

Glow worm

Servicing Instructions

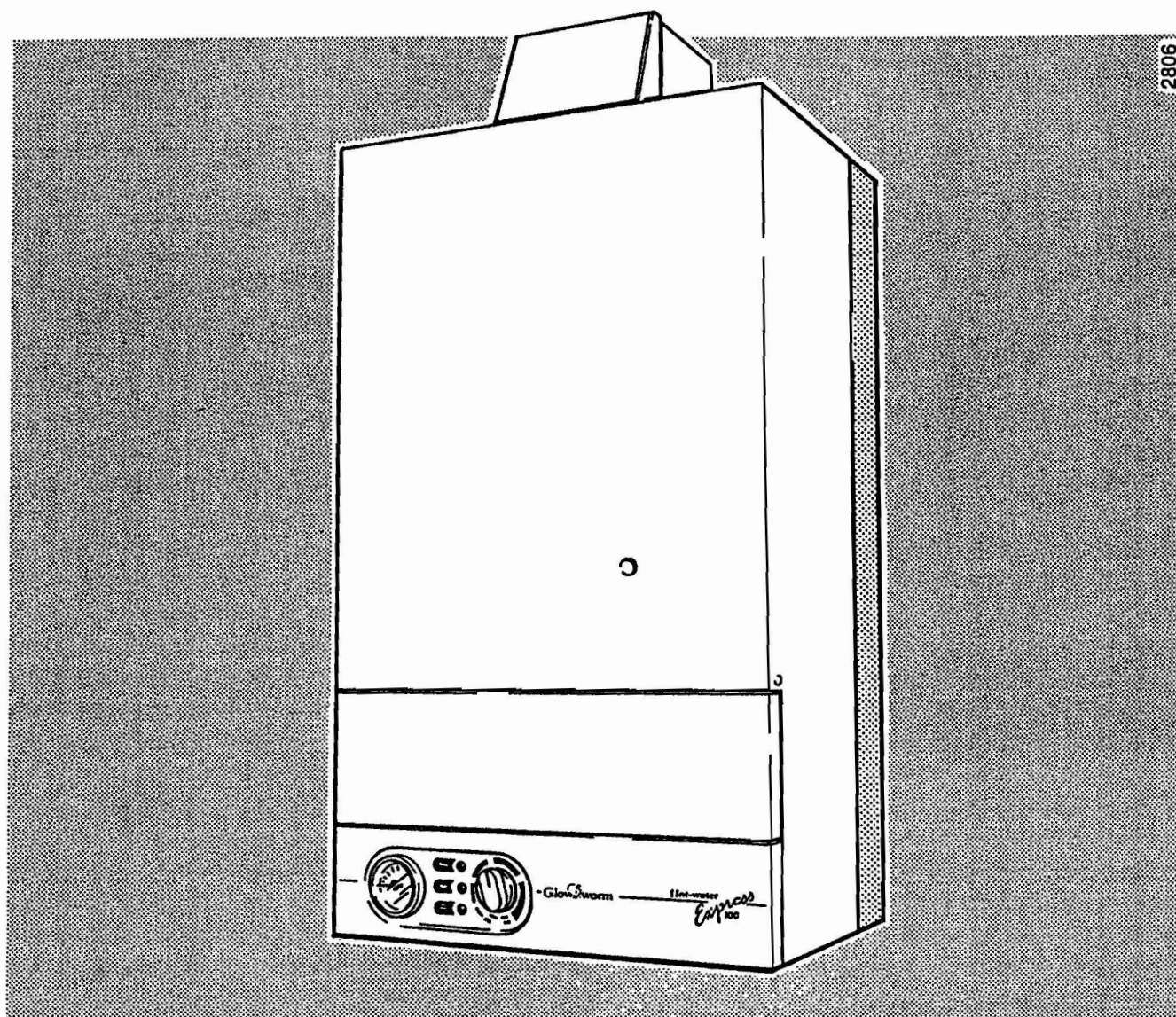
To be left with the user

Hot-water EXPRESS 100

Fanned Flue Combination Boiler

WITH S.I.T GAS CONTROL

G.C. No. 47 313 06



1 General

1.1 Servicing or Replacing Parts

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 should be enough.

It is the Law that any service work must be carried out by a competent person, such as a service engineer.

Unless stated otherwise, parts removed or renewed during servicing should be fitted in the reverse order to removal.

After completing any servicing, or renewing of gas carrying components, ALWAYS test for gas soundness and carry out functional checks of controls.

Discard all used sealing washers, gaskets and "O" rings when renewing components. Use the new ones supplied with the replacement.

1.2 Data Badge

The data badge is positioned on the front of the inner case cover, see diagram 1.3.

1.3 Isolation of Boiler

Before commencing any servicing or the replacement of parts, isolate the boiler from the electrical supply at the external isolator and close the gas service cock, see diagram 1.1.

BEFORE DRAINING THE BOILER, REFER TO SECTION 1.6.

1.4 Outer Case Removal

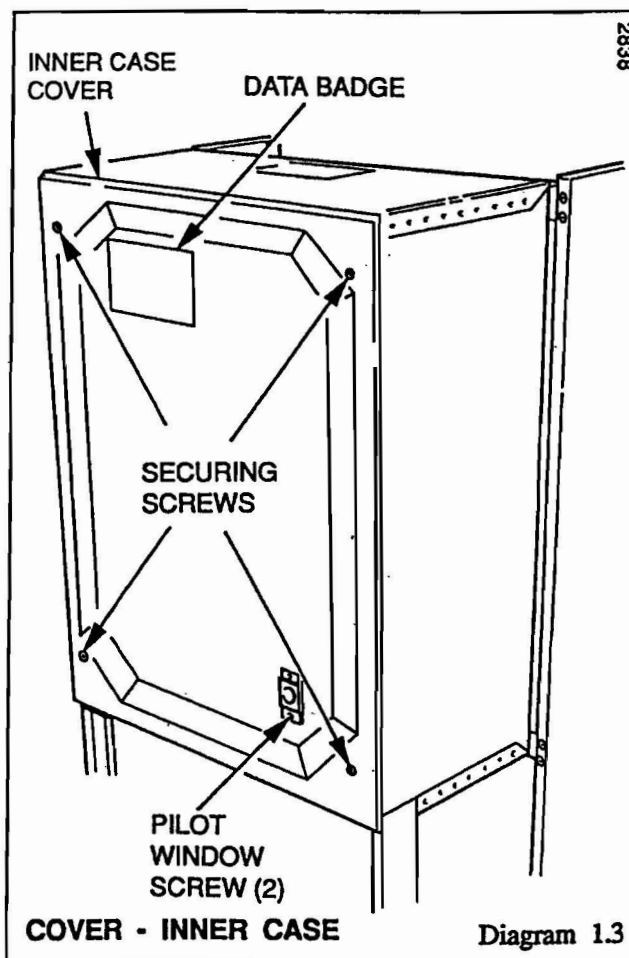
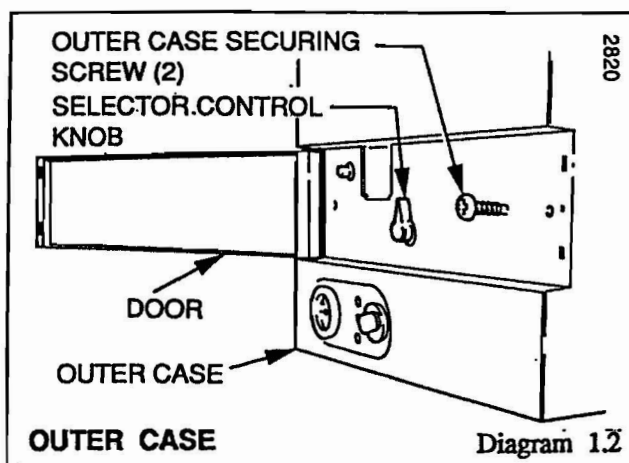
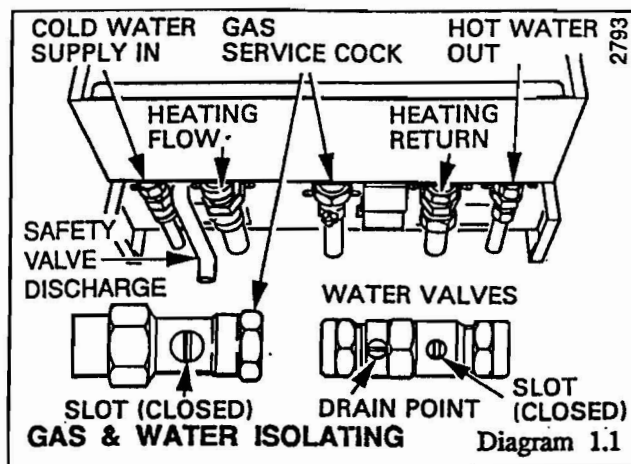
The door opens to the left or right hand side. The door catch is spring loaded, to open, push the side opposite to the hinge then pull.

Pull the selector control knob off the spindle.

Remove the two screws securing the outer case then unhook the case at the top and pull it forward and off, see diagram 1.2.

1.5 Cover - Inner Case

Remove the cover of the inner case, secured by four screws, see diagram 1.3.



1.6 System Pressures and Draining

All parts containing water of the central heating circuit within the boiler, are under the system pressure. Before any parts of this circuit are disconnected, reduce the system pressure at the external draining tap, turn the central heating isolating valves off, and drain at the drain points on the appropriate valves, see diagram 1.1.

All water containing parts of the domestic hot water circuit of the boiler will be under the supply water pressure. Before any parts of this circuit are disconnected, turn the domestic cold water isolating valves off, open the hot water taps to reduce the water pressure in the boiler, close the hot water isolating valve and drain the boiler at the valves, see diagram 1.1.

After replacing any water containing part of the central heating circuit, make up the water loss, vent all air and pressurise the system. Refer to "Commissioning" in the Installation Instructions.

Check for water soundness.

2.1 Pilot Check

Check that the pilot flame is burning correctly and of the correct size, see diagram 4.4. If the pilot flame is not correct, the pilot injector will require removing, see Sections 2.5 and 4.4.

2.2 Isolation and Access

Before commencing, refer to Section 1.1.

Isolate the boiler from the electrical supply and close the gas service cock, refer to Section 1.3.

Remove the outer case and the cover of the inner case, refer to Sections 1.4 and 1.5.

Remove the fan from the flue collector, refer to Section 4.1.

Remove the flue collector secured by two wing nuts and hook bolts, see diagram 4.1.

Remove the main burner, refer to Section 4.2.

2.3 Cleaning Heat Exchanger

Place a sheet of paper or similar in the combustion chamber, to act as a collector for deposits removed.

Brush the heat exchanger with a suitable brush, remove paper together with any debris.

2.4 Cleaning Main Burner

Use a vacuum cleaner or suitable brush to clean the burner thoroughly, making sure that all burner ports are clear and unobstructed. Do not use a brush with metallic bristles.

2.5 Cleaning Pilot Injector

If the pilot flame was not burning correctly, Section 2.1 above, it is necessary to remove the pilot injector, refer to Section 4.4 and 4.6.

Inspect the injector and clean as necessary. Do not use a wire or sharp instrument.

2.6 Service Checks

Inspect the pilot burner, spark electrode, adaptor olive on the pilot tube and thermocouple. Clean or renew if necessary, refer to Sections 4.4, 4.5, 4.6 and 4.7.

Check the main injector, cleaning or renewing as necessary, refer to Section 4.3.

Before replacing any of the parts removed during servicing, inspect the condition of all seals and joints, renewing as necessary.

Check the condition of the combustion chamber insulation. If renewing, refer to Section 4.30.

Check that the spark gap is as shown in diagram 4.4.

2.7 Initial Assembly

Make sure that the main burner is located on the main injector and is horizontal, the tips of the rear most blade under the two burner guides.

The combustion chamber front panel should be fitted loosely, then the flue collector also fitted loosely, ensuring that it is seated correctly on the heat exchanger and over the top edge of the front panel.

To fit the fan, locate it into the rear bracket and ease the flue elbow onto the fan outlet and secure with the two screws, see diagram 4.1.

When fitting the flexible tubes to the air pressure switch ensure the upper (coloured) tube from the fan connects to the upper connection of the switch.

Connect the electrical cables to the fan, the polarity of the two connectors is not important, see diagram 4.1.

Secure the flue collector and combustion chamber front panel by tightening the wing nuts and screws, evenly, see diagrams 4.1 and 4.2.

2.8 Operational Checks

Light the boiler, carry out operational checks and any necessary adjustments as described in "Commissioning" in the Installation Instructions.

2.9 Completion

Hook the outer case on at the top and secure with the screws previously removed, see diagram 1.2.

Fit the selector control knob and close the door.

3.1 Initial Checks

If the boiler fails to operate, first check the following:

- 1 That the electrical supply is available at the boiler and the fuses are in order.

NOTE: THE BOILER CONTROL BOARDS CAN BE DAMAGED BY INCORRECT TESTING WITH THE POWER ON.

- 2 Ensure that the system pressure gauge registers 0.7bar, minimum, and that the automatic air vent works.
Refer to Installation Instructions, Section 11.2.
- 3 That the gas supply is available at the boiler and purged of air.
- 4 Is the pilot burner lit? - If the pilot burner will not light refer to Section 3.2. If the pilot burner fails to remain alight, refer to Section 3.3
- 5 That the boiler is set for the required service.
- 6 With the boiler set for "Hot Water", check that the domestic water supply is available and water flows freely from the hot taps.
- 7 With the boiler set for "Hot Water + Central Heating", check that all heating system controls, if fitted, are working correctly and calling for heat. If not isolate the boiler from the electrical supply. Disconnect the rear multi-pole connector at the base of the boiler and release the cable from the clamp. Remove the connector cover and dependent on the type of control fitted test for continuity, mains or low voltage at terminals 1 and 2, see diagram 3.1.

If this is satisfactory proceed with the detailed fault finding as Section 3.4.

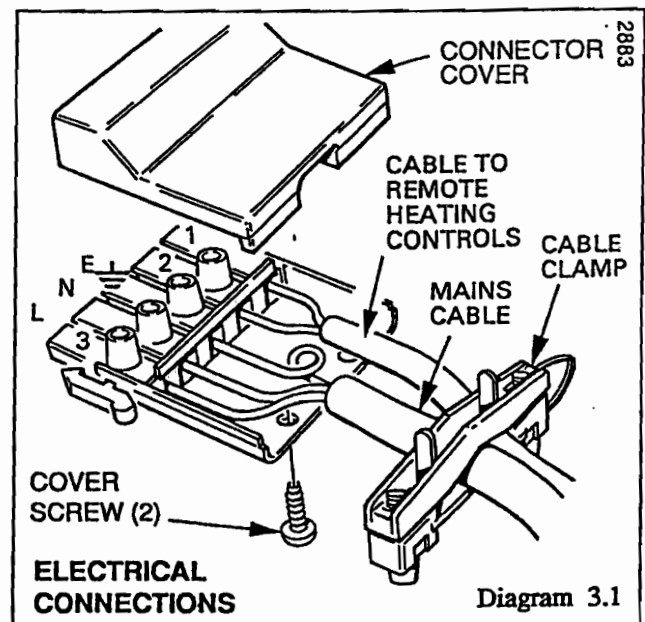


Diagram 3.1

3.2 Pilot Burner and Ignition System

Symptom: The pilot burner will not light or stay alight.

Test the pilot burner and ignition system as described and shown in diagram 3.2.

3.3 Thermocouple and Overheat Cutoff

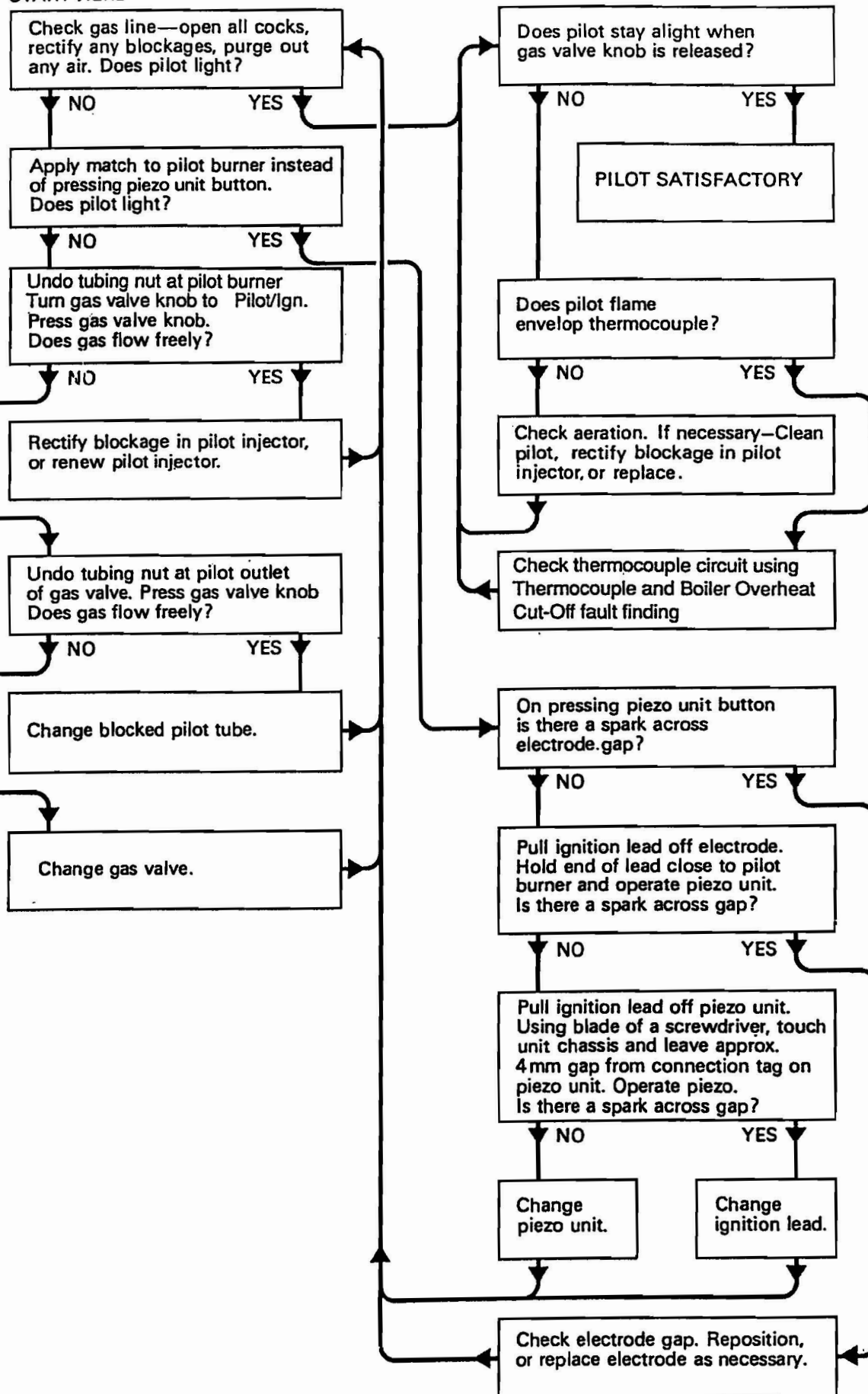
Symptom: The pilot burner fails to stay alight.

On completion of initial checks, as Section 3.1.

Test the thermocouple, overheat cutoff and thermocouple connectors, as described in Fault Finding diagram 3.3 and shown in diagram 3.4.

Check the millivoltage of the thermocouple closed circuit at points "A" and "E", this should be within the range of 6 to 11mV, see diagram 3.4.

PILOT WILL NOT LIGHT
START HERE

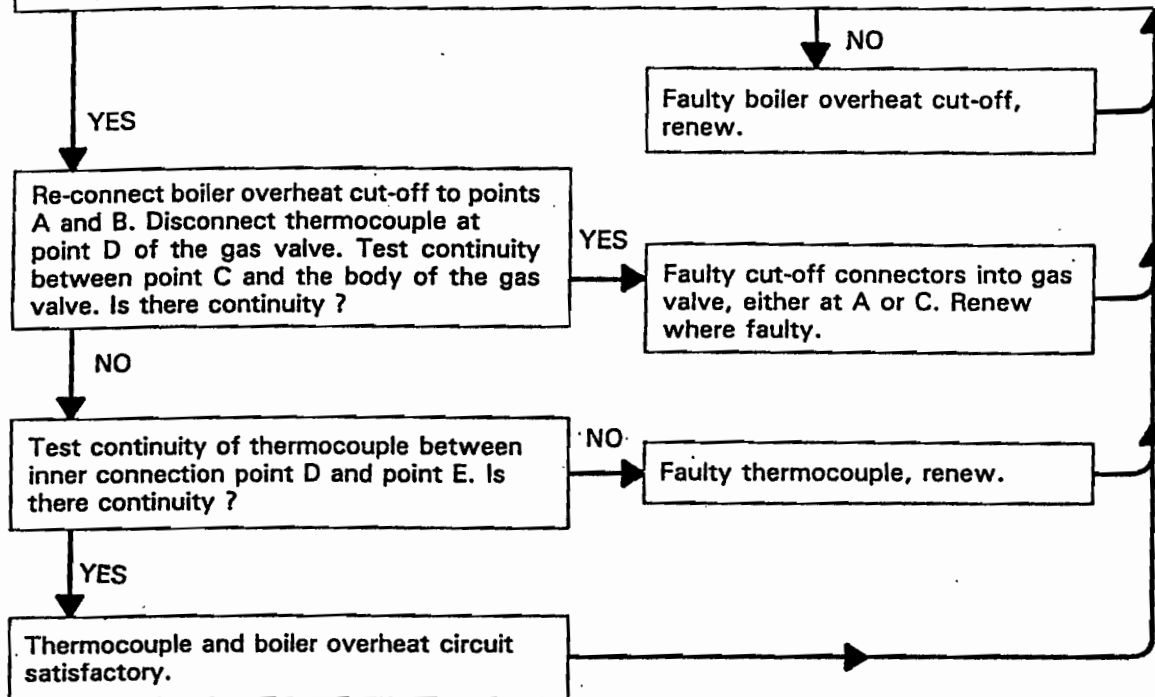


PILOT / IGNITION FAULT FINDING

Diagram 3.2

2840

With the boiler cold, check connections of the thermocouple, boiler overhe cut-off and gas valve. Disconnect overhe cut-off connectors at points A and B at the gas valve, see diagram 3.4. Test continuity of the overhe cut-off. Is there continuity ?



THERMOCOUPLE AND BOILER OVERHEAT CUT-OFF FAULT FINDING

Diagram 3.3

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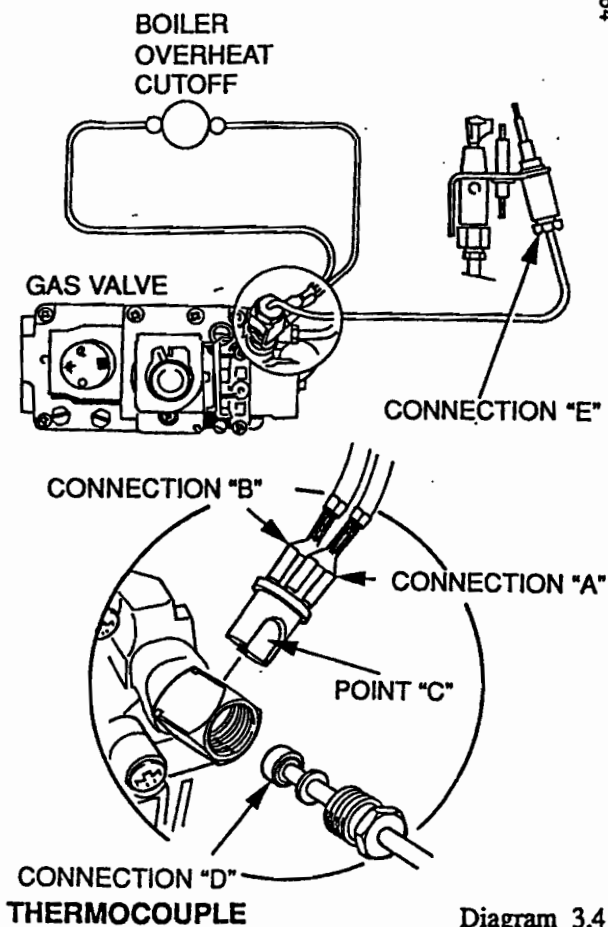


Diagram 3.4

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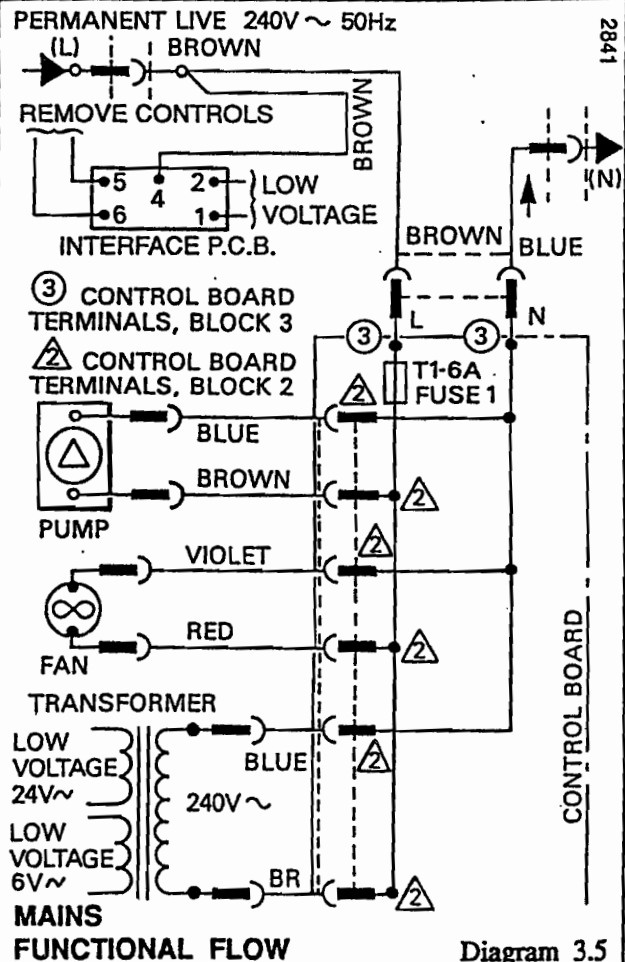


Diagram 3.5

3.4 Electrical

Preliminary electrical system checks, as outlined in a Multimeter Instruction book, are the first checks to be carried out during a fault finding procedure.

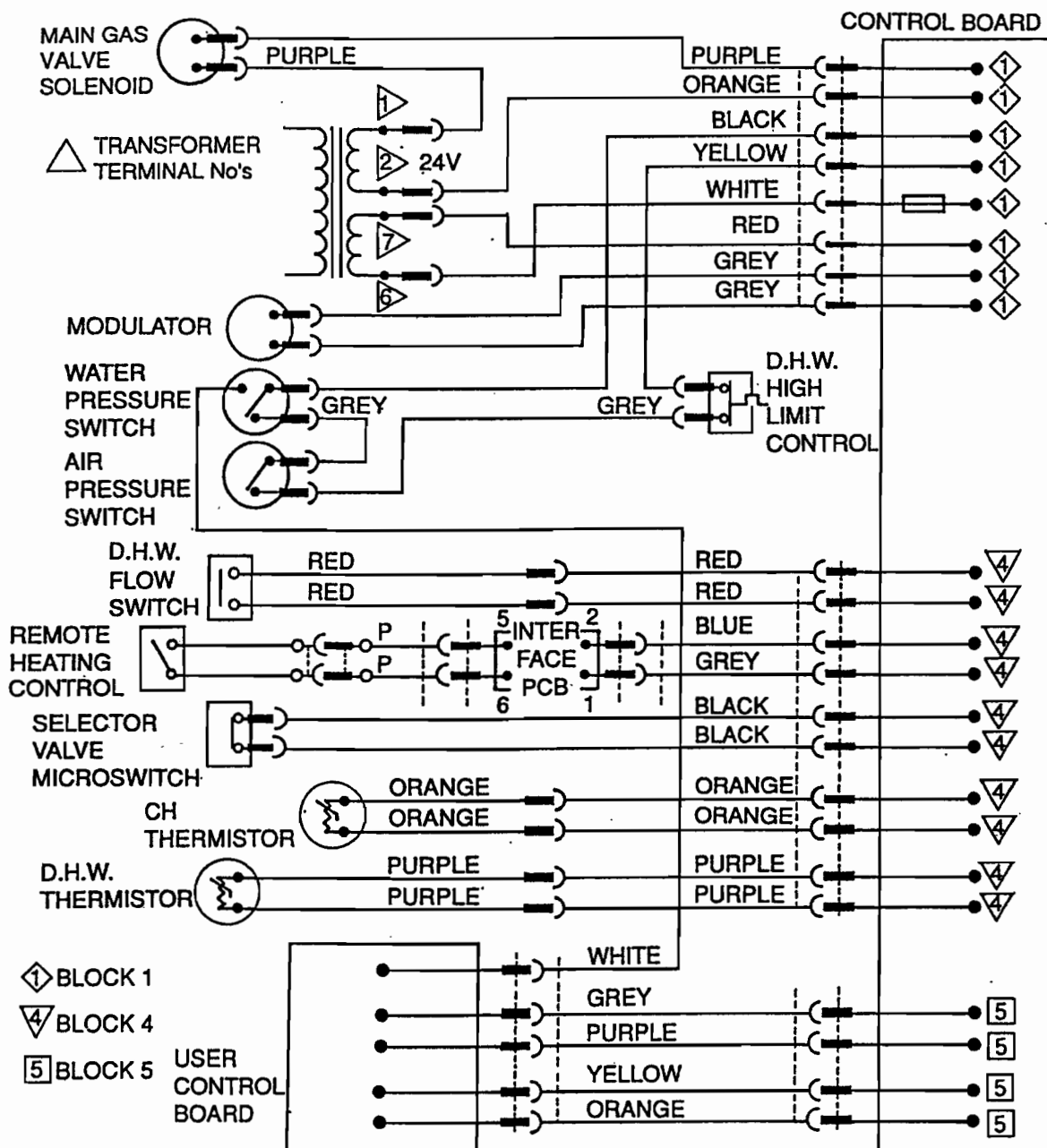
Isolate the boiler from the electrical supply, refer to Section 1.3.

Gain access to the boiler controls by removing the outer case, refer to Section 1.4. Check that all cables and connectors are secure.

Gain access to the control board, refer to Section 4.14. Check all cables at the multi-pin connectors on the board.

Test the two fuses on the main control board and renew as necessary, fuses are to BS4265: Fuse 1 is type T1.6A, Fuse 2 type T 630mA. If a fuse fails repeatedly or the initial fault-finding checks described in Section 3.1 indicate a boiler fault, check the boiler electrical circuits and follow the fault finding procedures, see diagrams 3.5, 3.6, 3.7, 3.8 and 3.9.

On completion of a fault finding task that has required the disconnection and making of electrical connections then checks, for earth continuity, polarity and resistance to earth must be carried out.



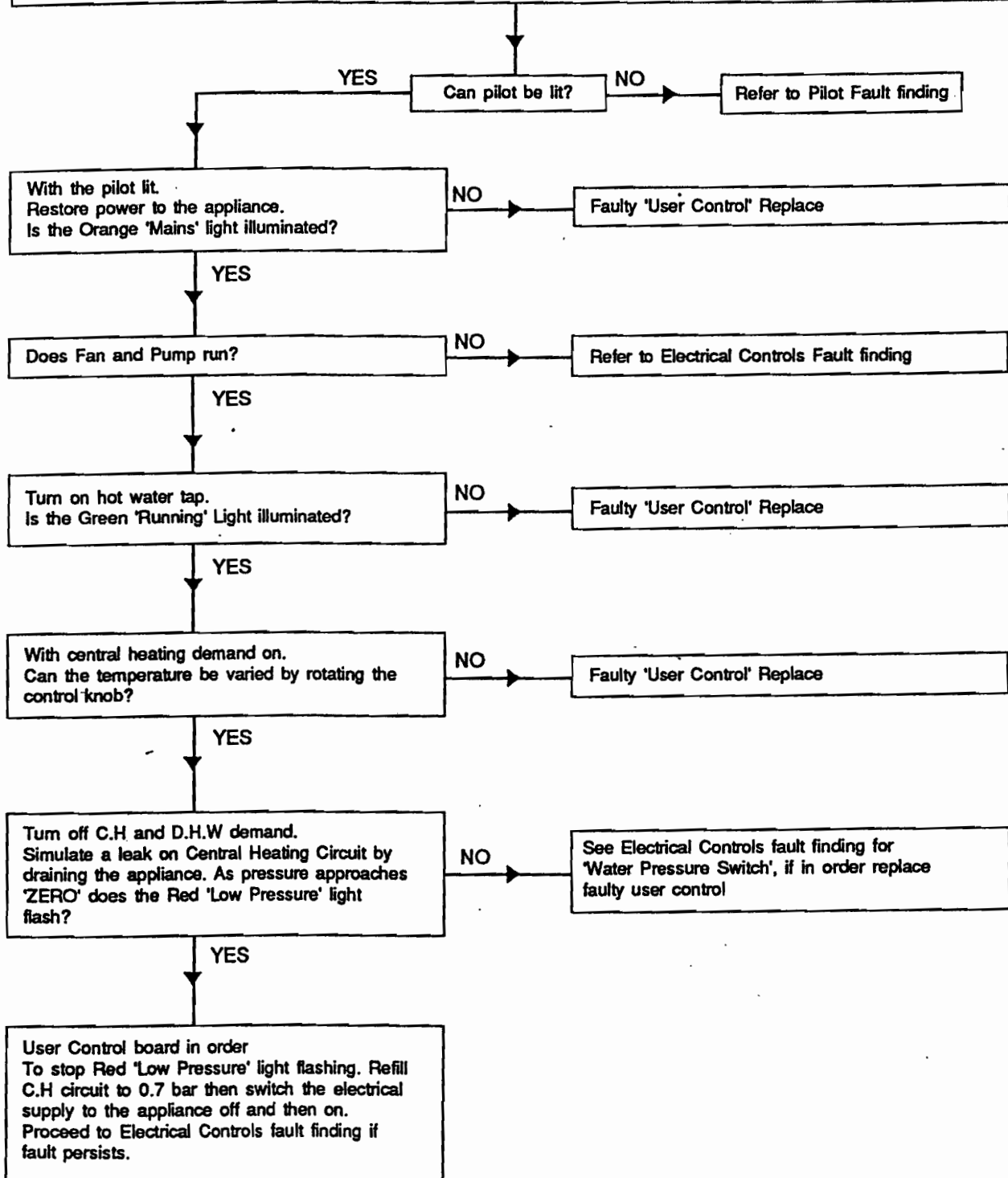
LOW VOLTAGE - FUNCTIONAL FLOW

Diagram 3.6

Carry out the initial Fault Finding checks described in Section 3.1 and 3.4. Check that gas, water and electricity are available at the boiler.
Before commencement of test, isolate the boiler from the electrical supply, ensure that the remote controls are not calling for duty. Refer to the functional flow diagrams in conjunction with the following fault finding.

START

Remove the selector knob, outer case, control housing, control housing cover, user control knob and the cover. Check all connections on the control boards. Rectify or renew as necessary.



ELECTRICAL CONTROLS - FAULT FINDING

Carry out the initial fault finding checks described in Section 3.1 and 3.4. Check that gas, water and electricity are available at the boiler. Before commencing test, isolate the boiler from the electricity supply, ensure that the remote controls are not calling for duty. Refer to the functional flow diagrams in conjunction with the following fault finding.

START

Remove the outer case, control housing and its cover. Check all connections on the control board and the boiler components, rectify or renew as necessary. A dummy two-way connector is provided for ease of testing continuity, a spare fuse is also provided.

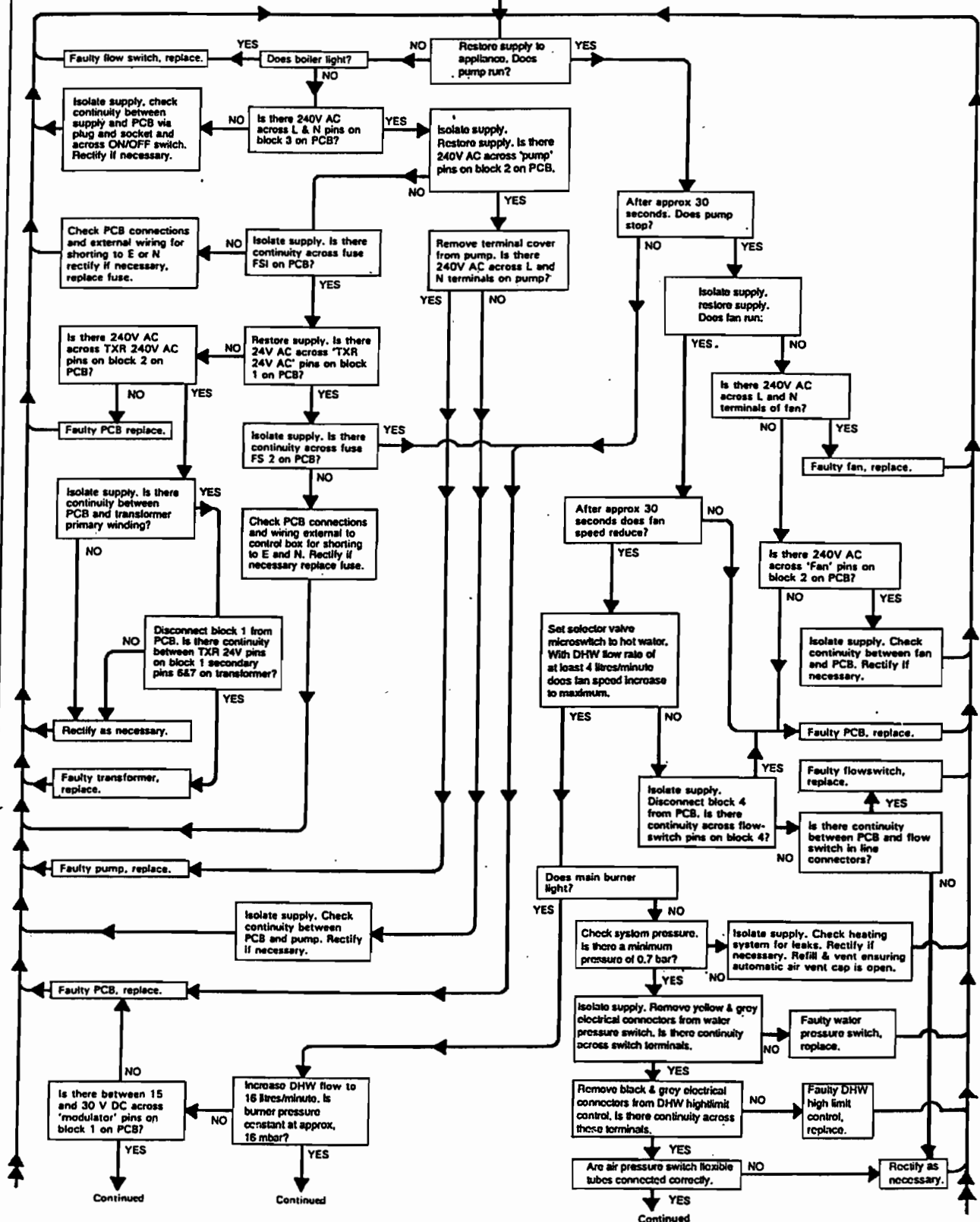
Can pilot be lit?

NO

Refer to pilot fault finding.

YES

Complete 'user control' fault finding before proceeding further see diagram 3.7



ELECTRICAL CONTROLS - FAULT FINDING

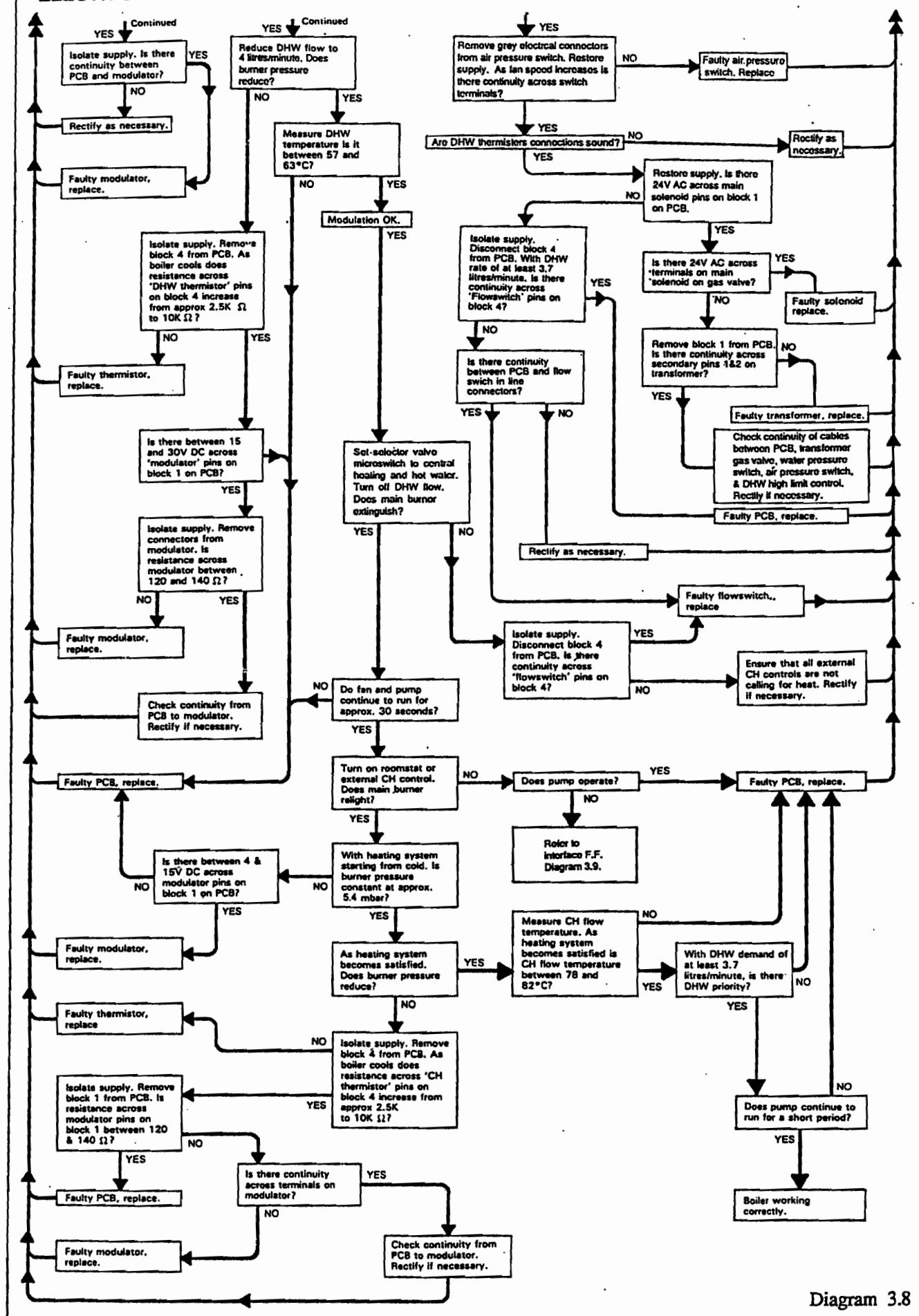


Diagram 3.8

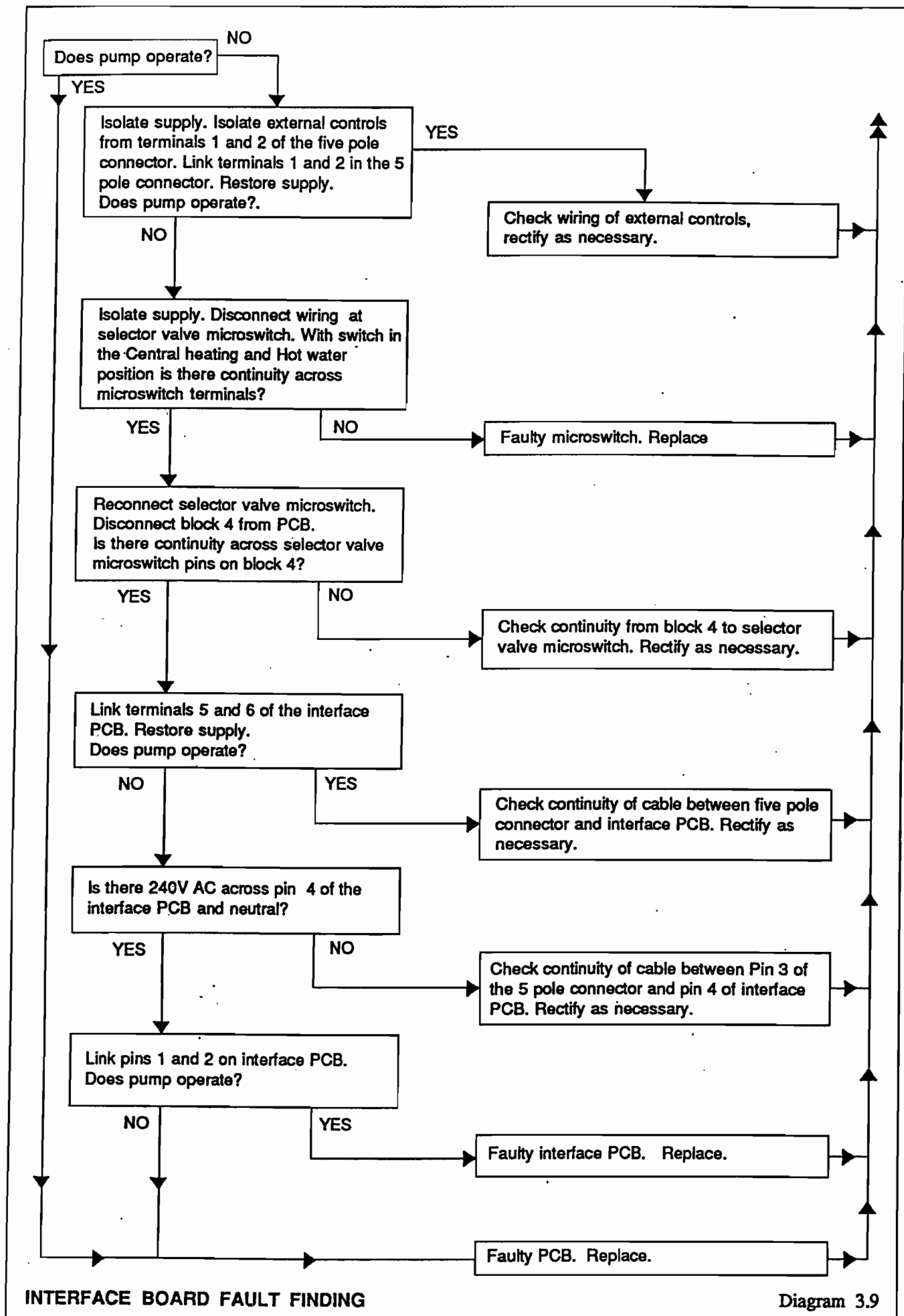


Diagram 3.9

Before replacing any part please read points below:

1. Refer to Section 1.1.
2. Always isolate the boiler from the electrical and as required the gas supply as Section 1.3.
3. On completion, make good any water loss and pressurise the system to initial design pressure, refer to "Commissioning" in the Installation Instructions.

If the red light "flashes", momentarily interrupt the electrical supply.

4.1 Fan

Disconnect the two electrical connectors at the fan, see diagram 4.1. It is not necessary to disconnect the green and yellow earth cable.

Disconnect the two flexible tubes from the switch.

Remove the air box access plate, refer to Section 10.2 in the Installation Instructions.

When replacing the flexible tubes to the air pressure switch ensure the upper (coloured) tube from the fan connects to the upper connection of the switch.

Slacken the clamp securing the flue elbow to the fan.

Remove the fan, secured with two screws at the front and gently ease the fan from the flue elbow and rear bracket.

To fit the fan, locate it into the rear bracket and ease the flue elbow onto the fan outlet and secure with the two screws, see diagram 4.1.

The polarity of the two connectors is not important.

4.2 Main Burner

Remove the inner case as Section 1.5.

Slacken the two wing nuts securing the flue collector, see diagram 4.2.

Remove the combustion chamber front panel, secured with four screws and a wing nut.

Separate the pilot assembly from the main burner, secured with two screws, see diagram 4.3.

Remove the main burner from the main injector at the rear. Raise the burner up and forward, easing the pilot assembly forward to clear, taking care not to damage the combustion chamber insulation or pilot burner assembly.

Make sure the main burner is fitted correctly on assembly, located on the main injector and horizontal, the tips of the rear most blade under the two burner guides, see diagram 4.2A.

Locate the combustion chamber front panel under the front edge of the flue hood on assembly, then secure all screws and wing nuts.

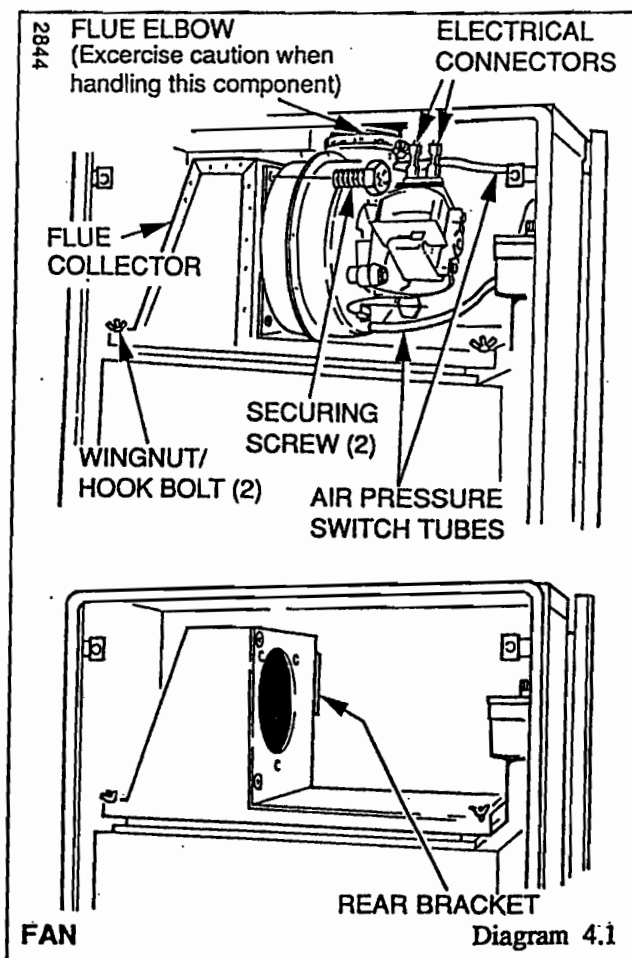
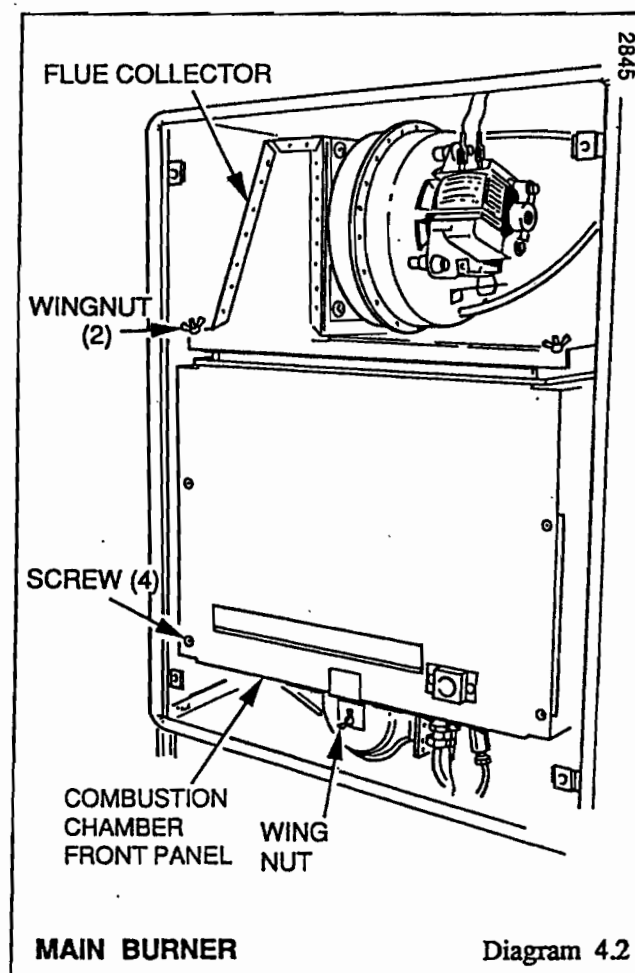


Diagram 4.1



MAIN BURNER

Diagram 4.2

4 Replacement of Parts

4.3 Main Injector

Remove the main burner, refer to Section 4.2.

Unscrew the main injector.

When fitting the main injector, fit the sealing washer, supplied, to ensure gas soundness.

4.4 Pilot Burner

Remove the main burner, refer to Section 4.2.

Remove the sealing angle, secured with a single screw, see diagram 4.3.

Disconnect the ignition lead from the spark electrode.

Remove the spark electrode, secured with a single screw.

Disconnect the thermocouple nut from the pilot burner.

Disconnect the pilot supply tube, holding the pilot injector hexagon with a spanner, then remove the pilot burner.

Check the spark gap upon assembly, see diagram 4.4.

Light the pilot burner and adjust the flame size if necessary, by turning the pilot adjustment screw anti-clockwise to increase.

4.5 Spark Electrode

Remove the inner case as Section 1.5.

Slacken the two wing nuts securing the flue collector, see diagram 4.2.

Remove the combustion chamber front panel, secured with four screws and a wing nut.

Disconnect the ignition lead from the spark electrode, see diagram 4.3.

Remove the spark electrode, secured with a single screw.

Check the spark gap upon assembly, see diagram 4.4.

4.6 Pilot Injector

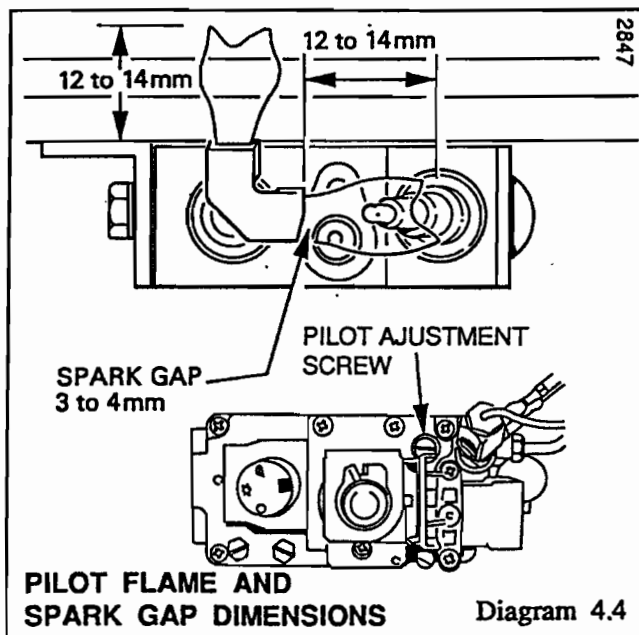
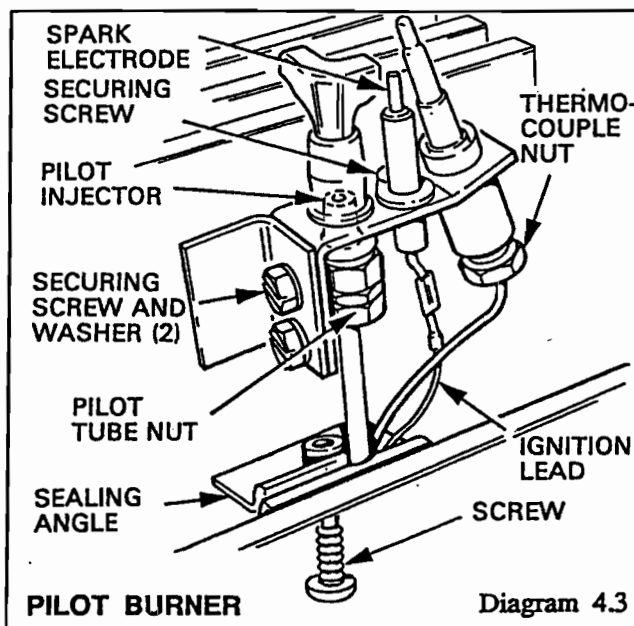
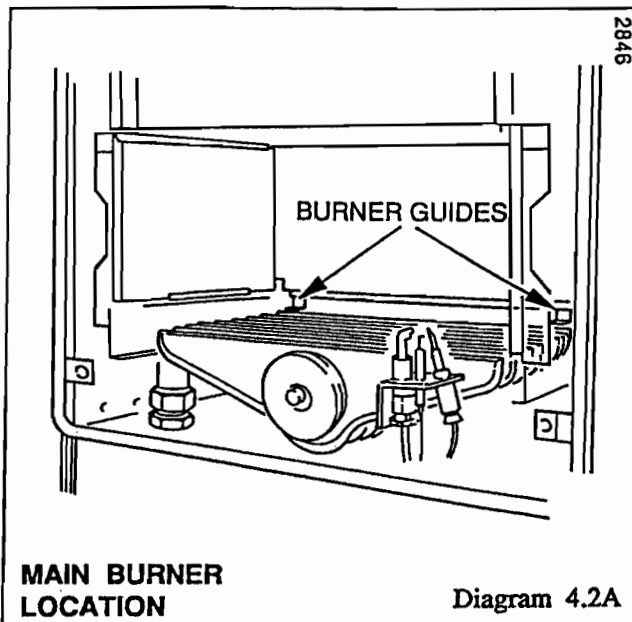
Remove the main burner, refer to Section 4.2.

Remove the sealing angle secured with a single screw, see diagram 4.3.

Disconnect the ignition lead from the spark electrode.

Remove the spark electrode, secured with a single screw.

Disconnect the thermocouple nut from the pilot burner.



Disconnect the pilot supply tube, holding the pilot injector hexagon with a spanner, remove pilot burner.

Unscrew the injector from the pilot assembly.

When relighting, check that the flame length is as shown in diagram 4.4.

4.7 Thermocouple

Remove the control housing as Section 4.13.

Remove the main burner, refer to Section 4.2.

Remove the sealing angle, secured with a single screw, see diagram 4.3.

Disconnect the ignition lead from the spark electrode.

Disconnect the pilot supply tube, holding the pilot injector hexagon with a spanner, see diagram 4.3.

Disconnect the thermocouple at both ends, see diagrams 4.3 and 4.5.

Remove the pilot burner secured with two screws, then remove the thermocouple.

Do not tighten the thermocouple nut more than a quarter turn beyond finger tight or make any tight bends in the thermocouple capillary.

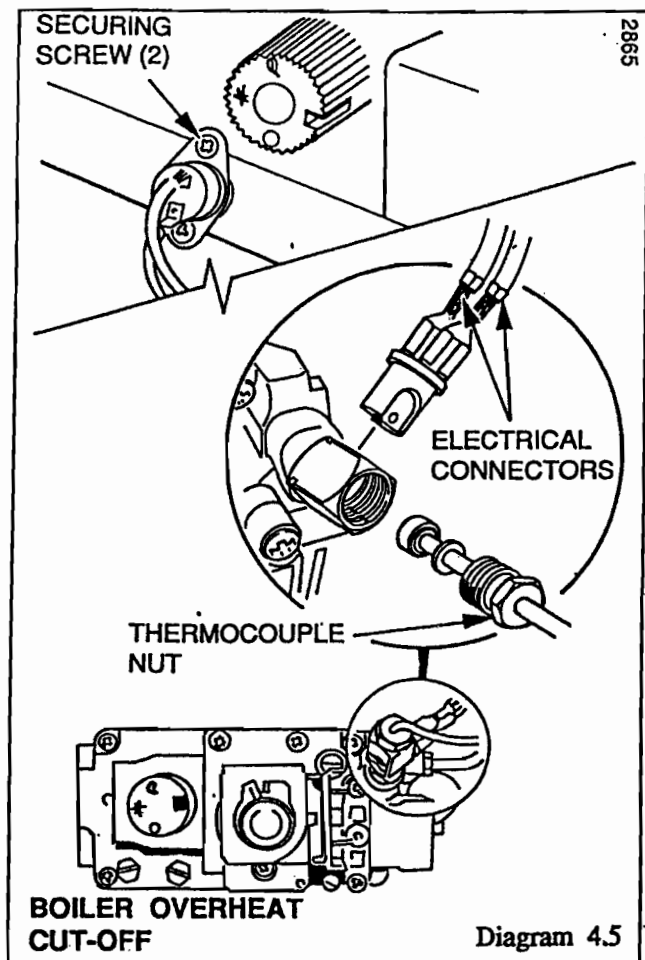


Diagram 4.5

4.8 Boiler Overheat Cutoff

Remove the control housing as Section 4.13.

Remove piezo unit bracket, disconnect lead, see diagram 4.6.

Disconnect the boiler overheat cutoff electrical connectors from the gas valve, see diagram 4.5.

Remove the overheat cutoff, secured with two screws, see diagram 4.5.

Use the heat sink compound supplied, between the mounting plate and the cutoff, when fitting it.

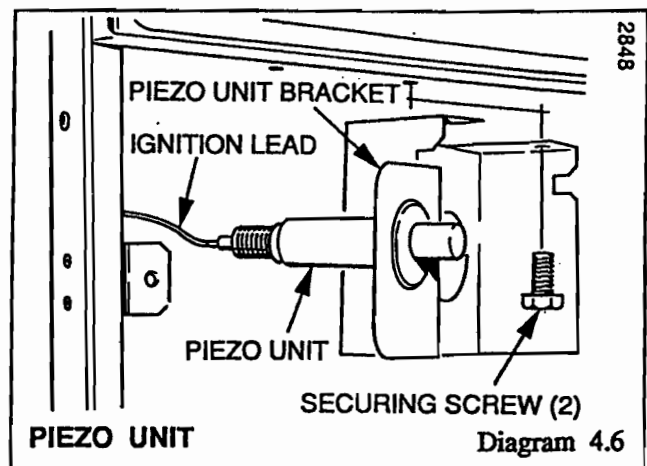


Diagram 4.6

4.9 Water Pressure Switch

Release the water pressure and drain the central heating circuit of the boiler, refer to Section 1.3 and 1.6.

Disconnect the electrical connectors at the pressure microswitch, see diagram 4.7.

Remove pressure switch, see diagram 4.7.

Replace the "O" ring seal with the new seal provided.

Ensure that the switch terminals are facing diagonally forward to give access, as shown in diagram 4.7.

Reconnect the electrical connections, refer to diagram 4.12.

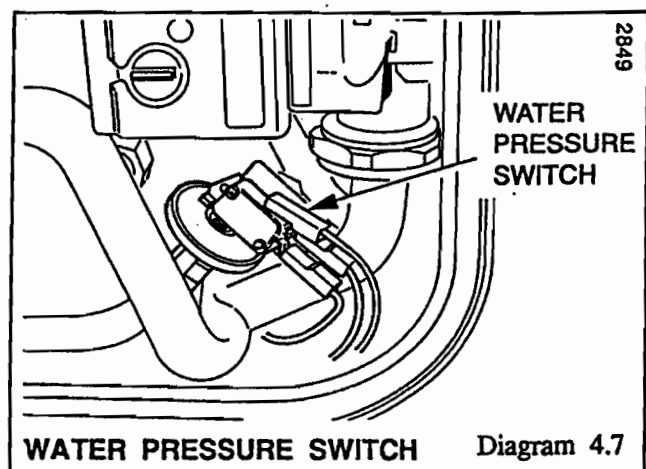


Diagram 4.7

4 Replacement of Parts

4.10 D.H.W. High Limit Control

Remove the pump, see Section 4.27.

Disconnect the electrical connections at the domestic hot water high limit control, see diagram 4.8.

Remove the high limit control from the flow pipe, secured with two screws.

Use the heat sink compound supplied, between the mounting plate and the control.

When refitting the electrical connections to the high limit control the polarity is not important refer to diagram 4.12.

4.11 Piezo Unit

Remove the piezo unit bracket, see diagram 4.6.

Disconnect the ignition lead at the piezo unit.

Remove the piezo unit from the bracket.

4.12 Ignition Lead

Remove the piezo unit bracket, see diagram 4.6.

Disconnect the ignition lead at both ends and withdraw.

When refitting push the lead through the seal from the top and make sure that the clear end is fitted to the spark electrode and that the lead follows the same route, being secured in the same manner, as the original.

Take care not to damage the seal of the sealing angle, see diagram 4.3.

4.13 Pressure Gauge

Remove the control housing assembly, secured with two screws. Support the control housing on a surface or by screwing it to the front edge of the base, using one of the screws previously removed, see diagram 4.10.

Release the water pressure and drain the central heating circuit of the boiler, refer to Sections 1.3 and 1.6.

Remove the pressure gauge bracket.

Disconnect the pressure gauge connection from the safety valve, discard the washer, see diagram 4.9.

Remove the pressure gauge secured with the retaining spring tabs.

Locate the supplied washer under the pressure gauge connection when refitted to the safety valve.

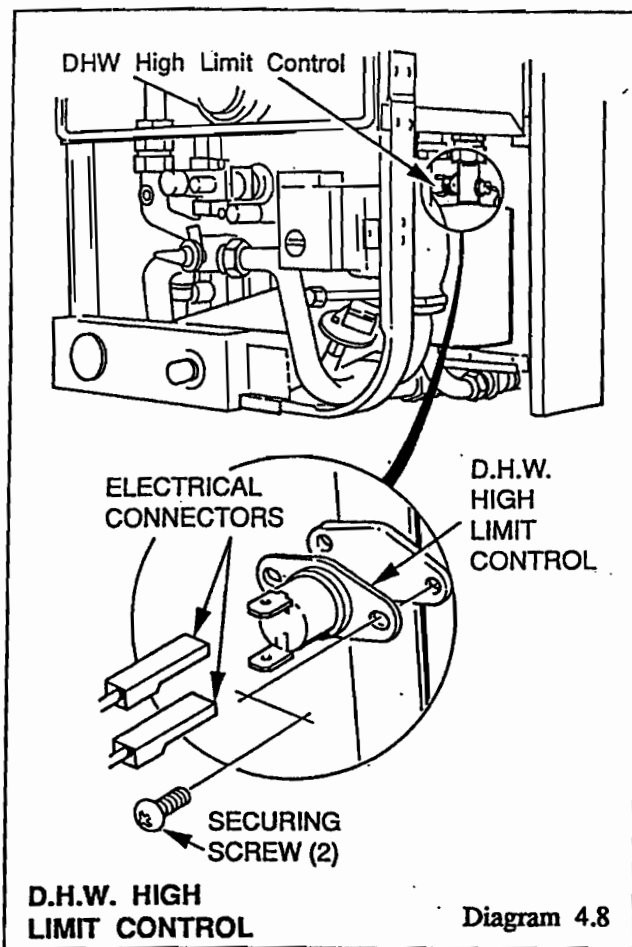


Diagram 4.8

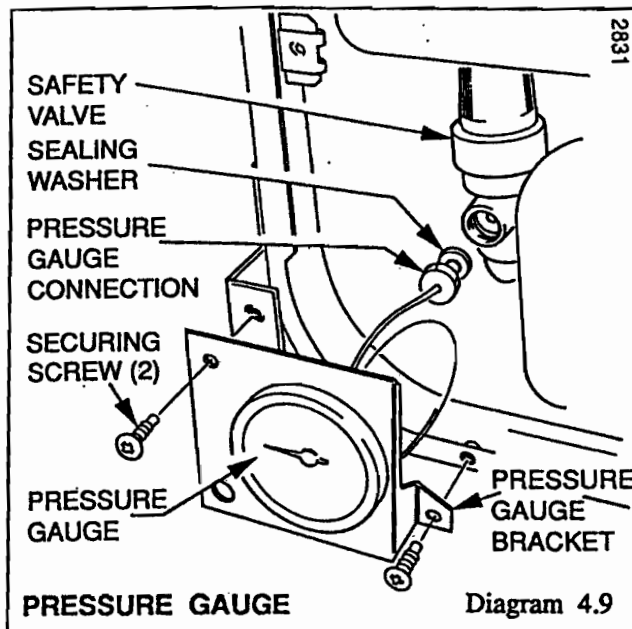


Diagram 4.9

4.14 Control Boards

Remove the control housing assembly, see Section 4.13.

Remove control housing cover, temperature control knob and the fascia, see diagram 4.10.

Disconnect all multi-pin connectors, see diagram 4.11.

Remove the control boards from the support posts, noting their correct positions. Great care must be taken when handling any control board.

THE MAIN CONTROL BOARD MUST BE KEPT IN THE ANTI STATIC HOLDER UNTIL IMMEDIATE REQUIREMENT.

To connect the multi-pin connectors correctly, see diagram 4.12.

When replacing the main control board check and if necessary adjust the main burner gas pressure in both the hot water and central heating modes. Refer to "Commissioning" in the Installation Instructions.

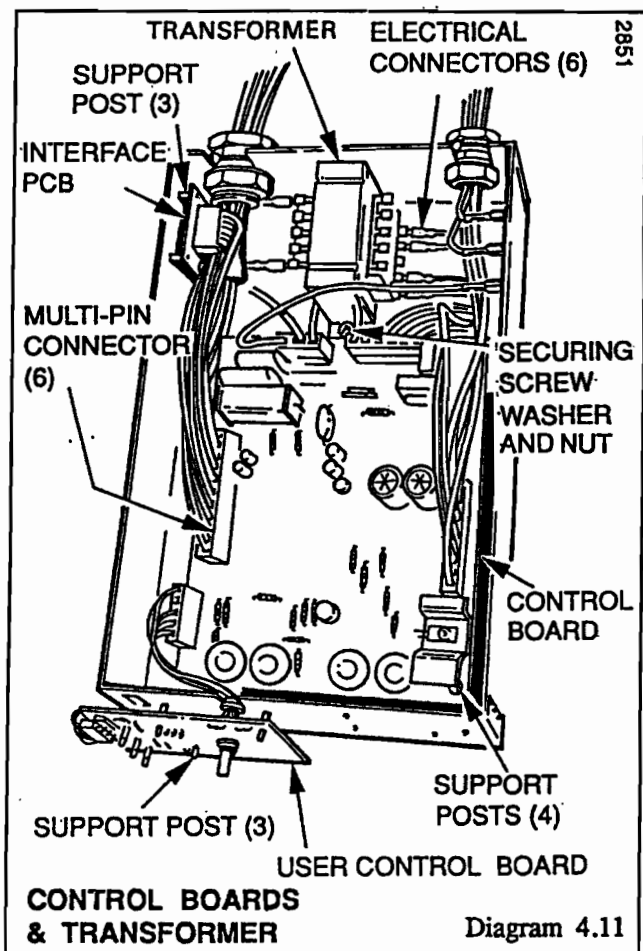
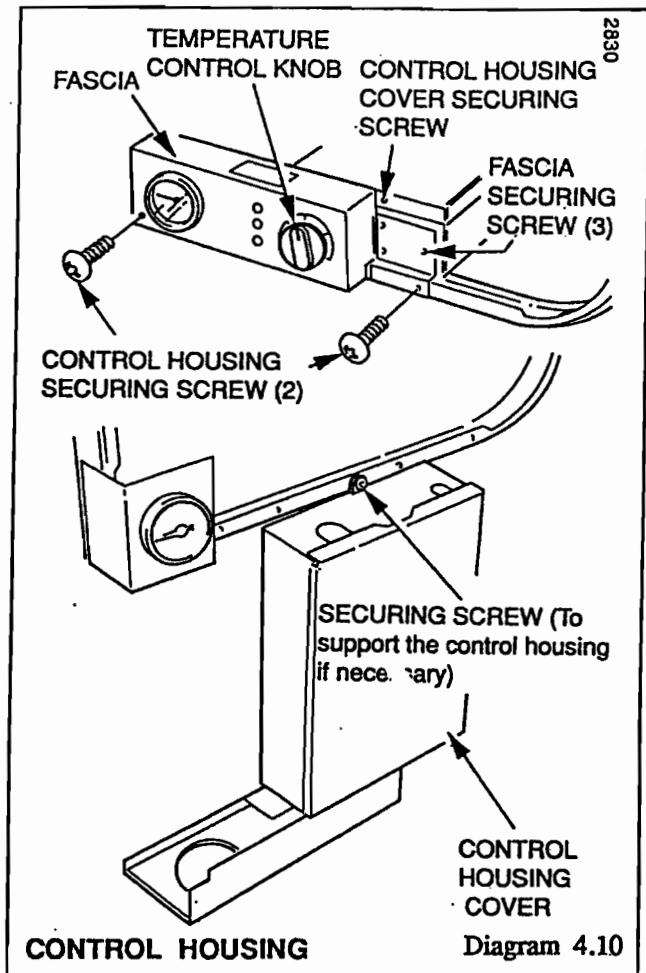
4.15 Transformer

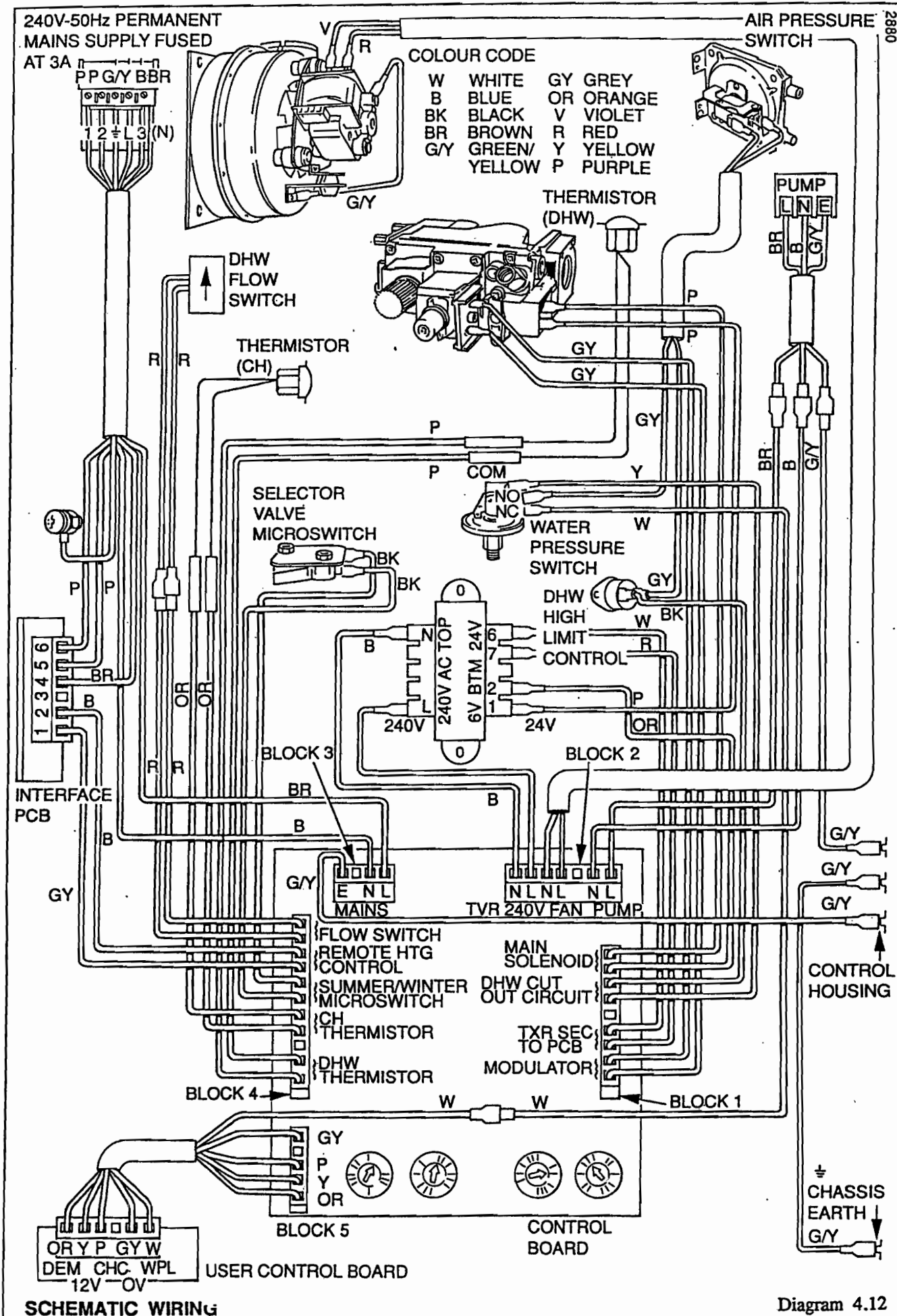
Remove control housing assembly, see Section 4.13.

Remove the control housing cover, holding the housing and disconnect the electrical connectors from the transformer, see diagram 4.11.

Remove the transformer, noting the correct position.

To connect the transformer cables correctly, refer to diagram 4.12.





4.16 Gas Valve

Remove control housing, see Section 4.13.

Remove the piezo bracket, see diagram 4.6.

Disconnect the four electrical connectors at the front of the gas valve and the boiler overhear cutoff connectors, see diagram 4.13.

Disconnect the thermocouple at the gas valve.

Disconnect the pilot supply tube at the gas valve.

Remove the four extended hexagon screws at the right of the gas valve.

Support the gas valve, disconnect the union nut of the gas service cock and remove the valve complete with inlet pipe.

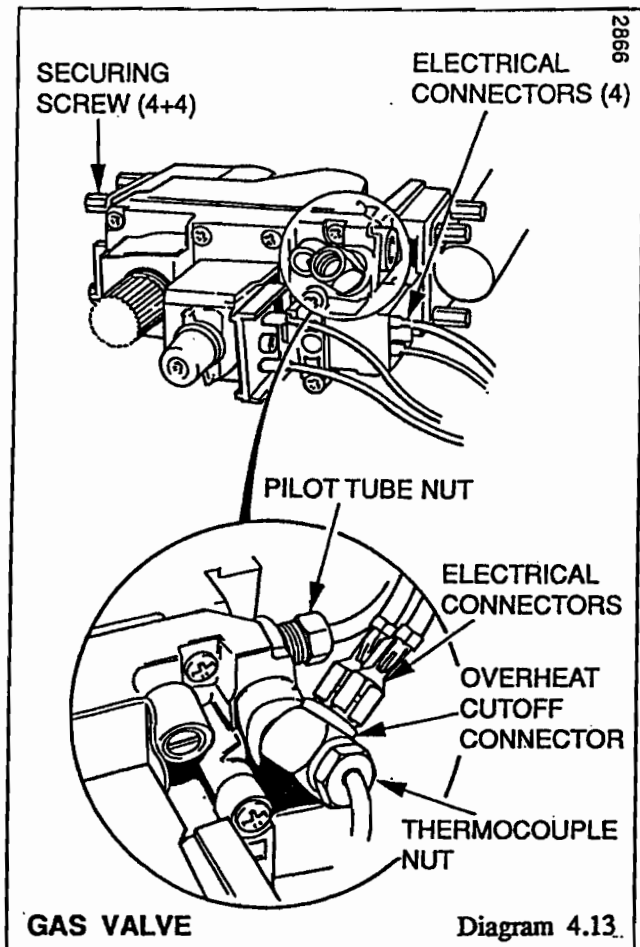
Separate the valve from the pipe, noting the fitted position.

Discard the "O" rings and fit the new ones, supplied.

To connect the gas valve cables correctly, see diagram 4.12.

If necessary adjust the pilot flame, refer to Section 4.4.

Check and adjust the main burner gas pressure in both the hot water and central heating modes, refer to "Commissioning" in the Installation Instructions.



4.17 Microswitch (Selector Valve)

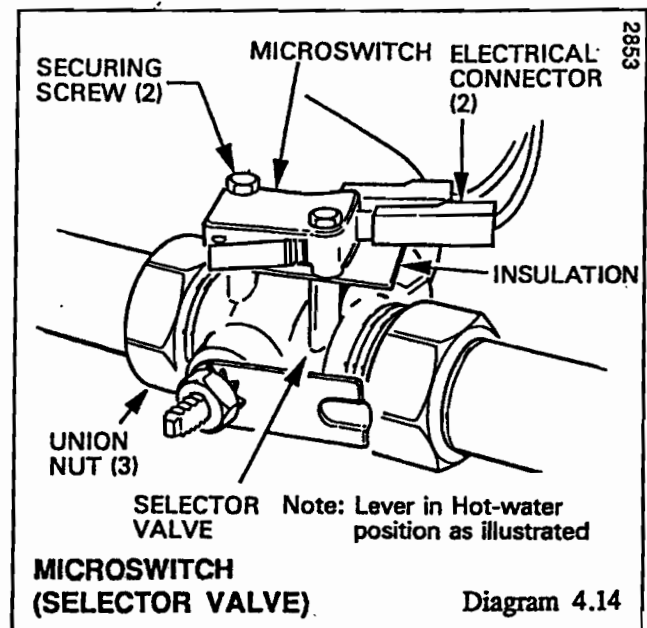
Turn the selector control knob fully clockwise to "Hot Water" setting.

Disconnect the electrical connectors at the microswitch, see diagram 4.14.

Remove the microswitch and insulation.

On re-assembly, ensure that the insulation is fitted between the microswitch and the selector valve.

The polarity of the electrical connectors is not important.



4 Replacement of Parts

4.18 Modulator

Disconnect the two electrical connectors at the modulator, see diagram 4.15. Unscrew the centre shaft, nut "A", and remove the modulator coil.

Check and if necessary, adjust the boiler, refer to Commissioning in the Installation Instructions.

The polarity of the electrical connections is not important.

4.18A Solenoid

Disconnect the two electrical connectors at the solenoid, see diagram 4.15.

Remove the two solenoid securing screws and remove the solenoid.

The polarity of the electrical connections is not important.

4.19 Selector Valve

Turn the selector control knob fully clockwise to the "Hot Water" setting.

Release the water pressure and drain the central heating circuit of the boiler, refer to Section 1.3 and 1.6.

Disconnect the electrical connectors at the microswitch, see diagram 4.14.

Disconnect the three union nuts of the selector valve, see diagram 4.14.

Loosen the left hand flow pipe at the isolation cock and safety valve discharge pipe as necessary to enable the selector valve to be removed.

Transfer the microswitch and insulation, to the replacement selector valve ensuring that the insulation is fitted between the microswitch and the valve, see diagram 4.14.

The polarity of the electrical connectors is not important.

4.20 Domestic Hot Water Flow Switch

Note, alternative types of flow switches may be fitted to the boiler.

Identify the type by checking the part number on the switch body.

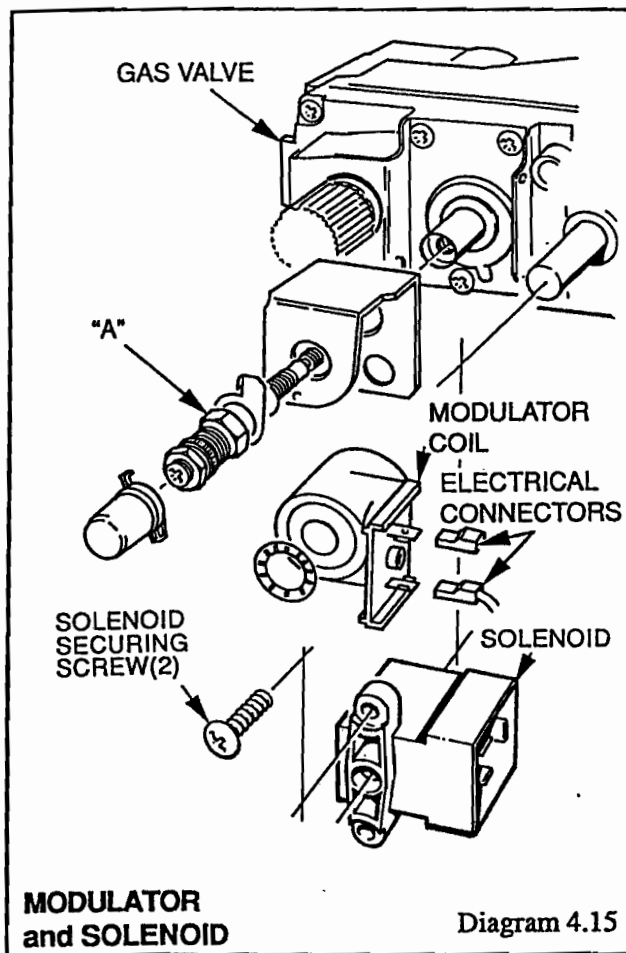
Isolate the domestic hot water inlet and drain, refer to Sections 1.3 and 1.6.

Remove the piezo unit bracket, see diagram 4.6 and Section 4.11.

Disconnect the flow switch cables.

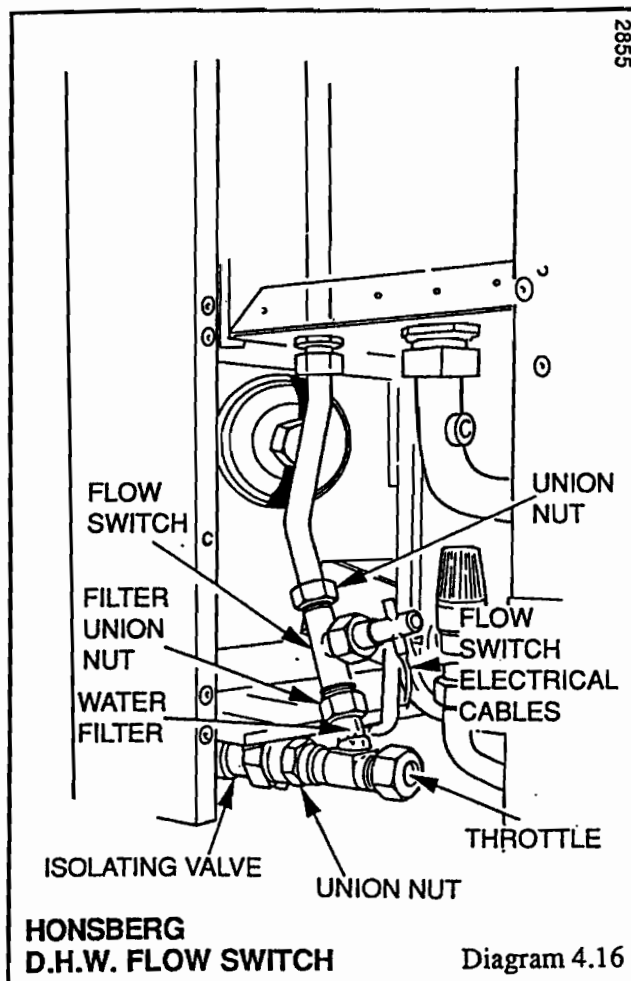
When replacing the flow switch it is recommended that the water inlet filter is cleaned or renewed.

When replacing the flow switch make sure it is correctly positioned, with the flow direction arrow pointing upward.



MODULATOR
and SOLENOID

Diagram 4.15



HONSBERG
D.H.W. FLOW SWITCH

Diagram 4.16

PART No. 208523 - HONSBURG FLOW SWITCH (Spares Assembly No. 800135)

Remove the flow switch by disconnecting the union nut, see diagram 4.16, noting the fitted position. Slacken or remove the clip securing the isolating valve to ease removal.

Withdraw the throttle assembly including flow switch.

Disconnect the filter union nut.

PART No. 208527 - PLATON FLOW SWITCH (Spares Assembly No. 800136)

Remove the burner as described in Section 4.2.

Disconnect the union nuts, see diagram 4.16A.

Remove the locknut from the flow switch and lower the domestic hot water inlet pipe assembly including flow switch from the base of the main panel.

Disconnect the filter union nut.

4.21 Thermistor - Heating

Release the water pressure and drain the heating circuit of the boiler, refer to Sections 1.3 and 1.6.

Gain access, by removing the piezo bracket, see diagram 4.6.

Disconnect the cables from the thermistor, see diagram 4.17.

Remove the thermistor, complete with its "O" ring.

The polarity of the electrical connections is not important.

4.22 Thermistor - Domestic Hot Water

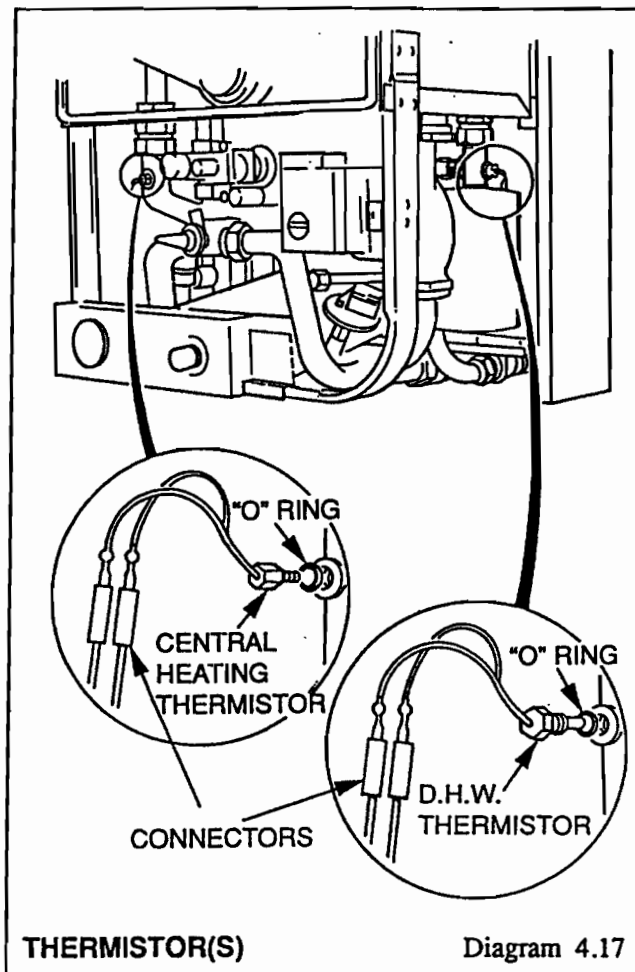
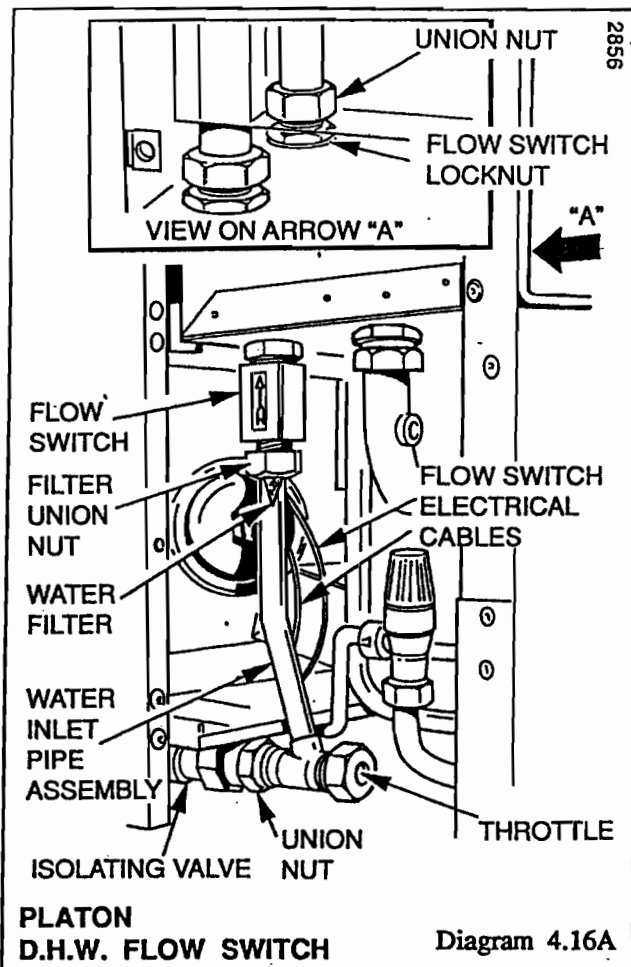
Remove the pump, see Section 4.27.

Release the water pressure and drain the domestic circuit of the boiler, refer to Sections 1.3 and 1.6.

Disconnect the cables from the thermistor, see diagram 4.17.

Remove the thermistor complete with its "O" ring.

The polarity of the electrical connections is not important.



4.23 Safety Valve

Release the water pressure and drain the central heating circuit of the boiler, refer to Section 1.3 and 1.6.

Remove the pressure gauge, refer to Section 4.13.

Disconnect the union nuts to release the safety valve, see diagram 4.18.

4.24 Water Inlet Filter

Release the water pressure and drain the domestic circuit of the boiler, refer to Sections 1.3, 1.6 and 4.20.

4.25 Domestic Hot Water Throttle

Release the water pressure and drain the domestic circuit of the boiler, refer to Sections 1.3 and 1.6.

Remove the domestic hot water inlet pipe assembly, refer to Section 4.20.

Remove the cap nut and carefully remove the throttle adjuster, by unscrewing and pushing it out, see diagram 4.19.

Clean if necessary, taking care not to damage the throttle body.

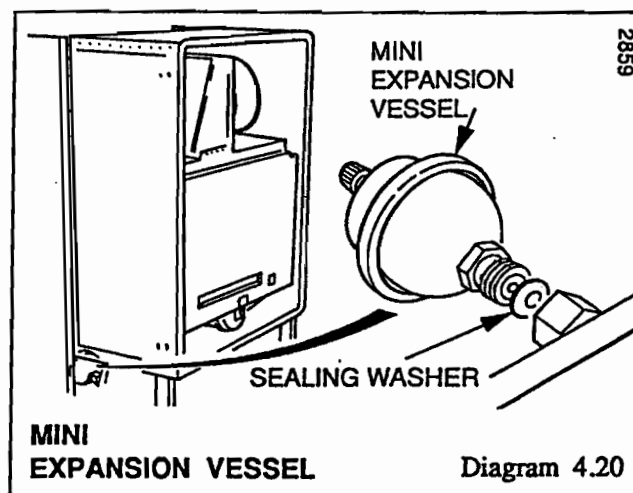
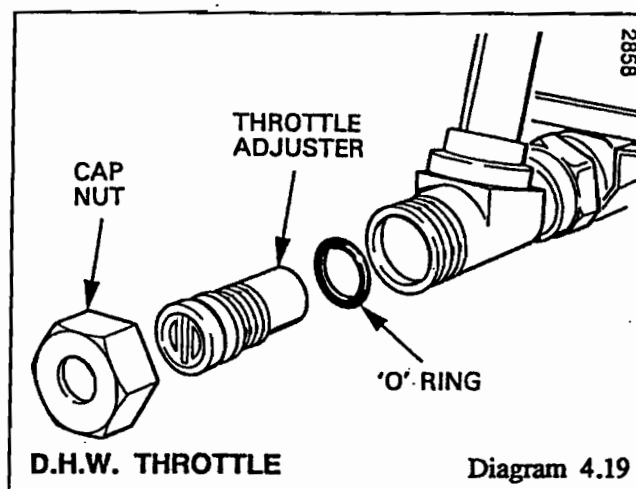
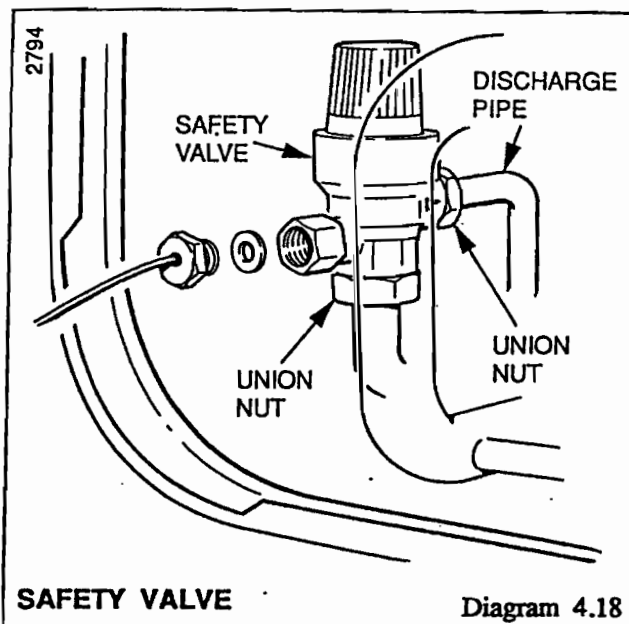
Reset the domestic hot water flow rate refer to Section 11.7 in Installation Instructions.

4.26 Mini Expansion Vessel

Release the water pressure and drain the domestic circuit of the boiler, refer to Sections 1.3 and 1.6.

Remove the domestic hot water inlet pipe complete with the mini-expansion vessel from the boiler, refer to Section 4.20.

When refitting use the new sealing washer supplied.



4.27 Pump

Release the water pressure and drain the central heating circuit of the boiler, refer to Sections 1.3 and 1.6.

Disconnect the electrical connectors at the water pressure microswitch. Remove the water pressure switch, refer to Section 4.9.

Remove the terminal cover from the pump and disconnect the cable, see diagram 4.21.

Disconnect the pump at the upper union only.

Disconnect the three union nuts shown in diagram 4.21, then remove the pump complete with lower pipework.

Separate the pump at the lower union, discarding all sealing washers.

Make sure that the flow direction arrow is pointing upward when fitting, and use the new sealing washers.

Refit water pressure switch, refer to Section 4.9.

The flow adjuster on the new pump should be set to that of the original, refer also to Section 4.6 in the Installation Instructions.

The flow rate should be controlled by means of a valve in the heating flow, refer to Section 11.10 in the Installation Instructions.

Note: Should the pump fail to operate, refer to diagram 3.8. If all is in order, but the pump still does not operate, remove the end screw, see diagram 4.21, then turn the pump spindle to release any temporary seizure.

DO NOT HIT THE SPINDLE.

4.28 Automatic Air Vent

Release the water pressure and drain the central heating circuit of the boiler, refer to Sections 1.3 and 1.6.

Remove the automatic air vent, see diagram 4.22.

SLACKEN THE SMALL CAP ON THE AIR VENT. THIS MUST NOT BE RE-TIGHTENED.

When refitting use the new sealing washer provided.

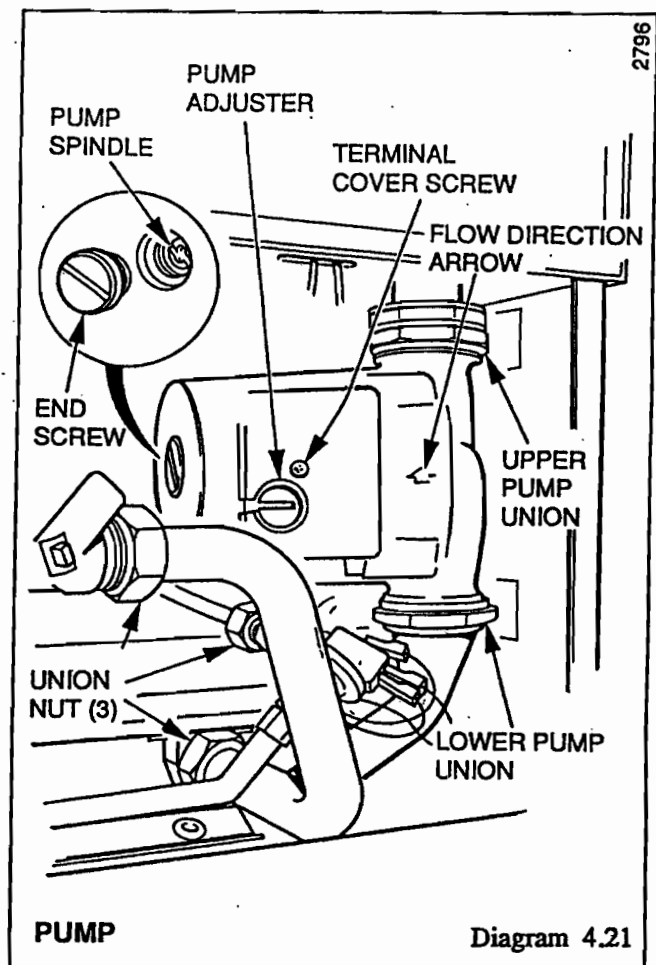


Diagram 4.21

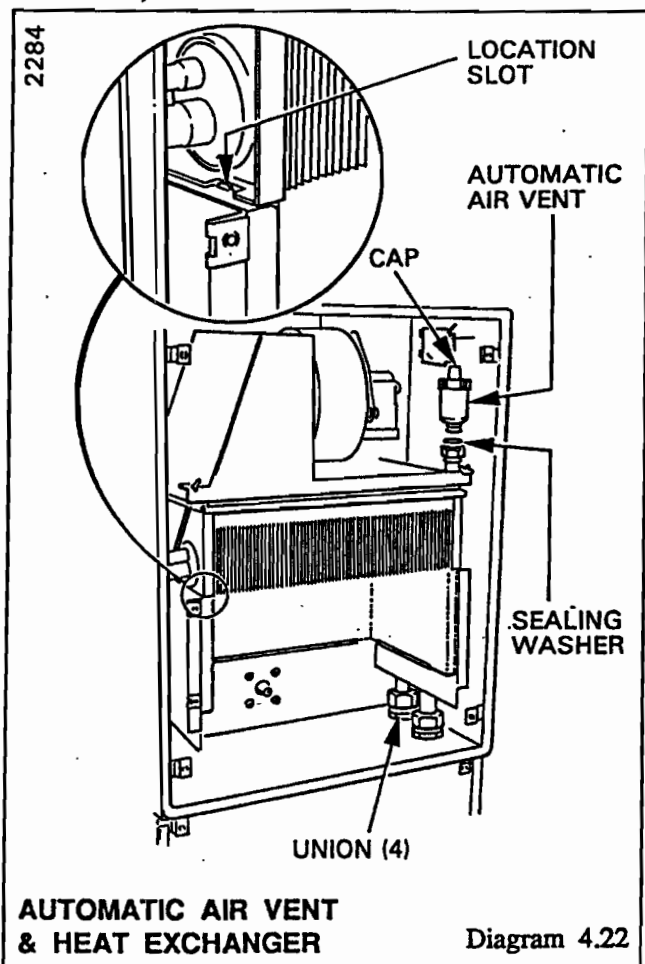


Diagram 4.22

4.29 Heat Exchanger

Release the water pressure and drain the central heating and domestic hot water circuits refer to Sections 1.3 and 1.6.

Remove the fan from the flue collector, refer to Section 4.1.

Remove the flue collector, secured with two wing nuts and hook bolts, see diagram 4.1.

Remove the main burner, refer to Section 4.2.

Remove the automatic air vent, refer to Section 4.28. If renewing the heat exchanger, transfer the air vent, using the new sealing washers provided.

Disconnect the union nuts of the heat exchanger to remove it, see diagram 4.22.

Locate the raised location tabs on the combustion chamber sides into the slots on the heat exchanger, see diagram 4.22.

Make sure that the main burner is located on the main injector and is horizontal, the tips of the rear most blade under the two burner guides, see diagram 4.2A.

The combustion chamber front panel should be fitted loosely, then the flue collector also fitted loosely, ensuring that it is seated correctly on the heat exchanger and over the top edge of the front panel.

4.30 Combustion Chamber Insulation

Remove the fan, refer to Section 4.1.

Remove the flue collector, secured with two wing nuts and hook bolts, see diagram 4.1.

Remove the combustion chamber front panel, secured with four screws and a wing nut, see diagram 4.2.

Remove the front insulation, secured with a clip, see diagram 4.23.

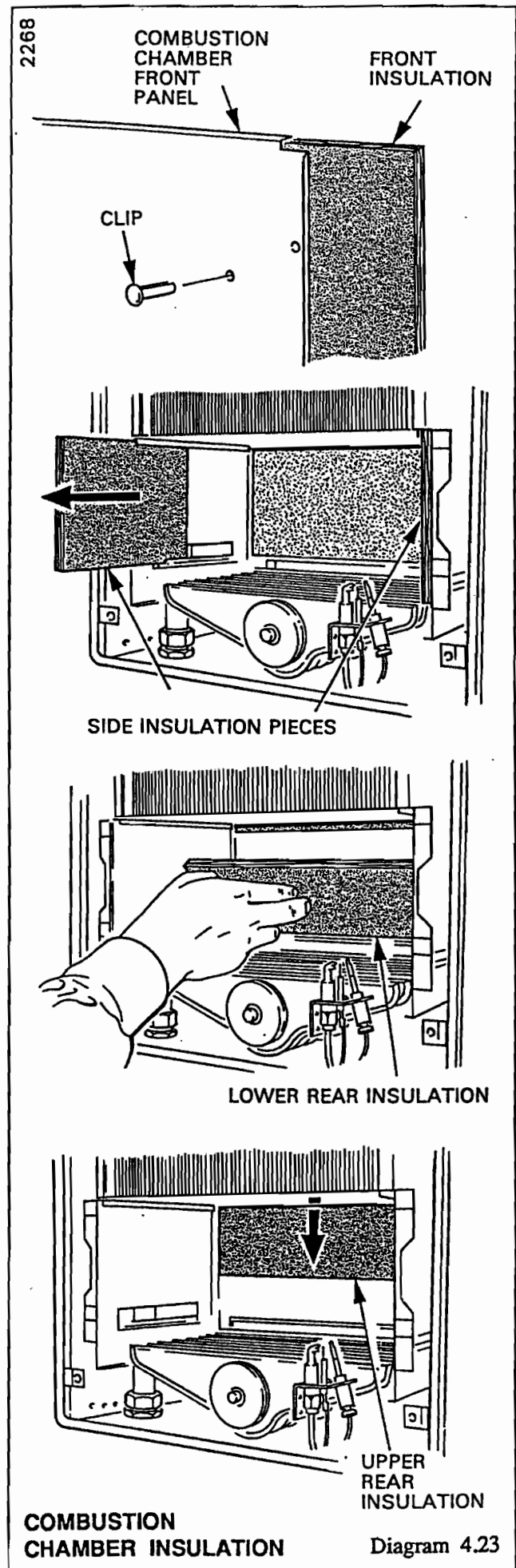
Slide out both side insulation pieces

Pull the lower rear insulation forward, then slide the upper rear insulation down from behind the heat exchanger.

4.31 Expansion Vessel

Renewal of the expansion vessel requires the boiler to be removed from the wall. As an alternative, a separate expansion vessel of the same specification may be connected as close as possible to the boiler, leaving the original in position, refer to Section 4 in the Installation Instructions.

Release the water pressure and drain the central heating and domestic water circuits, refer to Sections 1.3 and 1.6.



Remove the air box access plate, refer to Section 10.2 of the Installation Instructions.

Remove the fan from the flue collector, refer to Section 4.1.

Remove the air box, secured to the boiler with four screws and to the air duct with two screws, see diagram 4.24.

Disconnect the boiler water connection union nuts at the front of the isolating valves, see diagram 1.1.

Disconnect the gas service cock union.

Disconnect the safety valve discharge pipe from the boiler, see diagram 4.18.

Separate the two parts of the boiler multi-pole electrical connector.

Slacken the clips of the gas service cock and the water isolating valves.

Remove the boiler from the mounting frame, secured with two screws at the top, see diagram 4.26. Pull the boiler from the isolating valves. Unhook the boiler at the top and lift off.

Carefully lay the boiler down on its side for access to the expansion vessel.

Disconnect the union nut connection, see diagram 4.25 and discard the sealing washer.

Remove the expansion vessel, secured with three clamping screws.

Connect the union nut, when fitting the expansion vessel, before clamping it.

4.32 Pilot Viewing Window

Remove the pilot viewing window, secured with two screws. When fitting a new window use the gasket provided, see diagram 1.3.

4.33 Casing Seal

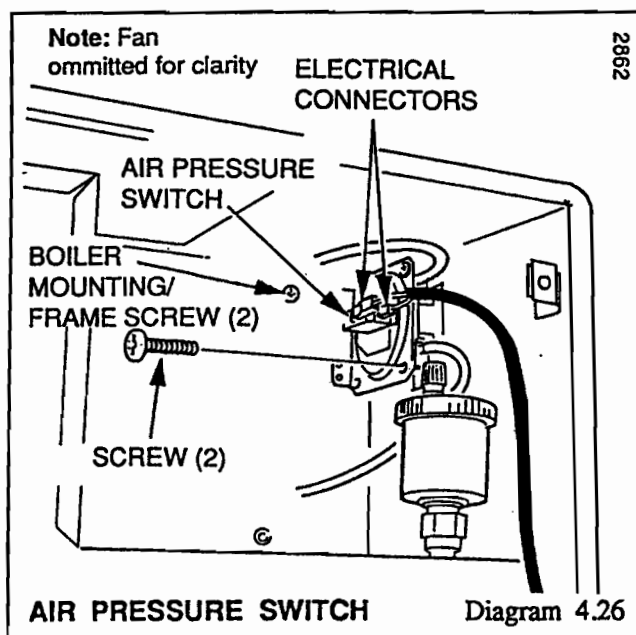
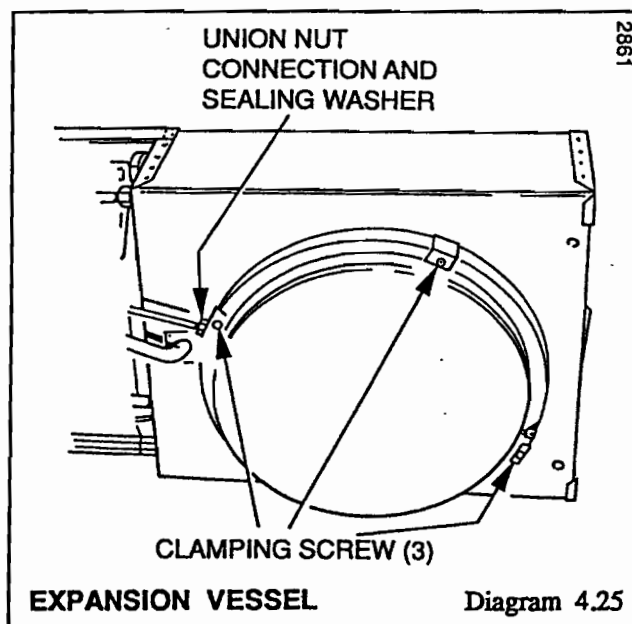
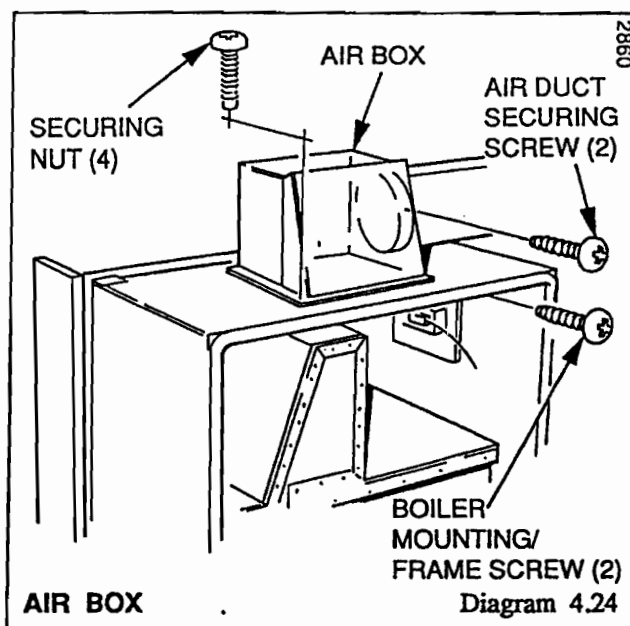
Remove the old seal, clean out the old adhesive. Glue the new seal into place, ensuring that there are no breaks.

4.34 Air Pressure Switch

Disconnect the two electrical connectors at the air pressure switch, see diagram 4.26. Remove the flexible tubes from the switch. Remove the air pressure switch, secured with two screws.

When replacing the tubes to the air pressure switch ensure the upper (coloured) tube from the fan connects to the upper connection of the switch.

The polarity of the electrical connections is not important.



5 Spare Parts

5.1 Part Identification

The key number in diagram 5.1 and the first column of the list will help identify the spare part.

The data badge is positioned on the inner case cover, see diagram 1.3.

5.2 Ordering

When ordering any spare part, please quote the part number and the description from the list together with the model name and serial number information from the data badge.

If ordering from the local gas undertaking, please also quote the GC appliance number from the data badge and the GC spare part number from the list.

Key No	Part No	Description	GC No
1	438046	Fan assembly	313 242
2	800133	Main injector assembly	313 276
3	203425	Pilot burner	376 967
4	202616	Spark electrode	383 724
5	203516	Pilot injector	376 968
6	202425	Thermocouple	383 719
7	432869	Boiler over heat cut off assy	376 988
8	432868	DHW high limit control assy	
9	900501	Piezo unit)	382 585
		Piezo unit)	384 146
10	WW4604	Ignition lead alternatives	360 211
11	800134	Pressure gauge assembly	313 294
12	202119	Control board inc 19 & 20	313 250
13	202806	Transformer	313 086
14	800158	Gas valve assembly	313 237
15	800154	Modulator coil	-
16	202099	Microswitch	313 022
17A	800132	Thermistor assembly-Domestic	313 280
17B	432867	Thermistor assembly-Heating	376 987
18A	800135	DHW switch assembly-Honsberg	-
18B	800136	DHW switch assembly-Platon	313 277
19	202107	Fuse 2 (BS4265 type T 630mA)	313 087
20	202114	Fuse 1 (BS4265 type T1.6A)	313 068
21	800155	Water pressure switch assembly	-
22	202118	Interface PCB	313 249
23	202121	User PCB	313 253
24	438118	Air pressure switch assy	313 234
25	208214	Water inlet filter	281 359
26	800153	Automatic air vent assembly	313 285
27	800149	Safety valve assembly	397 677
28		Solenoid Coil	

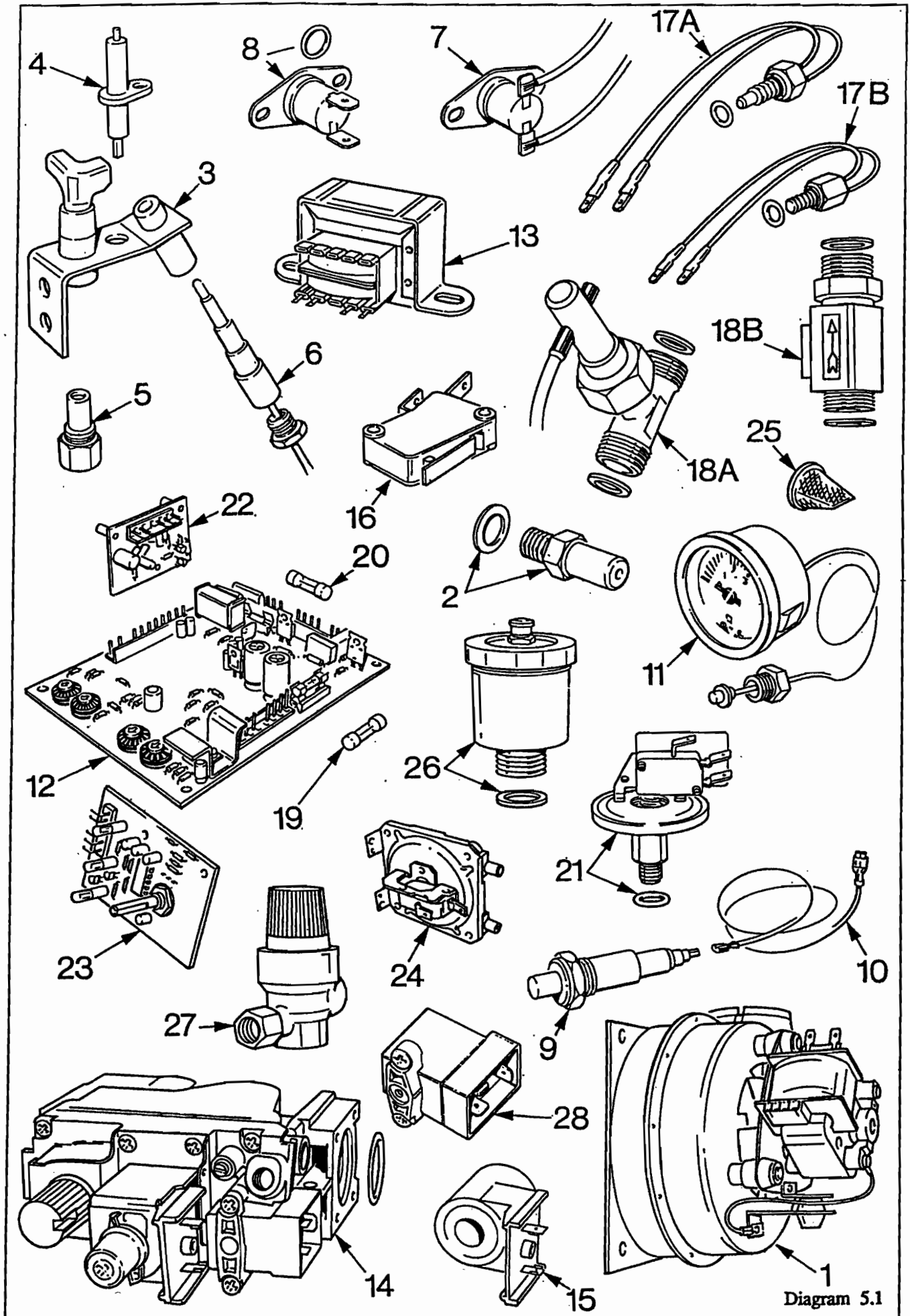


Diagram 5.1

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