

# **Baxi W.M. 552 OF**

# **Baxi W.M. 402 OF**

**Central heating boilers**  
**Cat. 1N**

## **Installation and**

## **Service Instructions**

G.C. No. 41 077 10

G.C. No. 41 077 09

**Installation Instructions**

**Introduction**

The Baxi WM 552 OF is a wall mounted open flue boiler range rated between 16.1 kW (55,000 Btu/h) and 10 kW (34,000 Btu/h) heat outputs.

The Baxi Wm 402 OF is a wall mounted open flued boiler range rated between 11.7 kW (40,000 Btu/h) and 7.3 kW (25,000 Btu/h) heat outputs.

The appliances are designed for use on Natural Gas only and consist essentially of three components namely:

1. Wall mounting plate
2. Combustion chamber with heat exchanger, burner, controls and draught diverter hood
3. Outer case.

**Installation Requirements:**

**General**

The installation must be carried out by a competent installer and be in accordance with relevant BS Codes of Practice, I.E.E. Regulations, Gas Safety Regulations, Building Regulations and byelaws of the local Water Undertaking. References should be made to B.S. Codes of Practice 331 — Part 3, B.S. 5440 Parts 1 and 2, B.S. 5376 Part 2, B.S. 5449 Part 1 and B.S. 5546.

**Siting**

The unit must be fitted on a wall suitable to meet the requirements of the open flue and be capable of supporting the assembled appliance. It may be fitted on a wall of timber construction. It should not be installed in a bathroom, bedroom or bed sitting room. Details of essential features of cupboard/compartiment design are given in B.S. 5376:2.

**Clearances**

A vertical area is required for the appliance as follows: 600mm (26") wide x 910mm (36") high

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

The minimum outer case clearances are indicated in Fig. 2 and are as follows:

*Top:* Minimum 100mm (4"). (Additional clearance may be required for the passage of pipes around local obstructions such as joists running parallel to the front face of the appliance).

*Bottom:* Minimum 150mm (6").

*Sides:* Minimum 30mm (1 1/4").

*Front:* Minimum: 1.3m (4').

The wall mounting plate should be used as a template to determine the position of the appliance on the wall.

**Ventilation**

Detailed recommendations for air supply are given in BS 5440:2.

The following notes are intended to give general guidance.

The room in which the unit is situated requires a permanent air vent which must be either direct to outside air or to an adjacent room or internal space which must itself have a permanent air vent of at least the same size direct to outside air.

The minimum effective area of the permanent air vent(s) is specified below and is related to the maximum rated input of the appliance.

Minimum Free Area of Air Vent:	
WM 552 OF	66cm <sup>2</sup> (10 sq. in.)
WM 402 OF	50cm <sup>2</sup> (7.5 sq. in.)

If, however, the boiler is fitted in a compartment which has such ventilation direct to outside, the room containing the compartment does not require additional ventilation.

**Fitting in a compartment**

The unit may be fitted in a specially built or modified compartment meeting the following general requirements:

1. Preferably it should be only of sufficient size to permit access for inspection and servicing of the unit and the compartment.
2. The use of an oversize compartment which can be used as a storage cupboard should be avoided. If this is not possible then arrangements should be made to prevent materials stored in the cupboard from coming in contact with hot surfaces on the boiler or flue.
3. The door should be of sufficient size to permit the unit to be withdrawn from the compartment.
4. Two permanent air vents must be fitted to the compartment as table below.
5. When the compartment is ventilated to the room then the room itself must have permanent ventilation as indicated in VENTILATION.

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

Position of opening	FREE AREA OF AIR VENTS			
	TO ADJACENT ROOM		TO OUTSIDE	
	WM 552 OF	WM 402 OF	WM 552 OF	WM 402 OF
HIGH LEVEL	200cm <sup>2</sup> (30in. <sup>2</sup> )	150cm <sup>2</sup> (23in. <sup>2</sup> )	100cm <sup>2</sup> (15in. <sup>2</sup> )	75cm <sup>2</sup> (12in. <sup>2</sup> )
LOW LEVEL	400cm <sup>2</sup> (60in. <sup>2</sup> )	300cm <sup>2</sup> (46in. <sup>2</sup> )	200cm <sup>2</sup> (30in. <sup>2</sup> )	150cm <sup>2</sup> (23in. <sup>2</sup> )

## Flue arrangements

Detailed recommendations for flues are given in B.S. 5440:1.

The unit is intended for connection with 100mm (4") flue tube.

The integral draught diverter of the unit makes the combustion performance independent of conditions in the secondary flue but in common with other fuels an efficient flue is necessary to ensure a trouble-free installation.

Open Flue requirements are:

1. The flue should be kept as short and as warm as possible.
2. Give maximum possible vertical rise from the appliance before using any bends, preferably at least 600mm (2'). Avoid the use of right angled bends.
3. Terminate in an approved terminal preferably above ridge height but at least above the eaves of a pitched roof.
4. If 'Twin-wall' type flue tubing is to be used the inner tubing of the boiler adaptor must not project into the draught diverter of the boiler. An adaptor which meets this requirement is obtainable.
5. An existing brick chimney should be lined with acid and moisture resistant materials such as stainless steel flexible flue pipe. This is particularly important if the flue is above 6.5m (20') in height and not wholly internal. Whether or not the chimney is to be lined it must be swept thoroughly before the installation.

## 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 is not suitable for use with sealed systems. When the unit is to be installed to an existing or new gravity domestic hot water and plumbed 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 not be less than 1m (3') with a maximum horizontal run of 3m (10') when using 28mm (1") pipes. Smaller pipe sizes and longer horizontal runs are acceptable with suitably increased circulating heads.
- (ii) The system must be designed to prevent reversed circulation.
- (iii) Pipes should be laid to maximum fall avoiding points of possible air lock.

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

- (i) THE INJECTOR TEE MUST BE FITTED TO THE BOILER RETURN CONNECTION ON ALL SYSTEMS.
- (ii) The static head must not exceed 30m (100') of water.
- (iii) The boiler must only be used with an indirect cylinder.
- (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 would not restrict the servicing of the boiler.
- (vi) Arrangements must be made so that gravity circulation does not take place in the heating circuit when the pump is not in use.

## Gas Supply

The gas installation should be in accordance with C.P. 331:3.

The connection of the appliance is Rc $\frac{1}{2}$  ( $\frac{1}{2}$ " BSPT internal) located at the bottom right hand side of the appliance.

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

## Electrical Supply

External wiring must be correctly earthed and polarised and in accordance with the I.E.E. Regulations.

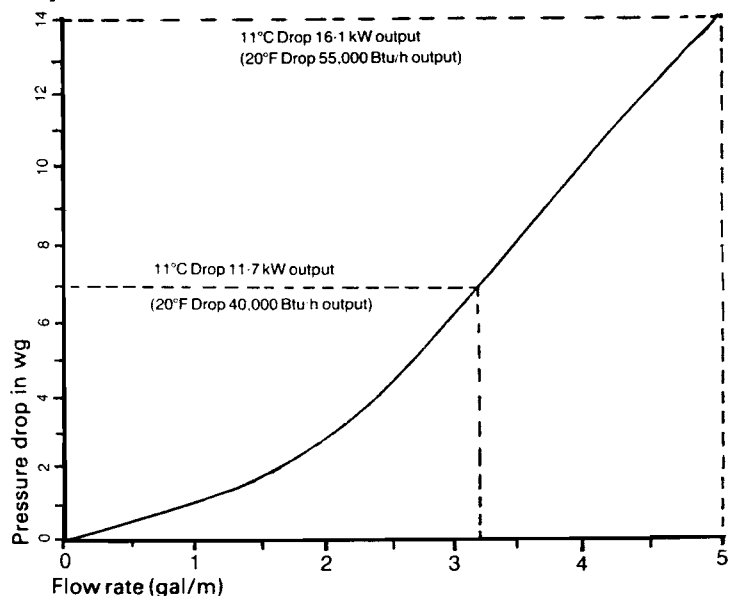
For wiring instructions see 'ELECTRICAL CONNECTIONS'.

## Appliance Details

Overall sizes with outer case in position.

Height	660mm (26")
Width	600mm (23 $\frac{5}{8}$ ")
Forward projection from wall	330mm (13")
Weight empty	60.2kg (133lbs)
Water content	2.7 litres (-6 gallons)
Boiler tappings	3 x Rc1 (1" BSPT internal)
Gas connections	Rc $\frac{1}{2}$ ( $\frac{1}{2}$ " BSPT internal)
Electrical supply	240V A.C. 50Hz—3 amp fuse
Max. working head	30m (100')
Flue connection size	100m (4")
Recommended thermocouple output	10-15 millivolts

## Hydraulic Resistance Chart



1. Select the most suitable position for the boiler using the wall mounting plate as a template, ensuring adequate clearances where necessary. (Fig. 2.) Note that the centre of the flue is NOT the centre of the outer case.
2. If the bottom edge of the outer case is required to line up with the wall cupboards, the lower edge of the plate should be positioned 169mm (6<sup>3</sup>/<sub>4</sub>" ) above the bottom edge of the cupboards.
3. (a) Position the plate to the wall ensuring correct level.  
(b) Mark the 4 widest sound anchorage points and the wall plug.  
(c) Remove the plate and drill the anchorage holes 10mm diameter (3/8"), 70mm deep (2<sup>3</sup>/<sub>4</sub>") ensuring the holes are not more than 1mm (1/32") oversize. Drill the wall plug hole to suit the plug supplied.
4. Secure the wall fixing plate to the wall with the fixing bolts and screw provided ensuring that the frame is horizontal.
5. Lift the combustion chamber assembly into position on to the two brackets on the wall mounting plate until the screws drop into the slots and secure the four screws to the wall mounting plate with the nuts and washers provided (Fig. 4).
6. Using a 10mm (3/8") drill, carefully drill the two flue spigot securing bolt holes to a depth of 60mm (2<sup>3</sup>/<sub>8</sub>") (Fig. 4). Make sure that the holes in the walls are not more than 1mm (1/32") oversize. Secure the flue spigot casting to the wall by placing the assembled bolts fully into the holes, through the holes in the flue spigot casting and frame and tighten. (Fig. 4.)
7. Connect the flue pipe (see 'Flue Arrangements').
8. Connect the water flow and return pipes (see 'Boiler Connections').
9. Connect the gas supply (see 'Gas Connections').
10. Connect the electrical supply (see 'Electrical Connections').
11. Complete the installation as outlined in 'Commissioning the Unit'.

### N.B. Boiler Connections

The boiler has three Rc1 (1" BSPT internal) connections on the right hand side (Fig. 3) and is supplied with the following:

- 1 — injector tee with plastic spreader.

### Pumped Domestic Hot Water and Pumped Central Heating Systems

The pipes should be connected in the following order: See Fig. 5 for example.

- (a) Fit the injector tee provided in the bottom return tapping on the boiler using suitable jointing compound. Do not use excessive jointing compound which may obstruct the holes in the plastic water spreader.
- (b) Plug the unrequired flow connection (top front).
- (c) Plug the unrequired Rp 3/4 (3/4" BSP) return connection on the 'T' and then connect the return pipework to the Rp 1 (1" BSP) connection on the 'T'. This return pipework can be run either upwards or downwards.
- (d) Connect the flow pipework as shown in Fig. 5 if running upwards, or run at the side of the return pipework if running downwards.
- (e) When installing this pipework ensure that:
  - (i) Suitable union fittings are used at the first joint of all boiler connections.
  - (ii) The pipework will run through the cutouts provided in the outer case when fitted (Fig. 1).
  - (iii) Drain off points should be provided as appropriate.
  - (iv) Pipe sizes are suitable for the system design.

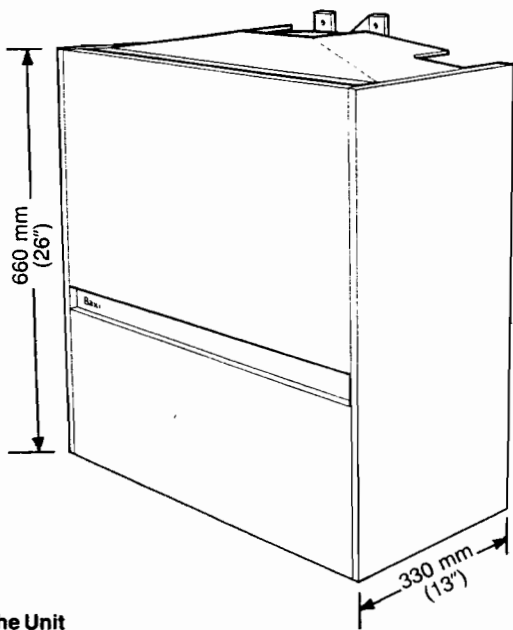
### Gravity Domestic Hot Water and Pumped Central Heating System

The pipes should be connected in the following order, see Fig. 6 for example.

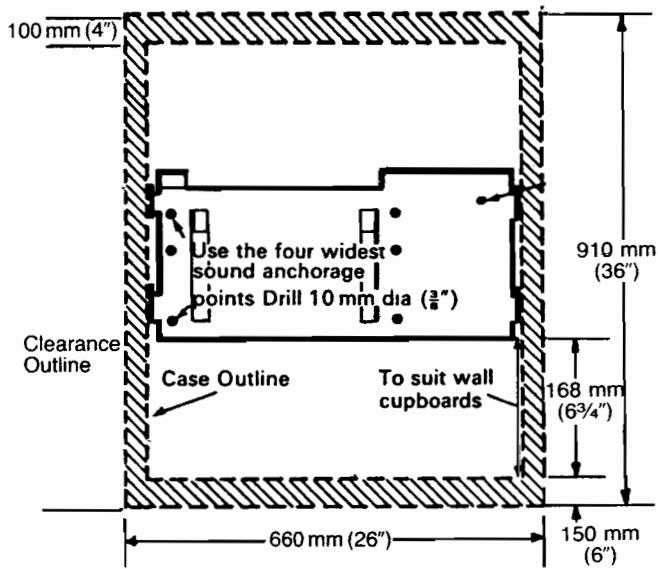
- (a) Fit the injector tee provided in the bottom return tapping WITH THE BRANCH FACING DOWN. Do not use excessive jointing compound which may obstruct holes in the plastic water spreader.
- (b) Connect the gravity return pipework to the Rp1 (1" BSP) tapping on the 'T'.
- (c) Connect the gravity flow pipework.
- (d) Connect the pumped return pipework to the Rp 3/4 (3/4" BSP) tapping on the 'T'.
- (e) Connect the pumped flow pipework upwards as illustrated or downwards behind the pumped return pipe.
- (f) When installing the pipework ensure that:
  - (i) Suitable union fittings are used at the first joint of all boiler connections.
  - (ii) The pipework will run through the cutouts provided in the case when it is fixed (Fig. 1).
  - (iii) Drain off points should be provided as appropriate.
  - (iv) Pipe sizes are suitable for the system design.

### Gas Connections (Fig. 6)

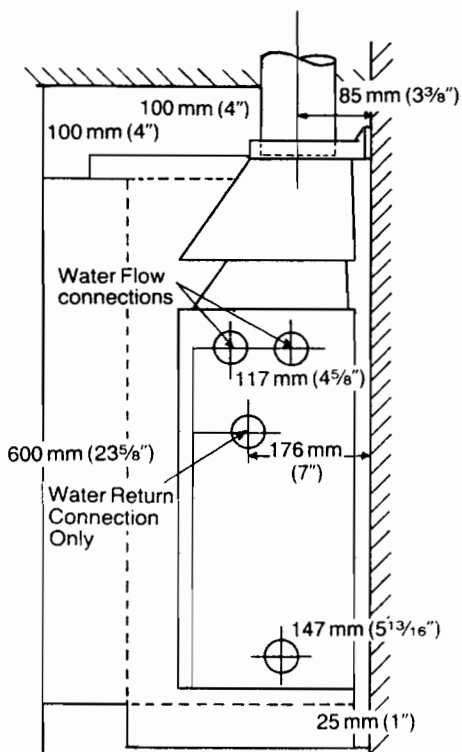
Adapt the 15mm (1/2") gas supply pipe within the outer casing to suit the particular flow and return arrangement, making the gas connection to the gas service tap. Connect to the service tap using either an Ext/int. malleable iron elbow or BSPT /capillary elbow.



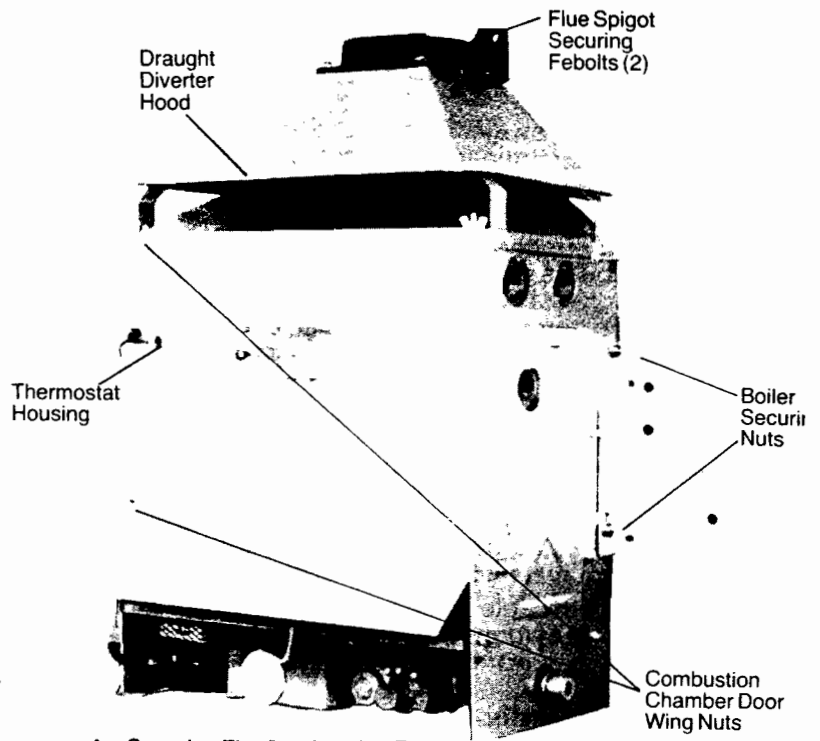
1. The Unit



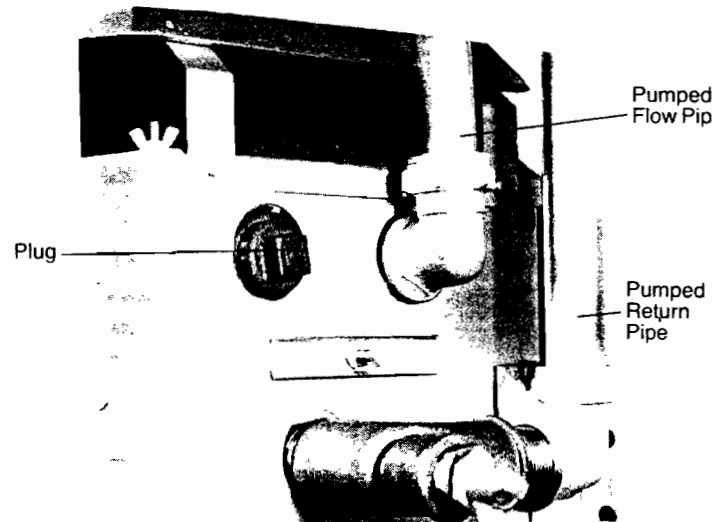
2. WM 552 OF Wallmounting Plate requirements



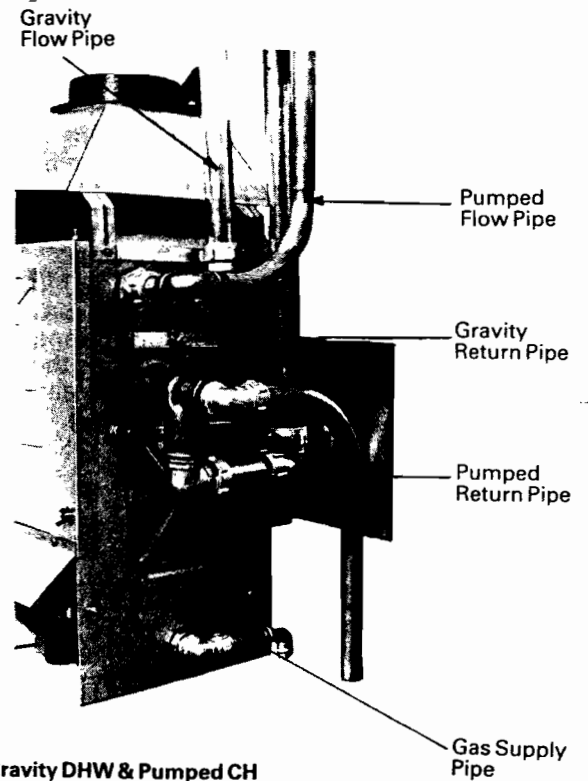
3. Gas & Water Tappings



4. Securing The Combustion Box



5. Pumped DHW & CH



6. Gravity DHW & Pumped CH

# Electrical Connections

## General

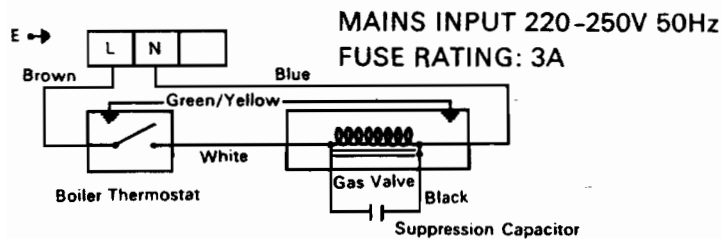
In the event of an electrical fault after installation of the appliance, preliminary electrical system checks can be carried out as described in the British Gas Multimeter instruction book.

The mains supply required is 220/250 V 50Hz fused at 3 amp. A double pole switch should be provided in the installation or an unswitched socket outlet should be used. All external wiring shall be correctly earthed and polarised and generally in accordance with I.E.E. regulations.

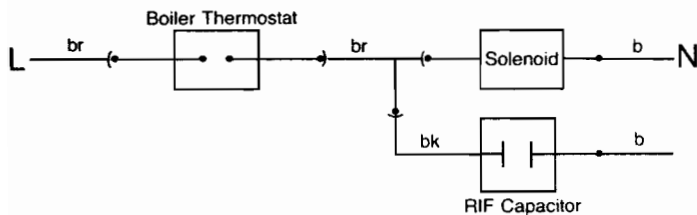
## Electrical Supply to Controls

1. The recommended cable for connection to the appliance terminal strip is 0.5 sq. mm. 16/20 PVC heat resistant grade or 23/0076 PVC heat resistant grade or equivalent PVC heat resistant grade.
2. The input cable should be secured with the cable clip(s) provided and pass behind the boiler support bracket(s) on the underside of the combustion box:

## Illustrated Wiring Diagram



## Functional Flow Wiring Diagram



## Control Systems

A selection of control systems is indicated with the appropriate heating circuit arrangements (Figs. 11-14). Connect the electrical controls system to the unit as follows:

1. Disconnect the electrical plug and socket by pulling the plug forwards in the direction of the arrow, after first removing the retaining screw.
2. Remove the electrical socket by removing the retaining screw (Fig. 7).
3. Feed the input electrical cable behind the boiler support bracket(s) beneath the combustion box to the electrical socket and then connect the live and neutral wires as indicated inside the socket and run approximately 50mm (2") of the earth wire through the slot in the side of the housing. Clamp the cable using the cable grip provided.

## Setting Pressures

Appliance	Maximum Input	Setting Pressure	Intermediate Input	Setting Pressure	Minimum Input	Setting Pressure
<b>WM 552 OF</b>	21.2kW 72,400 Btu/h	17.75 m bar 7.1" w.g.	17.35kW 59,200 Btu/h	11.75 m bar 4.7" w.g.	13.3kW 45,500 Btu/h	7.5 m bar 3.0" w.g.
<b>WM 402 OF</b>	15.44kW 52,600 Btu/h	17.75 m bar 7.1" w.g.	11.87kW 40,500 Btu/h	11.25 m bar 4.5" w.g.	9.96kW 34,000 Btu/h	7.5 m bar 3.0" w.g.

4. Refit the electrical socket in the position provided at the back left hand side of the appliance and replace the retaining screw. Connect the earth wire to the point provided (Fig. 7).
5. Clip the input electrical cable to the cable grip(s) provided, ensuring that the cable does not touch the underside of the combustion box.
6. Refit the electrical plug to the socket and replace the retaining screw.

## Commission the Appliance

1. Flush the whole system with all valves open.
2. Fill the system with water, vent the radiators and check for water soundness.
3. Connect the gas supply pipe and then turn the gas service tap clockwise to the 'ON' position. Check for gas soundness. (C.P. 331 Part 3.)
4. Purge the air from the supply pipe at the gas service tap.
5. Ensure that all external controls e.g. room thermostat, timer, etc., are calling for heat.
6. Turn the boiler thermostat to the 'OFF' position (Fig. 8).
7. Turn on the mains electricity supply.
8. Remove the burner pressure test point screw and connect a pressure gauge.
9. Hold in the grey ON/OFF button on the gas control valve (Fig. 8).
10. Apply a lighted taper or match to the pilot until pilot lights. Hold in grey ON/OFF button for a further 20 seconds and then release. The pilot should then stay alight. If pilot fails to remain alight turn the grey ON/OFF button clockwise, wait three minutes and start again from 9. The flame should be without a yellow tip and should extend past the pilot shroud by approximately 12mm (1/2"). Adjust if necessary (turn the restrictor screw anti-clockwise to increase flame length) (Fig. 8).
11. Operate the burner by turning the thermostat knob to the high setting. CHECK THE OPERATION OF THE FLAME FAILURE DEVICE by turning the grey ON/OFF button clockwise. The burner and the pilots should go out.
12. Turn the boiler thermostat to the OFF position. Wait three minutes and relight the pilot.
13. Operate the burner by turning the thermostat knob to the high setting.
14. Remove the cover screw and adjust the appliance governor (Fig. 7) to the setting pressure corresponding to the required input. Check the pressure after 10 minutes burning time and adjust if necessary. Adjust the input indicator arrow if necessary.
15. The system should be flushed again, when hot, refilled and checked for water leaks.
16. Make a final check for gas soundness.
17. Turn the boiler thermostat to the required setting.
18. Turn off the electrical supply.
19. Remove pressure gauge and tighten the test point screw.

20. Test for spillage as follows:

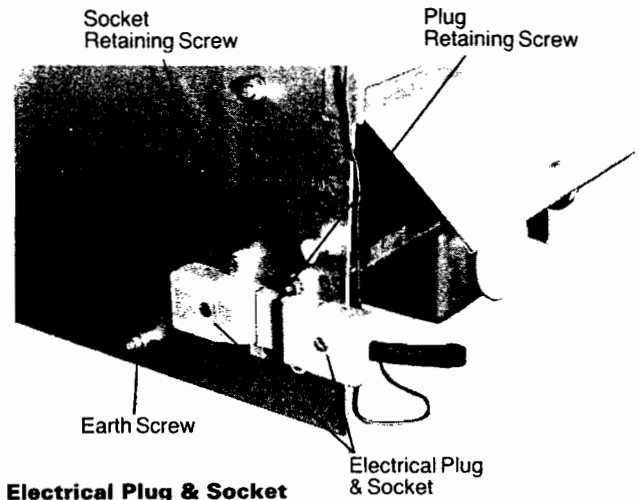
- (a) Ensure that all doors and windows into the room containing the appliance are closed and any extraction fans, etc., are set in operation.
- (b) Light the boiler and leave on full rate for at least 5 minutes.
- (c) EITHER  
Apply a smoke match around the bottom edge of the upper draught diverter hood. Spillage is indicated by smoke being blown back into the room. IF SPILLAGE IS DETECTED DISCONNECT THE BOILER AND SEEK EXPERT ADVICE.

OR

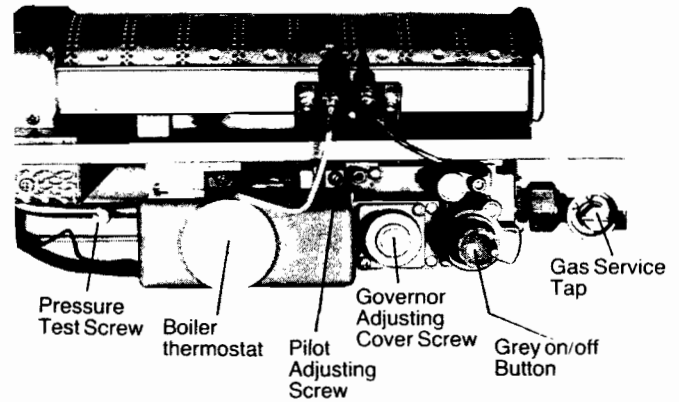
Hold a cold mirror or polished metal which is not above room temperature around the bottom edge of the upper draught diverter hood and tilt it to a slight angle to facilitate viewing. Spillage is indicated by misting of the cold surface. This method becomes insensitive if the mirror becomes too warm too quickly. If there is any doubt repeat the test after a further 10 minutes. IF SPILLAGE IS DETECTED DISCONNECT THE BOILER AND SEEK EXPERT ADVICE.

21. Assemble the outer case in the following manner: (Fig. 8a)

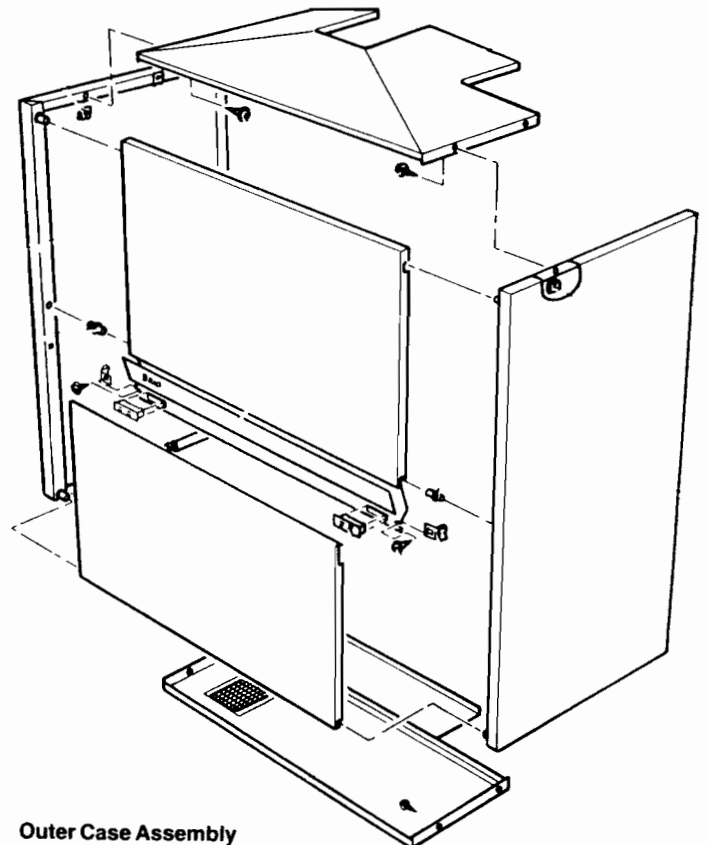
- (a) Secure the bottom panel to the right hand side panel, bottom labels together.
  - (b) Position the lower front panel to the side panels such that the bottom pegs in the side panels locate in the lower front panel holes. Secure the bottom panel to the left hand side panel.
  - (c) Position the top panel ensuring that the cutout for the pipes is at the rear right hand side.
  - (d) Line up the holes in the top panel with the clips in the side panel and secure with the screws provided.
  - (e) Remove the two right angled clips from the bag and tap in position so that they are securely located in the vacant slots in the side panels.
22. Lift the outer case on to the lugs on the wall fixing plate taking care not to damage the loose lower front panel.
23. Fit the upper front panel on the pegs on the side panel and secure at the bottom using the two short flanged head screws provided. Raise the lower front panel until it is held by the magnets on the panel behind.
24. Turn on the electrical supply.
25. Instruct the customer in the use of the unit.



7 Electrical Plug & Socket



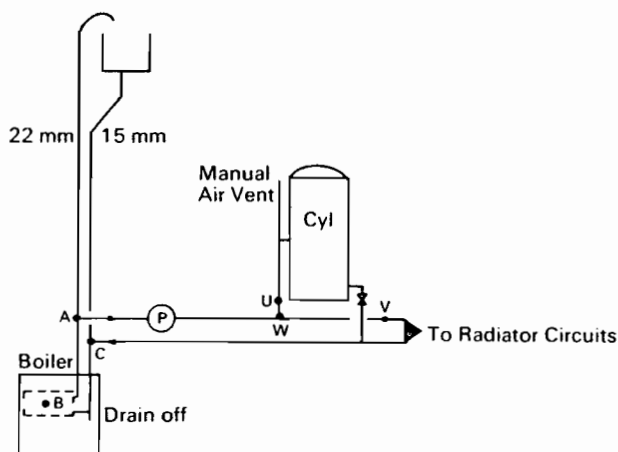
8. Unit Controls



8a. Outer Case Assembly

## 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 a 11°C (20°F) drop across the system.
- (b) The open vent pipe must be a minimum of 22 mm and must rise continuously to above the feed 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, 6 inches away from the vent pipe, but there must always be a cold water path to the boilers return connection.
- (d) For fuel economy and best boiler performance, the system should be designed so that gravity circulation does not take place in the heating system when the pump is not running.



9. Rising Flow and Return Pipes

## 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. The examples given below and on the following pages indicate alternatives to meet different circumstances.

### Fully Pumped Systems

#### One Zone Valve (Fig. 11)

Zone valve with auxiliary switch fitted at point V. A cylinder thermostat and a room thermostat are used to control both the pump and the boiler. The room thermostat also controls the zone valve to stop water circulation in the heating system.

#### Two Zone Valves (Fig. 13)

Zone valves are fitted at points V and U to stop water circulation to the heating system and the cylinder. The valves are controlled by a room thermostat and a cylinder thermostat respectively, each of which also control the boiler and the pump.

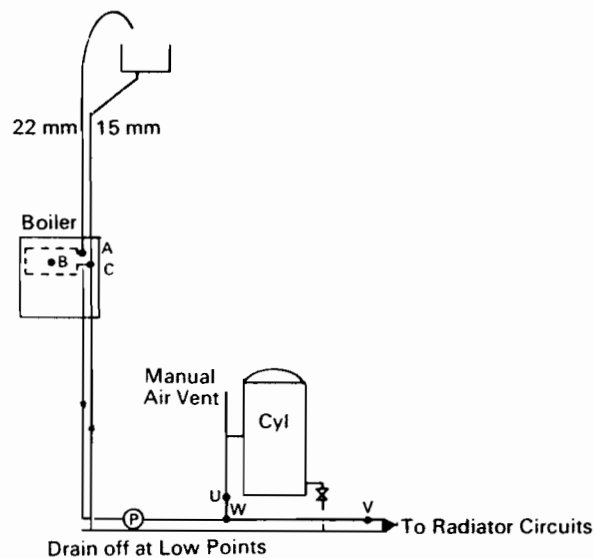
#### Diverter Valve (Fig. 14)

A diverter valve is inserted at point W to direct water circulation to either the cylinder or the heating system. The valve along with the pump and the boiler is controlled by a cylinder thermostat and a room thermostat.

### Gravity D.H.W. Systems

#### Sundial Control (Fig. 12)

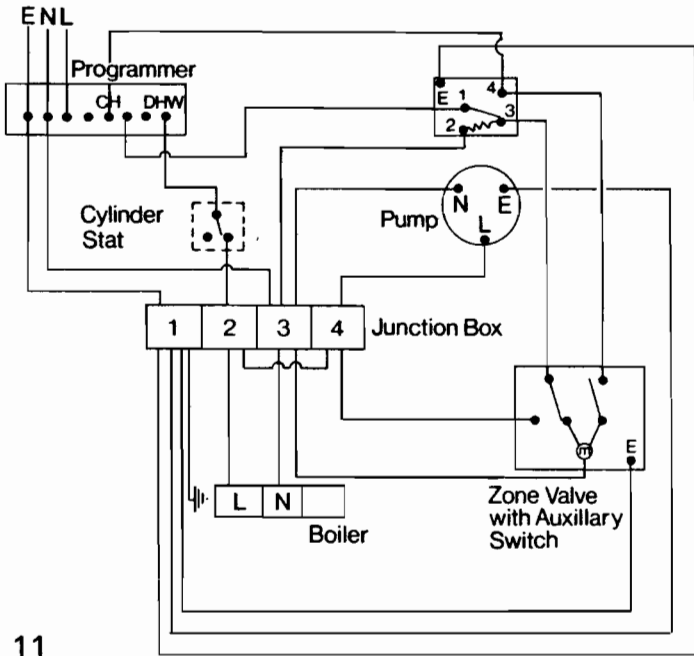
Both the boiler and the pump are controlled by a cylinder thermostat and a room thermostat. The room thermostat overrides the cylinder thermostat when heating is called for.



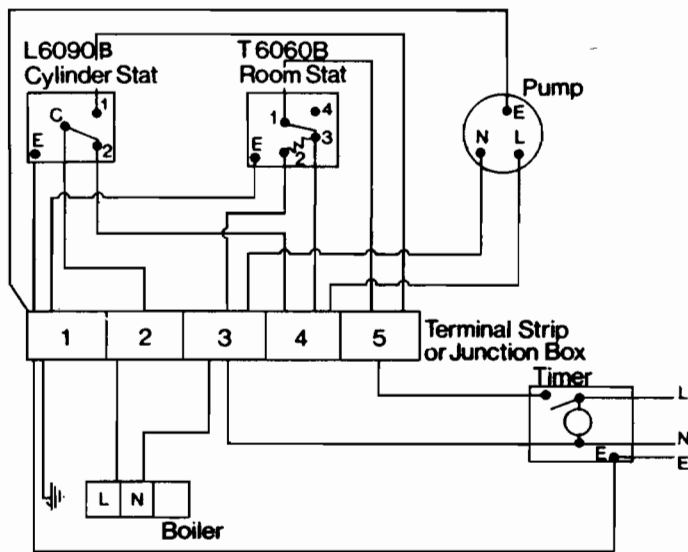
10. Dropping Flow and Return Pipes



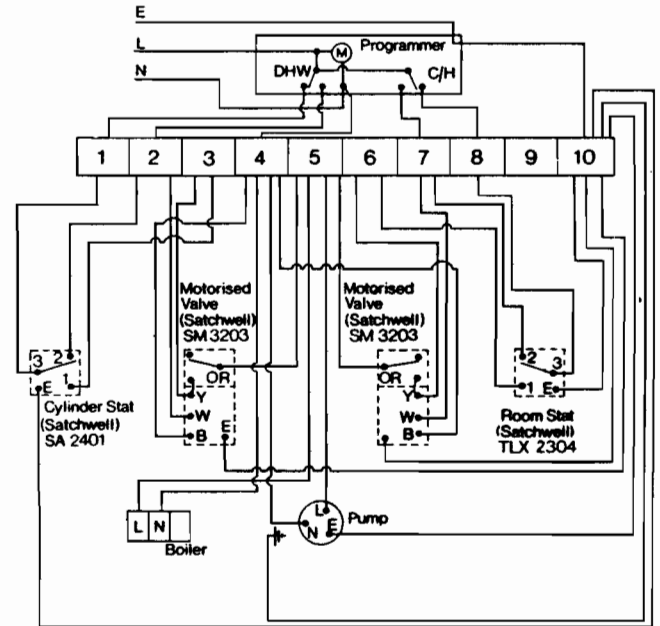
- 11. One Zone Valve - Fully Pumped System
- 12. Sundial Control - Gravity Domestic Hot Water System
- 13. Two Zone Valve - Fully Pumped System
- 14. Diverter Valve - Fully Pumped System



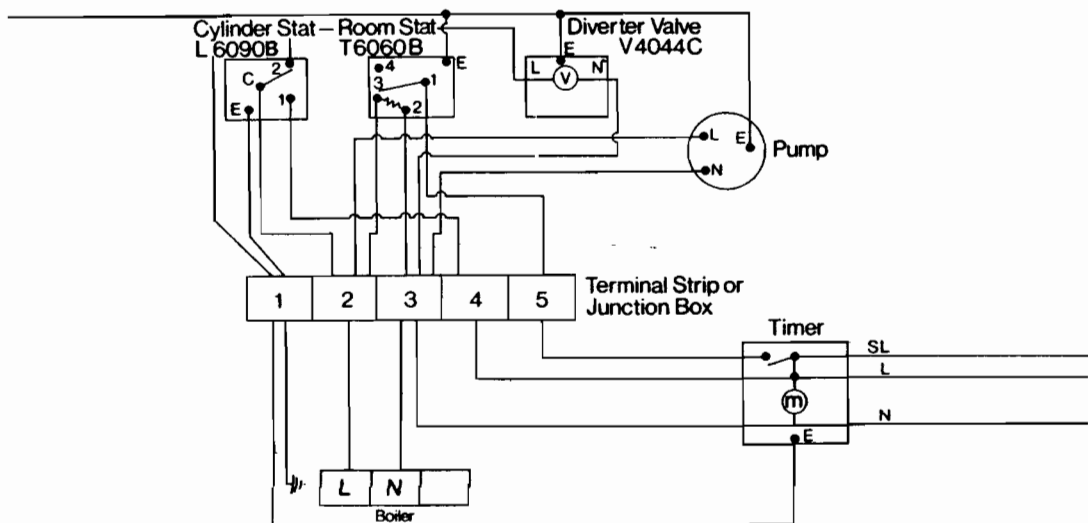
11



12



13



14

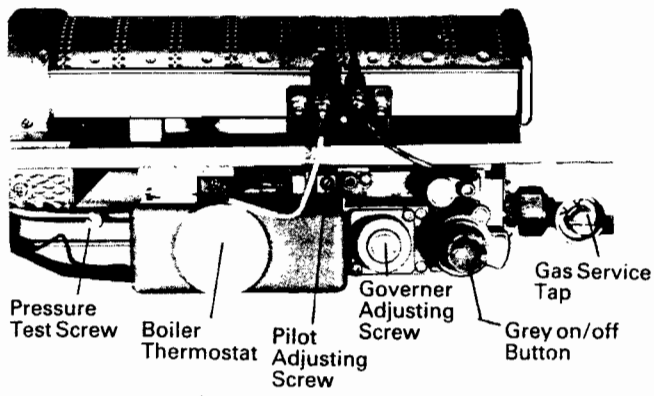
## SEE ALSO SERVICING GUIDE LABEL ON THE BOILER.

1. Turn off the electrical supply to the boiler.
2. Remove the outer case in the following manner:
  - (a) Drop the lower front casing panel exposing the two flanged head screws.
  - (b) Remove the two screws and lift the upper panel to disengage from the side panels.
  - (c) Lift the case out of the lugs on the wall fixing plate and pull clear of the combustion chamber taking care not to damage any of the panels.
3. Turn off the gas supply at the service tap and disconnect the union.
4. Disconnect the electrical plug and socket by removing the screw nut and washer and pulling the electrical plug in the direction of the arrow (Fig. 15).
5. Remove the thermostat phial from the housing after removing the capillary from the clip (Fig. 15).
6. Remove the four wing nuts securing the combustion chamber door. Remove the door by swinging the lower edge forward and then upwards until clear of the locating pegs.
7. Remove the controls by removing the two controls securing thumb screws and easing the assembly forward carefully until burner and controls clear the combustion box and place the complete unit on one side (Fig. 15).
8. Slide out the heat exchanger baffles noting their positions.
9. **Clean the Boiler:**

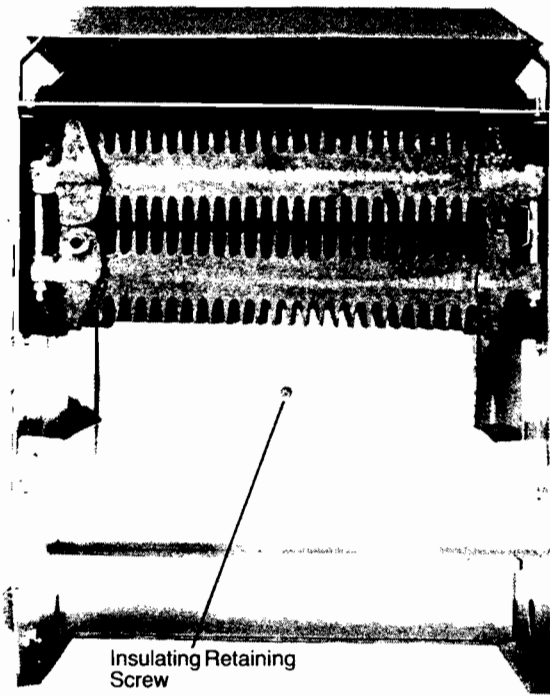
Place a card or piece of paper below the combustion chamber to collect any deposits. Clean the top section of the heat exchanger with a bristle brush from front to back and then end to end in between the finned tubes. Brush between the two heat exchanger sections and clean the underside of the lower section and the top section taking care not to damage the insulation at the back of the combustion chamber. Remove the card or piece of paper. Suitable brushes for cleaning the heat exchanger are:

  - 50mm (2") diameter × 150mm (6") bristle brush.
  - 25mm (1") diameter × 63mm (2½") long bristle brush.
10. Remove the lint arrester retaining screw and then remove the lint arrester from the controls assembly by sliding forwards. Clean the lint arrester by washing, brushing or by using a vacuum cleaner and replace (Fig. 16).
11. **Clean the Burner:**
  - (a) Disconnect the burner feed pipe at the union connection on the burner elbow.
  - (b) Remove the two air box retaining screws and remove the air inlet box from the burner.
  - (c) Remove the three screws securing the burner to the controls tray and place the burner on one side (Fig. 17).
  - (d) Remove the nut and washer securing the burner end plates and dismantle the burner. Clear away any lint or deposits that may have accumulated inside the burner. Replace the end plates, nut and washer ensuring the gaskets are not damaged and fit flush to their sealing faces. Replace if necessary (Fig. 16).
- (e) Disconnect the locknut securing the burner elbow and remove the elbow complete with the injector.
- (f) Remove the injector from the burner elbow and clean carefully.
- (g) Replace the injector and the burner elbow and secure to the burner with the locknut.
- (h) Re-assemble the burner air box and lint arrester in reverse order of dismantling. If it has been washed, thoroughly dry the lint arrester before replacement.
12. **Clean the Pilot:**

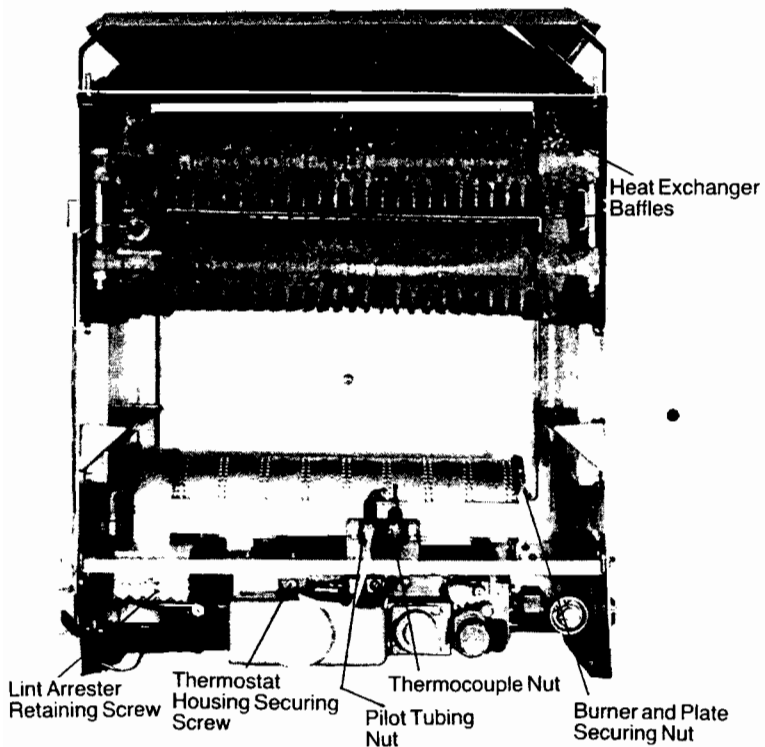
Unscrew the pilot tubing nuts at both ends and remove the pilot tube. Remove the adaptor after first removing the thermocouple to gain access to adaptor. Remove and clean the pilot injector and clean the pilot shroud (Figs. 16 & 17). Re-assemble the pilot components in the reverse order of dismantling.
13. Re-assemble the controls and combustion chamber door in reverse order of dismantling. Ensure that the rear of the controls tray locates fully over the front edge of the combustion rear base tray.
14. Connect the gas union at the service tap. Turn on the gas service tap and check for gas soundness.
15. Re-fit the electrical plug, retaining screw and nut and washer. Turn the thermostat to the 'OFF' position.
16. Re-fit the outer case without the front casing panel.
17. Hold in the grey 'on/off' button on the gas valve (Fig. 15).
18. Apply a lighted taper or match to the pilot until the pilot lights. Hold in the grey 'on/off' button for a further 30 seconds and then release. The pilot should then stay alight. If the pilot fails to remain alight turn the grey 'on/off' button fully clockwise and release it, wait 3 minutes and start again from 17. The flame should be without a yellow tip and be approximately 25mm (1") long. Adjust if necessary. (Turn the restrictor screw anti-clockwise to increase flame length.) (Fig. 15.)
19. Turn on the electricity supply to the boiler.
20. Remove the pressure test point screw, connect a pressure gauge and operate the burner by turning the thermostat knob to its highest setting (Fig. 15).
21. Check that the correct pressure corresponding to the output is adequate for the installation. (See data label.) If necessary remove the cover screw and adjust the appliance governor (Fig. 15). Turn the screw clockwise to increase pressure and alter position of input indicator arrow on data label to suit.
22. Turn the boiler thermostat to the OFF position and replace the pressure test point sealing screw.
23. Turn the boiler thermostat to its original setting.
24. Replace the top front panel and secure using the two screws, then lift the lower front panel until it is held by magnets.



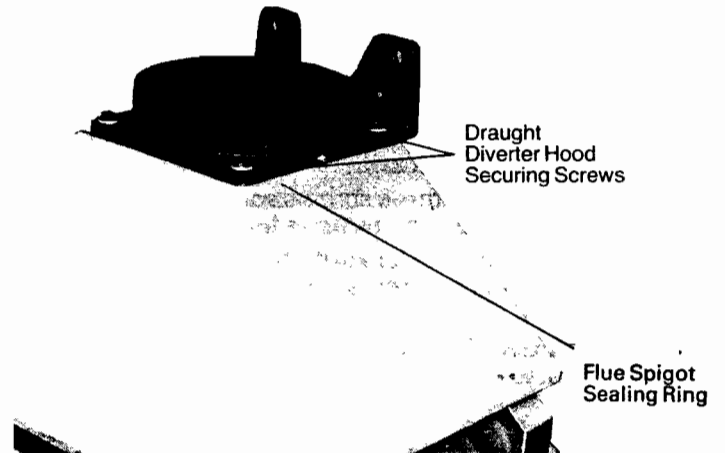
15. Unit Controls



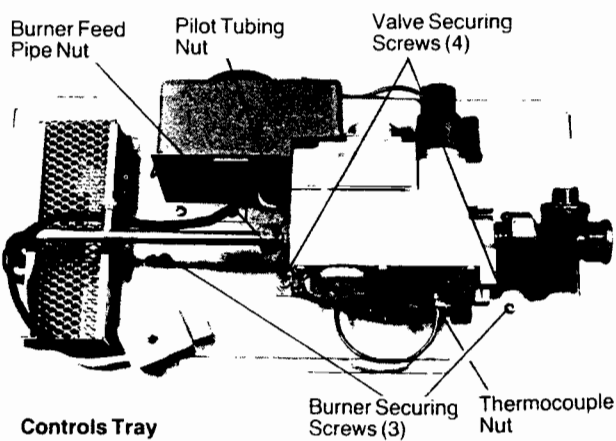
18. Combustion Chamber



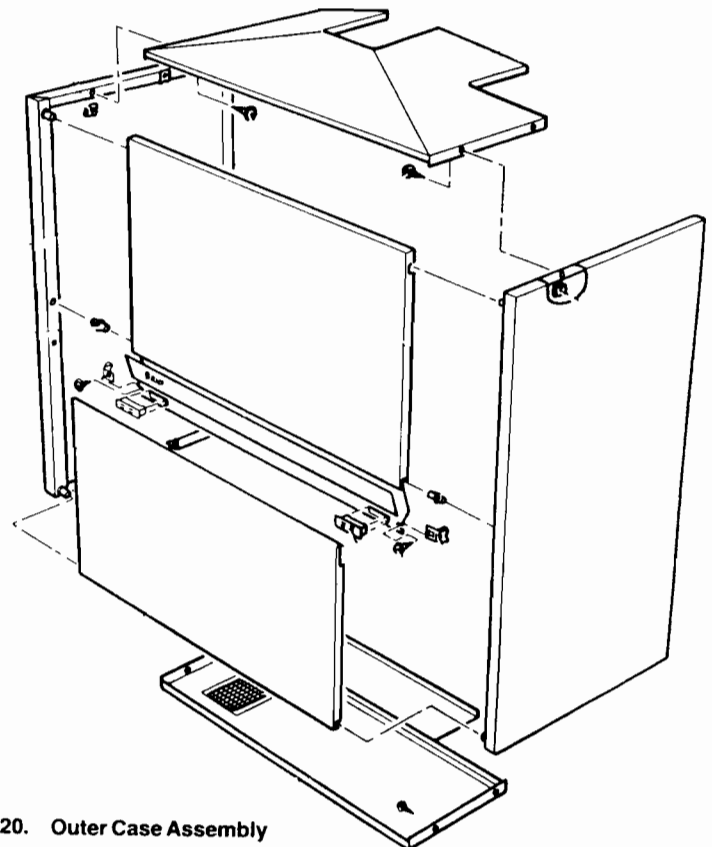
16. Combustion Chamber & Controls



19. Draught Diverter



17. Controls Tray



20. Outer Case Assembly

## Exchanging the Components

### Thermocouple

Remove the combustion chamber door and controls as described in the Annual Service instructions from items 1-7 inclusive.

- (a) Release the 10mm A/F thermocouple nut at the gas valve (Fig. 21).
- (b) Release the thermocouple nut at the pilot bracket (Fig. 22).
- (c) Re-assemble the controls and combustion chamber in reverse order of dismantling.

### Injector

Remove the combustion box door assembly as described in the Annual Service Instructions from item 1-7 inclusive.

- (a) Disconnect the burner feed pipe at the union connections on the burner elbow and Honeywell gas valve and remove.
- (b) Remove the lint arrester retaining screw and remove the lint arrester from the air inlet box.
- (c) Remove the three screws securing the burner to the controls tray and remove the burner (Fig. 21).
- (d) Disconnect the locknut securing the burner elbow to the burner and remove the elbow complete with the injector.
- (e) Remove the injector from the burner elbow.
- (f) Replace parts in reverse order of dismantling.

### Burner

Remove the combustion chamber door and controls as described in the Annual Servicing Instructions from item 1-7 inclusive.

- (a) Disconnect the burner feed pipe at the union connections on the burner elbow and Honeywell gas valve and remove.
- (b) Remove the lint arrester retaining screw and remove the lint arrester from the air inlet box.
- (c) Remove the three screws securing the burner to the controls tray and remove the burner (Fig. 21).
- (d) Remove the two air inlet retaining screws and remove the burner from the air inlet box (Fig. 22).
- (e) Replace the parts in the reverse order of dismantling.

### Boiler Thermostat

Remove the front casing panels as described in the Annual Service Section item 2 and disconnect the electrical supply.

- (a) Remove the thermostat phial from the housing after removing the capillary from the clip (Fig. 15).
- (b) Remove the thermostat knob by pulling forwards.
- (c) Remove the screw securing the thermostat to its mounting bracket. Pull the complete assembly forwards until the three spade electrical connections can be disconnected. The thermostat housing can now be removed from the boiler (Fig. 18).
- (d) Remove the nut and washer securing the thermostat to the housing.

- (e) Replace the thermostat and re-assemble to the appliance in reverse order. Ensure that the green/yellow earth wire is fitted to the earth tag on the thermostat and that the capillary lies in the groove in the corner of the thermostat housing.

### Honeywell Gas Valve (Fig. 21)

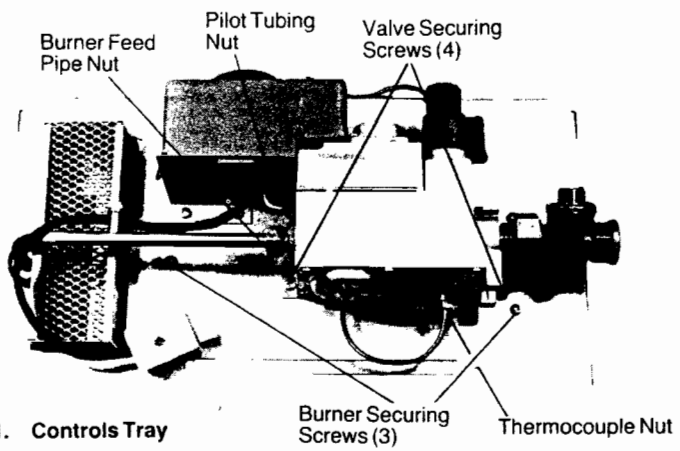
Remove the combustion chamber door and controls as described in the servicing instructions from item 1-7 inclusive.

- (a) Disconnect the thermocouple nut at the gas valve.
- (b) Disconnect the pilot tubing nut at the gas valve.
- (c) Disconnect the burner feed pipe at the union connections on the burner elbow and Honeywell gas valve and remove.
- (d) Remove the screw securing the thermostat housing to its mounting bracket. Pull the complete assembly forwards until the three electrical connections at the gas valve can be disconnected.
- (e) Disconnect the four screws securing the Honeywell valve to the controls bracket.
- (f) Remove the gas valve from the unit.
- (g) If the individual sub-components of the gas valve are to be replaced refer to the makers' instructions.
- (h) If the complete gas valve is to be replaced remove the adaptor and union connector from the inlet and outlet connections and fit them to the new valve using suitable jointing compound.
- (i) Re-assemble the new valve in reverse order of dismantling.
- (j) Check and adjust governor if necessary to give correct burner pressure as shown on the data badge as in sections 20-22 of 'Servicing the Unit'.

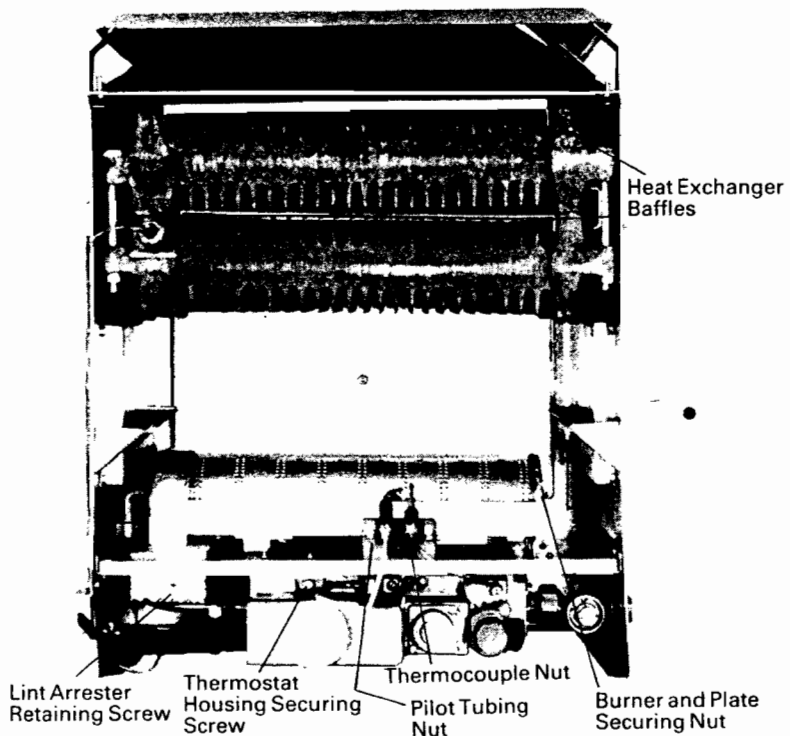
### Insulation in Combustion Chamber (Fig. 23)

Remove the combustion chamber door and controls as described in the servicing instructions items 1-7 inclusive.

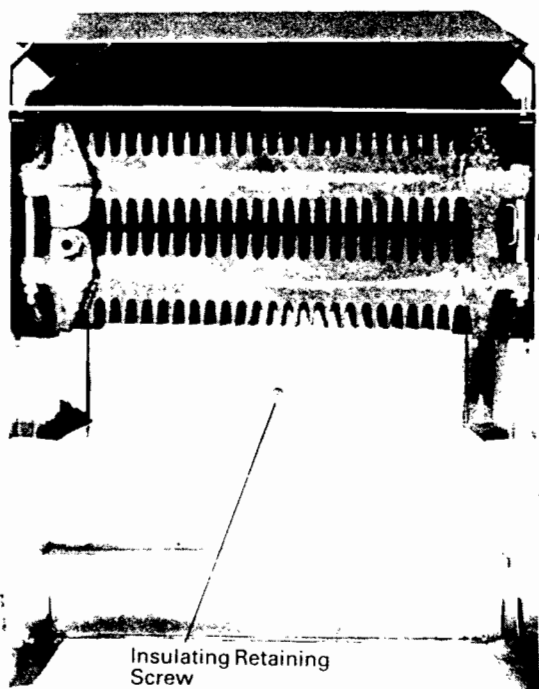
- (a) Remove the screw and washer securing back panel insulation then slide the insulation downwards to remove.
- (b) Remove the screw, nut and washer securing the front panel insulation.
- (c) Fit the new insulation.
- (d) Re-assemble in reverse order.



**21. Controls Tray**



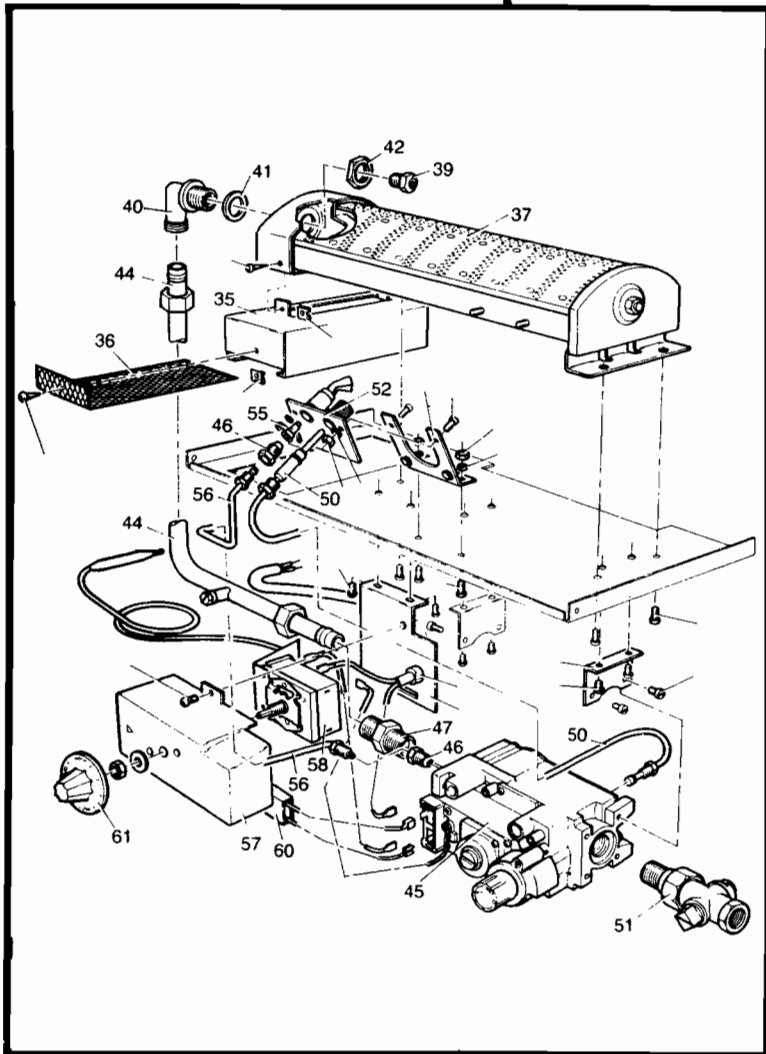
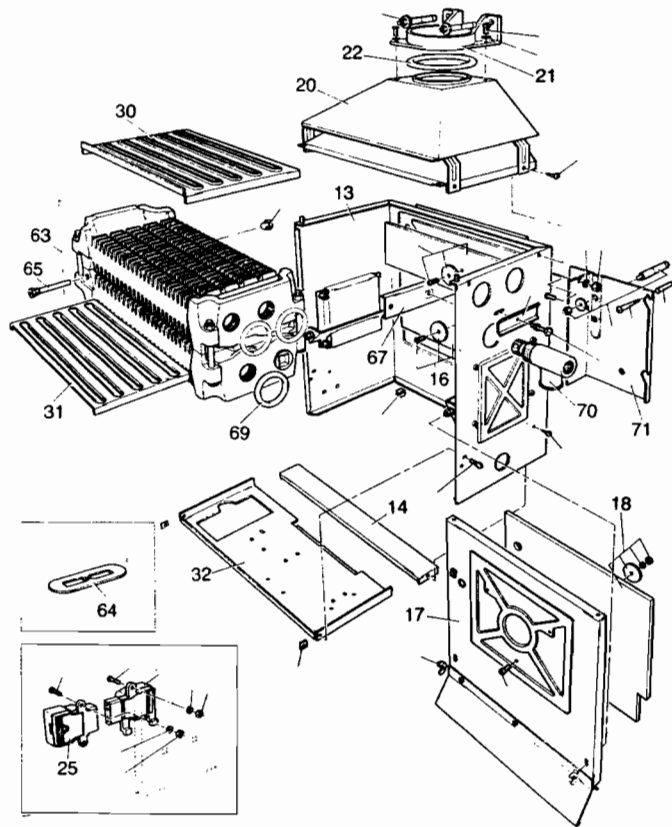
**22 Combustion Chamber and Controls**



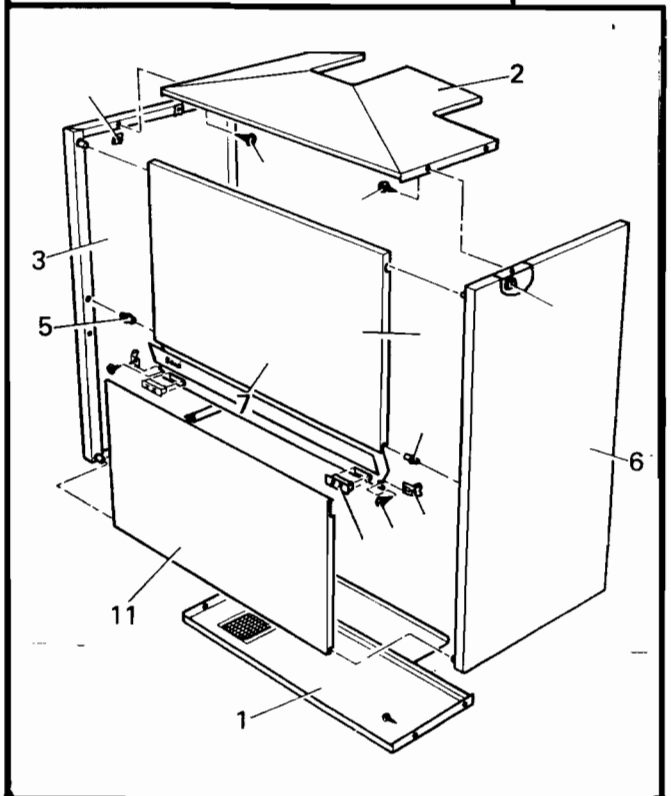
**23 Combustion Chamber**

**Baxi W.M 552 OF**  
**Baxi W.M 401 OF**  
**Exploded Diagram**

**Boiler and Combustion Chamber**

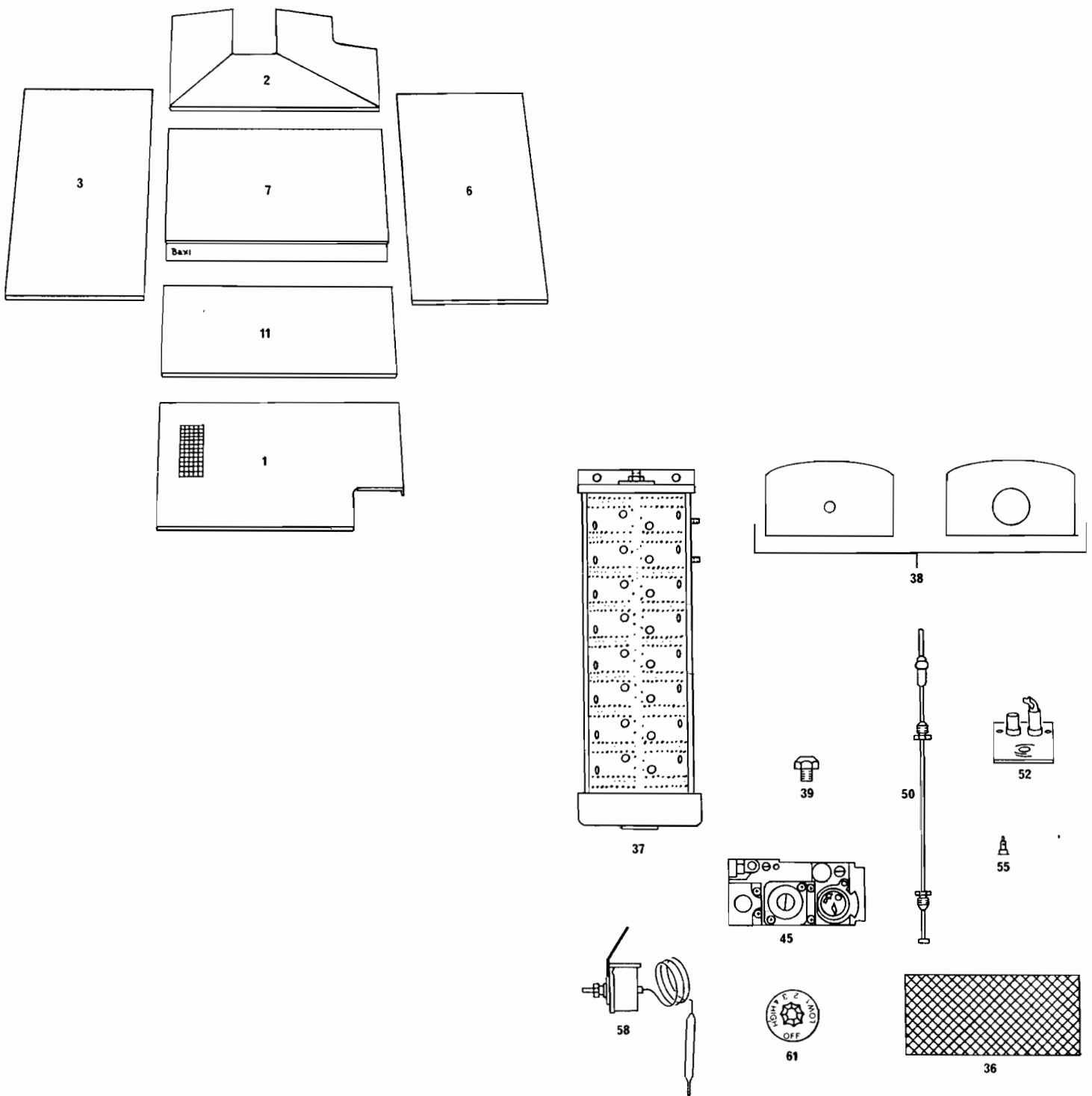


**Burner and Controls**



**Outer Case**

List of parts available on Request.



### SHORT PARTS LIST

Key No.	B.G. Number	Description	Manufacturer Part No.
1	364 231	Panel Bottom	100215
2	364 232	Panel — Top	100216
3	364 128	Kit — Panel Side L.H.	100091
6	364 129	Kit — Panel Side R.H.	100092
7	364 172	Panel — Front	100123
11	364 174	Panel — Door	100124
36	364 084	Arrester — Lint	100205
37	384 807	Burner — Boiler	102136
38	364 145	Kit — Gaskets — Boiler Burner	100133
39	183 930	Injector — Burner — Stereomatic 1.5mm	042939
45	393 180	Valve — Control — Honeywell V4600C	062623
50	390 131	Thermocouple — 18" Honeywell Q309A 2606	102005
52	391 664	Burner L.E. Pilot — Honeywell Q359A	062638
55	391 665	Injector Pilot NG — Honeywell 0.30A	062639
58	382 340	Thermostat — Boiler Ranco G1 P1000	042818
61	183 630	Knob — Control — Thermostat Ranco 83151/36	042717

