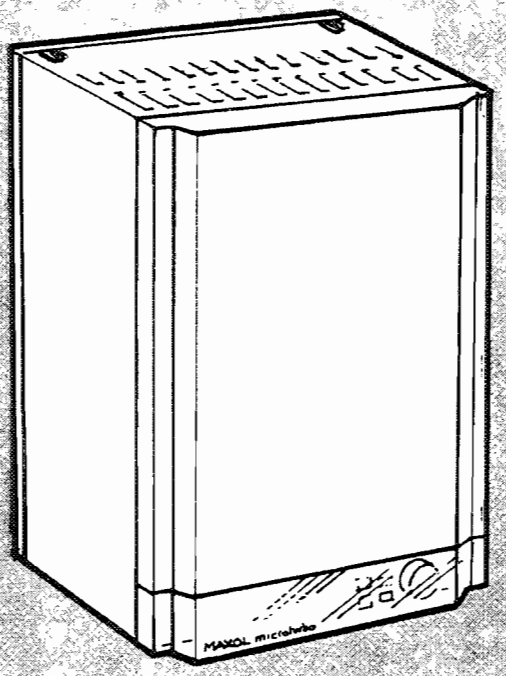
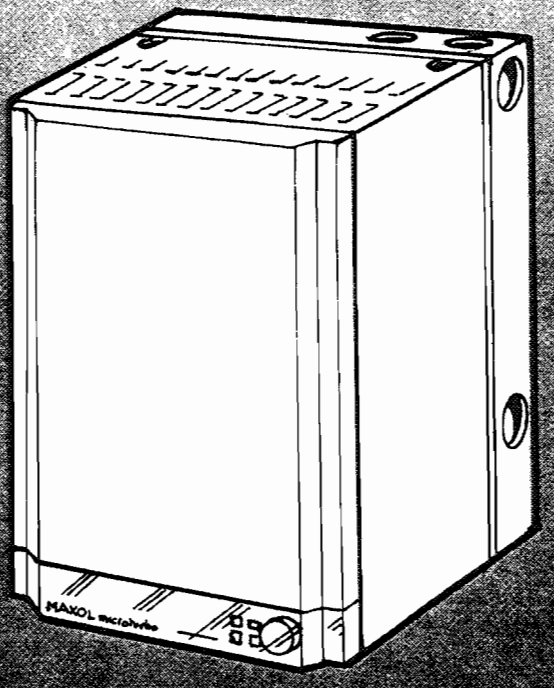
SRF

GC. No: 41.202.05





MDF

GC. No: 41.202.20

MAXOL

A
GLEN DIMPLEX
COMPANY

Microturbo 40

INSTALLATION AND SERVICING INSTRUCTIONS

Leave these instructions with the user.

Wall Mounted, Room Sealed, Fanned Flue, Gas Boiler.

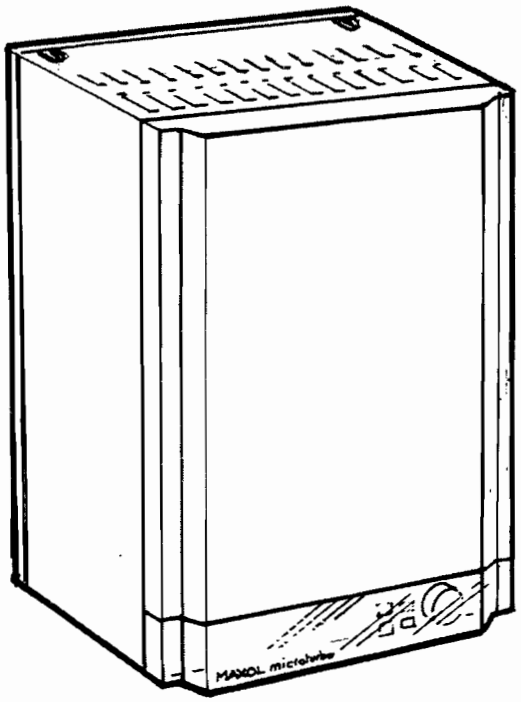
This appliance is for use with Natural gas only.

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1 Introduction

The Maxol Microturbo 40 is a wall mounted, room sealed, fan flued, central heating boiler designed for ease of installation, with a range of flueing options. The casing is attractively styled and the boiler incorporates the latest in gas appliance technology.



1.1 Features

- Output — 11.7 kW (40,000 Btu/h) suitable for most heating and domestic hot water requirements.

- Size — 300w × 460h × 280d MDF (215d SRF). Compact size enables it to be easily fitted into a kitchen unit.

- Automatic control — Specially designed electronic controls with electronic ignition (no pilot), boiler thermostat and neon display all mounted behind an attractive plinth.

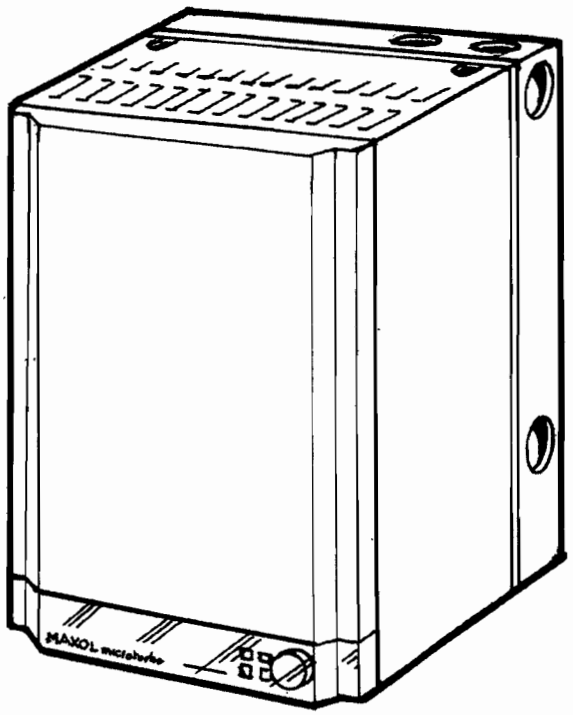
- Suitable for fully pumped sealed and open vented systems — Overheat thermostat and pump overrun fitted as standard. (Not suitable for gravity systems).

- 2 pipe unbalanced flueing system. The pipes may be connected at the top, base or sides of the appliance and in any direction up to 9 metres (straight) or 6 metres and 2 bends using two 51mm diameter pipes and unobtrusive flue terminals, — MDF and from 180mm to 610mm through a rear wall — RF.

- Latest pre-mixed burner technology gives low Nitrous Oxide values — meets all proposed EC requirements and helps reduce acid gas emissions and environmental damage. NO_x — 29ppm.

- Light weight 15.5kg (34 lb) — High efficiency copper heat exchanger.

- This appliance meets all the essential requirements of the Gas Directive and carries the CE mark.
It is also British Gas Service listed.



2 Safety and General Information

2.1 General Safety

Prior to installation ensure that the local distributions conditions (nature of gas and gas pressure) and the adjustment of the appliance are compatible. The adjustment conditions are stated on the data badge.

This appliance shall be installed and connected in accordance with the current installation regulations. Particular attention should be given to the revelant requirements regarding ventilation.

In the United Kingdom the installation must be in accordance with the regulations and codes of practice as detailed:

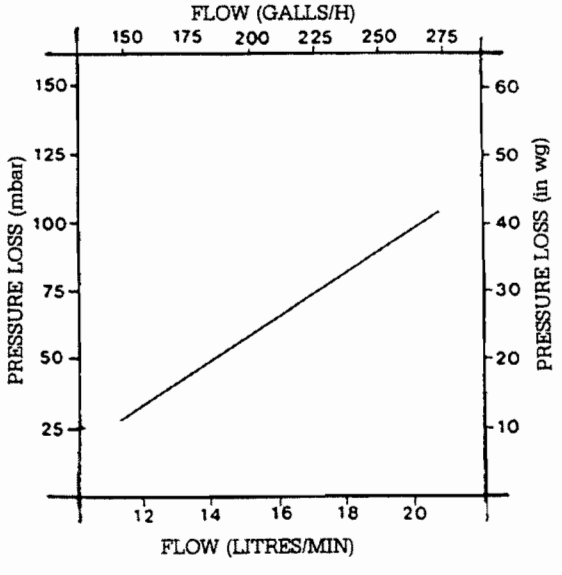
- Current Gas Safety Regulations (Installation & Use) — The installation of this appliance must be carried out by a competent C.O.R.G.I. registered person in accordance with the above regulation, Local Building Regulations, Building Standards (Scotland) Regulations, current I.E.E. regulations on wiring, BS 7671, the Bye laws of the Local Water Undertaking, Health & Safety Document No. 635 "The Electricity at work regs. 1989".
- It should also be in accordance with the relevant recommendations of the following British Standard Codes of Practice:

BS 5440 Pt.1 — Flues (for gas appliances under 60 kW).
BS 5440 Pt.2 — Ventilation (for gas appliances under 60 kW).
BS 5449 — Forced circulation — hot water systems.
BS 5546 — Installation of gas hot water supplies for domestic purposes.
BS 6798 — Installation of gas hot water boilers for gas appliances under 60 kW.
BS 6891 — Low pressure installation pipes.
BS 7593 — Code of Practice for the treatment of water in CH systems.

Thermostat Settings
Min (Posn. 1) — 59°C
Max (Posn. 5) — 82°C

The recommended flow through the boiler is 16 l/min minimum.

MAXOL MICROTURBO 40H
WATER PRESSURE LOSS



2.2 Water System

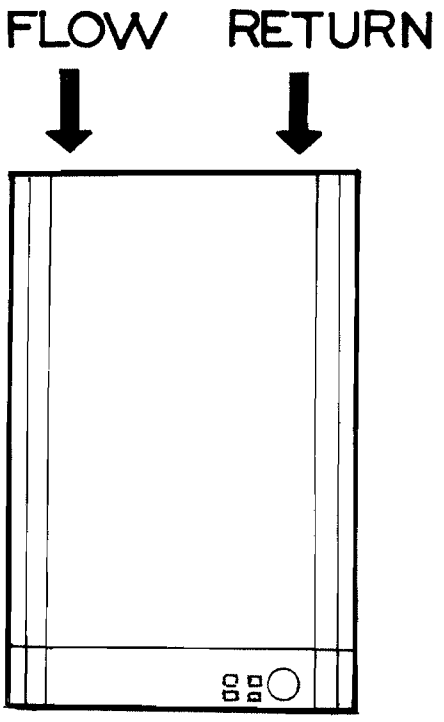
a. **Maximum head** — 30 metres (100 ft.) — with open vent.
b. **Minimum head** — 1 metre (3 ft.) (Static).
c. The hot water cylinder must be of the indirect type.
d. Suitable for **fully pumped systems** only.
e. **System design temperature** — approx. 11°C temperature rise across the boiler under any conditions of use.
f. **Systems with flow & return pipes dropping to floor level** — The boiler is fitted with an overheat thermostat, but adequate provision must be incorporated to ensure air is vented from the system by an open vent or automatic air vents at the highest positions on the flow and return pipes.

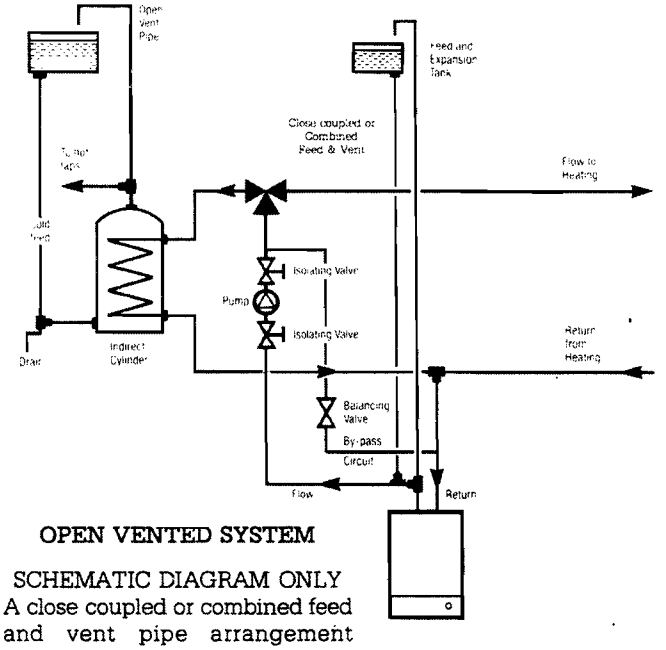
g. **Bypass** — A bypass must be fitted in 15 mm pipe with a valve (not adjustable by the user). Adjust the valve setting to obtain a temperature rise across the boiler of approximately 11°C. This is performed with the system fully heated, starting with the valve almost fully closed with the pump at its optimum speed. The valve is progressively opened to achieve the required temperature rise.

h. **Pump position** — The pump should be sited in the flow for open vented systems. Isolating valves should be fitted as close to the pump as possible. Pump manufacturers installation requirements must be followed. A suitable pump would be the Grundfos UPS 15/60 or other high head pump.

i. **Flow and Return Connections** — These are suitable for 22 mm copper pipework with compression fittings integral with the appliance. The **flow** is the left hand connection and the **return** is the right hand connection. Both flow and return connections are situated at the top rear of the appliance within the boiler casing.

j. **System Cleaning and Inhibiting**— Before commissioning the appliance it is **essential** to clean all installations in accordance with the procedure set out in BS 7593. This involves the application of a cleanser, circulating it around the whole system for the specified time and flushing to drain. It is important to select a cleanser appropriate to the situation, ie. for a new installation, or for an existing system where the boiler is being replaced. In the case of boiler replacement it is good practice to clean the system prior to the installation of the new boiler. It is recommended that an inhibitor is added to protect the system. Product should be added in accordance with the manufacturer's instructions at the time of the final fill. We recommend products manufactured by: Sentinel Division, Grace Dearborn Ltd., Widnes, Cheshire WA8 8UD. Tel: 051-495 1861 Fax: 051-420 5447





OPEN VENTED SYSTEM

SCHEMATIC DIAGRAM ONLY
A close coupled or combined feed and vent pipe arrangement should be connected as in the above schematic.

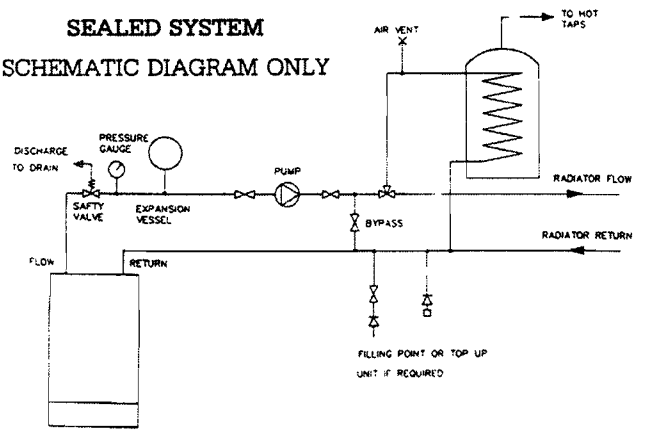
2.3 *Sealed System Requirements*

The system must comply with the following British Standards and any local Building Regulations which may apply. BS 6700, BS 6798, BS 5449, BS 7074: Part 1.
The maximum boiler flow temperature is 82°C (180°F).
The installation should be designed in accordance with the schematic diagram and the following points must be adhered to:

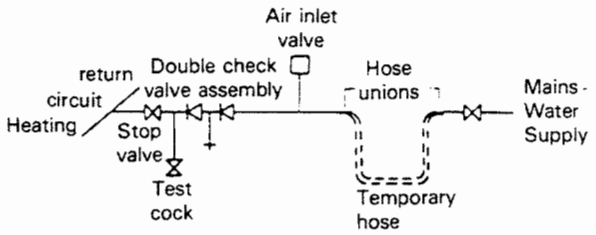
a. A safety valve shall be fitted on the flow as close to the boiler as possible. No valve or restriction may be placed between the boiler and the valve. The valve must be piped to drain so that any discharge will not cause a hazard to the user, electrical components or wiring. The safety valve must be set to operate at 3 bar. The safety valve shall conform to BS 6759

SEALED SYSTEM

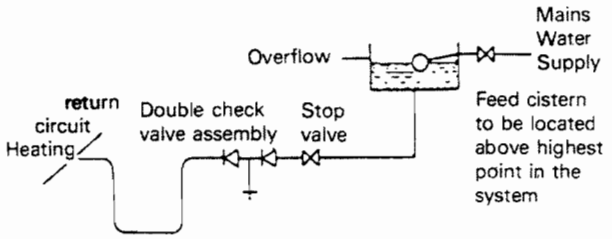
SCHEMATIC DIAGRAM ONLY



FILLING AND MAKE UP DIAGRAM



Non-automatic filling and make-up



Automatic filling and make-up

b. An expansion vessel conforming to BS 4814 shall be fitted and positioned as in the schematic diagram. The method of sizing the expansion vessel can be found in BS 5449: Part 1 or BS 7074: Part 1 as appropriate. The required basic parameters are water content of the system and the operating pressure. For example with a vessel charge and initial system pressure of 1.0 bar a total system water content of 100 l a vessel volume of 10.9 l will be required. For any system a more accurate calculation of vessel size detailed in BS 7074: Part 1 section 7.2.

c. A pressure gauge shall be fitted in the system preferably in the flow on the suction side of the pump. The gauge, must be capable of measuring 0 to 4 bar and be fitted with an adjustable pointer.

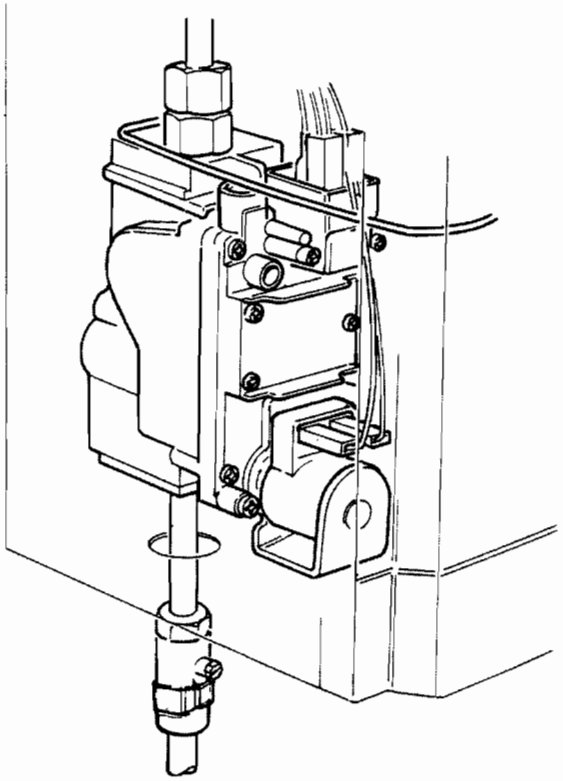
d. An air separator should be fitted on the flow and if the pump is on the flow, the separator should be fitted on the inlet side.

e. Any method of top up must comply with local water bylaws (see filling and make up diagram).

f. Air vents should be fitted at any point where air is likely to collect.

g. Filling methods must comply with local water bylaws. The methods are outlined in filling and make up diagrams.

h. An indirect cylinder must be used suitable for operation at a pressure of 3.35 bar.



2.4 Air Supply Requirements

If the appliance is mounted in a compartment/cupboard which conforms to the minimum service clearances (see page 7), no purpose made ventilation is required.

2.5 Gas Supply

Installation pipes should be fitted in accordance with BS 6891. Pipework from the meter to the appliance must be of adequate size. Pipes of a size smaller than the appliance inlet gas connection should not be used.

The complete installation including the meter must be tested for soundness and purged as described in the above code. The gas connection to the appliance is Rc ½ (½ in. BSP) and is situated at the rear of the base at the left hand side.

2.6 *Electrical Supply*

a. Wiring external to the appliance must be installed in accordance with current I.E.E. Wiring Regulations and any Local Regualtions which apply.

b. The supply cable must be PVC insulated 3-core 0.75 mm (24/0.2 mm) to BS 6500 Table 16.

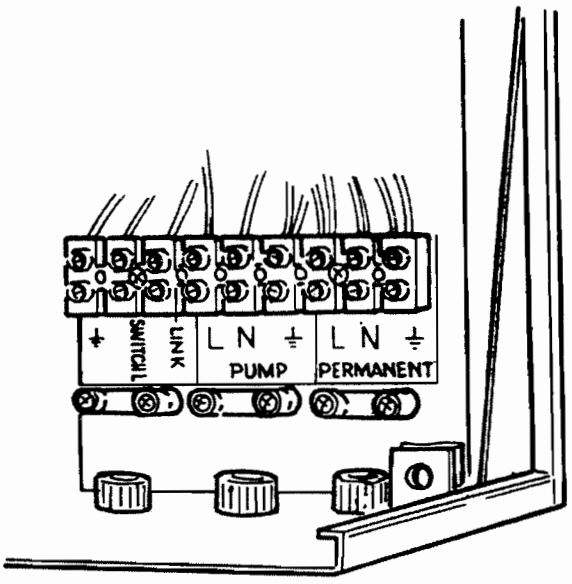
c. Power consumption of the appliance is 55 W (max.). The supply must be 240V~ 50Hz and through an unswitched shuttered socket outlet and 3A fused 3-pin plug. Both complying with the requirements of BS 1363. Alternatively a 3A fused double pole isolating switch may be used, having a minimum contact separation of 3 mm in all poles, servicing only the appliance and system controls.

d. Any means for disconnecting the appliance from the electricity supply must have a contact separation of at least 3 mm in all poles.

e. The boiler may be installed in any room or internal space, although particular attention is drawn to the requirements of the current I.E.E. Wiring Regulations, and in Scotland, the electrical provisions of the Building Regulations in Scotland, with respect to the installation of the boiler in a room or internal space containing a bath or shower. Where a room-sealed appliance is installed in a room containing a bath or shower, any electrical switch or appliance control, utilising electricity should be so situated that it cannot be touched by a person using the bath or shower.

f. Wiring connection is made through the grommets at the rear of the base at the right hand side.

g. This appliance must be earthed using the terminals supplied.



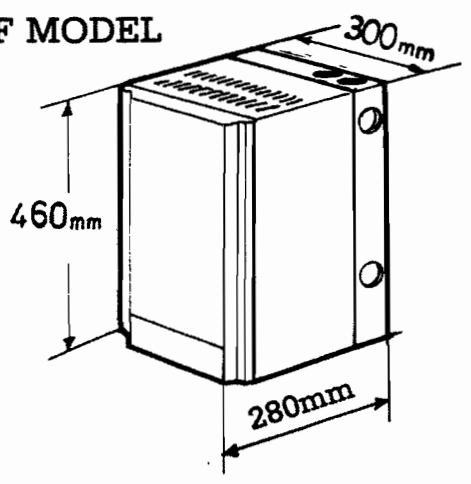
2.7 *Technical Data*

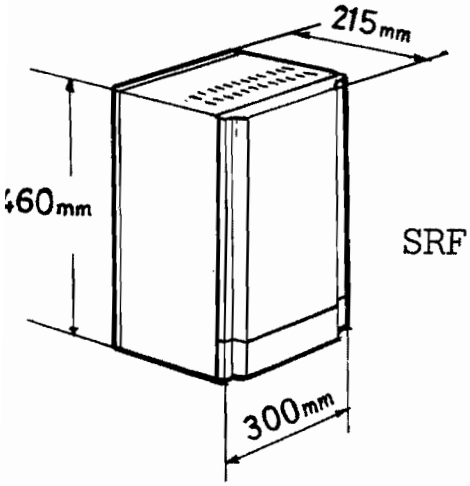
HEAT INPUT & OUTPUTS

a. MDF - 300mm Flue
Nominal heat input = 14.51kW
Nominal heat output = 11.72kW
Burner press (hot) = 4.3mb ± 0.5mb

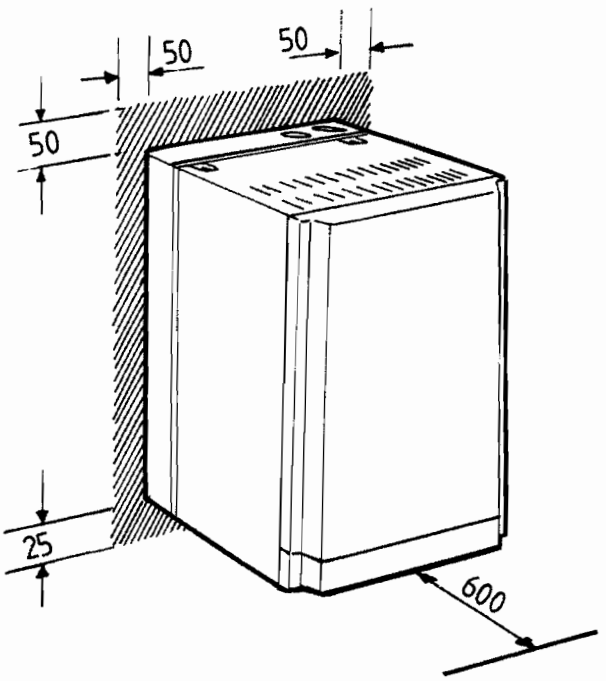
b. MDF — Max Flue Length
Nominal heat input = 14.51kW
Nominal heat output = 11.72kW
Burner press (hot) = 4.3mb ± 0.5mb
Injector — 6 x 1.7mm dia. — Stamped M-40

MDF MODEL





SRF MODEL



MAXOL				
MICROTURBO 40H MDF (MULTI-DIRECTIONAL FLUE) FANNED FLUED CENTRAL HEATING BOILER BURCO DEAN APPLIANCES LIMITED Part No: 58407 Issue D.				
GAS INLET PRESSURE: 20mbar.	BURNER PRESSURE: 4.3mbar ±0.5mbar.			
ELECTRICAL DATA: 230V~ 50Hz.	NOMINAL INPUT: 14.5kW. NOMINAL OUTPUT: 11.7kW.			
FUSED AT 3A.	INJECTOR: 6 x 1.7mm DIA. HEX. – 40M.			
GC No: 41.202.20	MAXIMUM HEAD: 30m MINIMUM HEAD: 1m			
SERIAL No: 197–	NATURAL GAS ONLY			
This appliance is NOT adjustable for heat input.				
Manufactured by: Burco Dean Appliances Ltd., Burnley, Lancashire. BB12 6AL.				
CE 86/AP/054 0086	GB IE	GAS TYPE CAT. I_{2H}	FLUE TYPE CAT. C_{12}	

MAXOL				
MICROTURBO 40S RF (REAR FLUE) FANNED FLUED CENTRAL HEATING BOILER BURCO DEAN APPLIANCES LIMITED Part No: 59021 Issue C.				
GAS INLET PRESSURE: 20mbar.	BURNER PRESSURE: 2.6mbar ±0.5mbar.			
ELECTRICAL DATA: 230V~ 50Hz.	NOMINAL INPUT: 14.5kW. NOMINAL OUTPUT: 11.7kW.			
FUSED AT 3A.	INJECTOR: 6 x 1.9mm DIA. HEX. – 40.			
GC No: 41.202.05	MAXIMUM HEAD: 30m MINIMUM HEAD: 1m			
SERIAL No: 236–	NATURAL GAS ONLY			
This appliance is NOT adjustable for heat input.				
Burco Dean Appliances Ltd., Burnley, Lancashire. BB12 6AL.				
CE 86/AP/032 0086	GB IE	GAS TYPE CAT. I_{2H}	FLUE TYPE CAT. C_{12}	

c. SRF — All Flue Length
Nominal heat input = 14.51kW
Nominal heat output = 11.72kW
Burner press (hot) = 2.6mb ± 0.5mb
Mean heat output = 40,000 Btu/h — S.R.F./M.D.F

d. Time for 100l of gas = 4min 20secs
Time for 1ft³ of gas = 74 secs
CV = 38MJ/cubic metre
Mean gas rate = 1.4m³/hr.

e. Flue duct diameters MDF = 50mm
SRF = 50mm
Projection through the wall = 25mm

f. Injector SRF — 6 × 1.9mm dia. — Stamped 40S.
MDF — 6 × 1.7mm dia. — Stamped 40M.

g. Core drill diameter required for flues - 65mm MDF
- 65mm SRF

h. Weight — 15.5 kg (34 lb)
Water capacity — 0.4 l (0.09 gal.)
Static Head — Min. 1m (3ft)
— Max. 30m (100ft)

i. **Thermostat Settings**
Min (Posn. 1) — 59°C
Max (Posn. 5) — 82°C
The recommended flow through the boiler is 16 l/min minimum.

j. **Minimum Clearance Required for Servicing.**
Top — 50mm (2in)
Base — 25mm (1in)
Sides — 50mm (2in) *
Front — 600mm (24in)
5mm (0.21in) - behind openable cupboard door.

k. **Additional Minimum Clearance Required for Flueing.(MDF)**
This clearance depends on the direction of the incoming flue pipes.
N.B. If the appliance is to be fitted in a kitchen cabinet see section 5.2.5.

Flue pipes from:	Min. dist. to wall or surface
LHS	250mm between RHS & wall
RHS	150mm between LHS & wall
Top	300mm between Top & Ceiling
Bottom	400mm between Bottom & floor

* **N.B.** The minimum flue length with the MDF is 300mm. This must be taken into consideration when installing the appliance with wall thickness of less than 250mm as the minimum side clearance of 50mm required for servicing will increase correspondingly. e.g. Wall thickness — 100mm — min. clearance is 200mm.

l. The data badge is located on the inside of the case and has the information shown opposite.

m. This boiler requires external controls to work at its optimum and prevent wasteful cycling at the boiler thermostat. Maxol recommend a timer control with separate room and cylinder thermostats. The boiler is suitable for use with thermal storage systems also.

n. Average flue temperatures of the combustion products = 130°C above ambient temperature.

p. The maximum vertical flue length on the MDF is 1.5 metres to the first 90° bend.

3 *Air Inlet/Flue Exit Terminal Location*

a. The air inlet and flue exit terminals must be installed according to the recommendations of BS 5440 Part 1 and be installed sufficiently close to each other on the same wall to be located in sensibly similar wind conditions.

b. The terminals must be positioned on the outside of the building and must allow the free passage of air across them at all times.

c. Avoid positions where the terminals are adjacent to projections; particularly under a balcony or immediately adjacent to a drain pipe.

d. The position of the outlet terminal must ensure that products of combustion produced from the boiler cannot enter the building or any adjacent building through windows, doors or any other means.

e. Acceptable flue terminal positions are indicated in the diagram.

f. **Both terminals must be positioned on the same wall.**

g. **The minimum distance between centres of the terminals (MDF only) is 150mm. There is no maximum distance.**

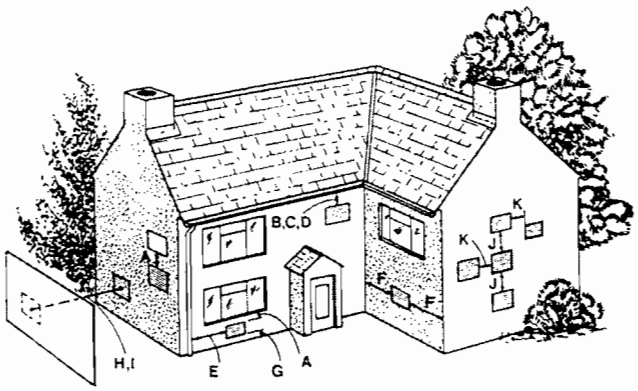
h. If the boiler is fitted into a timber framed building — consult British Gas publication "Guide for Gas Installations in Timber Framed Housing DM2" or your local Gas Region.

i. Where the lowest part of either flue terminal is fitted less than 2 metres (6.6 ft.) above ground, a balcony, or above a flat roof to which there is access then the flue terminal/terminals must be protected by a terminal guard, available from Maxol.
Ensure the terminal guard is fitted centrally.

j. The terminal guard is supplied with three fixing screws & rawlplugs. Fit the guard centrally over the flue pipe and secure with the plugs and screws provided.

N.B. With the minimum flue outlet/inlet distance of 150mm the flue terminal guards will touch if both are fitted.

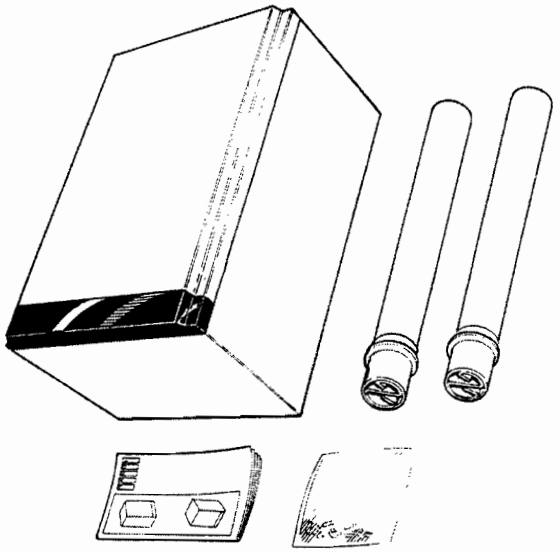
k. The outlet flue terminal will produce a plume of water vapour and also moisture droplets.
This should be considered when positioning the flue terminal eg. over a door.
This is a normal feature of a high efficiency appliance.



Terminal Position		Minimum distance
A	: Directly below an openable window or other opening e.g. an air brick.	300mm
B	: Below gutters, soil pipes or drain pipes	75mm
C	: Below eaves	200mm
D	Below balconies	200mm
E	From vertical drain pipes and soil pipes	75mm
F	: From internal or external corners	75mm
G	: Above ground or balcony level	300mm
H	: From a surface facing a terminal	600mm
I	. From a terminal facing a terminal	1200mm
J	: Vertically from a terminal on the same wall	1500mm
K	: Horizontally from a terminal on the same wall	300mm

4 Packaging

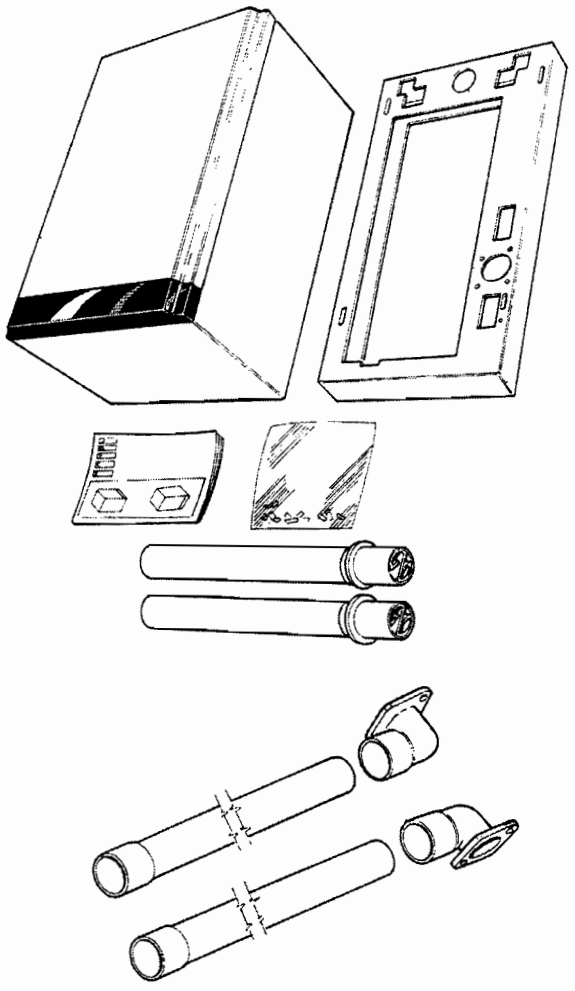
The boiler is available in two forms:



4.1 SRF Rear Flueing Model

178mm (7in) — 381mm (15in) the standard carton includes:

(i) Boiler
(ii) Flue Terminals — 2 off 381mm (15″)
(iii) Installation & Servicing Instructions
(iv) Users Instructions
(v) Plastic Bag Assembly



4.2 MDF Side/Top/Base Flue Model

— Packaged in one carton with extra flue extension kits available if required including:

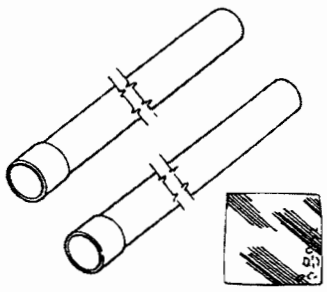
(i) Boiler
(ii) Rear flue box
(iii) Installation & Servicing Instructions
(iv) Users Instructions
(v) Plastic Bag Assembly
(vi) Flue Terminals — 2 off 381mm (15″)
(vii) Inlet elbow
(viii) Exhaust elbow
(ix) 0.5mm flue pipe — 2 off (socketed)

Flue Kit Cartons Available for MDF Model:

4.2.1 1m (3'3") Extension Kit

including:

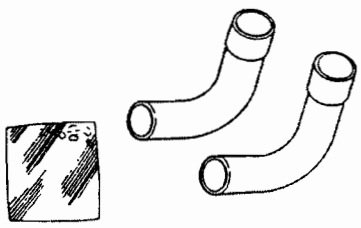
(i)	Flue pipe (socketed)	— 2 off
(ii)	Plastic Bag Assemblyy	— 1 off



4.2.2 90° Bend Kit

including:

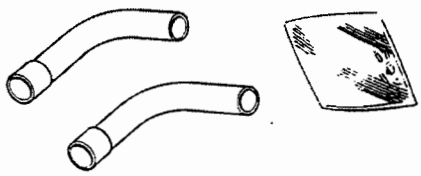
(i)	90° bend (socketed)	— 2 off
(ii)	Plastic Bag Assembly	— 1 off



4.2.3 135° Bend Kit

including:

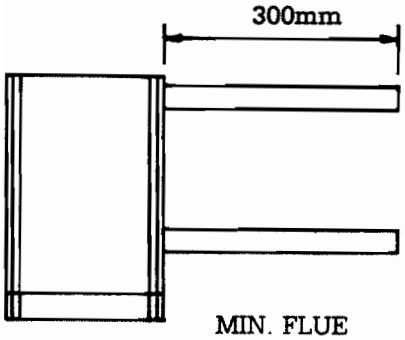
(i)	135° bend (socketed)	— 2 off
(ii)	Plastic Bag Assembly	— 1 off



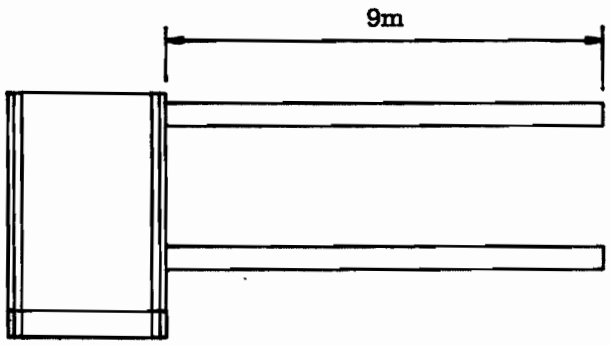
4.3 Other Optional Extras

(i)	Wall mounting clips	— 2 off
(ii)	Protective flue ducting — (1m) length	
(iii)	Protective flue duct bend, — left, right or back	— 1 off
(iv)	Ceiling mounting kit	— 1 off

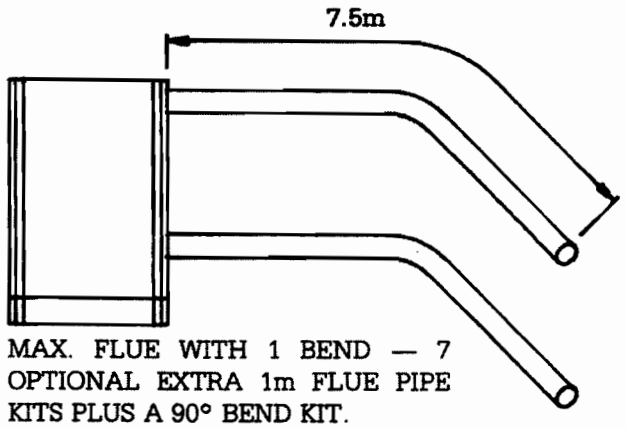
5 Installation of MDF Model *(for SRF see sect. 5.4)*



MIN. FLUE



MAX. FLUE WITH NO BENDS & 8 OPTIONAL EXTRA 1m FLUE PIPE KITS PLUS 1 × 0.5m FLUE PIPE KIT.



MAX. FLUE WITH 1 BEND — 7 OPTIONAL EXTRA 1m FLUE PIPE KITS PLUS A 90° BEND KIT.

5.1 Siting the boiler & routing the flue

Any flue length can be installed up to a maximum of 9m straight flue pipe.
For each bend (either 90° or 135°) added you must reduce the overall flue length by 1.5m.

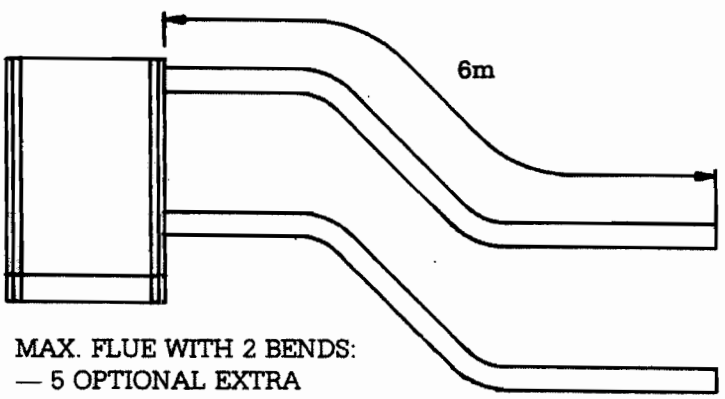
eg. Max Flue Length	No. of Bends
9m	0
7.5m	1
6m	2
4.5m	3
3m	4

The boiler supplied allows you to flue up to 0.5m plus the flue terminal length of 381mm. The maximum flue length possible using the boiler as supplied will depend on the direction of flue entry — see sect. 5.2.4.

Note the minimum flue length possible is 300mm from flue terminal to boiler case.

Some flueing examples are shown opposite.

NB NOISE — This appliance utilises a high pressure fan.
This should be considered when siting the boiler, e.g. in a bedroom.



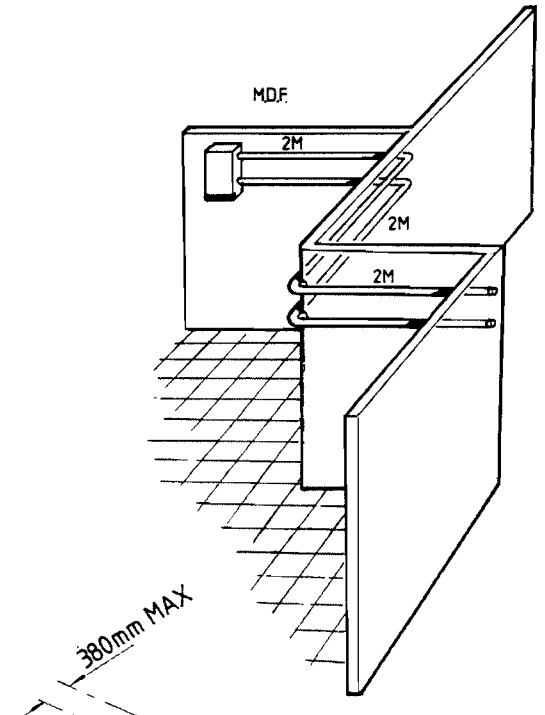
MAX. FLUE WITH 2 BENDS:
— 5 OPTIONAL EXTRA 1m FLUE PIPE KITS
— 1 × 0.5m FLUE PIPE KIT
— 2 × 90° BEND KITS.

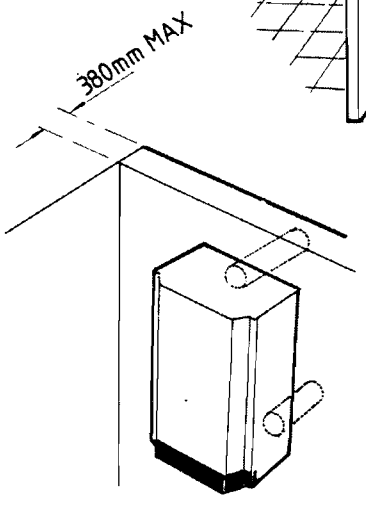
5.1.1 *Design requirements for routing the flue*

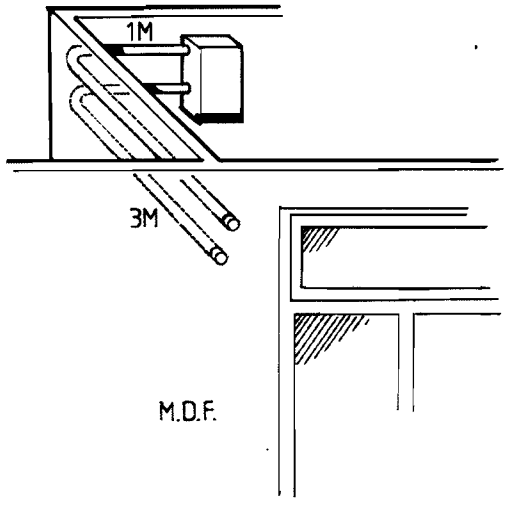
(1) Both flue pipes must enter the appliance in the same direction. The flues must terminate in a horizontal position and on the same wall of the building.
(2) The minimum distance between inlet and outlet flues is 150mm between centres at the outlet of the wall.
(3) If the inlet and outlet pipes are required to be different length a ratio of 2:1 should be used as a maximum. ie. 2m inlet 4m outlet or vice versa, but it is recommended that the flue lengths are kept to similar lengths if at all possible.

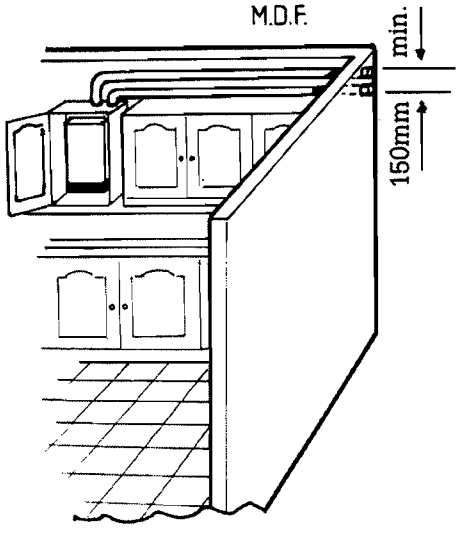
The illustrations give some examples of flue installation:
NB — When routing the flues around an external corner it is necessary to chase into the wall using a chisel etc. to allow the bends to follow the centre lines for the fixing clips. 20mm will be sufficient for the flue only. If protective ducting is used 60mm is necessary.

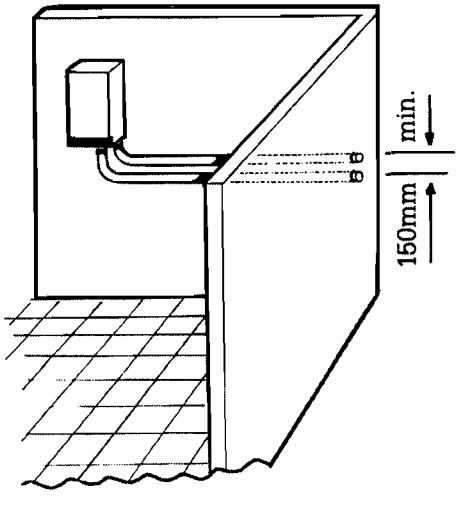
(4) It is recommended that on longer flueing installations a sketch is made of the flue runs as a guide to cutting the pipes.
(5) The exhaust flue pipe must not be closer than 25mm (1in) to combustible material. Additional clearance must be provided when passing the flue through timber walls.
Detailed recommendations on protection of combustible materials are given in BS 5440: Part 1. (Specifically sect. 8.2.3). Where the outlet flue is to be routed along or adjacent to a combustible wall a ducting kit is available to protect the wall. The kit is available in 1m lengths and also a 90° bend.
(6) The exhaust flue pipe must be routed so that it cannot be touched by the user. If this is unavoidable a ducting kit is available from Maxol to protect the flue pipe.
(7) Remember both flue pipes must enter the appliance in the same direction.
(8) Remember the flues must terminate in a horizontal position and on the same wall of the building.
(9) Installations with long flue runs may give rise to a build up of condensation in the outlet flue pipe. This must not be allowed to run back into the boiler.
When installing long flue runs angle the flue AWAY from the boiler using a 25mm drop for every 4m horizontal run.
(10) The maximum vertical flue run is 1.5 metres to the first 90° bend.

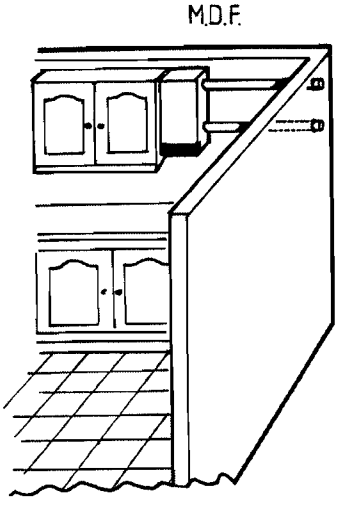




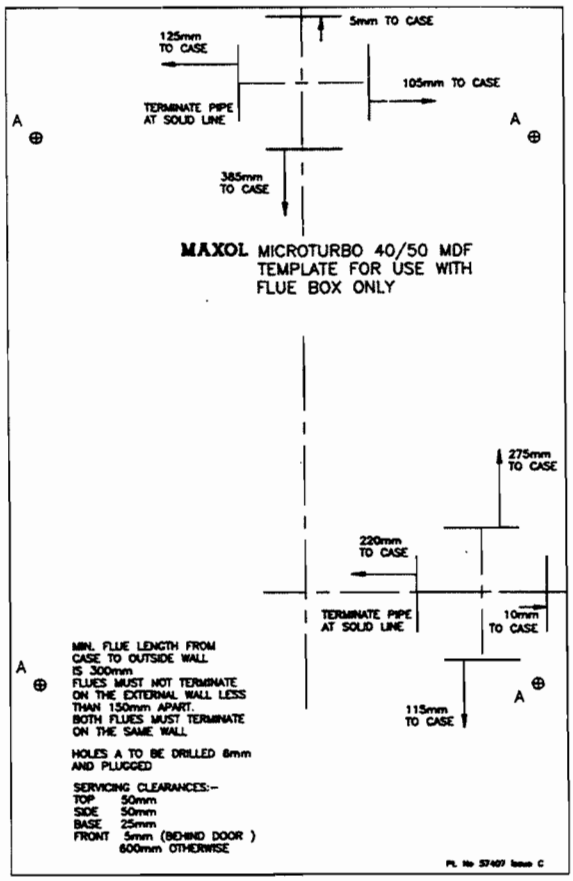








5.2 Base/Side/Top flueing arrangements (MDF)



5.2.1 Installing the Flue Box

— For a kitchen cupboard installation see sect. 5.2.5.

(i) The flue box template must be positioned at a minimum dimension from any wall or surface depending on the direction of incoming flue pipes — see below.

Flue pipes from:	Minimum distance from edge of template to wall or surface
LHS	250mm between RHS & wall
RHS	150mm between LHS & wall
Top	400mm between bottom & floor
Bottom	300mm between top & ceiling

(ii) Position and fix the template provided for fixing the flue box, drill and plug where marked using the plugs and screws provided in the plastic bag. Ensure the template is horizontal and on a flat sound wall. Note that the flue pipes should terminate at the positions shown on the template.

5.2.2 Installing the Flue pipes

(i) Remember the minimum distance between inlet and outlet flues is 150mm (6in) in any direction at the outlet of wall — between centres.

(ii) The vertical distance between the side flue connections on the boiler is 270.4mm.
The horizontal distance between Base/Top connections is 95mm.

(iii) There is no maximum distance required between the flue terminals.

(iv) After deciding where the flues will terminate drill the two flue openings using a core drill if possible. Ensure no breakout or if possible make good externally.
CORE DRILL DIAMETER 65mm.

If the flues exit close to a corner it may be easier to:

(a) drill a pilot hole from inside the property and carry out the core drill operation from outside.

or (b) use a masonry chisel to make the flue openings and make good afterwards.

Ensure that during the cutting operation the masonry produced does not cause any damage to property or injury to persons.

(v) Fix the pipe support clips along the pipe routes or fit the optional protective ducting (see separate instructions). Ensure that any bends are securely held at each end by the clips provided.

NB. No. 6 wood screws and plugs are supplied for fixing the clips.

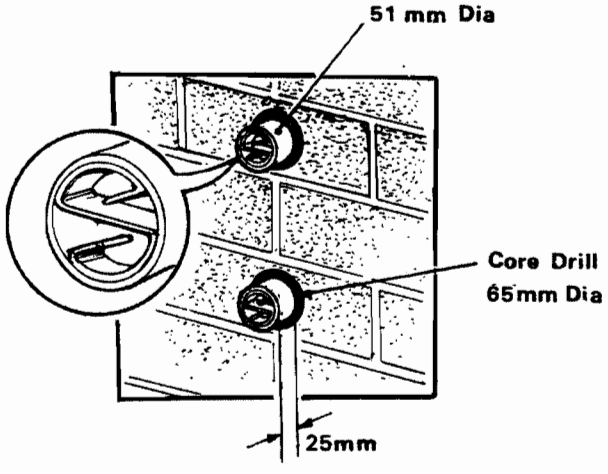
5.2.3 *Assembling the Flue Pipes*

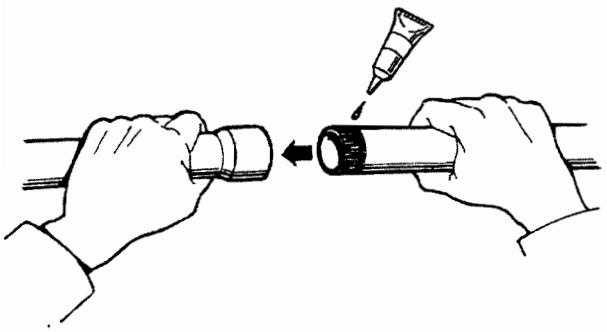
IMPORTANT

- The flue pipes must be assembled with plain end of pipe (or bend) nearest the appliance and the female socket end furthest from the appliance.
- Always adjust the length of pipes by cutting the plain end. Remove any burrs both inside and out.
- Keep the flue pipes clean and free of oil or grease or swarf.

(i) ALWAYS START AT THE WALL. Take the two lengths of flue pipe that have the flue terminal inserts and lipseals (in boiler pack). Measure the wall thickness. Then measure from the lip seal at the end nearest the outlet,and mark the wall thickness onto the pipe minus 10mm. Minimum flue length is 300mm (12in) from appliance to external wall. Check minimum service clearances laid out in Section 3 — Technical Data.
Do not cut at this stage unless the flue run requires only one length of flue pipe, — then mark and cut the ducts so that they terminate at the appropriate position on the template, as in 5.2.4. If more than one length of flue pipe is required continue.

(ii) Fit the two wall mounting fixing clips approx. 300mm (12in) or less from the wall in line with the inlet and outlet pipe runs. Feed the tie straps through the brackets.





(iii) Push the tubes through the support clips into the wall up to the mark. Visually check that the pipes have protruded through the wall by 25mm and that the lip seal is located in the wall around its circumference. If there are any gaps present make good at this stage externally.
Join the tie straps around the pipes and pull tight so that the straps prevent any movement of the flue pipes. Any excess may be cut off.

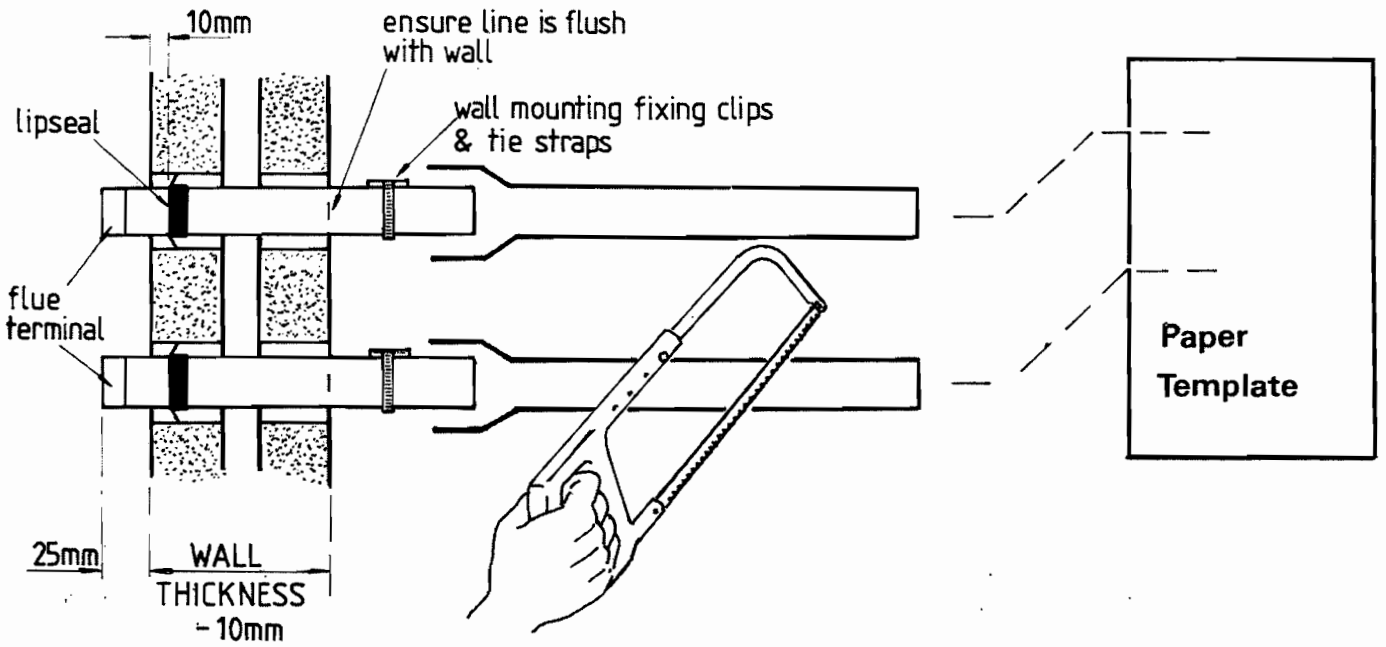
(iv) Smear a film of silicone sealant (approx. 0.5mm thick) onto the male end of the pipes (approx. 40mm along). For safe use of the silicone rubber solution see Sect. 5.2.4.1.
Repeat this operation with every male pipe end, (except the final pieces of flue pipe) as the flue pipe runs are assembled.

(v) Cut the next lengths of flue pipe or elbows for inlet and outlet, (if required) and slide into the support clips with the female end towards the wall.

(vi) Push the flue pipes firmly together ENSURING the pipes do not protrude further through the wall.

(vii) Continue this procedure until the flue runs are complete except for the last length to the flue box.

(viii) Remember on long horizontal flue runs to angle the outlet flue AWAY from the boiler so any condensate will run out from the boiler.



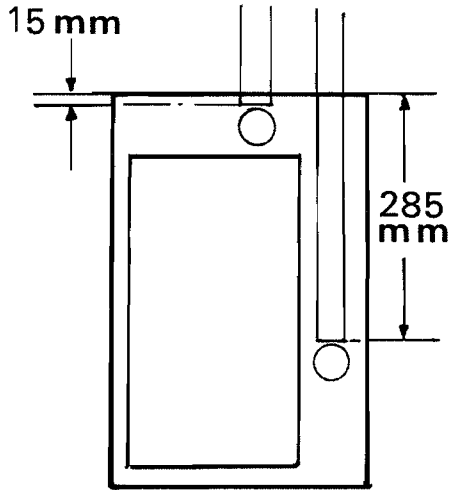
5.2.4 *Connecting the flues to the flue box*

Depending on the directions of the flue entry the following are the dimensions for flue length from elbow to case. (See diagrams).

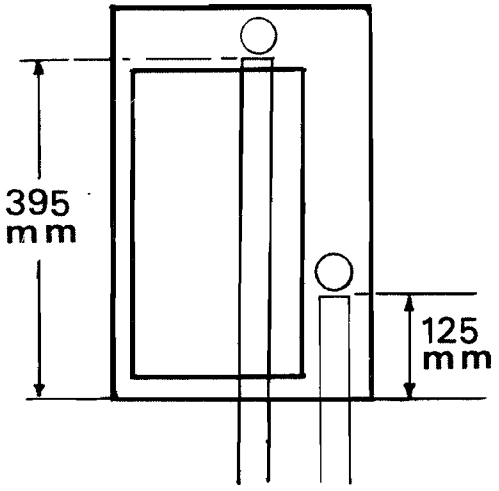
Add on the dimensions from the diagrams below to the last flue lengths before cutting and fixing (depending on the incoming flue directions).

At this stage you should have the template fixed to the wall and both flue runs completed and terminating at the positions marked on the template as required.

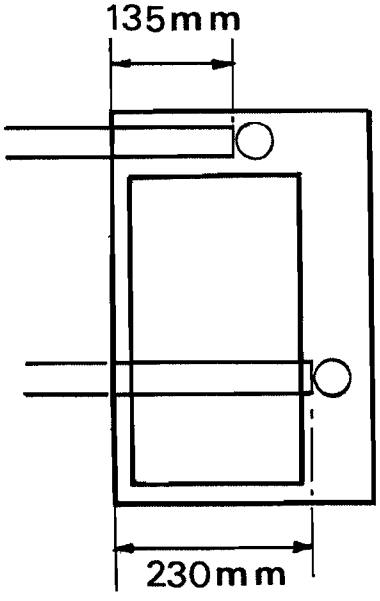
Top Entry
Inlet (upper connection) — 15mm
Outlet (lower connection) — 285mm



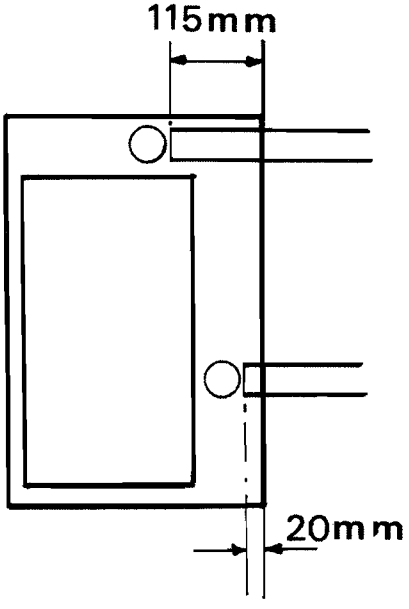
Bottom Entry
Inlet — 395mm
Outlet — 125mm



Left Hand Side Entry
Inlet — 135mm
Outlet — 230mm

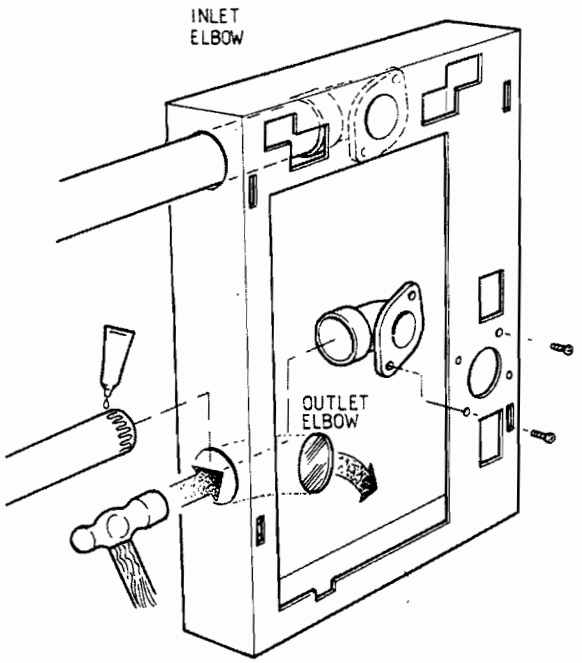


Right Hand Side Entry
Inlet — 115mm
Outlet — 20mm



5.2.4.1 *Elbows*

Ensure you have the correct elbows in your kit.



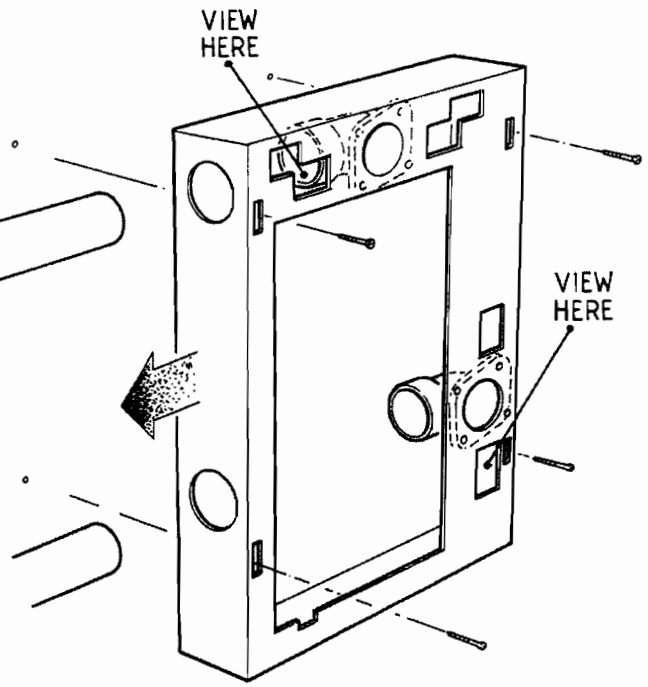
Using the silicone rubber solution

(1) Wear gloves and/or goggles where there is a risk of accidental contact.
(2) Store below 30°C and use in a well ventilated area.
(3) If any silicone is spilt wipe any excess up with a soft cloth and allow to cure. Then scrape up any excess.

(i) Smear a film of silicone (approx. 0.5mm thick) onto the ends of the pipes, (approx. 20mm along).
(ii) Remove the template.
(iii) Take the flue box, take the elbows and align the elbows to their required orientation with the two fixing screws. Inlet elbow at the TOP, outlet elbow at the BOTTOM.

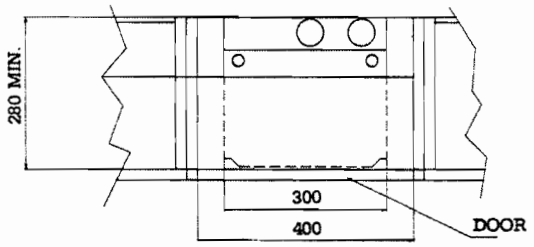
NOTE — the elbows cannot be fitted incorrectly.

(iv) Carefully knock out the two plates where the flues will be entering the box and discard. This is best achieved by tapping the disc with a hammer away from the joining tabs then twist loose with finger and thumb.
(v) Slide the flue box over the flue pipes and locate the flue pipes fully into the elbows ensuring a good seal. Secure the flue box to the wall using the screws provided. The elbows may be viewed through the front box to ensure correct location.



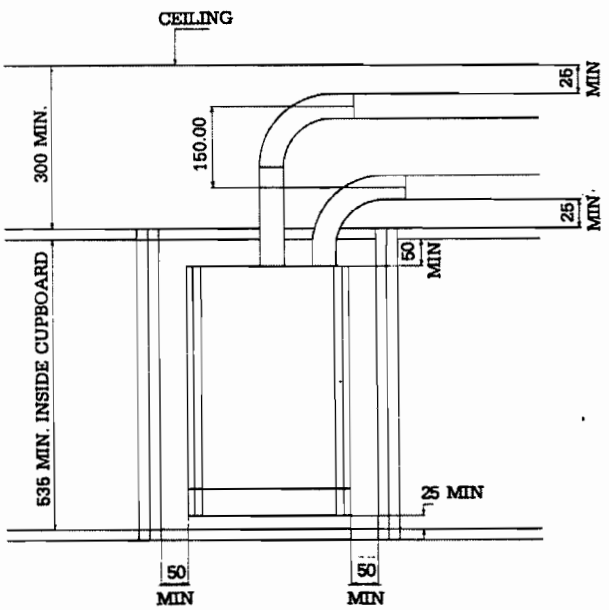
5.2.5 *Additional requirements for the installation of the Microturbo MDF in a kitchen cabinet*

The Microturbo MDF has been specifically designed to fit into a kitchen wall cabinet which must be at least 535mm high (internally) and 400mm wide (internally). The boiler must be fixed to the rear wall and **not** the back panel of the unit. (See diagram).
If the flues are to be routed along the top of the kitchen unit a minimum distance of 320mm is required between the ceiling and the unit top.
The flue outlet pipe must be kept a minimum distance of 25mm from any combustible surface.

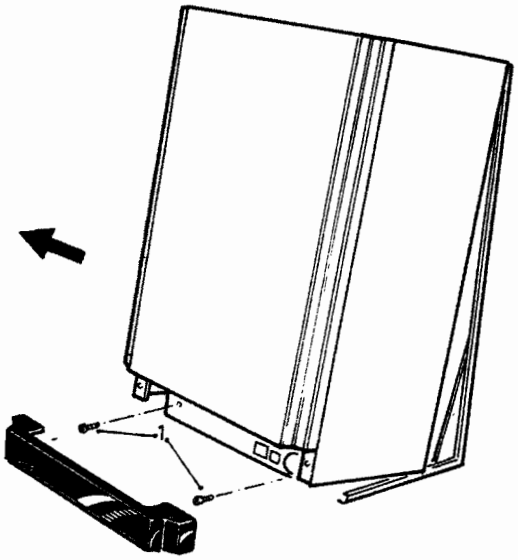


5.2.5.1 *Installing the Flue Pipes & Box — KITCHEN CABINET ONLY*

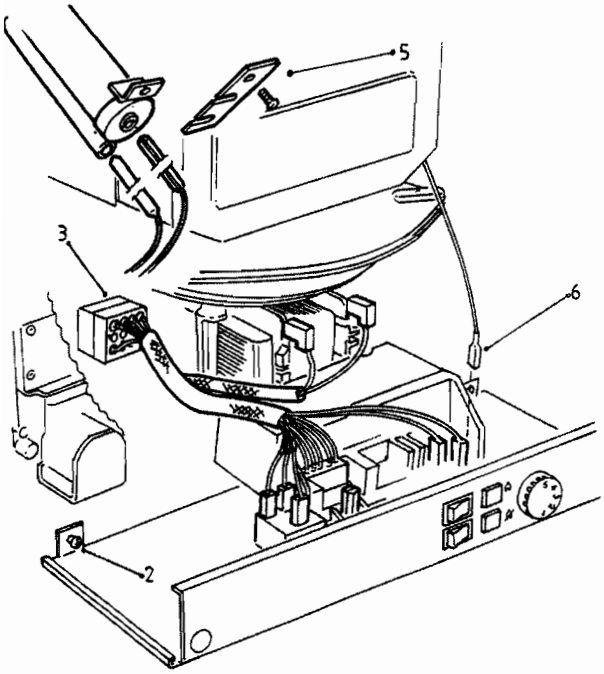
As there may be insufficient room to enable the flue box to be installed as in the previous text, it may be easier to introduce the last flue lengths into the elbows/flue box assembly before fixing the flue box to the wall. In this case leave sufficient room to enable these flue lengths to fit into the flues fitted previously. These requirements must be taken into consideration before finalising the flue positions. The flue box must be positioned in the cabinet to cover the minimum clearances required for servicing — Sect. 3.



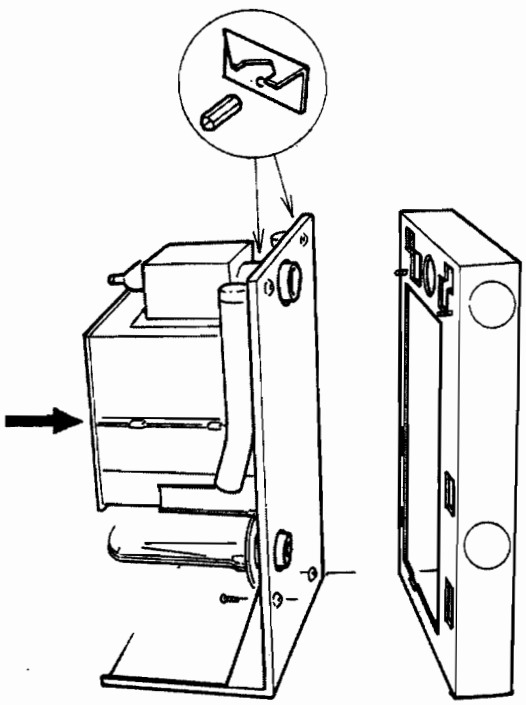
5.3 *Fixing the boiler to the Flue Box — MDF*



(i) Remove the boiler plinth, and remove two screws (1) to remove the boiler case. — The case is hinged at the top. Pull forward at the base and lift off.



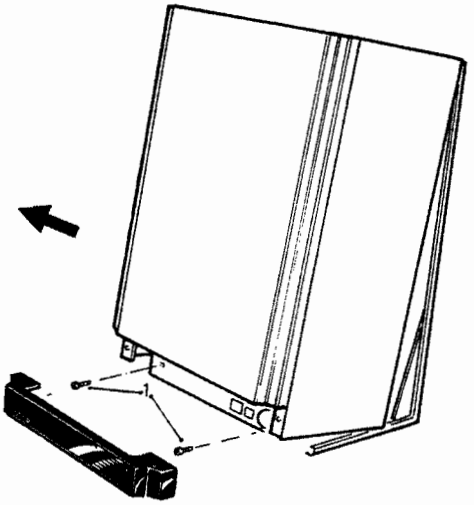
(ii) Remove the two screws securing the tray (2) and the plug in connector (3).
(iii) Unscrew the phial clipscrew and remove the clip (5) pull out both thermostat phials.
(iv) Pull out the spark ignitor lead from the control box (6).
(v) Remove tray.



(vi) Pick up the boiler and line up with the two studs on the flue box. Push the boiler into position checking that the inlet and outlet pipes enter the elbows and make a seal. Secure with the two pillar nuts and two screws provided in the boiler plastic bag assembly.

Installation of Rear Flue Model (SRF)

This model has the option of rear flueing only. The flues can be run from 180mm (7in) to 380mm (15in) as supplied with a maximum length of 610mm (24in).



5.4 Prepare the boiler

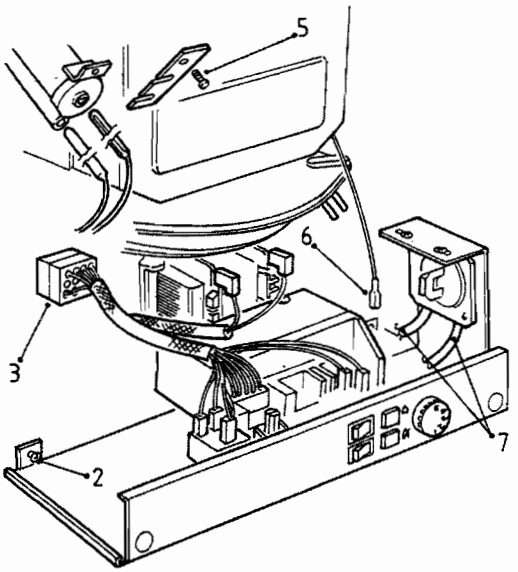
(i) Remove the boiler plinth, and remove two screws (1) to remove the boiler case. — The case is hinged at the top. Pull forward at the base and lift off.

(ii) Unscrew the two tray captive screws a quarter turn each (2). Pull the tray forward. Remove the spark ignitor (6) and plug in connector (3).

(iii) Unscrew the phial clip screw and remove the clip (5). Remove both phials.

(iv) Pull off the two pressure sensing tubes (7).

(v) Remove tray.



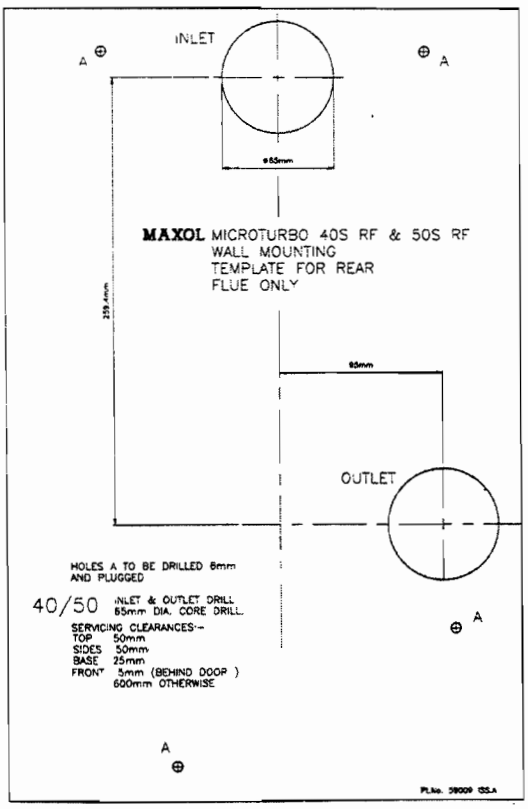
5.5 Wall Mounting Template

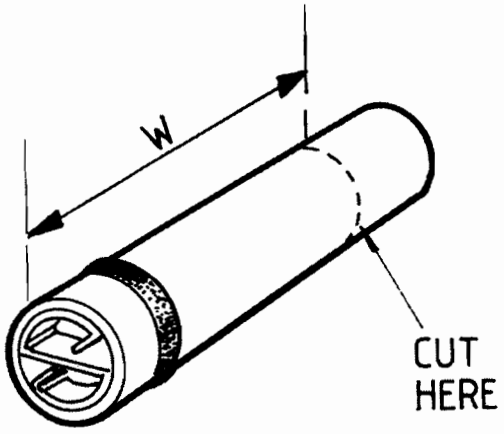
(i) Tape the template into position taking into account the minimum installation requirements detailed in section 3. Ensure the template is square.

(ii) Drill and plug the fixing holes in the positions marked using the plugs provided in the fixing kit.

(iii) Cut the two flue holes (preferably using a 65mm — 2.5in core drill) in the positions marked. Ensure both faces are clean and free from breakout — make good if necessary.

(iv) Remove template.



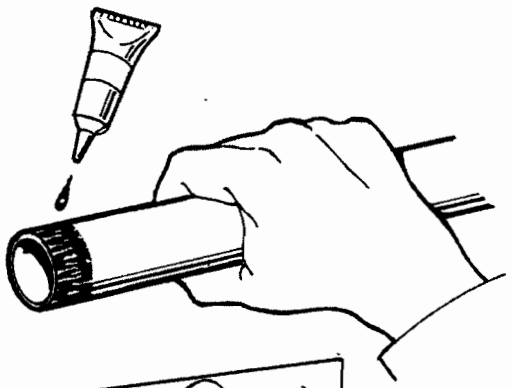


5.6 *Fixing the Flue Terminals*

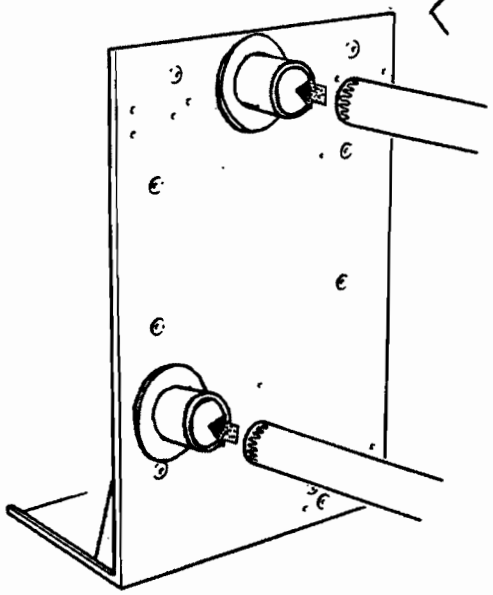
(i) Two lengths of flue pipe are provided of lengths 381mm (15in) with flue terminals at one end.

(ii) Measure the wall thickness and mark it onto the flue pipes **W**.

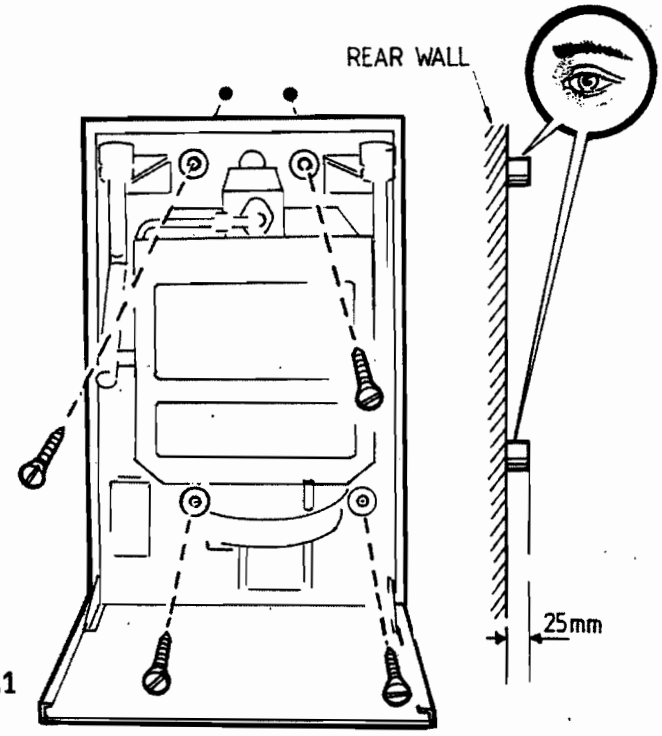
(iii) Cut the flue pipes and remove the burrs both inside and outside. CUT AT OPPOSITE END TO THE FLUE TERMINAL. Ensure any swarf is removed.



(iv) Smear a film of silicone sealant (approx. 0.5mm thick) onto the ends of the pipes (approx. 40mm along).



(v) Push the plain ends of the pipes into the two connections at the rear of the boiler. Drill through the sides of the socket with a 2.8mm drill and secure the pipes with the two No.6 screws provided.



5.7 *Wall Mounting the Boiler*

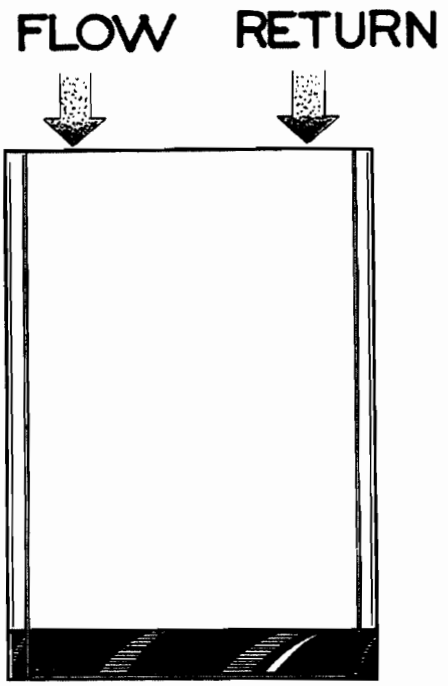
(i) Offer the boiler and flue pipes assembly to the wall and push the flues and flue seals through until the boiler meets the wall. Secure with the four screws provided in the plastic bag assy.

(ii) Visually check that the flue terminals project 25mm on the outside wall.

6 Water Connections

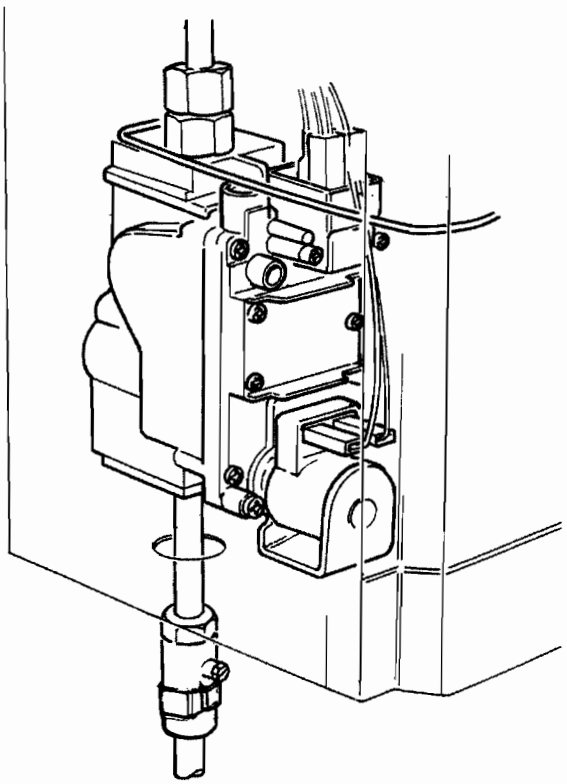
The Flow and Return Connections

These are suitable for 22mm copper pipework with compression fittings integral with the heater (Note: as despatched the ends are blanked with plastic or metal discs. These must be removed by unscrewing the nuts and substituted with the olives supplied in the ancillary components (Plastic bag.) The flow is the L.H. connection and both are situated at the top rear of the case.

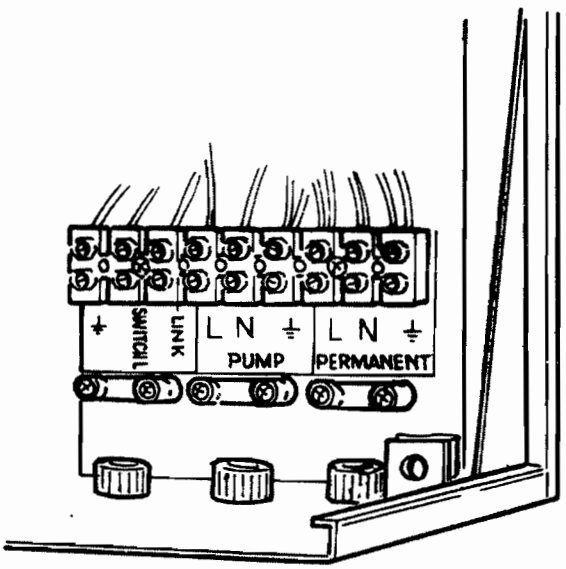


7 Gas Connection

The gas connection to the appliance is Rc ½ (½ in B.S.P.) and is situated at the rear left hand side of the base.
The Neva cock is supplied separately in the fitting kit.



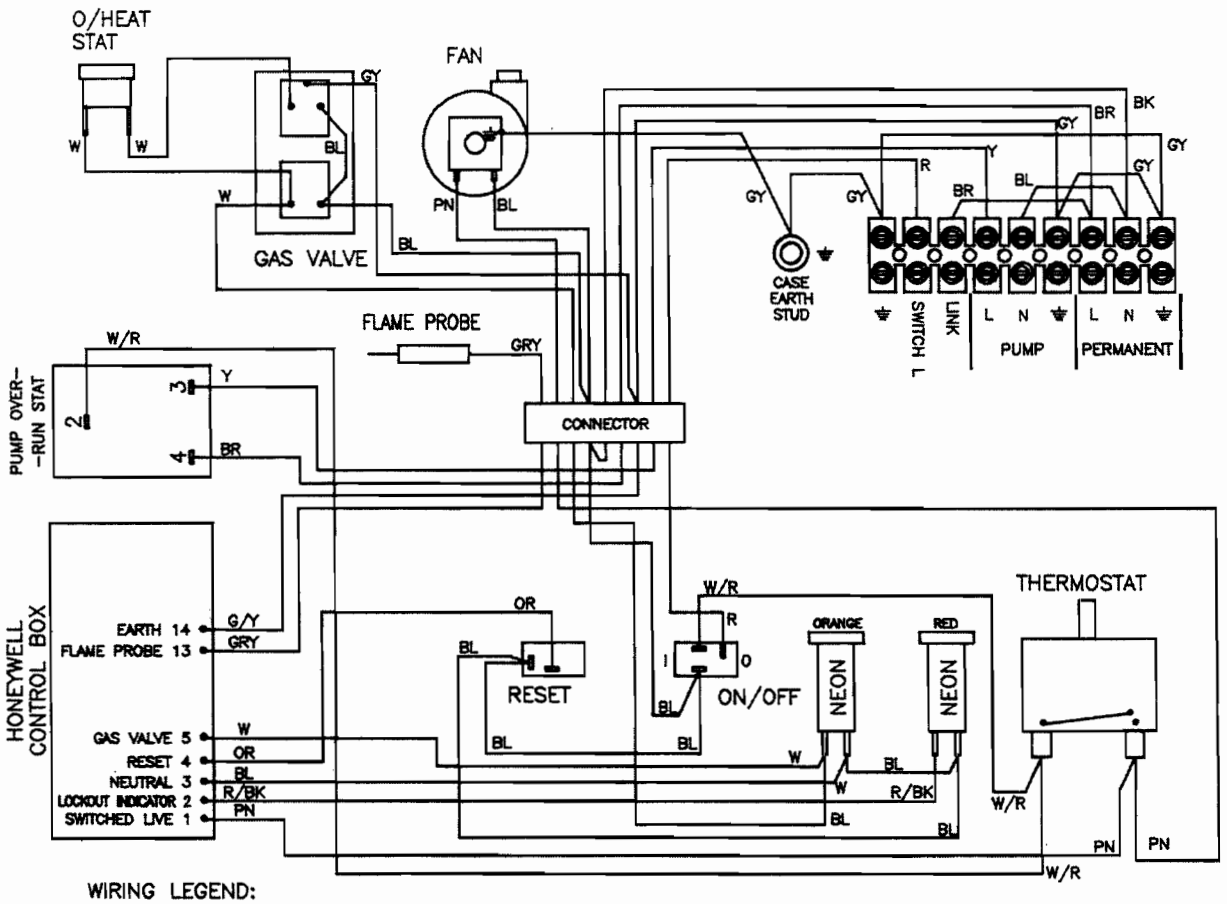
8 *Electrical Connection*



(i) Route the incoming cables to the bottom, rear, right-hand side through the grommets provided.

(ii) Connect the electricity supply cable, pump cable and any external control cable to the terminal block and clamps.

WIRING DIAGRAM — MAXOL MICROTURBO 40



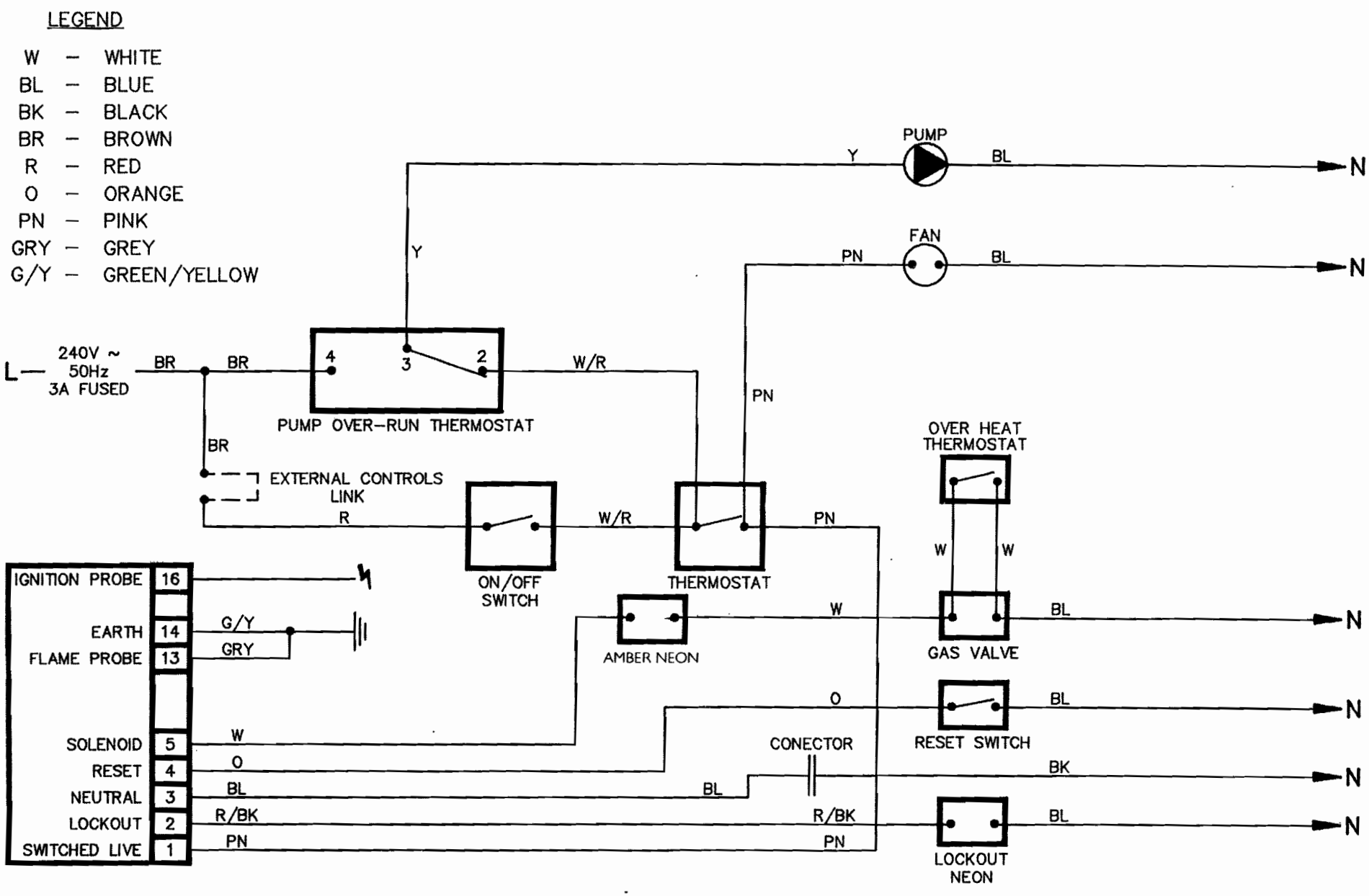
WIRING LEGEND:

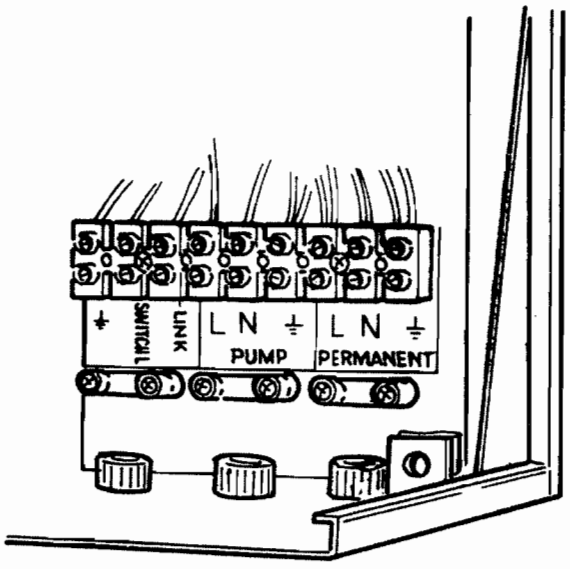
R	– RED	Y	– YELLOW
PN	– PINK	BK	– BLACK
OR	– ORANGE	BR	– BROWN
BL	– BLUE	W	– WHITE
GRY	– GREY	GY	– GREEN/YELLOW

ELECTRICAL DATA – 240V ~ 50Hz – 55W – 3A FUSED.

WARNING – DISCONNECT MAINS POWER SUPPLY BEFORE ATTEMPTING ELECTRICAL MAINTENANCE.

FUNCTIONAL FLOW DIAGRAM
MAXOL MICROTURBO 40





Notes

(a) The incoming mains supply cable is connected to the terminals L - live (Brown wire), N - neutral (Blue wire), ⏚ - earth (Green/Yellow wire).

(b) No controls must be connected directly in the supply line to the terminal marked L.

(c) The length of the conductors between the cord anchorage and the terminals must be such that the current carrying conductors become taut before the earth conductor (i.e. the earth wire must be slightly longer than, both live and neutral when connecting into the terminal block).

(d) **The pump must be connected to the terminal block at terminals (pump live), (pump neutral) and (pump earth) to allow the overrun thermostat to be operative. All wiring for the pump must be suitable for 240V.**

(e) If external controls are used remove link wire, and connect the switched live to terminal, and earth to ⏚ as in the diagram; — ensure all cables are secured.

(iii) Refit the controls tray and secure using two screws (2) as in section 5.3 MDF, section 5.4 RF.

(iv) Join together the plug in connector (3).

(v) Connect the spark ignitor lead (red sleeve) to the control box (6).

(vi) Replace thermostat phials & retaining clip.

(vii) Fault Finding — see pages 30 and 31 for fault finding charts.

On completion of an installation service/fault finding task which has required the breaking and making of electrical connections complete the following electrical safety checks with a suitable meter.

A - Earth Continuity
B - Polarity
C - Resistance to earth must be replaced.
D - Short Circuit.

NOTE — The pump overrun switches on pump L.

9 Commissioning the Boiler

(a) Ensure the system is filled with water.

(b) Check that all drain cocks are closed and any valves in the flow and return are open.

(c) Remove the screw on the burner pressure test point on the injector elbow assy. and connect a pressure gauge.

(d) Turn ON the electricity mains supply. Red lockout light may be illuminated. Press reset switch to restart.

(e) Switch the boiler mains ON/OFF switch to ON. Ensure that all external controls are calling for heat.

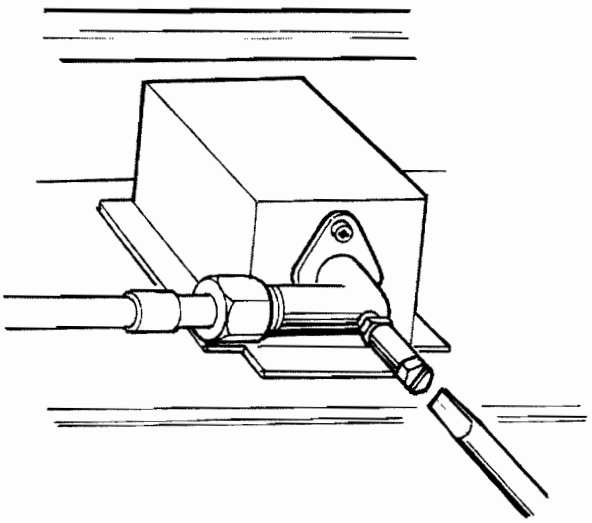
(f) The boiler mains switch should illuminate and the fan will start running. After a few seconds the solenoid valve will open and the intermittent spark will commence until the main burner ignites.

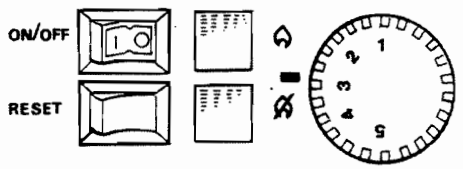
(g) Once the main burner is lit the amber neon (burner on) will illuminate.

(h) If for any reason the main burner fails to light the amber neon will extinguish and the red lockout neon will illuminate. To restart wait 20 sec., press and release the reset button. The appliance will restart from (f). See fault finding chart if this does not happen. If the appliance still fails to ignite contact the manufacturer for advice.

(i) Test for gas soundness around all the boiler gas carrying components.

(j) After 10 minutes the burner pressure can be checked. The boiler is factory set to the required input and CANNOT BE ADJUSTED. — The governor is factory sealed, do not break the seal.





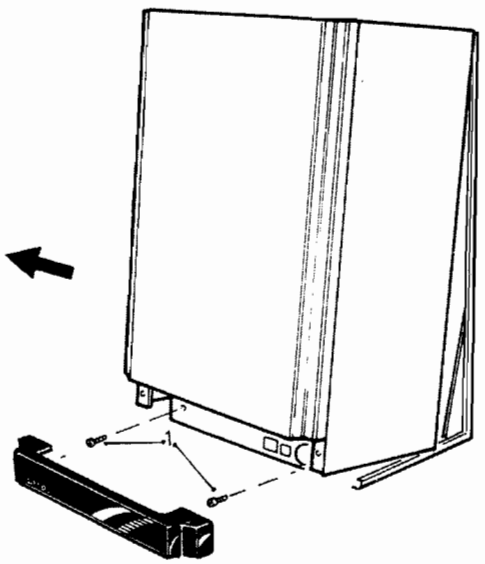
HEAT INPUT & OUTPUTS

1. MDF - 300mm Flue
   Nominal heat input = 14.51kW
   Nominal heat output = 11.72kW
   Burner press (hot) = 4.3mb ± 0.5mb
2. MDF — Max Flue Length
   Nominal heat input = 14.51kW
   Nominal heat output = 11.72kW
   Burner press (hot) = 4.3mb ± 0.5mb
   Mean heat output = 40,000 Btu/h.
   The burner pressure changes with flue length but should be between the ranges above depending on flue length.
3. SRF — All Flue Length
   Nominal heat input = 14.51kW
   Nominal heat output = 11.72kW
   Mean heat output = 40,000 Btu/h.
   Burner press (hot) = 2.6mb ± 0.5mb
   Time for 100l of gas = 4min 20secs
   Time for 1ft³ of gas = 74 secs

(k) Temporarily switch off, remove the pressure gauge and retighten test point screw. Re-light and check for gas soundness at test point screw.

(l) Turn OFF boiler ON/OFF switch.

10 Fitting the Case



(a) Lift the boiler case up to the boiler and hang the case on the top back rail at an angle.

(b) Position the case at the bottom and secure with the two screws provided.

(c) Push back the plinth onto the guide rails.

11 General Checks

(a) With the water system **hot** check all water connections for soundness, rectifying where necessary.

(b) Add the appropriate cleanser (see 2.2 j) in accordance with the manufacturer's instructions.
Turn off gas, water and electricity supplies and drain down completely to flush the system. A drain cock is fitted on the return pipe.

(c) Refill the system including a corrosion inhibitor (see 2.2 j) in accordance with the manufacturer's instructions, and vent.

(d) Balance the system and correctly set the by pass for the correct design temperature rise (11°C temperature rise across the boiler under any conditions of use).

(e) Set the boiler thermostat to the systems required setting. Normally position 4 will suffice for a conventional system.

(f) Handing over — Instruct the user in the operation of the boiler and any system controls that are relevant. Hand over both the Users and Installation and Service Instructions and stress the necessity of regular annual servicing.

Servicing Instructions

To ensure safe, efficient operation of the appliance, it is necessary to carry out routine servicing at regular intervals. The frequency of servicing will depend upon the particular installation conditions and the use to which the boiler is put, but in general, once a year should be adequate.

IMPORTANT: Before commencing any servicing or exchange of components always turn off the gas supply and isolate the electricity supply. After completing any service work always check for gas soundness. Ensure the appliance is cold.

1.0 Routine Annual Servicing

1.1 Remove the case Fig. 1

(i) Remove the boiler plinth.
(ii) Remove two screws (1), hinge forward the case and lift off.
(iii) Put the case in a safe position.

A combustion sampling point has been provided on the front cover **bottom** section. Remove the hex. screw to access. See Fig. 2.

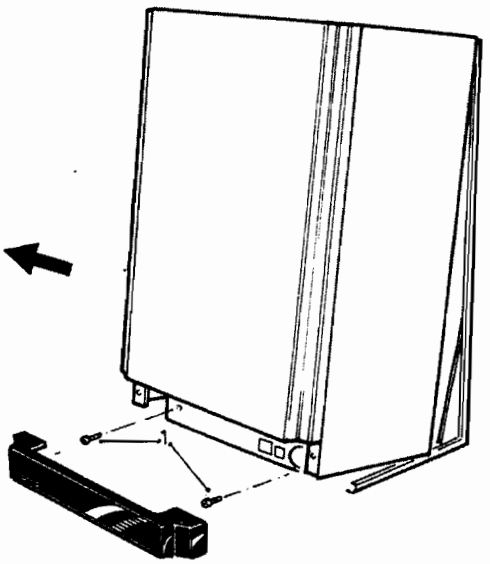


Fig. 1

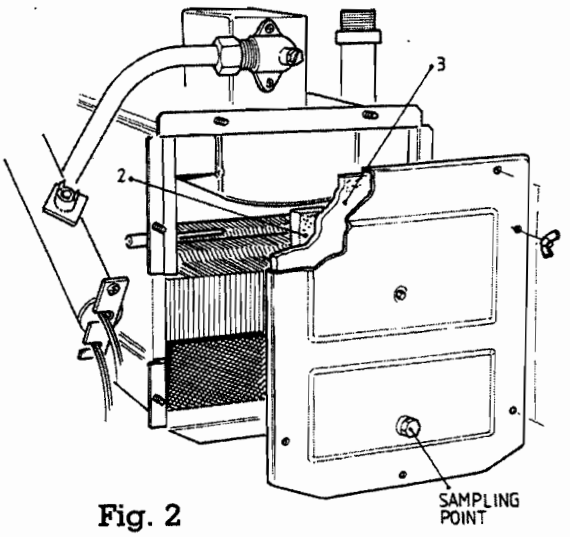


Fig. 2

1.2 Remove combustion chamber cover Fig. 2

(i) Remove the 7 brass wing nuts securing the front cover. (1)
(ii) Carefully remove the front cover and check the insulation panel (2) and also the fibre sealing gasket. (3) — replace if necessary.

1.3 Cleaning the combustion chamber Fig. 3

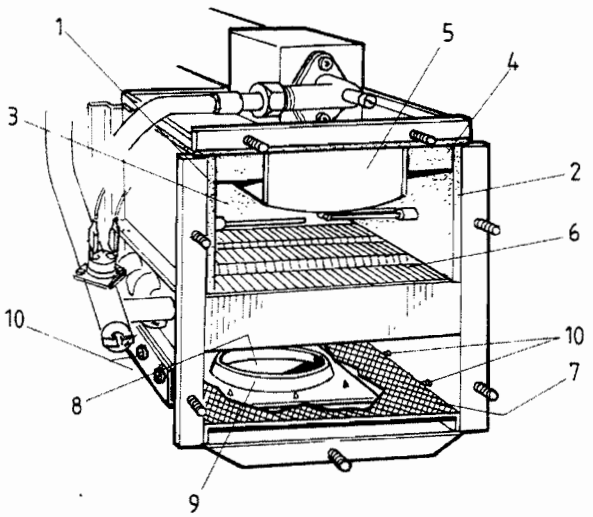


Fig. 3

(i) Check the LH, RH side and rear (1,2 & 3) insulation panels — replace if necessary.
(ii) Check the upper insulation panels (4) — replace if necessary.
(iii) Inspect and clean the burner (5) — lightly brush away any debris with a soft brush and ensure that all ports are free from obstruction.
(iv) Inspect and clean the heat exchanger (6) from above and below using a soft brush to remove any debris.
(v) Slide out the baffle (7) and inspect and clean, ensuring that the mesh is clear from obstruction.
(vi) Inspect the fan rotor (8) and fan seal (9) and clean with a soft brush if necessary.
(vii) Replace the baffle (7) sliding it between the combustion chamber base and the four screws (10).

1.4 Check the Spark & Sensing Positions Fig. 4

Ensure that the dimensions stated in Fig. 4 are still in tolerance, if necessary re-position carefully the probes taking care not to damage the ceramic insulation.
It may be necessary to remove the spark electrode to set the gap — see section 2.5.

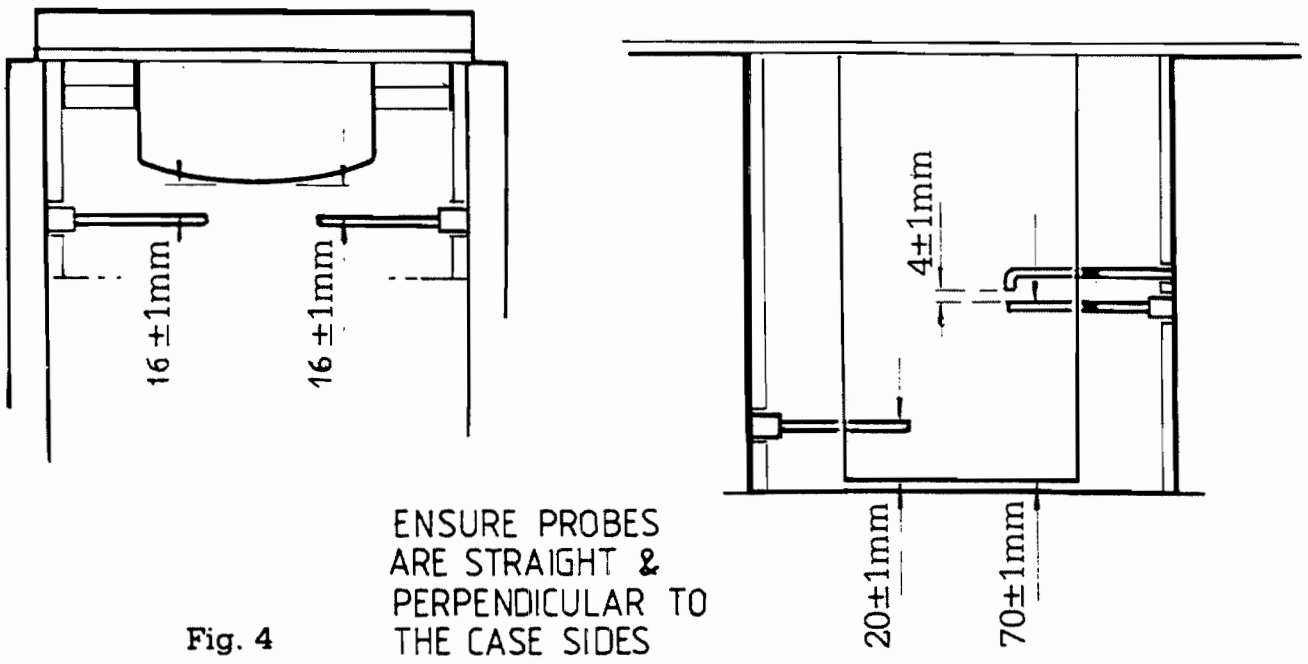


Fig. 4

1.5 *Replace the combustion chamber cover*

(i) Carefully locate the door on the seven studs and push back to the combustion chamber taking care not to damage the threads.

(ii) Re-locate the seven wing nuts and tighten fully. Check that the door is sealed completely around the combustion chamber front.

1.6 *Check and Clean the Injector Fig. 5*

(i) Disconnect the feed pipe from the injector block (1).

(ii) Remove the two screws securing the injector block to the mixing box (2).

(iii) Remove the injector block assembly and check the injector. Clean or replace if necessary.

(iv) Re-assemble in reverse order ensuring the rubber gasket (3) provides a good seal.

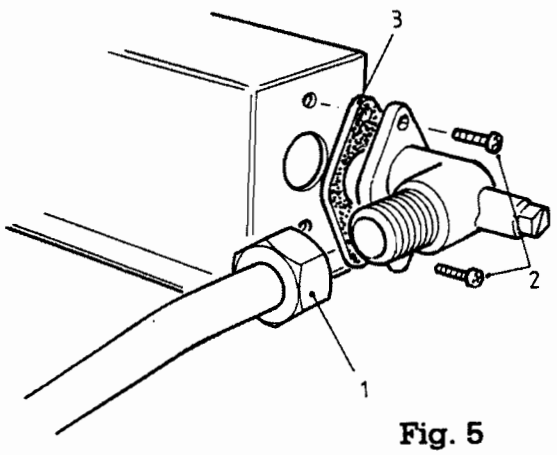


Fig. 5

2.0 Component Exchange

2.1 Control Tray removal Fig. 6

The following components are mounted on a slide out tray:

(1) Control box.
(2) Pump overrun thermostat.
(3) Boiler thermostat.
(4) Appliance switches.
(5) Amber neon and Red l.e.d. indicator lights.

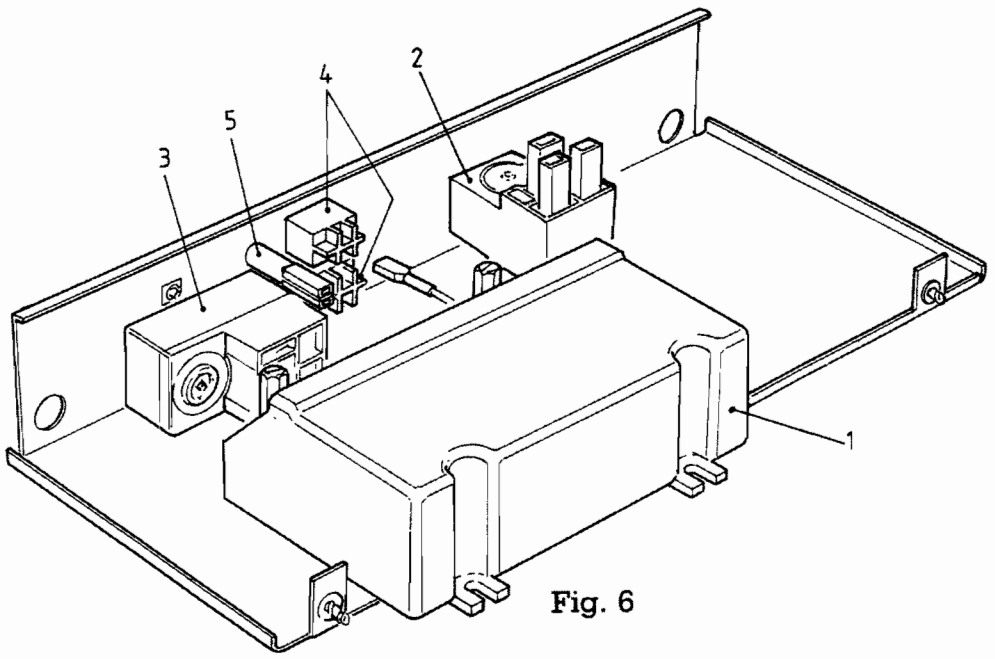


Fig. 6

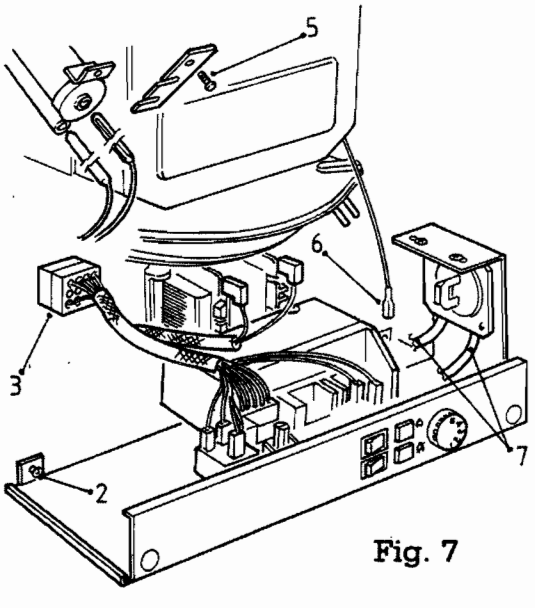


Fig. 7

To remove the tray: Fig 7

(i) Unscrew the two tray captive screws a quarter turn each (2). Pull the tray forward.
(ii) Remove the spark ignitor from the control box (6).
(iii) Remove the plug in connector (3).
(iv) Unscrew the phial clip screw and remove the clip (5) pull out both thermostat phials.
(v) Slide out the tray with the thermostat phial and move to a convenient place.
(vi) After completion of task re-assemble the tray in reverse order.

NOTE
The SRF model contains a Sifan fan
The MDF model contains an Ebm fan

2.1.1 Control Box Fig. 9

(i) Remove the plug in connector (2).
(ii) Remove the earth and flame sensing spade connectors (1).
(iii) Remove the two hex. pillar nuts (3).
(iv) Remove the box.
(v) Replace in reverse order.

NOTE
The SRF model contains a Sifan fan
The MDF model contains an Ebm fan

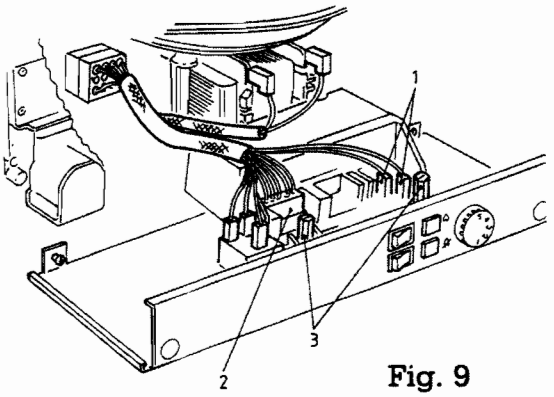


Fig. 9

2.1.2 Pump Overun Thermostat Fig.10

(i) Disconnect leads 2, 3, 4.
(ii) Unscrew from tray, (screws on tray base).
(iii) Replace thermostat & re-connect leads in correct order:-
4 - white/red, 2 - brown, 3 - yellow.

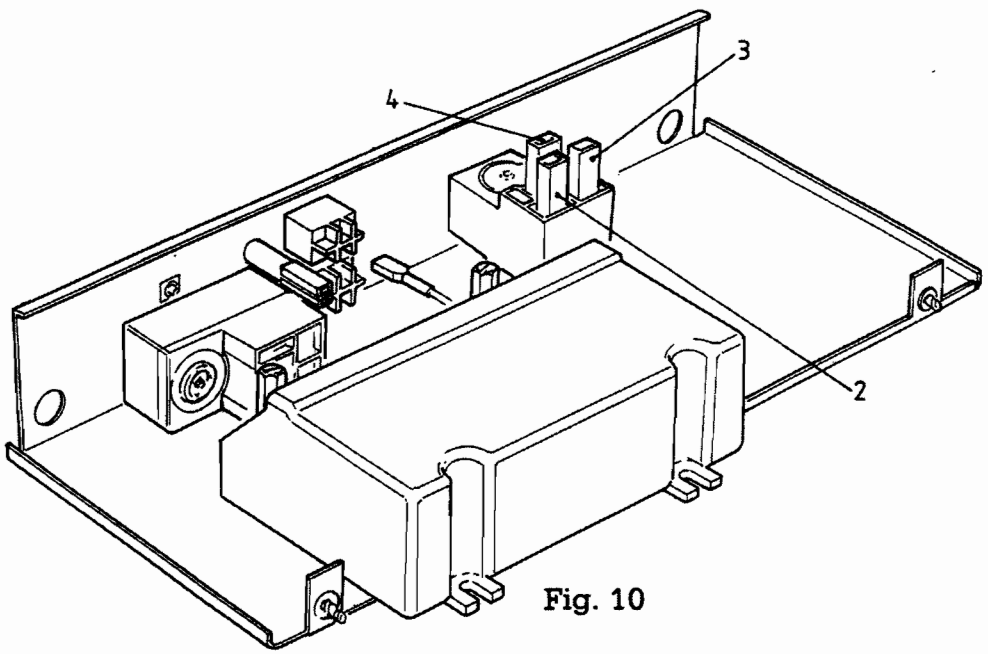


Fig. 10

2.1.3 Boiler Thermostat Fig. 10A

(i) Pull off the thermostat knob (4).
(ii) Remove the two screws (5) securing the thermostat body.
(iii) Re-assemble in reverse order ensuring the phial tube is not kinked.

2.1.4 Appliance Switches Fig. 10A

(i) Press out the switch assembly and note the position of the leads.
(ii) Remove the leads and replace the switch in the correct orientation.
(iii) Re-assemble in the reverse order using the wiring diagram if necessary to re-locate the wiring correctly.

2.1.5 Indicator Lights Fig.10A

(i) Push out the indicator assembly.
(ii) Remove the tags — noting position of the wires.
(iii) Replace the indicator ensuring correct polarity (plastic pip to the top).
(iv) Replace the tags ensuring correct polarity.
(v) Push back the indicator.

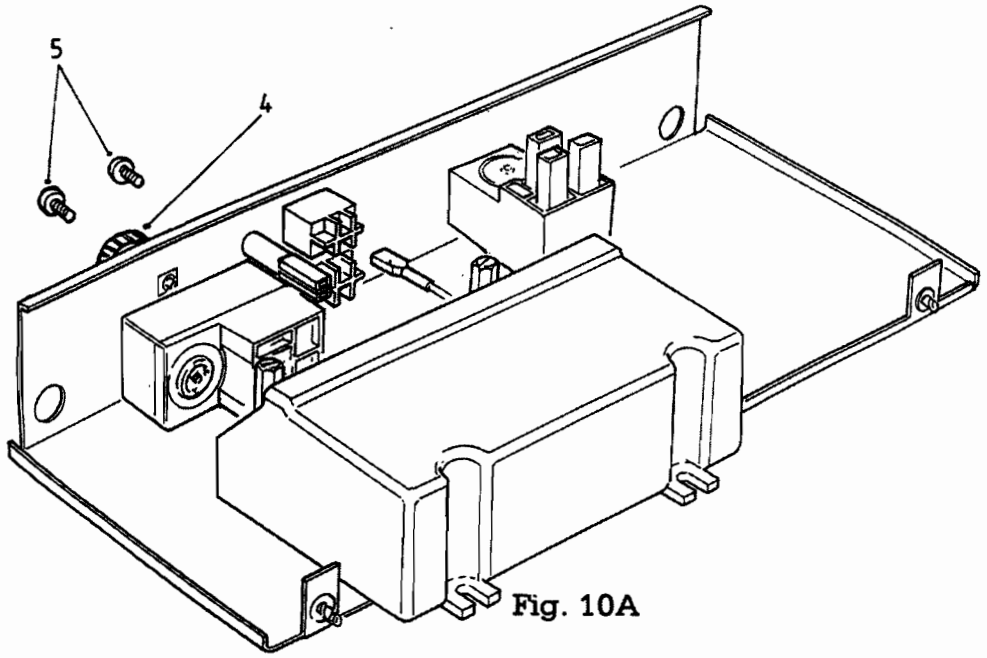


Fig. 10A

2.2.1 *Double Solenoid Valve MDF only — Fig. 11*

(i) Remove the control tray assembly as detailed in section 2.1
(ii) Disconnect the nuts fixing the sensing pipes to the combustion chamber. These are on the inlet mixing box and at the flue collector.
(iii) Disconnect the inlet connection at the Neva cock.
(iv) Disconnect the burner feed pipe from the valve top (1).
(v) Remove the wiring tags (3) noting their positions.
(vi) Remove the two fixing screws holding the bracket to the boiler.
(vii) Remove the valve and sensing pipes complete.
(viii) Remove the valve mounting bracket two screws.
(ix) Remove the sensing pipes by unscrewing the fixing nuts (2).
(x) Replace in the reverse order.
(xi) Remove the burner pressure test point and fit a manometer. Fig 12 (3).
(xii) Follow the commissioning procedure (sect. 9 (a) to (h)) — once the amber neon illuminates set the burner pressure as on the data badge. The burner pressure is adjusted as follows:

1) Remove governor cap and make sure the gas valve governor is screwed fully in. Replace governor cap to seal. Fig. 11 (5)

2) Set offset screw clockwise to decrease, anticlockwise to **increase** to **6.0**mbar +0 – 0·1mbar Fig. 11 (4).

3) Remove the gas valve governor cap and set the valve governor clockwise to increase, anticlockwise to **decrease** to **6.2**mbar +/– 0.1mbar Fig 11. (5).

4) Replace governor cap. The burner pressure should be within the manufacturer's tollerance stated on the data badge. If not contact the manufacturer.

(xiii) Check for gas soundness at this stage.
(xiv) Turn off the mains on/off switch. Remove the pressure gauge and re-tighten test point screw.
(xv) Place the thread sealing solution provided on the offset screw and replace.
(xvi) Re-light and test for gas soundness at the test point screw.

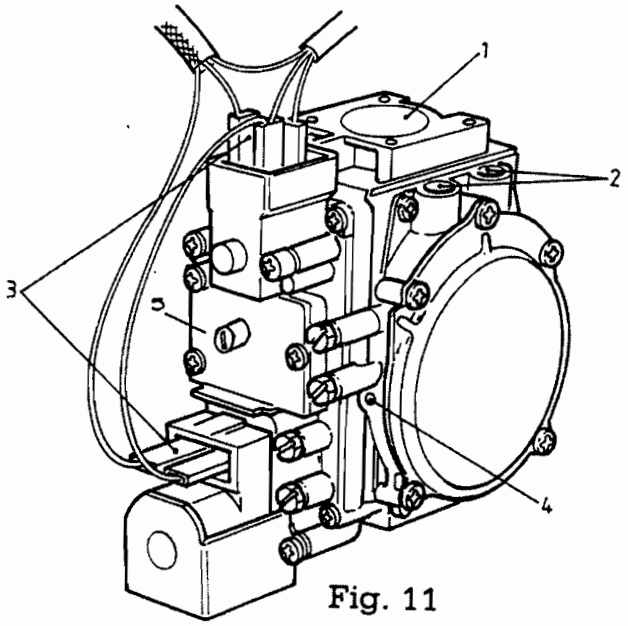


Fig. 11

2.2.2 Double Solenoid Valve Fig. 11A SRF only

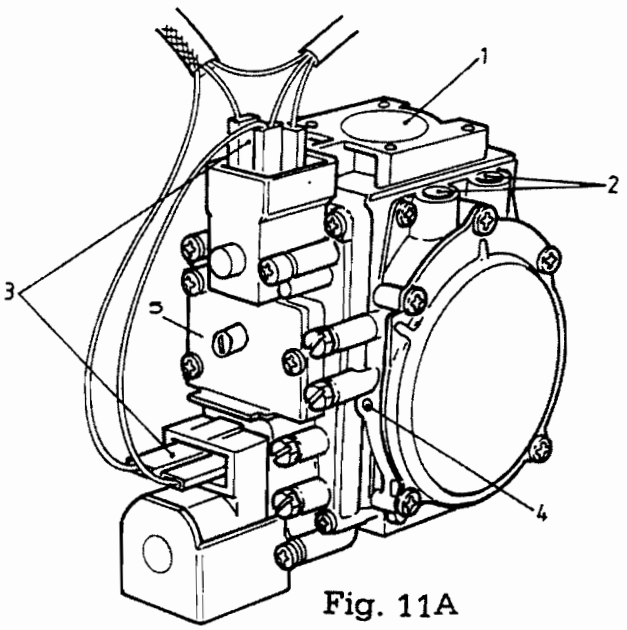


Fig. 11A

(i) Remove the control tray assembly as detailed in section 2.1
(ii) Disconnect the nuts fixing the sensing pipes to the combustion chamber. These are on the inlet mixing box and at the flue collector.
(iii) Disconnect the inlet connection at the Neva cock.
(iv) Disconnect the burner feed pipe from the valve top (1).
(v) Remove the wiring tags (3) noting their positions.
(vi) Remove the two fixing screws holding the bracket to the boiler.
(vii) Remove the valve and sensing pipes complete.
(viii) Remove the valve mounting bracket two screws.
(ix) Remove the sensing pipes by unscrewing the fixing nuts (2).
(x) Replace in the reverse order.
(xi) Remove the burner pressure test point and fit a manometer. Fig 12 (3).
(xii) Remove gas valve governor cap (5) and screw governor fully in. Replace governor cap to seal.
(xiii) Follow the commissioning procedure (sect. 9 (a) to (h)) — once the amber neon illuminates set the burner pressure as on the data badge. The burner pressure is adjusted by turning the offset screw anticlockwise to increase. (4)
SRF - 2.6mb ± 0.5 mbar
If these pressures cannot be achieved contact the manufacturers.
(xiv) Check for gas soundness at this stage.
(xv) Turn off the mains on/off switch. Remove the pressure gauge and re-tighten test point screw.
(xvi) Place the thread sealing solution provided on the offset screw and replace.
(xvii) Re-light and test for gas soundness at the test point screw.

2.3 Injector Fig. 12

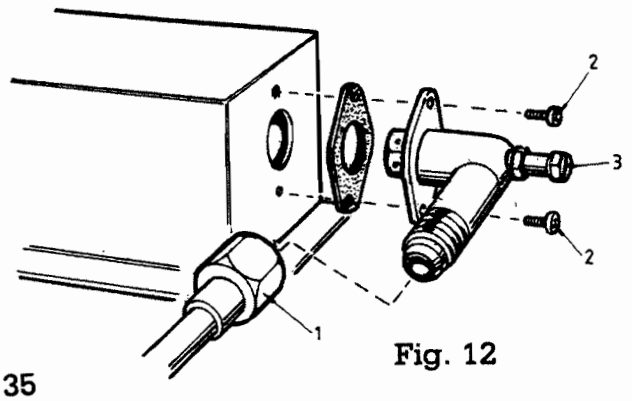


Fig. 12

(i) Disconnect the feed pipe from the injector block (1).
(ii) Remove the two screws securing the injector block to the mixing box (2).
(iii) Remove the injector block assembly and replace it in the reverse order.

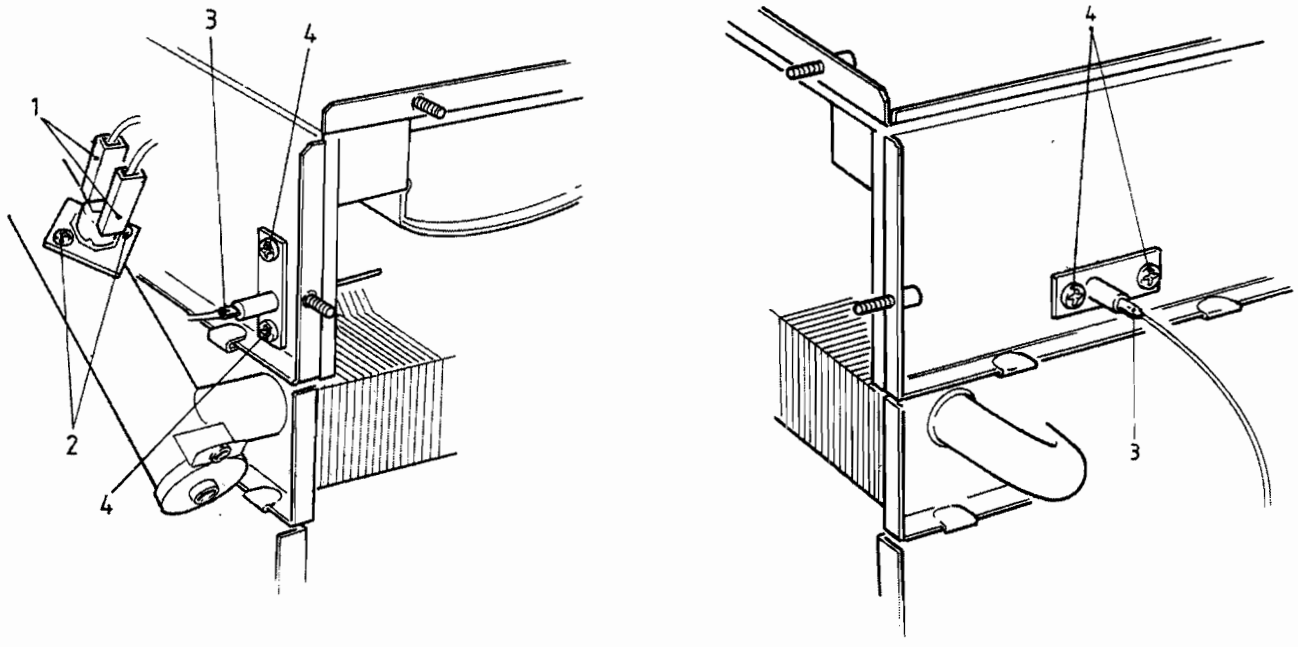
2.4 *Overheat Thermostat Fig. 13*

(i) Remove the two tags (1).
(ii) Remove two screws (2).
(iii) Replace overheat thermostat.
(iv) Re-assemble in the reverse order.

2.5 *Spark Electrode and Flame Sensing Probe Fig. 13*

(i) Remove the seven wing nuts securing the combustion chamber front cover and carefully remove taking care not to damage the fibre seal. Fig. 2.
(ii) Remove the wire tags on each probe. (3)
(iii) Remove the two screws securing each probe. (4)
(iv) Remove the probes taking care not to damage the insulation.
(v) Re-assemble in reverse order and then re-set the positions as in Fig. 4.

Fig. 13



2.6 *Burner Fig. 14*

(i) Remove the seven wing nuts securing the combustion chamber front cover and carefully remove taking care not to damage the fibre seal. Fig. 2.
(ii) Remove the top insulation panels (1). Remove the spark probes (section 2.5).
(iii) Remove the six nuts on combustion chamber top (2). SRF only remove white sensing tube.
(iv) Pull the burner down carefully and pull out taking care not to damage the top fibre seal .
(v) Re-assemble in reverse order and reset the probe positions as in Fig. 4.

2.7 *Insulation Panels*

(i) Remove the probes as in section 2.5.
(ii) Remove the burner as in section 2.6.
(iii) Pull out the left hand and right hand side insulation panels noting the cut outs at the back.
(iv) Pull out the rear panel.
(v) Unscrew the nut and washer on the front door and remove the door panel and fibre seal.
(vi) Re-assemble in reverse order taking care to align front door panels correctly and also to locate the rear panel correctly (cut out locations to the bottom).

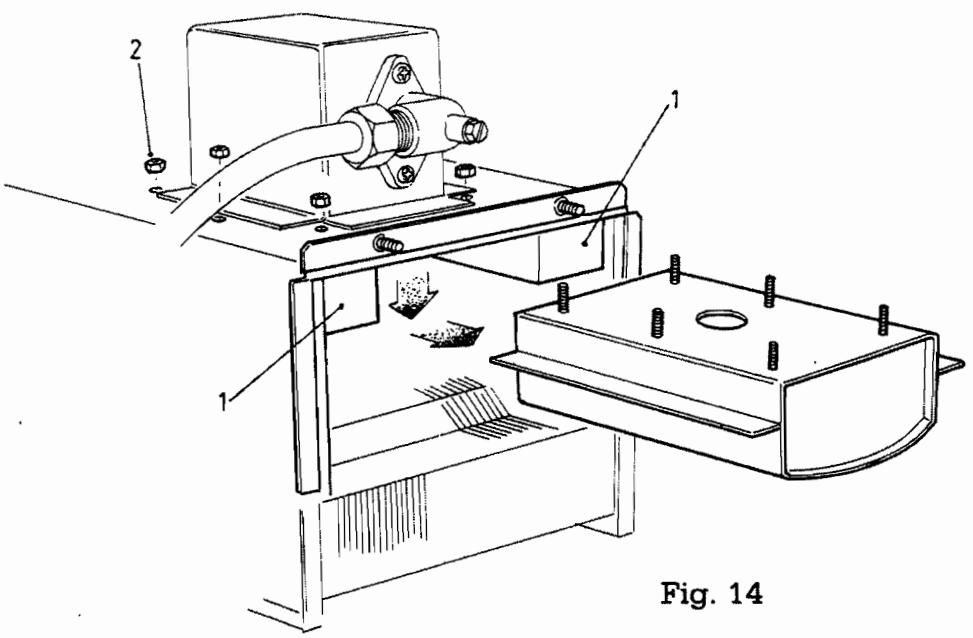


Fig. 14

2.8 Fan Fig. 15 MDF only

(i) Remove the seven wing nuts securing the combustion chamber front cover and carefully remove taking care not to damage the fibre seal. Fig 2.
(ii) Slide out the baffle (1) from between the four screws (2) and combustion chamber base.
(iii) Remove controls tray as detailed in section 2.1.
(iv) Remove the wiring tags including the earth lead from the fan.
(v) Remove the four screws (2) from combustion chamber sides.
(vi) Pull the fan assembly out of the inlet and outlet seals and remove.
(vii) Remove the two screws holding the fan mounting bracket and transfer to the replacement fan.
(viii) Pull off the fan outlet reducer and transfer to the replacement fan.
(ix) Re-assemble in the reverse order.

2.9 Heat Exchanger Fig. 15 MDF only

(i) Remove gas valve sensing pipes. Section 2.2.1 / 2.
(ii) Remove Overheat Thermostat. Section 2.4.
(iii) Remove Spark Electrode and Flame Sensing Probe. Section 2.5.
(iv) Remove Burner. Section 2.6.
(v) Remove Insulation Panels. Section 2.7.
(vi) Remove Fan. Section 2.8
(vii) Disconnect the nut (3) from the inlet pipe to the injector assembly.
(viii) Remove the two hexheaded screws from the gas valve top (2) and remove the inlet pipe Fig.11.
(ix) Drain the water system and disconnect at the flow and return union connections.
(x) Disconnect the two locknuts from the heat exchanger brackets and remove.
(xi) Remove the four combustion chamber retaining screws and remove the heat exchanger assembly.
(xii) Remove the six screws (5) on the fan seal clamp and transfer the seal and clamp to the replacement heat exchanger assembly.
(xiii) Re-assemble in reverse order.
(xiv) Check for water soundness.

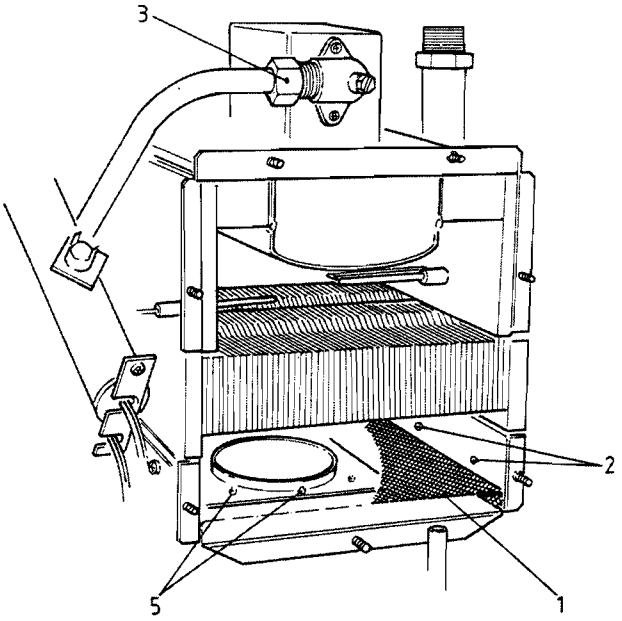


Fig. 15

2.8A Fan Fig. 15 SRF only

(i) Remove controls tray as detailed in section 2.1.
(ii) Remove the wiring tags including the earth lead from the fan.
(iii) Remove the two screws holding the RHS fan mounting bracket to the RHS of the combustion chamber.
(iv) Remove the screw holding the LHS fan mounting bracket to the bottom of the combustion chamber.
(v) Withdraw the fan and seal assembly.
(vi) Remove the two screws holding the RHS fan mounting bracket and seal to the fan. Transfer the seal and the RHS fan mounting bracket to the new fan.
(vii) Re-assemble in the reverse order.

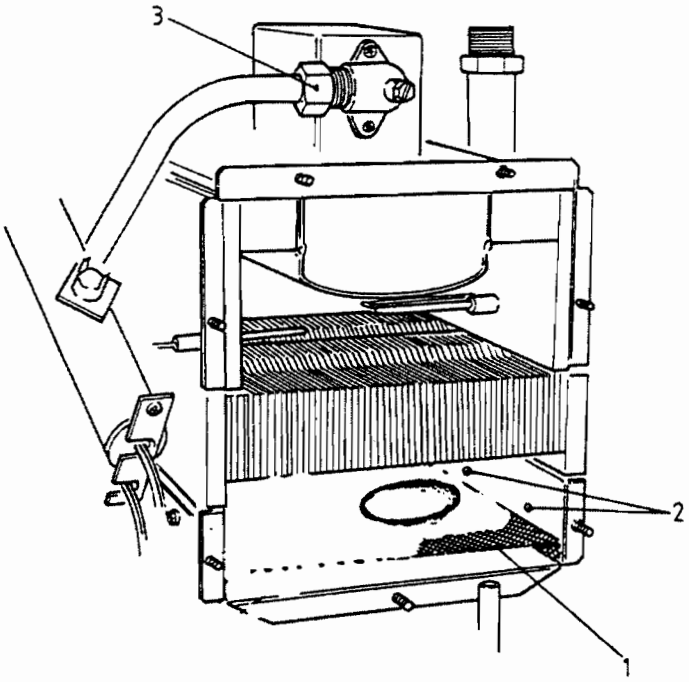
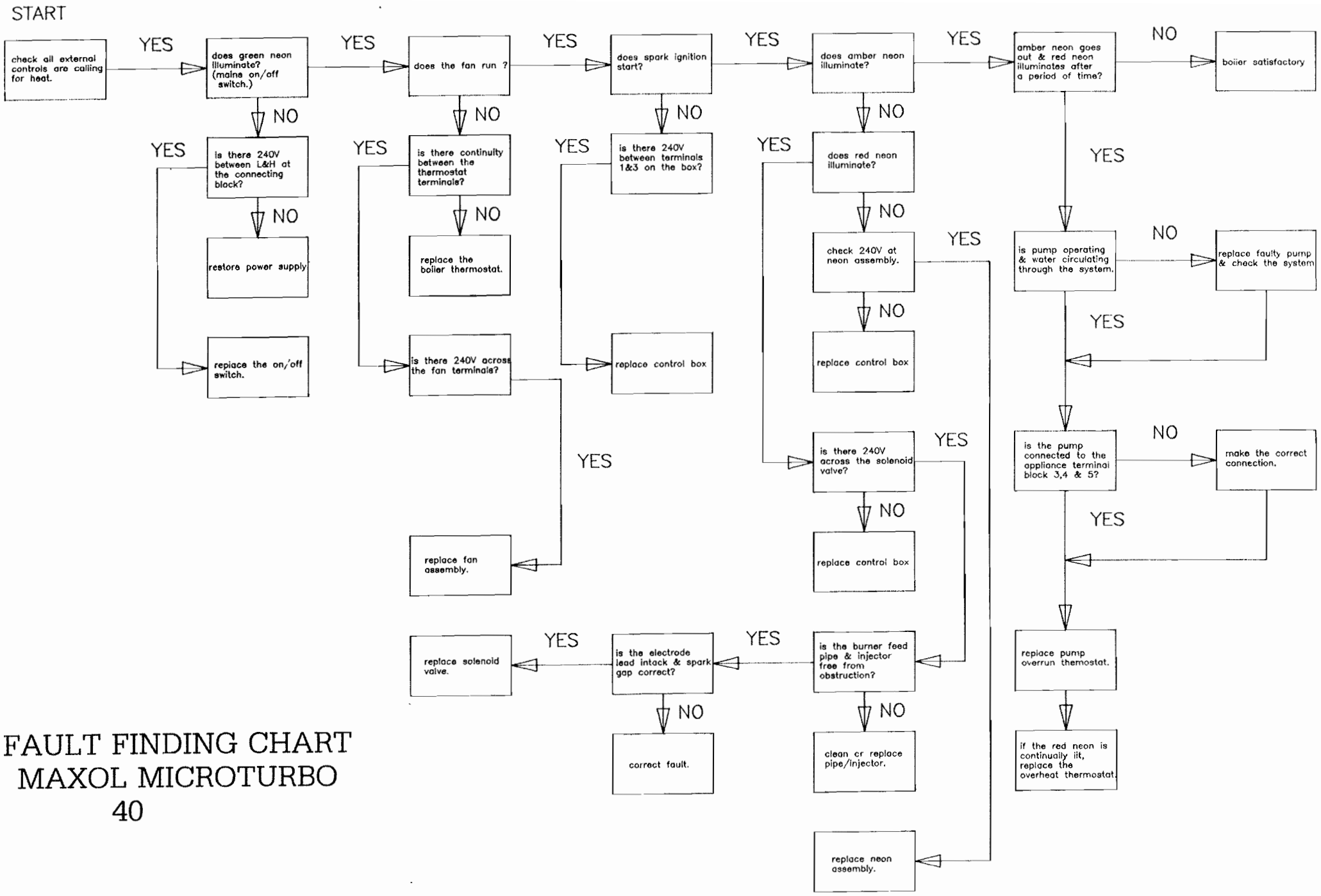


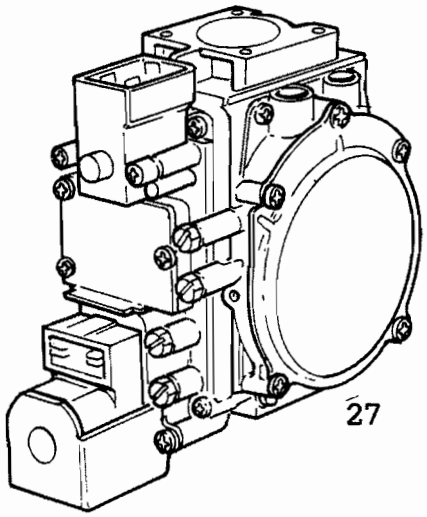
Fig. 15A

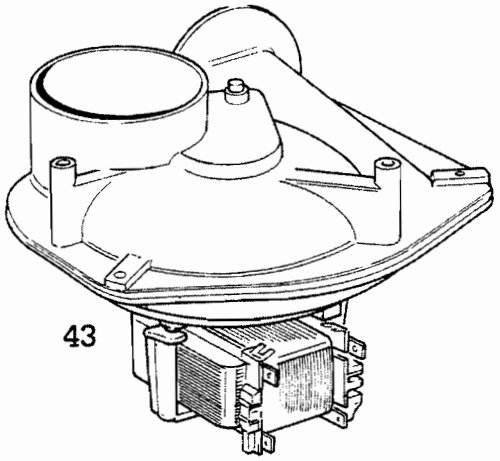
2.9A Heat Exchanger Fig. 15 RF only

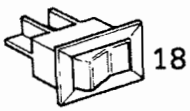
(i) Remove gas valve sensing pipes. Section 2.2.1 / 2.
(ii) Remove Overheat Thermostat. Section 2.4.
(iii) Remove Spark Electrode and Flame Sensing Probe. Section 2.5.
(iv) Remove Burner. Section 2.6.
(v) Remove Insulation Panels. Section 2.7.
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(vii) Disconnect the nut (3) from the inlet pipe to the injector assembly.
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(ix) Drain the water system and disconnect at the flow and return union connections.
(x) Disconnect the two locknuts from the heat exchanger brackets and remove.
(xi) Remove the four combustion chamber retaining screws and remove the heat exchanger assembly.
(xiii) Re-assemble in reverse order.
(xiv) Check for water soundness.

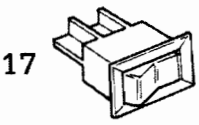


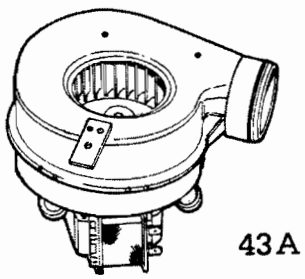
FAULT FINDING CHART
MAXOL MICROTURBO
40

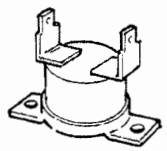




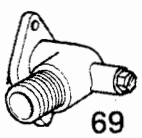


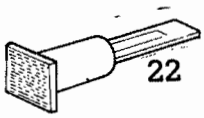


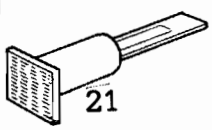


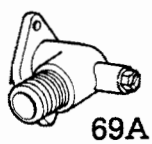


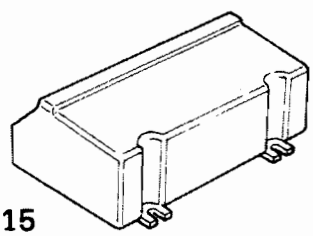


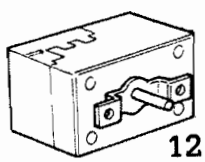


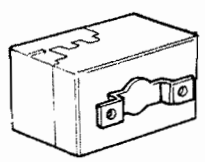












Short List of Parts for Maxol Microturbo 40

Key No.	Part No.	GC No.	Description	Qty.
12	58100	379 444	Thermostat RANCO	1
15	58102	379 446	Control Box — Honeywell	1
17	58260	379 447	Re-set Switch — Eaton	1
18	56874	378 339	Neon Switch — Eaton	1
21	57219	378 340	Neon Orange — ARCO.	1
22	58264	379 449	Neon Red — ARCO.	1
27	58104	294 071	Gas Valve — SIT	1
43A	59000		Fan — Sifan (SRF)	1
43	57431	370 274	Fan — E.B.M. — including 'O' Ring. (MDF)	1
69	58544		Injector Elbow Assembly (MDF)	1
69A	59022		Injector Elbow Assembly (SRF)	1
70	57039	370 293	Injector Elbow Gasket	1
86	57516	378 349	Overheat Thermostat	1
13	58101	379 445	Pump Overrun Stat — RANCO	1

MAXOL

microturbo

Burco Maxol
A member of the Glen Dimplex Group

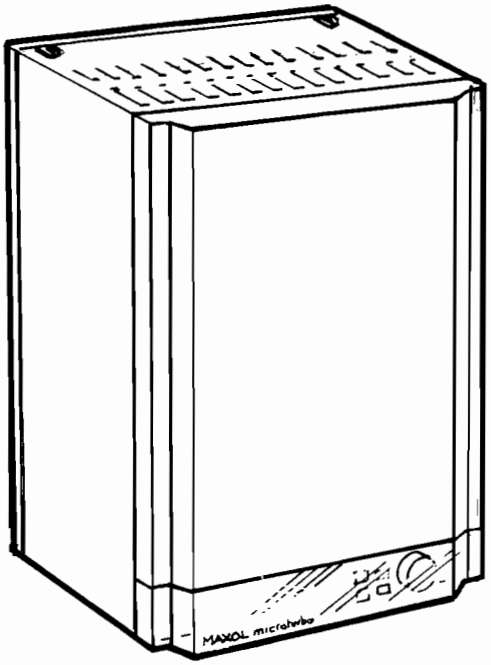
Rose Grove, Burnley, Lancashire BB12 6AL. Telephone: (01282) 427241. Telex: 63275 BDAL. Fax No. 01282 831206

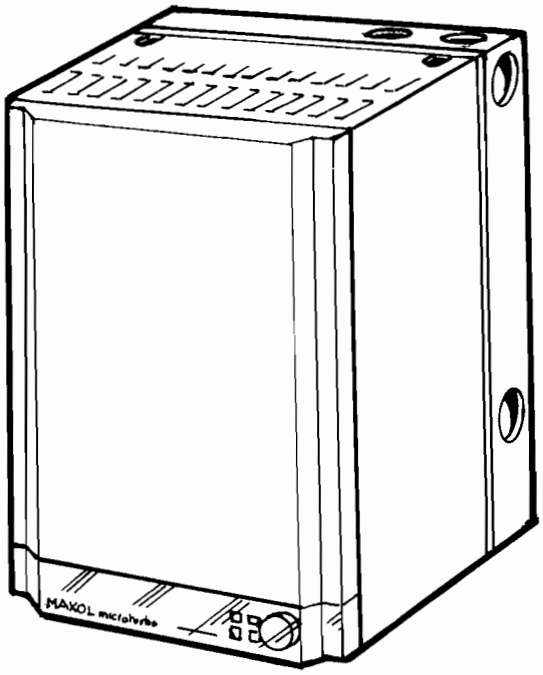
Maxol maintain a policy of continuous product improvement and reserve the right to change this specification without notice. The statutory rights of the consumer are not affected.

Bitech No. 08/17558/0 Maxol Part No. 58507 Issue F.

RF

GC. No: 41.202.17





MDF

GC. No: 41.202.15

MAXOL

Microturbo 40

INSTALLATION AND SERVICING INSTRUCTIONS

Leave these instructions with the user.

Wall Mounted, Room Sealed, Fanned Flue, Gas Boiler.

This appliance is for use with Natural gas only.

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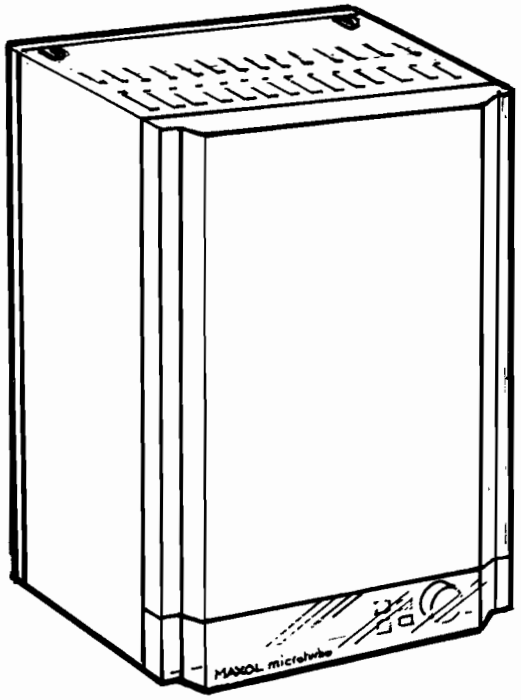
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1 Introduction

The Maxol Microturbo 40 is a wall mounted, room sealed, fan flued, central heating boiler designed for ease of installation, with a range of flueing options. The casing is attractively styled and the boiler incorporates the latest in gas appliance technology.

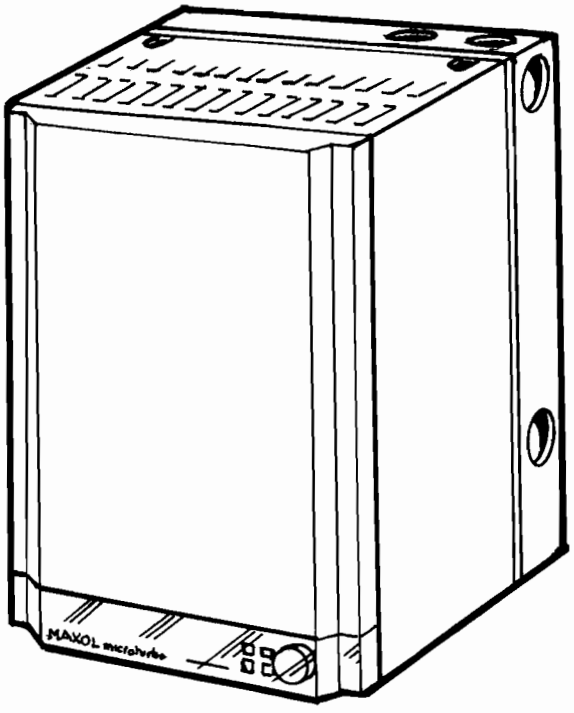


1.1 Features

- Output — 11.7 kW (40,000 btu/hr) suitable for most heating and domestic hot water requirements.

- Size — 300w × 460h × 275d MDF (215d RF). Compact size enables it to be easily fitted into a kitchen unit.

- Automatic control — Specially designed electronic controls with electronic ignition (no pilot), boiler thermostat and neon display all mounted behind an attractive plinth.

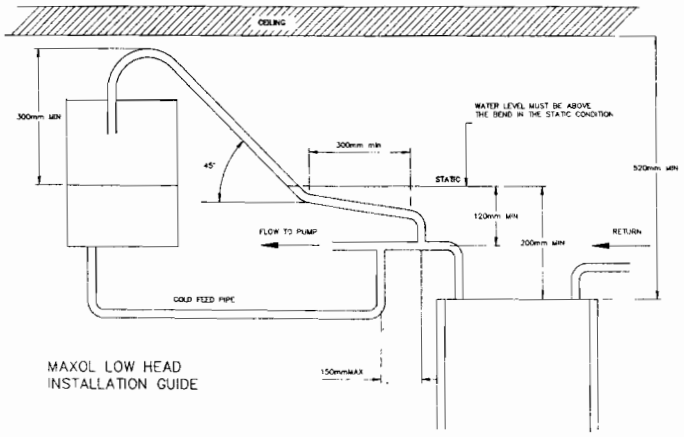


- Suitable for fully pumped sealed and open vented systems — Overheat thermostat and pump overrun fitted as standard. (Not suitable for gravity systems).

- 2 pipe unbalanced flueing system. The pipes may be connected at the top, base or sides of the appliance and in any direction up to 9 metres (straight) or 6 metres and 2 bends using two 45mm diameter pipes and unobtrusive flue terminals, — MDF and from 180mm to 380mm through a rear wall — RF.

- Latest pre-mixed burner technology gives low Nitrous Oxide values — meets all proposed EC requirements and helps reduce acid gas emissions and environmental damage. NO_x — 29ppm, NO — 19ppm — (British Gas figures).

- Light weight 15.5kg (34 lb) — High efficiency copper heat exchanger.



MAXOL LOW HEAD INSTALLATION GUIDE

Low Head Installation

All primary pipework must be in 22mm diameter. A close coupled cold feed and vent must be placed as close to the appliance as possible on the flow pipe.

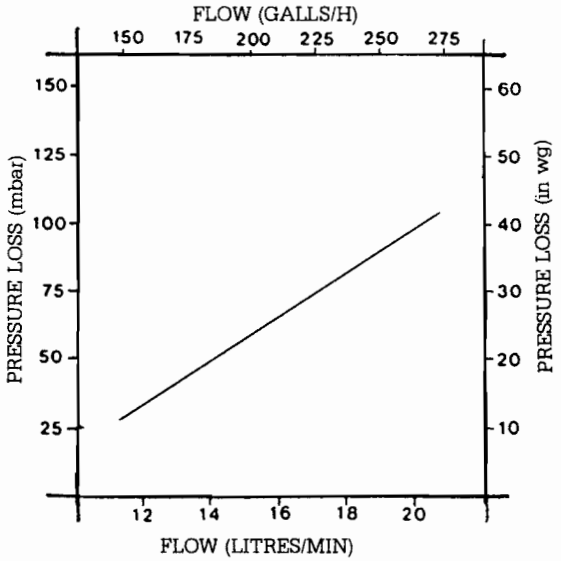
The vent pipe must be arranged as in the diagram. The pump should be set to obtain the flow rates specified with sufficient static head as recommended by the manufacturer.

Thermostat Settings

Min (Posn. 1) — 42°C
Max (Posn. 5) — 82°C

The recommended flow through the boiler is 16 l/min maximum.

MAXOL MICROTURBO 40
WATER PRESSURE LOSS



2.1 General Safety

- Gas Safety Regulations (Installation & Use) 1984. — The installation of this appliance must be carried out by a competent C.O.R.G.I. registered person in accordance with the above regulation, Local Building Regulations, Building Standards (Scotland) Regulations, current I.E.E. regulations on wiring, the Bye laws of the Local Water Undertaking, Health & Safety Document No. 635 "The Electricity at work regs. 1989".

- It should also be in accordance with the relevant recommendations of the following British Standard Codes of Practice:

BS 5440 Pt.1 — Flues (for gas appliances under 60 kW).
BS 5440 Pt.2 — Ventilation (for gas appliances under 60 kW).
BS 5449 — Forced circulation — hot water systems.
BS 5546 — Installation of gas hot water supplies for domestic purposes.
BS 6798 — Installation of gas hot water boilers for gas appliances under 60 kW.
BS 6891 — Low pressure installation pipes.

2.2 Water System

a. **Maximum head** — 30 metres (100 ft.) — with open vent.

b. **Minimum head** — 1 metre (3 ft.) (Static).

c. The hot water cylinder must be of the indirect type.

d. Suitable for **fully pumped systems** only.

e. **System design temperature** — approx. 11°C temperature rise across the boiler under any conditions of use.

f. **Systems with flow & return pipes dropping to floor level** — The boiler is fitted with an overheat thermostat, but adequate provision must be incorporated to ensure air is vented from the system by an open vent or automatic air vents at the highest positions on the flow and return pipes.

g. **Bypass** — A bypass must be fitted in 15 mm pipe with a valve (not adjustable by the user). Adjust the valve setting to obtain a temperature rise across the boiler of approximately 11°C. This is performed with the system fully heated, starting with the valve almost fully closed with the pump at its optimum speed. The valve is progressively opened to achieve the required temperature rise.

h. **Pump position** — The pump should be sited in the flow for open vented systems. Isolating valves should be fitted as close to the pump as possible. Pump manufacturers installation requirements must be followed. A suitable pump would be the Grundfos UPS 15/50 or equivalent.

i. **Flow and Return Connections** — These are suitable for 22 mm copper pipework with compression fittings integral with the appliance. The **flow** is the left hand connection and the **return** is the right hand connection. Both flow and return connections are situated at the top rear of the appliance within the boiler casing.

j. **System Flushing** — Before commissioning the appliance it is **essential** to flush the system thoroughly to remove any contamination from the system. Where an anti-corrosion additive is recommended, a suitable product would be Fernox CP3 — used at the dilution recommended by the manufacturers.

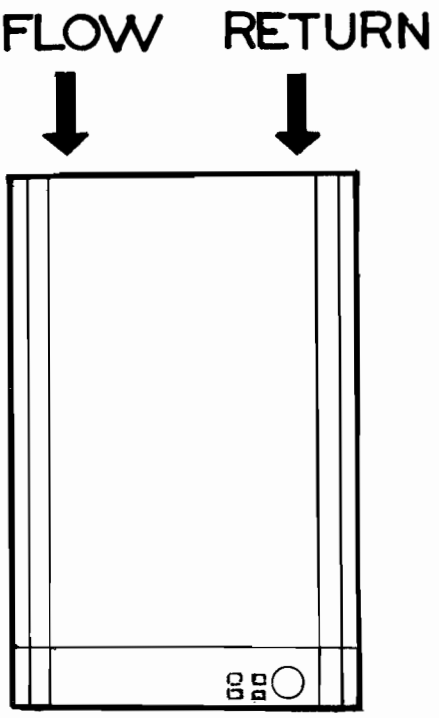
2.3 *Sealed System Requirements*

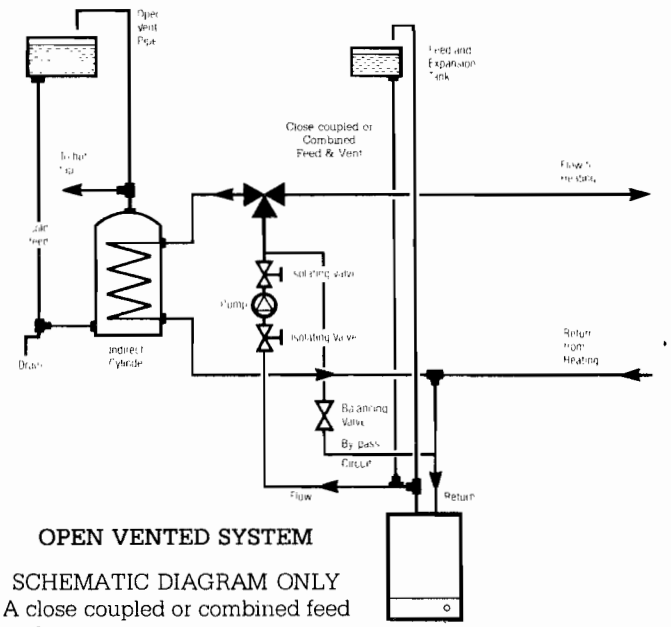
The system must comply with the following British Standards and any local Building Regulations which may apply. BS 6700, BS 6798, BS 5449, BS 7074: Part 1.

The maximum boiler flow temperature is 82°C (180°F).

The installation should be designed in accordance with the schematic diagram and the following points must be adhered to:

a. A safety valve shall be fitted on the flow as close to the boiler as possible. No valve or restriction may be placed between the boiler and the valve. The valve must be piped to drain so that any discharge will not cause a hazard to the user, electrical components or wiring. The safety valve must be set to operate at 3 bar. The safety valve shall conform to BS6759

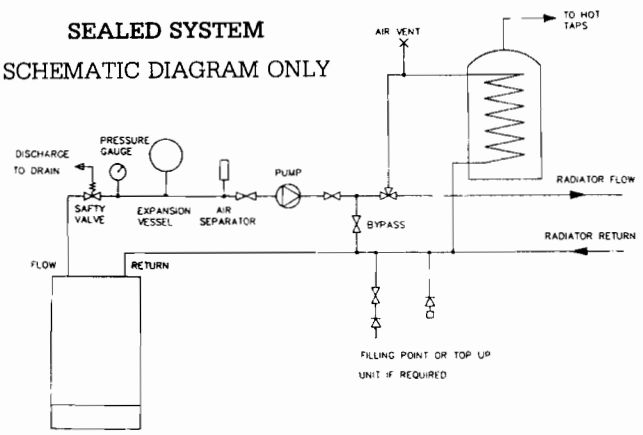




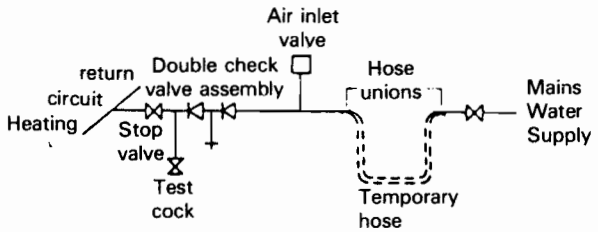
OPEN VENTED SYSTEM

SCHEMATIC DIAGRAM ONLY

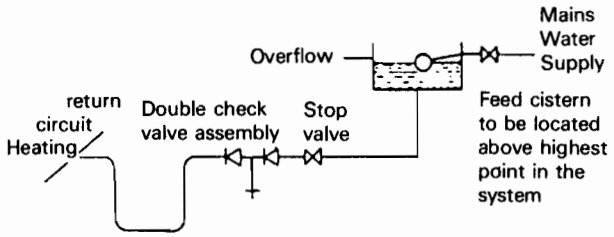
A close coupled or combined feed and vent pipe arrangement should be connected as in the above schematic.



FILLING AND MAKE UP DIAGRAM



Non-automatic filling and make-up



Automatic filling and make-up

b. An expansion vessel conforming to BS 4814 shall be fitted and positioned as in the schematic diagram. The method of sizing the expansion vessel can be found in BS 5449: Part 1 or BS 7074: Part 1 as appropriate. The required basic parameters are water content of the system and the operating pressure. For example with a vessel charge and initial system pressure of 1.0 bar a total system water content of 100 l a vessel volume of 10.9 l will be required. For any system a more accurate calculation of vessel size detailed in BS 7074: Part 1 section 7.2.

c. A pressure gauge shall be fitted in the system preferably in the flow on the suction side of the pump. The gauge, must be capable of measuring 0 to 4 bar and be fitted with an adjustable pointer.

d. An air separator should be fitted on the flow and if the pump is on the flow, the separator should be fitted on the inlet side.

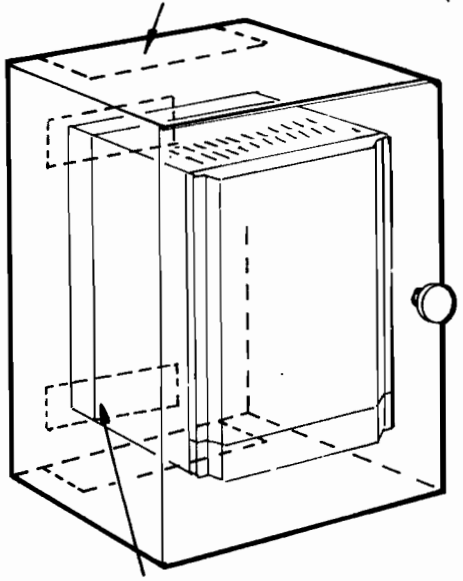
e. Any method of top up must comply with local water bylaws (see filling and make up diagram).

f. Air vents should be fitted at any point where air is likely to collect.

g. Filling methods must comply with local water bylaws. The methods are outlined in filling and make up diagrams.

h. An indirect cylinder must be used suitable for operation at a pressure of 3.35 bar.

VENTILATION TO ROOM (1)



VENTILATION TO OUTSIDE (2)

2.4 Air Supply Requirements

Detailed recommendations for air supply are given in BS 5440:2. If the boiler is positioned in a kitchen cabinet/compartment permanent air vents must be provided of the following dimensions at both high and low levels in the cabinet/compartment. Each vent should be of the following dimension:

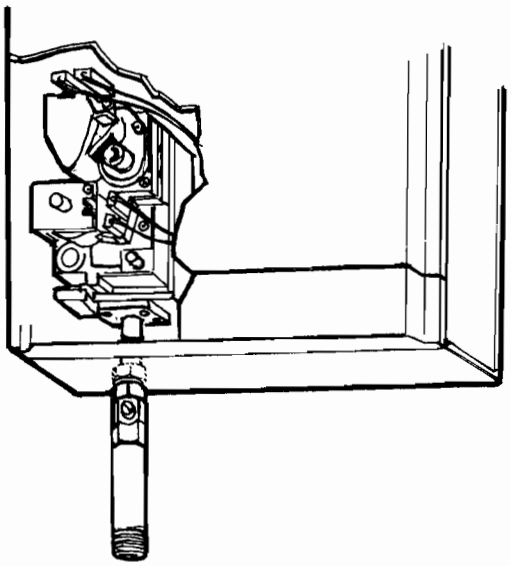
(1) Ventilation to room or internal space = 131 cm^2 (20in^2). OR

(2) Ventilation direct to outside air = 65 cm^2 (10in^2).

2.5 Gas Supply

Installation pipes should be fitted in accordance with BS 6891. Pipework from the meter to the appliance must be of adequate size. Pipes of a size smaller than the appliance inlet gas connection should not be used.

The complete installation including the meter must be tested for soundness and purged as described in the above code. The gas connection to the appliance is Rc ½ (½ in. BSP) and is situated at the rear of the base at the left hand side.



2.6 *Electrical Supply*

a. Wiring external to the appliance must be installed in accordance with current I.E.E. Wiring Regulations and any Local Regualtions which apply.

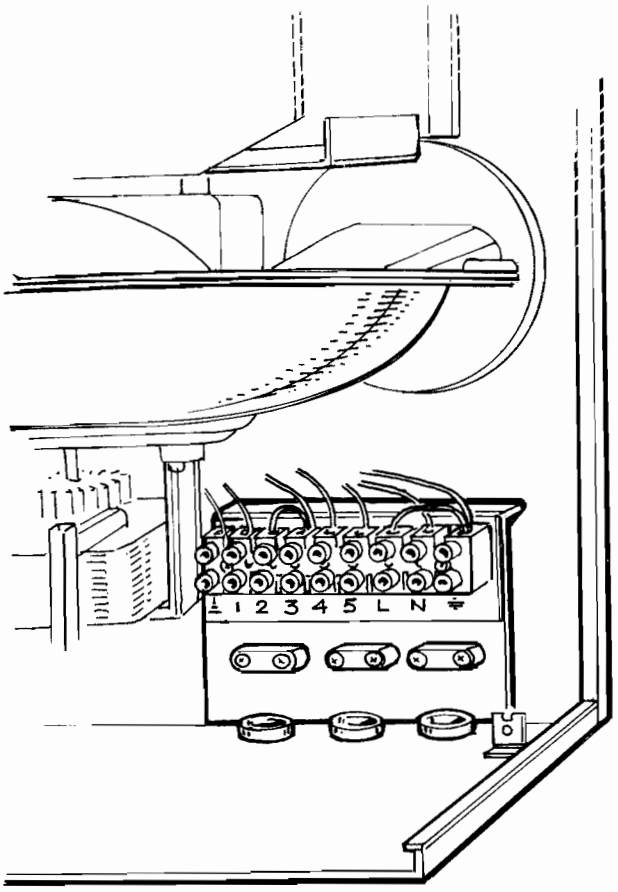
b. The supply cable must be PVC insulated 3-core 0.75 mm (24/0.2 mm) to BS 6500 Table 16.

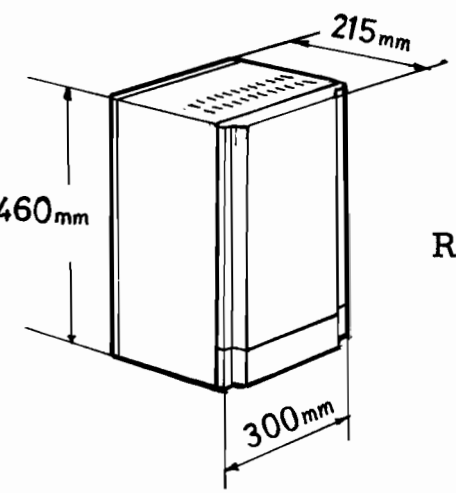
c. Power consumption of the appliance is 55 W (max.). The supply must be 240V~ 50Hz and through an unswitched shuttered socket outlet and 3A fused 3-pin plug. Both complying with the requirements of BS 1363. Alternatively a 3A fused double pole isolating switch may be used, having a minimum contact separation of 3 mm in all poles, servicing only the appliance and system controls.

d. Any means for disconnecting the appliance from the electricity supply must have a contact separation of at least 3 mm in all poles.

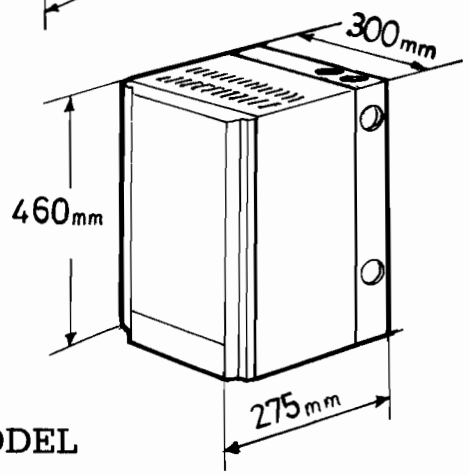
e. The boiler may be installed in any room or internal space, although particular attention is drawn to the requirements of the current I.E.E. Wiring Regulations, and in Scotland, the electrical provisions of the Building Regulations in Scotland, with respect to the installation of the boiler in a room or internal space containing a bath or shower. Where a room-sealed appliance is installed in a room containing a bath or shower, any electrical switch or appliance control, utilising electricity should be so situated that it cannot be touched by a person using the bath or shower.

f. Wiring connection is made through the grommets at the rear of the base at the right hand side.

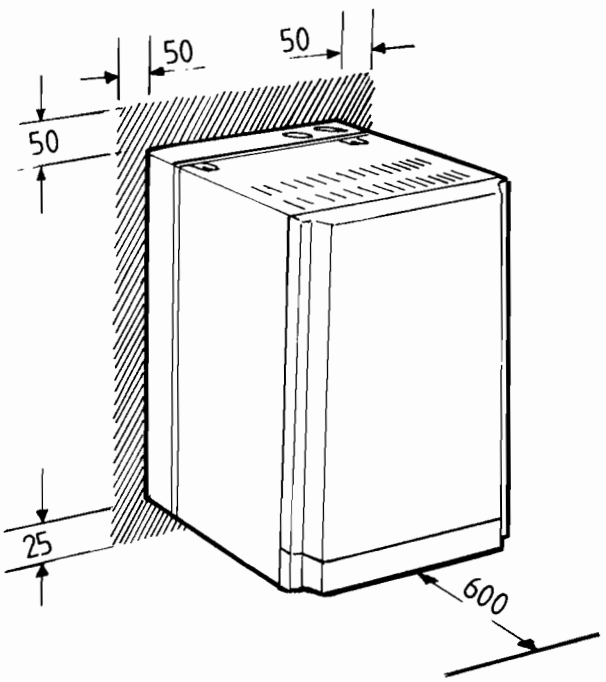




RF MODEL



MDF MODEL



Nominal Heat Input — 49,500btu/hr. — 14.51kW.
Nominal Heat Output — 40,000btu/hr. — 11.72kW.
Gross Efficiency — 80.8%.
Burner Pressure (cold) — 10.3 ± 0.5 mb.
Gas Rate (after 10 mins) — 1.38 m^3/hr.
Time for 100 litres of gas = 4 min. 20 secs.
Time for 1 cubic foot of gas = 74 secs.
Injector — 6 × 1.4mm dia. — Stamped "40".

N.B. Gas rate is Not adjustable by the installer.

Dimensions of the appliance
Flue duct diameters — 45 mm o.d. (1.8 in)
— projection through wall = 25 mm (1″)
— min. dist. apart = 150 mm (6″) across centres.

Core Drill diam. for installing flues - 52mm (2″)

Weight	— 15.5 kg (34 lb)
Water capacity	— 0.4 l (0.09 gal.)
Data badge	— inside front of case.
Static Head	— Min. 1m (3ft) Max. 30m (100ft)

Thermostat Settings

Min (Posn. 1)	— 42°C
Max (Posn. 5)	— 82°C

The recommended flow through the boiler is 16 l/min maximum.

Minimum Clearance Required for Servicing.
Top — 50mm (2in)
Base — 25mm (1in)
Sides — 50mm (2in) *
Front — 600mm (24in)
5mm (0.25in) - behind openable cupboard door.

Additional Minimum Clearance Required for Flueing.(MDF)
This clearance depends on the direction of the incoming flue pipes.
N.B. If the appliance is to be fitted in a kitchen cabinet see section 5.2.5.

Flue pipes from:	Min. dist. to wall or surface
LHS	250mm between RHS & wall
RHS	150mm between LHS & wall
Top	400mm between Bottom & floor
Bottom	300mm between Top & ceiling

* **N.B.** The minimum flue length with the MDF is 300mm. This must be taken into consideration when installing the appliance with wall thickness of less than 250mm as the minimum side clearance of 50mm required for servicing will increase correspondingly. e.g. Wall thickness — 100mm — min. clearance is 200mm.

3 Air Inlet/Flue Exit Terminal Location

a. The air inlet and flue exit terminals must be installed according to the recommendations of BS 5440 Part 1.

b. The terminals must be positioned on the outside of the building and must allow the free passage of air across them at all times.

c. Avoid positions where the terminals are adjacent to projections; particularly under a balcony or immediately adjacent to a drain pipe.

d. The position of the outlet terminal must ensure that products of combustion produced from the boiler cannot enter the building or any adjacent building through windows, doors or any other means.

e. Acceptable flue terminal positions are indicated in the diagram.

f. **Both terminals must be positioned on the same wall.**

g. **The minimum distance between centres of the terminals (MDF only) is 150mm. There is no maximum distance.**

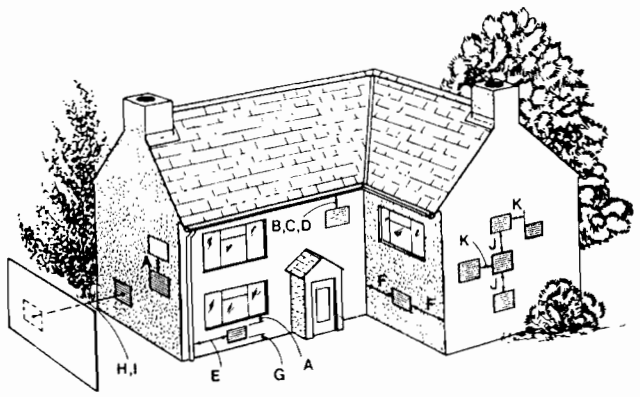
h. If the boiler is fitted into a timber framed building — consult British Gas publication "Guide for Gas Installations in Timber Framed Housing DM2" or your local Gas Region.

i. Where the lowest part of either flue terminal is fitted less than 2 metres (6.6 ft.) above ground, a balcony, or above a flat roof to which there is access then the flue terminal/terminals must be protected by a terminal guard, available from Maxol.
Ensure the terminal guard is fitted centrally.

j. The terminal guard is supplied with three fixing screws & rawlplugs. Fit the guard centrally over the flue pipe and secure with the plugs and screws provided.

N.B. With the minimum flue outlet/inlet distance of 150mm the flue terminal guards will touch if both are fitted.

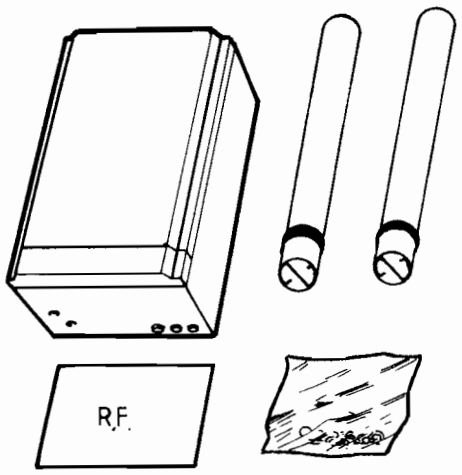
k. The outlet flue terminal will produce a plume of water vapour and also moisture droplets until the appliance warms up (especially in cold weather). This should be considered when positioning the flue terminal eg. over a door. The appliance does not produce condensate under normal running conditions.



	Terminal Position	Minimum distance
A	Directly below an openable window or other opening e.g. an air brick.	300mm
B	Below gutters, soil pipes or drain pipes	75mm
C	Below eaves	200mm
D	Below balconies	200mm
E	From vertical drain pipes and soil pipes	75mm
F	From internal or external corners	300mm
G	Above ground or balcony level	300mm
H	From a surface facing a terminal	600mm
I	From a terminal facing a terminal	1200mm
J	Vertically from a terminal on the same wall	1500mm
K	Horizontally from a terminal on the same wall	300mm

4 Packaging

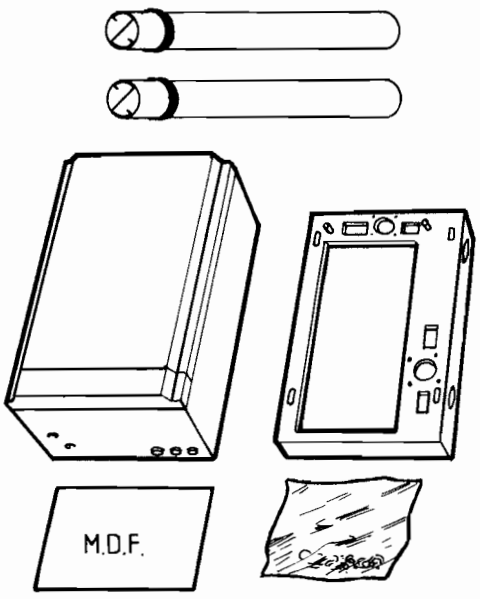
The boiler is available in two forms:



4.1 RF Rear Flueing Model

178mm (7in) — 381mm (15in) packaged in one carton including:

(i) Boiler
(ii) Flue Terminals — 2 off 380mm (15″)
(iii) Installation, servicing & users instructions
(iv) Plastic Bag Assembly

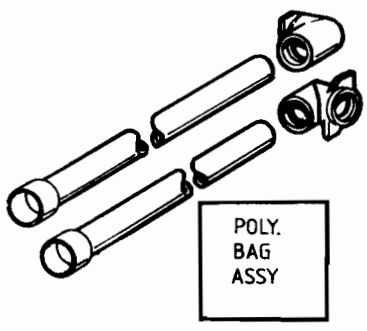


4.2 MDF Side/Top/Base Flueing Model

— packaged in one carton.
To be installed with the desired flue kit carton including:

(i) Boiler
(ii) Rear flue box
(iii) Installation, servicing & users instructions
(iv) Plastic Bag Assembly
(v) Flue Terminals — 2 off 380mm (15″)

Flue Kit Cartons Available for MDF Model:

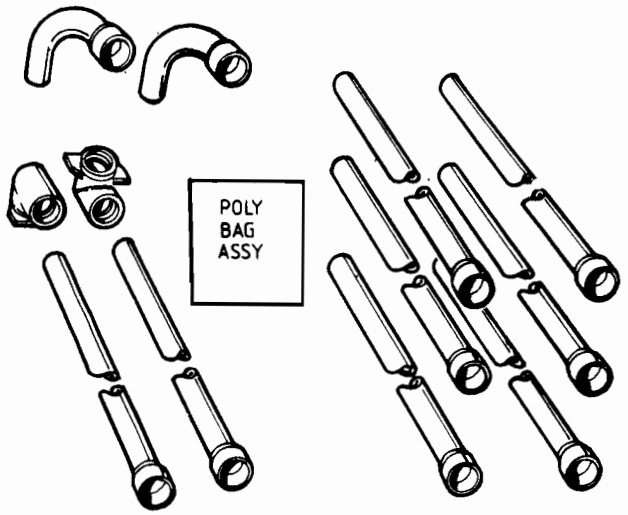


4.2.1 300mm (12″) — 1m (3'3″) — straight flue

including:

(i) Flue pipe (socketed) 1m — 2 off
(ii) Exhaust elbow — 1 off
(iii) Inlet elbow Red 1m — 1 off
(iv) Plastic Bag Assy. — 1 off

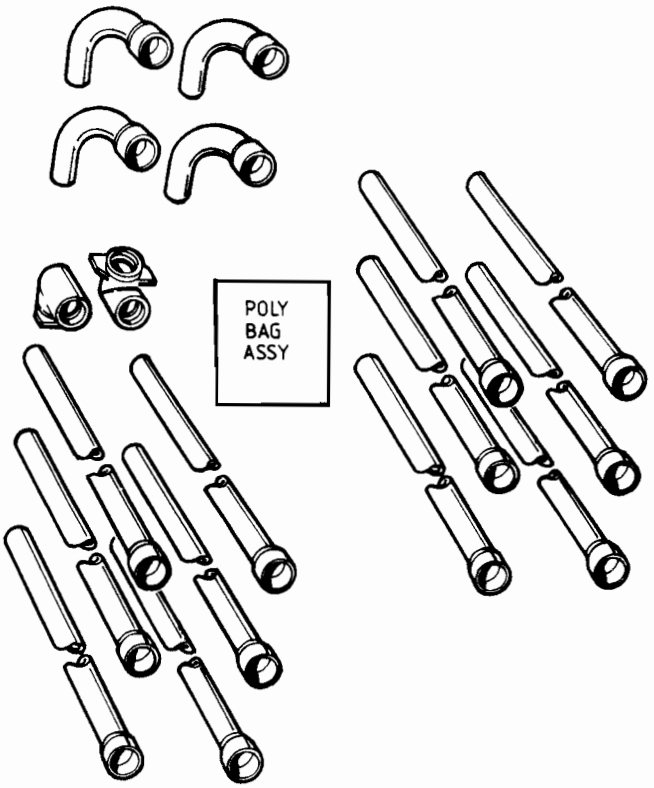
4.2.2 1m (3'3") — 4m (13') — with 1 bend



including:

(i)	Flue pipe (socketed) 1m	— 8 off
(ii)	Exhaust elbow	— 1 off
(iii)	Inlet elbow Blue 4m	— 1 off
(iv)	90° bend (socketed)	— 2 off
(v)	Plastic Bag Assy.	— 1 off

4.2.3 4m (13') — 6m (19'6") — with 2 bends



including:

(i)	Flue pipe (socketed) 1m	— 12 off
(ii)	Exhaust elbow	— 1 off
(iii)	Inlet elbow Yellow 6m	— 1 off
(iv)	90° Bend (Socketed)	— 4 off
(v)	Plastic Bag Assy	— 1 off

4.3 Optional Extras

Available from Maxol

(i)	Wall mounting clips	— 2 off
(ii)	Protective flue ducting (1m) lengths.	
(iii)	Protective flue duct bend, — left, right or back	— 1 off
(iv)	Flue pipe 1m length (socketed)	— 1 off
(v)	Flue pipe 0.5m length (socketed)	— 1 off
(vi)	135° bends	— 1 off

5 *Installation of MDF Model* *For RF see section 5.4*

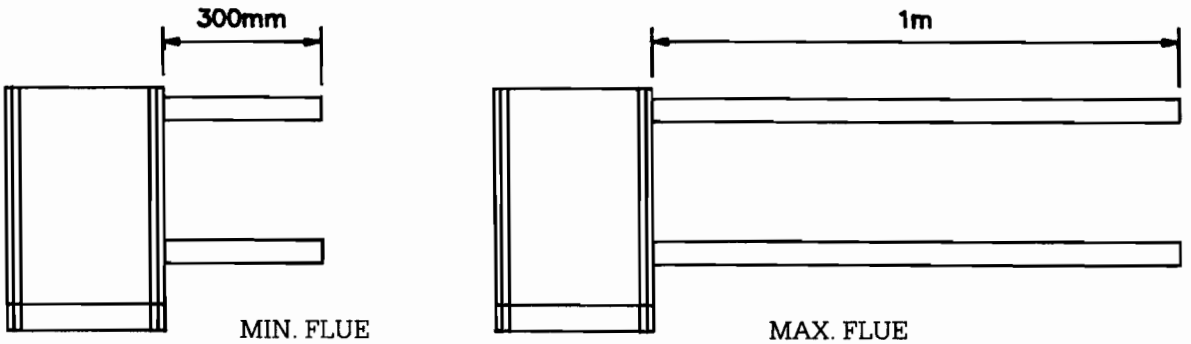
5.1 Siting the boiler & routing the flue

The boiler is capable of having the following flue options giving a large number of siting options:

The flue kits are designed to be installed and work as a **single kit only.**

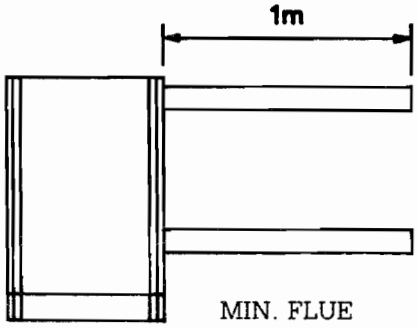
1. DO NOT INSTALL FLUES LONGER OR SHORTER THAN THE KIT RECOMMENDS.
2. DO NOT USE **MORE** THAN ONE KIT PER INSTALLATION **OR** EXTEND A KIT OTHER THAN BY THE USE OF THE OPTIONAL LENGTHS SPECIFIED WHEN OMITTING BENDS.
3. DO NOT MIX KITS TOGETHER.
4. THE INLET ELBOW IS SPECIFICALLY MATCHED TO THE KIT — ALWAYS INSTALL AS SUPPLIED.
5. BOTH FLUE PIPES MUST ENTER THE APPLIANCE IN THE SAME DIRECTION. THE FLUES MUST TERMINATE IN A HORIZONTAL POSITION AND ON THE SAME WALL OF THE BUILDING.
6. THE MINIMUM DISTANCE BETWEEN INLET AND OUTLET FLUES IS 150mm BETWEEN CENTRES AT THE OUTLET OF THE WALL.

FLUE OPTIONS WITH KIT A

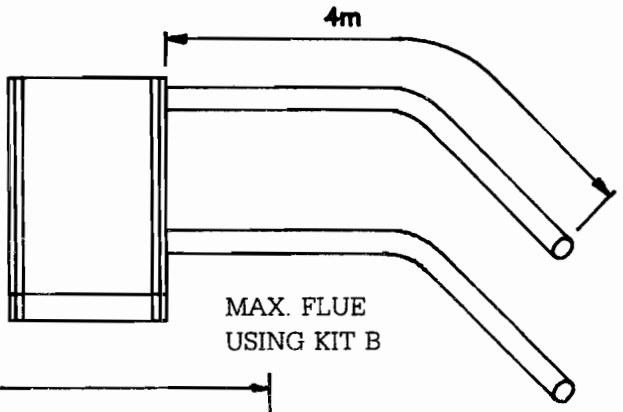


& ANY LENGTH INBETWEEN

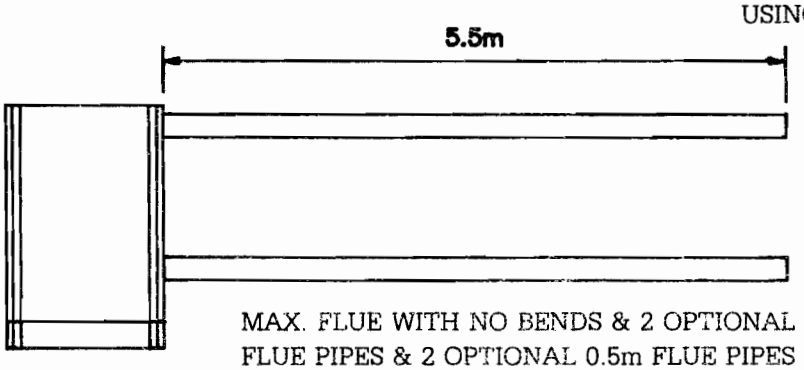
FLUE OPTIONS WITH KIT B



MIN. FLUE



MAX. FLUE
USING KIT B

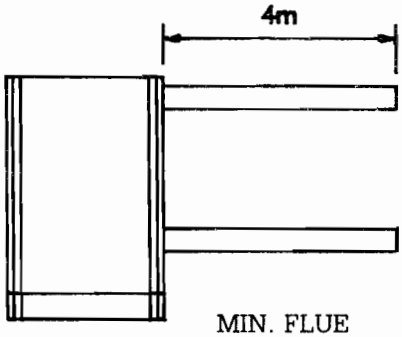


MAX. FLUE WITH NO BENDS & 2 OPTIONAL EXTRA 1m FLUE PIPES & 2 OPTIONAL 0.5m FLUE PIPES

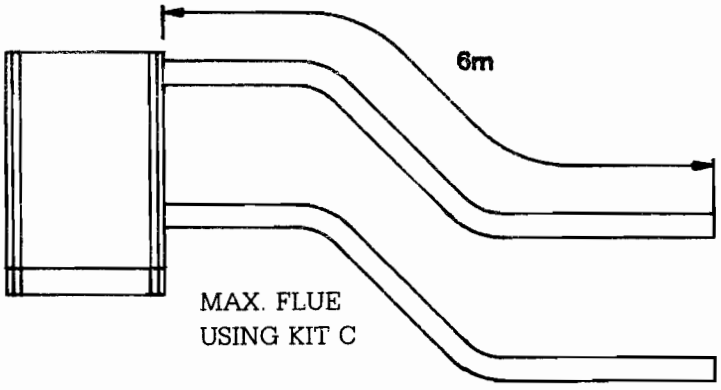
& ANY OPTION INBETWEEN

NB. IF A BEND IS NOT REQUIRED, THE FLUE LENGTH MAYBE EXTENDED BY UP TO 1.5m.

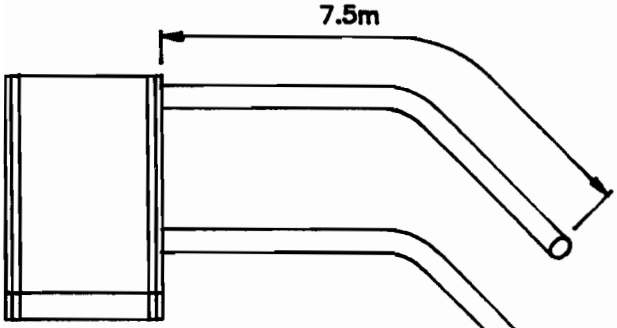
FLUE OPTIONS WITH KIT C



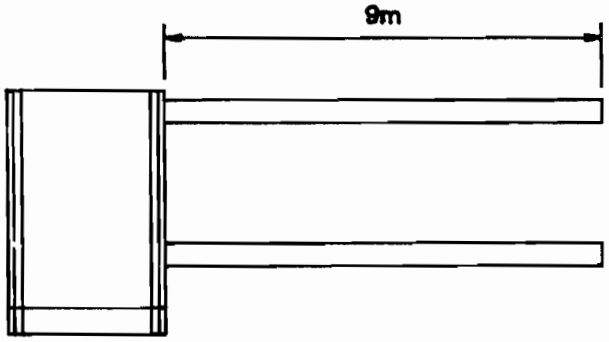
MIN. FLUE



MAX. FLUE
USING KIT C



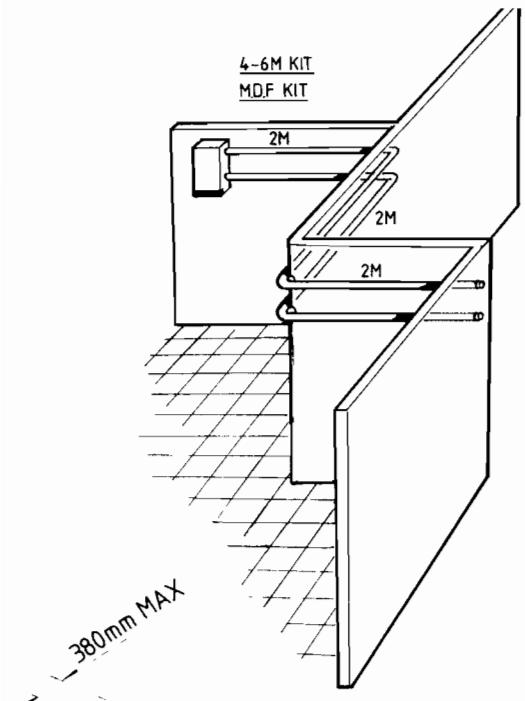
MAX. FLUE WITH 1 BEND & 2 OPTIONAL EXTRA 1m FLUE PIPES & 2 OPTIONAL 0.5m FLUE PIPES

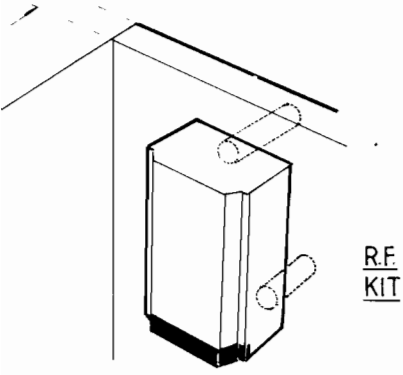


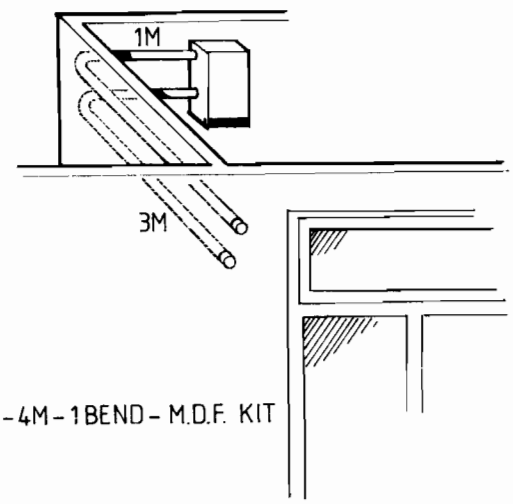
MAX. FLUE WITH NO BENDS & 6 OPTIONAL EXTRA 1m FLUE PIPES

& ANY OPTION INBETWEEN

NB. IF A BEND IS NOT REQUIRED, THE FLUE LENGTH MAYBE EXTENDED BY UP TO 1.5m.







1M-4M-1BEND-M.D.F. KIT

5.1.1 *Design requirements for routing the flue*

(i) These flue options are specifically designed for each kit and flueing lengths must be adhered to.

(ii) If fewer bends are required on the flue installation then the flue may be extended by 1.5m on each pipe for each bend omitted. Flue lengths are available from Maxol in 1m and ½m lengths.

(iii) Inlet and Outlet flue pipe runs must use the same number of bends.

(iv) If the inlet and outlet flue pipes are required to be of different lengths do not exceed the minimum or maximum lengths stated for the flue kit used. e.g. With a 1m-4m kit the minimum inlet length is 1m if a maximum outlet length of 4m is used, (& vice versa).

The illustrations give some examples of flue installation:

NB — When routing the flues around an external corner it is necessary to chase into the wall using a chisel etc. to allow the bends to follow the centre lines for the fixing clips. 20mm will be sufficient for the flue only. If protective ducting is used 60mm is necessary.

(iv) It is recommended that on longer flueing installations a sketch is made of the flue runs as a guide to cutting the pipes.

(v) The exhaust flue pipe must not be closer than 25mm (1in) to combustible material. Additional clearance must be provided when passing the flue through timber walls.

Detailed recommendations on protection of combustible materials are given in BS 5440: Part 1. (Specifically sect. 8.2.3). Where the outlet flue is to be routed along or adjacent to a combustible wall a ducting kit is available to protect the wall. The kit is available in 1m lengths and also a 90° bend.

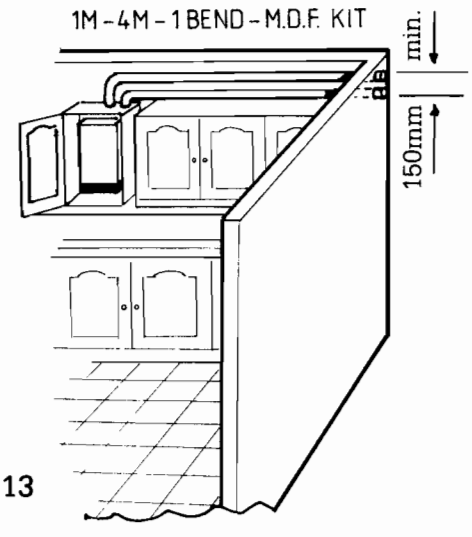
(vi) The exhaust flue pipe must be routed so that it cannot be touched by the user. If this is unavoidable a ducting kit is available from Maxol to protect the flue pipe.

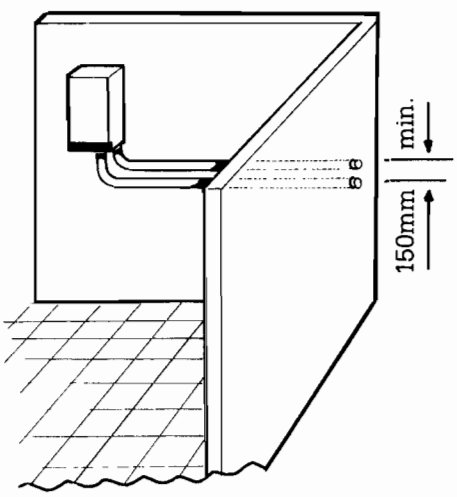
(vii) Remember both flue pipes must enter the appliance in the same direction.

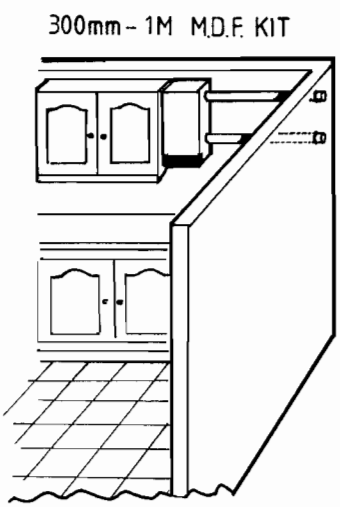
(viii) Remember the flues must terminate in a horizontal position and on the same wall of the building.

(ix) Installations with long flue runs may give rise to a build up of condensation in the outlet flue pipe. This must not be allowed to run back into the boiler.

When installing long flue runs angle the flue AWAY from the boiler using a 25mm drop for every 4m horizontal run.







5.2 *Base/Side/Top flueing arrangements (MDF)*

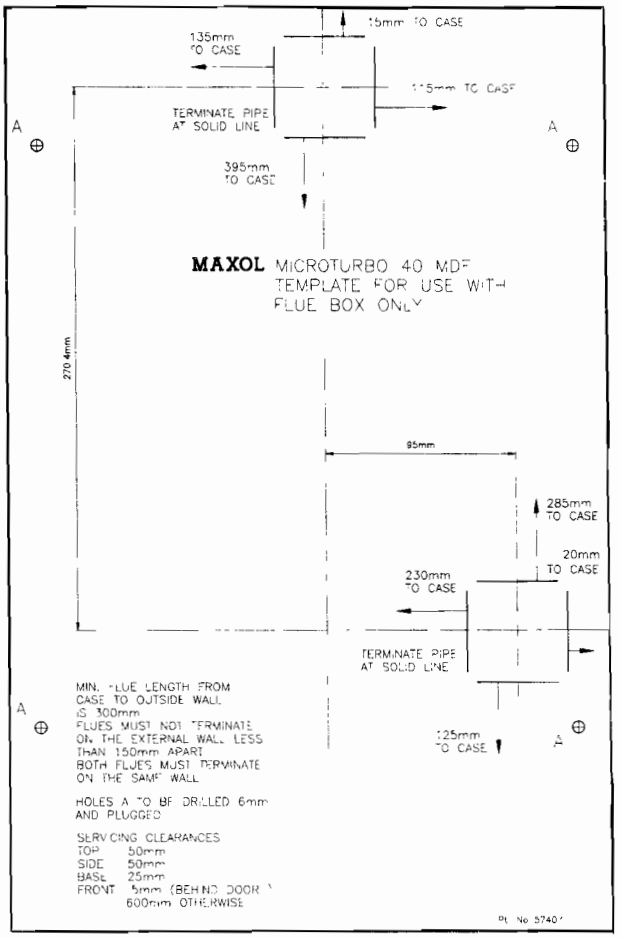
5.2.1 *Installing the Flue Box*

— For a kitchen cupboard installation see sect. 5.2.5.

(i) The flue box template must be positioned at a minimum dimension from any wall or surface depending on the direction of incoming flue pipes — see below.

Flue pipes from:	Minimum distance from edge of template to wall or surface
LHS	250mm between RHS & wall
RHS	150mm between LHS & wall
Top	400mm between bottom & floor
Bottom	300mm between top & ceiling

(ii) Position and fix the template provided for fixing the flue box, drill and plug where marked using the plugs and screws provided in the plastic bag. Ensure the template is horizontal and on a flat sound wall. Note that the flue pipes should terminate at the positions shown on the template.



5.2.2 *Installing the Flue pipes*

(i) Remember the minimum distance between inlet and outlet flues is 150mm (6in) in any direction at the outlet of wall — between centres.

(ii) The vertical distance between the side flue connections on the boiler is 270.4mm.
The horizontal distance between Base/Top connections is 95mm.

(iii) There is no maximum distance required between the flue terminals.

(iv) After deciding where the flues will terminate drill the two flue openings using a core drill if possible. Ensure no breakout or if possible make good externally.
CORE DRILL DIAMETER 52mm (2in).

If the flues exit close to a corner it may be easier to:

(a) drill a pilot hole from inside the property and carry out the core drill operation from outside.

or (b) use a masonry chisel to make the flue openings and make good afterwards.

Ensure that during the cutting operation the masonry produced does not cause any damage to property or injury to persons.

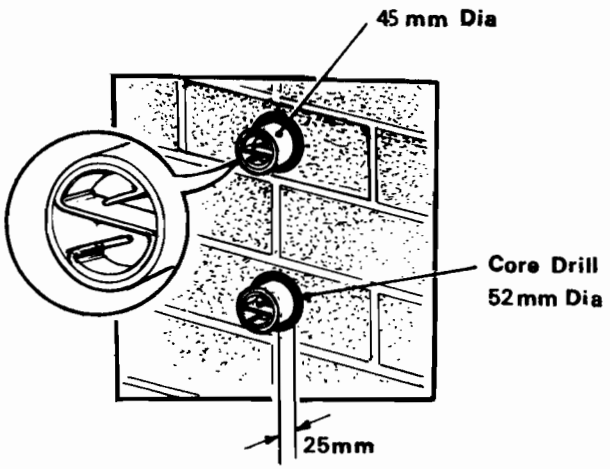
(v) Fix the pipe support clips along the pipe routes or fit the optional protective ducting (see separate instructions). Ensure that any bends are securely held at each end by the clips provided.

NB. No. 6 wood screws and plugs are supplied for fixing the clips.

5.2.3 *Assembling the Flue Pipes*

IMPORTANT

- The flue pipes must be assembled with plain end of pipe (or bend) nearest the appliance and the female socket end furthest from the appliance.
- Always adjust the length of pipes by cutting the plain end. Remove any burrs both inside and out.
- Keep the flue pipes clean and free of oil or grease or swarf.



(i) ALWAYS START AT THE WALL. Take the two lengths of flue pipe that have the flue terminal inserts and lipseals (in boiler pack). Measure the wall thickness. Then measure from the lip seal at the end nearest the outlet,and mark the wall thickness onto the pipe minus 10mm. Minimum flue length is 300mm (12in) from appliance to external wall. Check minimum service clearances laid out in Section 3 — Technical Data.
Do not cut at this stage unless the flue run requires only one length of flue pipe, — then mark and cut the ducts so that they terminate at the appropriate position on the template, as in 5.2.4. If more than one length of flue pipe is required continue.

(ii) Fit the two wall mounting fixing clips approx. 300mm (12in) or less from the wall in line with the inlet and outlet pipe runs. Feed the tie straps through the brackets.

(iii) Push the tubes through the support clips into the wall up to the mark. Visually check that the pipes have protruded through the wall by 25mm and that the lip seal is located in the wall around its circumference. If there are any gaps present make good at this stage externally. Join the tie straps around the pipes and pull tight so that the straps prevent any movement of the flue pipes. Any excess may be cut off.

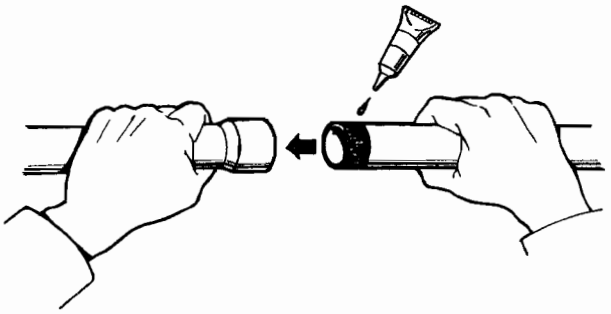
(iv) Smear a film of silicone sealant (approx. 0.5mm thick) onto the male end of the pipes (approx. 40mm along). For safe use of the silicone rubber solution see Sect. 5.2.4.1.
Repeat this operation with every male pipe end, (except the final pieces of flue pipe) as the flue pipe runs are assembled.

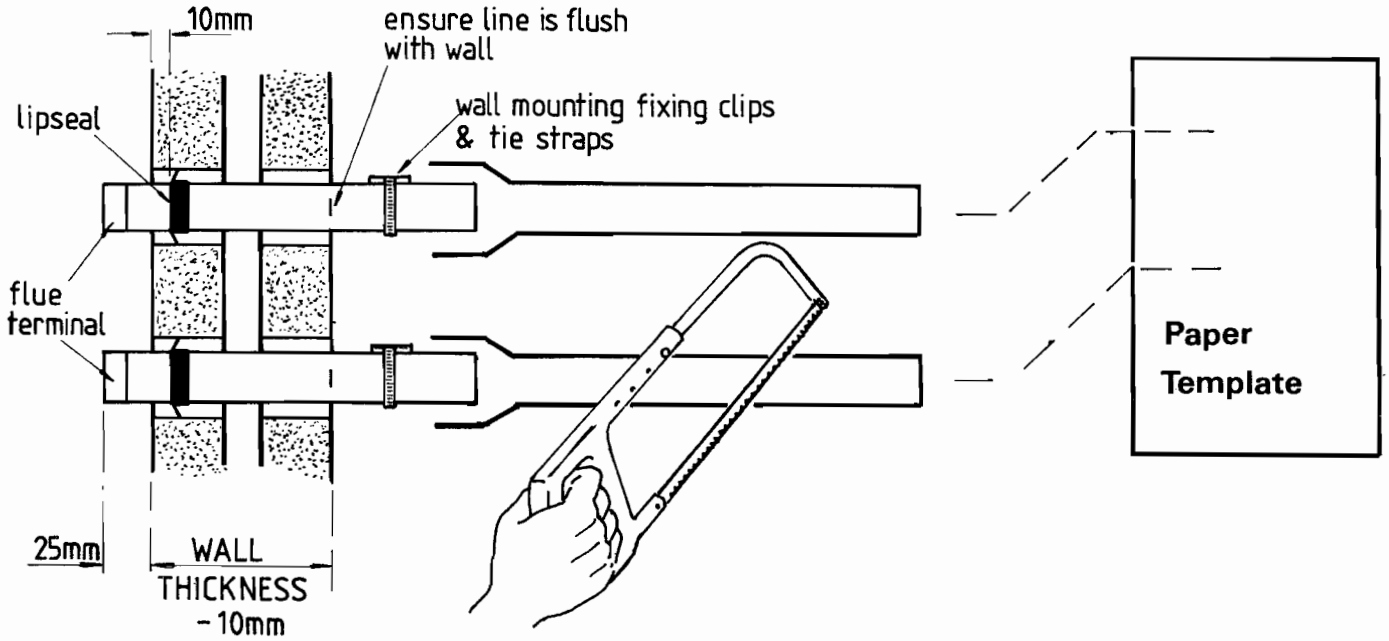
(v) Cut the next lengths of flue pipe or elbows for inlet and outlet, (if required) and slide into the support clips with the female end towards the wall.

(vi) Push the flue pipes firmly together ENSURING the pipes do not protrude further through the wall.

(vii) Continue this procedure until the flue runs are complete except for the last length to the flue box.

(viii) Remember on long horizontal flue runs to angle the outlet flue AWAY from the boiler so any condensate will run out from the boiler.





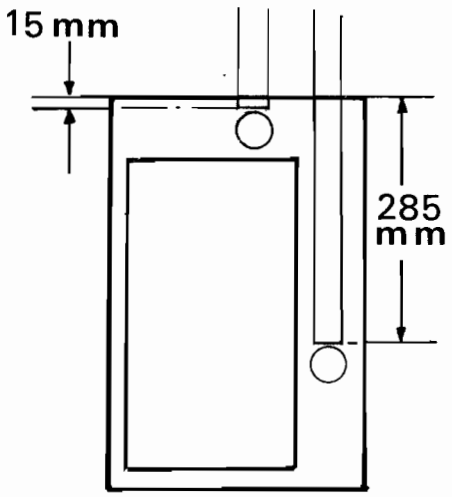
5.2.4 *Connecting the flues to the flue box*

Depending on the directions of the flue entry the following are the dimensions for flue length from elbow to case. (See diagrams).

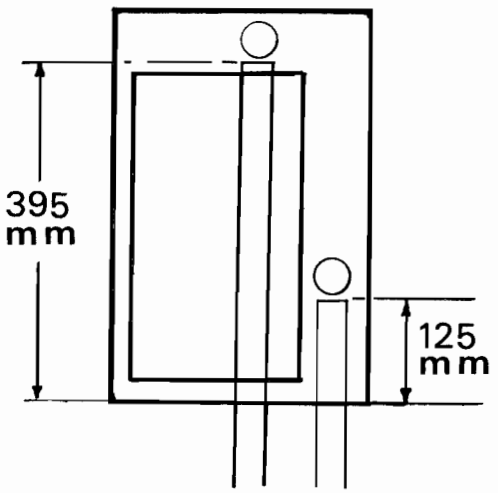
Add on the dimensions from the diagrams below to the last flue lengths before cutting and fixing (depending on the incoming flue directions).

At this stage you should have the template fixed to the wall and both flue runs completed and terminating at the positions marked on the template as required.

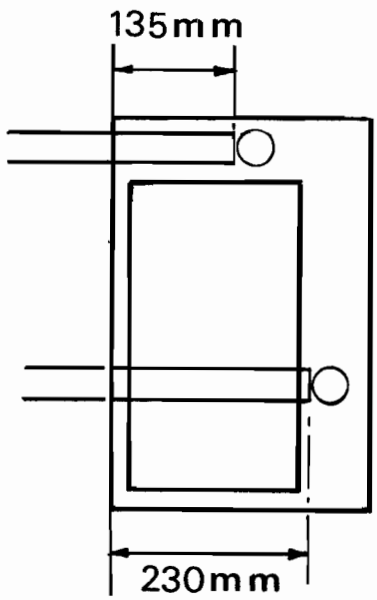
Top Entry
Inlet (upper connection) — 15mm
Outlet (lower connection) — 285mm



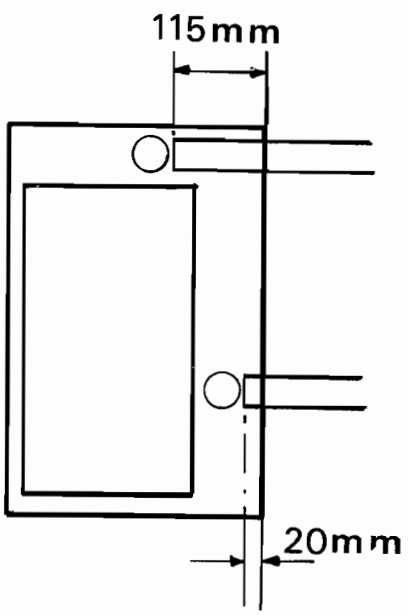
Bottom Entry
Inlet — 395mm
Outlet — 125mm



Left Hand Side Entry
Inlet — 135mm
Outlet — 230mm



Right Hand Side Entry
Inlet — 115mm
Outlet — 20mm



5.2.4.1 *Elbows*

Red, stamped 1m — 300mm - 1m Kit A
Blue, stamped 4m — 1m - 4m Kit B
Yellow, stamped 6m — 4m - 6m Kit C
} Inlet

Plain — Outlet

Ensure you have the correct elbows in your kit.

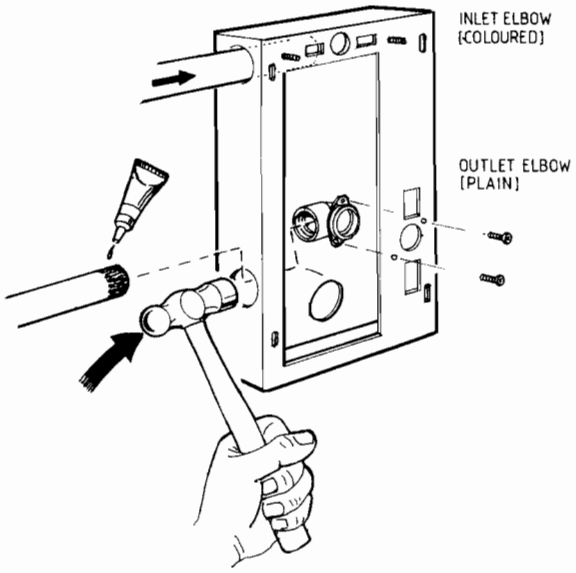
Using the silicone rubber solution

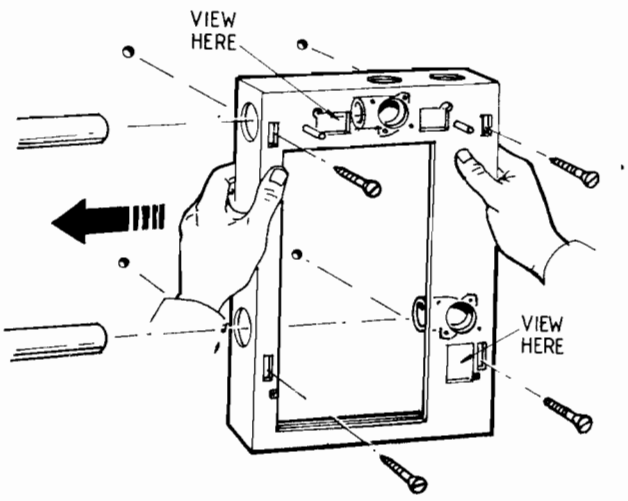
(1) Wear gloves and/or goggles where there is a risk of accidental contact.
(2) Store below 30°C and use in a well ventilated area.
(3) If any silicone is spilt wipe any excess up with a soft cloth and allow to cure. Then scrape up any excess.

(i) Smear a film of silicone (approx. 0.5mm thick) onto the ends of the pipes, (approx. 20mm along).
(ii) Remove the template.
(iii) Take the flue box, take the elbows and align the elbows to their required orientation with the two fixing screws. Coloured inlet elbow at the TOP, outlet elbow at the BOTTOM.

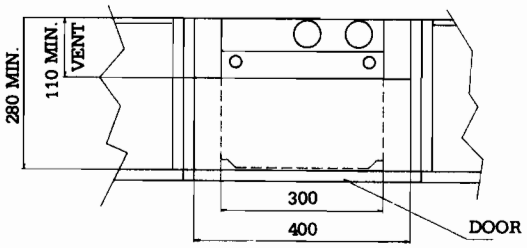
NOTE — the elbows cannot be fitted incorrectly.

(iv) Carefully knock out the two plates where the flues will be entering the box and discard. This is best achieved by tapping the disc with a hammer away from the joining tabs then twist loose with finger and thumb.
(v) Slide the flue box over the flue pipes and locate the flue pipes fully into the elbows ensuring a good seal. Secure the flue box to the wall using the screws provided. The elbows may be viewed through the front box to ensure correct location.





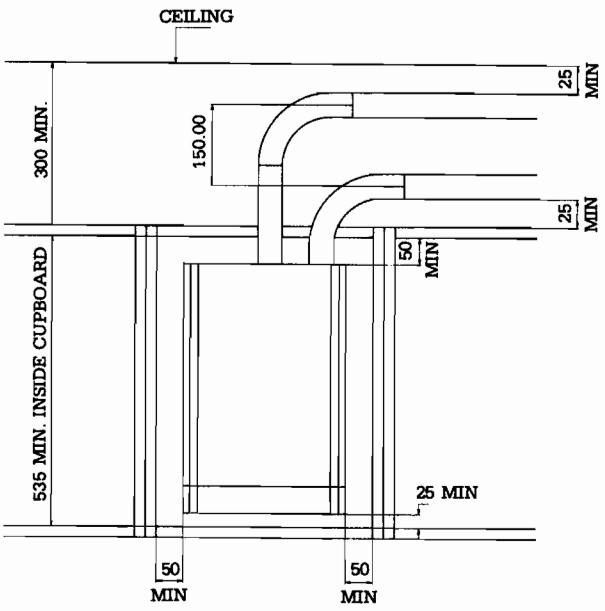
5.2.5 *Additional requirements for the installation of the Microturbo MDF in a kitchen cabinet*



The Microturbo MDF has been specifically designed to fit into a kitchen wall cabinet which must be at least 535mm high (internally) and 400mm wide (internally). To facilitate ventilation and enable services to be routed easily, it is necessary to remove a section at the rear of the top and bottom panels. The boiler must be fixed to the rear wall and **not** the back panel of the unit. (See diagram).

If the flues are to be routed along the top of the kitchen unit a minimum distance of 300mm is required between the ceiling and the unit top.

The flue outlet pipe must be kept a minimum distance of 25mm from any combustible surface.

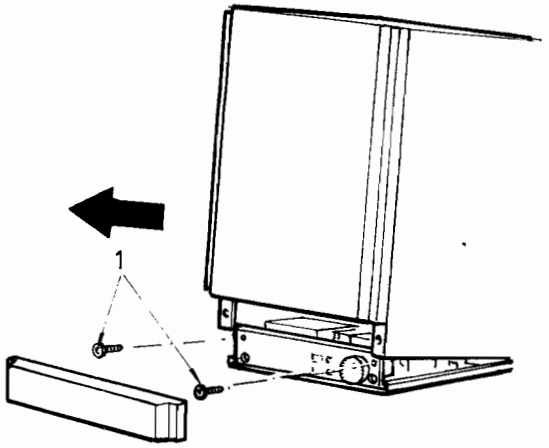


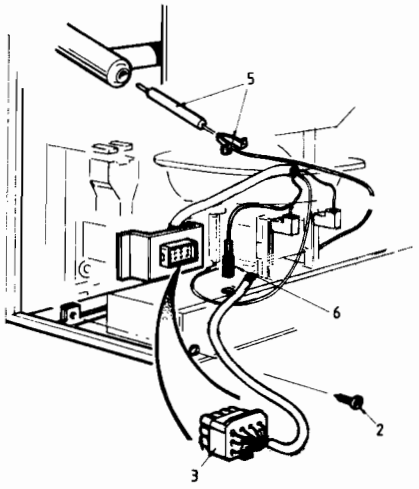
5.2.5.1 *Installing the Flue Pipes & Box — KITCHEN CABINET ONLY*

As there may be insufficient room to enable the flue box to be installed as in the previous text, it may be easier to introduce the last flue lengths into the elbows/flue box assembly before fixing the flue box to the wall. In this case leave sufficient room to enable these flue lengths to fit into the flues fitted previously. These requirements must be taken into consideration before finalising the flue positions. The flue box must be positioned in the cabinet to cover the minimum clearances required for servicing — Sect. 3.

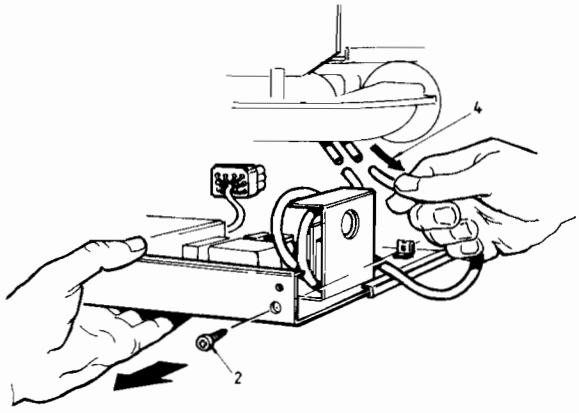
5.3 *Fixing the boiler to the Flue Box — MDF*

(i) Remove the boiler plinth, and remove two screws (1) to remove the boiler case. — The case is hinged at the top. Pull forward at the base and lift off.

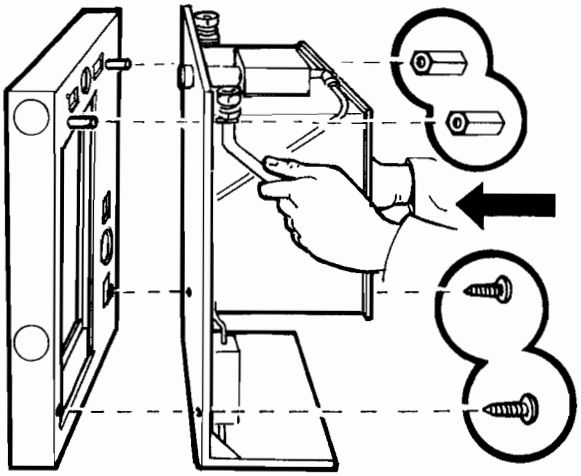




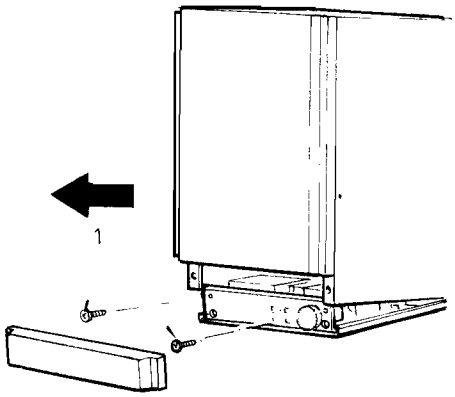
(ii) Remove the two screws securing the tray (2) and the plug in connector (3).
(iii) Pull off the two pressure sensing tubes (4) — white tube to white tube.
(iv) Pull out the thermostat phial and retaining clip (5).
(v) Pull out the spark ignitor lead from the control box (6).
(vi) Remove tray.

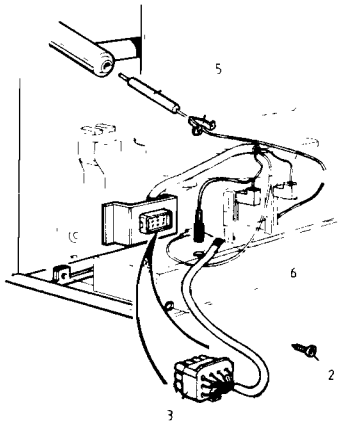


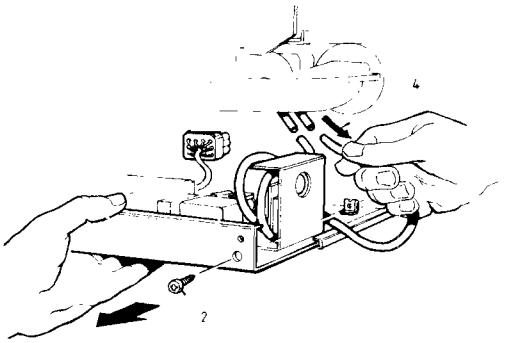
(vii) Pick up the boiler and line up with the two studs on the flue box. Push the boiler into position checking that the inlet and outlet pipes enter the elbows and make a seal. Secure with the two pillar nuts and two screws provided in the boiler plastic bag assembly.

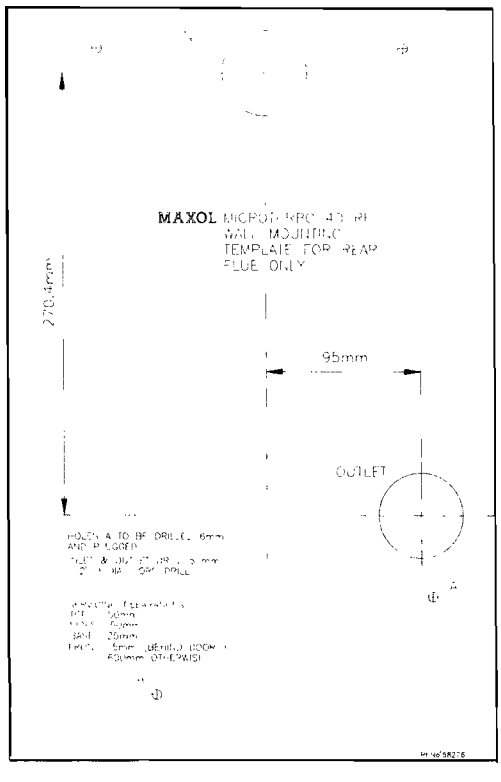


Installation of Rear Flue Model (RF)









This model has the option of rear flueing only. The flues can be run from 180mm (7in) to 380mm (15in)

5.4. Prepare the boiler

(i) Remove the boiler plinth, and remove two screws (1) to remove the boiler case. — The case is hinged at the top. Pull forward at the base and lift off.

(ii) Remove the two screws securing the tray (2) and the plug in connector (3).

(iii) Pull off the two pressure sensing tubes (4) — white tube to white tube.

(iv) Pull out the thermostat phial and retaining clip (5).

(v) Pull out the spark ignitor lead from the control box (6).

(vi) Remove tray.

5.5 Wall Mounting Template

(i) Tape the template into position taking into account the minimum installation requirements detailed in section 3. Ensure the template is square.

(ii) Drill and plug the fixing holes in the positions marked using the plugs provided in the fixing kit.

(iii) Cut the two flue holes (preferably using a 52mm — 2in core drill) in the positions marked. Ensure both faces are clean and free from breakout — make good if necessary.

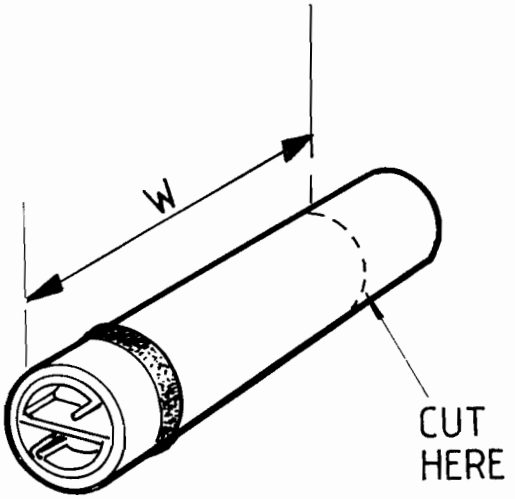
(iv) Remove template.

5.6 *Fixing the Flue Terminals*

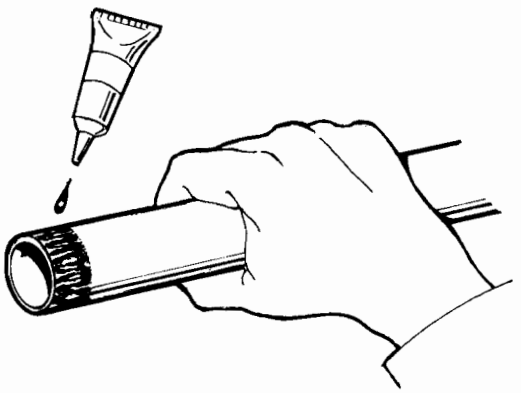
(i) Two lengths of flue pipe are provided of lengths 381mm (15in) with flue terminals at one end.

(ii) Measure the wall thickness and mark it onto the flue pipes **W**.

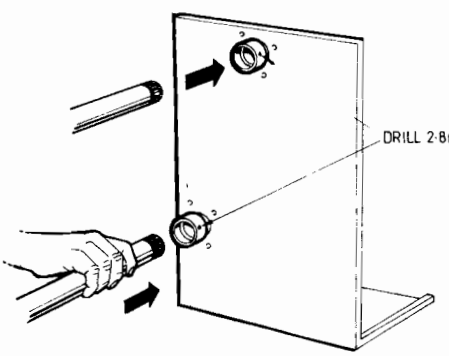
(iii) Cut the flue pipes and remove the burrs both inside and outside. CUT AT OPPOSITE END TO THE FLUE TERMINAL. Ensure any swarf is removed.



(iv) Smear a film of silicone sealant (approx. 0.5mm thick) onto the ends of the pipes (approx. 40mm along).



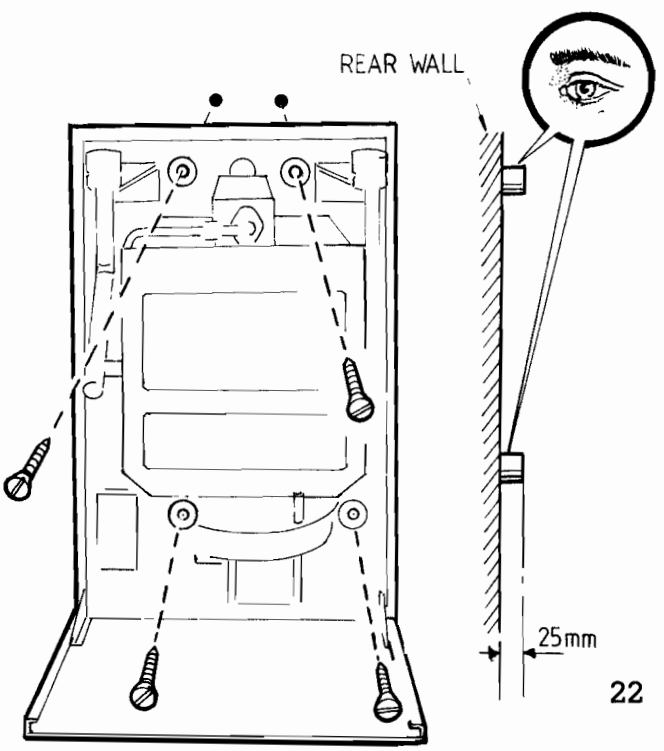
(v) Push the plain ends of the pipes into the two connections at the rear of the boiler. Drill through the sides of the socket with a 2.8mm drill and secure the pipes with the two No.6 screws provided.



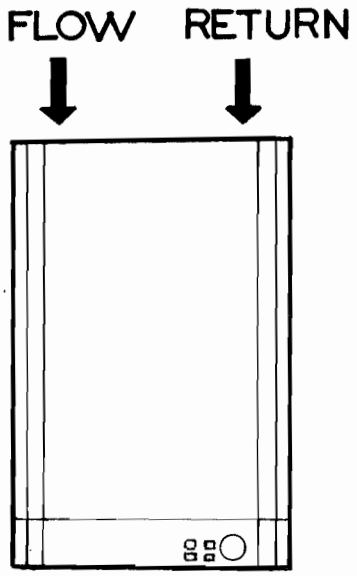
5.7 *Wall Mounting the Boiler*

(i) Offer the boiler and flue pipes assembly to the wall and push the flues and flue seals through until the boiler meets the wall. Secure with the four screws provided in the plastic bag assy.

(ii) Visually check that the flue terminals project 25mm on the outside wall.



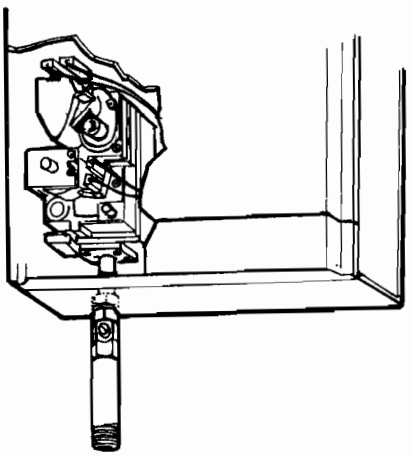
6 Water Connections



The Flow and Return Connections

These are suitable for 22mm copper pipework with compression fittings integral with the heater (Note: as despatched the ends are blanked with plastic or metal discs. These must be removed by unscrewing the nuts and substituted with the olives supplied in the ancillary components (Plastic bag.) The flow is the L.H. connection and both are situated at the top rear of the case.

7 Gas Connection

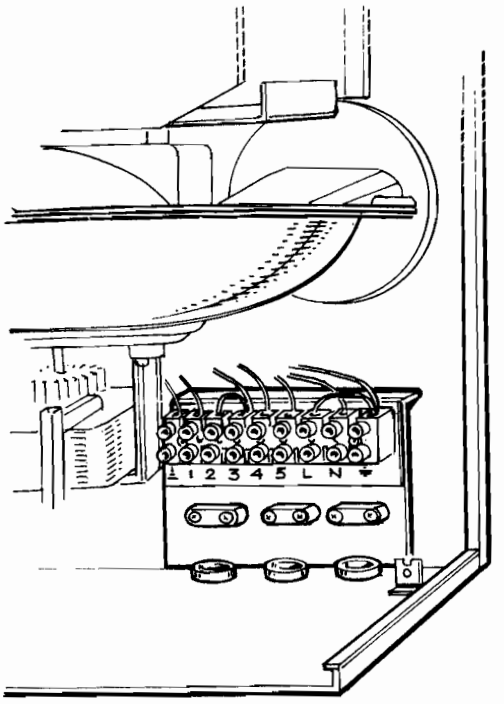


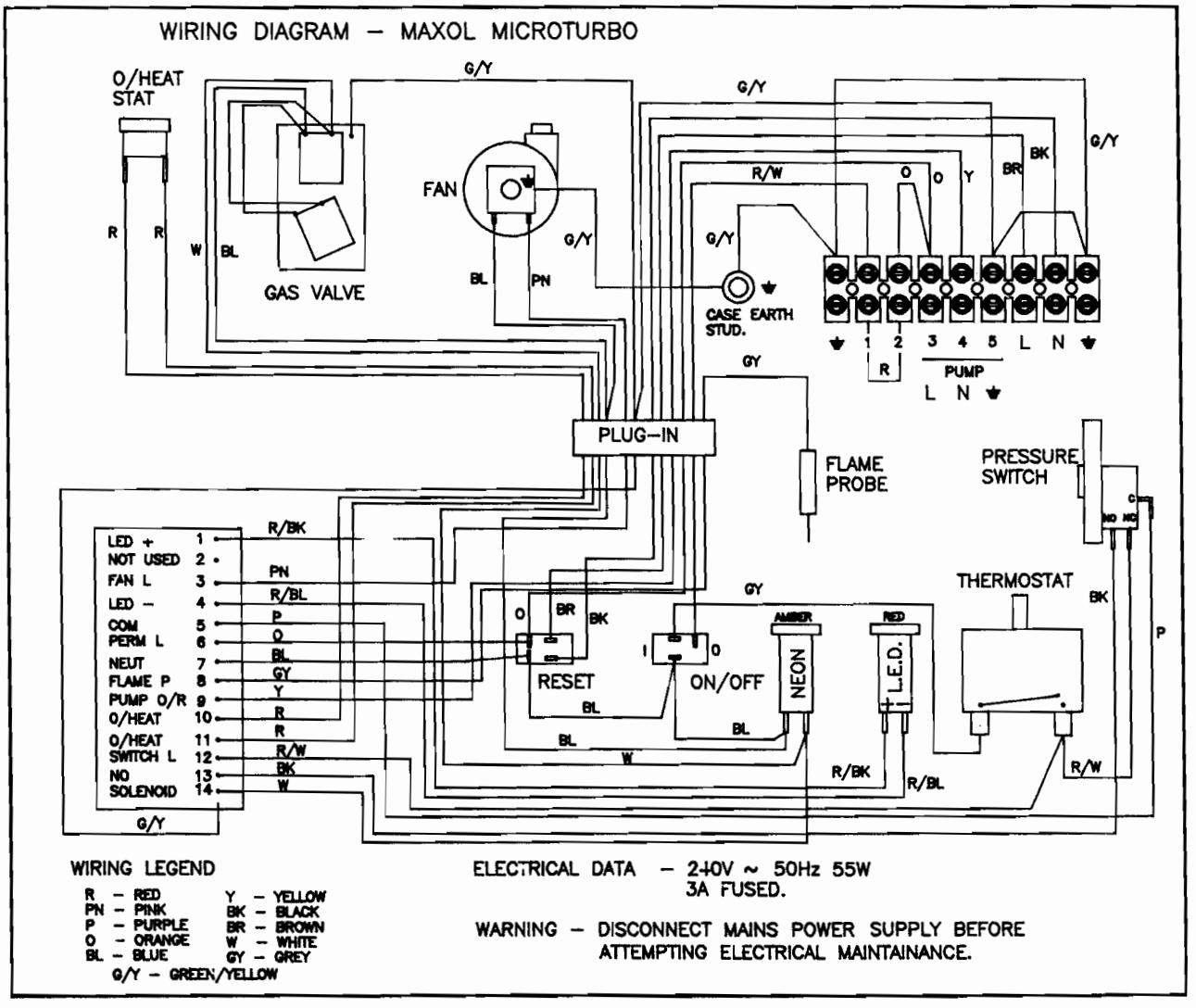
The gas connection to the appliance is Rc ½ (½ in B.S.P.) and is situated at the rear left hand side of the base.
The Neva cock is supplied separately in the fitting kit.

8 *Electrical Connection*

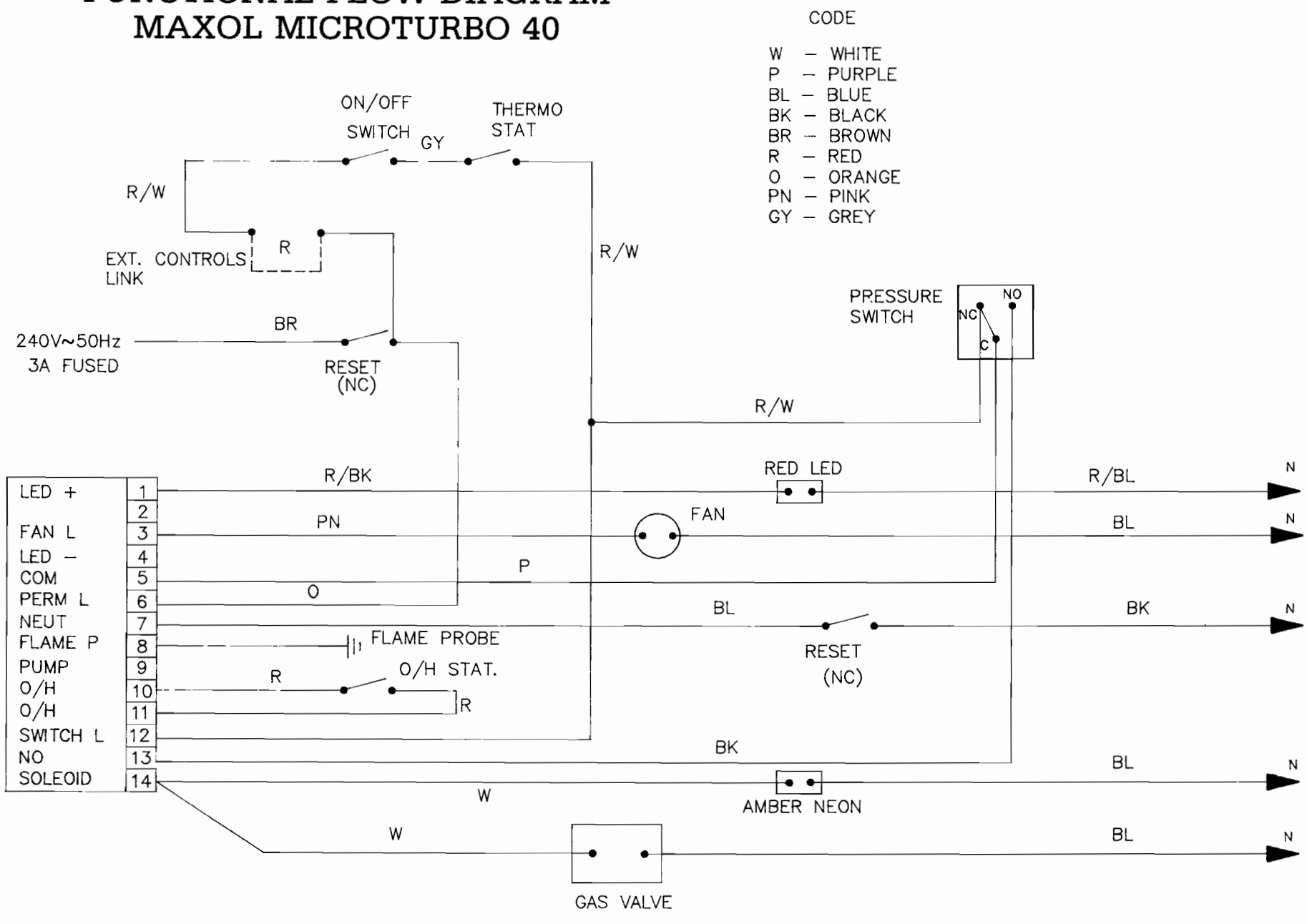
(i) Route the incoming cables to the bottom, rear, right-hand side through the grommets provided.

(ii) Connect the electricity supply cable, pump cable and any external control cable to the terminal block and clamps.





FUNCTIONAL FLOW DIAGRAM
MAXOL MICROTURBO 40



Notes

(a) The incoming mains supply cable is connected to the terminals L - live (Brown wire), N - neutral (Blue wire), ⏚ - earth (Green/Yellow wire).

(b) No controls must be connected directly in the supply line to the terminal marked L.

(c) The length of the conductors between the cord anchorage and the terminals must be such that the current carrying conductors become taut before the earth conductor (i.e. the earth wire must be slightly longer than, both live and neutral when connecting into the terminal block).

(d) **The pump must be connected to the terminal block at terminals 3 (pump live), 4 (pump neutral) and 5 (pump earth) to allow the overrun thermostat to be operative. All wiring for the pump must be suitable for 240V.**

(e) If external controls are used remove link wire (terminals 1 and 2) and connect the switched line to terminal 1, and earth to ⏚ as in the diagram; — ensure all cables are secured.

(iii) Refit the controls tray and secure using two screws (2) as in section 5.4.3.

(iv) Join together the plug in connector (3).

(v) Connect the spark ignitor lead (red sleeve) to the control box (6).

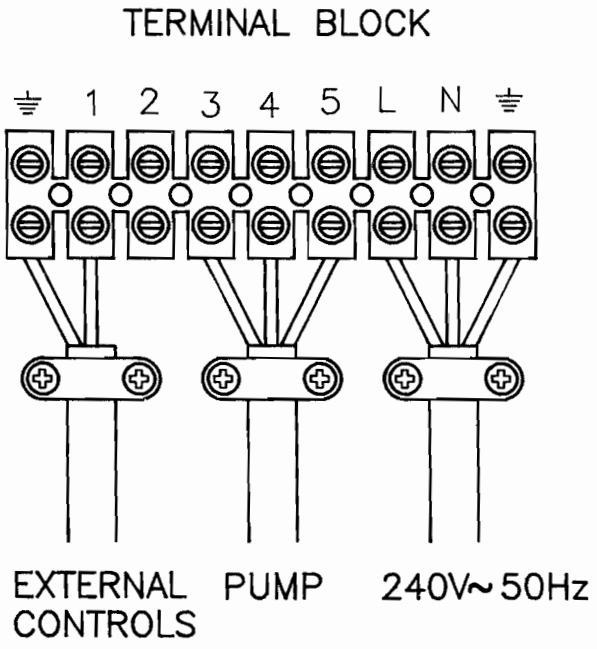
(vi) Connect the fan sensing tubes — note colour coding — white tube to white pipe (4).

(vii) Replace thermostat phial & clip (5).

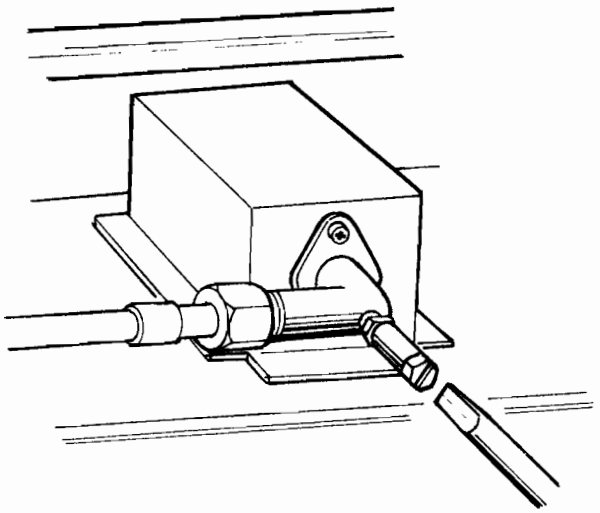
(viii) Fault Finding — see page 29 for fault finding chart.

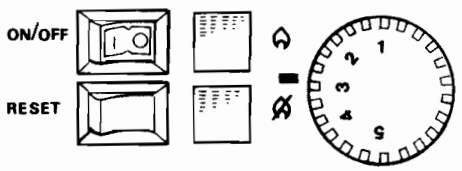
On completion of an installation service/fault finding task which has required the breaking and making of electrical connections complete the following electrical safety checks with a suitable meter.

A - Earth Continuity
B - Polarity
C - Resistance to earth
D - Short Circuit.



9 Commissioning the Boiler





(a) Ensure the system is filled with water.

(b) Check that all drain cocks are closed and any valves in the flow and return are open.

(c) Remove the screw on the burner pressure test point on the injector elbow assy. and connect a pressure gauge.

(d) Turn ON the electricity mains supply. **On connection of the mains supply the pump will run for approx. 9 minutes to check the pump overrun circuit.** Ensure the pump is running and connected properly.

(e) Switch the boiler mains ON/OFF switch to ON. Ensure that all external controls are calling for heat.

(f) The boiler mains switch should illuminate and the fan will start running. After a few seconds the solenoid valve will open and the intermittent spark will commence until the main burner ignites.

(g) Once the main burner is lit the amber neon (burner on) will illuminate.

(h) If for any reason the main burner fails to light on initial lighting the amber neon will extinguish and the appliance will restart the ignition sequence from (f). See fault finding chart if this does not happen. If the appliance still fails to ignite contact the manufacturers for advice.

(i) Test for gas soundness around all the boiler gas carrying components.

(j) After 10 minutes the burner pressure can be checked. The boiler is factory set to the required input and CANNOT BE ADJUSTED. — The governor is factory sealed, do not break the seal.

Burner pressure = 10.3mb ± 0.5mb.

If the pressure is incorrect check the inlet pressure which should be 20mb. If this is correct refer to the manufacturer.

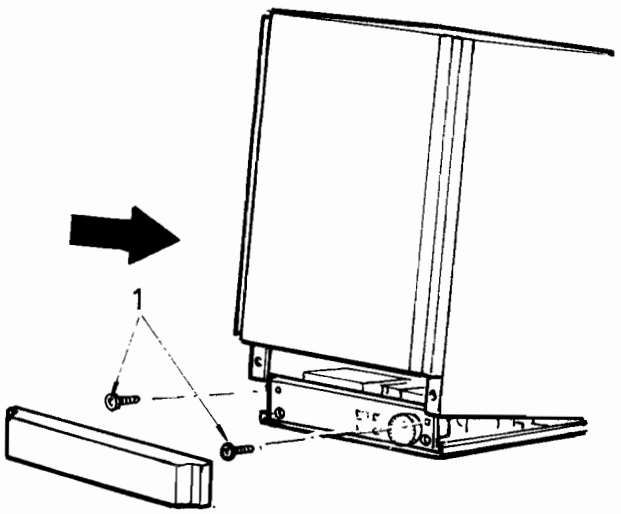
Time for 100 litres of gas = 4min 20sec.

(k) Temporarily switch off, remove the pressure gauge and retighten test point screw. Re-light and check for gas soundness at test point screw.

(l) Turn OFF boiler ON/OFF switch.

10 Fitting the Case

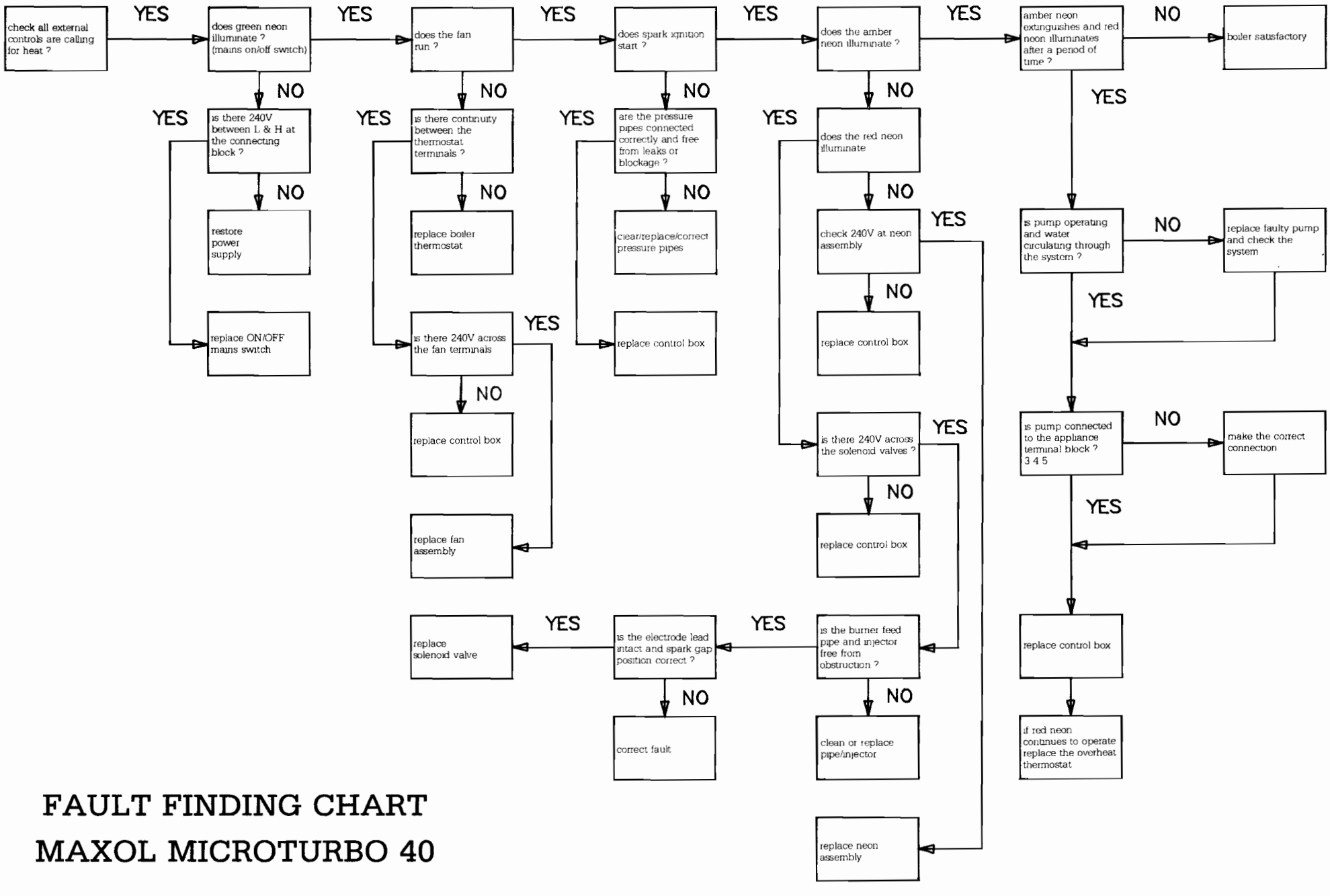
(a) Lift the boiler case up to the boiler and hang the case on the top back rail at an angle.
(b) Position the case at the bottom and secure with the two screws provided.
(c) Push back the plinth onto the guide rails.



11 General Checks

(a) With the water system **hot** check all water connections for soundness.
(b) Turn off gas, water and electricity supplies and drain completely down to flush the system. A drain cock is fitted on the return pipe.
(c) Refill and vent the system including an anti-corrosion additive (e.g. Fermox CP3) at the recommended dilution — if required.
(d) Balance the system and correctly set the by pass for the correct design temperature rise (11°C temperature rise across the boiler under any conditions of use).
(e) Set the boiler thermostat to the systems required setting. Normally position 4 will suffice for a conventional system.
(f) Handing over — Instruct the user in the operation of the boiler and any system controls that are relevant. Hand over both the Users and Installation and Service Instructions and stress the necessity of regular annual servicing.

START



FAULT FINDING CHART
MAXOL MICROTURBO 40

Servicing Instructions

To ensure safe, efficient operation of the appliance, it is necesary to carry out routine servicing at regular intervals. The frequency of servicing will depend upon the particular installation conditions and the use to which the boiler is put, but in general, once a year should be adequate.

IMPORTANT: Before commencing any servicing or exchange of components always turn off the gas supply and isolate the electricity supply. After completing any service work always check for gas soundness. Ensure the appliance is cold.

1.0 Routine Annual Servicing

1.1 Remove the case Fig. 1

(i) Remove the boiler plinth.
(ii) Remove two screws (1), hinge forward the case and lift off.
(iii) Put the case in a safe position.

A combustion sampling point has been provided on the front cover **bottom** section. Remove the pozi screw to access. See Fig. 2.

Note: Combustion measurements taken from this sampling point may not give an accurate representation of the actual combustion levels found in the exhaust flue pipe of the appliance.

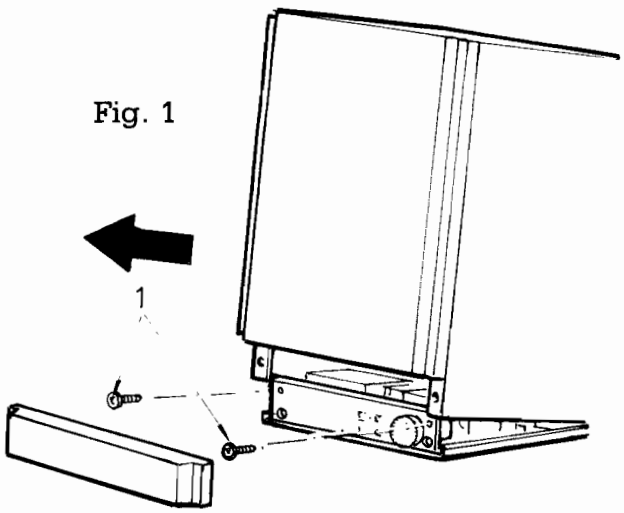


Fig. 1

1.2 Remove combustion chamber cover Fig. 2

(i) Remove the 7 brass wing nuts securing the front cover. (1)
(ii) Carefully remove the front cover and check the insulation panel (2) and also the fibre sealing gasket. (3) — replace if necessary.

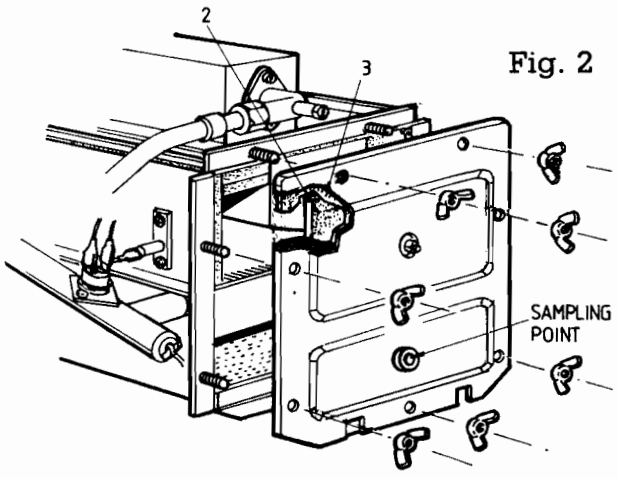


Fig. 2

1.3 Cleaning the combustion chamber Fig. 3

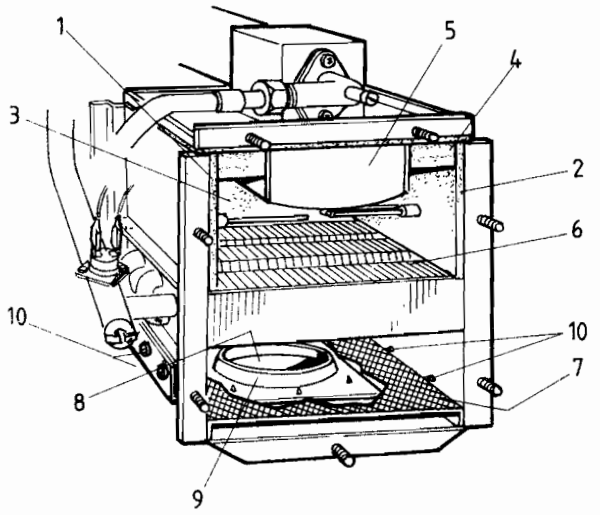


Fig. 3

(i) Check the LH, RH side and rear (1,2 & 3) insulation panels — replace if necessary.
(ii) Check the upper insulation panels (4) — replace if necessary.
(iii) Inspect and clean the burner (5) — lightly brush away any debris with a soft brush and ensure that all ports are free from obstruction.
(iv) Inspect and clean the heat exchanger (6) from above and below using a soft brush to remove any debris.
(v) Slide out the baffle (7) and inspect and clean, ensuring that the mesh is clear from obstruction.
(vi) Inspect the fan rotor (8) and fan seal (9) and clean with a soft brush if necessary.
(vii) Replace the baffle (7) sliding it between the combustion chamber base and the four screws (10).

1.4 Check the Spark & Sensing Positions Fig. 4

Ensure that the dimensions stated in Fig. 4 are still in tolerance, if necessary re-position carefully the probes taking care not to damage the ceramic insulation.
It may be necessary to remove the spark electrode to set the gap — see section 2.5.

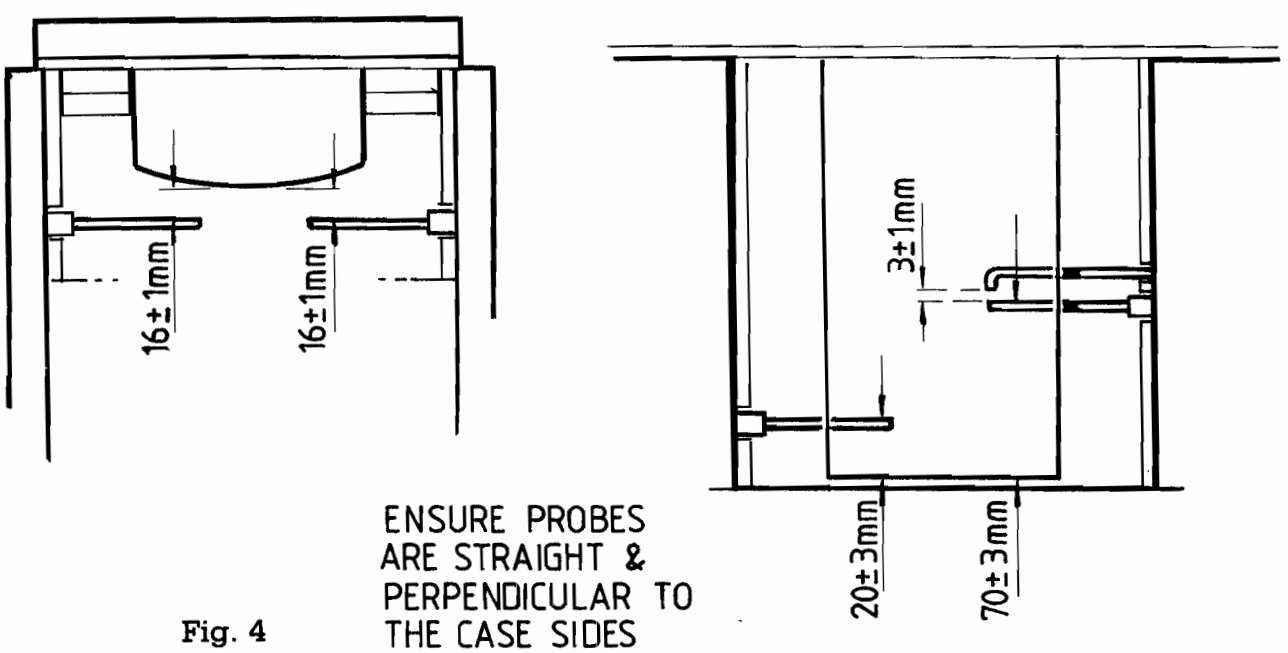


Fig. 4

1.5 *Replace the combustion chamber cover*

(i) Carefully locate the door on the seven studs and push back to the combustion chamber taking care not to damage the threads.

(ii) Re-locate the seven wing nuts and tighten fully. Check that the door is sealed completely around the combustion chamber front.

1.6 *Check and Clean the Injector Fig. 5*

(i) Disconnect the feed pipe from the injector block (1).

(ii) Remove the two screws securing the injector block to the mixing box (2).

(iii) Remove the injector block assembly and check the injector. Clean or replace if necessary.

(iv) Re-assemble in reverse order ensuring the rubber gasket (3) provides a good seal.

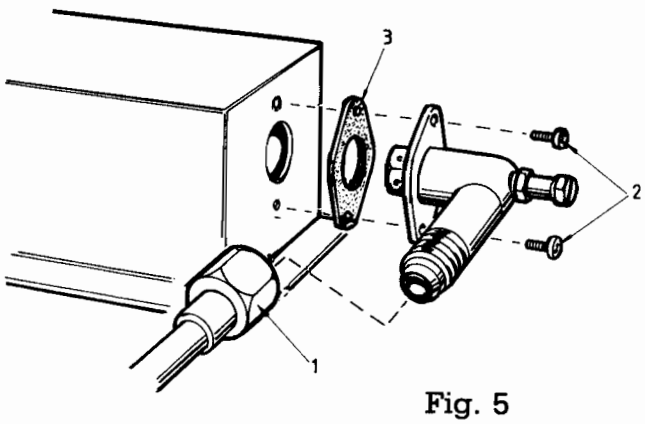


Fig. 5

2.0 Component Exchange

2.1 Control Tray removal Fig. 6

The following components are mounted on a slide out tray:

(1) Control box.
(2) Pressure switch.
(3) Boiler thermostat.
(4) Appliance switches.
(5) Amber neon and Red l.e.d. indicator lights.

Fig. 6

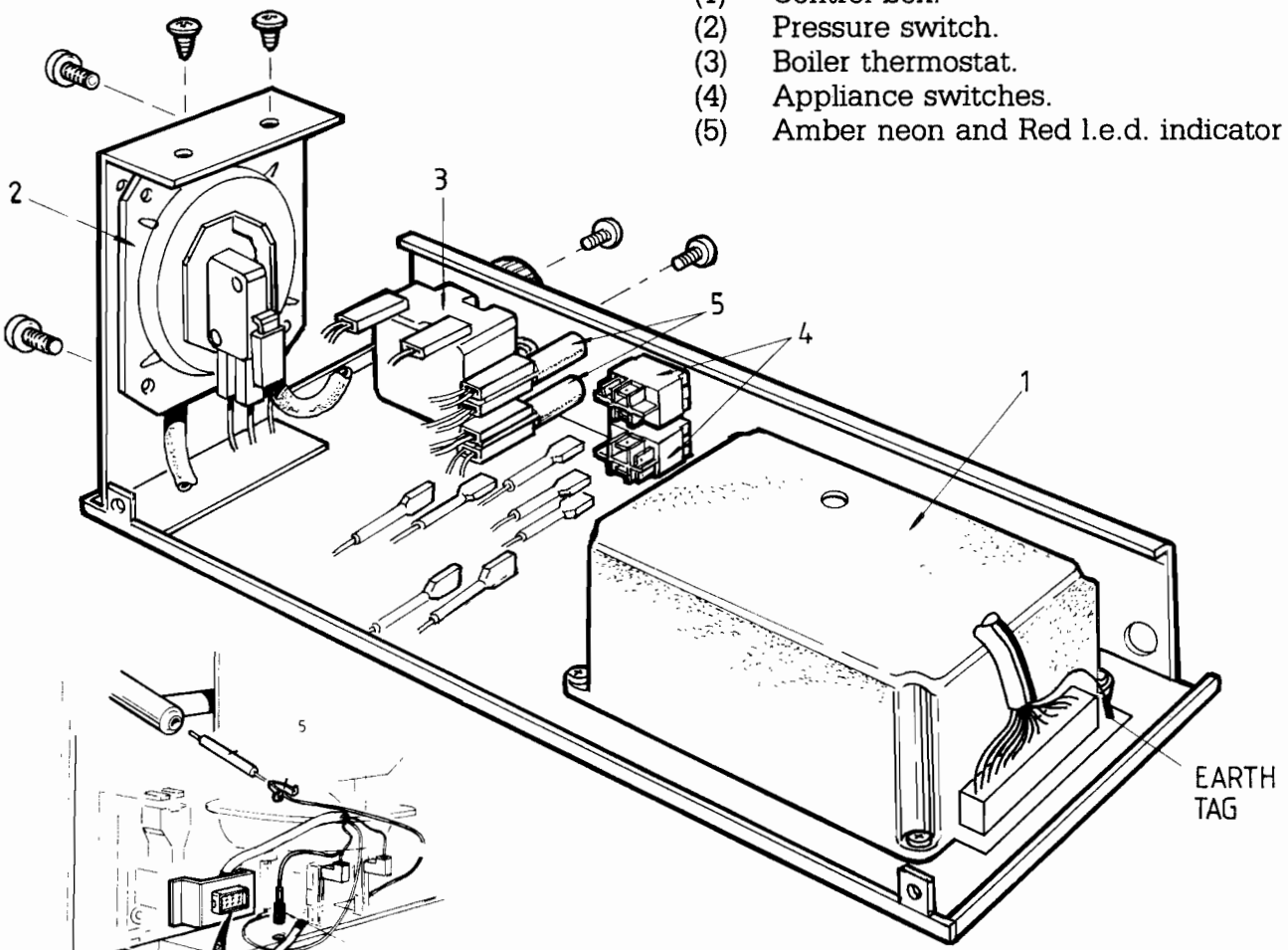


Fig. 7

To remove the tray: Figs 7 & 8

(i) Remove the two screws (2).
(ii) Remove spark ignitor lead from the control box (6).
(iii) Remove the plug in connector (3).
(iv) Remove the red and white sensing tubes (4).
(v) Remove the thermostat phial clip and pull out the thermostat phial (5).
(vi) Slide out the tray with the thermostat phial and move to a convenient place.
(vii) After completion of task re-assemble the tray in reverse order.

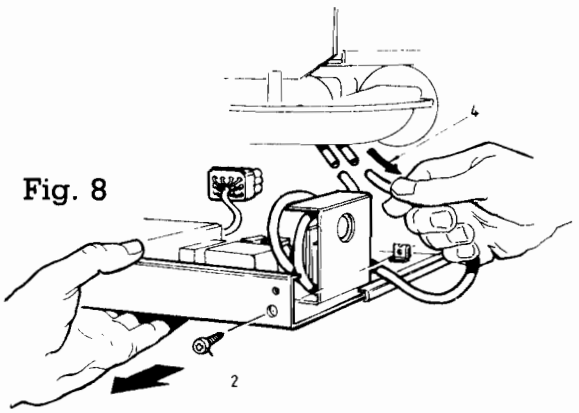


Fig. 8

2.1.1 Control Box Fig. 9

(i) Unplug the earth tag connection (1).
(ii) Unplug the large connector (2) (note this will only fit in the correct orientation).
(iii) Remove the two screws (3).
(iv) Remove the control box.
(v) Re-place in reverse order.

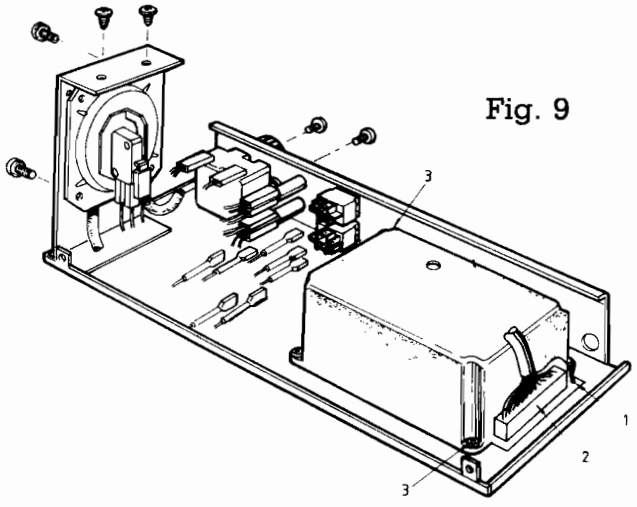


Fig. 9

2.1.2 Pressure Switch Fig.10

There are two alternative makes of pressure switch fitted on the appliance:
(a) Honeywell C6065 Fig. 10A
(b) EAC PS700 Fig. 10B

Either switch may be fitted to the appliance, but THERE IS A DIFFERENT SETTING FOR EACH APPLIANCE. Ensure you state RF or MDF model when ordering.

(i) Remove the three wires from the switch. Purple - C, Red/White - NC, Black - NO. (1)
(ii) Remove the two screws. Honeywell top, EAC — side (2).
(iii) Remove the pressure switch and disconnect the red and white sensing tubes. (3)
(iv) Refit the sensing tubes to the new pressure switch:
RED — + or H
WHITE — – or L
(v) Re-assemble in reverse order ensuring the wiring harness is connected properly.

Fig. 10A

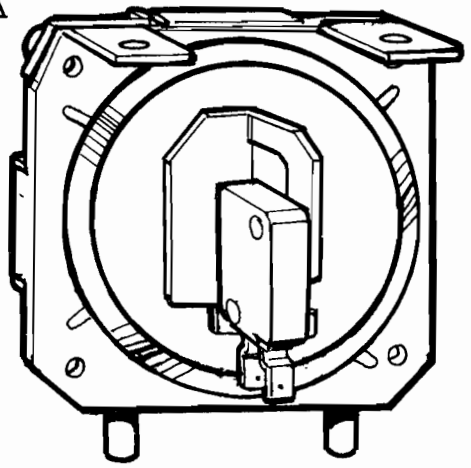
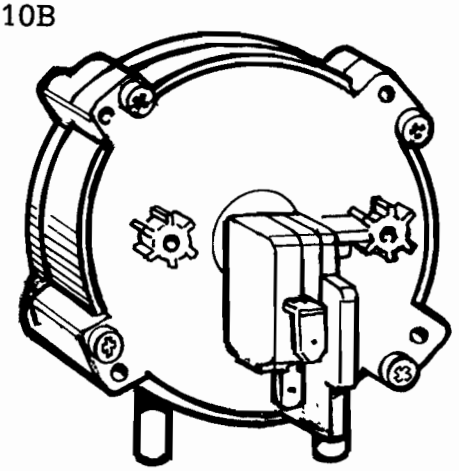


Fig. 10B



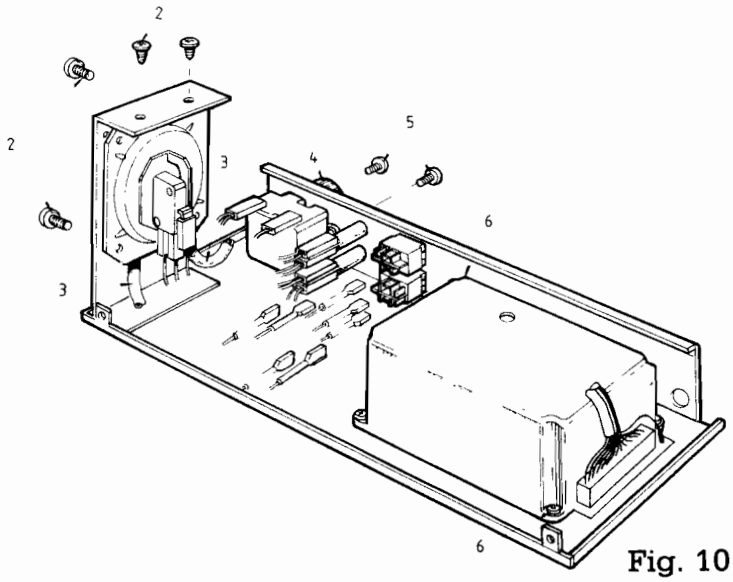


Fig. 10

2.1.3 Boiler Thermostat Fig. 10

(i) Pull off the thermostat knob (4).
(ii) Remove the two screws (5) securing the thermostat body.
(iii) Remove the screw (6) securing control box to the tray and pull out the tube to facilitate removal.
(iv) Re-assemble in reverse order ensuring the phial tube is not kinked.

2.1.4 Appliance Switches Fig. 10

(i) Press out the switch assembly and note the position of the leads.
(ii) Remove the leads and replace the switch in the correct orientation.
(iii) Re-assemble in the reverse order using the wiring diagram if necessary to re-locate the wiring correctly.

2.1.5 Indicator Lights Fig.10

(i) Push out the indicator assembly.
(ii) Remove the tags — noting position of the wires.
(iii) Replace the indicator ensuring correct polarity (plastic pip to the top).
(iv) Replace the tags ensuring correct polarity.
(v) Push back the indicator.

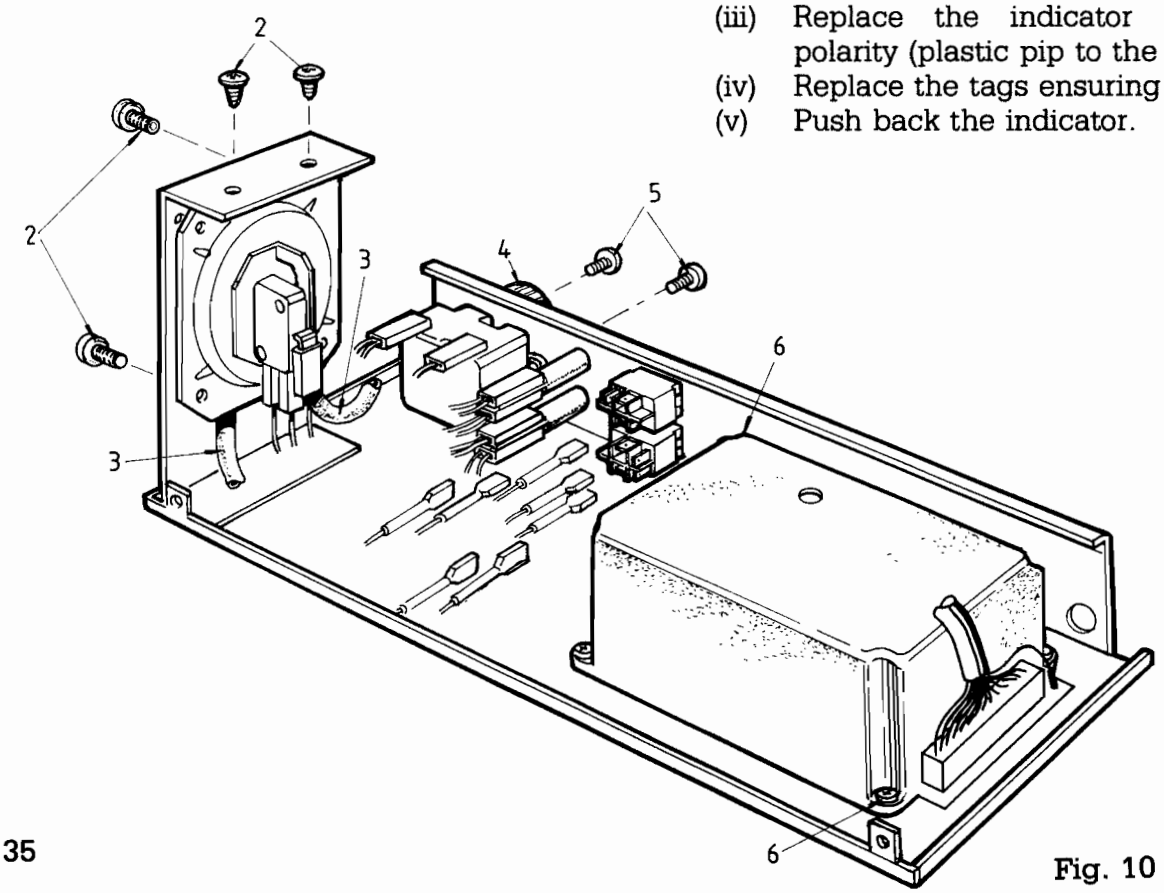


Fig. 10

(i) Remove the control tray assembly as detailed in section 2.1
(ii) Disconnect the inlet connection (1) at the Neva cock.
(iii) Remove the two hexagonal headed screws (2) to free the inlet pipe.
(iv) Remove the wiring tags and earth screw noting their positions.
(v) Remove the two screws (3).
(vi) Pull the solenoid valve forward from its base and remove from the bracket at the top (4). Note the two grub screws used for location.
(vii) Unscrew the four screws (5) and remove the inlet pipe and 'O' ring.
(viii) There are two solenoid valves approved for the appliance:—
(a) Honeywell VR 4705A — model shown in Fig. 11.
(b) Johnson GM 7531.
Both valves are completely interchangeable and are provided with a rear fixing bracket.
(ix) Replace in the reverse order. Ensure the hexagonal head screws are replaced in the correct orientation.
(x) Remove the burner pressure test point and fit a manometer. Fig 12 (3).
(xi) Follow the commissioning procedure (sect. 9 (a) to (h)) — once the amber neon illuminates set the burner pressure as on the data badge. The burner pressure is adjusted by removing the governor sealing screw and rotating the governor screw.
— Burner pressure = 10.3 mb ± 0.5 mb (cold).
(xii) Check for gas soundness at this stage.
(xiii) Turn off the mains on/off switch. Remove the pressure gauge and re-tighten test point screw.
(xiv) Place the thread sealing solution provided on the governor sealing screw and replace.
(xv) Re-light and test for gas soundness at the test point screw.

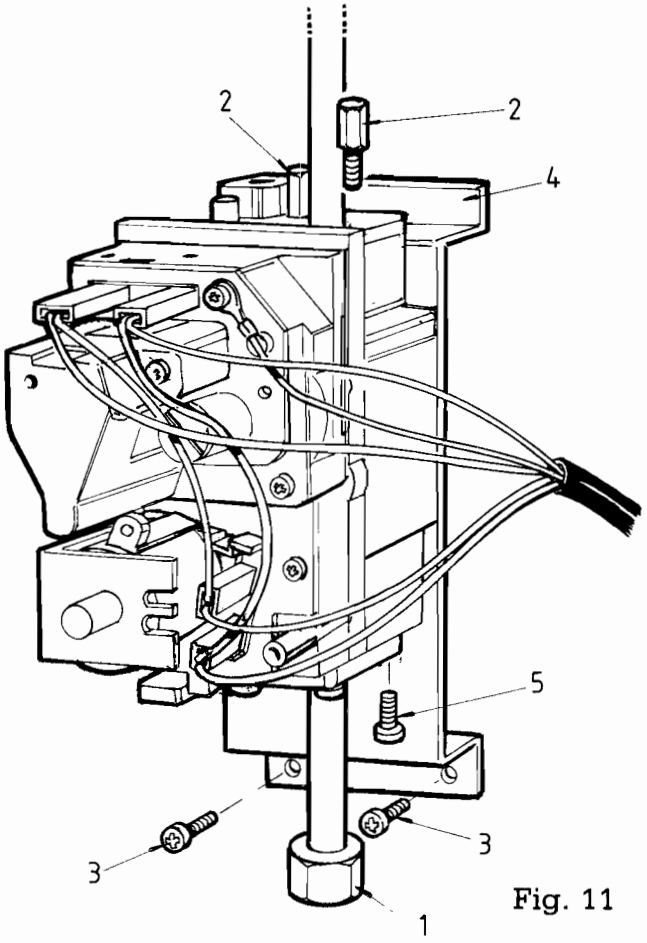
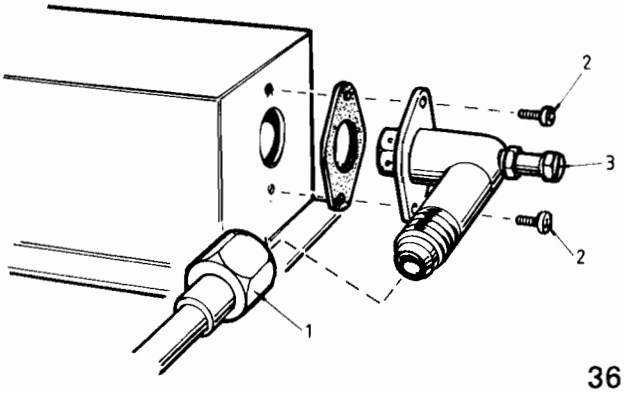


Fig. 11

Fig. 12

(i) Disconnect the feed pipe from the injector block (1).
(ii) Remove the two screws securing the injector block to the mixing box (2).
(iii) Remove the injector block assembly and replace it in the reverse order.



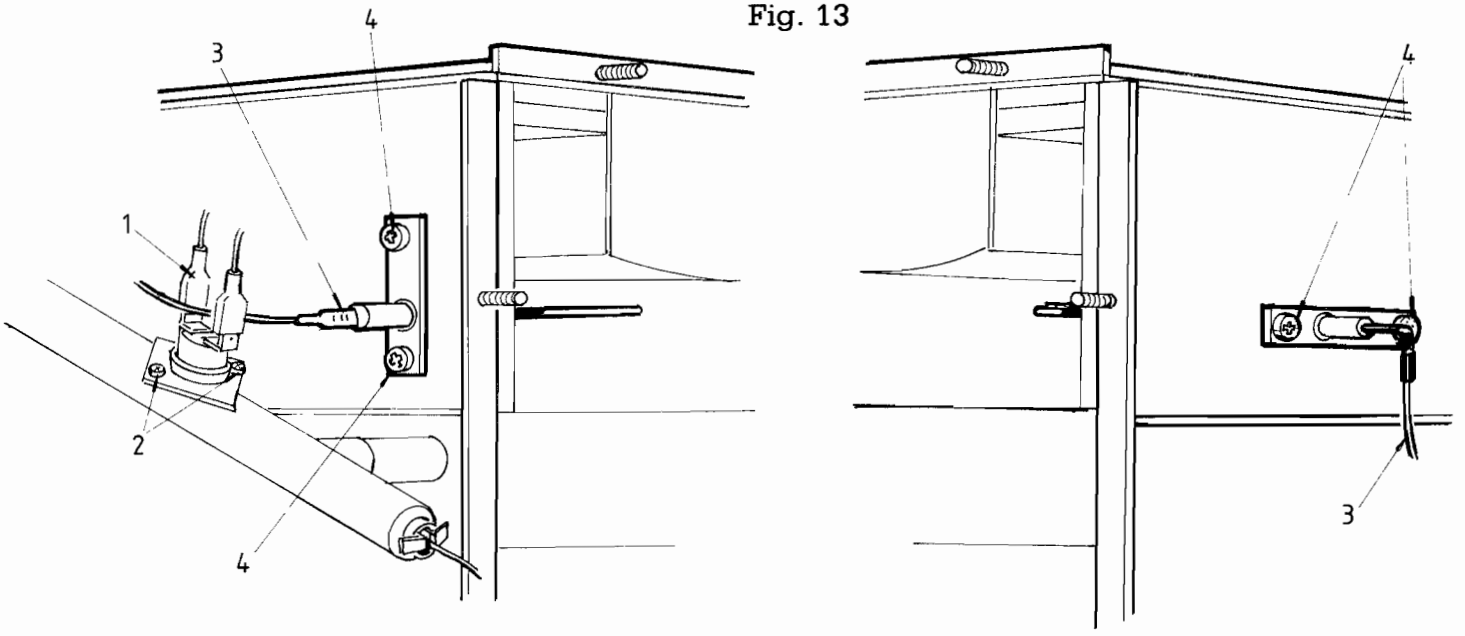
2.4 Overheat Thermostat Fig. 13

(i) Remove the two tags (1).
(ii) Remove two screws (2).
(iii) Replace overheat thermostat.
(iv) Re-assemble in the reverse order.

2.5 Spark Electrode and Flame Sensing Probe Fig. 13

(i) Remove the seven wing nuts securing the combustion chamber front cover and carefully remove taking care not to damage the fibre seal. Fig. 2.
(ii) Remove the wire tags on each probe. (3)
(iii) Remove the two screws securing each probe. (4)
(iv) Remove the probes taking care not to damage the insulation.
(v) Re-assemble in reverse order and then re-set the positions as in Fig. 4.

Fig. 13



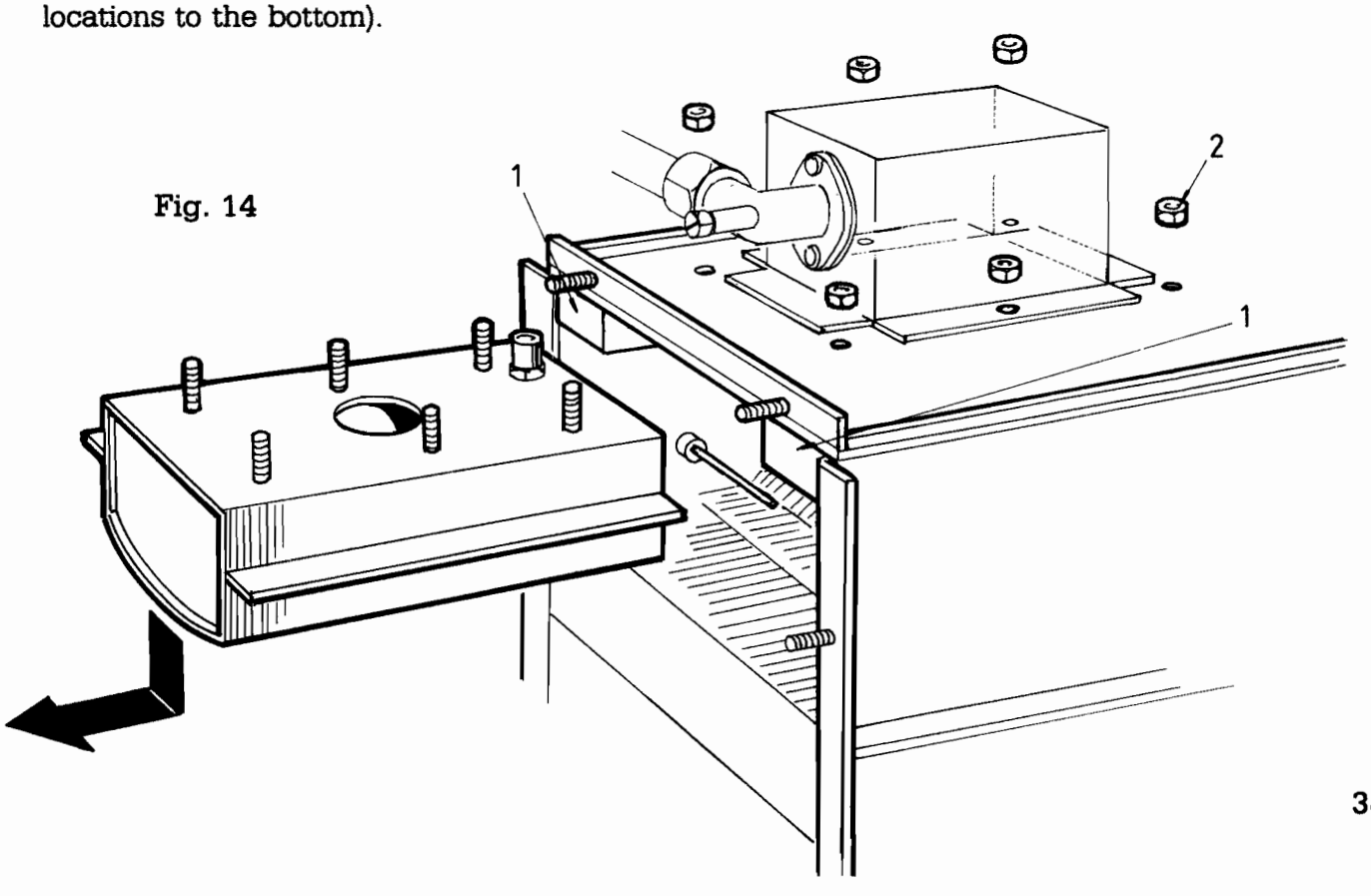
2.6 Burner Fig. 14

(i) Remove the white sensing tube.
(ii) Remove the seven wing nuts securing the combustion chamber front cover and carefully remove taking care not to damage the fibre seal. Fig. 2.
(iii) Remove the top insulation panels (1). Remove the spark probes (section 2.5).
(iv) Remove the six nuts on combustion chamber top (2).
(v) Pull the burner down carefully and pull out taking care not to damage the top fibre seal.
(vi) Re-assemble in reverse order and reset the probe positions as in Fig. 4.

2.7 Insulation Panels

(i) Remove the probes as in section 2.5.
(ii) Remove the burner as in section 2.6.
(iii) Pull out the left hand and right hand side insulation panels noting the cut outs at the back.
(iv) Pull out the rear panel.
(v) Unscrew the nut and washer on the front door and remove the door panel and fibre seal.
(vi) Re-assemble in reverse order taking care to align front door panels correctly and also to locate the rear panel correctly (cut out locations to the bottom).

Fig. 14



2.8 Fan Fig. 15

(i) Remove the seven wing nuts securing the combustion chamber front cover and carefully remove taking care not to damage the fibre seal. Fig 2.
(ii) Slide out the baffle (1) from between the four screws (2) and combustion chamber base.
(iii) Remove controls tray as detailed in section 2.1.
(iv) Remove the wiring tags including the earth lead from the fan.
(v) Remove the four screws (2) from combustion chamber sides.
(vi) Pull the fan assembly out of the inlet and outlet seals and remove.
(vii) Remove the two screws holding the fan mounting bracket and transfer to the replacement fan.
(viii) Pull off the fan outlet reducer and transfer to the replacement fan.
(ix) Re-assemble in the reverse order.

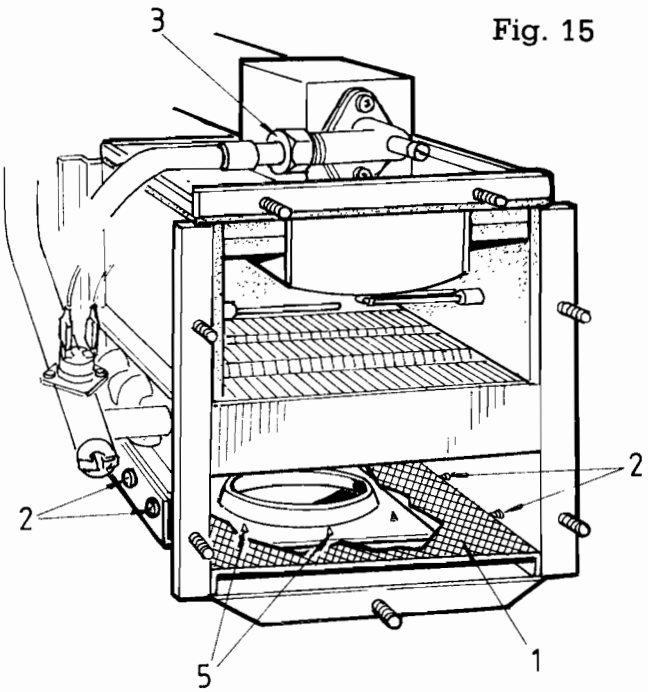
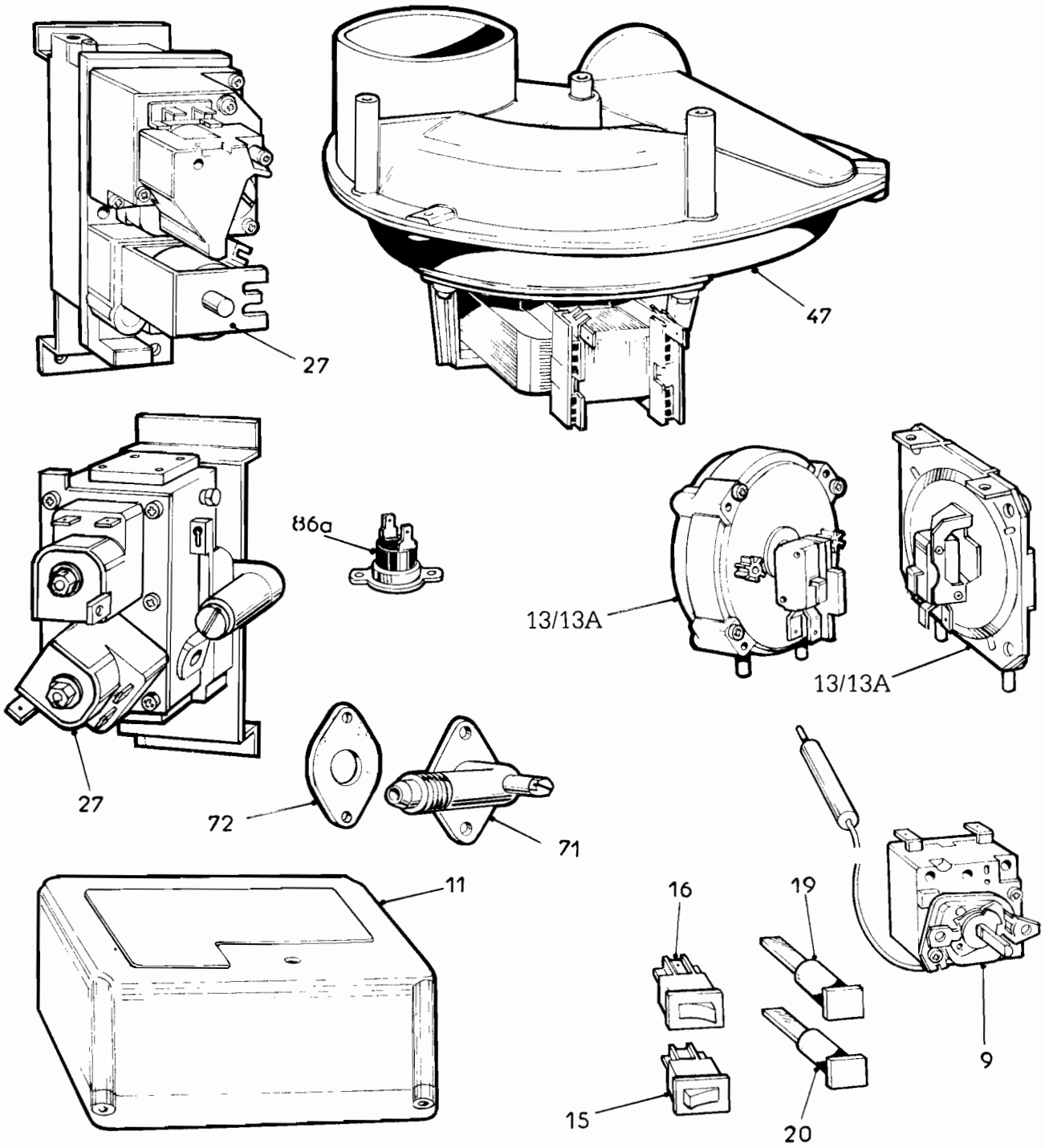


Fig. 15

2.9 Heat Exchanger Fig. 15

(i) Remove Overheat Thermostat. Section 2.4.
(ii) Remove Spark Electrode and Flame Sensing Probe. Section 2.5.
(iii) Remove Burner. Section 2.6.
(iv) Remove Insulation Panels. Section 2.7.
(v) Remove Fan. Section 2.8
(vi) Disconnect the nut (3) from the inlet pipe to the injector assembly.
(vii) Remove the two hexheaded screws from the gas valve top (2) and remove the inlet pipe Fig.11.
(viii) Drain the water system and disconnect at the flow and return union connections.
(ix) Disconnect the two locknuts from the heat exchanger brackets and remove.
(x) Remove the four combustion chamber retaining screws and remove the heat exchanger assembly.
(xi) Remove the six screws (5) on the fan seal clamp and transfer the seal and clamp to the replacement heat exchanger assembly.
(xii) Re-assemble in reverse order.
(xiii) Check for water soundness.



Short List of Parts for Maxol Microturbo 40

Key No.	Part No.	GC No.	Description	Qty.
9	54604	382 424	Thermostat Landis & Gyr	1
11	56871	370 255	Control Box — APCO.	1
13/13A	57510	378 350	Pressure Switch - (R.F. Model)	1
13/13A	56872	378 337	Pressure Switch - (M.D.F. Model)	1
13/13A	57974	—	Pressure Switch - (R.F. Model) from serial No. 0800	1
13/13A	57838	—	Pressure Switch - (M.D.F. Model) from serial No. 1200	1
15	56873	378 338	Re-set Switch — Eaton	1
16	56874	378 339	Neon Switch — Eaton	1
19	57219	378 340	Neon Orange — ARCO.	1
20	57220	378 341	L.E.D. Red — ARCO.	1
27	57429	370 261	Gas Valve — Honeywell	1
27	57429	370 261	Gas Valve — Johnson	
47	57431	370 274	Fan — E.B.M. — including 'O' Ring.	1
71	57036	370 292	Injector Elbow Assy.	1
72	57039	370 293	Injector Elbow Gasket	1
86A	57516	378 349	Overheat Thermostat	1

MAXOL

microturbo

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A member of the Glen Dimplex Group

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