. To avoid insulation from going into the flow and return ports, cover with insulating tape.

c. Using the towel rail, punch out a passage way through the insulation material to the boiler connections. Clear any insulation away from the boiler connections.

d. Before passing the flow and return pipes through the cooker, cover the ends with tape to avoid insulation entering them.

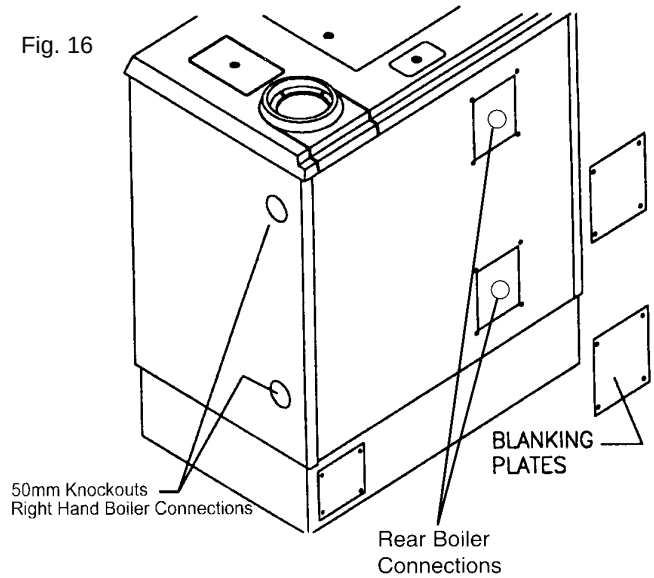
e. Remove tape from pipes and boiler ports. Connect pipes to boiler.

f. Replace blanking plates.

g. Plug the boiler tappings on the left hand side of the boiler with 1" BSP plugs.

h. Test for leaks.

Fig. 16



DRAINING

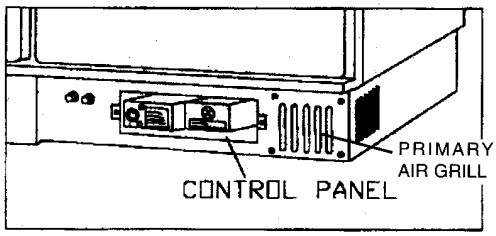
Key-operated drain taps to BS 2879 should be provided in accessible positions in all low parts of the system. However, it should be noted that there may be short sections of pipework, e.g. when passing under doorways, that may not be possible to drain.

INTERNAL PUMP THERMOSTAT

This appliance is fitted with a thermostat for switching the circulating pump 'on' and 'off' automatically. To wire in the pump connect the phase to terminal marked CIRC Pump (L) and connect the Neutral to terminal marked CIRC Pump (N). The earth wire is to be connected into the earth block.

The connection circuit board/control panel is located within the appliance beneath the warming oven. (See Fig.17)

Fig.17



WATER CIRCUIT TEMPERATURE

The return water temperature should be maintained at not less than 50°C (122°F) so as to avoid condensation forming within the boiler.

CARE FOR YOUR CENTRAL HEATING SYSTEM

The use of suitable corrosion inhibitors and anti freeze solution in your heating system is essential to minimise black oxide, sludge and scale build-up, which effects efficiency.

In hard water areas the use of a suitable limescale preventer / remover is advised.

Use only quantities specified by the water treatment product manufacturer. Only add to the heating system after flushing and finally refilling. Refer to BS 7953.

INDIRECT DOMESTIC CYLINDER

The cooker must only be connected to an indirect cylinder of no less than 180 litres using 28mm diameter flow and return piping. It is recommended that the cylinder is lagged together with pipework with runs in excess of 4 meters (12').

SERVICING

To ensure continued efficient and safe operation of the appliance, it is recommended that it is checked and serviced by an Authorised Stanley Service Engineer at least once a year.

In the event that the cooker is not serviced by such an engineer, at least once a year, Waterford Stanley Limited regrets that it can entertain no claims whatsoever in respect of alleged problems in the efficiency or safety of the cooker supplied.

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.

GENERAL MAINTENANCE

It is important that the user is familiar with their heating system and that they ensure regular checks and maintenance which can limit unnecessary break-downs.

If in doubt, the user should consult an appropriately qualified person such as a plumber or heating engineer.

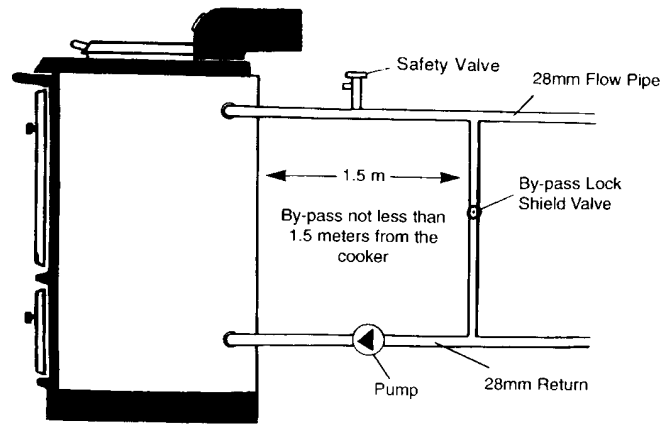
We recommend that you evaluate the overall insulation in your house, i.e. attic, external walls, windows and external doors. Insulation and draught-proofing can greatly reduce running costs while equally enhancing living conditions. (See Fig. 18, 19, 20, 21, 22, 23, 24)

SAFETY VALVE

A non-adjustable 3 bar safety valve must be fitted to the primary flow pipe adjacent to the boiler connection ensuring that any discharge will not create a hazard to occupants or cause damage to electrical components or property.

BY-PASS LOOP

Fig.18



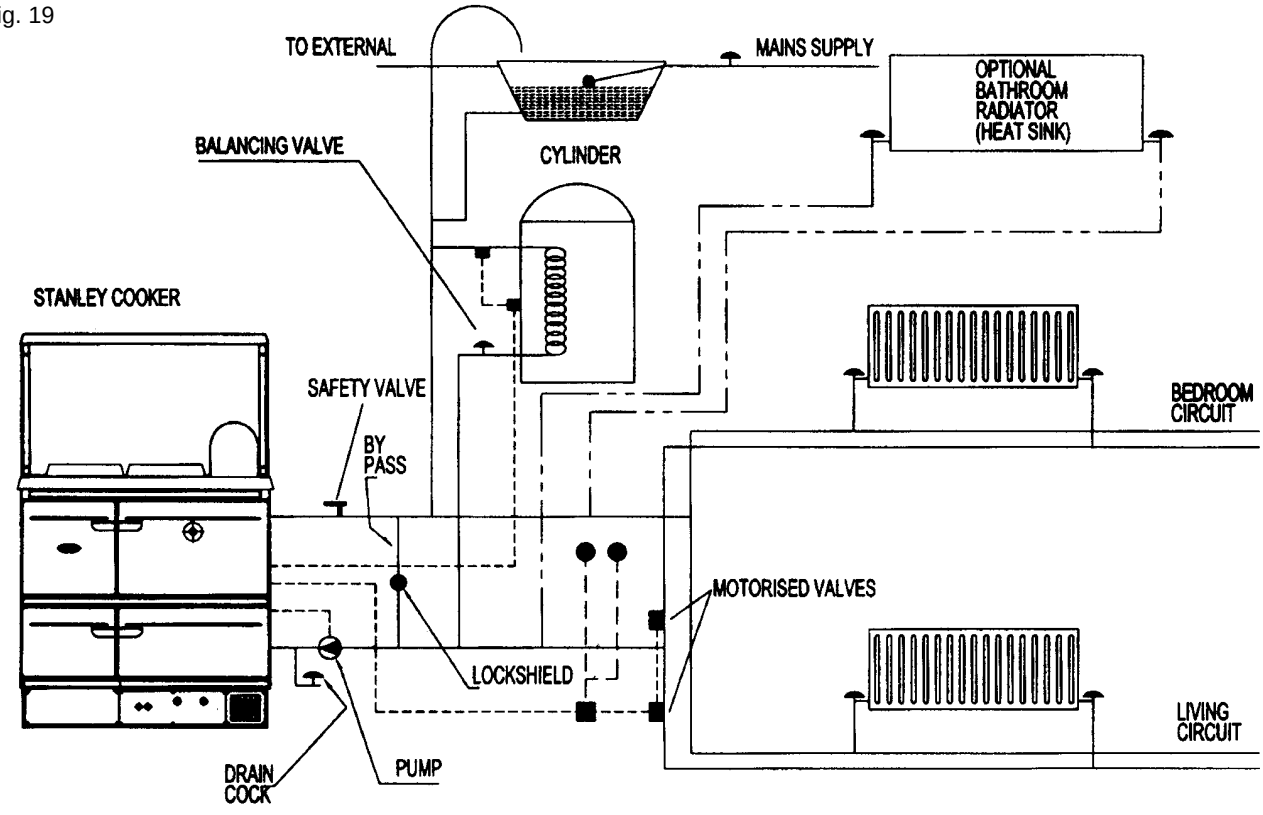
A 15mm system by-pass **must** be fitted not less than 1.5 meters (4.9ft) from the cooker to allow correct water circulation for the pump and to prevent condensation forming in the boiler. This should be balanced. A heat sink radiator / towel rail may be installed if desired in addition to the By-Pass Loop. (See Fig.18 & Fig 24)

NOTE: We strongly advise the use of pipe lagging and also the use of a frost thermostat if the installation is likely to be exposed to situations where the temperature will dip to a level consistent with frost.

The following diagrams illustrate the different types of central heating systems to which this appliance can be connected, but are not to be used as working drawings.

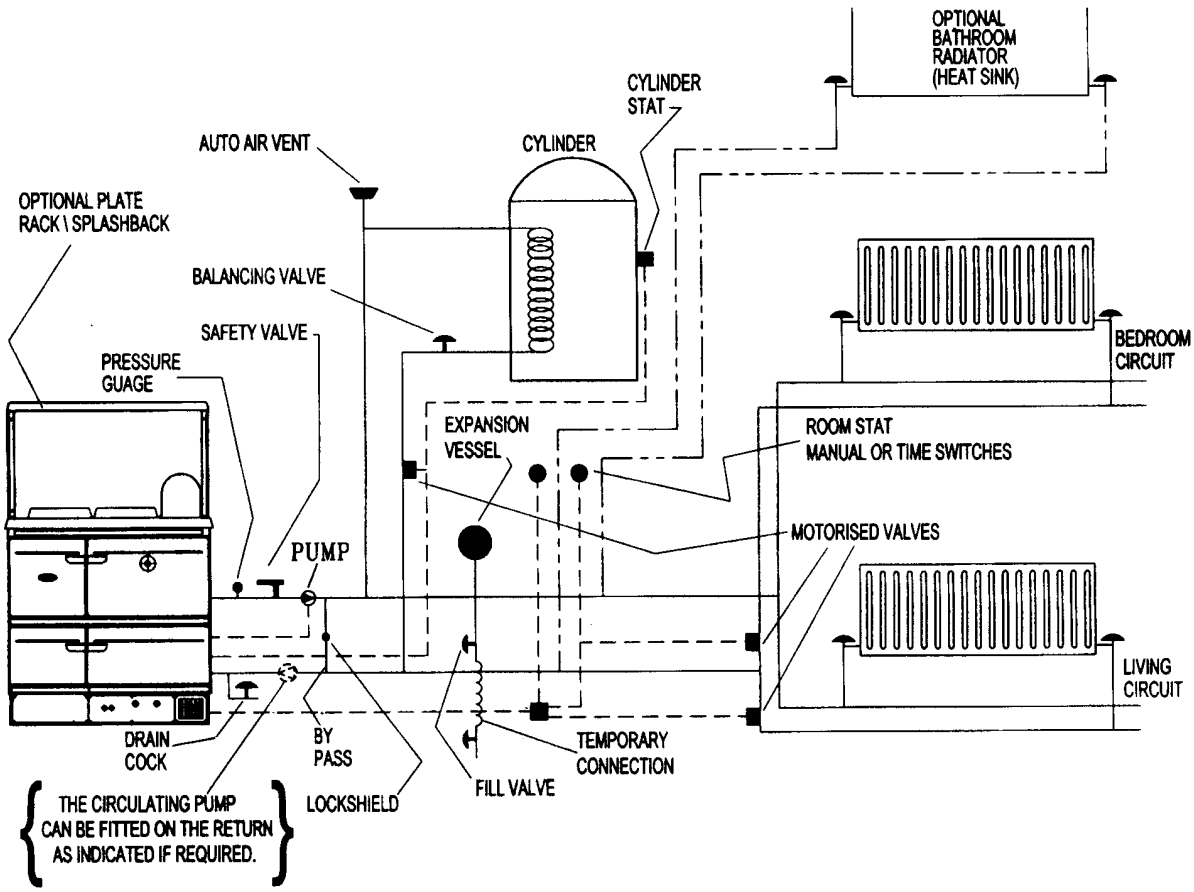
OPEN SYSTEM (WITH PUMP ON RETURN)

Fig. 19



SEALED SYSTEM (WITH PUMP ON FLOW)

Fig. 20



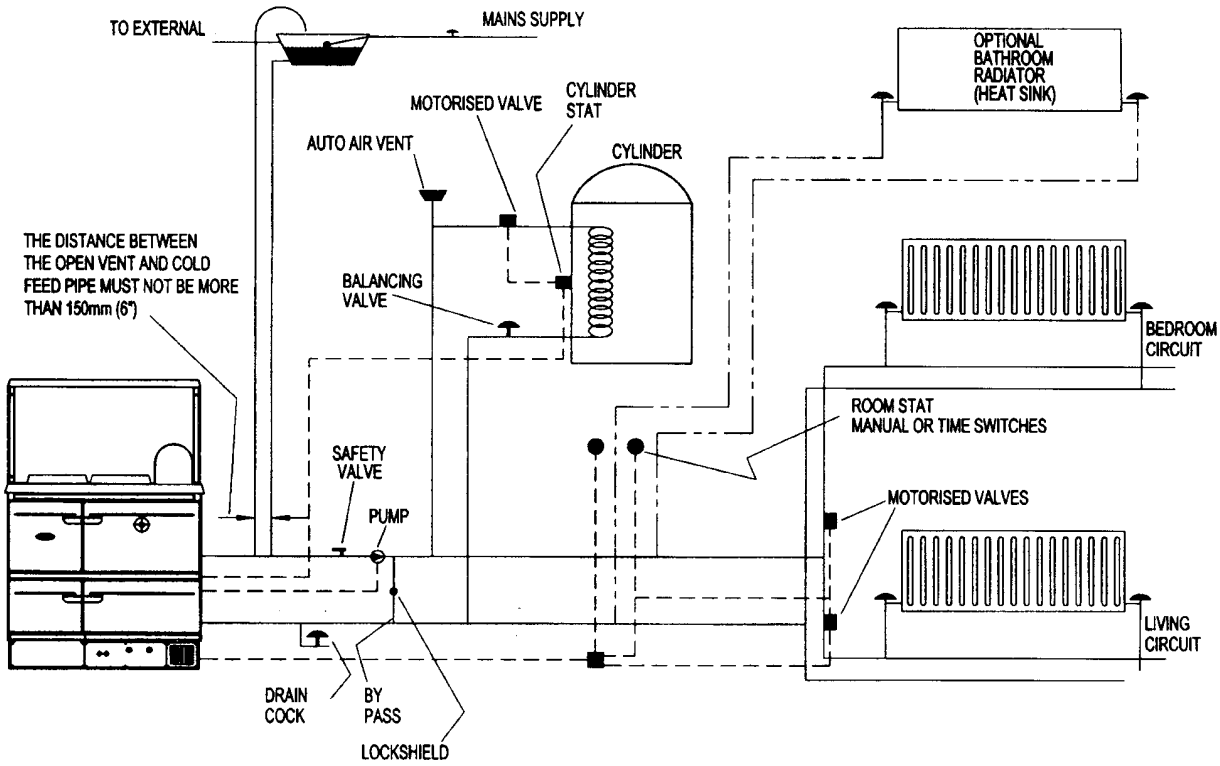
OPEN SYSTEM (WITH PUMP ON FLOW)

Fig.21

PIPE LAYOUT ——————————

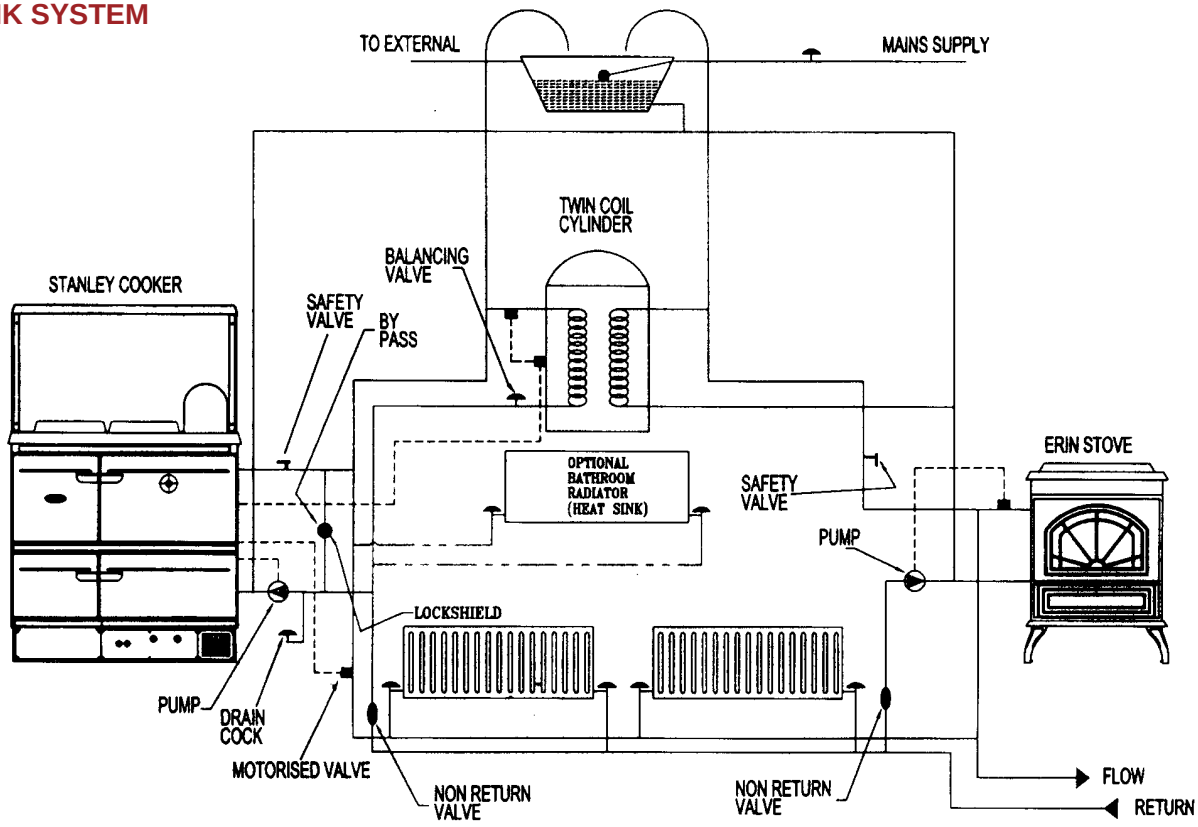
WIRING LAYOUT - - - - - - - - - - - - - - - -

OPTIONAL PIPE LAYOUT —— - - —— - - —— - - ——



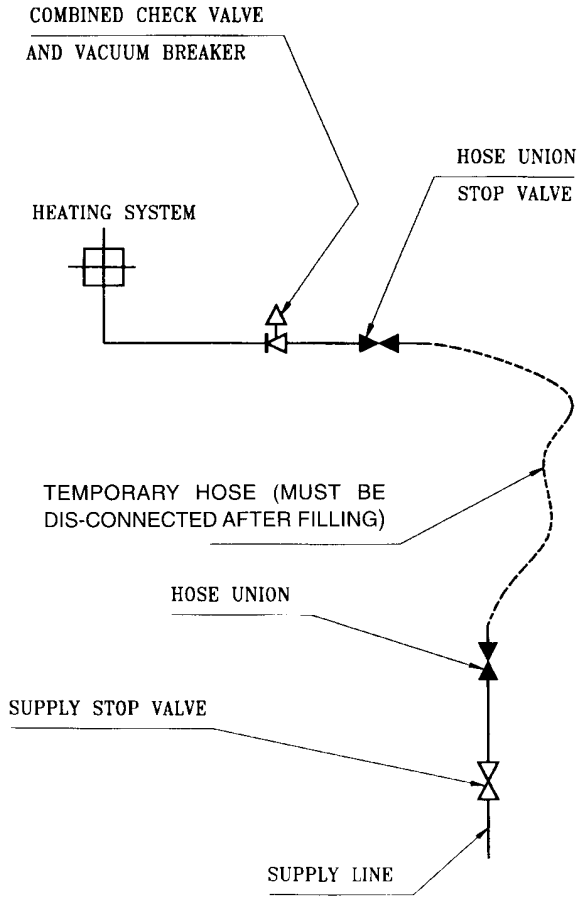
INTERLINK SYSTEM

Fig. 22



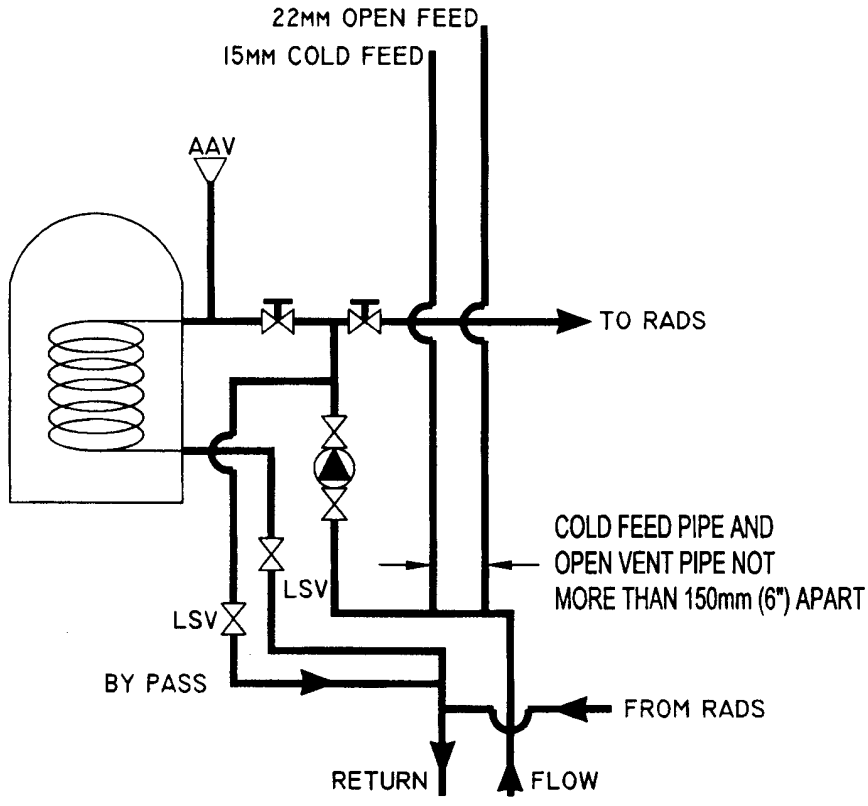
PROVISION FOR FILLING SEALED SYSTEM

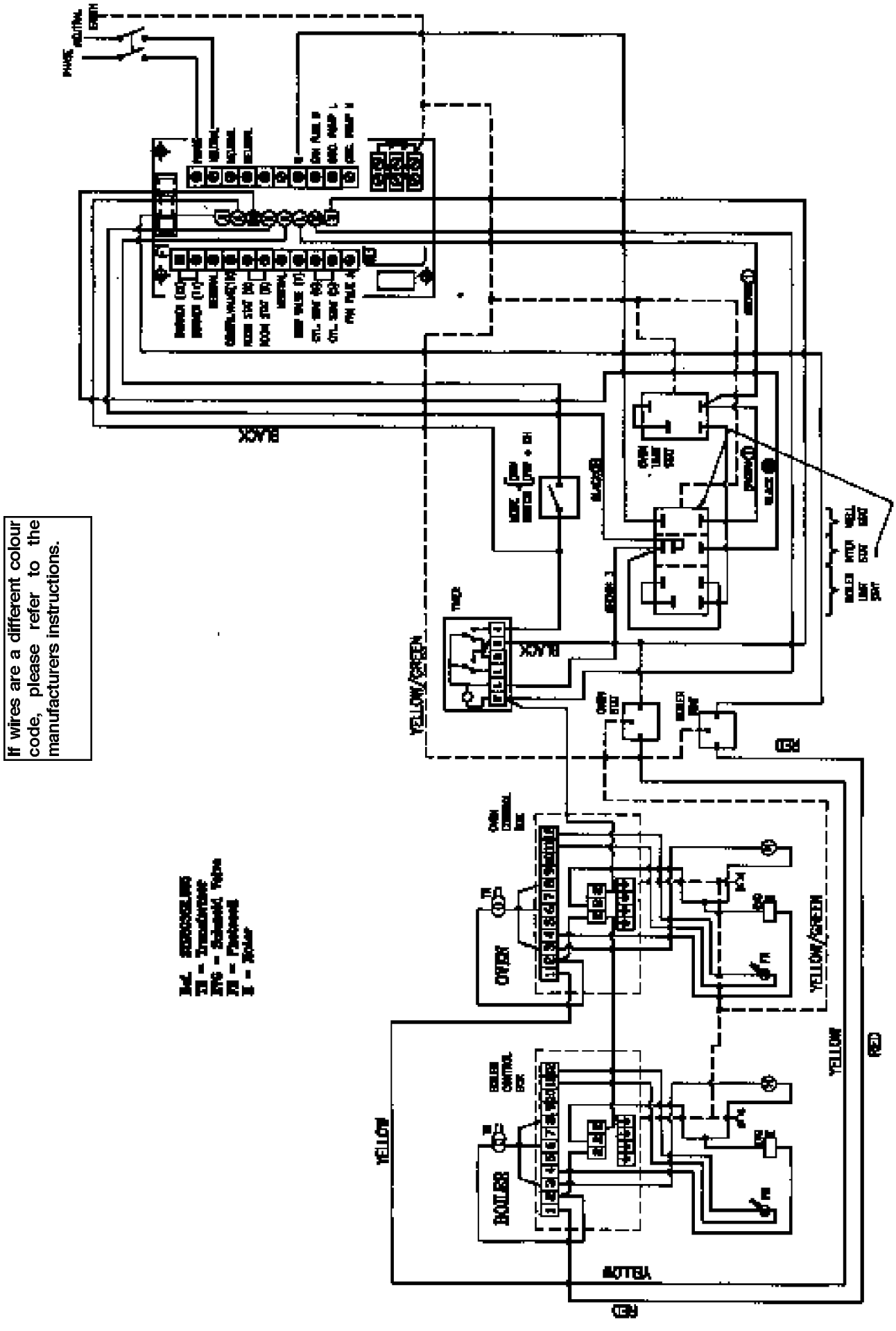
Fig.23



S PLAN SYSTEM

Fig.24

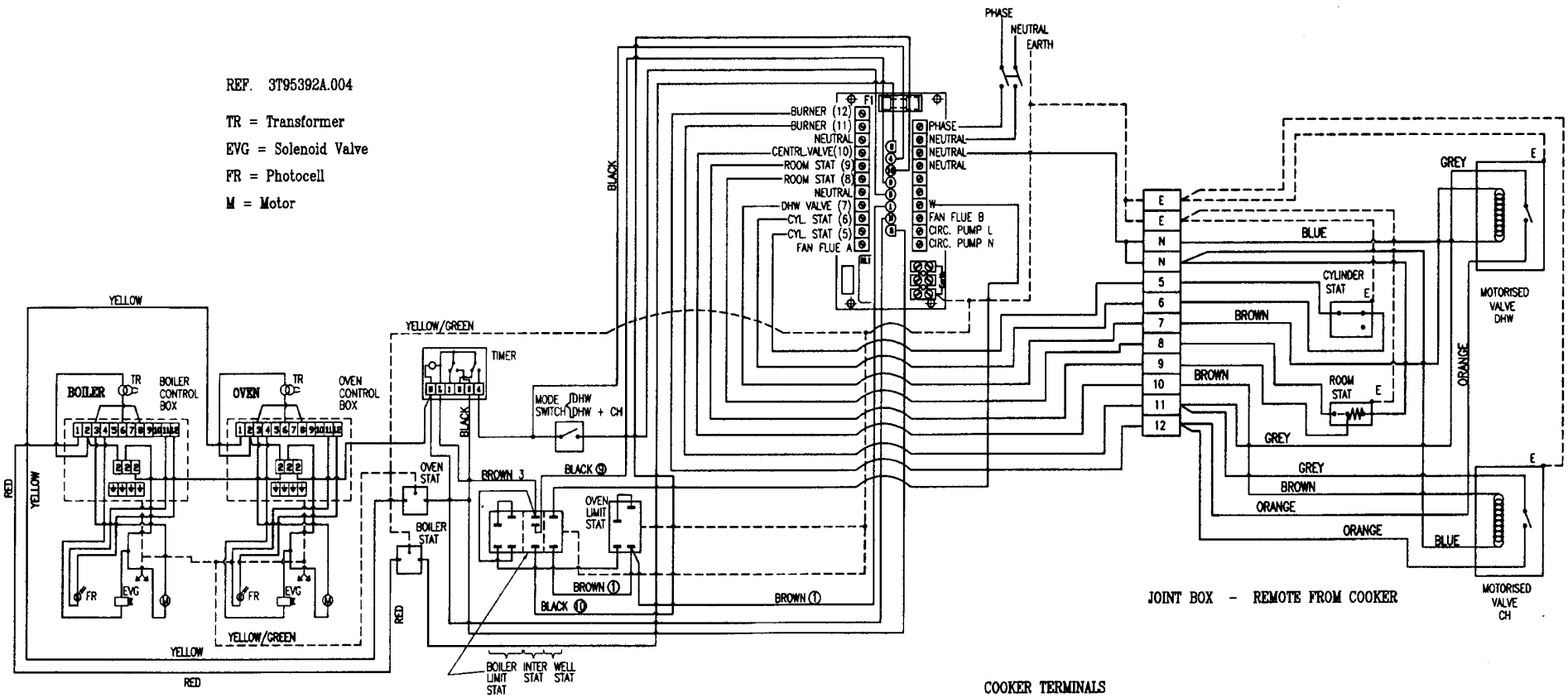




WIRING DIAGRAM 100K / 80K / 60K Fig. 25

S PLAN WIRING DIAGRAM 100K / 80K / 60K Fig. 26

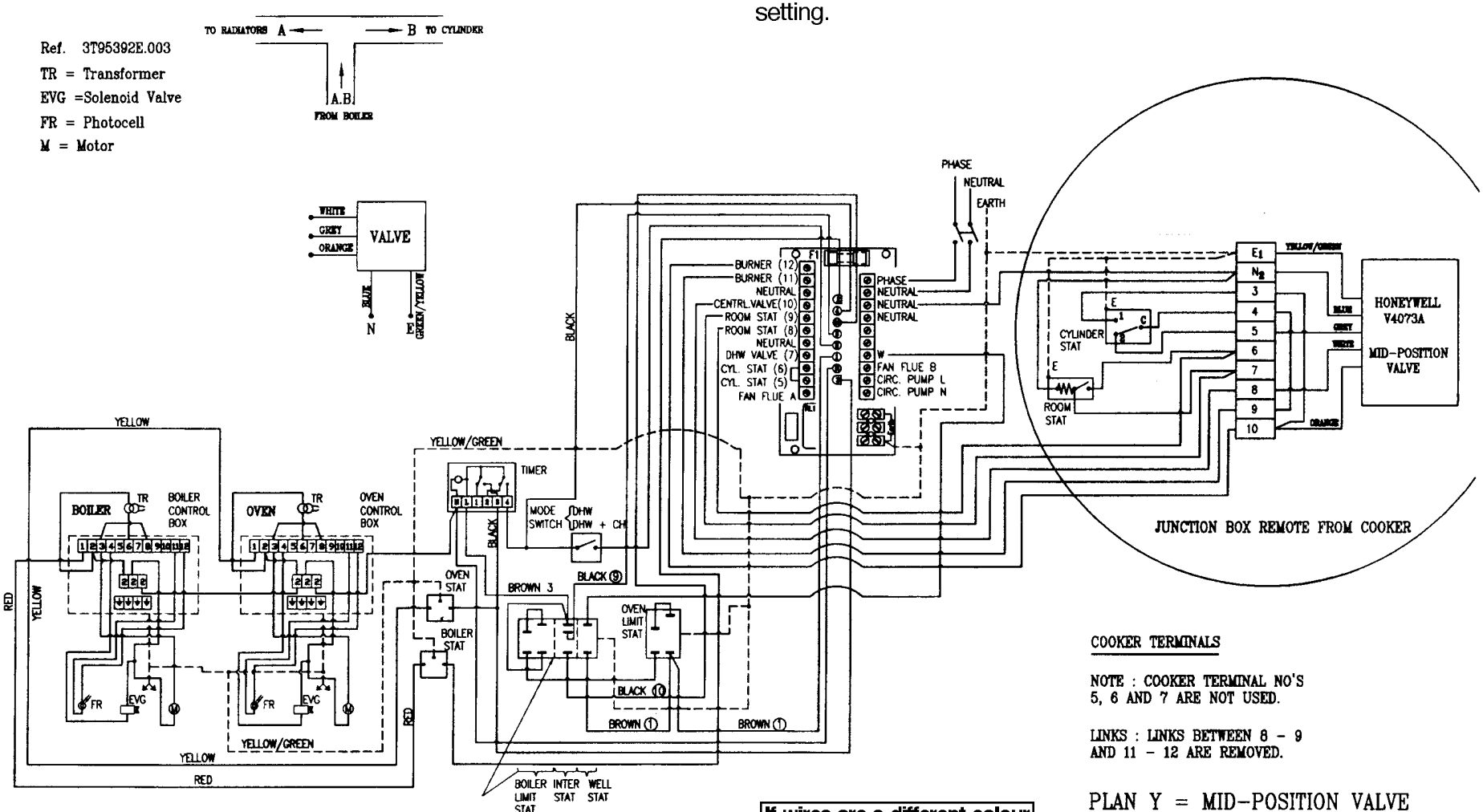
If wires are a different colour code, please refer to the manufacturers instructions.



COOKER TERMINALS

LINKS : LINKS BETWEEN 8 - 9
AND 11 - 12 AND 5 - 6
ARE REMOVED.

On cooking mode hot water will be provided continuously to the cylinder by passing the cylinder temperature control stat and increasing the cylinder temperature above that of the thermostat setting.



COOKER TERMINALS

NOTE : COOKER TERMINAL NO'S 5, 6 AND 7 ARE NOT USED.

LINKS : LINKS BETWEEN 8 - 9 AND 11 - 12 ARE REMOVED.

PLAN Y = MID-POSITION VALVE

If wires are a different colour code, please refer to the manufacturers instructions.

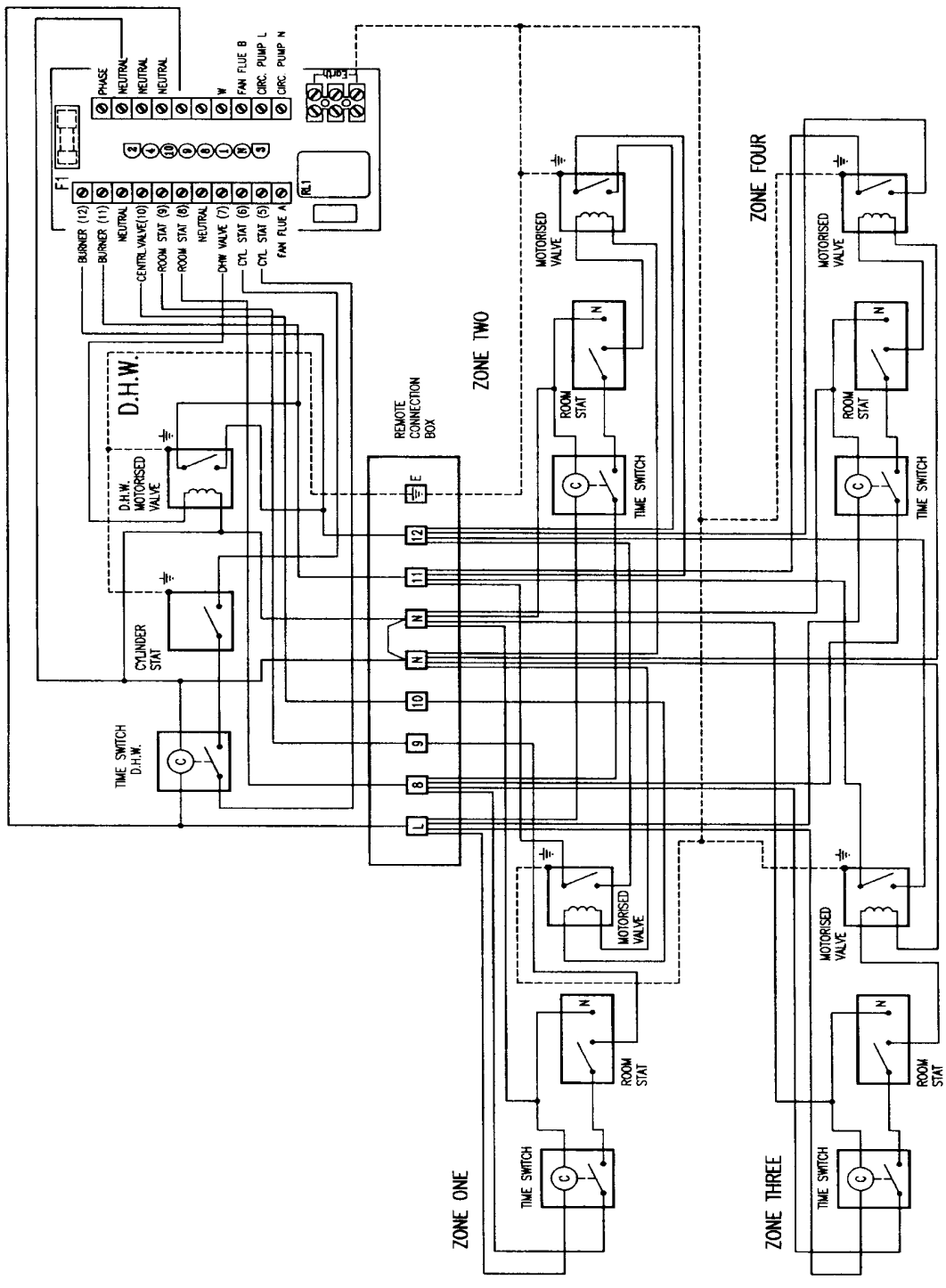
4 ZONE HEATING SYSTEM

When connecting the Stanley Twin Series cooker to a 4 - zoned heating system (i.e. separate time switches and thermostats for domestic hot water and four central heating zones), the domestic hot water and one zone **must** be controlled directly from the cooker enabling the inter thermostat to operate if necessary. All other zones can be controlled from the cooker where a constant live supply must be connected to the **time clocks** only (see figure 31).

Time switches with independent clock and switch circuits must be used.

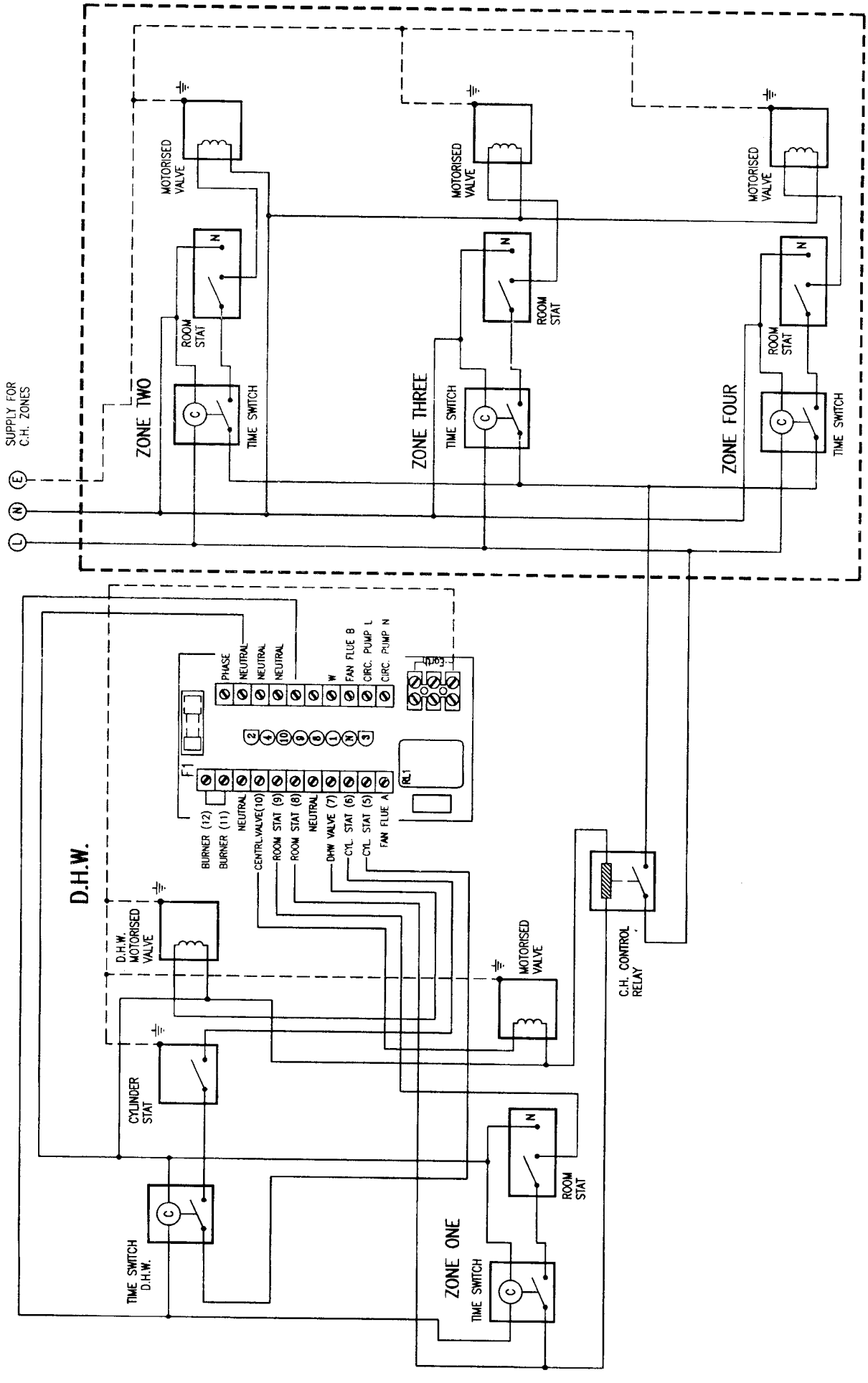
Alternatively, other zones can be powered from a supply source other than the cooker provided zone 1 of the heating circuit and the domestic hot water are powered directly from the cooker (see figure 32). This can be achieved using a central heating control relay which is energised from the cooker when the selector switch is set to central heating. Energising this relay closes a contact which switches the second supply to the additional zone control valves via time switches and room thermostats. A constant live is supplied to the time clocks from the supply source.

Under no circumstances can other supply sources be connected directly to the cooker.

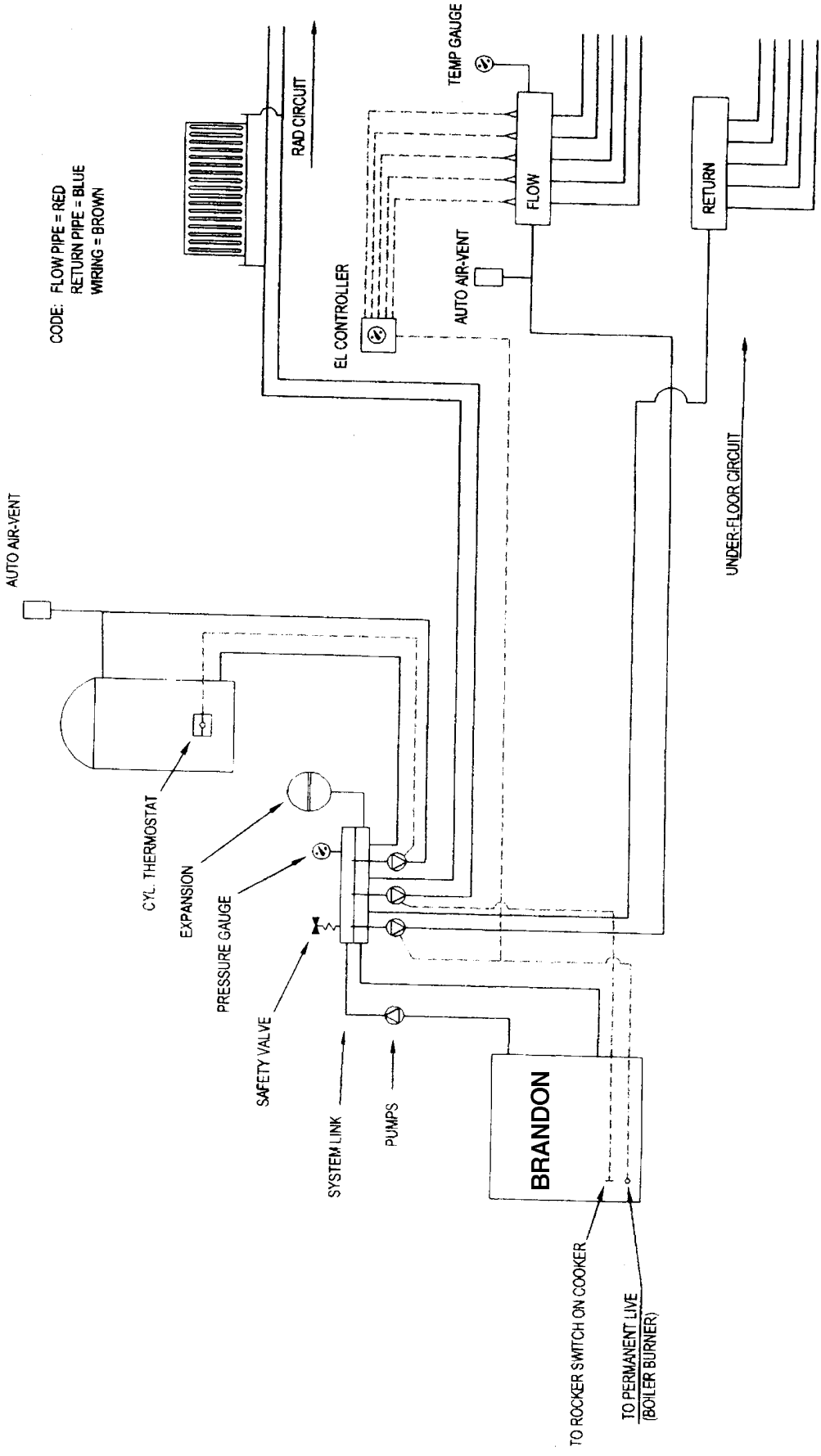


SCHEMATIC DIAGRAM FOR 100k / 80K / 60K "FOUR ZONE" SYSTEM DIAGRAM 1 Fig. 28
This system ensures compliance with the Building Regulations Part L 1 (England and Wales) and Part J (Scotland) regarding separate control of space heating and hot water

SCHEMATIC DIAGRAM FOR 100K / 80K / 60K "FOUR ZONE" SYSTEM DIAGRAM 2 Fig.. 29



PLUMBING DIAGRAM FOR UNDERFLOOR HEATING Fig.30



WIRING DIAGRAM FOR UNDERFLOOR HEATING ONLY

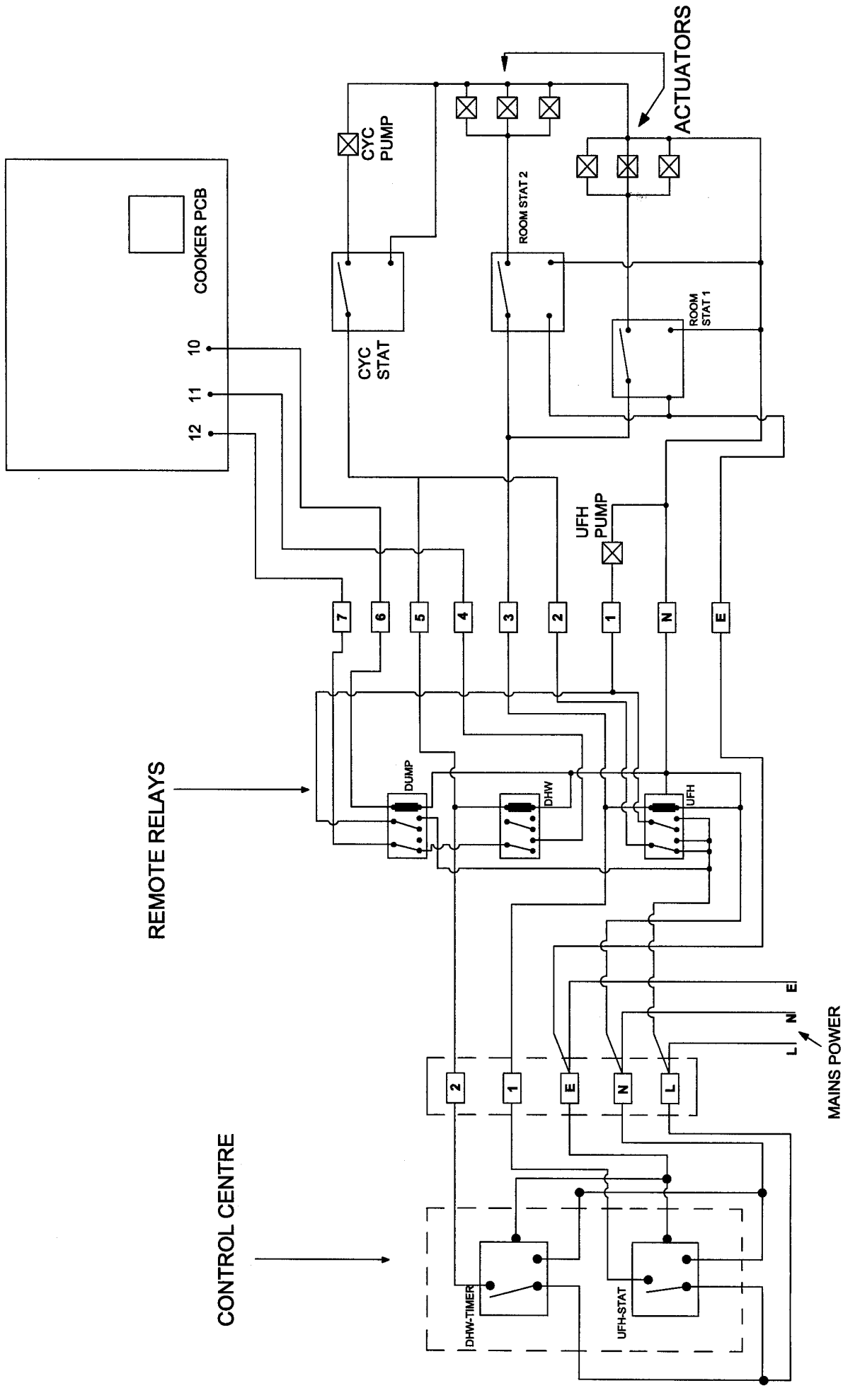
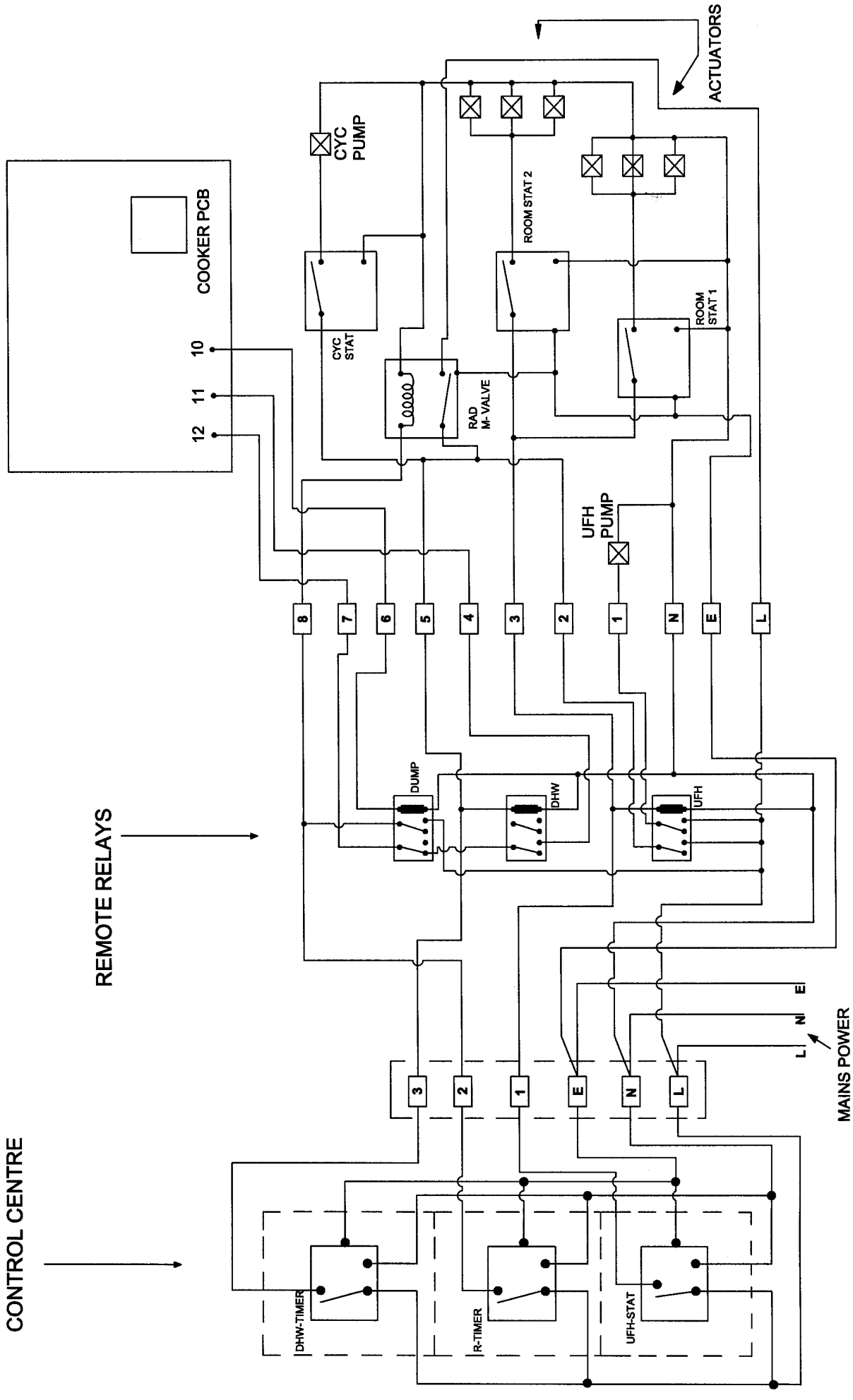


Fig.31

WIRING DIAGRAM FOR UNDERFLOOR HEATING WITH RADIATORS Fig.32



FUEL INSTALLATION

OIL STORAGE TANKS

Oil storage tanks made of steel and all connecting equipment (eg: 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.

An isolating valve should be fitted at the tank outlet, in a 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. 35, 36, 37 & 38).

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

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

FUELS

THE RECOMMENDED FUEL IS KEROSENE 28 SECOND VISCOSITY FUEL OIL.

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 9mm (3/8") and connected to the oil inlet connection located at the cooker left hand side.

Oil supply pipes are normally run in annealed copper tube complying to B.S. E.N. 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 tapered 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 one 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 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, 35, 36, 37 & 38).

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 heat sensoring phial of the fire valve must be fitted to the clip provided in the burner compartment. 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 are 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.

When gravity feed is used (the most common) the minimum head should not be below 1 meter (3'3") and the maximum head should not exceed 6.5 meters (21' 3").

NOTE: The pump is factory set for a single pipe installation to convert to a two pipe system consult manufacturers instructions.

Before connecting the oil supply, secure appliance burner oil pipes to the base using the tee junction (see Fig. 33 & 34).

Fig.33

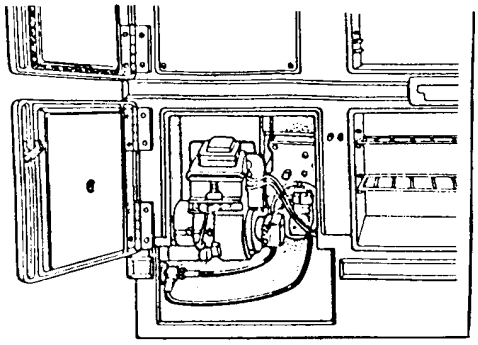
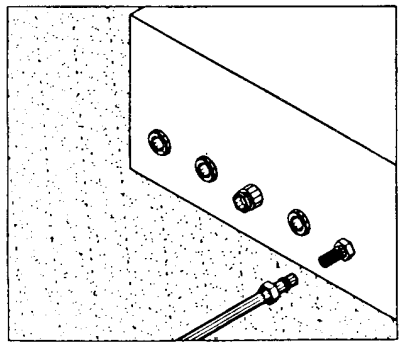


Fig.34

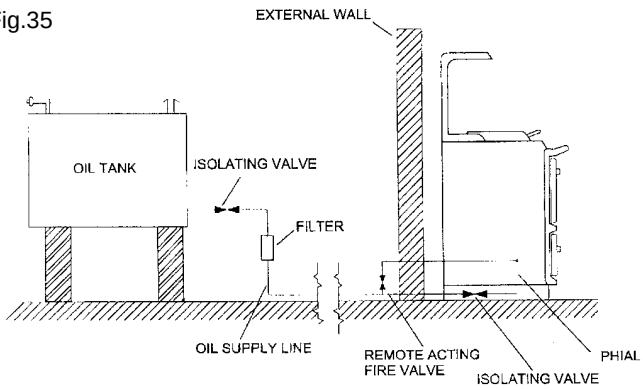


SINGLE PIPE SUPPLY SYSTEM: BOTTOM OF OIL STORAGE TANK ABOVE BURNER **(See fig. 35)**

Single pipe supply system: Tanks servicing this appliance by means of a single pipe need to be positioned so that they will apply the minimum head required 1 meter (3' 3") of oil to the burner when the fuel level is at its lowest point.

Refer to B.S. 5410 to calculate the additional head requirement relating to pipe length and size.

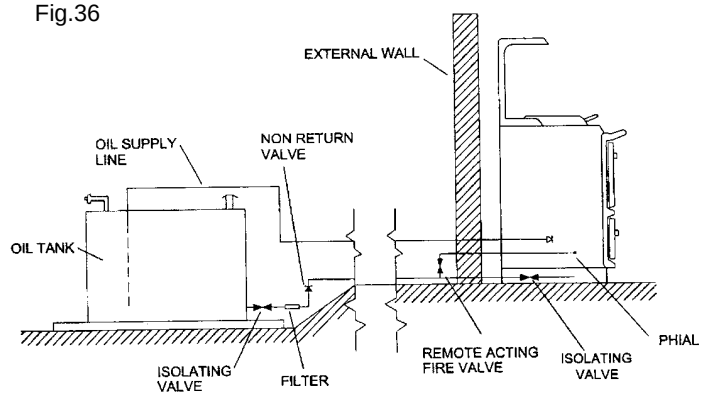
Fig.35



TWO PIPE SUPPLY SYSTEM: BOTTOM OF OIL STORAGE TANK BELOW OR LEVEL WITH BURNER **(see fig. 34)**

If the tank base is below the level at which the gravity feed to the burner can be maintained a two pipe oil supply system may be adopted. (See fig. 36). The non-return valve in the supply line of the two pipe system is required to prevent oil running back from the burner and unpriming the oil pump. The non-return valve in the return line is only required if the top of the tank is above the burner. Its purpose is to prevent oil running back through the burner during maintenance.

Fig.36



SINGLE PIPE SYSTEM: WITH DE-AERATION DEVICE BOTTOM OF OIL STORAGE TANK BELOW OR LEVEL WITH BURNER. **(see fig. 37):**

This system can be used where the tank base is below the level at which gravity feed to the burner can be maintained and the burner incorporates an oil pump. The chamber is fitted close to the burner and is linked to the tank by a single pipe, thus saving the return pipe required by the two pipe system as described previously. Any air in the oil brought up from the tank is bled off in the de-aeration chamber.

De-aeration chambers must always be installed externally to buildings because they emit small quantities of vapour. The chamber is connected to the oil pump in the burner of the appliance by a normal two pipe loop.

TIGER LOOP OIL SUPPLY **(see fig. 38)**

For installations normally requiring a two pipe system but have long or difficult return line runs, an alternative Tigerloop Deaerator system can be used.

Tigerloop Deaerators remove air from a two pipe oil feed. Higher lift heights can be achieved than are possible with a conventional two pipe system.

These requirements are fully explained within the following documents:

* B.S. 5410: Part 1: Code of Practice for Oil firing installations up to 45 kW output capacity for space heating and hot water supply purposes.
* OFTEC - Technical Information Book Three.

  Installation requirements for oil fired boiler and oil storage tanks.
* The Building Regulations Part J: Ireland Part F Section 4 Scotland and Part L Northern Ireland.
* The Building Regulations Part J: England & Wales.

Fig. 37

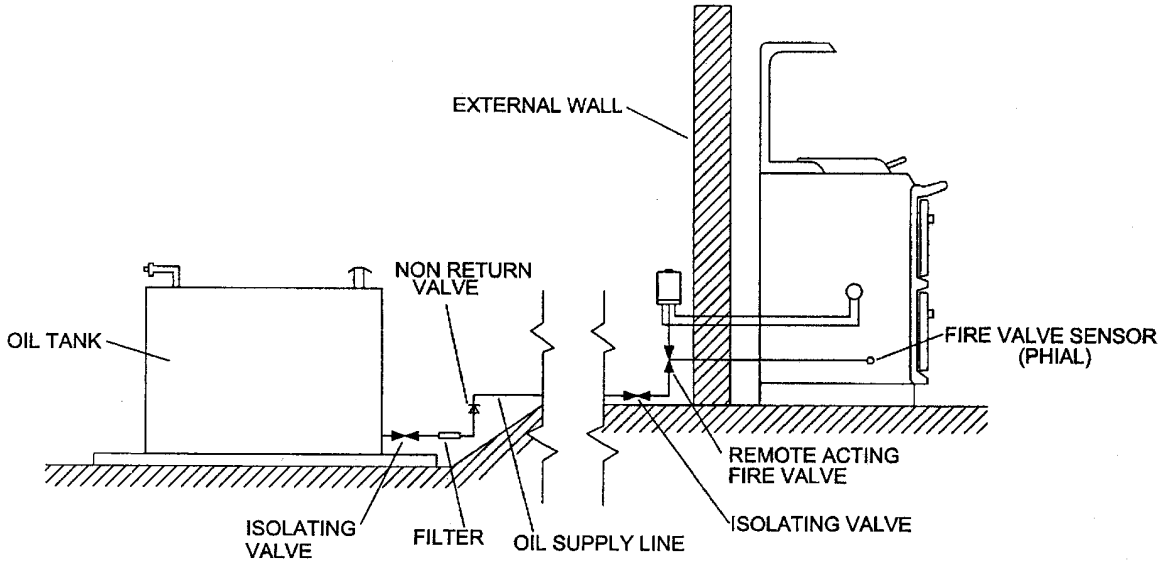
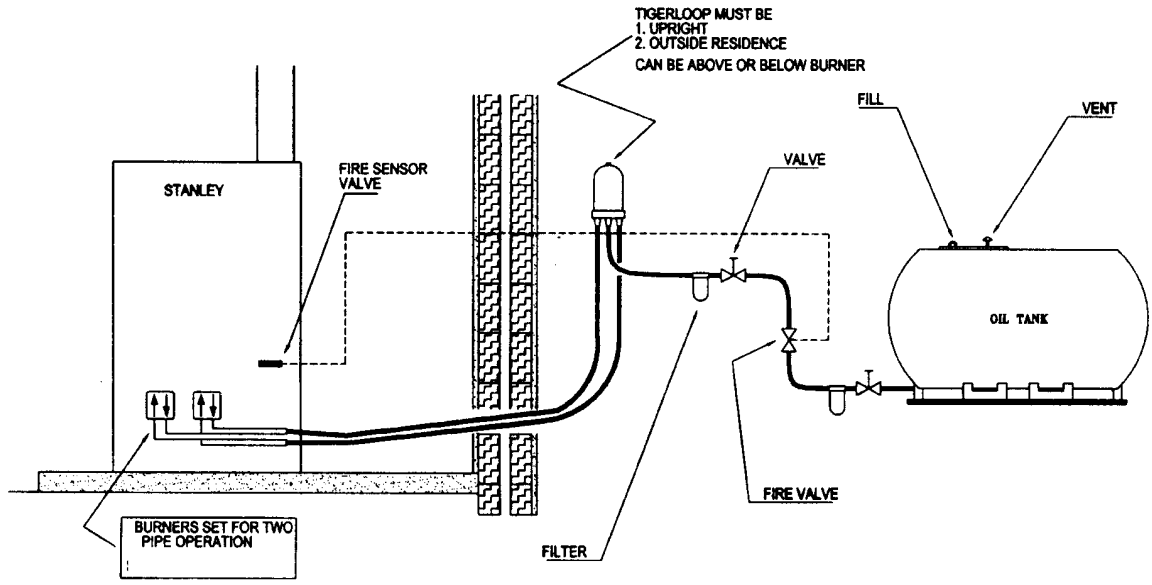


Fig. 38

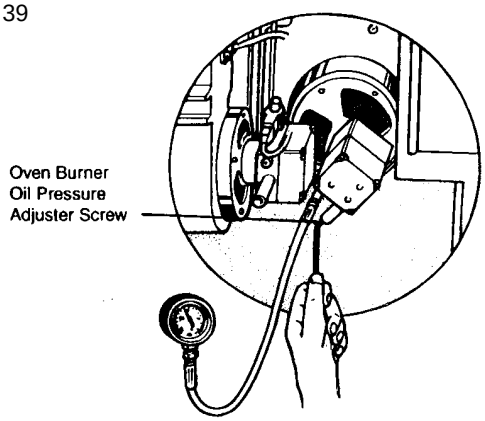


INSTALLATION CHECK LIST

1. Check all items from packaging are removed from ovens and the shelves are properly fitted.
2. Check that electrical wiring is correct.
3. Check that the boiler and heating system is full of water and purged of air.
4. Check that the boiler plate transport screws have been removed and that the plates are in their correct positions. (See section removal of transport screw and Fig. 44)
5. Time switches and room thermostats must be on.
6. Check that the boiler and oven thermostats are functional.
7. Check that all valves in the oil line are open and that the filter is purged of air. Check that the fire valve is open.
8. Turn on the electrical supply and check that any time switches are on and room thermostats associated with the cooker are on and calling for heat. Burners should now fire.
9. Check temperature differential between flow and return 11°C (20°F) and adjust pump or by-pass accordingly.
10. Check heating circuit and balance if necessary.
11. With fuel supply off, switch on the burners.
12. Complete the start sequence to lockout (8 seconds) for both burners observing the correct operating functions.
13. Ensure both pumps are purged of air. Check pump pressure with a calibrated pressure gauge and adjust it as necessary. (See Figs. 40 & 41)

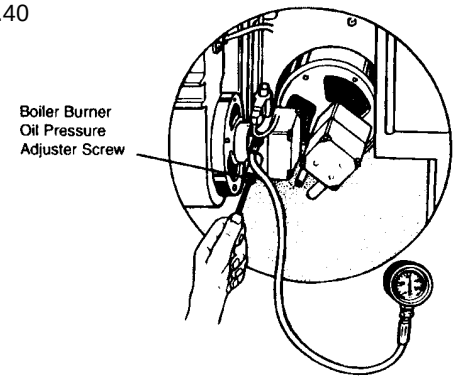
    For further information refer to 100K and 80K specification on page 6.

Fig. 39



Cooker Pressure Settings

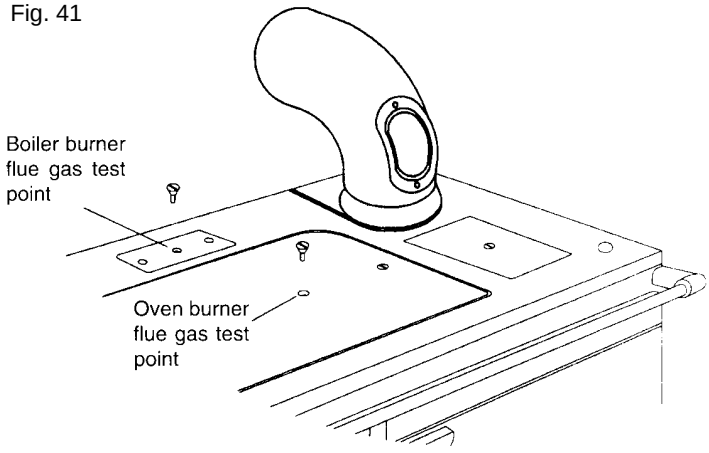
Fig.40



Boiler Pressure Settings

14. Re-instate fuel supply and switch on the burners to ensure that they fire correctly.
15. After the appliance has achieved its operating temperature, with each burner running, carry out a flue gas analysis for each burner. (See Fig. 41).
16. Check for smoke and flue draught reading.

Fig. 41



17. Check and set combustion approximate settings:

Boiler		Cooker	
Air Setting	CO^2%	Air Setting	CO^2%
9	11.5	5	10
8	11.8	4	10.34
7	11.9	3	10.8
6	12.2	2	11.2

Fig.42

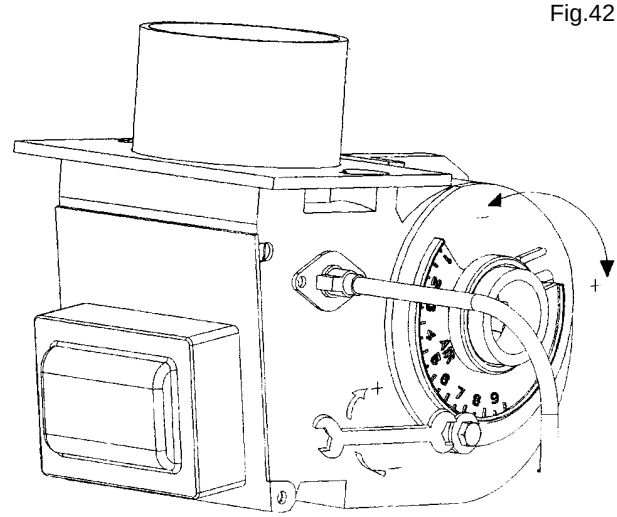
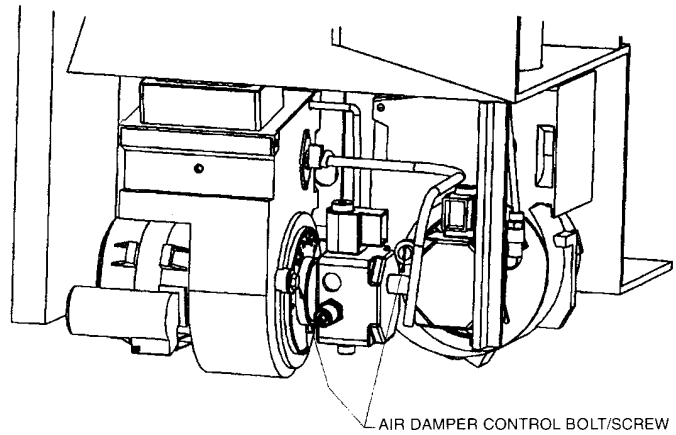


Fig.43



18. Find the correct position of the air control, which gives the highest reading of CO_2 within the range of the table above without exceeding a smoke No. 0-1 (Bacharach Scale). (See Figs. 42 & 43)
19. Check the oil supply for leaks from storage tanks via oil filter.
20. Check if complete system is working correctly.
21. Make sure specified clearances are adhered to.
22. Check flue joints are sealed correctly and that no escapes are present.
23. If not satisfied check the trouble shooting guide.

24. After withdrawing the mains cable tighten the anti-tug gland located at the left side of the cooker base level.

25. Refer to the Operation Instructions Manual for correct operation of the appliance and familiarise the occupants on the correct method of operating the appliance.

LEAVE ALL DOCUMENTS WITH THE END USER

26. Check lockout (8 seconds)

26a. Check cooker burner is purged of air, check cooker burner with a calibrated pressure gauge and adjust if necessary to 110 p.s.i.

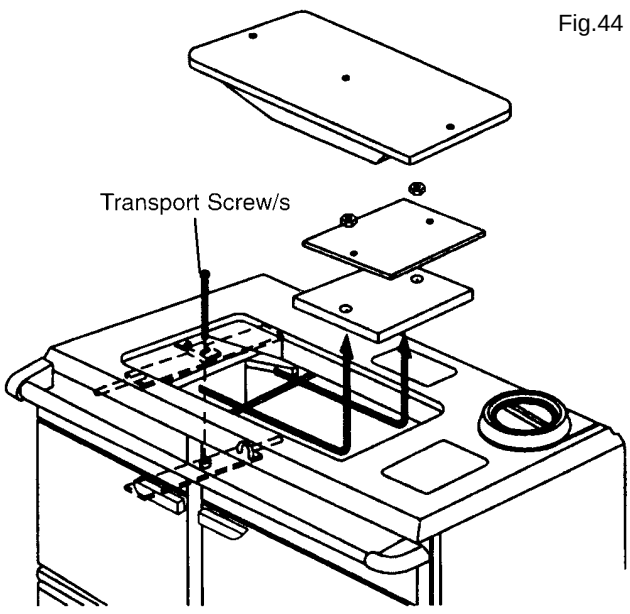
26b. To complete commissioning exercise refer back to point number 14.

NOTE: If you are in any doubt whatsoever about the above installation checks or anything else in this booklet, please contact between the hours of 8.00am and 4.30pm Monday to Friday, who will be happy to answer your queries.

REMOVAL OF TRANSPORT SCREW/S

Remove the hotplate and boiler top plate. Remove retaining screws from boiler plates. Check that all plates have remained in their correct position and that no debris has accumulated on them during transport. Replace boiler top plate and hotplate ensuring that all seals are intact (See Fig.44).

Fig.44



FUNCTION

Normal Start
Pre-ignition and pre-purging, after 7 seconds oil released, and the burner operates, if the flame forms within the safety time of 10 seconds.

Post ignition after oil release:
LOA 24 - 10 seconds.

False light at start
If oil is released and no flame is established the control will cut out within the safety time of 10 seconds.

Flame failure in operation
In the event of flame failure in operation the oil supply is cut off and the control restarts the burner as described under the heading “Normal Start”. On flame failure, immediately after burner start, the control will initiate re-ignition.

Flame monitoring
The flame is monitored by a photocell unit. Note: In accordance with the latest ISO and DIN standards, type LOA activates the safety relay if the photocell unit is exposed to light in the pre-purging period.

Control of flame signal
The photocell current is measured with a d.c. ammeter (moving coil instrument) which is connected in series with the photocell unit. Min current for flame indication: 35 µA.

This booklet has been prepared by Waterford Stanley Limited to set out the correct method to be adopted in installing a Stanley Cooker. If the cooker is not installed fully in compliance with these instructions, Waterford Stanley Limited will accept no liability whatsoever for any loss, damage or personal injury (including death) arising out of any alleged defect in the cooker.

IMPORTANT NOTE: Once you are satisfied that the cooker is properly installed in accordance with these instructions, you must turn off the cooker which should not be re-lighted until it has been commissioned by an accredited Commissioning Agent.

Waterford Stanley
Bilberry, Waterford, Ireland.
Telephone: (051) 302300
Facsimile: (051) 302375

STANLEY
TURNING YOUR HOUSE INTO A HOME