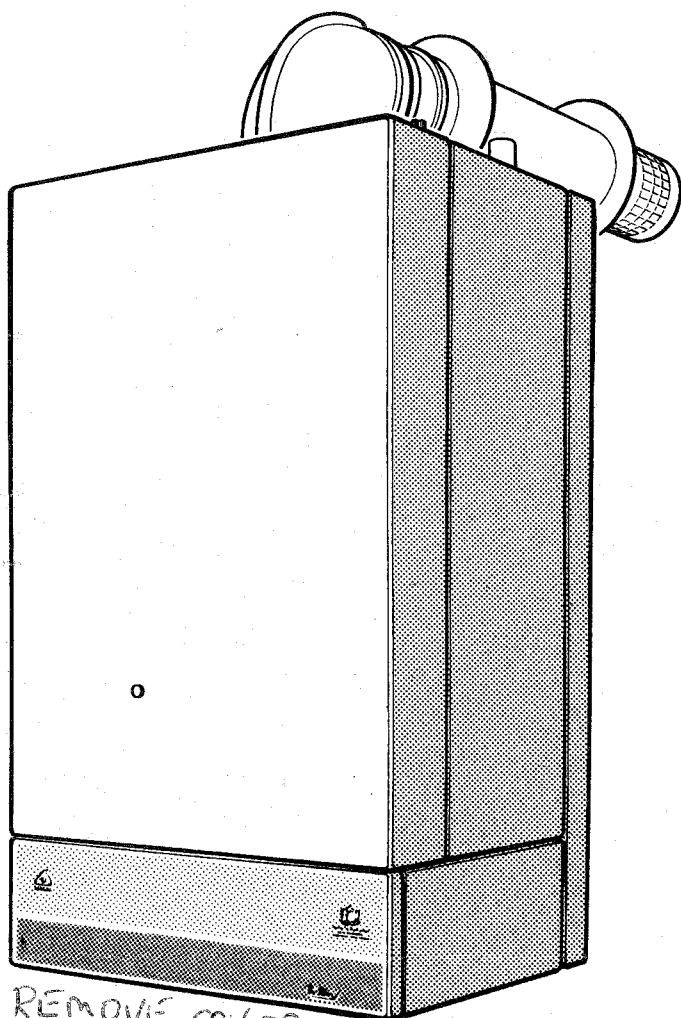




TRIANCO TriStar

Wall Mounted Fan Assisted Gas Fired
Central Heating Boiler

INSTALLATION AND SERVICING INSTRUCTIONS



REMOVE COVER
DATA PLATE ON L H SIDE
FACING YOU

TRIANCO TriStar

Model 35F	GC No. 41 898 44
Model 45F	GC No. 41 898 45
Model 52F	GC No. 41 898 46
Model 60F	GC No. 41 898 47
Model 80F	GC No. 41 898 48

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1. INTRODUCTION

These fan assisted wall mounted central heating boilers require pumped circulation of primary water and cannot be used on gravity circulation systems. They are for use on Natural Gas only.

The appliance can be used wherever the maximum load required is within the range detailed below.

Model	System Load	
	kW	Btu/h
35F	5.9 - 10.3	20000 - 35000
45F	8.79 - 13.19	30000 - 45000
Tristar 52F	11.72 - 15.24	40000 - 52000
60F	14.65 - 17.58	50000 - 60000
80F	17.58 - 23.44	60000 - 80000

Statutory Requirements:

The installation of the boiler MUST be carried out by a competent person in accordance with the relevant requirements of the current issue of the Gas Safety (Installation and Use) Regulations, The Building Regulations, The IEE Wiring Regulations, The Building Standards (Scotland) Regulations (applicable in Scotland), Local Water Company Byelaws, Health and Safety Document No. 635, The Electricity at Work Regulations 1989.

Detailed recommendations are contained in the current issue of the following British Standard Codes of Practice:- BS 6798, BS 5440 Parts 1 and 2, BS 5546 Part 1, BS 6891, BS 4814, BS 7074 Parts 1 and 2.

Important

This central heating boiler is for use on fully pumped, open vented or sealed water systems. It is suitable for use with NATURAL GAS ONLY.

These instructions should be left adjacent to the gas meter.

Variable Boiler Depth

The depth of the TriStar 35F, 45F, 52F and 60F boilers, being 270mm, is such that they may be installed within the confines of a standard kitchen wall unit, providing the minimum ventilation requirement is maintained. See Section 3.4. However, a spacer is provided which, when fitted, increases the depth of the boiler to 300mm allowing the front face of the boiler to be flush with a standard kitchen unit. The depth of the TriStar 80F boiler is 300mm, and 330mm with the spacer fitted.

2. TECHNICAL DATA

2.1 PERFORMANCE DATA

Model	TriStar	35F	45F	52F	60F	80F
Heat Input	Max kW Btu/h	12.8 43740	16.48 56240	19.05 65000	22.0 75000	29.3 10000
	Mid kW Btu/h	10.3 35000	14.09 48080	17.51 59740	20.54 70060	26.47 90320
	Min kW Btu/h	7.6 25970	11.42 38970	15.24 52630	19.03 64935	22.83 77920
Heat Output	Max kW Btu/h	10.3 35000	13.19 45000	15.24 52000	17.58 60000	23.44 80000
	Mid kW Btu/h	8.1 27500	10.99 37500	13.48 46000	16.12 55000	20.51 70000
	Min kW Btu/h	5.9 20000	8.79 30000	11.72 40000	14.65 50000	17.58 60000
Burner Press	Max mbar inWg	13.0 5.2	13.0 5.2	13.6 5.46	12.3 4.9	13.5 5.4
	Mid mbar inWg	8.5 3.4	9.3 3.7	10.8 4.34	10.5 4.2	10.7 4.3
	Min mbar inWg	4.8 1.9	6.0 2.4	8.2 3.29	9.3 3.7	7.8 3.1

2.2 GENERAL DATA

		35	45	52	60	80
Fan		Sifan	Sifan	Sifan	Sifan	Sifan
Main Burner		Bray	Bray	Bray	Bray	Bray
Gas Control Valve		Honeywell VR 4700E 1034B				
Main Injectors		Bray Cat 23 950	Bray Cat 23 1250	Bray Cat 23 1500	Bray Cat 23 1700	Bray Cat 23 2400
Overall Weight (dry)	kg lb	18.25 40.2	18.75 41.3	18.75 41.3	19.75 43.5	23.2 51.1
Overall Height Excluding Turret	mm in	600 23				
Including Turret	mm in	740 29				
Overall Width	mm in	350 13.75			400 15.75	
Overall Depth Without Spacer	mm in	270 10.63				300 11.81
With Spacer	mm in	300 11.81				330 13.0
Minimum Water Flow	l/s gal/min	13.4 2.9	17.2 3.8	19.9 4.4	22.9 5.0	30.5 6.7
Minimum Static Head	mm in	610 24				
Maximum Static Head	m ft	30.5 100				
Water Capacity	l gal	0.43 0.09	0.5 0.11	0.5 0.11	0.6 0.13	0.9 0.2
Water Connection Flow Return		22mm OD Copper Tube 22mm OD Copper Tube			28mm Copper Tube 28mm Copper Tube	
Gas Connection		Rc ½"				
Pilot Bracket		Honeywell Q395A 1017B				
Ignition Electrode		Honeywell 45900413-003B				
Pilot Injector		Honeywell 56/42A 45004108-005B				
Control Thermostat		Ranco ODD Type K36				
Overheat Thermostat		Ranco LM 7				
Pump Over-run Thermostat		Thermodisc 60T13 L55 - 6C				
Electricity Supply		240V ~ 50Hz Fused at 3A				
Pressure Switch		Honeywell C6065A 1168				

Notes: The gas connection is situated towards the rear of the lower right hand corner of the appliance within the controls pod.

The electrical connections are to be made within the "swing down" controls box.

The DATA badge is situated on the front of the "swing down" controls box.

2.3 CLEARANCE REQUIRED FOR INSTALLATION AND SERVICING (See also Fig. 1)

Right hand side	mm in	10 3/8
Left hand side	mm in	10 3/8
Top (above jacket)	mm in	193 7 1/2
Bottom	mm in	100 4

2.4 FLUE DETAILS

The flue ducts and terminal are supplied in the form of 2 kits which are for use as follows:-

Standard Flue Kit Pt No. 501170

This kit will allow flue lengths, measured from the centre line of the fan outlet on the top of the appliance to the outside wall face, of up to and including 928mm (36 1/2").

Extension Duct Kit Pt No. 501180

This extension duct allows the length of the flue, measured from the centre line of the fan outlet on the top of the appliance to the outside of the wall face, to be increased by 965mm (38").

Note: A maximum of one extension duct may be fitted in any one installation, thus giving a maximum flue length, when measured from the centre line of the fan outlet on the top of the appliance to the outside of the wall, of 1893mm (74.5").

Maximum flue lengths (mm):

Model	35F	45F	52F	60F	80F
STD Kit	928				
STD + extension	1893				

3. GENERAL

The installation of this boiler must be in accordance with the relevant requirements of the Gas Safety (Installation & Use) Regulations, the Local Building Regulations, the I.E.E. Wiring Regulations, and the byelaws of the Local Water Undertaking.

It is essential that the boiler is installed strictly in accordance with these instructions. Installations should be in accordance with any relevant requirements of the Local Gas Region and Local Authority and the relevant recommendations of the current issues of the following British Standards and Codes of Practice.

BS6700, BS5440:1 and 2, BS5546, BS6891, BS6798, BS5449.

3.1 LOCATION

THIS BOILER IS NOT SUITABLE FOR OUTDOOR INSTALLATIONS

The boiler may be installed in any room, although particular attention is drawn to the requirements of the I.E.E. Wiring Regulations and, in Scotland, the electrical provisions of the Building Standards applicable in Scotland, with respect to the installation of the boiler in a room containing a bath or shower.

Where a room sealed appliance is installed in a room containing a shower or bath, any electrical switch or appliance control utilising mains electricity should be so situated that it cannot be touched by a person using the shower or bath.

The boiler position should be such that the minimum clearances for installation and servicing (Fig. 1) and the limitations on flue terminal position (Fig. 2) are maintained.

A cupboard or compartment used to enclose the boiler must be designed and constructed specifically for the purpose. Details of essential features of cupboard/compartment design, including airing cupboard installations, are given in BS 6798.

3.2 GAS SUPPLY

The meter and supply pipes must be capable of delivering the quantity of gas detailed below:-

35F	1.22	m ³ /hr (43 ft ³ /hr)
45F	1.56	" (55 ft ³ /hr)
TriStar 52F	1.82	" (64.3 ft ³ /hr)
60F	2.08	" (73.5 ft ³ /hr)
80F	2.77	" (98 ft ³ /hr)

3.3 ELECTRICAL SUPPLY

The supply to the boiler should be 240V ~ 50Hz via a fused double pole switch, having a 3mm contact separation or a fused 3 pin plug (complying with BS 1363) and unswitched shuttered outlet socket, adjacent to the boiler. The supply should be fused at 3A and the cable should be rated to take at least 5A - e.g. 0.75mm² (24/0.2mm) complying with BS 6500. The rating of the boiler is approximately 85W. The external wiring between the appliance and the electrical supply shall comply with the latest I.E.E. Wiring Regulations and any local regulations which apply. The appliance must be earthed.

3.4 AIR SUPPLY

Detailed recommendations for air supply are given in BS 5440:2. The following notes are for general guidance.

No purpose provided air vents are required in a room containing this appliance (i.e. appliance is room sealed). If the boiler is installed in a cupboard or compartment, ventilation must be provided. Permanent air vents are required in the cupboard or

3.4 Continued

compartment, at high level and at low level, either direct to outside air or to the room. Both high and low level air vents must communicate with the same room or must both be on the same wall to outside air. Each vent must have a minimum free area as detailed below.

Model	Air from room	Air direct from outside
TriStar 35F	115cm ² (17.8in ²)	57.5cm ² (8.9in ²)
TriStar 45F	148cm ² (23 in ²)	74 cm ² (11.5in ²)
TriStar 52F	171cm ² (26.6in ²)	85.5cm ² (13.3in ²)
TriStar 60F	198cm ² (30.6in ²)	99 cm ² (15.3in ²)
TriStar 80F	264cm ² (40.9in ²)	132 cm ² (20.5in ²)

4. INSTALLATION NOTES

4.1 GENERAL

The boiler is designed for use with fully pumped open or sealed central heating systems. When domestic hot water is to be provided by the system, an indirect cylinder to BS 1566 Pt. 1 that is suitable for the system pressure must be used.

The appliance can be used wherever the maximum required output falls within the range detailed below:-

Model	System Load	
	kW	Btu/h
TriStar 35F	5.9 - 10.3	20000 - 35000
TriStar 45F	8.8 - 13.19	30000 - 45000
TriStar 52F	11.7 - 15.24	40000 - 52000
TriStar 60F	14.65 - 17.58	50000 - 60000
TriStar 80F	17.58 - 23.44	60000 - 80000

4.2 FLUE SYSTEM

Detailed recommendations for flueing are given in the current issue of BS5440:1. The following notes are intended for general guidance.

The boiler must be installed so that the terminal is exposed to external air. It is important that the position of the terminal allows the free passage of air across it at all times.

NOTE: The boiler is suitable for installation to a combustible wall provided that the air inlet/flue duct and the flue terminal are not closer than 25mm to combustible material. A metal sleeve should be installed to surround the air/inlet flue duct and provide a 25mm annular space. Further guidance is given in the current issue of BS5440 clause 8.2.3.

If, however, the boiler is to be fitted to a timber frame construction it should be fitted in accordance with the British Gas Publication - "Guide for Gas Installations in Timber Framed Housing" Reference D.M.2. If in doubt advice must be sought from the local Gas Region of British Gas.

4.2.1 FLUE KITS

Flue kits are available to suit various wall thicknesses and site requirements. Details are given in the Technical Data. (Section 2.4).

4.2.2. FLUE TERMINAL POSITION

When siting the boiler, check that the flue terminal position complies with the Building Regulations. The terminal position must not be less than the minimum distances (Fig. 2).

4.3 WATER SYSTEM

4.3.1 CIRCULATING PUMP (OPEN VENTED OR SEALED SYSTEM)

The pump should be fitted in an accessible position in the FLOW pipe from the boiler and isolation valves fitted as close to either side of the pump as possible. The hydraulic pressure loss across the boiler is shown in the following table.

Model	35F	45F	52F	60F	80F
Boiler Output (Btu/h)	35000	45000	52000	60000	80000
Flow Rate l/min	13.4	17.2	19.9	22.9	30.5
g/min	2.9	3.8	4.4	5.0	6.7
Pressure Loss mm	440	735	980	1358	1150
in wg	17.3	28.9	38.6	53.5	45.3
Temp Rise °C	11				
°F	20				

The pressure loss across the boiler should be taken into account when selecting the correct pump duty for the system.

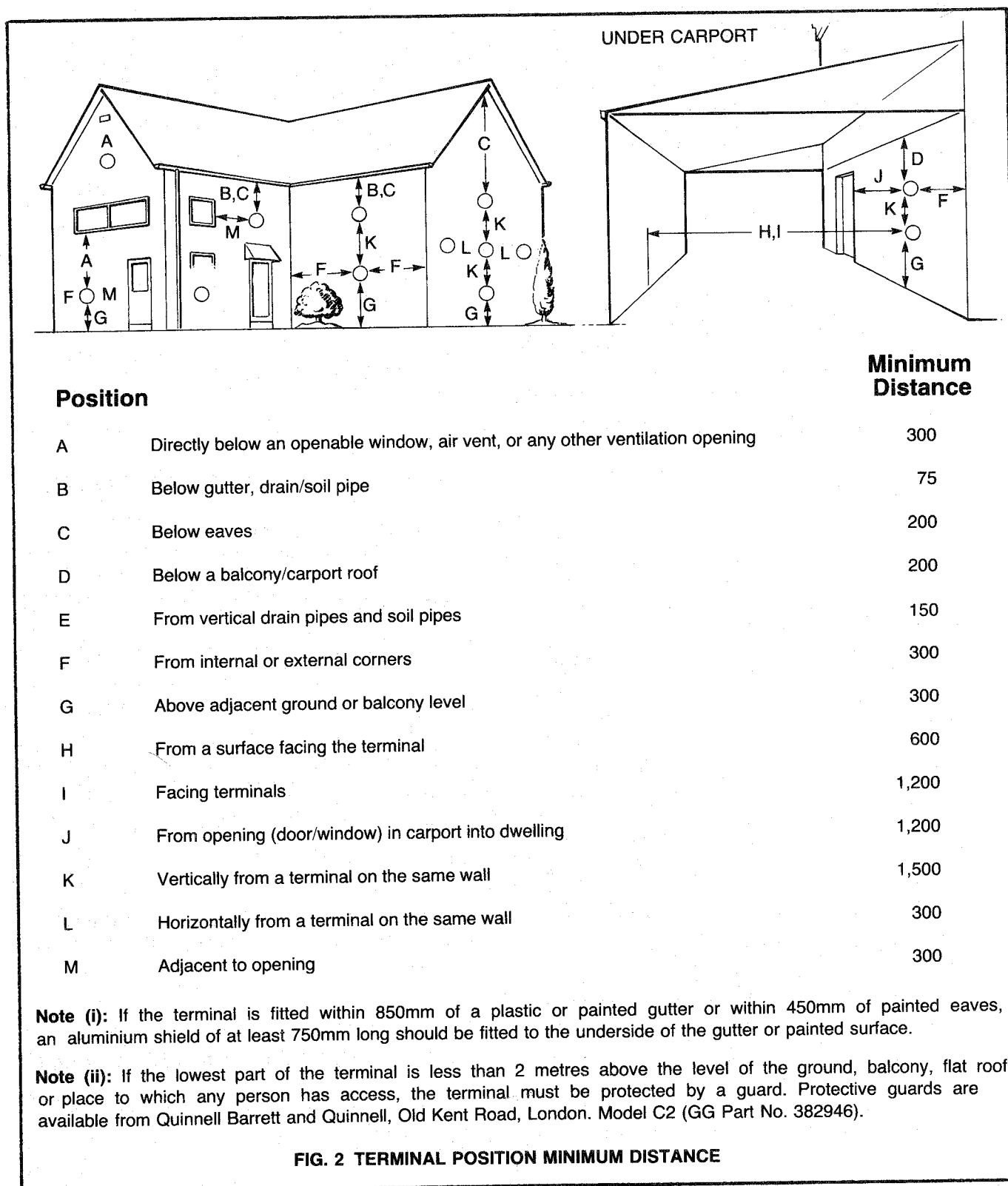
4.3.2 BYPASS (OPEN VENTED OR SEALED SYSTEM)

The flow through the boiler must not be allowed to fall below the flow rates detailed in the table above while the burner is alight.

The bypass balancing valve should be of a type which is non-adjustable by the householder and must have at least 2m of 22mm (35, 45, 52) or 2m of 28 (60, 80) pipe each side between it and the boiler.

4.3.3 DRAIN COCK (OPEN VENTED AND SEALED SYSTEM)

At least one drain cock should be fitted at the lowest point in the system to enable the water system to be drained.



4.3.4 OPEN VENTED SYSTEM ONLY (Fig. 3)

SAFETY VALVE: The provision of a safety valve on open vented systems is not necessary unless local regulations stipulate that a safety valve is to be used. If a safety valve is fitted, it should comply with the specification detailed in Section 4.3.5.

CYLINDER: Any hot water storage cylinder must be a fully indirect type BS 1566 Pt 1 that is suitable for the system pressure. Single feed (self priming) indirect cylinders are NOT recommended.

OPEN VENT AND COLD FEED: A 22mm minimum open vent pipe must be fitted in the FLOW pipe from the boiler and terminated above the cold feed and expansion cistern, which should not be less than 18 litres (4 gallon) capacity. The vent should have a continuous rise to discharge over the cistern. No valves should be fitted in the open vent. The feed and expansion cistern must not be situated more than 30.5 metres (100ft) above the boiler.

A 15mm O.D. (minimum) cold water feed must be fitted to supply the system.

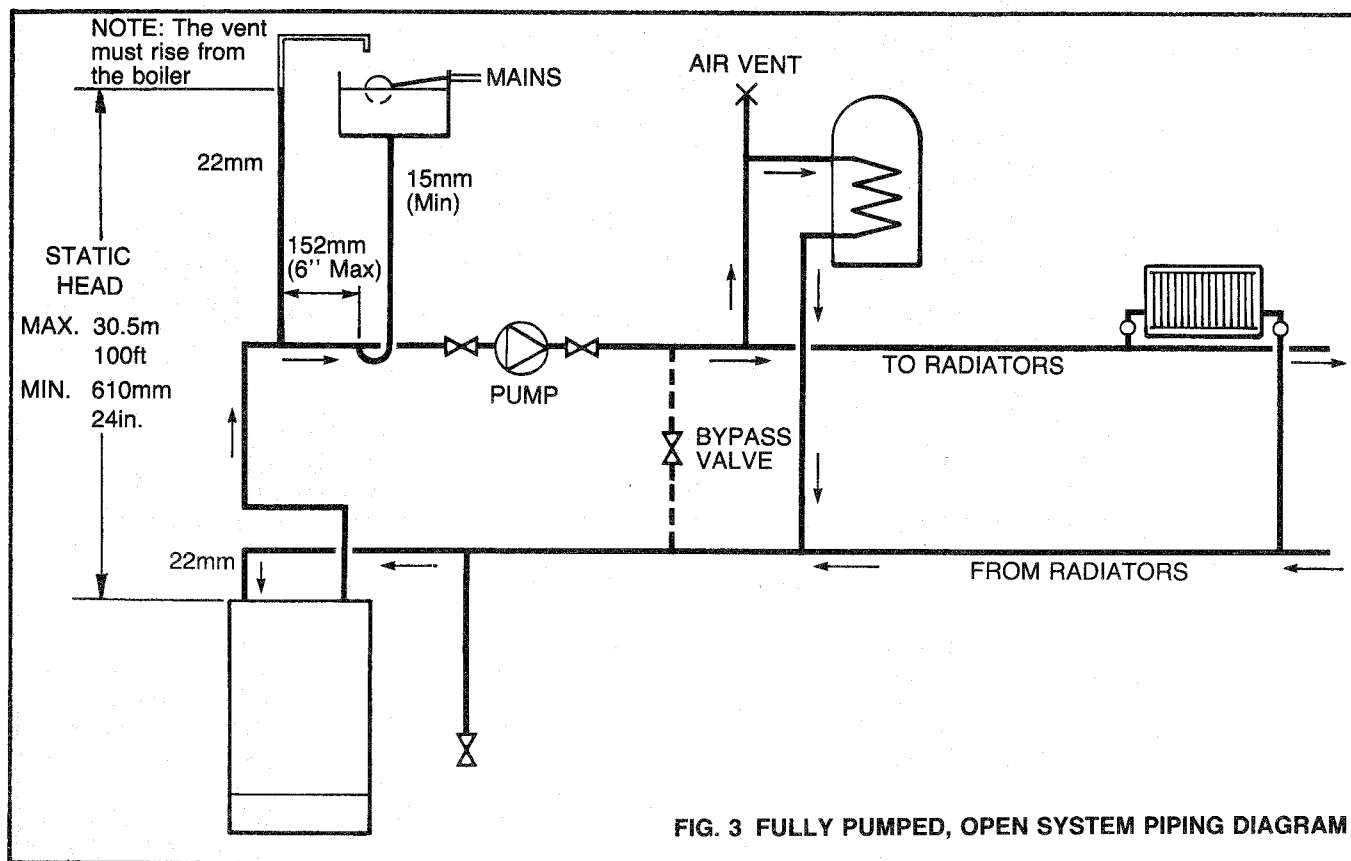


FIG. 3 FULLY PUMPED, OPEN SYSTEM PIPING DIAGRAM

4.3.5 SEALED WATER SYSTEM ONLY (Fig. 4)

GENERAL: The installation must comply with the requirements of the current issue of BS 5449 and BS 6798.

SAFETY VALVE: A spring loaded safety valve complying with the relevant requirements of BS 6759 shall be fitted and shall incorporate the following features:-

1. A pre-set, non-adjustable lift pressure, not exceeding 3 bar (45 lbF/in²).
2. A seating or valve face of suitable resilient material.
3. A manual testing device.
4. Provision for connection to a discharge pipe.

The safety valve shall be fitted in the flow pipe, as near as possible to the boiler, with no intervening valve or restriction and accessible for manual testing. The safety valve shall be so positioned or any discharge pipe so arranged that discharge of water or steam from the valve cannot create a hazard to occupants or damage to electrical components and wiring.

EXPANSION VESSEL: A diaphragm type expansion vessel, to BS 4814, shall be connected at a point close to the inlet side of the pump in the FLOW pipe from the boiler. The vessel must be chosen to suit the volume of water in the system and the charge pressure must not be less than the static head at the point of connection. Refer to the current issue of BS 5449 and BS 7074: Part 1 for further details.

EXPANSION VESSEL SIZING TABLE:

Vessel Charge & Initial System Pressure (bar)	0.5	1.0	1.5
Vessel Volume (litres)	$\frac{V}{x}$ 0.0833	$\frac{V}{x}$ 0.109	$\frac{V}{x}$ 0.156

Where V = System Volume (litres)

PRESSURE GAUGE: A pressure gauge covering at least the range 0 to 4 bar (0 to 60 lbF/in²) shall be permanently fitted to the system and visible to the person filling the system. The pressure gauge should incorporate a movable pointer to indicate the system fill pressure.

CYLINDER: The hot water cylinder shall either be the indirect coil type or a direct cylinder fitted with an immersion calorifier. Single fed (self priming) indirect cylinder **MUST NOT** be used on sealed systems.

METHOD OF MAKE UP: Water loss from the system should be replaced from a make-up vessel connected to the system through a non return valve on the return side of either the hot water cylinder or heating circuit.

Alternatively provision for make-up can be made by pre-pressurisation of the system.

Filling: There shall be no direct connection to the mains water supply or to a storage cistern supplying domestic water even through a non-return valve, without the approval of the local Water Authority.

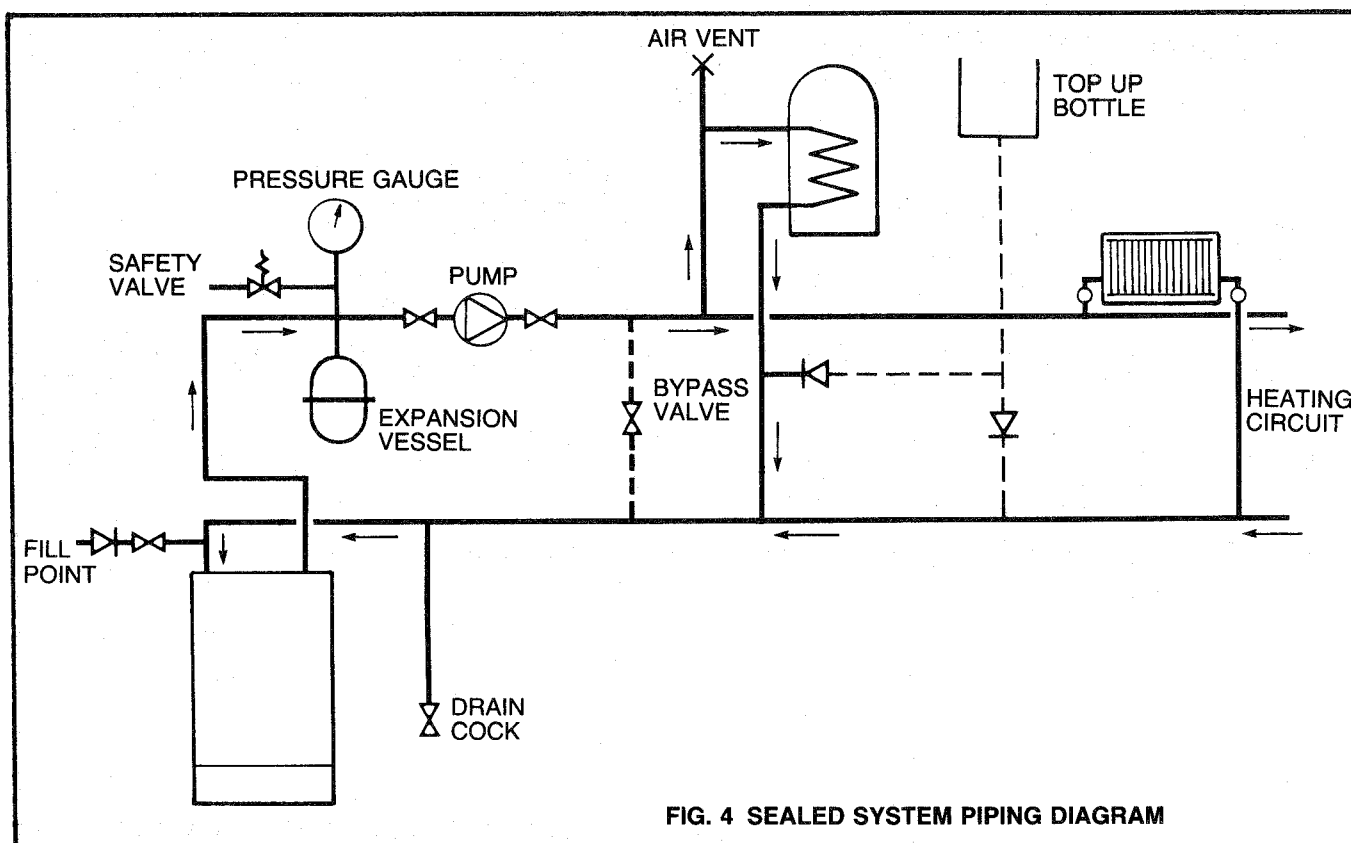


FIG. 4 SEALED SYSTEM PIPING DIAGRAM

5. INSTALLATION PROCEDURE

5.1 UNPACKING THE APPLIANCE

The standard appliance is supplied in two separate packages, the boiler and the standard flue kit. In addition one flue extension kit may be used. If the appliance is to be installed without access to the outside wall, the wall liner (Part No. 501181) will be required.

Check the contents of each package against the following lists:-

APPLIANCE PACKAGE:

Boiler	1 off
Wall Bracket	1 off
Wall Bracket extension	1 off
Spacer & Washer	2 off
Wall mounting Template (paper)	2 off
Fixing Screws No 12 x 50	4 off
Plastic Wall Plugs	4 off
Rear Infill Panel	2 off
Plastic Rivet	4 off
Fixing Screws No 12 x 70	2 off

STANDARD FLUE PACKAGE: (Part No. 501170)

Inner Duct (flue) c/w terminal and centering springs	1 off
Outer Duct (air)	1 off
Junction Collar	1 off
Protective Metal Sleeve	1 off
Sealing Ring (Outer Wall)	1 off
Flue Elbow	1 off
M5 x 151g Pozi Pan Head Screws	4 off
M5 Flat Washers	4 off
Aluminium Retention Ring	1 off

EXTENSION DUCT KIT: (Part No. 501180)

Inner Duct (flue) c/w Centering Springs	1 off
Outer Duct (air)	1 off
No 8 x 10 Self Tapping Screws	2 off

WALL LINER KIT: (Part No. 501181)

Wall Liner	1 off
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5.2 FIXING THE WALL MOUNTING BRACKET

Before installing the appliance ensure that the chosen location is suitable (Section 3.1) and that requirements for the flue position (Section 4.2), and minimum clearances (Section 2.3) are satisfied. These minimum clearances are essential to provide access for servicing, and are also included on the wall mounting template.

- Open the paper wall mounting templates. If a rear flue is to be used, discard the side templates and secure the rear template in the desired position. For a side flue application, secure both the rear and appropriate side template in position.
- Mark the position of the two wall mounting bracket fixing holes, the two lower frame fixing holes, and the flue/air duct hole on the appropriate wall(s).
- Remove the template(s) and drill the four fixing holes, depth 38mm (1½"), using a 6mm masonry drill. Fit the plastic plugs provided.
- Cut the hole in the wall for the flue/air duct. The diameter should not be less than 102mm (4in)

5.2 Continued

and must be horizontal. If the hole is not accessible from the outside of the building, its minimum diameter should be sufficient to allow the insertion of the wall liner (130mm (5¼in) diameter) which will be sealed with mortar. Refer to Fig. 5. (The wall liner (Part No. 501181) is available as an optional extra).

- (e) Accurately measure the wall thickness, and note this dimension for use later.
- (f) Secure the wall mounting bracket in position using the screws provided. Ensure that it is the correct way up (and square) as indicated in Fig. 10.

5.3

This appliance may be installed such that the front of the case measures 300mm from the wall, which is the normal position when fitted between or alongside standard kitchen wall units. However, if the appliance is required to be fitted behind a kitchen wall unit door, its depth may be reduced to 270mm by NOT fitting the wall extension bracket and two spacers.

5.3.A HANGING THE APPLIANCE (Without the wall bracket extension and plastic spacers)

- (a) Lift the fully assembled appliance out of the packaging and hook it onto the wall bracket.
- (b) Remove the lower pod by hinging down the door, unscrewing and removing the two self tapping screws which then allows the complete pod to be pulled forwards and lowered until it is fully removed. Fig. 15.
- (c) Fit the two lower fixing screws to prevent any further movement of the appliance.

5.3.B HANGING THE APPLIANCE (Using the wall extension bracket and spacers. Used to increase the overall depth of the appliance by 30mm. See Fig. 1)

- (a) Hang the wall extension bracket over the wall bracket. (Fig. 10).
- (b) Lift the fully assembled appliance out of the packing and hook it over the wall extension bracket. **NOTE:** The appliance will hang on the wall sloping backwards at its base.
- (c) Remove the lower pod by hinging down the door, unscrewing and removing the two self tapping screws which then allows the complete pod to be pulled forwards and lowered until it is fully removed. Fig. 15.

- (d) Holding the boiler lower fixing points away from the wall approximately 30mm, position the spacers between the wall and the lower fixing points and secure the appliance to the wall with the two No 12 x 701g screws.
- (e) Assemble each of the rear infill panels by hooking them over the plastic spacers on the rear of the appliance and fitting the plastic rivets to secure the panels in position.

5.4 WATER SYSTEM CONNECTIONS

Connect the boiler to the water system using compression fittings. Alternatively the straight compression fittings may be replaced with compression elbows.

Note: (Fig. 16) - It is essential to fit the compression fittings to the flow and return pipes allowing a space between the boiler casing and the lower nut of 30mm. This space is to allow the heat exchanger to be removed for replacement/cleaning should it be necessary.

The flow connection is on the right.

System guidance is given in Section 4.3.

5.5 FLUE AND TERMINAL PREPARATION

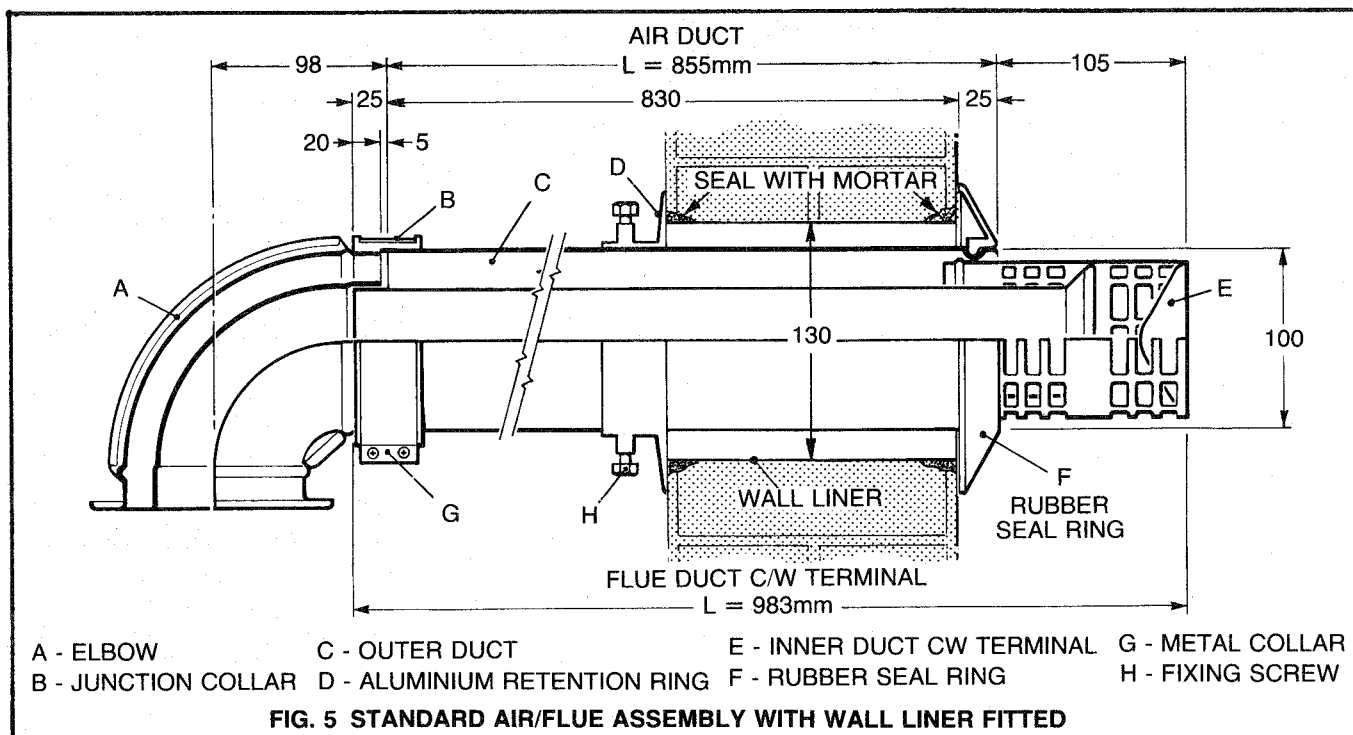
If the wall thickness is less than 0.5m (19in) the flue/air duct may be fitted without access to the outside wall providing that this optional wall liner kit is used. (This consists of a steel pipe, 0.5m long and 130mm outside diameter with a 1mm wall thickness).

5.5.1 FLUE/AIR DUCT LENGTHS

- (a) Determine whether an extension duct is required with reference to the "Z" dimension shown in Figs 6 and 7 (Rear Flue) or Fig 8 (Side Flue), and the table below. Alternatively wall thickness information is given in Section 2.4.

"Z" Dimension UP to 928mm STANDARD FLUE DUCT ONLY REQUIRED
"Z" Dimension greater than 929mm and up to 1893mm STANDARD FLUE DUCT + 1 EXTENSION REQUIRED
"Z" Dimension greater than 1893mm NOT PERMITTED FLUE NOT AVAILABLE AT THIS LENGTH

- (b) If no extension ducts are required, proceed to 5.5.2.
- (c) If an extension duct is to be used, the flue and air ducts should be joined before proceeding to the next section. The extension ducts should be joined to the standard ducts using the following procedure (Fig. 9).



5.5.1 Continued

- (d) For both the flue and air duct in turn, push the plain end of the standard duct into the swaged end of the extension duct(s).
- (e) Drill two 3.3mm diameter holes in the air duct (larger duct) as shown in Fig. 9. Screw the two self tapping screws provided with each kit into the holes to secure the joint.

5.5.2 CUTTING THE FLUE/AIR DUCT TO THE CORRECT LENGTH

(A) REAR FLUE OUTLET ONLY (Figs 6 & 7)

- (a) Select the air duct (larger duct) and starting at the formed end, 'mark off' the length to be cut which is:

Without Wall Bracket Spacer: $32 + \text{Wall Thickness (x)} + 25$

With Wall Bracket Spacer: $62 + \text{Wall Thickness (x)} + 25$

(B) SIDE FLUE OUTLET ONLY (Fig. 8)

- (a) Select the air duct (larger duct) and starting at the formed end, 'mark off' the length to be cut as stated below and Fig. 8.

MODEL	CUT LENGTH
35-45-52	$82 + \text{side clearance (y)} + \text{wall thickness (x)} + 25$
60-80	$107 + \text{side clearance} + \text{wall thickness} + 25$

ALL INSTALLATIONS

- (b) Cut the air duct square to the mark and remove all burrs and sharp edges.
- (c) Refer to Fig. 11. Hold the air duct at the plain end, and slide the flue duct (small duct) inside the air duct (terminal first) until the external swage of the terminal stops against the internal swage of the air duct, then mark off the length to be cut, which leaves 28mm protruding flue duct.
- (d) Remove and cut the flue duct square to the mark and remove all burrs and sharp edges.

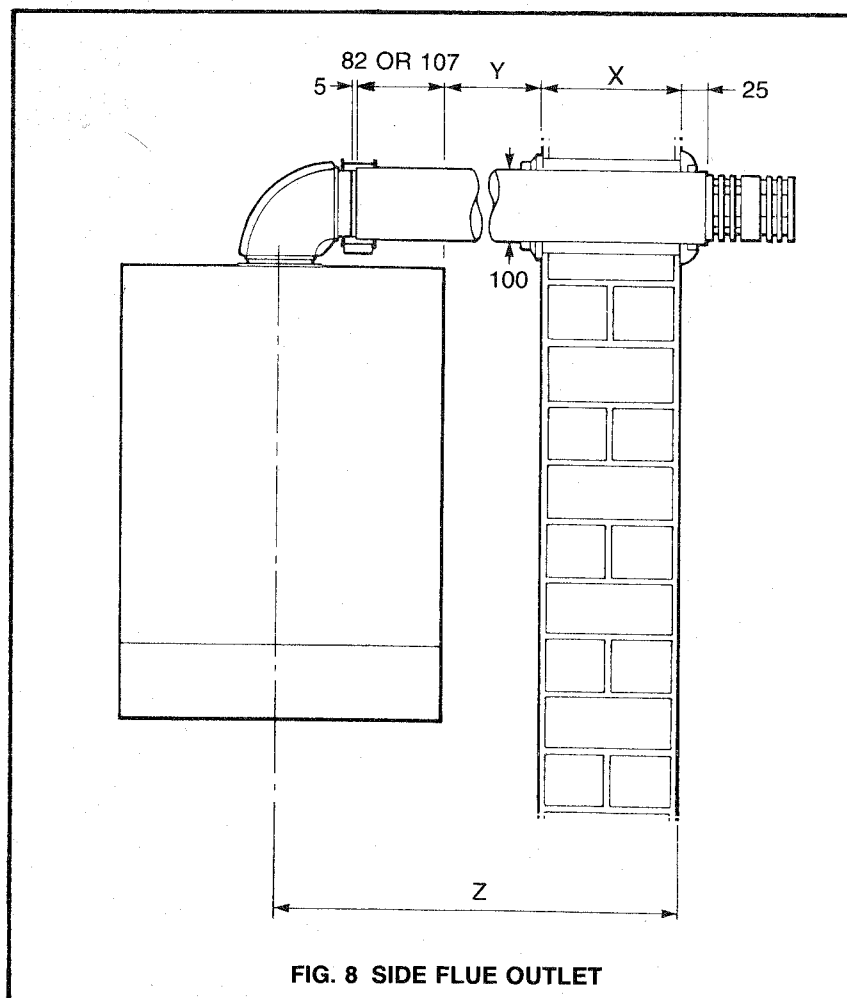
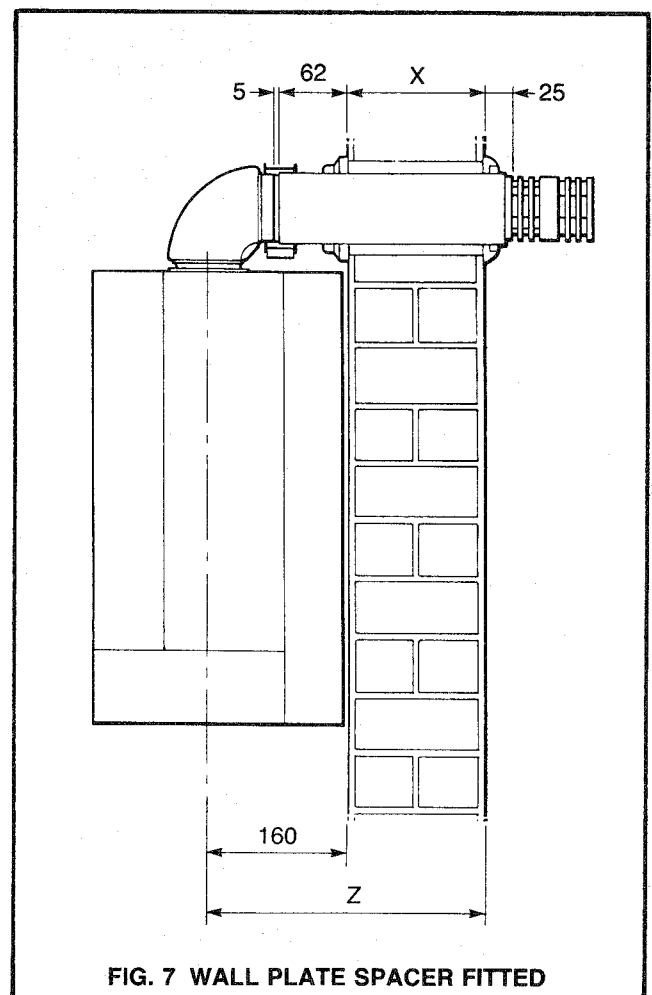
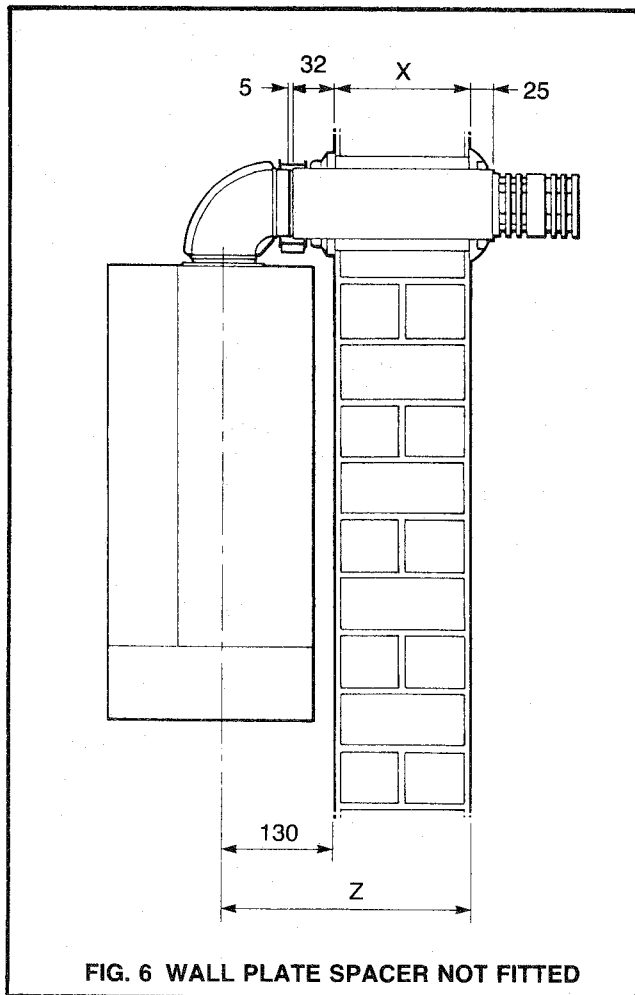
VERTICAL FLUE KIT SOISSO

5.6 FLUE AND TERMINAL INSTALLATION

5.6.1 INSTALLATION FROM OUTSIDE THE BUILDING ONLY (Minimum hole required in wall 102mm (4in))

- (a) Fit the rubber sealing ring into the swaged groove in the air duct as shown in Fig. 5. Ensure that it is the correct way round.
- (b) Push the flue duct assembly into the air duct until the external swaged ring on the flue terminal stops against the internal swage on the air duct (Fig. 11).
- (c) From outside the building, slide the duct assembly into the wall until the sealing ring forms a good seal against the outside wall.

Proceed to section 5.6.3.



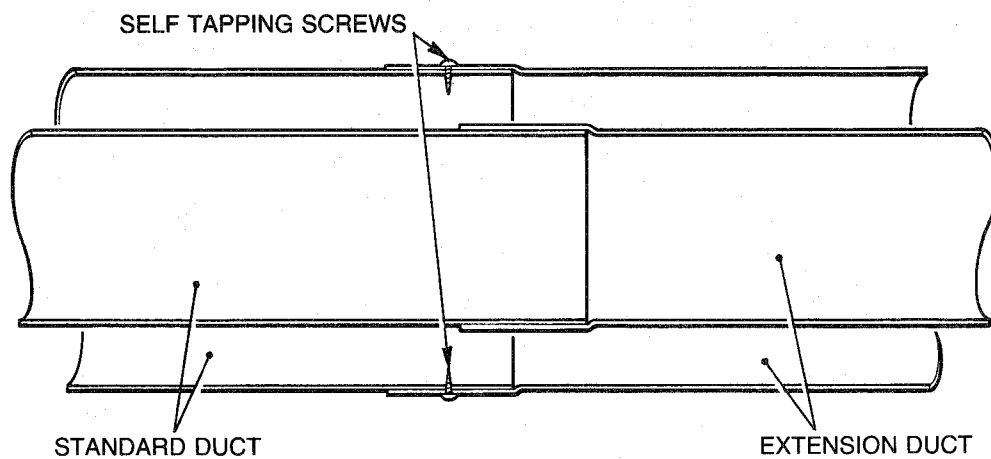


FIG. 9 EXTENSION DUCT ASSEMBLY PROCEDURE

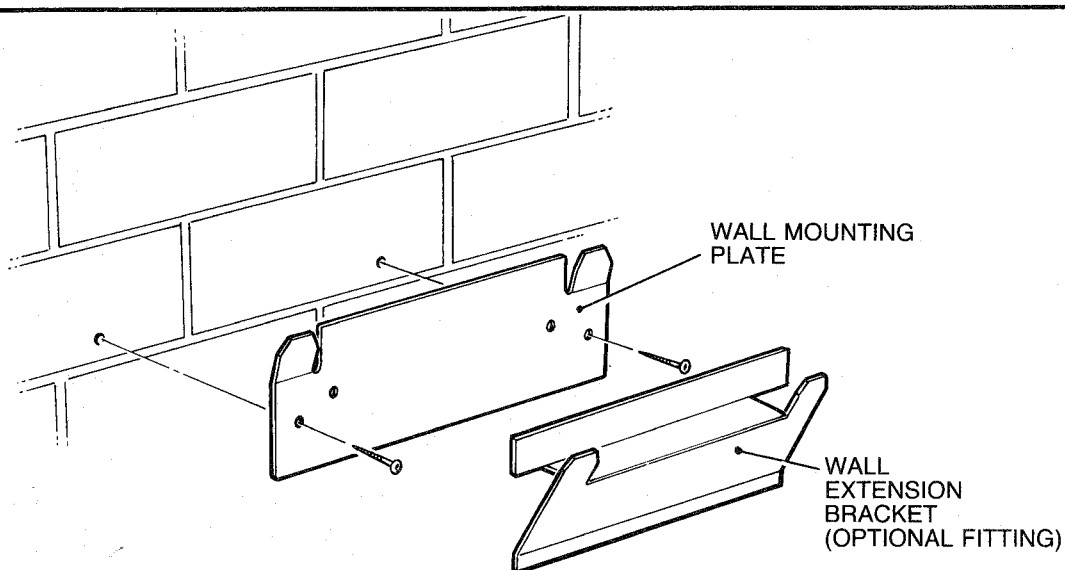
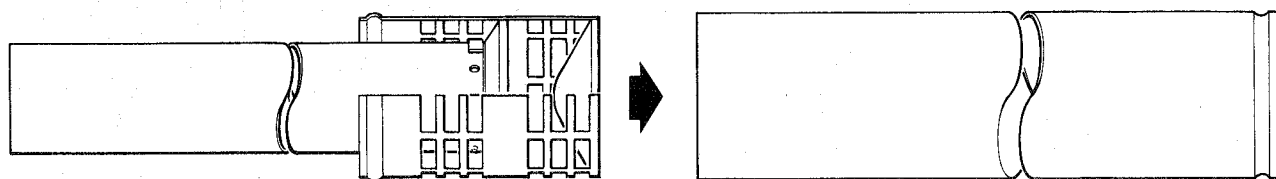


FIG. 10 WALL MOUNTING PLATE



INSERT FLUE DUCT & TERMINAL
INTO AIR DUCT IN DIRECTION OF ARROW

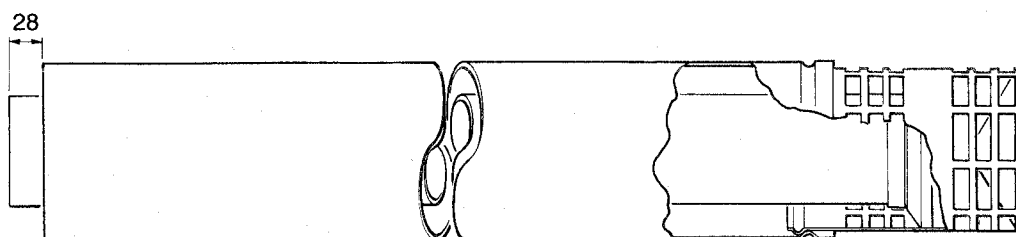


FIG. 11 STANDARD DUCT ASSEMBLY PROCEDURE

5.6.2 INSTALLATION FROM INSIDE THE ROOM

(Wall thicknesses up to 0.5m (19in) only), hole diameter sufficient to accept wall liner (130mm (5¼in) if optional kit is used). Fig. 5.

- (a) A wall liner, 130mm (5¼in) outside diameter, 500mm (19in) long is available as an optional extra for use when fitting the flue/air duct from inside the building, (or where it is required to seal the hole through a cavity wall). Cut the liner to the wall thickness, insert into hole, and seal with mortar at the inner and outer wall faces. Access to the outside can be made by inserting ones hand through the liner.
- (b) Fit the rubber sealing ring into the swaged groove in the air duct as shown in Fig. 5. Ensure that it is the correct way around and spray the outside surface with talcum powder or soap solution to reduce friction.
- (c) Push the flue duct assembly into the air duct until the external swaged ring on the flue terminal stops against the internal swage on the air duct. Fig. 11.
- (d) From inside the building slide the duct assembly into the wall liner until the sealing ring passes completely through the wall, then pull the air duct back until the ring is pulled up to the surface of the wall.

5.6.3 CONNECTING THE DUCT ASSEMBLY (All Installations)

Note: (See Fig. 17). If the appliance has been installed with a rear flue position and its case depth reduced to 270mm, the silicone junction collar will require trimming, prior to fitting, using a sharp knife and a piece of air duct to support the silicone junction collar. The final width needs to be reduced to 35mm.

- (a) With reference to Fig. 5, slide on the aluminium retention ring (D), check that the rubber sealing ring (F) is pulled up to the wall and that the duct assembly is horizontal, then secure the aluminium retention ring to the air duct using the two screws (H) provided. Do not overtighten the screws.
- (b) Push the junction collar (B) over the air duct.
- (c) Push the elbow socket onto the flue duct. NOTE: There will be a gap of approximately 5mm between the end of the AIR duct and the elbow. This can be seen in Fig. 5 and will be sealed in steps (f) and (g).
- (d) Fit the elbow onto the top of the appliance, taking care to ensure that the fan outlet and the flue duct has correctly engaged into the flue elbow.
- (e) Secure the elbow to the top of the appliance using the four screws and washers provided.

(f) Position the junction collar over the flue elbow as shown in Fig. 5 and ensure that it forms a satisfactory seal.

(g) Fit the protective metal collar (G) over the junction collar.

5.7 GAS INSTALLATION

The gas inlet is Rc ½ (½in BSPT) and is situated at the base of the appliance towards the right hand side. A Rc ½ x 15mm elbow must be fitted for installations where the gas supply is required to enter vertically from beneath the appliance. The orientation of the gas tap should not be changed. The whole gas installation including the meter should be installed, inspected and tested for soundness and purged in accordance with the recommendations of the current issue of BS 6891.

5.8 ELECTRICAL WIRING (See Wiring Diagram Fig. 21)

**NOTE: THIS APPLIANCE MUST BE EARTHED
A PERMANENT LIVE AND THE PUMP MUST
BE CONNECTED TO THE BOILER**

1. Unscrew the two screws (Fig. 12) which hold the control box in its horizontal position and swing the control box down through 90°. Remove the control box cover by first unscrewing the two screws.
2. All electrical wiring to the boiler should be secured to prevent the wire touching any hot surfaces on the boiler. Thread the power supply cable through one of the spare grommets in the rear of the control box, make the required connection to the terminal, strip and clamp the wire in the cable clamp. When making these connections ensure that the earth wire is made longer than the live and neutral wires (Fig. 13).
3. The pump lead and any external controls wiring should be passed through one of the other grommets at the rear of the control box, connected to the terminal box and secured with the cable clamp (Fig. 13).

The electrical installation must comply with the latest I.E.E. Wiring Regulations. After installation of the appliance, preliminary electrical systems checks must be carried out, i.e. earth continuity, polarity and resistance to earth short circuit.

On completion of the electrical installation the control box cover should be re-fitted and the control box should be secured in its horizontal position.

DO NOT SWITCH ON THE ELECTRICITY SUPPLY AT THIS STAGE

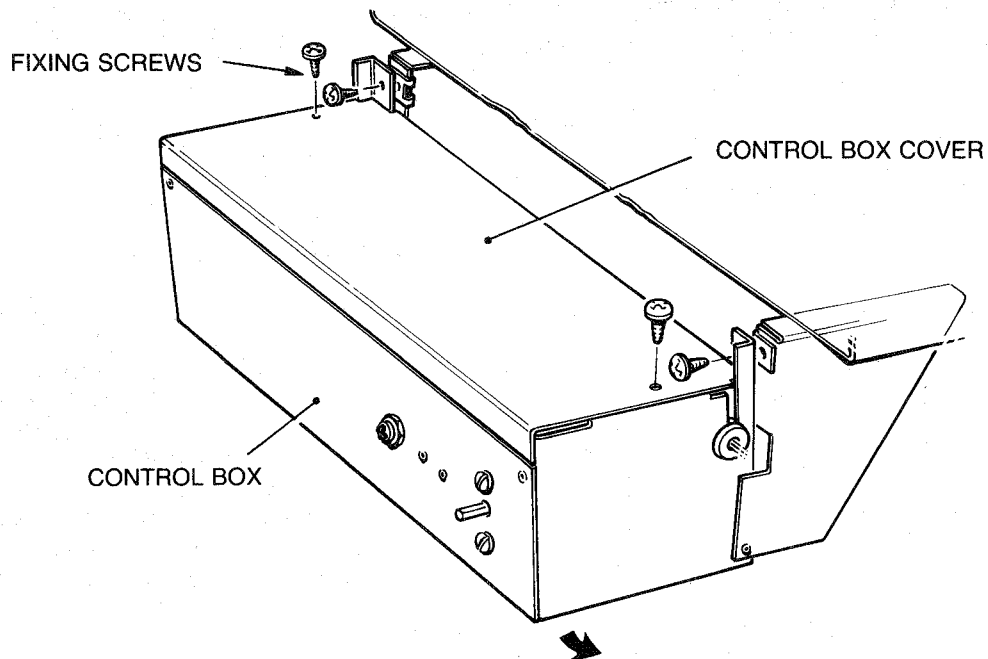


FIG. 12

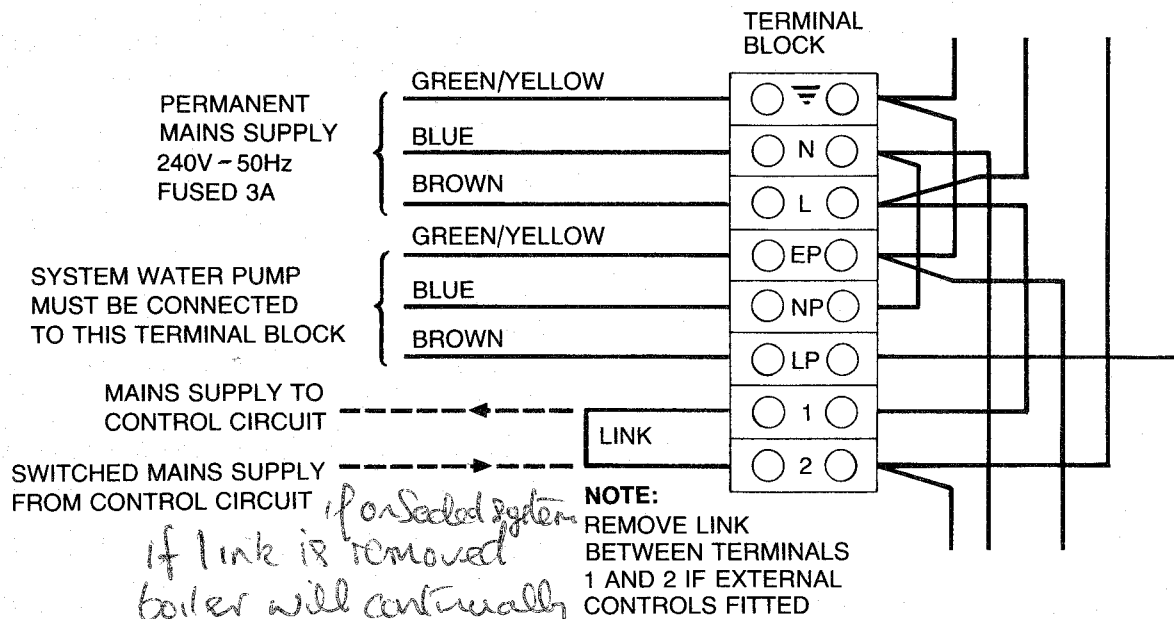


FIG. 13

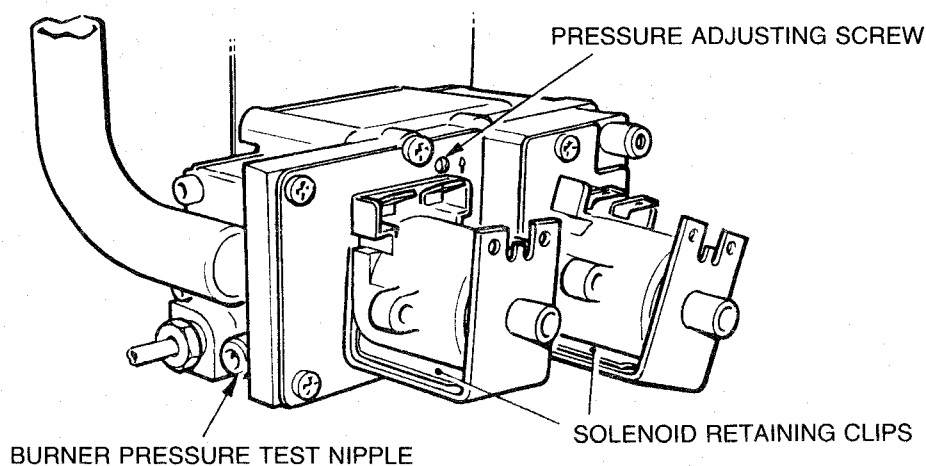


FIG. 14

6. COMMISSIONING

The water system must be thoroughly flushed out with cold water without the pump in position. Refit the pump and fill the system. Vent all air from system. Clear any air locks and examine the system for water leaks.

Sealed Systems Only: Flush the whole system with cold water without the pump in position. Refit the pump and fill the system until the pressure gauge registers 1.5 bar (22 lbF/in²). Clear any air locks and examine the system for water leaks.

6.1 INITIAL LIGHTING

- (a) Check that the electricity supply is ISOLATED and the boiler thermostat switch is set to OFF position.
- (b) Turn on the gas supply and open the gas service cock to purge air from the gas line in accordance with the current issue of BS 6891.
- (c) Loosen the burner pressure test point on the gas valve (Fig. 14) and connect a suitable pressure gauge.

Note: To ease access to the pressure test point the control pod may be lowered from its horizontal position (Fig. 12).

- (d) Ensure all system controls are calling for heat.
- (e) Switch ON the electricity supply and check that the circulation pump is circulating water through the boiler.
- (f) Switch on the appliance by rotating the thermostat control knob clockwise to its stop.

The fan will start to run, and when the air flow is proven, a click will be heard, upon which the igniter will start to spark and the pilot gas solenoid will open, allowing gas to the pilot burner. Immediately following the pilot burner ignition the main gas solenoid will open allowing main burner ignition to take place.

Pilot and main burner flames may be seen through the viewing port in the front of the outer case.

- (g) The burner pressure must be checked and if necessary adjusted to the correct pressure (Section 2). The adjustment screw is located on the gas valve (Fig. 14).
- (h) After approximately 10 minutes running the gas rate may be checked (Section 3.2).
- (i) Switch OFF the appliance with the thermostat control and then disconnect the pressure gauge and re-tighten the test point screws. The pump will continue to run for a period of time after the boiler control thermostat has been switched off.
- (j) Turn the control thermostat ON and once the

main burner is alight test all gas carrying components and joints for soundness using a suitable leak detection fluid.

- (k) Check that the boiler and all automatic controls operate satisfactorily.

NOTE: A manual reset overheat cut-off device is fitted to the boiler and is situated on the front of the control box. The device is wired to interrupt the electrical supply between the control thermostat and the ignition control board unit causing loss of main burner flame in the event of an overheat situation taking place. Should this occur during commissioning, the device will require resetting and the fault condition eliminating. Refer to Fault Finding section "Overheat cut-off device operates".

- (l) Allow system to operate at maximum working temperature, examine for leaks. Turn the boiler OFF and drain system rapidly while still hot. Refill system and vent all air from the system.

For sealed systems adjust to the initial design pressure. Set the marker on the pressure gauge to coincide with the initial design pressure. Disconnect any temporary connection made to the mains water supply.

6.2 ADJUSTMENT OF BYPASS

1. The boiler should be fired with a full load (i.e. central heating and domestic hot water) and the bypass valve fully closed.
2. Balance the system using the pump and radiator valves to give an 11°C temperature drop across the radiators, with an 11°C temperature rise across the boiler.
3. Open the bypass valve gradually until the temperature rise across the boiler is between 9°C and 10°C.
4. Check the differential temperature of the flow and return pipes at the opposite side of the bypass to the boiler. If this differential temperature has increased, increase the speed of the pump until it reduces back down to 11°C.

6.3 RE-ASSEMBLY

After adjustments and commissioning have been completed the lower control pod should be refitted by locating it onto the supports towards the rear and securing it in position with the two self tapping screws. (Fig. 15).

6.4 INSTRUCT THE USER

Hand the USER'S INSTRUCTIONS to the user or purchaser for retention and instruct in the efficient and safe operation of the boiler and heating/hot water system.

Advise the user or purchaser of the precautions necessary to prevent damage to the heating/hot

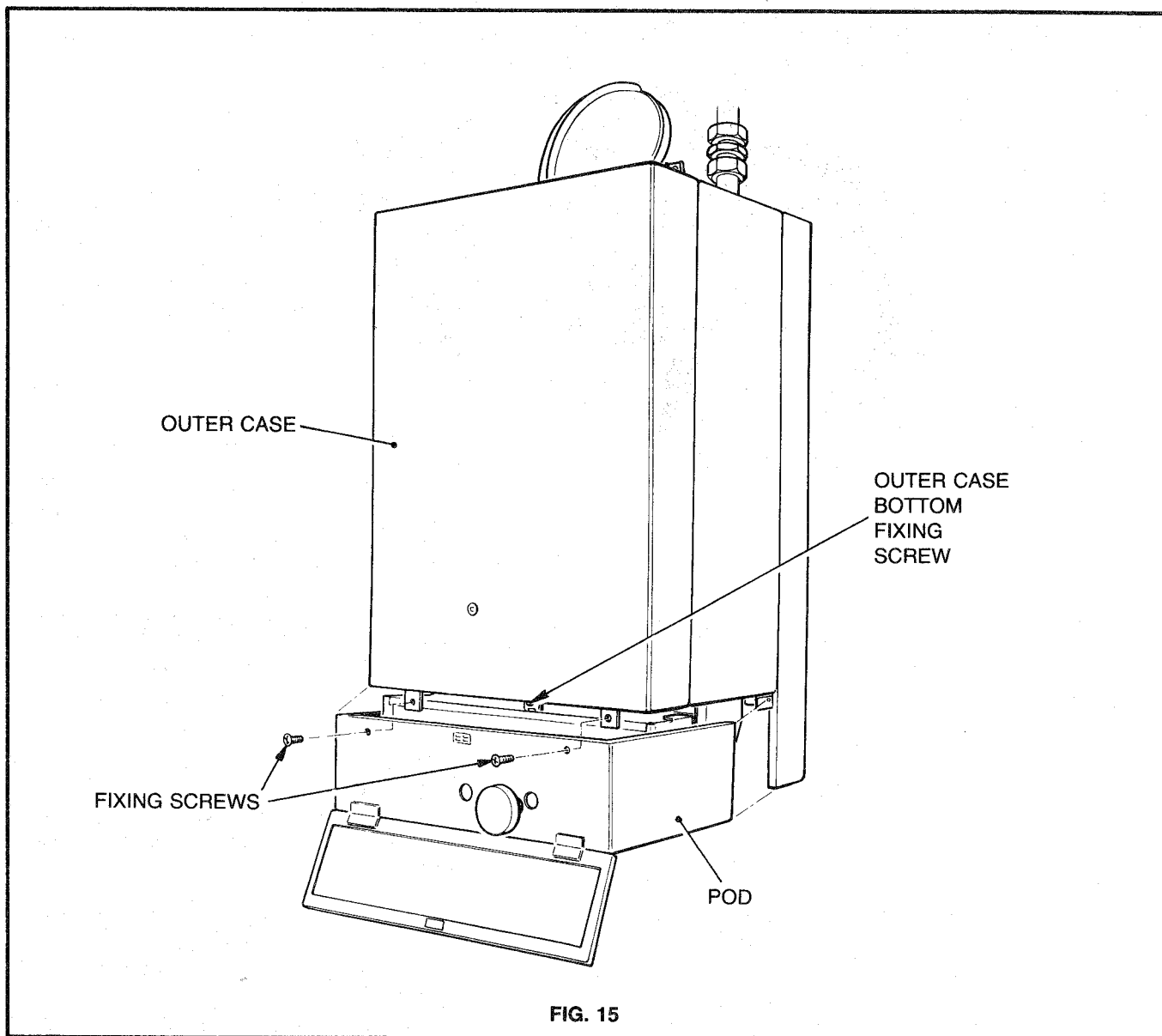


FIG. 15

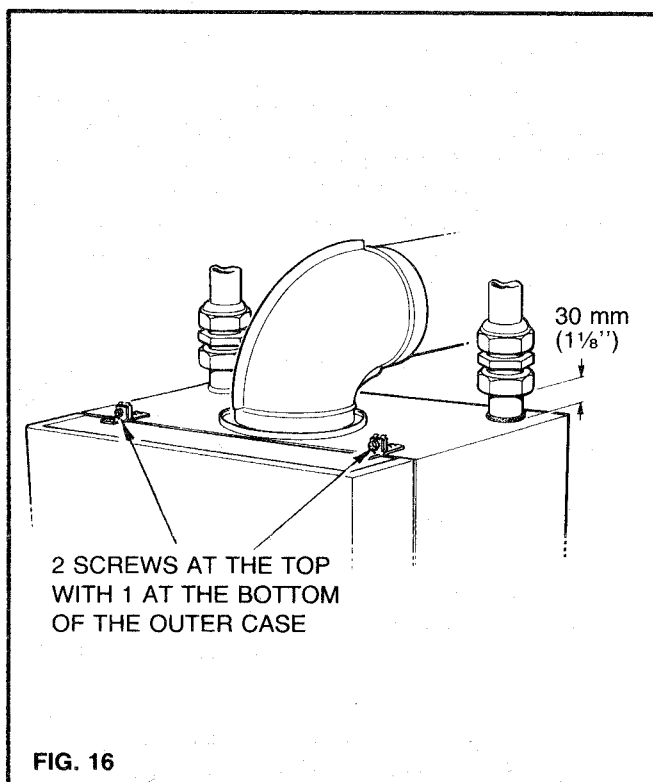


FIG. 16

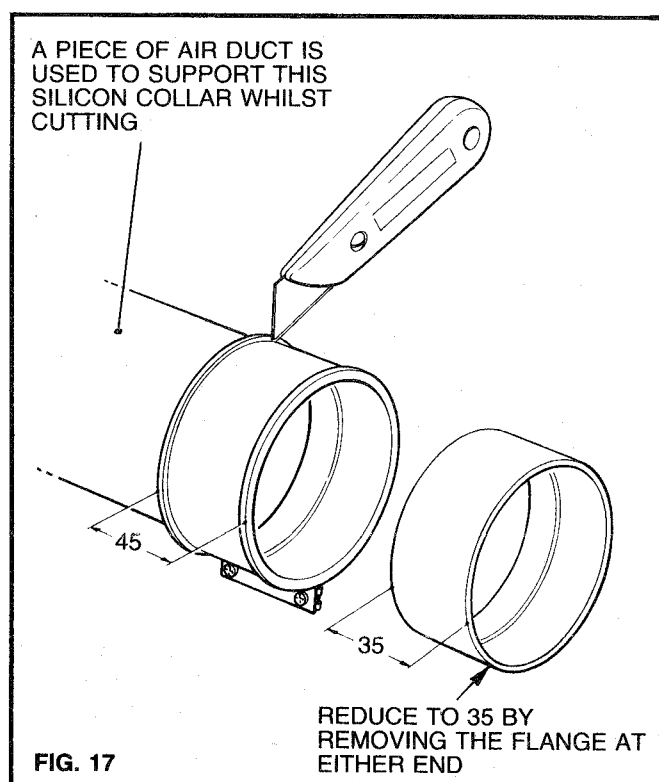


FIG. 17

6.4 Continued

water system and to the building in the event of the heating system remaining inoperative during frost conditions.

Finally, advise the user or purchaser that, for continued efficient and safe operation of the boiler, it is important that adequate servicing is carried out at intervals recommended by the local gas region.

NOTE: LEAVE INSTALLATION AND SERVICING INSTRUCTIONS ADJACENT TO THE GAS METER.

7 SERVICING

To ensure the continued efficient and safe operation of the appliance, it is recommended that servicing is carried out at regular intervals, the frequency of which will vary, depending on the installation conditions and usage, but usually once a year should be adequate.

Servicing must be completed by a competent person such as a gas service engineer.

7.1 ISOLATING THE SERVICES

BEFORE STARTING THE SERVICE ISOLATE THE ELECTRICITY SUPPLY TO THE APPLIANCE. Remove the lower pod for access by hinging down the door, unscrewing and removing the two self-tapping screws which then allows the complete pod to be pulled forwards and lowered until it is fully removed. ISOLATE THE GAS SUPPLY TO THE APPLIANCE BY TURNING OFF AT THE GAS SERVICE COCK, INDICATOR SLOT TO BE VERTICAL.

7.2 GAINING ACCESS TO THE SERVICEABLE COMPONENTS

- (a) Remove the two screws (Fig. 12) which hold the control box in its horizontal position and swing the control box down through 90°.
- (b) Ensuring sealed outer case does not fall, remove the three retaining screws (Fig. 15) and lift the outer case clear of the appliance.

7.2 REMOVE AND CLEAN THE MAIN BURNER AND PILOT BURNER ASSEMBLY (Figs. 18 and 23)

- (a) Unscrew the hexagonal nut securing the front of the burner to the support bracket.
- (b) Unscrew the two screws holding the lower front combustion chamber panel in place and remove the panel with its insulation.
- (c) Unscrew the compression nut on the pilot supply tube and ease the tube out of the pilot bracket, being careful not to lose the pilot injector, which is a loose fit item held in position by the pilot supply tube.

- (d) Remove the lead from the ignition probe. It is a push-on spade connector.
- (e) The burner may now be removed forwards.
- (f) Inspect the burner, burner injector, pilot burner, pilot burner injector, and ignition probe.
- (g) Lightly brush off any deposits, do not use metallic objects to clean the injector holes.

7.4 INSPECT AND CLEAN THE HEAT EXCHANGER (Fig. 18)

With the burner removed and the controls covered:-

- (a) Remove the combustion chamber front/collector hood fabrication by first unscrewing and removing the two hook bolts, the two wing studs, the M5 screw and the two self-tapping screws. Then lift the fabrication away from the appliance. An upward twisting action may be required to clear the fan. The insulation inside this fabrication is loose once removed, therefore care must be taken not to damage it.
- (b) Inspect the heat exchanger to ensure the flueways are clean.
- (c) If necessary brush the heat exchanger from above and below, using a small stiff brush. The brush motion should be back to front and NOT sideways.
- (d) Remove all deposits from the base of the appliance.

7.5 INSPECT AND CLEAN THE FAN (Fig. 19)

With the burner and collector hood/combustion chamber front removed:-

- (a) Disconnect the blue and brown wires from the fan motor. (The polarity of these wires is of no concern). Disconnect the earth wire from the earthpost.
- (b) Disconnect the white tube from the fan assembly.
- (c) Unscrew and remove the three screws which retain the fan assembly.
- (d) Remove the fan assembly by lowering and rotating it from the bottom outwards.
- (e) Inspect the impellor and if necessary lightly brush any deposits, taking care not to damage the impellor.

7.6 RE-ASSEMBLY

- (a) Re-assemble the components in reverse order, but do not refit the lower pod at this stage.

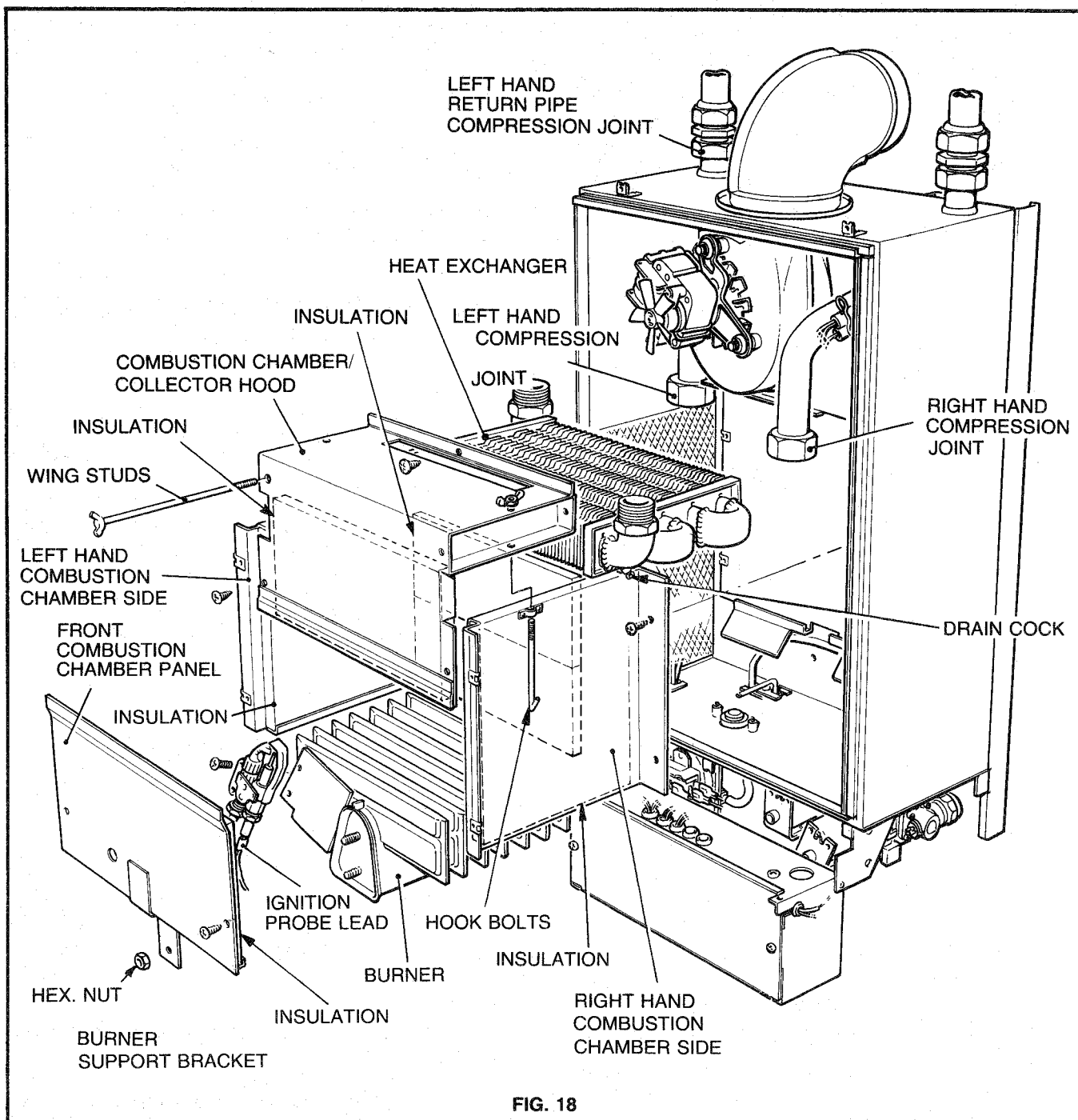


FIG. 18

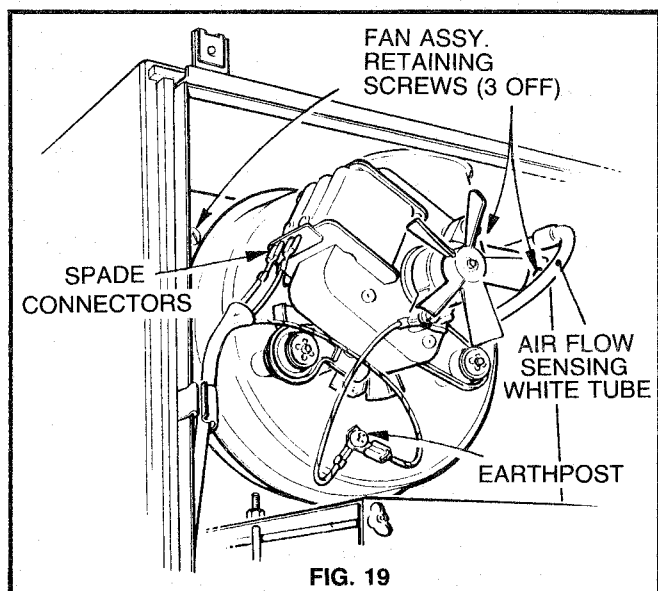


FIG. 19

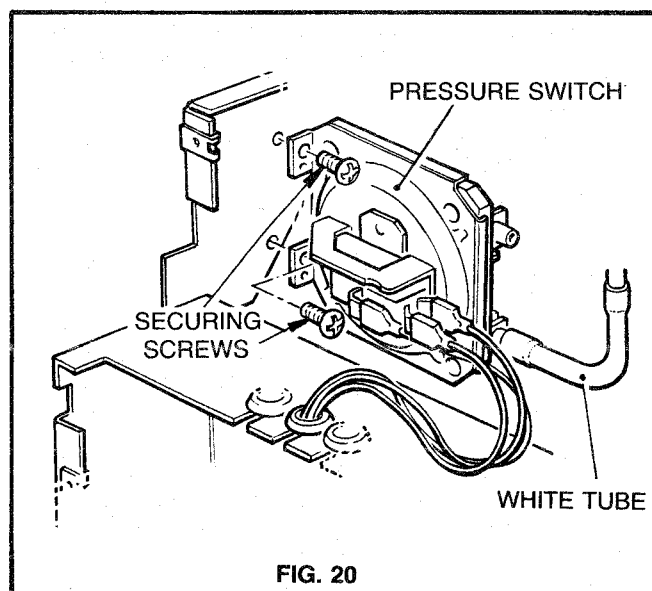


FIG. 20

7.7 RE-ESTABLISH THE CORRECT OPERATION OF THE APPLIANCE

- (a) Restore the gas and electrical supplies to the appliance and check:-
 - (i) for correct operation of the ignition procedure.
 - (ii) the main burner pressure is in accordance with that stated on the data badge.
 - (iii) correct operation of the appliance controls.
 - (iv) correct operation of the system controls.
- (b) Once correct operation of the appliance has been re-established the lower pod should be re-assembled onto the appliance.

8. REPLACEMENT OF PARTS

Before commencing the replacement of any components:-

ISOLATE THE SERVICES

- (i) ISOLATE THE ELECTRICITY SUPPLY TO THE APPLIANCE:- Remove the lower pod for access by hinging down the door, pulling off the thermostat control knob, unscrewing and removing the two self-tapping screws which then allows the complete pod to be pulled forwards and lowered until it is fully removed.
- (ii) ISOLATE THE GAS SUPPLY TO THE APPLIANCE:- By turning off at the gas service cock, indicator slot to be vertical.

8.1 TO REPLACE THE PRESSURE SWITCH (Fig. 20)

- (a) Remove the two screws (Fig. 12) which hold the control box in its horizontal position and swing the control box down through 90°.
- (b) Disconnect the three wires on the pressure switch, taking note of their correct positions.
- (c) Disconnect the white tube from the pressure switch.
- (d) Unscrew and remove the two screws which hold the pressure switch in position.
- (e) Remove the pressure switch from the appliance.
- (f) Re-fit a new pressure switch to the appliance in the reverse order, taking care to connect the electrical wires in accordance with the wiring diagram (Fig. 21) and the white silicon tube to the correct point on the pressure switch.

8.2 TO REPLACE THE HONEYWELL IGNITION CONTROL PCB (Fig. 22)

- (a) Remove the two screws (Fig. 12) which hold the control box in its horizontal position and swing the control box down through 90°.
- (b) Remove the control box cover by first removing its two retaining screws.
- (c) Disconnect all the electrical wires from the ignition control PCB, noting the correct position of each.
- (d) Unclip the board from its four mounting posts and remove from the control box.
- (e) Refit a new ignition control PCB to the appliance in the reverse order, taking care to connect the electrical connectors in accordance with the wiring diagram (Fig. 21).

8.3 TO REPLACE THE OVERHEAT SAFETY THERMOSTAT (Fig. 22)

- (a) Lower the control box and remove cover, see Section 8.2 (a) and (b).
- (b) Ensuring the outer case does not fall, remove the three retaining screws (Fig. 15) and lift the outer case clear of the appliance.
- (c) Disconnect the two electrical wires from the thermostat body. The polarity of these is of no concern.
- (d) Unscrew the overhear thermostat retaining nut on the front of the control box.
- (e) Push out the plastic grommet which protects the capillary as it passes through the control box side.
- (f) Remove the thermostat body and capillary from the control box and unclip the capillary from the plastic grommet.
- (g) Remove the screw and bracket which retains the blue grommet from inside the appliance and remove the blue grommet.
- (h) Unclip and remove the capillary heat shield.
- (i) Remove the clip which holds the thermostat bulb in the pocket.
- (j) Remove the thermostat bulb from the pocket, passing it downwards through the hole in the jacket base.
- (k) Refit a new overhear thermostat in the reverse order, ensuring the reset button has been depressed.

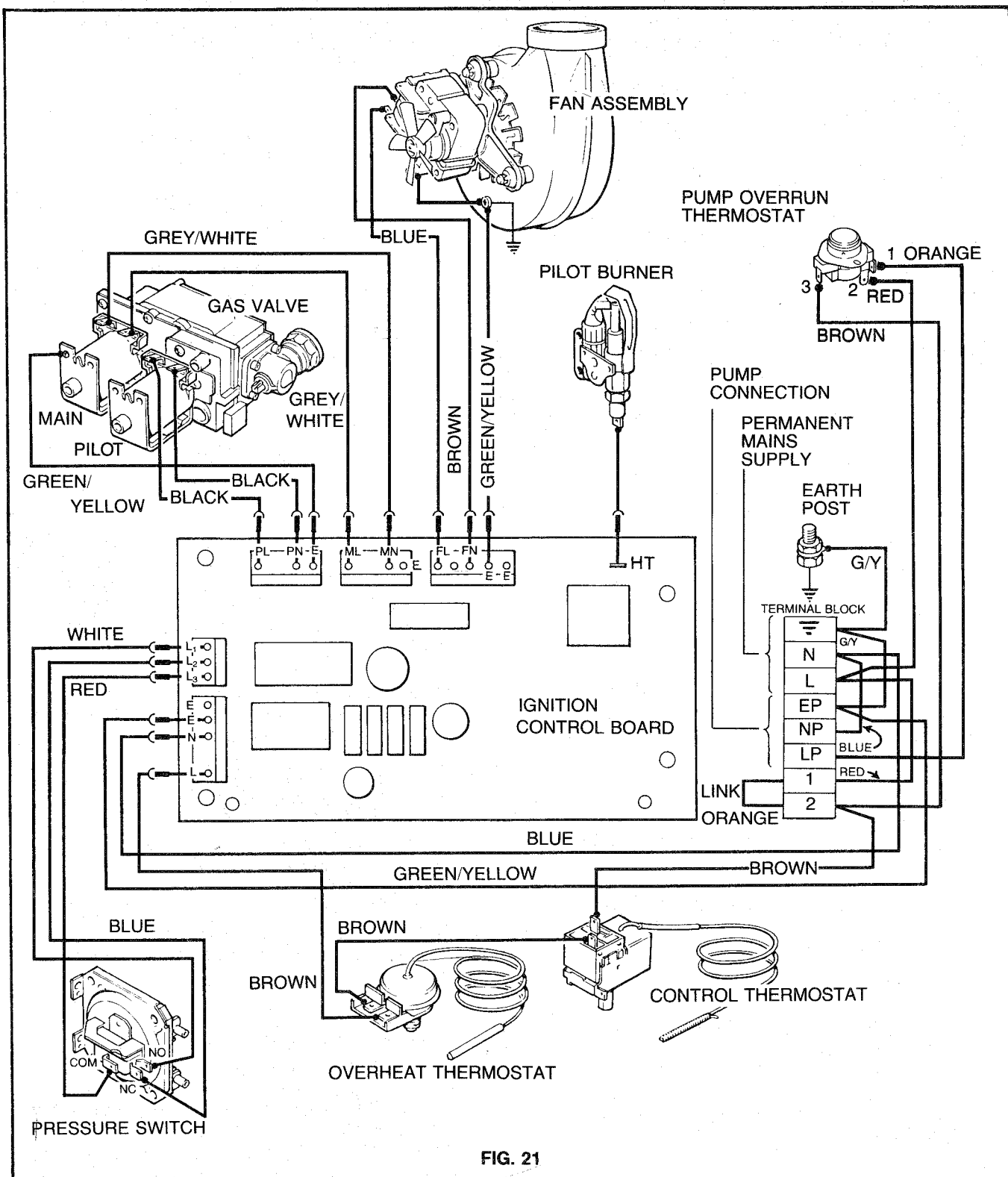


FIG. 21

8.4 TO REPLACE THE CONTROL THERMOSTAT (Fig. 22)

- Lower the control box and remove its cover, see Section 8.2 (a) and (b).
- Ensuring the outer case does not fall, remove the three retaining screws (Figs. 15 and 16) and lift the outer case clear of the appliance.
- Disconnect the two electrical wires from the thermostat body. The polarity of the wires is of no concern.
- Unscrew the two pozidrive screws which secure the control thermostat in position.
- Push out the plastic grommet which protects the capillary as it passes through the control box side.
- Remove the thermostat body and capillary from the control box and unclip the capillary from the plastic grommet.
- Remove the screw and bracket which retains the blue grommet from inside the appliance and remove the blue grommet.

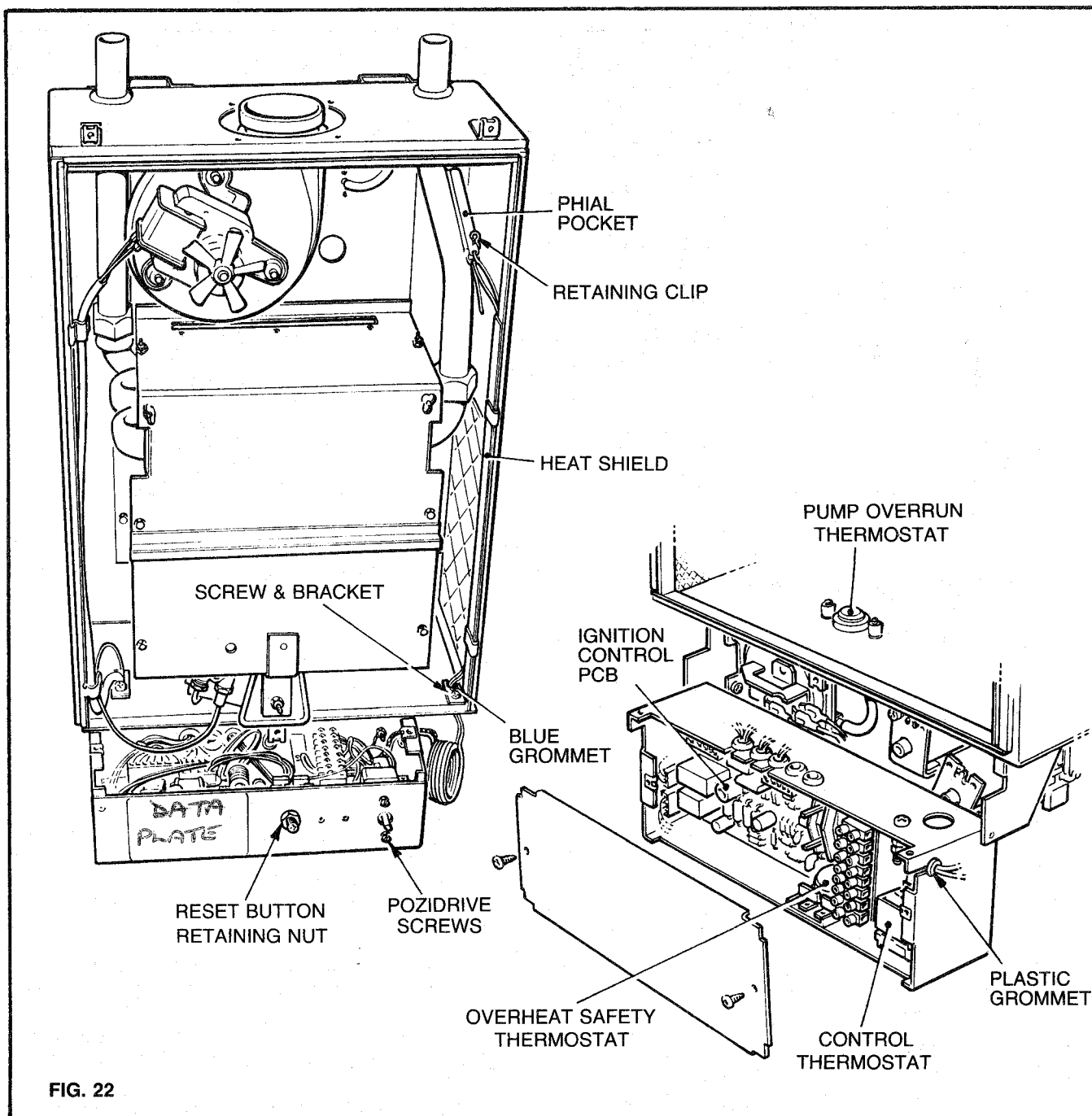


FIG. 22

8.4 Continued

- (h) Unclip and remove the capillary heat shield.
- (i) Remove the clip which holds the thermostat bulb in the pocket.
- (j) Remove the thermostat bulb from the pocket, passing it downwards through the hole in the jacket base.
- (k) Refit a new control thermostat in the reverse order.

8.5 TO REPLACE THE MAIN BURNER (Fig. 23)

- (a) Remove the two screws (Fig. 12) which hold the control box in its horizontal position and swing the control box down through 90°.
- (b) Ensuring the outer case does not fall off, remove the three retaining screws (Figs. 15 and 16) and lift the outer case clear of the appliance.
- (c) Unscrew the hexagonal nut securing the front of the burner to the support bracket.
- (d) Unscrew the two screws holding the lower front combustion chamber in place and remove the panel with its insulation.
- (e) Unscrew the two screws holding the pilot bracket to the main burner.
- (f) Holding the pilot bracket down, slide the main burner forwards and out of the combustion chamber.
- (g) Refit as new main burner in the reverse order, ensuring all gas connections are sound.

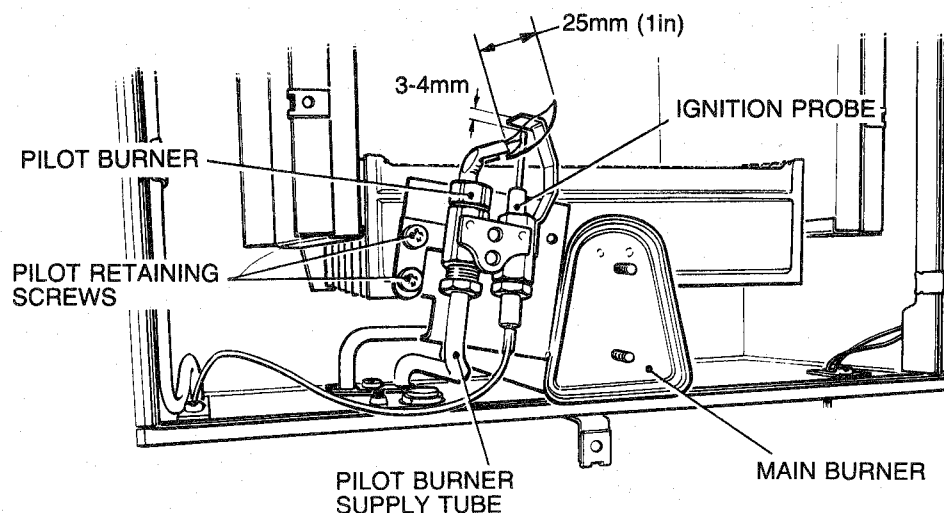


FIG. 23

8.6 TO REPLACE THE PILOT BURNER and/or SPARK ELECTRODE (Fig. 23)

- (a) Lower the control box and remove its cover. See Section 8.2 (a) and (b).
- (b) Ensuring the outer case does not fall, remove the screws (Figs. 15 and 16) and lift the outer case clear of the appliance.
- (c) Unscrew the hexagonal nut securing the front of the burner to the support bracket.
- (d) Unscrew the two screws holding the lower front combustion chamber in place and remove the panel with its insulation.
- (e) Unscrew the compression nut on the pilot supply tube and ease the tube out of the pilot bracket, being careful not to lose the pilot injector which is a loose fit item held in position by the pilot supply tube.
- (f) Remove the lead from the ignition probe. It is a push-on spade connection.
- (g) Unscrew the nut securing the ignition probe in place and withdraw the ignition probe.
- (h) Remove the pilot burner from the main burner by first removing its two retaining screws.
- (i) Refit new components and reassemble in reverse order, ensuring all gas connections are sound.
- (b) Ensuring the outer case does not fall, remove the three retaining screws (Figs. 15 and 16) and lift the outer case clear of the appliance.
- (c) Unscrew the hexagonal nut securing the front of the burner to the support bracket.
- (d) Unscrew the two screws holding the lower front combustion chamber in place and remove the panel with its insulation.
- (e) Unscrew the two screws holding the pilot bracket to the main burner.
- (f) Holding the pilot bracket down, slide the main burner forwards and out of the combustion chamber.
- (g) Remove the four screws which secure the flanged gas service cock to the gas valve.
- (h) Unscrew the compression nut which retains the pilot supply pipe to the gas valve.
- (i) Remove the four screws which secure the manifold to the gas valve.
- (j) Disconnect the four spade terminals and the screwed earth terminal from the gas valve, taking note of their positions (wiring diagram, Fig. 21).
- (k) Whilst holding the gas valve remove the two screws, from above, which hold the gas valve and its bracket to the base.
- (l) Withdraw the gas valve and bracket out of the appliance.
- (m) Remove the gas valve from its bracket by first removing the two screws.
- (n) Reassemble with a new gas valve in the reverse order, but do not fit the lower pod at this stage.
- (o) Re-establish the correct operation of the appliance. See Section 7.7 (a) and (b).

8.7 TO REPLACE THE GAS VALVE (Fig. 24)

- (a) Remove the two screws (Fig. 12) which hold the control box in its horizontal position and swing the control box down through 90°.

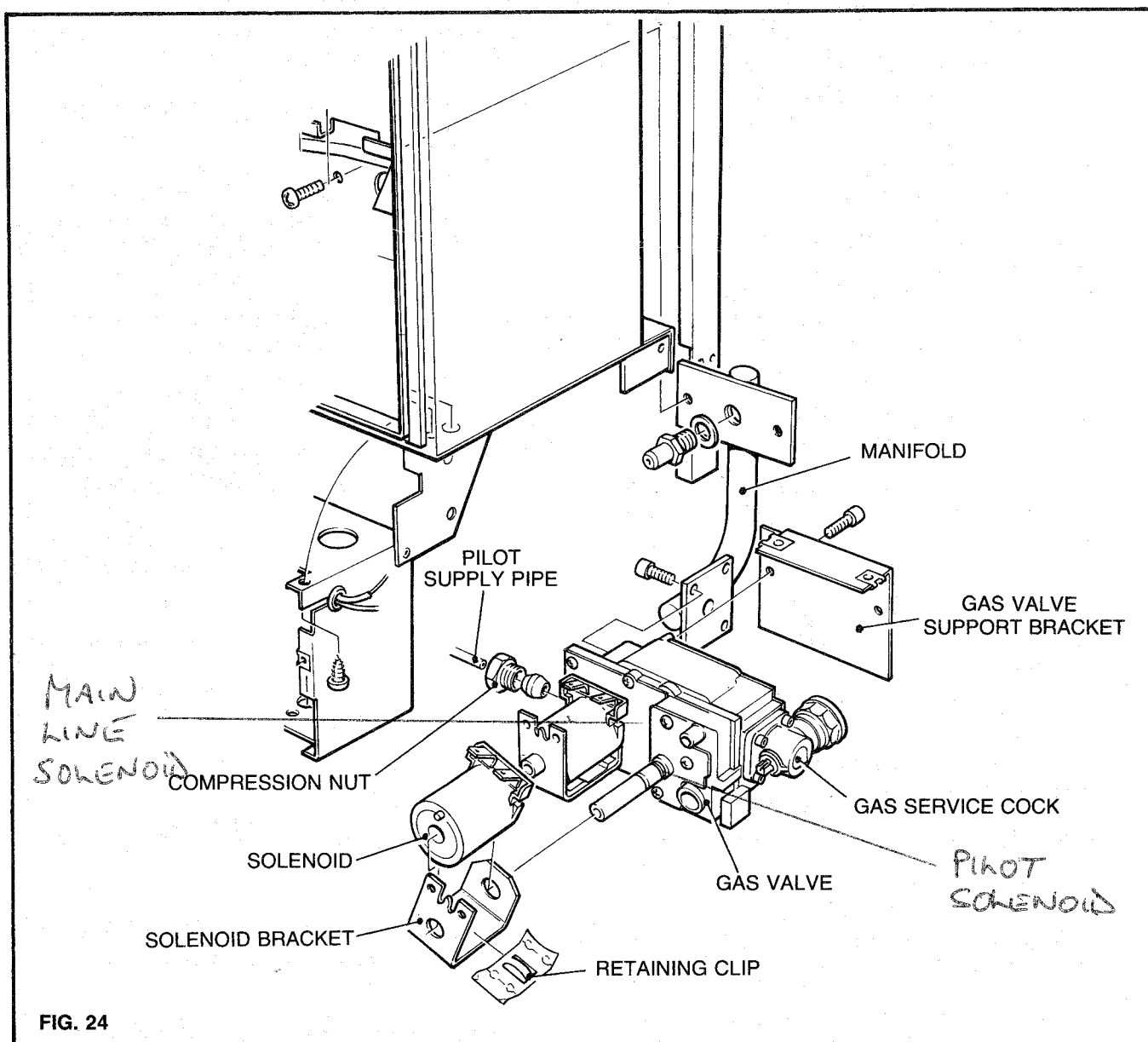


FIG. 24

8.8 TO REPLACE THE FAN (Fig. 19)

- Remove the two screws (Fig. 12) which hold the control box in its horizontal position and swing the control box down through 90°.
- Ensuring the outer case does not fall, remove the three retaining screws (Figs. 15 and 16) and lift the outer case clear of the appliance.
- Unscrew the hexagonal nut securing the front of the burner to the support bracket.
- Unscrew the two screws holding the lower front combustion chamber in place and remove the panel with its insulation.
- Remove the combustion chamber front/collector hood fabrication by first unscrewing and removing the two hook bolts, the two wing studs, the M5 screw and the two self-tapping screws (Fig. 25). Then lift the fabrication away from the appliance. An upward twisting action may be required to clear the fan. The insulation inside this fabrication is loose once removed, therefore care must be taken not to damage it.
- Disconnect the blue and brown wires from the fan motor. (The polarity of these wires is of no concern). Disconnect the earth wire from the earth post.
- Disconnect the white tube from the fan assembly.
- Unscrew and remove the three screws which retain the fan assembly.
- Remove the fan assembly by lowering and rotating it from the bottom outwards.
- Unscrew the three screws which retain the fan to the fan mounting plate and remove the fan.
- Replace the fan and reassemble in reverse order.

8.9 TO REPLACE THE HEAT EXCHANGER (Fig. 18)

- Drain the central heating system of water.
- Remove the two screws (Fig. 12) which hold the control box in its horizontal position and swing the control box down through 90°.

8.9 Continued

- (c) Ensuring the outer case does not fall off, remove the three retaining screws (Figs. 15 and 16) and lift the outer case clear of the appliance.
- (d) Unscrew the hexagonal nut securing the front of the burner to the support bracket.
- (e) Unscrew the two screws holding the lower front combustion chamber in place and remove the panel with its insulation.
- (f) Unscrew the two screws holding the pilot bracket to the main burner.
- (g) Holding the pilot bracket down, slide the main burner forwards out of the combustion chamber.
- (h) Remove the combustion chamber front/collector hood fabrication by first unscrewing and removing the two hook bolts, the two wing studs, the M5 screw and the two self-tapping screws. Then lift the fabrication away from the appliance. An upward twisting action may be required to clear the fan. The insulation inside this fabrication is loose once removed, therefore care must be taken not to damage it.
- (i) Remove the LH and RH combustion chamber sides by first removing the two screws which secure each in place.
- (j) The lower part of the rear insulation will now be loose. Remove it.
- (k) Drain the remaining water from the heat exchanger using the small drain cock on the front right hand corner of the heat exchanger.
- (l) Disconnect the left hand side compression joint on the return pipe, external to the appliance.
- (m) Disconnect the compression joint on the front right hand side of the heat exchanger.
- (n) Lower the heat exchanger and return pipe until access is gained to disconnect the left hand side rear compression joint on the heat exchanger.
- (o) The heat exchanger can now be removed.
- (p) Fit a replacement heat exchanger in the reverse order.

8.10 TO REPLACE THE COMBUSTION CHAMBER INSULATION (Fig. 18)

Note: If the heat exchanger is to be replaced it is advisable to replace the combustion chamber insulation at the same time. However, the insulation may be replaced on its own.

- (a) Refer to Section 8.9, steps (b) to (j).
- (b) Slide the pieces of insulation out of the two combustion chamber sides in either direction.

- (c) Replace each piece of insulation and reassemble the components in reverse order.

8.11 TO REPLACE THE MAGNETIC CATCH

- (a) The magnetic catch can be removed from the lower pod by squeezing the retaining catches at each end and passing it forwards through the rectangular hole.
- (b) A new magnetic catch can be inserted from the front until it clips into position.
- (c) Reassemble the components in reverse order.

8.12 TO REPLACE THE PUMP OVER-RUN THERMOSTAT (Fig. 22)

- (a) Remove the two screws (Fig. 12) which hold the control box in its horizontal position and swing the control box down through 90°.
- (b) Disconnect the three wires from the pump over-run thermostat which is located on the back panel base, taking note of their respective positions (wiring diagram, Fig. 21).
- (c) Remove the pump overrun thermostat by first unscrewing its two fixing screws.
- (d) Replace the pump overrun thermostat and re-assemble in reverse order.

8.13 TO REPLACE ONE OR BOTH OF THE GAS VALVE SOLENOIDS (Fig. 24)

- (a) Remove the two screws (Fig. 12) which hold the control box in its horizontal position and swing the control box down through 90°.
- (b) Ensuring the outer case does not fall, remove the three retaining screws (Figs. 15 and 16) and lift the outer case clear of the appliance.
- (c) Disconnect the four spade terminals and the screwed earth terminal from the gas valve, taking note of their positions (wiring diagram, Fig. 21).
- (d) Remove either or both of the solenoid retaining clips by sliding them sideways.
- (e) The solenoid and its bracket may now be pulled forwards off its shaft.
- (f) Fit a replacement solenoid and re-assemble in reverse order, ensuring the electrical connections are made in accordance with Fig. 21.

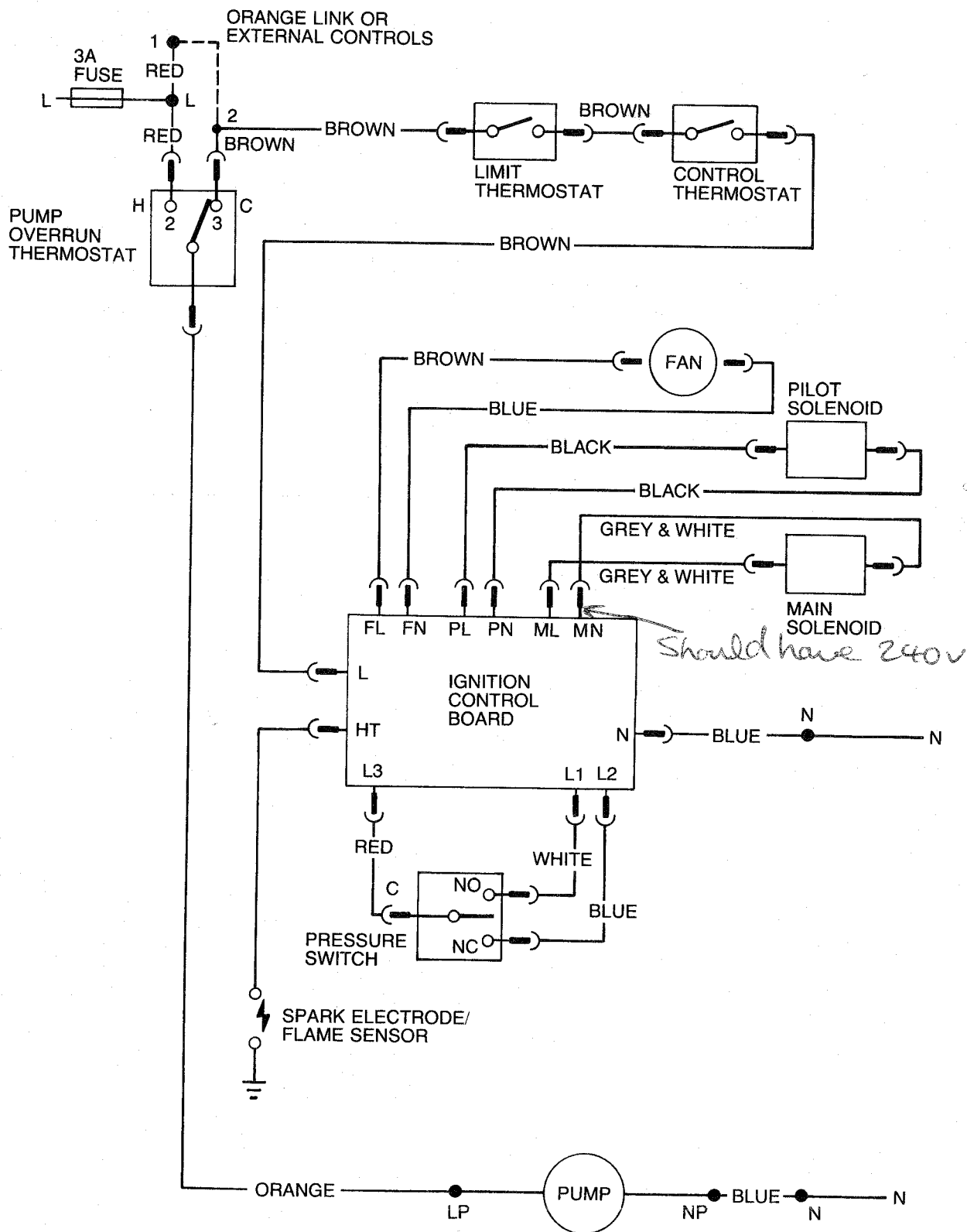
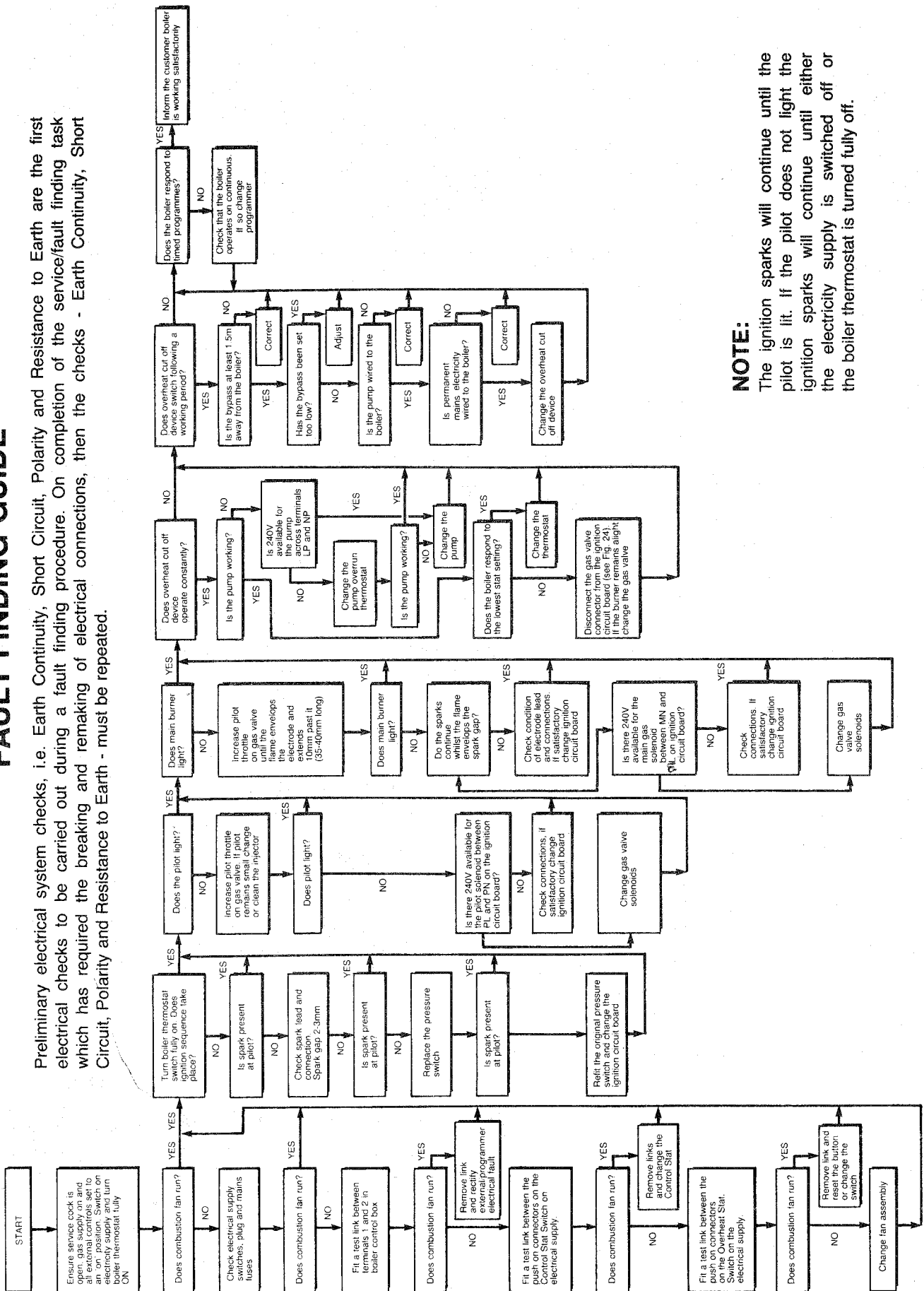


FIG. 25 FUNCTIONAL FLOW WIRING DIAGRAM

9. FAULT FINDING

FAULT FINDING GUIDE

Preliminary electrical system checks, i.e. Earth Continuity, Short Circuit, Polarity and Resistance to Earth are the first electrical checks to be carried out during a fault finding procedure. On completion of the service/fault finding task which has required the breaking and remaking of electrical connections, then the checks - Earth Continuity, Short Circuit, Polarity and Resistance to Earth - must be repeated.

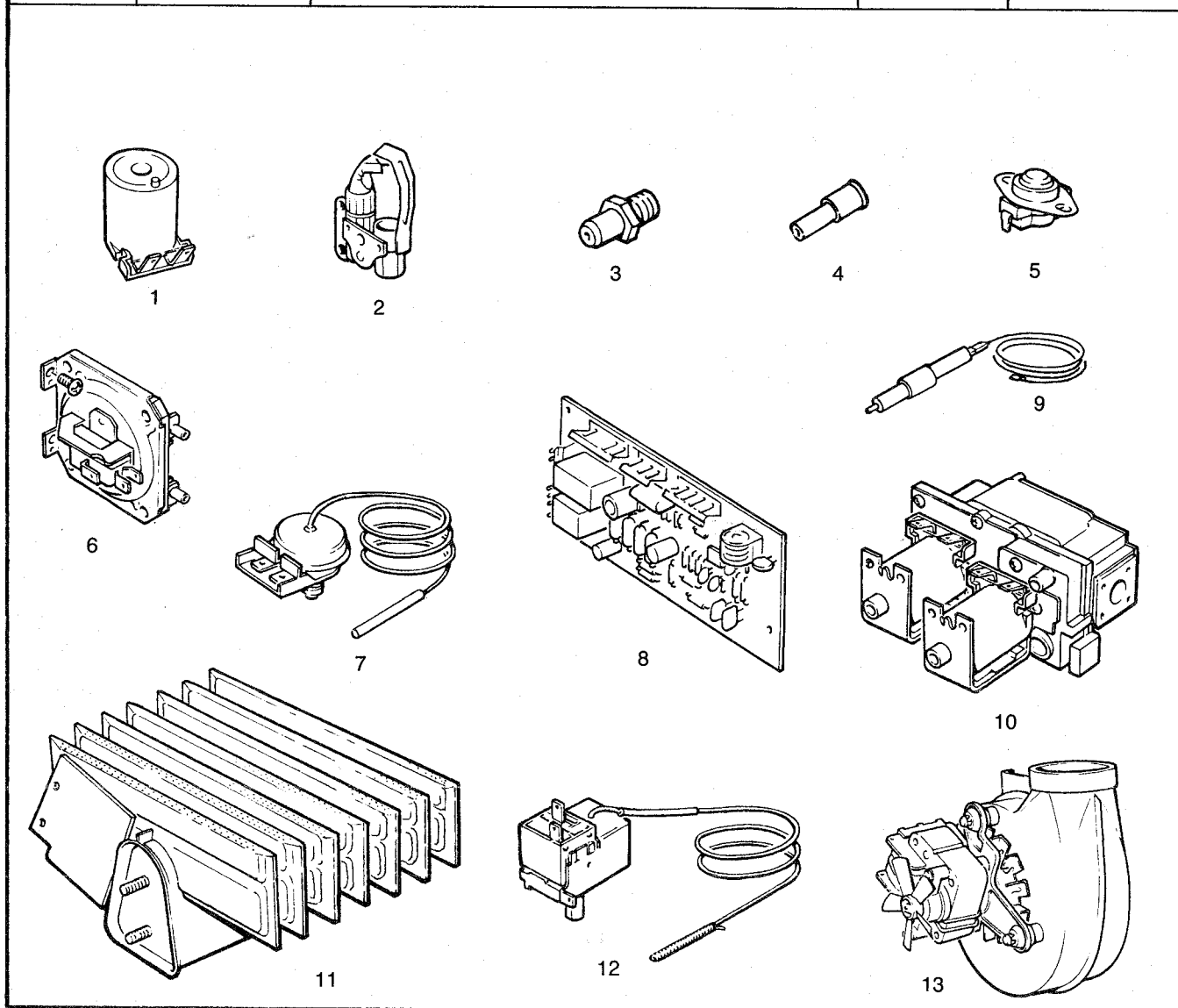


NOTE:

The ignition sparks will continue until the pilot is lit. If the pilot does not light the ignition sparks will continue until either the electricity supply is switched off or the boiler thermostat is turned fully off.

10. SHORT LIST OF PARTS

Key No.	GC No.	Description	No. off	Trianco Part No.
7	* 378139	Overheat Cut-Off Thermostat	1	* 501107
13	{ 378138	Fan 35, 45, 52, 60	1	501037
	{ 378137	Fan 80	1	501505
	{ 389554	Burner 35	1	501101
11	{ 389555	Burner 45, 52	1	501251
	{ 389556	Burner 60	1	501371
	{ 389557	Burner 80	1	501501
	{ 398376	Main Injector 35	1	501095
	{ 398389	Main Injector 45	1	501255
3	{ 398558	Main Injector 52	1	501256
	{ 398363	Main Injector 60	1	501375
	{ 398381	Main Injector 80	1	501495
2	378133	Pilot Burner	1	501163
4	378134	Pilot Injector	1	501164
9	378140	Spark Electrode	1	501165
12	* 378136	Control Thermostat	1	* 501108
10	378131	Gas Control Valve	1	501103
6	378135	Air Pressure Switch	1	501102
5	* 382466	Pump Overrun Thermostat	1	* 501109
8	378132	Ignition Control PCB	1	501106
1	381703	Gas Valve Solenoid	1	501096



11. EXPLODED VIEW

