

Baxi W.M. 511 RS

Central heating boilers Cat. 1 N

Installation and Service Instructions

B.G.C. No. 41 077 08

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Baxi WM 511 RS Installation Instructions

Introduction

The Baxi WM 511 RS is a wall mounted room sealed boiler, range rated between 14.94 and 7.3 kW (51,000 and 25,000 Btu/h) heat outputs.

The appliance is designed for use on Natural Gas only and consists essentially of four components namely:

1. Wall mounting plate.
2. Combustion chamber with heat exchanger, burner and controls.
3. Outer case.
4. Balanced flue terminal assembly. (Packed separately.)

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 bye laws of the Local Water Undertaking. References should be made to BS Codes of Practices 331 - Part3, 342 Parts 1 & 2, 5376 Part 2, 5549 Part 1 and 5546.

Siting

This appliance must be fitted on a suitable outside wall, the position permitting a satisfactory flue and an adequate air supply.

A cupboard or compartment used to enclose the boiler must be designed and constructed specifically for this purpose. An existing cupboard or compartment may be used provided that it is modified for the purpose. Details of essential features of cupboard/compartment design are given in BS5376:2.

Clearances

A vertical area is required for each appliance as follows: 660 mm (26") wide x 750 mm (29 1/2") 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 50 mm (2")

(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 100 mm (4"). Sides Minimum 30 mm (1 1/4").

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 room sealed appliance is installed does not require a purpose provided air vent. Where a room sealed appliance is installed in a purpose made cupboard or compartment air vents are required

(for cooling purposes) in the cupboard or compartment at high and low level which may communicate with a room or direct to outside air.

The actual minimum effective area requirements of cupboard/compartment air vents are based upon the rated INPUT of the appliance are in table at foot:

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

Position of air vent	Air from room	Air direct from outside
High and Low level	190 cm ² (30 in ²)	95 cm ² (15 in ²)

Flue arrangement

Detailed recommendations for flues are given in BS 5440:1.

The standard flue terminal supplied with the appliance is suitable for use with wall thicknesses between 241 mm (9 1/2") to 343 mm (13 1/2").

Optional extra flue terminal kits are available as alternatives for the following wall thicknesses:

(a) 102mm (4") to 229mm (9"). To enable the flue to be suitable for a 102 mm (4") to 128 mm (5") wall the outer duct on the back of the appliance needs trimming back by 25 mm (1") with a suitable tool (tinsnips, hacksaw, etc.).

(b) 356mm (14") to 457mm (18").

The balanced flue terminal is designed such that it must be fitted from inside the building. The air inlet/products outlet duct must be horizontal and square with the inner wall face.

The following hole size is required through the wall of the appliance:

310 mm (12 3/16") wide x 255 mm (10") high. ([Fig. 2](#)).

Balanced Flue Siting Requirements

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

1. On a clear expanse of outside wall, preferably not less than 600 mm (2') from a corner, recess or projection.
2. Not less than 300 mm (1') vertically beneath an openable window or ventilator.
3. Not less than 600mm (2') from any surface facing the terminal.
4. Not less than 300 mm (1') from ground level.
5. Not immediately beneath eaves or a balcony.
6. If the terminal is less than 2m (6') above the ground or balcony to which people have access the terminal should be protected by a guard.

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

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2. Not less than 300 mm (1') vertically beneath an openable window or ventilator.
3. Not less than 600 mm (2') from any surface facing the terminal.
4. Not less than 300 mm (1') from ground level.
5. Not immediately beneath eaves or a balcony.
6. If the terminal is less than 2 m (6') above the ground or balcony to which people have access the terminal should be protected by a guard.
7. If the outer surface of an outside wall is of combustible material it should be protected by fitting a non combustible plate so that it extends not less than 50 mm (2") around the terminal.

A terminal guard is available as an optional extra or may be obtained from:

South

Tower Flue Components Ltd.,
Morley Road, Deacon Trading Estate, Tonbridge, Kent, TN9 1RA. Tel: 073 2-351555

North

Tower Flue Components Ltd.,
236 Lockwood Road, Lockwood, Huddersfield, HD1 3TG. Tel: 0484-47916

When ordering a terminal guard quote the appliance name.

Water Circulation Systems

The appliance is only suitable for connection to a cistern supply with fully pumped systems.

The following conditions must be observed on all types of system

(i) THE SPREADER ELBOW MUST BE FITTED TO THE BOILER RETURN CONNECTION

(ii) The static head must not exceed 30 m (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 CP331:3.

The connection of the appliances is RC 1/2 (1/2" BSPT internal) located at the bottom right-hand side of the appliances.

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.

	WM 512 RS	WM382 RS and WM282 RS
Height	600 mm (23 5/8")	600 mm (23 5/8")
Width	500 mm (19 3/4")	400 mm (15 1/2")
Forward projection from wall	330 mm (13")	330 mm (13")
Weight empty	60.2 kg (133lbs)	54.3 kg (120lbs)

Water content 2.7ltrs (.6 gals) 2.2ltrs (.48 gals)

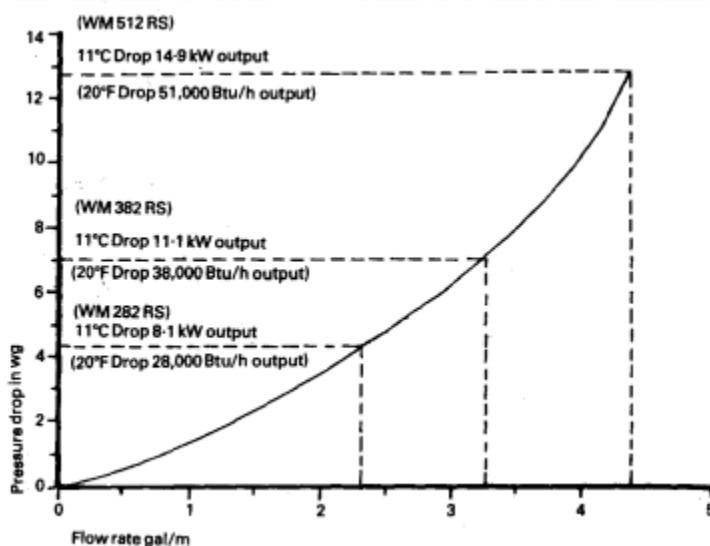
Boiler tappings x RC 1 (1 " BSPT internal)

Gas connection c 1/2 (1/2" BSPT internal)

Electrical supply 40VA.C. 50 Hz-
3 amp fuse Max. working head 30 m (100').

Hydraulic resistance chart

WM 512 RS, WM 382 RS and WM 282 RS



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Fitting the Appliance

Installation of Water Circulation System

(BS 5376:2, BS 5449:1)

1. Ensure that the length of flue ducting is suitable for the wall thickness.
2. Select the most suitable position for the boiler using the wall mounting plate as a template, ensuring adequate clearances where necessary ([Fig. 2](#)).
 - (a) Mark the position of the bottom and side edges of the flue opening (the sides are indicated by the sides of the cut out).

(b) If the bottom edge of the outer case is required to line up with wall cupboards, the lower edge of the plate should be positioned 173 mm (6 13/16") above the bottom edge of the cupboards.

3. Remove the plate.

a) Complete the marking out of the hole for the flue ducting above the marked lines and then cut out the hole (for sizes see [Fig. 2](#)).

(b) Reposition the plate to the wall ensuring correct level.

(c) Mark off the position of the four widest sound anchorage points and the wall plug.

(d) Remove the plate and drill the anchorage holes 10 mm diameter (3/8") 70 mm deep (2 3/4") ensuring the holes are not more than 1 mm (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 screws provided ensuring that the frame is horizontal.

5. Measure the wall thickness at the aperture of the wall. Assemble the flue terminal to the back of the appliance and adjust until the dimension from the back of the combustion chamber to the edge of the lip on the terminal mesh is the same as the wall thickness, ensuring that the four screws securing the terminal mesh to the flue duct will be accessible from outside the building. Tape up the joint between the flue terminal assembly and the air duct on the back of the combustion chamber ([Fig. 3](#)).

6. Lift the combustion chamber assembly into position onto the two brackets on the wall mounting plate until the screws drop in the slots.

(a) Secure the four screws to the wall mounting plate with the nuts and washers provided.

(b) Make good the hole in the wall around the flue terminal outside the premises, ensuring the flue terminal is horizontal.

(c) If appropriate fit a terminal guard.

(d) Make good the hole in the wall around the boiler inside the premises.

7. Connect the water flow and return pipes (see 'Boiler Connections').

8. Connect the electrical supply (see '[Electrical Connections](#)').

9. Complete the installation as outlined in 'Commissioning the Unit'.

N.B. Boiler Connections

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

1 - injector tee and spreader.

Pumped Domestic Hot Water and Pumped Central Heating System

The pipes should be connected in the following order: See [Fig. 4](#) 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 pipe work can be run either upwards or downwards.

(d) Connect the flow pipework as shown in [Fig. 4](#) 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 reused 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. 5](#) 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 Rp 3/4 (3/4" 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.

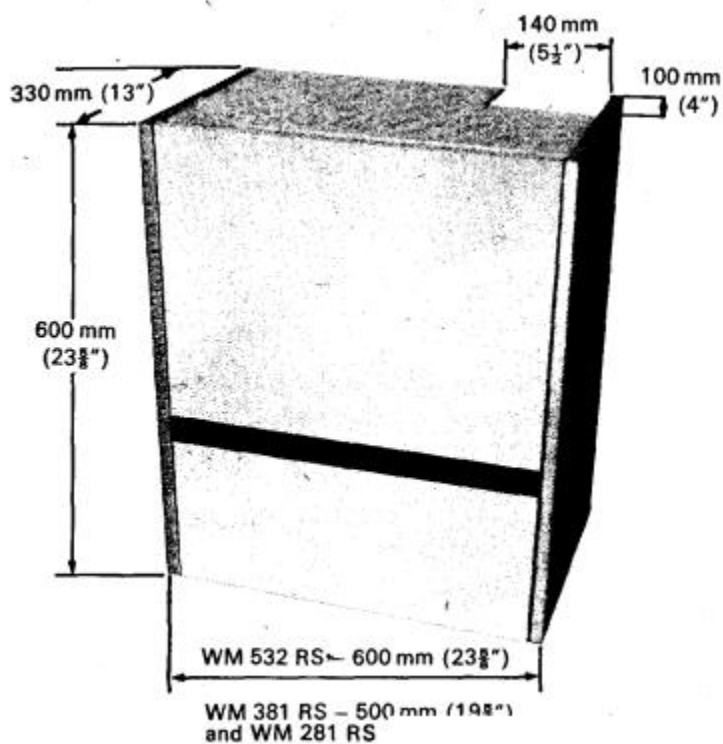
(ii) The pipework will run through the cutouts provided in the case when it is fixed ([Fig. 1](#)).

(iii) Drain off points should be provided as appropriate.

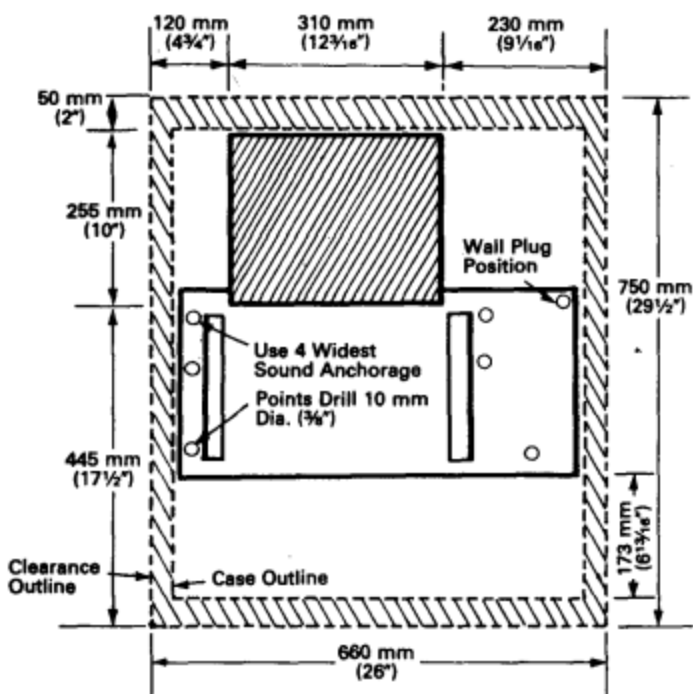
(iv) Pipe sizes are suitable for the system design.

Gas Connections ([Fig. 5](#))

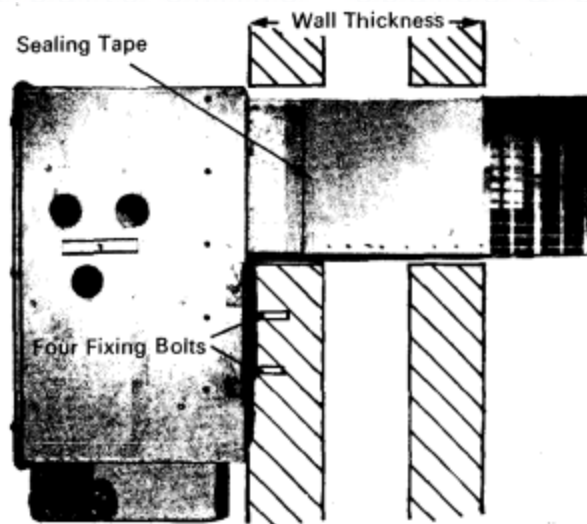
Adapt the 15 mm (1/2") gas supply pipe within the outer casing to suit the particular flow and return arrangement, making the gas connection to the gas service tap. Connect to the service tap using either an Ext/int malleable iron elbow or BSPT/capillary elbow.



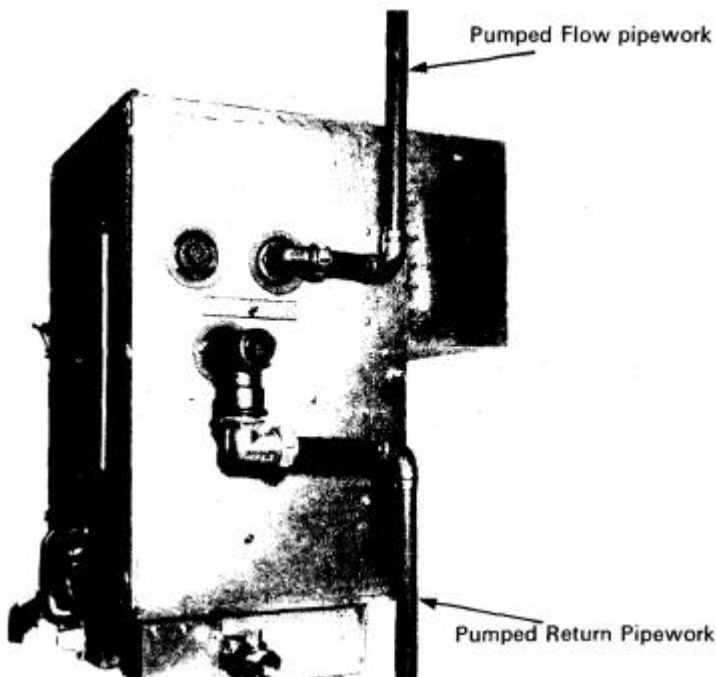
1. The Unit



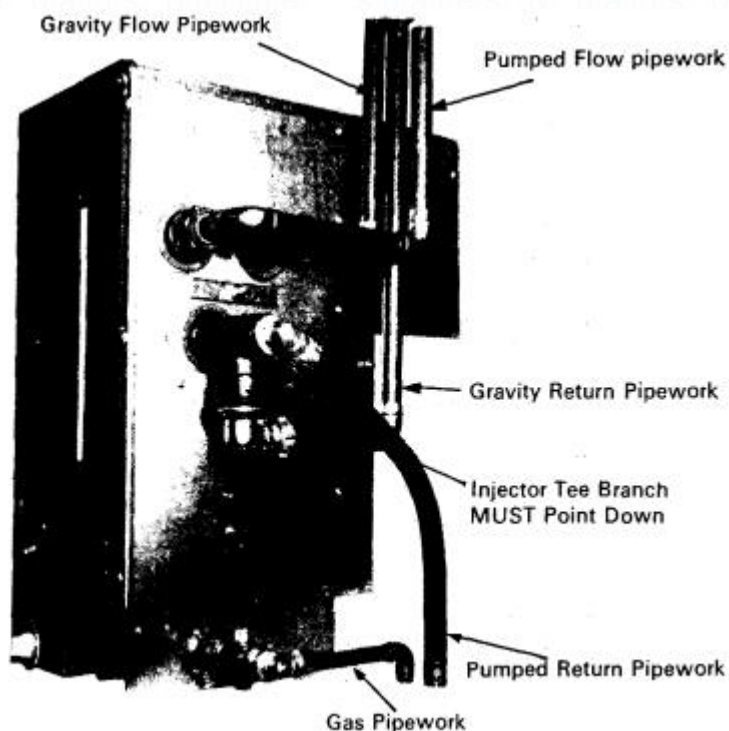
2. Wall Mounting Plate Requirements



3. Securing the Combustion Box



4. Boiler Connections



5. Boiler Connections

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Electrical Connections

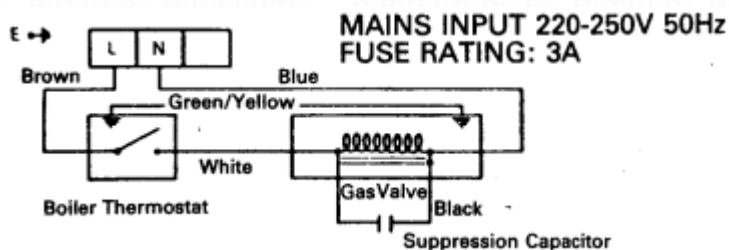
General

The mains supply required is 220/250V 50 fused at 3 amp. A double pole switch should be provided in the installation or an unswitched socket outlets 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.

Internal Wiring Diagram



Control Systems

A selection of control systems is indicated with the appropriate heating circuit arrangements (Figs 9-

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. 6](#)).
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 50 mm (2") of the earth wire through the slot in the side of the housing. Clamp the cable using the cable grip provided.
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. 6](#)). Clip the input electrical cable to the cable grips provided ensuring that the cable does not touch the underside of the combustion box.
5. Refit the electrical plug to the socket and replace the retaining screw.

Commissioning 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. (CP 331 part3).
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. 7](#)).
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. 7](#)).
10. Press in the igniter button and release. Repeat 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 12 mm (1/2"). Adjust if necessary (turn the restrictor screw anti-clockwise to increase flame length). ([Fig. 7](#)).
11. Operate the burner by turning the thermostat knob to the high setting.
12. Remove the cover screw and adjust the appliance governor to give the correct pressure corresponding to the required input. See table below. Check this pressure after 10 minutes and adjust if necessary. ([Fig. 7](#).)
13. Turn the boiler thermostat to the 'OFF' position and re-check the pilot flame length. Adjust if necessary. ([Fig. 7](#)).
14. The system should be flushed again, when hot, refilled, vented and checked for water soundness.
15. Make a final check for gas soundness.
16. Refit the burner pressure test point screw and then turn the boiler thermostat to the required setting.
17. Turn off the electrical supply

Appliance	Maximum Input	Setting Pressure	Intermediate Input	Setting Pressure	Minimum Input	Setting Pressure
WM 511 RS	19.8 kW 67,600 Btu/h	17.5 mbar 7.0" wg	15.6 kW 53,300 Btu/h	11.3 mbar 4.5" wg	10.0kW 34,150 Btu/h	4.8 mbar 1.9" wg

On completion of the installation leave these instructions with the customer or near the gas meter.

18. Assemble the outer case in the following manner leaving the top front panel off ([Fig. 8](#)).

(a) Place the top panel on a flat solid surface face down, ensuring that the cutout for the pipes is at the back left hand side of the panel.

(b) Position the right hand side panel to the left of the top panel (top labels together) and line up the holes in the top panel with the clips in the side panel. Secure using the two screws provided.

(c) Position the other side panel next to the top panel and secure as above using two screws.

(d) Turn the assembly upside down positioning the bottom panel between the two side panels and secure the left hand side panel to the bottom panel.

(e) Position the lower front panels to the side panels such that the bottom pipes in the side panels locate in the lower front panel holes. Secure the bottom panel to the right hand side panel.

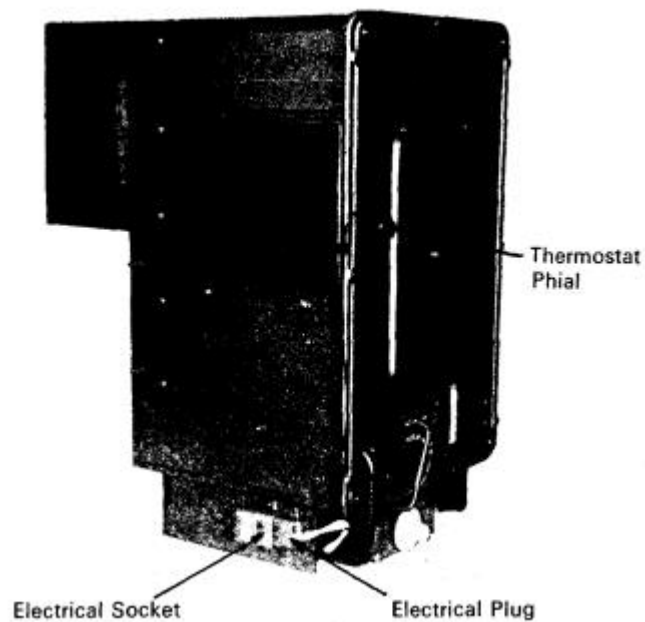
(f) Remove the two right angled clips from the bag and tap in position so they are securely located in the vacant slots in the side panels.

19. Lift the outer case onto the lugs on the wall fixing plate, taking care not to damage the loose lower front panel.

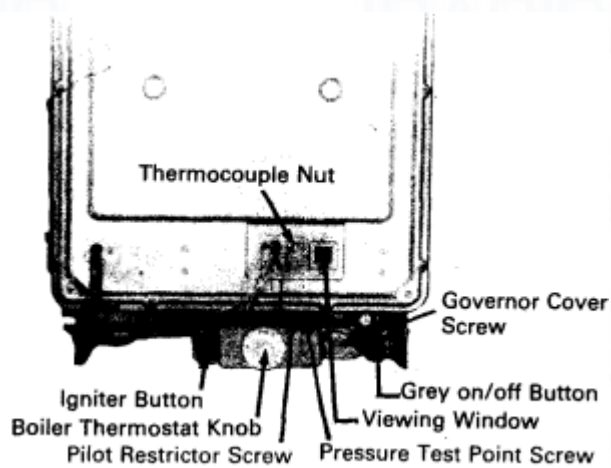
20. Fit the upper front panel on the pegs on the side panel and secure at the bottom using the screws provided. Raise the lower front panel until it is held by the magnets on the panel behind.

21. Turn on the electrical supply.

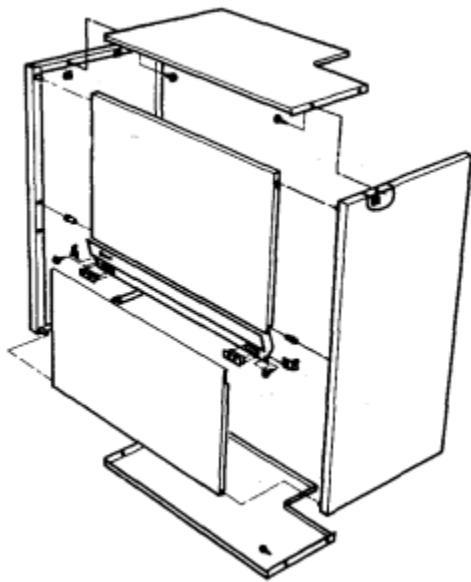
22. Instruct the customer in the use of the unit.



6. Electrical Connections



7. Controls



8. Outer Case

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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. Assuming a 11°C (20°F) drop across the system it is recommended that the main flow and return pipes should be sized in accordance with the table below.

(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) The cold feed pipe, 15 mm, should be connected to the return main as near as possible to the boiler and should not include a valve unless required by the local water authority.

(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.

2. Feed System

(a) The bottom of the feed tank should be a minimum of 1 m (3') above the highest point in the circulation system.

(b) With the pump in the flow as shown, the total resistance to flow between points C and A (cold feed entry to vent position including the boiler) must not exceed the height between point A and the bottom of the tank. With a minimum tank height of 1 m (3') above the open vent connection this can be achieved with pipe lengths as indicated below.

Load		Flow rate of water		F & R pipe size	Max. length of pipe from A to B to C*
kW	Btu/h	l/m	lbs/h		
15.5	53,000	201	2,650	28 mm	9m (30')
11.1	38,000	144	1,900	22 mm	4.5 m (15')
7.3	25,000	95	1,250	22 mm	6 m (20')
4.4	15,000	57	750	15 mm	7.5 m (25')

*An allowance has been made for the resistance of fittings. Increasing the tank height permits the use of greater lengths between these points to meet different circumstances.

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.

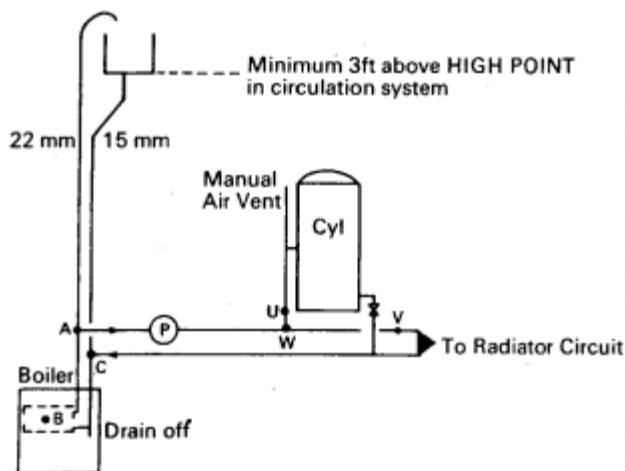
Diverter Valve ([Fig. 14](#))

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.

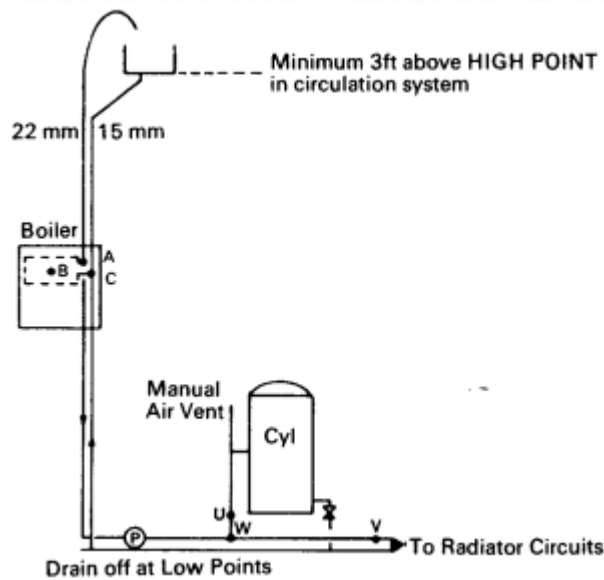
Gravity D.H.W. Systems

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.

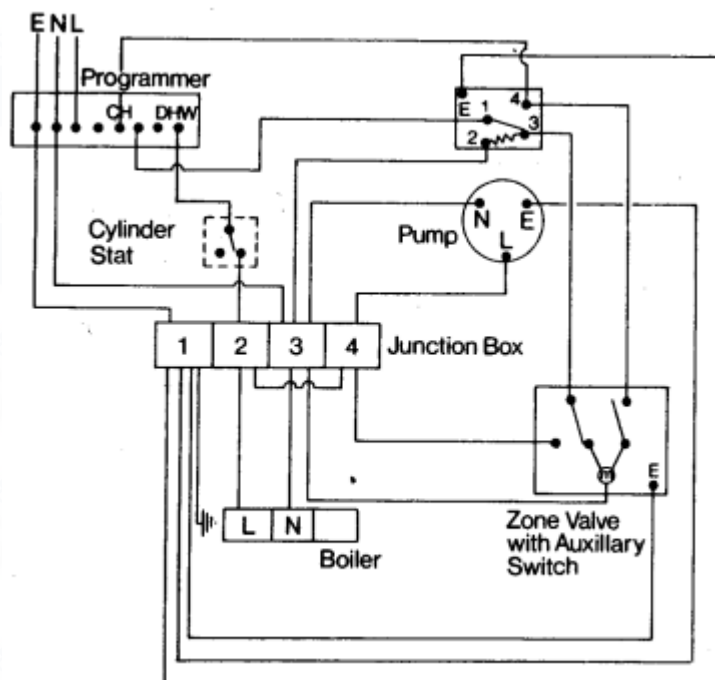


9. Rising Flow and Return Pipes

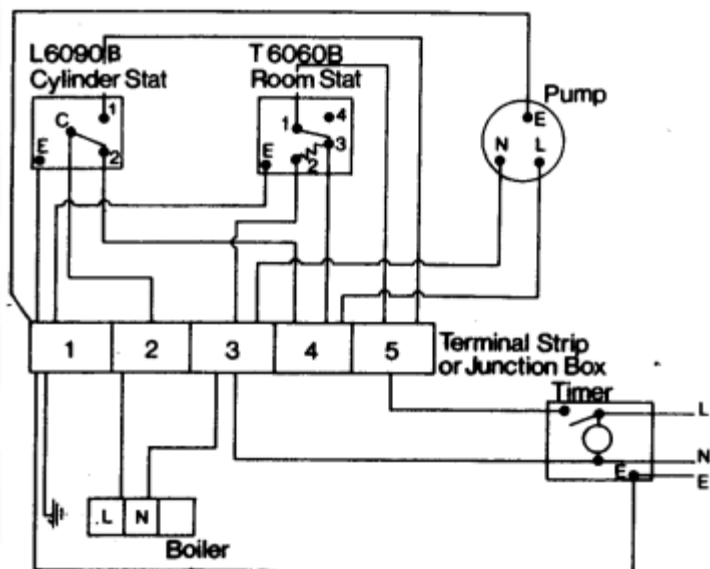


10. Dropping Flow and Return Pipes

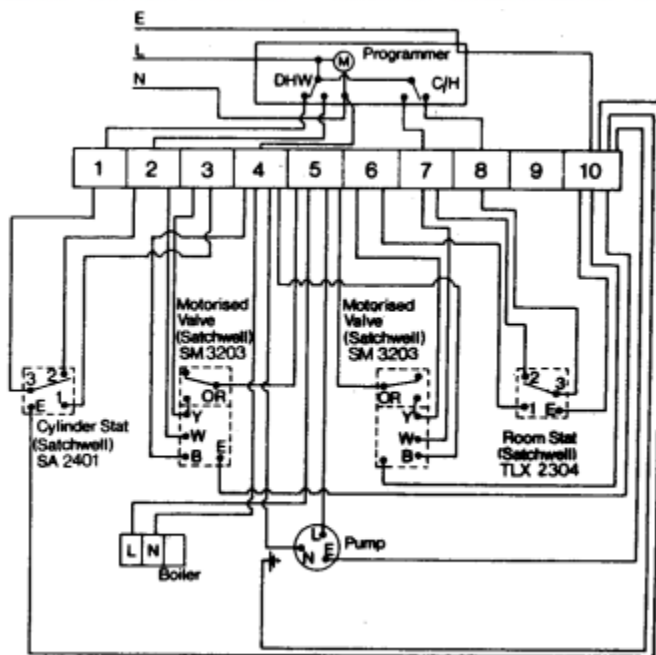
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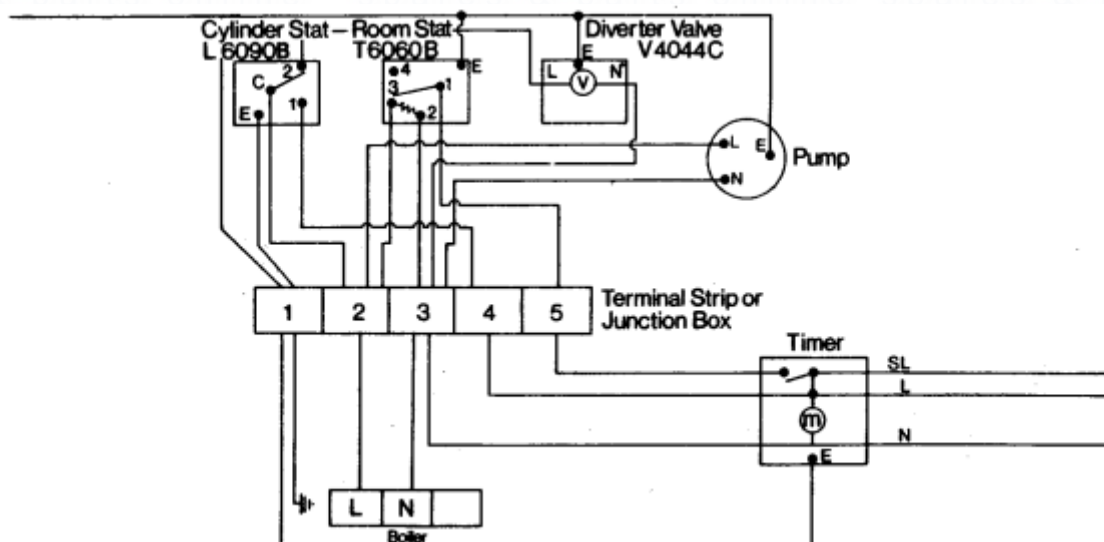
11. One Zone Valve - Fully Pumped System



12. Sundial Control - Gravity Domestic Hot Water System



13. Two Zone Valve - Fully Pumped System



14. Diverter Valve - Fully Pumped System

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Annual Service

See also Servicing Guide on the Boiler

Instruction 1-25 are for maintenance to be carried out annually.

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.
2. Turn off the gas supply at the service tap and disconnect the union.
4. Disconnect the electrical plug by pulling in the direction of the arrow after first removing the retaining screw ([Fig. 6](#)).
5. Slacken the screw on the thermostat phial sealing plate and rotate the plate and seal to remove the phial.

6. Remove the flange headed screws securing the combustion box door (10).
7. The combustion box door complete with all the controls can now be removed. Ease the assembly forward horizontally until the burner is clear of the combustion box bottom panel and place to one side.
8. Remove any dirt that has accumulated in the flue outlet duct.
9. Remove the baffles between and on top of the heat exchanger sections.

10. Clean the Boiler:

Clean the top section of the heat exchanger with a bristle brush from back to front 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 on the side(s) and back of the combustion chamber. Brush out the bottom of the combustion chamber, ensuring air opening at rear is clear ([Fig. 15](#)).

Suitable brushes for cleaning the heat exchanger are:

50 mm (2") diameter x 150 mm (6") bristle brush 25 mm (1") diameter x 63 mm (2 1/2") long bristle brush.

11. Clean the burner:

Disconnect the burner feed pipe at the union connection on the burner elbow.

(a) Remove the four screws securing the burner mounting brackets to the combustion box door ([Fig. 16](#)).

(b) 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.

(c) Remove the primary air deflector from the injector end of the burner ([Fig. 16](#)).

(d) Disconnect the locknut securing the burner elbow and remove the elbow complete with the injector.

(e) Remove the injector from the burner elbow and clean carefully.

12. Clean the pilot:

(a) Unscrew the pilot tubing nuts at both ends and remove the pilot tube. Remove and clean the

pilot injector and the pilot shroud ([Fig. 17](#)). Reassemble the pilot details and then the burner in reverse order of dismantling, ensuring the burner body is horizontal to the burner end plates.

Replace the baffles above and between the heat exchanger sections.

13. Reassemble the combustion box door assembly in the reverse order of dismantling. Check that the combustion box door seal is undamaged. Replace if necessary.

14. Reconnect the gas union at the service tap. Turn on the tap and check for gas soundness.

15. Re-fit the electrical plug and replace the retaining screw. Turn the thermostat knob to the OFF position.

16. Replace the thermostat dial and sealing plate.

17. Re-fit the outer case in reverse order of dismantling, leaving the top front panel off.

18. Hold in the grey ON/OFF button on the gas control valve ([Fig. 7](#)).

19. Press in the igniter button and release. Repeat until pilot lights. Hold in the grey ON/OFF button for a further 20 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, wait three minutes and start again from 19. The flame should be without a yellow tip and should extend past the pilot shield by approximately 12 mm (1/2"). Adjust if necessary (turn the restrictor screw anti-clockwise to increase flame length) ([Fig. 7](#)).

20. Turn on the electricity supply to the boiler.

21. Remove the pressure test point screw, connect a pressure gauge and operate the burner by turning the thermostat knob to its highest setting ([Fig. 7](#)).

22. Check that the correct pressure corresponding to the range rated output is adequate for the installation (see data label). If necessary remove the

verscrew and adjust the appliance governor, ([Fig. 7](#)).

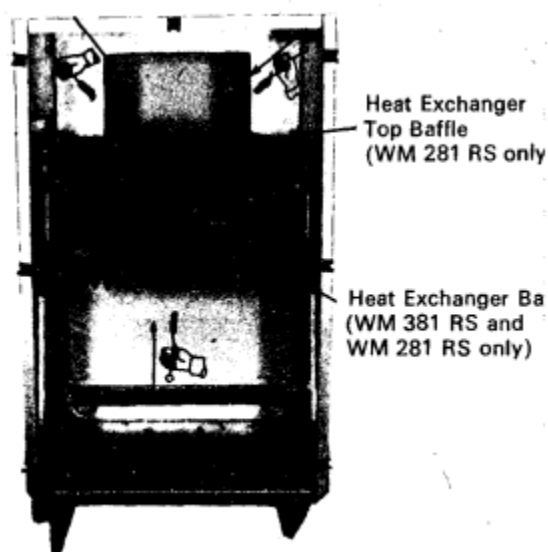
(Turn screw clockwise to increase pressure) and alter position of input indicator arrow on data label to suit.

23. Turn the boiler thermostat to the OFF position and replace the pressure test point sealing screw.

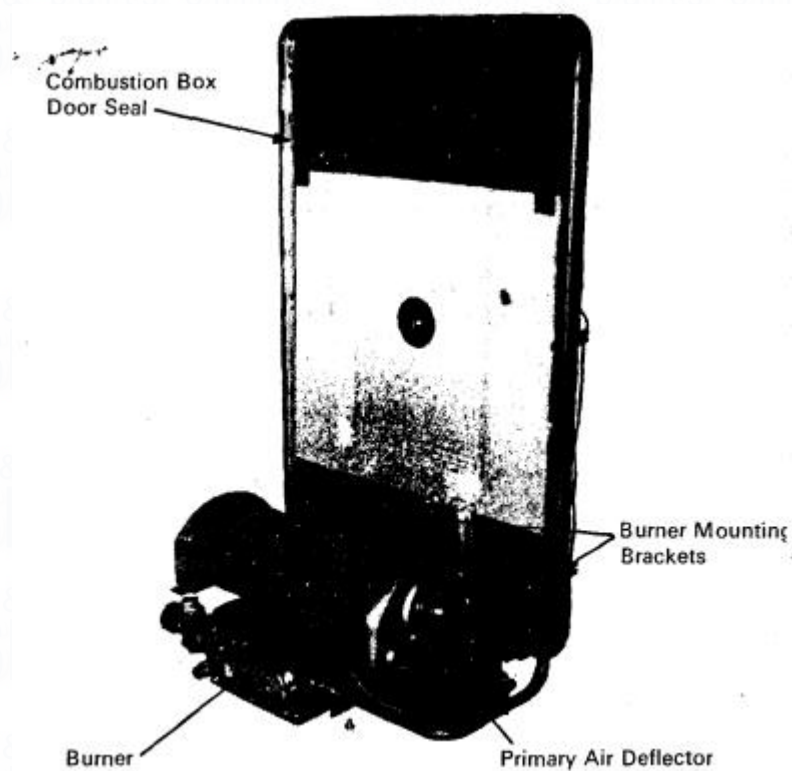
24. Turn the boiler thermostat to its original setting.

25. Replace the top front panel and secure using the two screws, then lift the lower front panel until it is held by the magnets.

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15. Heat Exchanger



16. Burner Assembly



17. Pilot

Changing Components

Thermocouple

1. Remove the outer case as described in the boiler servicing instructions, item 2, after first turning off the electrical supply, then:

- (a) Turn off the gas supply at the service tap.
- (b) Release the 10 mm A/F thermocouple nut from behind the gas valve (access from underneath the appliance) ([Fig. 18](#)).
- (c) Release the thermocouple nut at the pilot bracket.
- (d) Re-assemble parts in reverse order of dismantling.

(If the appliance is at low level and access to the thermocouple nut behind the gas valve is limited, remove the combustion box door assembly as described in the servicing instructions 1-7 inclusive.)

Injector

Remove the combustion box door assembly as described in the servicing instructions from item 1-7 inclusive.

- (a) Disconnect the burner feed pipe at the union connection on the burner elbow.
- (b) Remove the four screws securing the burner mounting brackets to the combustion box door.
- (c) Remove the primary air deflector from the injector end of the burner.
- (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 box door assembly as described in the servicing instructions from items 1-7 inclusive.

Disconnect the burner feed pipe at the union connecton on the burner elbow.

(a) Remove the four screws securing the burner mounting brackets to the combustion box door.

(b) Remove the two burner mounting brackets, pilot shield primary air deflector, burner elbow and injector if these parts are not to be exchanged ([Fig16](#)).

(c) Reconnect in reverse order of dismantling, ensuring that the burner is parallel to the combustion box door and the primary air deflector is on the side nearest the door.

Boiler Thermostat

Remove the outer case from the appliance and turn off the electrical supply as described in the servicing instructions items 1 and 2.

(a) Slacken the screw on the thermostat phial sealing plate and rotate the plate and seal to remove the phial, disengage the capillary from the clips down the left hand side of the door.

(b) Remove the thermostat knob by pulling forwards.

(c) Remove the screw securing the thermostat housing to its mounting bracket. Tilt the complete assembly forwards, release the lug from the locating slot and disconnect the three spade electrical connections. Release the capacitor from inside the thermostat box. The thermostat housing can now be removed from the appliance.

(d) Remove the nut and washer securing the thermostat to the housing.

(e) Replace the thermostat and reassemble in reverse order of dismantling ensuring that green/yellow wire is fitted to the earth tag on the thermostat and

that the phial and sealing plate are refitted.

Honeywell gas Valve

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

- (a) Remove the screw securing the thermostat housing to its mounting bracket. Tilt the complete assembly forwards, release the lug from the locating slot and disconnect the electrical connections at the Honeywell valve.
- (b) Disconnect the thermocouple nut behind the gas valve.
- (c) Disconnect the burner feed pipe nut at the gas valve end and release the pipe.
- (d) Disconnect the pilot feed pipe nut at the gas valve end.
- (e) Disconnect the screws securing the gas valve to the mounting brackets.
- (f) Remove the gas valve and if individual sub-components of the valve are to be replaced, refer to the maker's instructions.
- (g) If the complete valve is to be replaced remove the adaptor and union connector from the inlet and outlet connections.
- (h) Re-assemble the new valve using suitable jointing compound, in reverse order of dismantling.
- (i) Check and adjust governor if necessary to give correct burner pressure as shown on data badge as in sections 21 to 23 of 'Servicing the Unit'.

Insulation in Combustion Chamber

Remove the combustion box door as described in the servicing instructions items 1-7 inclusive.

(a) Front and Side Panel Insulation

Remove any brackets, plates securing the insulation as necessary and replace in reverse order of dismantling, ensuring the parts are correctly positioned.

(b) Rear Panel Insulation

Remove the screw securing the plate and then slide the insulation panel upwards out of the retaining 'U' section at the bottom and then pull outwards at bottom and remove. Reassemble in reverse order of dismantling taking care not to damage the insulation.

Heat Exchanger

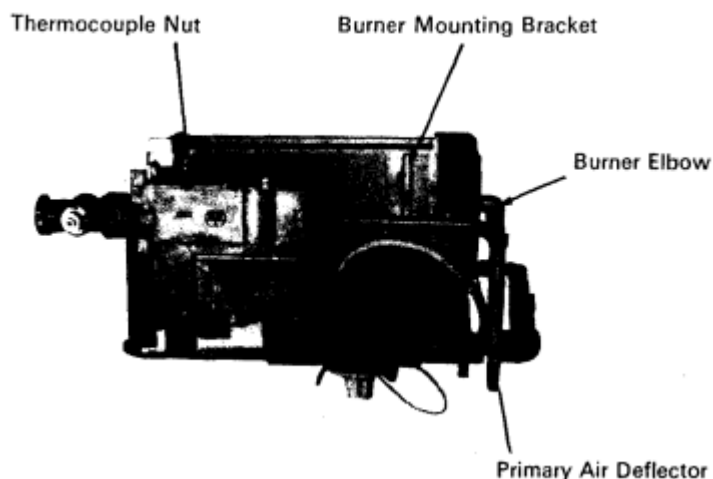
- (a) Remove the combustion box door as described in the servicing instructions 1-7 inclusive.
- (b) Drain off the central heating system to the boiler.
- (c) Disconnect the water union connections at the appliance.
- (d) Remove all the fittings that are secured to the heat exchanger tappings.
- (e) Remove the casting securing bolt at the right hand side and withdraw the boiler clamping plate.
- (f) Push the heat exchanger towards the left hand side of the combustion chamber and remove the three ring gaskets at the heat exchanger tappings.
- (g) Remove the baffles in between and above the heat exchanger sections.
- (h) Remove the heat exchanger from the appliance and clean out any dirt that has accumulated inside the combustion box.
- (i) When replacing the heat exchanger ensure that the hole for the thermostat pin is in the bottom casting at the left hand side.
- (j) Re-assemble in reverse order ensuring that the three ring gaskets are correctly positioned to ensure the room seal and the combustion chamber door is not damaged.
- (k) Ensure that the heat exchanger baffles are replaced correctly.

Piezo Igniter

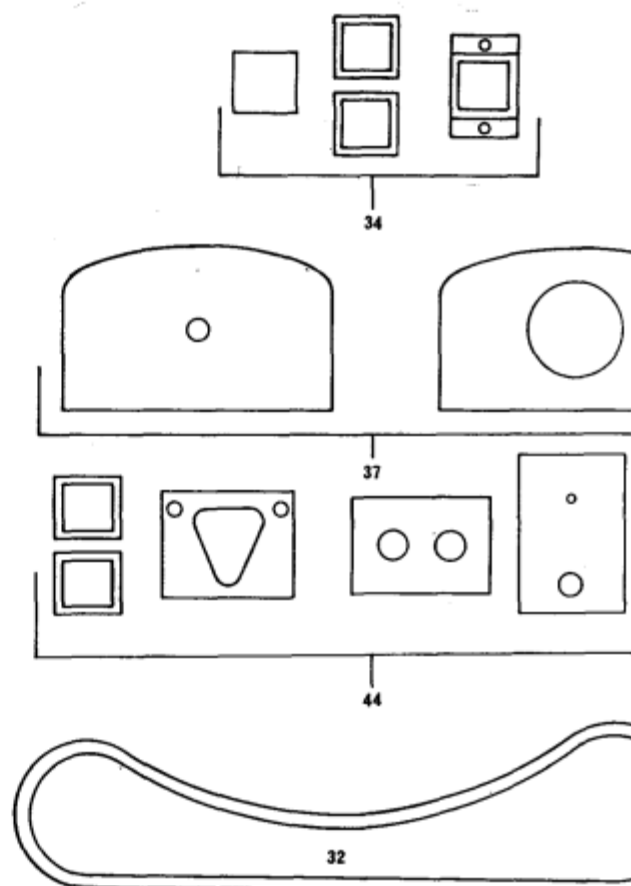
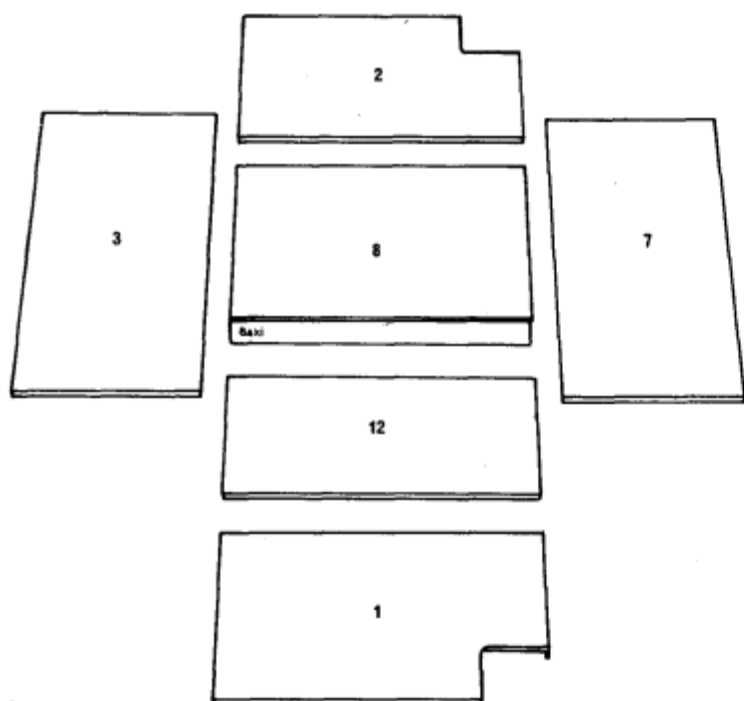
1. Remove the outer case.
2. Disconnect the spark electrode lead at the igniter.
3. Unscrew the 16 mm nut securing the igniter to the thermostat housing bracket and replace the igniter.
4. Reconnect the lead and check that the igniter is sparking correctly at the pilot shroud.

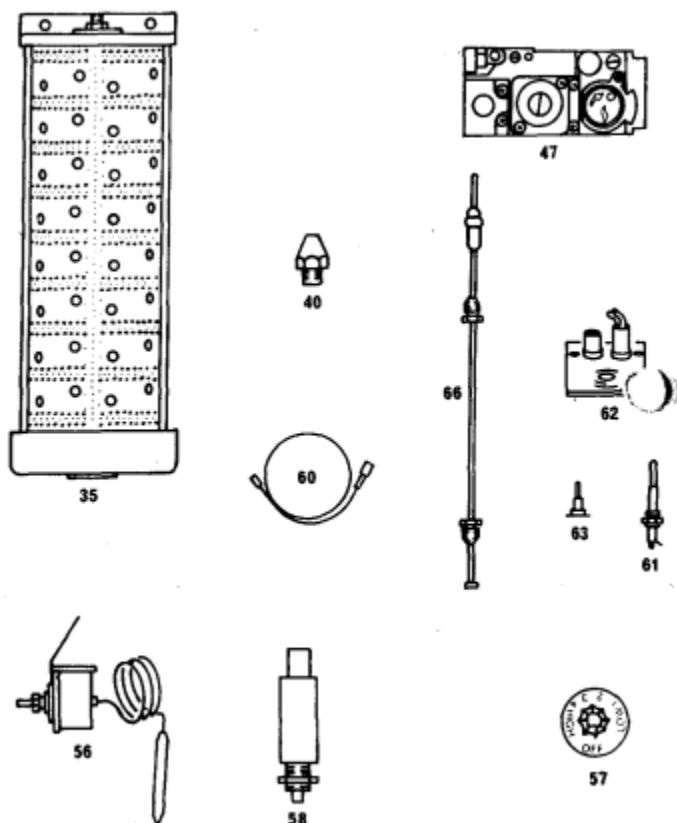
Spark Electrode

1. Remove the combustion box door as described in the servicing instructions items 1-7 inclusive.
2. Disconnect the thermocouple nut and remove the thermocouple.
3. Disconnect the spark electrode lead at the spark electrode.
4. Remove the locking nut securing the electrode to the pilot bracket and remove the electrode.
5. Fit the new electrode checking that the sparking gap is between 3.5 and 4.5 mm and reconnect the electrode lead.
6. Test the igniter and check that the electrode lead is sparking correctly to the pilot shroud.
7. Re-assemble in reverse order of dismantling.



18. Control Valve





SHORT PARTS LIST

Baxi WM 511 RS CAT 1 NAT GAS

British Gas Appliance Number 41 077 08

Key No.	B.G. No.	Description	Makers Part No.
1	364 170	Panel Bottom	100121
2	364 171	Panel Top	100122
3	364 128	Kit - Panel Side - L.H.	100091
7	364 129	Kit - Panel Side - R.H.	100092
8	364 172	Panel Front	100123
12	364 174	Panel Door	100124
32	364 214	Seal Panel Front to Combustion Box	102134
34	364 143	Kit - Sight Window	100134
35	364 182	Burner Boiler	100126
37	364 145	Kit - Gaskets Boiler Burner	100133
40	364 227	Injector-Burner Marked 3.45 mm	102191
44	364 144	Kit - Gaskets Panel Front	100128
47	393 180	Valve - Control Honeywell V4600 C 1029	062623
56	384 686	Thermostat - Boiler - Ranco - P1001	102027
57	183 630	Knob-Thermostat Control Ranco 83151/36	042717

58	183 936	Kit Ignitor - Piezo	040456
60	183 928	Lead - Electrode	102143
61	387 852	Electrode - Pilot Ignition - Kigass E3356	102024
62	391 664	Burner - Pilot Honeywell A359A	062638
63	391 665	Injector - Pilot - N.G. - Honeywell 0.30A	062639
66	390 131	Thermocouple - 18" Honeywell - Q309A 2606	102005

Baxi heating Bamber Bridge Preston PR5 6SN Lancs Tel Preston 36201