

# VITODENS 200 WB2A

## INSTALLATION & SERVICING INSTRUCTIONS

Fully automatic fan assisted balanced flue condensing

Combination & System boiler for use with Natural Gas or Propane.



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# 1 General Information

## 1.1 Appliance Description

Appliance gas council numbers:           47-819-06 Vitodens 200 WB2A 26kW Combi  
  41-819-11 Vitodens 200 WB2A 26kW System

The Vitodens 200 is a fully automatic, wall hung, fan assisted balanced flue condensing system and combination boiler for use with Natural Gas (G20) or Propane (G31). The appliance incorporates a microprocessor based fully modulating gas control system with direct burner ignition.

The appliance features an attractive white enamelled casing with an inset control panel behind a drop down door.

The Vitodens 200 provides central heating output between 8.0 kW (27,300Btu/h) and 24.7 kW (84,300Btu/h) and instantaneous hot water at outputs between 8.0 kW (27,300 Btu/h) and 27.4 kW (93,550 Btu/h). If required, the heat output can be range rated to suit the system requirements.

Heat output is controlled according to demand (in both domestic hot water and central heating mode) by the modulating gas control. The appliance always gives priority to domestic hot water supply.

The appliance is designed for use with sealed primary water systems (only) and incorporates a circulation pump, diverter valve assembly, pressure gauge, flow switch, DHW plate heat exchanger, safety valve and CH expansion vessel. A separate DHW expansion vessel is not required.

Isolation valves are supplied for the heating service connections, a filling loop is included and an automatic heating bypass is fitted to maintain an adequate flow rate through the boiler. Note that if thermostatic radiator valves are installed we recommend that one radiator is fitted with lockshield valves (normally in the bathroom).

If desired, the mounting bracket may be fitted and the system pipework and flue system completed and pre-filled prior to the boiler being fitted.

Internal frost protection and an electronic control unit is fitted as standard equipment and the boiler may be used with any suitable room thermostat and/or time clock in addition to the optional controls available from Viessmann.

The boiler is supplied with a standard concentric air and flue duct system 125mm diameter (5 in), which is suitable for a wall thickness of up to 360 mm (14 in) for a rear flue or 345 mm (13 3/5 in) for a side flue with minimum clearances. The duct assembly is connected to the boiler by a multidirectional turret, which can exit the boiler in any horizontal direction. Extension ducts may be fitted up to a total length of 10 m (393 in).

A vertical outlet kit is also available for installation where an outside wall is not accessible and it is necessary to fit the duct through the roof.

The appliance incorporates an electronic fault diagnosis system and display to facilitate rapid identification of any fault conditions.

# 1 General Information

## 1.2 Certification Details

The Vitodens 200 is certified to comply with the requirements of EN 483 and EN 625 for use in GB and IE (Great Britain and Ireland) using gas category 2H (G20 with a governed gas supply at 20 mbar (8 in.wg) inlet pressure) or 3P (G31 with a supply pressure of 37mb(14.5in wg)).

The appliance classification is either C13 or C33 depending upon whether a horizontal or vertical flue terminal is used.

# 2 Technical Specifications

## 2.1 Performance Data

### 2.1.1 Thermal Performance Details

Mode	Rate	Output		Input			
		KW	Btu/h	Net		Gross	
Central Heating	Max	24.7	84,300	25.7	87,700	28.5	97,100
	Min	8.0	27,300	8.4	28,660	9.3	31,800
Domestic Hot Water (Combi only)	Max	27.4	93,550	29.5	100,650	32.74	111,700
	Min	8.0	27,300	8.4	28,660	9.3	31,800

### 2.1.2 General Performance Details

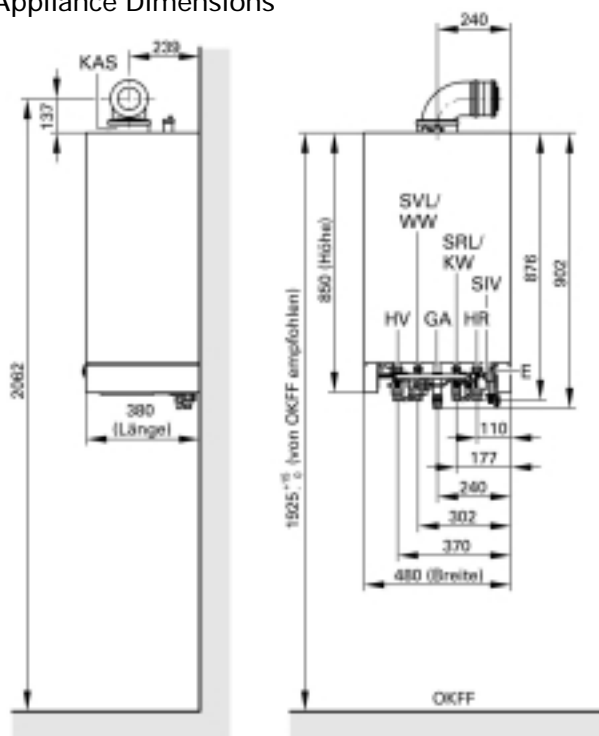
Boiler Model	Combi	System
Maximum gas rate (after 10mins operation i.e. hot) (DHW)	3.1m <sup>3</sup> /h (110 ft <sup>3</sup> /h)	2.7m <sup>3</sup> /h (96ft <sup>3</sup> /h)
Domestic hot water flow rate	4-14l/min (0.88 – 3.1 gpm)	-
Design domestic hot water performance (specific rate)	13.1l/min	-
Domestic hot water temperature range	38 – 57°C	-
Maximum mains water inlet pressure	10 bar (145psi)	-
Minimum mains water inlet pressure for operation	1.0 bar (14.5psi)	-
Minimum mains water inlet pressure for max output	2.0 bar (29psi)	-

## 2 Technical Specifications

### 2.2 General Specifications

Boiler Model	Combi	System
Main burner gas restrictor	6.2mm	6.2mm
Total water capacity (Including expansion Vessel)	11litres	10.5litres
Minimum CH system pressure (static head) – Cold	0.8 bar (11.6psi)	0.8 bar (11.6psi)
Maximum CH system pressure (static head) – Hot	3 bar (43psi)	3 bar (43psi)
Empty weight	54kg	52kg
Electrical supply	230V – 50Hz	230V – 50Hz
Internal fuses	6.3A	6.3A
Maximum power consumption	165w	165w
Maximum CH flow temperature	74°C	74°C
Integral expansion vessel capacity	10 Litres	10 Litres
Integral expansion vessel pre-charge pressure	0.75 bar (11psi)	0.75 bar (11psi)

### 2.3 Overall Appliance Dimensions



## 2 Technical Specifications

Connection Sizes	Combi	System
Gas	Rc 1/2 (Female)	Rc 1/2 (Female)
Central heating flow	Rc 3/4 (Female)	Rc 3/4 (Female)
Central heating return	Rc 3/4 (Female)	Rc 3/4 (Female)
Domestic water inlet	Rc 1/2 (Female)	–
Domestic water outlet	Rc 1/2 (Female)	–
Pressure relief valve outlet	Rc 3/4 (Female)	Rc 3/4 (Female)
Condensate connection	19mm (Female) Flexible	19mm (Female) Flexible

### 2.4 Minimum Installation Clearances

The following minimum clearances must be maintained for installing and servicing the appliance.

Right hand side	10mm (3/8in)	10mm (3/8in)
Left hand side	10mm (3/8in)	10mm (3/8in)
Top (above casing)	350mm (14in)	350mm (14in)
Front	450mm (18in)	450mm (18in)

### 2.5 Flue System Specifications

#### 2.5.1 Concentric Horizontal Flue Systems

Standard horizontal flue kit: The appliance is supplied complete with a standard concentric horizontal balanced flue terminal assembly suitable for flue lengths of up to 620 mm (24.4 in) from the centre of the flue outlet which equates to wall thicknesses of up to 380 mm (15 in) for rear flues or 370 mm (14.6 in) for side flues with minimum clearances.

Extension ducts can be used to increase the straight flue length up to 10 m (393 in) and include two 87° elbows or three 45° elbows. An extra 87° elbow can be used but this reduces the maximum permissible length by 1m (40 in). An extra 45° elbow can be used but this reduces the maximum permissible length by 0.5 m (20 in).

## 2 Technical Specifications

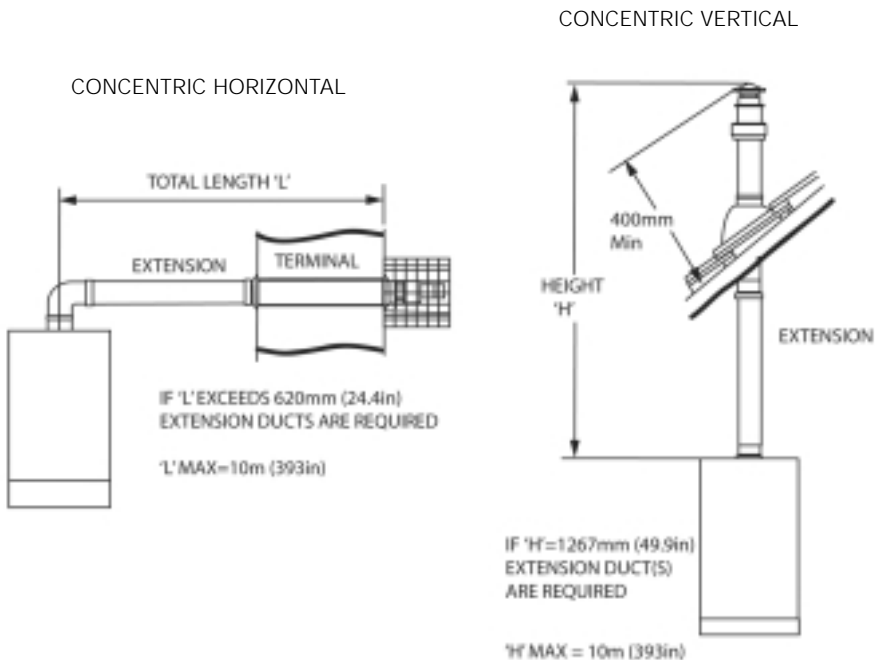
### 2.5.2 Concentric Vertical Flue Systems

The vertical flue kit (optional extra) with extensions may be used to provide a straight length of up to 10 m (393 in) and include two 87° elbows or three 45° elbows.

An extra 87° elbow can be used but this reduces the maximum permissible length by 1 m (40 in). An extra 45° elbow can be used but this reduces the maximum permissible length by 0.5 m (20 in).

Refer to figure 2/A to determine which option kits are required before commencing the installation. Installation instructions for installing the appliance with a standard flue and straight extension ducts are included in the main text of these instructions.

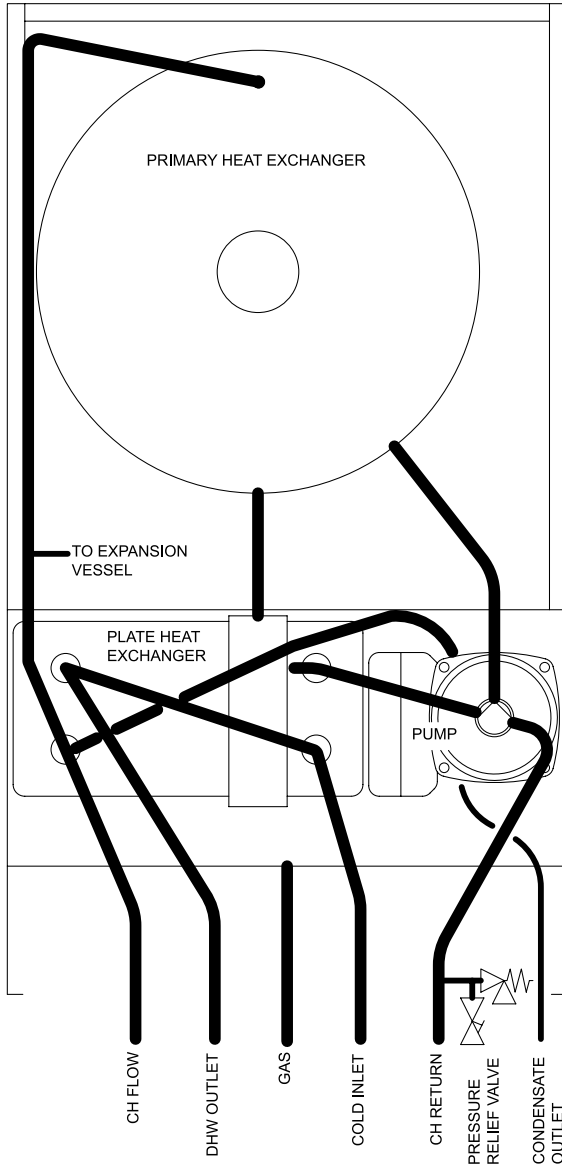
Figure 2/A shows the optional flue systems available for use with the Vitodens 200.



## 2 Technical Specifications

### 2.6 Hydraulic Circuit

Figure 2/B: Hydraulic Circuit





## 2 Technical Specifications

### 2.7 Sectional Diagram

Figure 2/C: Sectional Diagram (Combi Boiler Illustrated)



## 3 Installation Requirements

### 3.1 Statutory Requirements

#### GAS SAFETY (INSTALLATION AND USE) REGULATIONS (CURRENT ISSUE)

It is the law that all gas appliances are installed by a registered person, in accordance with the above regulations. Failure to install appliances correctly could lead to prosecution. It is in your own interest and that of safety, to ensure that the law is complied with.

In addition to the above regulations, this appliance must be installed in accordance with the current IEE Wiring Regulations for electrical installation (BS 7671), local Building Regulations, the Building Standards (Scotland) (Consolidation) Regulations, bye laws of the local water undertaking and Health and Safety Document No. 635 'The Electricity at Work regulations 1989'.

It should also be in accordance with the relevant recommendations in the current editions of the following British Standards and Codes of Practice: BS 5449, BS 5546, BS 5440:1, BS 5440:2, BS 6798, BS 7593, BS 6891 and IGE/UP/7.

#### IMPORTANT NOTES:

Please be advised that NO asbestos, mercury or CFC's have been, nor will be, used in this product

Manufacturers instructions must not be taken in any way as overriding statutory obligations.

### 3.2 Boiler Position

The following limitations MUST be observed when siting the boiler:

- a) The boiler is not suitable for external installation. The position selected for installation should be within the building, unless otherwise protected by a suitable enclosure and MUST allow adequate space for installation, servicing and operation of the appliance and for air circulation around it. (Refer to sections 2.4 and 3.4).
- b) This position MUST allow for a suitable flue system and terminal position. (Refer to sections 2.5 and 3.3). The combination boiler must be installed on a flat vertical wall capable of supporting the weight of the appliance and any ancillary equipment when full.
- c) Due consideration should be given to the routing of the condensate drain from the chosen position.

# 3 Installation Requirements

## 3.2 Boiler Position

The following limitations MUST be observed when siting the boiler:

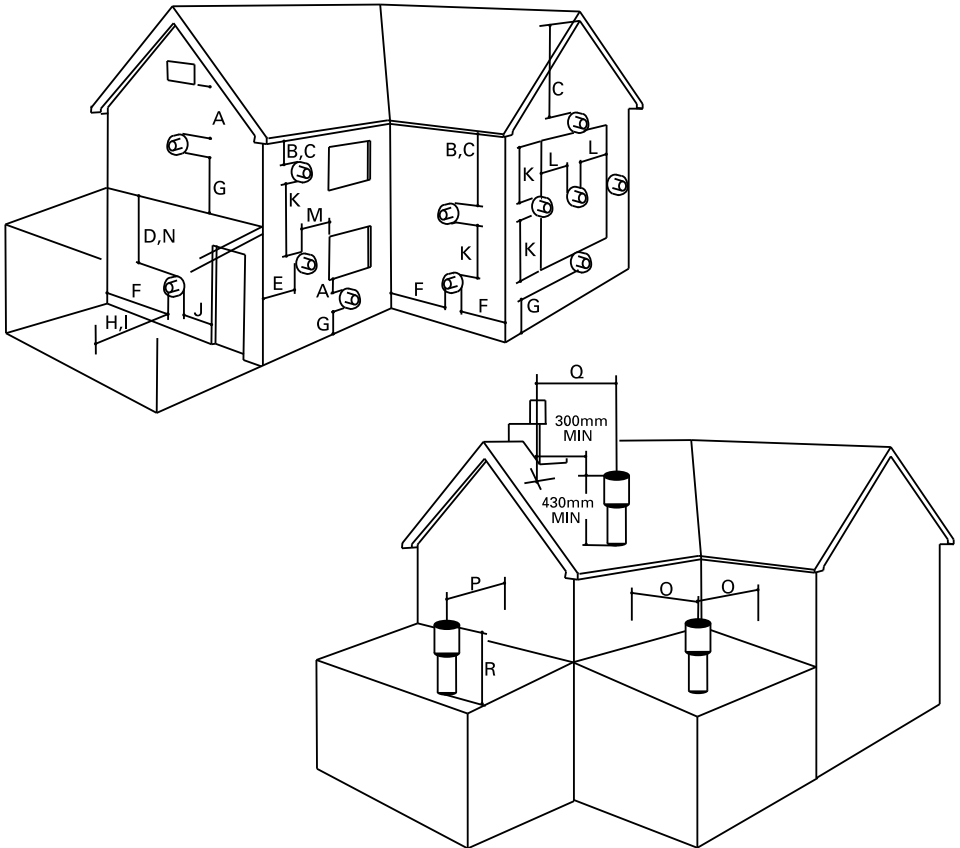
- d) If the boiler is to be fitted in a timber framed building it should be fitted in accordance with the institute of gas engineers publication IGE/UP/7 "Gas installations in Timber Framed Buildings". If in doubt, advice should be sought from the institute of Gas Engineers directly.
- e) If the appliance is to be installed in a room containing a bath or shower, any electrical switch or control utilising mains electricity must be so situated that it cannot be touched by a person using the bath or shower. Attention is drawn to the requirements of BS 7671 (the current I.E.E Wiring Regulations) and in Scotland the electrical provisions of the Building Regulations applicable in Scotland.
- f) A compartment used to enclose the appliance MUST be designed and constructed specifically for this purpose. An existing cupboard or compartment may be used provided it is modified accordingly. BS 5376:2 gives details of the essential features of cupboard / compartment design, including airing cupboards.
- g) Where installation will be in an unusual location, special procedures may be necessary. BS 6798 gives detailed guidance on this aspect.

Position	Minimum Spacing	
A Directly below an openable window, air vent or any other ventilation opening	300mm	12in
B Below gutter drain or soil pipe	75mm	3in
C Below eaves	200mm	8in
D Below a balcony	200mm	8in
E From vertical drain or soil pipes	150mm	6in
F From internal and external corners	300mm	12in
G Above adjacent ground or balcony level	300mm	12in
H From a surface facing the terminal	600mm	24in
I Facing terminals	1200mm	48in
J From opening door/window in carport into dwelling	1200mm	48in
K Vertically from a terminal on same wall	1500mm	60in

# 3 Installation Requirements

Position	Minimum Spacing	
L Horizontally from a terminal on same wall	300mm	12in
M Adjacent to opening	300mm	12in
N Below carport	200mm	8in
O From adjacent wall	300mm	12in
P From adjacent opening window	1000mm	40in
Q From another terminal	600mm	24in
R Minimum height	300mm	12in

Figure 3/A: Flue Termination Position



## 3 Installation Requirements

### 3.3 Flue Terminal Location

Detailed recommendations for flue installation are given in BS 5440:1. The following notes are for general guidance.

- a) The boiler **MUST** be installed so that the terminal is exposed to external air.
- b) It is important that the position of the terminal allows free passage of air across it at all times.
- c) It is **ESSENTIAL TO ENSURE** that products of combustion discharging from the terminal cannot re-enter the building or any other adjacent building, through ventilators, windows, doors, other sources of natural air infiltration or forced ventilation / air conditioning.
- d) The minimum acceptable dimensions from the terminal to obstructions and ventilation openings are specified in Figure 3/A.(BS 5440 Part 1)
- e) If the terminal discharges into a pathway or passageway check that combustion products will not cause nuisance and that the terminal will not obstruct the passageway.
- f) Where the lowest part of the terminal is fitted less than 2m (78in) above ground, above a balcony or above a flat roof to which people have access, the terminal **MUST** be protected by a purpose designed guard. (Available as an optional extra).
- g) Where the terminal is fitted within 850mm (34in) of a plastic or painted gutter, or 450mm (18in) of painted eaves, an aluminium shield at least 750mm long must be fitted to the underside of the painted surface.
- h) The air inlet / flue outlet duct **MUST NOT** be closer than 25mm (1in) to combustible material.
- i) In certain weather conditions the terminal may emit a plume of steam. This is normal but positions where this would cause a nuisance should be avoided.

# 3 Installation Requirements

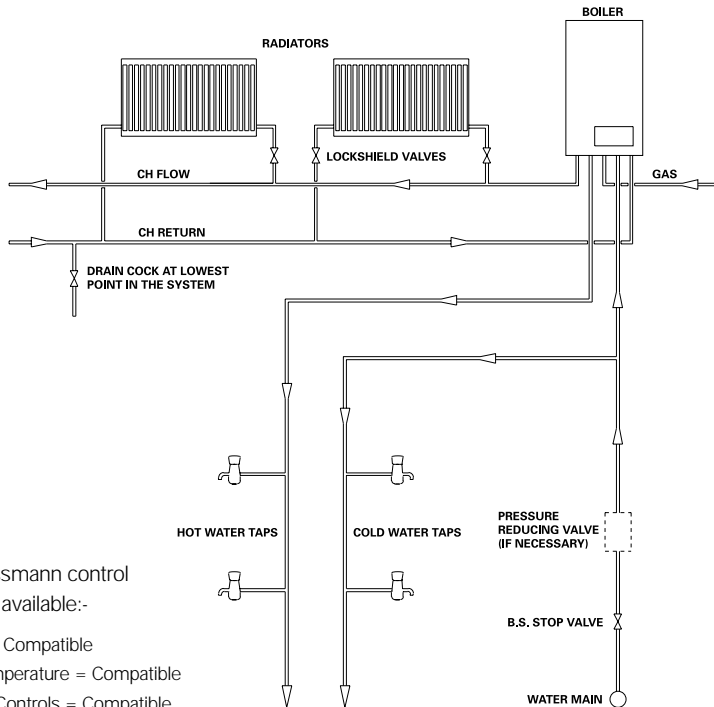
## 3.4 Ventilation Requirements

Detailed recommendations for air supply are given in BS 5440:2. The following notes are for general guidance.

- a) It is not necessary to have a purpose provided air vent in the room or internal space in which the appliance is installed.
- b) If the boiler is to be installed in a cupboard or compartment, no permanent air vents are required for cooling purposes in the cupboard or compartment, however, it is essential to ensure that the minimum clearances stated in section 2.4 are maintained.

Figure 3/B: Typical System Design (Combi Boiler)

Note: The boiler incorporates an internal bypass to ensure adequate water flow, however one radiator (preferably in the bathroom) should be permanently open (fitted with two lockshield valves) to dissipate any excess heat.



- The following Viessmann control configurations are available:-

Constant Temperature = Compatible

Timer with Constant Temperature = Compatible

Weather Compensated Controls = Compatible

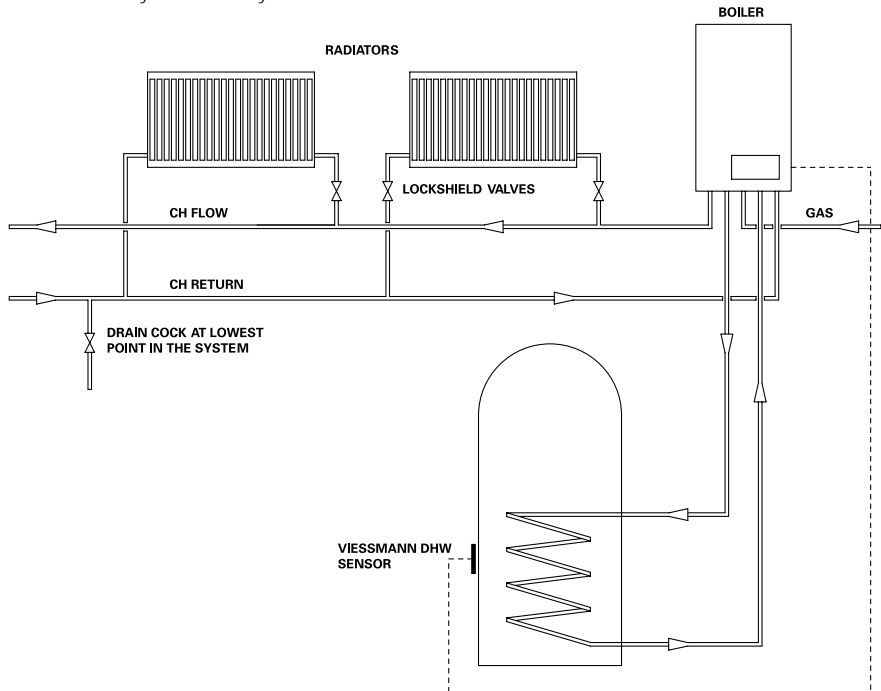
UTD = Compatible

The Boiler will require a permanent live feed via plug 40. (see section 4)

## 3 Installation Requirements

Figure 3/C: Typical System Design (System Boiler - 4 Pipes)

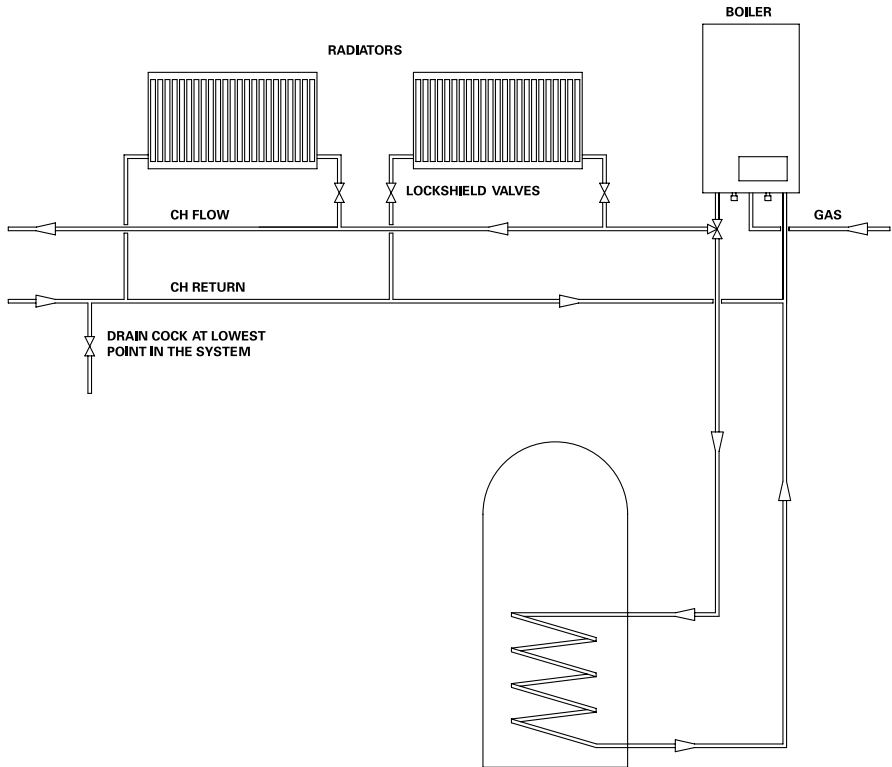
Note: The boiler incorporates an internal bypass to ensure adequate water flow, however one radiator (preferably in the bathroom) should be permanently open (fitted with two lockshield valves) to dissipate any excess heat. The System boiler system is illustrated below.



- As shown above the system boiler utilises the DHW flow and return connections making the DHW fully controllable.
- The following Viessmann control configurations are available:-
  - Constant temperature = Compatible (Timed Control of DHW not Available)
  - Timer with Constant temperature = Compatible
  - Weather Compensated controls = Compatible
  - UTD = CompatibleThe boiler will require a permanent live feed via plug 40. (See section 4.10)
- The Viessmann DHW sensor **MUST BE ATTACHED** to the cylinder by secure means to ensure good contact is made with the cylinder itself (as shown).
- The DHW will always take priority over the Central Heating when timed demand is selected.
- Where an unvented hot water cylinder is used the safety thermostat connected to the cylinder which controls the 2-port valve can be operated by a remote timer or via an internal H1 or H2, or external H1 Viessmann accessory.

## 3 Installation Requirements

Figure 3/D: Typical System Design (System Boiler - 2 Pipes)



- As shown above as a fully pumped system for heating and hot water using only 2 pipes from boiler, the boiler will require the hot water pipes capping off and a permanent live feed via plug 40 with the system demand being connected to the boiler via plug 96.
- The Viessmann DHW sensor **MUST NOT BE FITTED**.
- The following Viessmann control configurations are possible:-
  - Constant temperature = Compatible
  - Timer with Constant temperature = Not Compatible
  - Weather Compensated controls = Not Compatible
  - UTD = Not Compatible

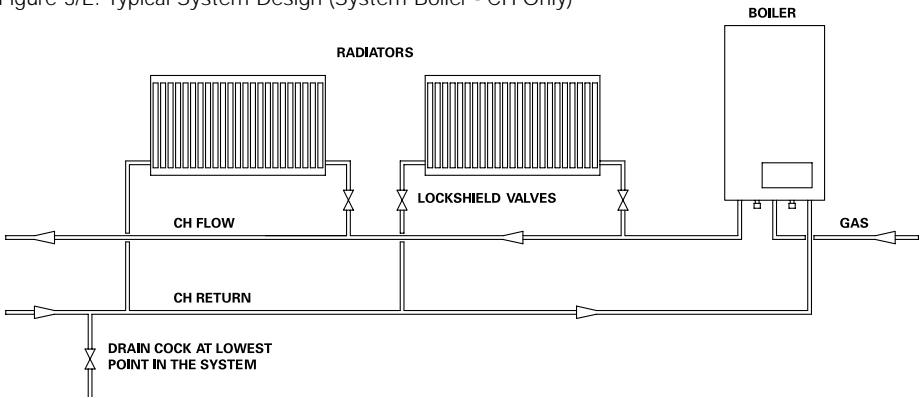
### Note

- Where Y plan and S plan systems connected to traditional open vented or unvented hot water systems are used a remote timer, cylinder thermostat and room thermostat are generally required.



# 3 Installation Requirements

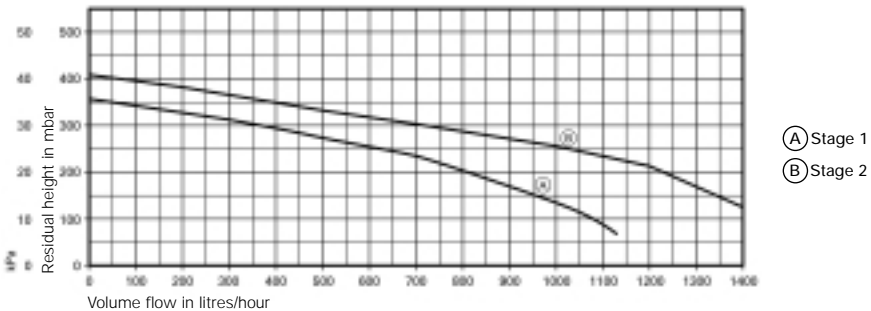
Figure 3/E: Typical System Design (System Boiler - CH Only)



## 3.5 Central Heating System

- a) These appliances are designed for connection to sealed central heating water systems. Refer to Figure 3/B - 3/E for typical system designs.
- b) A sealed system must only be filled by a competent person. A filling loop is supplied as part of the installation kit, therefore no special connections are needed within the system. Instructions for filling the system using the filling loop are supplied in Section 5.
- c) The available pump head is given in Figure 3/F.

Figure 3/F: Available Pump Head



- a) An automatic heating bypass is fitted within the appliance.
- b) The following paragraphs outline the specifications of the items fitted to the boiler.

# 3 Installation Requirements

## 3.5 Central Heating System

### PUMP

The available head shown in figure 3/F is that in excess of the appliance hydraulic resistance, i.e. that available for the system.

### EXPANSION VESSEL

The table below shows the maximum system volume that the integral expansion vessel can sustain under different charge pressure conditions. If the system volume exceeds that shown, an additional expansion vessel must be fitted and connected to the heating system primary return pipe as close as possible to the appliance. If an extra vessel is required, ensure that the total capacity of both vessels is adequate. Further details are available in the current issues of BS 5449 and BS 6798.

Note: If the pressure gauge indicates 2.5 bar or greater when the appliance is at maximum temperature with all radiators in circulation an extra expansion vessel is required.

### PRESSURE GAUGE

A pressure gauge is situated on the appliance control panel. This can be viewed by lowering the plastic panel cover.

### PRESSURE RELIEF VALVE

A pressure relief valve set at 3 bar (43.5 psi) is supplied with the appliance.

### Expansion Vessel Requirements (In accordance with BS 5449)

Vessel charge and initial system pressure	bar	0.5	1.0	1.5
	psi	7.3	14.5	21.5
Total water content of system using 10 litre (2.2 gal) capacity expansion vessel supplied with appliance	litres	106	75	42
	gallons	23	16.5	9
For systems having larger capacity, multiply the total system capacity in litres (Gallons) by the factor to obtain the total minimum expansion vessel capacity required		0.0833	0.11	0.16

## 3 Installation Requirements

### 3.6 Domestic Hot Water System (Combi Boiler Only)

- a) Check that the mains water pressure is sufficient to produce the required DHW flow rate, but does not exceed the maximum DHW pressure (10 bar). If necessary, a pressure reducing valve must be fitted to the mains supply before the DHW inlet connection.
- b) The final 600 mm (24 in) of the mains supply pipe to the boiler must be copper.
- c) A regulator is fitted to control the maximum water flow rate.
- d) If the appliance is installed in an area where the temporary hardness of the water supply is high (over 150 ppm) the fitting of an in line scale inhibitor may be an advantage. Consult the Local Water Authority if in doubt.
- e) For specific information relating to fittings (eg. Showers, washing machines etc) suitable for connection in the DHW circuit, consult the Local Water Authority. However, the following information is given for guidance.

DOMESTIC HOT / COLD WATER SUPPLY TAPS AND MIXING TAPS. All equipment designed for use at mains water pressure is suitable.

SHOWERS AND BIDETS. Any mains pressure shower or bidet complying with the Local Water Authority regulations is suitable.

### 3.7 Gas Supply

- a) The Gas Supplier should be consulted at the installation planning stage in order to establish the availability of an adequate supply of gas.
- b) An existing service pipe MUST NOT be used without prior consultation with the gas supplier.
- c) A gas meter can only be connected by the gas supplier or by their contractor.
- d) An existing meter and / or pipework should be of sufficient size to carry the maximum boiler input plus the demand of any other installed appliance. (BS 6891: 1988). A minimum of 22 mm dia. pipework is required to within 1 metre of the appliance gas cock.

## 3 Installation Requirements

### 3.7 Gas Supply

- e) The governor at the meter must give a constant outlet pressure of 20 mbar (8 in.wg) when the appliance is running. Alternatively for LPG appliances the supply pressure should maintain 37 mb (14in wg)
- f) The gas supply line should be purged. **WARNING:** Before purging open all doors and windows, also extinguish any cigarettes, pipes and any other naked lights.
- g) The complete installation must be tested for gas soundness.

### 3.8 Electricity Supply

- a) Wiring external to the appliance must be in accordance with BS 7671 (the current I.E.E Wiring Regulations) for electrical installation and any local regulations which apply.
- b) The mains cable must be at least 0.75 mm<sup>2</sup> (24/0.2 mm) PVC insulated to BS 6500 table 16.
- c) **WARNING: THIS APPLIANCE MUST BE EARTHED.** (Failure to provide a satisfactory earth connection would be a safety hazard and may also result in appliance malfunction).
- d) The method of connection to the mains supply must facilitate complete electrical isolation of the appliance. Either a 3A fused three pin plug and unswitched shuttered socket outlet, both complying with BS 1363, or a 3A fused double pole switch having a 3 mm contact separation in both poles and serving only the boiler (and its external controls) may be used.

### 3.9 External Controls

To ensure optimum performance, Viessmann offer a range of external controls however the appliance may be used with any Certificated room thermostat or time clock room thermostat as described in Section 4.

## 4 Installation Procedure

### 4.1 Unpacking the Appliance

The appliance is supplied as standard in 2 separate packages. Any optional extras are supplied individually. Check the availability and contents of each package before commencing the installation.

**Boiler package:**            **Boiler (assembled)**  
                                 **Wall mounted template (paper)**  
                                 **Wall mounted pipework connections**

**Installation package:**    **Flue duct comprising standard horizontal terminal assembly.**  
                                 **Flue turret concentric elbow.**  
                                 **Conversion kit from Natural Gas (G20) to Propane (G31)**  
                                 **(includes instructions for conversion).**

Note: The Vitodens 200 'installation package' and all system pipework and flue system can be installed prior to the boiler being fitted if site security cannot be guaranteed.

### 4.2 Preparing the Wall for Installation

Important: Before installing the appliance, check that the chosen position is suitable (section 3.2), adequate installation clearances are available (section 2.4) and that the requirements for flue terminal position (section 3.3) are satisfied.

#### 4.2.1 Fitting the Wall Mounted Piping Frame Assembly

- a) Open the paper wall template and fix it in the desired location, ensuring that the appliance centre line is vertical and that the minimum installation clearances are maintained.
- b) Mark the position of the four fixing holes and the flue outlet if a rear flue is to be used. If a side (or vertical) flue is to be used the appropriate centre line should be extended as shown in Figure 4/A to mark the required hole position.
- c) Drill the top and bottom fixing holes (Figure 4/B) 8 mm diameter. Insert the appropriate plugs. Use a core drill to bore the air / flue duct 130 mm diameter

# 4 Installation Procedure

Figure 4/A: Determining the position of the flue duct hole

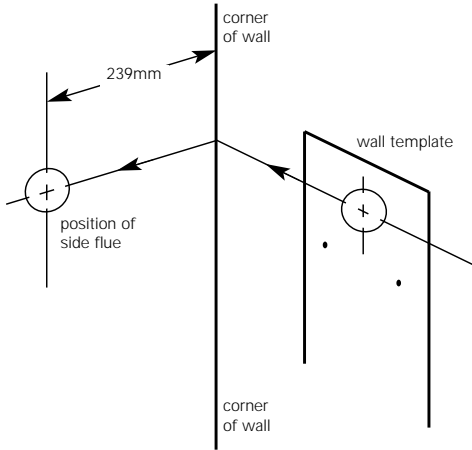
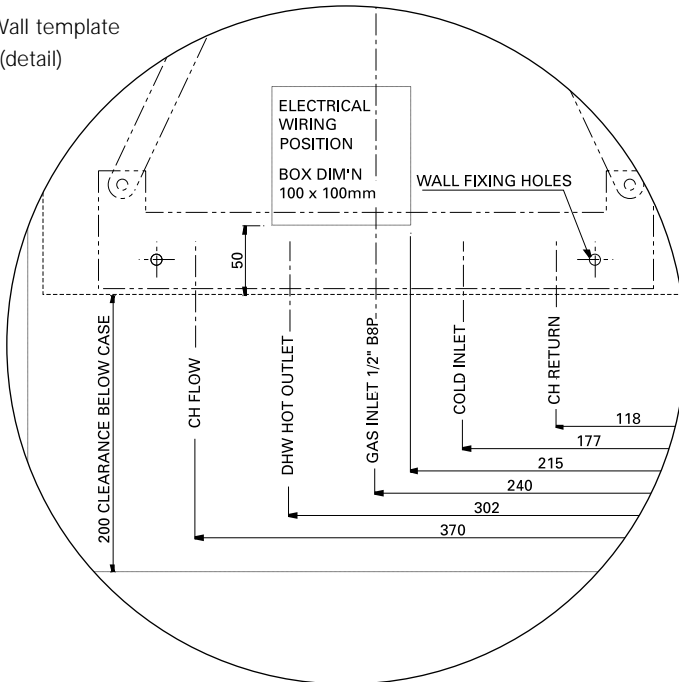
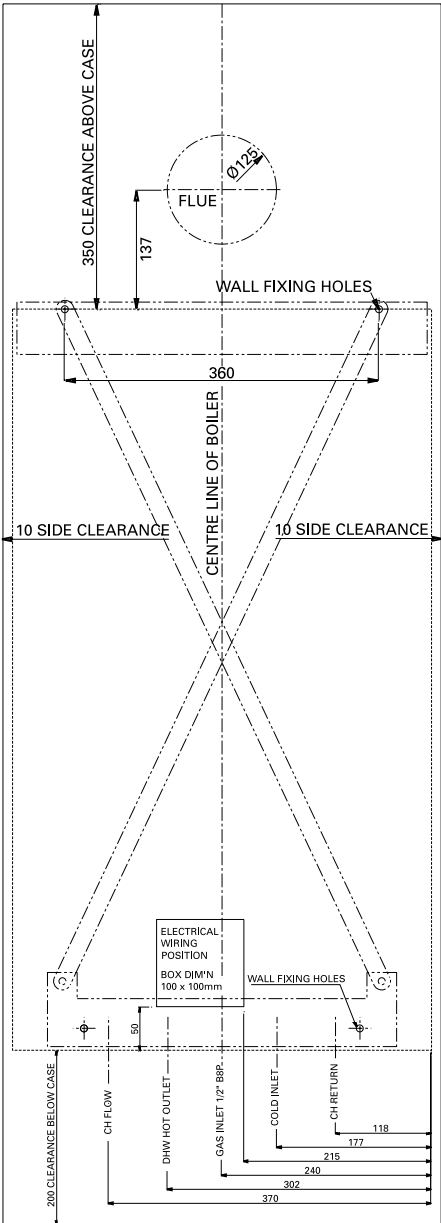


Figure 4/B: Wall template connections (detail)



# 4 Installation Procedure

Figure 4/B: Full Wall template



## 4 Installation Procedure

### 4.2.2 Fitting the Flue Support Bracket

- a) Fix the flue support bracket to the wall using the screws provided as shown in Figure 4/C.

### 4.2.3 Fitting the Connection Adapters

- a) Assuming that the service connections are to be completed using copper pipework, fit the threaded connectors (supplied) to the pipe connections as appropriate.

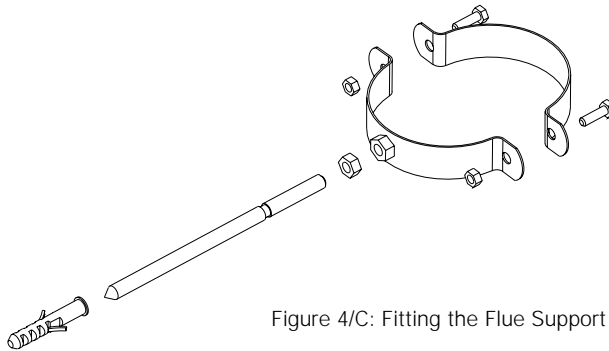


Figure 4/C: Fitting the Flue Support Bracket

### 4.3 Fitting the Boiler

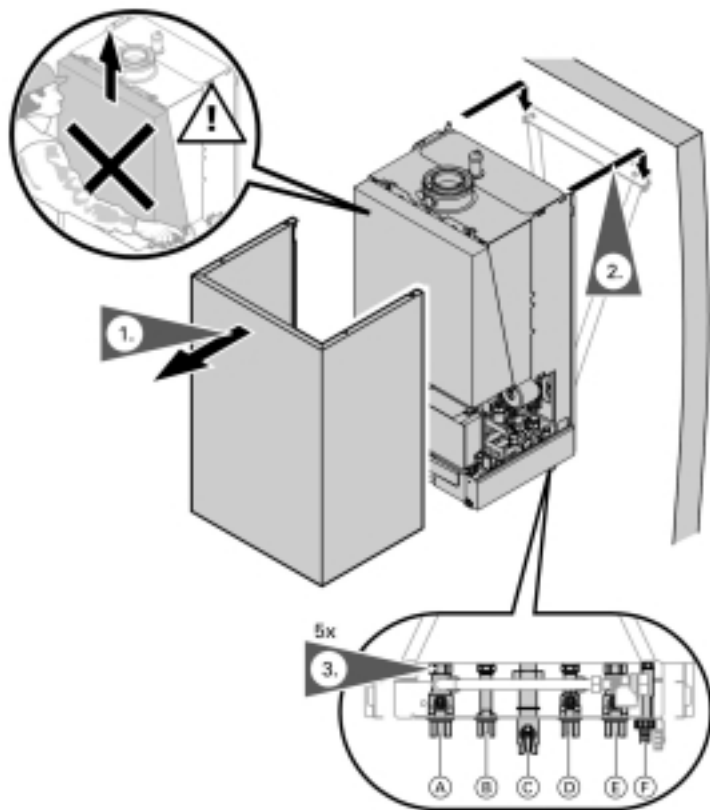
**NOTE:** This step can be delayed until immediately prior to system commissioning if site security cannot be guaranteed. If this option is required, isolate the service connections and continue with the system installation procedure described in the following sections, including checking the soundness of the system, flushing and cleaning, then return to this section later.

- a) Unpack the boiler and remove the outer casing by removing the two lower fixing screws, pulling forward and lifting clear of the appliance. Place the outer casing in a safe place until after installation (Figure 4/D), stand the appliance in a vertical position.



## 4 Installation Procedure

Figure 4/D



- b) Ensure that the two outermost compression coupling nuts on the piping frame are slacked but in position with their olives aligned.
- c) Lift the boiler in a vertical attitude (two persons will be needed for this task) and offer the boiler against the wall mounting frame entering the two 22 mm vertical flow and return pipes into the compression couplings on the piping frame before lowering the boiler onto the two supporting lugs at the top of the wall support frame.

## 4 Installation Procedure

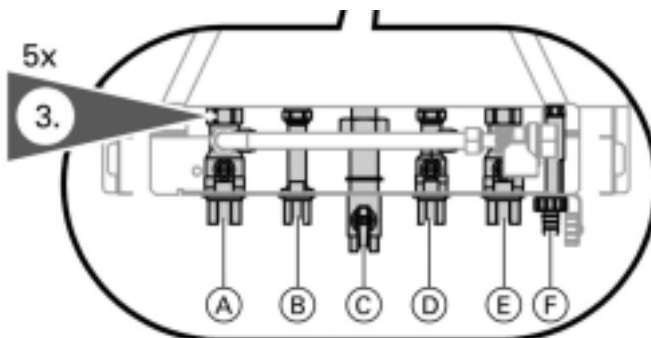
### 4.3 Fitting the Boiler

- d) Open the lower hinged controls cover. Disconnect the fixing clips at the side of the control pod and hinge the pod forwards.
- e) Tighten the CH compression couplings.
- f) Connect the DHW inlet and outlet couplings by inserting a sealing washer (supplied) and lifting the nut to engage with the thread, tighten both nuts to make a watertight seal.
- g) Pass the gas cock assembly through the central hole in the piping frame ensuring that it is the correct way round. Insert a sealing washer and partially tighten the coupling.

### 4.4 Making the Water Connections

- a) Refer to Figure 4/E. Connect the central heating system to the boiler flow and return connections as shown.
- b) Connect the mains cold water supply to the cold water connection (combi).
- c) Connect the domestic hot water outlet pipework to the DHW outlet connection if required (system).

Figure 4/E: Boiler Service Connections



## 4 Installation Procedure

Figure 4/E: Key - Boiler Service Connections

Combi	System
A Central heating flow	A Central heating flow
B Hot water outlet (Combi only)	B DHW cylinder flow (if required)
C Gas connection	C Gas connection
D Cold water inlet (Combi only)	D DHW cylinder return (if required)
E Central heating return	E Central heating return
F Drain valve connection	F Drain valve connection

### 4.5 Connecting the Gas Supply

- a) Refer to Figure 4/E. Connect the gas supply to the gas inlet connection on the gas cock. Upon completion, tighten the union connection.
- b) **NOTE: The appliance is supplied adjusted for Natural Gas G20.**
- c) If the appliance is to be used on Propane (G31) follow the instructions supplied with the conversion kit.

**NOTE:** There is a safety device incorporated within the gas service cock which, when exposed to heat (100°C) will shut off the gas supply. Care should be taken whilst connecting the gas supply not to expose the gas service cock to heat sources e.g heat from blow torches.

If shut off does occur then the safety valve has to be replaced, as it cannot be re-set.

### 4.6 Pressure Relief Valve Connection

Refer to Figure 4/E. Connect a suitable discharge pipe to the pressure relief valve outlet using a tundish and pipework as required by the Building Regulations. The pipe between the appliance and the tundish must be a minimum of 15 mm copper and run continually downwards.

### 4.7 Flue System Preparation

#### 4.7.1 Horizontal Flues (Rear and Side Flues).

- a) Accurately measure the total flue length 'L' from the external wall face to the centre line of the flue spigot as shown. If this distance is 640mm or less, no further extensions will be required. (refer to Figure 4/F).
- b) Where the flue length is less than 640mm the flue pipe will require cutting. The cut length is calculated  $L - 80\text{mm}$ .

# 4 Installation Procedure

## 4.7 Flue System Preparation

### 4.7.1 Horizontal Flues (Rear and Side Flues).

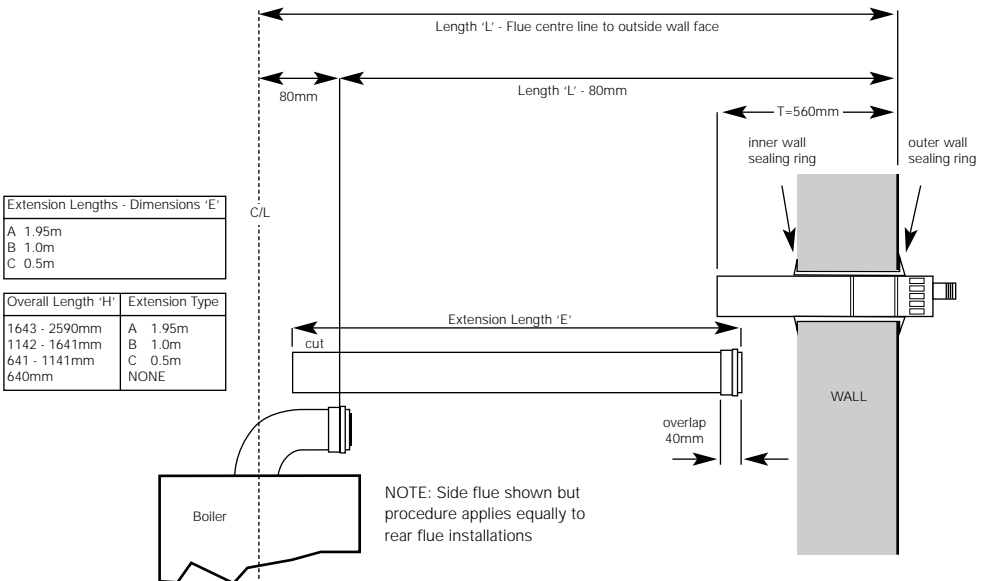
**Note:** Cut both inner and outer ducts flush and square, remove any burrs or sharp edges. Cut only the opposite end to the discharge terminal.

- c) If the flue requires extending where  $L > 640\text{mm}$  then  $L - 560 - 80 + 40$  will equal the minimum total length of extension duct required.
- d) To cut the extension piece to the correct length, the distance from the socket end to the cut can be calculated the same as before (c)  $L - 560 - 80 + 40$

**Note:** Cut both inner and outer ducts flush and square, remove any burrs or sharp edges. Cut only the opposite end to the socket.

- e) As the flue elbow terminates 80 mm from flue centre line, calculate the length to be cut from the extension(s) to achieve length  $L - 620\text{ mm}$ . Note that a 40 mm overlap is necessary at each joint.
- f) Cut the excess length from the plain end of one of the extension ducts. Cut both ducts flush and square. Remove any burrs or sharp edges.

Figure 4/F: Measuring the flue length from outside wall face to flue centre line



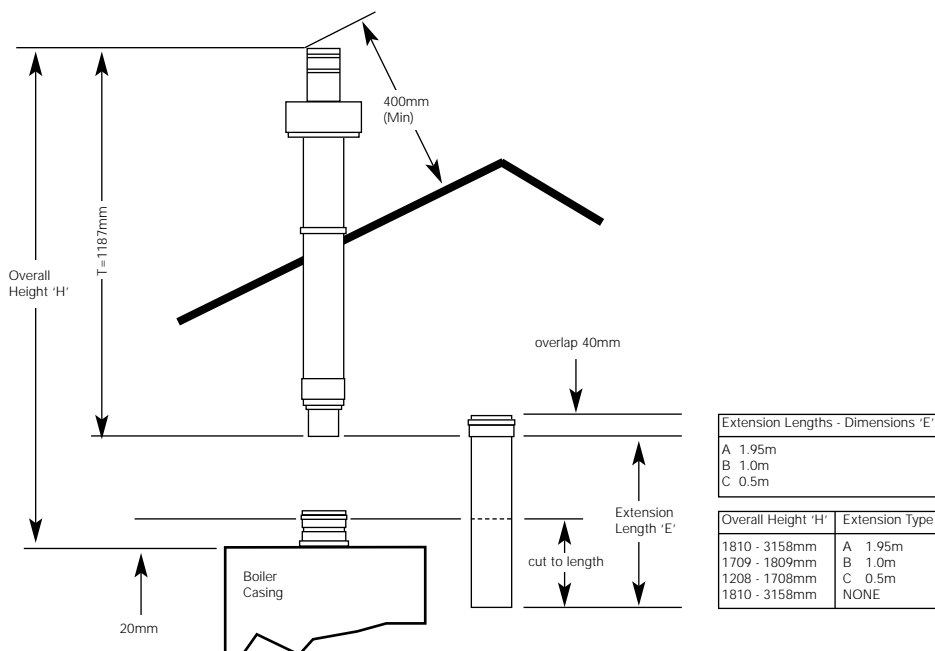
## 4 Installation Procedure

### 4.7.2 Vertical Flue Systems

- Accurately measure the required flue length 'H' as shown, ensuring that a minimum of 400 mm is maintained above the roof line. If this distance is 1207mm or less, no further extensions will be required. Refer to Figure 4/G.
- Where an extension is required the total length of the flue can be calculated  $H - 20 + 40$ . This will equal the minimum length of extension duct required.
- To cut the extension piece to the correct length, the distance from the socket end to the cut can be calculated the same as before (b)  $H - 20 + 40$

**Note:** Cut both inner and outer ducts flush and square, remove any burrs or sharp edges. Cut only the opposite end to the socket.

Figure 4/G: Measuring the flue length from the terminal to the top of the outer casing



## 4 Installation Procedure

### 4.8 Fitting the Flue System

#### 4.8.1 Horizontal Flue Systems

Refer to Figure 4/H. Note that the flue can be installed prior to the boiler (if desired) because the flue support bracket if used will hold the flue system in place. Install the flue system as follows:

- Step 1: Push the adaptor into the top half of the spigot at the top of the boiler as shown. Silicone grease may be used to assist with connection.
- Step 2: Push the elbow firmly into the adaptor as illustrated.
- Step 3: If applicable, push any extension ducts into the elbow.
- Step 4: Push the outer sealing ring over the flue terminal (up to the locating ridge) and slide the flue terminal assembly through the hole in the wall from outside the building. (Alternatively this can be done from inside the room if no external access is available in which case the outer seal is not used).
- Step 5: Loosely push the inner sealing ring over the terminal assembly.
- Step 6: Push the terminal assembly into the extension ducts (or elbow) and ensure that the outer sealing ring (if fitted) is flush against the outside wall. The terminal must be the correct way up with the holes in the air inlet duct at the bottom.
- Step 7: Slide the inner wall seal against the wall face to hold the assembly in position and provide an adequate seal.

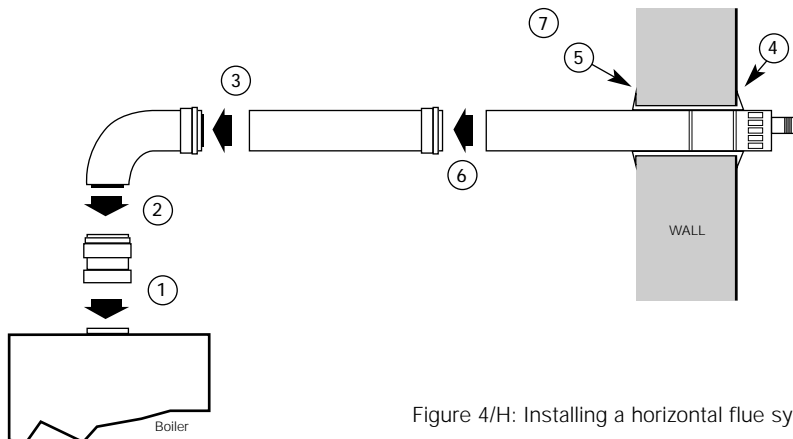


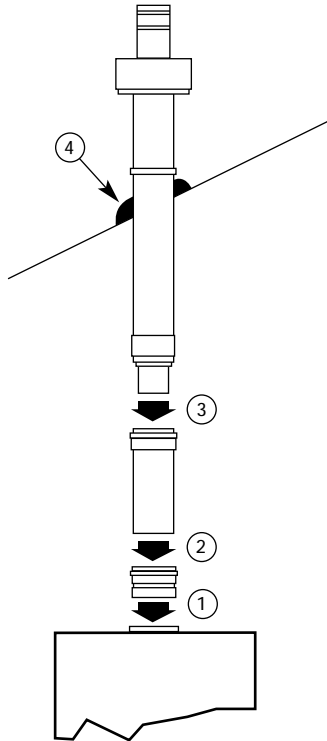
Figure 4/H: Installing a horizontal flue system

## 4 Installation Procedure

### 4.8.2 Vertical Flue Systems

- a) Refer to Figure 4/I. Note that the flue can be installed prior to the boiler (if desired) because the flue support bracket supplied as an optional extra will hold the flue system in place. Install the flue system as follows:

Figure 4/I:  
Installing a vertical flue system



- Step 1: Push the adaptor into the top half of the spigot at the top of the boiler as shown
- Step 2: If applicable, push any extension ducts into the elbow.
- Step 3: Push the roof sealing assembly over the flue terminal and slide the flue terminal assembly through the roof from outside the building. Push the terminal into the adaptor (or extension duct).
- Step 4: Make good the roof seal from outside the building.

## 4 Installation Procedure

### 4.8.3 Flue Systems with Additional Elbows

- a) If the flue system incorporates additional 90° or 45° elbows the procedure for adding the elbows into the system is exactly the same as for extension ducts. Measurements to be used for such purposes are given in Figure 4/J.

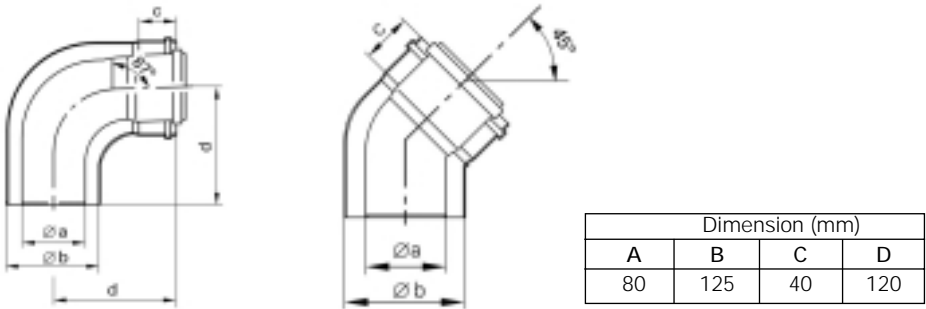


Figure 4/J: Dimensions of Additional elbows for use in Flue Systems

## 4.9 Wiring Instructions

Gain access to the wiring interface by:

- Disconnect the fixing clips at the side of the control pod and hinge the pod forwards.
- Release the seven plastic tabs securing the lid of the control pod and lift off the lid.

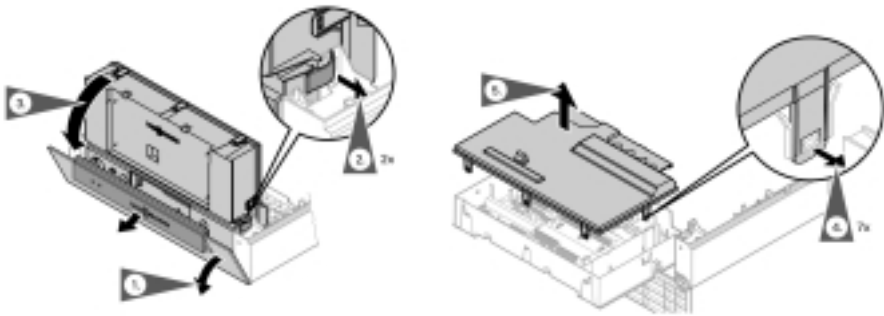


Figure 4/K: Opening the Control Unit Housing



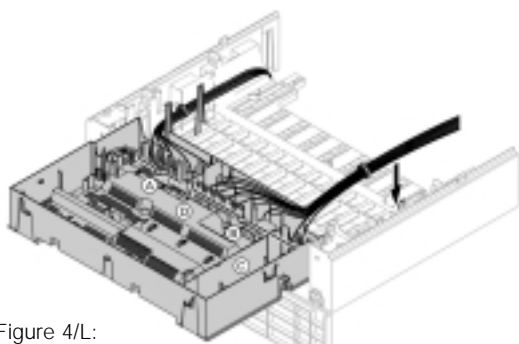
## 4 Installation Procedure

### 4.9.1 Electrical Connections

It is important that the Live (L) and Neutral (N) are not interchanged.

A two pole shut off switch with a contact separation of at least 3 mm MUST be fitted in the mains supply to the boiler with a maximum fuse value of 3A

Route the main cable through one of the cable glands at the rear of the controls pod to the mains connection terminal (40) the brown wire being connected to terminal (L), the blue wire to (N) and the green / yellow to (E) ensuring that the earth (green / yellow) is longer than the live and neutral wires. Ensure that the routing of the wire does not allow the cable to exceed its maximum safe working temperature.



- (A) Low voltage connections (to ancillary equipment)
- (B) 230 V mains connection
- (C) Internal extension
- (D) Main circuit board

Figure 4/L:

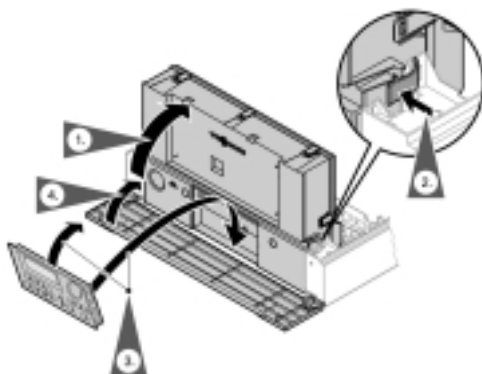
### 4.9.2 Fitting the user interface

When the installation is complete and all connections have been secured, insert the user interface behind the lower drop down door by inserting into the central aperture bottom first then pushing backwards to make the electrical contacts.

## 4.10 External Controls

### Clock /Thermostat

Install the Vitotrol 100 UTA or Vitotrol 100 UTD clock thermostat in accordance with the instructions contained in the kit.



## 4 Installation Procedure

### 4.10 External Controls

Alternatively connect programmer /room thermostat terminal (96) in accordance with Fig 4/M after removing link between L and 1 routing wiring through one of the strain relief clamps.

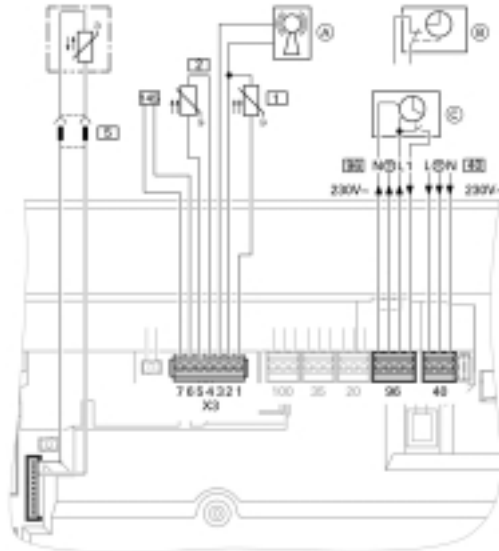


Figure 4/M:

Other Accessories (Room Thermostat and / or Time Clocks)

External controls should be connected to the appliance as follows:

- a) Volt free switching contacts (e.g across clock switch) should be connected between 'L and 1' in place of the jumper as described above.
- b) Mains voltage power for operating any external controls is available from connector 96 (Figure 4/M). If required, remove plug 96, connect the controls cable into the plug and replace the plug using a strain relief retaining clamp. Note that the line (brown wire) must be connected to the terminal marked 'L', the blue wire to the terminal marked 'N' and the green / yellow wire to earth.

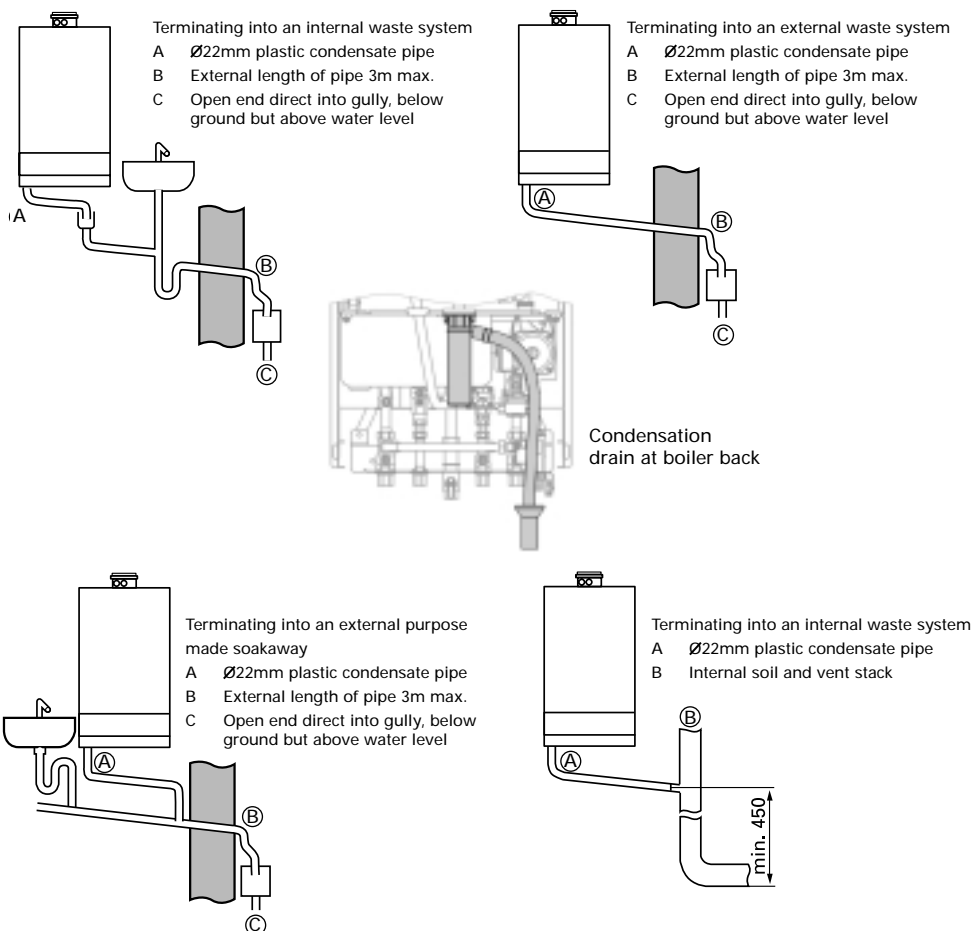
Room Thermostat With Anticipator Fitted

If a room thermostat with anticipator fitted is to be used, connect the switching contacts across terminals 'L and 1' and return the neutral anticipator wire to the neutral connection in terminal 96.

## 4 Installation Procedure

### 4.11 Condensate Drain Connection

- Route the condensate drain via a tundish or other suitable vented pipework to a suitable drain.
- Ensure that the drainage pipework has a minimum fall of 1 in 20 away from the boiler.
- All pipework must be of plastic and must not be reduced in diameter throughout its length.
- Ensure that the siphon is full of water before firing the boiler.



## 5 Commissioning and Testing

Before commissioning the appliance, the whole gas installation including the meter MUST be purged and tested for gas soundness in accordance with BS 6891: 1988. IMPORTANT: Open all doors and windows; extinguish naked lights and DO NOT SMOKE whilst purging the gas line.

Before commencing the commissioning procedure, ensure that the gas service cock is turned on, the electricity supply is isolated and that the DHW and CH pipework is complete.

Fill the system with cold water. It may be convenient to carry out this procedure before fitting the boiler to the piping frame. Vent the system via the radiator valves and system air vents in accordance with normal practice, close all air vents and check for system soundness. Drain the entire system to flush out any debris.

The following instructions assume that the casing has not yet been fitted following initial installation. If the casing has been fitted, it is necessary to remove the casing as described in section 6.1 (a)

### 5.1 Filling the Central Heating Circuit

The following procedure is recommended when the boiler has been fitted.

- a) Check that the central heating flow and return valves are open. Turn on the mains water supply.
- b) Open the filling loop valves and fill the system via the boiler fill and drain valve (A). Check the system pressure on the gauge and vent all radiators and air vents in the normal way. Close the filling loop valves before the system pressure reaches 2.5 bar.
- c) Unscrew the pump spindle cover (in the centre of the pump head) and spin the pump shaft with a screwdriver to ensure that it routes freely. Replace the spindle cover.
- d) Check the operation of the pressure relief valve by rotating the plastic head anticlockwise 1/4 of a turn and checking that water is discharged. Ensure that the valve seats correctly and does not leak. If the valve leaks or is stuck closed, replace it.
- e) Check the system for water leaks; the system should then be flushed in accordance with BS 7593. Upon completion of correct flushing, the system should be re-filled to 0.2 bar above system design pressure. System design pressure should be between 1.0 and 1.5 bar.

## 5 Commissioning and Testing

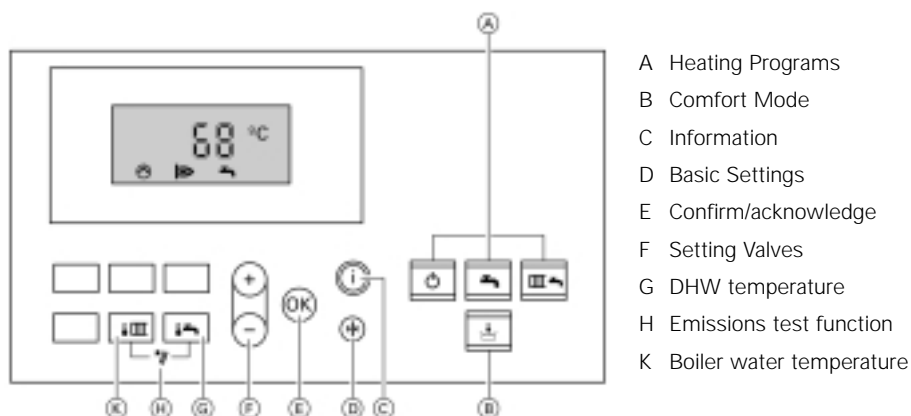
### 5.1 Filling the Central Heating Circuit



NOTE: To prevent air being trapped in the top of the heat exchanger it is recommended to flush the heat exchanger with the 12mm tubing (B) – see Fig 5/A. – connected to the flow pipe within the combustion chamber after completion of the above steps.

### 5.2 Venting the Boiler

Note: Control indicated is the Constant temperature model, if controls incorporating clock or weather compensation are used the same procedure applies.

Figure 5/A: Venting the boiler, Venting the heating system, Adjusting Max boiler output (Range Rating)

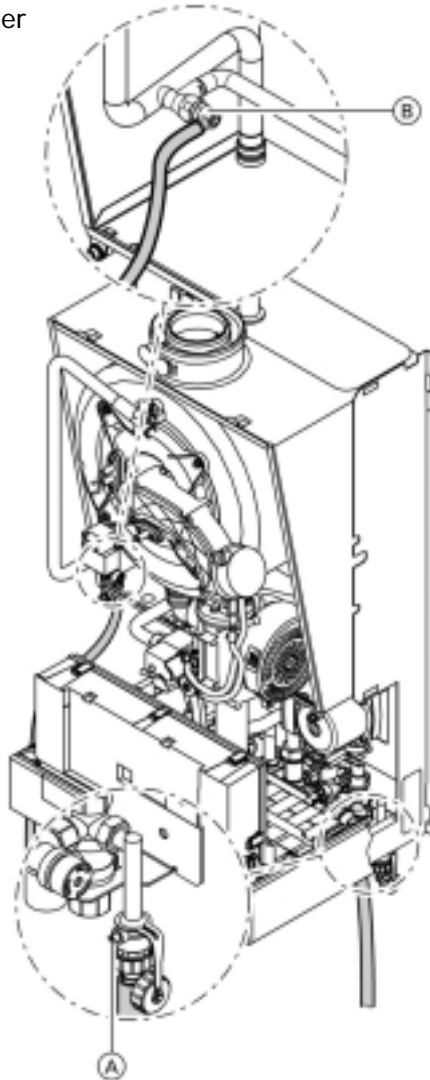


- Start the control unit and select code 1 by simultaneously pressing  and  for approximately 2 seconds (See fig 5/A).
- Using  $\oplus/\ominus$  select coding 2F:2 when the diverter valve will be in the central position and display shows bF in Constant temperature mode. Weather compensated mode will show 'VENTING'.
- Close the isolation flow valve (A) on the central heating side.
- Connect the drain hose on the upper valve (B) to a drain point (See fig 5/A) overleaf.

## 5 Commissioning and Testing

### 5.2 Venting the Boiler





Fig 5/B



- e) Open valves (A) and (B) and vent at mains pressure, until the sound of escaping air cannot be heard.
- f) Close valves (A) and (B), and open the primary isolation flow valve.

## 5 Commissioning and Testing




### 5.3 Venting the Heating System

- a) Close the gas shut off valve and start the control unit
- b) Use  and  simultaneously to activate code 1 and use  $\oplus/\ominus$  to activate the venting program via coding address 2F:1(See fig 5/A).
- c) Under this coding the diverter valve is opened and closed for 20 minutes to assist venting and the display will show EL in Constant temperature mode. Weather compensated mode will show 'VENTING'. After 20 minutes the coding will automatically return to 2F:0.
- d) Check the system pressure and top up if necessary
- e) Press  and  simultaneously to deactivate coding 1 and return controller to normal operation.
- f) Disconnect the filling loop flexible hose.

#### Maximum Heating Output Adjustment (if required)

The gas control is fully modulating and will normally facilitate a rapid heat up at maximum output followed by a continually controlled heat output. If the system has a particularly low heating load it is possible to restrict the maximum heating output to prevent short cycling.

To adjust the heating output, proceed as follows.

- a) Start up the boiler.
- b) Refer to Figure 5/A. Press  and  simultaneously until 85 flashes on the display (= rated output) and  appears. On weather compensated controls the display additionally shows 'Max output'
- c) With  $\oplus/\ominus$  buttons select the required value in % of rated output as max output.
- d) Confirm the set value with.
- e) Record the setting of max output on the additional data plate included with the technical documentation. Affix this data plate next to the original data plate on top of the boiler.
- f) Ensure that the new maximum output is sufficient to cope with the demand.

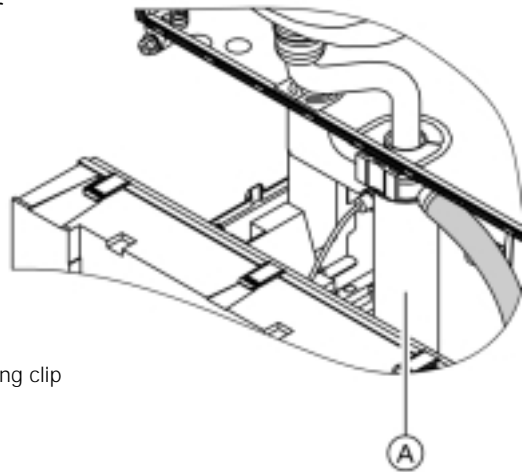
## 5 Commissioning and Testing

### 5.4 Filling the Domestic Hot Water Circuit (Combi Boiler Only)

- a) Open the DHW inlet valve.
- b) Open all DHW taps in turn to vent any air from the DHW pipework.

### 5.5 Filling the Siphon with Water

Fig 5/C



- a) Remove the retaining clip and siphon (A)
- b) Fill the siphon with water.
- c) Fit siphon (A) and secure with the retaining clip

### 5.6 Commissioning the Boiler

- a) If a clock thermostat is fitted, check that the jumper between 'L and 1' on plug 96 has been removed. (Figure 4/M).
- b) Lower the control box by detaching the two plastic clips at each end of the control and rotating the control box forwards (see section 4.9)

**NOTE:** The boiler is supplied for use on Natural Gas (G20). If the boiler is to be used on LPG Propane (G31) follow the instructions supplied with the relevant conversion kit before commissioning the boiler.

- c) Refer to Figure 5/D. Loosen the screw (A) and connect a pressure gauge to the inlet pressure test point on the gas valve. Ensure the room thermostat is calling for heat, turn on the gas supply and light the boiler and any other appliances served by the gas pipe. When commissioning the boiler for use on Natural Gas (G20) check that the inlet pressure is  $20 \pm 1$  mbar (8 in.wg).



## 5 Commissioning and Testing

### 5.6 Commissioning the Boiler

- d) Remove the pressure gauge. Tighten the inlet pressure test point screw.
- e) Restart the appliance and check for leakage of gas from the pressure test nipple.

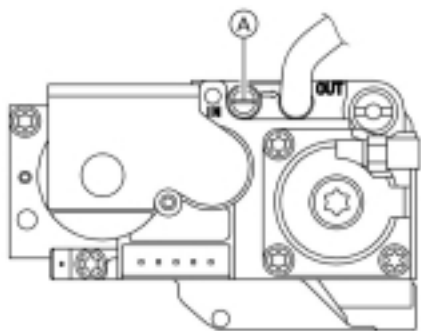


Fig 5/D: Gas Control

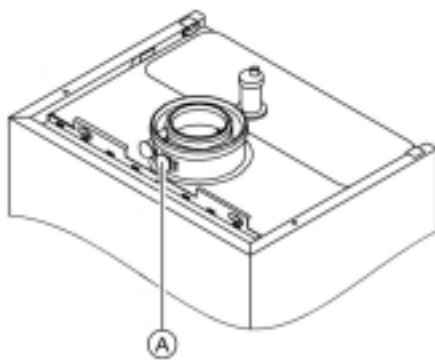


Figure 5/E: Flue Gas Sampling

Vitodens 200 is set up in the factory for natural gas and can be converted to LPG Propane using a conversion kit. During commissioning or after maintenance the CO<sub>2</sub> level can be checked at the boiler flue adaptor position (A) as illustrated in Figure 5/E.

Subject to Wobbe index, the CO<sub>2</sub> content fluctuates between:

7.4% to 10.5% for natural gas

8.5% to 11.0% for LPG Propane

Compare the actual CO<sub>2</sub> value measured at position (A) with the above CO<sub>2</sub> value ranges for the individual gas groups. If the actual CO<sub>2</sub> value deviates by more than 1% for natural gas or 0.5% for LPG, proceed as follows:-

Check that the correct gas restrictor has been fitted.


Check the balanced flue system for soundness.

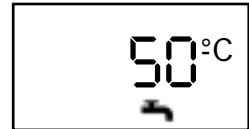
## 5 Commissioning and Testing

### 5.7 Domestic Hot Water Flow Rate and Temperature (Combi Boiler Only)

A flow regulator is fitted to ensure that no adjustment of maximum flow is necessary.

The domestic hot water outlet temperature is regulated between the temperatures 32° and 57°C. This temperature can be changed on the controller by the following:


Change the temperature of the DHW to the desired level by pressing the control button  and the currently set value will be displayed.

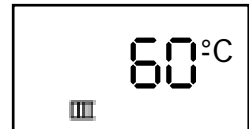


By pressing control buttons  $\oplus$  or  $\ominus$  this setting can be increased or decreased. When the required setting has been indicated enter this value by pressing  $\otimes$ . Whilst this adjustment is being made the selected temperature and the tap symbol will flash in the display window.

### 5.8 Adjusting the boiler water temperature

The boiler water temperature must be set at an adequate level to satisfy the requirements of the heating system. The level is factory set at 74°C but may be adjusted as follows:

Press  and the currently set temperature will flash. Use  $\oplus$ / $\ominus$  to adjust the set temperature to that required. Press  $\otimes$  to confirm and save the new setting.



### 5.9 Final Checks

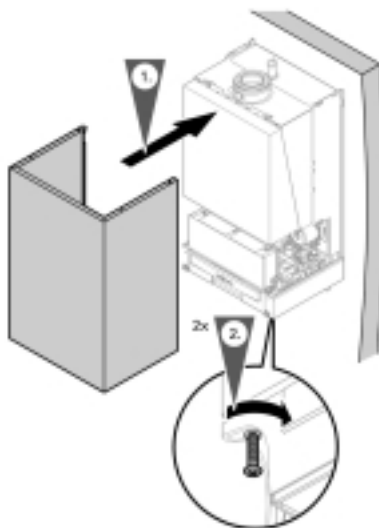
Fit the boiler casing as described below.

- a) Hinge back the boiler controls assembly and secure with the clips.
- b) Lift the outer casing onto the appliance and locate it on the top two brackets (Figure 5/F).
- d) Set all heating and hot water controls to the required settings
- e) Fill in the relevant details for the installation in the benchmark logbook supplied in the instructions pack and affix the self adhesive bar code strip from the outside of the boiler packaging to this logbook.

## 5 Commissioning and Testing

### 5.9 Final Checks

Figure 5/F



### 5.10 User's Instructions

Upon completion of commissioning and testing, hand the appliance over to the User, with reference to the following.

- a) Give the Users instructions to the householder and emphasise their responsibilities under the current edition of the Gas Safety (Installation and Use) Regulations.
- b) Explain and demonstrate the lighting and shutdown procedures.
- c) Advise the householder on the efficient use of the system, including the use and adjustment of all system controls for both DHW and CH.
- d) Advise the user of the precautions necessary to prevent damage to the system and to the building in the event of the system remaining inoperative during frost conditions.
- e) Explain the function of the boiler safety controls and how to reset them. Emphasise that if cut-out persists, the boiler should be turned off and the installer or service engineer consulted.
- f) Stress the importance of an annual service by a registered heating engineer.

**NOTE:** Should the timer first display a language that is not English press the button marked 'info' on the timer unit, then each subsequent press of the will scroll through different languages. When English is located press OK.

## 6 Routine Servicing

To ensure continued efficient operation of the appliance, it is recommended that it is checked and serviced as necessary at regular intervals. The frequency of servicing will depend upon the particular installation conditions and usage but in general once a year should be adequate. It is the law that any service work must be carried out by a competent person such as a British Gas engineer or other CORGI registered personnel.

The boiler incorporates a flue sampling point in front of the flue outlet, see Figure 5/C. The service engineer has suitable equipment to analyse the flue gas. The push fit cap may be removed and a sample tube fitted. The push fit cap must be replaced after use. The flue gas sample will enable the service engineer to judge whether any major action is required. Refer to section 5.4.

Before commencing any service operation, ISOLATE the mains electrical supply and TURN OFF the gas supply at the appliance service cock.

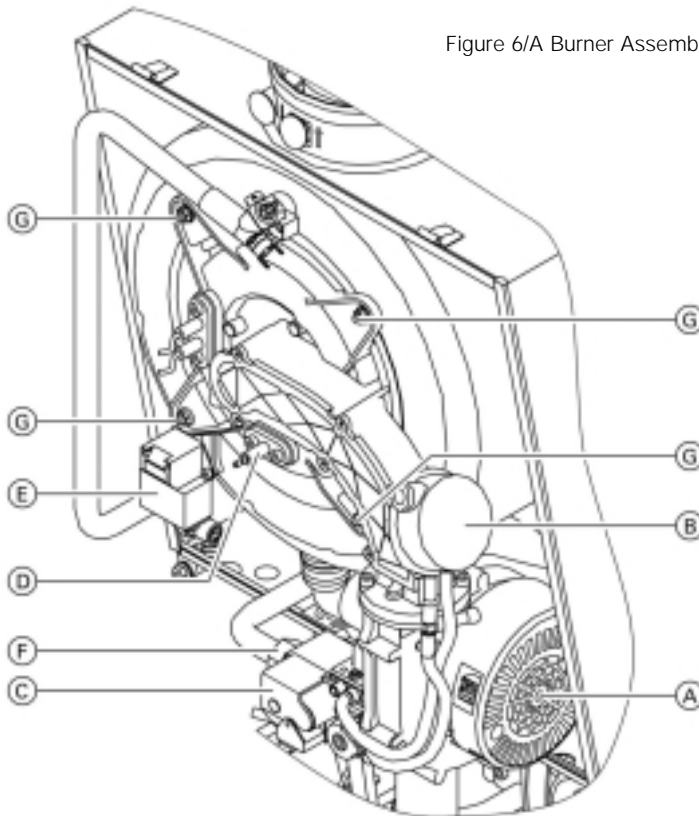


Figure 6/A Burner Assembly

## 6 Routine Servicing

### 6.1 Routine Servicing

- a) Remove the outer casing as follows: Open the lower hinged controls cover. Remove the two screws securing the bottom of the upper decorative cabinet and remove this by pulling forward and place in a safe position. Disconnect the fixing clips at the side of the control pod and hinge the pod forwards. (Refer to figure 5/F).
- b) Remove the sealed chamber front panel by removing the two fixing screws at the bottom and hinge upwards unhooking from the top fixing lugs. Place the cover in a safe position.
- c) Pull electrical cable connector from the fan motor (A), pressure switch (B), gas valve (C), ionisation electrode (D) and ignition unit (E).
- d) Disconnect the union and release the gas connection pipe taking care not to lose the sealing washer.
- e) Remove the four nuts (G) and remove the burner plate complete with the burner.
- f) Check the burner plate gasket for damage and change if necessary. Generally this gasket should be changed every two years.

### 6.2 Ignition and Detection Electrodes

- g) Remove the ignition and detection electrodes.
- h) Check the electrodes for wear and contamination.
- i) Clean the electrodes with a small non abrasive brush.
- j) Check all clearances. If the gaps are not as specified or the electrodes are damaged, replace and align the electrodes together with new gaskets after inspection of the burner. Tighten the electrode fixing screws to 2.5Nm.

See diagrams overleaf

## 6 Routine Servicing

### 6.2 Ignition and Detection Electrodes

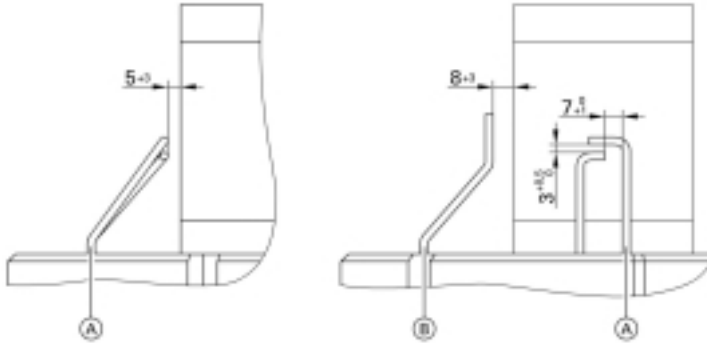
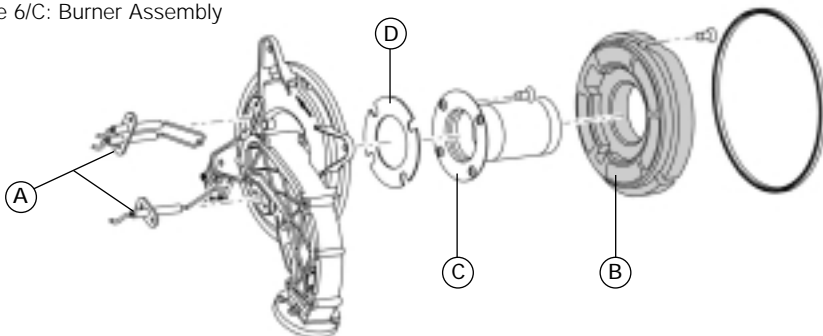


Figure 6/B: Electrode Alignment

### 6.3 Burner

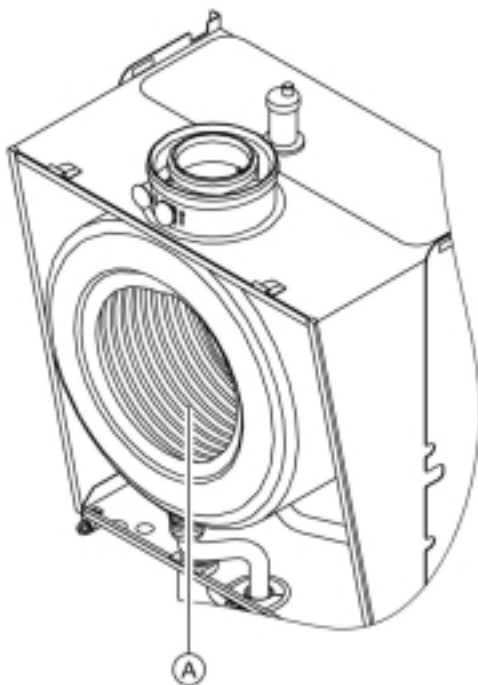
- Remove the electrodes (See Figure 6/B above & Figure 6/C below).
- Release the three Torx screws, and remove the thermal insulating ring (B).
- Release the four Torx screws, and remove the burner assembly with its gasket.
- Inspect the burner for blocked ports, cracks or slits. If sound clean with a soft brush and refit in reverse order.
- Refit the thermal insulating ring (B).

Figure 6/C: Burner Assembly



## 6 Routine Servicing

### 6.4 Combustion Chamber Cleaning



- a) If required, clean combustion chamber (A) and heating surfaces within with a soft brush, or flush with water. Important. Scratches on parts which are in contact with flue gases can lead to corrosion. Only use plastic brushes rather than wire brushes.
- b) Replace the burner assembly as a reverse of removal.

### 6.5 Air Pressure Switch Sensing Pipes

- a) Check that the pressure switch sensing pipes are not blocked or damaged. It is not necessary to remove the air pressure switch; this is not adjustable and does not require any servicing.

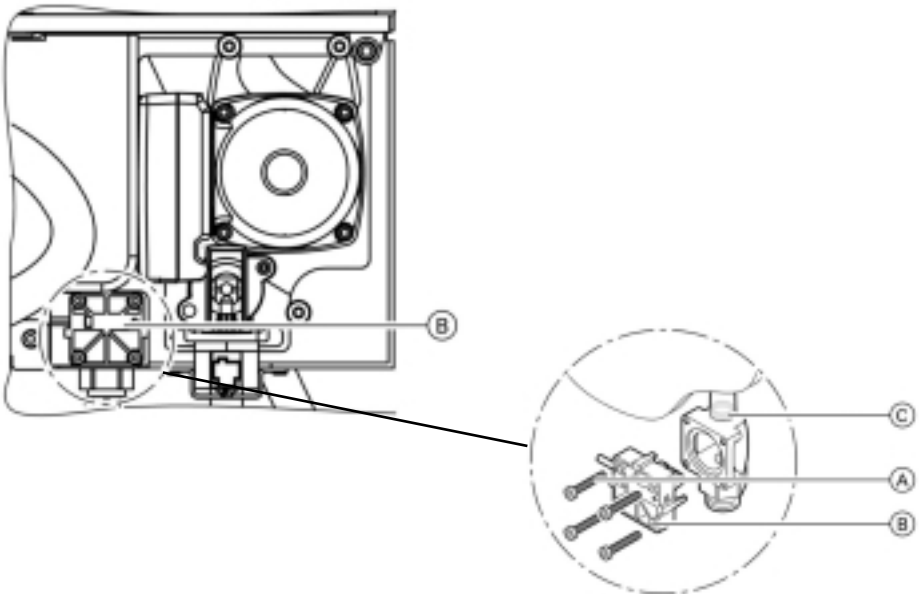
## 6 Routine Servicing

### 6.6 Checking the Condensate Drain and Cleaning the Siphon

- a) Check at the siphon, that the condensate can drain freely.
- b) Remove the retaining clip and the siphon.
- c) Clean the siphon.
- d) Fill the siphon with water, fit it to the boiler and secure with the retaining clip.

### 6.7 Domestic Hot Water Flow Limiter (Combi Boiler only)

- a) Shut of the cold water supply.
- b) Release the Allen screws (A).
- c) Remove the flow switch (B) and remove the flow limiter (C) downwards.
- d) Check the flow limiter (C) and replace if excessive deposits are evident or if the unit appears damaged. Replace and secure flow switch (B)





## 6 Routine Servicing

### 6.8 Re-commissioning

- a) Replace the sealed chamber front panel as reverse of removal.
- b) Switch on the electricity and gas supply and light the boiler.
- c) Check the operation of the appliance in both central heating and DHW modes.
- d) Check the combustion performance at maximum rate as in section 5.6.

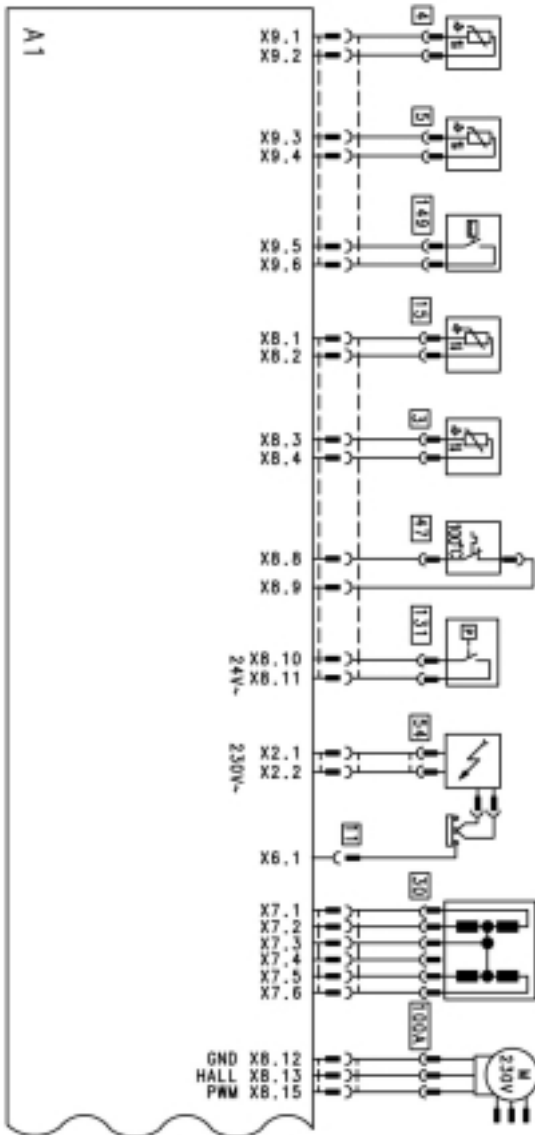
### 6.9 Sealed Water System

- a) Check the operation of the pressure relief valve as described in section 5.1.
- b) Check the correct operation of the appliance pressure gauge by noting the reading when cold and check that the pressure increases with temperature. Replace the gauge if readings are not reliable.
- c) Check that the system is at its original (cold) design pressure. If necessary, re-pressurise the system as described in section 5.1 and search for and rectify any leaks causing loss of water.

### 6.10 Final Checks

- a) Refit the outer casing as reverse of removal and return all appliance and external controls (if fitted) to their original settings.
- b) Check that the minimum boiler clearances are maintained.
- c) Check that the flue terminal it is good condition and clear of any obstructions.

# 7 Internal Wiring Diagram



**KEY:**

- A1 Main PCB
- 3 Boiler temperature sensor
- 30 Step motor (Diverter valve)(Combi only)
- 54 Ignition unit
- 131 Air Pressure switch
- 149 Flow switch (Combi only)
- 4 DHW outlet sensor (Combi only)
- 5 Comfort sensor (Combi only)
- 47 Temperature limiter
- 100 Fan motor
- 11 Ionisation electrode
- 15 Flue gas temperature sensor

## 8 Fault Finding

It is the law that any service work must be carried out by a competent person such as a British gas engineer or other CORGI registered personnel

### 8.1 General

Before looking for a fault condition, check that:

- a) The mains electrical supply is turned on.
- b) The clock and / or room thermostat (if fitted) are calling for heat (CH 'faults' only)
- c) The gas service cock is open.
- d) The DHW (Combi only) and CH isolation cocks are open.
- e) The system is at design pressure.

Before attempting any electrical fault finding, always conduct the preliminary electrical system checks as described in the Instructions for the British Gas Multimeter or other similar instrument.

On completion of any service or fault finding operation involving making or breaking electrical connections always check for EARTH CONTINUITY, POLARITY and RESISTANCE TO EARTH.

Detailed procedures for replacing faulty components are described in section 9.

### 8.2 Built in Diagnostic Features

Features are as follows:

Troubleshooting steps

#### Diagnosis

Establish error message or determine behaviour of system.

Look for the corresponding cause of the fault in the diagnostic table.







#### Correction

Establish the action required in the table.

Correct the fault.

## 8 Fault Finding

Diagnosis and correction. See the following table of error messages:

Error Message	System Behaviour	Cause of fault	Action
30	Boiler cools down	Boiler temperature sensor shorted out	Check boiler temperature sensor
38	Boiler cools down	Boiler temperature sensor open circuit	Check boiler temperature sensor
b0	Boiler cools down	Flue gas temperature sensor shorted out	Check flue gas temperature sensor
b8	Boiler cools down	Flue gas temperature sensor open circuit	Check flue gas temperature sensor
b7	Boiler will not run	Boiler coding card missing or incorrect card fitted	Check boiler coding card
E4	Boiler will not run	Supply voltage fault	Replace control unit
E5	Boiler will not run	Flame detection fault	Check ionisation electrode. Check flue gas system for leaks. PRESS 
E6	Burner fault	Flue gas/air supply blocked	Check flue gas/air supply Check air pressure switch & cables PRESS 
F0	Burner will not run	Internal fault	Replace controls unit
F1	Burner will not run	Flue gas temperature limiter has locked out	Check heating system water level. Vent heating system PRESS after 20 minutes
F2	Burner will not run	Flow temperature limiter has responded	Check heating system water level. Check circulation. Check limit thermostat and leads. PRESS 
F3	Burner will not start	False flame signal	Check ionisation electrodes and leads. PRESS 
F4	Burner will not run	No flame signal	Check ionisation electrode, gas pressure, gas valve, ignition transformer/electrode and condensate drain. PRESS 
F7	Burner locked out	Differential pressure sensor faulty	Check differential pressure sensor
F8	Burner will not run	Gas valve closes too late	Check gas valve. PRESS 
F9	Burner will not run	Fan speed too low at burner start	Check fan, fan cables, supply and fan control PRESS 
A	Burner will not run	Fan does not stop	Check fan, fan cables and fan control. PRESS 
Fd	Burner at lockout	Burner control unit fault	Check ignition electrodes/leads. Check for EMC interference. PRESS  If fault persists replace control unit
FE	Burner at lockout	Strong EMC interference, faulty boiler coding card or main PCB faulty.	Remove EMC, Check coding card or replace control unit
FF	Burner at lockout	Internal fault replace control unit	Remove EMC, Check coding card or

## 9 Replacement of Parts

Before commencing any service operation, ISOLATE the mains supply and TURN OFF the gas supply at the appliance service cock.

It is the law that any service work must be carried out by a registered person.

### 9.1 Heat Exchanger

- a) Close the isolation valves between the boiler and the central heating system. Attach a suitable hose to the drain point on the lower right hand side of the boiler and drain the boiler.
- b) Remove the outer casing as follows: Open the lower hinged controls cover. Remove the upper decorative cabinet by pulling forward and place in a safe position. Disconnect the fixing clips at the side of the control pod and hinge the pod forwards.
- c) Remove the sealed chamber front panel by removing the two socket head fixing screws at the bottom and hinge upwards unhooking from the top fixing lugs. Place the cover in a safe position.
- d) Pull the electrical cable connector from the fan motor (A), pressure switch (B), gas valve (C), ionisation electrode (D), and ignition unit (E).
- e) Disconnect the electrical connections from the boiler temperature sensor, temperature limiter and flue gas temperature sensor.
- f) Disconnect the gas inlet union from the gas valve, release the gas pipe union above the pipe connection frame and remove the gas connection pipe together with its rubber bulkhead seal.
- g) Remove the four nuts (G) and remove the burner plate complete with the burner, fan and gas valve.
- h) Remove the securing clip from the water connection between the flexible hose from the expansion vessel to the flow pipe and disconnect.
- i) Remove the securing clips from the upper flow connection of the heat exchanger and the lower flow connection above the rear bulkhead and remove the pipe.
- j) Remove the retaining clip and the siphon.

## 9 Replacement of Parts

### 9.1 Heat Exchanger

- k) Remove the siphon connecting pipe from the bottom of the heat exchanger together with its bulkhead seal.
- l) Remove the retaining clips from the return connection of the heat exchanger and above the lower right hand bulkhead and remove the return pipe.
- m) Support the flue system above the flue connection collar.
- n) Remove the screws and clamps retaining the flue connection collar and remove the collar.
- o) Unscrew the automatic air vent from its seat behind the flue collar.p) Slacken the four M6 nuts securing the heat exchanger rear brackets, slide the heat exchanger upwards to release it from the keyhole slots and remove in a forward direction.
- q) Replace the heat exchanger and assemble in reverse order ensuring that all joints and seals are correctly made.
- r) Connect the filling loop, open the CH flow and return valves and re-pressurise the system to design pressure using the filling loop valves and venting as necessary. Check all connections for soundness, then disconnect the filling loop. Finally, ensure that the outer casing is secured in position and carry out a combustion check as in 5.4.

### 9.2 Fan Assembly

- a) Gain access by removing the burner assembly as described in section 9.1, steps (b) to (g).
- b) Separate the fan/gas valve assembly from the burner by removing the two 6mm socket head screws.
- c) Separate the fan from the venturi/gas valve assembly by removing the two 5mm screws taking care not to damage the gasket.
- d) Replace the fan and reassemble in reverse order.
- e) Finally, ensure that the outer casing is secured in position and carry out a combustion check as in 5.6.

## 9 Replacement of Parts

### 9.3 Burner

- a) Gain access by removing the burner assembly as described in section 9.1, steps (b) to (g).
- b) Remove the ignition and detection electrodes.
- c) Release the three Torx screws and remove the thermal insulating ring (B).
- d) Release the four Torx screws and remove the burner assembly (C) with its gasket.
- e) Replace the burner using a new gasket (D) preferably to a torque of 3.5 Nm.
- f) Refit the thermal insulating ring (B).
- g) Check the combustion chamber gasket for any damage and reassemble in reverse order.
- h) Finally, ensure that the outer casing is secured in position and carry out a combustion check as in 5.6.

### 9.4 Ignition Electrodes

- a) Gain access by removing the burner assembly as described in section 9.1, steps (b) to (g).
- b) Pull off the HT leads from the spark generator.
- c) Remove the ignition electrodes by releasing the two 5mm socket head screws and withdrawing the electrodes.
- d) Fit a new electrode assembly using a new gasket and check all clearances. If the gaps are not as specified align the electrodes. Tighten the electrode fixing screws preferably to a torque of 2.5 Nm.
- e) Check the combustion chamber gasket for any damage and reassemble in reverse order.
- f) Finally, ensure that the outer casing is secured in position and carry out a combustion check as in 5.6.

## 9 Replacement of Parts

### 9.5 Detection Electrode

- a) Gain access by removing the burner assembly as described in section 9.1, steps (b) to (g).
- b) Remove the detection electrode by releasing the 5mm socket head screw and withdrawing the electrode.
- c) Fit a new electrode assembly using a new gasket and check all clearances. If the gaps are not as specified align the electrode. Tighten the electrode fixing screw preferably to a torque of 2.5Nm.
- d) Check the combustion chamber gasket for any damage and reassemble in reverse order.
- e) Finally, ensure that the outer casing is secured in position and carry out a combustion check as in 5.6.

### 9.6 Gas Control

- a) Gain access to the relevant components by following steps (b) and (c) in section 9.1.
- b) Pull the electrical cable connector from the gas valve (C).
- c) Disconnect the gas inlet union from the gas valve.
- d) Disconnect the plastic pressure sensing pipes leading to the pressure switch from the gas valve.
- e) Release the three Torx screws securing the gas valve to the venturi assembly and remove the gas valve taking care not to lose the gas restrictor.
- f) Replace the gas valve in reverse order taking care to replace gaskets, restrictors and ensuring that the pipes to the pressure switch are not interchanged.
- g) Finally, ensure that the outer casing is secured in position and carry out a combustion check as in 5.6.



## 9 Replacement of Parts

### 9.7 Air Pressure Switch

- a) Gain access to the relevant components by following steps (b) and (c) in section 9.1.
- b) Pull the electrical cable connector from the pressure switch (B).
- c) Disconnect the plastic sensing pipes from the pressure switch
- d) Release the two screws securing the pressure switch to the gas/air supply duct and remove the pressure switch.
- e) Replace the pressure switch in reverse order ensuring that the pipes are not interchanged.
- f) Finally, ensure that the outer casing is secured in position and carry out a combustion check as in 5.6.

### 9.8 Spark Generator

- a) Gain access to the relevant components by following steps (b) and (c) in section 9.1
- b) Pull off the electrical mains leads and HT leads from the spark generator.
- c) Release the two 4mm socket head screws securing the spark generator to the burner door casting and remove the spark generator.
- d) Finally, ensure that the outer casing is secured in position and carry out an ignition check.

### 9.9 P.C.B

- a) Gain access by following step 9.1(b).

## 9 Replacement of Parts

### 9.9 P.C.B

- b) Release the seven plastic tabs securing the lid of the control pod and lift off the lid.
- c) Unplug all leads from the board to the boiler controls.
- d) Unplug all leads from the board to the boiler controls.
- e) Remove the two screws securing the plastic ventilated cover, unclip the four plastic securing clips and remove the cover/P.C.B assembly complete.
- f) Deflect the seven clips securing the P.C.B into the cover and remove the printed circuit board.
- g) Replace the P.C.B and reassemble in reverse order.
- h) Check that all original settings have been retained.

### 9.10 Limit Thermostat

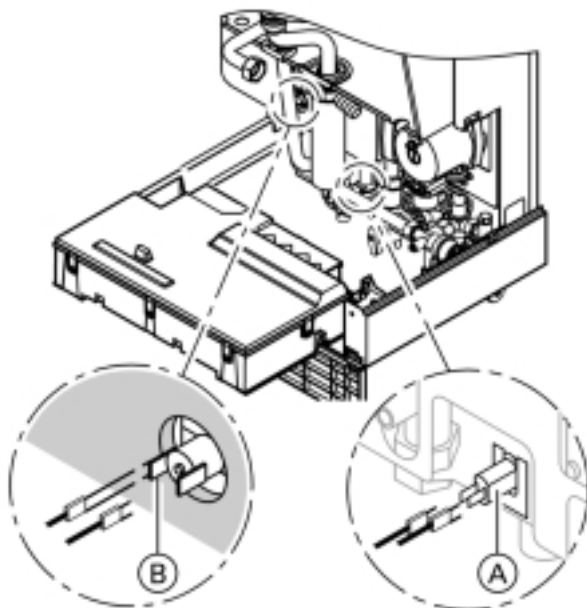


## 9 Replacement of Parts

### 9.10 Limit Thermostat

- a) Gain access by following step 9.1(b).
- b) Locate the limit thermostats (Figure 9/A). Disconnect the electrical connections to the faulty thermostat.
- c) Unscrew the two screws securing the faulty thermostat to the flow pipe and remove the thermostat.
- d) Fit the new thermostat (using heat sink compound supplied with the new thermostat) and reassemble in reverse order.
- e) Finally, ensure that the outer casing is secured in position and carry out an ignition check.

### 9.11 DHW Thermistor (A) (Combi only)



## 9 Replacement of Parts

### 9.11 DHW Thermistor (A) (Combi only)

- a) Gain access by following step 9.1(b).
- b) Isolate the DHW circuit closing the DHW inlet valve. Drain the DHW circuit by opening any DHW tap below the level of the boiler.
- c) The DHW thermistor is situated over the domestic hot water outlet above the piping frame.
- d) Disconnect the two electrical connections from the thermistor.
- e) Slide out the clip securing the thermistor in position and pull out the thermistor.

**NOTE:** There may be a small discharge of water hence precautions should be taken.

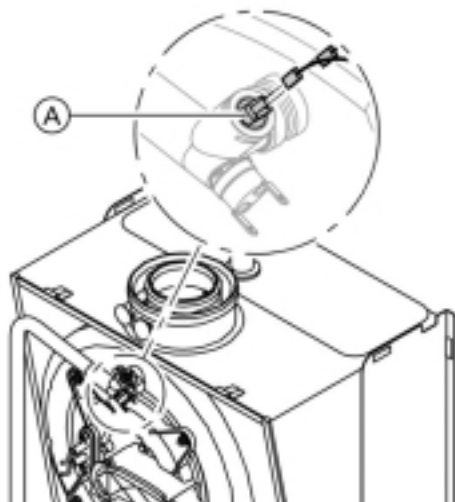
- f) Replace the thermistor and reassemble in reverse order.
- g) Finally, open the DHW inlet valve, ensure that the outer casing is secured in position and carry out an ignition and hot water temperature check.

### 9.12 DHW Comfort Sensor (B) (Combi only)

- a) Gain access by following step 9.1(b).
- b) The DHW Comfort sensor is situated at the front of the domestic hot water heat exchanger.
- c) Disconnect the two electrical connections from the sensor.
- d) Remove the sensor by sliding upwards out of its housing.
- e) Replace the sensor as reverse of removal.
- f) Finally, ensure that the outer casing is secured in position and carry out an ignition and hot water temperature check.

## 9 Replacement of Parts

### 9.13 CH Thermistor



- a) Gain access by following step 9.1(b).
- b) Remove the sealed chamber front panel by removing the two socket head fixing screws at the bottom and hinge upwards unhooking from the top fixing lugs. Place the cover in a safe position.
- c) Isolate the central heating circuit by closing the flow and return valves. Drain the flow pipe using the drain point situated in the lower part of the flow pipe underneath the heat exchanger at the bottom left hand side.
- d) Disconnect the two electrical connections from the thermistor
- e) Slide out the clip securing the thermistor in position and pull out the thermistor.

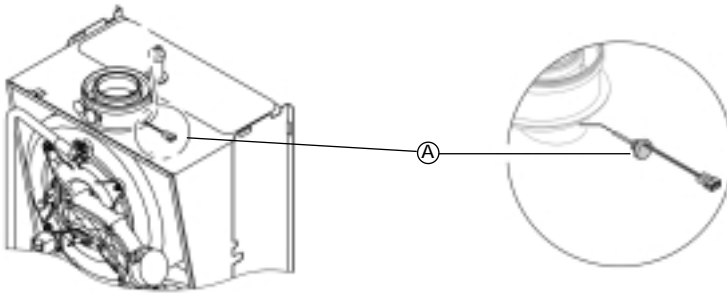
**NOTE:** There may be a small discharge of water hence precautions should be taken.

- f) Replace the thermistor and reassemble in reverse order.
- g) Finally, ensure that the outer casing is secured in position and carry out an ignition and temperature control check.

## 9 Replacement of Parts

### 9.14 Flue Gas Temperature Sensor

- a) Pull the leads from the flue gas temperature sensor.
- b) Pull the sensor together with its mounting bush from its aperture in the boiler flue.
- c) Replace as reverse of removal and reconnect leads.
- d) Check for correct functioning



### 9.15 Diverter Valve Mechanism (Combi Only)

- a) Gain access by following step 9.1(b).
- b) Close the isolation valves between the boiler and the central heating system. Attach a suitable hose to the drain point on the lower right hand side of the boiler and drain the boiler.
- c) Disconnect the two screws securing the motor and valve in place and withdraw the assembly.

**NOTE:** There may be a small discharge of water hence precautions should be taken.

- d) Unplug the electrical wiring from the assembly after releasing the securing tab.
- e) Replace the internal assembly and reassemble in reverse order.
- f) Finally, close the drain, open the CH isolation valves, ensure that the outer casing is secured in position and carry out an ignition and control check.

## 9 Replacement of Parts

### 9.16 DHW Heat Exchanger (Combi Only)

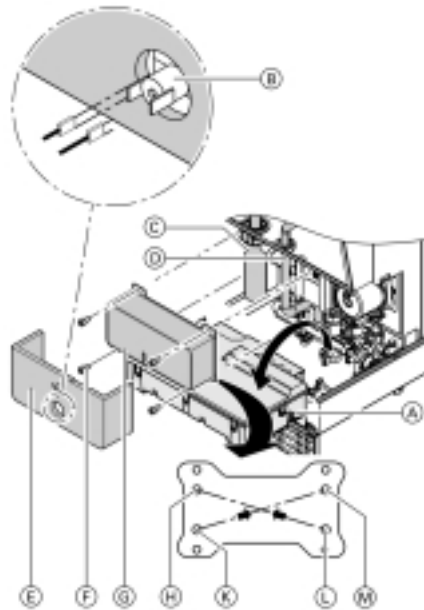
- a) Close the isolation valves between the boiler and the central heating system. Attach a suitable hose to the drain point on the lower right hand side of the boiler and drain the boiler.
- b) Gain access by following step 9.1(b).
- c) Isolate the DHW circuit closing the DHW inlet valve. Drain the DHW circuit by opening any DHW tap below the level of the boiler.
- d) Refer to Figure 9/B. Remove the leads from the surface mounted comfort sensor on the front of the heat exchanger.
- e) Remove the clip and the siphon (C). Remove the siphon pipe (D) from the heat exchanger, together with the inlet ferrule
- f) Disconnect the gas inlet union from the gas valve, release the gas pipe union above the pipe connection frame and remove the gas connection pipe together with its rubber bulkhead seal.
- g) Pull forward and remove the thermal insulation from the plate heat exchanger.
- h) Release the four screws (G) and pull the plate heat exchanger (H) forward.

**NOTE:** There may be a small discharge of water hence precautions should be taken

- i) Replace the DHW heat exchanger using new gaskets with lubricant and reassemble in reverse order.
- j) Connect the filling loop, open the CH flow and return valves and re-pressurise the system to design pressure using the filling loop valves and venting as necessary. Open the DHW inlet valve. Check all connections for soundness, and then disconnect the filling loop.
- g) Finally, ensure that the outer casing is secured in position and carry out an ignition and control check.

## 9 Replacement of Parts

Figure 9/B: DHW Heat Exchanger



### 9.17 DHW Flow Regulator (to replace or clean)

- a) Gain access by following step 9.1(b).
- b) Remove the plate heat exchanger as in 9.16 above. Refer to section 6.7.
- c) Uncouple the pipe couplings immediately below the flow switch body and above the DHW inlet isolation valve.
- d) Lift the flow switch body slightly and remove the section of pipe between the flow switch and the isolation valve.
- e) Remove the flow regulator from the inlet of the flow switch.
- f) Replace (or clean) the water flow regulator.
- g) Reassemble in reverse order. Check for water soundness.
- h) Replace the DHW heat exchanger using new gaskets with lubricant and reassemble in reverse order.



## 9 Replacement of Parts

### 9.17 DHW Flow Regulator (to replace or clean)

- i) Connect the filling loop, open the CH flow and return valves and re-pressurise the system to design pressure using the filling loop valves and venting as necessary. Open the DHW inlet valve. Check all connections for soundness, and then disconnect the filling loop.
- i) Finally, ensure that the outer casing is secured in position and carry out an ignition and control check.

### 9.18 DHW Flow Switch Sensor

- a) Gain access by following step 9.1(b).
- b) Isolate the DHW circuit closing the DHW inlet valve. Drain the DHW circuit by opening any DHW tap below the level of the boiler.
- c) Remove the four 4mm socket head screws securing the cover of the flow switch.
- d) Remove the cover and switch mechanism and disconnect the electrical wiring from the switch.
- e) Electrically connect the new switch mechanism and replace in the switch body securing with the four socket head screws.
- f) Open the DHW inlet valve and check for water soundness.
- g) Finally, ensure that the outer casing is secured in position and carry out an ignition and control check.

### 9.19 Pump Head

- a) Gain access by following step 9.1(b).
- b) Isolate the central heating circuit by closing the flow and return valves. Drain the appliance using the drain point situated underneath the appliance at the bottom right hand side.

## 9 Replacement of Parts

### 9.19 Pump Head

- c) Unscrew the four recessed hexagon screws and withdraw the pump head.
- d) Remove the single screw securing the electrical connection cover. Remove and transfer electrical connections to the new pump and reassemble in reverse order ensuring that the pump is adjusted to maximum speed (II).
- e) Connect the filling loop, open the CH flow and return valves and re-pressurise the system to design pressure using the filling loop valves and venting as necessary. Check all connections for soundness, and then disconnect the filling loop.
- f) Finally, ensure that the outer casing is secured in position and carry out an ignition and control check.

### 9.20 Pressure Relief Valve

- a) Gain access by following step 9.1(b).
- b) Isolate the central heating circuit by closing the flow and return valves. Drain the appliance using the drain point situated underneath the appliance at the bottom right hand side.
- c) Disconnect the pressure relief valve outlet connection and unscrew the union behind the pressure relief valve and the coupling to the left of the valve between it and the by-pass pipe.
- d) Replace the pressure relief valve and reassemble in reverse order.
- e) Connect the filling loop, open the CH flow and return valves and re-pressurise the system to design pressure using the filling loop valves and venting as necessary. Check all connections for soundness and then disconnect the filling loop.
- f) Finally, ensure that the outer casing is secured in position warm up the system and check for water leaks.

## 9 Replacement of Parts

### 9.21 Pressure Gauge

- a) Gain access by following step 9.1(b).
- b) Isolate the central circuit by closing the flow and return valves. Drain the appliance using the drain point situated underneath the appliance at the bottom right hand side.
- c) Slide out the clip securing the pressure gauge connector to the casing above the flow connection and pull out the connector.

**NOTE:** There may be a small discharge of water hence precautions should be taken.

- d) Release the seven plastic tabs securing the lid of the control pod and lift off the lid.
- e) Push down gently and rotate in an anticlockwise direction the plastic clip securing the back of the pressure gauge head and lift out the head.
- f) Carefully cut the cable ties securing the pressure gauge connecting tube to the wire bundles and remove the gauge completely.
- g) Replace the pressure gauge and reassemble in reverse order re-attaching the pressure tube to the wire bundles using suitable cable ties.
- h) Connect the filling loop, open the CH flow and return valves and re-pressurise the system to design pressure using the filling loop valves and venting as necessary. Check all connections for soundness and then disconnect the filling loop.
- i) Finally, ensure that the outer casing is secured in position warm up the system and check for correct pressure readings.

## 9 Replacement of Parts

### 9.22 Auto Air Vent

- a) Isolate the central circuit by closing the flow and return valves. Drain the appliance using the drain point situated underneath the appliance at the bottom right hand side.
- b) Unscrew the automatic air vent situated at the top of the boiler behind the flue connector.
- c) Replace the automatic air vent and reassemble in reverse order.
- d) Connect the filling loop, open the CH flow and return valves and repressurise the system to design pressure using the filling loop valves and venting as necessary. Check all connections for soundness and then disconnect the filling loop.

### 9.23 Expansion Vessel

In the unlikely event of failure of the expansion vessel diaphragm it is acceptable to leave the vessel in position and to fit a replacement vessel (of similar or greater capacity) external to the appliance but as close as possible to the central heating return connection.

If replacement is desired (or necessary due to a leaking vessel), proceed as follows.

- a) Gain access by following step 9.1(b).
- b) Isolate the central circuit by closing the flow and return valves. Drain the appliance using the drain point situated underneath the appliance at the bottom right hand side.
- c) Slacken the two socket head screws clamping the bottom flange of the expansion vessel.
- d) Remove the securing clip from the water connection between the flexible hose from the expansion vessel to the flow pipe and disconnect.

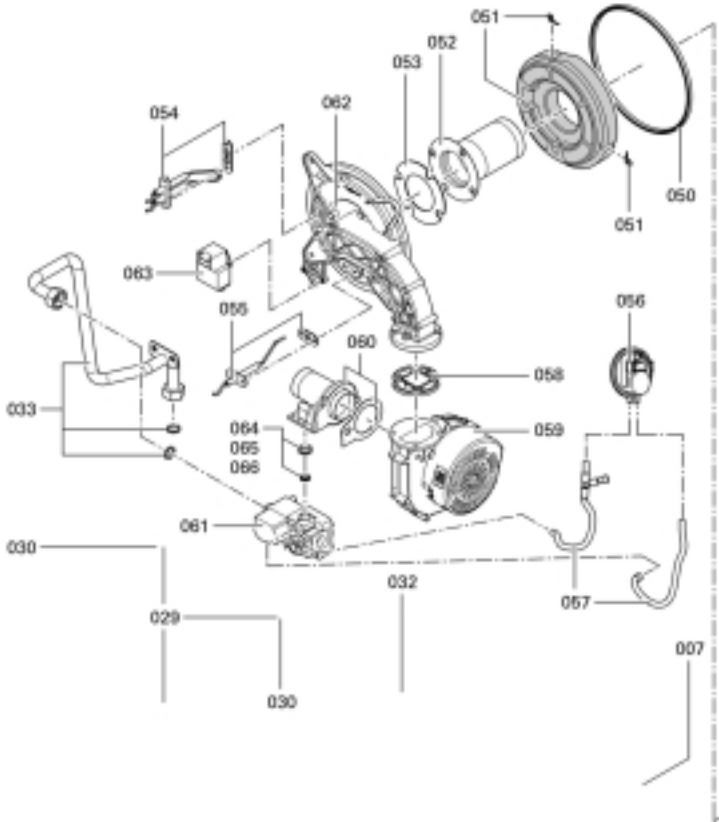
## 9 Replacement of Parts

### 9.23 Expansion Vessel

**NOTE:** There may be a small discharge of water hence precautions should be taken.

- e) If a rear flue is fitted it is necessary to temporarily disconnect the flue system.
- f) Unscrew the automatic air vent situated at the top of the boiler behind the flue connector.
- g) Unscrew the eight screws securing the top rear cover and remove the cover.
- h) Lift out the expansion vessel. Replace and reassemble in reverse order. Check the expansion vessel pre-charge pressure.
- i) Connect the filling loop, open the CH flow and return valves and re-pressurise the system to design pressure using the filling loop valves and venting as necessary. Check all connections for soundness and then disconnect the filling loop.
- j) Finally, ensure that the outer casing is secured in position warm up the system and check for leaks and correct pressure readings.

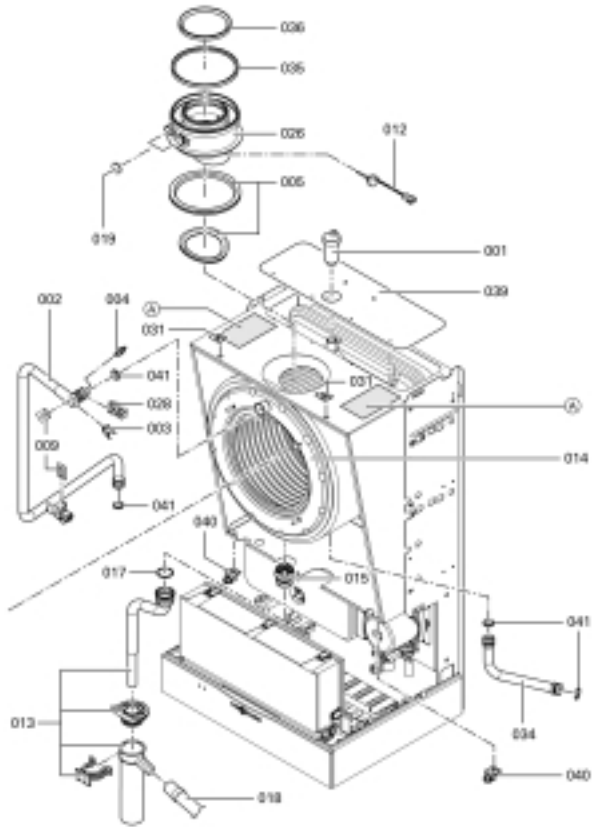
# 10 Replacement Parts



- |     |                                  |     |                       |
|-----|----------------------------------|-----|-----------------------|
| 007 | Casing Seal                      | 056 | Air Pressure Switch   |
| 029 | Front Cover                      | 057 | Control Tubes         |
| 030 | Fixing Clip                      | 058 | Mixture Damper        |
| 032 | Inner Front Cover                | 059 | Fan                   |
| 033 | Gas Supply pipe                  | 060 | Venturi Top           |
| 050 | Burner Plate Gasket              | 061 | Gas Combination Valve |
| 051 | Insulating Ring                  | 062 | Burner Door           |
| 052 | Burner Gauze Assembly            | 063 | Ignition Unit         |
| 053 | Burner Gauze Assembly Gasket     | 064 | Conversion Kit        |
| 054 | Ignition Electrode with Gasket   | 066 | Conversion Kit        |
| 055 | Ionisation Electrode with Gasket |     |                       |

Indicates Short Parts List Items

## 10 Replacement Parts



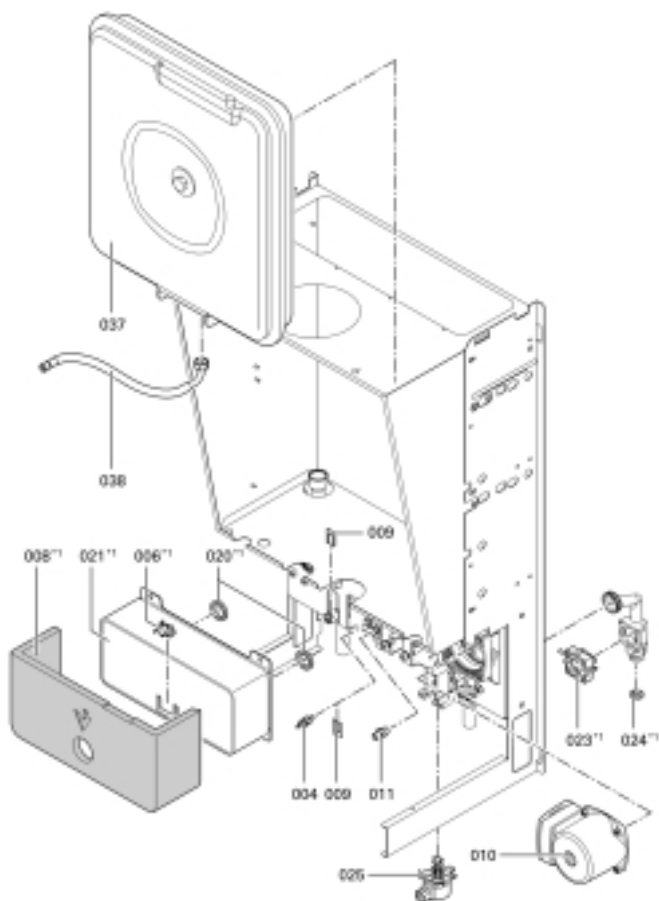
001	Quick Acting Air Vent Valve	018	Condensate Hose
002	Connecting Pipe (with item 041)	019	Flue Sampling Plugs (2 off)
003	Thermostat	026	Boiler Adaptor (with 019, 035 and 036)
004	Temperature Sensor	028	Pipe Retaining Clip
005	Boiler Adaptor Grommets	031	Hook-in Lock
009	Securing Clip	034	Return Pipe (with gasket 041)
012	Flue Gas Temperature Sensor	035	Combustion Air Gasket
013	Siphon	036	Flue Gas Gasket
014	Heat Exchanger	039	Rear Panel Lid
015	Heat Exchanger Siphon Connection	040	Clip Nut
017	O Ring 28 x 2.5mm	041	Plug in connection gasket set

Indicates Short Parts List Items





## 10 Replacement Parts



- |     |                           |     |                      |
|-----|---------------------------|-----|----------------------|
| 004 | Temperature Sensor        | 021 | Plate Heat Exchanger |
| 006 | Comfort Sensor            | 023 | Flow Switch          |
| 008 | Thermal Insulation        | 024 | Water Flow Limiter   |
| 009 | Fixing Clip               | 025 | Linear Step Motor    |
| 010 | Pump Motor                | 037 | Expansion Vessel     |
| 011 | DHW Valve                 | 038 | Connection Line      |
| 020 | Heat Exchanger Gasket Set |     |                      |

Indicates Short Parts List items

Indicates Combi boiler only

# 11 Index

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*The code of practice for the installation,  
commissioning & servicing of gas central heating*

# Installation, Commissioning and Service Record Log Book

## CUSTOMER DETAILS

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

TEL No. \_\_\_\_\_

## IMPORTANT

1. Please keep the Log Book in a safe place for future reference.
2. This Log Book is to be completed in full by the competent person(s) who commissioned the boiler and associated equipment and then handed to the customer. When this is done, the Log Book is a commissioning certificate that can be accepted as evidence of compliance with the appropriate Building Regulations.
3. Failure to install and commission this appliance to the manufacturer's instructions may invalidate the warranty.

The above does not affect your statutory rights.

The content of this Log Book has been produced in  
consultation with



Benchmark is supported by



# INSTALLER & COMMISSIONING ENGINEER DETAILS

## INSTALLER DETAILS

COMPANY NAME

INSTALLATION DATE

ADDRESS

INSTALLER'S NAME

TEL No.

### CORGI REGISTRATION DETAILS

REG No.

CORGI ID SERIAL No.

## COMMISSIONING ENGINEER (IF DIFFERENT)

NAME

COMMISSIONING DATE

ADDRESS

TEL No.

### CORGI REGISTRATION DETAILS

REG No.

CORGI ID SERIAL No.

## APPLIANCE & CONTROL DETAILS

### BOILER

MAKE AND MODEL

APPLIANCE SERIAL No.

SEDBUK No.  %

LOCATION

NEW SYSTEM  or REPLACEMENT BOILER

### CONTROLS

To comply with the Building Regulations, each section must have a tick in one or other of the boxes.

REQUIREMENT	MEASURES PROVIDED	
1. TIME AND TEMPERATURE CONTROL TO HEATING	ROOM STAT & PROGRAMMER/TIMER <input type="checkbox"/>	PROGRAMMABLE ROOMSTAT <input type="checkbox"/>
2. TIME AND TEMPERATURE CONTROL TO HOT WATER	CYLINDER STAT & PROGRAMMER/TIMER <input type="checkbox"/>	COMBI BOILER <input type="checkbox"/>
3. HEATING ZONE VALVES	FITTED <input type="checkbox"/>	NOT REQUIRED <input type="checkbox"/>
4. THERMOSTATIC RADIATOR VALVES	FITTED <input type="checkbox"/>	
5. AUTOMATIC BYPASS TO SYSTEM	FITTED <input type="checkbox"/>	NOT REQUIRED <input type="checkbox"/>
6. BOILER INTERLOCK	PROVIDED <input type="checkbox"/>	

PLEASE FOLLOW THE INSTALLATION AND COMMISSIONING INSTRUCTIONS IN THE INSTALLATION MANUAL SUPPLIED WITH THE EQUIPMENT

# COMMISSIONING PROCEDURE INFORMATION

## FOR ALL BOILERS

HAS THE SYSTEM BEEN FLUSHED IN ACCORDANCE WITH THE BOILER MANUFACTURER'S INSTRUCTIONS? YES  NO

WHAT WAS THE CLEANSER USED? \_\_\_\_\_

HAS AN INHIBITOR BEEN USED? YES  NO

WHICH INHIBITOR WAS USED? \_\_\_\_\_

## For the central heating mode, measure and record:

HEAT INPUT \_\_\_\_\_ kW

BURNER OPERATING PRESSURE \_\_\_\_\_ mbar

CENTRAL HEATING FLOW TEMPERATURE \_\_\_\_\_ °C

CENTRAL HEATING RETURN TEMPERATURE \_\_\_\_\_ °C

## FOR COMBINATION BOILERS ONLY

HAS A WATER SCALE REDUCER BEEN FITTED? YES  NO

WHAT TYPE OF SCALE REDUCER HAS BEEN FITTED? \_\_\_\_\_

## For the domestic hot water mode, measure and record:

HEAT INPUT \_\_\_\_\_ kW

MAXIMUM BURNER OPERATING PRESSURE \_\_\_\_\_ mbar

MAXIMUM OPERATING WATER PRESSURE \_\_\_\_\_ bar

COLD WATER INLET TEMPERATURE \_\_\_\_\_ °C

HOT WATER OUTLET TEMPERATURE \_\_\_\_\_ °C

WATER FLOW RATE AT MAXIMUM SETTING \_\_\_\_\_ lts./min

## FOR CONDENSING BOILERS ONLY

HAS THE CONDENSATE DRAIN BEEN INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS? YES  NO

## FOR ALL INSTALLATIONS

DOES THE HEATING AND HOT WATER SYSTEM COMPLY WITH THE APPROPRIATE BUILDING REGULATIONS? YES

HAS APPLIANCE AND ASSOCIATED EQUIPMENT BEEN INSTALLED AND COMMISSIONED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS? YES

HAVE YOU DEMONSTRATED THE OPERATION OF THE APPLIANCE AND SYSTEM CONTROLS TO THE CUSTOMER? YES

HAVE YOU LEFT ALL THE MANUFACTURER'S LITERATURE WITH THE CUSTOMER? YES

COMPETENT PERSON'S SIGNATURE \_\_\_\_\_

CUSTOMER'S SIGNATURE \_\_\_\_\_

*(To confirm demonstrations of equipment and receipt of appliance instructions)*

# SERVICE INTERVAL RECORD

It is recommended that your heating system is serviced regularly and that your service engineer completes the appropriate Service Interval Record below.

## SERVICE PROVIDER

Before completing the appropriate Service Interval Record below, please ensure you have carried out the service as described in the boiler manufacturer's instructions and in compliance with The Gas Safety Regulations.

Always use the appliance manufacturer's specified spare part when replacing gas controls.

**SERVICE 1** DATE: \_\_\_\_\_  
ENGINEER NAME \_\_\_\_\_  
COMPANY NAME \_\_\_\_\_  
TEL No. \_\_\_\_\_  
CORGI ID SERIAL No. \_\_\_\_\_  
COMMENTS \_\_\_\_\_  
SIGNATURE \_\_\_\_\_

**SERVICE 2** DATE: \_\_\_\_\_  
ENGINEER NAME \_\_\_\_\_  
COMPANY NAME \_\_\_\_\_  
TEL No. \_\_\_\_\_  
CORGI ID SERIAL No. \_\_\_\_\_  
COMMENTS \_\_\_\_\_  
SIGNATURE \_\_\_\_\_

**SERVICE 3** DATE: \_\_\_\_\_  
ENGINEER NAME \_\_\_\_\_  
COMPANY NAME \_\_\_\_\_  
TEL No. \_\_\_\_\_  
CORGI ID SERIAL No. \_\_\_\_\_  
COMMENTS \_\_\_\_\_  
SIGNATURE \_\_\_\_\_

**SERVICE 4** DATE: \_\_\_\_\_  
ENGINEER NAME \_\_\_\_\_  
COMPANY NAME \_\_\_\_\_  
TEL No. \_\_\_\_\_  
CORGI ID SERIAL No. \_\_\_\_\_  
COMMENTS \_\_\_\_\_  
SIGNATURE \_\_\_\_\_

**SERVICE 5** DATE: \_\_\_\_\_  
ENGINEER NAME \_\_\_\_\_  
COMPANY NAME \_\_\_\_\_  
TEL No. \_\_\_\_\_  
CORGI ID SERIAL No. \_\_\_\_\_  
COMMENTS \_\_\_\_\_  
SIGNATURE \_\_\_\_\_

**SERVICE 6** DATE: \_\_\_\_\_  
ENGINEER NAME \_\_\_\_\_  
COMPANY NAME \_\_\_\_\_  
TEL No. \_\_\_\_\_  
CORGI ID SERIAL No. \_\_\_\_\_  
COMMENTS \_\_\_\_\_  
SIGNATURE \_\_\_\_\_

**SERVICE 7** DATE: \_\_\_\_\_  
ENGINEER NAME \_\_\_\_\_  
COMPANY NAME \_\_\_\_\_  
TEL No. \_\_\_\_\_  
CORGI ID SERIAL No. \_\_\_\_\_  
COMMENTS \_\_\_\_\_  
SIGNATURE \_\_\_\_\_

**SERVICE 8** DATE: \_\_\_\_\_  
ENGINEER NAME \_\_\_\_\_  
COMPANY NAME \_\_\_\_\_  
TEL No. \_\_\_\_\_  
CORGI ID SERIAL No. \_\_\_\_\_  
COMMENTS \_\_\_\_\_  
SIGNATURE \_\_\_\_\_

**SERVICE 9** DATE: \_\_\_\_\_  
ENGINEER NAME \_\_\_\_\_  
COMPANY NAME \_\_\_\_\_  
TEL No. \_\_\_\_\_  
CORGI ID SERIAL No. \_\_\_\_\_  
COMMENTS \_\_\_\_\_  
SIGNATURE \_\_\_\_\_

**SERVICE 10** DATE: \_\_\_\_\_  
ENGINEER NAME \_\_\_\_\_  
COMPANY NAME \_\_\_\_\_  
TEL No. \_\_\_\_\_  
CORGI ID SERIAL No. \_\_\_\_\_  
COMMENTS \_\_\_\_\_  
SIGNATURE \_\_\_\_\_

When all of the above services have been completed, please contact your Service Engineer for an additional service interval record sheet.



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