Saunier Duval

Installation & Servicing Instructions

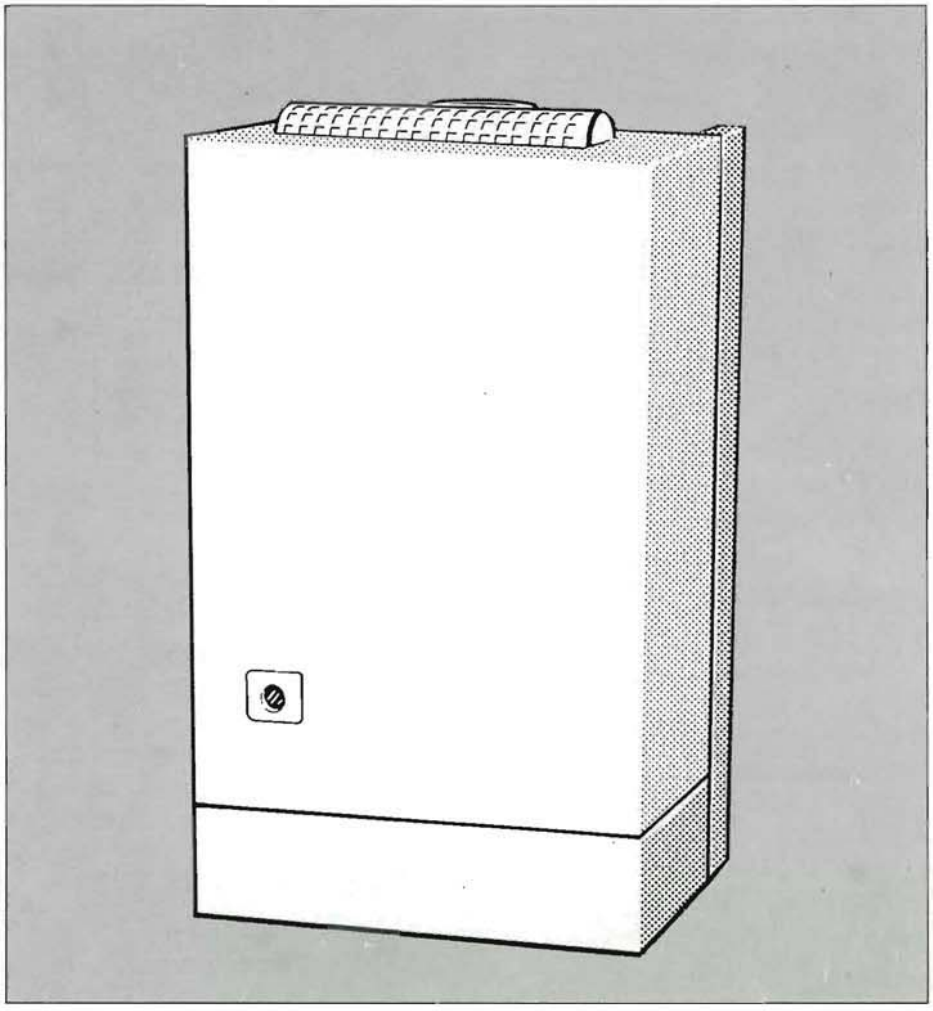
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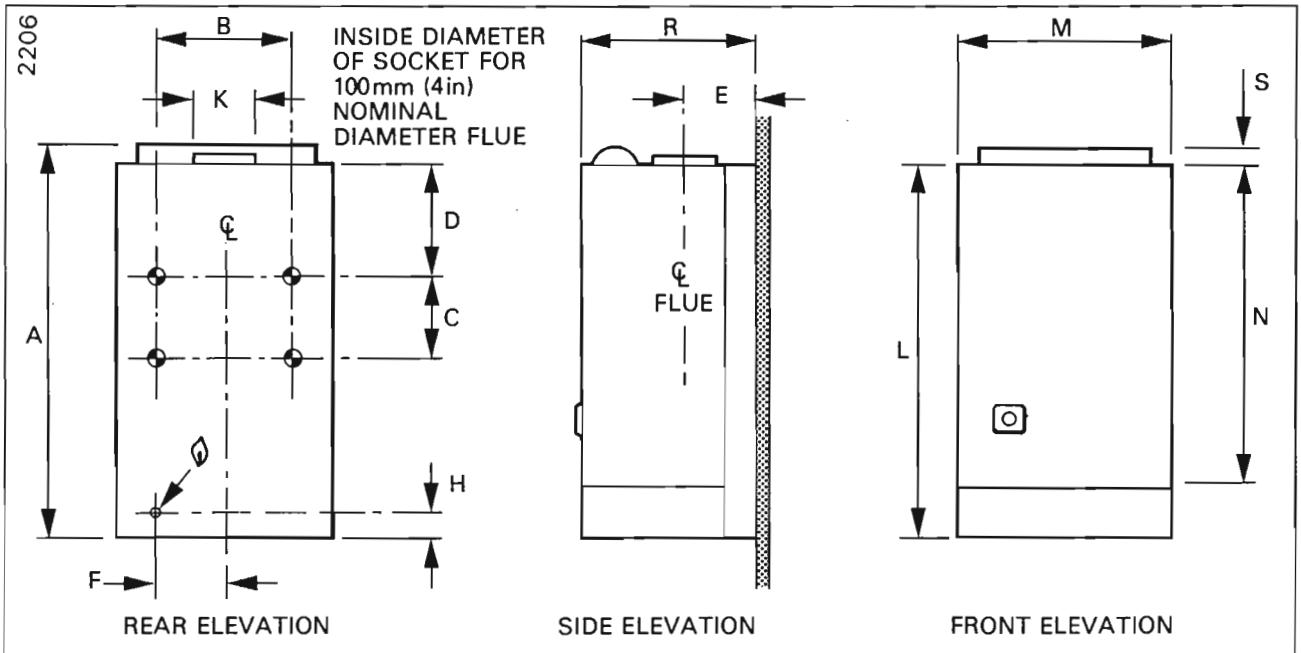
500.30C G.C. No. 41 920 07

500.40C G.C. No. 41 920 08

500.50C G.C. No. 41 920 09

Open Flue Boiler





GENERAL DIMENSIONS (all dimensions in mm) Diagram 1.1

MODEL	A	B	C	D	E	F	H		K	L	M	N	R	S
500.30C 500.40C	764	265	168	213	149	24.5	39		115	741	417	640	345	23
500.50C	764	328	168	213	149	56	39		115	741	480	640	345	23

1 General Notes and Information

It is essential that the boiler is installed strictly in accordance with the instructions and information in this booklet.

Important Notice

The boiler is for use on natural gas only and cannot be used on any other gas.

Sheet Metal Parts

When installing or servicing the boiler care should be taken when handling sheet metal parts, to avoid any possibility of personal injury.

1.1 Statutory Requirements

THE INSTALLATION OF THE BOILER MUST BE CARRIED OUT BY A COMPETENT PERSON IN ACCORDANCE WITH THE RELEVANT REQUIREMENTS OF THE CURRENT ISSUE OF: THE GAS SAFETY (Installation and Use) REGULATIONS, THE BUILDING REGULATIONS, I.E.E., WIRING REGULATIONS, LOCAL WATER UNDERTAKING BYLAWS, THE BUILDING STANDARDS (Scotland) REGULATIONS (applicable in Scotland).

Detailed recommendations are contained in the current issue of the following British Standard codes of practice: BS6798, BS5440 Parts 1 and 2, BS5546 Part 1, BS5449 Part 1, BS6891.

1.2 DATA

MODEL	500.30C	500.40C	500.50C
WEIGHT	45.0 kg (99.0lb)	45.0 kg (99.0lb)	60.0 kg (132.0 lb)
WATER CONTENT	5.6 litres (1.23 gal)	5.6 litres (1.23 gal)	6.4 litres (1.4 gal)
GAS CONNECTION	Rc ½ in. (½ in. BSPT)		
WATER CONNECTION	4 x Rc1, (1 in. BSPT)		
ELECTRICITY SUPPLY	240V, 50Hz, fused 3A max.		
POWER RATING	55W		
DATA BADGE	On right hand side of electrical control box		

1.3 Range Rating

The boiler is range rated and may be adjusted to suit the individual system requirements.

The respective Table 1 gives the ratings and settings.

1.4 B.S.I., Certification

The boiler is certificated to the current issue of British Standard 6332 Part 1, invoking the current issue of BS5258 Part 1 for performance and safety. It is, therefore, important that no alteration is made to the boiler without permission, in writing, from Saunier Duval Ltd.

Any alteration that is not approved by Saunier Duval Ltd., could invalidate the B.S.I., Certification of the boiler, warranty and could also infringe the current issue of the Statutory Requirements, Section 1.1.

1.5 Gas Supply

The gas installation shall be in accordance with the current issue of BS6891.

On completion test the gas installation for soundness and purge, in accordance with the above Standard.

1.6 Electrical Supply

WARNING: This boiler must be earthed.

All system components shall be of an approved type and shall be connected in accordance with the current issue of the I.E.E., Wiring Regulations and any applicable local regulations.

Connection of the boiler and system controls to the mains supply must be through a common isolator and must be fused at 3A, maximum. The method of connection should be, preferably, an unswitched shuttered socket outlet and 3 pin (BS1363) plug.

Alternatively, a double pole isolating switch may be used, provided it has a minimum contact separation of 3mm in both poles. The isolator should be clearly marked, showing its purpose, preferably positioned close to the boiler.

Cables within the boiler casing must be to the current issue of BS6500 Table 9 not less than 0.75mm2 (24/0.20mm).

1.7 Contents of Packaging

The boiler is delivered in one pack which contains:-

Boiler with outer case and wall frame, side panels, burner, combustion chamber shield, flueway baffle and loose items pack.

1.8 Water System

The boiler shall only be used on an unrestricted open vented system with the water supply taken from a feed and expansion tank, having a head between 1m (3ft 3in) minimum and 27m (90ft) maximum.

TABLE(S) 1

Saunier Duval 500.30C RANGE RATING			
RANGE RATING		*Min.*	*Max.*
NOMINAL HEAT INPUT	*kW*	7.8	11.43
	Btu/h	26,600	39,OOO
NOMINAL HEAT OUTPUT	*kW*	5.86	8.79
	Btu/h	20,000	30,000
BURNER SETTING PRESSURE	*m bar*	6.8	14.8
	in.w.g	2.7	5.9
APPROX. GAS RATE	m^3/h	0.75	1.10
	ft^3/h	26	39
INJECTOR MARKING		BURNER :- 203013 PILOT :- 7215	

Saunier Duval 500.40C RANGE RATING			
RANGE RATING		*Min.*	*Max.*
NOMINAL HEAT INPUT	*kW*	11.69	15.36
	Btu/h	39,900	52,400
NOMINAL HEAT OUTPUT	*kW*	8.79	11.72
	Btu/h	30,000	40,000
BURNER SETTING PRESSURE	*m bar*	8.1	14.2
	in.w.g	3.3	5.7
APPROX. GAS RATE	m^3/h	1.13	1.47
	ft^3/h	40	52
INJECTOR MARKING		BURNER :- FF2029 PILOT :- 7215	

Saunier Duval 500.50C RANGE RATING			
RANGE RATING		*Min.*	*Max.*
NOMINAL HEAT INPUT	*kW*	15.59	19.23
	Btu/h	53,200	65,600
NOMINAL HEAT OUTPUT	*kW*	11.72	14.65
	Btu/h	40,000	50,000
BURNER SETTING PRESSURE	*m bar*	8.9	13.4
	in.w.g	3.6	5.4
APPROX. GAS RATE	m^3/h	1.51	1.85
	ft^3/h	53	66
INJECTOR MARKING		BURNER :- 203009 PILOT :- 7215	

1.9 Draining Tap

A draining tap must be provided at the lowest point of the system which will allow the entire system, the boiler and hot water cylinder to be drained.

Draining taps shall be to the current issue of BS2879, type 1.

1.10 Safety Valve

Where a safety valve is fitted it should be on the flow pipe, as near to the boiler as possible, there must not be any intervening valve or cock.

Safety valves shall be to the current issue of BS6759 Part 1.

1.11 Location

This boiler is not suitable for outdoor location.

Open flue boilers must not be installed in a garage.

The boiler must not be installed in a bedroom, bedsitting room or a room containing a bath or shower.

The boiler must be mounted on a flat wall which is sufficiently robust to take its weight.

1.12 Boiler Clearances

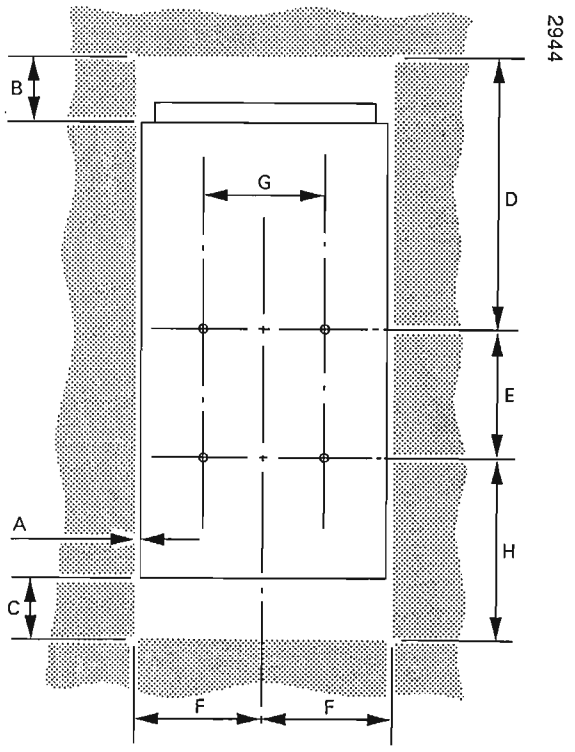
Refer to diagram 1.2.

The boiler must be positioned so that at least the minimum operational and servicing clearances are provided.

Additional clearances may be required for installation.

If fixtures are positioned next to the boiler they should be made removable for access to pipework.

Sufficient clearance must be left in front of the boiler for servicing.



MODEL 500 SERIES		30/40C	50C
A	L.H. and R.H. side of casing	6	6
B	Top of casing to ceiling/fixture	108	108
C	Bottom of casing to floor/fixture	100	100
D	Top fixing holes to ceiling/fixture	441	441
E	Fixing holes—upper to lower	210	210
F	℄ to R.H. and L.H. wall/fixture	215	246
G	Fixing holes—R.H. to L.H.	204	267
H	Lower fixing holes to floor/fixture	305	305

FIXING HOLE POSITIONS Diagram 1.2

2 FLUE AND VENTILATION

2.1 Flue Connection

The integral draught diverter makes the combustion performance independent of conditions in the secondary flue, but an efficient flue is necessary to ensure a trouble free installation.

The flue must be installed in accordance with the recommendations in the current issue of BS5440 Part 1.

The flue should be kept as short as possible. Horizontal or very shallow runs should be avoided.

Give maximum possible vertical rise from the boiler, minimum 600mm (24in) before any bend.

The use of 45° bends is recommended.

A slip-on loose collar must be provided for flue removal.

Terminate with an approved terminal, above ridge height, if possible, if not, at least above the eaves of a pitched roof.

A previously used chimney must be swept and any register plate or damper etc., must be removed and the chimney made good.

2.2 Boilers in a Compartment

Where the installation of the boiler will be in an unusual location, special procedures are necessary. Refer to the current issue of BS6798 for guidance.

A compartment used to enclose the boiler must be designed and constructed specifically for this purpose.

An existing cupboard or compartment modified for the purpose may be used. Refer to the current issue of BS6798 for guidance.

The doorway opening should be sufficient size to allow for easy removal of the boiler.

Be provided with permanent ventilation openings as shown in the respective Table 2. These figures are for the minimum free area.

The high and low level openings must communicate with the same room or space or must both be on the same wall to outside air.

The compartment door or vent should not communicate with a bedroom, bed sitting room or a room containing a bath or shower.

A purpose designed ventilation opening must be provided on an outside wall of the building, this opening may be either, directly into the room or space containing the boiler, or into an adjacent room or space which has an internal permanent air vent of the same size to the room containing the boiler.

Do not ventilate via kitchen, bathroom or toilet.

Vents through a cavity wall must be ducted.

If there are other fuel burning appliances present, allowance must be made for their combustion requirements. The free area for the boiler is:

500.30C - 20cm² (3in²)

500.40C - 38cm² (5in²)

500.50C - 55cm² (8.5in²)

COMPARTMENT AIR VENT TABLE 2
SAUNIER DUVAL 500.30C 2946

COMPARTMENT VENTILATION REQUIREMENTS	HIGH LEVEL VENT AREA		LOW LEVEL VENT AREA	
	cm²	in²	cm²	in²
VENTILATION FROM ROOM OR SPACE	104	16	208	32
VENTILATION FROM OUTSIDE	52	8	104	16

COMPARTMENT AIR VENT TABLE 2
SAUNIER DUVAL 500.40C

COMPARTMENT VENTILATION REQUIREMENTS	HIGH LEVEL VENT AREA		LOW LEVEL VENT AREA	
	cm²	in²	cm²	in²
VENTILATION FROM ROOM OR SPACE	140	22	278	44
VENTILATION FROM OUTSIDE	70	11	139	22

COMPARTMENT AIR VENT TABLE 2
SAUNIER DUVAL 500.50C

COMPARTMENT VENTILATION REQUIREMENTS	HIGH LEVEL VENT AREA		LOW LEVEL VENT AREA	
	cm²	in²	cm²	in²
VENTILATION FROM ROOM OR SPACE	174	28	348	56
VENTILATION FROM OUTSIDE	87	14	174	28

2.3 Products of Combustion

Test the boiler for clearance of flue products at the draught diverter as detailed in the current issue of BS5440 Part 1, Appendix B.

2.4 Extract Fans

If an extract fan is fitted there is a possibility that if adequate air is not provided spillage of the flue products could occur. If vents are fitted in accordance with the above recommendations this should not occur. Where such an installation is found a spillage test must be carried out as detailed in the current issue of BS5440 Part 1 and any necessary action taken.

2.5 Timber Frame Buildings

If the boiler is to be installed in a timber frame building it should be fitted in accordance with the British Gas publication "Guide for Gas Installation in Timber Framed Housing" reference DM2. If in doubt, seek advice from the local gas undertaking or Saunier Duval Ltd.

Frost Protection

If the position of the boiler is such that it may be vulnerable to freezing it should be protected as specified in the current issue of BS5422. It is also recommended that a frost protection thermostat be installed.

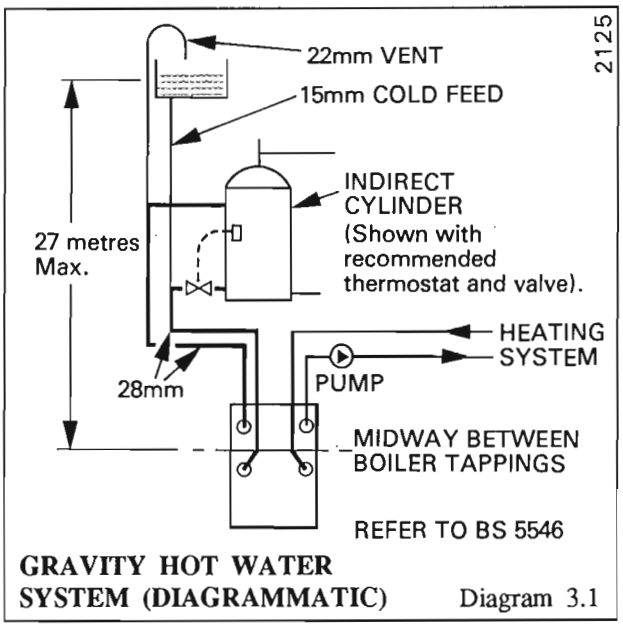
3.1 Cylinders

For all systems supplying domestic hot water the cylinder must be indirect. It is recommended that the cylinder be fitted with some form of temperature control.

3.2 Gravity Domestic Hot Water with Pumped Heating

It is important that the flow and return connections are in the same relative positions as shown in diagram 3.1.

The domestic flow and return must both be on one side of the heat exchanger. The heating flow and return are taken from the other.

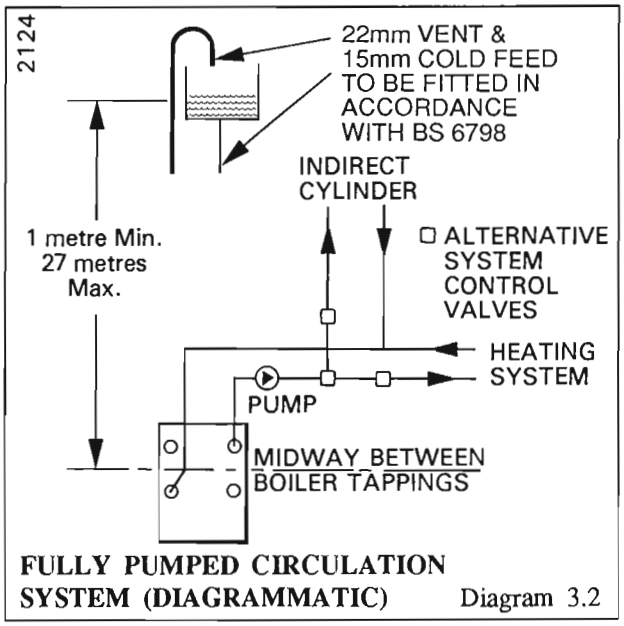


GRAVITY HOT WATER SYSTEM (DIAGRAMMATIC) Diagram 3.1

3.3 Pumped Heating and Hot Water

It is important the the flow and return connections are made as shown in diagram 3.2.

These connections may be fitted on the opposite side to that shown but always in the same relative positions.



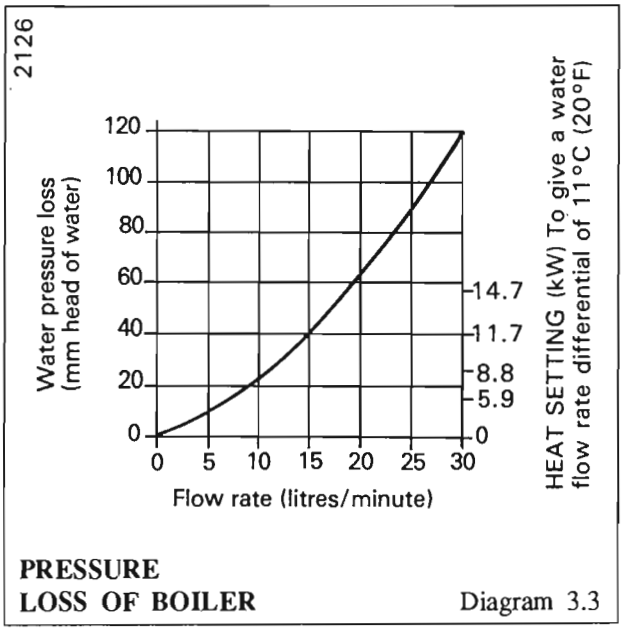
FULLY PUMPED CIRCULATION SYSTEM (DIAGRAMMATIC) Diagram 3.2

3.4 Pump

This should be fitted on the flow pipe and have isolating valves fitted each side, integral, if possible.

The pump should be set to give a temperature difference of 11°C (20°F) between flow and return, with the boiler thermostat set at "MAX" which is about 82°C (180°F).

The resistance through the boiler can be found from diagram 3.3.



PRESSURE LOSS OF BOILER Diagram 3.3

4.1 Unpacking

Unpack and check that the contents, listed below, are present and undamaged:-

Boiler, combustion chamber shield, side panels x 2, burner, flueway baffle, loose items pack (with check list).

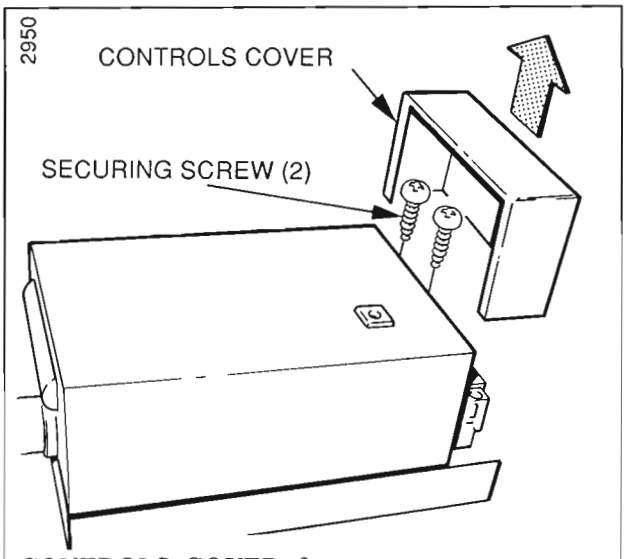
With the boiler still in the bottom tray, slide the controls cover upward and remove as shown in diagram 4.1. Remove the outer case by undoing, and retaining), the two screws and lifting off, see diagram 4.1.

Release the wall frame by removing and keeping the two retaining screws at the back of the combustion chamber, see diagram 4.2.

To remove the boiler, turn it over, sideways, out of the bottom tray, see diagram 4.3, taking care not to damage the controls, so that it is face down on the floor, exposing the four Rc1 (1in BSP) water connections.

Remove the remaining loose items, including the wall frame which is in the bottom of the tray

Note: It is NOT recommended that the boiler be placed in an upright position. If it is unavoidable great care must be taken not to damage the gas valve, to avoid this it is suggested that support be placed under the boiler, positioned as shown in diagram 4.3.



CONTROLS COVER & OUTER CASE REMOVAL Diagram 4.1

4.2 Preparation

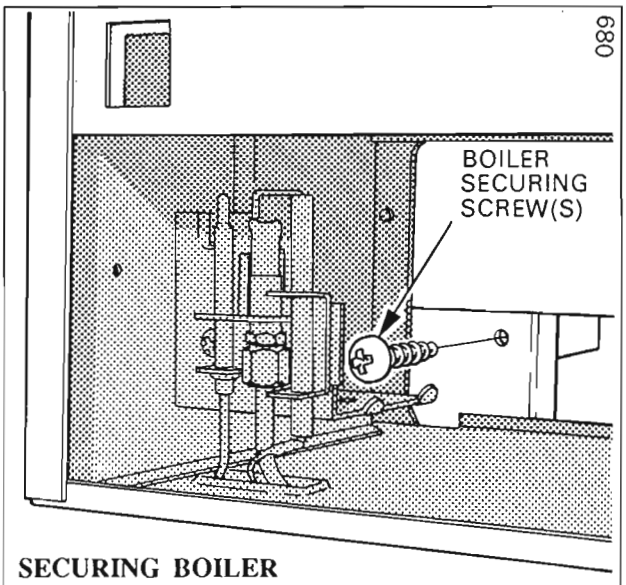
Use the wall frame and refer to diagram 4.4, mark out the position of the fixing holes, making sure they are square.

Remove the wall frame and drill holes to suit plugs and screws provided. Secure the wall frame with its cross member at the top, to the wall.

Ensure the wall frame is level.

Fit suitable Rc1 (1in BSP) fittings into the appropriate tappings. Tighten to required position and then fit suitable fittings and short lengths of pipe into these fittings, ensuring that they will be in an accessible position when the boiler is fixed.

Note: It is important to ensure that all these joints are watertight at this stage as they will not be directly accessible after the boiler is fixed.



SECURING BOILER TO WALL FRAME Diagram 4.2

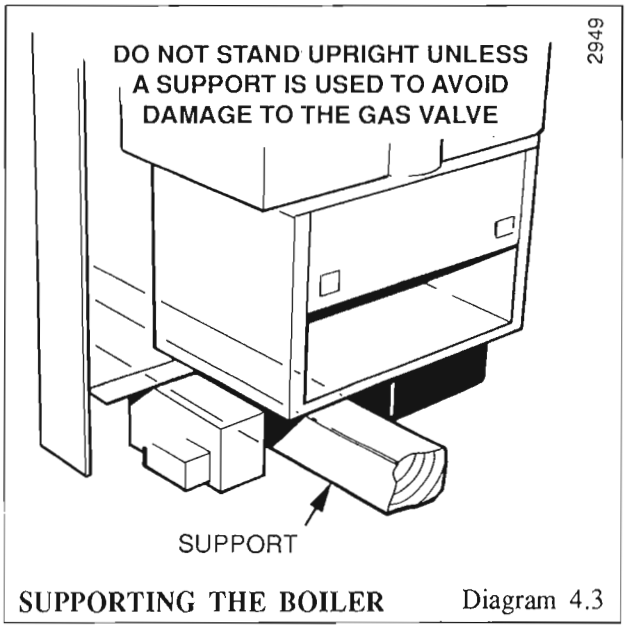
4.3 Mounting the Boiler

Note: Access to the screw holes is through the combustion chamber, see diagram 4.3. Take care not to damage the pilot/thermocouple assembly.

Lift the boiler and position on to the wall frame so that the tags on the boiler body locate on the cross member of the wallframe, see diagram 4.5.

Fasten the boiler to the wallframe, using the screws previously removed.

Remove the flue cleaning door, see diagram 4.6.



SUPPORTING THE BOILER Diagram 4.3

Remove the split pin. Withdraw the retaining angle and thermostat phial from its pocket.

Fit the flueway baffle, ensuring that it is seated down correctly onto the casing as shown in diagram 4.6.

Re-assembly note: When fitting the thermostat, ensure that the thermostat is fully inserted into the phial pocket and then insert the retaining angle.

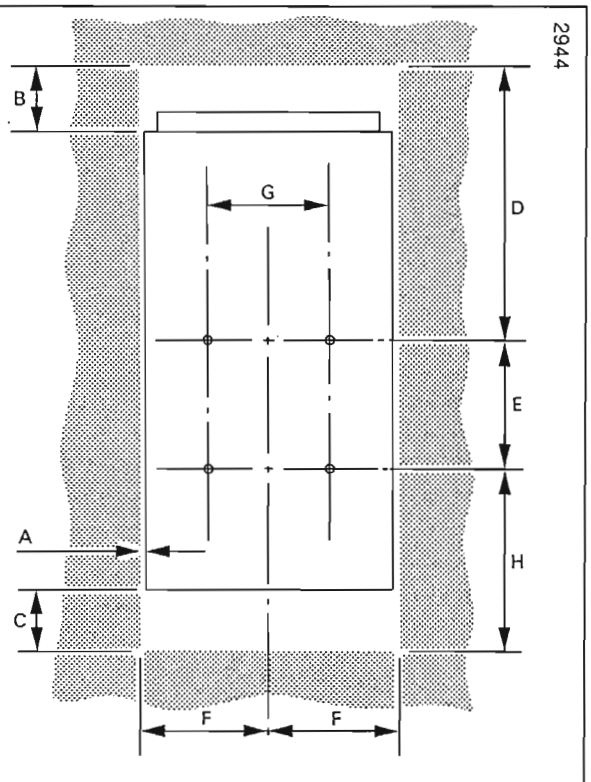
Replace the flue cleaning door.

4.4 Water Circulation System

Complete the water connections to the boiler pipework, using compression fittings.

Fill, vent and cold flush the system as recommended in the current issue of BS6798.

Visually check for and rectify any water leaks.



MODEL 500 SERIES		30/40C	50C
A	L.H. and R.H. side of casing	6	6
B	Top of casing to ceiling/fixture	108	108
C	Bottom of casing to floor/fixture	100	100
D	Top fixing holes to ceiling/fixture	441	441
E	Fixing holes—upper to lower	210	210
F	℄ to R.H. and L.H. wall/fixture	215	246
G	Fixing holes—R.H. to L.H.	204	267
H	Lower fixing holes to floor/fixture	305	305

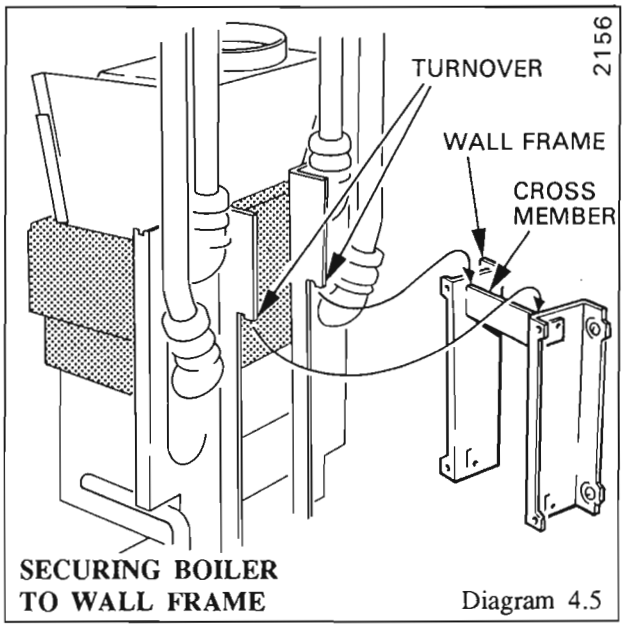
FIXING HOLE POSITIONS Diagram 4.4

4.5 Gas Connection

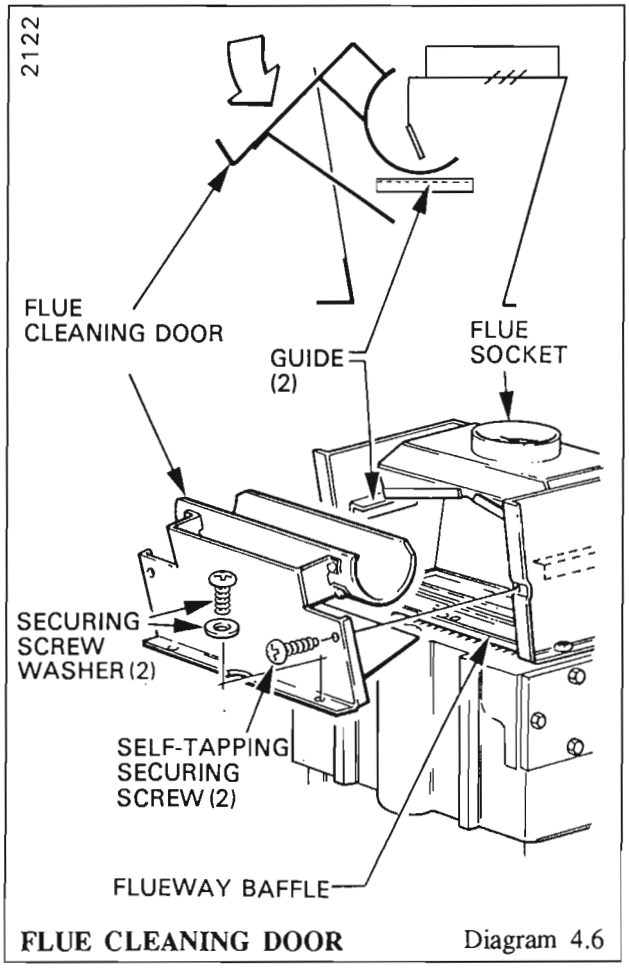
Make the gas connection to the flanged Rc$^1/_2$ gas service cock.

4.6 Flue

Install the flue pipework and seal to the flue socket in accordance with normal practice.



SECURING BOILER TO WALL FRAME Diagram 4.5



FLUE CLEANING DOOR Diagram 4.6

5.1 Control Box Removal

Remove electrical control box securing screws, see diagram 5.1. Slide the box backward to release the rear location hook, temporarily hook it into the front slot, provided, see diagram 5.2.

5.2 Cable Connection

Thread the power supply cord through the clamp at the rear of the control box, as shown in diagram 5.2.

The earth conductor must be made of a greater length so that if the cable is strained the earth conductor is the last to become disconnected.

Connect to the terminal strip, as shown in diagram 5.3.

Secure the cable into the clamp, as shown in diagram 5.2.

Ensure that there is sufficient cable to allow the control box to be temporarily hooked into the front slot, to allow for servicing.

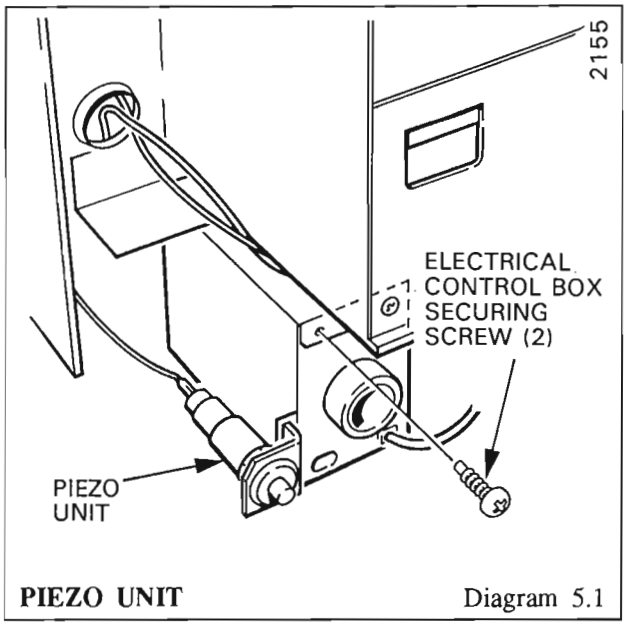
Replace the control box by reversing the information given above in Section 5.1. Take care not to trap the thermostat capillary at the rear of the control box also ensure the rear location hook is correctly engaged.

5.3 Testing

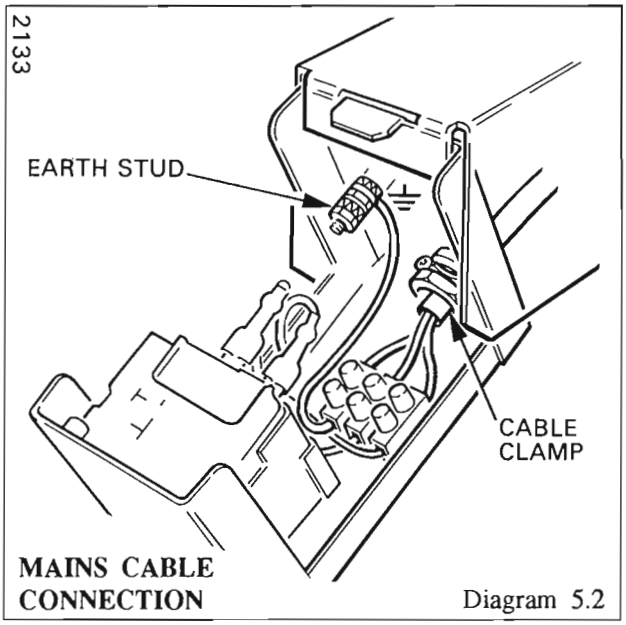
Checks to ensure electrical safety should be carried out by a competent person.

It is essential that the polarity is correct.

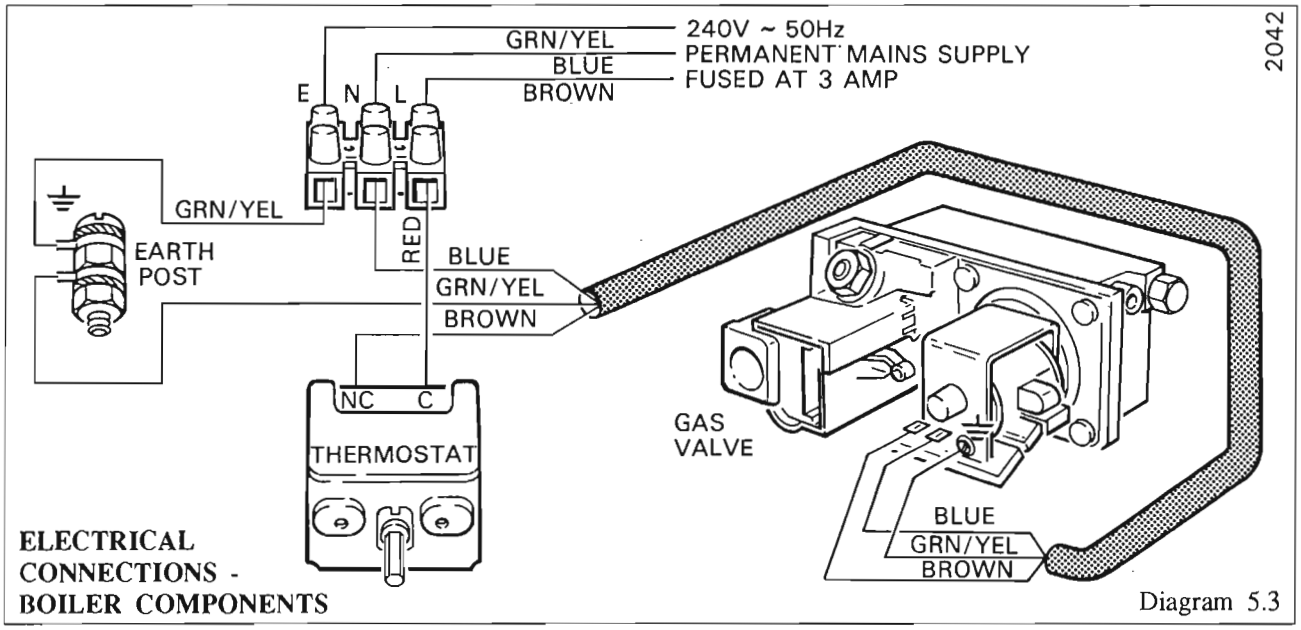
In the event of an electrical fault after installation of the system, the preliminary electrical system checks, as described in a multimeter instruction book are the first checks to be carried out.



PIEZO UNIT Diagram 5.1



MAINS CABLE CONNECTION Diagram 5.2



ELECTRICAL CONNECTIONS - BOILER COMPONENTS Diagram 5.3

6.1 Testing, Initial Lighting and Adjustment

Pressure test the complete installation for soundness and purge in accordance with the current issue of BS 6891.

Refer to diagram 6.1 to fit the burner.

Identify the controls by reference to diagram 6.2.

Check that the gas service cock "C" is off, that is, indicator vertical.

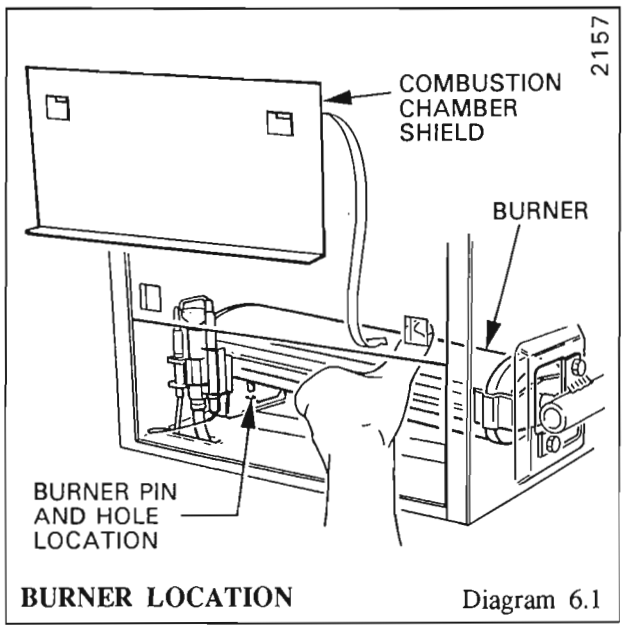
Check that the mains electrical supply to the boiler is off.

Set the thermostat control knob "B" to "O" - the off position.

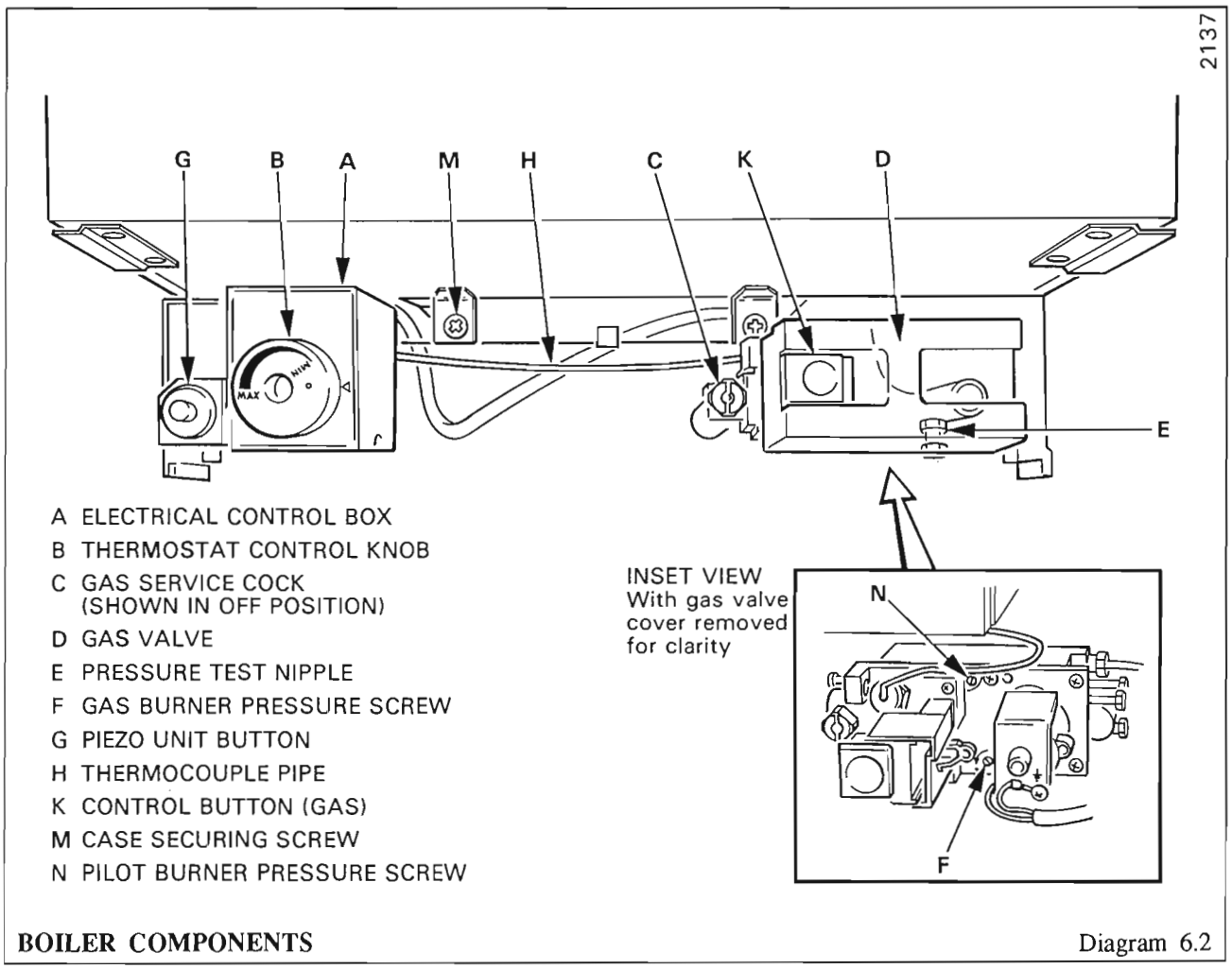
Remove the gas pressure test nipple screw "E" and fit a suitable pressure gauge.

Open gas service cock "C". Depress control button "K", keep pressed in and at the same time operate the piezo unit button "G" until the pilot burner lights.

After the pilot burner lights keep the button "K" depressed for approximately 15 seconds. If the pilot burner fails to light or stay alight a safety device in the gas valve prevents immediate re-lighting.



BURNER LOCATION Diagram 6.1



BOILER COMPONENTS Diagram 6.2

Do not attempt to relight until the safety device has reset. Check the length of the pilot flame, it should envelop the thermocouple tip as shown in diagram 6.3. The pilot rate can be adjusted, if necessary, by turning the pilot burner adjustment screw "N", having first removed the gas valve cover by releasing the screw as diagram 6.4.

Test pilot supply connections for gas soundness, using a suitable leak detection fluid.

Hook the combustion chamber shield onto the front of the combustion chamber, making sure that it is flush and horizontal with the combustion chamber front, see diagram 6.1.

Fit the outer case, ensuring that the lower part clears the pilot supply tube. Secure with the screws previously removed.

Make sure that the pilot is alight and stable by viewing through the window in the casing.

Switch on the electrical supply to the boiler and turn on all external controls.

Set the thermostat knob "B" between "MIN" and "MAX" and check that the main burner cross lights smoothly from the pilot. Whilst the boiler is operating test gas valve and gas connections for gas soundness using a suitable leak detection fluid.

To set the burner pressure, operate the boiler for 10 minutes, remove the gas valve cover, if not already removed, as above. Adjust the gas burner pressure via screw "F" until the required pressure is obtained, see the relevant Table 1 for setting pressures.

Align and attach the self adhesive arrow from the loose items pack in the appropriate space beneath the "Min" or "Max" column on the data badge.

Should any doubt exist about the gas rate this should be checked at the meter using a stop watch to time at least a cubic foot of gas consumption.

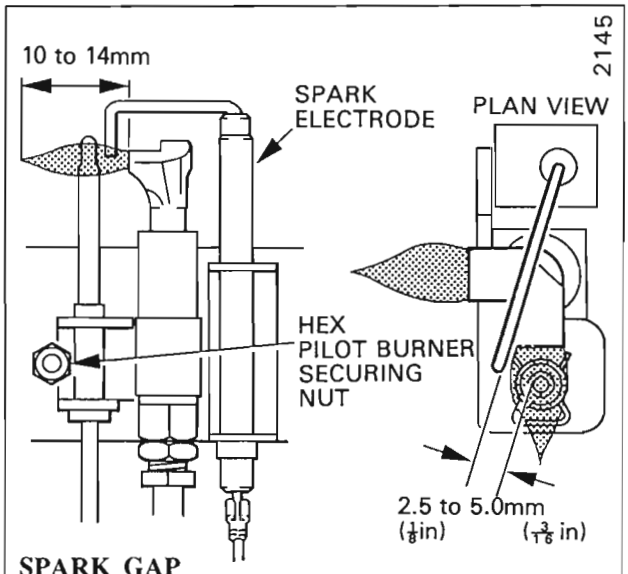
Replace the gas valve cover.

Check the operation of the flame failure device, with the burner alight, as follows:- Slide the control button "K" inward and release, the main burner and pilot will go out. Check that the flame failure device has operated, indicated by a "click", within 60 seconds, from the valve. The gas valve incorporates a safety device. Do not attempt to re-light until it has reset, in about 3 minutes.

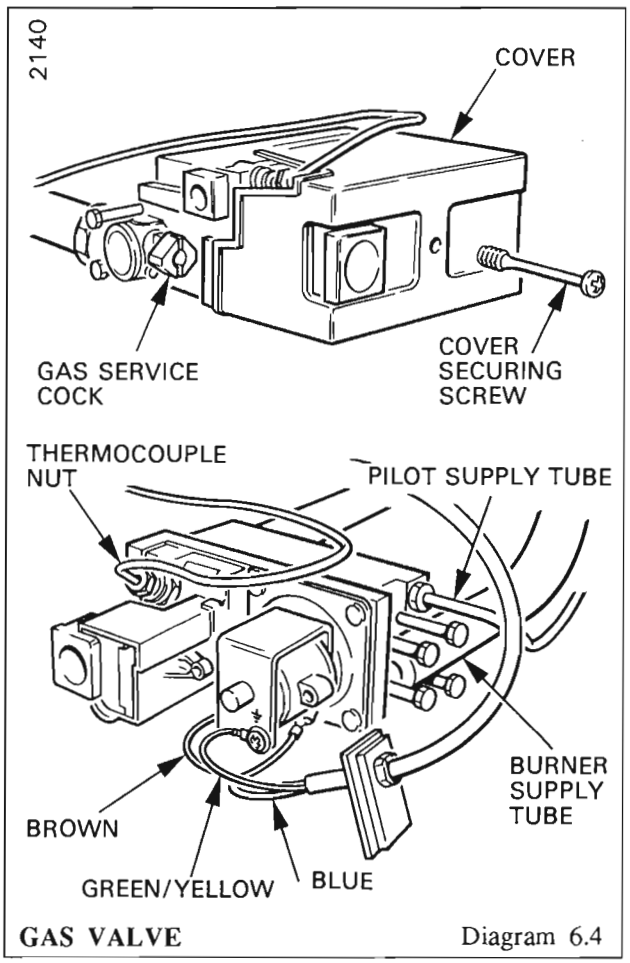
Remove the pressure gauge and refit the screw "E", ensuring that a gas tight seal is made.

Set the thermostat knob "B" to "O" (the off position) and relight the pilot, as above.

Check that the boiler thermostat and all external controls are operating as required.



SPARK GAP AND FLAME DIMENSION Diagram 6.3



GAS VALVE Diagram 6.4

6 COMMISSIONING

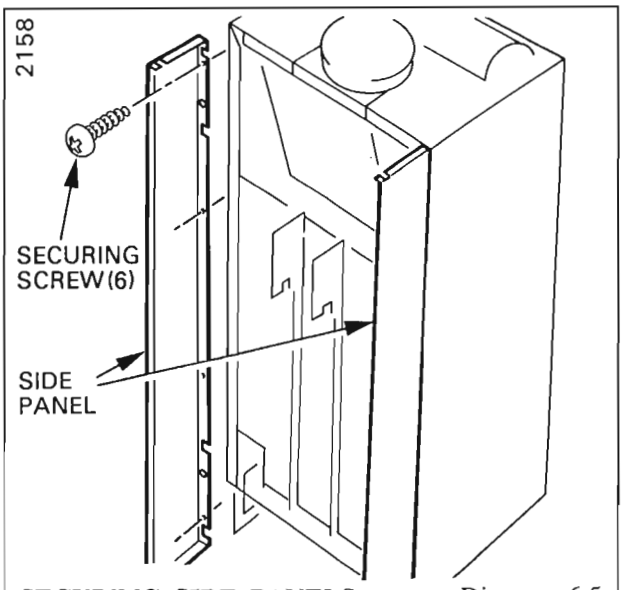
Relight the main burner and allow the system to warm up.

There should be no undue noise in the system and no pumping over or ingress of air at the open vent. Allow the system to reach maximum temperature and check for water soundness.

The burner should then be turned off and the system drained, as rapidly as possible, to complete the flushing process. Refill the system, heat up, vent and check again for water soundness.

If the side panels are to be fitted, remove the outer case. (Fit by fastening to the outer case using the securing screws, see diagram 6.5.)

Refit outer case and controls cover.



SECURING SIDE PANELS Diagram 6.5

7 USER INSTRUCTION

Hand the User Instructions to the user for their retention. Instruct and demonstrate the efficient and safe operation of the boiler, the heating system and if installed the domestic hot water system.

Advise that to ensure the continued efficient and safe operation of the boiler it is recommended that it is checked and serviced as necessary at regular intervals. The frequency of servicing will depend upon the particular installation conditions and usage, but in general once a year, preferably at he end of the heating season, should be enough.

It is the Law that any servicing must be carried out by a competent person.

Leave these instructions with the user for use during future service calls.

To ensure the continued efficient and safe operation of the boiler it is recommended that it is checked and serviced as necessary at regular intervals. The frequency of servicing will depend upon the particular installation conditions and usage, but in general once a year, preferably at the end of the heating season, should be enough.

It is the Law that any servicing must be carried out by a competent person.

BEFORE SERVICING OR REPLACING PARTS TURN OFF THE GAS SUPPLY AND ISOLATE THE ELECTRICAL SUPPLY TO THE BOILER. AFTER COMPLETING A SERVICE OR REPLACEMENT OF GAS CARRYING COMPONENTS ALWAYS TEST FOR GAS SOUNDNESS AND CARRY OUT FUNCTIONAL CHECKS ON CONTROLS.

Unless stated otherwise replacement of parts is in the reverse order to removal.

8.1 Access

Refer to diagrams 4.1, 4.2 and 6.1.

Slide the controls cover off. Undo the screws and remove the outer case.

Lift the combustion chamber shield clear of the lugs and remove.

8.2 Main Burner

Refer to diagram 6.1.

Remove the main burner. Lift the left hand end of the burner to disengage the locating pin.

Slide the burner off the injector by moving it to the left, take care not to damage the pilot burner and electrode assembly. Bring the right-hand end of the burner through the opening first.

Service note: Clean the burner thoroughly, making sure that all the flame ports are clear.

8.3 Boiler Flueway Cleaning

Gain access as Section 8.1. Remove burner as Section 8.2. Refer to diagrams 4.6 and 8.6.

Release split pin. Remove retaining angle and thermostat phial.

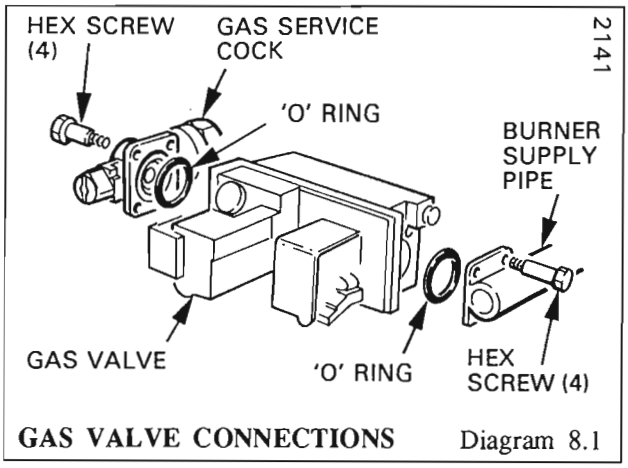
Undo the screws and remove the flue cleaning door.

Remove flueway baffle.

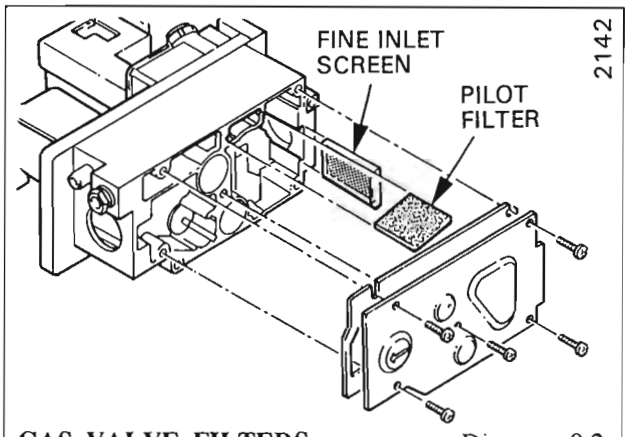
Place a sheet of paper in the combustion chamber, covering the electrode/pilot assembly, to catch the flue debris.

Clean the boiler flueways and fins thoroughly with a suitable stiff brush.

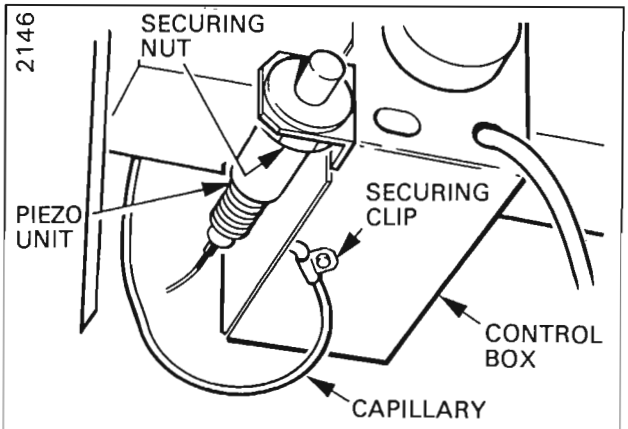
Re-assembly note: When replacing the flue cleaning door and flueway baffle ensure they are fitted as shown in diagram 4.6.



GAS VALVE CONNECTIONS Diagram 8.1



GAS VALVE FILTERS Diagram 8.2



PIEZO UNIT Diagram 8.3

8.4 Gas Valve - Replacement

Gain access as Section 8.1.

Refer to diagrams 6.4 and 8.1.

Remove screw to release gas valve cover.

Disconnect the electrical leads, thermocouple and pilot supply tube at the gas valve.

Remove the electrode by undoing the retaining nut.

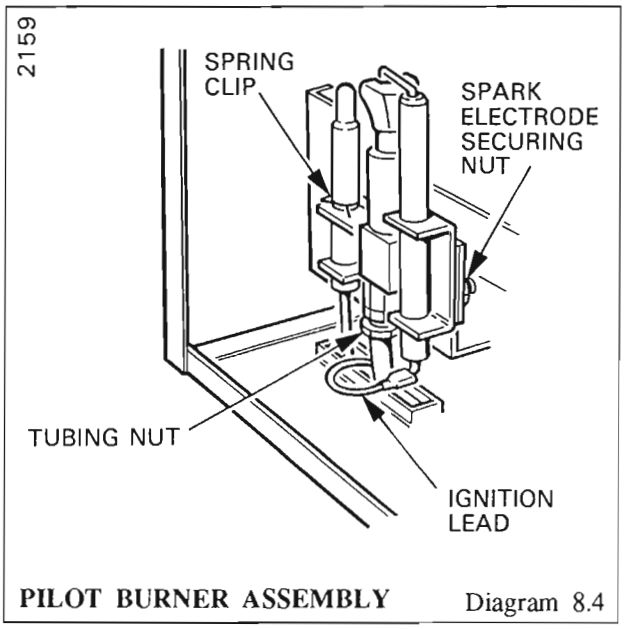
Disconnect the pilot supply tube at the pilot burner assembly and disengage pilot supply tube from gas valve. Undo the four screws each side of the gas valve to release the gas service cock and burner supply tube, take care not to damage the "O" rings.

Re-assembly note: When refitting the gas valve take care not to damage the "O" rings.

Remake electrical connections.

Do not tighten the thermocouple nut more than one quarter turn beyond finger tight.

It will be necessary to purge the pipework and valve before re-lighting, refer to Commissioning.



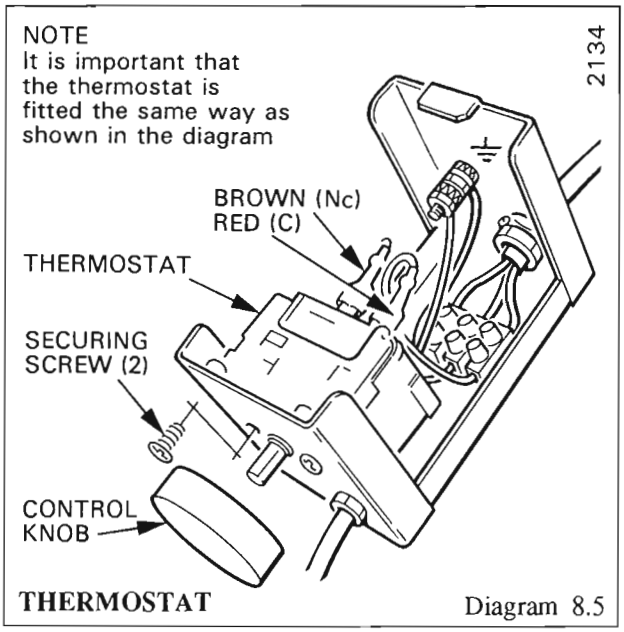
PILOT BURNER ASSEMBLY Diagram 8.4

8.5 Gas Valve - Servicing

Remove gas valve as 8.4 above.
Refer to diagram 8.2.

To inspect the inlet screen and replace the pilot filter remove the base of the gas valve by releasing the five screws.

When re-assembling take care not to damage the screen.



THERMOSTAT Diagram 8.5

8.6 Main Injector

Gain access as Section 8.1.

Remove main burner as Section 8.2.

Remove the main burner injector from the right hand side of the combustion chamber.

Clean or replace as necessary. Do not clean with wire or sharp instrument.

8.7 Electrode

Gain access as Section 8.1. Refer to diagram 8.4.

Disconnect the electrode lead and remove electrode by undoing the retaining nut.

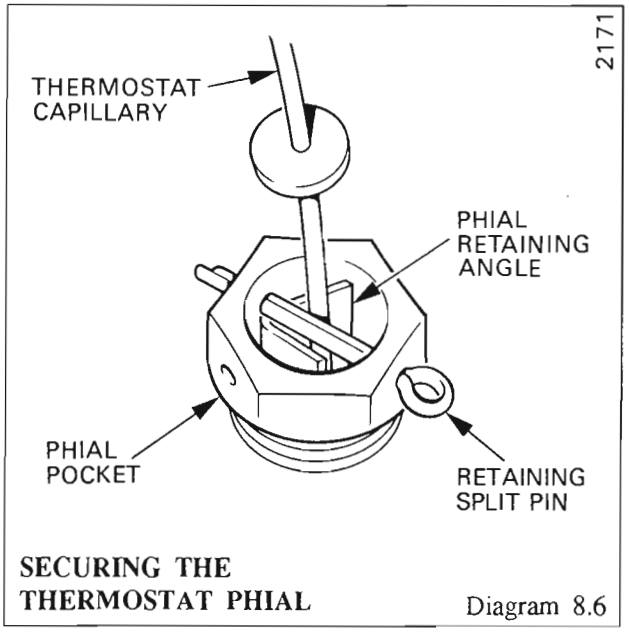
8.8 Pilot Burner Injector

Gain access as Section 8.1. Refer to diagram 8.4.

Remove the electrode as Section 8.7.

Disconnect the pilot supply tube by unscrewing the pilot tubing nut.

Ease the supply tube from the pilot injector and unscrew the injector.



SECURING THE THERMOSTAT PHIAL Diagram 8.6

8.9 Thermocouple

Gain access as Section 8.1. Refer to diagram 6.4.

Remove the gas valve cover as Section 8.4.

Disengage the thermocouple spring clip and remove the thermocouple.

Re-assembly note: When refitting do not tighten the thermocouple nut more than a quarter turn beyond finger tight.

8.10 Pilot Burner

Gain access as Section 8.1. Refer to diagrams 6.3 and 8.4.

Remove the main burner as described in Section 8.2.

Remove electrode as described in Section 8.7.

Disengage the thermocouple spring clip and carefully ease the thermocouple from the pilot burner. Disconnect the pilot supply tube by unscrewing the tubing nut. Remove the pilot burner by unscrewing the fixing at the left hand side.

Reassembly Note: When refitting check that the spark gap is correct and ensure that the thermocouple tip will be enveloped as shown.

8.11 Thermostat

Gain access as Section 8.1. Refer to diagrams 5.2, 8.5 and 8.6.

Remove and temporarily support the electrical control box as described in Section 5.1.

Remove the control knob. Remove the two electrical connections from the thermostat body.

Release the thermostat body by unscrewing the two screws in the front of the control box.

Remove the fixings securing the capillary clip to the underside of the control box. Remove the split pin. Withdraw the retaining angle and thermostat phial from its pocket.

Remove the thermostat from the boiler.

Re-assembly note: When fitting the thermostat, ensure that the thermostat is fully inserted into the phial pocket and then insert the retaining angle. Replace the split pin.

Remake electrical connections.

Ensure that the capillary is neatly clipped, as prior to removal, with any excess being coiled up tidily at the rear of the control box. There must be no kinks or sharp bends in the capillary.

8.12 Piezo Unit

Gain access as Section 8.1. Refer to diagram 8.3.

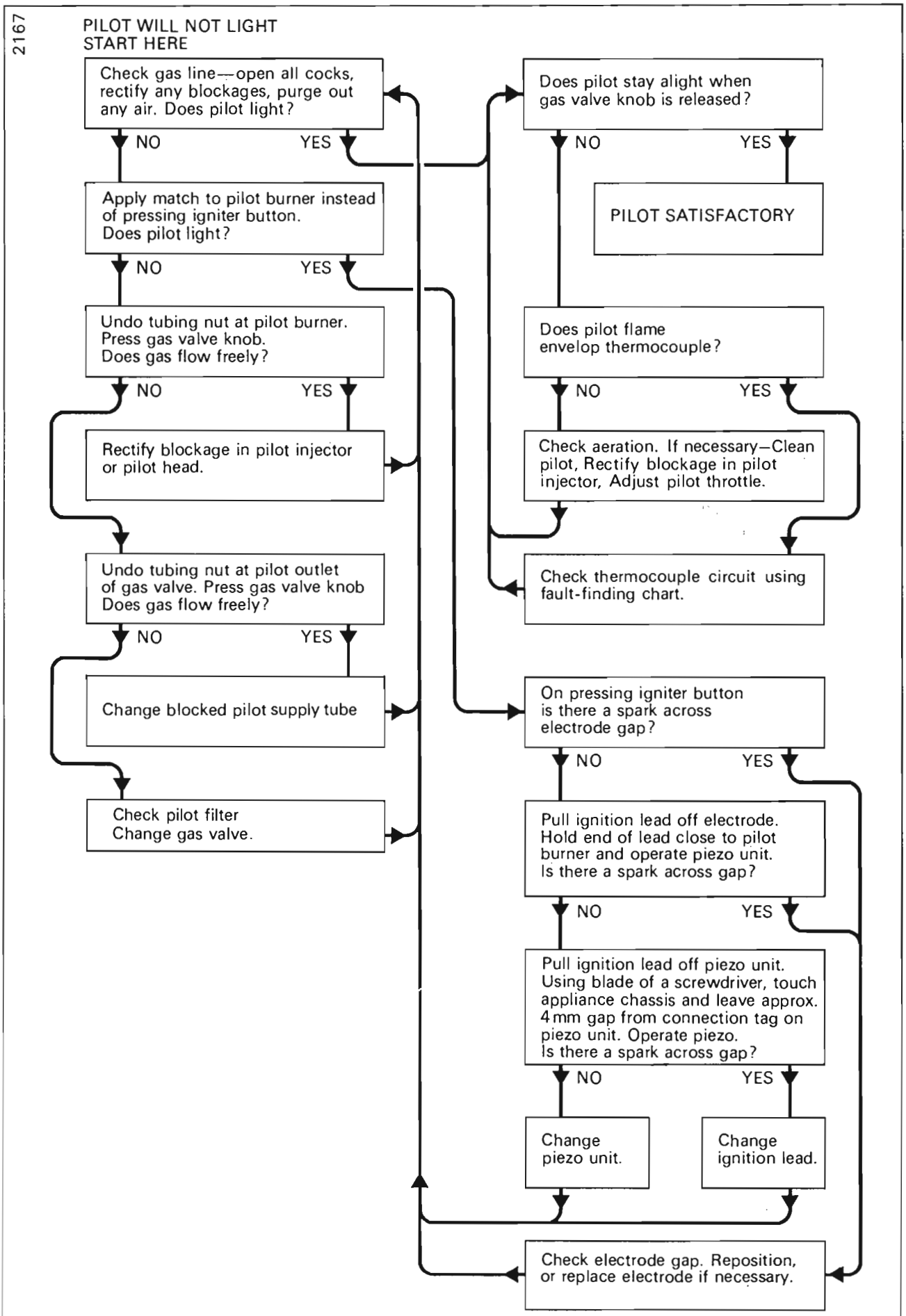
Remove piezo unit securing nut. Where the boiler has been installed at minimum clearance it will be necessary to remove and temporarily support the electrical control box as described in Section 5.1.

8.13 Ignition Lead

Gain access as Section 8.1.

Disconnect the lead at both ends and remove.

Re-assembly note: When replacing ensure the black end of the lead is attached to the piezo unit.



BOILER PILOT FAULT-FINDING Diagram 9.1

9.1 Pilot

Refer to chart 9.1.

9.2 Thermocouple

Refer to chart 9.2.

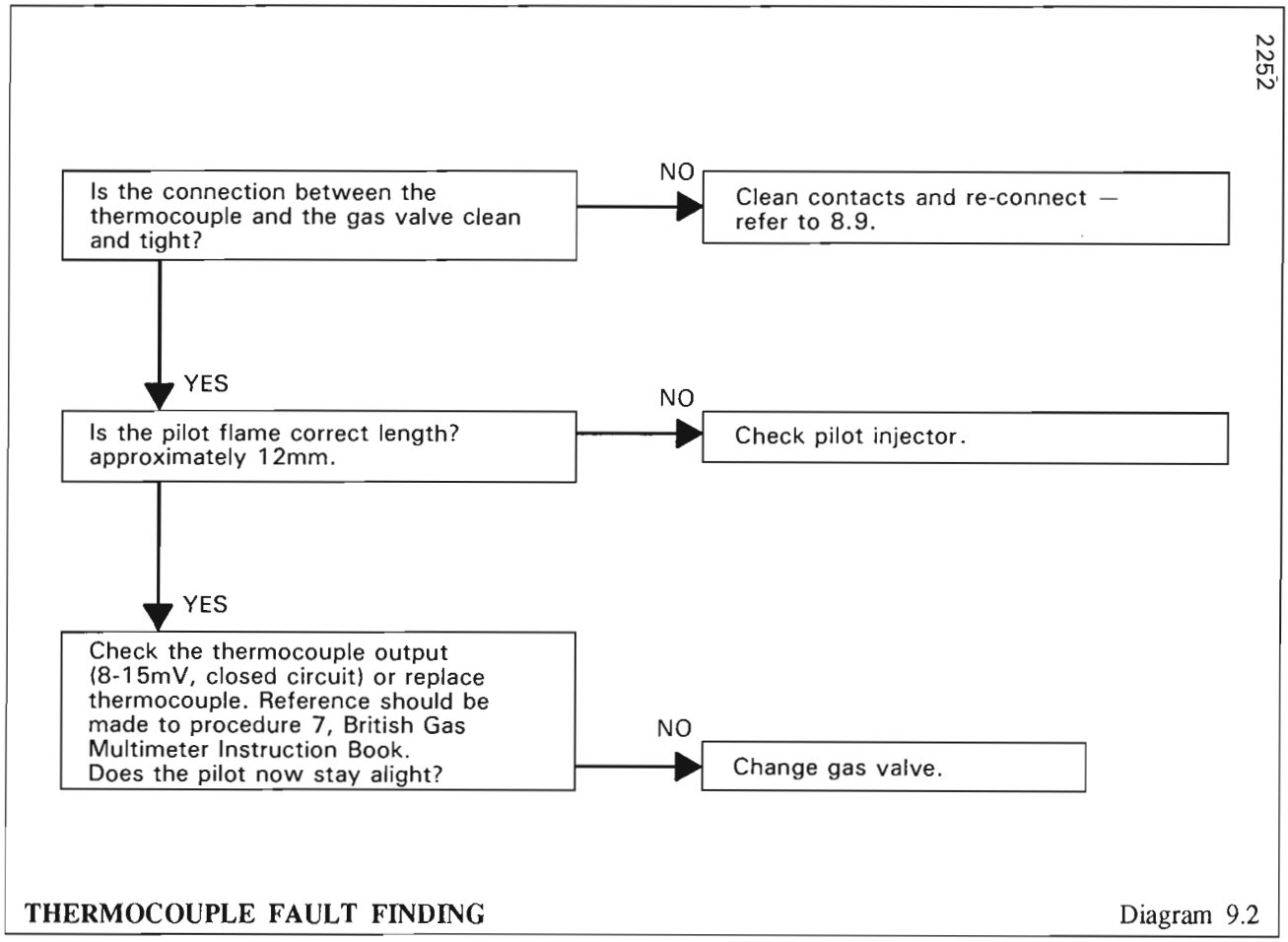
9.3 Electrical

Refer to chart 9.3 & 9.4.

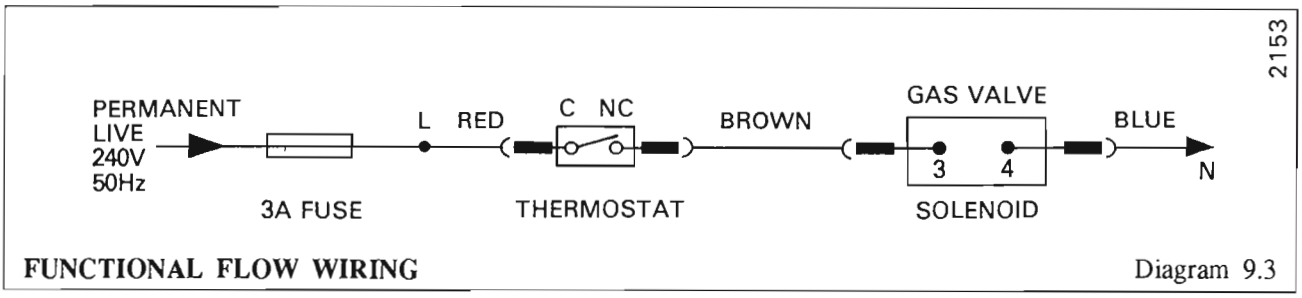
IMPORTANT

The preliminary electrical system checks as contained in a multimeter instruction book are the first checks to be carried out during fault finding.

On completion of any fault finding task which has required the breaking and remaking of electrical connections then the checks, earth continuity, polarity and resistance to earth, must be repeated.

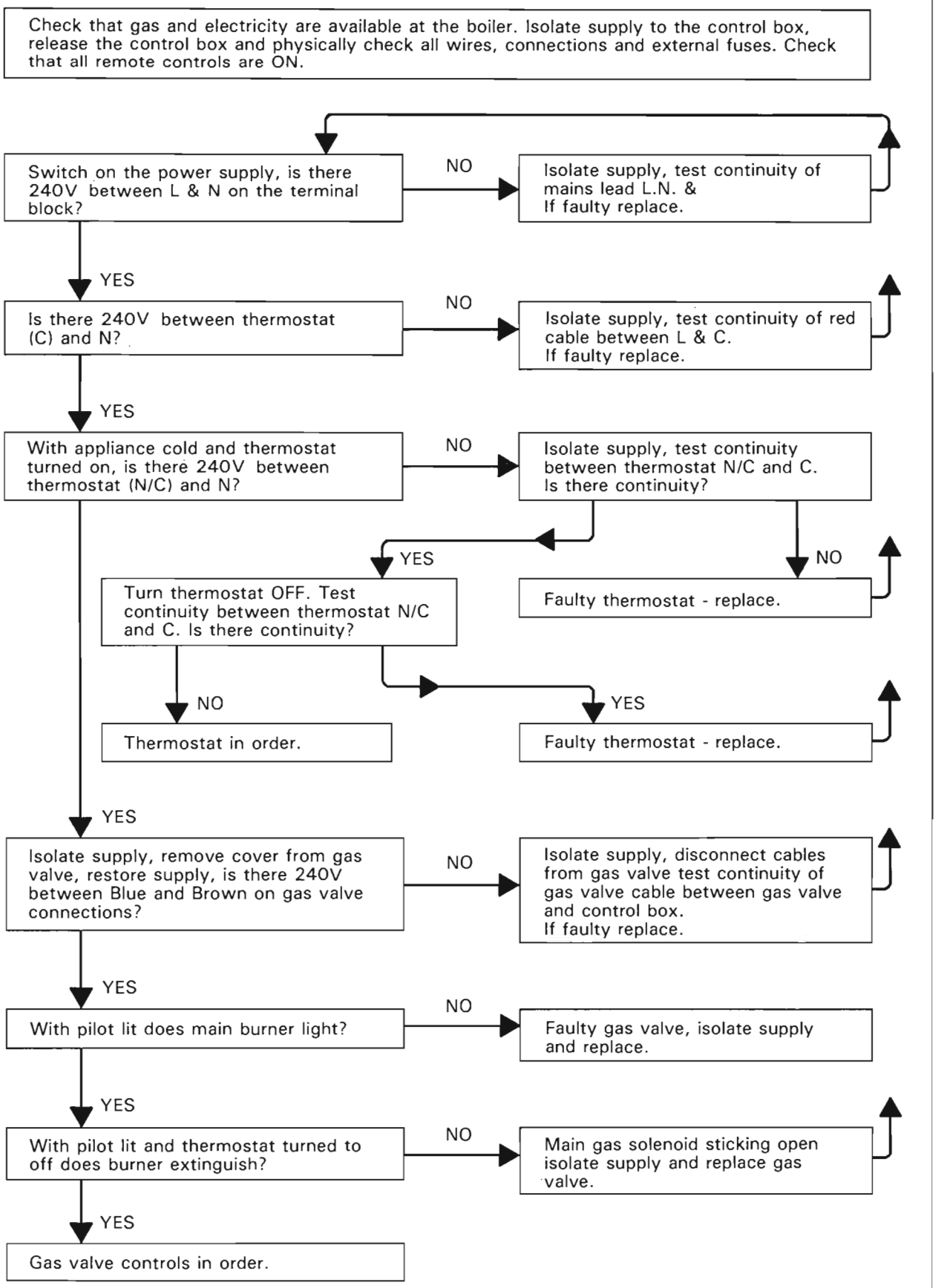


THERMOCOUPLE FAULT FINDING — Diagram 9.2



FUNCTIONAL FLOW WIRING — Diagram 9.3

2192



FAULT FINDING Diagram 9.4

If replacement parts are required, apply to your local supplier. Please quote the name of the appliance and its serial number, found on the data badge on the right hand side of the control box, after removal of the cover.

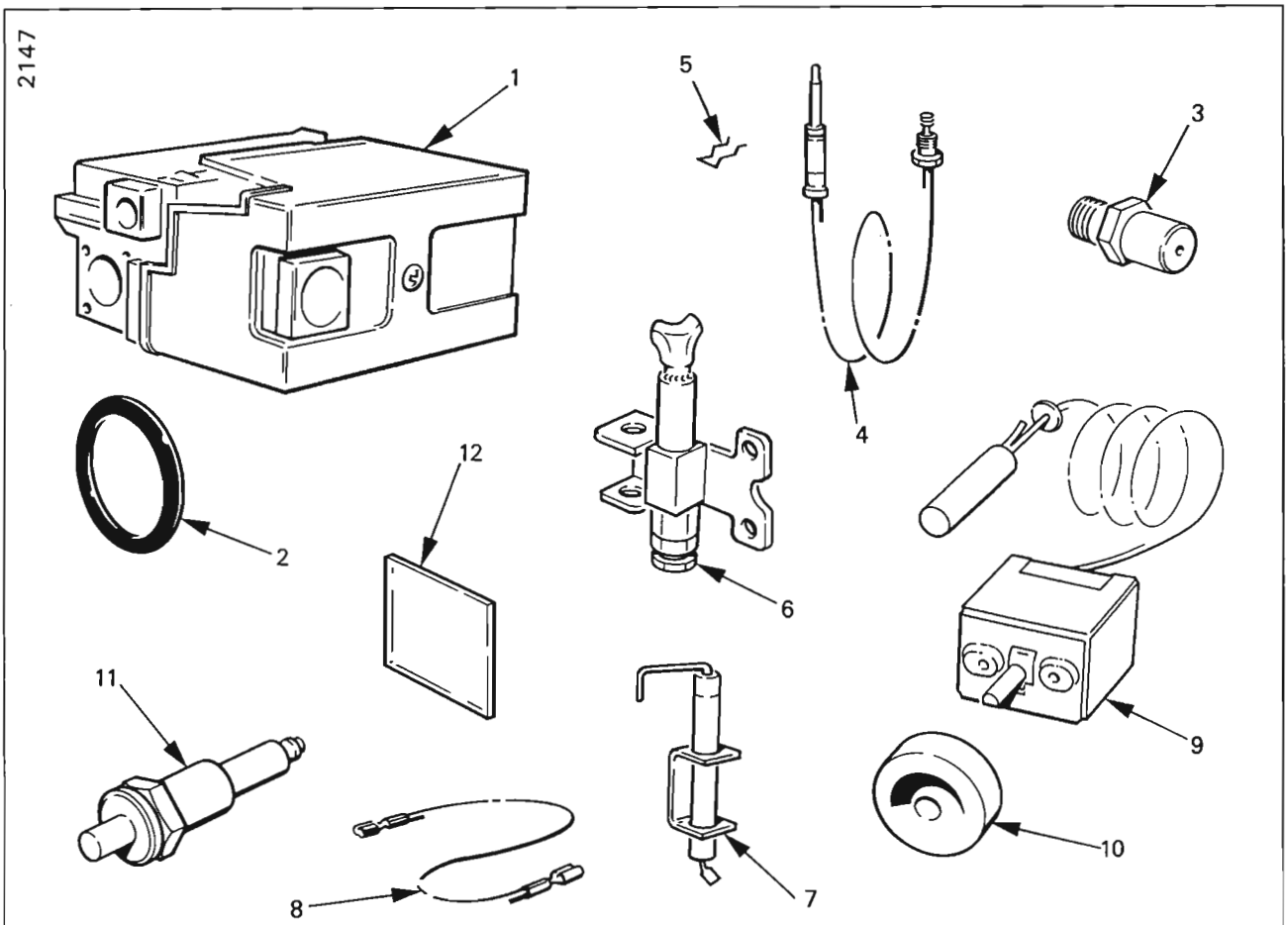


Diagram 10.1

Key No	Saunier Duval No	Description	G.C. Part No.
1	429549	Gas valve assembly	312 926
2	208040	"O" ring - gas valve	334 592
3	203013	Injector - 500.30C	355 473
3	FF2029	Injector - 500.40C	355 274
3	203009	Injector - 500.50C	334 540
4	K2674	Thermocouple	390 894
5	K3580	Clip - thermocouple	390 983
6	203416	Pilot burner	381 793
7	900500	Spark electrode	381 733
8	WW4617	Ignition lead	312 997
9	202519	Thermostat	381 798
10	426526	Control knob	191 274
11	900501	Piezo unit	384 146
12	411194	Sight glass	355 153



Because of our constant endeavour for improvement, details may vary slightly from those given in these instructions.