Oil-Fired

STANLEY

Super Star

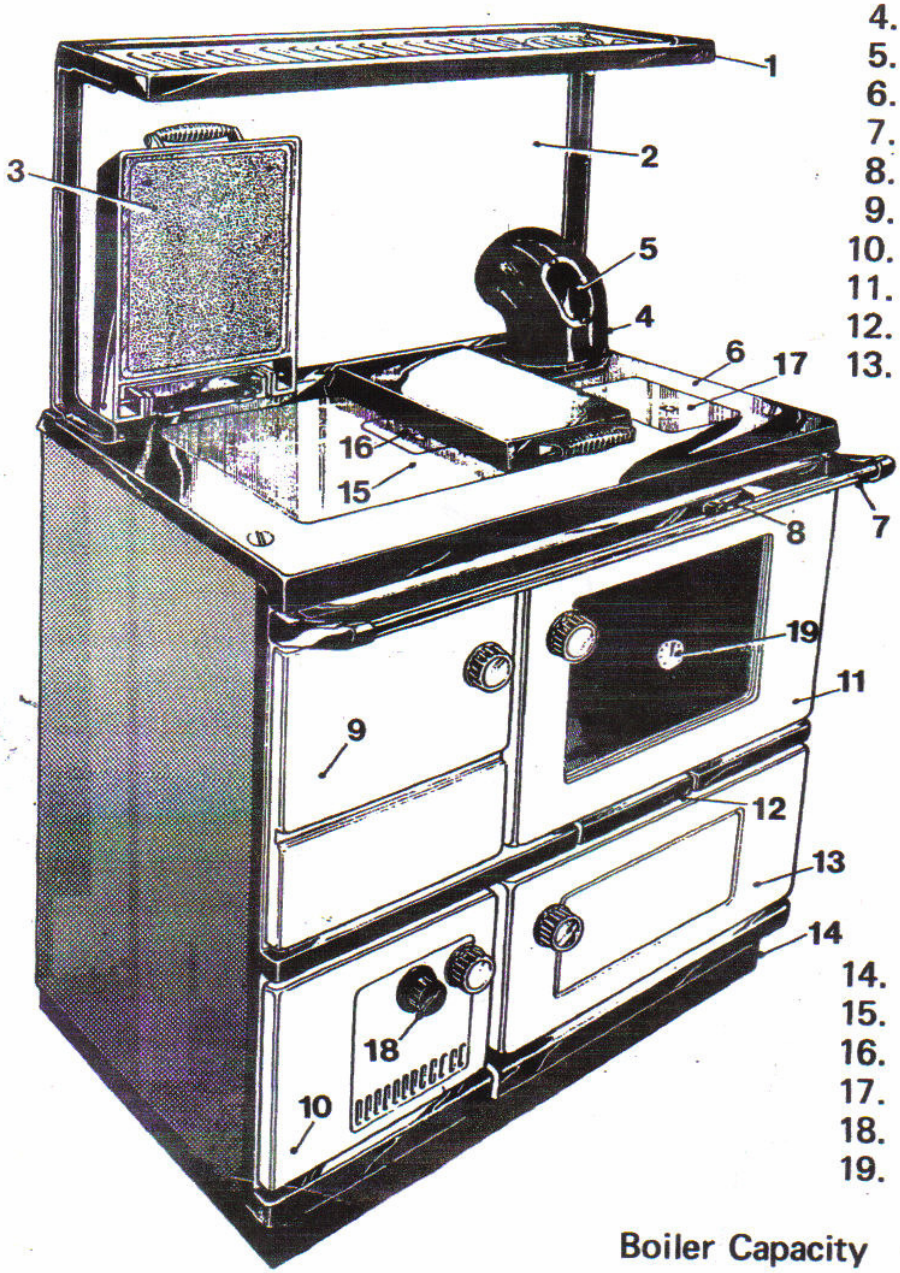
To ensure safety, satisfaction and maximum service, this quality Cooker should be installed by a trained and competent installer. The provision of a Central Heating facility, requires that the hot water systems involved, conform fully to good plumbing practice and established standards.

INSTALLATION AND OPERATING INSTRUCTIONS

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.



1. Platerack (to order)
2. Splashback (to order)
3. Hotplate Covers
4. 6" (150mm) 90° Bend
5. Bend Cleaning Plate
6. Hob
7. Towel Rail
8. Damper (Control)
9. Firedoor
10. Burner Door
11. Main Oven Door
12. Front Cleaning Door
13. Simmer Oven Door

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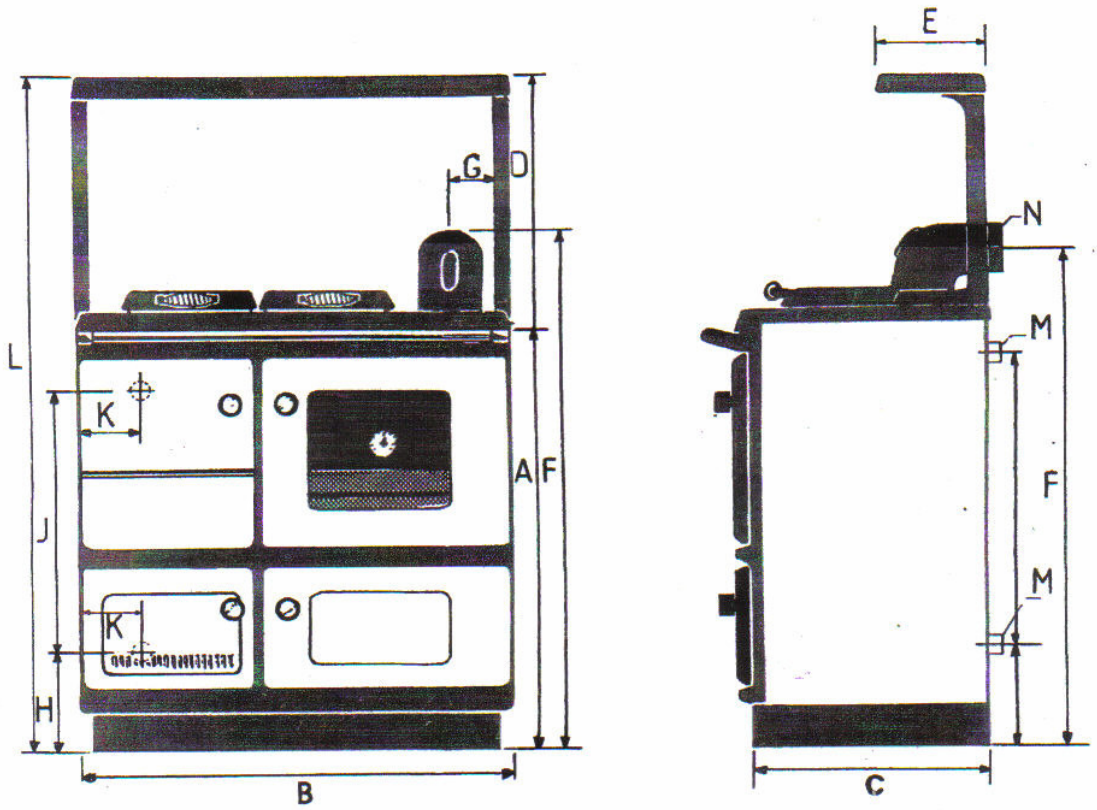
14. Base Frame
15. Hotplate
16. Cleaning Panel to Hotplate
17. Simmer and Cleaning Plate
18. Boiler Thermostat
19. Oven Thermometer

Boiler Capacity — 13.6 Litres = 3 Gallons
Cooker Weight — 364 Kg. = 810 Lbs.

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

SPECIFICATION

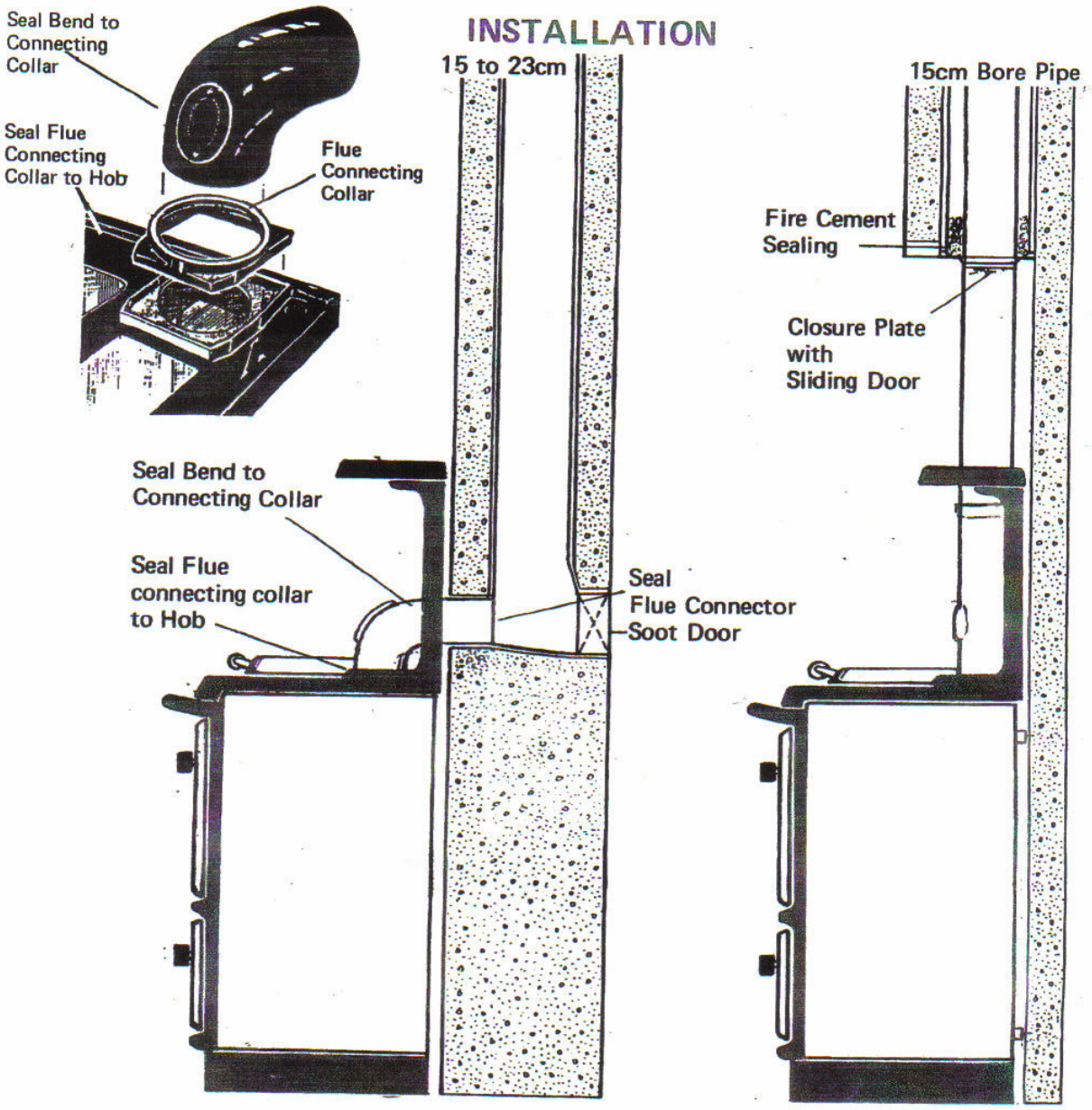


DIMENSIONS	A	B	C	D	E	F	G	H	J	K	L	M	N
METRIC (MILLIMETRES)	915	900	530	500	300	1040	130	255	590	190	1425	1"BSP	150
IMPERIAL (INCHES)	36	35½	21	20	11¾	41	5¼	10	23 3/8	7½	56	1"BSP	6"

FEATURE	METRIC	IMPERIAL
HOT PLATE:	560 x 330	22 x 13
ROASTING OVEN:	390W x 310H x 406D	15¼W x 12¼H x 16D
SIMMERING OVEN:	390W x 220H x 406D	15¼W x 8¾H x 16D

COOKER OUTPUT:	AT 2.25Kg = 2.86 Litres Kerosene/hour.
GROSS OUTPUT:	28 KW = 95,000 BTUS/hour
NET TO WATER:	17.5 KW= 60,000 BTUS/hour
JET:	80 Degree Solid Pattern (.65 US Gallons)
OIL PRESSURE:	9.15 Atmospheres (130 P.S.I.)
RADIATION SURFACE:	Heating surface only = 32.7 sq. Metres = 353 sq. ft.
	Heating plus Domestic Hot Water = 30.2 sq. Metres = 325 sq. ft.

INSTALLATION



PRE-INSTALLATION CHECK

Before installing your new Cooker, check that the chimney is clean and clear of obstructions. Cracked brickwork and leaking joints should be made good. The chimney should have a cross sectional area of at least 76 sq. cm. or an inner diameter of 15 to 23 cm. A similar direct air inlet is required in the room to support combustion.

Where flue piping passes through closure plate with 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 chimney serving another appliance. Always ensure that the connection is to a chimney of the same size - never connect to one of smaller dimensions. Chimneys wholly constructed of single skin pipe are not recommended under any circumstances. Due to their inability to retain heat such chimneys will inevitably give rise to the formation of condensation.

COOKER CLEARANCE

The cooker should not be installed at zero clearance to combustible materials. The sides should have a minimum clearance of at least 7.5 cm. from combustible materials unless otherwise fully insulated.

When the Cooker is backed up against a wall of combustible material it should have adequate protection in the form of non-asbestos millboard covered with sheet steel.

CHIMNEY HEIGHT

The flue must be high enough (more than 4.6 m in any case) to allow the flue gases to vent into clear air, away from the turbulence that may be caused by roof structures, other chimney stacks, etc. The venting position should be 1.0 m above any obstruction within a 7.6 m radius.

Where the standard masonary chimney is not available, a proprietory type of twin wall, fully insulated pipe may be used. As already stated, the minimum inner diameter must not be less than 15 cm. and 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.

FLUE PIPES

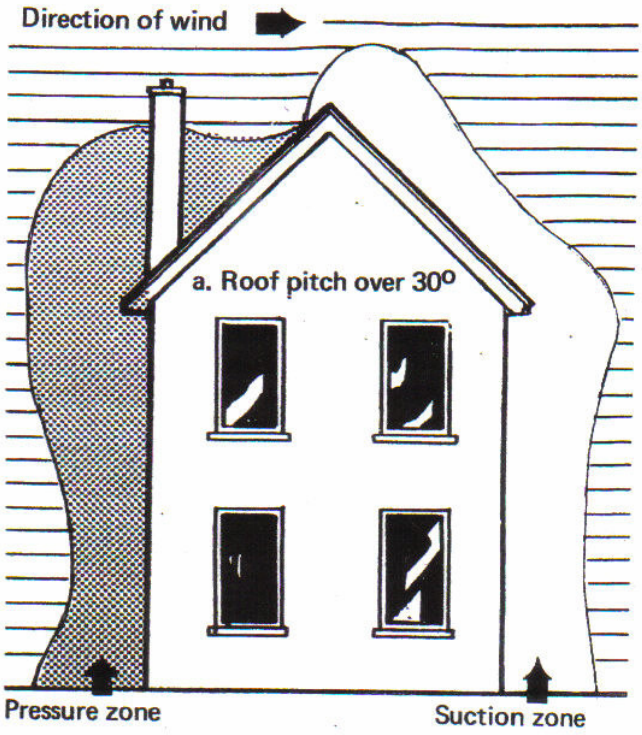
Square bends and long horizontal runs of flue piping must be avoided. A Back outlet Pipe with cleaning door is provided with the cooker. A Top outlet Pipe with cleaning door is available. ALL FLUE CONNECTIONS MUST BE THOROUGHLY SEALED. Blocked chimneys are dangerous, use only recommended fuels, keep chimneys and flue ways clear; read the operating instructions.

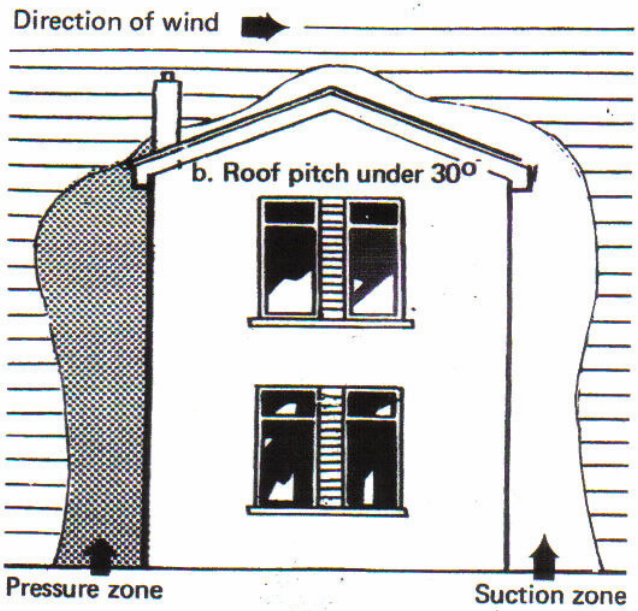
CHIMNEY CLEANING

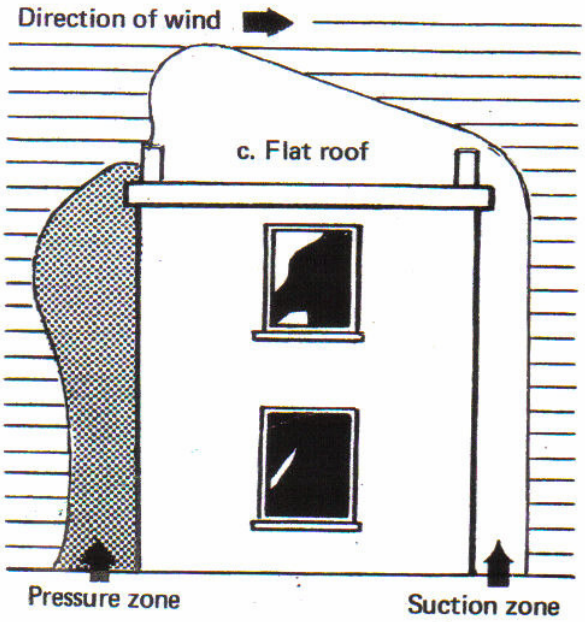
Whichever type of flue is chosen, there must be cleaning access to the whole of the flue system. The flue of the chimney will need to be cleaned regularly. How often will depend a lot on how your Cooker is run, but, to start with, make a point of inspecting the flue system every six months. This period may well be extended as time goes by if there is little sign of deposits.

HEARTH CONSTRUCTION

When a properly constructed hearth is not available we recommend that the Cooker be placed on a slab or foamed concrete 4 cm or a slab of other insulating material. This hearth must extend at least 45 cm to the front and 30 cm each side.







DRAUGHT REQUIREMENTS

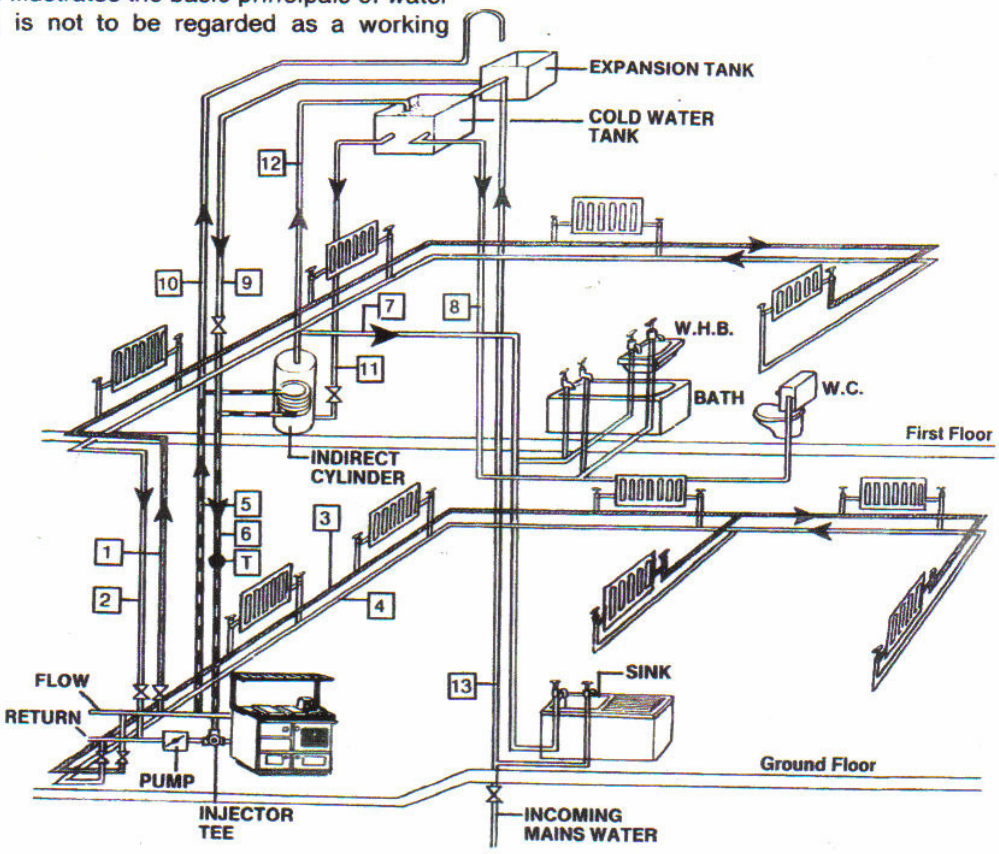
When a draught recorded is over .06 inches W.G. a draught stabiliser should be fitted.

Remember a proper flue is necessary for the efficient operation of your Oil Cooker to provide a steady draught of between .04 and .06 inches W.G.

PLUMBING

		PIPE	FUNCTION	PIPE	FUNCTION
RADIATOR HEATING CIRCUITS	FIRST FLOOR	1	PUMPED FLOW TO RADIATORS	7	HOT WATER FLOW
		2	PUMPED RETURN EX "	8	COLD WATER (EX TANK
	GROUND FLOOR	3	PUMPED FLOW TO RADIATORS	9	COLD FEED-HEAT SYS
		4	PUMPED RETURN EX "	10	OPEN VENT-HEAT SYS
CYLINDER HEATING CIRCUIT	FIRST FLOOR	5	GRAVITY FLOW TO CYLINDER	11	COLD FEED TO CYLIND
		6	GRAVITY RETURN EX "	12	HOT WATER VENT
				13	MAINS WATER
				T	THERMOSTAT
				⧖	ISOLATING VALVES

This diagram illustrates the basic principals of water systems and is not to be regarded as a working drawing.



Recommended indirect cylinder 135—180 litres, depending on domestic requirements with a 2.5 cm flow and retu pipes not exceeding 7.8m each in length. cylinder and pipework should be lagged to minimise heat losses.

REGULATIONS

The Plumbing must be in accordance with all relevant regulations and practices. It must include a gravity circuit with expansion pipe, open to the atmosphere. The central heating will normally be pump-driven as with other types of boilers. The system is thermostatically controlled by the unit mounted in the Cooker burner door.

BOILER OUTPUT

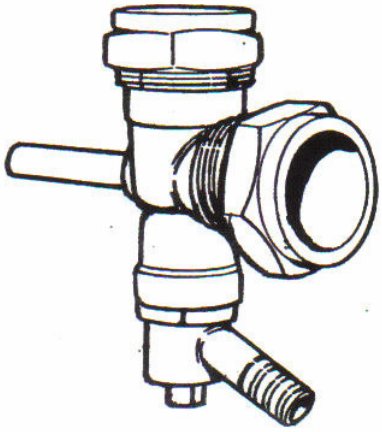
High output cannot be maintained unless fuel is being burned at a rate of 2.25 Kg. per hour of Kerosene.

GRAVITY CIRCUIT

The gravity circuit consists of the domestic h water tank of 135 - 180 litres indirect cylind fixed in an upright position, recommended for h water storage and it should be connected to t boiler by 25 mm diameter flow and return pipi The pipes should not exceed 7.8 m each in leng and anything in excess of 4.6 m must be ful lagged. The shorter the run of pipe work the mo effective the water heating efficiency and to th end, the cylinder should be fully lagged. F safety's sake do not have any valves on this circu

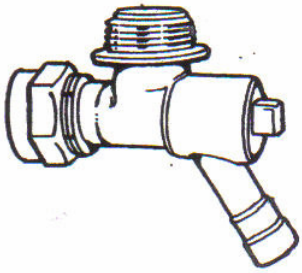
INJECTOR TEE

Where the gravity and central heating circuits join together to return to the Cooker we recommend the use of an injector tee connection, situated as close to the unit as possible. This type of tee encourages a stable flow of hot water through both circuits and helps to prevent priority being given to the stronger flow, which is most commonly the pumped central heating circuit. This way, there will be no shortage of hot water to the taps when the heating is on.



WATER CIRCUIT TEMPERATURE

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

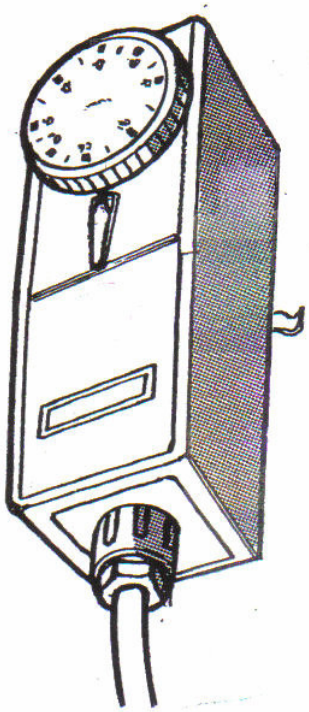


PIPE THERMOSTAT

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

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

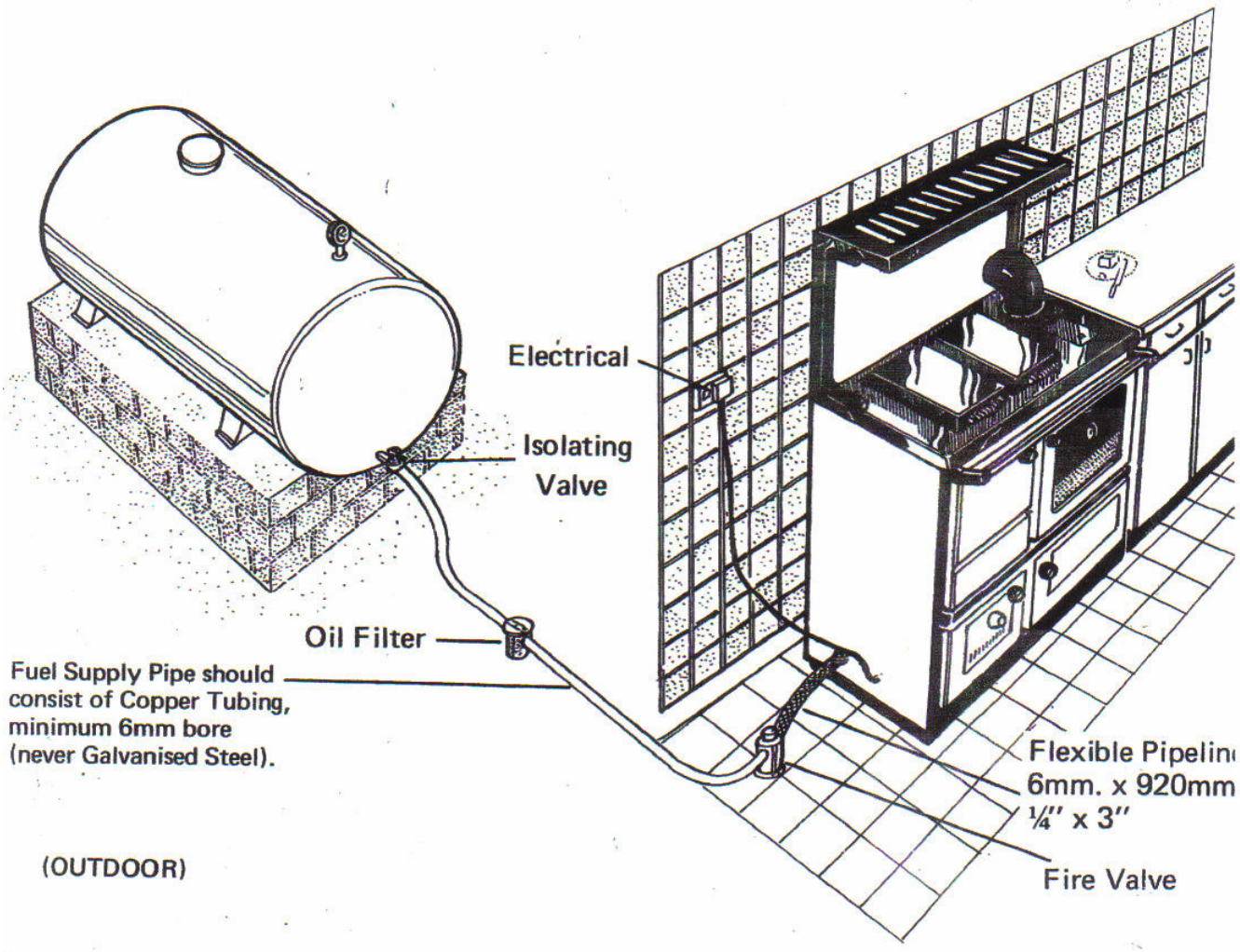
Ensure that the pipe thermostat is fitted on the flow pipe and as close as possible to the cooker. The recommended setting should be between 45°C and 55°C approx.



FUEL CALORIFIC VALUES:

Kerosene 28 sec. —
Calorific Value: 8354 Calories = 33,150 BTU's per Litre/Hour

FUEL INSTALLATION



FUELS

THE RECOMMENDED FUEL FOR THE COOKER BURNER IS KEROSENE 28 SECOND VISCOSITY FUEL OIL.

Gas Oil 35 second viscosity is not recommended due to high servicing requirements and the possibility of coagulation in severe cold weather conditions.
The burner is not suitable for use with tractor diesel oil due to premature blocking of the jet caused by inhibitants in the fuel.
If possible, purchase fuel from the same source each time.

FUEL SUPPLY LINE

Pipes should consist of copper tube (NEVER galvanised steel), the final connection to the burner pump inlet port being made with the length of flexible pipe supplied with the burner. Joints should be made with compression fittings, not by soldering.
When gravity feed is used (the most common), the maximum head should not exceed 4 m (equivalent to a pressure of 35 kPa).
Note that the pump is factory set for single pipe installation.

IT IS ABSOLUTELY ESSENTIAL THAT A SUITABLE FIRE SAFETY VALVE BE FITTED ON THE OIL SUPPLY LINE BETWEEN THE COOKER AND OIL FILTER, ADJACENT TO THE COOKER.

OPERATION

1. Ensure that the burner door thermostat is in the "off" position.

2. Switch on the mains electric supply.

3. Turn on the oil supply.

4. Select the heating mode required by opening the fire door and moving the boiler baffle lever, with the tool provided, to the required position.

5. Turn On Radiators

Setting A.
High oven temperature with lower boiler output.

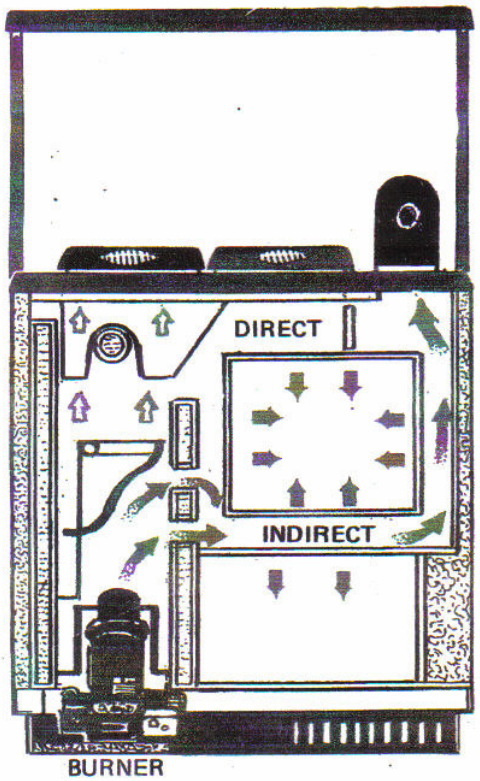
Setting B.
Oven with intermediate boiler output.

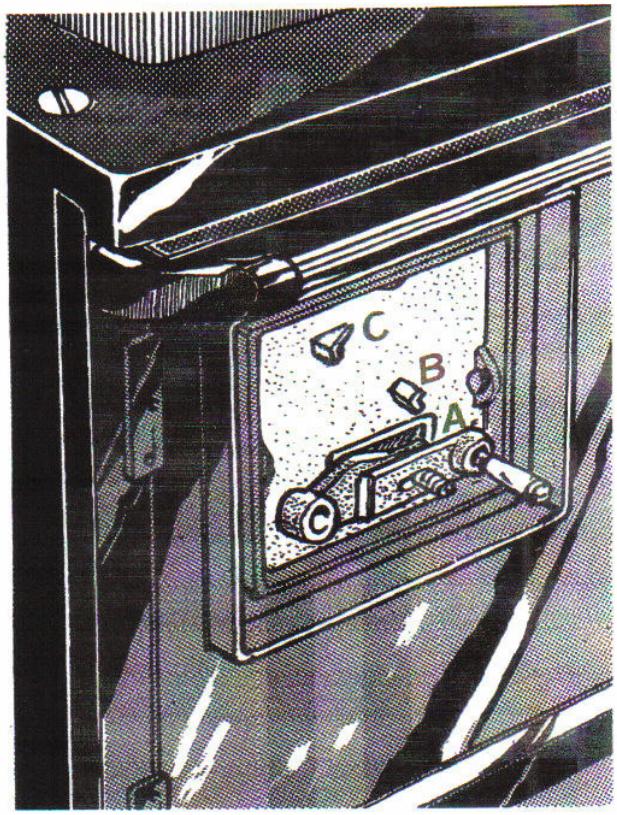
Setting C.
Oven with high boiler output.

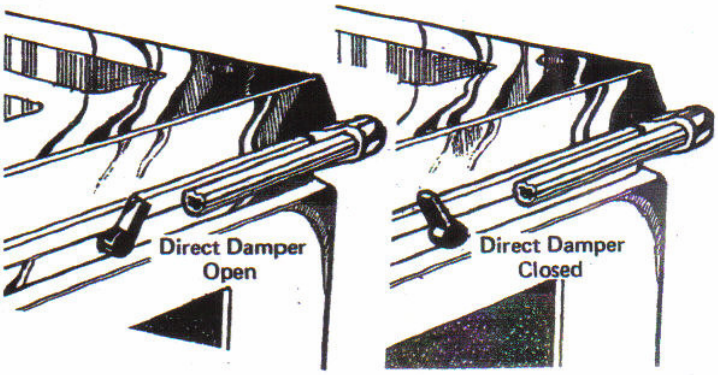
6. Close the direct damper by turning the lever to the left.

7. Turn the thermostat knob to "high" position and the burner will ignite after about 15 seconds. You will hear a clicking noise and this is caused by the electrodes before the oil ignites.

8. Allow the Cooker to heat up for about one hour, then adjust the thermostat to give the required setting.







USE OF OVENS

When baking or roasting, close the direct damper, set the boiler baffle to position A (see diagram) and turn thermostat up to high.
When the oven thermostat shows a temperature reading of 50°F higher than that which is required, then place food in oven. Turn thermostat back to position 2 or 3 and this should be sufficient to maintain the oven temperature. If the temperature drops below the cooking temperature required, simply increase the thermostat setting. A little practice will soon show the required adjustment necessary.
The MAIN OVEN is heated on all four faces and it will cook food evenly.
The SIMMERING OVEN is heated on top face only. The temperature will be about half that of the main oven, and it is ideal for slow cooking, casseroles, stews, soups, etc.

CENTRAL HEATING

The boiler output is determined by the position of the boiler baffle as follows:—

Setting A (approx) Max output 40,000 BTUS.
Min. output 18,000 BTUS.
Setting B (approx) Max. output 50,000 BTUS.
Min. output 25,000 BTUS.
Setting C (approx) Max. output 60,000 BTUS.
Min. output 30,000 BTUS.

(The above may vary slightly depending on individual installation conditions).

The boiler therefore will operate at its maximum output at setting C of the boiler baffle with the thermostat turned up to high. A range of outputs from the boiler and the ovens may be obtained to suit individual requirements by selecting the boiler baffle setting and adjusting the thermostat between low and high positions.

SUMMER SETTING

For Summer use and lower Boiler Output: Set the Boiler Baffle to position 'A' and turn the thermostat to low. When using the oven in this position turn on a number of Radiators and turn the thermostat to high until required temperature is reached and then turn back thermostat to low setting.

HOT PLATE

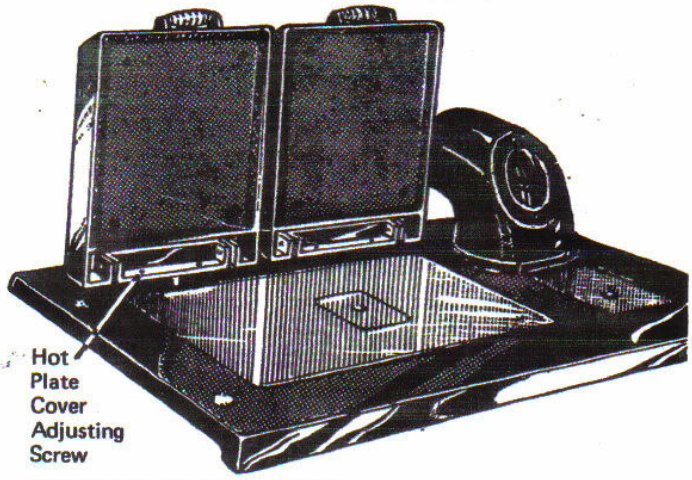
The hot plate is machine ground for maximum heating efficiency and it is temperature graded, the left hand side over the burner being the hottest and the right hand side is suitable for simmering.

For maximum hotplate temperature set the boiler baffle to setting C. Lower hotplate temperatures will be achieved using settings B or A.

A rapid hot plate temperature can be reached by opening the Hob Direct Damper which allows the hot gases to travel directly beneath the hot plate and to the flue.

HOT PLATE INSULATING COVERS

The insulating covers retain most of the heat that would otherwise be radiated into the kitchen. They also retain the heat in the hotplates so that rapid heating of cooking utensils will occur when one or both of them are lifted for cooking purposes.



Hot Plate Cover Adjusting Screw

COOKING UTENSILS

For best cooking results and economy of operation use heavy based, flat bottomed utensils.

EXTERNAL AUTOMATIC TIMESWITCH

The cooker may be connected to an external automatic timeswitch which will control the light up and shut down operation period of the cooker.

ROOM THERMOSTAT

The Cooker may be connected to a room thermostat in order to maintain an overall even temperature.

CONDENSATION

If the Cooker is run for extended periods on the low settings the unit can cool down to an extent that vapour in the flue gases may condense.

This will make the inside of the flueways damp, creating a sooty deposit which will reduce the efficiency of the appliance.

It is best to run the cooker occasionally at the higher settings in order to prevent the formation of condensation.

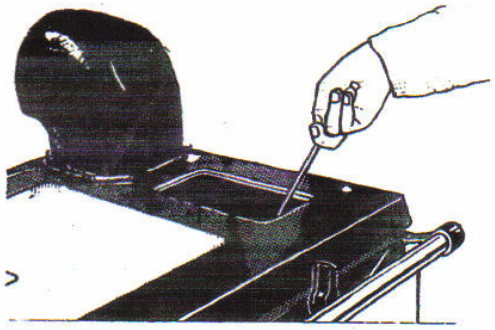
SERVICING

Provided that the Cooker has been operated normally and that the correct grade of oil has been used it will be found that the burner and cooker flueways will not need servicing until approximately every six to twelve months.

TO SERVICE THE COOKER, THE FOLLOWING PROCEDURE SHOULD BE ADOPTED:

WARNING !

Switch off electrical and oil supply to the Cooker.

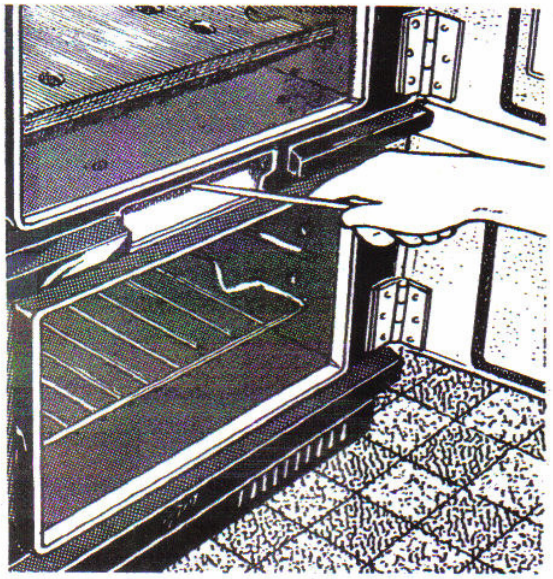


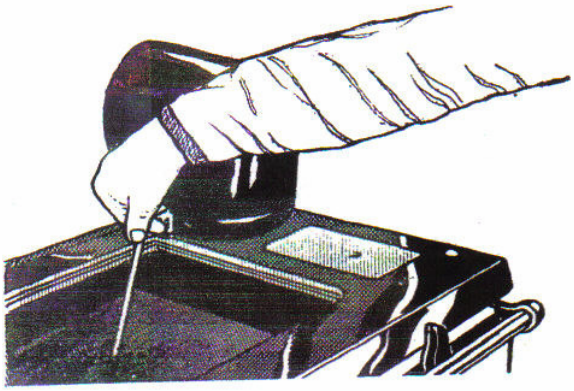
FLUE CLEANING

1. Remove the retaining nut from the cleaning panel of the hotplate (No. 16) and also the screw of the simmer cleaning plate (No. 17). Remove hotplate and cleaning panels. Remove the front cleaning door (No. 12) and also bend cleaning plate (No. 5).
2. All deposits from the flue pipe and the top of the oven may be brushed down the left hand or right hand sides of the oven. Deposits which

have accumulated on both the left and right hand sides of the oven should also be brushed downwards.

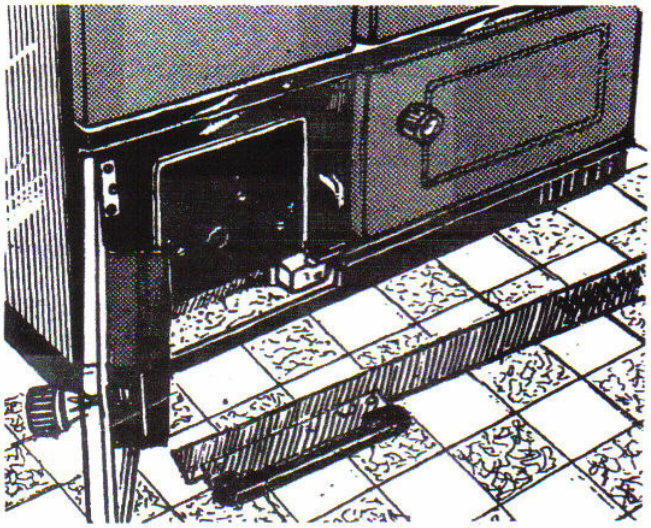
3. To remove these deposits thoroughly, clean out the residue from the side flues and base plate through the front cleaning door opening.



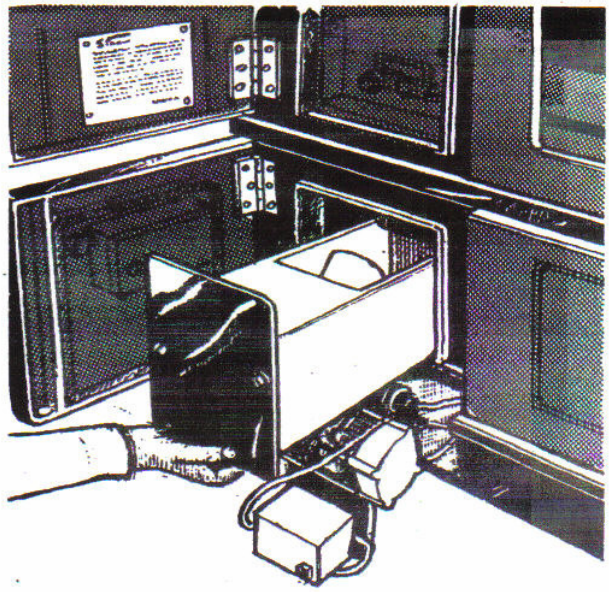


FIREBOX CLEANING

1. Disconnect the electrical connections from the thermostat mounted inside the burner door.

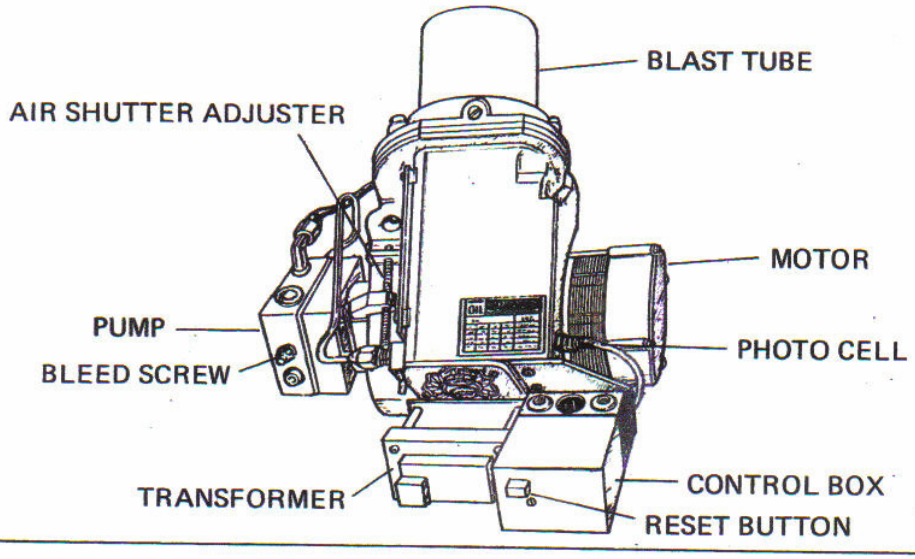


2. To remove the burner take out the four screws from the base frame (No. 14) which will drop the air grill and cover plate. Remove the two outer screws from the back plate of the burner carrier. Break the fire cement seal and withdraw the burner assembly complete.
   Care should be taken not to damage the electrical and oil leads connected to the burner.
3. The burner may now be serviced by a competent engineer.



4. To clean deposits from the boiler baffle, set it to position B and clean both sides down into firebox. Remove all soot deposits from the boiler, and the two stainless steel firebox baffles, and generally clean out firebox area.
   It is helpful to use a vacuum cleaner to collect dust deposits that will have accumulated.
5. Care should be taken when refitting the burner assembly that the insulation material over the burner blast tube is not damaged. Also ensure that the electrical and oil leads are not twisted.
   When refitting the burner assembly, clean off the old firecement from the frame located inside the burner door opening and apply fresh cement. Push the burner assembly into position and ensure a good seal. Refit screws, air grill and cover plate, etc.
6. Replace the front cleaning door, simmer cleaning plate and bend cleaning plate, ensuring that the surfaces have been cleaned and that fresh firecement has been applied.
7. Use new Insulating Tape before replacing the hotplate, clean off old cement from hotplate cleaning panel and apply fresh cement. Tighten home fully the retaining nut in the cleaning panel to the tie rod.
8. Switch on electrical and oil supply. The Cooker is now ready for operation.

BURNER TECHNICAL DATA



Motor	90, W, 1 - phase, 2800 rpm. Capacitor 3 uF.
Fan	108 Dia x 42 x 8H.
Pump	Danfoss 9.15 atmospheres (130 psi)
Electronic Transformer	S.E.M.220/14,000V, 38mA, TV & radio suppressed
Control	Danfoss
Mounting flange	Standard SIS
Flexible oil line	1/4" x 3 ft. long
Ignition electrodes	Electrodes with porcelain insulation
Nozzle	Danfoss .65 US Gallons 80 degree solid pattern
Fan House	Aluminium die casting
Blast Tube	PLI
Limit Thermostat	Ranco
Control Thermostat	Ranco

STARTING UP

a) Check that the boiler is full of water.

b) Check that all valves in the oil line are open and that the filter and oil pump are purged of air.

c) Switch on main supply. Burner will attempt to fire, (it may be necessary to press the reset button on controlbox).
If flame or ignition fails, the control locks out after 10 - 15 seconds and remains in that position until the safety switch is reset manually.

d) Check that any time switches and room thermostats associated with the boiler are "on".

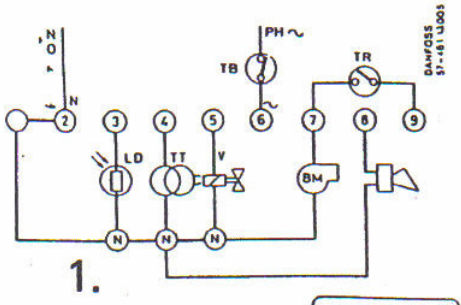
e) The burner is unlikely to fire correctly until the air has been purged from the pressure side of the pump via the bleed nipple.

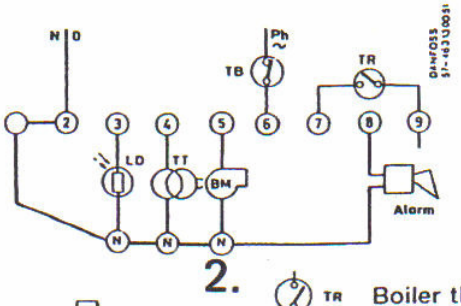
f) After the system has achieved its operating temperature, a flue gas analysis and check for smoke should be carried out.

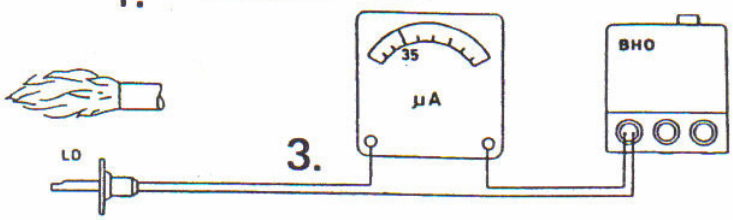
g) Check the correct position of the Air Shutter, which gives the highest reading of CO_2 without exceeding a smoke of No. 0 - 1. (Bacharach).
Refer to the manufacturer's (Bacharachs) instructions. The CO_2 will normally be in the range of 10% - 13%.

h) Check the locating plate of inner assembly. it's normally factory set in forward position. At abnormal pressure in the combustion chamber the nozzle position can be moved backwards via an adjustable locating plate to stabilise the flame.
Check the oil connection from storage tank via oil filter.
The pressure in the pump is factory set. If adjustment is necessary, this must only be done in conjunction with an oil pressure guage.

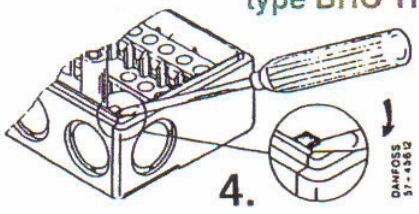
OIL BURNER ELECTRICAL CONTROLS

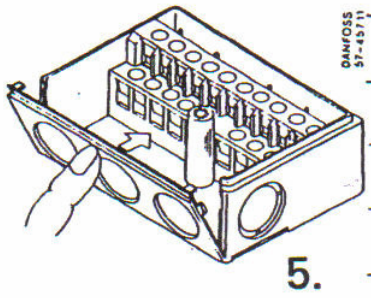




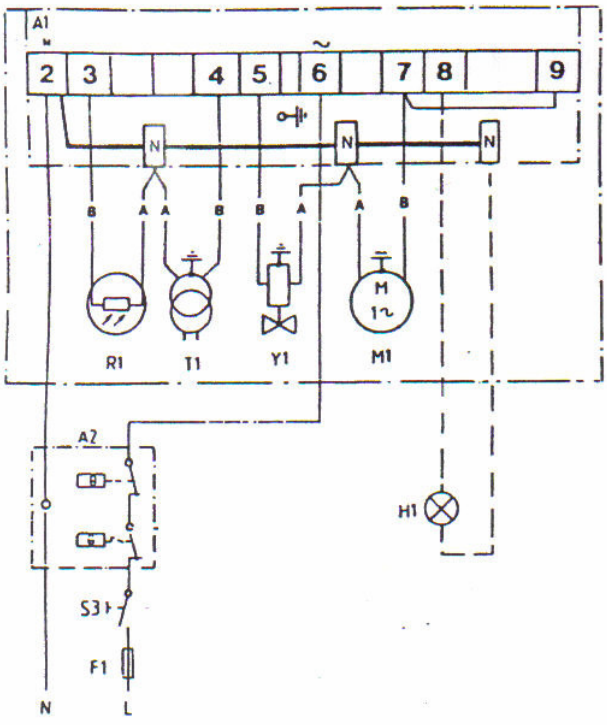


DANFOSS Oil burner control type BHO 11.1





TR	Boiler thermostat
TB	High temperature cutout
TT	Ignition transformer
BM	Burner motor
V	Solenoid valve
(LD)	Photo unit
	External alarm
~ Ph	Phase wire
0 N	Neutral wire
(LD)	Danfoss type designation



A1 Oil burner control
A2 Twin thermostat
F1 Fuses
H1 Lock-out signal lamp
M1 Burner motor
R1 Photoresistor
S3 Main Switch
T1 Ignition transformer
Y1 Magnetic valve
A Blue
B Brown
C Black

Application

Oil burner control type BHO11.1/1 is used for controlling and monitoring single-stage oil burners. In accordance with valid standards (ISO 3544 and DIN 4787) type BHO 11.1/ (with 10 s safety time) must only be used for fired oil quantities less than 30 kg per hour.

The flame is monitored by photo unit type LD. Provided the BHO 11.1 is used with a photo unit type LD codemarked "A" (Code No. 057H2020, 057H2021, 057H2022 and 057H2024) the false illumination requirement is met. Codemarking "A" is stamped on the cable of the photo unit.

Base
The base of BHO 11.1 is provided with a loop terminal A.
The four neutral terminals, marked N, are internally connected and can be used optionally. Also, the base is equipped with three connected earth terminals which in turn are connected to a plate at the bottom of the base. The plate has a hole and is designed for connection to burners with earth terminals by means of a screw.
The front plate of the base can be removed as shown in fig. 5.

Electrical connections
If type BHO 11.1 is connected as shown in fig. 1, it gives prepurging in the preignition time.
If it is connected as shown in fig. 2, it gives pre-ignition without prepurging.

Technical data

Rated voltage:	220 V
Frequency:	50/60 Hz
Working range:	187 - 264 V
Mains fuse:	Max 10 A
Enclosure:	IP 40
Ambient temperature:	- 25°C - + 70°C

Function
Normal Start
Preignition and prepurging, or preignition alone: 7 s. Oil is released, and the burner operates, if the flame forms within the safety time of: 10 s.

Post ignition after oil release:
BHO 11.1 - 5 s.

False light at start
If light reaches the photo unit in the prepurging time the control will, after both the prepurging time (7 s) and the safety time (10 s), cut out without releasing oil after approx.: 17 s.

No flame formation at start
If oil is released and no flame is established the control will cut out within the safety time of: 10 s.

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 photo unit type LD.
Note: in accordance with the latest ISO and DIN standards, type BHO activates the safety relay if the photo unit is exposed to light in the pre-purging period.

Max. cable length between BHO and LD: 10 m
Max. ambient temperature for LD: 70°C.
Note: Heat radiated by the flame can, in some cases, cause higher ambient temperatures than the max. permissible temperature for LD.

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

OIL PUMP ADJUSTMENTS

DANFOSS MSLA 032

Technical Data
Viscosity range:
1,3 - 18,0 mm^2/s (cSt) at 20°C
Speed: 2800 R.P.M.
Factory setting: 9.15 Bar
Coil voltage: Shown on the coil.

Connections (Fig. 1)
The pump is to be connected as follows:
Single-line open bypass (Fig. 6)
E = Nozzle line 1/8 in BSP.F.
S = Suction line 1/4 in BSP.F.
M = Pressure gauge connection, venting 1/8 in BSP.F.

Venting (Fig. 2)
Venting is necessary for single line Burner.

Pressure setting (Fig 3)
Note: The valve has two functions: A closing function with fixed closing pressure and a regulating function where the pump pressure can be set by means of the pressure regulating screw.

Dismantling the regulation system (Fig. 4)
1. Dismantle the orifice nipple with valve (A).
2. Remove the pressure regulation spring with the black plastic cover and the pressure cone.
3. When dismantling the pressure setting screw, remove the O-ring (C) and metal ring (D). The setting screw (B) can then be screwed anti-clockwise out of the pump.

Note: Orifice nipple and valve are a unit and cannot be dismantled.

Coil replacement (Fig 5)

INSTRUCTIONS

Danfoss

MSLA

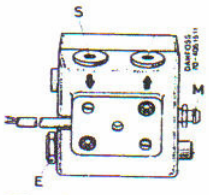


Fig. 1

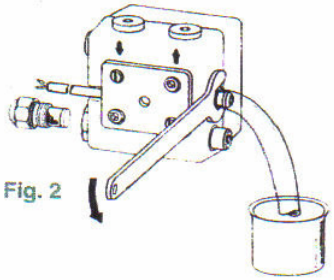


Fig. 2

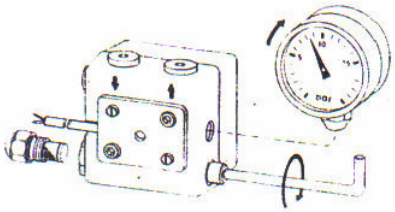
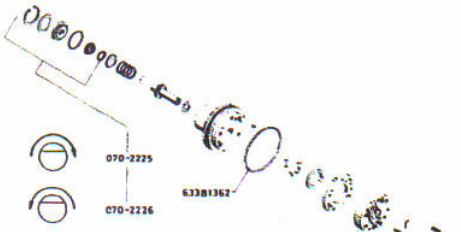


Fig. 3



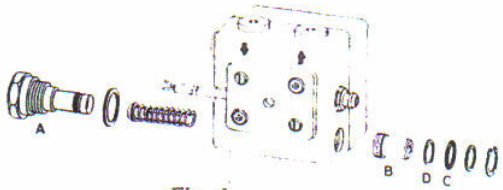
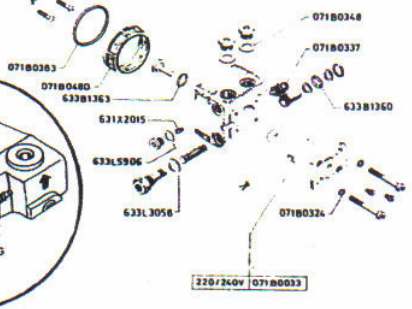


Fig. 4



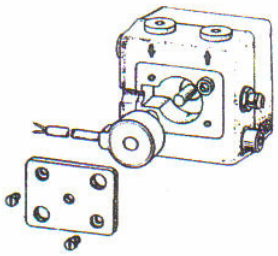


Fig. 5

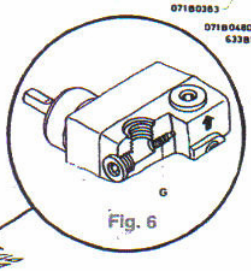
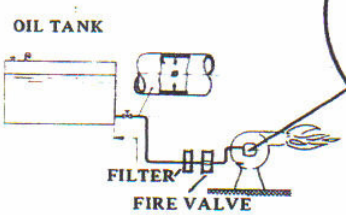
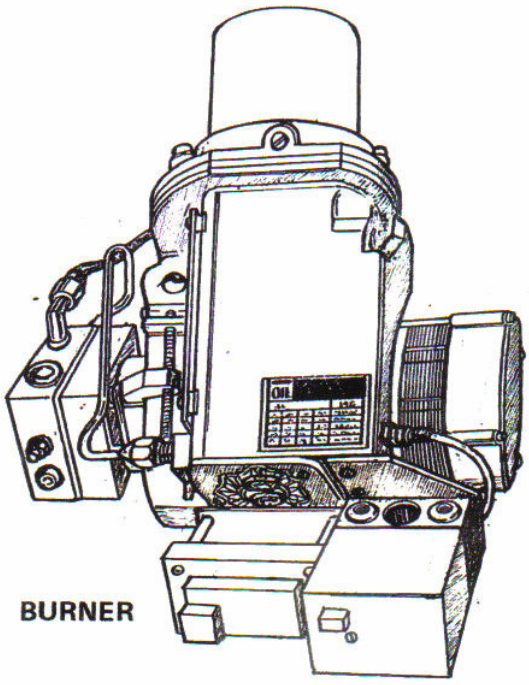


Fig. 6





BURNER

Oil-Fired

STANLEY

Super Star

FAULT FINDING

1. Poor Chimney Draught	(a) Obstruction	(a) Clear and Clean
	(b) Too Low	(b) Raise Height above Ridge
	(c) Too Wide	(c) Fit Flue Liner 15 to 23 c.m.
	(d) Crack in Wall	(d) Repair Cracks
	(e) Shared by another Unit	(e) Cut off other Unit.
2. Excessive Chimney Draught	(a) High Chimney	(a) Fit Draught Stabilizer.
3. Down Draught	(a) High Trees	(a) Raise Chimney Height
	(b) High Buildings	(b) Raise Chimney Height
	(c) Low Chimney	(c) Raise Chimney Height
	(d) Negative Pressure Zone	(d) Fit Cowl
4. Cooker Smoking	(a) Insufficient Primary Air	(a) Provide Room Air Inlet or adjust Burner air intake.
	(b) Chimney Choked	(b) Clean Chimney
	(c) Side Flueways Choked	(c) Clean Flueways
	(d) Down Draught	(d) Raise Chimney Height
5. Hot Plate not Heating	(a) Boiler Baffle incorrectly set.	(a) Set Baffle at position C.
	(b) Burner Cutting out.	(b) Increase Thermostat Setting.
	(c) Utensils not Flat	(c) Use machined based Utensils
6. Oven not Heating	(a) Boiler Baffle incorrectly set.	(a) Set Baffle at position A
	(b) Flue ways blocked with soot	(b) Clean Out
	(c) Damper open to Chimney	(c) Close Damper
	(d) Faulty Thermostat	(d) Check and replace if necessary.
7. Radiators not heating	(a) Pump not working	(a) Check and replace if defective.
	(b) Air in Radiators	(b) Vent Radiators
	(c) Pipe system faulty	(c) Check Pipe Sizes and Circuit.
	(d) Excessive Number of Radiators	(d) Turn off un-needed Radiators.
	(e) Radiator Valves not adjusted.	(e) Adjust Valves to give even flow.
8. Domestic Hot Water Cylinder not Heating	(a) Cylinder too Large	(a) Use 135 – 180L Cylinder
	(b) Flow Pipe too small	(b) Use 25 m.m. Bore Pipe.
	(c) Flow Pipe crossed	(c) Reverse Flow Pipe
	(d) Cylinder too far away	(d) Not more than 7.8m fully lagged
	(e) Hot water from Boiler not reaching Cylinder	(e) Adjust Flow Control Valves or fit Injector Tee.
9. Intermittent Performance	(a) Cooker starved of Primary Air	(a) Provide Air Inlet in Room.
	(b) Extraction Fan in Room	(b) Provide additional Air Inlet in Room.
	(c) Dirt in Nozzle	(c) Clean or Replace Nozzle
	(d) Dirty Burner	(d) Service Burner
	(e) Dirty Flueways	(e) Clean Flueways frequently.
	(f) Dirty Oil Filter	(f) Clean or Replace
	(g) Uncontrolled Burning	(g) Repair or Replace Thermostat.
10. Domestic Hot Water Rusty	(a) Leak in Indirect Cylinder Coil	(a) Replace Cylinder
	(b) Incorrect Cylinder fitted.	(b) Check with Installer

It is of the utmost importance to keep the flue pipe and chimney clear of deposits.
Blocked or partially obstructed flueways and chimneys will cause dangerous fumes to be emitted into the room, these may well be invisible.

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