Please leave these Instructions with the User

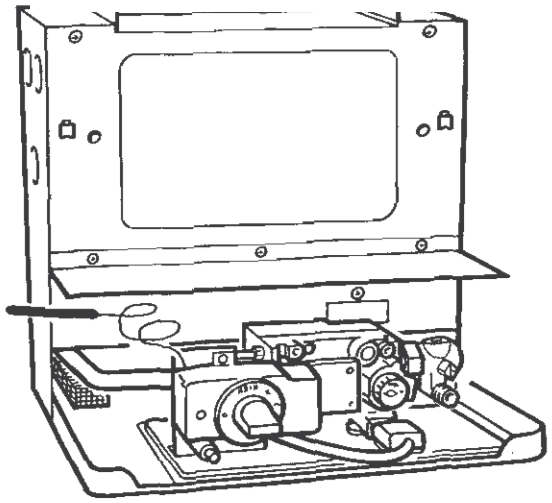
Baxi Bermuda 553 Propane Boiler

Gas Fired Central Heating Unit

Gas Type G31

Baxi Bermuda 553 Propane Boiler - G.C.No 44 077 75

These Instructions must be read in conjunction with those for the Firefront Section



Installation And Servicing Instructions

BAXI

Important Information

This product contains Refractory Ceramic Fibres (R.C.F.) which are man-made vitreous silicate fibres. Excessive exposure to these materials may cause temporary irritation to eyes, skin and respiratory tract. Care must be taken when handling these articles to ensure the release of dust or fibres is kept to a minimum.

To ensure that the release of fibres from these articles is kept to a minimum, during installation and servicing it is recommended that a H.E.P.A. filtered vacuum is used to remove any dust, soot or other debris accumulated in and around the appliance. This should be performed before and after working on the installation.

It is recommended that any replaced item(s) are not broken up but sealed within heavy duty polythene bags and clearly labelled "R.C.F. waste". This is not classified as "hazardous waste" and may be disposed of at a tipping site licensed for the disposal of industrial waste.

Protective clothing is not required when handling these articles but it is recommended that gloves are worn and the normal hygiene rules of not smoking, eating or drinking in the work area are followed and always wash hands before eating or drinking.

"Benchmark" Log Book

As part of the industry-wide "Benchmark" initiative all Baxi boilers now include an Installation, Commissioning and Service Record Log Book. Please read the Log Book carefully and complete all sections relevant to the appliance and installation. These include sections on the type of controls employed, flushing the system, burner operating pressure etc. The details of the Log Book will be required in the event of any warranty work. Also, there is a section to be completed at each subsequent regular sevice visit.

Propane appliances can be converted to operate on Natural Gas if required at a later date.

Baxi Part Nos. for conversion kits are:-

GF3 Super/553	247065
SL3/553	247065
VP3/553	247067
C5/553	247064
C5WM/553	247064

Bermuda 553 Propane
Cat. II_{2H3P} G31

INTRODUCTION

This unit is the boiler section of a combined central heating boiler and gas fire designed for installation in a living room. It is fitted in the normal builders opening at the base of the chimney and can be installed into most tiled surrounds, proprietory surrounds or as a panel fire. The unit is for use with Propane only. The boiler unit output is 15.3kW (52,200 Btu/h). Any one of five gas fire units may be used with the boiler.

VP3	GC No. 37 077 72
SL 3	GC No. 37 077 70
GF3 Super	GC No. 37 077 69
C5W Mahogany	GC No. 37 075 17
C5	GC No. 37 077 74

SITE REQUIREMENTS

Builders Opening (Fig. 1)

This opening is used to accommodate the boiler. The minimum dimensions required are 343mm (13½in) deep x 584mm (23in) wide x 584mm (23in) high. Such openings should be soundly constructed of brickwork, pre-cast concrete or material such as asbestos free Marinite. Care must be taken to mount the pre-cast units or boxes at a height appropriate to the type of installation e.g. wall or hearth fix, and the dimensional requirements must be maintained.

The Surround and Fireplace Opening (Fig. 2)

If a surround is to be used it must have a vertical flat area centrally placed about the fireplace opening, as shown in the separate firefront installation and servicing instructions.

The Hearth

The floor of the builders opening must be sound and in accordance with current building Regulations and ON THE SAME LEVEL AS THE FRONT HEARTH.

No Surround

The unit can be fitted as a hearth fire without a surround but a non-combustible hearth is always necessary.

Wall Fixing

The unit can be wall mounted using a fire support plate supplied with each fire. The base of the builders opening on which the boiler rests should be 100mm (4in) to 125mm (5in) above the floor level. IF A SURROUND IS BEING REMOVED THE OPENING SHOULD BE MADE TO THE MAXIMUM DIMENSIONS INDICATED IN TABLE 1.

Flue

A variety of types of flue may be used on the unit but they all must be equivalent to a straight flue of 3m (10ft) height from hearth level and have a minimum cross sectional area of 130cm² (20in²) equivalent to a 125mm (5in) internal diameter pipe. The effects of bends are covered in BS 5440 Part 1.

(a) **9in x 9in brick chimneys**—These must be of sound construction and lined with a 125mm (5in) flue liner terminating with an approved terminal. Previously used chimneys should be swept and dry before a flue liner is fitted. A seal around the space between the liner and the chimney is essential at the top and a seal at the base of the chimney is a requirement.

(b) **Pre cast flue blocks**—These must conform to BS 5440 Part 1.

(c) **Acid resistant liners**—If the chimney is already fitted with acid resistant liners suitable for gas appliances then a further liner is not necessary but an approved terminal is required. A short length of 125mm (5in.) diameter flue pipe to BS 567 is required to connect the boiler to the chimney. It is necessary to seal the space between the short piece of flue pipe and the chimney.

(d) **Light quality cement flue pipes and proprietory insulated flue pipes**—Flues of this type can be used taking care to design and install in accordance with good practice and the flue manufacturers' recommendations.

(e) **Terminals**—A suitable approved type of terminal is required.

If the flue exceeds 4.3m (14ft) height the restrictor ring, which is supplied with the unit will be required (see Fig. 4).

Gas Supply

The connection of the unit is Rc½ (½in BSPT) internal, located on the right hand side of the appliance. For the full information on gas supply pipes, pipe sizes etc. reference should be made to BS 5482 Pts 1+2. The gas supply pipe should be sized so as to provide adequate pressure at the appliance.

Electrical Supply

All external wiring should be correctly earthed and polarised and in accordance with I.E.E. wiring regulations. For wiring instructions see "Electrical Connection".

Water Circulation Systems

The unit is suitable for use with fully pumped systems (small bore and micro bore with open vents) and gravity domestic hot water with pumped central heating systems. The unit as supplied is not suitable for use on sealed systems. For systems requiring an overheat thermostat, a modification kit is available. The flow pipe arrangement for this type of installation is covered in the instructions supplied with that kit. (Baxi part No.234885). This kit is not suitable for systems where a gravity domestic hot water circuit is used. When the unit 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.

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

(ii) The system must be designed to prevent reverse circulation.

(iii) Pipes should be laid to maximum fall avoiding points of possible air lock. Non-metallic pipework-In systems using non-metallic pipework it is necessary to use copper pipe for the boiler flow and return. The copper must extend at least 1 metre from the boiler, and include any branches (Fig. a). The copper pipe should not be insulated.

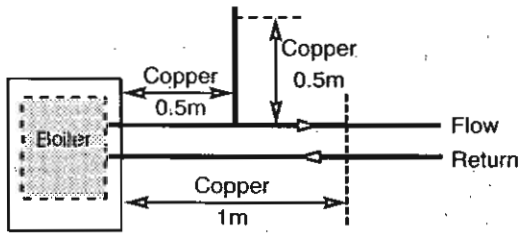


Fig. a

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

(i) THE WATER SPREADER ADAPTOR MUST BE FITTED TO THE BOILER RETURN CONNECTION ON ALL SYSTEMS.

(ii) The static head must not exceed 30m (100 ft) of water.

(iii) The boiler must only be used with an indirect cylinder.

Treatment of Water Circulating Systems

For optimum performance after installation, this boiler and its associated central heating system must be flushed in accordance with the guidelines given in BS7593:1992 "Treatment of water in domestic hot water central heating systems". This must involve the use of a proprietry cleanser, such as BetzDearborn's Sentinel X300 or X400, or Fernox's Superfloc. Full instructions are supplied with the products, but for immediate information please contact BetzDearborn on 0151 420 9563, or Fernox on 01799 550811.

For long term protection against corrosion and scale, after flushing it is recommended that an inhibitor such as BetzDearborn's Sentinel X100, or Fernox's MB-1 or Copal is dosed in accordance with the guidelines given in BS7593:1992.

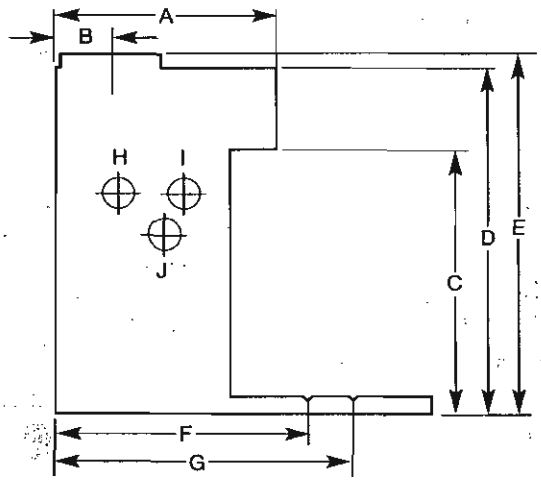
Failure to flush and add inhibitor to the system may invalidate the appliance warranty.

SURROUND OPENING—ALL FIRES		
HEIGHT	560mm (22in)	
	MINIMUM DIMENSION	MAXIMUM DIMENSION
WIDTH	406mm (16in)	584mm (23in)
	TABLE 1	**508mm (20in)**
		VP3 ONLY

(iv) Drain points should be fitted to the lowest points in the system.
(v) All electrical wiring, gas and water pipes must be installed in a way which will not restrict the servicing of the boiler.

Boiler Connections—The boiler is supplied with flow and return connections on the left hand side. If the connections are required on the right hand side the boiler casting can be reversed within the combustion chamber.
(See 'Boiler Connections').

Ventilation Ventilation via a permanent air vent of 90cm² (14in²) to outside atmosphere is required. The vent may be directly into the room containing the unit, or via an adjacent room other than a room or internal space containing a bath or shower which has a similarly sized permanent air vent to the room containing the appliance. The vent must not be placed in the builders opening. Consideration must be given to BS 5440 Pt. 2.



BOILER DIMENSIONS		
	From Back of Boiler	From Hearth Level
A	328mm (12 15/16in) -	
B	82mm (3 7/16in)	-
C	-	401mm (16in)
D	-	504mm (20in)
E	-	529mm (20 15/16in)
F	343mm (13 1/2in)	-
G	384mm (15 1/8in)	-

TABLE 2

FLOW AND RETURN TAPPINGS			
	From Back of Boiler-	When on	From Hearth
	Left Hand	Right Hand	Level
H rear Flow	71mm (2 13/16in)	99mm (3 7/8in)	333mm (13 1/8in)
I Front Flow	158mm (6 1/4in)	186mm (7 5/16in)	333mm (13 1/8in)
J Return	100mm (3 15/16in)	*158mm (6 1/4in)*	*241mm (9 1/2in)*

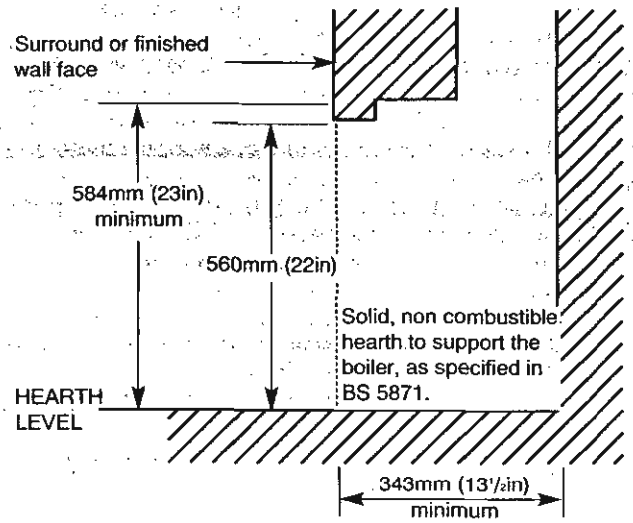
TABLE 3

Boiler Details

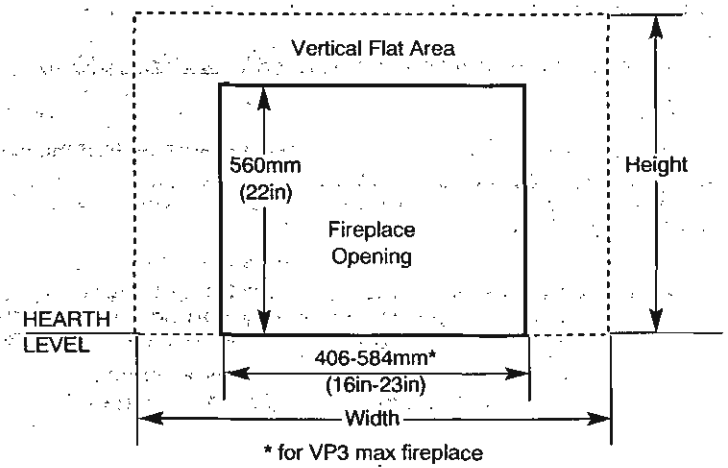
Height	- 533mm (21in)
Width	- 394mm (15 1/2in)
Weight (empty)	- 48kg (106lbs)
Water Content	- 2.6 litres (0.58 galls)
Boiler Tappings	- 3xRc1 (1 in BSPT internal)
Gas Connection	- Rc 1/2 (1/2in BSPT internal)
Electrical Supply	- 230v-50Hz-3 amp fuse
Hydraulic Resistance	- 35mbar (14in w.g.) at 1250 l/h (4.6 g.p.m.)

The system should be designed to prevent gravity circulation in the heating system when the pump is not running.

IMPORTANT:
If a false chimney breast is intended to house the boiler, a simulated builders opening, within the breast, must be provided. See BUILDERS OPENINGS. The builders opening must not communicate with voids, pipe ducts or spaces other than the room in which the appliance is situated.



When correctly installed the centre line of the boiler flue socket will be 258 mm-305 mm from the surround or finish wall face.
Fig. 1. Builders Opening



* for VP3 max fireplace opening 508mm (20in)

If wall fix, the hearth level must be 100-125mm (4in-5in) above floor level

If the opening is being purposely prepared the maximum dimensions are strongly recommended. If the fireplace opening is to the minimum dimension it may be necessary to use the pipe access holes to make the pipe connections.
Fig. 2. Fireplace Opening

Installation

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

All systems must be thoroughly flushed, and treated with inhibitor.

British Standard Codes of Practice BS 5440 Parts 1 & 2, BS 6798, BS 5871, BS 5546, BS 5449, BS 6500, BS 5482 Parts 1+2.

Siting the unit

The complete unit (boiler and fire) can be used in different circumstances:
(a) With a tiled surround and hearth.
(b) Without a tiled surround but with a hearth.
(c) As a wall mounted fire.
(d) In a proprietary surround constructed of suitable material.
The general method of installation is the same in all cases, but slight changes of procedure must be made to suit the particular circumstances.

Boiler Connections (Fig. 3)

If the boiler connections are required on the right hand side proceed as follows:
1. Remove the transit packing but do not lift the boiler off the transit base.
2. Remove the thermostat capillary from behind the clip on the front panel and withdraw the thermostat phial.
3. Remove the front panel (Fig. 6). Transfer the thermostat pocket blanking disc to the right hand hole.
4. Slide out the baffles from between and above the heat exchanger castings and slide out the blanking plate (Fig. 3).
5. Remove the two right angled captive nuts (Fig.3).
6. Remove the casting securing bolt at the left hand side (Fig. 6).
7. Lift out the heat exchanger. Retrieve the three sealing rings and boiler clamping plate.
8. Reverse the boiler casting-DO NOT TURN THE CASTING UPSIDE DOWN.
Re-assemble ensuring that:
(a) The three sealing rings are correctly positioned after refitting the casting.
(b) The blanking plate is fitted at the left hand side of the casting.
(c) The heat exchanger baffles are fitted between and above the casting.
(d) The casting is secured by the clamping plate and bolt.
(e) Route the thermostat capillary under the heat shield and up the left hand side (Fig. 7). The thermostat phial now fits in the pocket at the LEFT HAND SIDE IN THE LOWER SECTION. Replace two right angled captive nuts and refit the front panel.

Fitting the boiler (Fig. 4)

1. Remove the fireback, back boiler, rubble, etc., and expose the builders opening.
2. Line the flue. Terminate the lower end of the liner at 508 mm (20in) above the finished hearth level and seal between the flue liner and chimney (Fig. 4).
3. Build up a level solid hearth within the builders opening flush with the front of the hearth. Scribe a centre line on the hearth from the front finished face to a point at least 150 mm (6in) forward of the face.
4. Remove the controls heat shield and the gas service tap (Fig. 7).
5. Lift the boiler off the transit base, place the boiler in the builders opening, check that the front finished face lies between the notches on the sides of the boiler base (Fig. 4) and that the arrowhead cut out at the front is on the centre line of the hearth.
(a) Secure the boiler by drilling directly through the boiler base securing holes (Fig. 14) fit the plugs and secure with the screws and washers provided.
(b) Attach the liner to the socket with the three screws provided and seal the joint.
6. Connect the gas supply to the service tap. It is preferable to have the gas supply coming from the right of the builders opening. If however it does come from the left hand side and must pass in front of the boiler then for ease of servicing it is imperative that the pipe passes under the burner feed pipe and the pilot feed pipe. REPLACE THE HEAT SHIELD, UNLESS A GF3 SUPER, SL3 OR VP3 IS TO BE FITTED. IF SO FIT THE NEW HEAT SHIELD SUPPLIED WITH THE FIRE USING THE SCREWS PREVIOUSLY REMOVED.

7a **Gravity domestic hot water and pumped central heating** The flow and return connections to the boiler MUST be made as follows: (Fig. 5)
(i) The water spreader adaptor and the injector tee must be fitted in the lowest of the three tappings with the branch facing straight down. It is acceptable for the branch to be angled at 45° either side of this position .
(ii) Connect the pumped heating return to the compression fitting end of the injector tee.
(iii) Connect the gravity hot water return to the branch of the injector tee.
(iv) Connect the pumped heating flow to the top front tapping for left hand connections or the top rear tapping for right hand connections.
(v) Connect the gravity hot water flow to the remaining top tapping.

7b **Fully Pumped Systems** The flow and return connections to the boiler to be as follows (Fig.6).
(i) Fit the adaptor with the plastic water spreader in the bottom return tapping on the boiler. Do not use excessive jointing compound which may obstruct the holes in the spreader. Connect the pumped flow to the top front tapping for left hand connections or the top rear tapping for right hand connections.
(ii) Plug the remaining top tapping using a 1 in BSP plug.
8. Connect the electrical supply - see 'Electrical Connections'.
9. Any holes within the builders' opening e.g. to accommodate pipework etc must be made good.
10. Complete the installation as described under 'Commissioning the Boiler'.

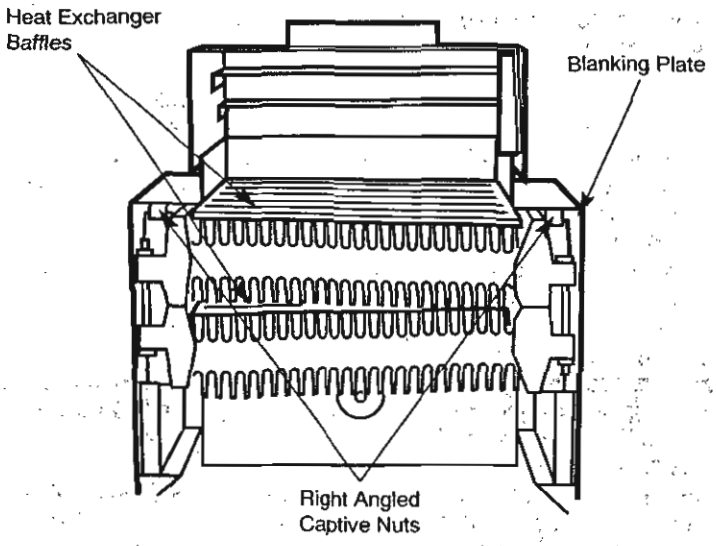


Fig. 3. Connections

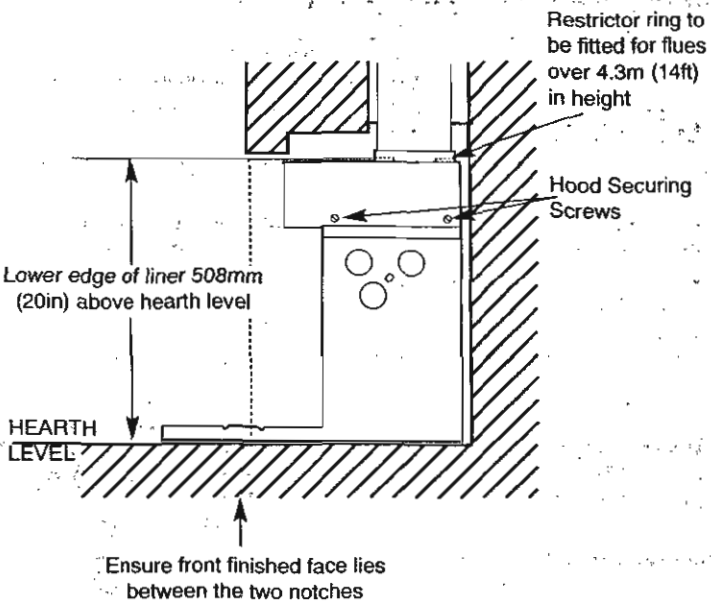


Fig. 4. Boiler in Builders Opening

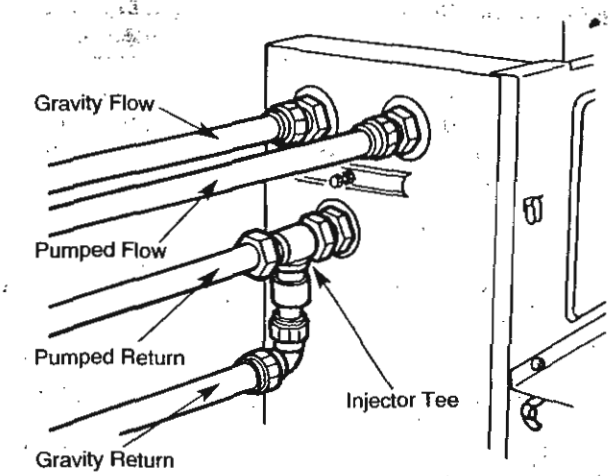


Fig. 5. Gravity D.H.W.

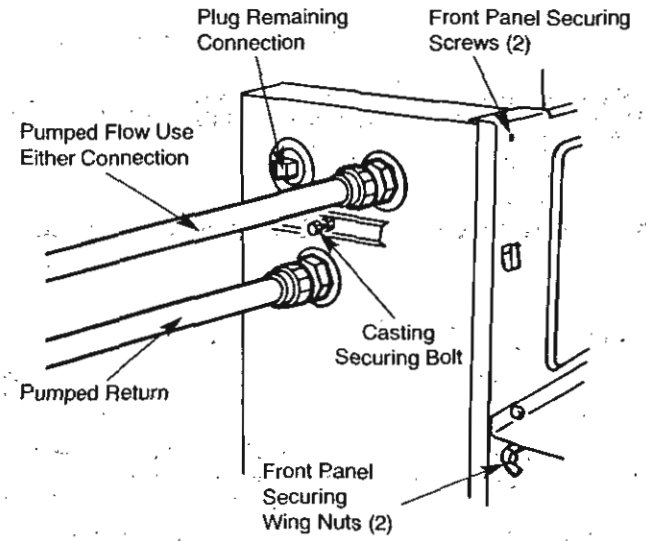


Fig. 6. Fully Pumped System

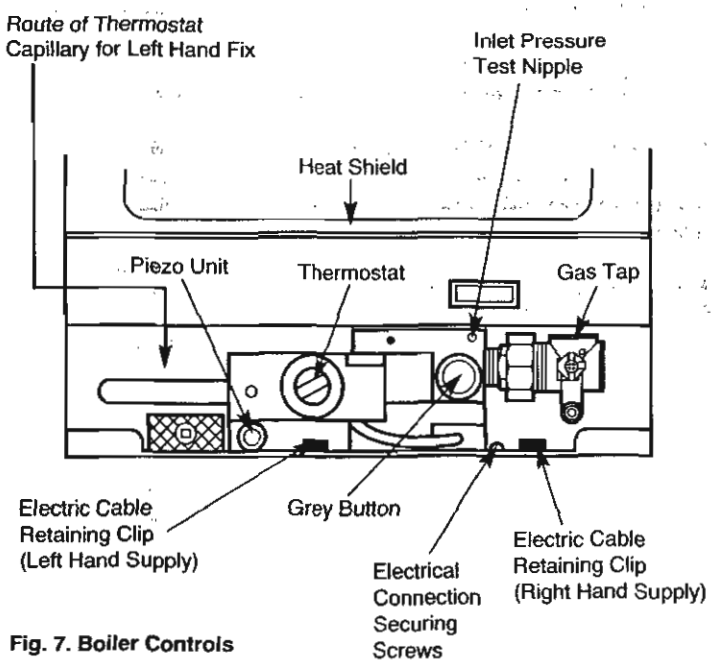


Fig. 7. Boiler Controls

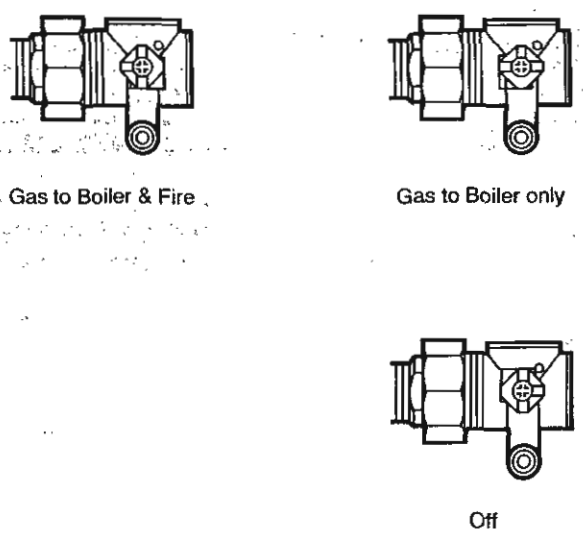
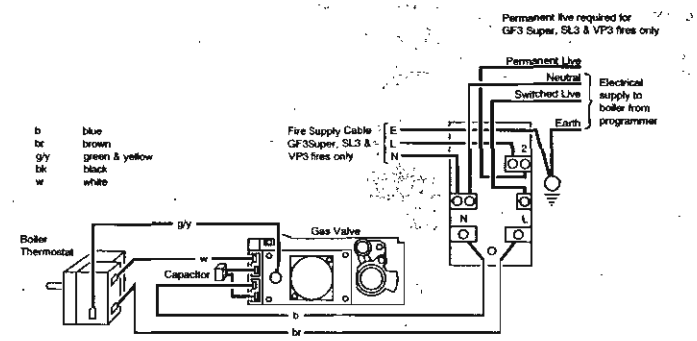


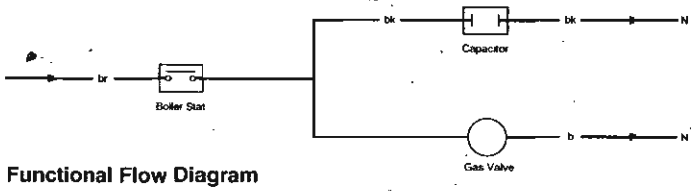
Fig. 8. Gas Service Tap

Electrical Connections

The main supply required is 230V~50 HZ fused at 3A. A double pole switch having a contact separation of at least 3mm should be used, serving only the appliance and system controls. All electrical wiring should be correctly earthed and polarised and in accordance with I.E.E. Wiring Regulations. When used in conjunction with firefronts equipped with light effects and/or electronic ignition a permanent live is required.



Illustrated Wiring Diagram



Functional Flow Diagram

Electrical supply to the controls

The cable within the builders opening should be 0.75mm² to IEC 227 Code 53 (heat resistant). It is preferable to have the electrical supply cable coming from the right hand side of the builders opening. If however it must come from the left hand side it must be fitted to the alternative clip provided (Fig. 7). It is important to route any input cable to avoid contact with the combustion box sides. To connect the electrical wiring to the boiler proceed as follows. (Fig. 7).

1. Remove the screw retaining the controls connection plug and disconnect.
2. Remove the screw retaining the input socket and slide the socket to the right then lift to remove.
3. Connect the wires to the socket as follows:
(a) Connect the brown wire (live) to the terminal marked L1.
(b) Connect the blue wire (neutral) to the terminal marked 'N'.
(c) Route the green and yellow (earth) through the cut out in the side of the socket housing leaving sufficient length to connect the wire to the adjacent earth terminall on the base. The earth wire should be sufficiently long so that if the supply cable is pulled on, the live and neutral wires become taut before the earth wire.
(d) If a GF3 Super, SL3 or VP3 is to be fitted, connect a permanent live supply to the remaining terminal in the socket marked L2. Cut away the plastic web at the inlet of the electrical socket and fit the fire supply cable (See Fire Section Installation Instructions).

Rating & Setting Pressure

Heat Input	19.8kW (67,600 Btu/h)
Heat Output	15.3kW (52,200 Btu/h)
Propane Setting Pressure	37 mbar (14.8in w.g.) at appliance inlet

(e) Secure the cable in the socket with the cable clamp, for 3 core cable use with the flat side downwards for the 4 core cable use with the radiused side downwards. Reassemble the socket to the base.
(f) Connect the earth wire to the earth terminal.
(g) Refit the controls connection plug and replace its securing screw.
(h) Clamp the cable(s) in the plastic clip (fig 7).
(i) In the event of an electrical fault after installation preliminary electrical checks should be carried out i.e. earth continuity, polarity, resistance to earth etc.

The recommended range of thermocouple outputs is between 7.5-13mv.

COMMISSIONING THE BOILER

1. Reference should be made to B.S. 5449 section five when commissioning the boiler and system.
2. Flush the whole system in accordance with BS7593: 1992. (See Treatment of Water Circulating Systems on page 3.) Check for water leaks.
3. Turn the gas service cock ¼ turn from the off position. This will supply gas to the boiler only.
4. Purge the air from the gas service pipe in accordance with B.S. 6891: and test for gas soundness.
5. Turn the boiler thermostat to the off position.
6. Ensure that all external controls e.g. room 'stat, timer etc. are calling for heat and turn on the mains electrical supply.
7. Slacken the appliance inlet test point sealing screw and connect a pressure gauge. Check the pressure. Hold in the grey button on the gas control valve.
8. Press the piezo igniter button and release. Repeat until the pilot lights. Hold in the grey button for a further 15 seconds.
9. The pilot should remain alight. If not, turn the grey button clockwise and wait 3 minutes before repeating the sequence.
10. The pilot flame should be without a yellow tip and be approximately 25mm (1in) long.
11. Operate the burner by turning the boiler thermostat knob to the HIGH setting. Check the operation of the flame failure device by turning the grey button clockwise. The burner and pilot should extinguish.
12. Turn the boiler thermostat to the 'O' position, wait three minutes and relight the pilot as previously described.
13. Operate the burner and allow the system to reach normal operating temperature. Make further checks for leaks.
14. Remove the pressure gauge and tighten the pressure test point sealing screw.
15. The boiler and system should be run and then flushed and treated in accordance with BS7593:1992 and the flushing agent/inhibitor manufacturers instructions. When all the air has been removed from the water circuit, the pump and radiators should be balanced to achieve the design temperature drop across the system.
16. Recheck the system for leaks.
17. Fit the firefront as described in the firefront Installation and Servicing Instructions.
18. The spillage check is performed once the firefront is fitted (see firefront Installation and Servicing Instructions for details).
19. Carefully read and complete all sections of the "Benchmark" Installation, Commissioning and Service Record Log Book that are relevant to the appliance and installation. The details of the Log Book will be required in the event of any warranty work. The Log Book must be handed to the user for safe keeping and each subsequent regular service visit recorded.

Notes for Guidance System Design

1. Pipe Sizing

(a) The sizes of flow and return pipes from the boiler should be determined by normal methods according to the requirements of the system. Generally an 11°C (20°F) drop across the system is desirable.

(b) The open vent pipe must be a minimum of 22 mm and must rise continuously to above the feed & expansion tank. The flow pipe from the boiler may form part of the open vent. No part of the open vent should contain a valve.

(c) In a fully pumped system the cold feed pipe (15 mm) may be connected to the flow pipe not more than 150mm (6 in) away from the vent pipe (close coupled), but there must always be a cold water path to the boilers return connection.

(d) The system should be designed so that gravity circulation does not take place in the heating system when the pump is not running.

Fuel Economy

When designing a control system for a central heating installation, better fuel economy is achieved by exercising control of the boiler from a room thermostat or cylinder thermostat as appropriate. Allowing the boiler to cycle under the control of the boiler thermostat does not produce the best results.

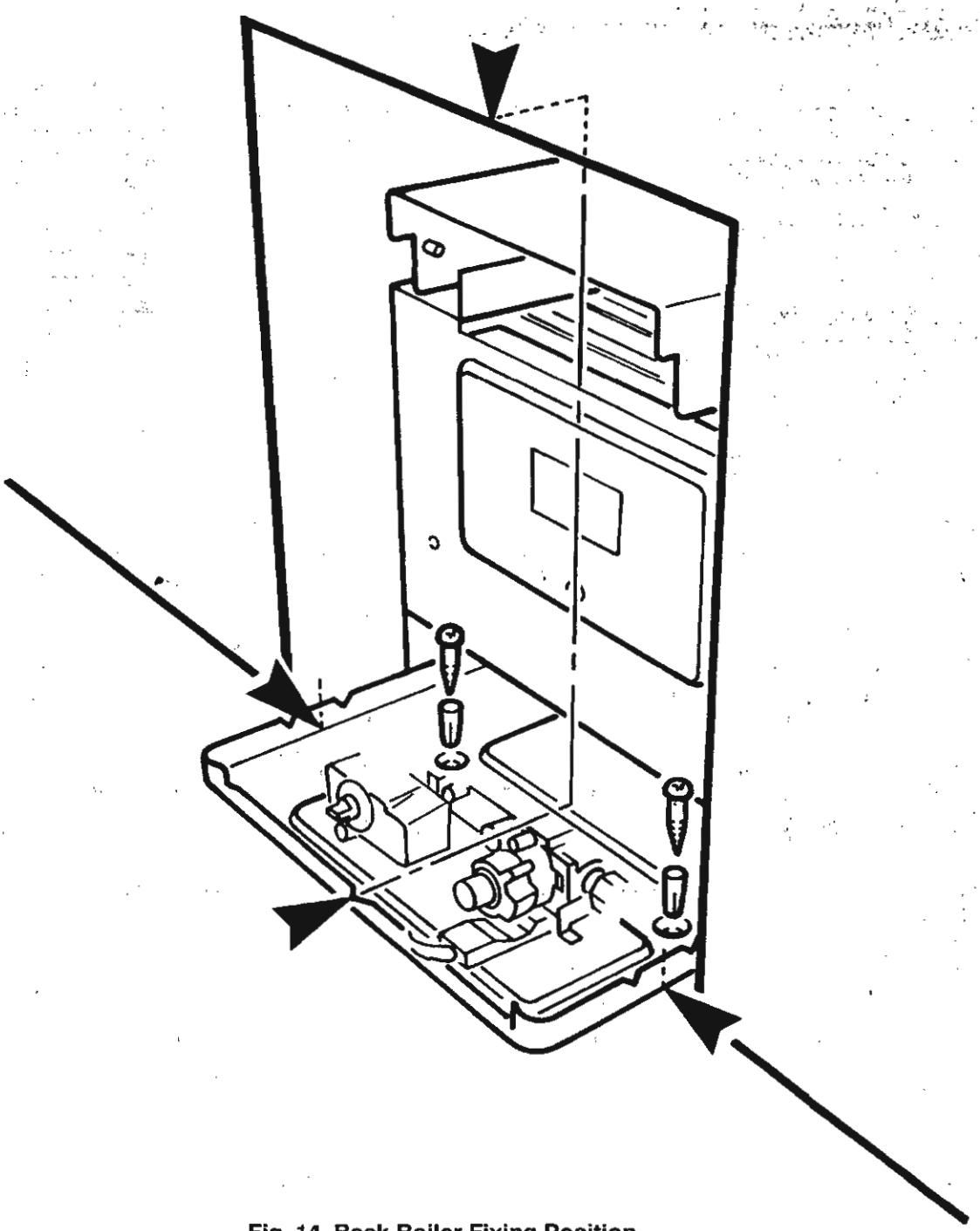


Fig. 14. Back Boiler Fixing Position

Servicing the Unit
After servicing complete the relevant section of the "Benchmark" Installation, Commissioning and Service Record Log Book. This should be in the possession of the user.
Fire - See separate instructions provided for the Fire Front Section .
Boiler -
1. Isolate the electrical supply.
2. Remove the fire as described in the separate instructions supplied for the Fire Front. Please read the Important Information on page 2 of these instructions.
3. After noting its original setting, turn the boiler thermostat to "OFF".
4. Ensure that the gas supply is turned off at the service tap and disconnect the union.
5. Remove the screw securing the controls connection plug, unclip the wiring, and disconnect the plug and the inlet socket (Fig. 9).
6. Unclip the capillary and remove the thermostat phial from the boiler.
7. Remove the front panel (fig. 13).
8. Remove the burner and controls complete (3 screws-Fig. 10) and remove the clip securing the lint arrester to the base of the appliance (Fig. 9). Remove the lint arrester.
9. Slide out the heat exchanger baffles, noting their positions (Fig. 11).
10. Remove the rear insulation by removing the retaining screw and washer (Fig. 11).

11. **Clean the boiler**
Clean the top section of the heat exchanger with a bristle brush from front to back and then side to side between the finned tubes. Brush between the two boiler sections and clean the underside of the heat exchanger taking care not to damage the remaining insulation. Suitable brushes for cleaning the heat exchanger are:
2 in diameter x 6in long bristle brush.
1 in diameter x 2in long bristle brush.
Brush out the bottom of the combustion box and then replace the insulation panels and the heat exchanger baffles, ensuring the one with the turned up edge is on top (Fig. 11).

12. **Clean the Burner (Fig. 12)**
(a) Undo the screw holding the A.S.D. bracket to its mounting plate on the burner.
(b) Disconnect the burner feed pipe nut from the injector elbow (Fig. 12).
(c) Remove burner end plate as follows: Remove centre securing nut and washer, remove end plate.
(d) Clear away any lint deposits that may have accumulated inside the burner. Replace the end plate in reverse order ensuring that the gaskets are not damaged and fit flush to their sealing faces. Replace if necessary. Inspect and clean the burner injector.

13. **Clean the pilot / A.S.D. Assembly (Fig. 12)**
Note:- No attempt should be made to clean the device using any hard tools, including pins or wire.
The thermocouple, electrode and pilot burner that make up the pilot assembly are not replaceable as separate items. If any part is damaged then the pilot assembly should be replaced.
During annual appliance servicing the pilot assembly should be inspected for damage to any of the component parts and any lint or debris should be carefully removed from the aeration hole.
Check that the spark gap between the electrode and the pilot burner is between 2.5 and 4mm.
14. Clean all traces of lint and dust from the lint arrester.
15. Replace the burner controls and all other items except the front panel in reverse order of dismantling.
16. Reconnect the gas union nut and turn on the tap ¼ turn in an anti-clockwise direction. (This will supply gas to the boiler only). Test for gas soundness.
17. Replace the front panel.
18. Turn on the electrical supply to the boiler. (Ensure that all external controls are calling for heat).
19. Turn the thermostat to the "OFF" position (Fig. 9).
20. Slacken the inlet pressure test point screw and connect a pressure gauge.
21. Hold in the grey button on the gas control valve.
22. Press the piezo unit button and release. Repeat until pilot lights. Hold in the grey button for a further 15 seconds and then release. The pilot should then stay alight. If the pilot fails to remain alight twist the grey button clockwise and release, wait for 3 minutes and start again from 21. 23. Operate the boiler burner by turning the thermostat knob to its highest setting.
24. Check that the inlet pressure is correct.
25. Turn the boiler thermostat off, remove the pressure gauge and tighten the test point sealing screw.
26. Turn the boiler thermostat to its original setting.
27. Service the fire as described in the separate instructions supplied for the Fire Section.
28. Complete the relevant section of the "Benchmark" Installation, Commissioning and Service Record Log Book and hand it back to the user.

Exchange of Individual Components
In all cases it is necessary to carry out items 1 to 8 of the servicing instructions.

Pilot / A.S.D. Assembly (Fig. 10)
WARNING: The pilot / A.S.D. assembly should not be adjusted in any way. The A.S.D. must not be altered so that it will not operate or be bypassed in any way.
The thermocouple cannot be changed as an individual component. The complete assembly must be replaced in the event of one or other component failure(s). Only use a Genuine Baxi Spare Part.
Remove the A.S.D. thermocouple nut at the rear of the valve.
Remove the ignition lead from the A.S.D. electrode.
Undo the pilot feed pipe at the A.S.D. and valve.
Undo the screw holding the A.S.D. bracket to its mounting plate on the burner.
Reassemble in reverse order, ensuring that the pilot / A.S.D. assembly locates on the tab on the mounting plate.

Piezo Unit (Fig. 12)
1. Disconnect the spark electrode lead.
2. Unscrew the nut securing the piezo unit to the thermostat housing bracket and replace the piezo unit.
3. Reconnect the lead and check that the electrode is sparking correctly at the pilot burner.
4. Re-assemble in reverse order.

Burner (Figs. 12)
1. Undo the screw holding the A.S.D. bracket to its mounting plate on the burner.
2. Disconnect the burner feed pipe nut from the injector elbow.
3. Remove the two nuts and washers securing the pilot support bracket to the burner.
4. Remove the two screws securing the burner fixing bracket to the burner end plate and re-fit to the new burner.
5. Remove injector assembly from the burner and refit to the new burner.
6. Re-assemble in reverse order.

Boiler Thermostat (Fig. 13)
1. Remove the thermostat knob.
2. Remove the screw securing the thermostat housing to the mounting bracket.
3. Unhook the thermostat housing and pull forward until the three spade electrical connections on the thermostat can be disconnected. Remove the capacitor from within the thermostat housing.
4. Remove the nut and washer securing the thermostat to the housing.

5. Replace the thermostat and re-assemble in reverse order. Ensure that green/yellow wire is fitted to the earth tag on the thermostat. Refit the thermostat knob.

Honeywell Gas Valve

1. Remove the thermostat housing and disconnect the wires from the valve, noting their position.
2. Remove the inlet union from the valve inlet.
3. Disconnect the thermocouple nut at the valve.
4. Disconnect and remove the pilot feed pipe.
5. Disconnect the burner feed pipe.
6. Remove the thermostat mounting bracket, the valve heat shield and the valve mounting bracket.
7. Remove the adaptor from the valve outlet.
8. Individual sub-components of the valve may be replaced as outlined by Honeywell Instructions.
9. Re-assemble the new valve in reverse order of dismantling using suitable jointing compound wherever necessary.

Insulation in Combustion Chamber (Fig. 11)

1. Remove the screw and washer securing back panel insulation then slide the insulation downwards to remove.
2. Remove the screw, nut and washer securing the front panel insulation.
3. Fit the new insulation.
4. Re-assemble in reverse order.

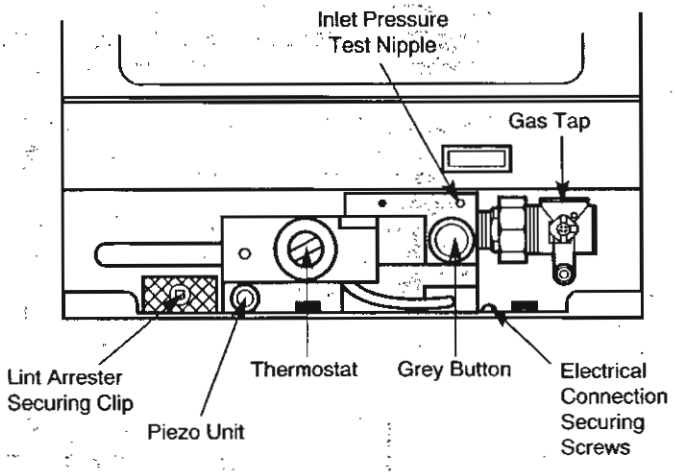


Fig. 9. Boiler Controls

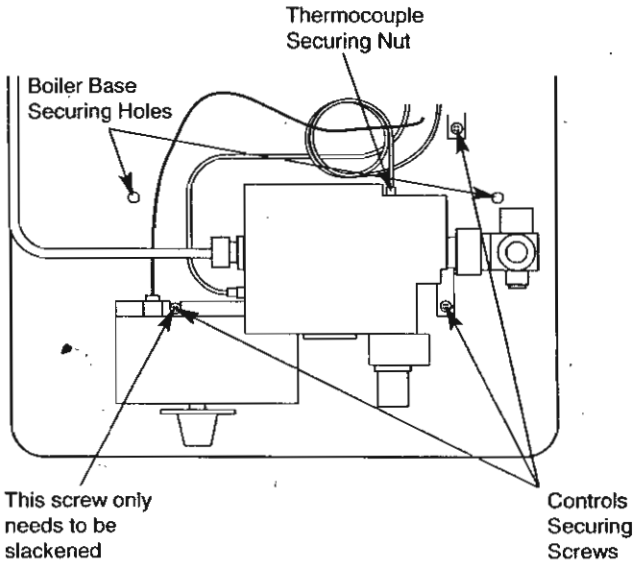


Fig. 10. Securing Screws and Controls

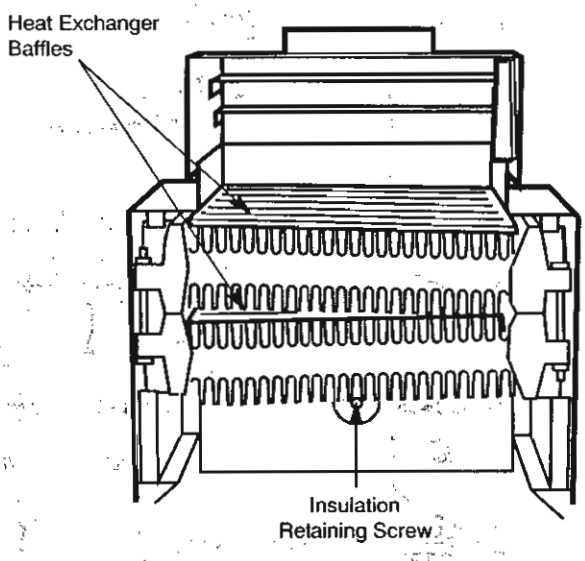


Fig. 11. Connections

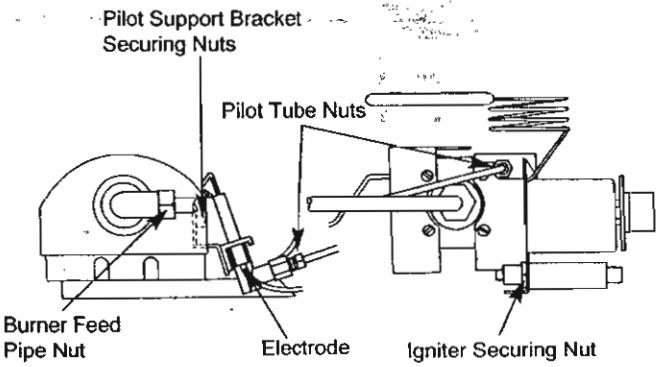


Fig. 12. Connections

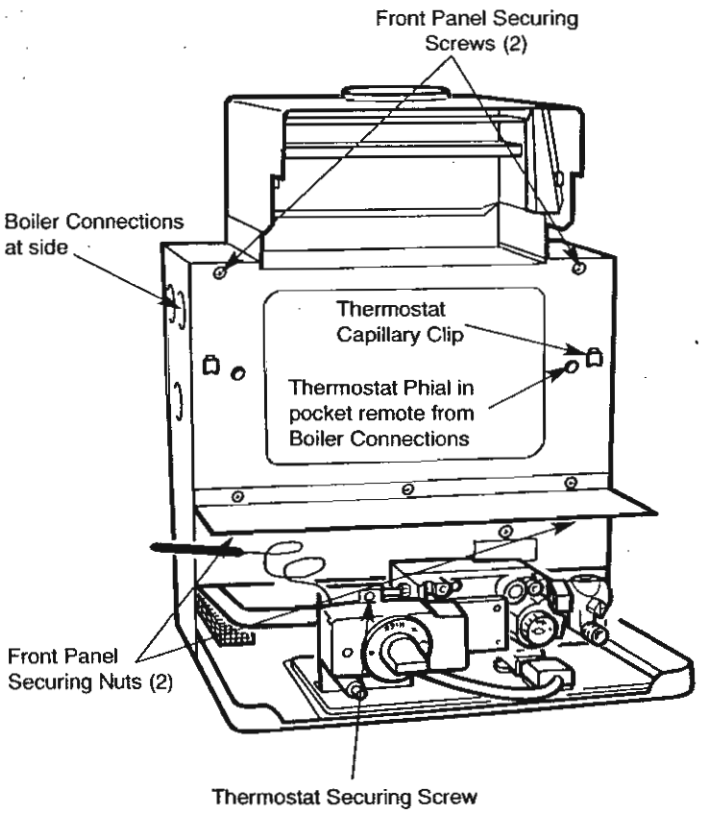
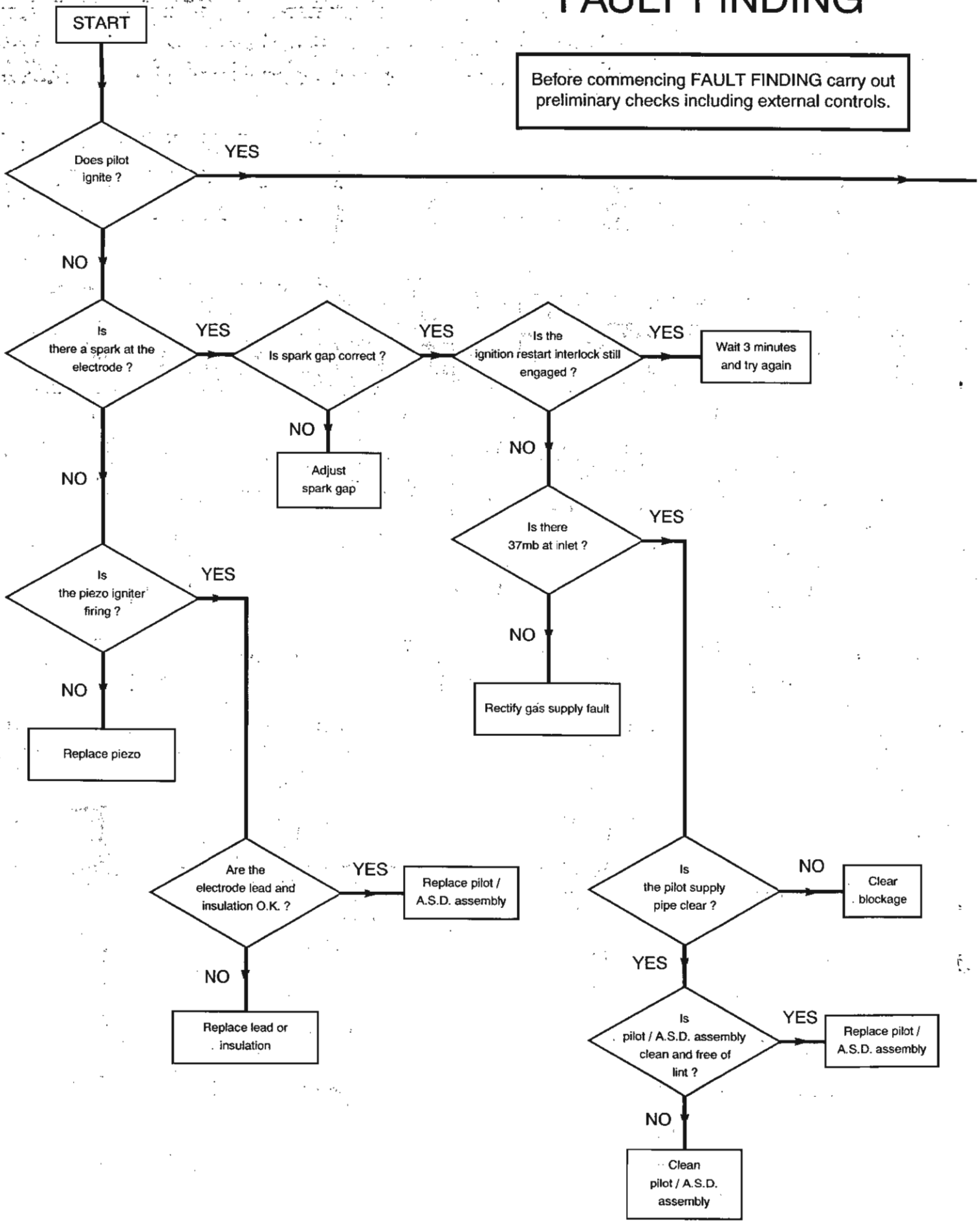


Fig. 13. Boiler Assembly

FAULT FINDING



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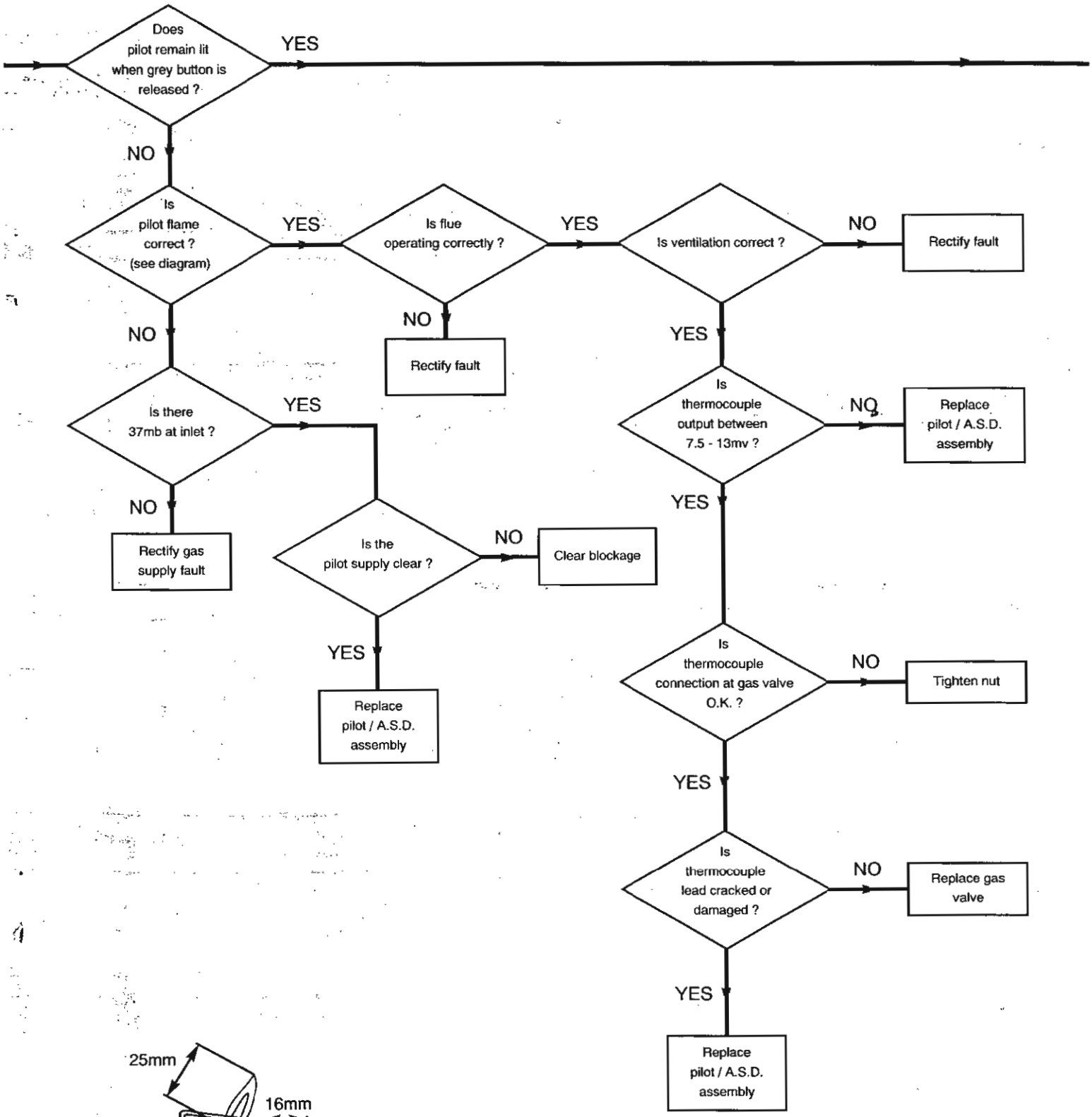
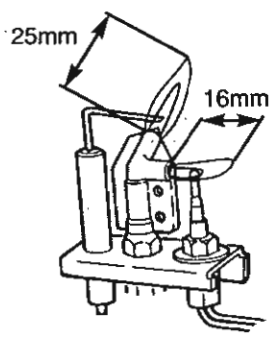
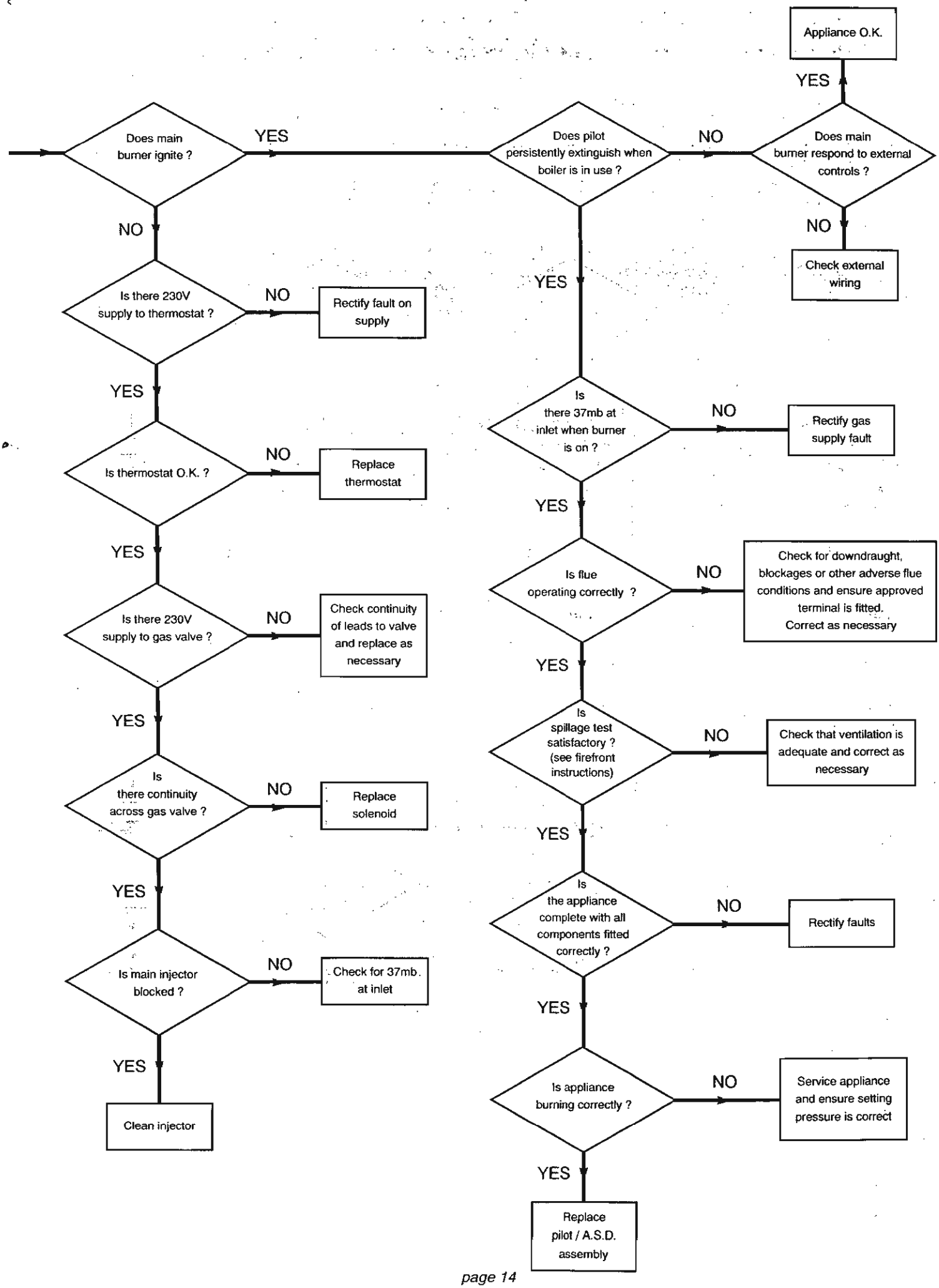

Does pilot remain lit when grey button is released ?
YES
NO
Is pilot flame correct ? (see diagram)
YES
Is flue operating correctly ?
YES
Is ventilation correct ?
NO
Rectify fault
NO
Rectify fault
YES
Is there 37mb at inlet ?
YES
NO
Rectify gas supply fault
Is the pilot supply clear ?
NO
Clear blockage
YES
Replace pilot / A.S.D. assembly
Is thermocouple output between 7.5 - 13mv ?
NO
Replace pilot / A.S.D. assembly
YES
Is thermocouple connection at gas valve O.K. ?
NO
Tighten nut
YES
Is thermocouple lead cracked or damaged ?
NO
Replace gas valve
YES
Replace pilot / A.S.D. assembly


25mm
16mm


Does main burner ignite ?
YES
NO
Is there 230V supply to thermostat ?
NO
Rectify fault on supply
YES
Is thermostat O.K. ?
NO
Replace thermostat
YES
Is there 230V supply to gas valve ?
NO
Check continuity of leads to valve and replace as necessary
YES
Is there continuity across gas valve ?
NO
Replace solenoid
YES
Is main injector blocked ?
NO
Check for 37mb. at inlet
YES
Clean injector
Does pilot persistently extinguish when boiler is in use ?
NO
Does main burner respond to external controls ?
YES
Appliance O.K.
NO
Check external wiring
YES
Is there 37mb at inlet when burner is on ?
NO
Rectify gas supply fault
YES
Is flue operating correctly ?
NO
Check for downdraught, blockages or other adverse flue conditions and ensure approved terminal is fitted. Correct as necessary
YES
Is spillage test satisfactory ? (see firefront instructions)
NO
Check that ventilation is adequate and correct as necessary
YES
Is the appliance complete with all components fitted correctly ?
NO
Rectify faults
YES
Is appliance burning correctly ?
NO
Service appliance and ensure setting pressure is correct
YES
Replace pilot / A.S.D. assembly

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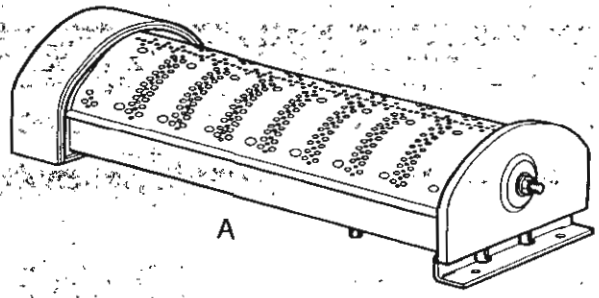

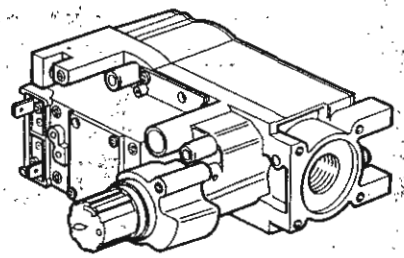

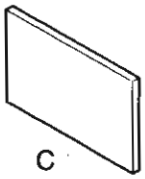

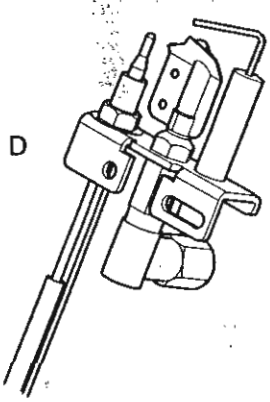

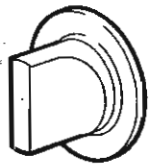

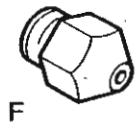

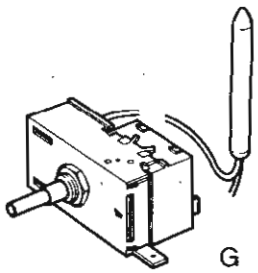

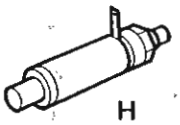

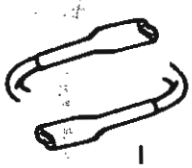

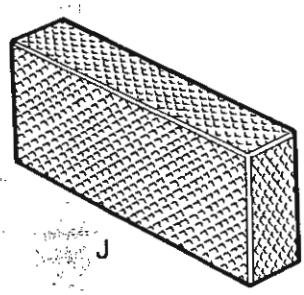

SHORT PARTS LIST

Key No.	G.C. No.	Description	Manufacturers Part No.
A	384 807	Burner	102136
B	E02 041	Valve Control	240834
C	183 530	Viewing Window	082109
D	E00 858	Pilot/A.S.D. Assy.	237079
E	183 630	Knob Thermostat	042717
F	378 859	Injector	043175
G	382 340	Thermostat	042818
H	183 936	Piezo Igniter Unit	040456
I	183 928	Ignition Lead	102143
J	393 361	Lint Arrestor	040073

Comp N° 239344 - Iss 4 - 7/00

The Baxi Helplines

For General Enquiries
+44 (0)8706 060 780

For After Sales Service
+44 (0)8706 096 096

For Technical Enquiries
+44 (0)8706 049 049

BAXI

Baxi UK Limited
Brownedge Road
Bamber Bridge Preston
Lancashire
PR5 6SN
www.baxi.com