

IDEAL ELAN 2

30 NF, 40 NF, 50 NF, 60 NF & 80 NF

Wall Mounted, Fanned, Balanced

Flue Gas Boilers.

Installation and Servicing.

CAUTION: To avoid the possibility of injury during the installation, servicing or cleaning of this appliance, care should be taken when handling edges of sheet steel components.

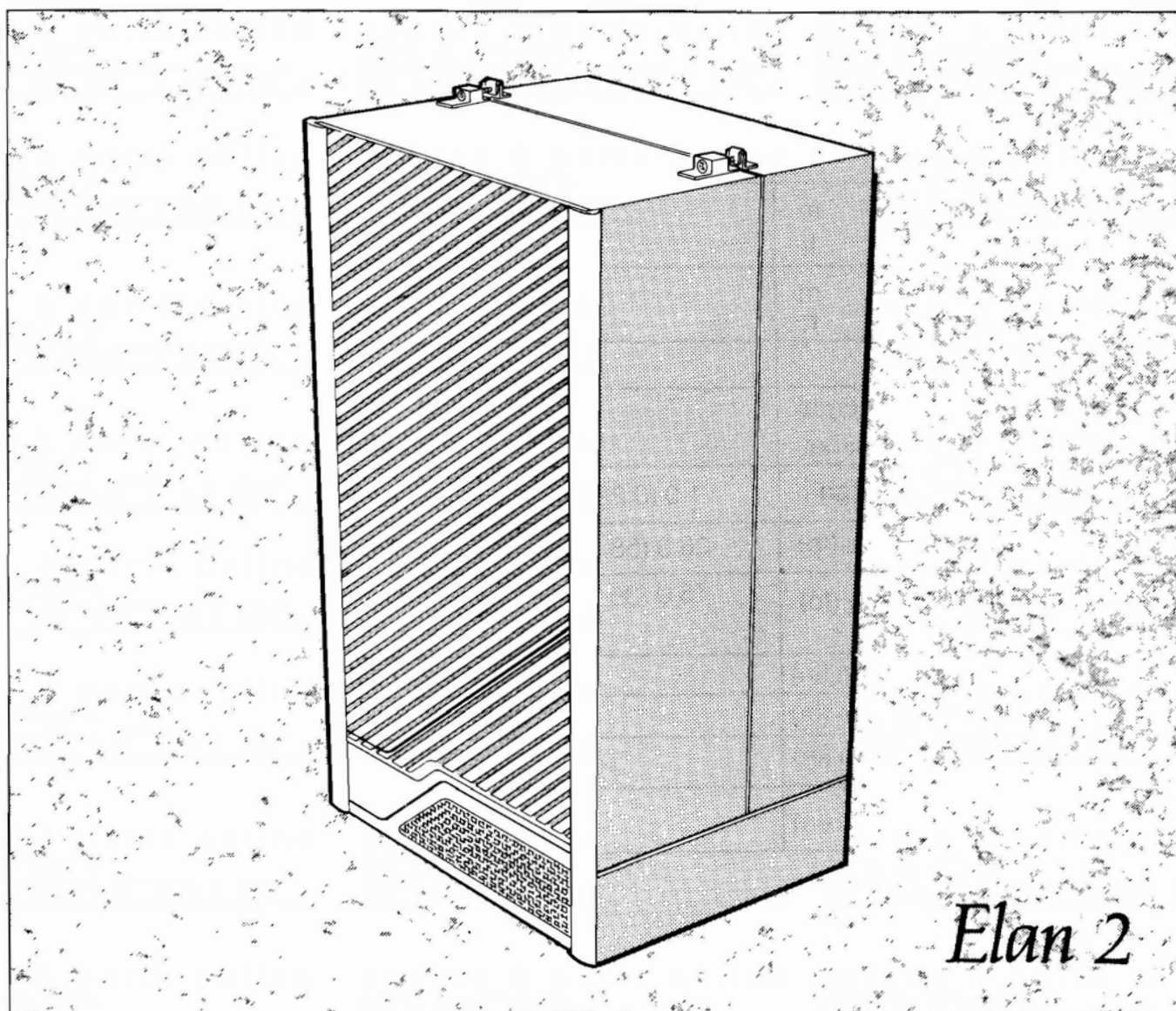
IMPORTANT: The appliances are for use with **NATURAL GAS ONLY.**

Ideal Elan 2

30 NF
40 NF
50 NF
60 NF
80 NF

S.I.T. Controls

GC. No. 41 421 73
GC. No. 41 421 54
GC. No. 41 421 55
GC. No. 41 421 56
GC. No. 41 421 57



NOTE TO THE INSTALLER: PLACE THESE INSTRUCTIONS ADJACENT TO THE GAS METER

Stelrad Ideal

GENERAL

PERFORMANCE DATA

Table 1 - General Data

Boiler Size		30NF	40NF	50NF	60NF	80NF
Main Burner		FURIGAS - Type 'R' No.118 500 077		FURIGAS - Type 'R' No.118 500 078		FURIGAS - Type 'R' No.118 500 079
Gas Control Valve		S.I.T. 830 TANDEM 0.830.020 240V ~ 50Hz				
Burner Injector		Bray Cat 16 750	Bray Cat 16 1100	Bray Cat 16 1400	Bray Cat 16 1700	Bray Cat 10 2400
Pilot Injector		S.I.T. 0.977.142 (stamped 33)				
Gas Supply Connection in.BSP/t		Rc1½ ½				
Flow Connection Return Connection		22mm OD Copper 22mm OD Copper				Copper 28mm OD 28mm OD
MAXIMUM Static Water Head		30.5 100				
MINIMUM Static Water Head		0.45 1.5				
Electrical Supply		240V ~ 50Hz				
Fuse Rating		3A F.I.A. to BS 4265				
Water Contents		1.0 (0.22)		1.2 (0.27)		1.5 (0.33)
Dry Weight		26.3 (58.0)		27.5 (60.6)		35.0 (77.2)
MAX. Installation Weight		16.0 (35.3)		17.2 (37.9)		22.9 (50.5)
Boiler Height		700 (27.5)				
Casing Width		380 (15)				465 (18)
Size Depth		300 (12)				
Flue Duct Diameter		100 (4)				

GENERAL

PERFORMANCE DATA

Table 2 - PERFORMANCE DATA

Boiler Size			30NF	40NF	50NF	60NF	80NF
Boiler Input	MINIMUM	kW	5.9	11.7	15.2	19.3	23.4
		Btu/h	20 300	40 000	51 900	65 800	80 000
	Gas Consumption	l/s (ft ³ /h)	0.15 (19.5)	0.30 (38.5)	0.39 (50.0)	0.50 (63.4)	0.60 (77.1)
	MID	kW	8.6	13.3	16.9	20.8	26.5
		Btu/h	29 400	45 500	57 700	71 000	90 500
	Gas Consumption	l/s (ft ³ /h)	0.22 (28.3)	0.34 (43.8)	0.44 (55.6)	0.54 (68.4)	0.68 (87.2)
	MAXIMUM	kW	11.1	14.8	18.6	22.2	29.6
		Btu/h	38 000	50 600	63 300	75 900	101 000
	Gas Consumption	l/s (ft ³ /h)	0.29 (36.6)	0.38 (48.7)	0.48 (61.0)	0.57 (73.1)	0.76 (97.3)
Boiler Output to water	MINIMUM	kW	4.4	8.8	11.7	14.7	17.6
		Btu/h	15 000	30 000	40 000	50 000	60 000
	MID	kW	6.6	10.2	13.2	16.1	20.5
		Btu/h	22 500	35 000	45 000	55 000	70 000
	MAXIMUM	kW	8.8	11.7	14.7	17.6	23.4
		Btu/h	30 000	40 000	50 000	60 000	80 000
Burner Setting Pressure (Hot)	MINIMUM	mbar	4.9	8.7	9.7	10.9	9.0
		in.w.g.	2.0	3.5	3.9	4.4	3.6
	MID	mbar	9.8	11.0	11.9	12.6	11.6
		in.w.g.	3.9	4.4	4.8	5.0	4.6
	MAXIMUM	mbar	16.2	13.7	14.0	14.2	14.5
		in.w.g.	6.5	5.5	5.6	5.7	5.8

Notes:

1. Gas consumption is calculated using a calorific value of 38.7 MJ/m³ (1038 Btu/ft³).
2. The appliance is pre-set at the factory, to the highest nominal rating.

GENERAL GUIDANCE

GAS SUPPLY - FLUING

INTRODUCTION

The Ideal Elan 30NF, 40NF, 50NF, 60NF & 80NF are fully automatically controlled, wall mounted, low water content, balanced flue fanned gas boilers. They are range rated to provide central heating outputs of 4.4kW (15 000 Btu/h) to 23.4kW (80 000 Btu/h).

The boilers are supplied with a standard flue kit suitable for rear or side outlet applications from 114mm (4½ in) to 406 mm (16 in). (from boiler rear/side).

Up to 3 Optional Extension duct kits allowing up to 3m (118 in.) are available.

The boiler casing is of white enamelled mild steel, with a fascia of satinised white glass. The controls pod, also of white enamelled mild steel, has fixed sides and a removable bottom panel. A programmer kit is available as an optional extra and separate fitting instructions are included with the kit.

The glass fascia slides upwards to reveal the boiler thermostat controls and gas valve and also the programmer (if fitted). With the fascia in the 'down' position the controls can be seen through an observation window.

The boilers are suitable for connection to fully pumped, open vented or sealed water systems. Adequate arrangements for completely draining the system by provision of drain cocks, MUST be provided in the installation pipework.

Gas Safety (Installation and Use) Regulations, 1984

It is the law that all gas appliances are installed by competent persons (e.g. CORGI, identified by ) in accordance with the above Regulations. Failure to install appliances correctly could lead to prosecution.

It is in your own interest, and that of safety, to ensure that the law is complied with.

The installation of the boiler MUST also be in accordance with the current I.E.E. Wiring Regulations, the Local Building Regulations, Building Standards-(Scotland), the bye laws of the Local Water Undertaking and any relevant requirements of the Local Authority. Detailed recommendations are contained in the following British Standard Codes of Practice.

Codes of Practice.

BS 6891

Low pressure installation pipes.

BS 6798

Boilers of rated input not exceeding 60kW.

BS 5449:1

Forced circulation hot water systems (small bore and microbore domestic central heating systems).

BS 5546

Installation of gas hot water supplied for domestic purposes (2nd Family Gases).

BS 5440:1

Flues (for gas appliances of rated input not exceeding 60kW).

BS 5440:2

Air supply (for gas appliances of rated input not exceeding 60kW).

IMPORTANT

This appliance range is certified by the British Standards Institute for safety and performance. It is, therefore, important that no external control devices, (e.g. flue dampers, economisers etc.) are directly connected to this appliance unless covered in these 'Installation and Servicing Instructions' or otherwise recommended by Stelrad Group Ltd., in writing.

If in doubt please enquire.

GENERAL GUIDANCE

GAS SUPPLY - FLUING

INTRODUCTION

Any direct connection of a control device not recommended by Stelrad Group Ltd. could invalidate the BSI Certification and the normal appliance warranty. It could also infringe the Gas Safety Regulations and the above regulations, or other statutory requirements. Manufacturers notes must NOT be taken, in any way as overriding statutory obligations.

LOCATION OF BOILER

The boiler MUST be installed on a flat and vertical non-combustible wall capable of adequately supporting the weight of the boiler and any ancillary equipment.

THE BOILER IS NOT SUITABLE FOR EXTERNAL INSTALLATION

IMPORTANT NOTICE

If the boiler is to be fitted in a timber framed building it should be fitted in accordance, with the 'British Gas publication Guide for Gas Installations in Timber Frame Housing' Reference DM2. If in doubt advice must be sought from the local Gas Region of British Gas, or Stelrad Group Ltd. 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 applicable with respect to the installation of the boiler in a room or internal space containing a bath or shower.

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

Where installation will be in an unusual location special procedures may be necessary and BS 6798 gives detailed guidance on this aspect.

A compartment used to enclose the boiler MUST be designed and constructed specially for this purpose. An existing cupboard, or compartment, may be used provided it is modified for the purpose. Details of essential features of cupboard/compartment design, including airing cupboards installations, are given in BS 6798.

In siting the boiler, the following limitations MUST be observed:

1. The position selected for installation MUST allow adequate space for servicing in front of the boiler and for air circulation around the boiler.
2. This position MUST also permit the provision of a satisfactory flue termination.

GAS SUPPLY

The Local Gas Region should be consulted, at the installation planning stage, in order to establish the availability of an adequate supply of gas.

An existing service pipe must NOT be used without prior consultation with the Local Gas Region.

A gas meter can only be connected by the Local Gas Region, or by a local Gas Region Contractor.

An existing meter should be checked, preferably by the Gas Region, to ensure the meter is adequate to deal with the rate of gas supply required.

Installation pipes should be fitted in accordance with BS 6891.

Do NOT use pipes of a smaller size than the boiler inlet gas connection.

The complete installation MUST be tested for gas soundness and purged as described in the above standard.

FLUING

The flue MUST be installed in accordance with the recommendations of BS 5440:1.

The following notes are intended for general guidance.

1. The boiler MUST be installed so that the terminal is exposed to the external air.

GENERAL GUIDANCE INTRODUCTION

GAS SUPPLY - FLUING

2. It is important that the position of the terminal allows the free passage of air across it at all times.
3. The minimum acceptable spacings from the terminal to obstructions and ventilation openings are specified in Table 3.
4. Where the lowest part of the terminal is fitted less than 2m (6.6ft) above a balcony, above ground, or above a flat roof to which people have access, the terminal **MUST** be protected by a purpose designed guard.
Terminal guards are available from
'Quinnel, Barret & Quinnel Ltd.
884 Old Kent Road, London SE 15 :Model 304.'
or 'Tower Flue Components Ltd.
Vale Rise, Tonbridge, Kent TN9 1TB : Model k1.'
Ensure that the guard is fitted centrally over the terminal.
5. Where the terminal is fitted within 850mm (34in.) of a plastic or painted gutter, or 450mm (18in.) of painted eaves, an aluminium shield - at least 750mm (30in.) long should be fitted to the underside of the gutter or painted surface.
6. The air inlet/products outlet duct and the terminal of the boiler **MUST** be NOT closer than 25mm (1 in.) to combustible material.
Detailed recommendations on protection of combustible material are given in BS 5440:1 1978, subclause 20.1.
7. If the terminal is fitted less than 2m (6 ft.-6 in.) above a balcony, above ground or above a flat roof, the minimum spacing in Table 3, No.s 2, 3, 5, & 6 would be 75 mm to allow a terminal guard to be fitted.
8. Where it is essential the terminal wall plate is fitted i.e. wall thickness over 610mm (24 in.) or with an inaccurately cut hole, the minimum spacing in Table 3, No.s 2,3,5, & 6 would be 60mm to allow the terminal wall plate to be fitted (Refer to frames 15 & 28 flue installation).

IMPORTANT

It is absolutely **ESSENTIAL** to ensure, in practice, that products of combustion discharging from the terminal cannot re-enter the building, or any other adjacent building, through ventilators, windows, doors, other sources of natural infiltration, or forced ventilation/air conditioning. If this event should occur, the appliance **MUST** be turned OFF IMMEDIATELY and the Local Gas Region consulted.

Table 3

Terminal Position	Minimum Spacing
1. Directly below, or adjacent to an openable window, air vent or any other ventilation opening.	300mm (12in.)
2. Below guttering, drain pipes or soil pipes.	25 mm (1 in)
3. Below eaves, balconies or car port roof.	25 mm (1 in)
4. Above adjacent ground, roof or balcony level.	300mm (12in.)
5. From vertical drain pipes or soil pipes.	25 mm (1 in)
6. From internal or external corners.	25 mm (1 in)
7. From a surface facing the terminal.	600mm (24in.)
8. From a terminal facing the terminal.	1200mm (48in.)
9. From an opening in the car port (e.g. door, window) into dwelling.	1200mm (48in.)
10. Vertically from a terminal on the same wall.	1500mm (60in.)
11. Horizontally from a terminal on the same wall.	300mm (12in.)

TERMINAL

The flue terminal assembly can be adapted to accommodate various wall thicknesses and flue lengths - Refer to 'Installation, Frame 3'.

AIR SUPPLY

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

1. It is NOT necessary to have a purpose provided air vent in the room or internal space in which the boiler is installed.
2. If the boiler is to be installed in a cupboard or compartment, permanent air vents are required (for cooling purposes) in the cupboard/compartment, at both high and low levels.

The air vents must either communicate with a room/internal space or be direct to outside air. The minimum effective areas of the permanent air vents, required in the cupboard/compartment, are specified below and are to the maximum rated heat input of the boiler.

Table 4: 30NF

Position of air vent	Air from room/internal space	Air direct from outside
HIGH LEVEL cm2 (in2)	100 (16)	50 (8)
LOW LEVEL cm2 (in2)	100 (16)	50 (8)

Table 5: 40NF

Position of air vent	Air from room/internal space	Air direct from outside
HIGH LEVEL cm2 (in2)	133 (21)	67 (11)
LOW LEVEL cm2 (in2)	133 (21)	67 (11)

Table 6: 50NF

Position of air vent	Air from room/internal space	Air direct from outside
HIGH LEVEL cm2 (in2)	166 (26)	83 (13)
LOW LEVEL cm2 (in2)	166 (26)	83 (13)

Table 7: 60NF

Position of air vent	Air from room/internal space	Air direct from outside
HIGH LEVEL cm2 (in2)	200 (30)	100 (15)
LOW LEVEL cm2 (in2)	200 (30)	100 (15)

Table 8: 80NF

Position of air vent	Air from room/internal space	Air direct from outside
HIGH LEVEL cm2 (in2)	264 (40)	132 (20)
LOW LEVEL cm2 (in2)	264 (40)	132 (20)

Note: Both air vents MUST communicate with the same room, or internal space, or MUST both be on the same wall to outside air.

WATER CIRCULATION SYSTEM

The boiler must NOT be used for direct hot water supply.

The boiler is suitable for connection to fully pumped open vented or sealed water central heating systems or central heating combined with indirect domestic hot water systems. The central heating system should be in accordance with the relevant recommendations given in BS 6798

and in addition, for Small bore and Microbore systems - BS 5449:1. The domestic hot water system, if applicable, should be in accordance with relevant recommendations to BS 5546. Copper tubing, to BS 2871:1 is recommended for water carrying pipework. The hot water storage cylinder MUST be of the indirect type and should be, preferably, manufactured of copper. Single-feed indirect cylinders are not recommended, and MUST NOT be used on sealed systems. The hot water cylinder and ancillary pipework, not forming part of the useful heating surface, should be lagged to prevent heat loss and any possible freezing, particularly where pipes run through roof spaces and ventilated under floor spaces.

Draining taps MUST be located in accessible positions, which permit the draining of the whole system, including the boiler and hot water storage vessel.

Draining taps should be at least 1/2in. nominal size and be in accordance with BS 2879.

The hydraulic resistances of the boilers, at MAXIMUM OUTPUT, with an 11 °C (20 °F) temperature differential, are shown in Table 9.

Table 9: WATER FLOW RATE & PRESSURE LOSS

Boiler Size		30NF	40NF	50NF	60NF	80NF
Boiler Output	kW	8.8	11.7	14.7	17.7	23.4
	Btu/h	30 000	40 000	50 000	60 000	80 000
Water Flow Rate	l/min	11.4	15.2	19.0	22.8	30.3
	gal/h	150	200	250	300	400
Pressure Loss	mbar	2.	45	70	102	92
	in.w.g.	7. 11	18	28	41	37

ELECTRICAL SUPPLY

Wiring external to the appliance **MUST** be in accordance with the current I.E.E. Wiring Regulations and any Local Regulations which apply.

The boiler is supplied for 240V ~ 50Hz Single Phase.

Fuse rating is 3A.

The method of connection to the mains electricity supply **MUST** facilitate complete electrical isolation of the boiler, preferably by the use of a 'three pin' plug and shuttered socket outlet both complying with the requirements of BS 1363.

Alternatively, a fused double pole switch, having a 3mm (1/8in.) contact separation in both poles and serving only the boiler, may be used.

The point of connection to the mains should be readily accessible and adjacent to the boiler, except that, for bathroom installations, the point of connection to the mains **MUST** be situated outside the bathroom.

If the boiler is installed in a bathroom it **MUST NOT** be possible to reach the ON/OFF switch from within the bath or shower.

INSTALLATION

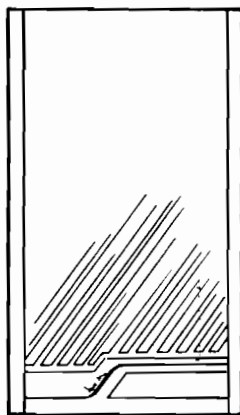
UNPACKING - LOCATION

1. UNPACKING

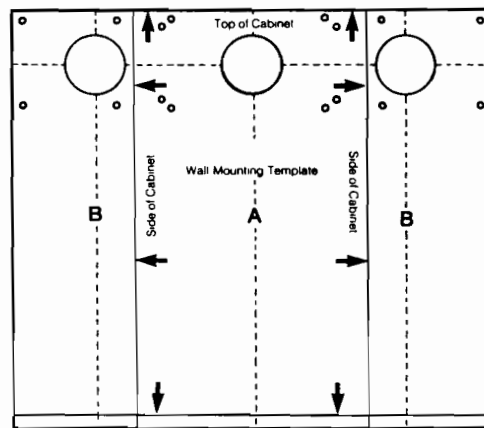
Unpack and check contents.

The boiler is supplied fully assembled in Pack A, together with a standard flue assembly for lengths up to 406mm (16 in.) rear or side outlet, pack B.

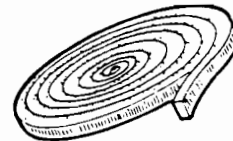
PACK 'A' Contents



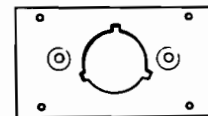
Complete boiler



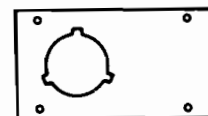
Wall Mounting Template



Sealing tape

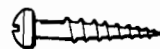


Wall Mounting Plate



Side Outlet Terminal Mounting Plate

PACK 'A' Hardware Pack Contents



13 - OFF NO.10 2in. long screws



13 - OFF Wall plugs



2 - OFF M6 wing nuts



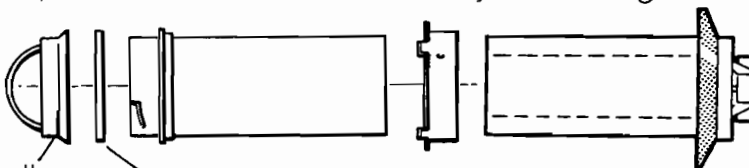
2 - OFF Sealing discs



1 - Output setting label

Pack 'B' Contents

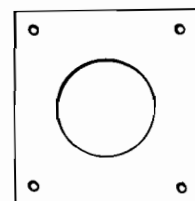
Telescopic air inlet/outlet duct assembly with sliding collar



Locking collar

Rubber gasket (supplied in bag)

Terminal Wall Plate



1 - OFF 3.2mm dia drill



9 - OFF No. 8x6mm (1/4in.lg) self tappers



1 - OFF Length of adhesive tape



2 - OFF Duct cutting support rings



3 - OFF Rectangular washers

INSTALLATION

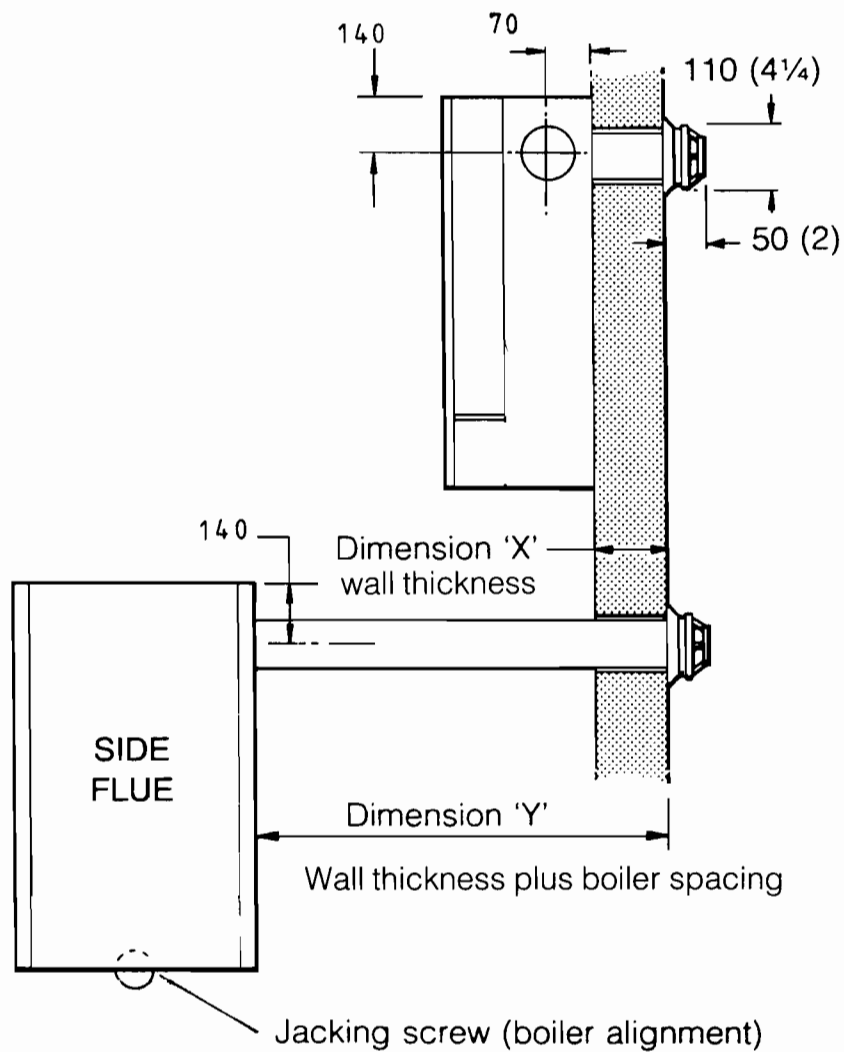
UNPACKING - LOCATION

2. WALL MOUNTING

It is most important that the boiler is installed in a vertical position.

Dimension 'X' - wall thickness

Dimension 'Y' wall thickness plus boiler spacing.



INSTALLATION
FLUE LENGTH

UNPACKING - LOCATION

Flue Kits -

Pack 'B' supplied as standard

Pack 'D' optional extension kit for side and rear flue outlet - Refer Frame 34 (up to 3 lengths).

Flue length - Dimension X or Y shown in Frame 2.		Flue Packs required
114 to 216mm	(4½ to 8½ in.)	Pack B (Cut down as in Frames 10 & 22)
216 to 406mm	(8½ to 16 in.)	Pack B
406 to 1280mm	(16 to 50¾ in.)	Pack B + 1 x Pack D
1280 to 2140mm	(50¾ to 84¼ in.)	Pack B plus 2 x Pack D
2140 to 3000mm	(84¼ to 118⅞)	Pack B plus 3 x Pack D

INSTALLATION

UNPACKING - LOCATION

4. BOILER CLEARANCES

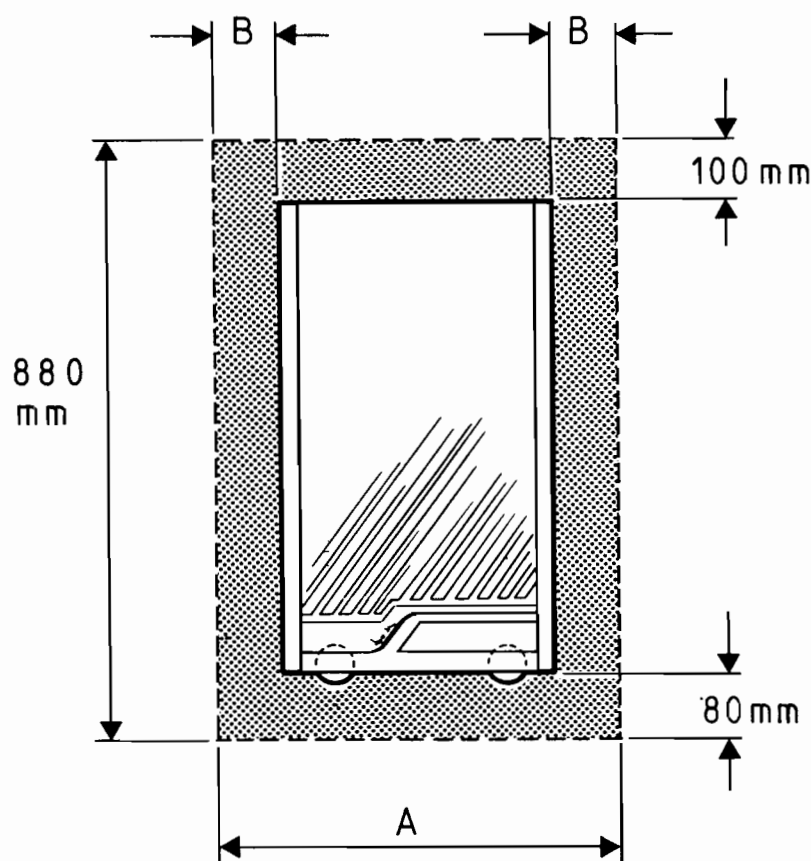
The following minimum clearances must be maintained for operation and servicing. Additional space will be required for installation depending upon site conditions.

Notes:

- (i) Provided that the flue hole is cut accurately, e.g. with a core drill the flue can be installed from inside but for flue lengths greater than the width/depth of the boiler the space in which the boiler is to be installed must be at least equal to the flue length plus the length of the terminal grill, (inside installation only up to 610mm wall thickness).
- (ii) If a core boring tool is to be used from inside the building, the space in which the boiler is to be installed must be at least wide enough to accommodate the tool.
- (iii) For side flues, once the boiler has been installed, the clearance on the non-flue side may be reduced to 10 mm. In addition a minimum of 450 mm MUST be available at the front of the boiler for servicing.

Dimn.	30NF, 40NF, 50NF & 60NF		80NF	
	Side Flue	Rear Flue	Side Flue	Rear Flue
'A'	425	400	510	485
'B'	10 flue side 35 non flue side	10 both sides	10 Flue side 35 non flue side	10 both sides

All dimensions in millimetres

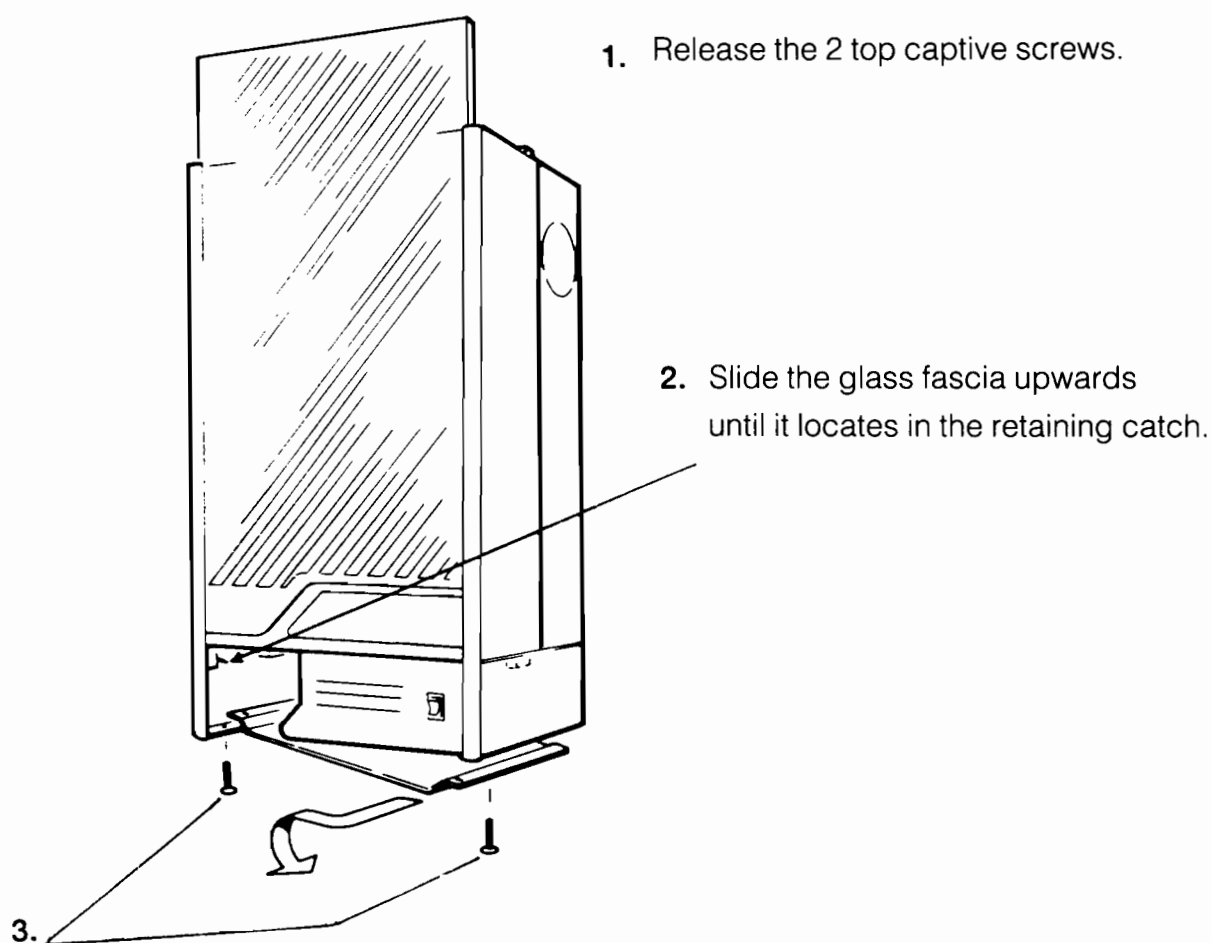


INSTALLATION

CASING REMOVAL

5. BOILER CASING REMOVAL

To install the boiler, the casing **MUST** be removed.



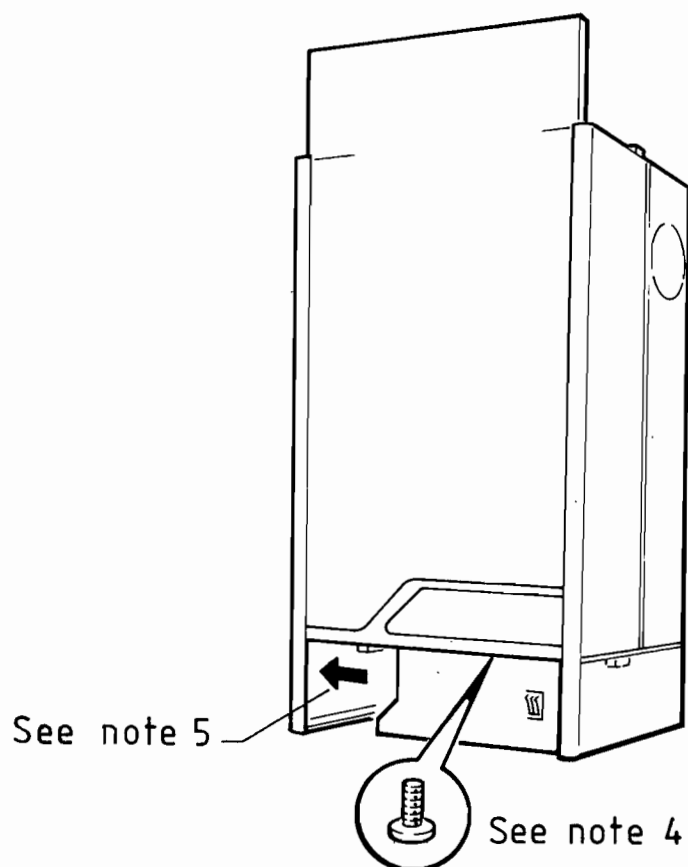
Remove the two bottom panel securing screws, slide the panel to the right hand side and drop the left hand side to remove from the casing.

INSTALLATION

CASING REMOVAL

6. BOILER CASING REMOVAL

4. Remove the control box securing screw.
5. Swing the control box to the left to gain access to the bottom right casing fixing screw.
6. Release the 2 bottom captive screws and lift the casing off the boiler. Place the casing safely to one side, taking care not to damage the glass fascia panel. (Slide the glass panel down in the casing for safe keeping.)



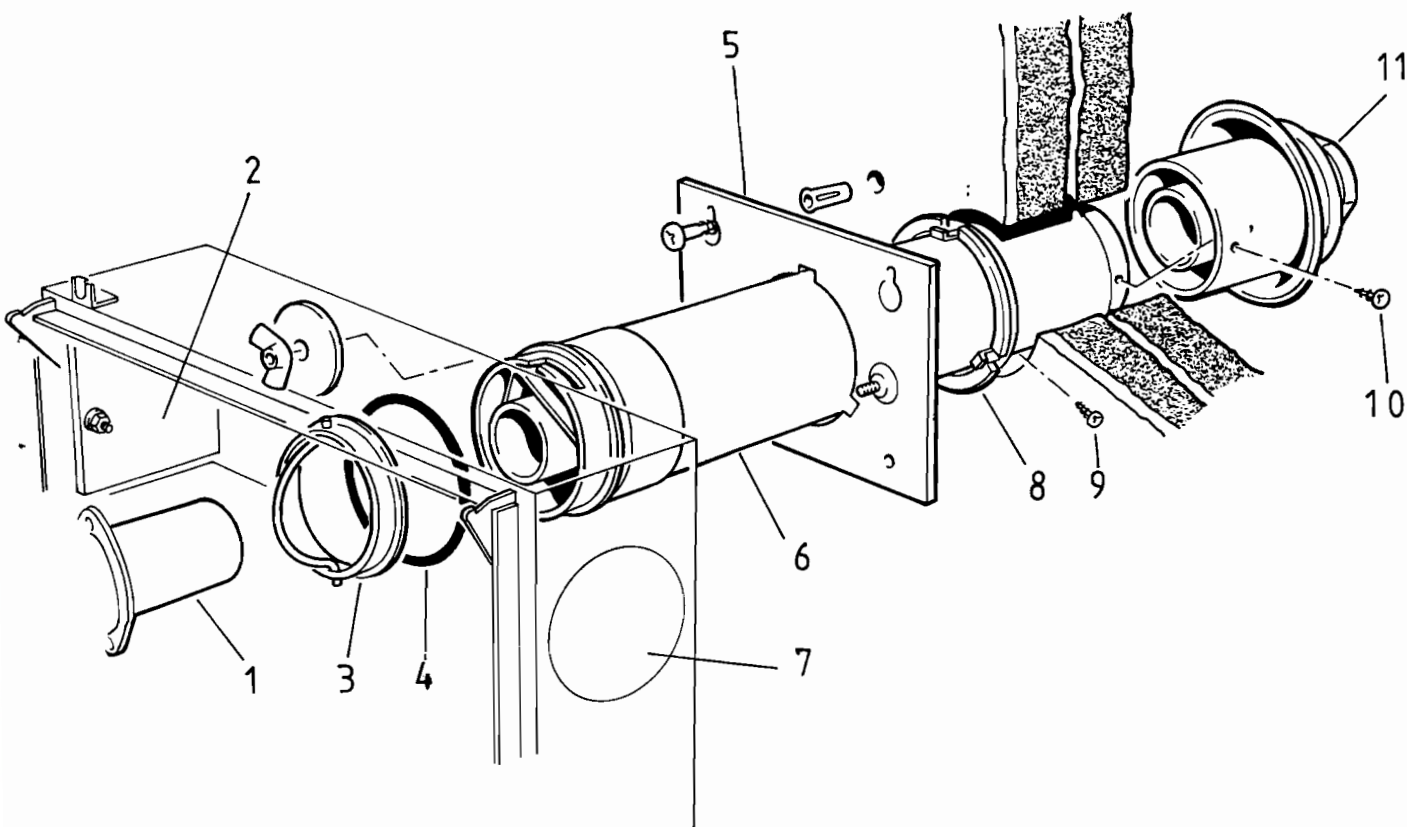
INSTALLATION

FLUE ASSEMBLY - Exploded View

REAR FLUE

Notes:

1. An optional duct extension kit is required for wall thicknesses greater than 406mm (16in) - refer frame 34.
2. When cutting the ducts always use the cardboard support rings provided.



LEGEND

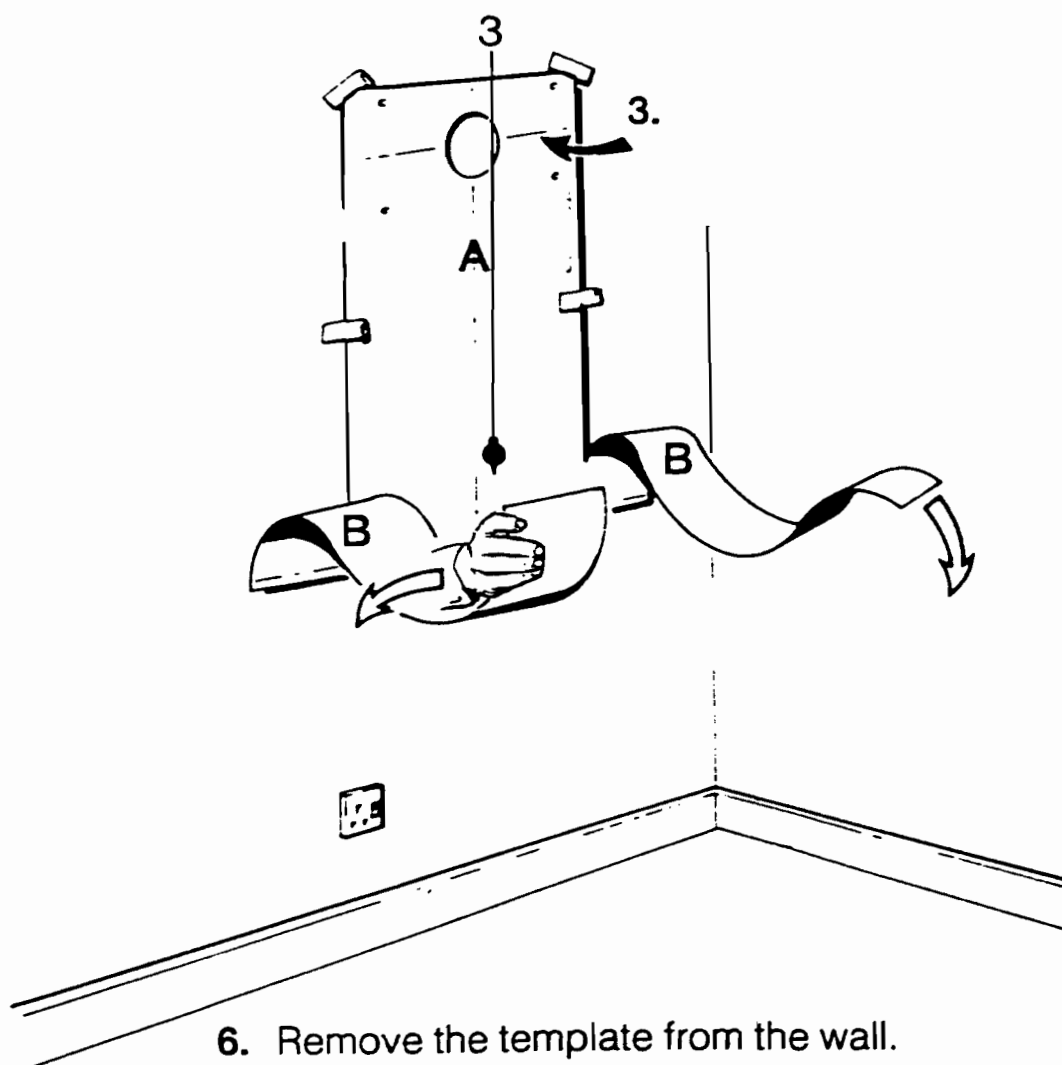
- | | |
|--------------------------------------|------------------------------------|
| 1. Flue outlet elbow | 6. Duct assembly |
| 2. Sealing disc and wing nut (2 off) | 7. Flue blanking plate |
| 3. Locking collar | 8. Sliding collar |
| 4. Air duct gasket | 9. Collar fixing screws (3 off) |
| 5. Wall mounting plate | 10. Terminal fixing screws (3 off) |
| | 11. Terminal assembly |

INSTALLATION

REAR FLUE

8. WALL MOUNTING TEMPLATE

1. Discard both sections B of template.
2. Tape the template into the selected position.
3. Ensure squareness by hanging plumb line as shown.
4. Mark onto the wall the 4 mounting plate screw positions and the lower fixing screw position.
5. Mark onto the wall the position of the flue duct Note:- Mark the centre of the hole as well as the circumference.

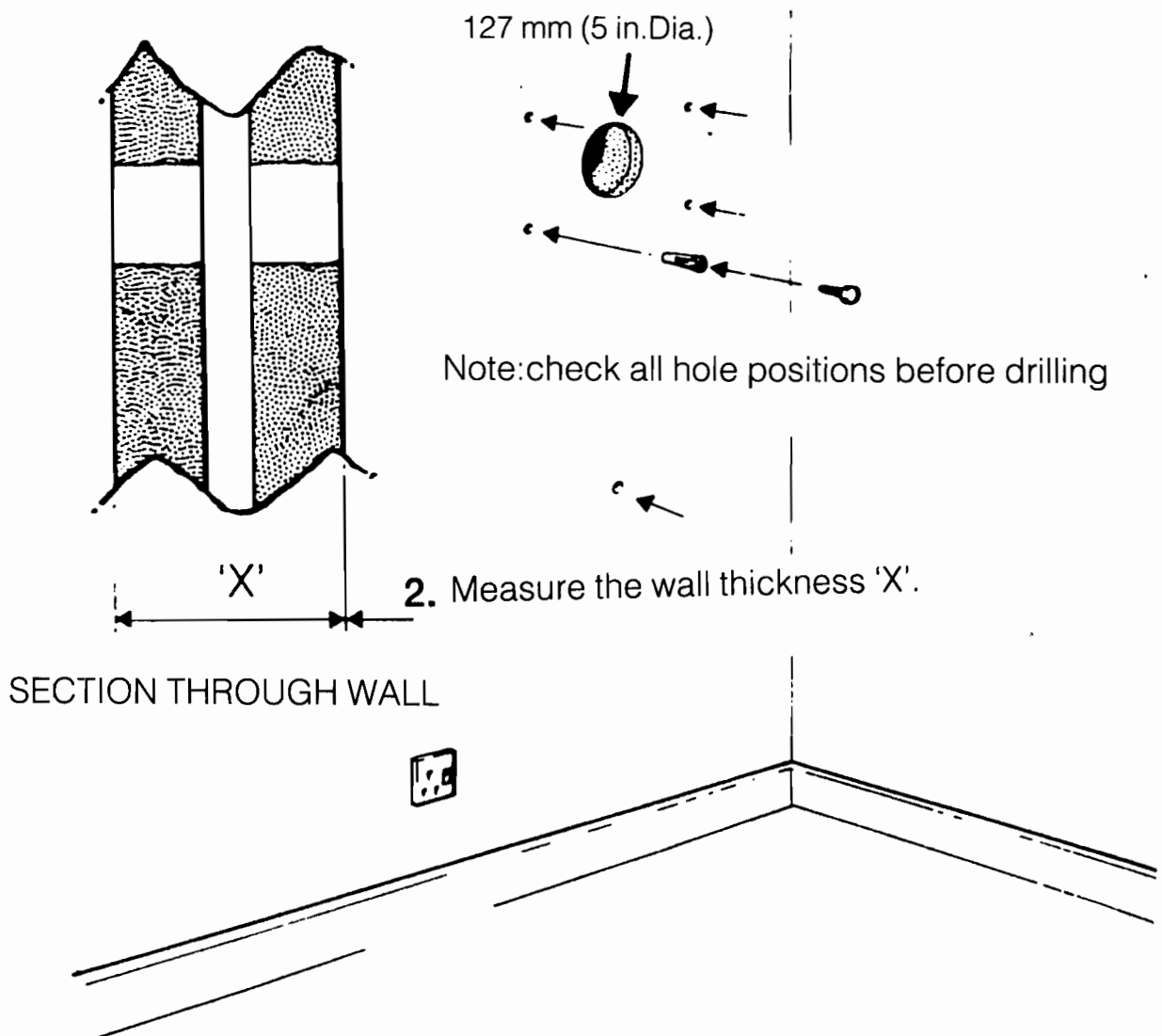


6. Remove the template from the wall.

9. PREPARING THE WALL

IMPORTANT: Ensure that, during the cutting operation, masonry falling outside of the building does not cause damage or personal injury.

1. Cut the flue hole preferably with a 5 in. core boring tool, ensuring the hole is square to the wall. If the hole has been quite accurately cut with a drill, then making good the wall faces is not essential, as seals are provided at both ends of the flue. However both wall faces immediately around the cut hole should be flat - make good if necessary.



PREPARING THE WALL Continued

For less accurate holes make good to approximately 125mm diameter at the two wall faces. For holes longer than 610mm this must be done from outside for the outer face, as access to outside is needed to fit the terminal plate anyway.

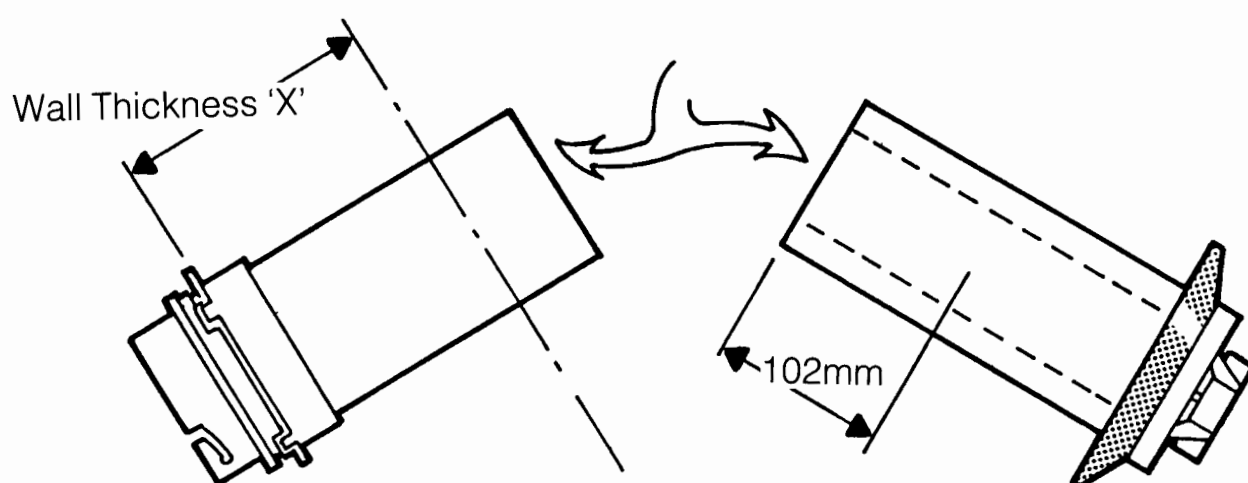
2. Measure the wall thickness 'X'.
3. Drill the 5 fixing holes with an 8mm (5/16in) masonry drill.
4. Insert the 5 plastic plugs provided.
5. Locate two No.10 x 2in. screws in the wall mounting plate top fixing holes and screw home to within 6mm (1/4in.) of the wall surface.

NOTE :If the terminal is to be sited 25 - 40 mm from a corner or vertical pipe (Ref Table 3) The hole MUST be accurately cut and the rubber weather seal trimmed around the groove provided. The terminal wall plate need not be fitted.

10. WALL THICKNESS 114 to 216mm

CUTTING THE DUCT ASSEMBLY

1. Separate the duct assembly
2. Push the sliding collar to the end of the duct and measure off dimension 'X'.

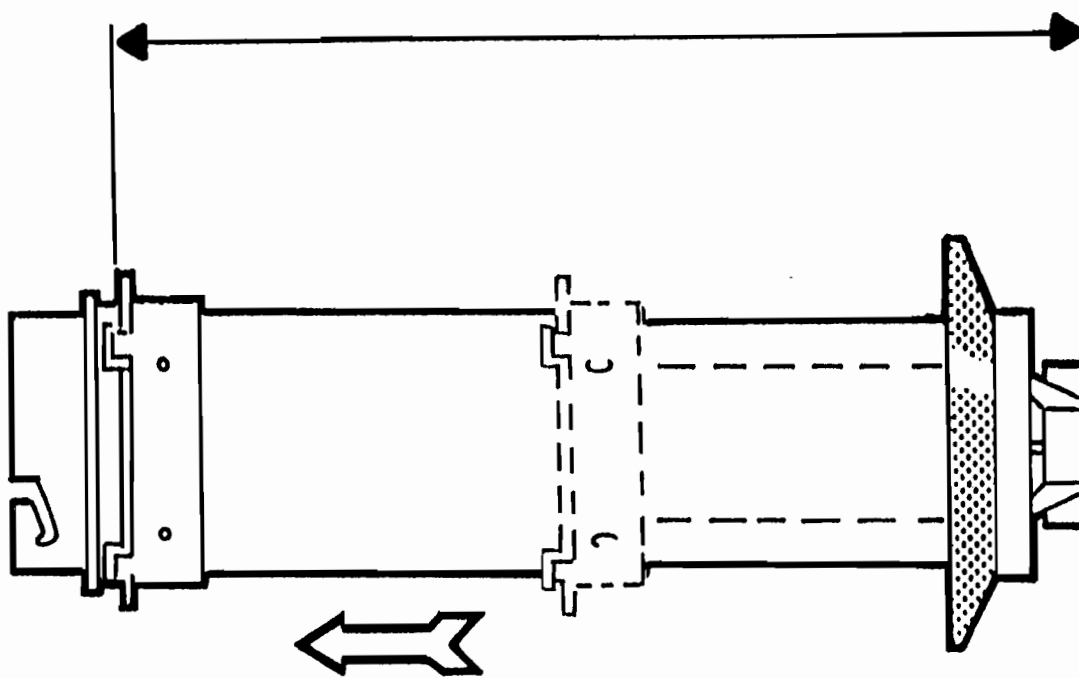


3. Cut to length 'X' using cardboard duct support rings (Note: Cut upper flue tube 6mm (1/4in.) longer than air tube).
4. Always cut 102mm (4in.) off terminal section (the flue tube can be flush).
5. Remove the cardboard support rings.
6. Re-assemble the terminal aligning the seams.

11. WALL THICKNESS 114 to 216mm

JOINING THE DUCT ASSEMBLY

1. Set the assembly to length . Wall thickness 'X' plus 50mm (2in.).



2. Using the sliding collar as a template at the duct join mark the position of the 3 fixing screws. Note: If the duct join is too close to the rubber weather seal to permit access for drilling, mark the hole positions at the mid-point of the duct.

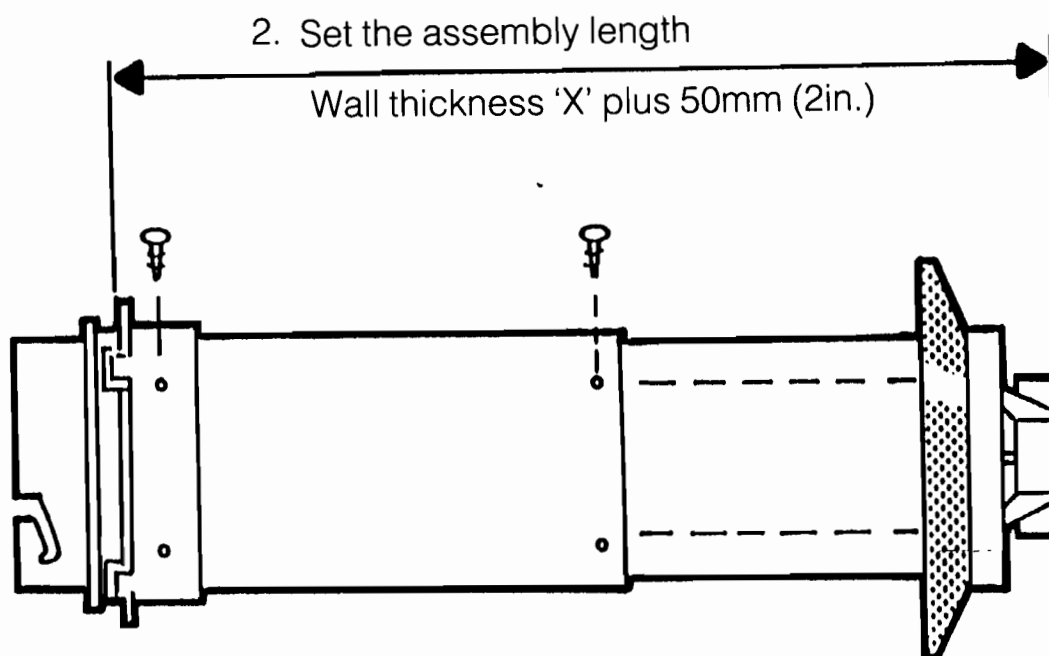
Slide the collar back to the boiler end of the duct &, again, mark the positions of the 3 fixing screws.

4. Go to Frame 12 Sections 5 & 6.

12. WALL THICKNESS 216 to 406mm

JOINING THE DUCT ASSEMBLY

1. Push the sliding collar to the boiler end of the assembly.



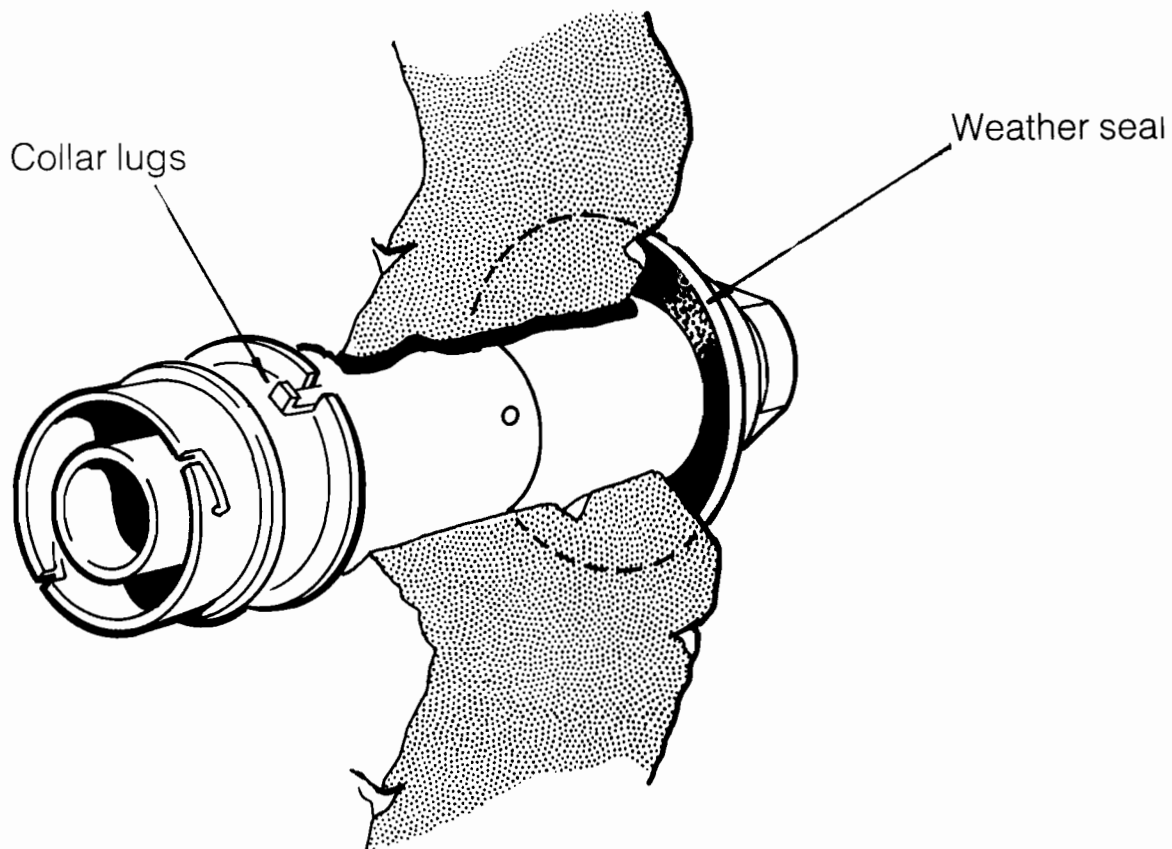
3. Using the sliding collar as a template at the duct join mark the position of the 3 fixing screws. Note: If the duct join is too close to the rubber weather seal to permit access for drilling, mark the hole positions at the mid-point of the duct.
4. Slide the collar back to the boiler end of the duct and again mark the position of the 3 fixing screws.
5. Drill the 6 fixing holes using the 3.2mm drill provided & insert the self tapping screws to fix the collar in position and lock the duct assembly.
6. Seal the air duct joint with the tape provided. For wall thicknesses more than 406mm refer to Frame 34.

13. WALL THICKNESS UP TO 406mm (16in.)

FITTING THE FLUE ASSEMBLY

(a) From outside only

Fit the wall mounting plate - Refer to Frame 14 - but **DONOT** drive the fixing screws fully home until the duct assembly is engaged.



(b) From both inside and outside

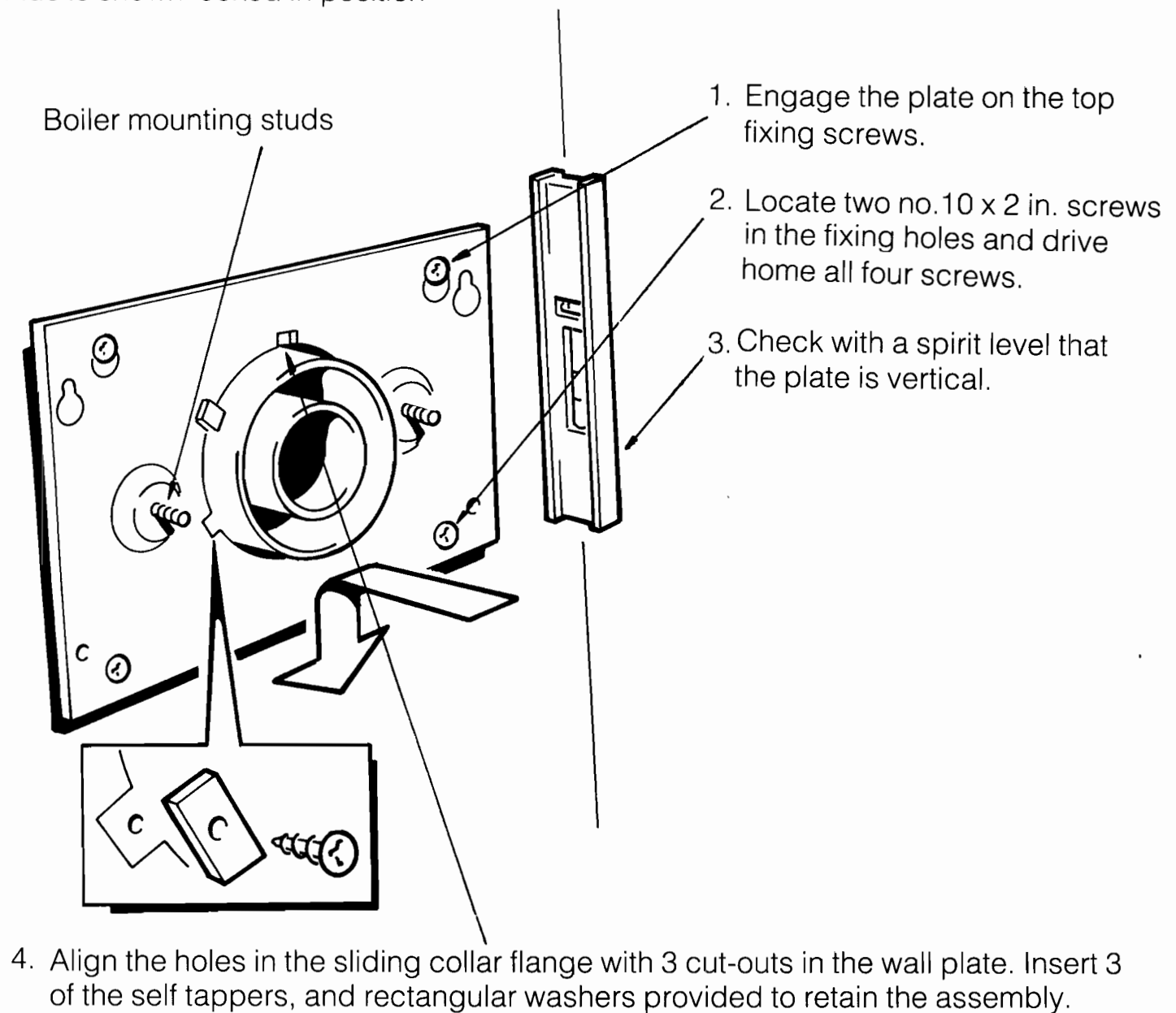
Push the assembly through the wall and engage the collar lugs with the wall mounting plate slots. Rotate the flue assembly to lock.

INSTALLATION

REAR-FLUE

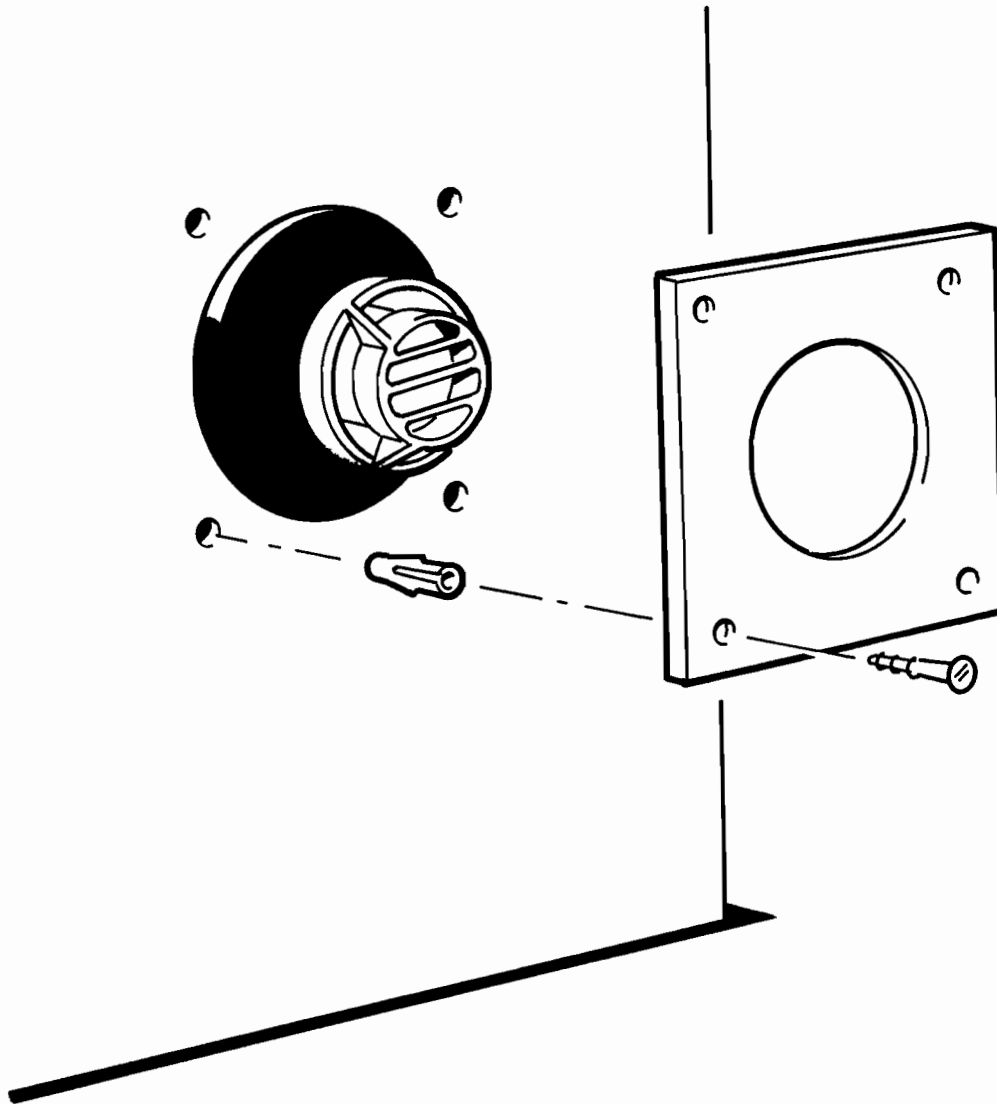
14. WALL MOUNTING PLATE

Flue is shown locked in position



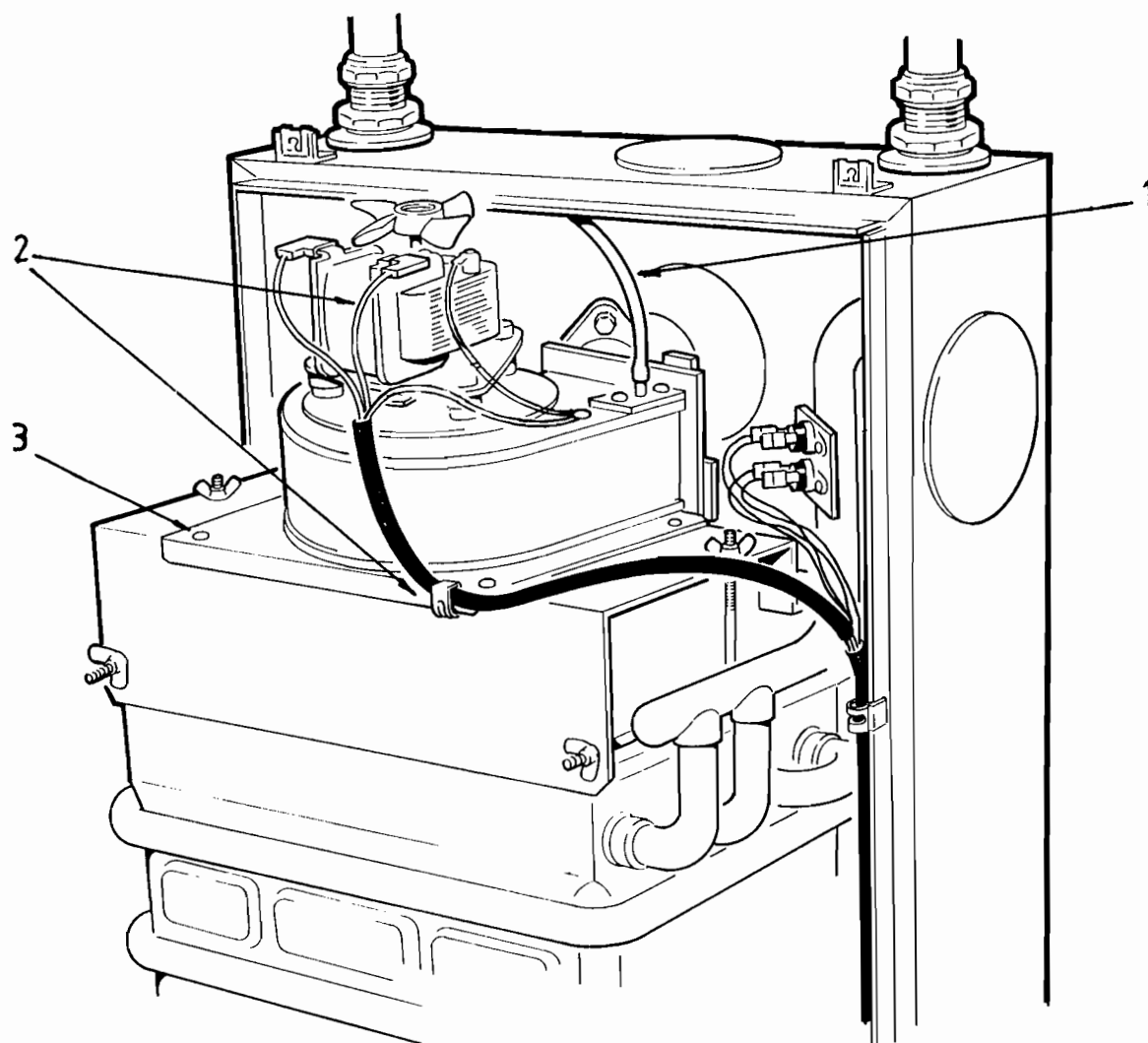
15. TERMINAL WALL PLATE

This plate is provided to allow neat concealment and full compression of the rubber seal. If the flue hole and flue ducts have been accurately cut and the outside wall face is flat around the flue hole its use is not essential, except this plate must be used on wall thicknesses over 610mm (24in.)



1. Position the terminal wall plate over the terminal, as shown.
 2. Drill four fixing holes with an 8mm (5/16in.) masonry drill.
 3. Insert the four plastic plugs provided.
 4. Secure the plate with four of the No.10 x 2 in. screws provided.
- Note:- If the terminal is less than 2m (6.6ft) above ground level an approved terminal guard should be fitted - Refer to page 3.

16. MOUNTING THE BOILER

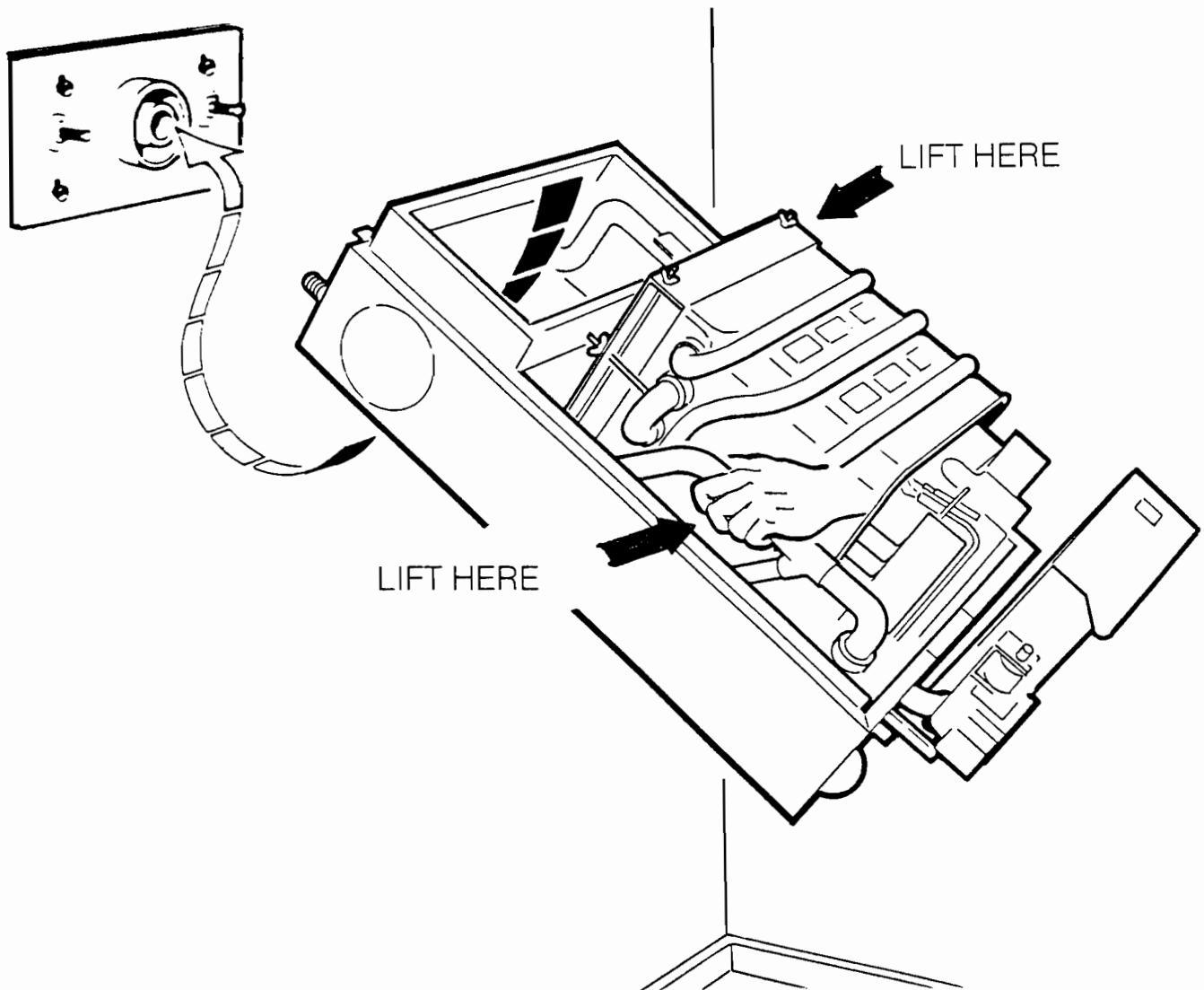


1. Disconnect the pressure sensing tube from the fan.
2. Disconnect the fan electrical leads and unclip the harness from the fan mounting plate.
3. Remove the four screws and washers securing the fan assembly to the top of the collector hood.
4. Lift off the fan assembly and place carefully to one side.
5. Remove the flue pipe connector from its transit position and discard it (for use with side flue only).

17. MOUNTING THE BOILER

Note:- Have ready to hand the sealing discs and wing nuts provided in the hardware pack - refer to frame 1.

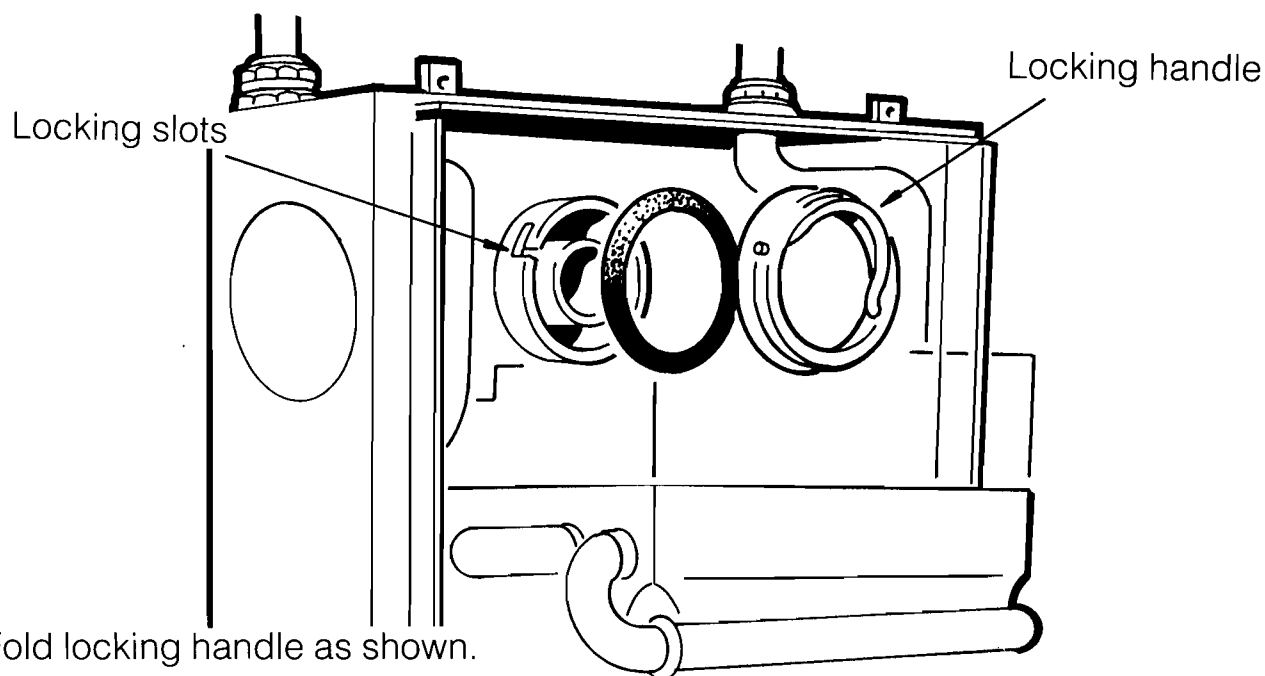
The studs fit into slots in the back panel and the air duct spigot enters the flue outlet hole in the back panel.



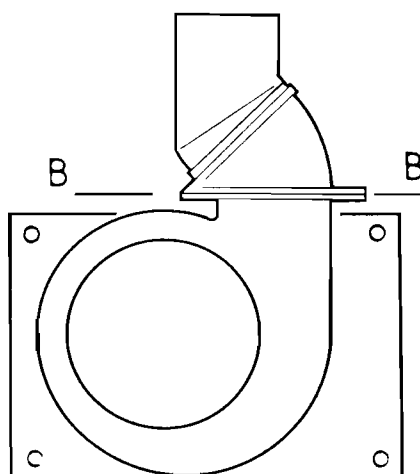
1. Lift the boiler onto the wall mounting plate as shown.
2. Fit a sealing disc over each stud and secure with a wing nut.
Note: Before fully tightening the wing nuts, check the boiler alignment using a spirit level, and adjust as necessary with the jacking screw - Refer to Frame 2.
3. Locate the No.10x2in. screw in the boiler lower fixing hole on the jacking screw and secure to the wall.

18. SEALING THE BOILER & FLUE - REFITTING THE FAN

1. Stretch the rubber gasket over the air duct spigot.
2. Fit the collar as shown and rotate it to lock into the locking slots.



3. Fold locking handle as shown.
4. Slacken the two extended nuts at joint 'BB' on the fan outlet elbow.
5. Refit the fan plate assembly fully engaging the fan outlet spigot into the flue pipe.
6. Secure the fan assembly to the collector hood with the four screws previously removed.



7. Re-tighten the two extended nuts at joint 'BB'.
 8. Reconnect the electrical leads and the pressure sensing tube to the fan.
- APPLIANCES FITTED WITH REAR OUTLET FLUES NOW PROCEED TO FRAME 37.

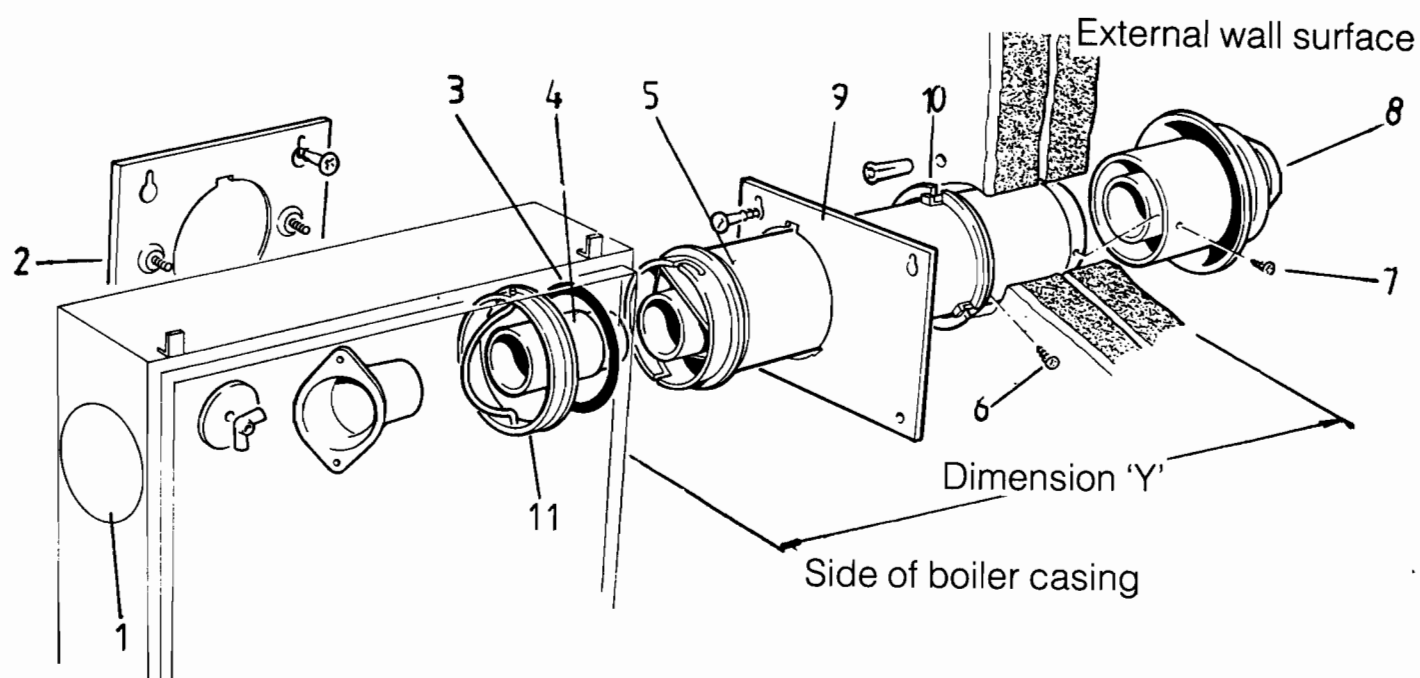
INSTALLATION

SIDE-FLUE

19. FLUE ASSEMBLY - Exploded view

Notes:

1. An optional duct extension kit is required for lengths of dimension 'Y', (wall thickness plus boiler/wall spacing), greater than 406mm (16in.) - refer to Frame 34.
2. When cutting ducts, always use the cardboard support rings provided.

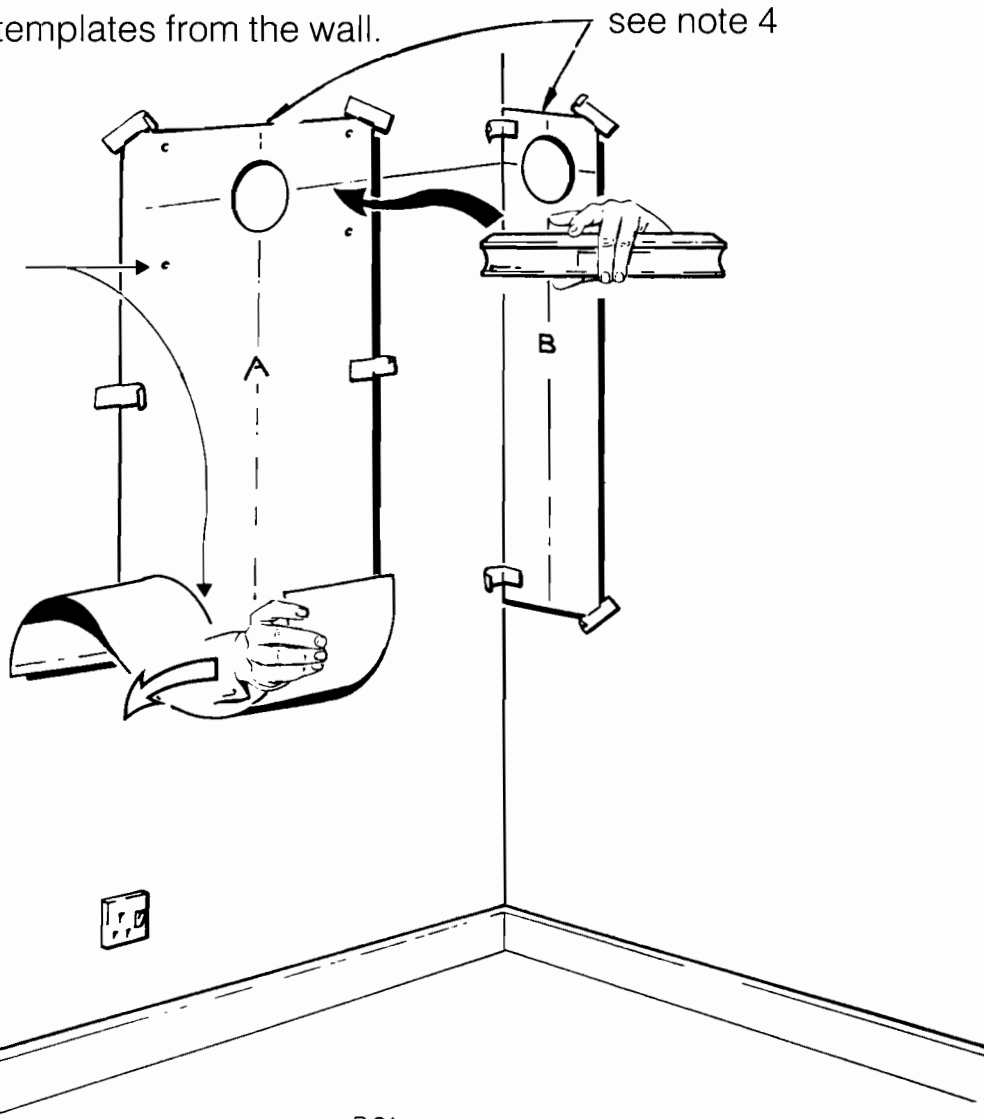


LEGEND:

- | | |
|---------------------------------|-----------------------------------|
| 1. Flue blanking pipe | 7. Terminal fixing screws (3 off) |
| 2. Wall mounting plate | 8. Terminal assembly |
| 3. Air duct gasket | 9. Terminal mounting plate |
| 4. Flue pipe connector | 10. Sliding collar |
| 5. Duct assembly | 11. Locking collar |
| 6. Collar fixing screws (3 off) | |

20 WALL MOUNTING TEMPLATE

1. Remove casing - Frames 5 & 6
2. Separate the templates.
3. Tape both templates into the selected position locating template 'B' via an extended centre line as shown.
4. Ensure squareness by hanging plumbline here.
5. Mark onto the wall, the mounting plate screw positions and the lower fixing screw position.
6. Mark on the wall the 4 terminal mounting plate screw positions.
7. Mark onto the wall, the positions of the flue duct. Note: Mark the centre of the hole as well as circumference.
8. Remove both templates from the wall.



INSTALLATION

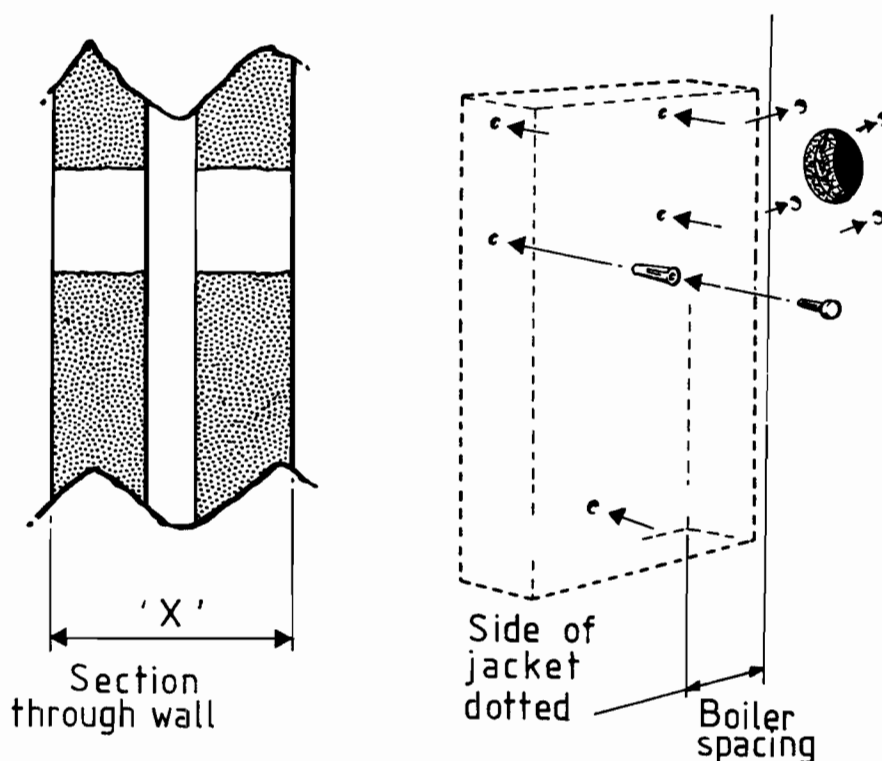
SIDE-FLUE

21. PREPARING THE WALL

IMPORTANT: Ensure that, during the cutting operation, masonry falling outside of the building does not cause damage or personal injury.

1. Cut the hole preferably using a 5in. core boring tool - ensure the hole is square to wall. If the hole has been quite accurately cut with a drill then making good the wall faces is not essential as seals are provided at both ends of the flue. However both wall faces immediately around the cut hole should be flat - Make good if necessary.

NOTE: Check all hole positions before drilling



21. PREPARING THE WALL Continued

For less accurate holes make good to approximately 125mm diameter at the two wall faces. For holes longer than 610mm this must be done from outside for the outer face, as access to outside is needed to fit the terminal plate anyway.

2. Measure the wall thickness 'X' and calculate Dimension 'Y' (i.e. Boiler spacing plus X) - Refer to Frame 2.
3. Drill all 9 fixing holes with an 8mm (5/16 in.) masonry drill.
4. Insert into the drilled holes the 9 plastic plugs provided.
5. Locate 2 No.10 x 2in. screws in the terminal mounting plate top fixing holes and screw home to within 6mm (1/4in.) of wall surface.

NOTE :If the terminal is to be sited 25 - 40 mm from a corner or vertical pipe (Ref Table 3) The hole MUST be accurately cut and the rubber weather seal trimmed around the groove provided. The terminal wall plate need not be fitted.

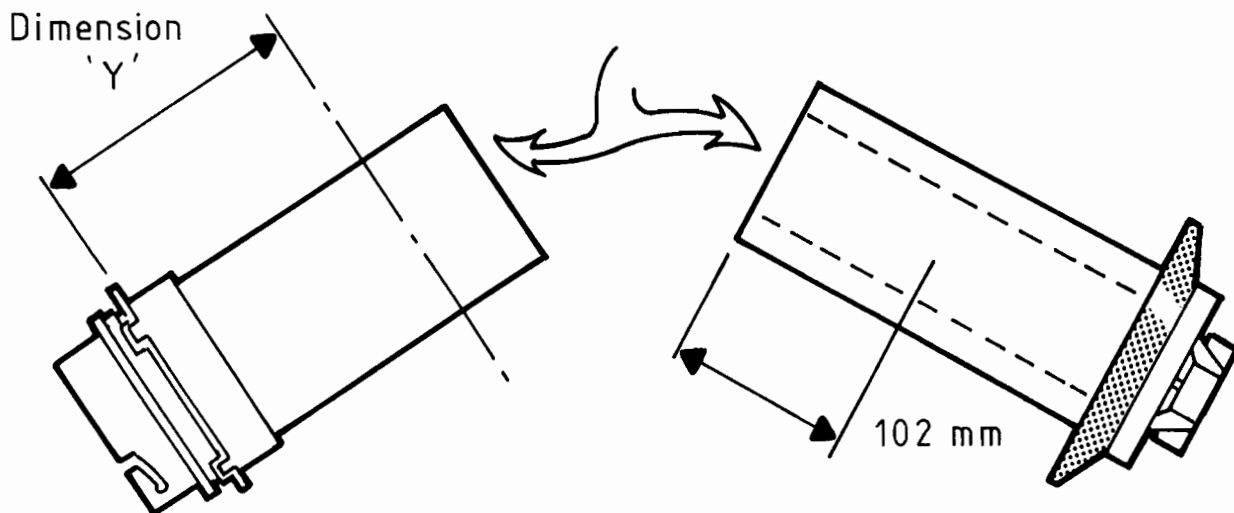
INSTALLATION

SIDE-FLUE

22. FLUE LENGTH 114 to 216mm

CUTTING THE DUCT ASSEMBLY

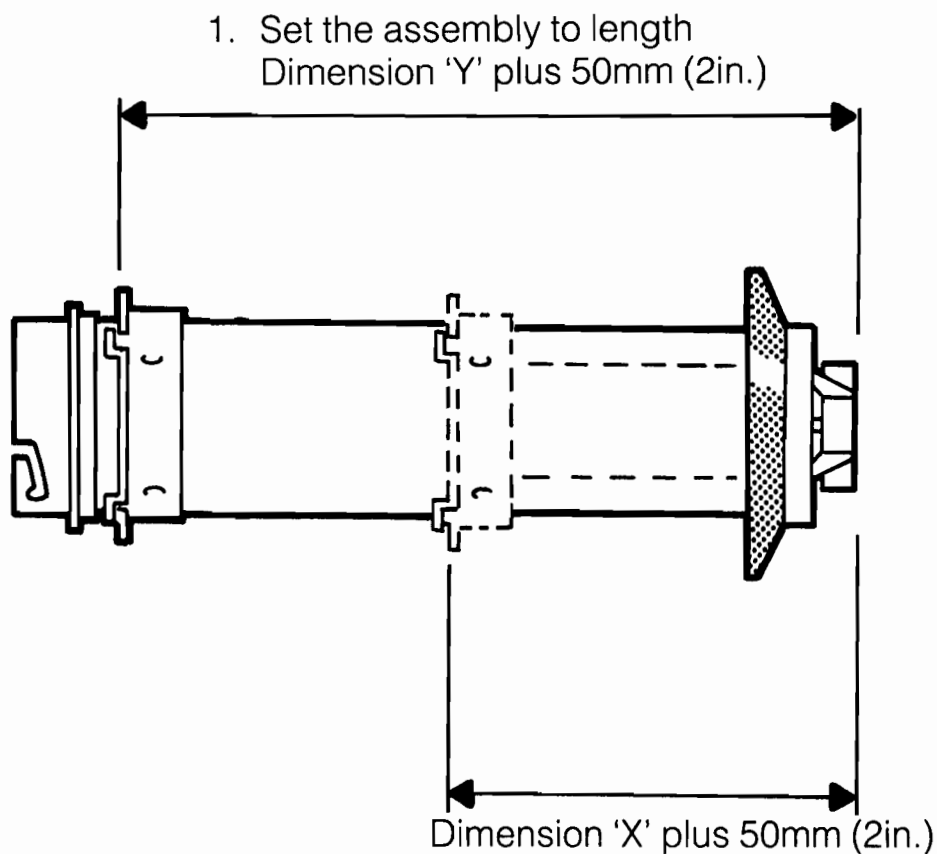
1. Separate the duct assembly.
2. Push the sliding collar to the end of the duct and measure off dimension 'Y'.
3. Cut to length 'Y' using cardboard duct support rings (Note: Cut inner flue tube 6mm (1/4in.) longer than air tube).
4. Always cut 102mm (4in.) off terminal section (the flue tube can be flush).
5. Remove the cardboard support rings.
6. Re-assemble the terminal aligning the seams.



INSTALLATION

SIDE-FLUE

23. FLUE LENGTH 114 to 216mm JOINING THE DUCT ASSEMBLY



2. Using the sliding collar as a template at the duct join, mark the position of the 3 fixing screws. Note: If the duct join is too close to the rubber weather seal to permit access for drilling, mark the hole positions at the mid point of the duct.
3. Set the collar to the required position, i.e. Dimension 'X' plus 50mm (2in.) & mark the positions of the 3 fixing screws.
4. Go to Frame 24 Section 5 & 6.

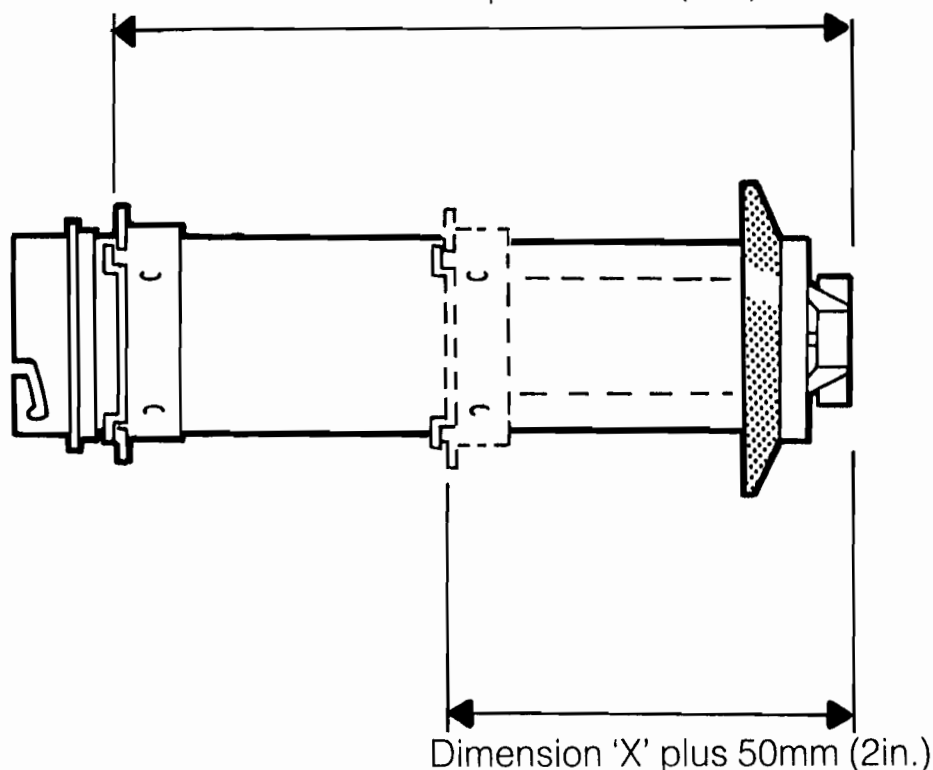
INSTALLATION

SIDE-FLUE

24. FLUE LENGTH 216 to 406mm JOINING THE DUCT ASSEMBLY

1. Push the sliding collar to the end of the duct.

2. Set the assembly to length
Dimension 'Y' plus 50mm (2in.)



3. Using the sliding collar as a template at the duct join, mark the position of the 3 fixing screws. Note: If the duct join is too close to the rubber weather seal to permit access for drilling, mark the hole position at the mid point of the duct.
4. Set the collar to the require positions i.e. Dimension 'X' plus 50mm (2in.) & mark the positionsof the 3 fixing screws.
5. Drill the 6 fixing holes using the 3.2mm drill provided and insert the self tapping screws to fix the collar in position and lock the duct assembly.
6. Seal any external air duct join with the adhesive tape provided.
Note: If duct assembly locking screws restrict the sliding collar, then use the collar locking screws to secure the whole assembly.
For flue lengths more than 406mm refer to Frame 34.

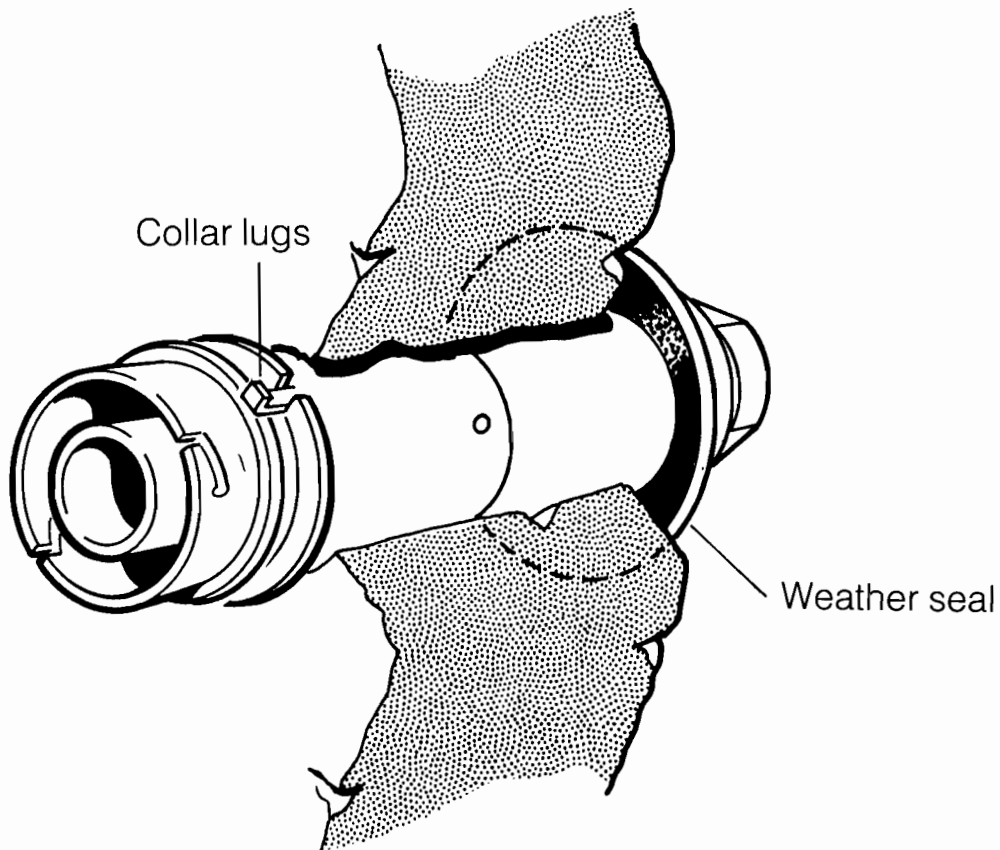
INSTALLATION

SIDE-FLUE

25. FLUE LENGTH UP TO 406mm (16in.) FITTING THE FLUE ASSEMBLY

(a) From outside only

Fit the terminal mounting plate - Refer to Frame 26 Step 1-6 but DO NOT drive the fixing screws fully home until the duct assembly is engaged - See step 2.



(b) From both outside and inside

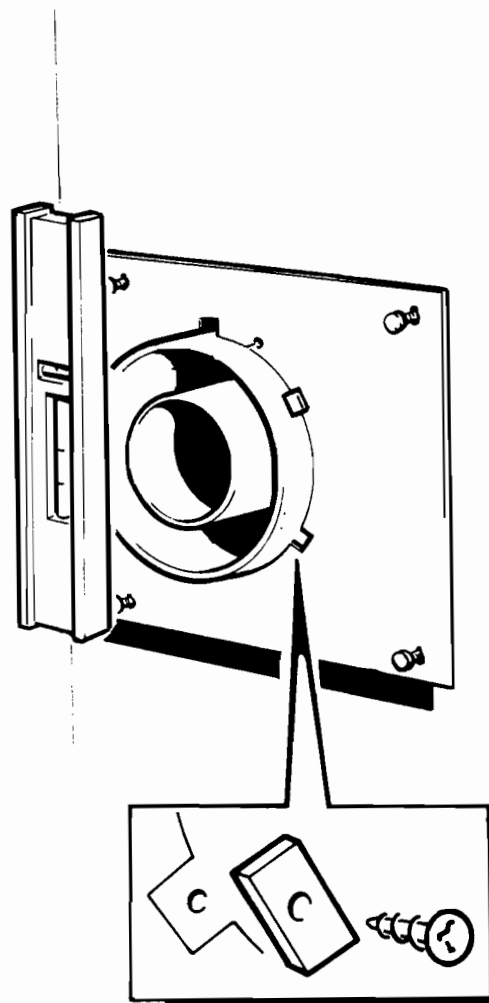
Push the assembly through the wall and engage the collar lugs with the terminal mounting plate slots. Rotate the flue assembly to lock.

INSTALLATION

SIDE-FLUE

26. TERMINAL MOUNTING PLATE

1. Stick the sealing tape provided to the reverse side of the plate.
2. Engage the plate on the top two fixing screws.
3. Locate two No.10x2in. screws in the bottom fixing holes and drive home all four screws.
4. Check with a spirit level that the plate is vertical.
5. Make good between the plate and the corner of the wall.
6. Align the holes in the sliding collar flange with the 3 cut outs in the terminal plate. Insert 3 of the self tapping screws and rectangular washers provided to retain the assembly.



Flue is shown
locked in position.

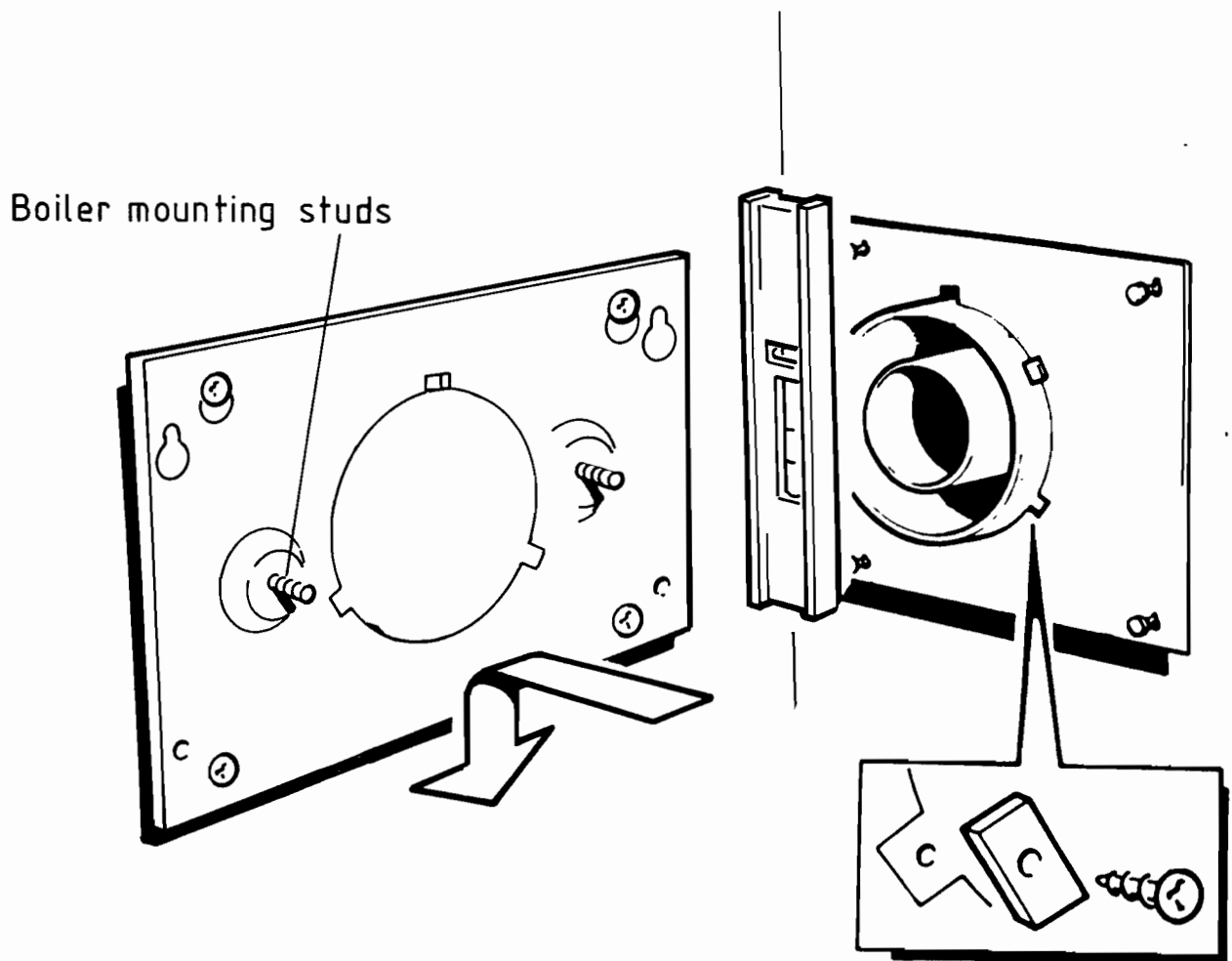
INSTALLATION

SIDE-FLUE

27. WALL MOUNTING PLATE

1. Locate two No.10x2in. screws in the plate top fixing holes and screw home to within 6mm (1/4in.) of the wall surface.
2. Engage the plate on the screws.
3. Locate two No.10x2in. screws in the bottom fixing holes and drive home all four screws.

Check with a spirit level that the plate is vertical.



INSTALLATION

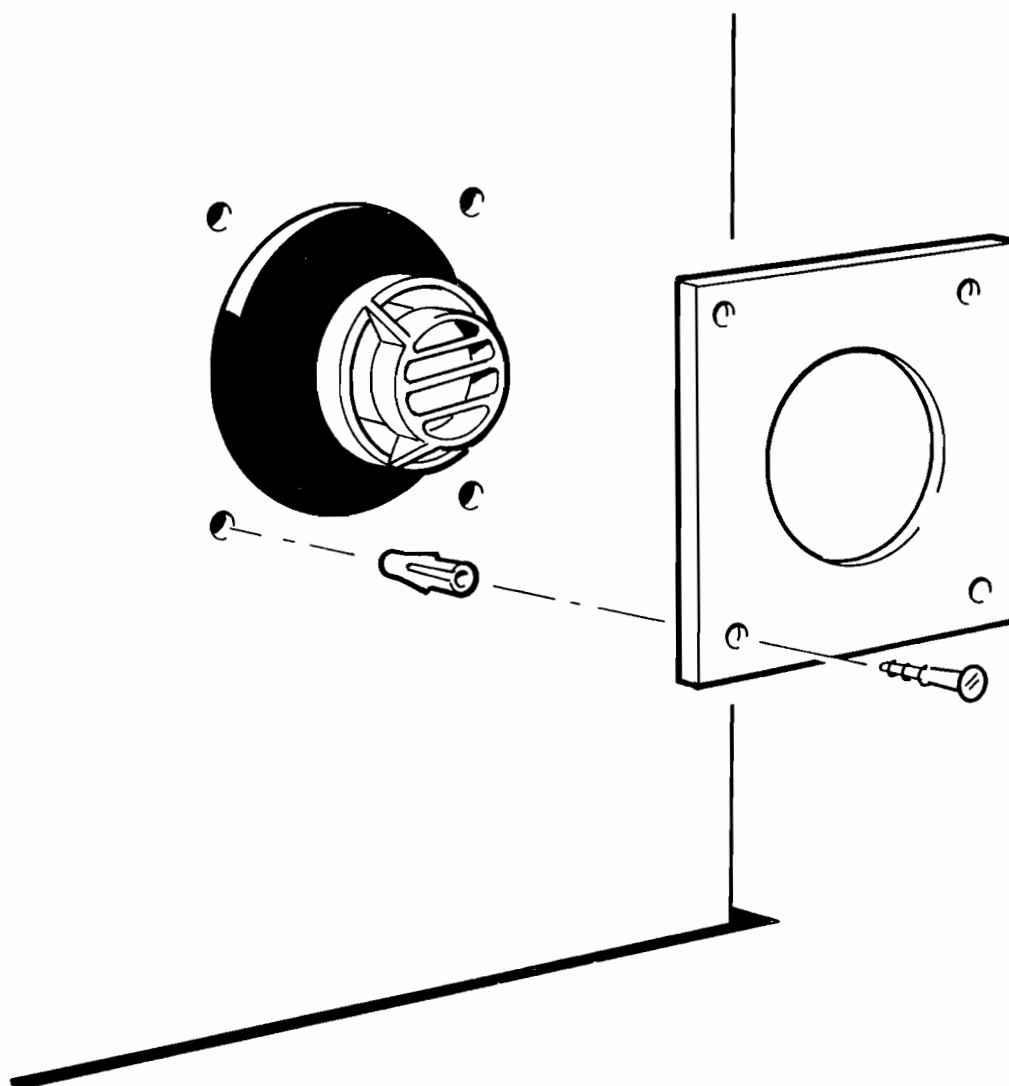
SIDE FLUE BOILER MOUNTING /SEALING

28. TERMINAL WALL PLATE - For flue assemble fitted from OUTSIDE the building ONLY.

1. Position the terminal wall plate over the terminal plate as shown.
2. Drill four fixing holes with a 8mm (5/16in) masonry drill.
3. Insert the four plastic plugs provided.
4. Secure the plate with four of the No.10x2in. screws provided.

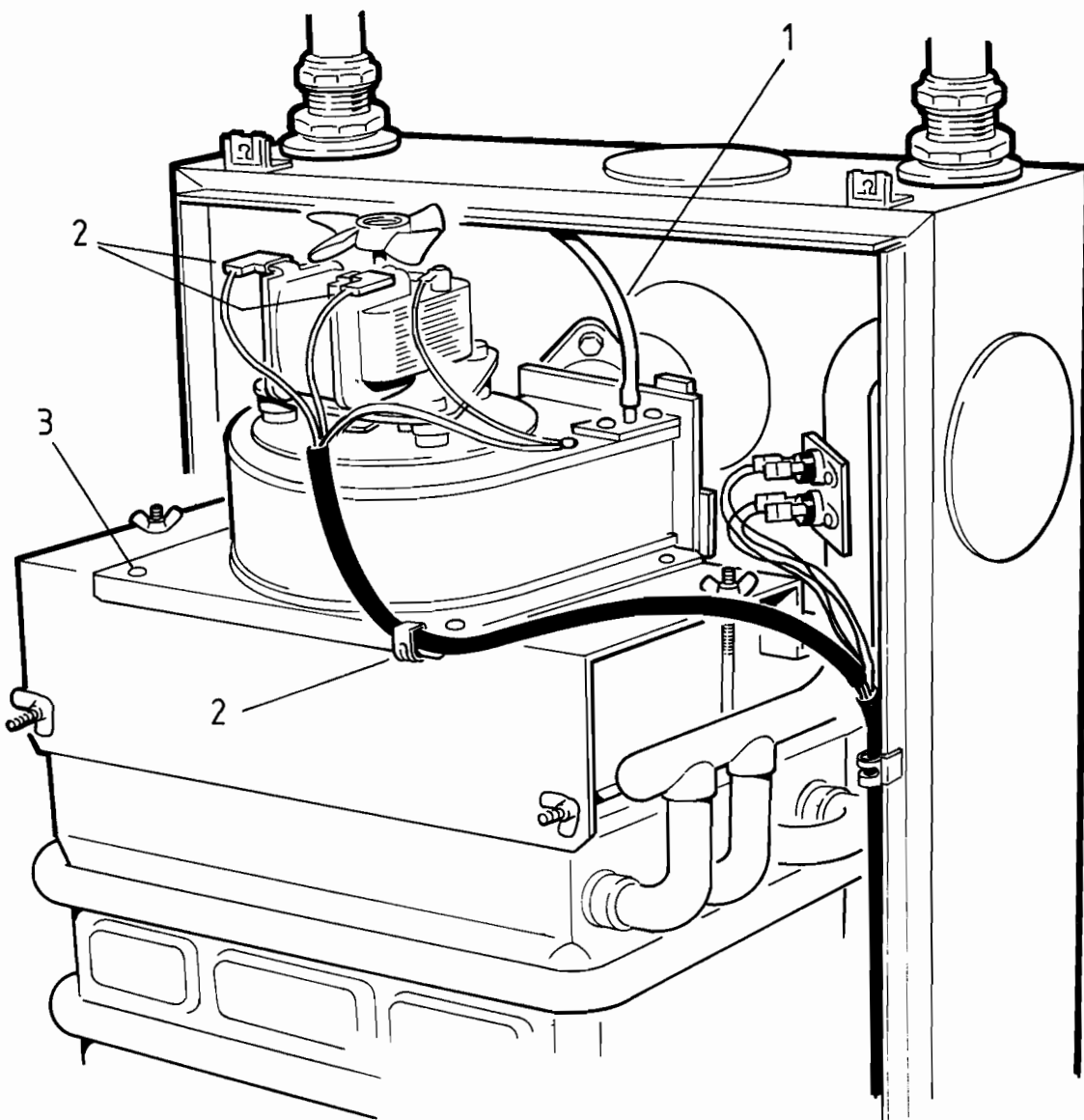
Note:- If the terminal is less than 2m (6.6ft) above ground level an approved terminal guard should be fitted - Refer to Page 3.

Note:- This plate is provided to allow neat concealment and full compression of the rubber seal. If the flue hole and flue ducts have been accurately cut and the outside wall face is flat around the flue hole its use is not essential, except this plate must be fitted on wall thicknesses over 610mm (24in.).



29. MOUNTING THE BOILER

1. Disconnect the pressure sensing tube from the fan.
2. Disconnect the fan electrical leads and unclip the harness from the fan mounting plate.
3. Remove the four screws and washers securing the fan assembly to the top of the collector hood.
4. Lift off the fan assembly and place carefully to one side.
5. Remove the flue pipe connector from its transit position.



6. Remove the blanking plate and disc from the appropriate side of the boiler and transfer them to the rear.

INSTALLATION

SIDE FLUE BOILER MOUNTING

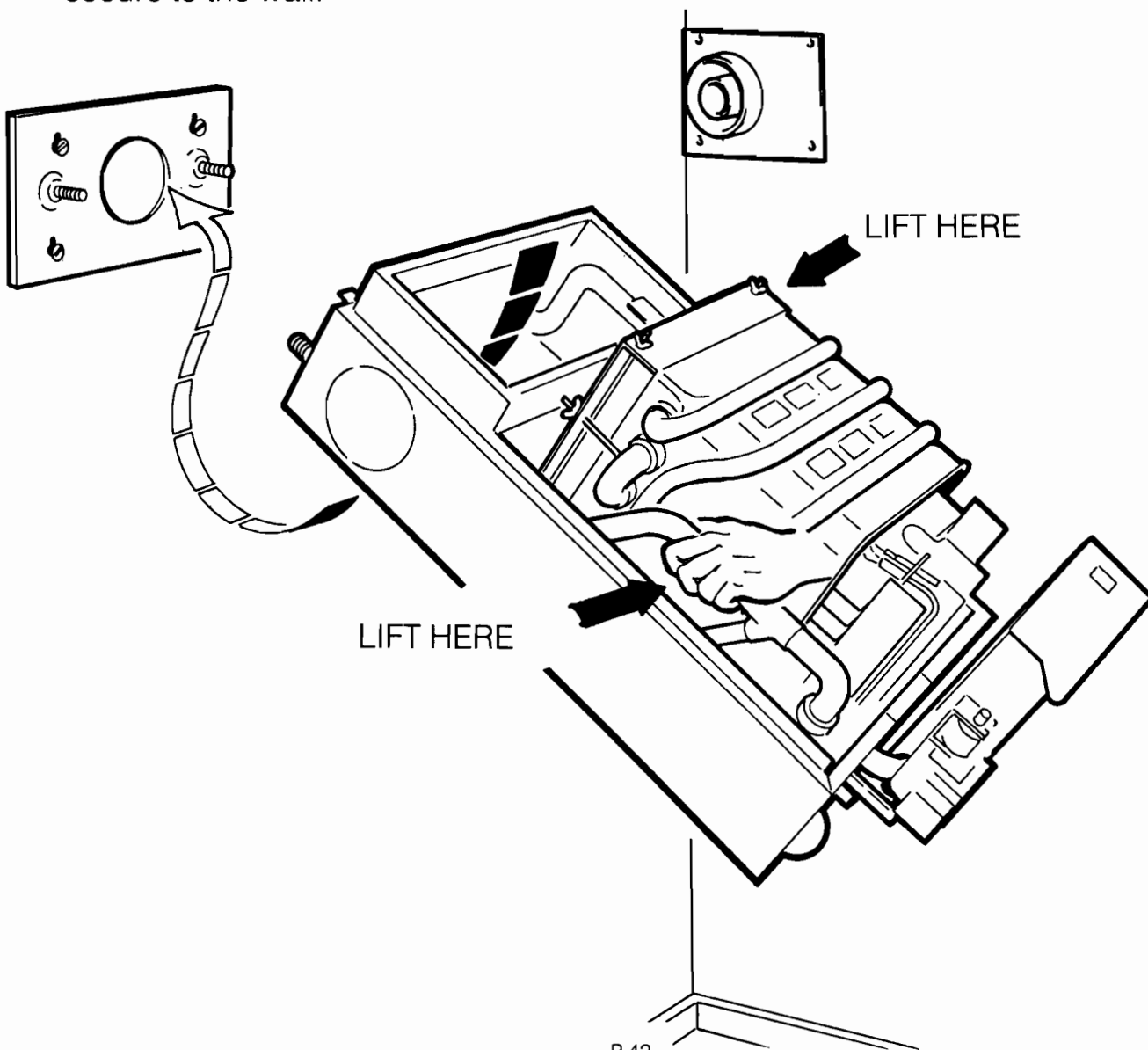
30. MOUNTING THE BOILER

Note:- Have ready to hand the sealing discs and wing nuts provided in the hardware pack - Refer to Frame 1.

1. Lift the boiler onto the wall mounting plate as shown.
2. Slide the boiler sideways into its intended position centralising the studs in the slots and engaging the air duct spigot in the hole in the side panel.
3. Fit a sealing disc over each stud and secure with a wing nut.

Note:- Before fully tightening the wing nuts, check the boiler alignment using a spirit level, and adjust as necessary with the jacking screws - Refer to Frame 2.

4. locate a No. 10x2in. screw in the boiler lower fixing hole on the jacking screw and secure to the wall.

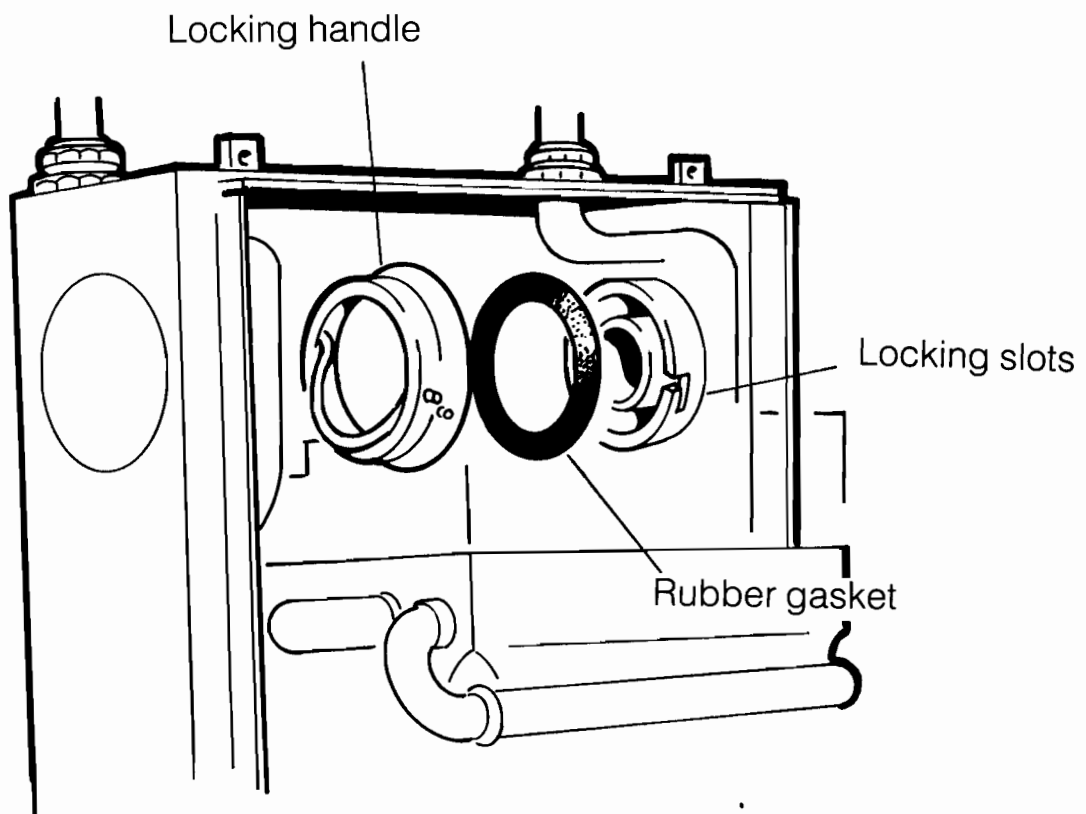


INSTALLATION

SIDE FLUE BOILER MOUNTING

31. SEALING THE BOILER & FLUE

1. Stretch the rubber gasket over the air duct spigot.
2. Fit the collar as shown and rotate to lock into the locking slots.
3. Fold locking handle as shown.



INSTALLATION

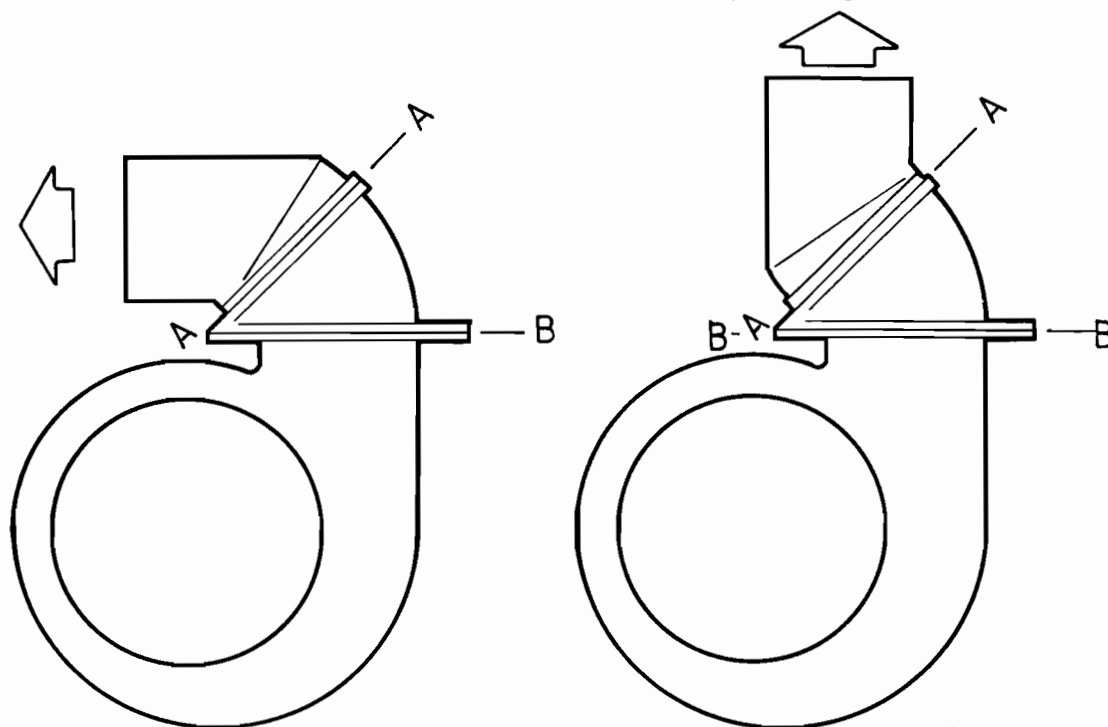
SIDE FLUE

31. FAN OUTLET ARRANGEMENT

The fan outlet is supplied for rear outlet. Re-arrange the outlet elbow to suit L.H. side or R.H. side as shown.

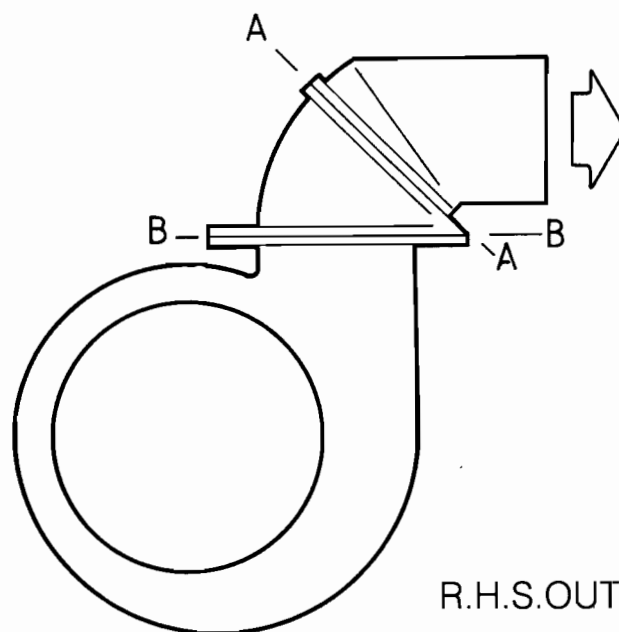
Disconnect at joint AA & rotate through 180g. For L.H.S. outlet

Disconnect at joints AA & BB & rotate both halves through 180g. For R.H.S. outlet



L.H.S. OUTLET

REAR OUTLET

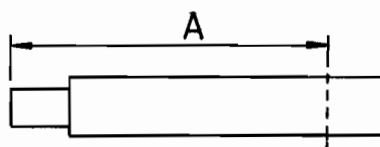


R.H.S. OUTLET

NOTE: When altering the arrangement of the fan outlet elbow, for either side, slacken the extended nuts at joint 'BB' to help alignment when re-fitting the fan assembly (Frame 32).

32. FAN ASSEMBLY REFITTING

1. Cut the side outlet flue connection pipe to the required size, given in the table below.
2. Fit the flue pipe connector onto the fan outlet elbow.
3. Refit the fan assembly onto the collector hood fully engaging the flue pipe connector into the flue pipe and secure down with the four screws previously removed. Re-tighten the extended nuts at joint 'BB'.
4. Reconnect the electrical leads and the pressure sensing tube to the fan.



Boiler size	Dimension 'A'	
	LHS Flue	RHS Flue
80 NF	200mm (8 in)	145 (5 ³ / ₄ in)
30 NF, 40NF 50 NF, 60NF	No cutting Required	105 (4 ¹ / ₈ in)

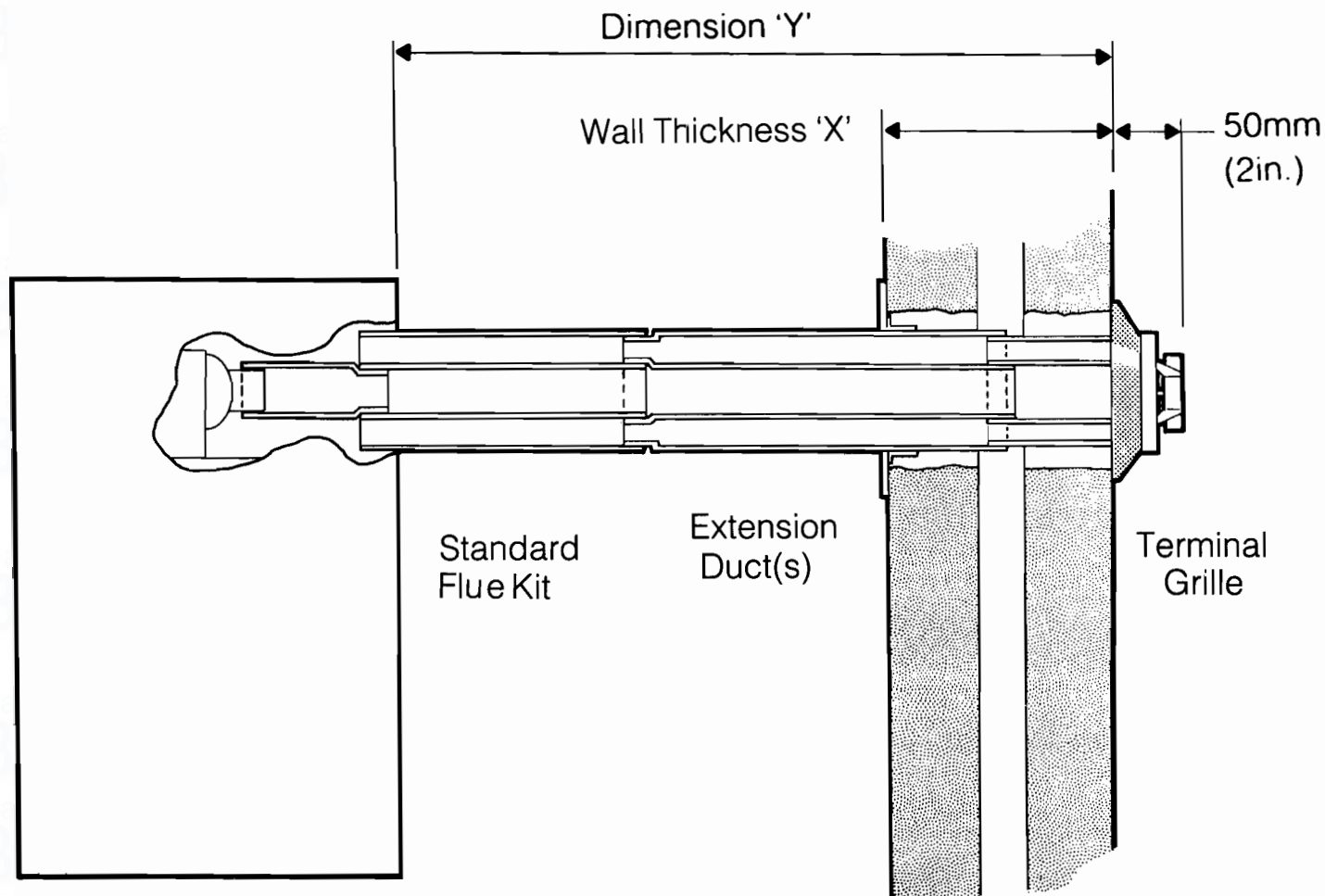
INSTALLATION

FLUE EXTENSION DUCTS

33. GENERAL

Notes:

1. A MAXIMUM of 3 kits may be used together - Refer to Frame 3.
2. Cut extension ducts at the plain ends only.
3. Ensure that there is, at least, a 25mm (1in.) over lap at each joint.
4. For flue lengths of less than 457mm (18in.) ensure that the collar is positioned on an air duct (outer).
5. Extensions of greater than 1m (39in.) should be supported with the bracket.
6. Tape all air duct connections.
7. Always align seams when re-assembling ducts.



Side Flue Configuration Shown

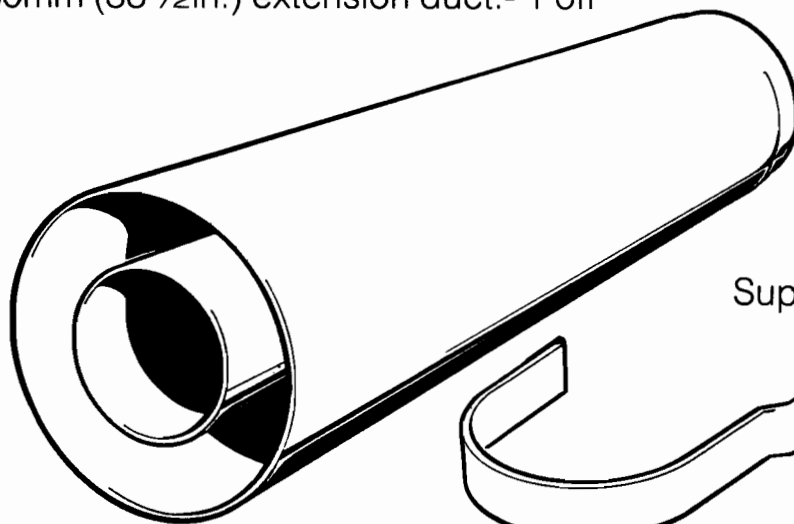
INSTALLATION

FLUE EXTENSION DUCTS

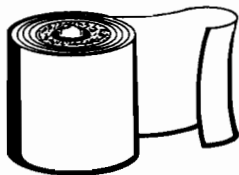
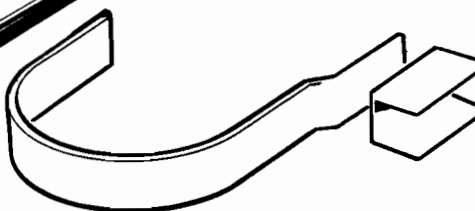
34. PACK 'D'

For flue lengths up to 3m (118in.). Use a maximum of 3 kits only. SEE ABOVE TABLE.

860mm (33 $\frac{1}{2}$ in.) extension duct:- 1 off



Support bracket - 1 off



Length of adhesive tape



No. 8x $\frac{1}{4}$ in. self tapping
screws - 4 off

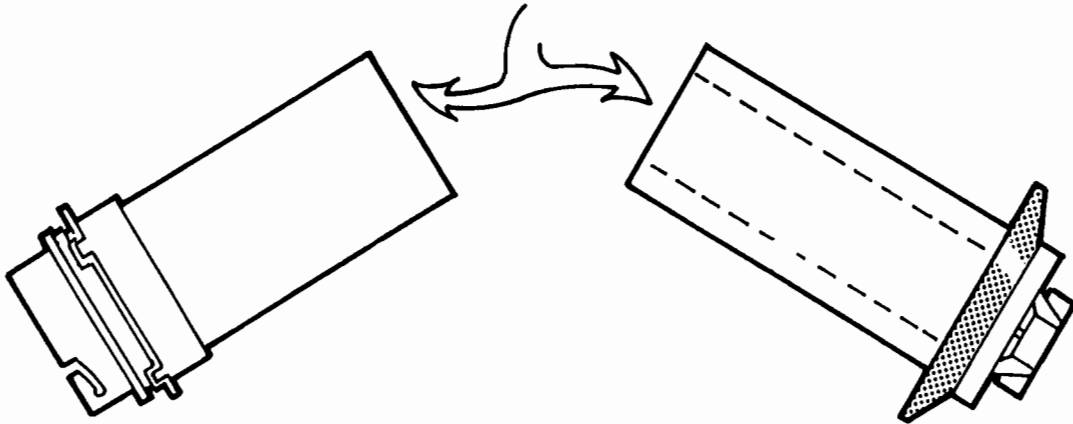
Wall plug - 1 off

No. 10x2in. screw - 1 off

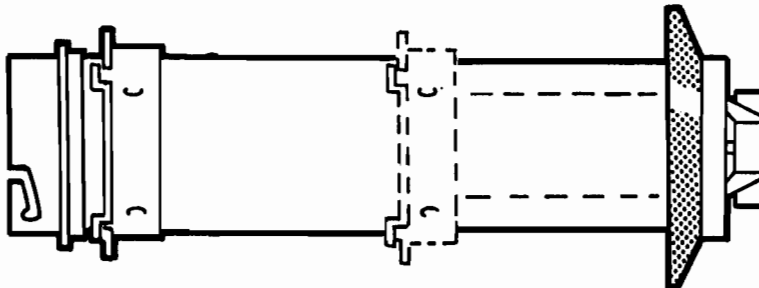
35. FITTING

IMPORTANT: Read in conjunction Frame 33

- 1 Separate the duct assembly



2. Insert the appropriate extension duct(s) with the plain end toward the terminal.
3. Re-assemble the terminal and the duct assemblies.
4. Set the assembly to length - Refer to Frame 36 Steps 1 & 2.
5. Using the sliding collar as a template at the joins of any ducts mark the positions of the 3 fixing screws.



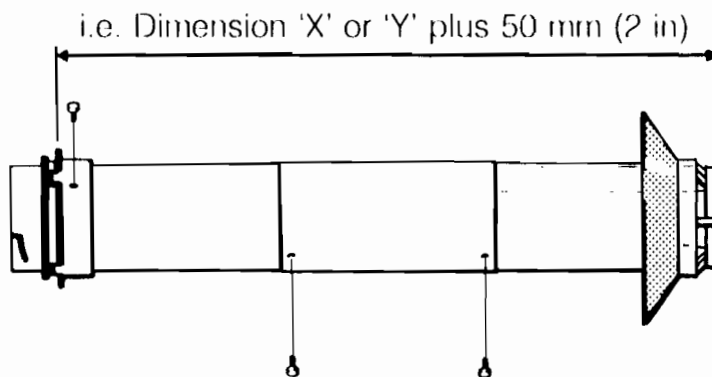
INSTALLATION

FLUE EXTENSION DUCTS

36. FITTING

1. Push the collar back to the boiler end of the duct, or to its intended position.
2. Set the assembly to length i.e. Dimension X or Y plus 50mm (2in.).
3. Drill at the markings with the 3.2mm drill provided.
4. Lock the assembly in position with the self tapping screws provided.
5. Drill through the holes of the collar into the air duct with the 3.2mm drill and lock the sliding collar into position with 3 of the self tapping screws provided.

Note: If the flue duct assembly locking screws restrict the sliding collar then use the collar locking screws to lock the whole assembly.



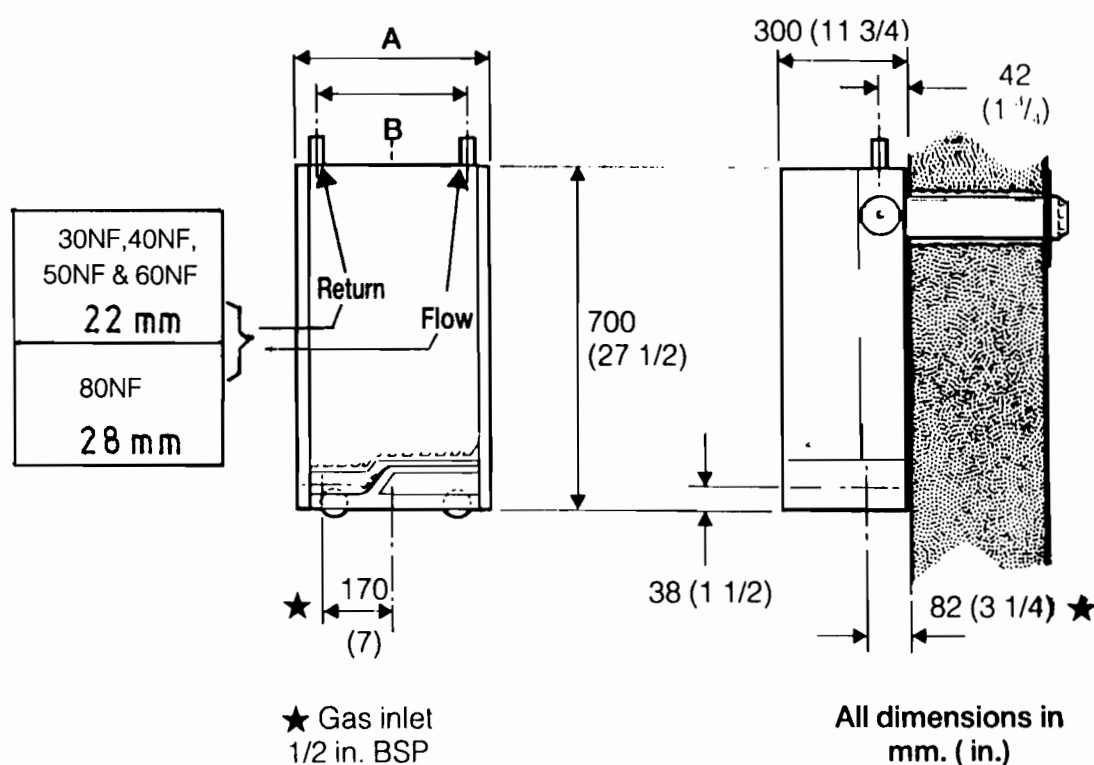
REFER BACK TO FRAME 13 OR FRAME 25 DEPENDING UPON THE FLUE ARRANGEMENT

INSTALLATION

SERVICE CONNECTIONS

37. GAS CONNECTION

A MINIMUM gas pressure of 20 mbar (8 in.w.g.) MUST be available at the boiler inlet. Extend a gas supply pipe NOT LESS THAN 15mm OD to the boiler and connect to the gas service cock situated at the bottomn LHS of the boiler. Connection MUST be made from BELOW and from the REAR of the boiler. Ensure that the gas supply pipe does not foul the boiler casing when fitted. Test the gas installation for soundness and purge in accordance with BS 6891 - Refer to Frame 54.



Dim	30NF, 40NF, 50NF & 60NF	80NF
A	380 (15)	465 (18)
B	310 (12.5)	395 (15.5)

INSTALLATION

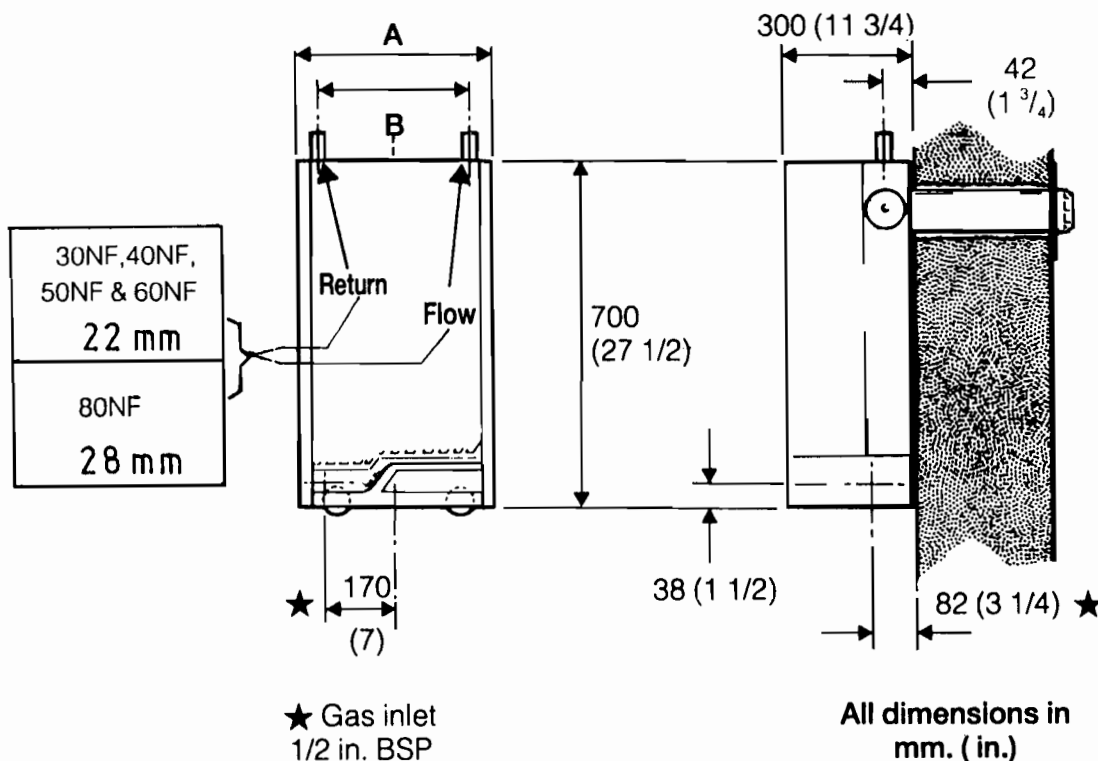
SERVICE CONNECTIONS

38. WATER CONNECTIONS

1. Connect the system flow and return pipework to the two water connections at the top of the boiler.
Note: When the required output exceeds 14.4kW (49 000 Btu/h) 28mm (1in.) flow and return pipes should be used, both to and from the boiler. On the 60NF boiler only, connect to the boiler in 22mm (3/4in.) pipe and increase to 28mm (1in.) as soon as is practical.
2. Ensure that all valves are open, fill and vent the system and check for water soundness. Note:- This appliance is NOT suitable for use with a direct hot water cylinder.

ON THE 80NF ONLY

When venting the heat exchanger using the manual air vent on the flow header, protect the electrical controls with a waterproof sheet or similar.



Dim	30NF, 40NF, 50NF & 60NF	80NF
A	380 (15)	465 (18)
B	310 (12.5)	395 (15.5)

INSTALLATION

SERVICE CONNECTIONS

39. OPEN VENT SYSTEM REQUIREMENTS

All dimensions in mm., (imperial dimensions approx.)

The system should be vented directly off the boiler FLOW pipe, as close to the boiler as possible. The cold feed entry should be inverted and **MUST** be positioned between the pump and the vent, and not more than 150mm (6in.) away from the vent connection.

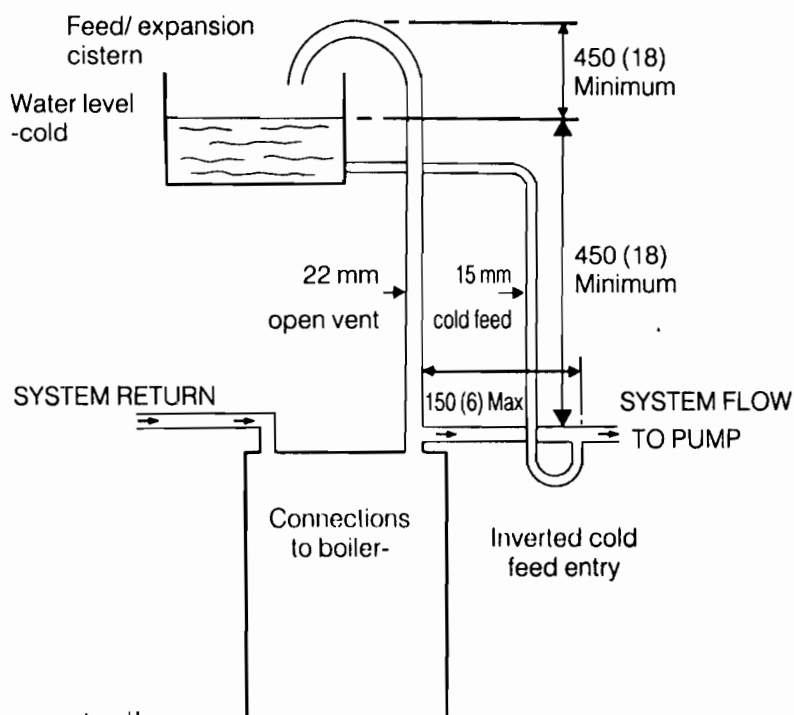
Note:- Combined feed and vent pipes may also be fitted.

There should be a minimum height - 450mm (18in.) of open vent above cistern water level. If this is impossible - refer Frame 45. The vertical distance between the highest point of the system and the feed/expansion cistern water level **MUST** not be less than 450mm (18in.)

The pump **MUST** be fitted on the flow side of the boiler.

A Suitable pump is a domestic circulator capable of providing an 11°C (20°F) temperature differential (e.g. Grundfoss UPS 15/50 or equivalent). The vertical distance between the pump and the feed/expansion cistern **MUST** comply with the pump Manufacturers minimum requirements to avoid cavitation.

Should these conditions not apply, either lower the pump position or raise the cistern above the minimum requirement specified by Stelrad Group Ltd.



Connections to boiler-
30NF, 40NF & 60NF 22mm
80NF 28mm

INSTALLATION

SERVICE CONNECTIONS

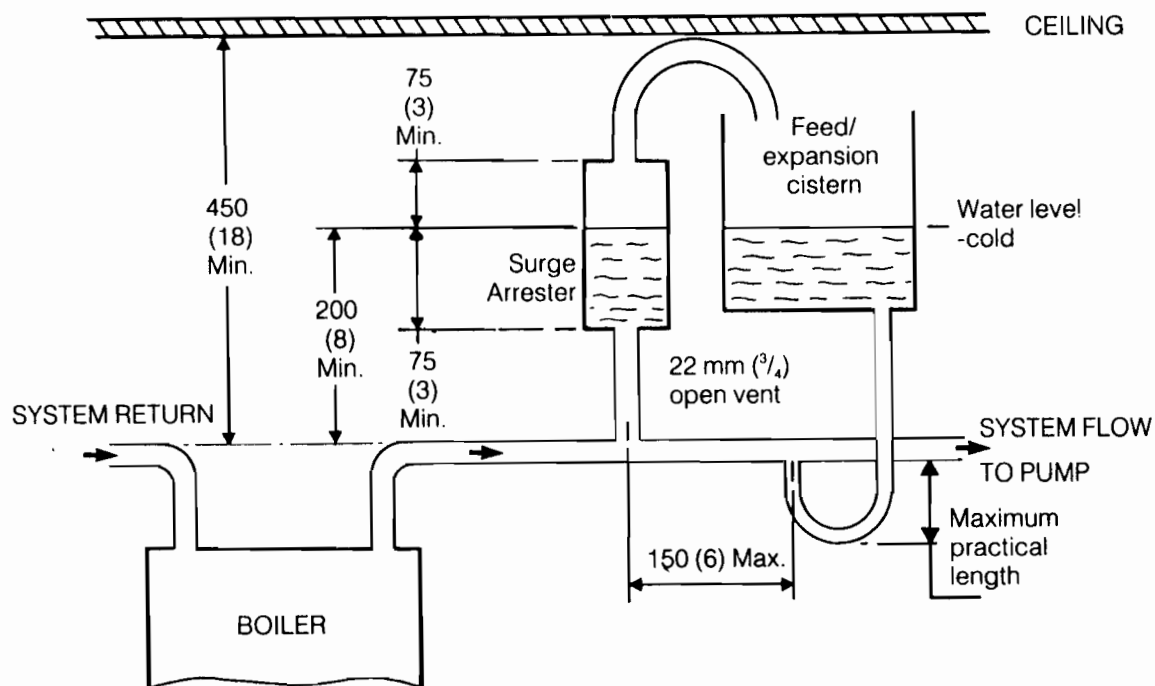
40. LOW HEAD INSTALLATIONS - OPEN VENT

The Ideal Elan 2 NF range of boilers can be installed in low head situations by fitting a surge arrester in the expansion pipe.

The following conditions **MUST** be observed.

1. The surge arrester must be at least 42mm diameter x 150 mm long.
 2. The cistern water level must be at least 200mm above the highest point of the system.
 3. The height of water in the surge arrester must be at least 75mm.
 4. The vent connection must NOT be made directly off the top of the boiler.
- Note: The pump manufacturers minimum requirements must be complied with.

All dimensions in mm, (imperial dimensions approx.)



INSTALLATION

SERVICE CONNECTIONS

41. SCHEMATIC PIPEWORK AND BYPASS ADJUSTMENT - OPEN VENT WATER FLOW RATE & PRESSURE LOSS

Boiler size		30NF	40NF	50NF	60NF	80NF
Boiler Output	kW	8.8	11.7	14.7	17.7	23.4
	Btu/h	30 000	40 000	50 000	60 000	80 000
Water Flow Rate	l/min	11.4	15.2	19.0	22.8	30.3
	gal/h	150	200	250	300	400
Pressure Loss	mbar	27	45	70	102	92
	in.w.g.	11	18	28	41	37

The flow through the boiler MUST NOT fall below the values shown in the table. A bypass MUST be fitted consisting of 15mm (1/2in.) pipe, positioned as far from the boiler as possible, and incorporating a balancing valve which CANNOT be adjusted by the householder.

BY-PASS ADJUSTMENT

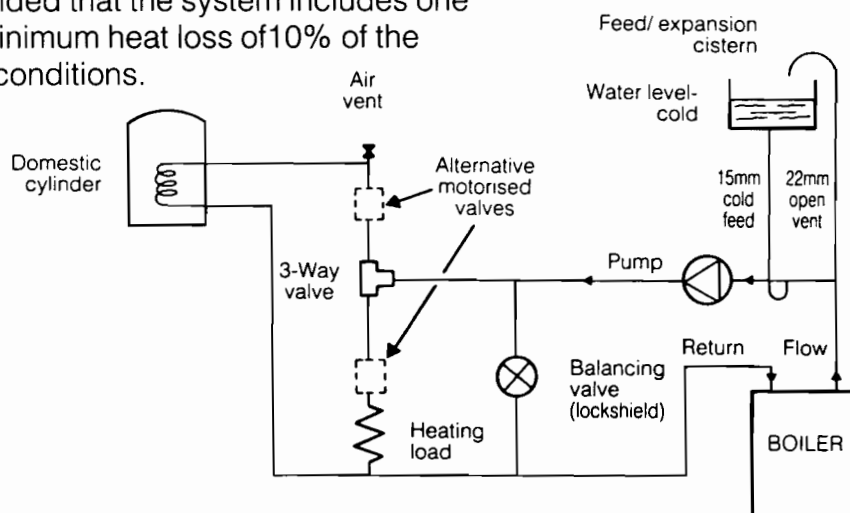
1. With the boiler and with ALL circuits OPEN and the bypass CLOSED, adjust the pump to give 11 °C (20 °F) temperature differential across the boiler and system.
2. With one small radiator only OPEN, open the bypass to give 11 °C (20 °F) temperature differential across the boiler.
3. With all circuits OPEN re-adjust the pump to give 11 °C (20 °F) temperature differential across the system.

If in doubt contact Stelrad Group Ltd.

Note: Thermostatic Radiator Valves

Stelrad Group Ltd support the recommendations made by leading manufacturers of domestic heating controls that heating systems utilising full thermostatic radiator valve control of temperature in individual rooms should also be fitted with a room thermostat controlling the temperature in a space served by radiators not fitted with such a valve.

Such an arrangement will provide for a potentially more efficient control of the environment and will also avoid the continuous running of the circulation pump during programmed heating "ON" periods, thus saving electrical energy. It is recommended strongly therefore that, when thermostatic radiator valves are used, that space heating temperature control over living/dining area or hallway having a heating requirement of at least 10% of the boiler heat output be achieved using a room thermostat whilst other rooms are individually controlled by thermostatic radiator valve. If a room thermostat is not fitted as described above, it is recommended that the system includes one uncontrolled radiator having a minimum heat loss of 10% of the boiler heat output under design conditions.



INSTALLATION

SERVICE CONNECTIONS

42. SEALED SYSTEM REQUIREMENTS

Notes:

- (1) Any connection for filling or replenishing of a sealed primary circuit from a supply pipe is conditional upon a water undertaking seeking and obtaining consent for a relaxation of its Byelaws 38.8 (1) from the Secretary of State.
 - (2) The method of filling, re-filling, topping up or flushing sealed primary hot water circuits from the mains via a temporary hose connection is only allowed if acceptable to the Local Water Authority.
1. General
 - (a) The installation must comply with the requirements of BS 6798 and BS 5449:1.
 - (b) The installation should be designed to work with the flow temperature of up to 82 °C.
 - (c) All components of the system, including the heat exchanger of the indirect cylinder, must be suitable for a working pressure of 3 bar (45 lb.ft/in.2) and temperature of 110 °C.

Care should be taken in making all connections so that the risk of leakage is minimised.
 2. Safety Valve

A spring loaded safety valve complying with the relevant requirements of BS 759 must be fitted in the flow pipe as close to the boiler as possible and with no intervening valve or restriction. The valve should have the following features:-

 - (a) A non-adjustable pre-set lift pressure not exceeding 3 bar (45 lbft/in2).
 - (b) A manual testing device.
 - (c) Provision for connection of a discharge pipe.

The valve or discharge pipe should be positioned such that discharge of water or steam cannot create a hazard to the occupants of the premises, or cause damage to electrical components and wiring.
 3. Pressure Gauge

A pressure gauge covering at least the range 0-4 bar (0.60 lb.ft/in2) must be fitted to the system. The gauge should be easily seen from the fitting point and should preferably be connected at the same point as the expansion vessel.
 4. Expansion Vessel
 - (a) A diaphragm type expansion vessel must be connected at a point close to the inlet side of the pump, the connecting pipe being not less than 15mm (1/2in. nominal size), and not incorporating valves of any sort. (See above for recommended layout.)
 - (b) The vessel capacity must be adequate to accept the expansion of the system water when heated to 110 °C (230 °F).
 - (c) The charge pressure must not be less than the static water head above the vessel. The pressure attained in the system when heated to 110 °C (230 °F) should be at least 0.35 bar (5 lb.ft/in2) less than lift pressure of the safety valve. For guidance on vessel sizing refer to the Table in Frame 43. For further details refer to BS 5449:1, and British Gas Corporation publication - "Material and Installation Specifications for Domestic Central Heating and Hot Water".

INSTALLATION

SERVICE CONNECTIONS

5. Cylinder

The cylinder must be either of the indirect coil type or a direct cylinder fitted with an immersion calorifier, which is suitable for operating at a gauge pressure of 0.35 bar (5lb.ft/in.2) in excess of the safety valve setting.

Single-feed indirect cylinders are not suitable for sealed systems.

6. Make-up Water

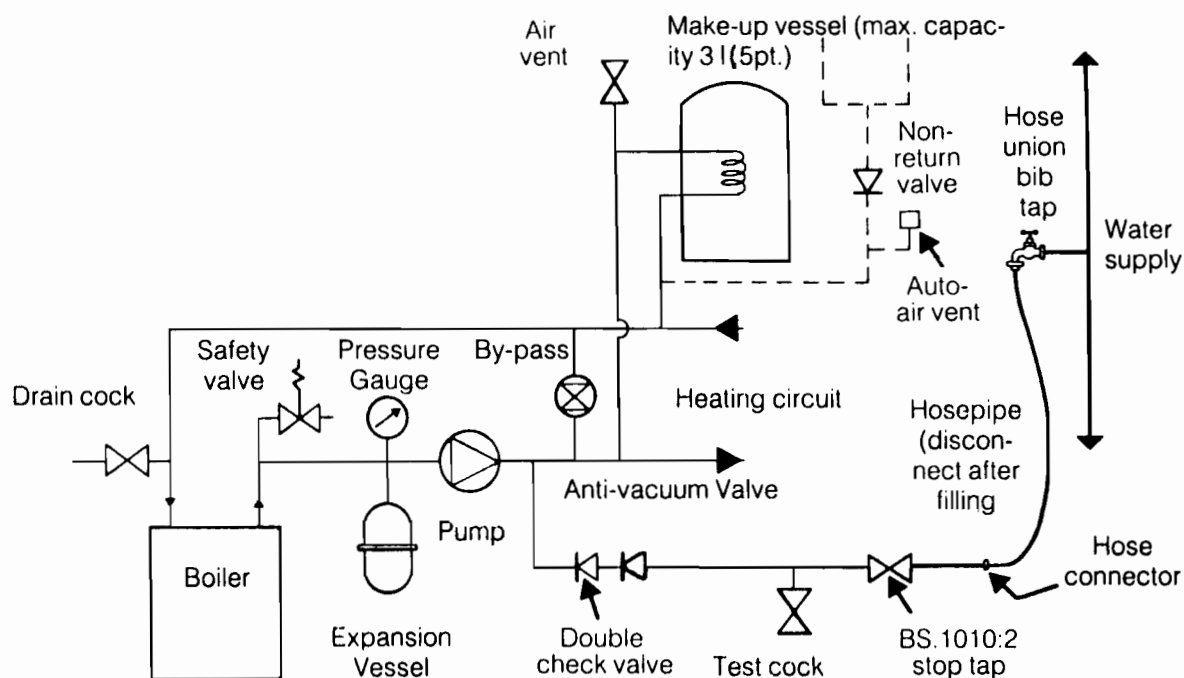
Provision must be made for replacing water loss from the system either:

- (a) From a manually filled make-up vessel with a readily visible water level. The vessel should be mounted at least 150mm (6in.) above the highest point of the system, and be connected through a non-return valve to the system, fitted at least 300mm (12in.) below the make-up vessel on the return side of the domestic hot water cylinder or radiators.

- (b) Where access to a make-up vessel would be difficult, by pre-pressurisation of the system (Refer to Frame 43 - Filling).

7. Mains Connection

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



INSTALLATION

SERVICE CONNECTIONS

43. SEALED SYSTEM REQUIREMENTS

Sizing procedure for expansion vessels:- The volume of the expansion vessel (litres) fitted to a sealed system shall not be less than that given by the table below multiplied by a factor of 0.8 (for flow temperatures of less than 88 °C).

Safety valve setting (bar)		3.0								
Vessel charge pressure (bar)		0.5				1.0			1.5	
Initial system pressure (bar)		0.5	1.0	1.5	2.0	1.0	1.5	2.0	1.5	2.0
Total water content of system		Expansion Vessel Volume (litres)								
Liters	25	2.1	3.5	6.5	13.7	2.7	4.7	10.3	3.9	8.3
	50	4.2	7.0	12.9	27.5	5.4	9.5	20.6	7.8	16.5
	75	6.3	10.5	19.4	41.3	8.2	14.2	30.9	11.7	24.8
	100	8.3	14.0	25.9	55.1	10.9	19.0	41.2	15.6	33.1
	125	10.4	17.5	32.4	68.9	13.6	23.7	51.5	19.5	41.3
	150	12.5	21.0	38.8	82.6	16.3	28.5	61.8	23.4	49.6
	175	14.6	24.5	45.3	96.4	19.1	33.2	72.1	27.3	57.9
	200	16.7	28.0	51.8	110.2	21.8	38.0	82.4	31.2	66.2
	250	20.8	35.0	64.7	137.7	27.2	47.5	103.0	39.0	82.7
	300	25.0	42.0	77.7	165.3	32.7	57.0	123.6	46.8	99.3
	350	29.1	49.0	90.6	192.8	38.1	66.5	144.2	54.6	115.8
	400	33.3	56.0	103.6	220.4	43.6	76.0	164.8	62.4	132.4
	450	37.5	63.0	116.5	247.9	49.0	85.5	185.4	70.2	148.9
	500	41.6	70.0	125.9	275.5	54.5	95.0	206.0	78.0	165.5
Systems volumes other than those given - multiply system volume by the factor across		0.0833	0.140	0.259	0.551	0.109	0.190	0.412	0.156	0.331

8. Filling

The system may be filled by one of the following methods:

- Through a cistern, used for no other purposes, via a ball valve permanently connected directly to a service pipe and/or a cold water distributing pipe. The static head available from the cistern should be adequate to provide the desired initial system design pressure. The cold feed pipe from the cistern should include a non return valve and stop valve with an automatic air vent connected between them; the stop valve being located between the system and automatic air vent. The stop valve may remain open during normal operation of the system if automatic water 'make-up' is required.

INSTALLATION

SERVICE CONNECTIONS

- (b) Through a self-contained unit comprising a cistern, pressure booster pump if required, and if necessary, an automatic pressure reducing valve and flow restrictor. The cistern should be supplied through a temporary connection from a service pipe or cold water distributing pipe.

This unit may remain permanently connected to the heating system to provide limited automatic water 'make-up'. Where the temporary connection is supplied from a service pipe or distributing pipe which also supplies other 'draw off' points at a lower level a double check valve shall be installed upstream of the 'draw off' point.

- (c) Through a temporary hose connection from a 'draw off' tap, supplied from a service pipe under mains pressure. Where the mains pressure is excessive, a pressure reducing valve shall be used to facilitate filling.

The following fittings shall form a permanent part of the system and shall be fitted in the order stated.

A stopvalve complying with the requirements of BS 1010 Part 2 (the hose from the 'draw off' tap shall be connected to this fitting).

A test cock.

A double check valve of an approved type.

- (i) Thoroughly flush out the whole of the system with cold water without the pump in position.

- (ii) With the pump fitted, fill the vent system until the pressure gauge registers 1.5 bar (21.5 lb.ft/in²), and examine for leaks.

- (iii) Check the operation of the safety valve by manually raising the water pressure until the valve lifts. This should occur within ± 0.3 bar (± 4.3 lb.ft/in²) of the pre-set lift pressure.

- (iv) Release water from the system until the initial system design pressure is reached.

- (v) Light the boiler and heat the system to the maximum working temperature. Examine for leaks.

- (vi) Turn off the boiler and drain the system while still hot.

- (vii) Refill and vent the system, and adjust the initial pressure to the required value.

INSTALLATION

ELECTRICAL CONNECTIONS

44. - ELECTRICAL CONNECTIONS

WARNING: This appliance **MUST** be efficiently earthed.

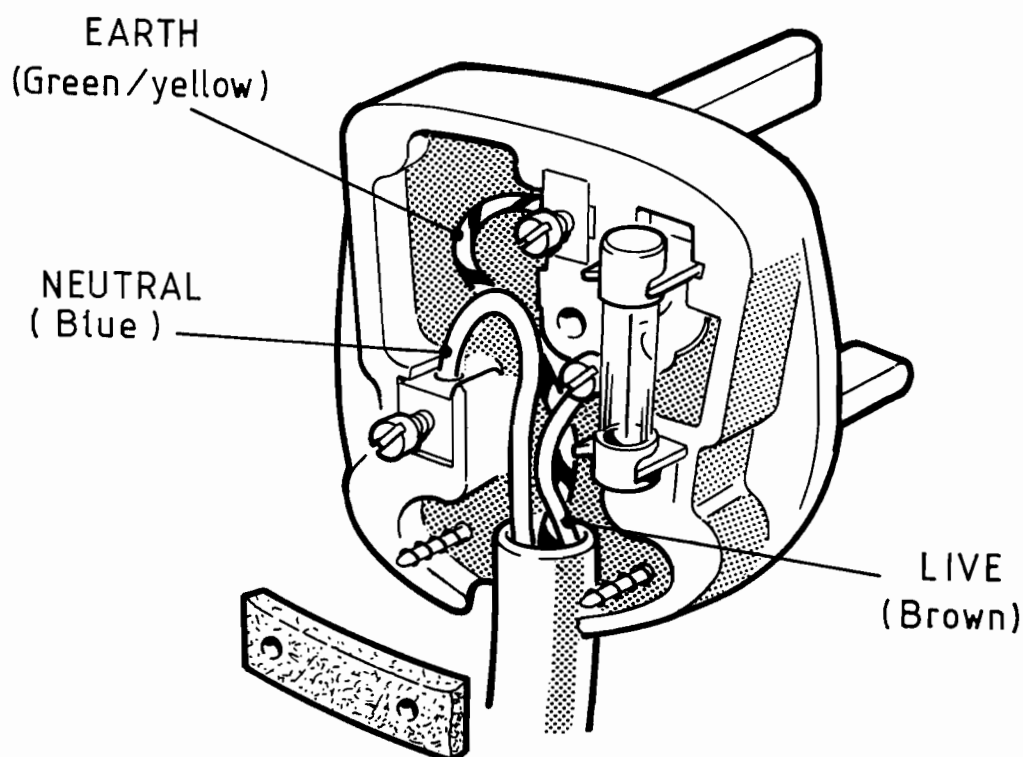
A mains supply of 240 V, 50Hz, ~ Single Phase is required.

All external controls & external wiring **MUST** be suitable for mains voltage. Wiring should be 3-core, PVC insulated cable, NOT LESS than 24/0.2mm (0.75mm²) to BS 6500, Table 16.

Wiring external to the boiler **MUST** be in accordance with the current I.E.E. Wiring Regulations and any Local Regulations which apply.

The supply connection may be made via a removable plug to a shuttered socket/outlet and should such a plug be used for connection to the mains, it **MUST** be of 3-pin type, wired as shown, fused at 3A and comply with the requirements of BS 1363.

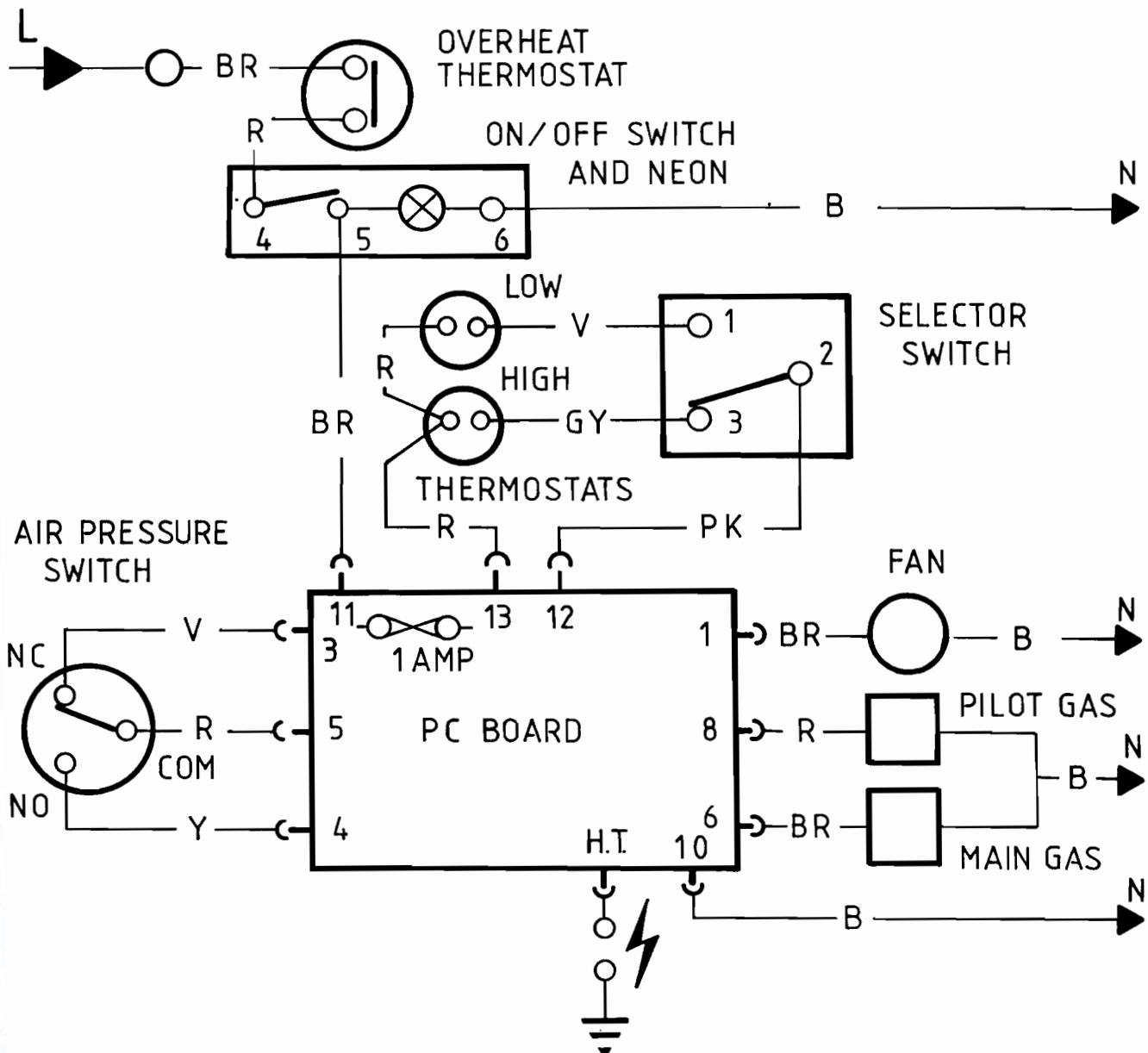
Alternatively a fused, double pole switch, having a 3mm (1/8 in.) contact separation in both poles and serving only the boiler may be used.



INSTALLATION

ELECTRICAL CONNECTIONS

45. WIRING DIAGRAM (FLOW)



LEGEND
 br - brown
 b - blue
 r - red
 pk - pink
 v - violet
 gy - grey
 y - yellow

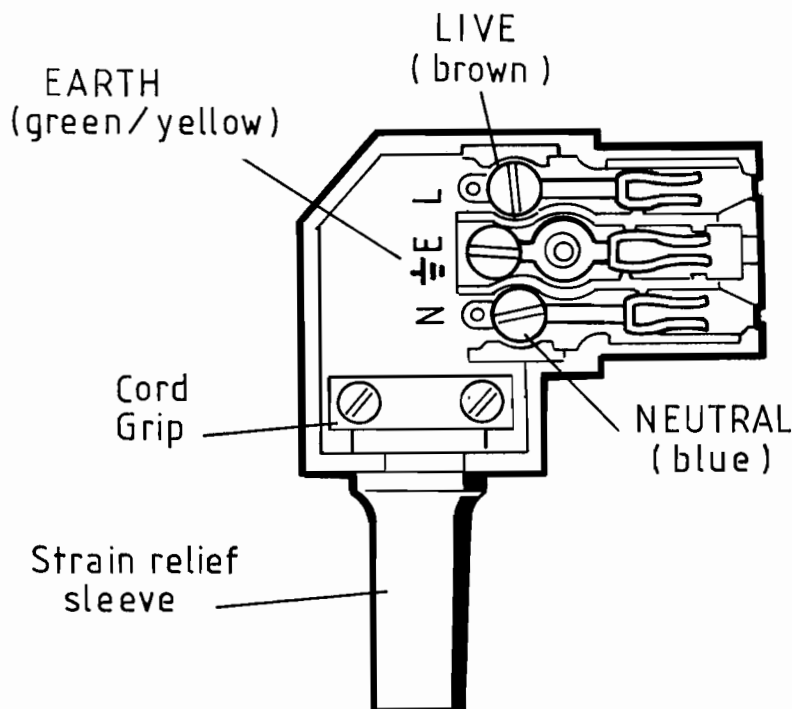
INSTALLATION

ELECTRICAL CONNECTIONS

46. WIRING TO THE BOILER

(N.B. If a programmer kit is to be fitted, follow the kit instructions and ignore this Frame.) The boiler supply cord should be wired to the connector as illustrated and described below:

- a) Cut the supply cord, allowing enough length to reach the control box in its forward position.
- b) Dismantle the connector, remove the rubber strain relief sleeve, and fit this over the supply cord.
- c) Strip 35mm from outer sheath.
- d) Shorten the blue wire ONLY, by 10mm (this, together with the screw positions, lessens the chance of the earth wire being detached first, if the cord should be accidentally jerked hard).
- e) Strip 15mm from the insulation of each wire, and twist the exposed conductor stands firmly together. Take the twisted strands CLOCKWISE round the appropriate screw, and tighten it., Check that there are no stray strands.
- f) Locate the strain relief sleeve in the connector body, then fit the cord grip strap (ensure that it is over the sheath and not just over the three wires) and tighten its screws.
- g) Fit the outer cover, making sure that it does not trap any wires. Tighten the cover screw



INSTALLATION

- ELECTRICAL CONNECTIONS

47. EXTERNAL WIRING

External wiring **MUST** be in accordance with the current I.E.E. Wiring Regulations. The wiring diagrams illustrated in Frames 49-51 cover the systems most likely to be used with this appliance.

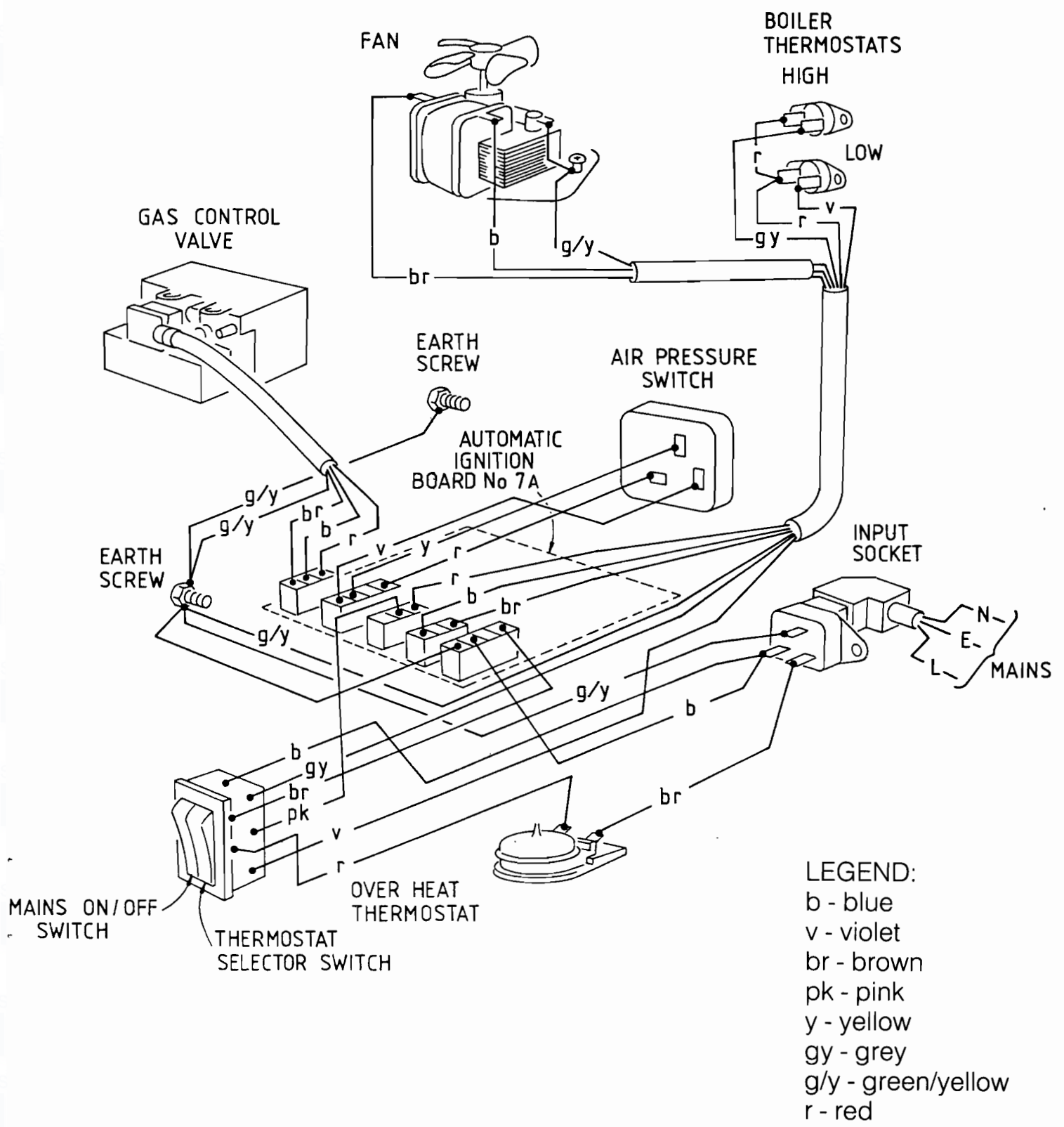
For wiring external controls to the IDEAL ELAN 2 NF boiler, reference should be made to the systems wiring diagram supplied by the relevant Manufacturer in conjunction with the wiring diagrams shown in Frames 45 & 48.

Difficulty in wiring should not arise, providing the following directions are observed:

1. Controls that switch the system ON and OFF, e.g. a time switch **MUST** be wired, in, series, in the live mains lead to the boiler.
2. Controls that over-ride an ON/OFF control e.g. a frost thermostat **MUST** be wired into the mains lead in parallel with the controls to be over-ridden - refer to Frame 52.
3. If a proprietary system is used, follow the instructions supplied by the Manufacturers.
4. The pump must always be wired in "parallel" with the boiler.

INSTALLATION 48. PICTORIAL WIRING

ELECTRICAL CONNECTIONS



INSTALLATION SYSTEM WIRING DIAGRAMS/FROST PROTECTION

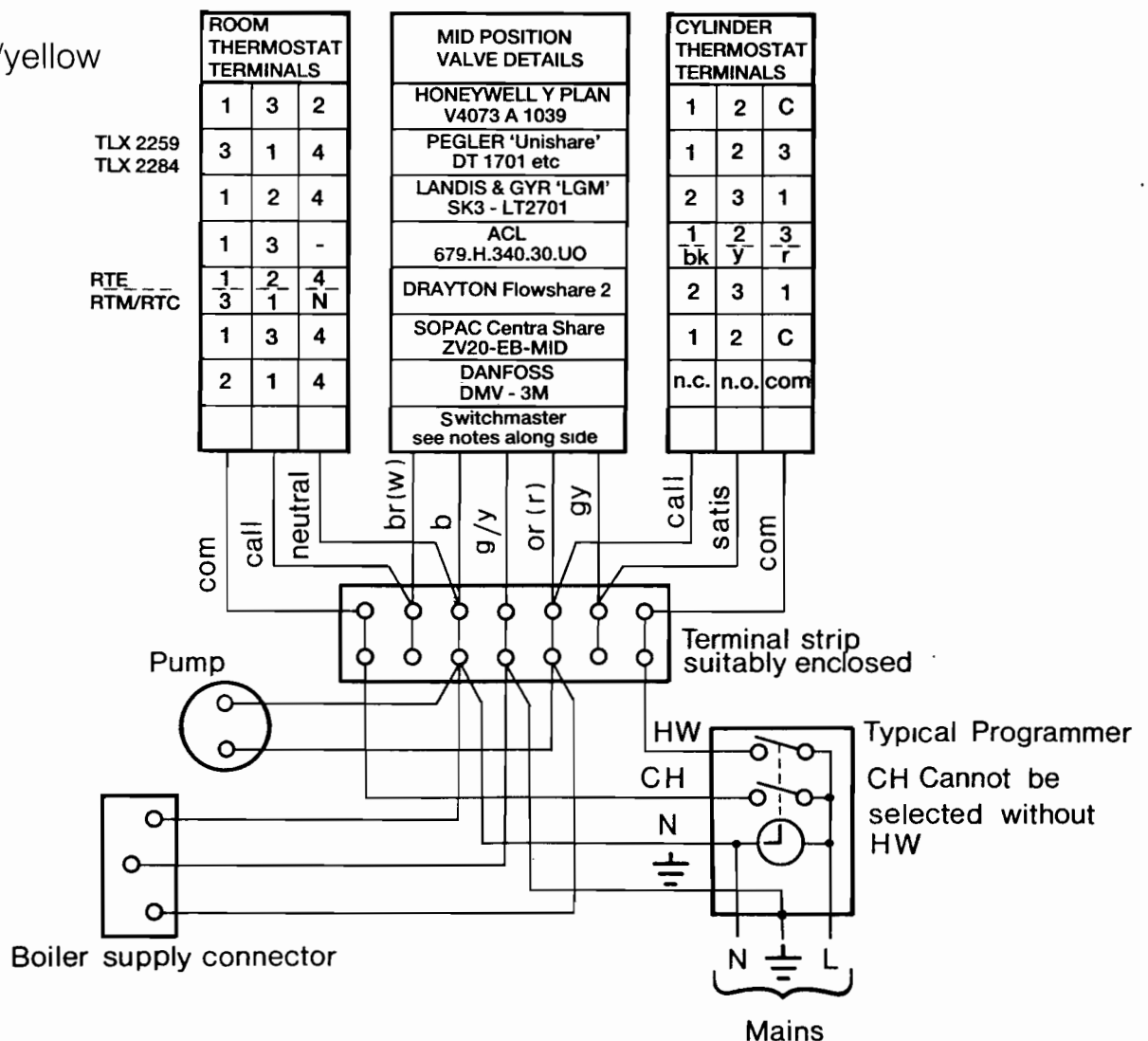
49. MID POSITION VALVE, (NO RELAY) PUMPED ONLY

Notes:

1. SOME EARTH WIRES ARE OMITTED FOR CLARITY. ENSURE PROPER EARTH CONTINUITY WHEN WIRING.
2. This is a fully controlled system - set the boiler thermostat to HIGH.
3. Numbering of thermostat terminals applies ONLY to the the Manufacturer mentioned.
- 4 Switchmaster Midi operates similarly, but the wiring is not identical - see manufacturer's wiring diagram.

LEGEND

b - blue
bk - black
br - brown
g - green
gy - grey
g/y - green/yellow
or - orange
r - red
y - yellow
w - white

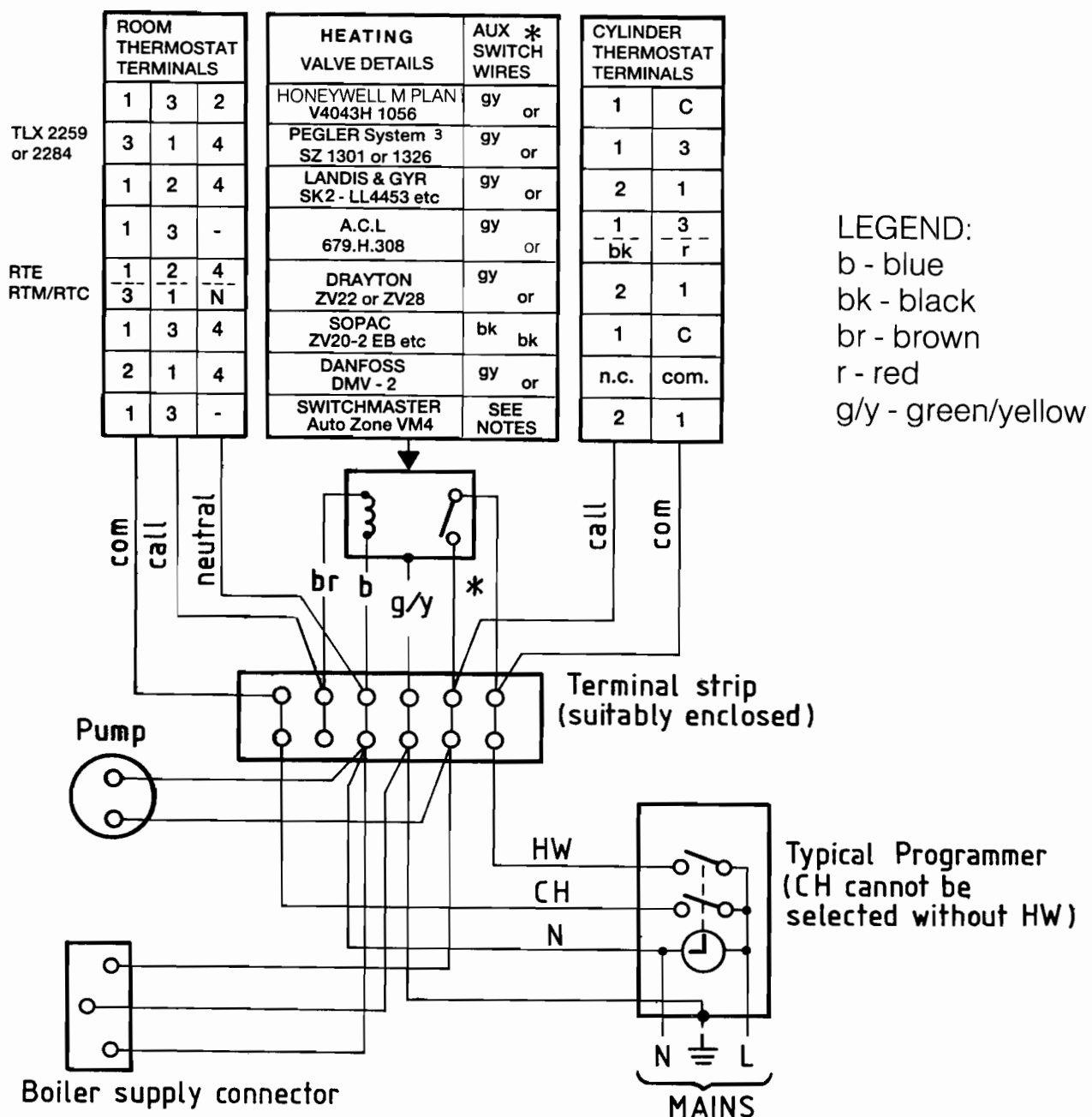


INSTALLATION SYSTEM WIRING DIAGRAMS/FROST PROTECTION

50. ONE VALVE IN HEATING CIRCUIT - PUMPED ONLY

Notes:

1. SOME EARTH WIRES ARE OMITTED FOR CLARITY. ENSURE PROPER EARTH CONTINUITY WHEN WIRING.
2. Numbering of thermostat terminals applies ONLY to the Manufacturer mentioned.
3. Switchmaster valve also has grey and orange wires, but the GREY wire (not the orange), must be connected to the incoming supply.

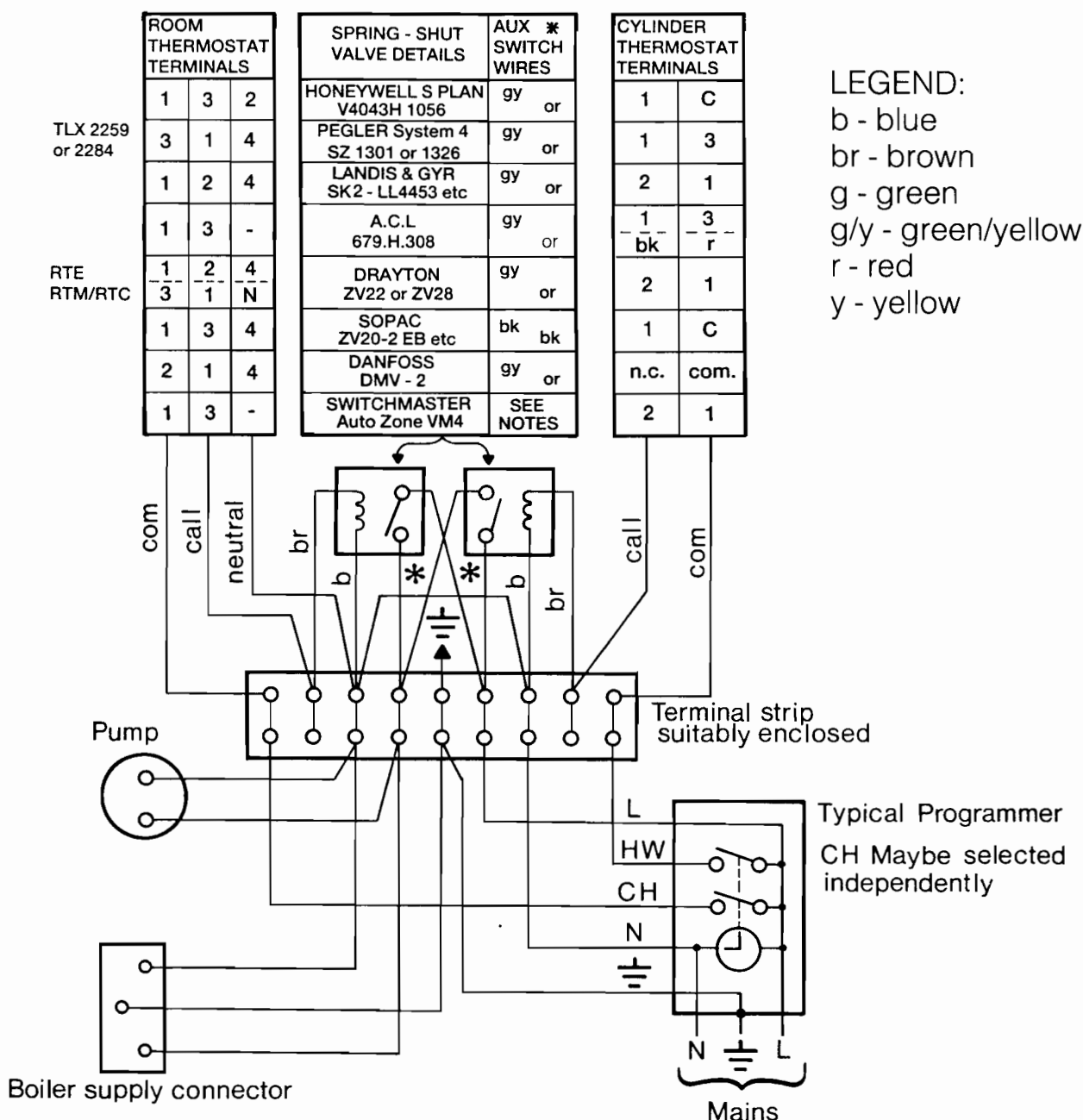


INSTALLATION SYSTEM WIRING DIAGRAMS/FROST PROTECTION

51. TWO SPRING CLOSED VALVES - PUMPED ONLY

Notes:

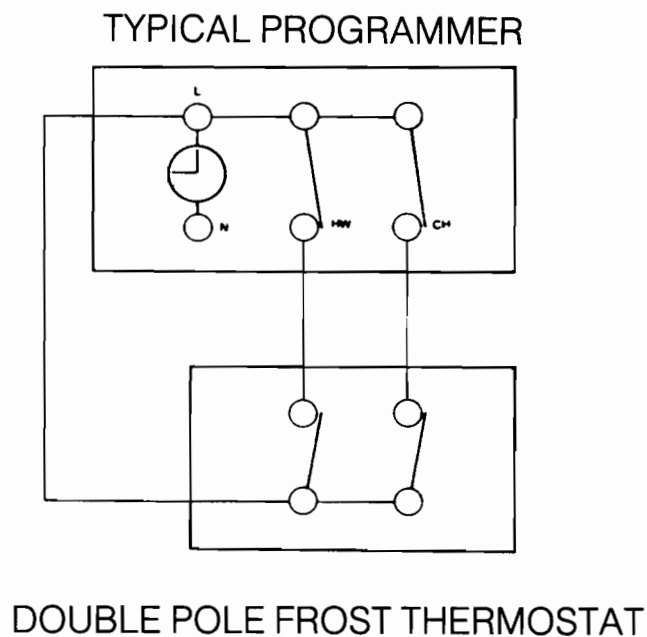
1. SOME EARTH WIRES ARE OMITTED FOR CLARITY. ENSURE PROPER EARTH CONTINUITY WHEN WIRING.
2. This is a fully controlled system - set the boiler thermostat to HIGH.
3. Numbering of thermostat terminals applies ONLY to Manufacturer mentioned.
4. Switchmaster Autozone also has grey and orange wires, but the GREY (not the orange) wire must be connected to the incoming live supply.



52. FROST PROTECTION

Notes:

1. The frost thermostat should be wired to the programmer as shown, without disturbing the existing wiring.
2. The frost thermostat should be sited in a cool place in the house, but where it can sense heat from the system.
3. The occupier should be advised that, during frosty weather, the system should be turned OFF at the programmer switches ONLY - all other controls should be left in the normal running position.



INSTALLATION

COMMISSIONING & TESTING

53. COMMISSIONING & TESTING

Electrical Installation

Checks to ensure electrical safety should be carried out by a competent person, with the boiler DISCONNECTED from the mains.

1. Using a suitable meter, check the continuity from the earth wire of the mains supply to both the body of the gas valve and the metalwork of the boiler control box.
2. Check that there is NO connection between earth and either live or neutral.
3. Check that the polarity of supply is correct, i.e. that live and neutral are not crossed over.
4. The boiler may now be connected to the supply.

54. COMMISSIONING & TESTING

Gas Installation

1. The whole of the gas installation including the meter, should be inspected and tested for soundness, and purged in accordance with the recommendations of BS 6891.
2. Purging air from the gas installation may be expedited by loosening the union on the gas service cock and purging until gas is smelled.
3. Retighten the union and check for gas soundness.

WARNING:

Whilst effecting the required gas soundness test and purging air from the gas installation, open all windows and doors, extinguish naked lights and DO NOT SMOKE.

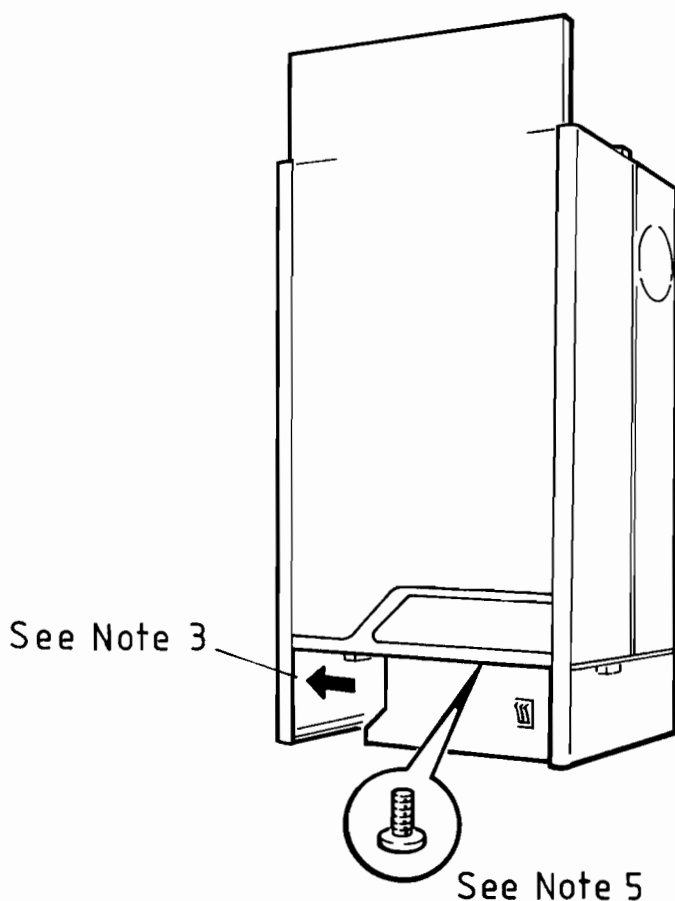
55. INITIAL LIGHTING - Continued in 'Frame 57' (Refer to Diagram in Frame 57)

1. Check that the gas service cock (C) is ON and the Mains ON/OFF switch (G) is OFF.
2. Remove the screw in the burner pressure test nipple (F) and connect a gas pressure gauge via a flexible tube.
3. Switch the electricity supply ON & check that all external controls are calling for heat.
4. Set the boiler thermostat selector switch (H) to HIGH and the mains ON/OFF switch (G) to ON and the switch neon will glow. The pilot solenoid valve should open and the intermittent spark commence, continuing until the pilot is established. The main burner will then light.
Check the appearance of the pilot flame - Refer to Frame 8 (Servicing)
Note: The pilot, flame is factory set and no adjustment should be necessary. Refer to Frame 12 (Servicing).
5. Test the pilot supply connection at the pilot burner for gas soundness using leak detection fluid.
6. Set the Mains ON/OFF switch (G) to OFF and switch OFF the electricity supply.
7. If the boiler output is to be set to MID or MINIMUM, affix the appropriate indicator label supplied, to the Data Plate.
8. Fit the boiler casing - Refer to Frame 61.

56. FITTING THE CASING

IMPORTANT: This appliance **MUST NOT** be operated without the casing being correctly fitted and forming an adequate seal. Except by a competent engineer during commissioning.

1. Lift the boiler casing with the glass fascia in the down position up to the boiler assembly and secure with the top 2 captive screws.
2. Slide the fascia up with it locates in the retaining catch.
3. Swing the control box to the left to gain access to the bottom right casing fixing screw.
4. Secure the bottom two captive screws.
The casing **MUST** seat correctly and compress the sealing strip to make an airtight joint. If side clearance is limited, this may be checked by ensuring that the top and bottom edges of the casing are correctly located.
5. Swing the control box back to the right and replace the securing screw.

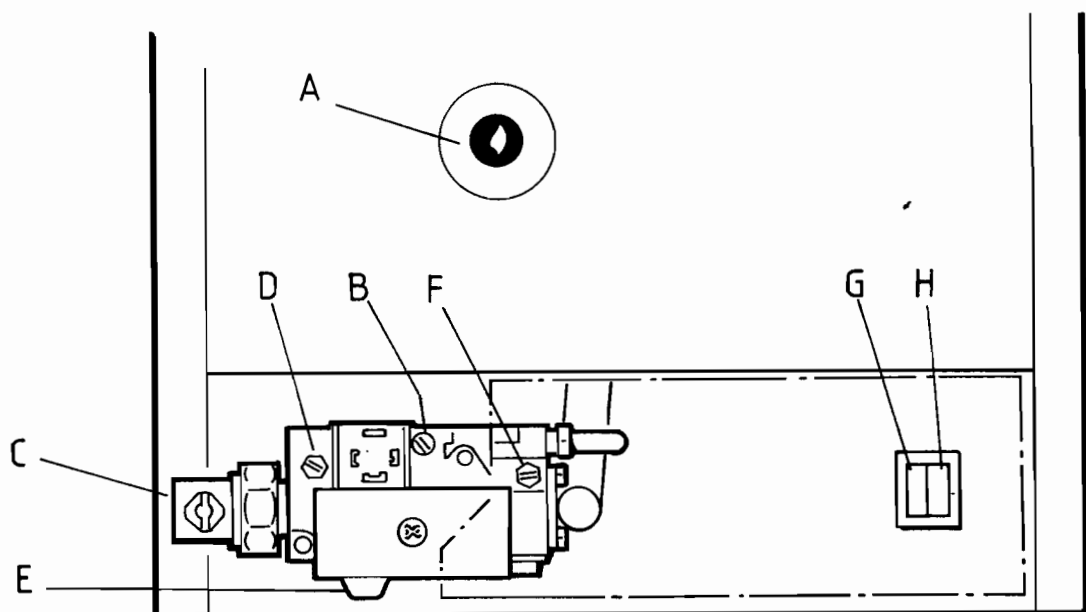


57. INITIAL LIGHTING - Continued

1. Switch the electricity supply ON.
2. Set the boiler thermostat selector switch (H) to HIGH and the mains ON/OFF switch (G) to ON the fan will start. After the fan has run for a few seconds the pilot solenoid will open and the intermittent spark commence, continuing until the pilot is established.
3. Once the pilot is established the main gas will come on. Check that the main burner cross-lights smoothly. If this sequence does not occur then refer to the 'Fault Finding' section.
4. Test for gas soundness around the boiler gas components using leak detector fluid.
5. Operate the boiler for ten minutes to stabilise the burner temperature.
6. The boiler is pre-set at the factory to its highest nominal rating , but can be range rated to suit the system design requirements - Refer to Table 2 on page 2. If the burner pressure setting requires adjusting the proceed as follows:
Remove the cover over the adjusting screw.
Turn pressure adjusting screw (E) clockwise to decrease the pressure. Replace the cover after adjustments are made.
7. Set the boiler thermostat selector switch to OFF.
8. Remove pressure gauge & tube. Replace the sealing screw in the pressure test nipple - ensure that a gas-tight seal is made.
9. Refit the controls pod bottom panel.

LEGEND:

- | | |
|------------------------------|---------------------------------|
| A Sightglass | E Main burner pressure adjuster |
| B Pilot pressure adjuster | F Burner pressure test nipple |
| C Gas service cock | G Mains ON/OFF switch |
| D Inlet pressure test nipple | H thermostat selector switch |



INSTALLATION

COMMISSIONING & TESTING

58. GENERAL CHECKS

Make the following checks for correct operation:

1. Turn the boiler mains ON/OFF switch ON & OFF at both HIGH and LOW settings, and check that the main burner lights and extinguishes in response.
2. Check the correct operation of the programmer, if fitted, and all other system controls should be proved.
Operate each control separately and check that the main burner responds.
3. Check that the casing is seated correctly and compressing the sealing strip all around the casing.
4. Water Circulation system
 - (a) With the system HOT, examine all water connections for soundness.
 - (b) With the system still hot turn off the gas, water and electricity supplies to the boiler and drain down in order to complete the flushing process.
 - (c) Re-fill and vent the system, clear all air locks and again check for water soundness.
 - (d) Balance the system and set the bypass.
Finally set the controls to the Users requirements and slide the glass fascia down into the closed position.

Notes:

1. If an optional Programmer Kit is fitted refer to the Programmer Kit Installation and User's Instructions.
2. The temperatures quoted below are approximate and vary between installations.

Thermostat Setting	Flow Temperature	
	° C	° F
HIGH	82	180
LOW	60	140

WARNING: The boiler MUST NOT be operated with the casing removed. Except by a competent engineer during commissioning.

INSTALLATION

COMMISSIONING & TESTING

59. HANDING OVER

After completing the installation and commissioning of the system the Installer should hand over to the Householder by the following actions:-

1. Hand the 'Users Instructions' to the Householder and explain his/her responsibilities under the Gas safety (Installation and Use) Regulations 1984.
2. Draw attention to the Lighting Instruction label affixed to the casing front and visible through the observation window in the glass fascia when in raised position.
3. Explain and demonstrate the lighting and shutting down procedures.
4. The operation of the boiler and the use and adjustment of ALL systems controls should be fully explained to the household, to ensure the greatest possible fuel economy, consistent with household requirements of both heating and hot water consumption. Advise the User of the precautions necessary to prevent damage to the system, and to the building, in event of the system remaining inoperative during frost conditions.
5. Explain the function and the use of the boiler thermostat and external controls.
6. Explain the function of the boiler over-heat thermostat and emphasise that if cut-out persists the boiler should be turned off and the local Heating Installer consulted.
7. Explain and demonstrate the function of time and temperature controls, radiator valves, etc. for the economic use of the system.
8. If an optional Programmer Kit is fitted, then draw attention to the 'Programmer Kit User's Instructions' and hand them to the Householder.
9. Stress the importance of regular servicing by the Local Gas Region or by a qualified Heating Engineer and that a comprehensive service should be carried out AT LEAST ONCE A YEAR.

SERVICING

GENERAL/CLEANING & ADJUSTMENT

1. SCHEDULE

THE FOLLOWING SHOULD BE CARRIED OUT AT PERIODS NOT EXCEEDING ONE YEAR.

- (a) Light the boiler and carry out a pre-service check, noting any operational fault.
- (b) Clean the main burner.
- (c) Clean the heat exchanger.
- (d) Clean the main and pilot injectors.
- (e) Check that the flue terminal is unobstructed and that the flue system, including the inner cover is sealed correctly.
- (f) If the appliance is installed in a compartment check that the ventilation areas are clear. THE SERVICING PROCEDURES ARE COVERED MORE FULLY IN FRAMES 2 TO 27 AND MUST BE CARRIED OUT IN SEQUENCE.

WARNING: Always turn OFF the gas supply at the gas service cock and switch OFF and DISCONNECT the electricity supply to the appliance BEFORE SERVICING. IMPORTANT: After completing servicing or exchange of components always test for gas soundness and carry out functional checks as appropriate.

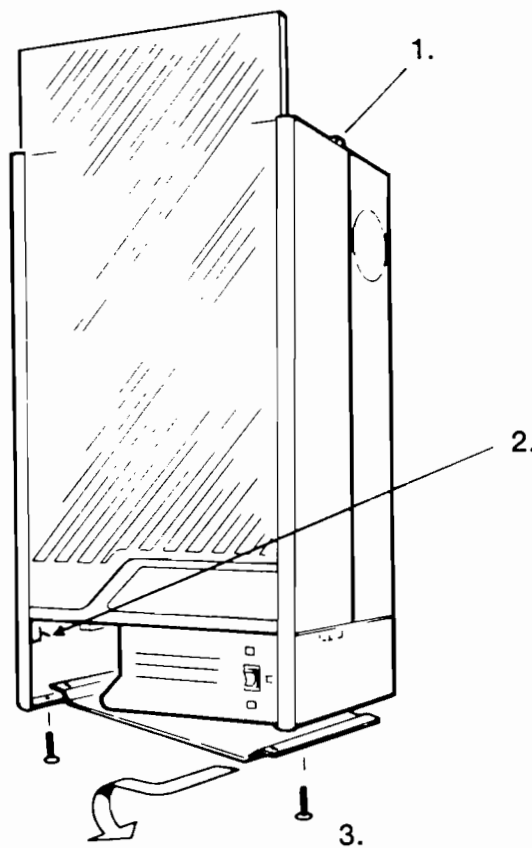
Note: In order to carry out either servicing or replacement of components the boiler casing, must be removed - Refer to Frame 2.

IMPORTANT: When work is complete the casing MUST be correctly re-fitted ensuring that a good seal is made.

Unless gas soundness is to be checked never light the boiler without the casing fitted.

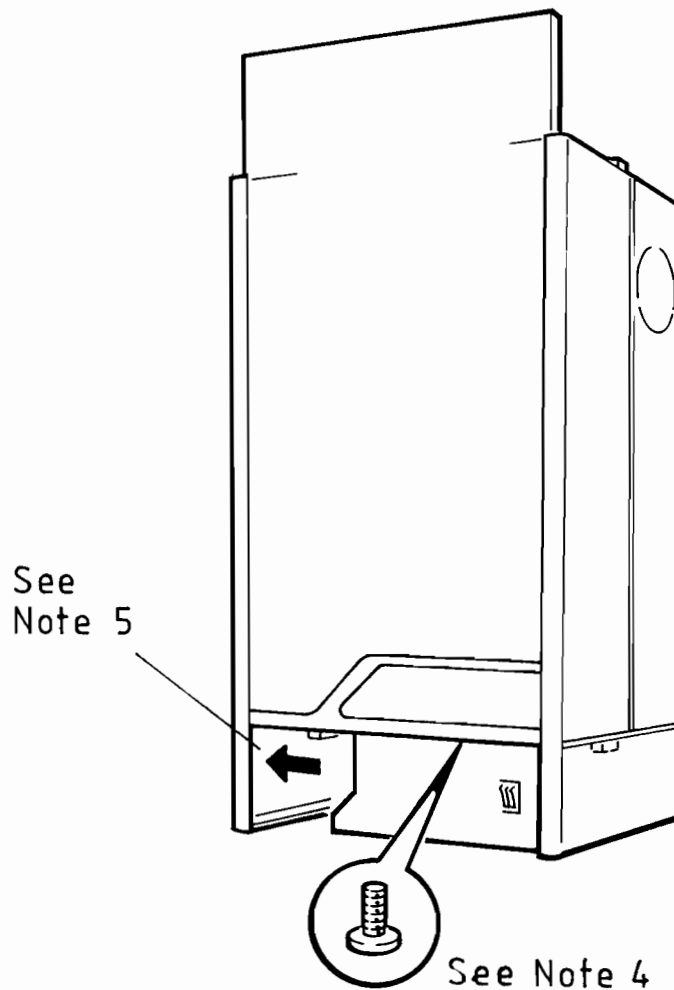
2. BOILER CASING REMOVAL

1. Release the 2 top captive screws.
2. Slide the glass fascia upwards until it locates in the retaining catch.
3. Remove the 2 bottom panel securing screws. Slide the panel forwards then to the R.H. side and drop the left hand side to remove from the casing.



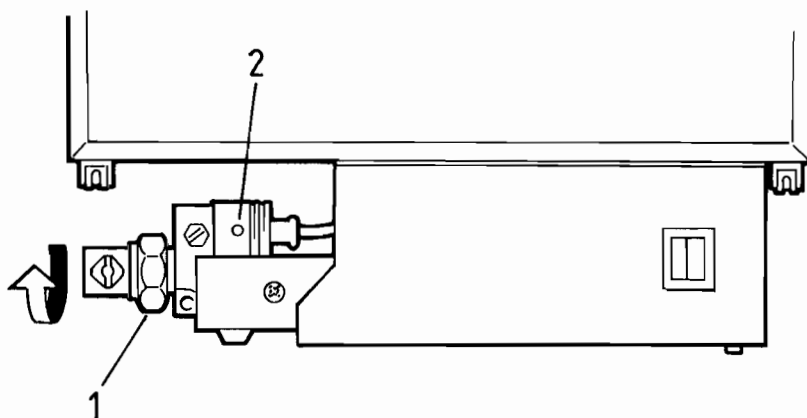
3. BOILER CASING REMOVAL - Continued

4. Remove the control box securing screw.
5. Swing the control box to the left to gain access to the bottom right casing fixing screw.
6. Release the 2 bottom captive screws and lift the casing off the boiler.
Place the casing safely to one side, taking care not to damage the glass fascia panel. (Slide the glass panel down in the casing for safe keeping.)



4. BURNER ASSEMBLY REMOVAL

1. Undo the gas service cock union nut.
2. Undo the securing screw on the plug and pull off the plug.

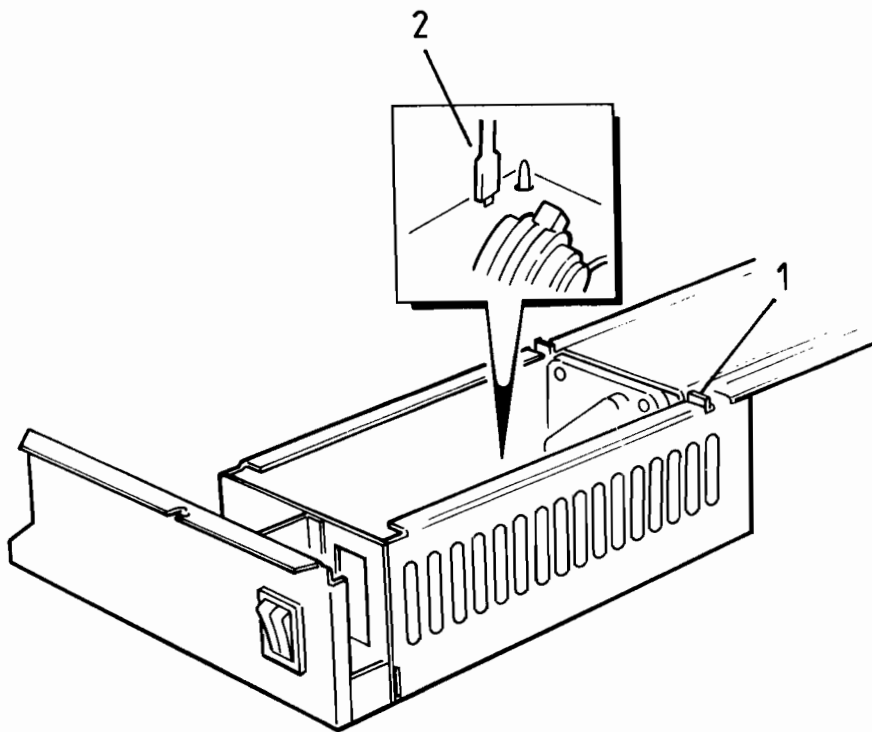


SERVICING

CLEANING & ADJUSTMENT

5. BURNER ASSEMBLY REMOVAL - Continued

1. Lift the front of the control box slightly and slide forward until the retention tabs locate in the slots on the runners.
2. Disconnect the ignition/detection lead and withdraw it from the box.

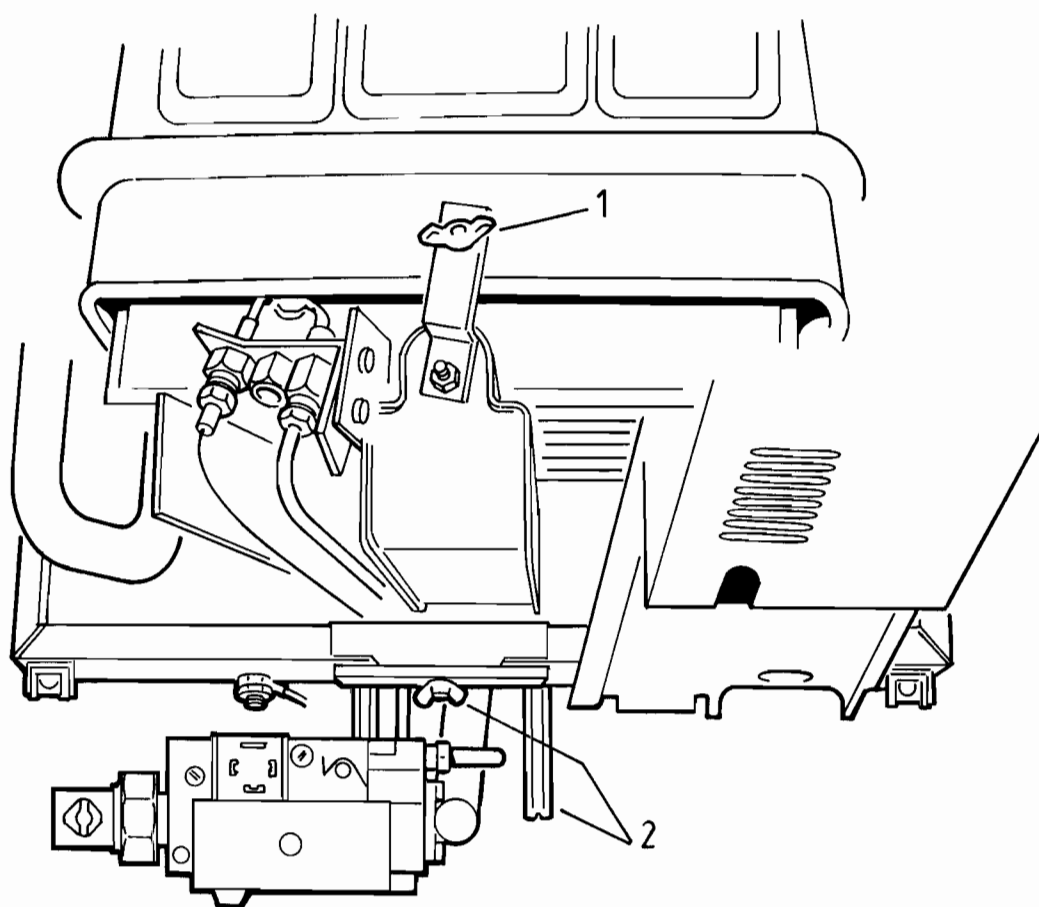


SERVICING

CLEANING & ADJUSTMENT

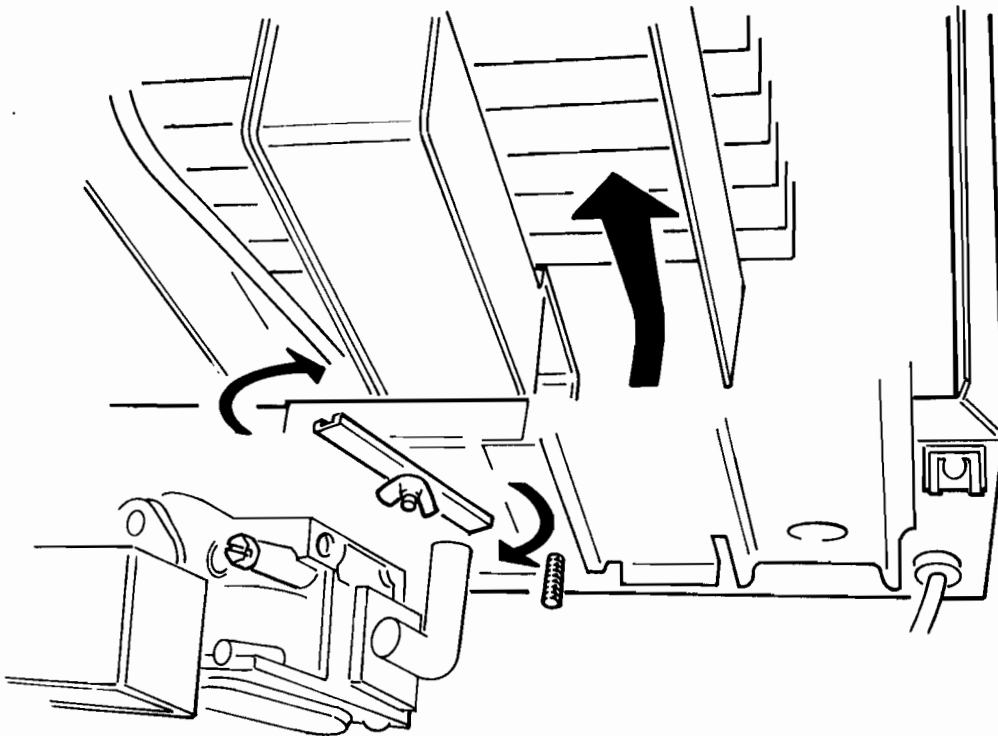
6. BURNER ASSEMBLY REMOVAL - Continued

1. Remove the wing nut.
2. Support the burner and remove the two extended nuts, also slackening the wing nut.



7. BURNER ASSEMBLY REMOVAL - Continued

1. Swing the clamping bracket through 90 deg.
2. Disconnect pressure sensor tubes from the control box and remove from clip. Remove purse clip to free ignitor lead.
3. Lift the rear of the burner/controls assembly and withdraw it from the boiler. Place on a convenient working surface.



SERVICING

GENERAL/CLEANING & ADJUSTMENT

8. CLEANING - BURNER ASSEMBLY

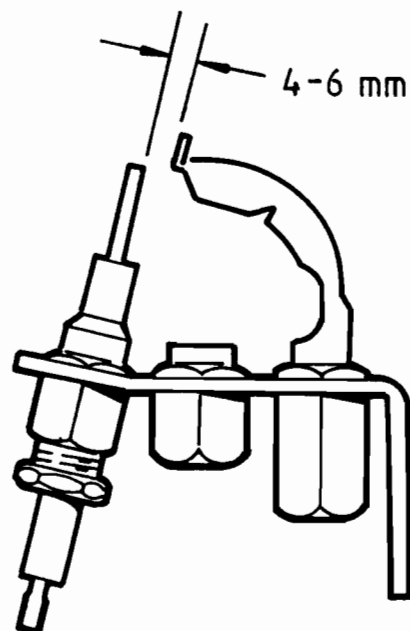
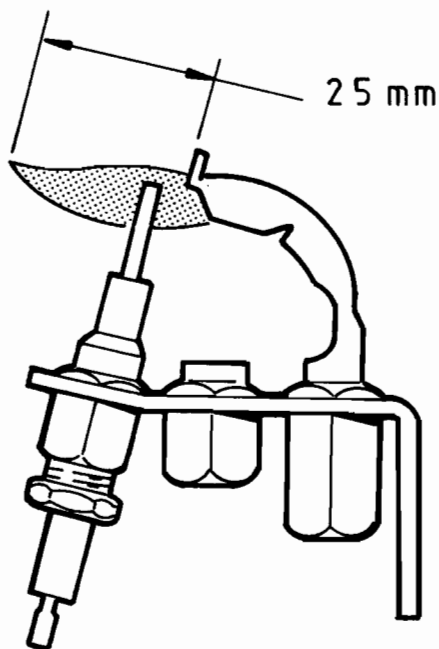
1. Brush off any deposits that may have fallen onto the burner head - ensuring the flame ports are unobstructed. Remove any debris that may have collected on any components.
Note: Brushes with metallic bristles MUST NOT be used.

2. Remove the main burner injector, ensure there is no blockage or damage, clean or renew as necessary.

3. Refit the injector, using an approved jointing compound sparingly.

4. Inspect the pilot burner and ignition/detection electrode, ensure they are clean and in good condition. In particular, check that:

- (a) The pilot burner injector is not blocked or damaged.
- (b) The pilot burner is clean & unobstructed.
- (c) The ignition/detection electrode is clean and undamaged.
- (d) The ignition/detection lead is in good condition.
- (e) The spark gap is correct.

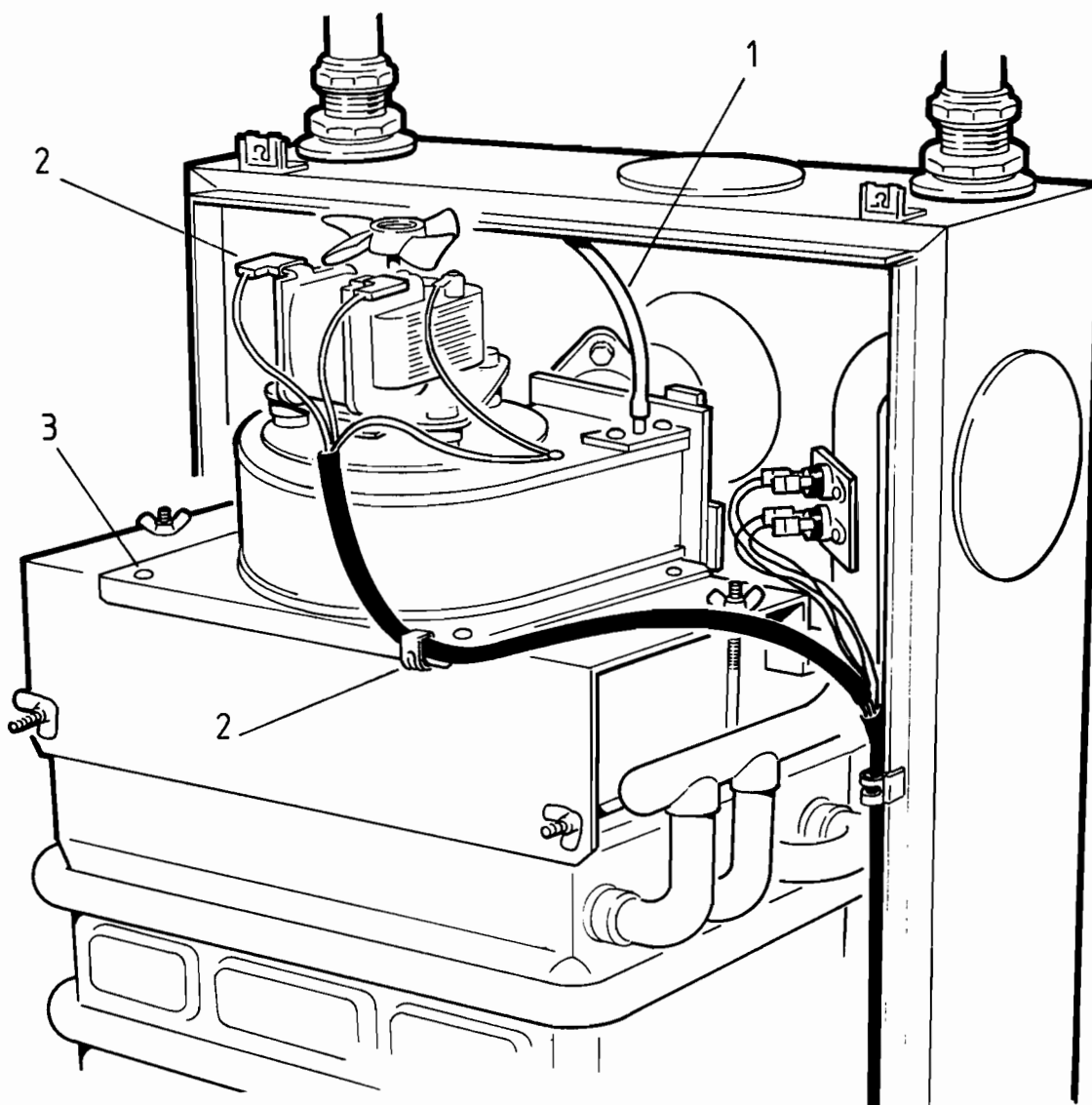


SERVICING

CLEANING & ADJUSTMENT

9. CLEANING - FAN ASSEMBLY

1. Disconnect the pressure sensing tube from the fan.
2. Disconnect the fan electrical leads and unclip the harness from the mounting plate.
3. Remove the four screws and washers securing the fan assembly to the top of the collector hood.
4. Slide the fan assembly clear of the boiler, disengaging the fan outlet elbow from the flue.
5. Check that the fan impellor runs freely. Clean with a soft brush or renew as necessary.
Note: Always take care when handling the fan, due to the balance of the impellor.
6. Check that the air inlet duct is unobstructed.

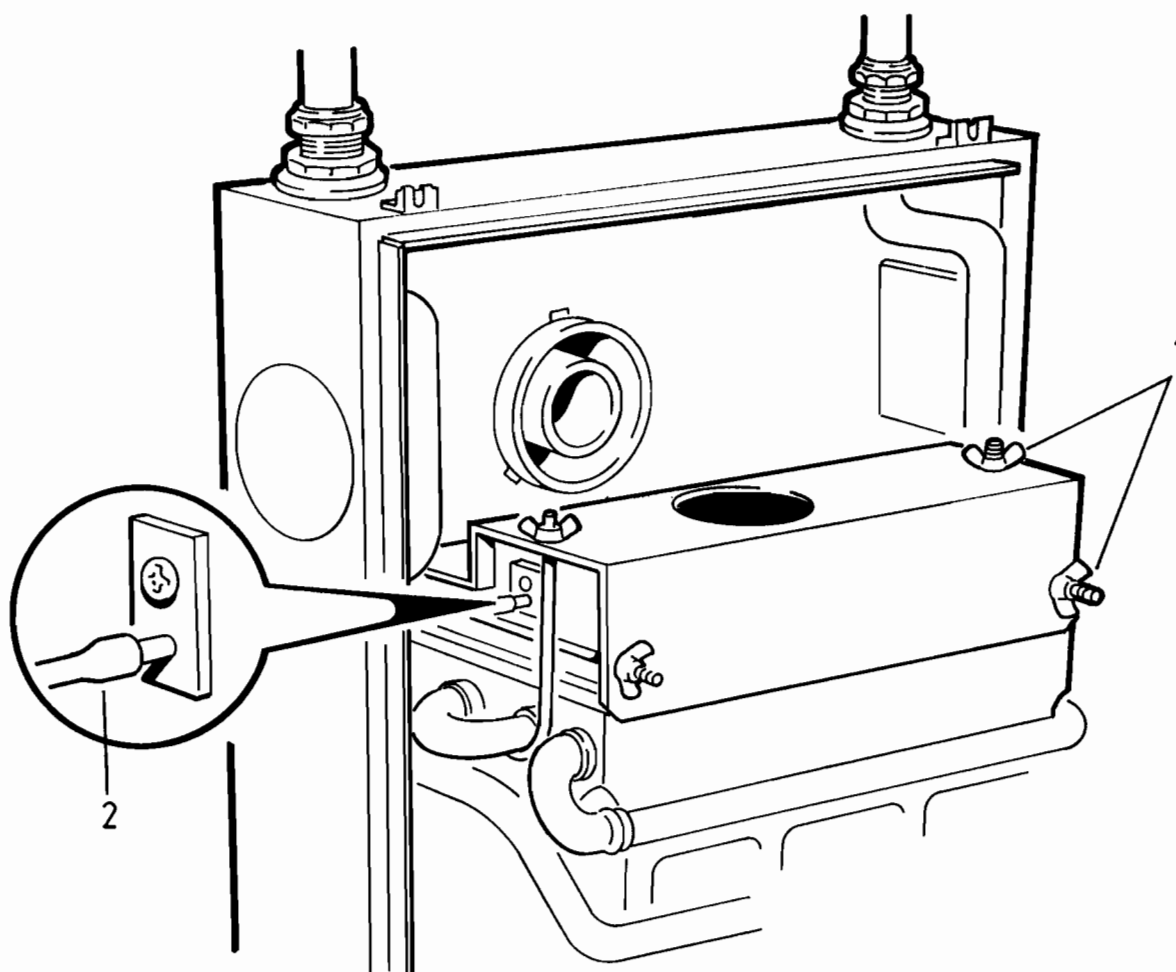


SERVICING

CLEANING & ADJUSTMENT

10. CLEANING - FLUEWAYS

1. Slacken the four wing nuts, disengage the tie rods, and remove the flue collector hood.
2. Disconnect the pressure switch sensing pipe.
3. Place a plastic sheet, or similar, beneath the boiler and remove all loose deposits from the heat exchanger finned block, brushing from above and below, and from the copper skirt, using a suitable brush and/or clearing rod.



SERVICING

CLEANING & ADJUSTMENT

11. RE-ASSEMBLY

Reassemble the boiler in the following order:

1. Refit the flue collector hood renewing any damaged or deteriorating sealing gasket.
Note: Enter the horizontal tie rods with the hooks vertical through the collector hood slots and engage in the holes in the retention angle.
2. Reconnect the pressure switch sensing pipe.
3. Refit the fan mounting plate assembly taking care to reconnect the pressure sensing pipe.
4. Refit the burner and controls assembly.
5. Slide the control box back into position.
6. Reconnect the gas service cock and electrical wiring.
7. Check the sightglass in the boiler casing. Clean or renew as necessary.
8. Refit the boiler casing.

SERVICING

ADJUSTMENT / COMPONENT REPLACEMENT

12. GAS PRESSURE ADJUSTMENT

(a) Pilot

Light the boiler and check that the pilot flame envelopes the ignition/detection electrode. Refer to Frame 8.

The pilot adjuster screw is factory set to maximum and no further adjustment should be necessary. However, if the pilot flame length is incorrect proceed as follows:

(a) Turn the mains ON/OFF switch (G) to OFF. Refer to Frame 57.

(b) Remove the gas valve electrical plug.

(c) Turn the pilot adjuster screw CLOCKWISE until fully CLOSED.

(d) Turn the pilot adjuster screw ANTICLOCKWISE four full turns to give maximum setting.

(e) Refit the gas valve electrical plug.

(f) Relight in accordance with 'Initial Lighting' - Refer to Frame 57 (Installation).

(b) Main Burner

After any servicing, reference should be made to Table 2, which quotes details of the rated output, with the related burner setting pressure and the heat input . Any required adjustments should be made by using the pressure adjustment screw.

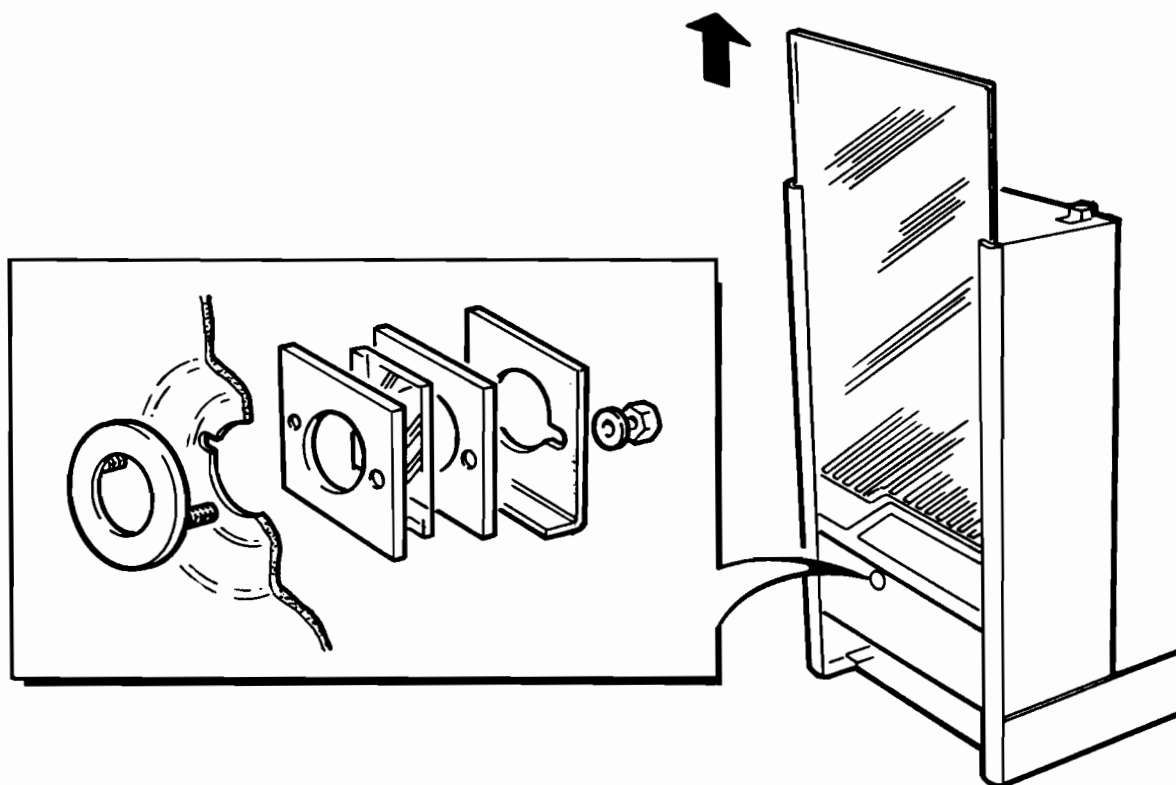
Refer to Initial Lighting, Frame 57 (Installation).

NOTE: To replace the components in Frames 13 to 25 it is necessary to remove the boiler casing - Refer to Frame 2.

IMPORTANT: When work is complete the casing MUST be correctly refitted, ensuring that a good seal is made.

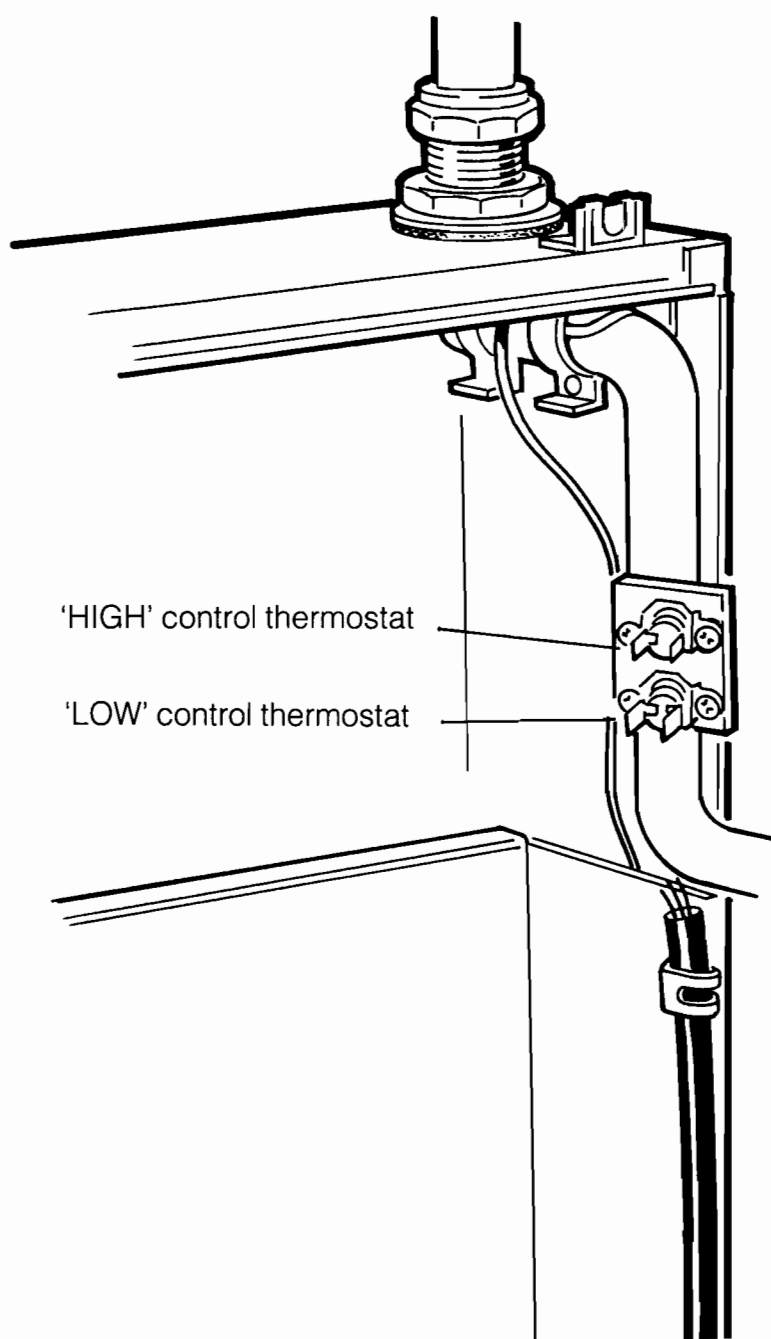
13. SIGHTGLASS-REPLACEMENT

1. Remove the fascia panel from the casing.
2. Unfasten the two nuts and washers and remove the assembly.
3. Fit the new sightglass and reassemble as shown.
4. Retighten the two nuts to ensure an airtight seal but DO NOT overtighten.
5. Refit the fascia panel.



14. CONTROL THERMOSTAT REPLACEMENT

1. Disconnect the two electrical leads from the thermostat.
2. Remove the two screws securing the faulty thermostat.
3. Fit the new thermostat and re-assemble in reverse order.



SERVICING

ADJUSTMENT / COMPONENT REPLACEMENT

15. OVERHEAT THERMOSTAT REPLACEMENT

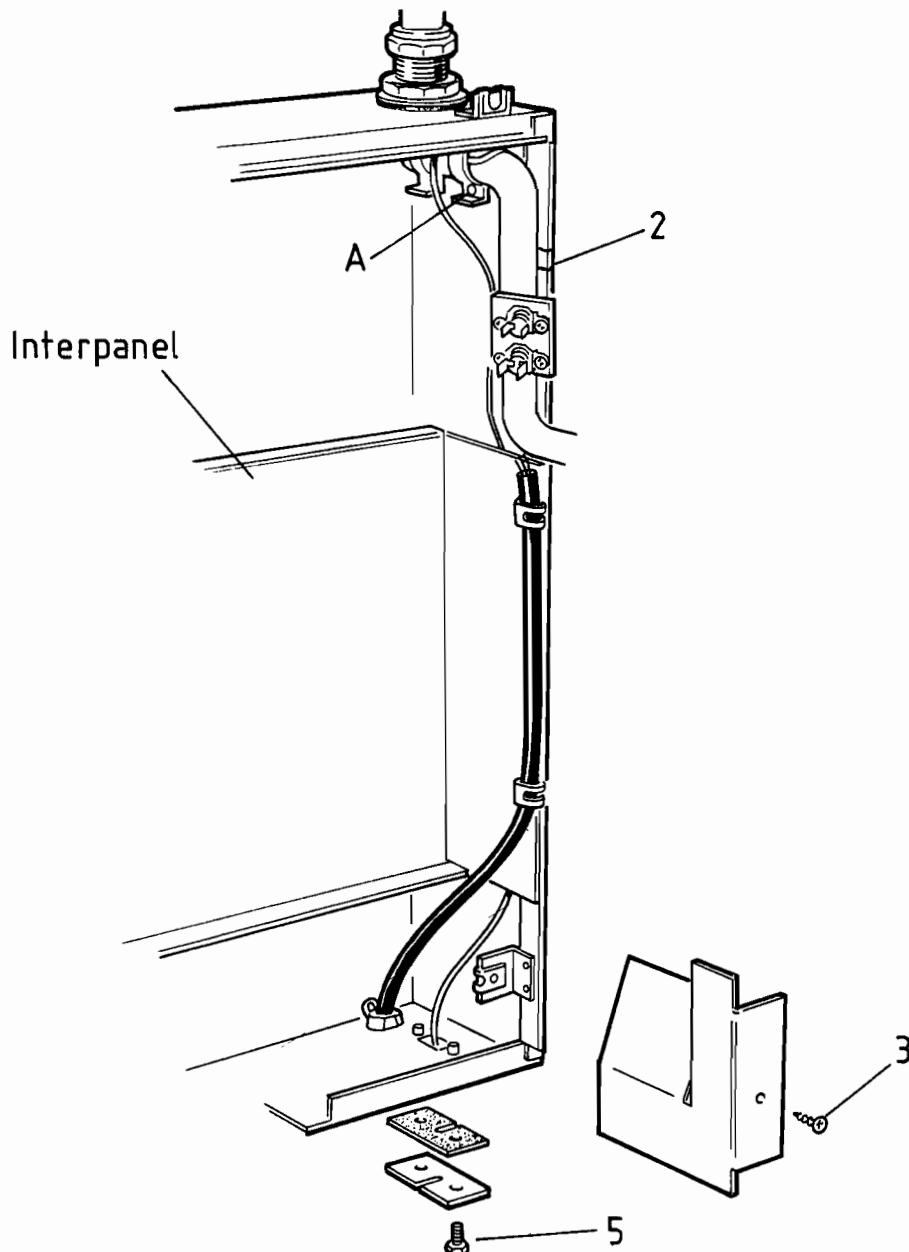
NOTE: To replace the overheat thermostat it will be necessary to remove the fan assembly - Refer to Frame 9.

1. Release screw 'A' of the thermostat clamp and withdraw the sensing head.
2. Unclip the capillary from the top clip.
3. Unscrew and remove the heat shield.
4. Lift and slide the control box forward until the retention tabs locate in the slots on the runners.
5. Unscrew the two screws and remove the cover plate.
6. Withdraw the thermostat capillary and phial downward and out of the boiler back panel.
7. Remove the nut securing the thermostat to the control box bottom.
8. Lift the thermostat body clear and transfer the leads to the new thermostat.
9. Fit the new thermostat to the control box bottom.
10. Lift the front of the control box and disengage from the control box mounting bracket.
11. Whilst supporting the control box remove the plastic peg retaining the stat capillary and remove the stat. Route the new stat capillary in the slot, and replace the retaining peg leaving no slack inside box.
12. Carefully uncoil the capillary ensuring that:
 - (i) the 4 coils in the head are not disturbed
 - (ii) one coil in the capillary is left behind the control box.
13. Re-engage the control box on its mounting bracket.

SERVICING

ADJUSTMENT / COMPONENT REPLACEMENT

15. OVERHEAT THERMOSTAT REPLACEMENT



14. Re-assemble in reverse order ensuring that:

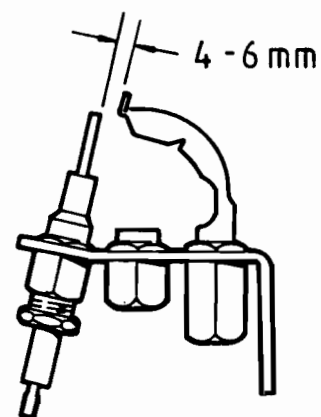
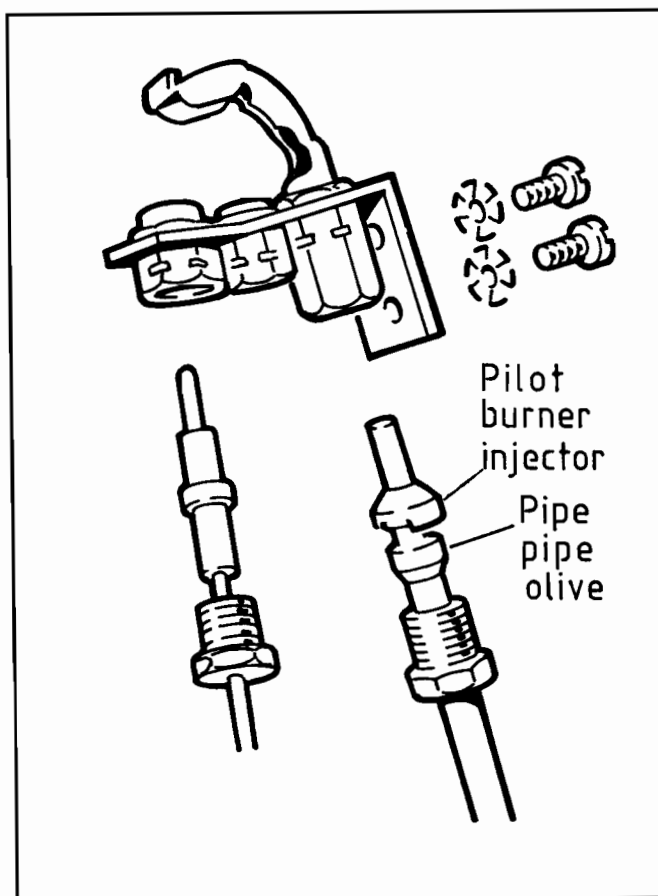
- (a) the thermostat capillary is routed up between the side of the interpanel and the boiler side panel (See Diagram).
- (b) If right hand side flue is fitted the thermostat capillary is clear of the side outlet flue pipe.
- (c) All excess capillary lengths must be neatly coiled behind the control box and clear of the casing to be replaced.
- (d) The heat shield is replaced.
- (e) That screw 'A' is fully re-tighten

SERVICING

COMPONENT REPLACEMENT

16. PILOT BURNER ASSEMBLY REPLACEMENT

1. Undo the pilot supply connection and ease clear of the pilot burner.
Do NOT lose the pilot injector which engages on the pipe as shown.
2. Undo the spark electrode nut and withdraw the electrode and nut.
3. Remove the two securing screws and withdraw the pilot assembly.
4. Fit the new pilot burner assembly and re-assemble in reverse order, ensuring that
 - (a) The injector is in position when re-fitting the pilot supply.
 - (b) A gas-tight joint is made. Refer to Frame 54 Installation.
 - (c) The spark gap is correct.

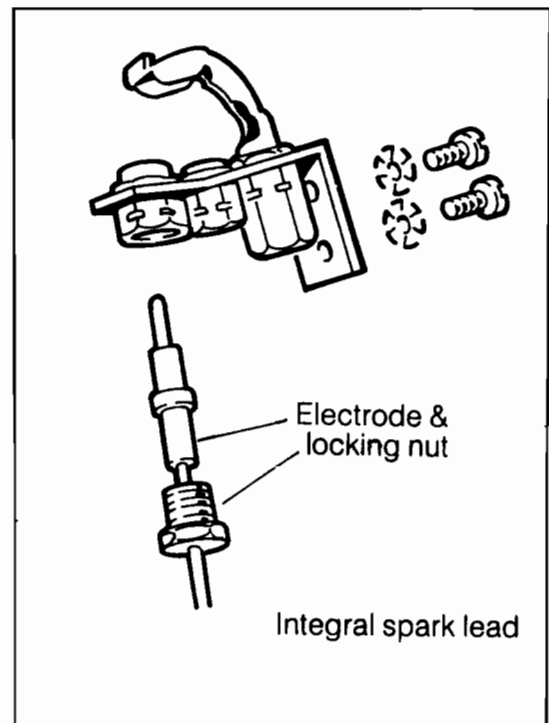
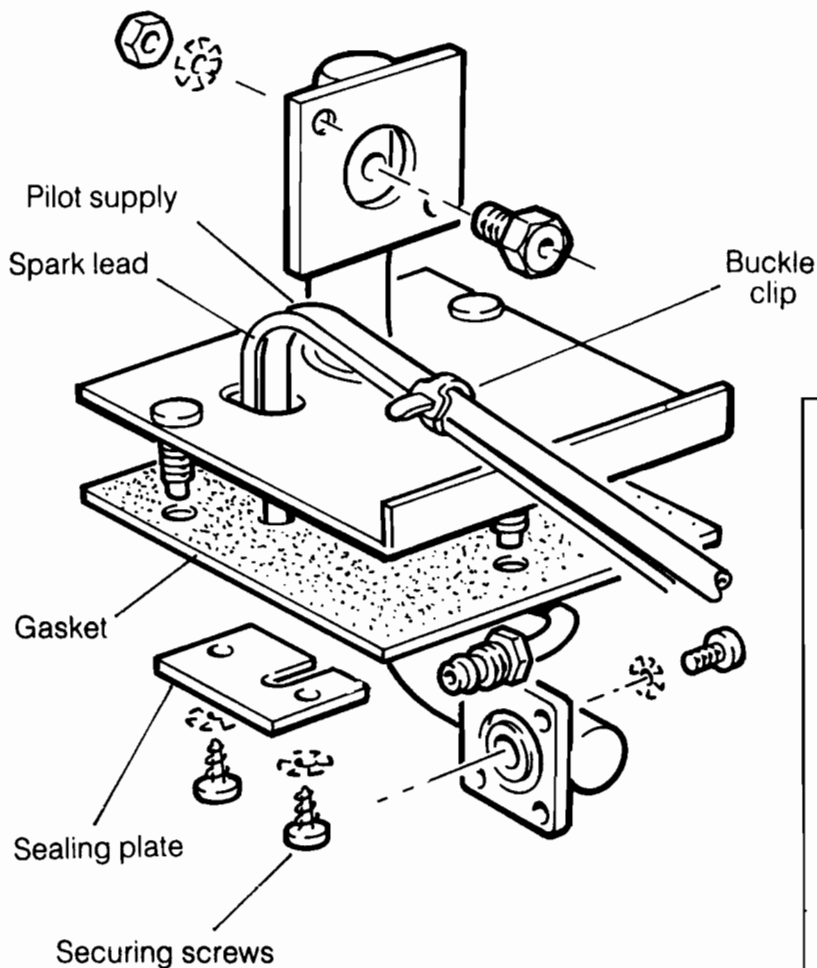


SERVICING

COMPONENT REPLACEMENT

17. SPARK ELECTRODE AND LEAD ASSEMBLY - REPLACEMENT

1. Remove the burner and controls assembly - Refer to Frames 4-7.
2. Remove the buckle clip.
3. Undo the two securing screws and washers and remove the sealing plate.
4. Undo the electrode nut and withdraw the electrode and withdraw the electrode complete with integral spark lead.
5. Fit the new electrode and re-assemble in reverse order.
6. Check that the spark gap is correct - Refer to Frame 16.

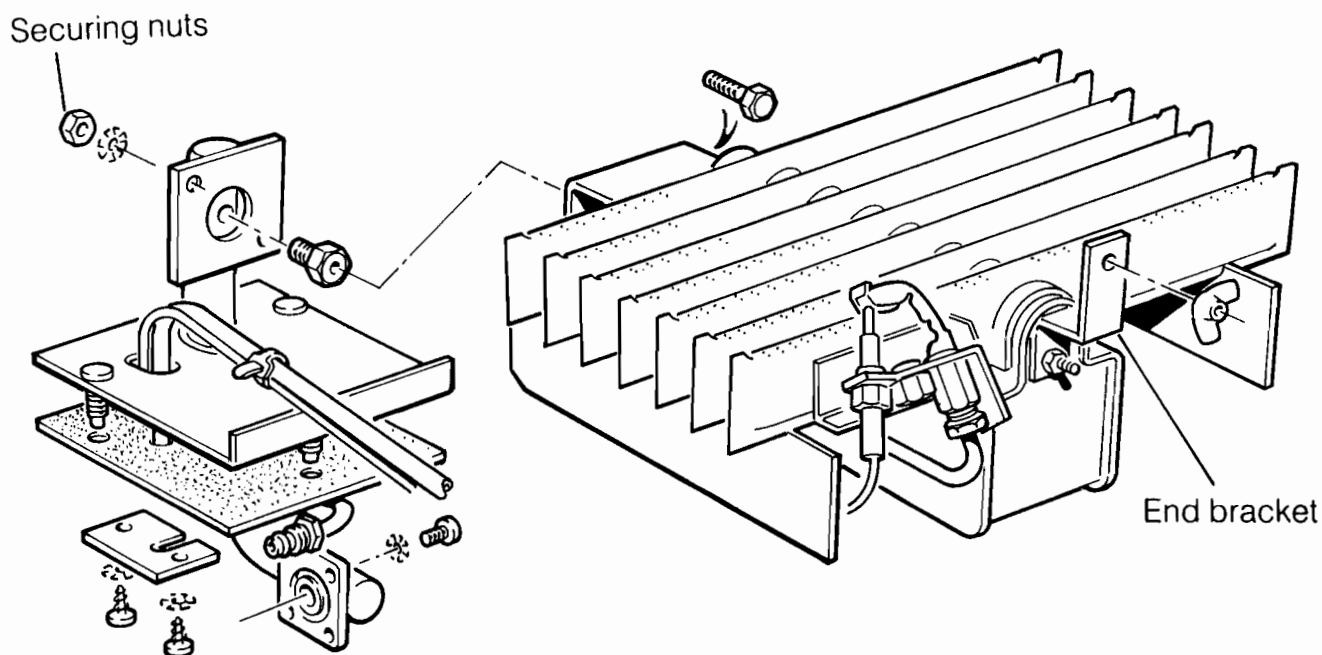


SERVICING

COMPONENT REPLACEMENT

18. MAIN BURNER - REPLACEMENT

1. Remove the burner and controls assembly - Refer to Frames 4-7.
2. Remove the pilot burner assembly - Refer to Frame 16.
3. Remove the two nuts and washers securing the burner to the manifold and withdraw the burner.
4. Transfer the burner end bracket to the new burner.
5. Fit the new burner and re-assemble in reverse order.

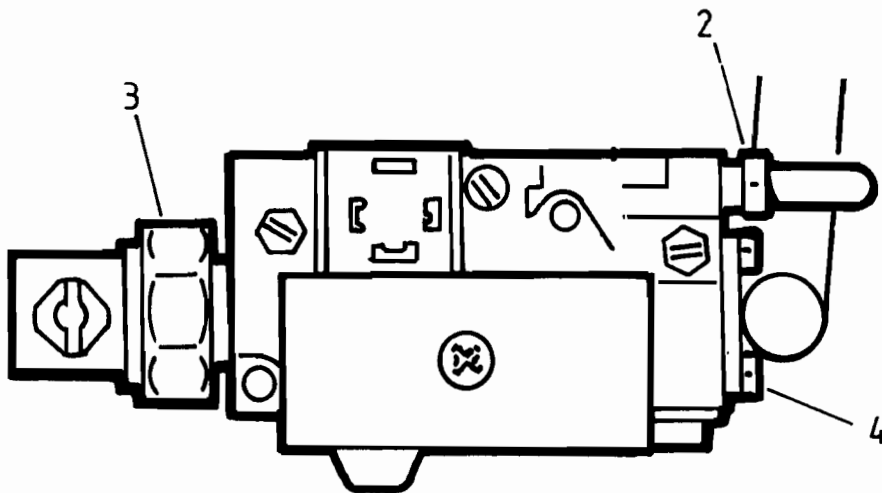


SERVICING

COMPONENT REPLACEMENT

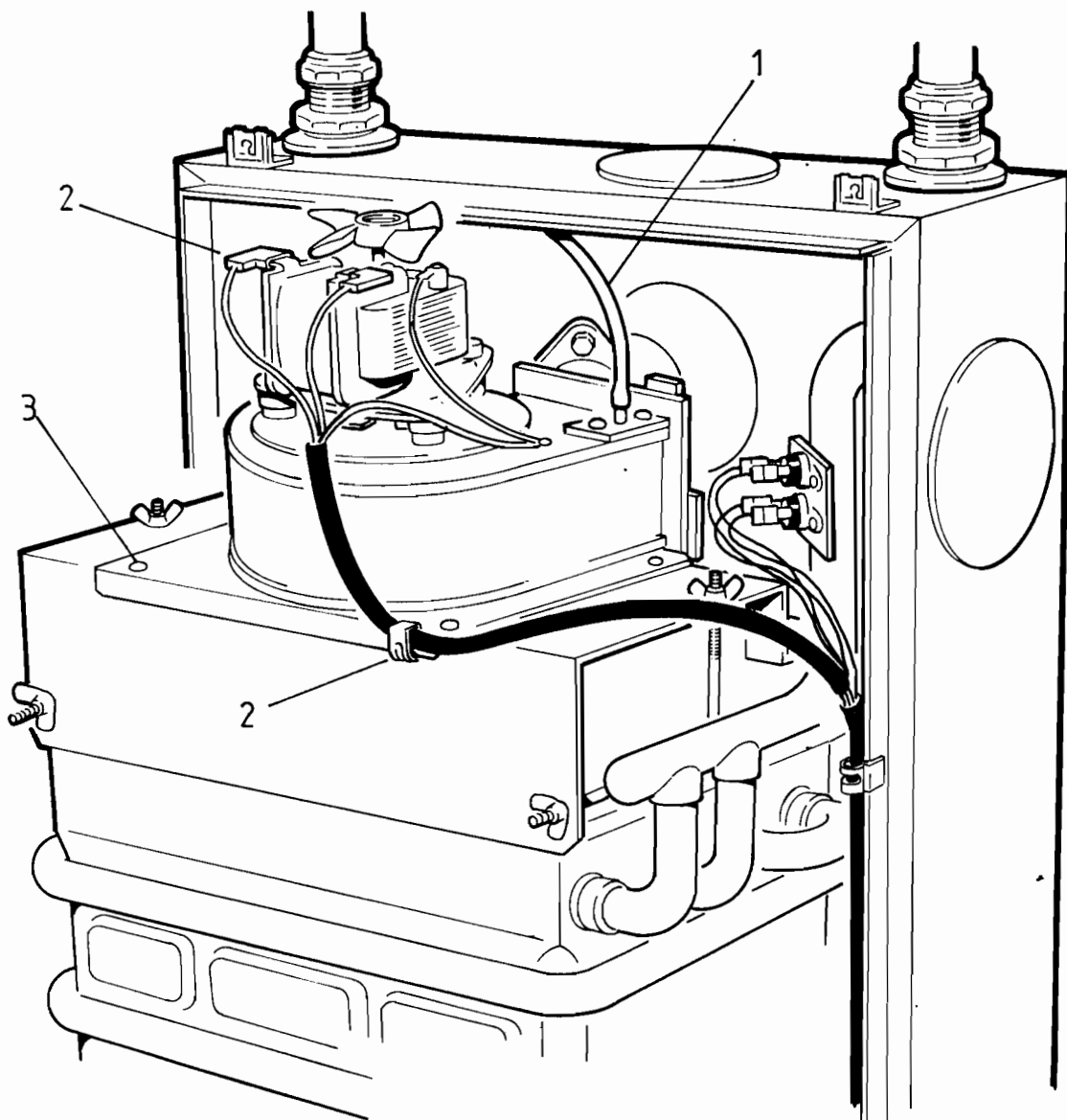
19. GAS VALVE - REPLACEMENT

1. Remove the burner and controls assembly - Refer to Frame 4-7.
2. Undo the pilot supply connection at the gas valve.
3. Undo the gas cock half union from the gas valve. Transfer the gas service cock union to the new valve using an approved jointing compound.
4. Undo the four securing screws and washers and withdraw the valve.
5. Fit the new gas valve ensuring that:
 - (a) The valve is fitted the right way round; an arrow engraved on the valve indicates the direction of flow.
 - (b) The sealing 'O' ring supplied with the valve is correctly fitted at the outlet flange.
6. Re-assemble in reverse order.



20. FAN UNIT - REPLACEMENT

1. Disconnect the pressure sensing tube from the fan.
2. Disconnect the fan electrical connections and unclip the harness from the fan mounting plate.
3. Remove the four screws and washers securing the fan assembly to the top of the collector hood.
4. Slide the fan assembly clear of the boiler disengaging the fan outlet elbow from the flue.
5. Re-fit the new fan assembly in reverse order.

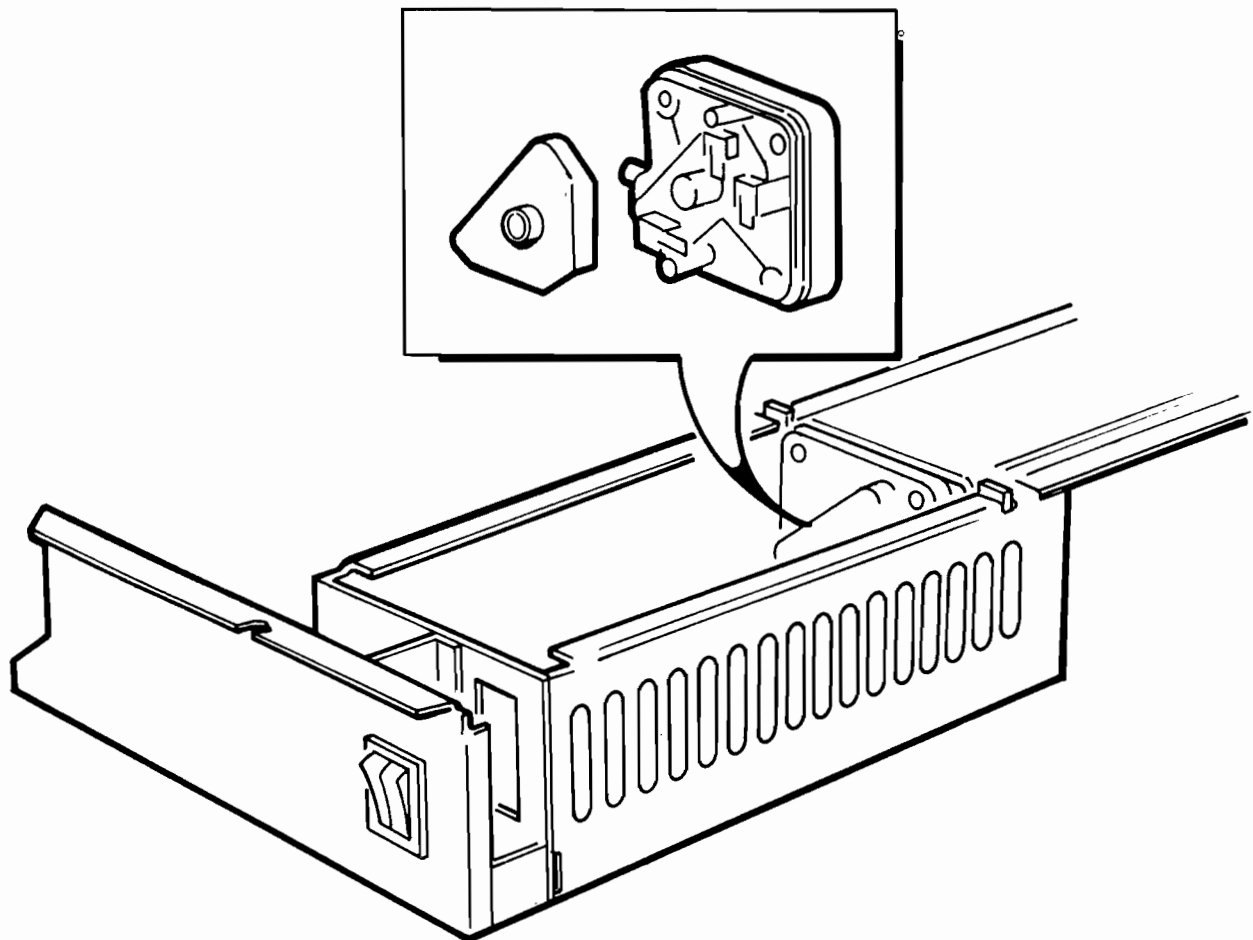


SERVICING

COMPONENT REPLACEMENT

21. PRESSURE SWITCH - REPLACEMENT

1. Lift the front of the control box slightly and slide forward until the retention tabs locate in the slots on the runners.
2. Pull of pressure sensing tubes off the pressure switch.
3. Pull off pressure switch connector at the printed circuit boards (marked 3, 4, & 5).
4. Remove the pressure switch (2 screws) and transfer the lead to the new pressure switch. Ensure electrical connections are correctly re-made.
5. Refit the new pressure switch and reconnect the leads to the P.C.B.
6. Reconnect the sensing tubes to the correct tapping (positive-positive- / negative - negative)
7. Re-assemble in reverse order.



SERVICING

COMPONENT REPLACEMENT

22. HEAT EXCHANGER - REPLACEMENT

IMPORTANT Before starting the removal procedure protect the gas and electrical controls with a waterproof sheet or similar.

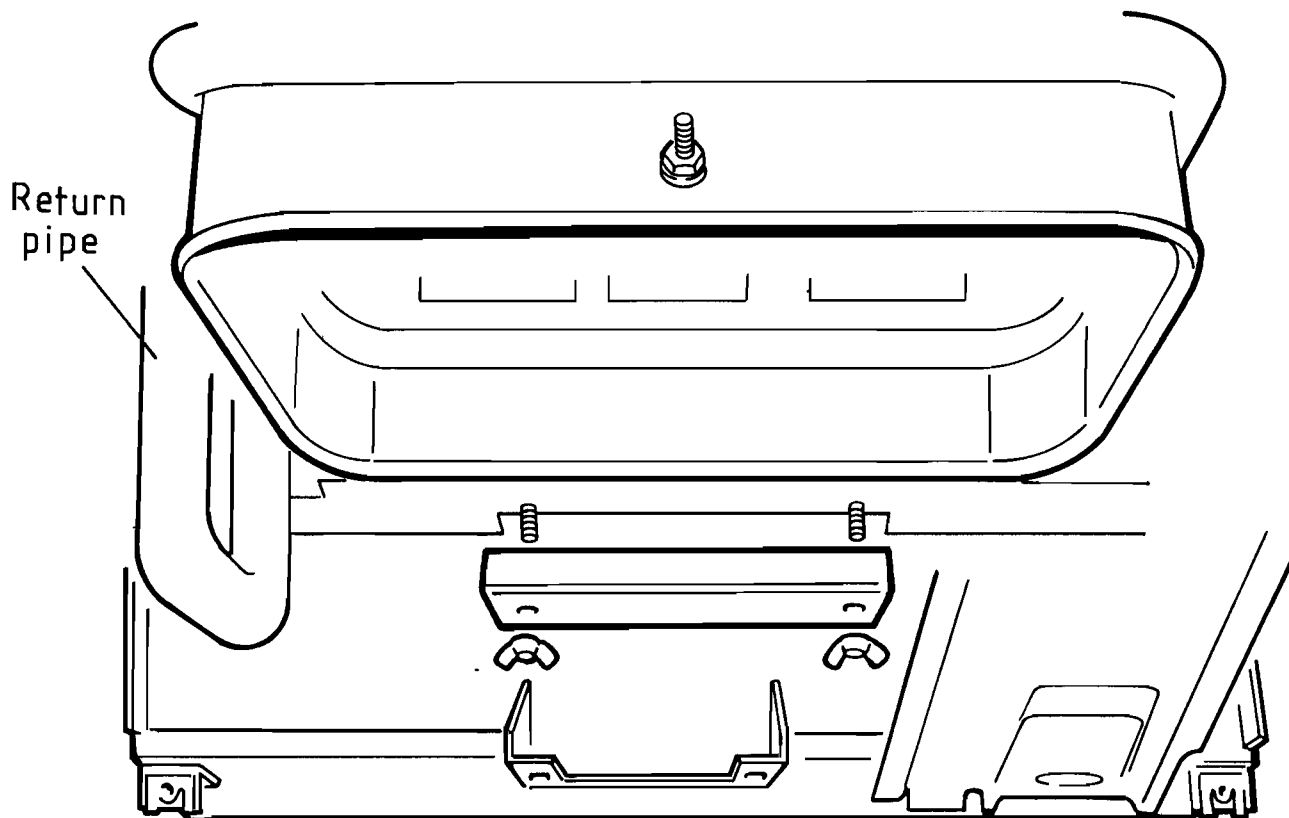
1. Drain down the system and heat exchanger.
2. Remove the fan assembly - Refer to Frame 9.
3. Remove the burner and controls assembly - Refer to Frames 4-7.
4. Remove the flue collector hood - Refer to Frame 10.
5. Remove all three thermostats and securing screws and clamps. Refer to Frames 14-15.

SERVICING

COMPONENT REPLACEMENT

23. HEAT EXCHANGER - REPLACEMENT Continued

6. Undo the two wing nuts & remove the retaining bracket.
7. Disconnect the boiler flow and return fittings and remove the back nuts.
8. Remove the two M5 screws in the top of the back panel and remove the pipe retention plates (80 NF only).
9. Withdraw the heat exchanger swinging forwards at the bottom, downwards and outwards.
10. Fit the new heat exchanger in reverse order.

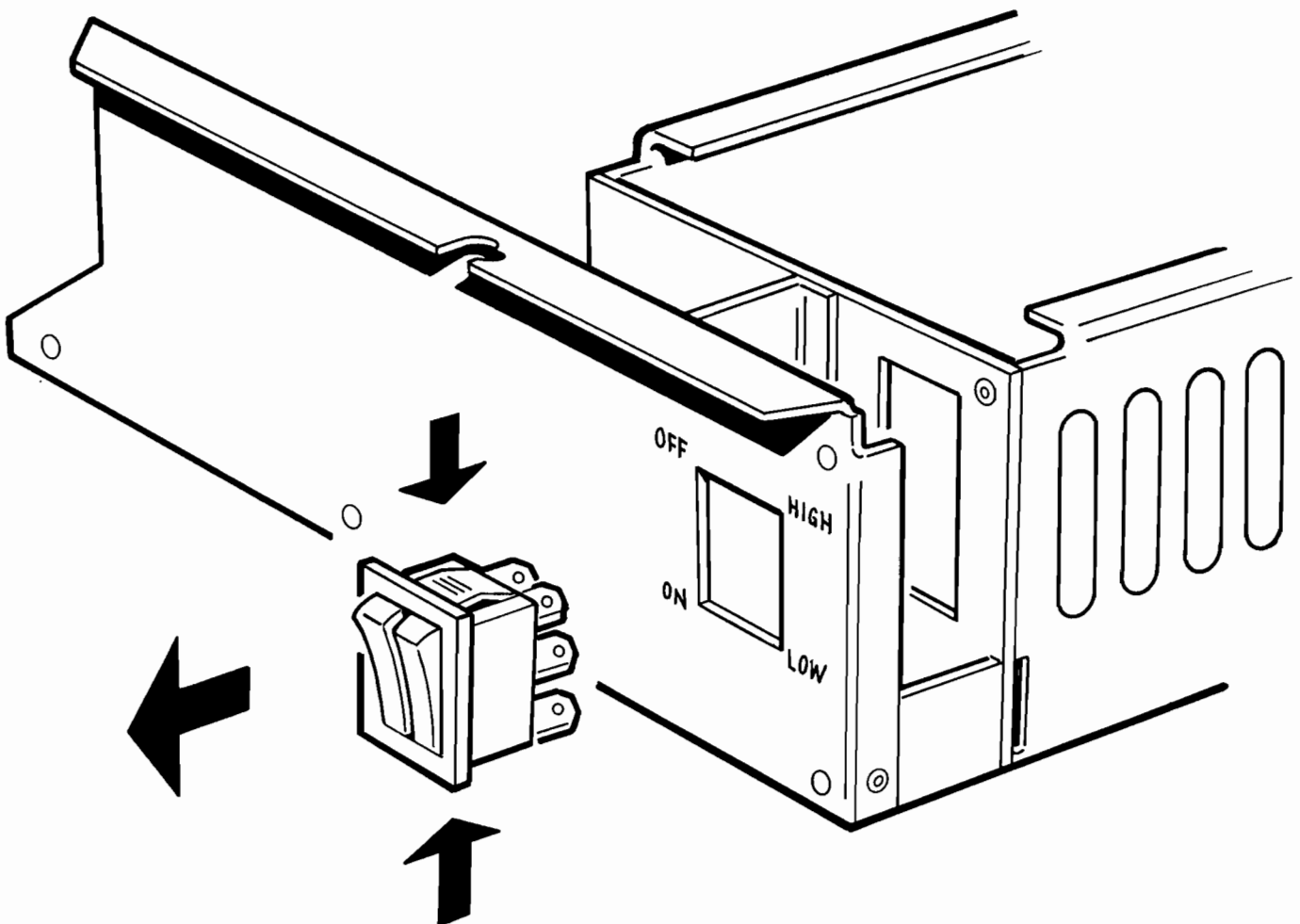


SERVICING

COMPONENT REPLACEMENT

24. THERMOSTAT SWITCH - REPLACEMENT

1. Lift the front of the controls box and slide forward slightly.
2. Disconnect leads from switch.
3. Compress the retaining clips and prise defective switch out.
4. Fit the new switch and re-assemble in reverse order.
Ensure that:-
 - (a) The switch is correct way up neon to left side.
 - (b) All electrical connections are correctly re-made.

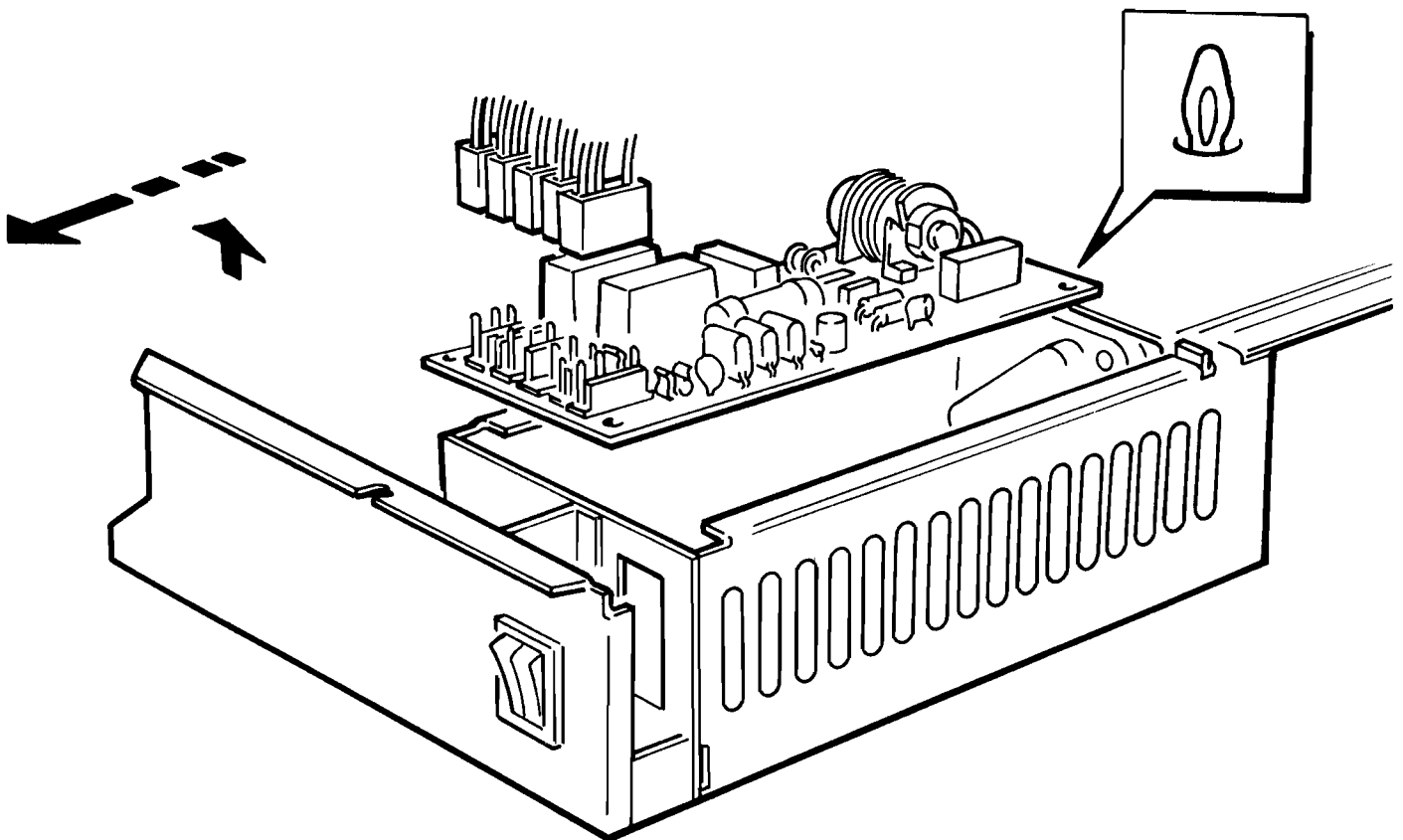


SERVICING

COMPONENT REPLACEMENT

25. AUTOMATIC IGNITION PCB - REPLACEMENT

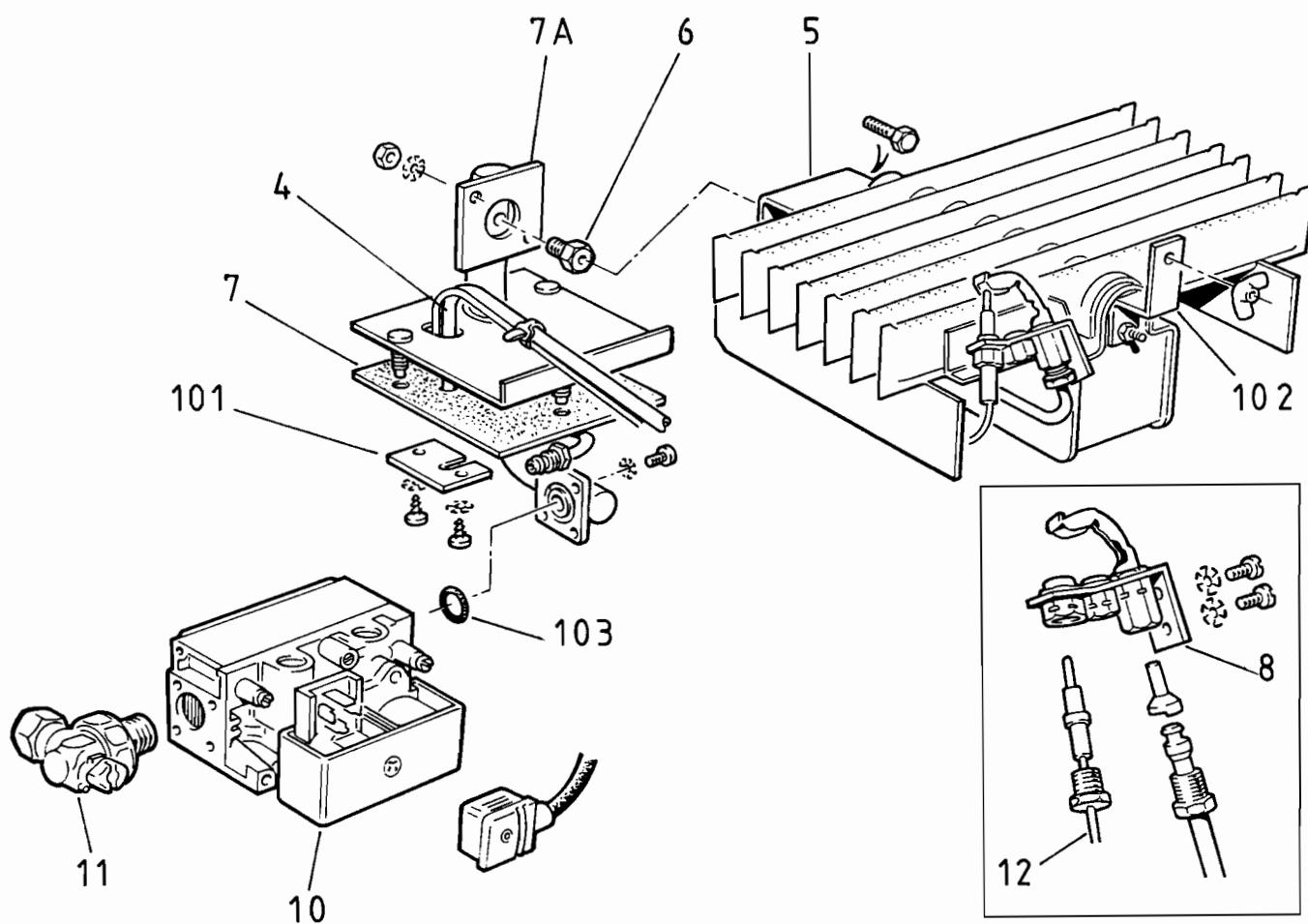
1. Lift the front of the box slightly and slide forward until the retention tabs locate in the slots on the runners.
2. Disconnect the ignition/detection lead.
3. Disconnect the five plug-in leads.
4. Disengage the P.C.B. by compressing the 4 mounting pegs with pliers.
5. Fit the new P.C.B. and re-assemble in reverse order.



SERVICING

EXPLODED VIEWS

26. BURNER ASSEMBLY



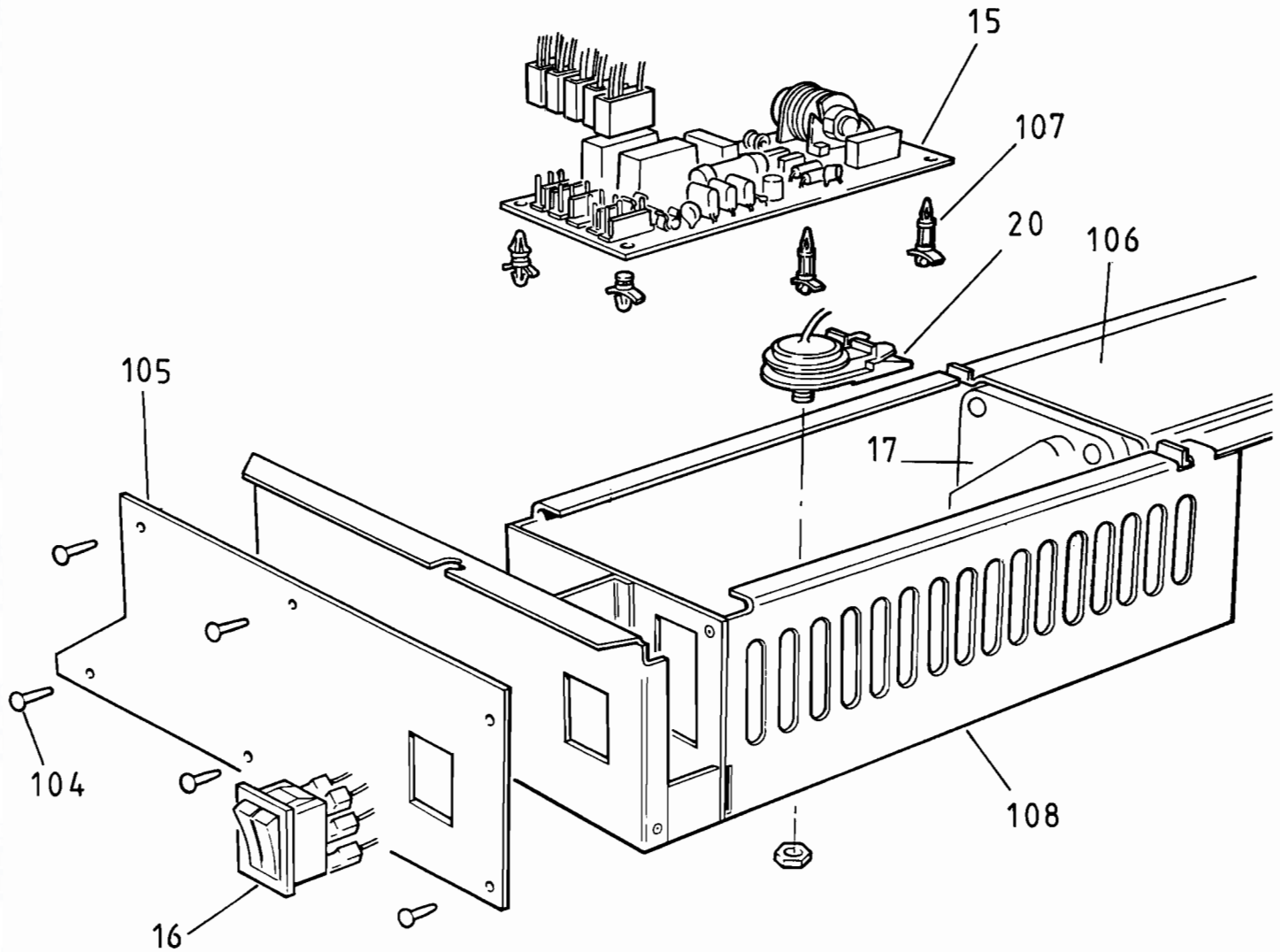
LEGEND

4	Pilot supply	10	Gas control valve
5	Main burner	11	Gas service cock
6	Burner injector	12	Ignition/detection electrode & lead assembly
7	Manifold sealing gasket	101	Manifold sealing plate
7A	Gas inlet manifold	102	Burner end bracket
8	Pilot burner	103	'O' ring seal

SERVICING

27. CONTROL BOX ASSEMBLY

EXPLODED VIEWS



LEGEND

15	Automatic ignition printed circuit board	105	Fascia
16	Thermostat selector/on-off switch	106	Control box support bracket
17	Pressure switch	107	Printed circuit board mounting pegs
20	Overheat thermostat	108	Control box
104	Fascia pins		

SERVICING

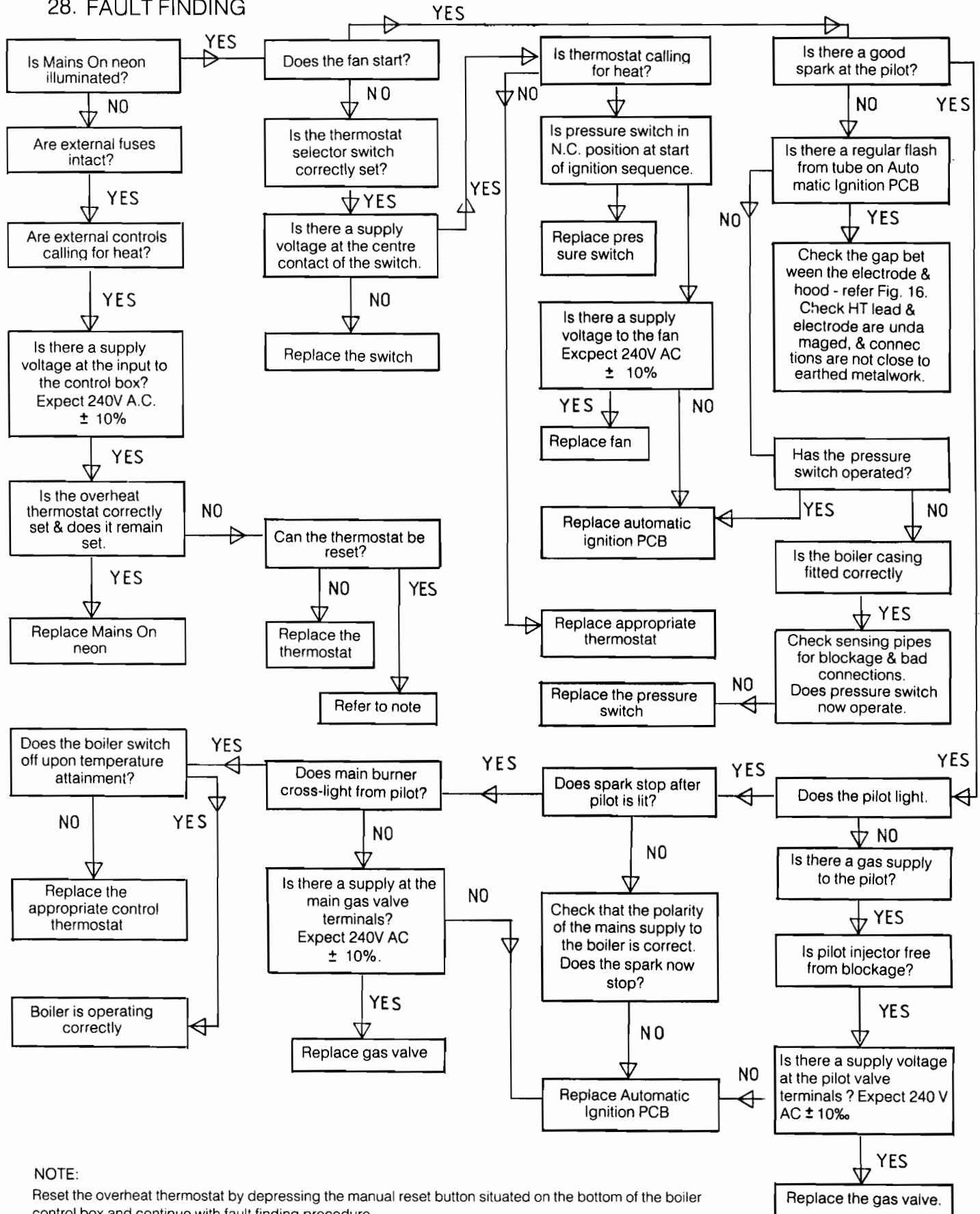
FAULT FINDING

Start from cold and set thermostat selector switch to either 'HIGH' or 'LOW'.

Before attempting any electrical fault finding, ALWAYS carry out the preliminary electrical system checks as detailed in the Instructions to the British Gas Multimeter, or similar test meter.

Detailed instructions on the replacement of faulty components are contained in the servicing section of this publication.

28. FAULT FINDING



SPARES

PARTS LIST

SHORT LIST OF PARTS

IDEAL ELAN 30 NF, 40 NF, 50 NF, 60 NF and 80 NF GAS BOILERS When ordering please quote:

1. Boiler model. 2. Appliance G.C. number. 3. Description. 4. Maker's part number. 5. Quantity.

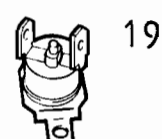
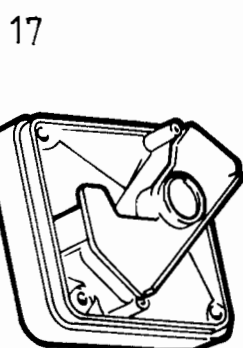
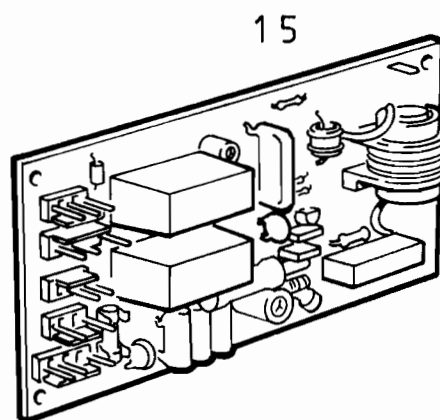
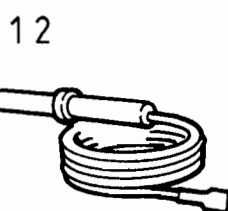
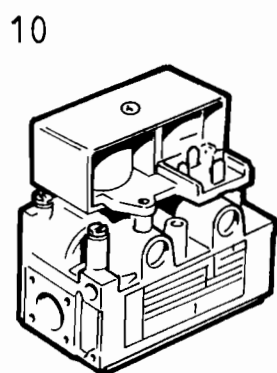
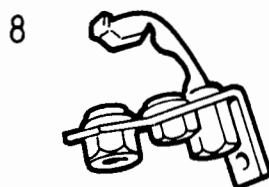
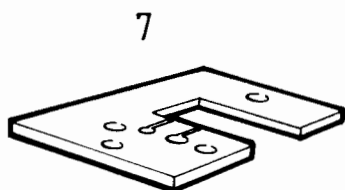
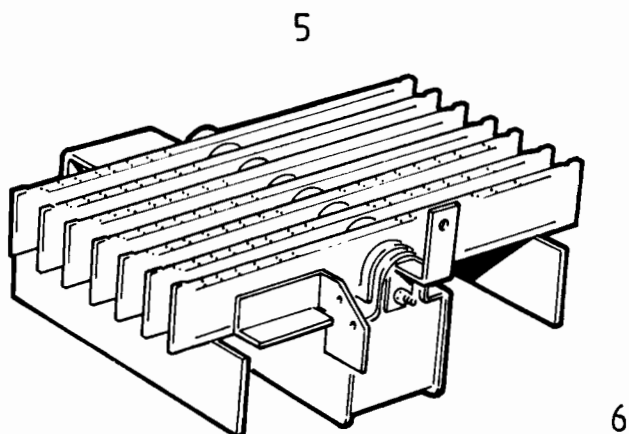
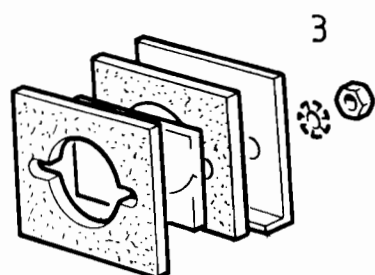
The following list comprises parts commonly required as replacement components due to damage, expendability, or such that failure or absence is likely to affect the safety or performance of the appliance. The list is extracted from the British Gas List of Parts, which contains all available spare parts.

Details of the British Gas Lists are held by Gas Regions, STELRAD Distributors and by merchants.

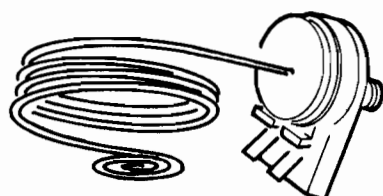
Key No	G.C. Part No	Description	No off	Maker's part no
3	319 493	Sightglass assembly kit	1	160 079 333
5		Main burner, FURIGAS Type R		
	308 030	No. 118 500 077. Ideal Elan 2 30 NF and 40 NF	1	189 936 065
	308 031	No. 118 500 078. Ideal Elan 2 50 NF and 60 NF	1	189 956 065
	308 032	No. 118 500 079. Ideal Elan 2 80 NF	1	189 986 065
6		Main burner injector		
	398 315	BRAY Cat. 16 size 750. Ideal Elan 2 30 NF	1	169 110 435
	398 339	BRAY Cat. 16 size 1100. Ideal Elan 2 40 NF	1	129 298 736
	398329	BRAY Cat. 16 size 1400. Ideal Elan 2 50 NF	1	189746060
	398 332	BRAY Cat 16 Size 1700-Ideal Elan 2 -60NF	1	189 456 061
	398 066	BRAY Cat. 10 size 2400. Ideal Elan 2 80 NF	1	199 256 060
7	319 027	Burner mounting plate gasket	1	189 946 074
8	308 035	Pilot burner, S.I.T. 0140 020 complete with injector	1	589 930 084
9	386 673	Pilot burner injector, S.I.T. N.G. 0977 142 (stamped 33)	1	589 930 083
10	386 674	1/2 in. BSP. Gas control valve, S.I.T. 830 Tandem 0830 020	1	586 931 900
12	386 685	Spark electrode, S.I.T. 0007 227 complete with integral spark lead	1	589 930 088
15	319 035	Automatic ignition PCB., PACTROL No. 7A	1	589250068
16	386 651	Thermostat selector switch, ARCOLECTRIC No. C 1403 F / C1410 FA	1	589 930 058
17	386 652	Pressure switch, DUNGS LGW 3A1 (0.6 mbar)	1	589930059
18	392 921	Thermostat - HIGH setting, ELMWOOD 2455R 821 4	1	589 730 056
19	392932	Thermostat - LOW setting, ELMWOOD 2455 R 821 3	1	589 730 057
20	386 675	Overheat thermostat, RANCO LM7	1	589930056
21	386 686	Fan assembly. S.E.L. No. RL 108/ 3030 LH or SIFAN No. FFB 0224-004	1	589935011
			1	589 935 012
26		Boiler casing assembly - white stove enamel complete with removable bottom panel (less removable glass fascia) lighting instructions label, dimple foil insulation, sealing gasket & 4 fixing screws/retaining washers.		
	308 048	Ideal Elan 2 30 NF, 40 NF, 50 NF and 60 NF	1	189 934 031
	308 049	Ideal Elan 2 80 NF	1	189 984 031
27		Controls casing bottom panel with Lighting Instruction label & two fixing screws.		
	308 050	Ideal Elan 2 30 NF, 40 NF, 50 NF and 60 NF		189 930 087
	308051	Ideal Elan 2 80 NF		189 980 087
28		Glass fascia		
	308 053	Ideal Elan 2 30 NF, 40 NF, 50 NF and 60 NF	1	189 932 082
	308 056	Ideal Elan 2 80 NF	1	189 982 082
30		Casing seal		
	308 058	Ideal Elan 2 30 NF, 40 NF, 50 NF and 60 NF	1	189 934 034
	308 059	Ideal Elan 2 80 NF	1	189 984 034

SPARES

PARTS LIST



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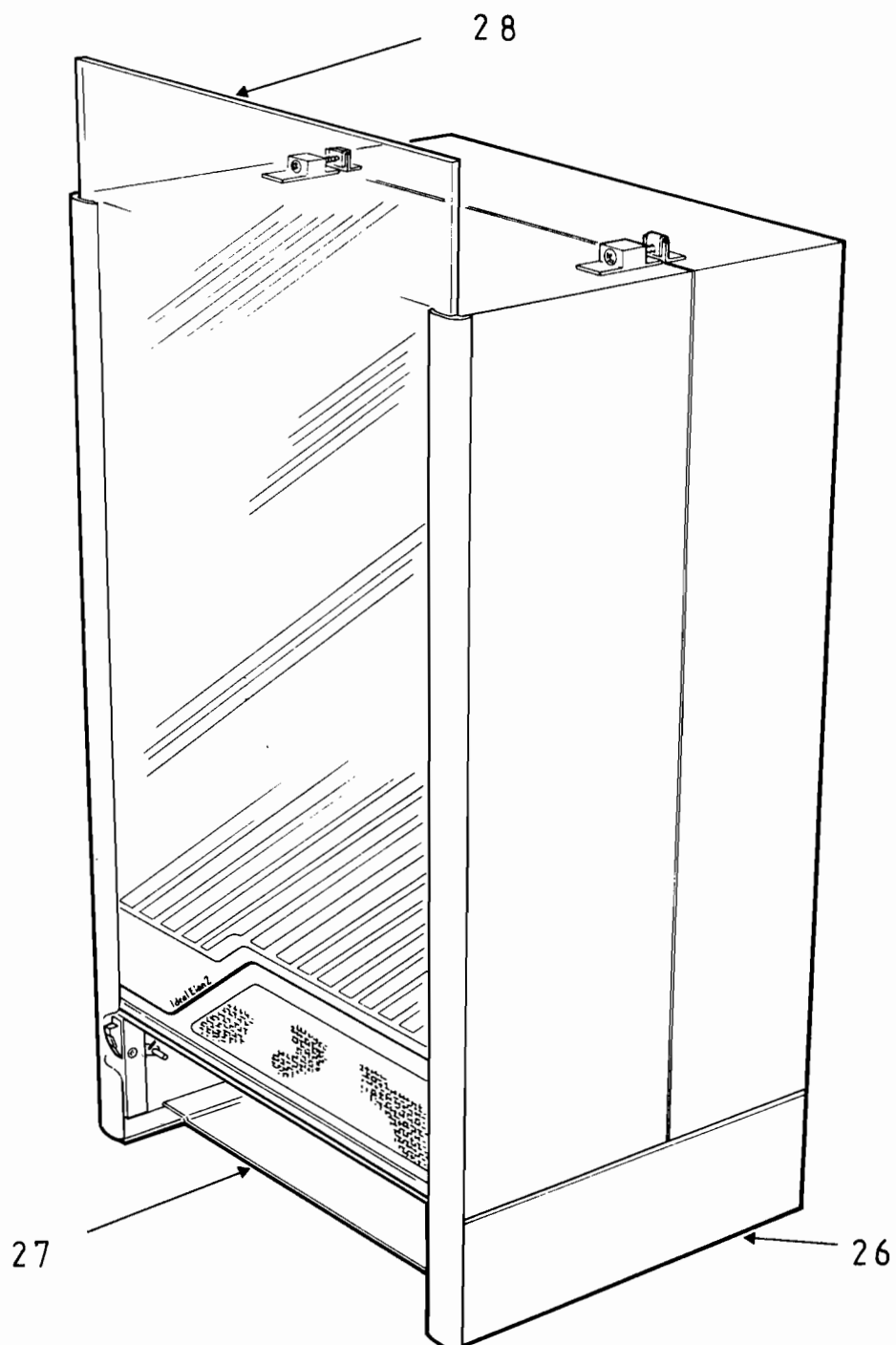


21



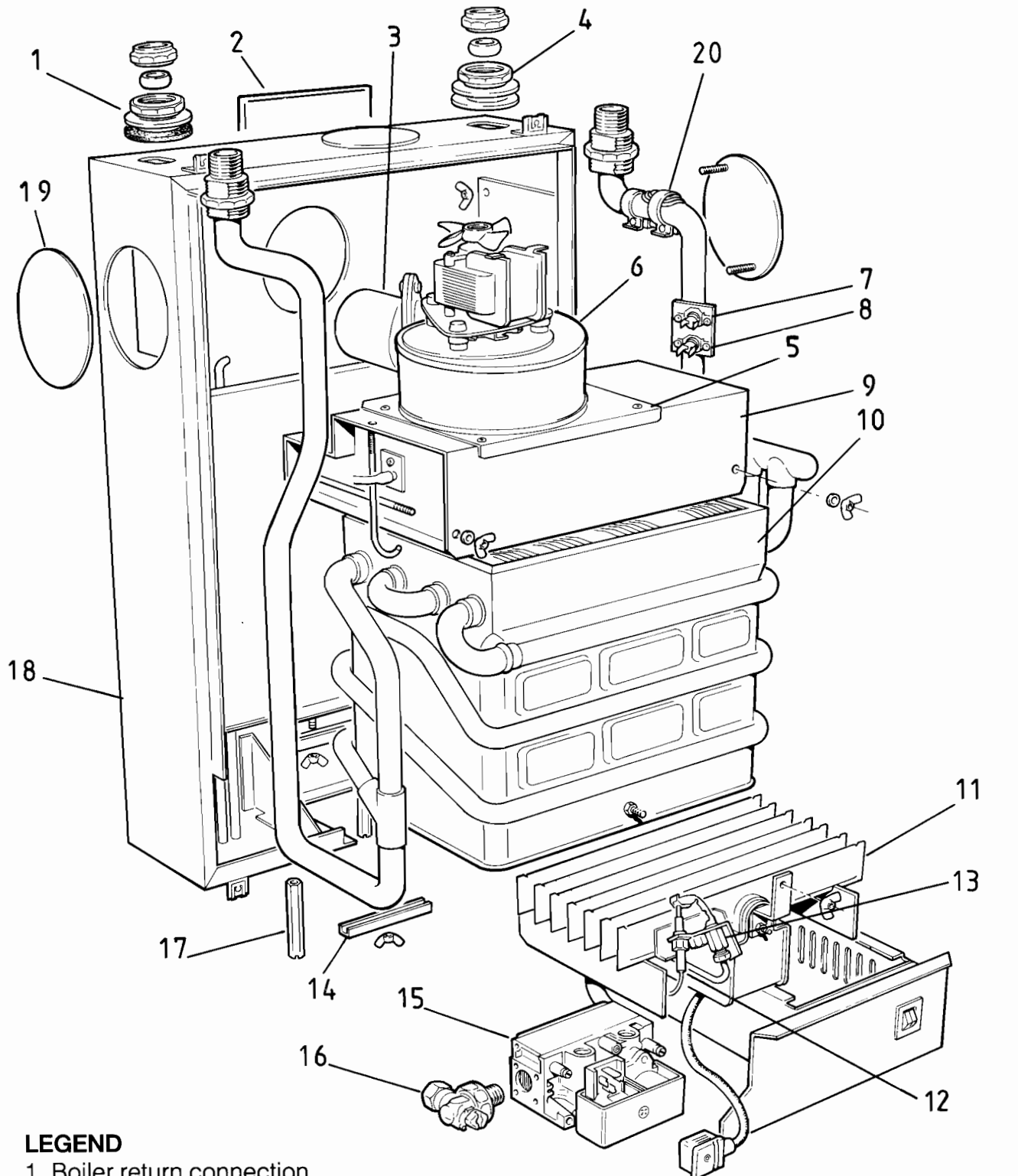
SPARES

CASING ASSEMBLY



EXPLODED VIEWS

BOILER ASSEMBLY



LEGEND

- 1 Boiler return connection
- 2 Wall mounting plate
- 3 Flue outlet elbow
- 4 Boiler flow connection
- 5 Fan mounting plate
- 6 Fan
- 7 'High' control thermostat
- 8 'Low' control thermostat
- 9 Collector hood
- 10 Heat exchanger

- 11 Main burner
- 12 Spark electrode
- 13 Pilot burner
- 14 Burner manifold clamping bracket
- 15 Gas control valve
- 16 Gas service cock
- 17 Burner manifold securing nuts (2)
- 18 Back panel assembly
- 19 Side flue outlet blanking plate (LHS)
- 20 Overheat thermostat



**THIS SYMBOL IS YOUR
ASSURANCE OF QUALITY**

These appliances are designed for use with Natural Gas only. They have been tested and conform with the provisions of BS. 6332 & BS. 5258.

Products bearing this Kitemark are made to a safety and performance standard under a stringent scheme of supervision and control monitored by the British Standards Institute.

STELRAD GROUP pursues a policy of continuing improvement in the design and performance of its products. The right is therefore, reserved to vary specification without notice.

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