

BAXI SOLO

ALL RS MODELS

WALL MOUNTED ROOM SEALED
GAS FIRED CENTRAL HEATING BOILERS

INSTALLATION & SERVICING INSTRUCTIONS

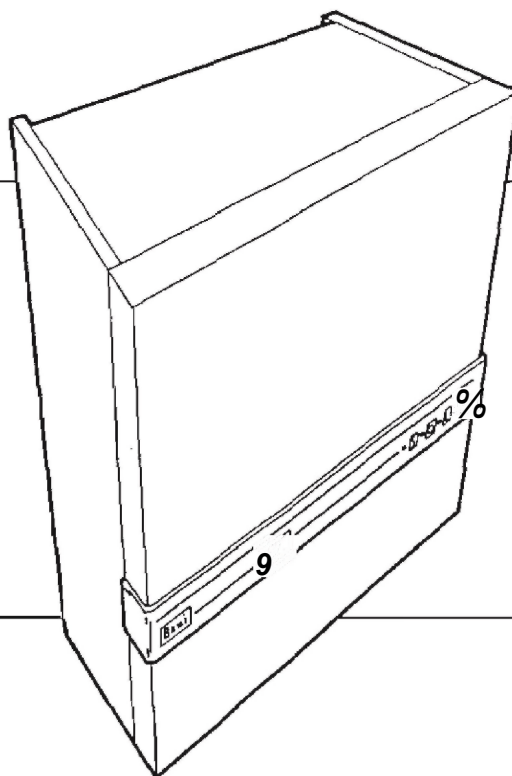
BAXI SOLO 60/4 RS - G.C. No 41 077 50

BAXI SOLO 50/4 RS - G.C. No 41 077 49

BAXI SOLO 40/4 RS - G.C. No 41 077 48

BAXI SOLO 30/4 RS - G.C. No.41 077 47

BAXI SOLO 20/4 RS - G.C. No 41 077 46



Please leave these Instructions with the User

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INTRODUCTION

fiSSKs:

Description

The Baxi Solo is a wall mounted room sealed central heating boiler with range rated outputs as shown in the table below.

Model	HEAT OUTPUT	
	Min	Max
Wjk	3.22kW (11,000 Btu/h)	5.86kW (20,000 Btu/h)
30/4	6.15kW (21,000 Btu/h)	8.79kW (30,000 Btu/h)
40/4	9.09kW (31,000 Btu/h)	11.72kW (40,000 Btu/h)
mEM	12.00kW (41,000 Btu/h)	14.70kW (50,000 Btu/h)
60/4	14.95kW (51,000 Btu/h)	17.58kW (60,000 Btu/h)

Each appliance is preset at its MAXIMUM heat input rating and is designed for use on NATURAL GAS only. They are suitable for gravity domestic hot water with piped central heating fully pumped open vented central heating and domestic hot water and sealed systems.

The standard flue assembly supplied is suitable for wall thicknesses between 100mm (4in) and 356mm (14in). An optional flue extension kit is available for walls of 356mm (Min) and 610mm (24in) thickness. A pump housing kit is also available when it is desired to fit a central heating pump within the confines of the case.

The appliance data badge is fitted to the combustion box door, adjacent to the burner feed pipe.

Installation

The installation must be carried out by a competent person and be in accordance with the relevant requirements of GAS SAFETY (Installation and Use) REGULATIONS 1984, the BUILDING REGULATIONS (Scotland) (Consolidation), the LOCAL BUILDING REGULATIONS, the current L.E.E. WIRING REGULATIONS and the bye laws of the LOCAL WATER UNDERTAKING. It should also be in accordance with the relevant BRITISH STANDARD CODES OF PRACTICE.

B.S. Codes of Practice

STANDARD	SCKBE
BS 6891:1988	Gas Installation.
BS 5546	Installation of hot water supplies for domestic purposes.
BS 5449 Part 1	Forced circulation hot water systems.
BS 6798:1987	Selection & Installation of gas space heating.
BS 5440 Part 1	Flues.
BS 5440 Part 2	Air Supply.

WARNING

The addition of anything that may interfere with the normal operation of the appliance (e.g. FLUE DAMPERS, ECONOMISERS etc) without the express written permission of BAXI could invalidate the appliance warranty and infringe the GAS SAFETY (Installation and Use) REGULATIONS 1984.

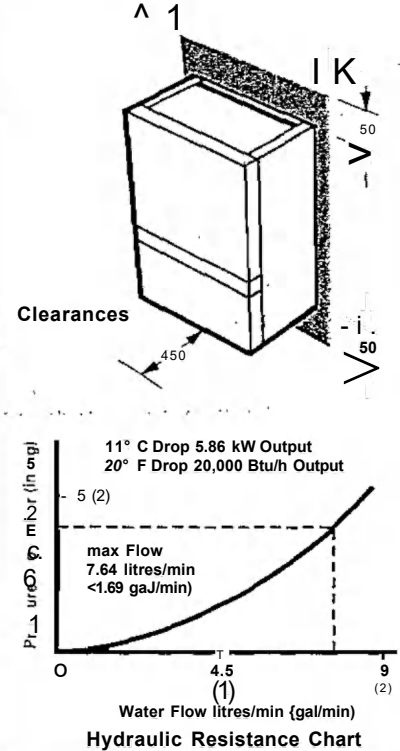
TECHNICAL DATA

20/4 RS

S M 8 i « ¥ : l i S

Heat Input	Max	Min
kW	7.51	4.24
Btu/h	25,640	14,475
Heat Output	Max	Min
kW	5.86	3.22
Btu/h	20,000	11,000
Burner Pressure	Max	Min
mbar	15.2 ± 0.5	4.8 ± 0.5
in wg	6.1 ± 0.2	1.9 ± 0.2
Gas Connection	RC7* (Vsin BSPT)	
Electrical Supply	240V~50Hz fused 3A	
Controls	on/off boiler thermostat with pilot/thermocouple cut out/overheat thermostat	
Connections	2 x 22mm and 2 x 28mm tails for gravity	

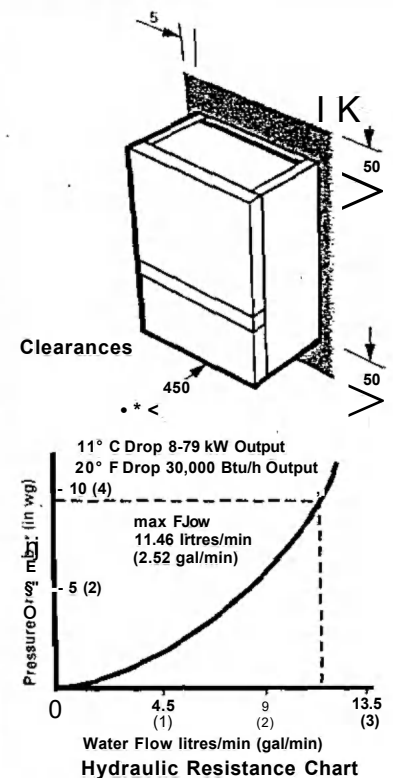
Lifting Weight	26.4 kg (58.2 lbs)	
Water Content	1.73 litres (0.38 gals)	
Static Head	Max	Min
metres	30	1
feet	100	3.25
Low Head	Min 0.15m (6in)	
System Design	gravity hot water fully pumped open vented and sealed systems	
Heat Exchanger	cast iron monobloc	
Gas Rate (after 10 mins)	0.70m ³ /h <24.70ft ³ /h	
Outercase Dimensions	Height	600mm
	Width	350mm
	Depth	300mm
Flue Terminal Dimensions	Height	230mm
	Width	230mm
	Depth	143mm



30/4 RS

Heat Input	Max	Min
kW	11.27	8.01
Btu/h	38,640	27,345
Heat Output	Max	Min
kW	8.79	6.15
Btu/h	30,000	21,000
Burner Pressure	Max	Min
mbar	15.6 ± 0.5	7.8 ± 0.5
in wg	6.25 ± 0.2	3.1 ± 0.2
Gas Connection	RCV* (1/2" in BSPT)	
Electrical Supply	240V~50Hz fused 3A	
Controls	on/off boiler thermostat with pilot/thermocouple cut out/overheat thermostat	
Connections	2 x 22mm and 2 x 28mm tails for gravity	

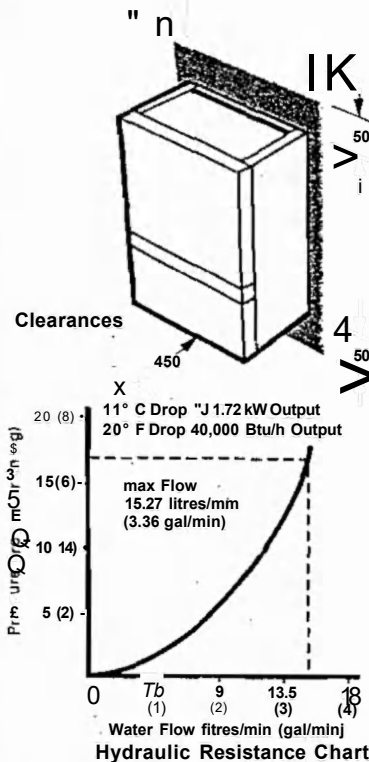
Lifting Weight	26.4 kg (58.2 lbs)	
Water Content	1.73 litres (0.38 gals)	
Static Head	Max	Min
metres	30	1
feet	100	3.25
Low Head	Min 0.15m (6in)	
System Design	gravity hot water fully pumped open vented and sealed systems	
Heat Exchanger	cast iron monobloc	
Gas Rate (after 10 mins)	1.05m ³ /h (37.05ft ³ /h)	
Outercase Dimensions	Height	600mm
	Width	350mm
	Depth	300mm
Flue Terminal Dimensions	Height	230mm
	Width	230mm
	Depth	143mm



40/4 RS

Heat Input	Max	Min
kW	15.23	11.95
Btu/h	51,970	40,780
Heat Output	Max	Min
kW	11.72	9.09
Btu/h	40,000	31,000
Burner Pressure	Max	Min
mbar	15.4 ± 0.5	9.6 ± 0.5
in wg	6.2 ± 0.2	3.9 ± 0.2
Gas Connection	RC ¹ / ₂ (Vain BSPT)	
Electrical Supply	240V~50Hz fused 3A	
Controls	on/off boiler thermostat with pilot/thermocouple cut out/overheat thermostat	
Connections	2 x 22mm and 2 x 28mm tails for gravity	

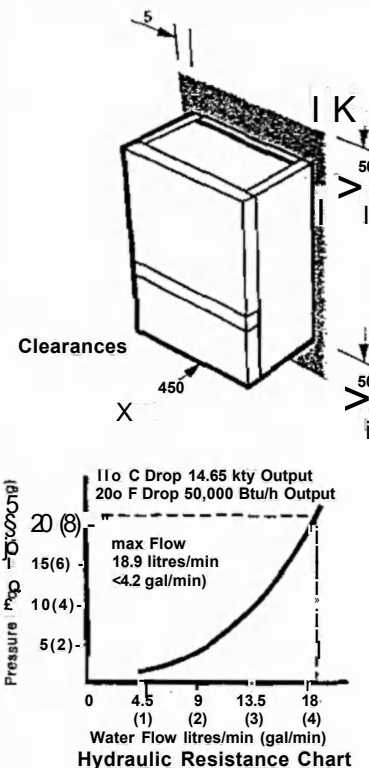
Lifting Weight	29.0 kg (63.9 lbs)	
Water Content	1.85 litres (0.41 gals)	
Static Head	Max	Min
metres	30	1
feet	100	3.25
Low Head	Min 0.20m (8in)	
System Design	gravity hot water fully pumped open vented and sealed systems	
Heat Exchanger	cast iron monobloc	
Gas Rate (after 10 mins)	1.42m ³ /h (50.07ft ³ /h)	
Outer Case Dimensions	Height	600mm
	Width	400mm
	Depth	300mm
Flue Terminal Dimensions	Height	230mm
	Width	230mm
	Depth	143mm



50/4 RS

Heat Input	Max	Min
kW	19.10	16.00
Btu/h	65,000	54,600
Heat Output	Max	Min
kW	14.70	12.00
Btu/h	50,000	41,000
Burner Pressure	Max	Min
mbar	18.2 ± 0.5	12.9 ± 0.5
in wg	7.3 ± 0.2	5.2 ± 0.2
Gas Connection	RCV ¹ / ₂ (Ain BSPT)	
Electrical Supply	240V-50Hz fused 3A	
Controls	on/off boiler thermostat with pilot/thermocouple cut out/overheat thermostat	
Connections	2 x 22mm and 2 x 28mm tails for gravity	

Lifting Weight	32.1 kg (70.8 lbs)	
Water Content	2.4 litres (0.53 gals)	
Static Head	Max	Min
metres	30	1
feet	100	3.25
Low Head	Min 0.15m (6in)	
System Design	gravity hot water fully pumped open vented and sealed systems	
Heat Exchanger	cast iron monobloc	
Gas Rate (after 10 mins)	1.77mVh (62.55ftYb)	
Outer Case Dimensions	Height	600mm
	Width	450mm
	Depth	300mm
Flue Terminal Dimensions	Height	241mm
	Width	307mm
	Depth	143mm



60/4 RS

Heat Input	Max	Min
kW	23.07	19.83
Btu/h	78,740	67,640

Heat Output	Max	Min
kW	17.58	14.95
Btu/h	60,000	51,000

Burner Pressure	Max	Min
mbar	17.7 ± 0.5	13.1 ± 0.5
• in wg	7.1 ± 0.2	5.3 ± 0.2

Gas Connection RCV* (Vsin BSPT)

Electrical Supply 240V~50Hz
fused 3A

Controls on/off boiler thermostat
with pilot/thermocouple
cut out/overheat
thermostat

Connections 2 x 22mm and 2 x 28mm
tails for gravity

Lifting Weight 35.5 kg (78.0 lbs)

Water Content 2.76 litres (0.61 gals)

Static Head	Max	Min
metres	30	1
feet	100	3.25

Low Head Min 0.15m (6in)

System Design gravity hot water fully
pumped open vented
and sealed systems

Heat Exchanger cast iron monobloc

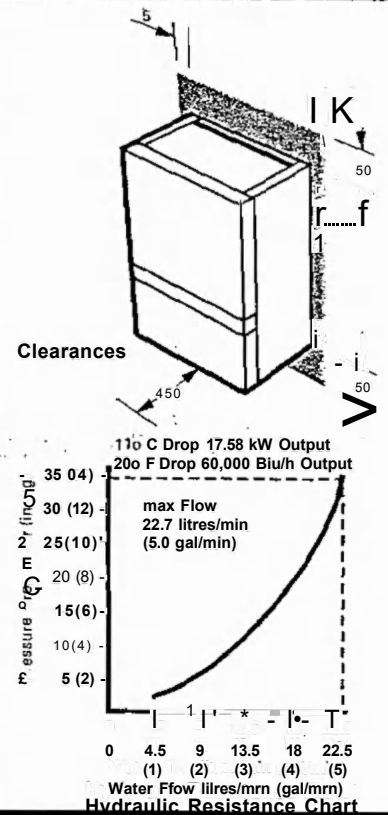
Gas Rate
(after 10 mins) 2.15m³/h (75.86ft³/h)

Outer Case Dimensions

Height	600mm
Width	470mm
Depth	320mm

Flue Terminal Dimensions

Height	241mm
Width	307mm
Depth	172mm



SYSTEM DETAILS

Water Circulating Systems

The appliance is suitable for use with fully pumped open vented systems; (small bore and micro-bore), gravity domestic hot water with pumped central heating systems and sealed systems.

When the boiler is to be installed to an existing or new gravity domestic hot water and pumped central heating system; the following considerations should be given to the design of the gravity domestic hot water flow and return pipes.

The minimum circulating head should not be less than 1m (3ft) with a maximum horizontal run of 3m (10ft) when using 28mm pipes. Smaller pipe sizes and longer horizontal runs are acceptable with suitably increased circulating heads.

The system must be designed to prevent reverse circulation.

Pipes should be laid to maximum fall avoiding points of possible air lock.

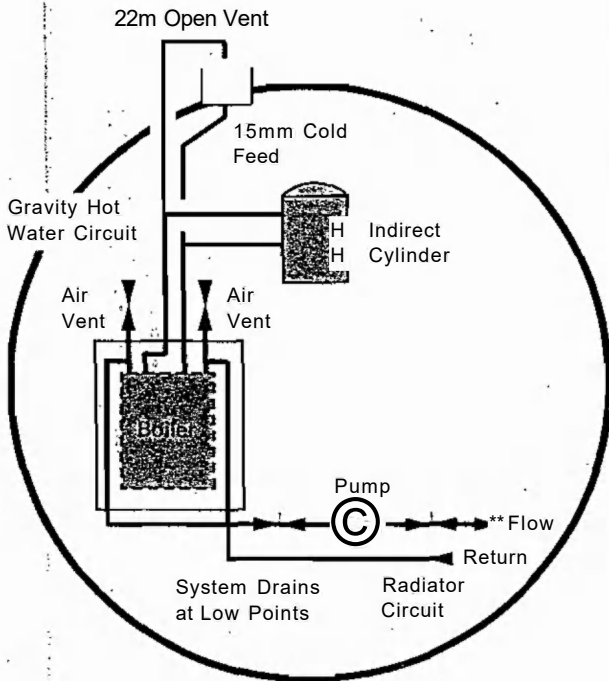
See page 23 for wiring of the boiler when installed with gravity hot water.

The following conditions should be observed on all types of system.

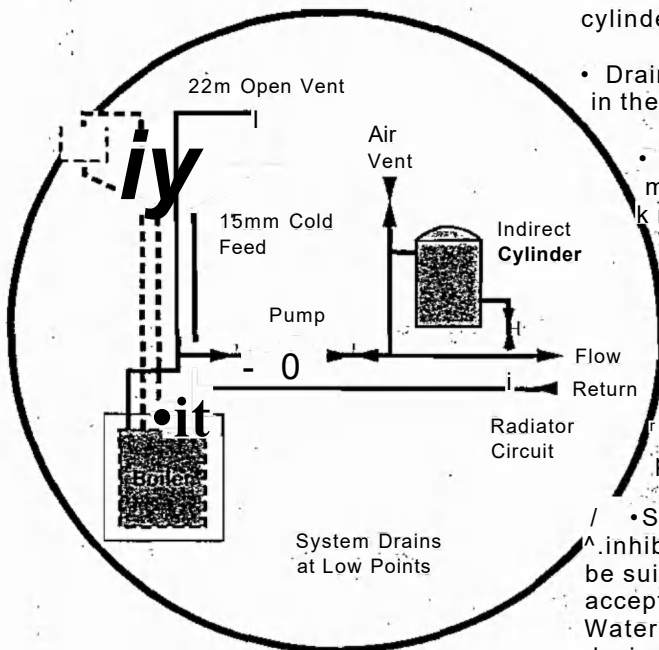
- The static head must not exceed 30m (100ft) of water.
- The boiler must only be used with an indirect cylinder.
- Drain points should be fitted to the lowest points in the system.
- All electrical wiring, gas and water pipes must be installed in a way which would not restrict the servicing of the boiler.
- Position isolating valves as close to the circulating pump as practicable.
- For fuel economy and best boiler performance, the system should be designed so that gravity circulation does not take place in the heating system when the pump is not running.
- System additives - where used, corrosion inhibitors and flushing agents/descalers should be suitable for all system metals. They should be acceptable to major users i.e. British Gas and Water Council approved. Non acidity or alkalinity is desirable.

BYPASS REQUIREMENTS

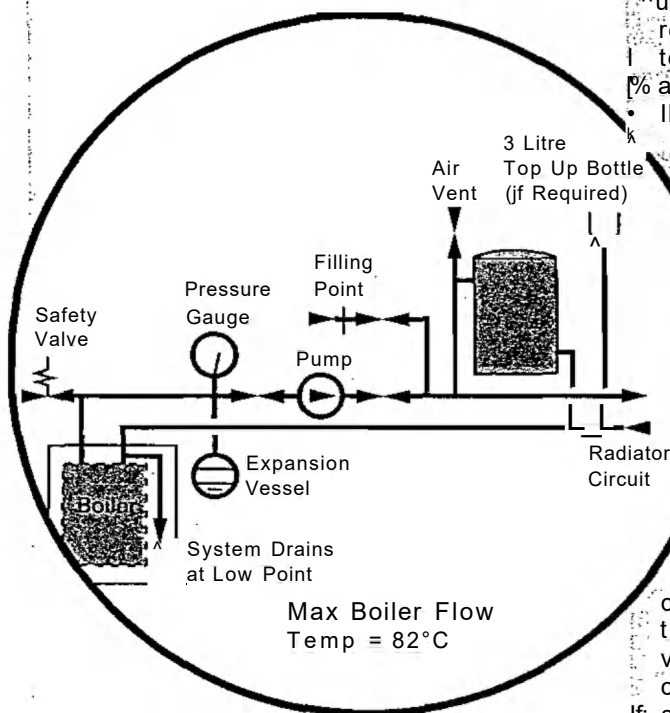
The boiler is fitted with a pump overrun device which allows the removal of residual heat from the boiler. The system design must therefore, always provide an open circuit for water to circulate between the boiler flow and return.



Gravity Hot Water - Pump Heating



Fully Pumped System



Method of determining minimum value of expansion vessel volume for sealed systems using Bar Boilers

Vessel Charge Pressure (Bar)	Initial System Pressure (Bar)	Multiply Total Water Content of System By (Litres)
0.5	0.5	0.067
	1.0	0.112
	1.5	0.207
	2.0	0.441
1.0	1.0	0.087
	1.5	0.152
	2.0	0.330
1.5	1.5	0.125
	2.0	0.265

Example: System Volume = 75 litres
 Vessel Charge Pressure = 0.5 bar
 Initial System Pressure = 1.0 bar
 Then 75 x 0.112 = 8.4 litres
 Expansion Vessel Volume

NOTE

Where a vessel of the calculated size is not obtainable then the next available larger size should be used.

Sealed Systems

SAFETY VALVE

A safety valve complying with the requirements of BS 6750 Part 1 must be fitted close to the boiler on the flow pipe by means of a horizontal or vertically upward connection with no intervening valve or restrictions and should be positioned to facilitate testing. The valve should be pre-set and non-adjustable to operate at a pressure of 3 bar (45 lbf/in²). It must be arranged to discharge any water or steam through a pipe to a safe outlet position!

PRESSURE GAUGE

A pressure gauge of minimum range 0-4 bar (0.60 lbf/in²) with a fill pressure indicator must be fitted to the system, preferably at the same point as the expansion vessel in an easily visible position.

EXPANSION VESSEL

An expansion vessel complying with the requirements of BS 4814 must be fitted to the system by means of a connection close to the inlet side of the circulating pump in accordance with the manufacturers instructions; the connecting pipe being unrestricted and not less than 15mm (1/2 in) nominal size. The volume of the vessel should be suitable for the system water content and the nitrogen or air charge pressure should not be less than the system static head.

Further details of sealed system design can be obtained from BS 5449: Part 1 and the British Gas publication entitled 'Specifications for Domestic Wet Central Heating Systems'.

FILLING POINT

A filling point and an approved stop valve to BS 1010 must be fitted at low level and the method used for filling the system should be approved by the local water undertaking. For further details see BS 6798.

MAKE UP SYSTEM

A method of replacing water lost from the system should be provided either by means of a make up vessel of not more than 3 litres (5 pints) capacity, mounted above the highest point of the system, or by pre-pressurisation of the system.

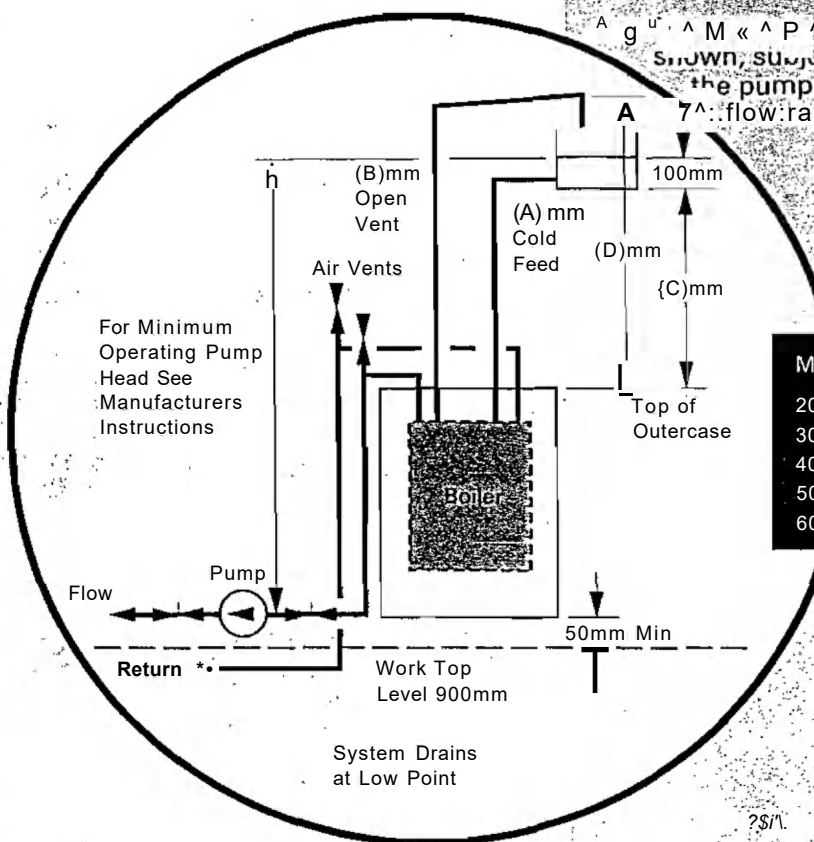
VENTING

A method of venting the system during filling and commissioning must be provided by fitting automatic air vents or by venting manually.

HOT WATER STORAGE

The hot water storage vessel must be of the coil type. All components used in the system must be suitable for operation at 110°C (230°F) and at the pressure allowed by the safety valve.

Low Head Installation



Model	A	B	C	D
20/4	15	22	150	750
30/4	15	22	150	750
40/4	15	22	200	800
50/4	22	28	150	750
60/4	22	28	150	750

Pipework

The sizes of flow and return pipes from the boiler should be determined by normal methods, according to the requirements of the system.

An 11°C (20°F) drop across the system is recommended.

System Controls

For optimum operating conditions, the heating system into which the boiler is installed should include a control system.

Such a system would normally comprise of timer control and separate room or cylinder thermostat as appropriate.

The boiler should be controlled so that it operates on demand only.

Operation of the system under control of the boiler thermostat only, does not produce the best results.

Reference should be made to control equipment manufacturers literature for information e.g. wiring diagrams; etc;

SITE REQUIREMENTS

Location

The appliance must be fitted through an outside wall with the flue discharging to atmosphere in a position permitting satisfactory removal of

'H' combustion products and an

The appliance should be fitted within the building unless otherwise protected by a suitable enclosure ie. garage or outhouse. - /

UJf the appliance is to be fitted in a house of timber / frame construction, refer to British Gas document /." 5' DM2. . .

r Recommendations for flues are given in BS 5440 Pt1. tl- .\Pj.v.-.v.A'.'.'Onf> .> .V

Clearances

A flat vertical area is required for the appliance measuring as shown in the table below for each model.

Model	Heig* mm (in)	Width mm (in)
20/4	700 (27 7/8)	360 (14 1/8)
30/4	700 (27 7/8)	360 (14 1/8)
40/4	700 (27 7/8)	410 (16 1/8)
50/4	700 (27 7/8)	460 (18 1/8)
60/4	700 (27 7/8)	480 (18 7/8)

These dimensions include the necessary clearances around the appliance for case removal, spanner access and air movement.

Additional clearances may be required for the passage of pipes around local obstructions such as joists running parallel to the front face of the appliance.

Balanced Flue Position

The following guide lines indicate the general requirements for siting balanced flue terminals.

If the terminal is fitted within 1 metre (39in) of a plastic gutter, within 500mm (19 3/4 in) of a painted eave or a painted gutter, an aluminium shield of at least 1 metre (39in) long should be fitted to the underside of the gutter or painted surface. An air space of 5mm (3/16 in) should be left between shield and gutter.

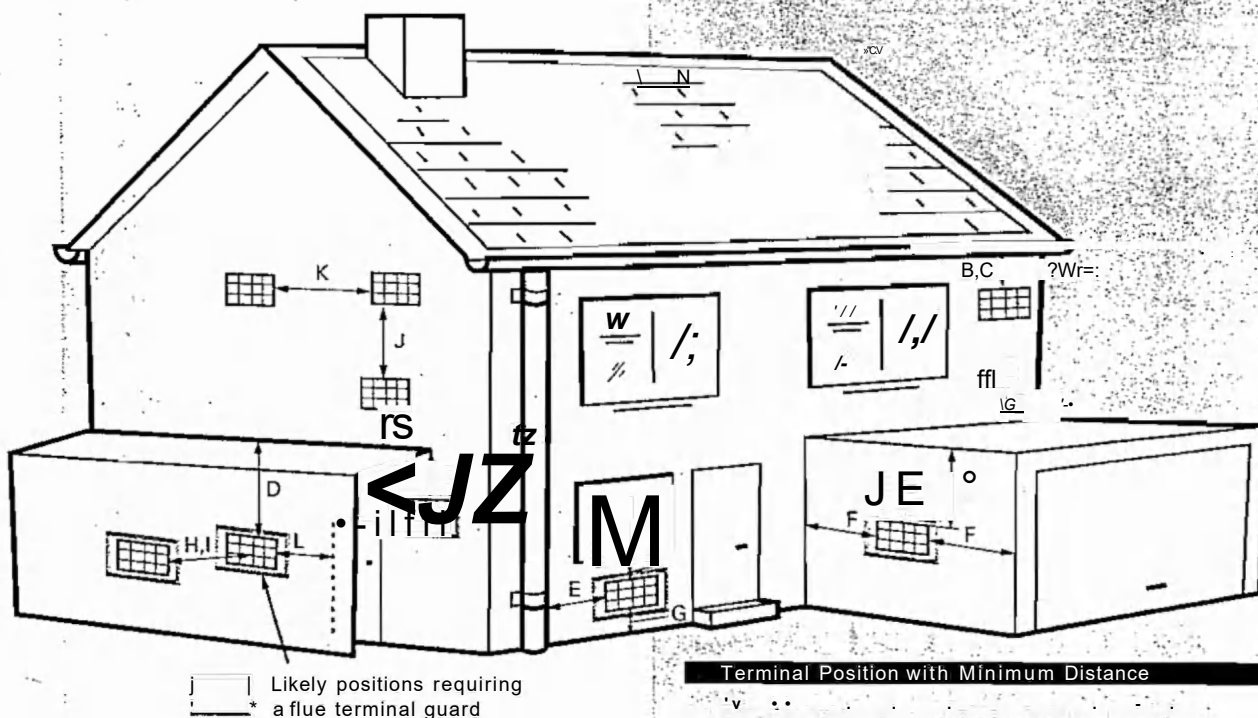
If the terminal discharges onto a pathway or passageway, check that combustion products will not cause a nuisance and that the terminal will not obstruct the passageway. ;'-/-..

If the outer surface of an outside wall is of combustible material, it should be protected by fitting a non-combustible plate so that it extends not less than 50mm (2in) around the terminal.

Model	Heig	Width
1 MM	350	350
2 1/2	400	400
1 1/2	450	450
1 1/4	470	470



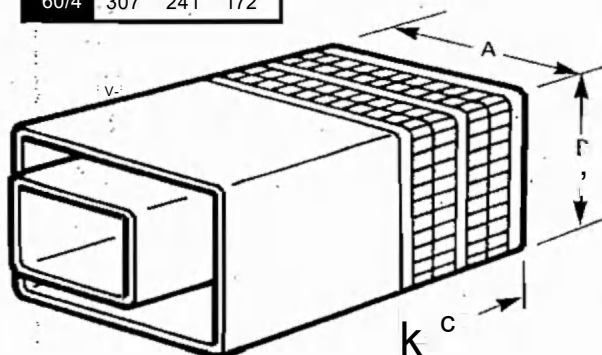
If a terminal is fitted less than 2 metres (78 3/4 in) above a balcony, above ground or above a flat roof to which people have access then a suitable terminal guard must be provided.



Terminal Position with Minimum Distance (mm)

A	Directly below an openable window or other opening, e.g. an air brick. " J,	300
B	Below gutters, soil pipes or drain pipes.	300
C	Below balconies or car port roofs.	600
E	From vertical drain pipes and soil pipes.	75
F	From internal or external corners.	600
G	Above ground, roof or balcony level.	600
H	From a surface facing a terminal.	600
I	From a terminal facing a terminal.	600
J	Vertically from a terminal on the same wall; ^E* - *? . *?	1500
K	Horizontally from a terminal on the same wall.	300
L	For an opening in a car port (e.g. door, window) into a dwelling.	1200

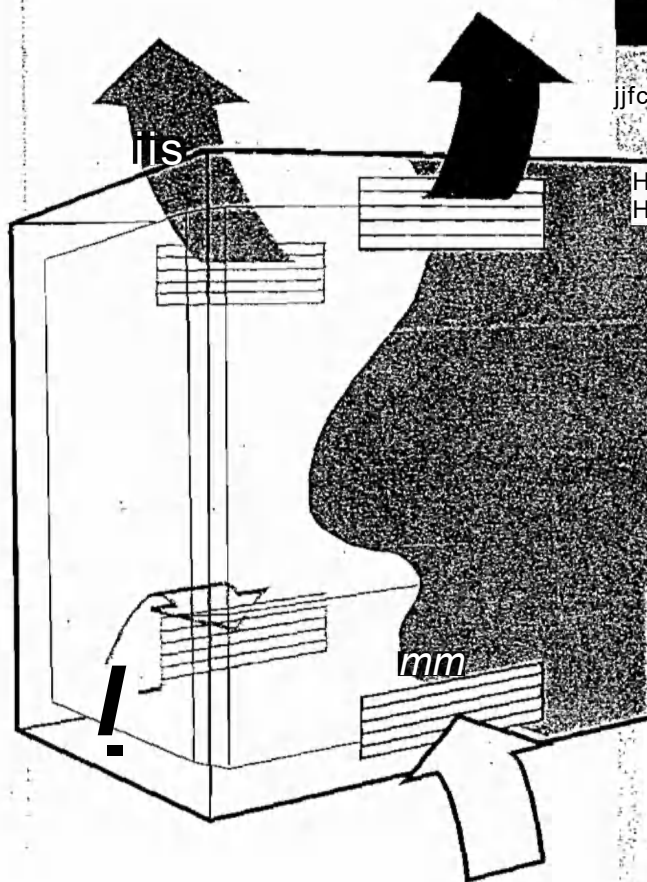
Model	A	B	C
20/4	230	230	143
30/4	230	230	143
40/4	230	230	143
50/4	230	241	143
60/4	307	241	172



Flue Dimensions

Recommendations for flues are given in BS 5440:1. The standard flue terminal supplied with the appliance is suitable for use with wall thickness between 100mm and 356mm (4in and 14in).

A flue terminal extension kit is available as an optional extra for wall thickness between 356mm and 610mm (14in and 24in) from the manufacturer. Quote appliance Model N° and G.C. N° when ordering.



Ventilation of Compartments

Where the appliance is installed in a cupboard or compartment, air vents are required (for cooling purposes) in the cupboard or compartment at high and low level which may communicate with a room or direct to outside air.

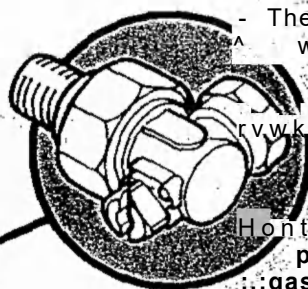
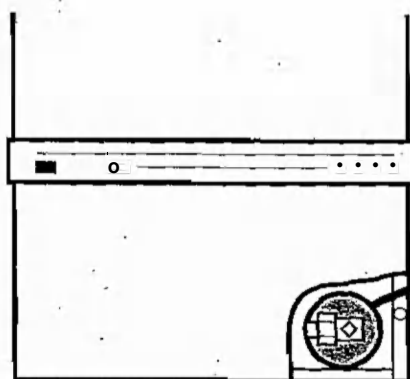
Detailed recommendations for air supply are given in BS 5440: Part 2: V-

An existing cupboard or compartment may be used, provided that it is modified for the purpose. Recommendations for air supplies and details of essential cupboard compartment design are given in BS 5440: Part 2.

NOTE: Both air vents must communicate with the same room or both be on the same wall to outside air.

Model	Position of Air Vent	Air from Room	Air direct from Outside
2 n/4	HIGH AND LOW LEVEL	67.59cm ² FREE AREA (10.26in ²)	33.15cm ² FREE AREA (5.13in ²)
30/A	LOW LEVEL	101.43cm ² FREE AREA (15.38in ²)	50.72cm ² FREE AREA (7.69in ²)
4W	LOW LEVEL	137.07cm ² FREE AREA (20.78in ²)	68.54cm ² FREE AREA (10.39in ²)
nn/4	HIGH AND LOW LEVEL	175cm ² FREE AREA (27in ²)	87.5cm ² FREE AREA (13.5in ²)
60/4	HIGH AND LOW LEVEL	207.63cm ² FREE AREA (31.5in ²)	103.82cm ² FREE AREA (15.75 in ²)

Gas Supply



The gas installation should be in accordance with BS 6891 : 1988.

The connection on the appliance is RCY* (V2 in BSPT internal) located at the bottom right hand side of the appliance.

Ensure that the pipework from the meter to the appliance is of adequate size. Do not use pipes of a smaller diameter than the appliance gas connection;

Electrical Supply

External wiring must be correctly earthed/polarized and in accordance with CURRENT I.E.E. WIRING REGULATIONS.

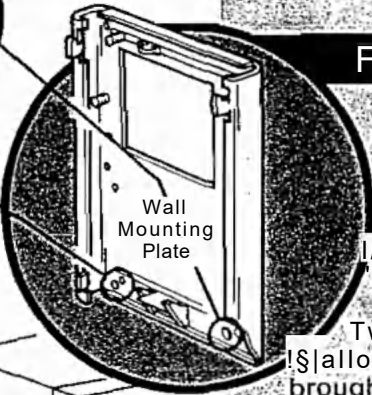
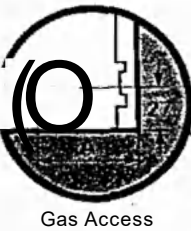
The mains supply is 240V - 50Hz fused at 3A.

NOTE: The method of connection to the electricity supply must facilitate complete electrical isolation of the appliance, preferably by the use of a fused three pin plug and unswitched shuttered socket outlet, both complying with the requirements of BS 1363. Alternatively, connection may be made via a fused double-pole isolator with a contact separation of a least 3mm in all poles and serving the appliance and system controls only.

INSTALLATION

Fitting the Wall Mounting Plate

Model A
20/4 37
30/4 1
40/4 1
50/4 97
60/4 97



Unpack wall mounting plate and hardware pack from the outer case carton.

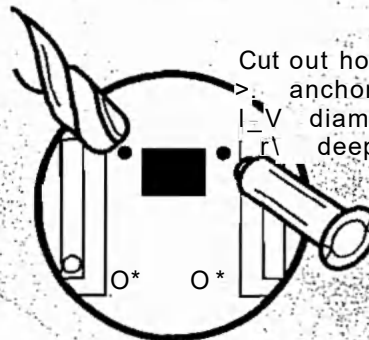
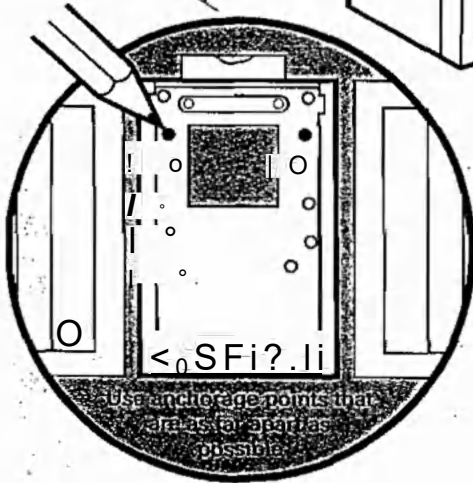
The plate is same height and width as the boiler.

Two holes are provided on the plate to allow gas and electrical supplies to be brought directly into the boiler from the wall. The grommet provided must be used when the electrical cable is routed through the wall mounting plate.

Choose a flat vertical area to position the boiler making necessary allowances for required minimum clearances. If fitting between wall cupboards ensure for each model that the minimum available width is as shown in the table below.

Model	Width B mm (in)
20/4	360 (14 1/8)
30/4	360 (14 1/8)
40/4	360 (14 1/8)
50/4	460 (18 1/8)
60/4	480 (18 7/8)

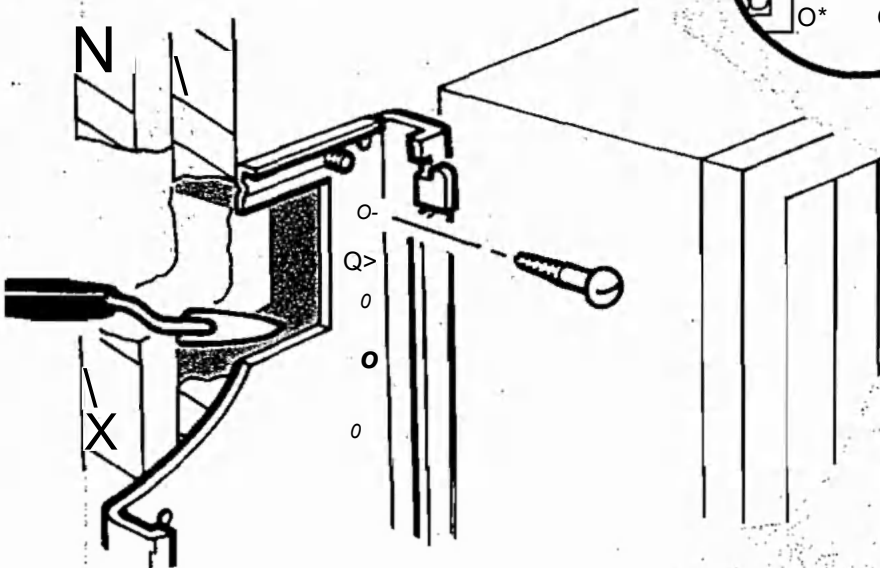
Offer plate to wall surface, level and using as a template, mark out flue opening and four good anchorage points. Mark gas and electrical supply access holes if required.

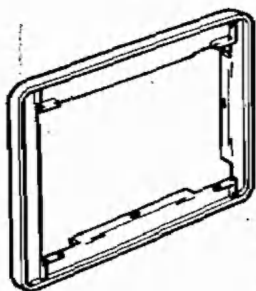


Secure plate to wall using 63mm (2 1/2 in) screws.

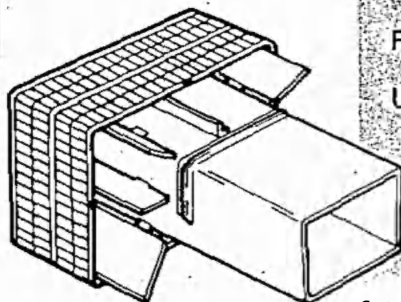
Secure plate to wall using 63mm (2 1/2 in) screws.

Make good internal masonry up to edges of flue cut-out in the plate.

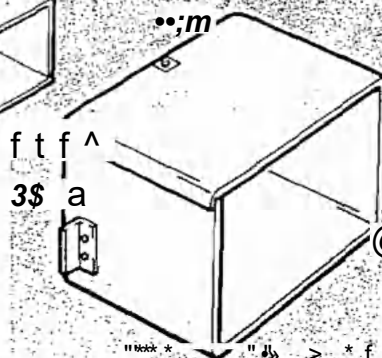




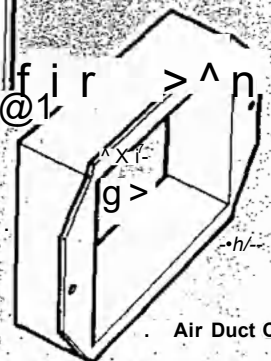
Flue Trim



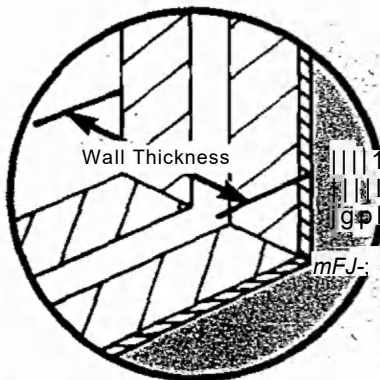
Flue Duct A



Air Duct B

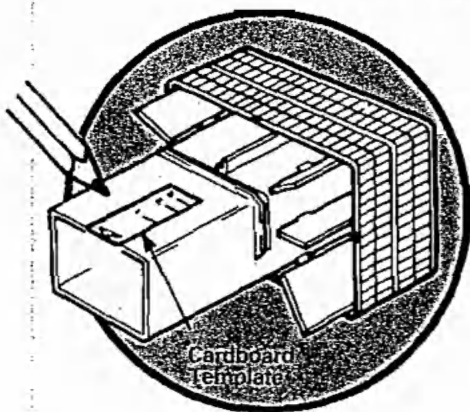


Air Duct C



Wall Thickness

Measure overall wall thickness. If this is between 280mm (11in) and 355mm (14in), use flue as supplied without alteration.

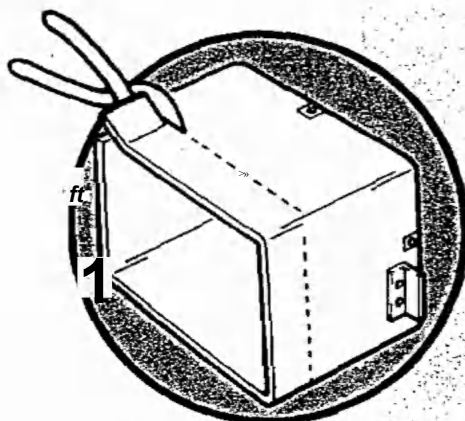


Cardboard Template

For wall thickness between 102mm (4in) and 280mm (11in), air duct B and flue duct A are required to be shortened.

Using the cardboard template supplied, place it with arrow at end of both ducts. Mark accordingly to table below.

Mark	Wall Thickness
1	203mm - 280mm (8in) - (11in)
2	127mm - 203mm (5in) - (8in)
3	102mm - 127mm (4in) - (5in)

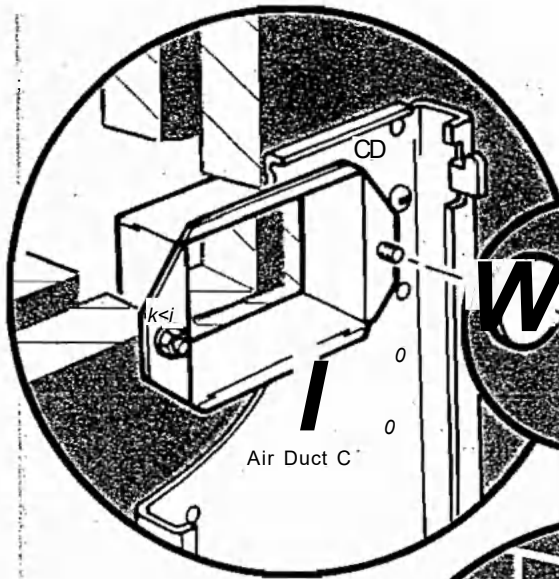


Using tin snips, cut around ducts at appropriate mark.

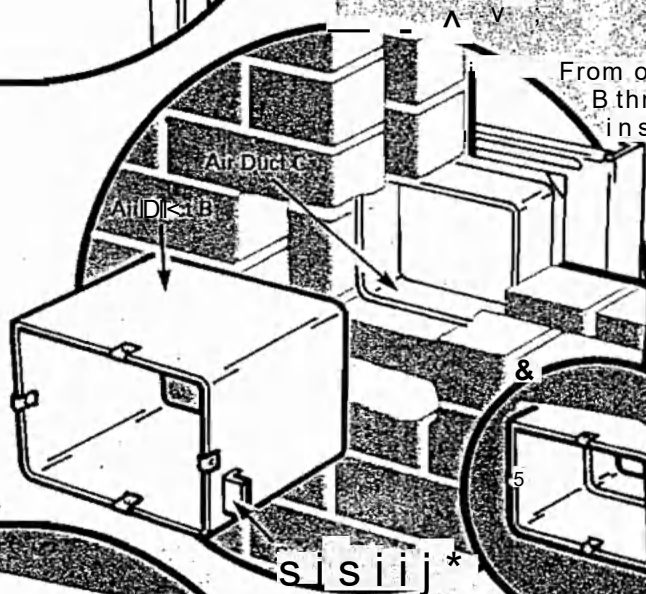
Fitting the Air Ducts

Fit inner air duct C through cut-out on mounting plate. Locate on two studs. Ensure duct is correct way up by putting flange marked LEFT to left hand side.

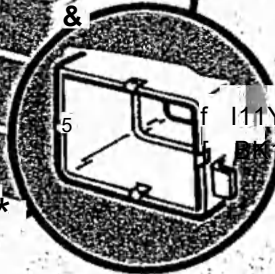
Secure with two nuts and washers.



Air Duct C



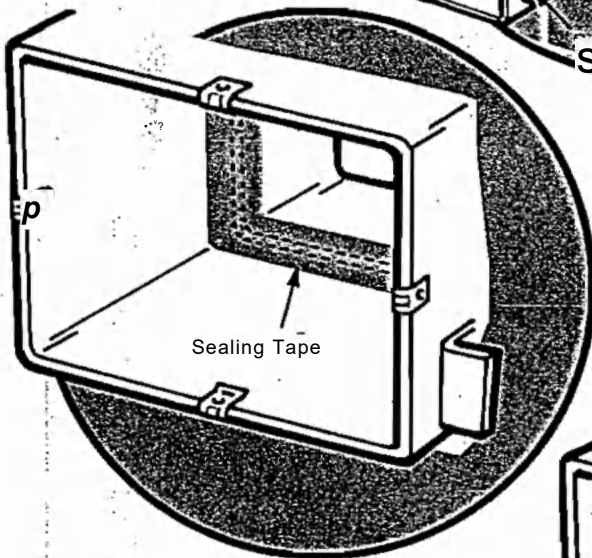
From outside building, pass air duct B through wall opening. The two inside brackets should be positioned at the bottom.



Slide duct over air

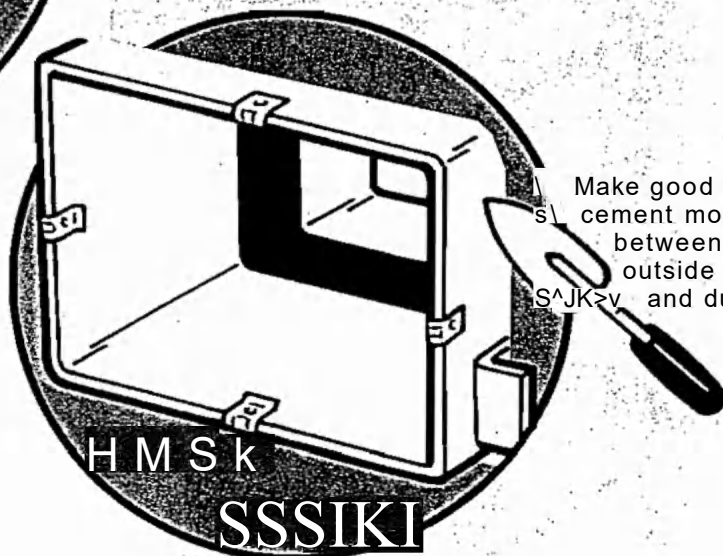
duct

brackets contact wall surface.



Sealing Tape

Ensure air duct B is horizontal and square to wall face. Using sealing tape supplied make good the joint on inside of the two ducts.



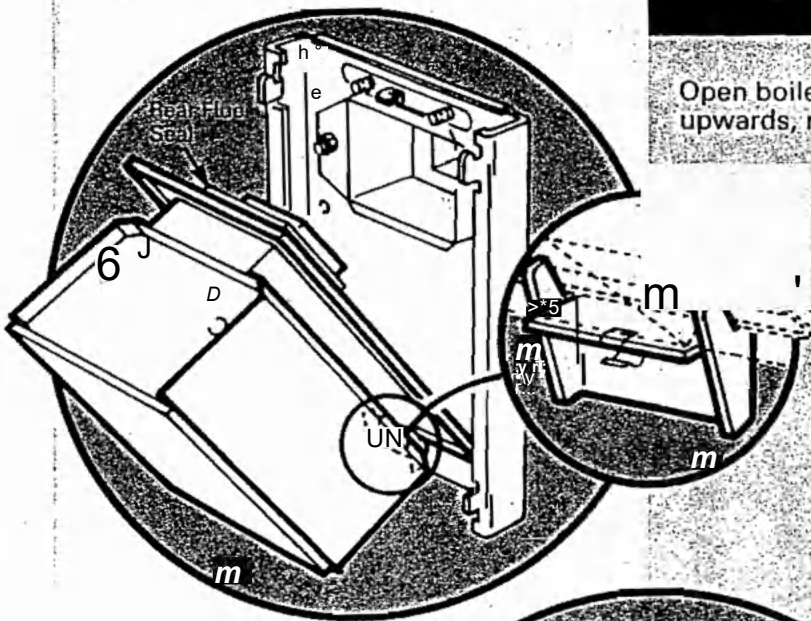
Make good with cement mortar between the outside wall and duct.

HMSK

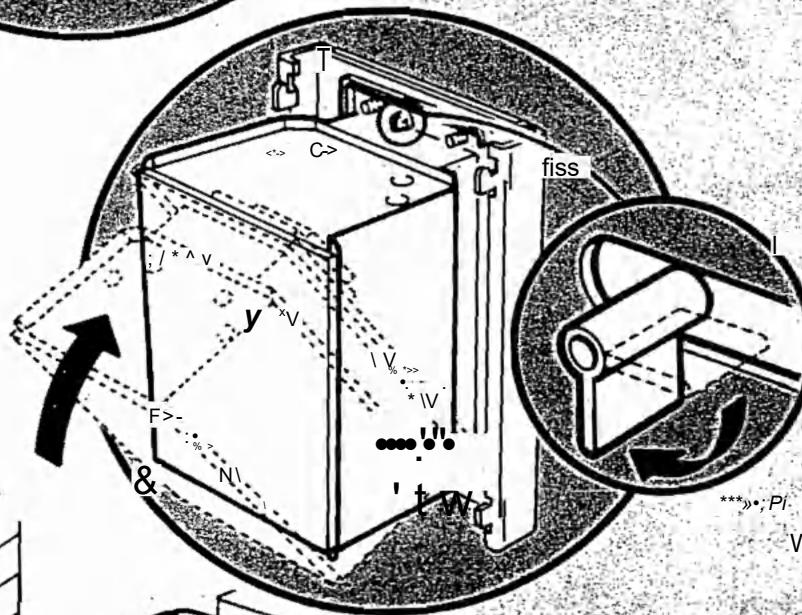
SSSI

Fitting the Boiler

Open boiler carton. Remove carton by lifting upwards, remove two cardboard side pieces.

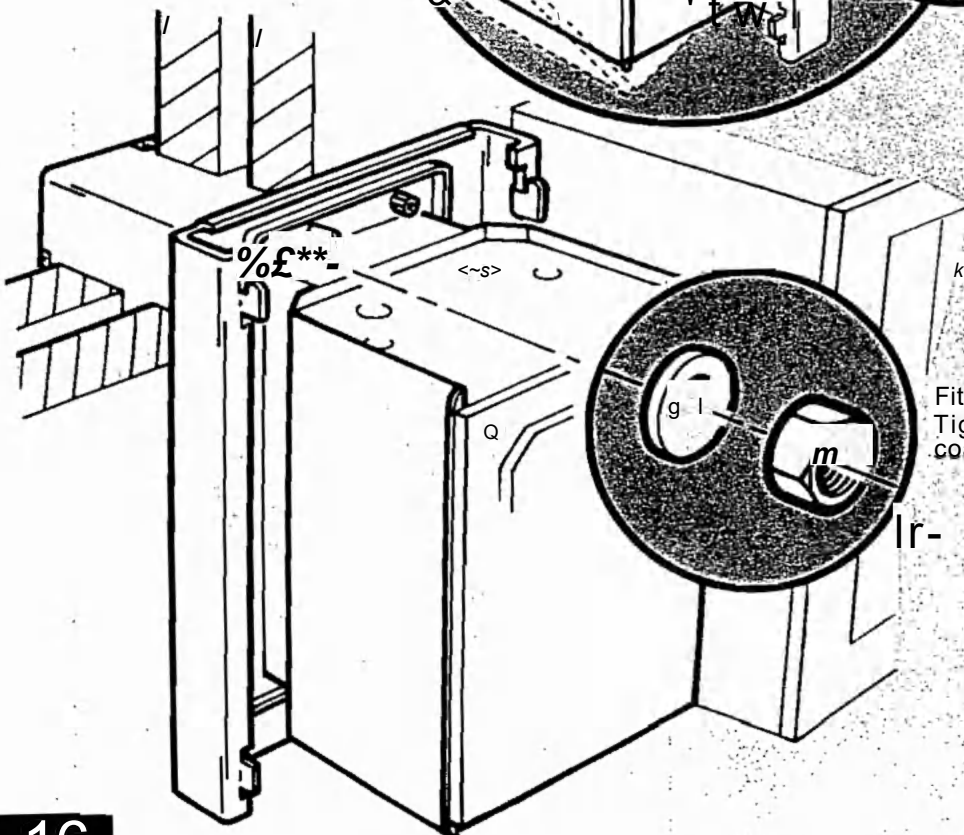


edge into hook bracket on mounting plate.



Rotate boiler back to mounting plate to engage two studs and latch.

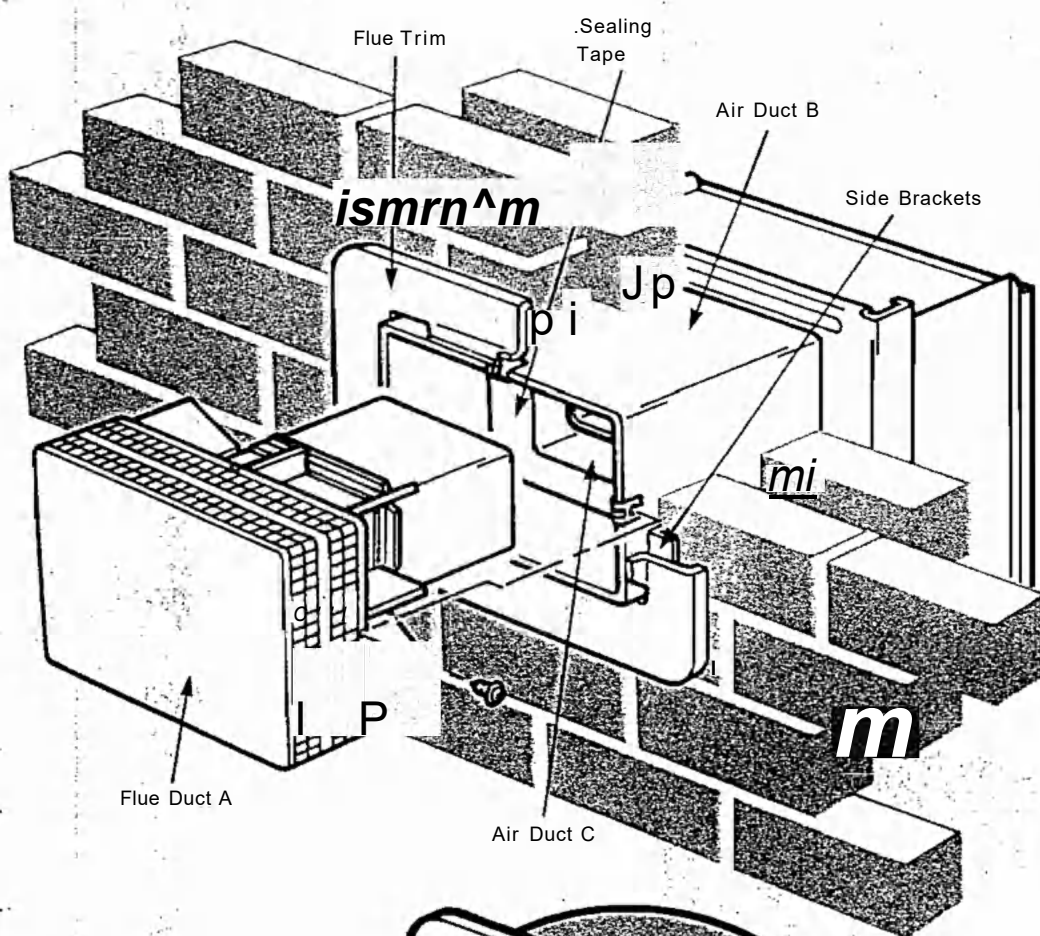
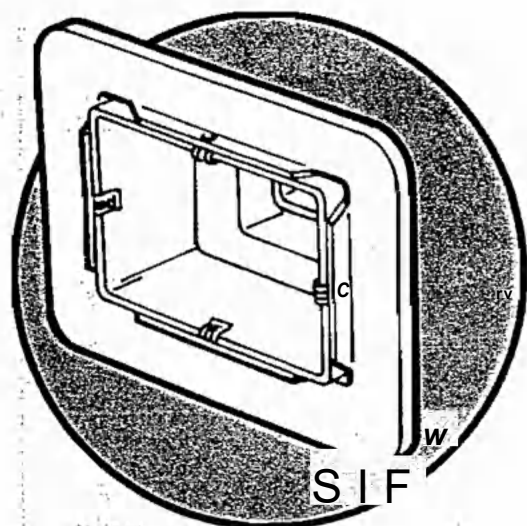
Turn latch to hold boiler in position.



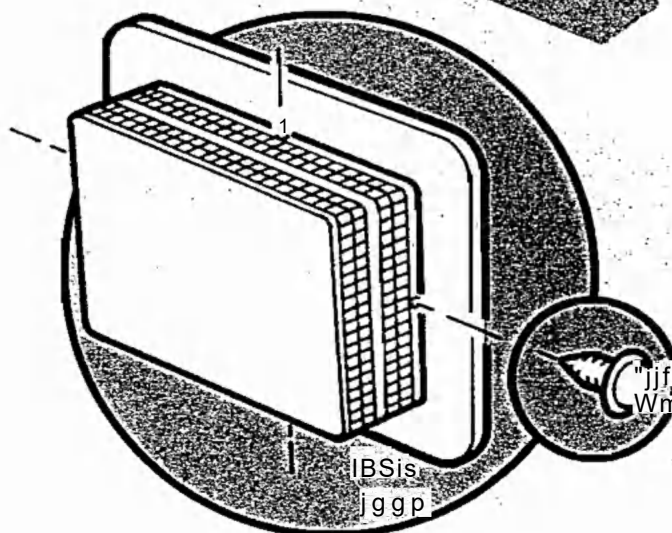
Fit the two nuts and washers. Tighten to compress rear flue coal.

Fitting the Flue Duct

Fit flue trim over air duct B



Slide flue duct A inside air duct B to engage flue duct on boiler.



Secure flue duct A, flue trim to air duct B with four screws.

Terminal Guard

When codes of practice dictate the use of terminal guards; they can be obtained from most plumbers and builders merchants nationwide.

When ordering a terminal guard, quote the appliance model number.

The guard manufacturers listed below can be contacted for terminal sizes and guard model numbers.

Quinnell, Barrett & Quinnell,

884 Old Kent Road,

London, SE15 1NL

Tel: 071 639 1357.

Tower Flue Components Ltd.,

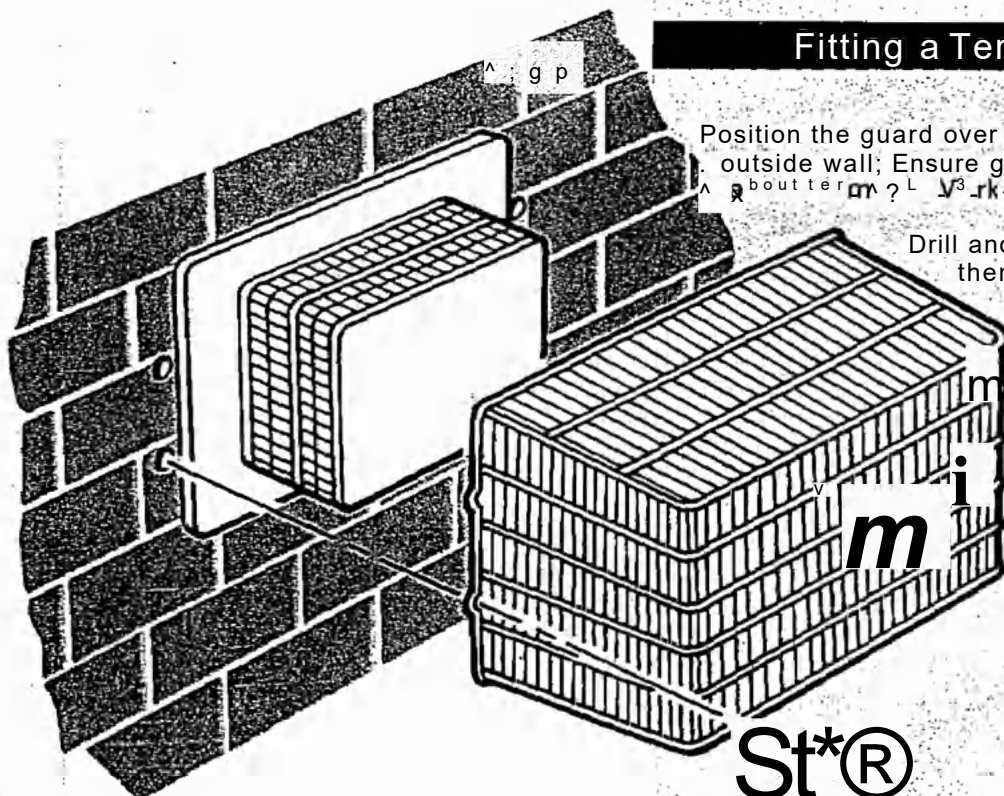
Tower House;

Vale Rise,

Tonbridge,

Kent.

Tel: 0732 351555

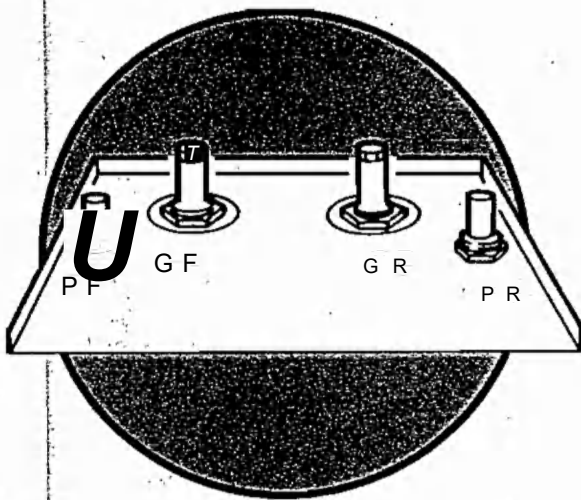


Fitting a Terminal Guard

Position the guard over the terminal on the outside wall; Ensure guard is equally spaced

Drill and plug fixing positions, then secure guard to wall.

St*®



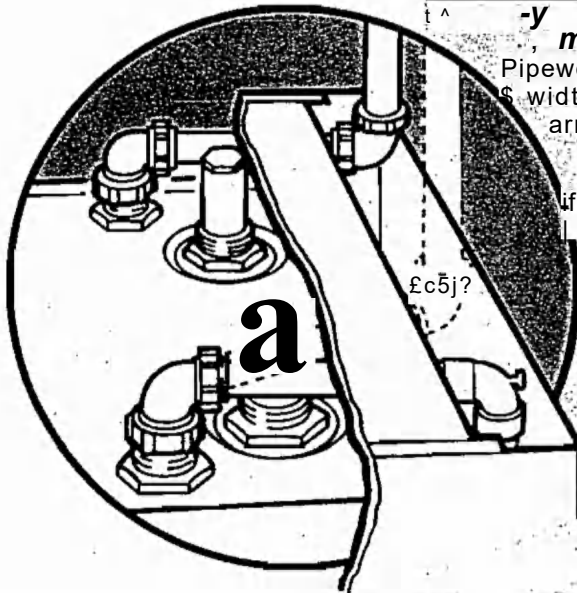
Water Connections

The boiler has 4 connection tails to accept capillary or compression fittings:-

- 22mm tail marked PF for Pumped Flow.
- 22mm tail marked PR for Pumped Return.

SEE ILLUSTRATION.

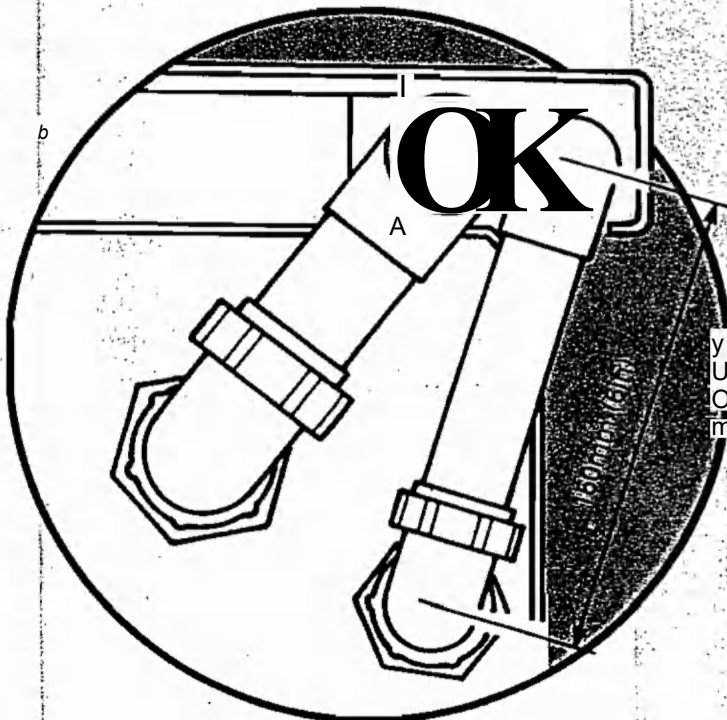
The boiler is supplied ready for fully pumped and sealed systems. The two gravity connections are



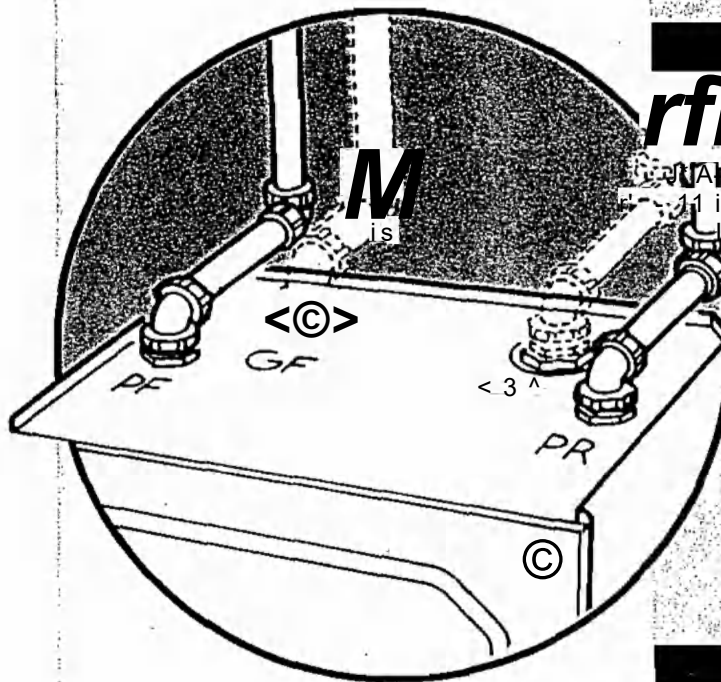
Pipe Routes

Pipework can be routed to any position across the width of casing through rear cut-outs and arranged to clear any obstructions.

Pipes may also be routed to drop down within outer case. Spaces are available at both sides.



Dimensions are given to enable a pipe to be routed downwards on right hand side. It is recommended that fittings 'A' are of copper capillary type.



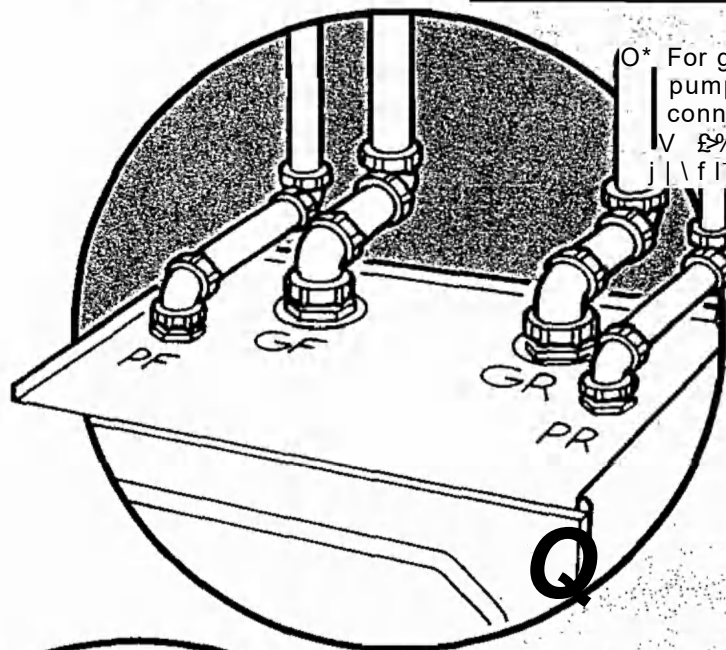
Fully Pumped System

rfmmmmmm,

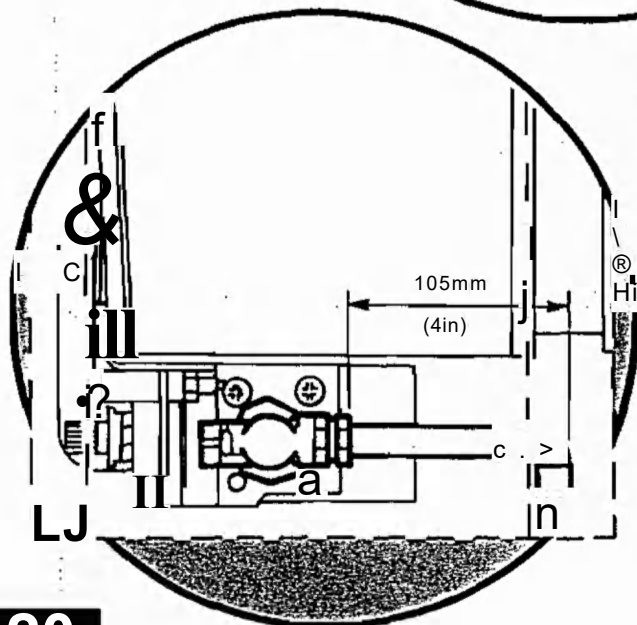
marked PF and PR; Gravity flow connection GF. It could be used as an open vent and GR as the cold feed.

Sealed System

For sealed system, connect to tails marked PF and PR.



O* For gravity domestic hot water and pumped central heating system, connect pumped circuit to connections marked PF and PR. Gravity hot water circuit to connections marked GF and GR, after removing blanking plugs. (See page 23 when wiring for gravity system.)



Gas Connection

Gas connection is made on the union gas service tap (female V2 in B.S.P. thread). Dimension shown will ensure that gas pipe does not interfere with outer case or any downward routed pipes.

KEY

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

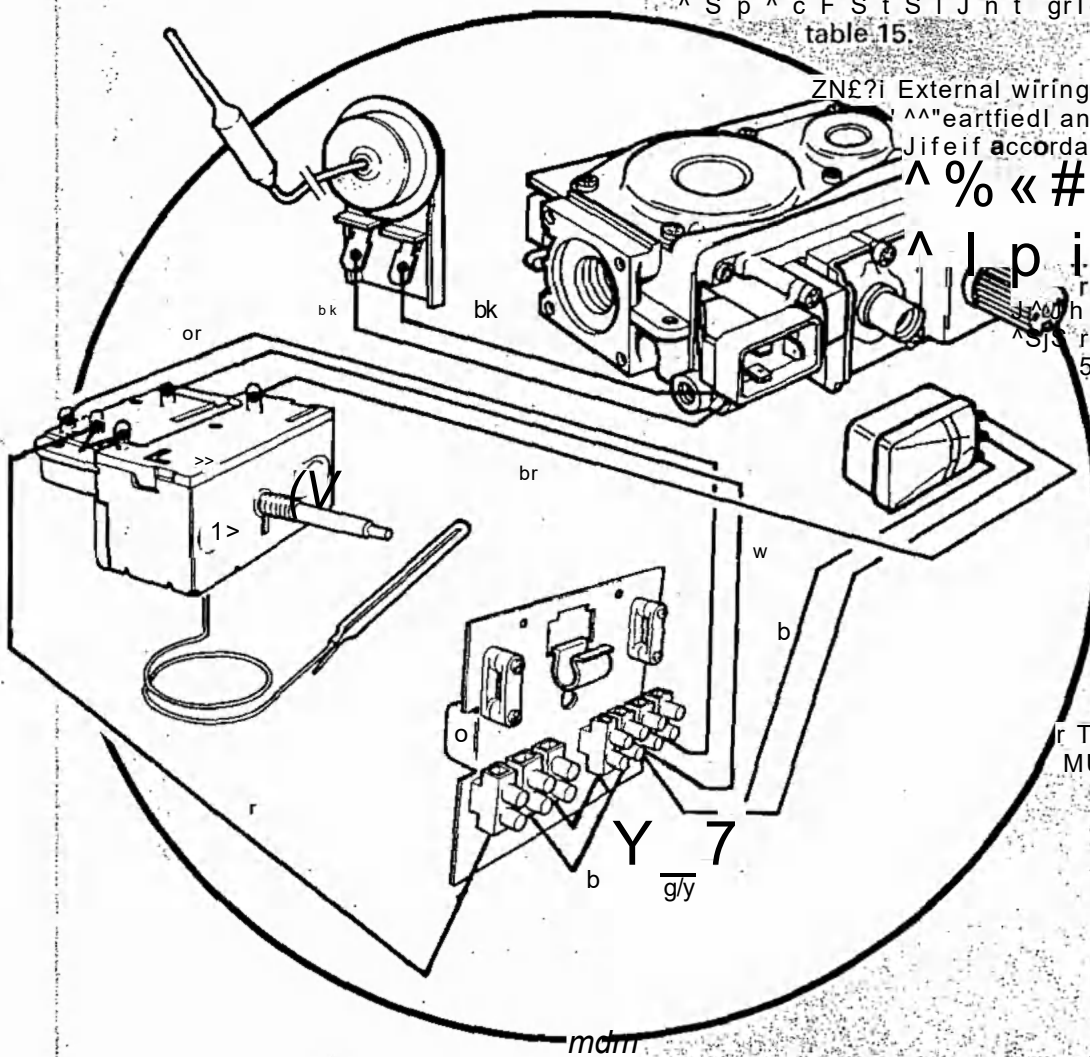
Electrical Supply

FOR FULLY PUMPED AND SEALED SYSTEMS

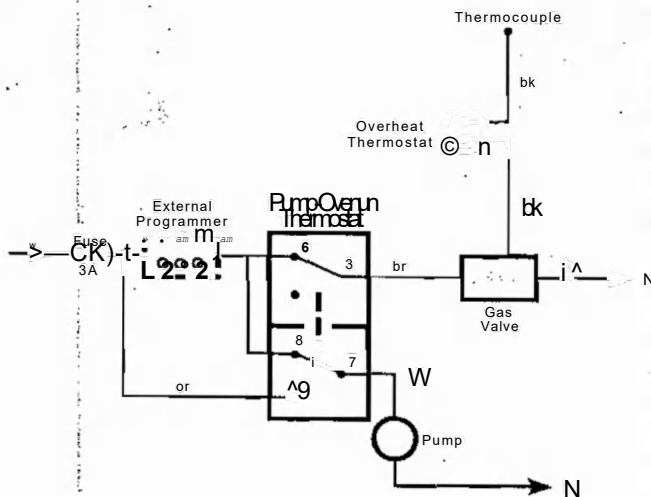
The recommended cable for connection to the
0.75 m² (24 x 0.2mm)
to BS 6141
table 15.

External wiring must be correctly
earthed and polarised in
accordance with the

The mains supply
required is 240V_s ~ 50Hz fused at 3A.



THIS APPLIANCE
MUST BE EARTHED.

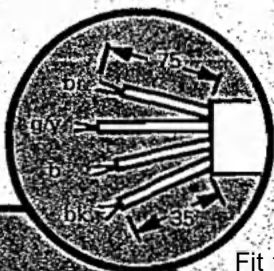


NOTE:

a) For existing installations and sites where only 3 core wiring is available see page 23.

b) The method of connection to the electricity supply must facilitate complete electrical isolation of the appliance.

$V-V$



:- 4" i: " J -

Connect the switched live to the terminal
JWL marked S/L.; "•

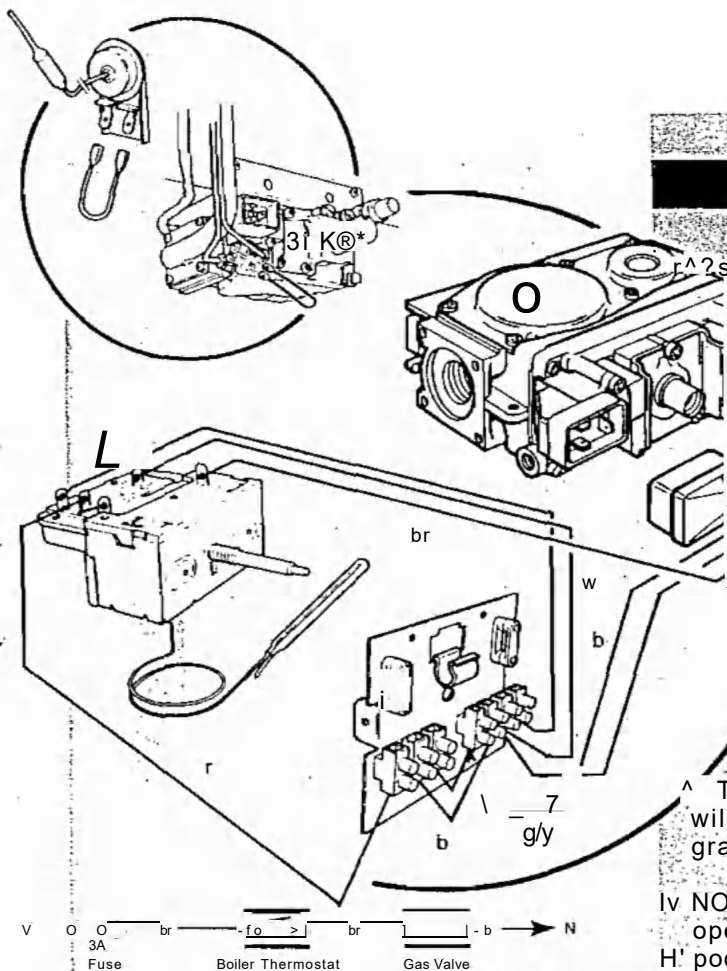
W1J Connect the supply neutral to the.
W1 terminal marked N and the supply earth
to the terminal marked —.

Connect the pump
Sk neutral to the terminal
marked N.W.-

Wf Secure the cable in place
p with the left hand cable
clamp.

To avoid contact with hot surfaces, lay the input cable through the clip fitted on hook bracket.





FOR GRAVITY D.H.W. AND PUMPED C. H.

Remove the two black wires from their

Take the blue wire supplied in kit with 4 female spade terminals and connect across the two terminals on the valve.

The overhear thermostat is now by-passed and will allow the appliance to perform satisfactorily on gravity circulation.

NOTE: Even though the overhear thermostat is not operational, it must not be removed from the H' pocket in the heat exchanger.

The recommended cable for connection to the appliance terminal strip is 0.75mm² (24 x 0.2mm) and P.V.Gi. heat resistant grade to BS 6141 Table 14.

WARNING: This appliance must be earthed.

Remove securing screw and electrical cover that are fastened to thermostat box.

Bare back input cable to dimensions shown.

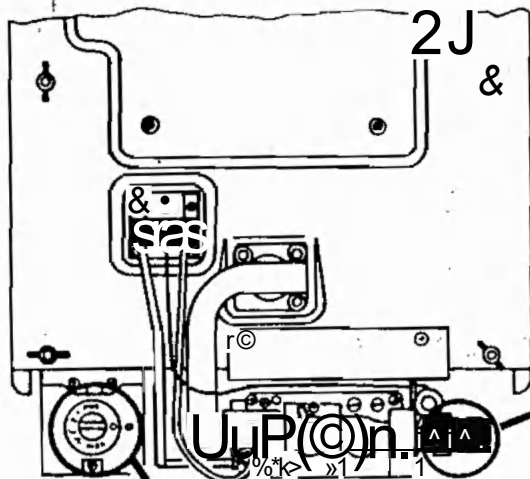
Input cable terminal block on left passing through clip and grip provided.

The pump should be wired to the W junction box or programmer.

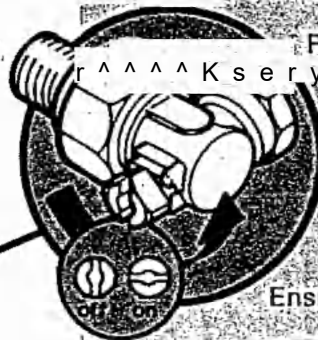
Replace electrical cover and securing screw. Avoid contact with hot surfaces; lay the input cable through clip fitted on hook bracket.

In the event of an electrical fault after installation of the appliance, preliminary electrical system checks should be carried out:- earth continuity, polarity and resistance to earth.

COMMISSIONING THE APPLIANCE



Flush the whole system with water. vent radiators



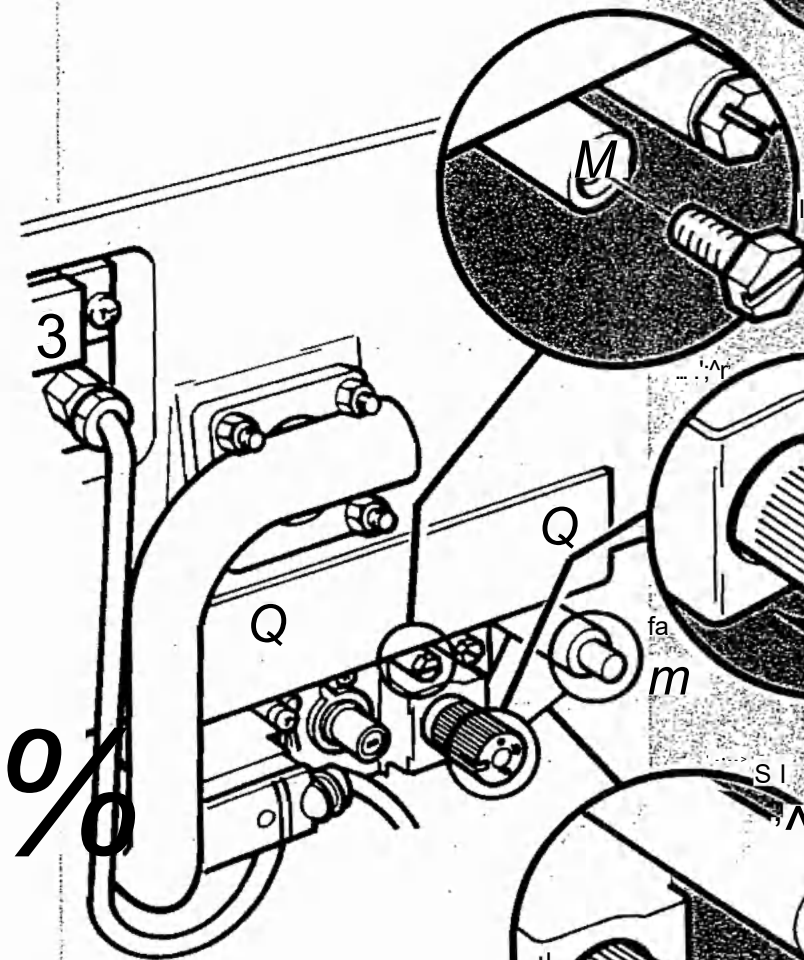
Purge air from supply pipe at gas service tap (BS 6891:1983)?

Turn gas service tap anticlockwise to ON position. Check for gas soundness up to gas valve.

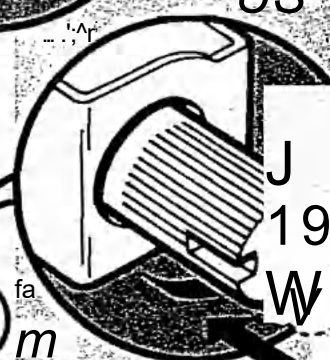
Ensure that all external controls, e.g. room thermostat, timer, etc. are calling for heat.



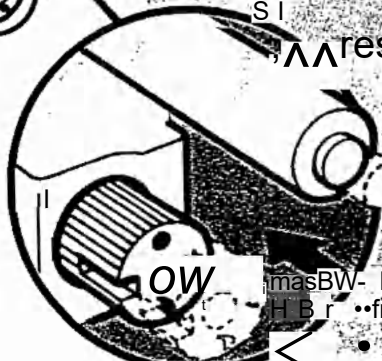
Fit thermostat control knob (packed with the contents in plastic bag). Turn anticlockwise to OFF position, marked 0.



Remove burner pressure test point. Connect pressure gauge.

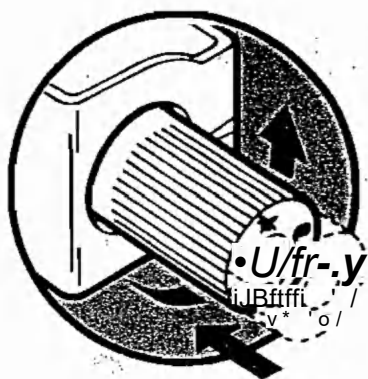


Press in igniter button and hold. Repeat until pilot light is white. Continue to hold. In gas control knob for approximately 10 seconds and then release.



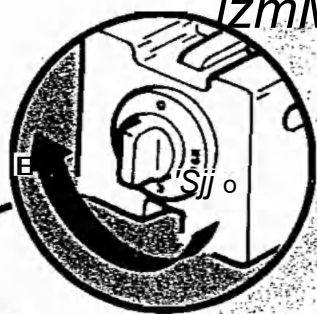
and hold/Press in igniter button and release. Repeat until pilot light is white. Continue to hold. In gas control knob for approximately 10 seconds and then release.

If pilot fails to remain alight, repeat from start of paragraph above.

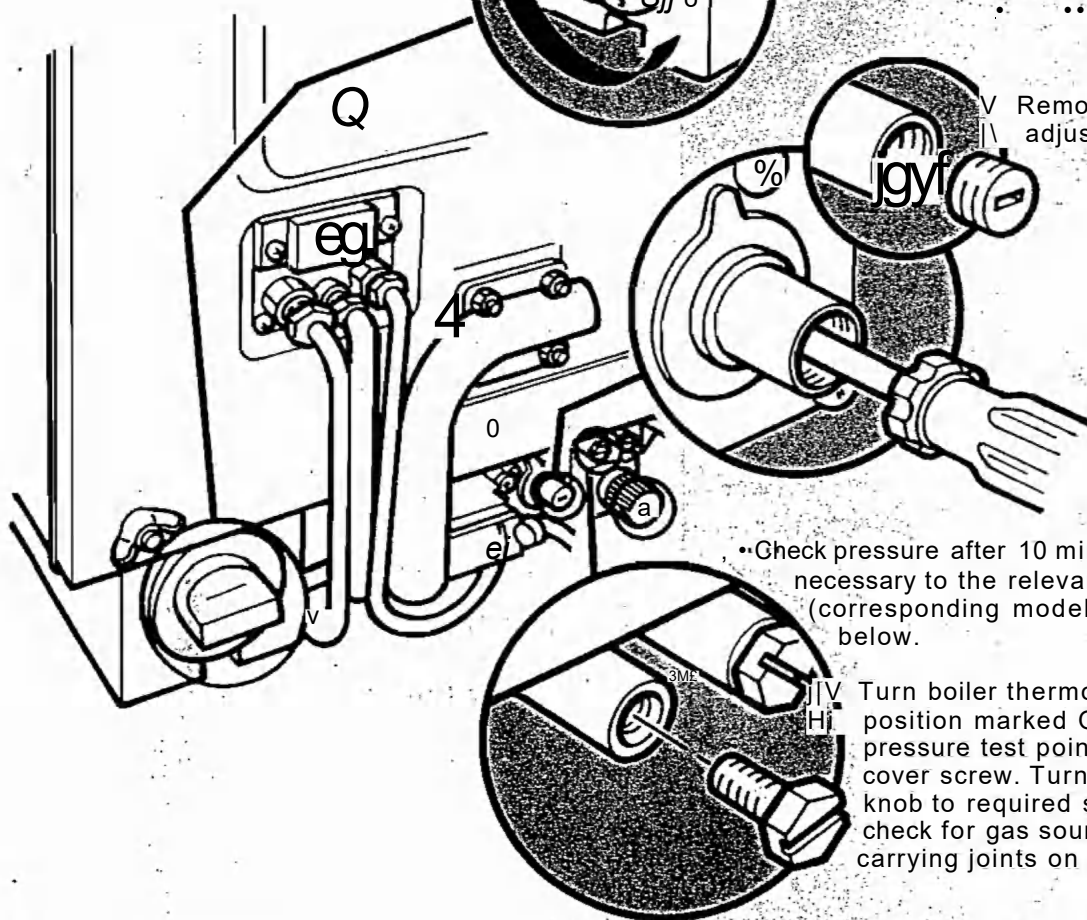


r ; Press in and turn gas control knob fully anticlockwise to ON position marked 4.

f Turn on main electricity supply.



Light main burner by turning thermostat knob to high setting (fully clockwise).



Remove cover screw to adjust governor.

•• Check pressure after 10 minutes. Adjust if necessary to the relevant figures for the (corresponding model shown in the chart below.

Turn boiler thermostat knob to the OFF position marked O. Refit burner pressure test point screw and governor cover screw. Turn boiler thermostat knob to required setting. Make final check for gas soundness of all gas carrying joints on boiler.

Model		Input kW	Btu/h	Setting Pressure mbar	in wg
20/4	Maximum	7.51	25,640	15.2 ± 0.5	6.1 ± 0.2
	Intermediate	5.71	19,483	8.8 ± 0.5	3.5 ± 0.2
	Minimum	4.24	14,475	4.8 ± 0.5	1.9 ± 0.2
30/4	Maximum	11.27	38,460	15.6 ± 0.5	6.25 ± 0.2
	Intermediate	9.47	32,300	11.0 ± 0.5	4.4 ± 0.2
	Minimum	8.01	27,345	7.8 ± 0.5	3.1 ± 0.2
40/4	Maximum	15.23	51,970	15.4 ± 0.5	6.2 ± 0.2
	Intermediate	13.41	45,750	12.0 ± 0.5	4.8 ± 0.2
	Minimum	11.95	40,780	9.6 ± 0.5	3.9 ± 0.2
50/4	Maximum	19.10	65,000	18.2 ± 0.5	7.3 ± 0.2
	Intermediate	17.30	59,200	15.6 ± 0.5	6.2 ± 0.2
	Minimum	16.00	54,600	12.9 ± 0.5	5.2 ± 0.2
60/4	Maximum	23.07	78,740	17.7 ± 0.5	7.1 ± 0.2
	Intermediate	21.27	75,560	14.8 ± 0.5	5.9 ± 0.2
	Minimum	19.83	67,640	13.1 ± 0.5	5.3 ± 0.2

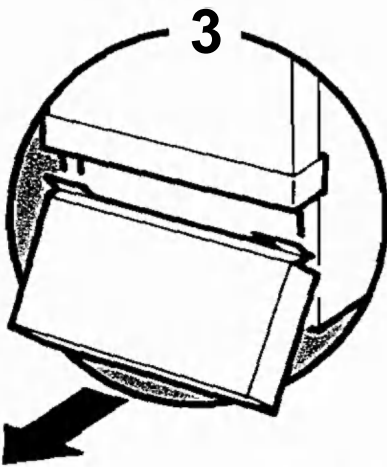
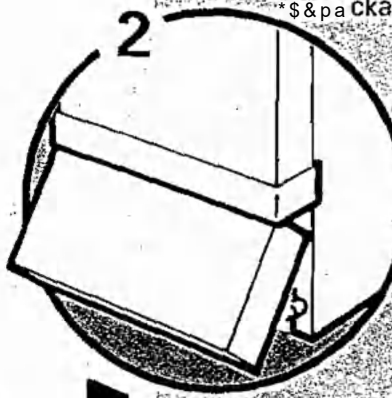
Check operation of flame failure device. Turn gas control knob to pilot position marked *, main burner will go out. Turn gas control knob to OFF position marked O, control knob cannot be returned to pilot position until ignition restart interlock device in gas valve has disengaged. This takes 60 seconds approximately. Pilot must not be relit for 3 minutes after shut down.

The system should be flushed again when hot and then refilled. Vent radiators, check for water leaks.

Set pointer on data label to input setting.

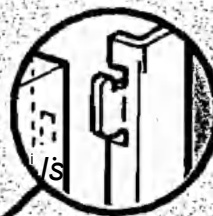
Set timer, room thermostat, cylinder thermostat to customer's requirements.

FITTING THE OUTER CASE

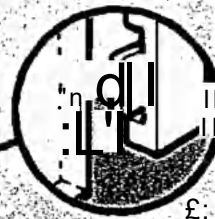


Remove ready assembled outer case from packaging.

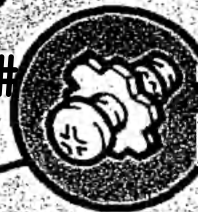
Remove lower door panel following the sequence of steps.



Offer the outer case up to the hooks on the wall mounting plate.



Locate on lower tabs.



Secure the outer case using the two screw/washer assemblies that are supplied.

Instruct the user in the operation of the boiler. Hand over both the Users and Installation instructions.

Replace the lower door panel.



D

w r * -

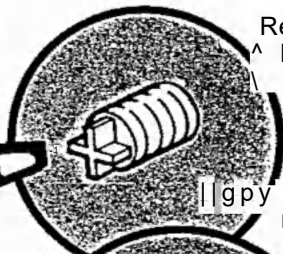
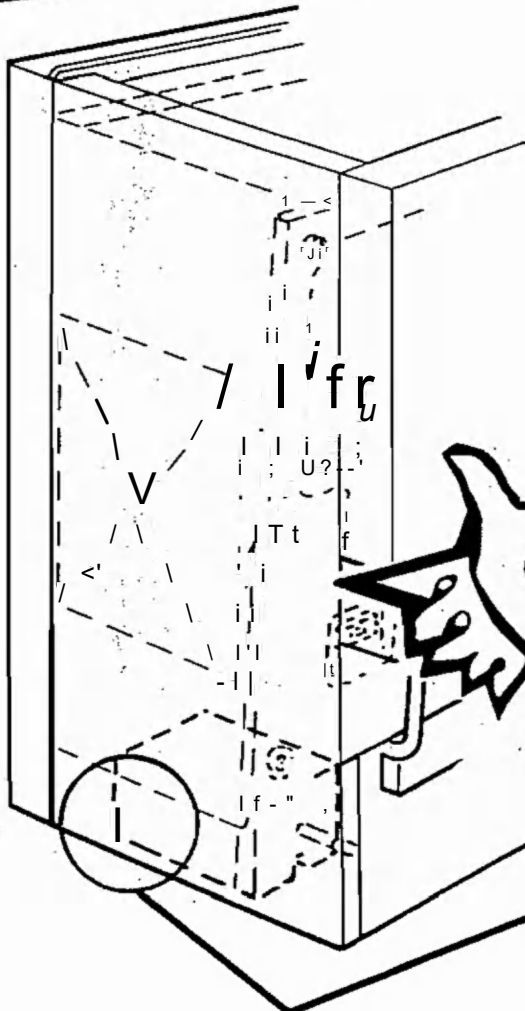
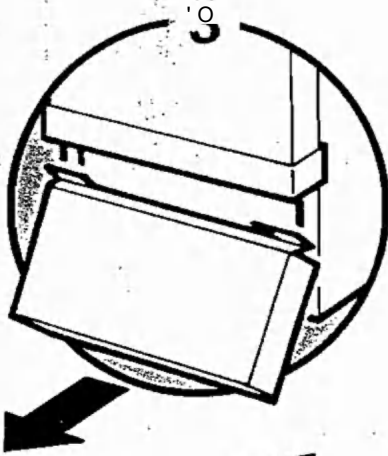
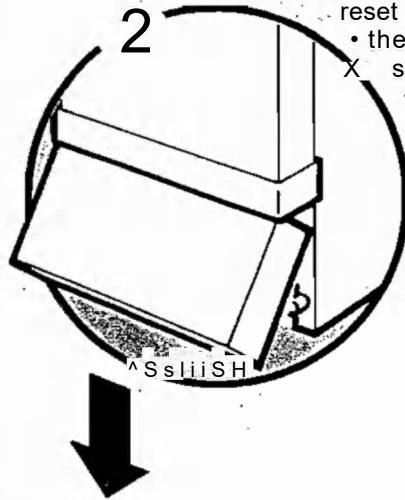
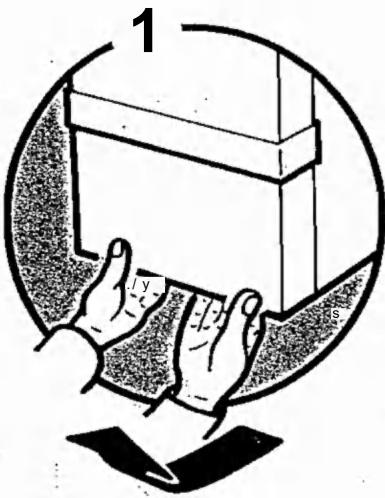
OVERHEAT CUT-OFF DEVICE

Operation

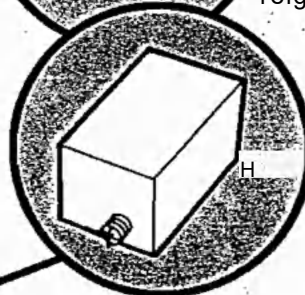
The overheat cut-off device is of the manual ! - reset type and therefore it is important that

- the user knows how to reset the control
- should it ever cut out.

Allow the boiler to cool if hot.
Remove the lower door panel by following the sequence of diagrams.



Reach into the outer case and locate the reset button at the rear of the control box.
Press the button to reset the overheat thermostat.



The boiler must be reignited manually.

ANNUAL SERVICING

For economy and safety reasons; it is important to service the appliance regularly. **ISOLATE THE ELECTRICAL SUPPLY TO THE BOILER.**

Remove lower door panel following the sequence of diagrams.

To remove the outer case from the boiler; take out two screw/washer assemblies. Pull bottom off the outer case forward and lift to clear lower tabs and hooks on mounting plate. Draw outer case forward and clear of the boiler.

Turn off gas supply at the service tap and disconnect the union.

Disconnect the electrical plug on the gas valve by pulling forward. Remove wire from clip at front of gas valve.

Disconnect the two wires from the overheat thermostat at the spade connections on the valve. Not applicable when boiler fitted on gravity D.H.W.

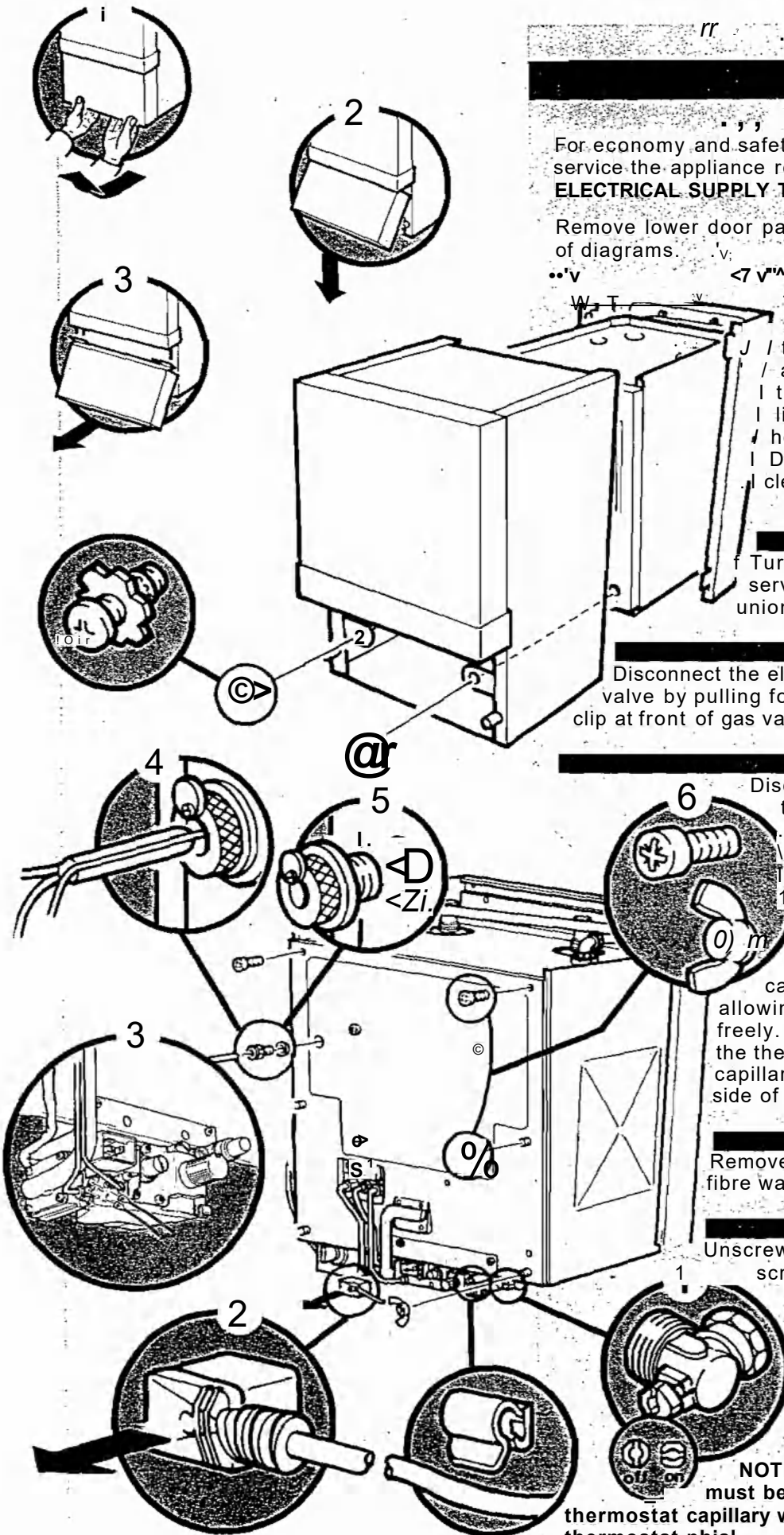
Loosen the screw on the capillary retaining washer, allowing the washer to move freely. Remove both phials from the thermostat pocket. Release the capillaries from the clips on the side of the combustion box.

Remove brass sealing plug with fibre washer.

Unscrew the four wing nuts and two screws.

Remove the controls door complete with the burner.

NOTE: When re-assembling, care must be taken to align the overheat thermostat capillary with the groove in the main thermostat phial.



Cleaning the Burner/Injector

Remove any debris from top of Burner and blades and ensure that parts are free of obstructions.

Remove the three burner rods.

Undo injector and remove from feed pipe. Clean carefully and replace ensuring copper washer is in position.

Check rope seal around the door and replace if necessary.

Reassemble burner to door and feed pipe

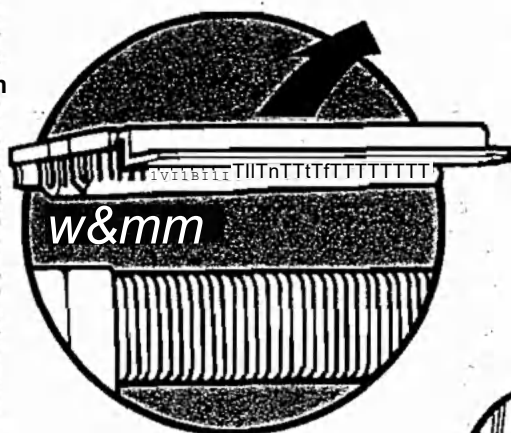
Cleaning the Pilot

Undo securing nuts on ends of

Remove pilot and examine and clean

Reassemble pilot in reverse order. Ensure injector is hooked over olive before tightening up.

h



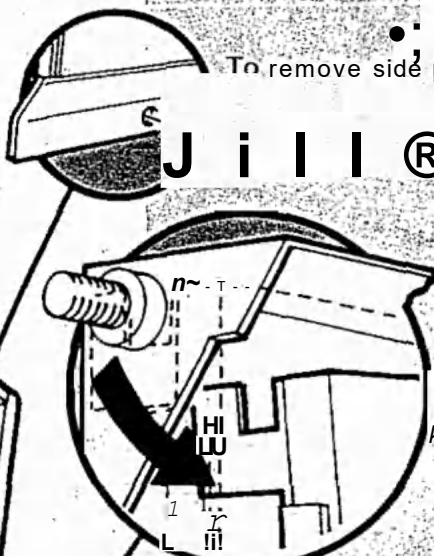
Cleaning the Combustion Box

§, L u p a n j ^ g w a ^ 5 , ...

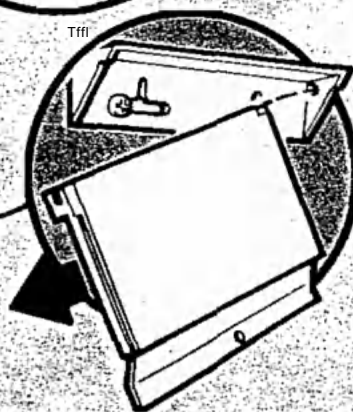
Side insulation pane & air insulation panel should be removed to avoid brush damage.

To remove side panel, remove one screw per-

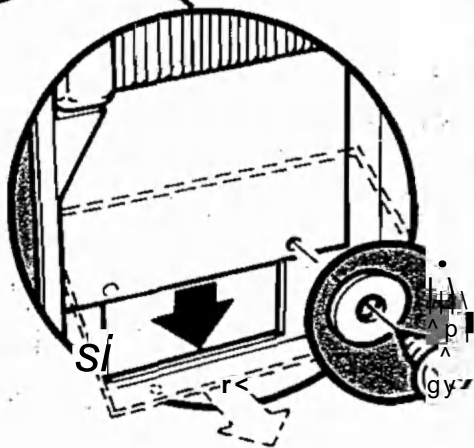
J i l l ® I f ;



Slide front end of panel down and away from location.



Pull forward to release rear location tab to allow removal of panel.



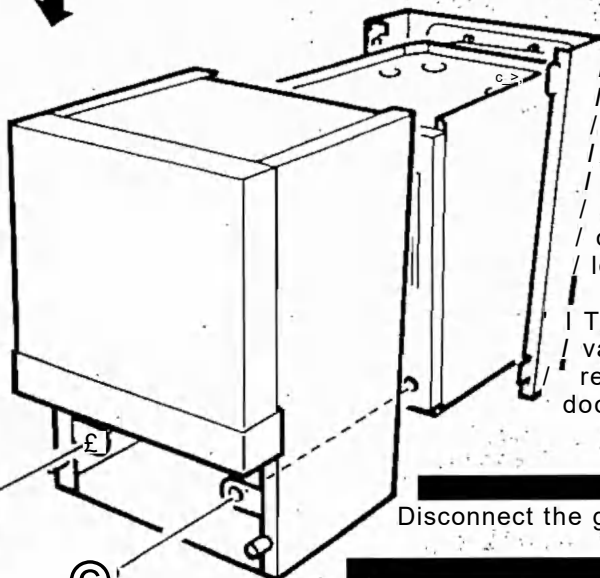
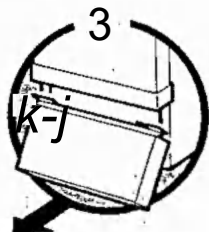
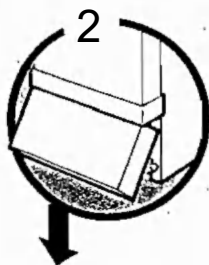
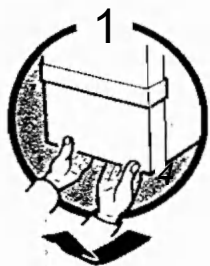
V Undo two securing screws and washers on rear panel; Slide panel downwards to clear heat exchanger and tilt bottom edge forward to remove.

m m m m m i

r Lay sheet of paper in combustion box to catch debris whilst cleaning. The heat exchanger can now be easily cleaned thoroughly. Remove any obstructions from flue outlet and air inlet. Remove paper, dirt, debris from bottom of combustion box.

tk- Reassemble all components in reverse order. Check burner setting pressure and gas rate. Re-commission the boiler before use, checking for gas soundness and ensuring all controls are working correctly.

CHANGING COMPONENTS



When changing components ensure that electrical and gas supplies are isolated.

1. To change piezo igniter, solenoid operator, thermocouple, remove outer case door panel as shown: 7"

To change pilot viewing window, spark electrode, pilot injector and thermostats, remove outer case door panel. Remove outer case from boiler by taking out two screw/washer assemblies. Lift and draw outer case forward to clear location hooks and tabs.

To change burner, injector, gas valve and insulation panels, remove outer case and controls door.

1
Disconnect the gas union.

2
Disconnect the electrical plug and cable on the gas valve. Pull clip at front of gas valve; valve forward and ease wire from clip.

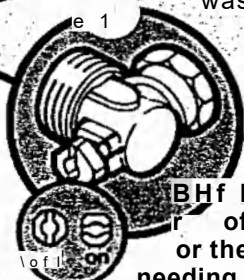
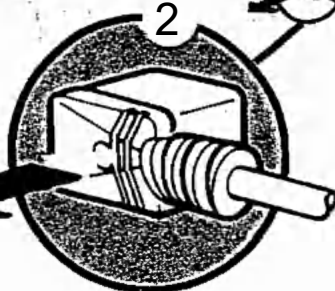
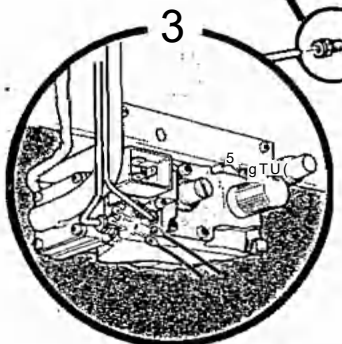
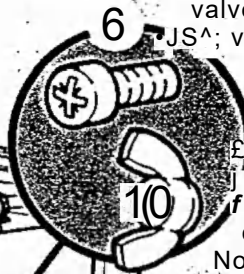
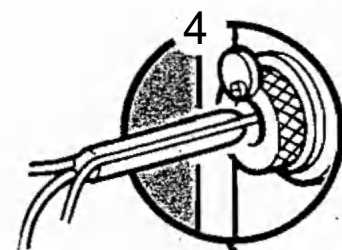
3
Disconnect the two wires from the overheat thermostat at the spade connections on the valve. Not applicable to boilers converted for use on gravity D.H.W. systems.

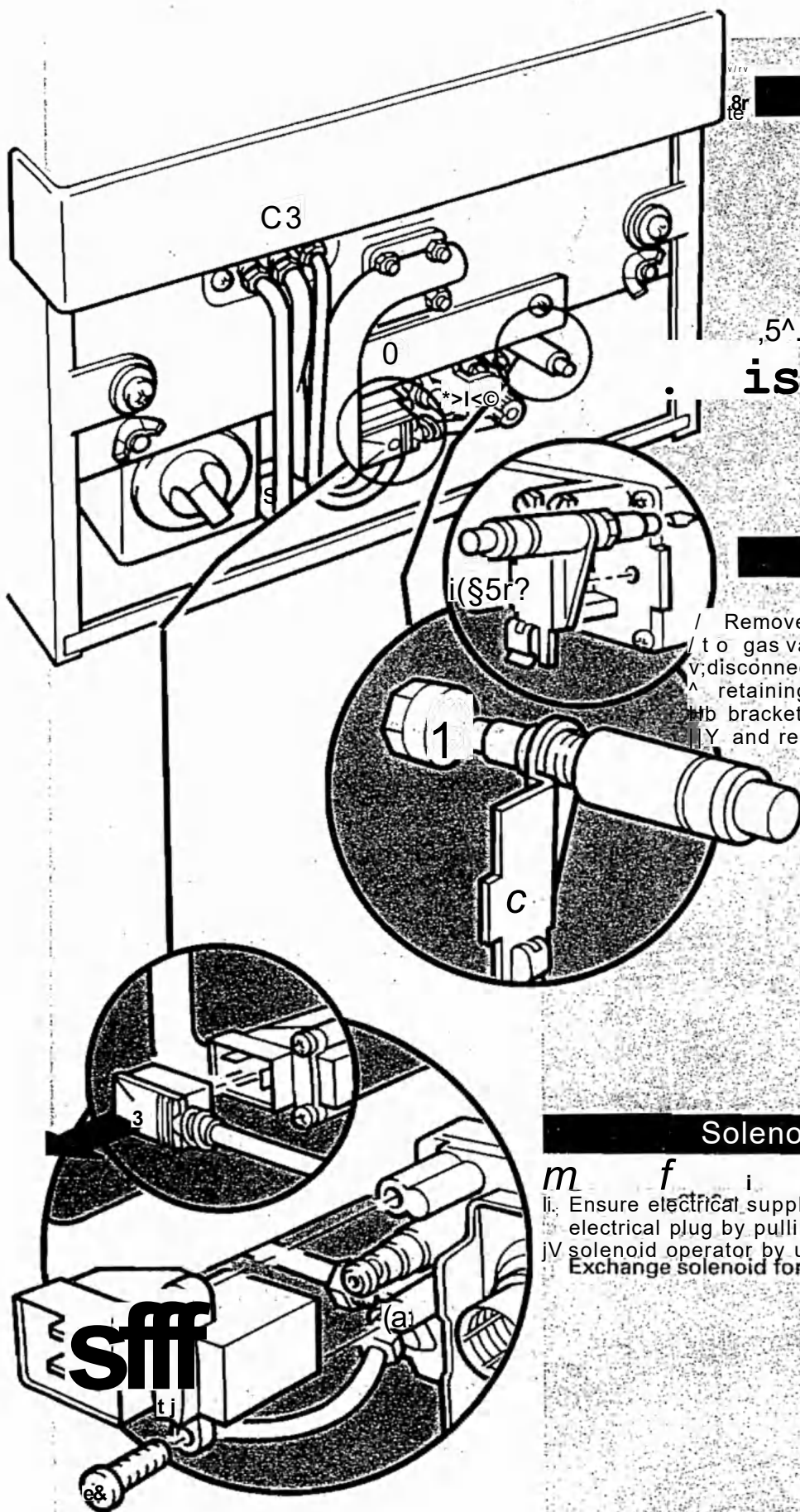
4
Loosen the screw on the capillary retaining washer, allowing the washer to move freely. Remove both phials from the thermostat pocket.

5
Remove brass sealing plug with fibre washer.

6
Unscrew the four wing nuts and two screws.

NOTE: In the unlikely event of the heat exchanger casting or the heat exchanger baffle needing replacement, these items may be ordered directly from BAXI, stating the Model N° and the Serial N° of the appliance.





is..

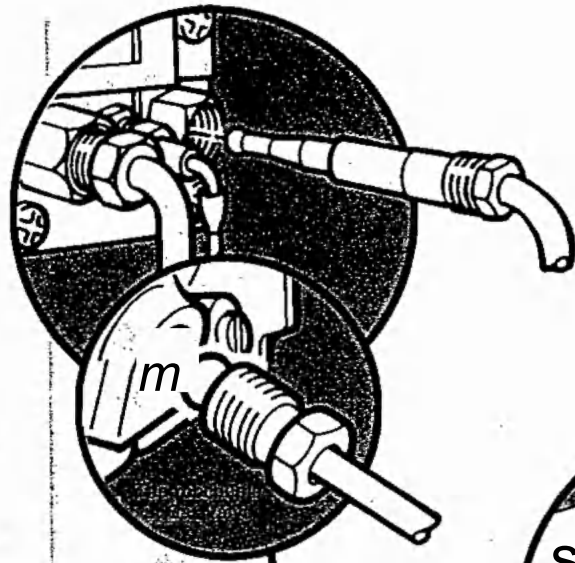
'fig Piezo Igniter

Remove screw securing piezo unit to gas valve. Withdraw and disconnect electrode lead. Remove retaining nut holding piezo igniter to bracket. Exchange igniter for new; and reassemble.

m&W:

Solenoid Operator

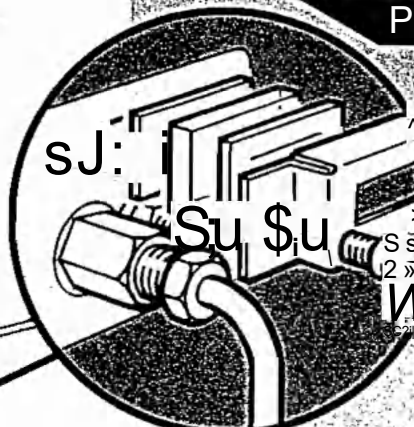
li. Ensure electrical supply is isolated. Remove electrical plug by pulling forward. Remove solenoid operator by unscrewing fixing screws. Exchange solenoid for new and reassemble.



Thermocouple

Remove old thermocouple. Required shape, fit in place. Discard old thermocouple. Ensure new thermocouple is in correct position as shown.

Caution: Do not overtighten nuts.



Pilot Viewing Window

Remove screws holding window assembly in place. Discard old assembly, ensure new assembly is in correct position as shown.

Spark Electrode



Disconnect lead at electrode. Release nut holding thermocouple to pilot bracket, free thermocouple. Release nut on electrode and remove. Refit new electrode, ensuring end connector is pointing vertically down. Do not overtighten nut. Reassemble thermocouple.

5

Pilot Injector

Disconnect nuts on pilot supply tube and remove. Extract injector. Fit new injector and reassemble. Ensure injector is hooked over olive before tightening up.

Thermostats

CHECK ELECTRICAL SUPPLY IS ISOLATED.

To change either the main thermostat or
overheat thermostat proceed as follows:

W - i - ? - ' - ' r

Loosen the screw on the
capillary retaining washer,
allowing the washer to move
freely. Withdraw both
thermostat phials from the
WSMJ thermostat pocket. Free the
capillaries from the clips on
the left hand side of the
combustion box. *

Disconnect the electrical plug and cable
on the gas valve.

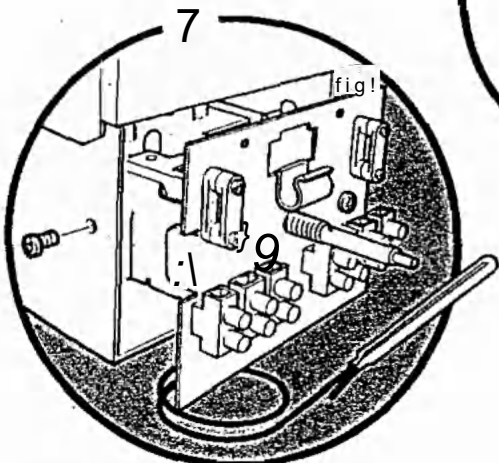
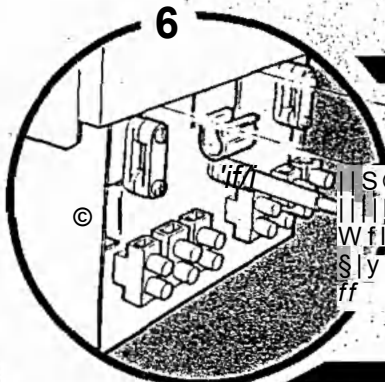
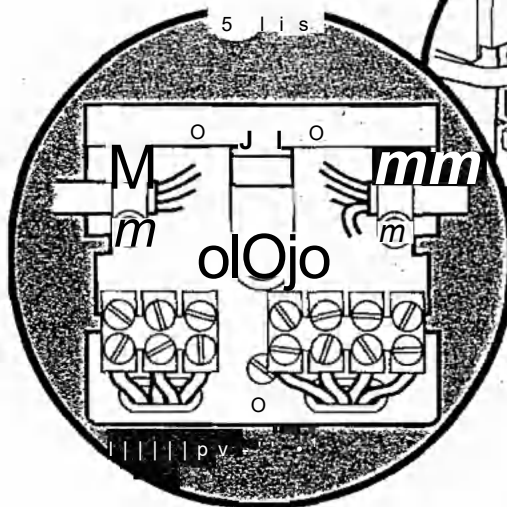
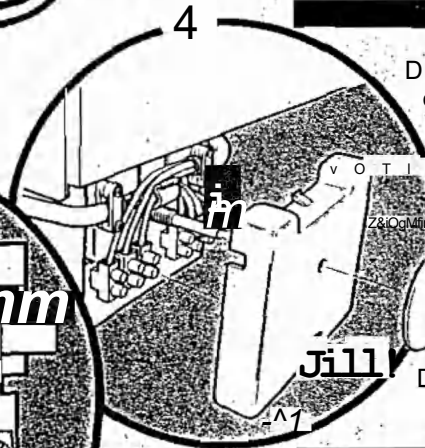
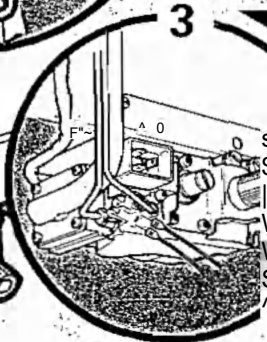
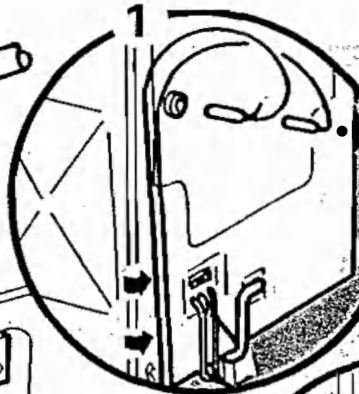
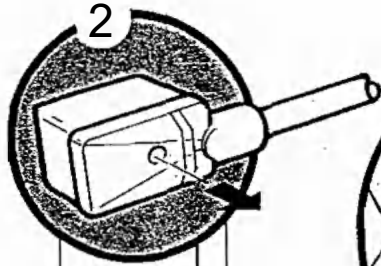
Disconnect the overheat thermostat
leads from the control valve
spade connections. Not
applicable where the boiler has
been converted for use with gravity
D.H.W.

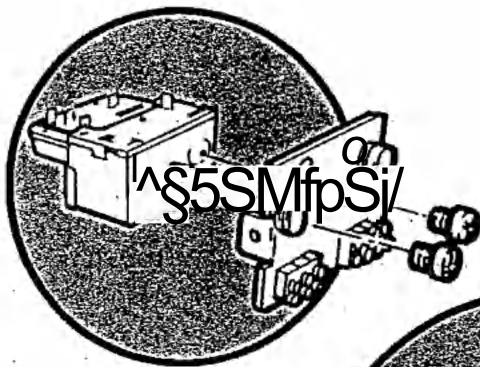
Carefully pull off the thermostat knob. Release the
screw securing the electrical box cover/remove
cover.

Disconnect the wires of the
input and pump outlet
cables from the terminal strips.
Loosen the screws on the cable
clamps. Boilers converted for use
on gravity D.H.W. will have wiring
only to the left hand terminal strip.

Unfasten the screws holding the thermostat to its
bracket on the boiler combustion box. The
thermostat box is now free of the boiler.

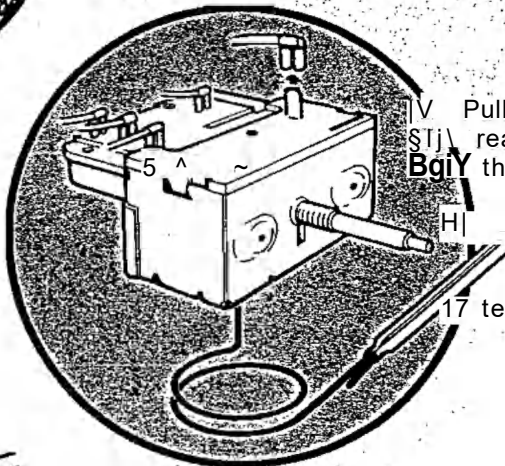
Remove the rear part of the thermostat box by
removing the screws at the side.





Main Thermostat

Release the screws securing the main boiler thermostat to the mounting plate.



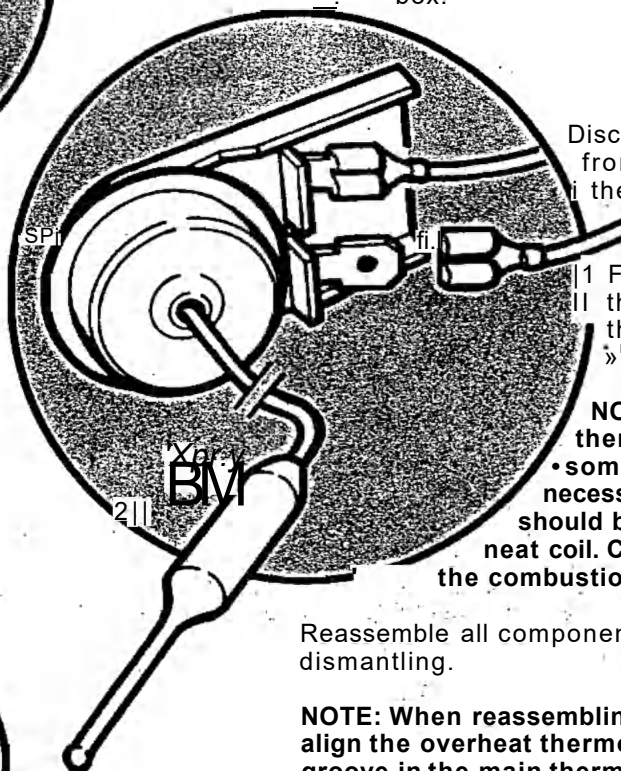
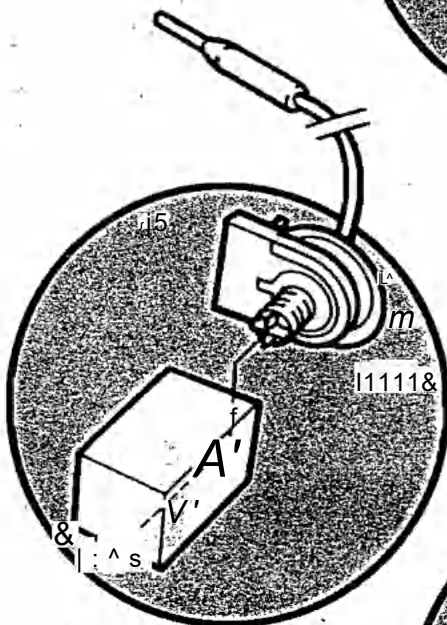
Pull off the spade connectors from the rear of the thermostat, taking note of their orientation.

Fit the new thermostat to the mounting plate and reconnect the spade connectors to the appropriate terminals, v

Overheat Thermostat

NOTE: On boilers converted for use with gravity D.H.W., the overheat thermostat will have been rendered inoperable and will never need changing.

Remove the locknut holding the overheat thermostat in place and withdraw from the control box.



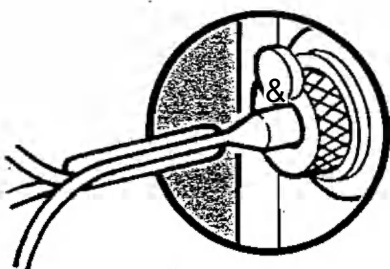
Disconnect the two wires from the overheat thermostat and refit them to the new component.

Fix the new overheat thermostat in position in the control box and lock it in place with the locknut.

NOTE: The overheat thermostat capillary may be somewhat longer than necessary. Excess length should be tidied up by making a neat coil. Contact with the side of the combustion box should be avoided.

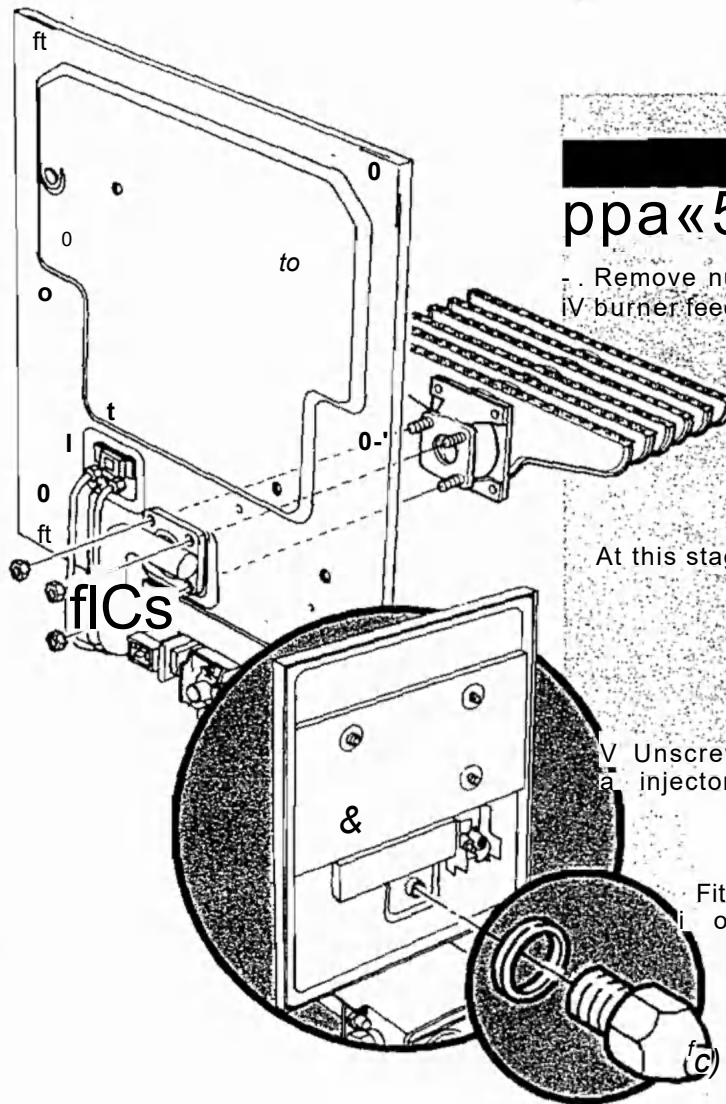
Reassemble all components in the reverse order to dismantling.

NOTE: When reassembling, care must be taken to align the overheat thermostat capillary with the groove in the main thermostat phial.



Burner and Injector

Remove nuts fixing burner to control door and
IV burner feed pipe.



& V

At this stage if required; injector may be changed.

Unscrew injector from burner pipe. Fit new injector ensuring copper washer is in position.

Fit new burner and reassemble in reverse order.

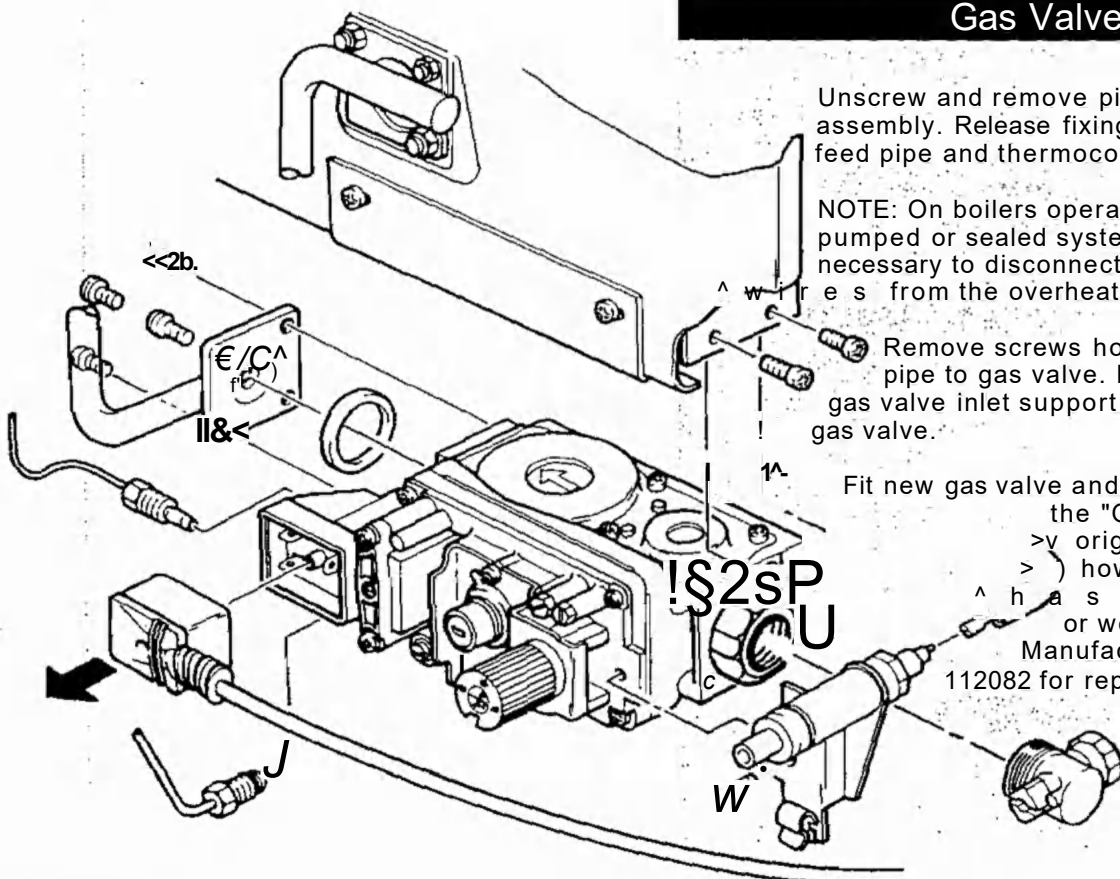
Gas Valve

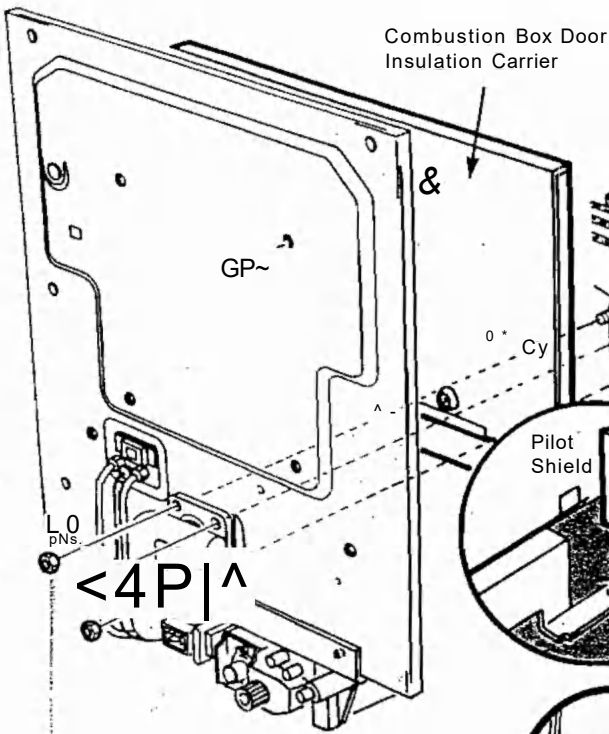
Unscrew and remove piezo igniter assembly. Release fixing nuts on pilot feed pipe and thermocouple at gas valve.

NOTE: On boilers operating on fully pumped or sealed systems it will be necessary to disconnect the two black wires from the overheat thermostat.

Remove screws holding burner feed pipe to gas valve. Remove screws on gas valve inlet support bracket. Remove gas valve.

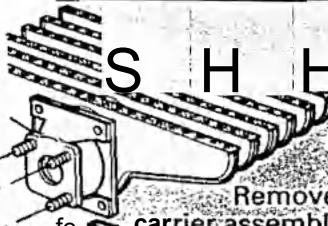
Fit new gas valve and reassemble using the "O" ring from the original valve, if however the "O" ring has become damaged or worn, please quote Manufacturers Part No 112082 for replacement.





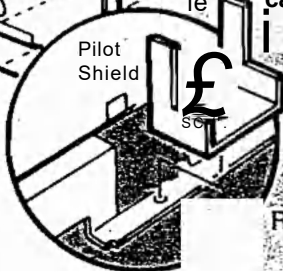
Combustion Box Door
Insulation Carrier

Insulation Panels



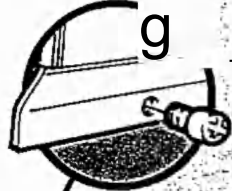
Undoing three securing nuts[^] on burner feed pipe flange.

Remove four screws holding insulation carrier assembly in place.

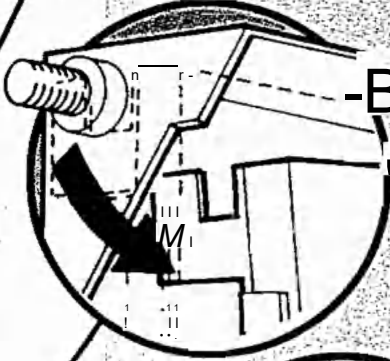


Remove pilot shield by releasing screw. Fit pilot shield to new assembly.

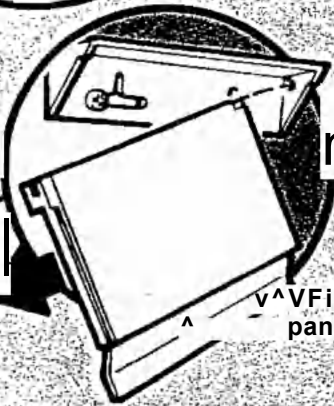
Reverse



To remove side insulation panels, remove fixing screws.

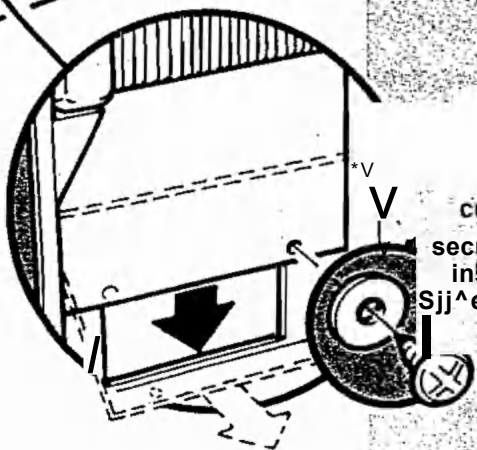


Use front end of panel down and away from location.



removal of panel.

Fit new side insulation panel in reverse order.



Remove rear insulation panel, unfasten two securing screws and washers. Slide rear insulation panel downwards and tilt bottom edge forward to remove. Fit rear panel.

FAULT FINDING

Gas Leak

SYMPTOM

Gas leak at joint or valve body on soap solution test.

POSSIBLE CAUSES

Loose screws at joints or fittings - defective gas valve - damaged gas valve casting - gas control knob not in correct position - gas valve control knob not in correct position.

Burner

SYMPTOM

Pilot on but burner will not ignite.

POSSIBLE CAUSES

External controls or boiler thermostat not calling for heat - blown fuse - defective power supply or external controls - governor stuck in closed position - solenoid open circuited (test for continuity at solenoid terminals) - main injector blocked - **gas valve control knob not in correct position.**

Pilot established and main burner will ignite but system liable to nuisance shut-down.

Dirty or loose thermocouple connections - defective thermocouple - defective flame safety magnet - **incorrect or faulty wiring.**

Main burner will not shut down in response to external controls.

Short circuit in external controls or wiring - defective solenoid - faulty boiler thermostat.

Main burner pressure incorrect.

Governor screw requires adjustment - (after adjustment recheck pressure).

Overheat Thermostat

SYMPTOM

Overheat thermostat reset but boiler cannot be reignited.

POSSIBLE CAUSES

System temperature higher than design temperature - main thermostat faulty - overheat thermostat faulty - central heating pump not functioning correctly. Thermocouple damaged - connect thermocouple and overheat thermostat correctly. Overheat thermostat faulty.

Pilot

SYMPTOM

Pilot will not light.

POSSIBLE CAUSES

Main gas tap off - ignition restart interlock is still engaged - gas control knob not fully depressed - pilot feed not purged of air - pilot feed blocked - pilot injector blocked - electrode lead ignitor faulty - **gas valve control knob not in correct position.**

Pilot established when gas control knob released but pilot flame does not fully envelop the thermocouple.

Incorrect or faulty pilot injector fitted - pilot injector partially blocked.

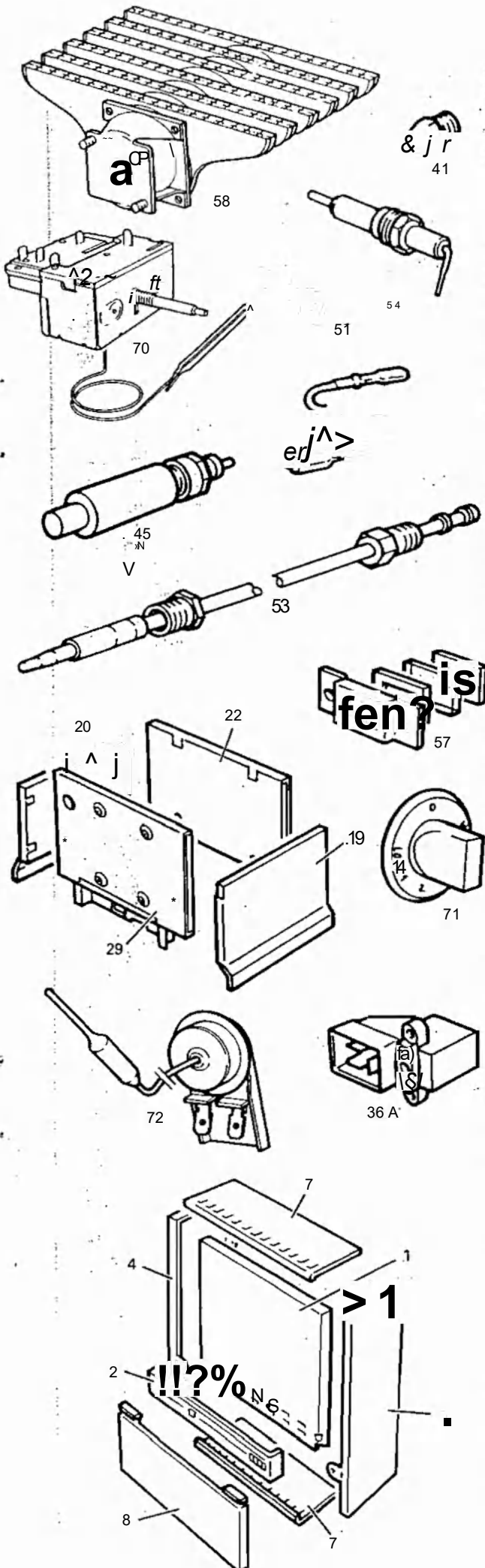
Pilot gas lights but goes out when gas control knob is released.

Gas control knob released too soon - dirty or loose thermocouple - defective thermocouple flame failure safety magnet - overheat cut-off device activated.

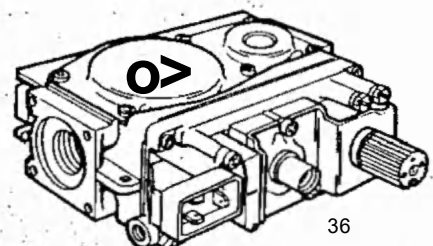
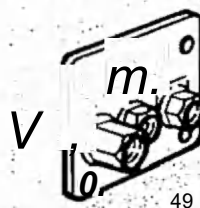
Main burner will ignite but flame is immediately extinguished.

Incorrect pilot injector for type of gas - gas supply too small or restricted - adverse wind conditions - incorrectly fitted terminal.

SHORT PARTS LIST



Key N°	Description	Model	G.C. N°	Manuf'rs Part N°
1	Panel Front	20/4-30/4 JS	364 64Vf	225306
2	Trim/Facia Assy	20/4-30/4	364 686	225859
		40/4	364 701	225860
		50/4	364 755	225851
		60/4	364 816	225862
4	-V Panel Side Assy LH	All models	364 643	225302
5	Panel Side Assy RH	All models	364 644	225304
7	if Panel Top & Bottom	20/4-30/4	364 646	224137
8	-V Panel Door Lower Assy	20/4-30/4	364 647	225863
		40/4	364 702	225864
		50/4	364 757	225865
		60/4	364 817	225866
19	Insulation Side Assy	All models	364 655	226527
20	Insulation Side Assy LH	20/4-30/4	364 656	226529
		40/4-50/4	364 706	226528
		60/4	364 706	226528
22	Insulation Rear Assy	20/4-30/4	364 658	226537
		40/4	364 712	226532
		50/4	364 762	226535
		60/4	364 821	226534
29	Insulation Door Assy	20/4-30/4	364 661	226533
		40/4	364 712	226532
		50/4	364 764	226531
		60/4	364 824	226530
36	Valve Control Sol	AD models	381 627	225533
36A	Solenoid	All models	364 835	226669
41	Injector Boiler	20/4	386 637	225820
		30/4	386 628	225821
		40/4	386 625	225822
		50/4	386 632	225823
		60/4	386 638	225824
45	Kit Piezo Igniter	All models	364 684	226113
49	Burner Pilot	All models	386 626	223981
51	injector Pilot	All models	392 935	225492
53	Thermocouple	All models	386 635	225496
54	Electrode Pilot Ignition	AH models	386 627	225498
55	Lead Electrode	All models	364 745	225826
57	Kit Window Viewing	AH models	364 719	226114
58	Burner Boiler	20/4-30/4	364 575	223906
		40/4	364 576	225831
		50/4-60/4	364 577	225832
70	Thermostat Boiler	All models	397 874	227786
71	Knob Thermostat	All models	364 685	226821
72	Thermostat Overheat	All models	397 875	227799



of the leading manufacturers of
the U.K.

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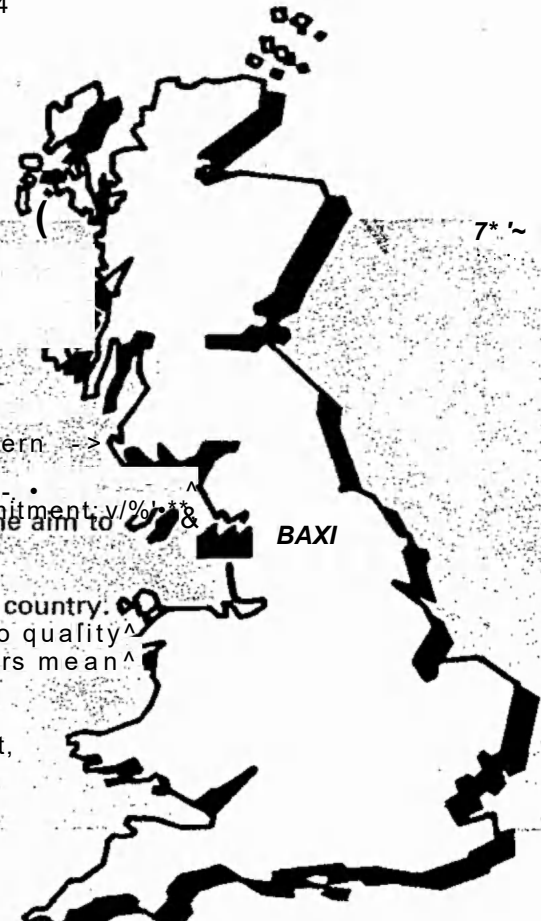
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To keep ahead of changing trends, we have made a commitment to develop new ideas using the latest technology, with the aim to continue making the products that customers want to buy.

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BS 5258

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