

IDEAL**ELAN 2, 40F, 50F, 60F & 80F****Wall Mounted, Balanced Flue,
Fanned, Gas Boilers****Installation & Servicing****CAUTION:**

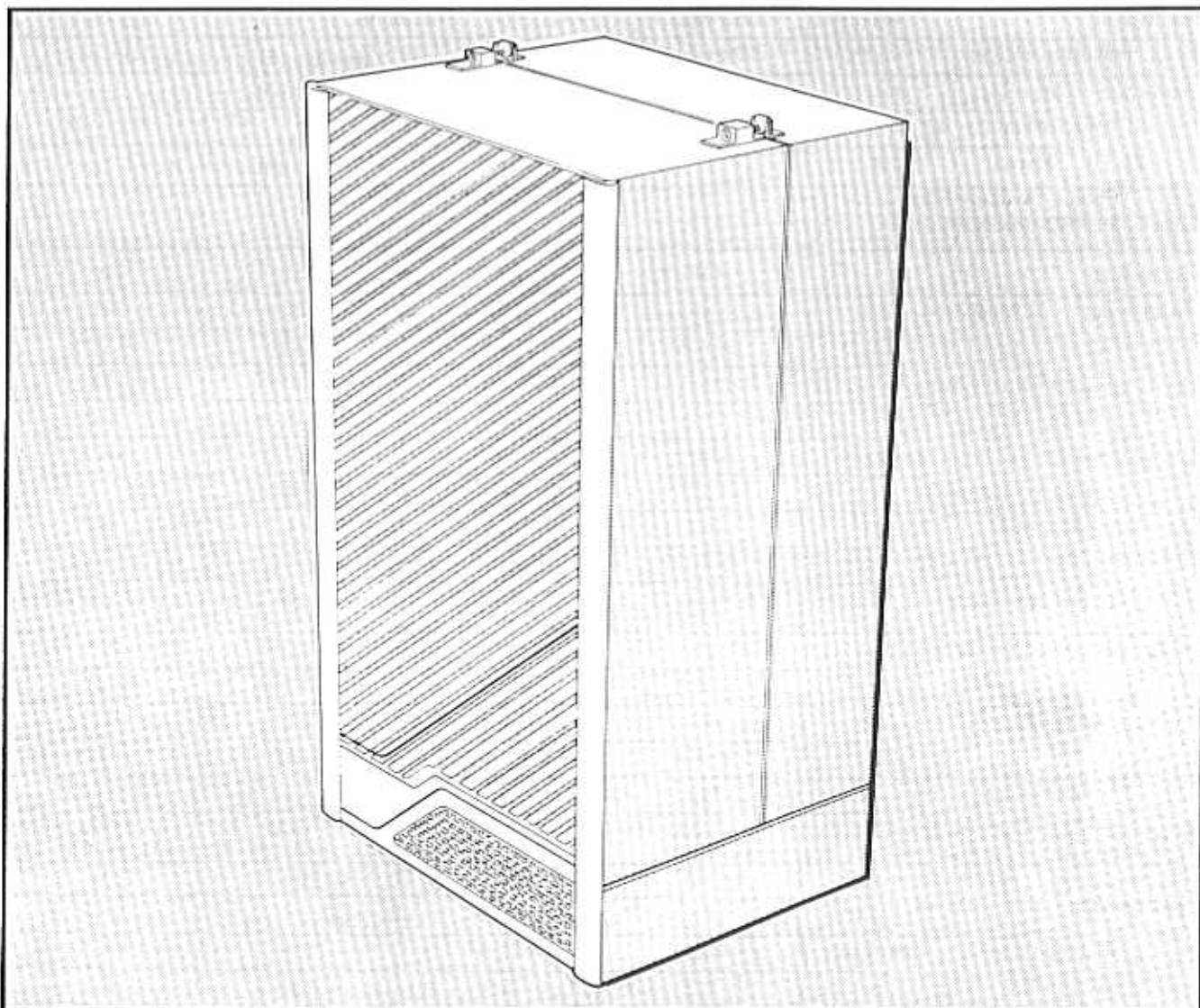
To avoid the possibility of injury during the installation, servicing or cleaning of this appliance, care should be taken when handling the edges of sheet steel components.

IMPORTANT: These appliances are for use with
NATURAL GAS ONLY.

Appliance**G.C. Number**

Ideal ELAN 2	40 F	41 415 62
Ideal ELAN 2	50 F	41 415 72
Ideal ELAN 2	60 F	41 415 61
Ideal ELAN 2	80 F	41 415 60

Note: The appliances covered by this book are fitted with "Honeywell" gas control valves



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

STELRAD
GROUP

Table 1 - GENERAL DATA

Boiler Size		40F	50F	60F	80F
Main Burner		FURIGAS - Type 'R' No.118 500 025	FURIGAS - Type 'R' No.118 500 025		FURIGAS - Type 'R' No.118 500 027
Gas Control Valve		1/2in BSP HONEYWELL- VR 4700E 1018 240V			
Burner Injector		Bray 10 1200	Bray 10 1400	Bray 10 1800	Bray 10 2400
Pilot Injector		HONEYWELL 56/42A			
Gas Supply Connection in BSP/ft		Rc 1/2 1/2			
Flow Connection Return Connection <i>Compression fittings</i>		22mm OD Copper 22 mm OD Copper			28 mm OD Copper 28 mm OD Copper
MAXIMUM Static Water Head m ft		30.5 100			
MINIMUM Static Water Head m ft		0.45 1.5			
Electrical Supply		240 V, 50 Hz. ~			
External Fuse Rating		3 A			
Water Content Litre (gal)		1.0 (0.22)	1.2 (0.27)		1.5 (0.33)
Dry Weight kg (lb)		26.3 (58.0)	27.5 (60.6)		35.0 (77.2)
MAX. Installation Weight kg (lb)		16.0 (35.3)	17.2 (37.9)		22.9 (50.5)
Boiler Size Height mm (in)		700 (27.5)			
Width mm (in)		380 (15)			465 (18)
Depth mm (in)		300 (12)			

Table 2 - PERFORMANCE DATA

Boiler Size			40F	50F	60F	80F
Boiler Input	MINIMUM	kW	7.9	14.9	18.5	22.5
		Btu/h	26 800	51 000	63 300	77 000
Gas Consumption	MID	l/s (ft ³ /h)	0.20 (25.8)	0.39 (49.1)	0.48 (61.0)	0.58 (74.2)
		kW	11.4	16.7	20.3	25.9
Gas Consumption	MAXIMUM	Btu/h	38900	57000	69200	88600
		l/s (ft ³ /h)	0.29 (37.5)	0.43 (54.9)	0.52 (66.7)	0.67 (85.4)
Gas Consumption	MAXIMUM	kW	14.7	18.4	22.0	29.3
		Btu/h	50 000	62 900	75 000	100 000
Gas Consumption	MAXIMUM	l/s (ft ³ /h)	0.38 (48.2)	0.48 (60.6)	0.57 (72.3)	0.76 (96.3)
		Boiler Output to water	MINIMUM	kW	5.9	11.7
Btu/h	20 000			40 000	50 000	60 000
MID	MID	kW	8.8	13.2	16.1	20.5
		Btu/h	30 000	45 000	55 000	70 000
MAXIMUM	MAXIMUM	kW	11.7	14.7	17.6	23.4
		Btu/h	40 000	50 000	60 000	80 000
Burner Setting Pressure (Hot)	MINIMUM	mbar	5.0	10.4	10.5	9.0
		in.w.g.	2.0	4.2	4.2	3.6
MID	MID	mbar	9.2	12.5	12.2	12.1
		in.w.g.	3.7	5.0	4.9	4.9
MAXIMUM	MAXIMUM	mbar	13.0	14.9	14.3	14.5
		in.w.g.	5.2	6.0	5.7	5.8

Notes:

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

GENERAL GUIDANCE

INTRODUCTION

The Ideal Elan 40F, 50F, 60F and 80F are fully automatically controlled, wall mounted, low water content, balanced flue fanned gas boilers. They are range rated to provide central heating outputs of 5.9kW (20 000 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 114 mm (4 1/2 in) to 406 mm (16 in).

Optional extension duct kits up to 610 mm (24 in) (rear or side outlet) and up to 2 m (79 in) (side outlet ONLY) are available.

A further optional kit is required for installation from inside the building.

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, 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.

CP.331.3	Low pressure installation pipes.
BS.5376.2	Boilers of rated input not exceeding 60 kW.
BS.5449.1	Forced circulation hot water systems (small bore and microbore domestic central heating systems).
BS.5546	Installation of gas hot water supplies 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 60 kW).

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 by these 'Installation and servicing Instructions' or otherwise recommended by Stelrad Group Ltd., in writing.

If in doubt please enquire.

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.

GAS SUPPLY- FLUING

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.5376.2 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 cupboard installations, are given in BS.5376.2.

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 CP.331.3.

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 Code.

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.
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: Quinell, Barret & Quinell Ltd, 884 Old Kent Road, London SE15, and from Tower Flue Components Ltd., Vale Rise, Tonbridge, Kent. TN9 1TB.
5. Where the terminal is fitted within 850 mm (34 in) of a plastic or painted gutter, or 450 mm (18 in) of painted eaves, an aluminium shield - at least 750 mm (30 in) long should be fitted to the underside of the gutter or painted surface.

GENERAL GUIDANCE

6. The air inlet/ products outlet duct and the terminal of the boiler MUST be NOT closer than 25 mm (1 in) to combustible material.

Detailed recommendations on protection of combustible material are given in BS.5440:1 1978, subclause 20.1.

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 air 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 an openable window, air vent or any other ventilation opening.	300 mm (12 in)
2. Below guttering, drain pipes or soil pipes	75 mm (3 in)
3. Below eaves, balconies or car port roof	200 mm (8 in)
4. Above adjacent ground, roof or balcony level	300 mm (12 in)
5. From vertical drain pipes or soil pipes	75 mm (3 in)
6. From internal or external corners	300 mm (12 in)
7. From a surface facing the terminal.	600 mm (24 in)
8. From a terminal facing the terminal.	1200 mm (48 in)
9. From an opening in the car port (e.g. door, window) into dwelling	1200 mm (48 in)
10. Vertically from a terminal on the same wall.	1500 mm (60 in)
11. Horizontally from a terminal on the same wall.	300 mm (12 in)

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:-

- It is NOT necessary to have a purpose provided air vent in the room or internal space in which the boiler is installed.
- 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 related to the maximum rated heat input of the boiler.

Table 4:- 40F

Position of air vent	Air from room/ internal space	Air direct from outside
HIGH LEVEL cm ² (in ²)	133 (21)	67 (11)
LOW LEVEL cm ² (in ²)	133 (21)	67 (11)

FLUING- VENTILATION

Table 5:- 50F

Position of air vent	Air from room/ internal space	Air direct from outside
HIGH LEVEL cm ² (in ²)	166 (26)	83 (13)
LOW LEVEL cm ² (in ²)	166 (26)	83 (13)

Table 6:- 60F

Position of air vent	Air from room/ internal space	Air direct from outside
HIGH LEVEL cm ² (in ²)	200 (30)	100 (15)
LOW LEVEL cm ² (in ²)	200 (30)	100 (15)

Table 7:- 80F

Position of air vent	Air from room/ internal space	Air direct from outside
HIGH LEVEL cm ² (in ²)	264 (40)	132 (20)
LOW LEVEL cm ² (in ²)	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.53776.2 and, in addition, for Smallbore and Microbore systems, - BS.5449.1. The domestic hot water system, if applicable, should be in accordance with the relevant recommendations of 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 7 in. 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 8.

Table 8:- WATER FLOW RATE & PRESSURE LOSS

Boiler size		40F	50F	60F	80F
Boiler Output	kW	11.7	14.7	17.7	23.4
	Btu/h	40 000	50 000	60 000	80 000
Water Flow Rate	l/min	15.2	19.0	22.8	30.3
	gal/h	200	250	300	400
Pressure Loss	mpa	45	70	102	92
	in.w.g.	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.

GENERAL GUIDANCE

ELECTRICAL SUPPLY, (Continued)

The boiler is supplied for 240V, 50Hz, ~ Single Phase
Fuse rating is 3 A.

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

Alternatively a fused double pole switch, having a 3 mm (1/8")

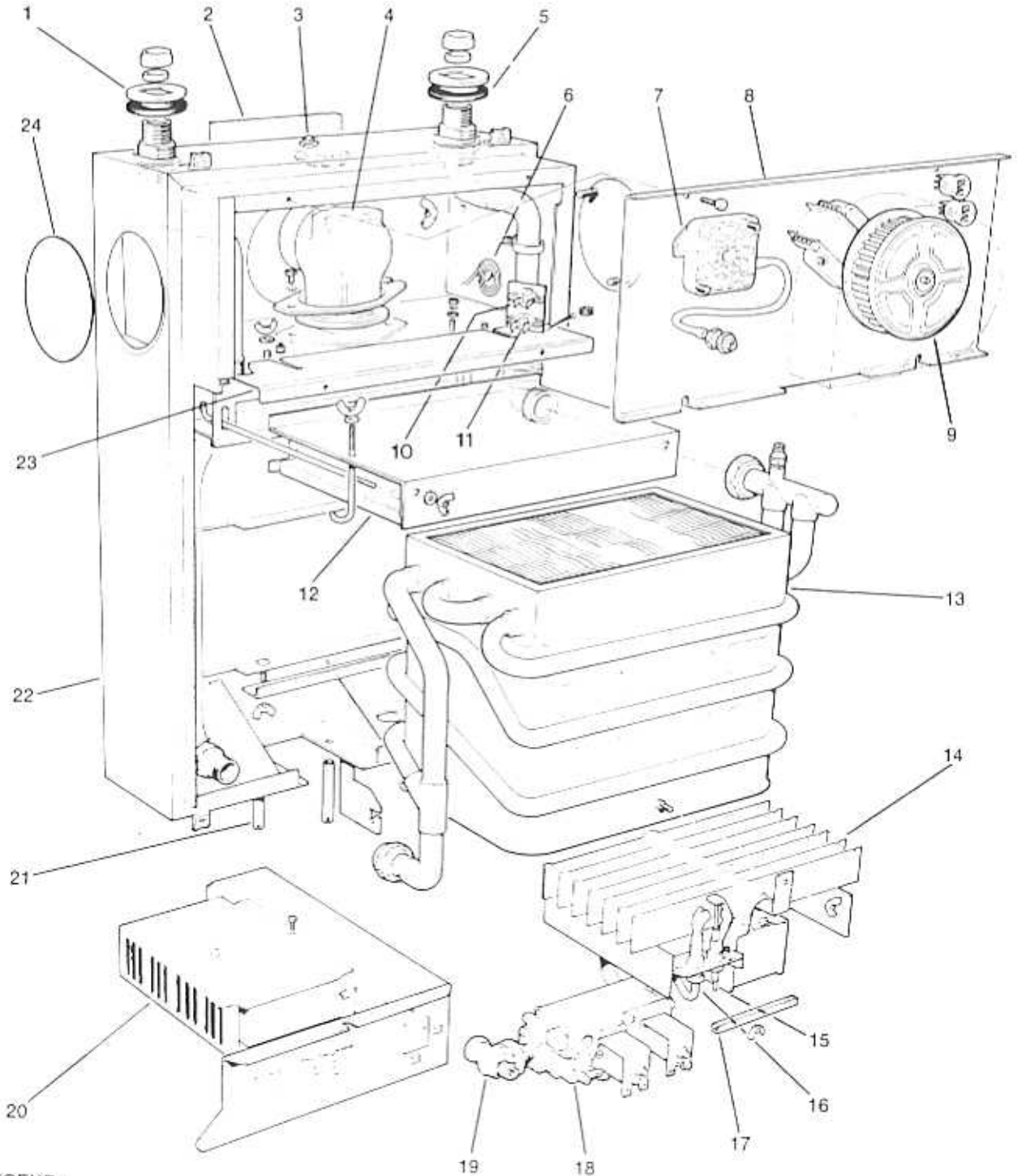
ELECTRICAL SUPPLY- BOILER ASSEMBLY

in) 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

BOILER ASSEMBLY- Exploded View



LEGEND:-

- | | | |
|------------------------------------|------------------------------|--|
| 1 Boiler return connection | 9 Fan | 17 Burner manifold clamping bracket |
| 2 Wall mounting plate | 10 'HIGH' control thermostat | 18 Gas control valve |
| 3 Overheat thermostat reset button | 11 'LOW' control thermostat | 19 Gas service cock |
| 4 Flue outlet elbow | 12 Collector hood | 20 Control box |
| 5 Boiler flow connection | 13 Heat exchanger | 21 Burner manifold securing nuts (2 off) |
| 6 Overheat thermostat sensing head | 14 Main burner | 22 Back panel assembly |
| 7 Pressure switch | 15 Spark electrode | 23 Air box bottom panel infill |
| 8 Fan mounting plate | 16 Pilot burner | 24 Side flue outlet blanking plate (LHS) |

1 UNPACKING

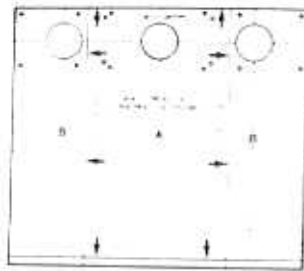
Unpack and check the contents.

PACK 'A' 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 in pack B.



Complete boiler



Wall mounting template



Wall mounting plate



Side Outlet Terminal Mounting Plate



- 14 - OFF No. 10, 2 in long screws
- 14 - OFF Wall plugs
- 2 - OFF M6 wing nuts
- 2 - OFF Sealing foam
- 1 - OFF Rear or side outlet sealing tape
- 1 - OFF Connector block

PACK 'A' Hardware Pack Contents.

1 - Output setting label

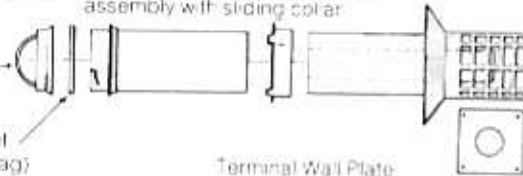
PACK 'B' Contents

Telescopic air inlet/outlet duct assembly with sliding collar

Locking collar

Rubber gasket (supplied in bag)

Terminal Wall Plate



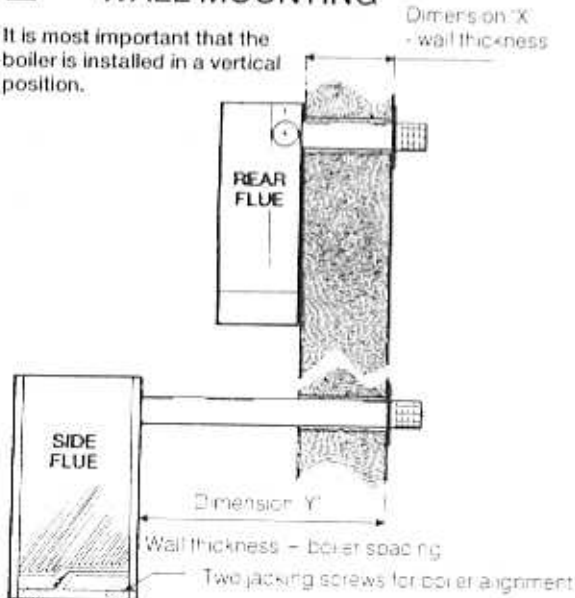
- 1 - OFF 3.2 mm dia drill
- 8 - OFF No. 8x6 mm (1/4 in) self tappers
- 1 - OFF Length of adhesive tape
- 2 - OFF Duct cutting support rings

PACK 'E' Contents (For inside installation ONLY)

5 in dia sleeve 610 mm (24 in)lg

2 WALL MOUNTING

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



3 FLUE LENGTH

- Flue Kits -
- Pack B: supplied as standard
- Pack B1: optional extends on kit - Refer 'Frame 38'
- Pack D: optional extension kit for side flue outlet only - Refer 'Frame 38'
- Pack E: optional internal installation kit - Refer 'Frame 1'

Flue length - Dimension 'X' or 'Y' shown in frame 2.	Flue Packs required
114 - 216 mm 4 1/2 - 8 1/2 in	Pack 'B' (cut down as in Frames 11&25)
216 - 406 mm 8 1/2 - 16 in	Pack 'B'
406 - 610 mm 16 - 24 in	Pack 'B' & Pack 'B1' (Frame 38)
606 - 2000 mm 16 - 79 in	Pack 'B' & 2-off Pack 'D' (Frame 36)

4 BOILER CLEARANCES

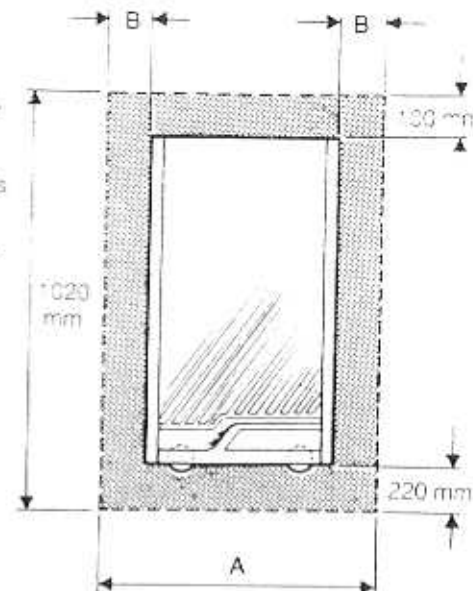
The following minimum clearances must be maintained for operation and servicing. Additional space will be required for installation depending upon site conditions.

Notes:

- (a) Bottom clearance may be reduced to 25 mm, but under this condition access to the boiler control box will be limited without removal of the boiler casing.
 - (b) Side flue only
 - (i) For flue lengths greater than the width 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 grille (as de installation only).
 - (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) 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.

Dim'	40F, 50F & 60F		80F	
	Side Flue	Rear Flue	Side Flue	Rear Flue
'A'	425	400	510	485
'B'	10 flue side	10 both sides	10 flue side	10 both sides

All dimensions in mm.

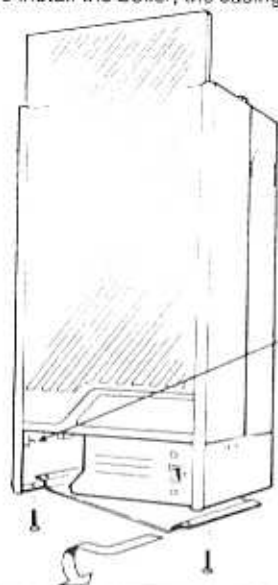


INSTALLATION

CASING REMOVAL- REAR FLUE

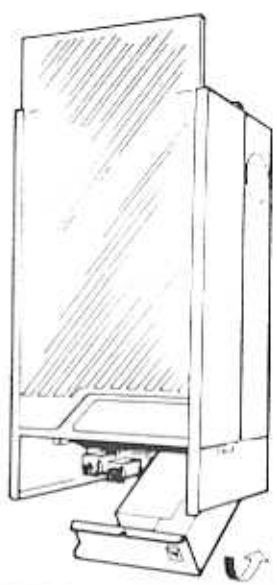
5 BOILER CASING REMOVAL

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



1. Release the 2 top captive screws
2. Slide the glass fascia upwards until it locates in the retaining catch
3. Remove the two securing screws, slide the panel forward slightly, and then sideways to remove from the casing

6 BOILER CASING REMOVAL

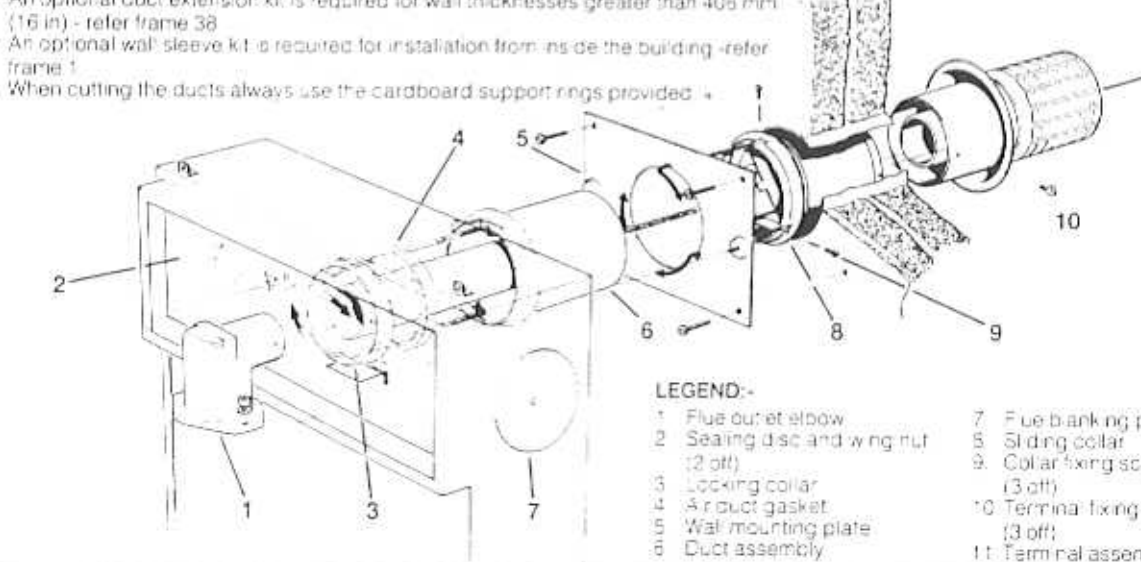


4. Remove the control box securing screw
5. Lift the back of the control box slightly and swing it down pivoting from the back
6. Release the 2 bottom captive screws and lift the casing off the boiler. Place the casing safely to one side, taking care not to damage the glass fascia panel.

7 FLUE ASSEMBLY- Exploded View

Notes:

1. An optional duct extension kit is required for wall thicknesses greater than 406 mm (16 in) - refer frame 38
2. An optional wall sleeve kit is required for installation from inside the building - refer frame 1
3. When cutting the ducts always use the cardboard support rings provided

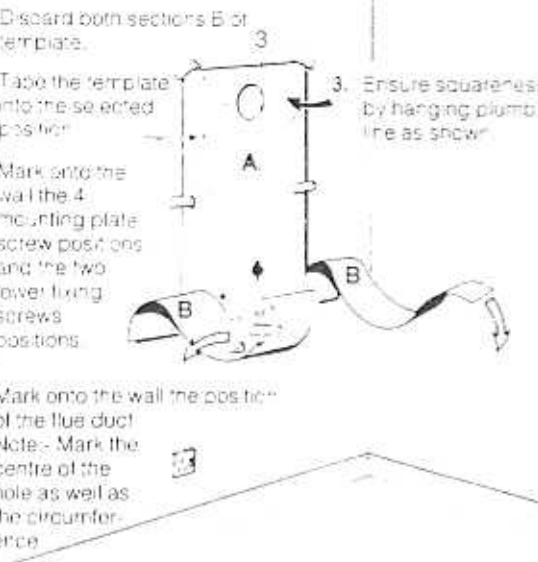


LEGEND:-

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

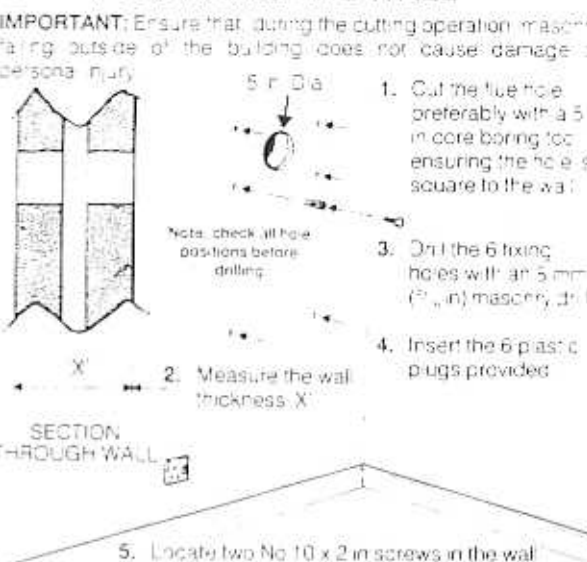
8 WALL MOUNTING TEMPLATE

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

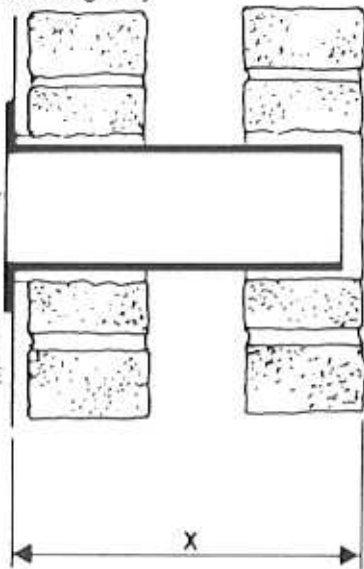
Note: check all hole positions before drilling

SECTION THROUGH WALL

10 WALL SLEEVE- For installation from INSIDE the building only

1. Cut the sleeve to length ($X' - 10$ mm)
2. Slide into the wall opening as shown

3. Make good at the inside end & at the outside end by reaching through the sleeve

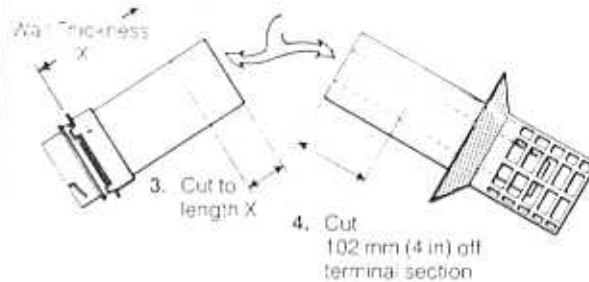


Note: Maximum wall thickness 610 mm (24 in)

11 CUTTING THE DUCT ASSEMBLY

For wall thicknesses 114 mm (4.5 in) - 216 mm (8.5 in) ONLY

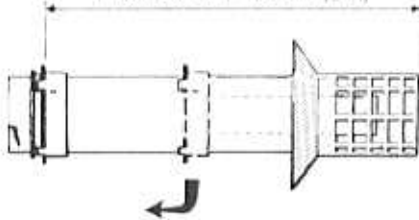
1. Separate the duct assembly
2. Push the sliding collar to the end of the duct and measure off dimension X'



5. Re-assemble the terminal aligning the seams

12 CUTTING THE DUCT ASSEMBLY

6. Set the assembly to length, wall thickness $X' + 150$ mm (6 in)

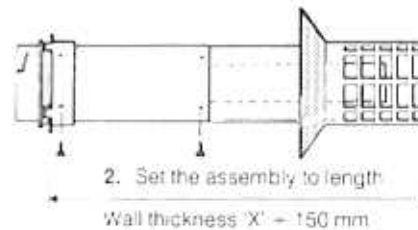


7. Using the sliding collar as a template at the duct join mark the position of the 3 fixing screws. Note: If the duct joint is too close to the rubber weather seal to permit access for drilling mark the hole positions at the mid-point of the duct.
8. Slide the collar back to the boiler end of the duct & again mark the positions of the 3 fixing screws

13 SETTING THE DUCT ASSEMBLY

For wall thicknesses up to 406 mm (16 in)

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



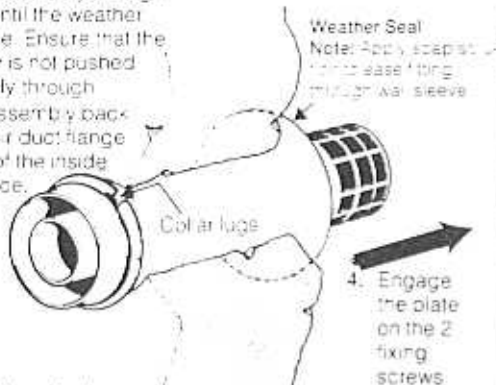
3. Using the sliding collar as a template at the duct join mark the position of the 3 fixing screws. Note: If the duct joint is too close to the rubber weather seal to permit access for drilling mark the hole positions at the mid-point of the duct
4. Slide the collar back to the boiler end of the duct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

For wall thicknesses more than 406 mm refer- frame 37.

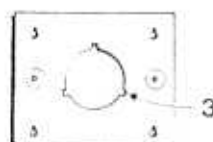
PROCEED TO FRAME 13, step 5

14 FITTING THE FLUE ASSEMBLY - From INSIDE the building

1. Push the assembly through the wall until the weather seal is free. Ensure that the assembly is not pushed completely through
2. Pull the assembly back until the air duct flange is proud of the inside wall surface.



3. Engage the collar lugs with the wall mounting plate slot rotate the flue assembly to lock.

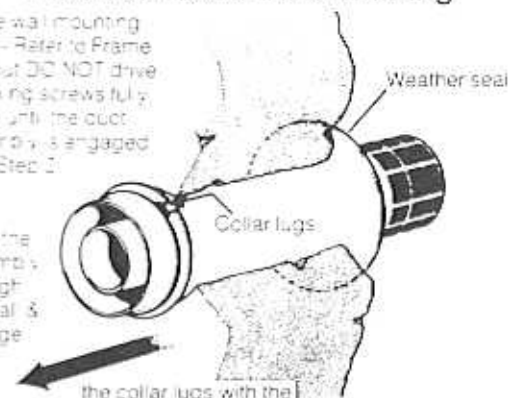


PROCEED TO FRAME 16 STEP 2

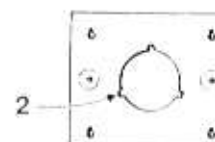
15 FITTING THE FLUE ASSEMBLY - From OUTSIDE the building

1. Fit the wall mounting plate - Refer to Frame 16 - but DO NOT drive the fixing screws fully home until the duct assembly is engaged - See Step 2

2. Push the assembly through the wall & engage



the collar lugs with the wall mounting plate slots. Rotate the flue assembly to lock



PROCEED TO FRAME 17

16 WALL MOUNTING PLATE

Flue is shown locked in position

Boiler mounting studs

- Engage the plate on the top fixing screws
- Locate two No 10 x 2 in screws in the fixing holes and drive home all four screws
- Check with a spirit level that the plate is vertical
- Align the holes in the sliding collar flange with 2 cut-outs in the wall plate. Insert 2 of the self tappers, provided to retain the assembly.

17 TERMINAL WALL PLATE

- For flue assemblies fitted from OUTSIDE the building

- Position the terminal wall plate over the terminal, as shown
- Drill four fixing holes with a 6 mm diameter masonry bit
- Insert the four plastic plugs provided
- Secure the plate with four of the No 10x2 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

18 MOUNTING THE BOILER

- Unplug the fan and pressure switch connection
- Slacken the bottom two screws
- Remove the top two screws and washers
- Lift off the fan plate assembly
- Remove the flue pipe connector from its transit position and discard it (for use with side flue only)
- Remove the two screws and washers shown and lift off the flue outlet elbow, taking care not to damage the sealing gasket, which is adhered in position.

View inside Air Box

19 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

- Lift the boiler onto the wall mounting plate as shown
- Fit a sealing disc over each stud and secure with a wing nut
- Locate two No 10x2 in screws in the boiler lower fixing holes and secure to the wall

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

20 SEALING THE BOILER & FLUE

- Stretch the rubber gasket over the air duct spigot
- Frame collar as shown and make it lock into the slots
- Fold locking handle as shown
- Slide the flue outlet elbow into the terminal flue pipe and refit the elbow in reverse order, taking care not to damage the sealing gasket - Refer to Frame 13
- Refit the fan plate assembly in reverse order - Refer to Frame 18

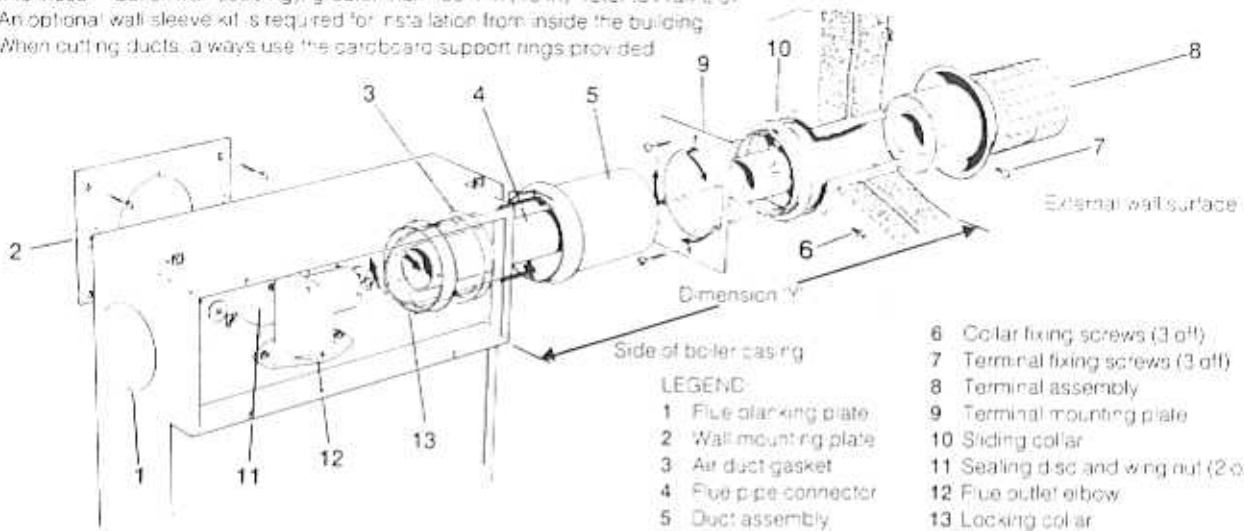
Locking handle

PROCEED TO 'FRAME 42'

21 FLUE ASSEMBLY- Exploded view

Notes:

1. An optional duct extension kit is required for lengths of dimension 'Y' (wall thickness + boiler/wall spacing), greater than 406 mm (16 in) - refer to Frame 37
2. An optional wall sleeve kit is required for installation from inside the building
3. When cutting ducts, always use the cardboard support rings provided



22 WALL MOUNTING TEMPLATE

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

23 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 using a 5 in core boring tool - ensure the hole is square to wall
 2. Measure the wall thickness 'X' and calculate Dimension 'Y' is (Boiler Spacing) - X - Refer to Frame 2
 3. Drill all 10 fixing holes with an 8mm (5/16 in) masonry drill
 4. Insert, into the drilled holes, the 10 plastic plugs provided.
 5. Locate 2 No. 10 x 2 in screws in the terminal mounting plate top fixing holes and screw home to within 6 mm (1/4 in) of wall surface
- Note: check all hole positions before drilling
- SECTION THROUGH WALL
- Side of socket (dotted)
- Boiler spacing
-

24 WALL SLEEVE- For installation from INSIDE the building ONLY

1. Cut the sleeve to length 'X' - 10 mm
 2. Slide into the wall opening as shown
 3. Make good at the inside end & at the outside end by reaching through the sleeve
- Wall Sleeve
- INSIDE WALL SURFACE
-

Note: Maximum wall thickness is 216 mm (8.5 in)

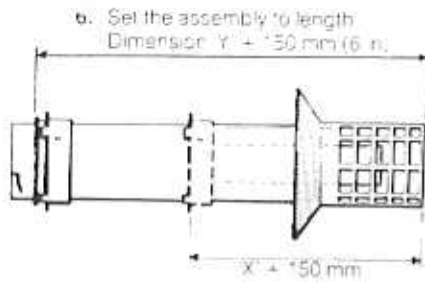
25 CUTTING THE DUCT ASSEMBLY

For wall flue lengths 114 mm (4.5 in) - 216 mm (8.5 in) ONLY

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'
 4. Cut 102 mm (4 in) off terminal section
 5. Re-assemble the terminal aligning the seams.
- Dimension Y
-

26 CUTTING THE DUCT ASSEMBLY

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



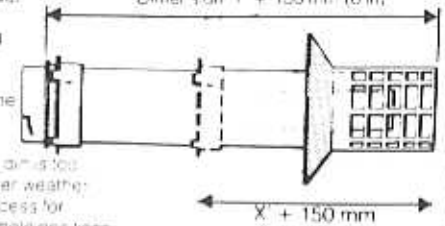
- Set the collar to the required position, i.e. Dimension 'X' + 150 mm (6 in) & mark the positions of the 3 fixing screws.

PROCEED TO FRAME 27, step 5

27 SETTING THE DUCT ASSEMBLY

For flue lengths (Dimension Y) up to 406 mm (16 in)

- Push the sliding collar to the end of the duct.
- Set the assembly to length i.e. Dimension 'Y' + 150 mm (6 in).
- Using the sliding collar as a template at the duct joint, mark the position of the 3 fixing screws. **Note:** If the duct joint is too close to the rubber weather seal to permit access for drilling, mark the hole positions at the mid point of the duct.
- Set the collar to required position i.e. Dimension 'X' + 150 mm (6 in) & mark the positions of the 3 fixing screws.
- Drill the 6 fixing holes using the 3.2 mm drill provided and insert the self tapping screws to fix the collar in position and lock the duct assembly.
- Seal any external air duct joint with the adhesive tape provided.



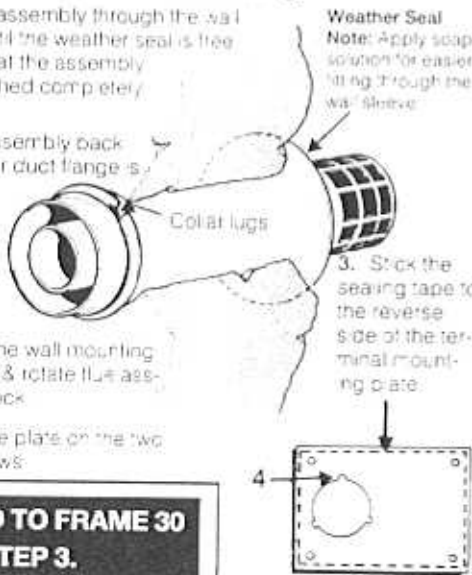
Note: If duct assembly locking screws restrict the sliding collar, then use the 20 air locking screws to secure the whole assembly.

For flue lengths more than 406 mm refer to Frame 37

28 FITTING THE FLUE ASSEMBLY

- From INSIDE the building

- Push the assembly through the wall sleeve until the weather seal is free. Ensure that the assembly is not pushed completely through.
- Pull the assembly back until the air duct flange is proud of the inside wall surface.
- Stick the sealing tape to the reverse side of the terminal mounting plate.
- Engage the collar lugs with the wall mounting plate slots & rotate flue assembly to lock.
- Engage the plate on the two fixing screws.

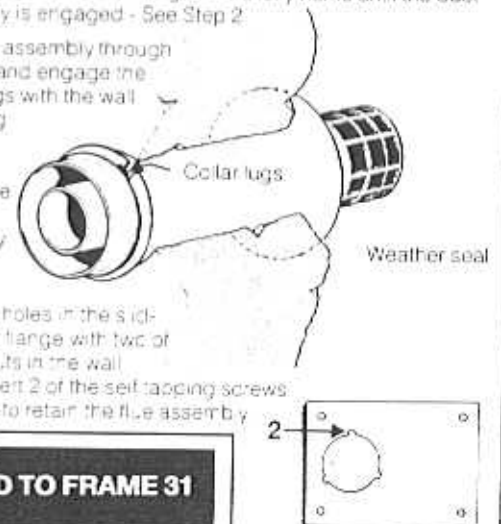


PROCEED TO FRAME 30 STEP 3.

29 FITTING THE FLUE ASSEMBLY

- From OUTSIDE the building

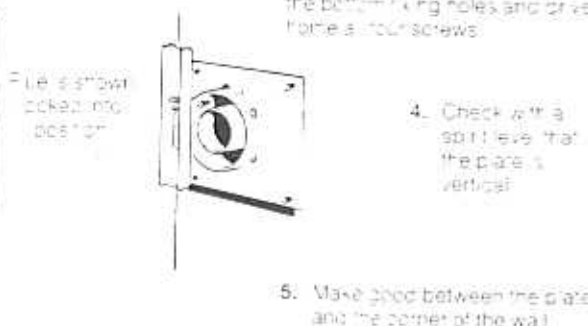
- Fit the terminal mounting plate - Refer to Frame 30 Step 1-5 but DO NOT drive the fixing screws fully home until the duct assembly is engaged - See Step 2.
- Push the assembly through the wall and engage the collar lugs with the wall mounting plate slots. Rotate the flue assembly to lock.
- Align the holes in the sliding collar flange with two of the cutouts in the wall plate. Insert 2 of the self tapping screws provided to retain the flue assembly.



PROCEED TO FRAME 31

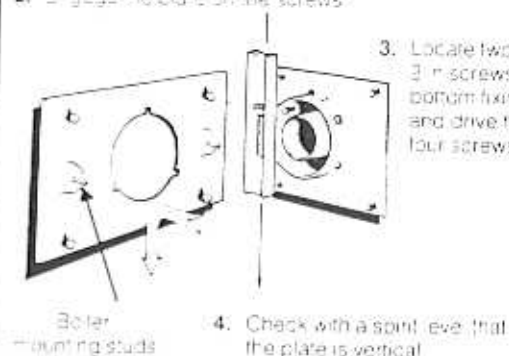
30 TERMINAL MOUNTING PLATE

- Stick the sealing tape provided to the reverse side of the plate.
- Engage the plate on the top tapping screws.
- Locate two No. 10 x 2 in screws in the bottom fixing holes and drive home all four screws.
- Check with a spirit level that the plate is vertical.
- Make good between the plate and the corner of the wall.
- Align the holes in the sliding collar flange with two of the cutouts in the wall plate. Insert two of the self tapping screws provided, to secure the flue assembly.



31 WALL MOUNTING PLATE

- Locate two No. 10 x 2 in screws in the plate top fixing holes and screw home to within 6 mm (1/4 in) of the wall surface.
- Engage the plate on the screws.
- Locate two No. 10 x 3 in screws in the bottom fixing holes and drive home all four screws.
- Check with a spirit level that the plate is vertical.



INSTALLATION

BOILER MOUNTING/ SEALING

32 TERMINAL WALL PLATE

- For flue assemblies fitted from OUTSIDE the building ONLY

1. Position the terminal wall plate over the terminal, as shown.
 2. Drill four fixing holes with a 8 mm (5/16") 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 2 m (6.6ft) above ground level an approved terminal guard should be fitted - Refer to page 3.

33 MOUNTING THE BOILER

1. Unplug the fan and pressure switch connection
 2. Slacken the bottom two screws
 3. Remove the top two screws and washers
 4. Lift off the fan plate assembly
 5. Remove the flue pipe connector from its transit position.
 6. Remove the two screws and washers shown and lift off the flue outlet elbow, taking care not to damage the sealing gasket which is adhered in position.
 7. Remove the blanking plate from the appropriate side of the air box and transfer it to the rear.
- View inside air box

34 MOUNTING THE BOILER

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

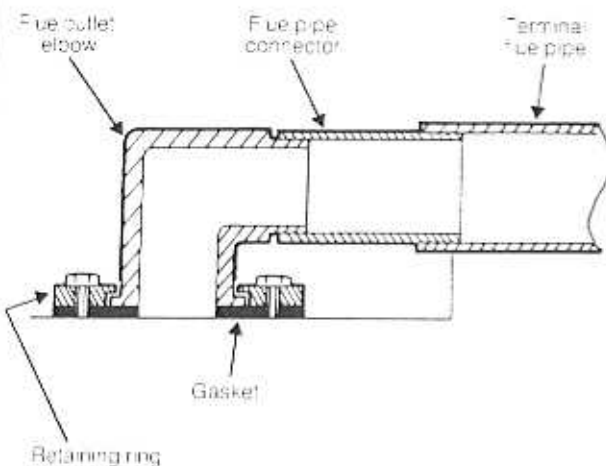
2. Slide the boiler sideways into its intended position, centralising the studs in the slots, and engaging air duct spigot in the hole in the side panel.
 3. Fit a sealing disc over each stud and secure with a wing nut. **Note:** Before fully tightening the wing nuts, check the boiler alignment using a spirit level and adjust as necessary with the jacking screws - Refer to Frame 2.
 4. Locate two NO. 10 x 2 in screws in the boiler cover fixing holes and secure to the wall
1. Lift the boiler onto the wall mounting plate as shown

35 SEALING THE BOILER & FLUE

1. Stretch the rubber gasket over the air duct spigot
2. Fit the collar as shown and rotate it to lock into the slots
3. Fold locking handle as shown
4. Fit the flue pipe connector and flue outlet elbow as shown, taking care not to damage the sealing gasket. - Refer to Frame 36.
5. Refit the fan plate assembly in reverse order - Refer to Frame 33.

36 SEALING THE BOILER & FLUE

Diagram to show the flue outlet arrangement



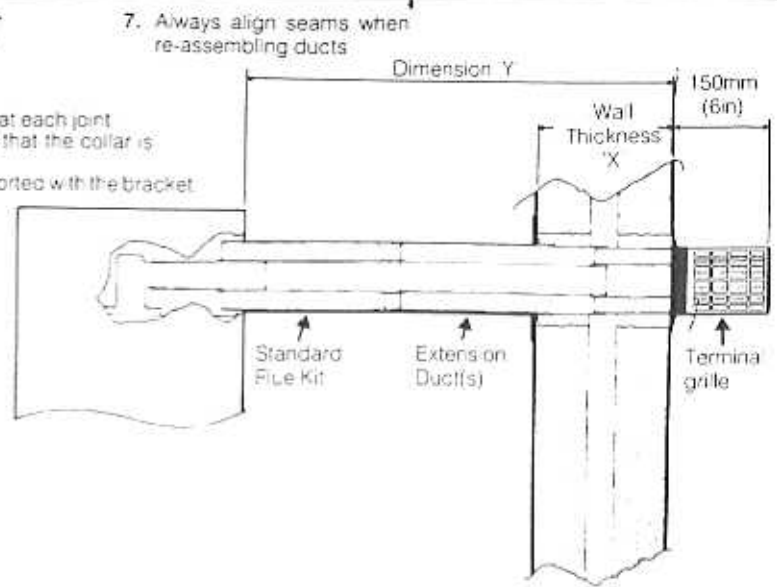
PROCEED TO FRAME 42

37 GENERAL ARRANGEMENT

Notes:

1. A MAXIMUM of two kits may be used together
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 216mm (8in) 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 outside of the wall thickness

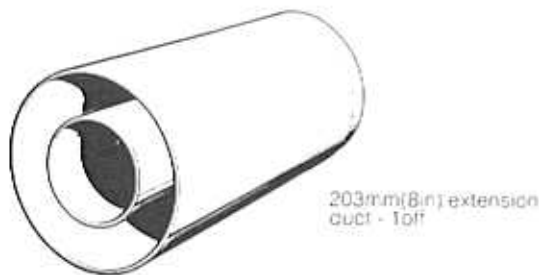
Dimension 'Y' (Side Flue) or 'X' (Rear Flue)	Standard Flue Kit B	Kit B1	Extension Kit D	Cutting Details
Side Flue (Dimension Y)				
Length up to 406mm (16in)	1 off			Side Flue P. 10
406mm (16in) - 610mm (24in)	1 off	1 off		Page 10 & Page 13
610mm (24in) - 1257mm (49 1/2 in)	1 off		1 off	Page 10 & Page 13
1257mm (49 1/2 in) - 2m (79in)	1 off		2 off	Page 10 & Page 13
Rear Flue (Dimension X)				
114mm (4 1/2 in) - 406mm (16in)	1 off			Rear Flue P. 7
406mm (16in) - 610mm (24in)	1 off	1 off		Page 7 & Page 13



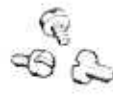
Side Flue Configuration Shown

38 PACK 'B1'

For flue lengths (X or Y) to 610mm (24in.) - SEE ABOVE TABLE
This kit is suitable for both rear and side outlet flue configurations



Length of adhesive tape

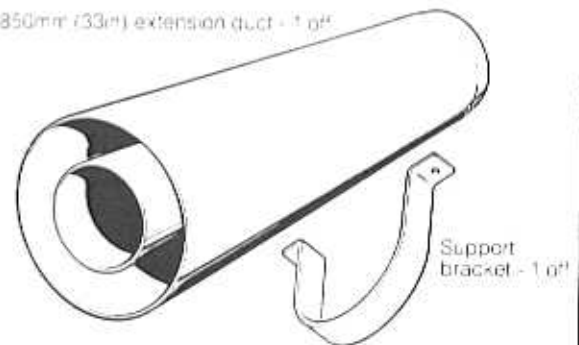


No. 8 x 1/4 in self-tapping screws - 3 off

39 PACK 'D'

For flue lengths ('Y' only) up to 2m (79in). Use a maximum of 2 kits only. SEE ABOVE TABLE.
This kit is suitable for side outlet flue configurations only

850mm (33in) extension duct - 1 off

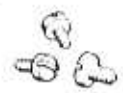


No. 10 x 2 in screws - 1 off

Wall plug - 1 off



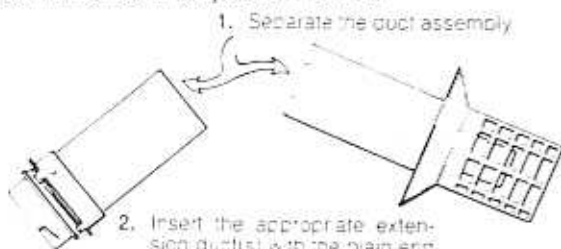
Length of adhesive tape



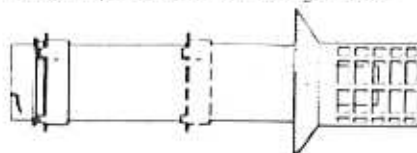
No. 8 x 1/4 in self-tapping screws - 4 off

40 FITTING

IMPORTANT: Read in conjunction Frame 37

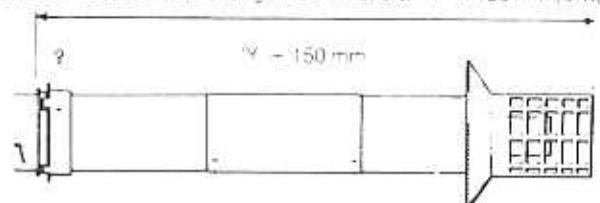


2. Insert the appropriate extension duct(s) with the plain end toward the terminator
3. Re-assemble the terminator and the duct assemblies
4. Set the assembly to length - Refer to Frame 41 Steps 1 - 2
5. Using the sliding collar as a template at the joints of any ducts mark the positions of the 3 fixing screws



41 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 Y + 150 mm (6 in)



3. Drill at the markings with the 3.2 mm 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 3.2 mm 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 14 OR FRAME 28 - DEPENDING UPON THE FLUE ARRANGEMENT

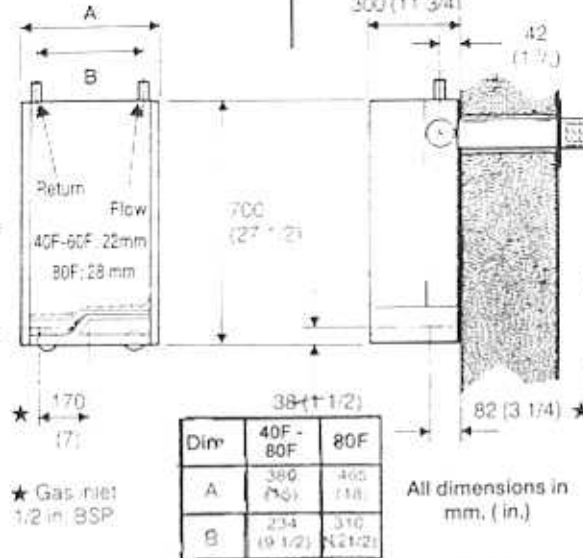
42 GAS CONNECTION

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 15 mm OD to the boiler and connect to the gas service cock situated at the bottom 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 CP331:3 - Refer to Frame 59



43 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) 28 mm (1 in) flow and return pipes should be used, both to and from the boiler. If access is restricted, connect to the boiler in 22 mm (7/8 in) pipe and increase to 28 mm (1 in) as soon as is practical.

2. Thoroughly flush the system with cold water WITHOUT the pump in position.

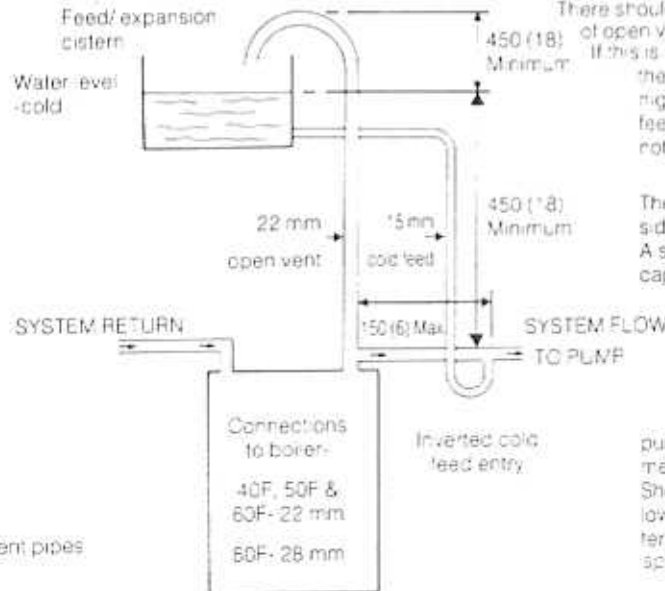
3. Refit the pump, ensure that all valves are open, fill and vent the system and check for water soundness.

Note: This appliance is NOT suitable for use with a direct hot water cylinder.

44 OPEN VENT SYSTEM REQUIREMENTS

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

Note: Combined lead and vent pipes may also be fitted.



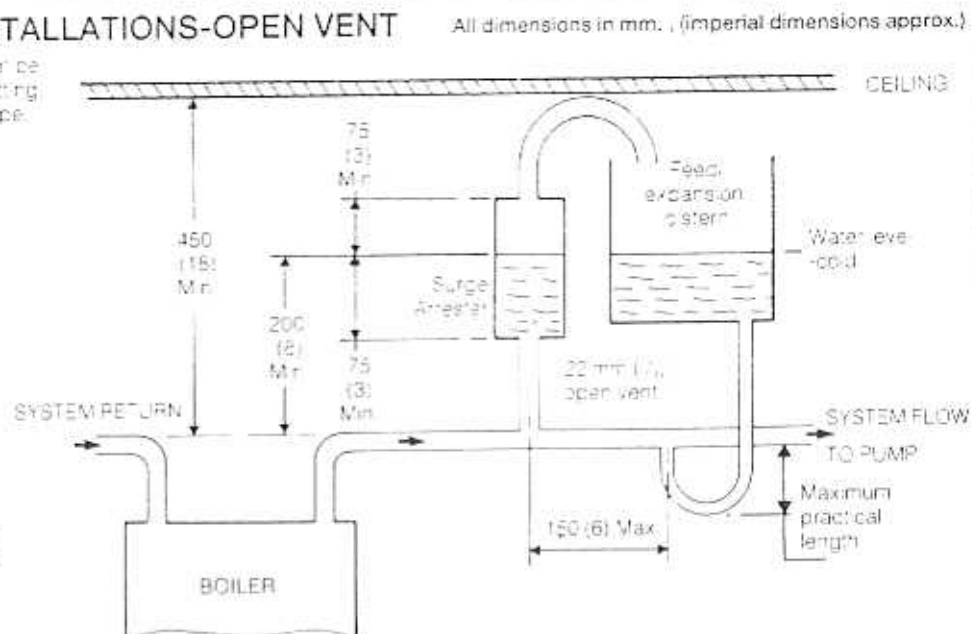
45 LOW HEAD INSTALLATIONS-OPEN VENT

The idea is an 2 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 42 mm diameter x 150 mm long.
2. The cistern water level must be at least 200 mm above the highest point of the system.
3. The height of water in the surge arrester must be at least 75 mm.
4. The vent connection must NOT be made directly off the top of the boiler.

Note: The pump manufacturer's minimum requirements must be complied with.



46 SCHEMATIC PIPEWORK AND BYPASS ADJUSTMENT- OPEN VENT

WATER FLOW RATE & PRESSURE LOSS

Boiler size		40F	50F	60F	80F
Boiler Output	kW	11.7	14.7	17.7	23.4
	Btu/h	40 000	50 000	60 000	80 000
Water Flow Rate	l/min	15.2	19.0	22.8	30.3
	gpm	200	250	300	400
Pressure Loss	mbar	45	70	102	92
	in.w.g	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 15 mm (1/2 in.) pipe, positioned as far from the boiler as possible, and incorporating a balancing valve which CANNOT be adjusted by the householder.

BY-PASS ADJUSTMENT

- With the boiler firing 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.
- With one small radiator only OPEN, open the bypass to give 11°C (20°F) temperature differential across the boiler.
- With all circuits OPEN re-adjust the pump to give 11°C (20°F) temperature differential across the system.

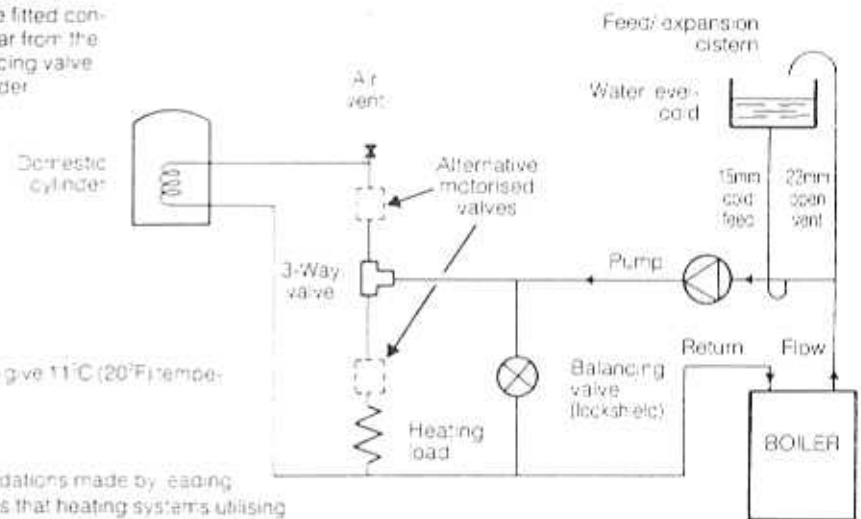
If in doubt contact Stelrad Group Ltd

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 2kW (70000 Btu/h) be achieved using a room thermostat whilst other rooms are individually controlled by thermostatic radiator valves. 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 1.5 kW (5000 Btu/h) under design conditions.



47 SEALED SYSTEM REQUIREMENTS

Notes:

- Any connection for filling or replenishing of a sealed primary circuit from a supply pipe is conditional upon a water undertaker seeking and obtaining consent for a relaxation of its Byelaws 30.9.11 from the Secretary of State.
- The method of filling, refilling, 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 5375 2 and BS 6449 1.

(b) The installation should be designed to work with the flow temperatures 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 3.0 bar (45 lb/in²) 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 1389 must be fitted in the flow pipe close to the boiler as possible and with no intervening valve or restriction. The valve should have the following features:

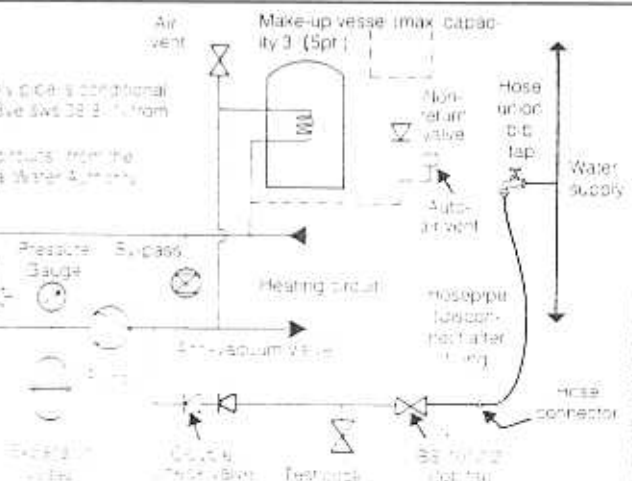
- A non-adjustable pressure not exceeding 3 bar (45 lb/in²).
- A manual testing device.
- Provision for connection of a discharge pipe. The valve or discharge pipe should be positioned such that discharge of water or steam cannot create a hazard to the occupants of the premises, or cause damage to electrical components and wiring.

3. Pressure Gauge

A pressure gauge covering at least the range 0.4 bar (6 lb/in²) to 1.0 bar 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 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 15 mm (1/2 in.) nominal size and not incorporating valves of any sort (see above for recommended system layout).
- The vessel capacity must be adequate to accept the expansion of the system water when heated to 110°C (230°F).
- The charge pressure must not be less than the static water head above the vessel. The pressure at a fixed in the system when heated



to 110°C (230°F) should be at least 0.35 bar (5 lb/in²) less than 19 (pressure) the safety valve. For guidance on vessel sizing refer to the Table in Part 48. For further details refer to BS 6449 1, and British Gas Corporation publication 'Materials and Installation Specifications for Domestic Central Heating and Hot Water'.

5.

The diaphragm must be either of the indirect type or a direct type identified with an 'M' for 'Mains', which is suitable for operating at a gauge pressure of 2.5 bar (37 lb/in²) in excess of the safety valve setting. Simple metal diaphragms are not suitable for sealed systems.

6. Make-up Water

- Provision must be made for replacing water loss from the system either:
 - From a manually filled make-up vessel with a readily visible water level. The vessel should be mounted at least 150 mm (6 in.) above the highest point of the system and be connected through a non-return valve to the system. The diameter should be at least 200 mm (8 in.) below the make-up vessel on the return side of the domestic hot water cylinder or radiator.
 - Where access to a make-up vessel would be difficult, by pre-pressurisation of the system (Refer to Part 46 - 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.

48 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)									
Litres	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	48.8	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	

B Filling

The system may be filled by one of the following methods

- (a) 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 a stop valve with an automatic air vent connected between them, the stop valve being located between the system and the automatic air vent. The stop valve may remain open during normal operation of the system if automatic water 'make up' is required.
- (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 stop valve 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 lbf/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 lbf/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

49 ELECTRICAL CONNECTIONS

WARNING: This appliance MUST be efficiently earthed

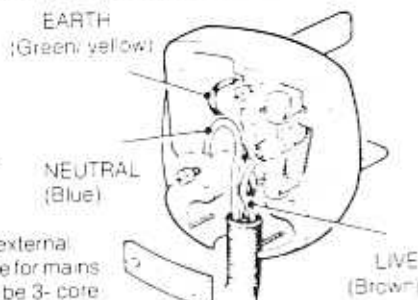
A mains supply of 240 V, 50Hz, ~ Single Phase is required.

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

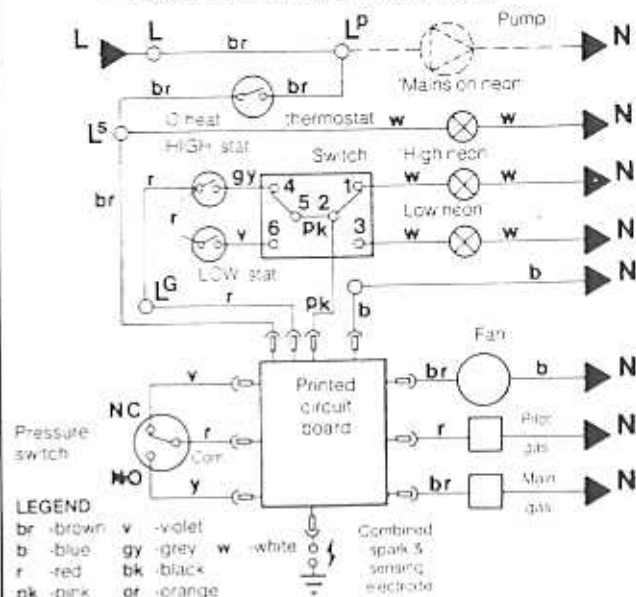
Wiring external to the boiler MUST be in accordance with the current I.E.E. Wiring Regulations and any Local Regulations which apply.

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 3 A & comply with the requirements of BS 1363.

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



FLOW WIRING DIAGRAM



50 INTERNAL WIRING

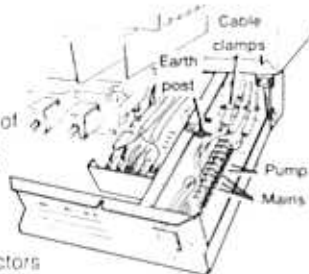
Flow & pictorial wiring diagrams are shown in frames 49 & 52. A schematic wiring diagram is included on the Lighting instructions Label.



1. Remove the screw securing the control box covers & lift off the covers
2. Route the electrical leads into the box via the grommetted hole at the rear & connect as shown

Notes:

- (a) Secure each lead with one of the cable clamps provided
- (b) The mains lead connection MUST be made in such a way that should the lead slip from the anchorage - the current carrying conductors become taut before the earthing conductor



51 EXTERNAL WIRING

EXTERNAL CONTROLS

External wiring MUST be in accordance with the current I.E.E. Wiring Regulations

The wiring diagrams illustrated in Frames 53-57 cover the systems most likely to be used with this appliance. For wiring external controls to the IDEAL ELAN 2 F boiler, reference should be made to the systems wiring diagram supplied by the relevant Manufacturer in conjunction with the wiring diagrams shown in frames 49 & 52.

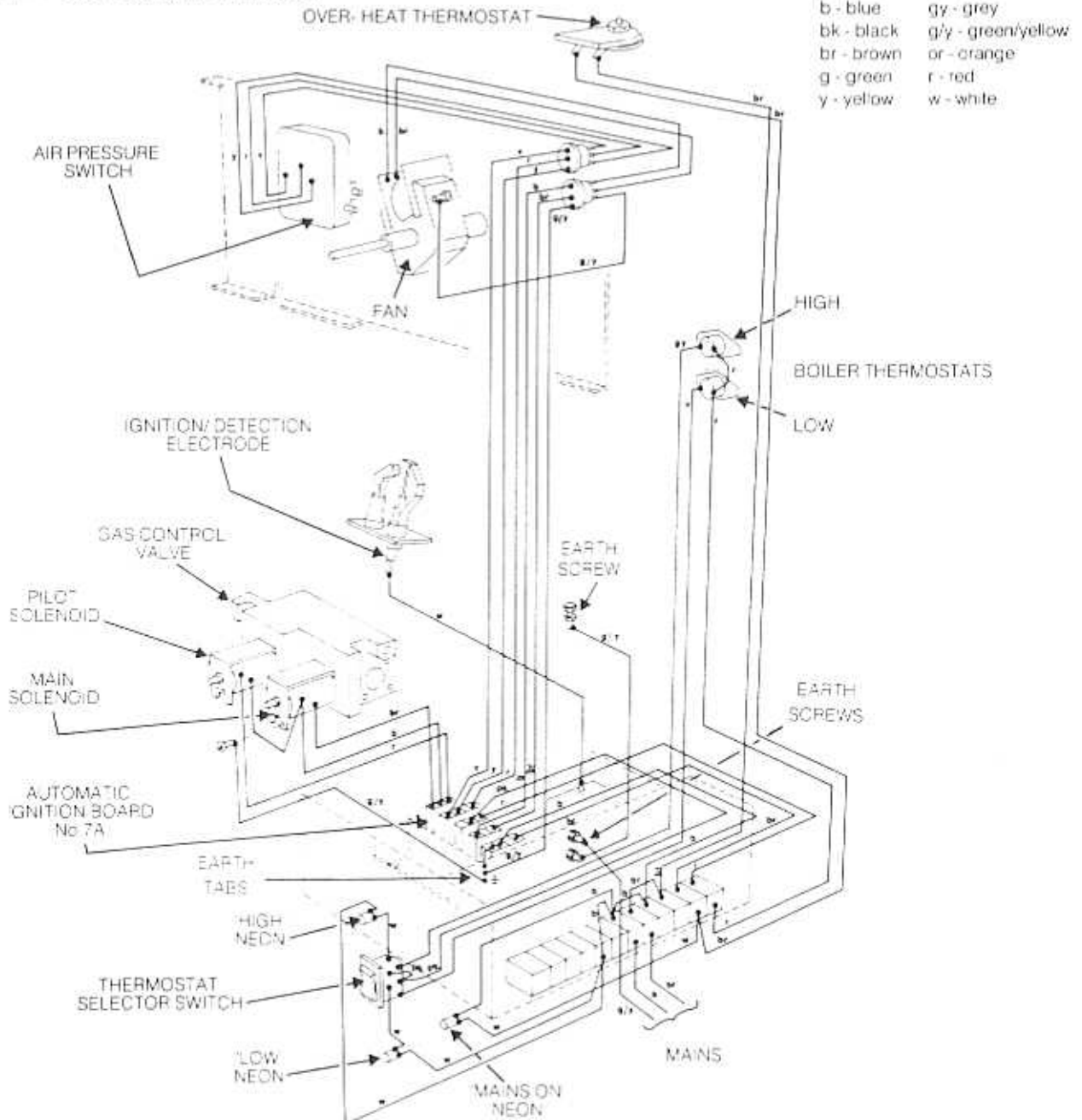
Disturbance in wiring should not arise, providing the following directions are observed:

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-riden - refer to Frame 58
3. If a proprietary system is used, follow the instructions supplied by the Manufacturer
4. SYSTEM DESIGNS FEATURING CONTROLS OR WIRING ARRANGEMENTS WHICH ALLOW THE BOILER TO FIRE WHEN THERE IS NO PUMPED CIRCULATION TAKING PLACE MUST NOT BE FITTED

Notes:

- (a) If there are no external controls, the circulating pump MUST also be wired into the control box
- (b) When the OPTIONAL programmer kit is fitted the incoming mains lead MUST be wired into the boiler control box terminals marked L, N & E - refer to the Programmer Kit Installation Instructions

52 PICTORIAL WIRING



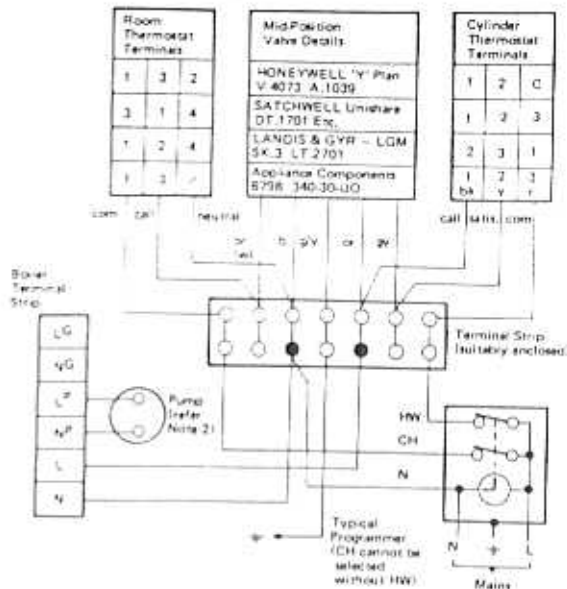
53 MID POSITION VALVE, (NO RELAY)- PUMPED ONLY

Notes:

1. SOME EARTH WIRES ARE OMITTED FOR CLARITY. ENSURE PROPER EARTH CONTINUITY WHEN WIRING.
2. Black dots denote alternative pump connections.
3. This is a fully controlled system - set the boiler thermostat to HIGH.
4. Numbering of thermostat terminals applies ONLY to the Manufacturer mentioned.

LEGEND:

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



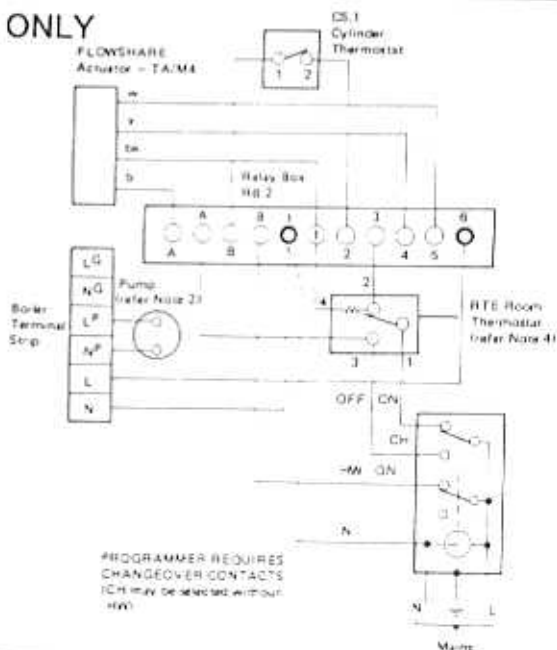
54 'DRAYTON FLOWSHARE'- PUMPED ONLY

Notes:

1. SOME EARTH WIRES ARE OMITTED FOR CLARITY. ENSURE PROPER EARTH CONTINUITY WHEN WIRING.
2. Black dots denote alternative pump connections.
3. This is a fully controlled system - set the boiler thermostat to HIGH.
4. Note room thermostat terminals have different numbering to previous DRAYTON models.

LEGEND:

- b - blue
- bk - black
- y - yellow
- w - white



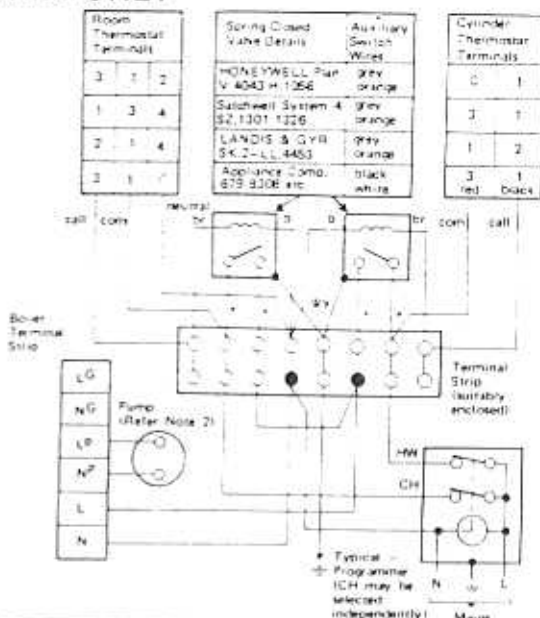
55 TWO SPRING CLOSED VALVES- PUMPED ONLY

Notes:

1. SOME EARTH WIRES ARE OMITTED FOR CLARITY. ENSURE PROPER EARTH CONTINUITY WHEN WIRING.
2. Black dots denote alternative pump connections.
3. This is a fully controlled system - set the boiler thermostat to HIGH.
4. Numbering of thermostat terminals applies ONLY to Manufacturer mentioned.

LEGEND:

- b - blue
- br - brown
- g - green
- g/y - green/yellow
- r - red
- y - yellow



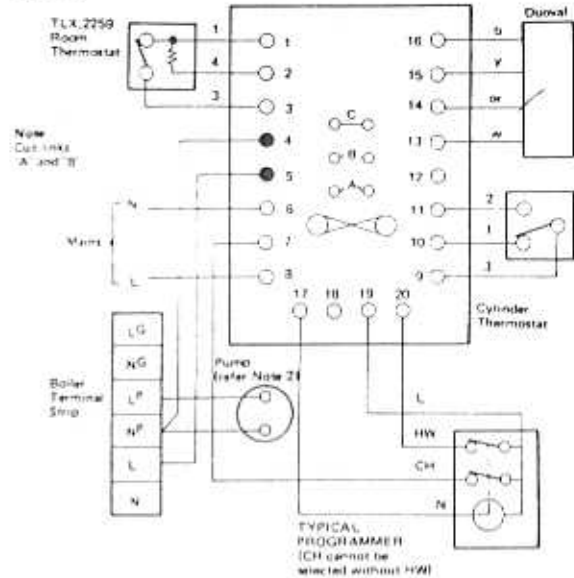
56 'SATCHWELL DUOFLO'- PUMPED ONLY

Notes:

1. SOME EARTH WIRES ARE OMITTED FOR CLARITY. ENSURE PROPER EARTH CONTINUITY WHEN WIRING.
2. Black dots denote alternative pump connections.
3. This is a fully controlled system - set the boiler thermostat to HIGH.
4. Numbering of thermostat terminals applies ONLY to the Manufacturer mentioned.

LEGEND:

- b - blue
- or - orange
- w - white
- y - yellow



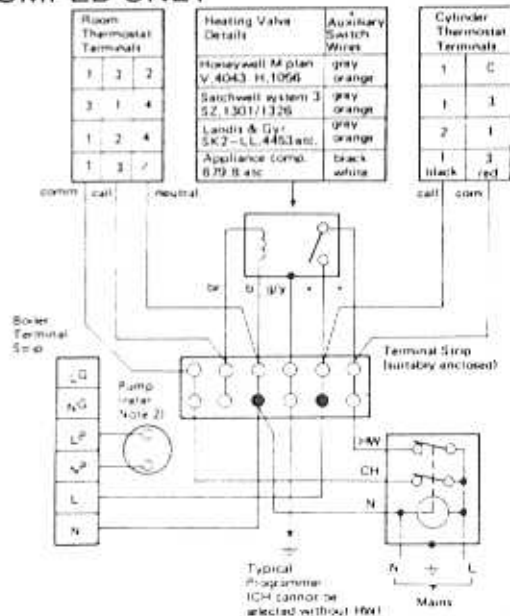
57 ONE VALVE IN HEATING CIRCUIT- PUMPED ONLY

Notes:

1. SOME EARTHED WIRES ARE OMITTED FOR CLARITY. ENSURE PROPER EARTH CONTINUITY WHEN WIRING.
2. Black dots denote alternative pump connections.
3. Numbering of thermostat terminals applies ONLY to the Manufacturer mentioned.

LEGEND:

- b - blue
- bk - black
- br - brown
- r - red
- gly - green/ yellow

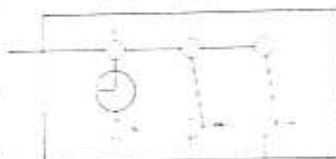


58 FROST PROTECTION

Notes:

1. The frost thermostat should be wired to the programmer as shown without disturbing the appliance internal 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 slide switches ONLY - all other controls should be left in the normal running position.

TYPICAL PROGRAMMER



DOUBLE POLE FROST THERMOSTAT



59 COMMISSIONING & TESTING

(a) Electrical Installation

1. Checks to ensure electrical safety should be carried out by a competent person
2. ALWAYS carry out the preliminary electrical system checks as detailed on the Instructions for the British Gas Multimeter, or similar test meter
3. Refit the control box covers

(b) 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 CP.331.3
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**

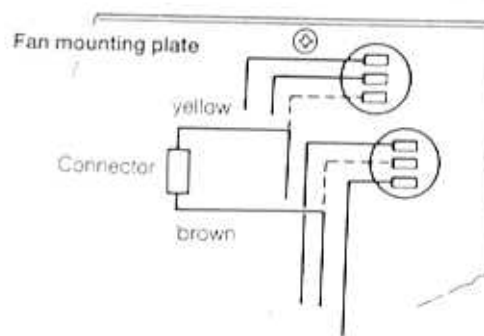
60 INITIAL LIGHTING- Continued in 'Frame 62'

1. Check that the gas service cock (C) is ON and the boiler thermostat selector 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. Remove the cover from the gas control valve
4. Screw the main gas adjuster (E) fully **CLOCKWISE**, counting the number of turns
5. Link the fan and pressure switch leads together as shown, using the connector provided
6. Switch the electricity supply ON & check that all external controls are calling for heat. The 'MAINS ON' neon (H) will glow
7. Set the boiler thermostat selector switch (G) to HIGH. The HIGH indicator neon (J) will glow. The pilot solenoid valve should open and the intermittent spark commence, continuing until the pilot is established

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

8. Test the pilot supply connector at the pilot burner for gas soundness using leak detection fluid



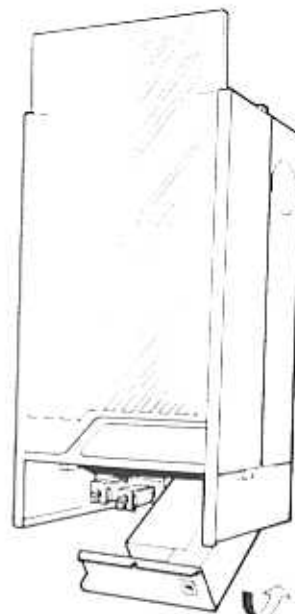
9. Set the boiler thermostat selector switch to OFF and switch OFF the electricity supply
10. Reconnect the fan and pressure switch leads
11. Return the main gas adjuster to its original setting
12. If the boiler output is to be set to MID or MINIMUM, affix the appropriate indicator label supplied, to the Data Plate
13. Fit the boiler casing - Refer to Frame 61

61 FITTING THE CASING

IMPORTANT: This appliance **MUST NOT** be operated without the casing being correctly fitted and forming an adequate seal.

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 until it locates in the retaining catch
 3. 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.

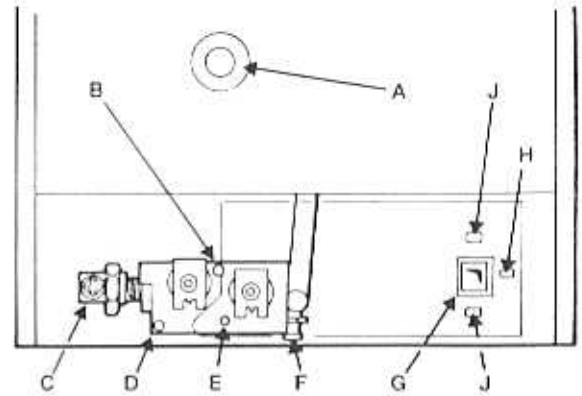
4. Swing the control box into its working position and secure it to the bottom of the casing



62 INITIAL LIGHTING- Continued

1. Switch the electricity supply ON.
2. Set the boiler thermostat selector switch (G) to HIGH. The HIGH indicator neon (J) will glow, and 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-ignites 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 detection 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 Table 2 on page 2. If the burner pressure setting requires adjustment then proceed as follows:-
Turn pressure adjusting screw (E) clockwise to decrease the pressure. Replace the valve 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.

BOILER CONTROLS



- LEGEND:**
- | | |
|---------------------------------|-------------------------------|
| A Sight glass | F Burner pressure test nipple |
| B Pilot pressure adjuster | G Thermostat selector switch |
| C Gas service cock | H 'MAINS ON' indicator neon |
| D Inlet pressure test nipple | J thermostat indicator neons |
| E Main burner pressure adjuster | |

63 GENERAL CHECKS

Make the following checks for correct operation:

1. Turn the boiler thermostat selector switch from OFF to HIGH and from OFF to LOW, and check that the main burner and indicator neons light and extinguish 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.

64 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 User's 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 the 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 system 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 the 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 out-of-order 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.

1 SCHEDULE

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

- Light the boiler and carry out a pre-service check, noting any operational faults.
- Clean the main burner.
- Clean the heat exchanger.
- Clean the main and pilot injectors.
- Check that the flue terminal is unobstructed and that the flue system, including the inner cover, is sealed correctly.
- If the appliance is installed in a compartment check that the ventilation areas are clear.

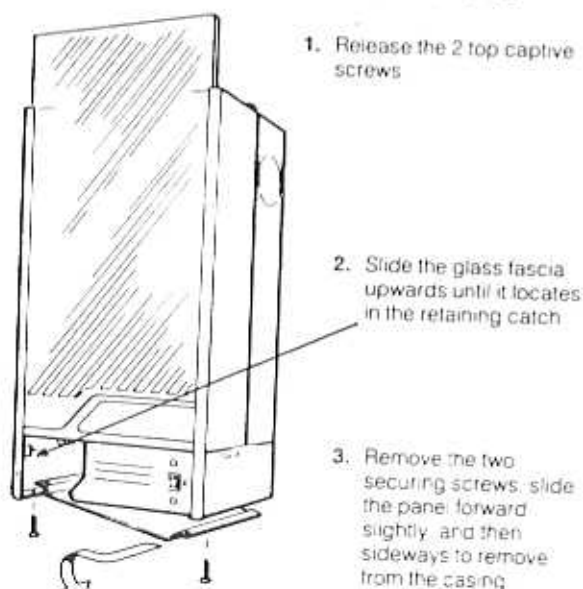
THE SERVICING PROCEDURES ARE COVERED MORE FULLY IN FRAMES 2 TO 30 AND MUST BE CARRIED OUT IN SEQUENCE

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.

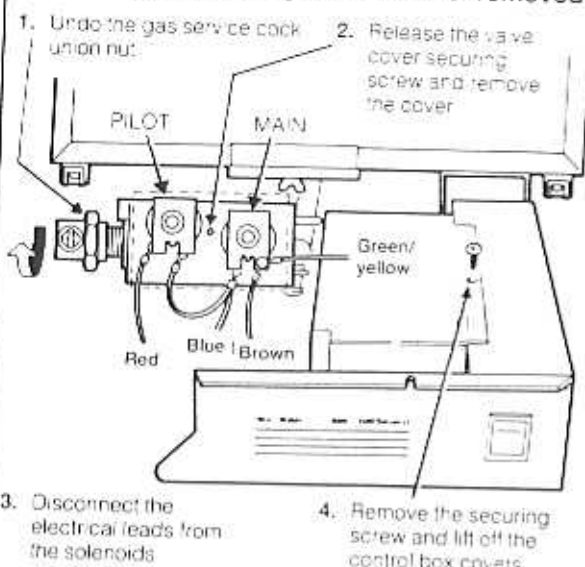
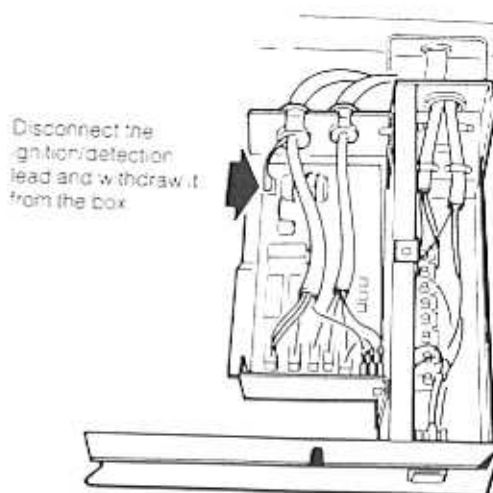
IMPORTANT:- After completing servicing or exchange of components always test for gas soundness and carry out functional checks as appropriate.

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

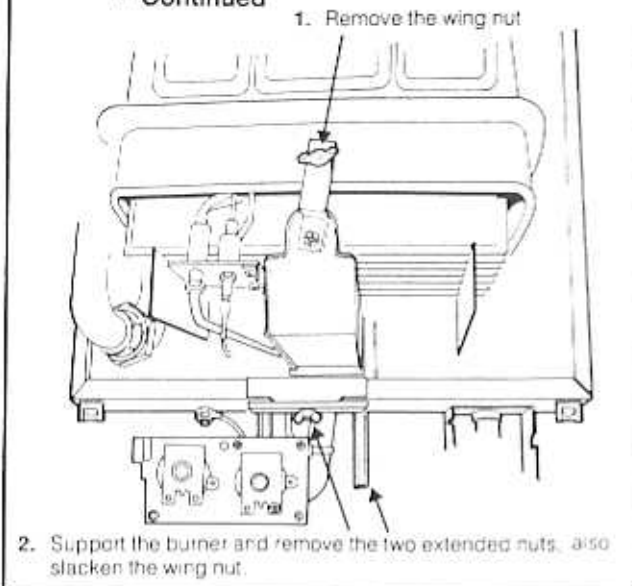
IMPORTANT:- When work is complete the casing MUST be correctly re-fitted ensuring that a good seal is made. The boiler MUST NOT be operated if the casing is not fitted.

2 BOILER CASING REMOVAL**3 BOILER CASING REMOVAL****4 BURNER ASSEMBLY REMOVAL**

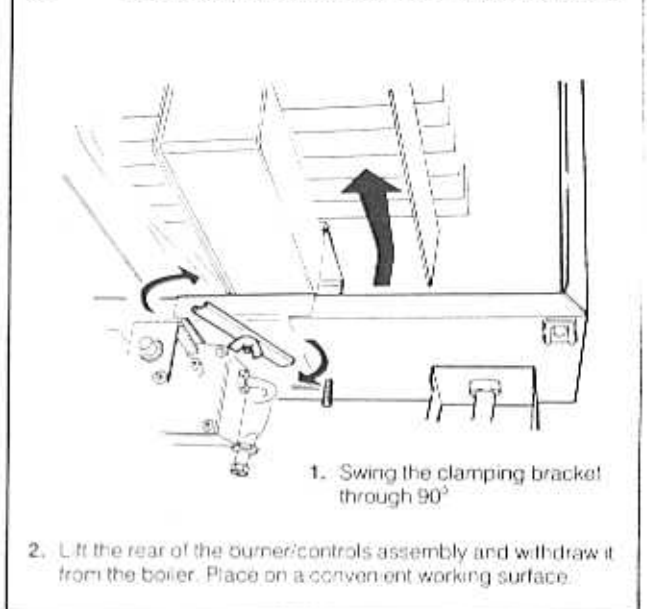
- Shown with gas valve cover removed

**5 BURNER ASSEMBLY REMOVAL**

6 BURNER ASSEMBLY REMOVAL - Continued

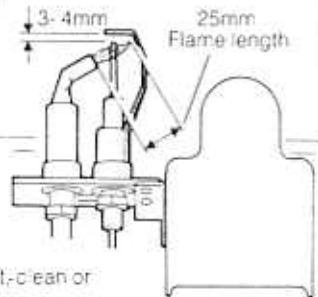


7 BURNER ASSEMBLY REMOVAL



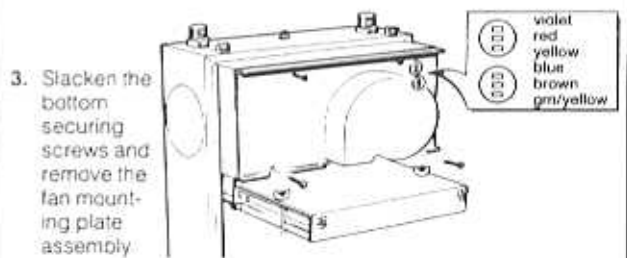
8 CLEANING- BURNER ASSEMBLY

- 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.
- Remove the main burner injector, ensure there is no blockage or damage. Clean or renew as necessary.
- Refit the injector, using an approved jointing compound sparingly.
- Inspect the pilot burner and ignition/detection electrode ensure they are clean and in good condition. In particular, check that:
 - The pilot burner injector is not blocked or damaged.
 - The pilot burner is clean & unobstructed.
 - The ignition/ detection electrode is clean and undamaged.
 - The ignition/ detection lead is in good condition.
 - The spark gap is correct, clean or renew as necessary.



9 CLEANING- FAN ASSEMBLY

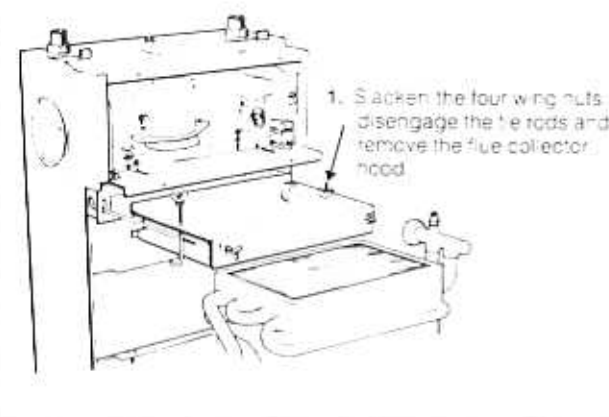
- Disconnect the fan and pressure switch leads.
- Remove the top securing screws and washers.



- Check that the fan impeller 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 impeller.
- Check that the air inlet duct is unobstructed.

10 CLEANING- FLUEWAYS

- 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.



11 RE-ASSEMBLY

Reassemble the boiler in the following order -

- Refit the flue collector hood renewing any damaged or deteriorating sealing gasket. **Note:** Enter the horizontal tie rods, with the hooks vertical, and rotate to engage.
- Refit the fan mounting plate assembly.
- Refit the burner and controls assembly.
- Refit the control box covers.
- Reconnect the gas service cock and electrical wiring.
- Check the sightglass in the boiler casing. Clean or renew as necessary.
- Refit the boiler casing.

IMPORTANT: When work is complete the casing **MUST** be correctly re-fitted ensuring that a good seal is made. **The boiler MUST NOT** be operated if the casing is not fitted.

12 GAS PRESSURE ADJUSTMENT

(a) Pilot

Light the boiler and check that the pilot flame is 25 mm (1 in) long - 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 thermostat selector switch to OFF.
- (b) Remove the gas valve cover.
- (c) Turn the pilot pressure 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 cover.
- (f) Relight in accordance with 'Initial Lighting' - Refer to Frame 62 (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 62 (Installation).

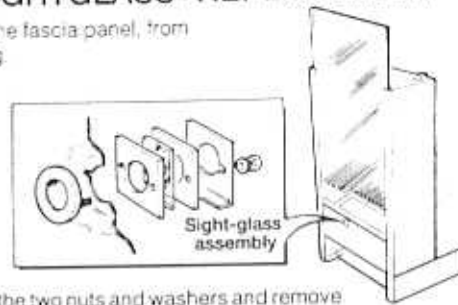
NOTE: To replace the components in 'Frames 12 to 24' it is necessary to remove the boiler casing-Refer to 'Frame 2'

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

*The boiler **MUST NOT** be operated if the casing is not fitted*

13 SIGHTGLASS- REPLACEMENT

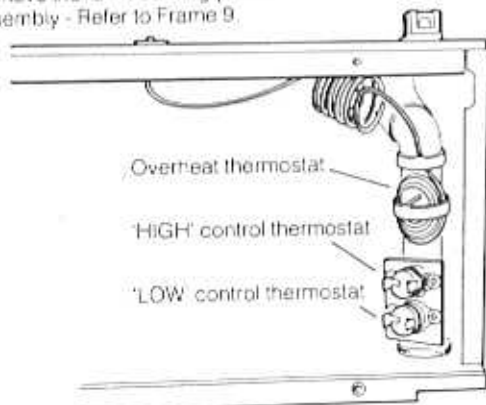
1. Remove the fascia panel, from the casing.



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

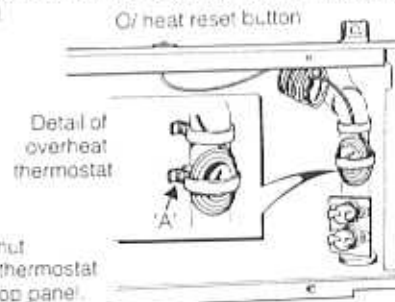
1. Remove the fan mounting plate assembly - Refer to Frame 9.



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

15 OVER-HEAT THERMOSTAT REPLACEMENT

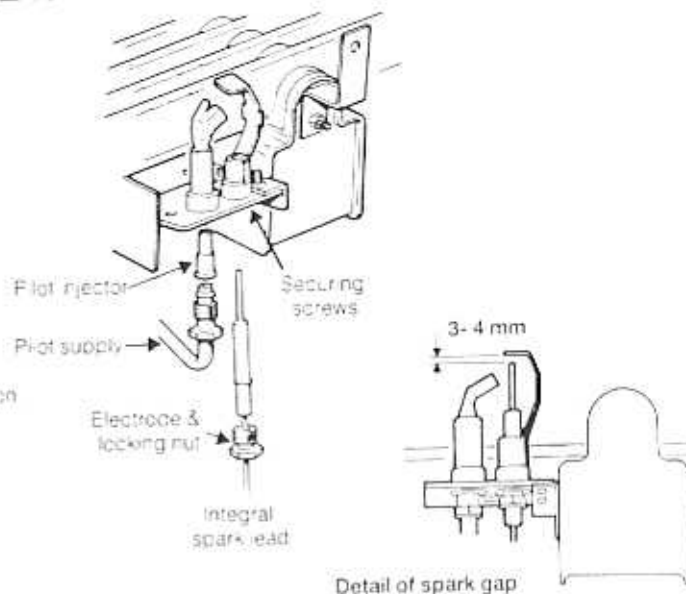
1. Remove the fan mounting plate assembly - Refer to Frame 9.
2. Release 'screw A' of the thermostat clamp and withdraw the sensing head.



3. Remove the nut securing the thermostat to the boiler top panel.
4. Disconnect the two electrical leads and withdraw the thermostat.
5. Fit the new thermostat in reverse order, ensuring that:
 - (a) the capillary is not damaged.
 - (b) The capillary is carefully routed and the surplus length coiled well away from the flue outlet pipe.

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 is a push fit in the pilot burner housing.
2. Undo the spark electrode locking 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 59 (b) Installation.
 - (c) The spark gap is correct.



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 locking nut and withdraw the electrode complete with integral spark lead.
5. Fit the new electrode and lead, and re-assemble in reverse order.
6. Check that the spark gap is correct - Refer to Frame 16

Labels: Electrode & locking nut, Integral spark lead, Pilot supply, Spark lead, Buckle clip, Gasket, Sealing plate, Securing screws

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 and bracket to the new burner.
5. Fit the new burner and re-assemble in reverse order.

Labels: Securing nuts, End bracket

19 GAS VALVE- REPLACEMENT

1. Remove the burner and controls assembly - Refer to frames 4-7.
2. Undo the pilot supply connection at the gas valve.
3. Unscrew the gas service cock union.
4. Undo the four securing screws and washers. Transfer the inlet flange & gas service cock union to the new valve.
5. 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' rings supplied with the valve, are correctly fitted at the inlet and outlet flanges
 - (c) The solenoid leads are correctly reconnected.
6. Re-assemble in reverse order.

Labels: Securing screws, Gas service cock union

20 PILOT FILTER- REPLACEMENT

1. Remove the burner and controls assembly - Refer to frames 4-7
2. Remove the five screws securing the valve back plate and lift off the plate.
3. Pull out the pilot filter and discard
4. Fit the new pilot filter and re-assemble in reverse order, taking care not to damage the cork gasket.

Labels: Pilot filter, Gasket, Back plate

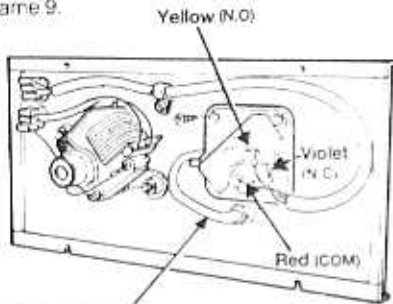
21 FAN UNIT- REPLACEMENT

1. Remove the fan mounting plate assembly - Refer to Frame 9
2. Remove the wiring harness retaining clip.
3. Remove the pressure sensing fitting retaining nut.
4. Remove the two securing screws.
5. Remove the earth post.
6. Disconnect the electrical leads and disengage the connector blocks from the plate.
7. Re-fit all components to the new fan assembly and re-connect all electrical leads.
8. Re-assemble the completed fan mounting plate in reverse order.

Labels: Pressure switch, violet, red, yellow, blue, brown, grn-yellow

22 PRESSURE SWITCH -REPLACEMENT

1. Remove the fan mounting plate assembly - Refer to Frame 9.
2. Disconnect the electrical leads from the pressure switch.

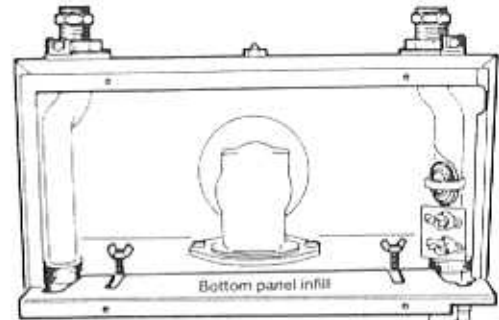


3. Disconnect the pressure sensing tube
4. Remove the two securing screws and withdraw the switch.
5. Fit the new pressure switch and re-assemble in reverse order ensuring that:
 - (a) the pressure sensing tube is connected to the tapping marked +
 - (b) All electrical connections are correctly remade

23 HEAT EXCHANGER-REPLACEMENT

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

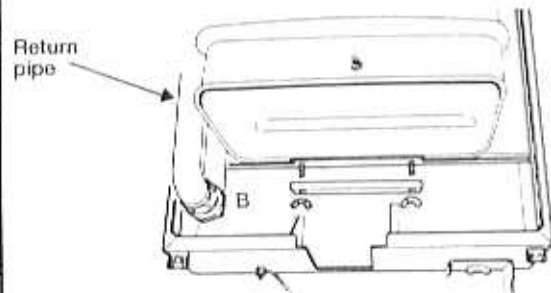
1. Drain down the system
2. Remove the fan mounting plate assembly - Refer to Frame 9
3. Remove burner and controls assembly - Refer to frames 4-7
4. Remove flue collector hood - Refer to Frame 10



5. Slacken the two wing nuts & slide the air box bottom panel in-fill out.

NOTE: To replace the components in 'Frames 25 to 27', if the clearance beneath the boiler is 220 mm (9 in.), or greater, it is only necessary to remove the casing bottom panel and hinge the control box down-Refer to 'Frame 2'

24 HEAT EXCHANGER -REPLACEMENT

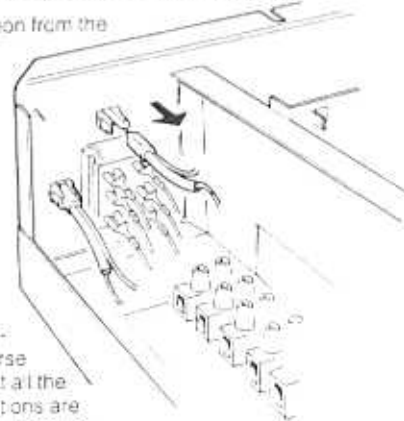


6. Undo the two wing nuts & remove the retaining bracket
7. Support the heat exchanger and undo the flow and return pipe connections ('A' & 'B')
8. Ease the heat exchanger forward slightly to drain the water from the return connection and then withdraw the heat exchanger from the back panel.
9. Fit the new heat exchanger in reverse order.

IMPORTANT:- When re-fitting the air box bottom panel in-fill ensure that the rubber grommet on the thermostat leads is correctly located in the slot in the panel.

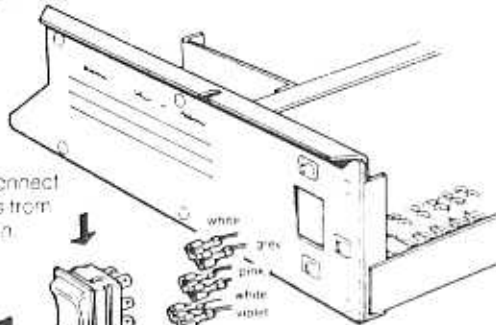
25 NEON- REPLACEMENT

1. Remove the control box covers - Refer to Frame 4
2. Disengage the neon from the lens.
3. Disconnect the leads from the terminals marked 'N' on the back of the selector switch, (HIGH and LOW neons) or 'Ns' and 'Ls' (MAINS ON neon).
4. Fit new neon & re-assemble in reverse order. Ensure that all the electrical connections are correctly remade - Refer to Frame 49 (INSTALLATION)



26 THERMOSTAT SWITCH -REPLACEMENT

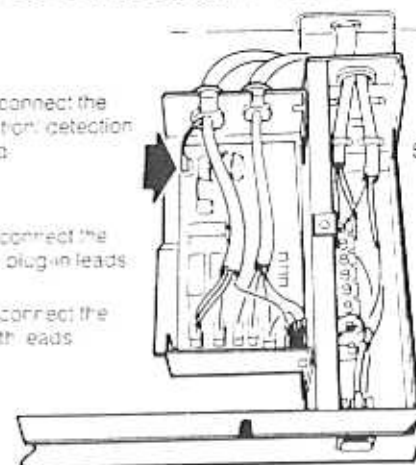
1. Remove the control box covers - Refer to Frame 4



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 the correct way up
 - (b) All electrical connections are correctly re-made
 - (c) The indicator neons have not been displaced during the switch replacements.

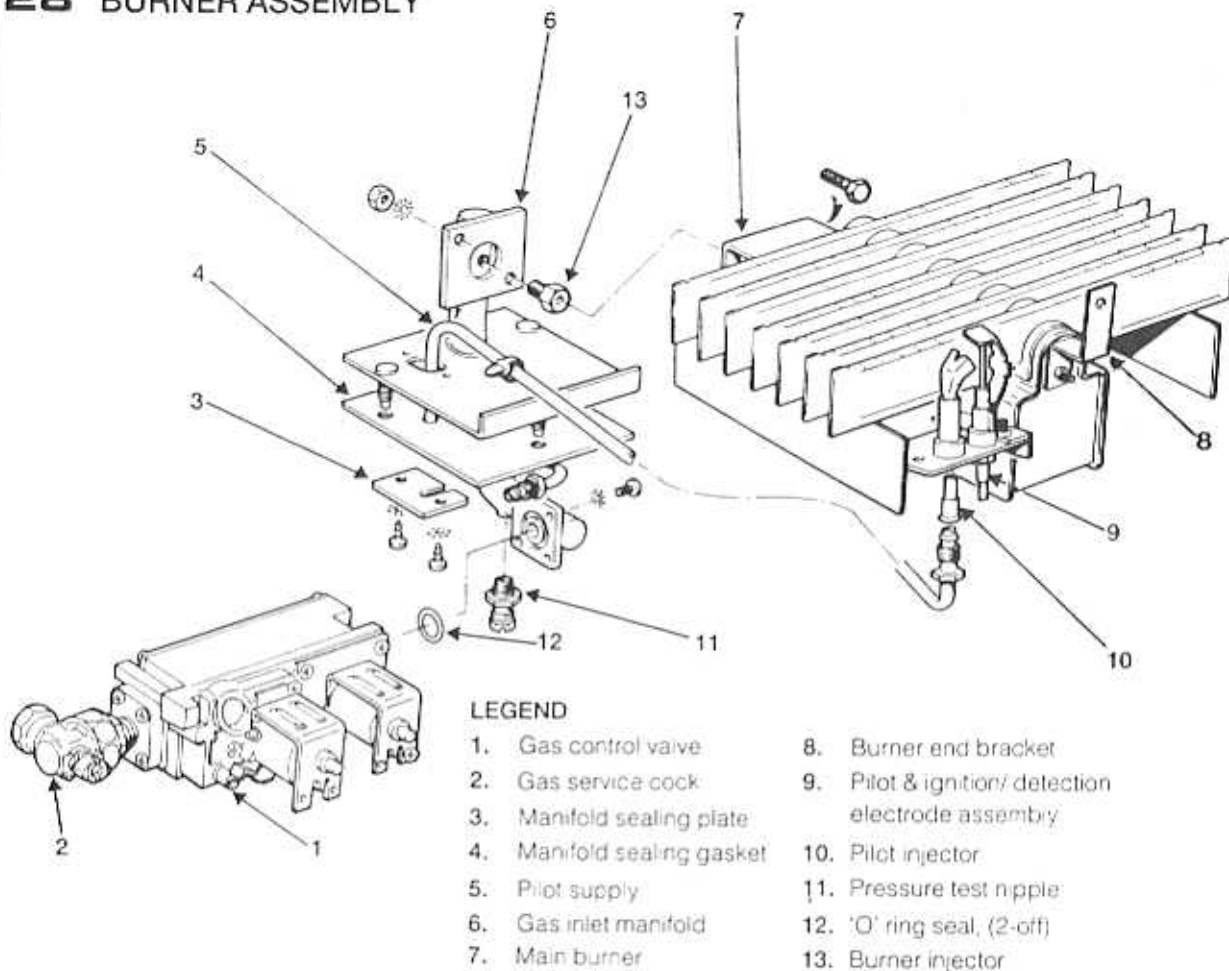
27 AUTOMATIC IGNITION PCB -REPLACEMENT

1. Remove the control box covers - Refer to Frame 4



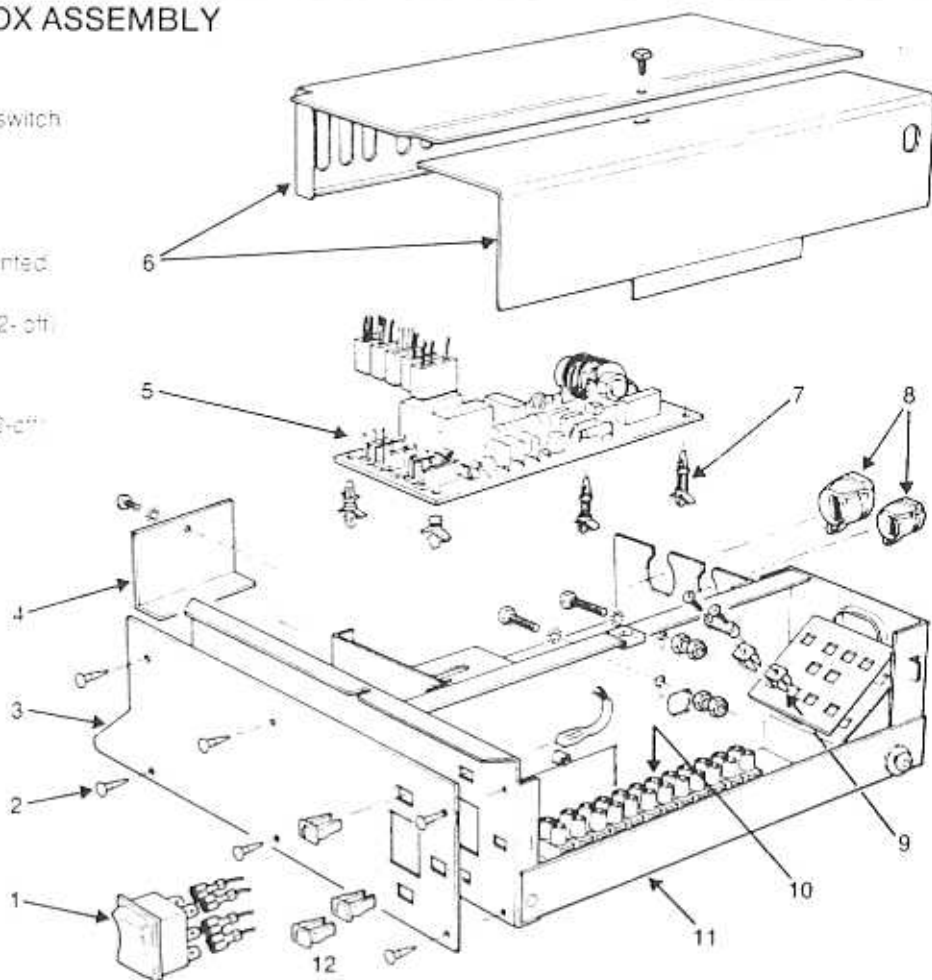
2. Disconnect the ignition detection lead
3. Disconnect the five plug-in leads
4. Disconnect the earth leads
5. Disengage the PCB by compressing the 3 mounting pegs with pliers
6. Fit the new PCB and re-assemble in reverse order.

28 BURNER ASSEMBLY



29 CONTROL BOX ASSEMBLY

- LEGEND**
- 1. Thermostat selector switch
 - 2. Fascia pins
 - 3. Fascia
 - 4. Cover plate
 - 5. Automatic ignition printed circuit board
 - 6. Control box covers (2-off)
 - 7. Printed circuit board mounting pegs
 - 8. Strain relief bushes (2-off)
 - 9. Cable clamps
 - 10. Terminal strip
 - 11. Control box
 - 12. Indicator neons

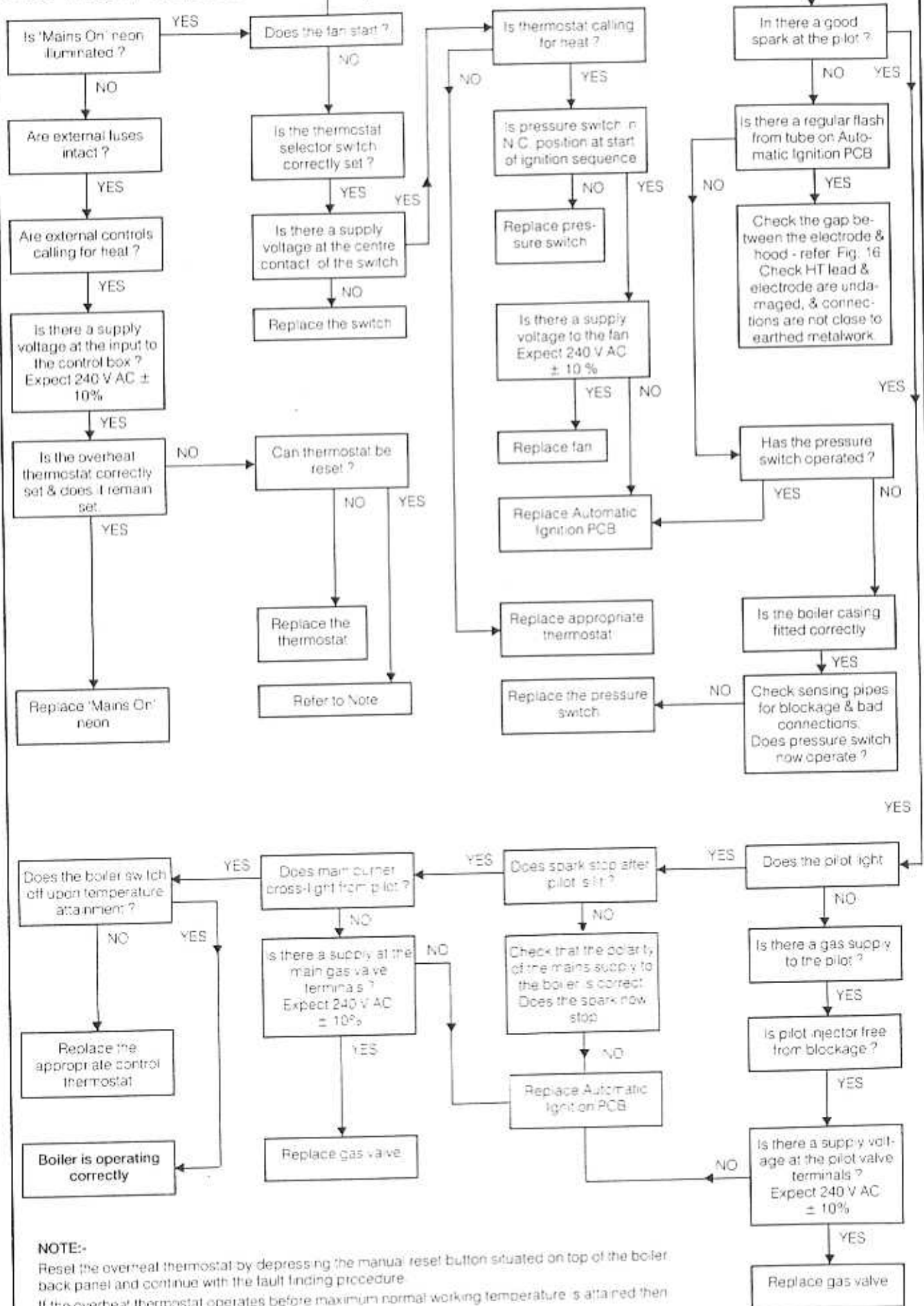


Start from cold and set thermostat selector switch to either 'HIGH' or 'LOW'.

Before attempting any electrical fault finding, ALWAYS carry out the preliminary electrical system checks as detailed on Pages 6-9 of 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.

30 FAULT FINDING



NOTE:-

Reset the overheat thermostat by depressing the manual reset button situated on top of the boiler back panel and continue with the fault finding procedure.
If the overheat thermostat operates before maximum normal working temperature is attained then replace the thermostat.

SHORT LIST OF PARTS

IDEAL ELAN 40F, 50F, 60F & 80F GAS BOILERS

When ordering spares, please quote:

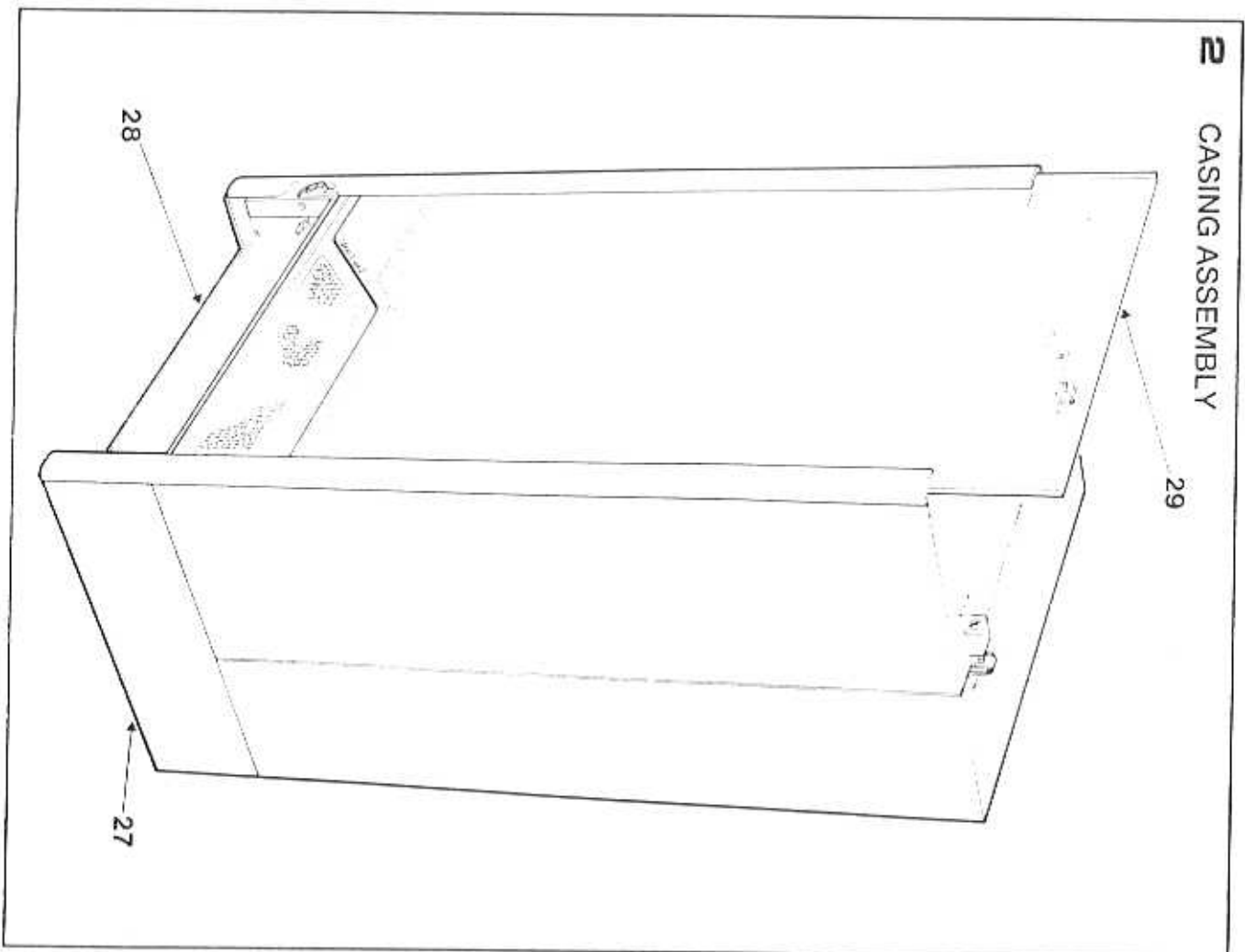
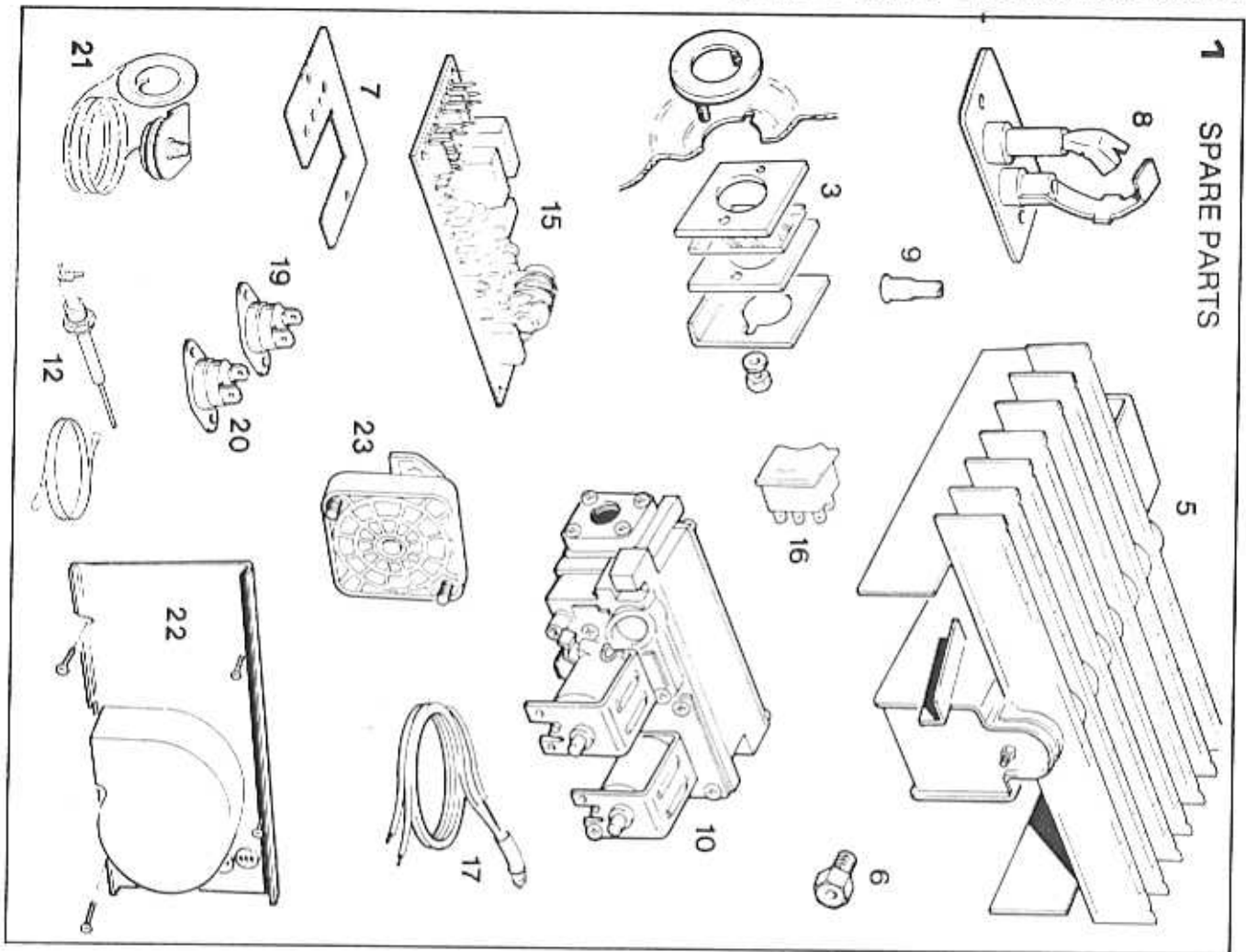
1. Boiler Model
2. Appliance G.C. Number
3. Description
4. Maker's Part Number
5. Quantity

The following list comprises parts commonly required as replacement components due to damage, expendability, or such that their failure, or absence, is likely to affect the safety or performance.

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	341 989	Sight glass assembly, comprising sight glass and frame, two sight glass gaskets, two M4 Hex nuts and two M4 shakeproof washers.	1	199116045
5	319 024	Main burner - FURIGAS Type 'R' No. 118 500 025- 40F	1	189946064
	319 025	No. 118 500 026- 50F & 60F	1	189956064
	319 026	No. 118 500 027- 80F	1	189986064
6		Main burner injector		
	398 051	BRAY Cat. 10, Size 1200- 40F	1	199026060
	398 055	BRAY Cat. 10, Size 1400- 50F	1	129108739
	398 060	BRAY Cat. 10, Size 1800- 60F	1	189966060
	398 066	BRAY Cat. 10, Size 2400- 80F	1	199256060
7	319 027	Burner mounting plate gasket	1	189946074
8	319 028	Pilot burner- Honeywell Q359A Automatic 27L	1	589250085
9	381 791	Pilot burner injector- Honeywell 45003 508 005 56/42A	1	589250083
10	395 796	1/2 in BSP Honeywell Gas Control Valve VR 4700E 1018, 240 V, with 2 'O' rings	1	586131300
12	319 029	Spark electrode and H/T lead assembly Vernitron No 60959, with H.T. lead- 600 mm lg.	1	589940088
15	319 035	Automatic Ignition Printed Circuit Board - Pactrol 7A	1	589250068
16	396 729	Thermostat selector switch- Arcoelectric No. C1470	1	589030104
17	341 461	Neon indicator- Readileads Ltd.	3	589730067
19	392 921	Thermostat - HIGH setting- Elmwood 2455R 821 4	1	589730056
20	392 932	Thermostat - LOW setting- Elmwood 2455R 821 3	1	589730057
21	394 216	Thermostat- OVERHEAT- Ranco LM7	1	589250074
22		Fan Assembly complete		
	319 037	Sifan No. W IFFB 0219-009, -40F, 50F & 60F	1	589945011
	319 038	Sifan No. W IFFB 1212-001 -80F	1	589985011
23		Pressure switch		
	392 933	Dungs LGW 3A1- 40F, 50F & 60F	1	589135025
	395 802	Dungs LGW 3A1- 80F	1	589115025
27		Boiler casing assembly- white stove enamel (less removable glass fascia) with removable bottom panel, lighting instructions label, complete insulation, sealing gasket & 4 fixing screws/retaining washers.		
	319 040	Ideal Elan 40F, 50F & 60F	1	189944030
	319 041	Ideal Elan 80F	1	189944029
28		Controls casing bottom panel with lighting instruction label and two fixing screws		
	319 042	Ideal Elan 40F, 50F & 60F	1	189940086
	319 042	Ideal Elan 80F	1	189800086
29		Glass Fascia		
	319 044	Ideal Elan 40F, 50F & 60F	1	189940088
	319 045	Ideal Elan 80F	1	189980088
30		Casing sealing pack		
	319 046	Ideal Elan 40F, 50F & 60F	1	189944033
	319 047	Ideal Elan 80F	1	189984033





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

STELRAD GROUP Limited

Sales and Marketing
P.O. Box 103, National Avenue,
Kingston upon Hull,
North Humberside HU5 4JN
Telephone: (0482) 492251 Telex: 527032

Head and Registered Office:
Newtown Road, Henley-on-Thames, Oxfordshire
RG9 1HL
Registration No. London 322137

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 **STELRAD
GROUP**

IDEAL

January, 1987

ELAN 2; 40F, 50F, 60F & 80F

Wall Mounted, Balanced Flue, Fanned Gas Boilers


User's Instructions

CAUTION:

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

Appliance		G.C.Number
Ideal Elan 2	40F	41 415 62
Ideal Elan 2	50F	41 415 72
Ideal Elan 2	60F	41 415 61
Ideal Elan 2	80F	41 415 60

The Gas Safety (Installation and Use) Regulations: 1984 impose certain statutory obligations on gas users. Further information may be obtained on application to the Gas Region.

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.

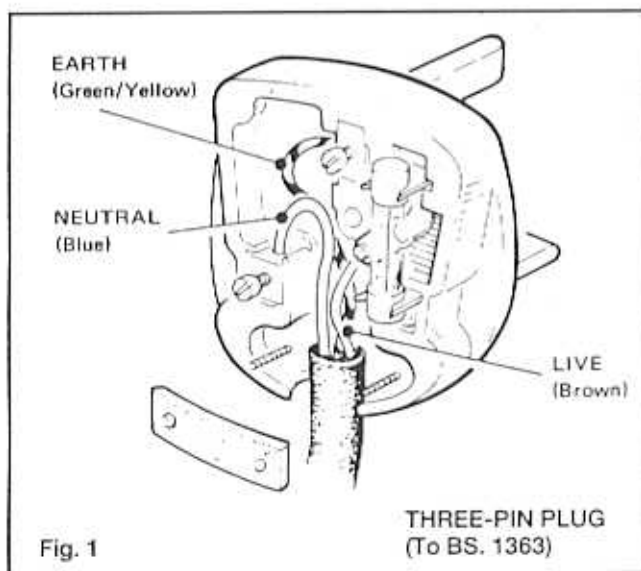
ELECTRICAL SUPPLY

If a mains plug is used it MUST be a 3-pin type, wired as shown in Fig. 1 and fused at 3 A.

The appliance MUST be efficiently earthed.

As the colour of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:-

The wire which is coloured GREEN and YELLOW must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol  or coloured GREEN or GREEN and YELLOW. The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK. The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.



MINIMUM SERVICING SIZES

Boiler size	Width	Depth	Height
40F, 50 & 60F			
Rear flue mm (in)	400 (16)	300 (12)	1020 (40)
Side flue mm (in)	425 (16 ⁷ / ₈)	300 (12)	1020 (40)
80F			
Rear flue mm (in)	485 (19)	300 (12)	1020 (40)
Side flue mm (in)	510 (20)	300 (12)	1020 (40)

After installation, the boiler can be built into the following clearances required for servicing.

	Rear flue outlet	Side flue outlet
Above the boiler	100mm. (4 in.)	100mm. (4 in.)
At each side of the boiler	10mm. (⁷ / ₈ in.)	10mm. (⁷ / ₈ in.); flue side 30mm (1 ¹ / ₈ in.); other side
Underneath the boiler	100mm. (4 in.)	100mm. (4 in.)

In addition an adequate clearance MUST be available at the front of the boiler -enabling the appliance to be serviced.

IMPORTANT: THIS APPLIANCE MUST NOT BE OPERATED WITHOUT THE CASING CORRECTLY FITTED AND FORMING AN ADEQUATE SEAL.

If the boiler is installed in a compartment it MUST NOT be used for storage purposes.

The ventilation provided for the boiler during installation MUST NOT be blocked and a check should be made periodically that the ventilation areas are free from any obstruction.

If it is known or suspected that a fault exists on the boiler it MUST NOT be used until the fault has been corrected by a competent person.

It is ESSENTIAL that the instructions in this booklet are strictly followed for safe and economical operation of the boiler.

TO LIGHT THE BOILER- Refer Fig. 2

1. Check that the electricity supply to the boiler is OFF.
2. Press the overheat reset button (A)- located on top of the boiler back panel
3. Slide the glass fascia upwards until it locates on the retaining catch (F)
4. Ensure that the boiler thermostat selector switch (D) is in the OFF position
5. Switch ON the electricity supply to the boiler and check that all external controls, eg. room thermostat e.t.c., are ON. The 'MAINS ON' neon (C) will glow.
6. Set the boiler thermostat switch to the desired position-HIGH or LOW. After about 15 seconds the boiler will light automatically.
7. Lift the glass fascia slightly, release the retaining catch (F) by pulling it forward, and slide the fascia down

For WINTER CONDITIONS i.e. central heating and domestic hot water, the thermostat should be set at HIGH

For SUMMER CONDITIONS i.e. domestic hot water only the thermostat should be set at LOW

Approximate flow temperatures for the boiler thermostat settings are:-

Thermostat Setting	Approx. Flow Temp	
	°C	°F
High	82	180
Low	60	140

TO SHUT DOWN THE BOILER

1. **For short periods:**
Set the boiler thermostat selector switch (D) to OFF. When heating is again required - restore the switch to its original setting.
2. **For longer periods:**
Set the boiler thermostat selector switch (D) to OFF. Switch the electricity supply to OFF.

WARNING:

If no frost protection is provided and frost is likely during a short absence from home, leave the heating controls, (if fitted) at a reduced temperature setting.

For longer periods, the entire system should be drained, including the domestic water supply.

If the system includes a frost thermostat, then, during cold weather, the boiler should be turned OFF at the time switch (if fitted) only.

The mains supply should be left switched 'ON' with the boiler HEATING & WATER switches remaining in 'OFF' positions.

BOILER OVERHEAT THERMOSTAT

The boiler is fitted with a safety 'cut out' thermostat which will interrupt the mains supply to the boiler and shut it down in the event of overheating. The 'Mains On' neon will go out.

Should this occur allow the boiler to cool and then re-light as detailed in steps 1 to 7, under 'To Light the Boiler'.

If the 'cut out' condition still persists then turn off the boiler and consult your local Heating Installer.

CONTROL OF WATER TEMPERATURE

1. Set the boiler thermostat selector switch to give the required temperature.
2. The boiler thermostat automatically switches the main burner OFF and ON to maintain the selected temperatures.

TO RELIGHT THE BOILER

Repeat the procedure 1-7 detailed in 'To Light the Boiler'.

ESCAPE OF GAS

Should a gas leak be suspected, contact your local Gas Region without delay.

Do NOT search for gas leaks with a naked flame.

CLEANING

For normal cleaning, simply dust with a dry cloth. To remove stubborn marks and stains, wipe with a damp cloth and finish off with a dry cloth.

Do NOT use abrasive cleaning materials.

MAINTENANCE

The appliance should be SERVICED AT LEAST ONCE A YEAR by a qualified Heating Engineer or your Local Gas Region.

LEGEND

- A Overheat Thermostat reset button
- B Sightglass
- C 'Mains On' indicator neon
- D Thermostat selector switch
- E Gas service cock
- F Fascia retention catch

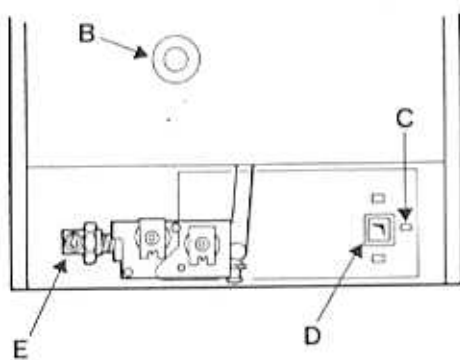
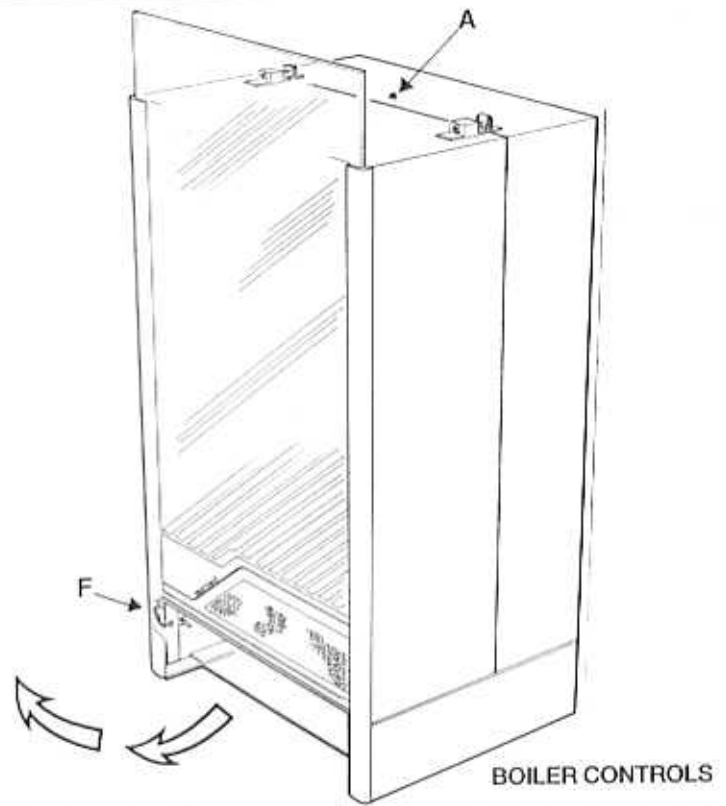


Fig. 2



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STELRAD GROUP Limited
Sales and Marketing
P.O. Box 103, National Avenue
Kingston upon Hull,
North Humberside. HU5 4JN
Telephone: 0482 492251 Telex: 527032

Head and Registered Office:
Newtown Road, HENLEY-on-Thames, Oxfordshire
RG9 1HL
Registration No. London 322137

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