Wall hung, fan flue, room sealed, high efficiency gas boiler

# User Manual and Installation Instructions

## RIVA OV

| Models | G.C. Appl. No. |
|---|---|
| **M110.18SM/OV** | **41-583-03** |
| **M110.30SM/OV** | **41-583-04** |

BIASI

spares & parts online IBASIS.CO.UK®

Congratulations on your choice.

**RIVA OV** are condensing high efficiency sealed chamber fan flue gas boilers.
They are fully electronically controlled and have electronic ignition.

The materials they are made of and the control systems they are equipped with give you safety, a high level of comfort and energy savings to allow you to get the greatest benefit out of independent heating.

**RIVA OV** allow a higher efficiency by reducing the flue gas temperature such that the water vapour formed during the combustion is condensed out.
This allows a gain of useful heat that otherwise would be lost.

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## Remember that...

✓ **The manual**

– must be read thoroughly, so that you will be able to use the boiler in a safe and sensible way;

– must be carefully kept. It may be necessary for reference in the future.

✓ **First lighting up** must be carried out by competent and responsible engineer.

✓ **The manufacturer**

– disclaim all liability for any translations of the present manual from which incorrect interpretation may occur;

– cannot be held responsible for non-observance of instructions contained in this manual or for the consequences of any procedure not specifically described.

## Using the boiler...

✓ **Before lighting the boiler** you are advised to have a professionally qualified person check that the installation of the gas supply;

– is gas-tight;

– is of the correct gauge for the flow to the boiler;

– is fitted with all the safety and control devices required by the current Regulations.

✓ **Ensure that**

– the installer has connected the condensate outlet to a suitable drain pipe.

✓ **On detecting the smell of gas**

– don't operate any electrical switches, the telephone or any device that may produce sparks;

– open the windows and doors at once to create a draught of air which will purge the area;

– shut off the gas cocks;

– get the assistance of a qualified person.

✓ **Do not touch the appliance** with parts of the body that are wet or damp and/or bare feet.

✓ **Do not block or modify** the condensate outlet and pipework.

✓ **In the case of structural work** or maintenance near the exhaust duct and/or fume exhaust devices or their attachments, turn off the appliance. On completion of the work, have a professionally qualified person check their efficiency.

✓ **Repairs** (under guarantee) must be carried out only by an approved engineer, using genuine spare parts. Thus do no more than switching off the boiler yourself (see the instructions).

✓ **Your boiler** allows heating up of water to a temperature less than boiling point;

– must be connected to a central heating system and/or a hot water supply system, compatible with its performance and output;

– can be used only for those purposes for which it has been specially designed;

– must not be touched by children or by those unfamiliar with its operation;

– must not be exposed to weather conditions.



✓ **During the operation** it is quite normal that the boiler produces a white plume of condensation vapour from the flue terminal. This is due to the high efficiency of the appliance and may be particularly evident with low outdoor temperatures.

## Safe handling of substances

Biasi products are manufactured in accordance with ISO 9000 and do not, and will not contain any hazardous materials or substances such as asbestos, mercury or C.F.C.'s.
The appliance packaging does not contain any substances, which may be considered a hazard to health.

**Combustion chamber panels**

Material: mineral fibres

Known hazards – Some people can suffer reddening and itching of the skin. Fibre entry in to the eye will cause foreign body irritation, which can cause severe irritation to people wearing contact lenses. Irritation to respiratory tract.

Precautions – Dust goggles will protect eyes. People with a history of skin complaints may be particularly susceptible to irritation. High dust levels are only likely to arise following harsh abrasion. In general, normal handling and use will not present high risk, follow good hygiene practices and wash hands before touching eyes, consuming food, drinking or using the toilet.

First aid – medical attention must be sought following eye contact or prolonged reddening of the skin.

## Safe handling of the appliance

This appliance is classed as a two man lift.
When handling or lifting always use safe techniques:-

- keep your back straight
- Bend your knees
- Don't twist
- Move your feet
- Avoid bending forwards and sideways and keep the load as close to your body as possible.
- Where possible transport the boiler using a sack truck or other suitable trolley.
- Always grip the boiler firmly, and before lifting feel the weights concentrated to establish the centre of gravity, repositioning yourself as necessary.

**Appliance category $I_{2H}$ Gas G20 20 mbar**

**Country of destination: United Kingdom (GB) Ireland (IE)**

This appliance conforms with the EEC directive 90/396 and, consequently, it has the right to make use of the Biasi Riva OV brand name.

Moreover, the appliance conforms with the EEC directive 87/308 relative to the prevention and elimination of radio disturbances.

The appliance is built to comply with the regulation now in force regarding gas appliance's safety and the European regulation now in force relative to safety of household and similar electrical appliances.

The manufacturer, in the continuous process to improve his products, reserves the right to modify the date expressed in the present documentation at any time and without prior notice.

The present documentation is an informative support and it cannot be considered as a contract towards third parties.

# Boiler installation and commissioning tips

✓ **The installation** must be carried out by a qualified person who will be responsible for observing the current Regulations.

## Installing the boiler...

✓ Do not forget to remove the transit caps and plugs from the boiler connections, these are fitted to every boiler.

✓ Keep the boiler clear of dust during installation and in particular do not allow any dust or debris to enter the top of the boiler where the flue connection is made. It is recommended that you put a dust sheet over the top of the boiler until you are ready to make the flue connection.

✓ Remember to release the manual air vent before filling the boiler. See the instructions to identify the location of this device.

✓ This boiler allows to control the flow temperature of the central heating system at very low levels.

In case of an underfloor heating system, a temperature limiting device (e.g. a safety thermostat) is recommended to stop the boiler in case the water temperature exceeds the design temperature.

✓ You are strongly advised to flush out the system both cold and hot in order to remove system and installation debris.

✓ It is also sensible to initially fire and commission the boiler before connecting any external controls such as a room thermostat. By this method if you have a subsequent problem following the addition of an external control you can eliminate the boiler from your fault analysis.

✓ If the boiler is fitted with a digital programmer, when setting the times for automatic operation, remember that for every “ON” time there must be an “OFF” time to follow and that on every occasion you enter a time you must also indicate which days that you want the boiler to follow the timed settings.

✓ Some products incorporate an anti-cyclonic time delay. It is normal when first switching the boiler on for the boiler to operate on heating for a few seconds then switch off. After 3-4 minutes has elapsed the boiler will then re-ignite and operate perfectly normally.

✓ If you are in any doubts as to the installation or operation of the boiler please read the instruction manuals thoroughly and then if necessary contact Biasi UK for advice and assistance.

When installing, commissioning or servicing a gas appliance that incorporates a pre-mix burner and zero-set governor, because it is not possible to measure an operating pressure the engineer should first check that the gas supply is metered and ascertain whether it is possible to measure the gas rate. If the gas input rate can be measured then the requirements of GSUIR 26(9) can be met, including any specific requirements in manufacturers’ instructions.

If gas input rate cannot be measured then, to satisfy the intent of GSUIR 26(9), the engineer shall measure the combustion quality of the appliance in accordance with BS 7967 or the manufacturers’ instructions.

If the engineer does not have the required equipment and no alternative test is specified by the manufacturer then the appliance shall be turned off and disconnected as an un-commissioned appliance until such time that equipment is available to undertake such tests.

Please remember that if you are in any doubt about the installation of this product you can contact our Technical Helpline on tel. 0121 506 1350.

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MAINTENANCE

# 1 Introduction

The **Biasi Riva OV 18** and **Riva OV 30** are high effiency condensing, fully automatic, wall mounted gas appliances suitable for room sealed applications and for use with Natural gas (G20) only. They are designed for use with either sealed or open vented central heating systems.

The appliances incorporate a microprocessor based, fully modulating pre-mix air/gas ratio control system with direct burner ignition, which provides a modulated heat output to central heating (CH) demand.

The heat exchanger is constructed from stainless steel, and there is the option for routing the flow and return connections either via top or bottom connections.

The appliances may be used with any certified mains voltage room thermostat, and can operate without the need for an automatic bypass valve, however if thermostatic radiator valves are installed it is recommended that one radiator is fitted with lockshield valves, (normally in the bathroom), to allow the pump overrun facility to operate correctly.

The **Biasi Riva OV 18** provides central heating at outputs between 5.9kW (20,100 BTU/h) and 19.3kW (65,900 BTU/h).

The **Biasi Riva OV 30** provides central heating at outputs between 8.2kW (28,000 BTU/h) and 32.1kW (109,500 BTU/h).

The appliances also incorporate frost protection as standard, however users are reminded that this is not operational when the electrical supply to the appliance is isolated.

Each appliance features an attractive white powder coated casing with an inset control panel. All flue systems are white powder coated to give an attractive appearance to the installation.

A standard horizontal concentric air/flue duct terminal is available, (maximum duct length of 755mm (29 in)), suitable for room sealed applications. The duct assembly is connected to the appliance via a turret, which can be orientated to provide different horizontal duct directions. Extension ducts may be fitted in accordance with and up to the maximum dimensions stated in these instructions.

A vertical concentric outlet kit is also available for installations where an outside wall is not accessible or where it is desired to fit the duct through the roof. Installation using the horizontal or vertical duct is described in the main text of these instructions and additional information is provided in the flue kit for the vertical installation option. (Note: If the vertical outlet kit is to be used, access to the roof is necessary).

A special anti-plume kit is available. For more information contact BIASI UK Ltd Technical helpline: 0121 506 1350.

**ONLY BIASI APPROVED FLUE KITS OR EXTENSIONS MAY BE USED WITH THESE APPLIANCES.**

### 1.1.1 Important Information

**IT IS A STATUTORY REQUIREMENT THAT ALL GAS APPLIANCES ARE INSTALLED BY COMPETENT PERSONS, (i.e. CORGI REGISTERED INSTALLERS) IN ACCORDANCE WITH THE SAFETY (INSTALLATION AND USE) REGULATIONS (CURRENT EDITION). FAILURE TO COMPLY WITH THESE REGULATIONS MAY LEAD TO PROSECUTION.**

These appliance have been tested and certified in order to satisfy the necessary European Directives and comply with the latest Building Regulations, including the effiency requirements of the SEDBUK scheme.

Gas Appliance Directive 90/396/EEC

Effiency of Hot Water Boilers Directive

92/42/EC

Low Voltage Directive 93/68/EEC

Electromagnetic Compatibility Directive

92/31/EEC

No modifications to these appliances should be made unless they are fully approved by the manufacturer. Appliance installation must be carried out by a competent person and must be in accordance with the current legislation in force at the time of installation, in the country of destination. The manufaturer's instructions must not be taken as overriding any statutory requirements.

**GAS LEAKS. DO NOT OPERATE ANY ELECTRICAL SWITCHES, OR USE A NAKED FLAME. TURN OFF THE GAS SUPPLY. VENTILATE THE AREA BY OPENING DOORS AND WINDOWS. CALL OUT YOUR LOCAL GAS SUPPLIER.**

### 1.1.2 Control of Substances Hazardous to Health

Under Section 6 of the Health and Safety at Work Act 1974, it is required to provide information on substances hazardous to health.

The adhesives and sealants used in this appliance are cured and give no known hazard in this state.

Insulation Pads - These can cause irritation to the skin, eyes and the respiratory tract. If you have a history of skin complaints you may be susceptible to irritation. High dust levels are usual only if the material is broken. Normal handling should not cause discomfort, but follow normal good hygiene and wash your hands before eating, drinking or going to the lavatory. If you do suffer irritation to the eyes or severe irritation to the skin seek medical attention.

### 1.1.3 Gas and Electricity Consumer Council (Energywatch)

Energywatch is an independent organisation, which protects the interests of gas users. If you need advice concerning energy issues, they may be contacted on their consumer help line number: 08459 060708, or via their web site; http://www.energywatch.org.uk

## 1.2 Safety

Read these user manual instructions and the user label (fitted on the decorative front panel) carefully before attempting to operate the appliance. Comply with all applicable warnings. Do not interfere with any sealed components and use the appliance only in accordance with these instructions.

### 1.2.1 Current Gas Safety (Installation and Use) regulations or the rules in force

It is the law that all gas appliances are installed by a competent 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. If the appliance is damaged, turn off the appliance and consult a CORGI registered installer.

If it is known or suspected that a fault exists on the appliance it **MUST NOT** be used until the fault has been rectified by a competent person.

### 1.2.2 Electrical Supply
**This appliance must be earthed.**

Supply: 230V ~ 50Hz fused at 3A.

This method of connection to the mains supply must facilitate complete isolation of the appliance. Either a 3A fused three pin plug and un-switched shuttered socket outlet, or a 3A fused double pole switch having a 3mm contact separation in both poles, serving only the boiler (and its external controls), may be used.

### 1.2.3 Clearances and Ventilation

It is not neccesary to have a purpose provided air vent in the room or internal space in which a room-sealed appliance is installed.

Cupboard or compartment ventilation is not necessary for a room-sealed appliance providing that the minimum clearances are maintained.

## 1.3 Boiler Logbook

Please ensure that you have a Logbook supplied with your appliance. This Logbook should be completed by your installer to verify that the correct installation and commissioning procedure was followed.

Failure to complete the Logbook may result in difficulties should a problem arise with your appliance during the guarantee period. This Logbook forms part of the industry's Benchmark code of practice for the installation, commissioning and servicing of central heating systems.

All CORGI Registered Installers carry a CORGI ID card and have a registration number. Both should be recorded in your Logbook. You can check your installer is CORGI registered by calling CORGI on 0870 401 2300.

## 1.4 Operating Instructions

Refer to Fig. 1

### 1.4.1 To light the Boiler

1 Switch on the electrical supply.

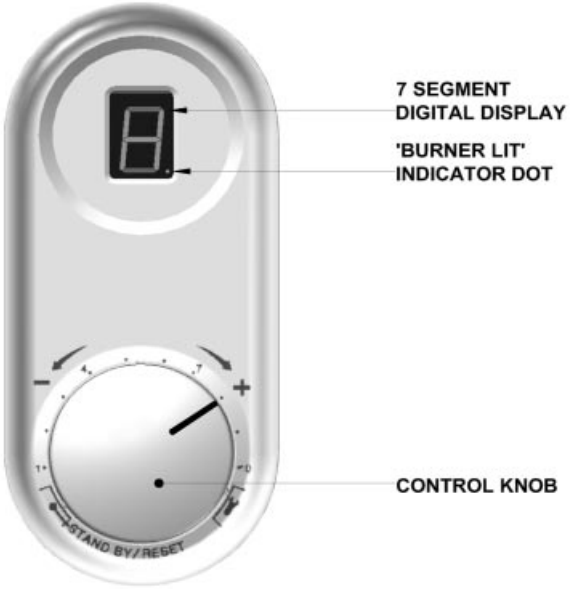
2 Turn the CH control knob to the midpoint between minimum and maximum setting. The display changes from '0' to 'h' .

3 Ensure that all secondary controls, e.g. programmer, room thermostat are calling for heat.

4 The display changes to 'H'. When the burner has lit there will be a small dot appearing in the bottom right corner of the display.

5 If the burner fails to light the fan will stop. Initially this may be due to air in the gas supply. The boiler will automatically have five attempts at ignition. After the five attempts it may be necessary to RESET the boiler by turning the control knob to RESET position and repeat (2).

**Fig 1. Fascia Panel**




### 1.4.2 Control of Water Temperature

**CH:** Adjustable via the CH temperature control knob to give radiator temperatures of between 30°C and 80°C. To operate the boiler more efficiently it is recommended to set the CH temperature about half way (between '+' and '-'). Please check with your installer the size of your radiators.

During periods of no heating requirement, this control should be set to the Standby position.

**Note:** If the display shows a flashing 'H' the boiler is in a service mode and the boiler will fire continuously at minimum input.

**This setting is for the convenience of the Service Engineer ONLY.**

### 1.4.3 To turn the Boiler off

For short or long periods

Switch the programmer and/or room thermostat switch to the **OFF** position.

**Note:** The appliance is fitted with a frost protection device. In the event of very cold conditions, the pump may operate and the boiler light for a few minutes to protect the appliance and system from potential frost damage. This can only function if the gas and electricity supplies are maintained and the control knob on the appliance is set to the STAND-BY position.

This function automatically operates the boiler when the heating system water reaches temperatures below 5ºC.

If either the gas or electricity services is to be isolated during a period when frost is likely, the water circuits must be drained.

### 1.4.4 Boiler overheat Thermostat

The appliance is fitted with two thermistors located on the flow and return pipes. In the event of overheating, the boiler will shut down and the display will show 'H'. Allow the boiler to cool, then briefly turn the control knob to STAND-BY/RESET position and then back to an 'on' position within TWO seconds.

If the fault persists, consult a CORGI registered installer.

### 1.4.5 Diagnostic Digital Display

**FASCIA PANEL, Figure 1**

For fault finding, refer to the diagnostic chart shown below, together with the notes given in sections 8.3, 8.4 and 8.5.

Fault Finding Codes

In the event of the appliance failing to light, refer to the Diagnostics Chart on the next page.

To RESET the boiler turn the control knob to the STAND-BY/RESET position and back to an 'on' position within TWO seconds.

## 1.5 General Care

The front panel, being a powder coated white finish should be cleaned with a damp cloth and mild detergent. Do not use abrasive cleaners.

## 1.6 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 law that any service work must be carried out by a competent person such as British Gas or other CORGI registered personnel.

## RESET LOCK-OUT CODES

| LED CODE | FAULT/EFFECT | REASON |
|---|---|---|
| 1 | Overheated appliance | Water temperature greater than 105°C |
| 2 | Water flow failure or Differential check faulty/ Flame for a short period only | Sensor temperature differential incorrect |
| 3 | No gas or Lockout flame signal/ No flame, Lockout after 5 ignition attempts | Low gas pressure. No flame signal on ignition, or loss of signal during operation |
| 4 | Flue gas sensor/No flame | Flue gas temperature greater than 95°C |

## BLOCKING CODES

| LED CODE | FAULT/EFFECT | REASON |
|---|---|---|
| 5 | Defective sensor/No flame | Defective flow, return or flue sensor |
| 6 | Defective gas valve/ Flame continues after demand ends | 5 sec. flame signal after burner is switched off |
| 7 | Defective fan/No flame | Missing or Erroneous RPM signal |
| 8 | PCB error/No flame | Internal error |
| b | Activate BCC/No flame | New BCC |
| C | Safety system failure/No flame | Failure of internal self checking system |
| E | BCC error/No flame | Incorrect /missing BCC |
| h | No flame | No demand/Faulty connector |
| 0 | Differential check faulty/Flame for 15 seconds | Water flow rate too low |
| P | Error in power supply/No flame | Low mains voltage |
| | No light indication | Defective power supply |

**NOTE:**

RPM SIGNAL - FAN SPEED SIGNAL IN REVOLUTIONS PER MINUTE

BCC - BOILER CHIP CARD (A SMALL MICROCHIP THAT PUSH FITS ONTO THE CONTROL PCB AND ALTERS OPERATING PARAMETERS) SEE SECTION 7 FIG.31)

**FAULT CODES 1-4 CAN BE RESET BY FOLLOWING THE PROCEDURE IN SECTION 1.4.5. HOWEVER, IF ANY OTHER FAULT CODE IS SHOWING PLEASE CONTACT YOUR INSTALLER OR BIASI UK LTD. TECHNICAL HELPLINE: 0121 506 1350.**

## 1.7 Warning

If a gas leak is suspected or exists, turn the gas OFF at the incoming mains (adjacent to the meter). Do not operate any electrical switches. Do not operate any electrical appliances. Open all windows and doors. Do not smoke. Extinguish all naked lights. Phone the Transco 24 hour emergency number immediately on 0800 111999. (Do not call from a mobile phone). The boiler is fitted with a condensate trap. The condensate drain point must not be modified or blocked (see section 4.6 of the installation manual).

## 1.8 Pluming from Terminal

Like all condensing boilers this appliance will produce a plume of condensation from the flue terminal. This is due to the high efficiency and hence low flue gas temperature of the boiler. It is normal and not a fault indication.

# INSTALLATION

## 2 Technical Specifications

### 2.1 Gas Categories

These appliances are certified to comply with the requirements of EN 483 and EN 677 for use in GB and IE (Great Britain and Ireland) using the following gas categories:

**Biasi RIVA OV 30, Biasi RIVA OV 18**

$I_{2H}$ (G20 with a governed gas supply at 20 mbar (8 in.wg) inlet pressure).

### 2.2 Performance Data - Biasi RIVA OV 30

| Central Heating Output | | | |
|---|---|---|---|
| Non Condensing 80 - 60ºC | | | |
| | Max | kW | 30.0 |
| | | *BTU/h* | *102400* |
| | Min | kW | 8.2 |
| | | *BTU/h* | *28000* |
| Condensing 50 - 30ºC | | | |
| | Max | kW | 32.1 |
| | | *BTU/h* | *109500* |

| Heat Input | | | |
|---|---|---|---|
| Max Rate | Net | kW | 30.4 |
| | | *BTU/h* | *103700* |
| | Gross | kW | 33.8 |
| | | *BTU/h* | *115300* |
| Min Rate | Net | kW | 7.6 |
| | | *BTU/h* | *26000* |
| | Gross | kW | 8.4 |
| | | *BTU/h* | *28600* |

| Gas Rate (after 10 mins operation - hot) | | |
|---|---|---|
| Max | m3/h | 3.22 |
| Max | ft3/h | 113.7 |

| Other Specifications | | |
|---|---|---|
| Seasonal Efficiency | % | 90.4 |
| Seasonal Efficiency SEDBUK | Band | A |
| NOx Classification | Class | 5 |
| Min Cen Heating Press | Bar | 0.1 (1m $H_20$) |
| Max Cen Heating Press | Bar | 3.0 |
| Max Cen Heat Flow Temp | ºC | 80 |
| Min Cen Heat Flow Temp | ºC | 30 |

**Performance Data - Biasi RIVA OV 18**

| Central Heating Output | | | |
|---|---|---|---|
| Non Condensing 80 - 60ºC | | | |
| | Max | kW | 18.0 |
| | | *BTU/h* | *61400* |
| | Min | kW | 5.9 |
| | | *BTU/h* | *20100* |
| Condensing 50 - 30ºC | | | |
| | Max | kW | 19.3 |
| | | *BTU/h* | *65900* |

| Heat Input | | | |
|---|---|---|---|
| Max Rate | Net | kW | 18.4 |
| | | *BTU/h* | *62800* |
| | Gross | kW | 20.4 |
| | | *BTU/h* | *69600* |
| Min Rate | Net | kW | 5.5 |
| | | *BTU/h* | *18800* |
| | Gross | kW | 6.1 |
| | | *BTU/h* | *20800* |

| Gas Rate (after 10 mins operation - hot) | | |
|---|---|---|
| Max | m3/h | 1.95 |
| Max | ft3/h | 68.9 |

| Other Specifications | | |
|---|---|---|
| Seasonal Efficiency | % | 90.3 |
| Seasonal Efficiency SEDBUK | Band | A |
| NOx Classification | Class | 5 |
| Min Cen Heating Press | Bar | 0.1 (1m $H_20$) |
| Max Cen Heating Press | Bar | 3.0 |
| Max Cen Heat Flow Temp | ºC | 80 |
| Min Cen Heat Flow Temp | ºC | 30 |

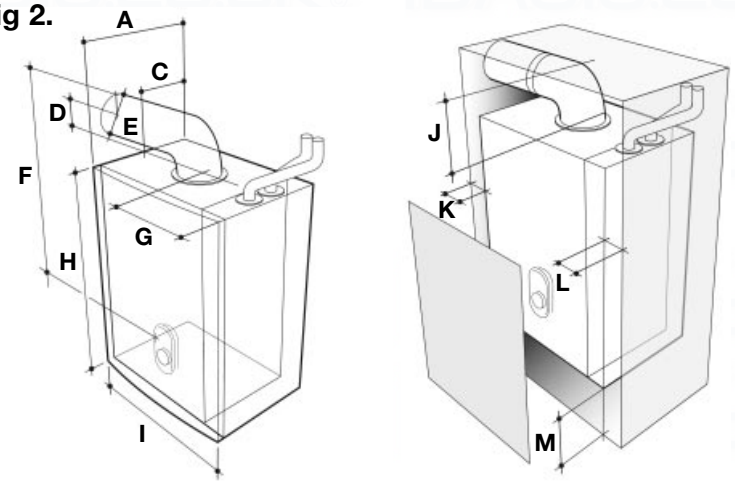
## 2.3 General Specifications

| General Specifications - Biasi RIVA OV 30 | | |
|---|---|---|
| Total Weight (full) | kg | 38.1 |
| Total Weight (empty) | kg | 36.1 |
| Max Lift Weight | kg | 28.1 |
| Total Water Capacity | l | 2.0 |
| Electrical Supply | 230V 50Hz Fuse 3A | |
| Internal Fuse | T4H 4A 250V | |
| Max Power Consumption | W | 46 |
| IP Rating | | IP 20 |
| Flue Gas Temp Nat Gas 80/60 | ºC | 73 |
| Flue Gas Temp Nat Gas 50/30 | ºC | 41 |
| $CO_2$ Value Max Rate (Nat Gas) | %9.2±0.3 Case on %9.0±0.2 Case off | |
| $CO_2$ Value Min Rate (Nat Gas) ref only | % | 8.9 ± 0.1 |
| CO Value Max Rate (Nat Gas) | % | 0.01 ± 0.005 |
| Flue Products mass flow rate (Nat Gas) | g/s | 13.7 |
| Gas Valve Offset @ min rate | Pa | -3.0 |
| **Connections - Biasi RIVA OV 30** | | |
| Gas | 15mm compression | |
| CH Flow | 22mm tail | |
| CH Return | 22mm tail | |
| Condensate Drain | 21.5 - 22mm plastic overflow pipe | |

| General Specifications - Biasi RIVA OV 18 | | |
|---|---|---|
| Total Weight (full) | kg | 32.6 |
| Total Weight (empty) | kg | 31.3 |
| Max Lift Weight | kg | 24.7 |
| Total Water Capacity | l | 1.3 |
| Electrical Supply | 230V 50Hz Fuse 3A | |
| Internal Fuse | T4H 4A 250V | |
| Max Power Consumption | W | 30 |
| IP Rating | | IP 20 |
| Flue Gas Temp Nat Gas 80/60 | ºC | 74 |
| Flue Gas Temp Nat Gas 50/30 | ºC | 43 |
| $CO_2$ Value Max Rate (Nat Gas) | %9.2±0.3 Case on %9.0±0.2 Case off | |
| $CO_2$ Value Min Rate (Nat Gas) ref only | % | 8.4 ± 0.1 |
| CO Value Max Rate (Nat Gas) | % | 0.01 ± 0.005 |
| Flue Products mass flow rate (Nat Gas) | g/s | 8.3 |
| Gas Valve Offset @ min rate | Pa | -3.0 |
| **Connections - Biasi RIVA OV 18** | | |
| Gas | 15mm compression | |
| CH Flow | 22mm tail | |
| CH Return | 22mm tail | |
| Condensate Drain | 21.5 - 22mm plastic overflow pipe | |

## 2.4 Overall Dimensions and Minimum Clearances

**Fig 2.**




| Biasi RIVA OV 18 | |
|---|---|
| **A** | **310 mm** |
| **C** | **150 mm** |
| **D** | **97 mm** |
| **E** | **100 mm** |
| **F** | **694 mm** |
| **G** | **200 mm** |
| **H** | **540 mm** |
| **I** | **400 mm** |
| **J** | **200 mm** |
| **K** | **5 mm** |
| **L** | **5 mm** |
| **M** | **200 mm** |

| Biasi RIVA OV 30 | |
|---|---|
| **A** | **350 mm** |
| **C** | **150 mm** |
| **D** | **97 mm** |
| **E** | **100 mm** |
| **F** | **694 mm** |
| **G** | **200 mm** |
| **H** | **540 mm** |
| **I** | **400 mm** |
| **J** | **200 mm** |
| **K** | **5 mm** |
| **L** | **5 mm** |
| **M** | **200 mm** |

## 2.5.1 Fitting the Flue System

Refer to the assembly instructions contained within the chosen flue kit packaging for the correct assembly and installation.

In general, it has to be taken in consideration that the horizontal sections of the flue pipe must have an horizontal sloping not less that 1.5 deg. (25 mm per metre) towards the boiler.

In the standard horizontal flue kit (Fig. 3) the flue pipe is angled within the air duct therefore the air duct must be horizontally installed.

If one or more extensions have to be used they must be adequately supported so that there is not sag in the flue pipe and a minimum fall of 1.5 deg. (25 mm per metre) over the whole length towards the boiler is ensured.

Before fitting the flue system, ensure that the flue gasket is fitted to the boiler.

## 2.5.2 Choice of flue

The following flue kits are available for connecting to the boiler:

**Standard horizontal flue kit (Fig. 3.)**

Co–axial 60/100mm - nominal length 1m

This kit is normally supplied with the boiler and can be fitted to allow discharge to the rear or either side of the boiler via the flanged boiler adapter elbow. Minimum length required is 250mm. Maximum equivalent length of 10 metres can be achieved utilising extensions. This flue system can only be used to discharge horizontally, it is not designed to enable termination in the vertical plane.

**Vertical kit with 90º elbow (Fig. 3.)**

Co–axial 60/100mm

Supplied with a straight flanged adapter a co-axial elbow and a co-axial pipe with terminal, this kit allows for a vertical rise of 0.5 m from the boiler. In all circumstances the flue terminal must discharge horizontally and the equivalent flue length must not exceed 10 metres.

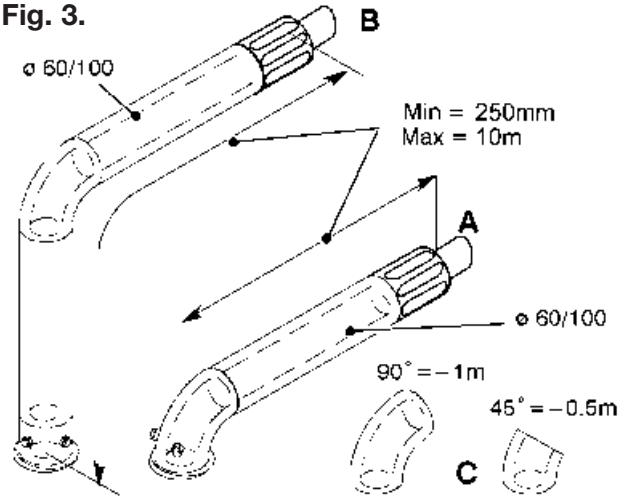
**Elbows 45º & 90º (Fig. 3.)**

Co–axial 60/100mm

Elbow kits enable the standard flue kits to be offset to overcome obstructions or ensure the correct clearances for the flue terminal. Each elbow used in addition to the standard flanged elbow reduces the overall acceptable length of the flue system as follows:

45º reduce length by 0.5 m.
90º reduce length by 1 m.

**Fig. 3.**




**Vertical - roof kit (Fig. 3.1.)**

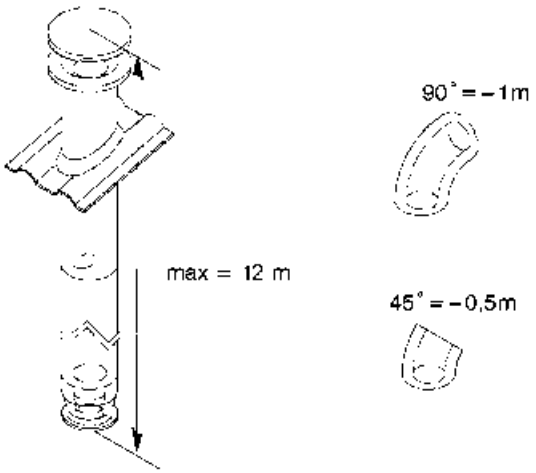
This kit allows vertical termination of the flue pipe through the roof. The kit is 1.2 m in length. Extension pieces (Co-axial) are also available which allows the flue system to be extended to a total overall maximum permissable length.

Optional 45º and 90º elbows can be used to offset the flue route.

Each additional elbow reduces the overall acceptable length of the flue system as follows:

45º reduce in length by 0.5 m.
90º reduce in length by 1 m.

**Fig. 3.1.**



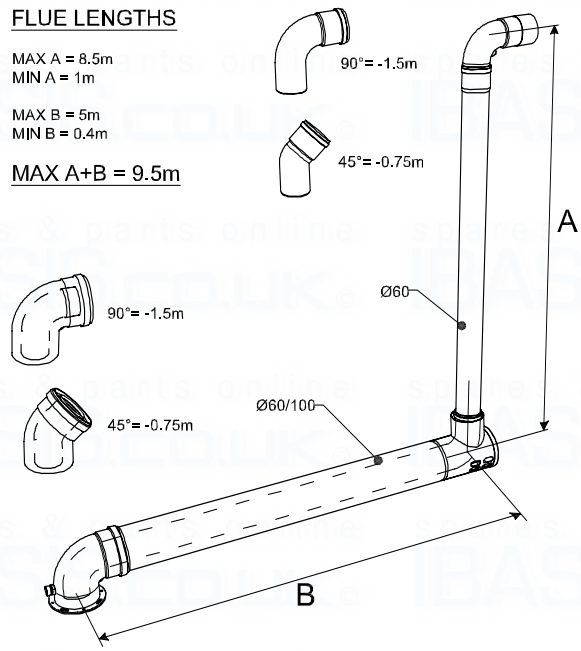
### 2.5.3 Anti-pluming kit

If the standard horizontal flue kit is likely to cause nuisance to neighbours or buildings, because of excess pluming, then this particular flue kit raises the flue gas outlet point to a higher elevation with the minimum amount of changes. The flue gas duct is teed-off from the concentric part and the air in-take remains at the lower level (see Figure 3.2.).

If choosing this option then the external flue duct length should be taken into account when calculating equivalent flue length.

For installation details refer to the flue kit instructions.

**Fig. 3.2.**




### 2.6 Additional Concentric Flue Kits

The following additional concentric kits are available as optional extras.

Flue Extension Ducts - 1 m and 500 mm long, (each duct extends the flue length by up to 950 mm and 450 mm respectively).

Raised Horizontal Flue - For use with elevated horizontal flues.

**For installation details refer to the instructions provided with the individual flue kits.**

These optional kits may be used with the standard flue kits to produce an extensive range of flue options, providing that the following rules are strictly obeyed.

a) The maximum/minimum permissible length of the room sealed flue system are:

**Horizontal flue terminal (all orientations) maximum 10 m (393 in)**

**Horizontal flue terminal (rear exit) minimum 250 mm (10 in)**

**Vertical flue terminal maximum 12 m (472 in)**

**Vertical flue terminal minimum 600 mm (23.5 in)**

**The 'equivalent' flue length must not exceed the maximum values stated.**

b) The standard terminal must always be fitted horizontally; horizontal ducts must have a minimum continuous fall towards the appliance of 1.5°. This ensures condensate runs back into the appliance from the flue system. The vertical terminal must always be used if a vertical outlet is required.

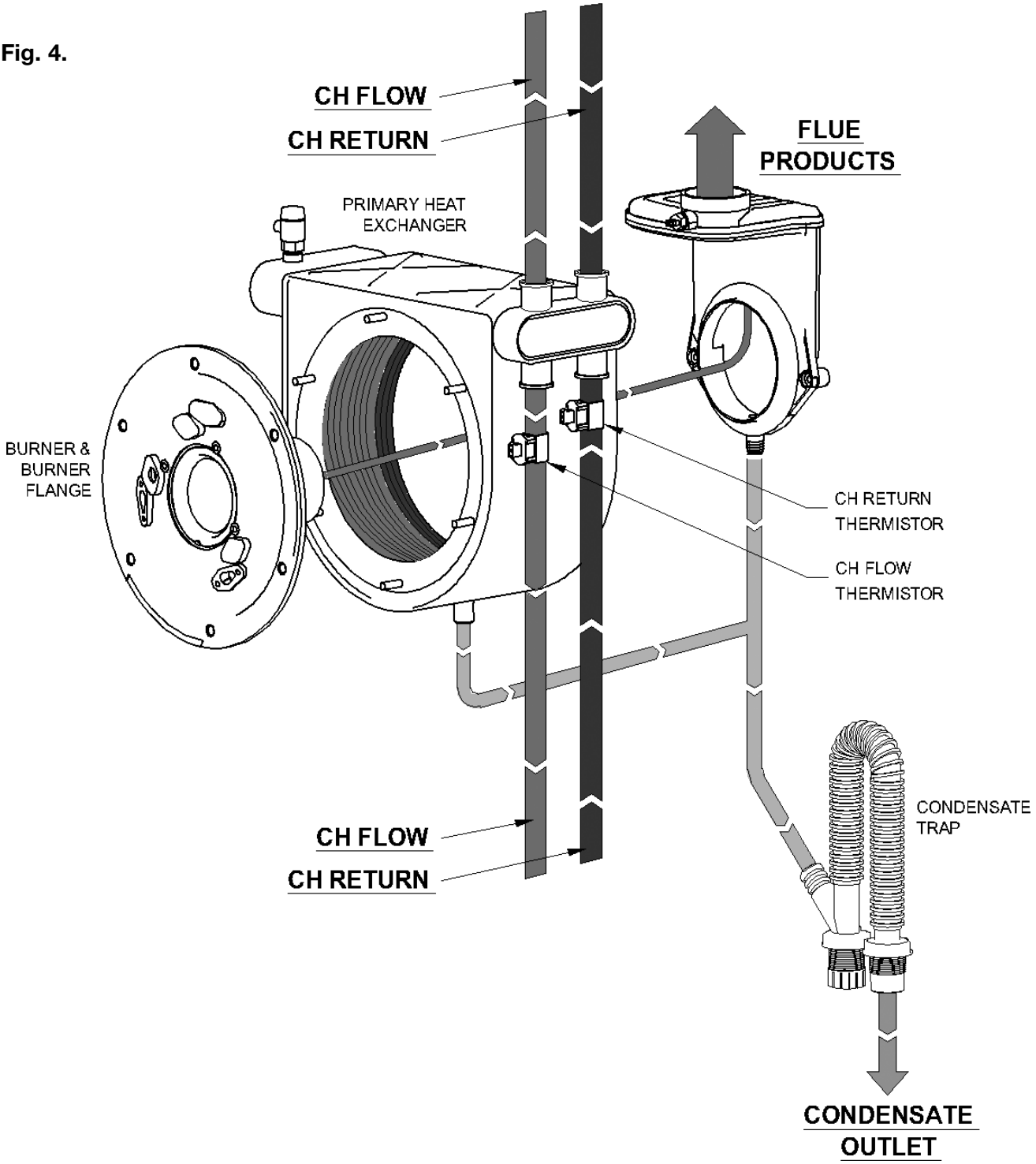
c) The concentric flue system must use either a flanged elbow or a raised horizontal flue socket at the entry/exit to the appliance.

d) All joints must be correctly made and secured in accordance with the installation instructions. When cutting ducts, avoid swarf, uneven and sharp edges to maintain duct integrity.

Refer to Figures 2 and 3 to determine which option kits are required before commencing the installation. Instructions for installing the appliance with a horizontal flue and straight extension ducts are included in the main text of these instructions (section 4.7).

## 2.7 Appliance Hydraulic Circuit

**Fig. 4.**



# 3 Installation Requirements

## 3.1 Statutory Requirements

**GAS SAFETY (INSTALLATION AND USE) REGULATIONS 1998 (AS AMENDED)**

The appliance is suitable only for installation in GB and IE and should be installed in accordance with the rules in force.

In GB, a CORGI Registered Installer must carry out the installation. It must be carried out in accordance with the relevant requirements of the:

**Gas Safety (Installation and Use) Regulations**

The appropriate Building Regulations either The Building Regulations, The Building Regulations (Scotland), Building Regulations (Northern Ireland).

**The Water Fitting Regulations or Water Byelaws in Scotland.**

**The Current I.E.E Wiring Regulations.**

Where no specific instructions are given, reference should be made to the relevant British Standard code of Practice.

In IE, the installation must be carried out by a Competent Person and installed in accordance with the current edition of I.S.813 "Domestic Gas Installations", the current Building Regulations and reference should be made to the current ETCI rules for electrical installation.

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 6891, Institute of Gas Engineer document IGE/UP-7, BS 7074 (expansion vessel) and IS813 for IE.

**IMPORTANT NOTE:** Manufacturer's instructions must NOT be taken in any way as overriding statutory obligations.

## 3.2 Appliance Location

**The following limitations MUST be observed when siting the appliance:**

a) The appliance is not suitable for external installations. 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 (Section 2.4 and 3.4).

b) This position MUST allow for a suitable flue system and terminal position. The appliance must be installed on a flat vertical wall, which is capable of supporting the weight of the appliance and any ancillary equipment.

c) If the appliance is to be fitted in a timber framed building it should be fitted in accordance with the British Gas publication 'Guide for Gas Installations In Timber Frame Housing', Institute of Gas Engineers document IGE/UP-7. If in doubt, advice must be sought from the Local Gas Supplier.

d) The appliance is approved to a protection rating of IP20. Therefore if the appliance is to be installed in a room containing a bath or a 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 the current BS 7671 (I.E.E Wiring Regulations) and in Scotland the electrical provisions of the Building Regulations applicable in Scotland. (This section under review!)

## 3.3 Flue Terminal Position

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

a) The appliance MUST be installed so that the terminal is exposed to the 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 5.

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 2 m (78 in) above the ground, above a balcony or above a flat roof to which people have access, the terminal MUST be protected by a purpose designed terminal guard.

g) The air inlet / flue outlet MUST NOT be closer than 25 mm (1 in) to combustible material.

h) Condensing appliances have a tendency to form a plume of water vapour at the terminal under certain operating conditions. This is normal but positions where this would cause damage or a nuisance should be avoided. Consideration should be given to the dispersal of the plume in terms of adjacent surfaces and neighbouring properties. A special flue terminal, is available to raise the flue discharge point; use of this terminal will limit the maximum flue length available. For further information contact: BIASI UK Ltd Technical helpline: 0121 506 1350.

## 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 a room-sealed appliance is installed.

b) Cupboard or compartment ventilation is not necessary for a room-sealed appliance providing that the minimum clearances are maintained.

c) If the appliance is installed in a room or internal space with other opened flued appliances, the aggregate maximum rated input shall be used to determine the air vent free-area. (BS 5440-2 Table 2).

d) Where an open flued system is used, and the flue duct air inlet is within a compartment then high and low level air vents are necessary in the compartment, the size of the vents should be calculated in accordance with BS 5440-2 Table 2.

The minimum acceptable spacing from the terminal to obstructions and ventilation openings are specified in Fig. 5.

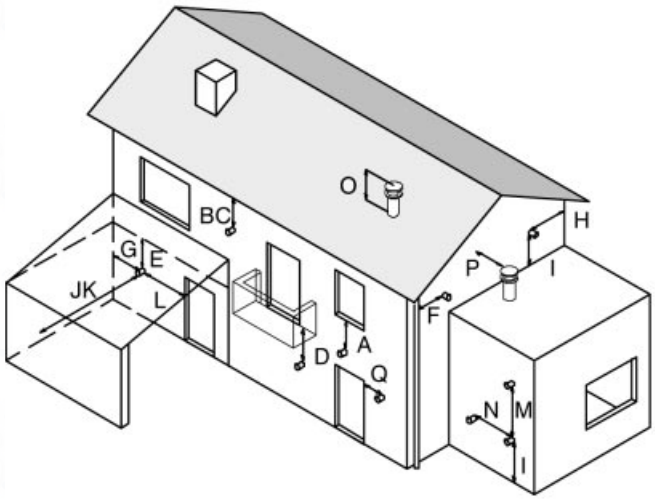



**Fig. 5.**

| Terminal Position | mm |
|---|---|
| A. Directly below a window or other opening | 300 |
| B. Below gutters, soil pipes or drain pipes | 75 |
| C. Below eaves | 200 |
| D. Below balconies* | 2500 |
| E. Below car port roof | NO |
| F. From vertical drain pipes and soil pipes | 150 |
| G. From internal corners** | 1000 |
| H. From external corners | 300 |
| I. Above ground or balcony level | 300 |
| J. From a surface facing a terminal | 2500 |
| K. From a terminal facing a terminal | 2500 |
| L. From an opening in the car port (e.g. door, window) into dwelling | NO |
| M. Vertically from a terminal in the same wall | 500 |
| N. Horizontally from a terminal in the same wall | 300 |
| O. Above the roof pitch with roof slope less than or equal to 30° | 350 |
| Above the roof pitch with roof slope more than 30° | 600 |
| P. From wall face | 600 |
| Q. From, above or to side of an opening | 300 |

* Wherever practicable to do so, the flue should be extended beyond the perimeter of the balcony.

** Consideration should be given to adding protection against condensate to the adjacent structure

## 3.5 Condensate Disposal

The condensate drain connection is suitable for either 21.5 mm or 22 mm plastic push fit or adhesive overflow pipes and fittings. It should be piped to drain, preferably within the building, maintaining a continuous 2.5° fall away from the appliance. If the drain is routed to outside it should be to a drain or soak away, and any external pipe work should be in 32 mm. Insulation to protect from freezing in cold weather conditions is also advisable.

**If the appliance is installed in a garage all pipe work should be in 32 mm. Ensure that the condensate discharge system complies with any local regulations in force.**

## 3.6 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 pipe work should be of sufficient size to carry the maximum appliance input plus the demand of any other installed appliance. (BS 6891: 1988).

**A minimum of 22 mm diameter pipe work is recommended within 1 m of the appliance gas cock.**

e) Natural gas appliances: The governor at the meter must give a constant outlet pressure of 20 mbar (8 in.wg) when all appliances on the system are running.

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 tightness.

## 3.7 Central Heating System

a) The appliances are designed for open vented central heating water systems, but may be fitted to a sealed central heating system provided the necessary components, such as expansion vessel and pressure safety relief valve are fitted to the system. Refer to Figure 8 for a typical open vented system design, which incorporates radiators, and a drain facility that must be provided at the lowest point in the system to allow complete drain down.

b) The installation should be designed to operate with a flow temperature of up to 95°C.

c) If a sealed system is to be used then only a competent person must fill it.

d) The hydraulic resistance curves for the appliances are given in Figure 6.

e) If thermostatic radiator valves are fitted, one radiator must be fitted with two lock shield valves, to enable correct operation of the pump-overrun facility.

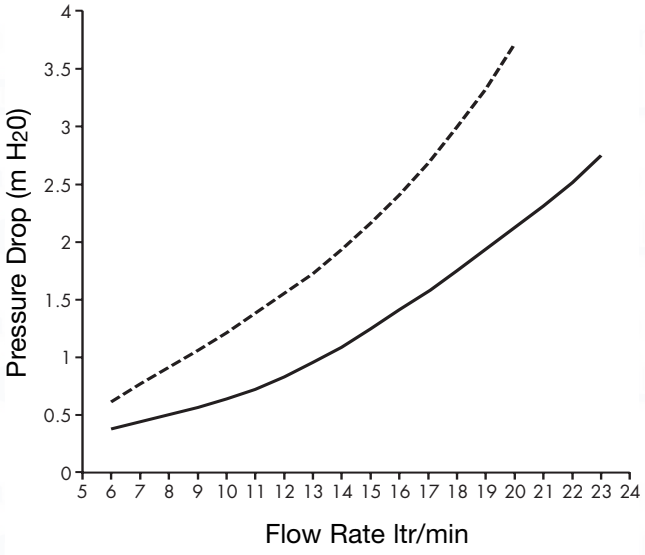
f) The following paragraphs outline the specifications of the items fitted to the appliances.

**Appliance Hydraulic Resistance**

——— **RIVA OV 30**

- - - - - - **RIVA OV 18**

**Fig. 6.**




## 3.8 Draining Tap

A draining tap must be provided at the lowest point of the system, which will allow the entire system and hot water system to be drained.

Draining taps shall be to the current issue of BS 2879.

### 3.9 Safety Valve Open Vent System

A safety valve need not be fitted to an open vented system. (See 3.16 for sealed systems)

### 3.10 Pump

The pump should be fitted on the flow pipe from the boiler and have isolating valves each side.

A variable duty pump should be set to give a temperature difference of no greater than 20°C between the flow and return, with the boiler controls set at "MAX", which is approximately 80°C to give a flow rate as shown in table 1.

See figure 6 for pressure loss of the boiler.

High resistance microbore systems may require a higher duty pump.

### 3.11 Flow Rate

If it is necessary to alter the flow rate, the system can be fitted with a lockable balancing valve in the main flow or return pipes shown as valve "A" in figure 7. The flow rate through the boiler must not be allowed to fall below that given in table 1.

| Table 1. Flow Rate |
|---|
| MINIMUM FLOW RATE |
| 200 l/h |
| This is equal to 20°C differential at minimum heat input. |

### 3.12 Water Treatment

**WATER TREATMENT, CLEANSING AND FLUSHING THE HEATING SYSTEM**

**NOTE:** *British Standard BS7593: 2006 stresses the importance of cleansing and flushing of the system to ensure it continues to run efficiently with the minimum of maintenance necessary. Biasi UK Ltd fully supports this professional approach and recommends that the system is cleansed with an effective chemical cleanser and protected long term with a suitable inhibitor. Such products are available from Fernox and Sentinal.*

### 3.13 Open Vented Water System

The boiler must be supplied from an unrestricted water supply taken from a feed and expansion cistern situated at a maximum height of 27 metres (90ft) above the boiler.

The cold feed must be 15mm minimum size.

The vent must rise continuously and be unrestricted.

It is important that the relative positions of the pump, cold feed and open vent are as shown in figure 9.

### 3.14 Domestic Hot Water Cylinder

SINGLE FEED INDIRECT CYLINDERS ARE NOT SUITABLE

The domestic hot water cylinder must be of the double feed fully indirect coil type.

### 3.15 Sealed Water Systems

The installation must comply with the appropriate requirements of the current issue of BS4814, BS5449, BS6759, BS6798 and BS7074 Part 1 and 2.

See figure 7 for a suggested layout.

### 3.16 Safety Valve Sealed System

A safety valve must be fitted to a sealed system.

It shall be preset, non-adjustable with a lift pressure of 3 bar, incorporating seating of a resilient material, a test device and a connection for drain.

The drain from the safety valve must be routed outside the building, must not discharge above an entrance or window or any type of public access area, be clear of any electrical fittings and positioned so that any discharge can be seen.

### 3.17 Expansion Vessel

A diaphragm type expansion vessel, conforming to the current issue of BS4814 (see also BS7074 Part 1 and 2) must be connected at a point close to the inlet side of the circulating pump, see the diagrammatic layout, figure 7 unless laid down differently by the manufacturer.

The expansion vessel volume depends on the total water system volume and the initial system design pressure. For any system an accurate calculation of vessel size is given in the current issue of BS5449 and BS7074 Part 1.

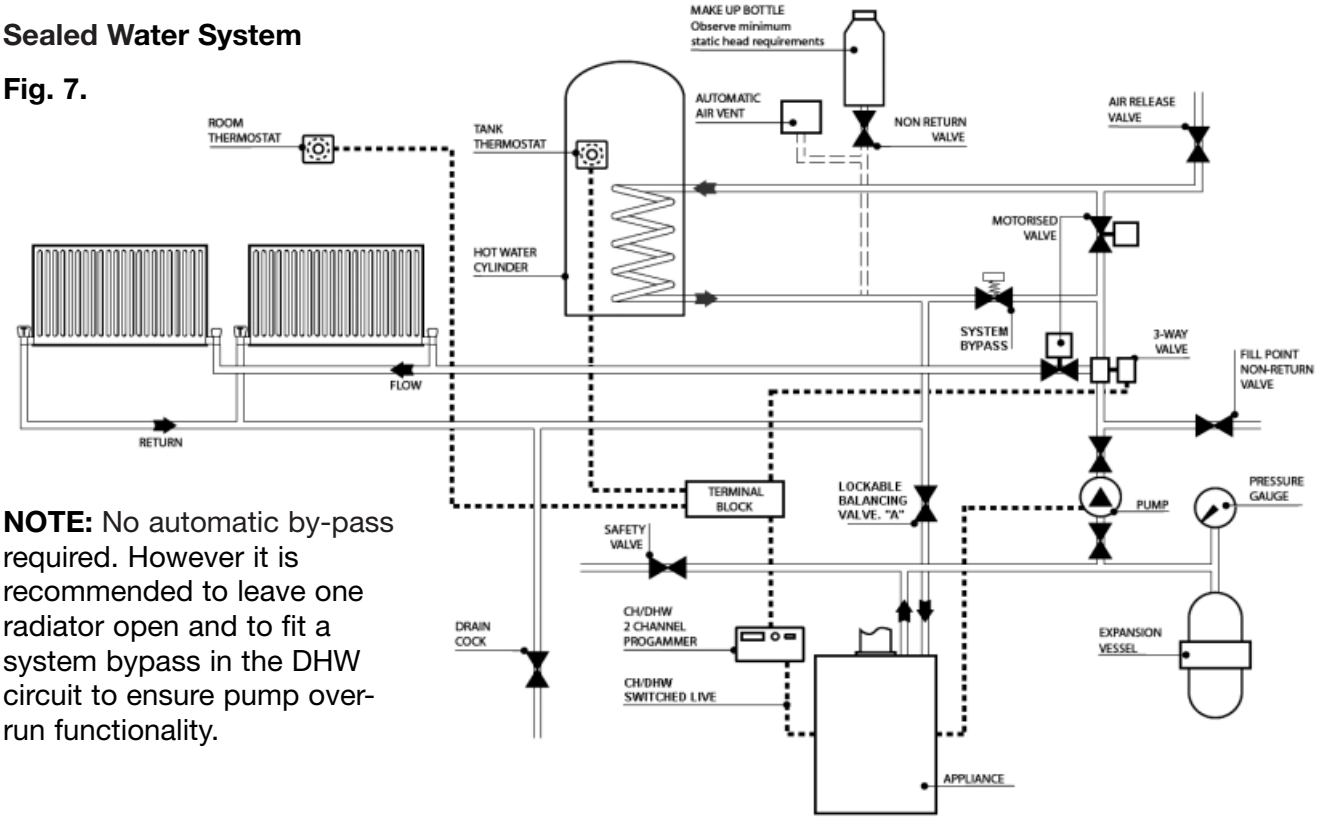
Example: For an initial design pressure of 0.7 bar, the minimum total vessel volume required is 0.063 x Total System Volume.

Note: A higher initial design pressure requires a larger volume expansion vessel.

The charge pressure must not be less than the static head of the system, that is, the height of the highest point of the system above the expansion vessel.

**Sealed Water System**

**Fig. 7.**




**NOTE:** No automatic by-pass required. However it is recommended to leave one radiator open and to fit a system bypass in the DHW circuit to ensure pump over-run functionality.

The water content of the boiler is given in 2.3 General Specifications.

**Expansion Vessel Requirements**

| Vessel charge and initial system pressure | bar | 0.5 | 0.75 | 1.0 | 1.5 |
|---|---|---|---|---|---|
| Total water content of system using 8 L (1.54 gal) capacity expansion vessel supplied with appliance. | L | 96 | 84 | 73 | 50 |
| For systems having a larger capacity multiply the total system capacity in litres (gallons) by these factors to obtain the total minimum expansion vessel capacity required in litres. | | 0.0833 | 0.093 | 0.109 | 0.156 |

## 3.18 Pressure Gauge

A pressure gauge with a set pointer and covering at least 0 to 4 bar (0 to 60 lb/in) shall be fitted permanently to the system in a position where it can be seen when filling the system.

## 3.19 Water Makeup

Provision should be made for replacing water loss from the system using a make up bottle mounted in a position higher than the top point of the system, connected through a non-return valve to the return side of either the heating circuit or the hot water cylinder.

Alternatively, provision for make up can be made using a filling loop.

## 3.20 Filling a Sealed Water System

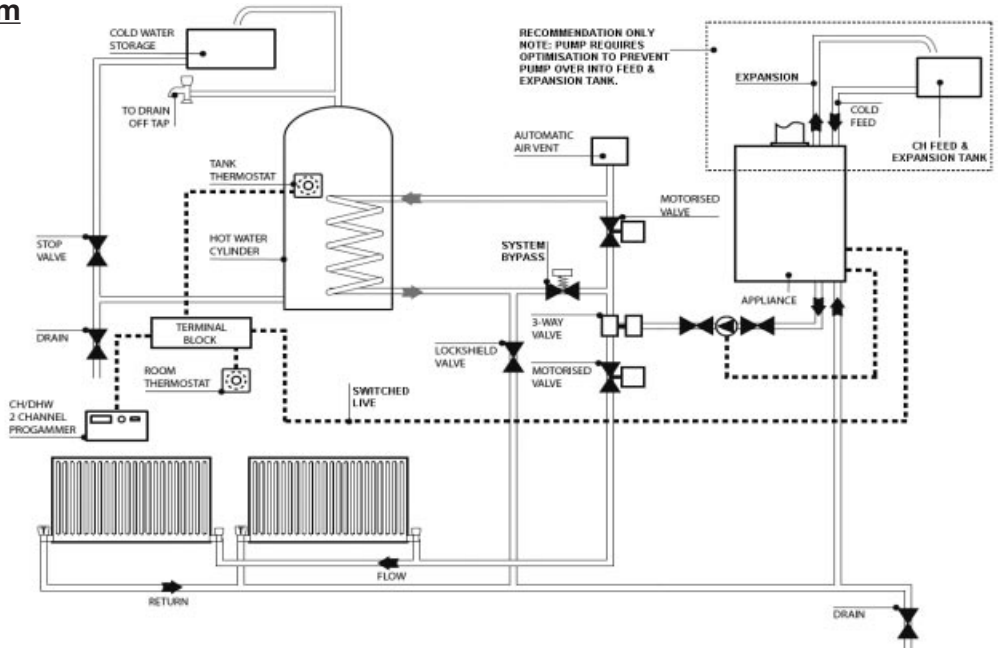
Provision for filling the system at low level must be made, see figure 7. There must be no permanent connection to the mains water supply, even through a non-return valve.

CONTROLS. As a minimum it is recommended that a room thermostat be installed to control the appliance. Thermostatic radiator valves may be fitted to the system, however they must not be fitted in the room where the room thermostat is fitted. There must be at least one radiator installed with lock shield valves that should not be closed. Further guidance can be obtained from the Domestic Heating and Hot Water Guide to the building regulations.

**Open vent water system with flow and return connected to bottom pipes.**

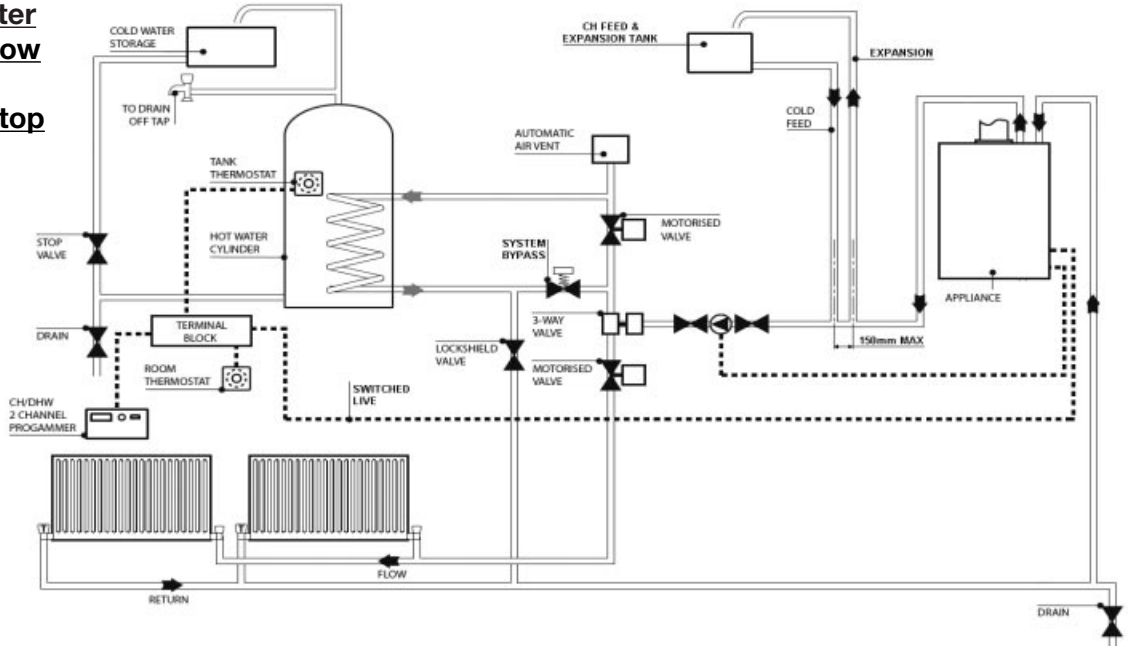
**Fig. 8.**

**NOTE:** No automatic by-pass required. However it is recommended to leave one radiator open and to fit a system bypass in the DHW circuit to ensure pump over-run functionality.




**Open vent water system with flow and return connected to top pipes.**

**Fig. 9.**




## 3.21 Electricity Supply

a) Wiring external to the appliance must be in accordance with the current I.E.E Wiring regulations (BS 7671) for electrical installation and any local regulations, which apply.

b) The mains cable must be at least 0.75 mm2 (24/0.2 mm) PVC insulated to BS 6500 table 16.

c) THIS APPLIANCE MUST BE EARTHED. Failure to provide a satisfactory earth connection will result in appliance malfunction.

The RIVA OV appliances may be used with any certified programmer/room thermostat, as described in section 4. For further information contact: BIASI UK Ltd Technical helpline: 0121 506 1350.

## 3.22 External Controls

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 un-switched 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.

# 4 Appliance Installation

Before installing the appliance, check that the chosen location is suitable (section 3.2) and that the requirements for flue position (section 3.3) and minimum clearances (Figure 2) are satisfied.

## 4.1 Unpacking the Appliance

The appliance is supplied in one box. Flue kits are provided separately, the various flue kits available as described in sections 2.5 - 2.6.

Unpack the boxes and check the contents:

- Complete appliance
- Paper wall mounting template
- Wall mounting plate
- User and Installation manual
- Hardware pack containing:
  - 50 mm x No 10 wood screw - 4 off
  - Rawl plug to suit - 4 off

**Manual Handling Note: During the appliance installation it will be necessary to employ caution and assistance whilst lifting, as the appliance exceeds the recommended weight for a one-man lift. Take care to avoid trip hazards, slippery or wet surfaces.**

## 4.2 Preparing the Wall

a) Fix the paper template in the required position (ensuring that the necessary clearances are achieved). Ensure squareness by hanging a plumb line.

b) Mark the position of the wall mounting plate-fixing holes (4).

c) Mark the position of the flue outlet. For side flue installation extend the flue centre line on to the sidewall, where the flue length exceeds 775 mm, a flue slope angle of 2.5° needs to be taken into account. Refer to Figure 9. Remove the paper template.

d) Cut the hole in the wall for the air/flue duct (preferably with a core-boring tool). The hole must be horizontal and not be less than 100 mm in diameter. If the hole is not accessible from outside, its minimum diameter must be sufficient to allow insertion of a wall liner (130 mm, 5in) which must be sealed in position with mortar (or equivalent).

e) Drill the four fixing holes using a 6mm drill and insert the wall plugs provided.

f) Hang the wall mounting plate using four fixing screws, ensuring that it is level.

## 4.3 Mounting the appliance

**Refer to Figures 10 and 11.**

a) Remove the outer panels as shown in fig. 11. Lift the appliance into position approximately 10 mm above the top of the wall mounting plate and use the side wings on the plate to locate the appliance in a horizontal direction. Then carefully lower the appliance, ensuring that the top locating rail is securely engaged.

b) Connect the central heating system pipes to the central heating flow and return pipes on the boiler.

**Pipe work may be routed from above or below the appliance as required.**

**Important Note: The flow and return thermistors should be moved from the upper to the lower pipes if routing from below. Ref Fig. 4.**

**Figure 10a REAR FLUE**

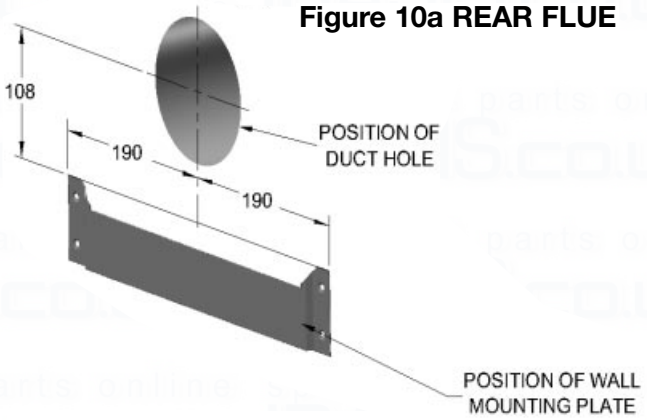
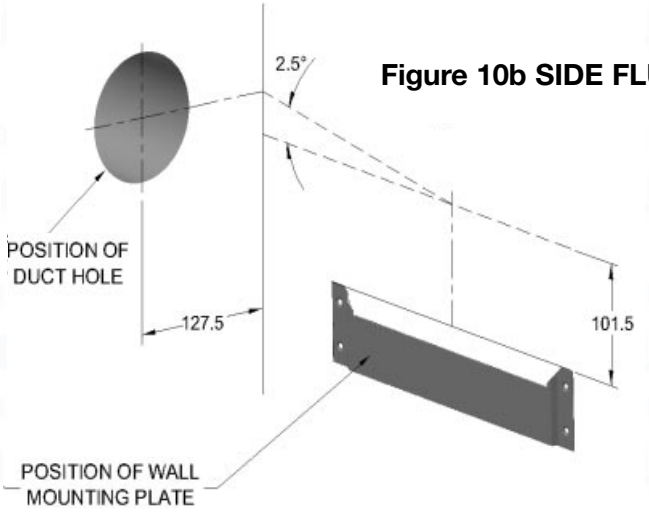


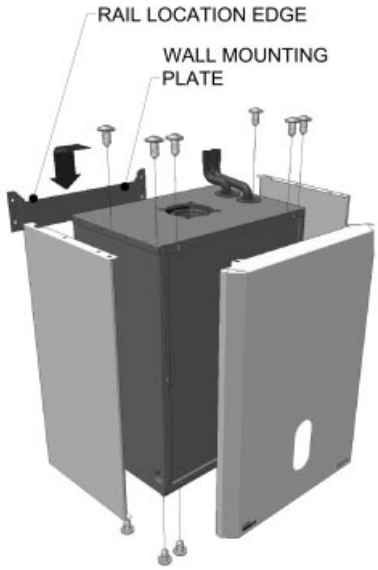

**Figure 10b SIDE FLUE**




INSTALLATION

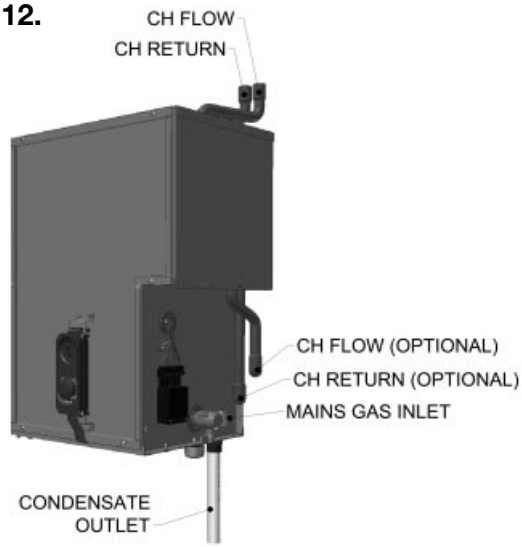
**Mounting the appliance**

**Fig. 11.**




**Service Connections**

**Fig. 12.**




## 4.4 Central Heating Service Connections

**Refer to Figure 12.**

a) The boiler is supplied with 22mm copper tails for both upwards and downwards (optional) flow and return pipe routing suitable for compression or soldering connections.

   USE EXTREME CARE IF SOLDERING THE JOINTS NEAR TO THE APPLIANCE. IF BOILER IS LOCATED IN TIGHT SPACE IT IS RECOMMENDED TO REMOVE THE PIPES FROM THE BOILER.

b) Connect the central heating system pipes to the central heating flow and return pipes on the boiler. If downwards routing is required: The sealed ends must be removed before connecting to the heating system pipes. The upwards pipes may be used for connecting to a vent pipe (open system) or fitting to an automatic air vent (sealed system). The remaining pipe must be solder sealed.

   **Important Note: When routing pipes from below the flow and return sensors have to be removed from the upwards pipes and reconnected to the downward pipes (Fig 4; flow is nearest to the front).**

c) Commission the central heating system as described in section 5.1, and then proceed to section 4.5.

## 4.5 Gas Connections

**Refer to Figure 12.**

Connect the gas supply pipe to the gas service cock. It is recommended that a minimum of 22 mm diameter OD copper pipe be used to within 1000 mm of the gas service cock.

## 4.6 Condensate Connection

**Refer to Figure 12.**

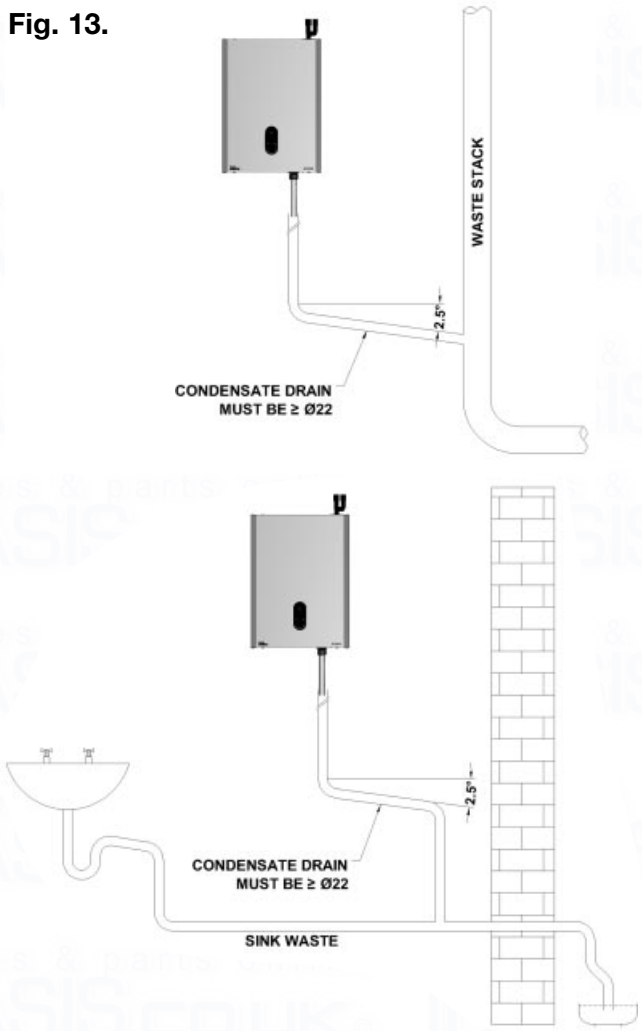
Connect preferably a 22 mm plastic push fit or adhesive overflow pipe to the condensate outlet. It should be piped to drain, preferably within the building, maintaining a continuous 2° fall away from the appliance. Note: The internal trap has a seal of 150 mm therefore an external trap is not required. 32 mm pipe should be used for external pipe work, or if the appliance is installed in a garage. If the drain is routed externally to a drain or soak away, then the external length should be kept as short as possible and not exceed 3000 mm. Protection from freezing in cold weather conditions is also advisable. Ensure that the condensate discharge system complies with any local regulations in force.

The drain pipe material should be resistant to acid with a pH less than 6.5. Suitable materials for the condensate drainage pipe are PVC, UPVC, ABS, PP or PVC-C.

In exceptional circumstances, such as when a boiler is installed in a basement without drainage, it may be necessary to install a condensate pump to carry condensate up to ground/drain level. Such products are available from Grundfos Pumps Ltd on: 01525 850000 and Pump House on: 0115 922 2211.

**Condensate Connections**

**Fig. 13.**




## 4.7 Air/Flue Duct Installation

For correct flue installation please refer to the installation instructions that are provided with the individual flue kit as described in sections 2.5 - 2.6.

a) Measure the required flue length as shown in Figure 14. Refer to section 2.5 to determine whether any extension kits are required. Installations using only the standard ducts or standard ducts with straight extensions are described in this section. Installation instructions for all other flue systems are included in the various flue kits.

b) Ensure that all (inner and outer tube) sealing rings are provided and assemble the air/flue ducts as shown in the flue instructions.

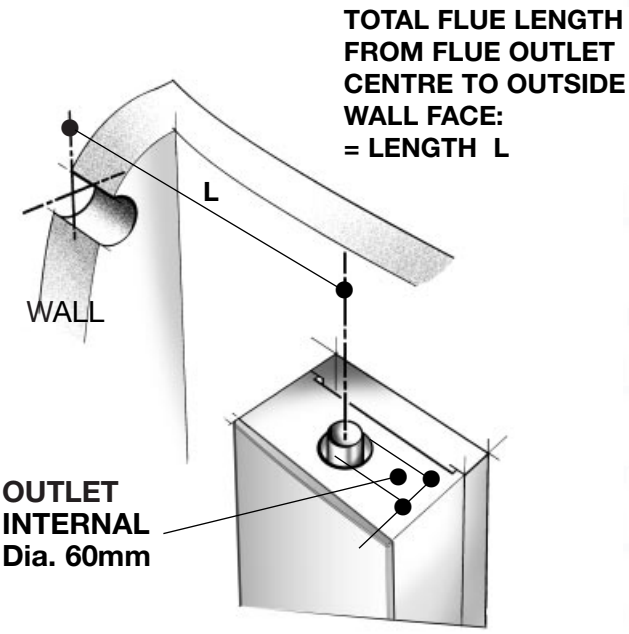
c) Construct the correct flue length by building the flue out from the appliance. **Ensure that the flue and air seals are correctly fitted before assembly and that each section is fully engaged.**

**The flue length is measured from the centreline of the appliance flue outlet to the inside of the external wall-sealing ring. In most cases it will be possible to achieve the required flue length without cutting the ducts, however where necessary the plain ends of the extension ducts may be cut. Never cut the swaged end, and always ensure that the cut is square and free of burrs or debris.**

**NOTE IT IS ESSENTIAL THAT THE TERMINAL IS FITTED THE CORRECT WAY UP See flue kit Instructions (i.e. rain shield at the top).**

**Fig. 14.**

**Measuring the exact flue length**




### 4.7.1 Installing the air/flue duct from inside the room

a) Push the terminal through the wall liner taking care to ensure that the terminal is the correct way round and the external wall-sealing ring does not become dislodged.

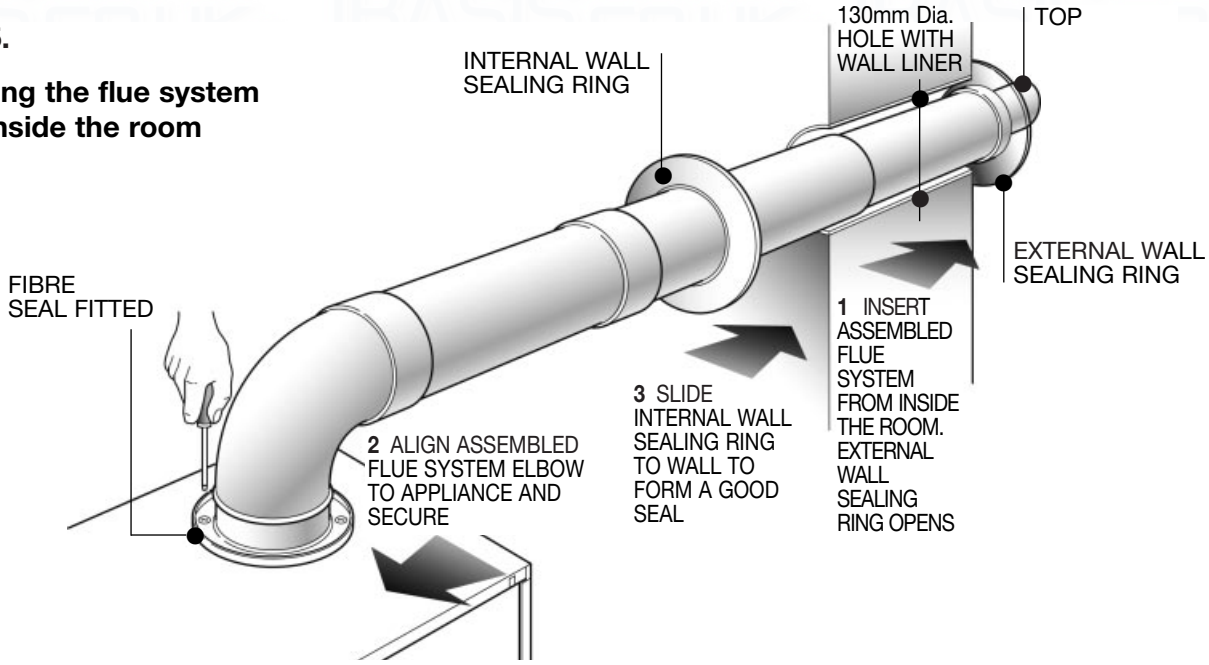
b) Assemble the flue system extension ducts as necessary, referring to Figure 15.

c) Pull the flue system towards the appliance to seat the external sealing ring against the outside wall, ensuring that the duct joints are not disturbed.

d) Use the internal sealing ring to make good the internal hole, and check that the terminal is correctly located on the outside wall (Where possible this should be visually checked from outside the building.) Figure 15 shows a view of the flue system, correctly installed.

**Fig. 15.**

**Installing the flue system from inside the room**




e) Finally locate and secure the elbow to the appliance using the four screws provided.

### 4.7.2 Installing the Air/Flue Duct from outside the building

(Flue hole diameter 100 mm - wall liner not necessary)

a) Secure the flue elbow with seal to the appliance using 4 screws.

b) Fit external wall sealing ring over flue and then from outside the building, push the flue system through the wall taking care to ensure that the terminal is the correct way around.

c) Loosely fit the internal wall sealing ring over the inside end of the flue.

d) Assemble the flue system extension ducts as necessary, referring to the flue kit instructions, and fit to the flue elbow.

e) Fit the flue terminal to the flue system, ensuring that the duct joints are not disturbed, and that the external sealing ring is seated against the outside wall.

f) Finally use the internal sealing ring to make good the internal hole. Check that the external wall sealing ring and the terminal is correctly located, on the outside wall from outside the building.

## 4.8 Electrical Connections

Connect the electricity supply and external controls (using suitable mains cable) as follows:

Wire the cable(s) into the appropriate connections in the electrical plug provided, referring to Figure 16. Live supply to L1, Neutral and Earth as indicated. Check that L1 and L3 are linked.

To provide correct cable retention, fit the piece of tubing supplied over the cable as it passes through the clamping arrangement. The cable will be held in position as the plug cover is fitted.

If a programmer/room thermostat is to be fitted remove the red link between L1 and L3 and connect the device across these terminals. Any external controls fitted must be rated at 230V 50Hz and have volt free contacts.

**Fig. 16.**

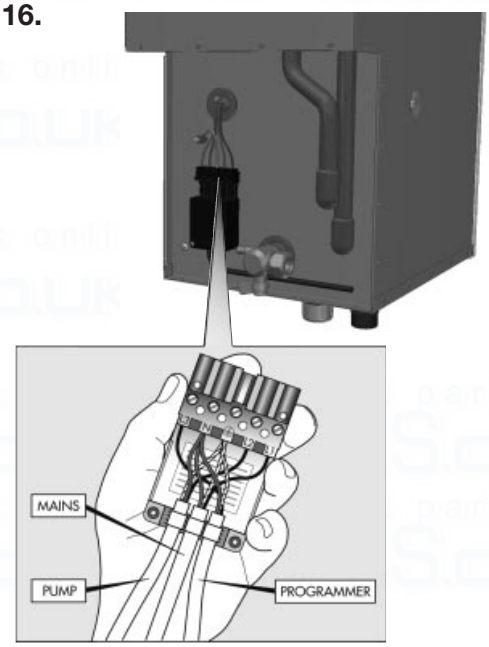


**Fig. 17.**

**Fully Pumped 'S' Plan**

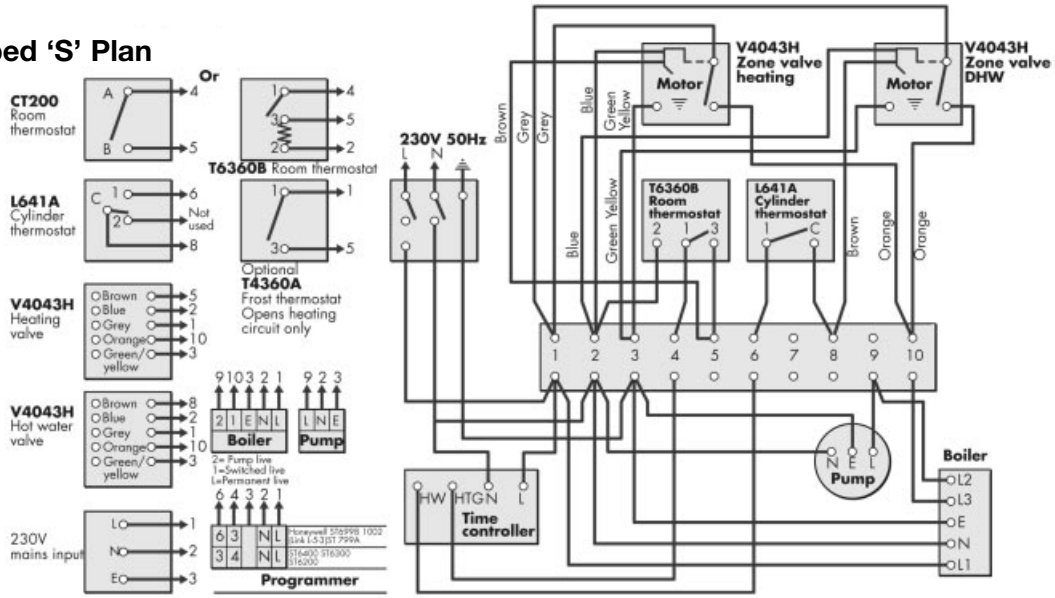



**Fig. 18.**

**Fully Pumped 'Y' Plan**

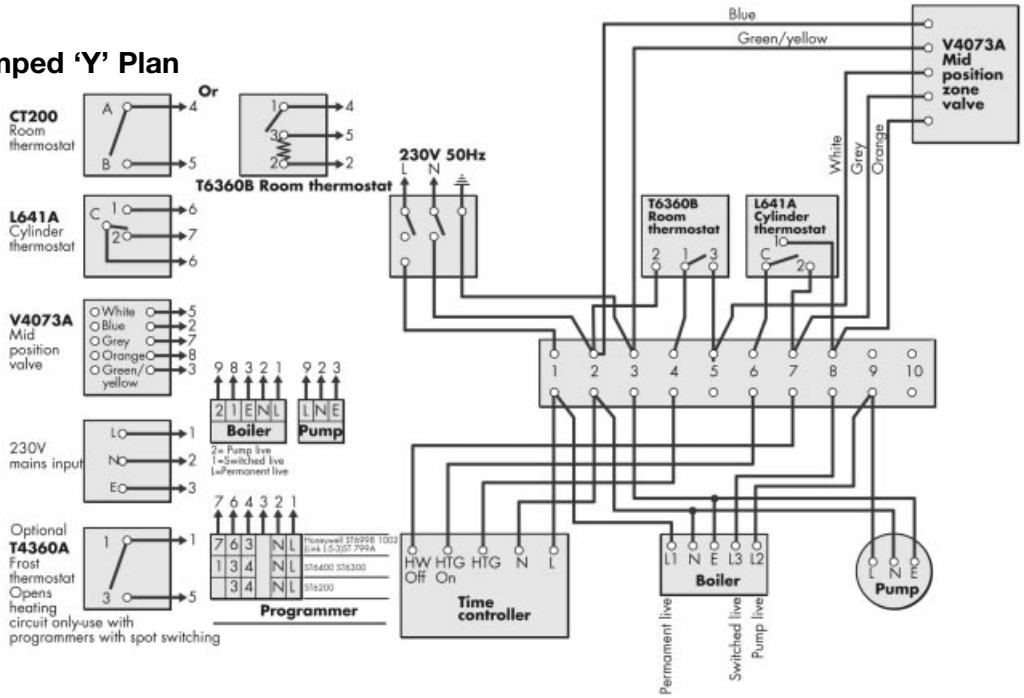



**Fig. 19.** **Upp15-50 Pump Plan Wiring Centre Connections**

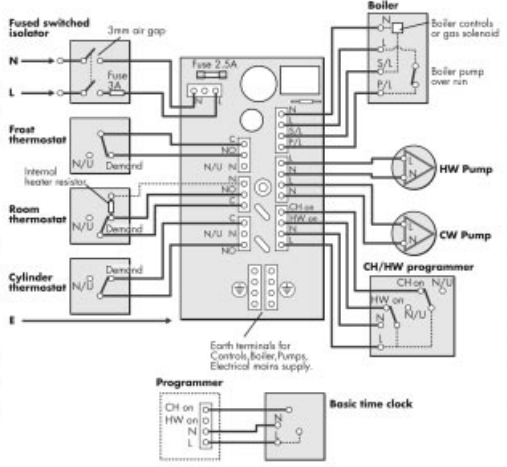
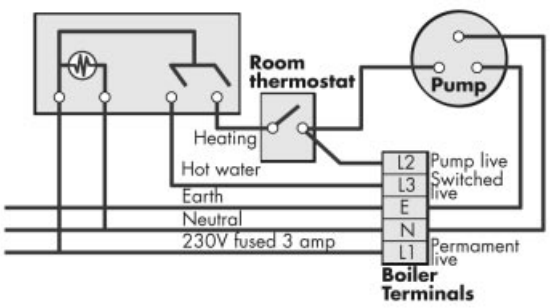



**Fig. 20.**

**Typical Programmer**



# 5 Commissioning & Testing

## 5.1 Filling the Water System

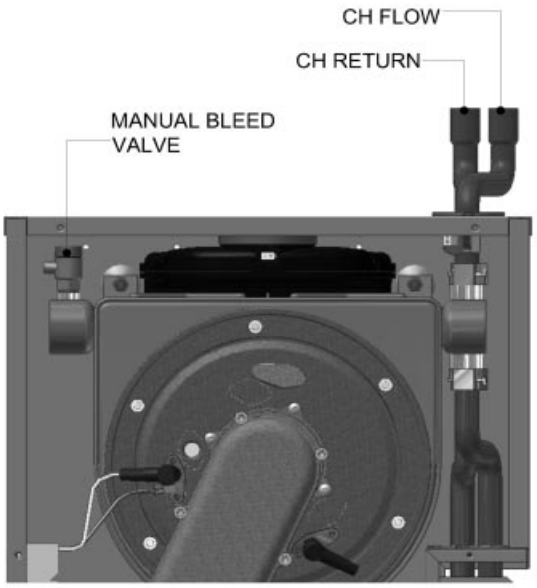
Before commissioning the appliance, the whole gas installation including the meter MUST be purged and tested for gas tightness in accordance with BS 6891: 1988.

**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 CH pipe-work is complete. Fill the water systems by following the procedure detailed below in steps a) and b), and referring to Figure 21.

**It is recommended, where possible, to flush the CH system without the appliance fitted, to avoid debris and flux blocking the waterways within the appliance.**

**Fig. 21. Commissioning the Water System**




### a) All Systems

A competent person in accordance with the current issue of BS6798 should carry out commissioning.

Fill the system with cold water. Vent the system via the radiator valves and system air vents in accordance with normal practice. Ensure that all system air vents are closed.

**To aid venting, a manual air vent is provided on the LHS of the heat exchanger.**

Check the system for soundness.

Drain the entire system to flush out any debris, and refill making sure that all the air is properly vented from the system and pump. Repeat this instruction with the system hot. It is recommended that the system be cleaned with a recognised system cleaner such as Fernox or Sentinel.

Prior to lighting the appliance to check the gas rates, the central heating system should be checked for circulation by operating the appliance with the gas turned off, this is to ensure that no air locks occur. The appliance may go into ignition lockout and require resetting.

### b) Sealed Systems

When fitting the boiler into a sealed system, it will be necessary to fit an expansion vessel, pressure gauge and pressure relief valve, external to the boiler. These items are available from most plumbing suppliers.

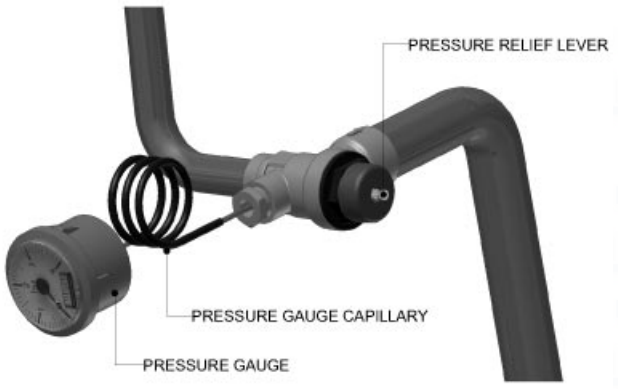
Fill the system until the pressure gauge registers 2.0 bar. Clear any locks and check for soundness.

Check the operation of the pressure relief valve (figure 22) by lifting the lever or turning the knob on the valve gently to ease the valve of its seat. Checking that water is discharged, release the lever and ensure that the valve seats correctly and does not leak. Where this is not possible a manual check should be carried out.

Release the cold water to the initial design pressure.

**Do not use the pressure relief valve to drain the system, because dirt or debris could prevent the valve seating correctly. If the valve leaks or sticks closed, then replace it.**

**Fig. 22.**




NOTE: THESE COMPONENTS ARE NOT SUPPLIED BY BIASI UK LTD

## 5.2 Commissioning the Appliance

a) Slacken the screw in the appliance inlet pressure test point and connect a suitable manometer. Refer to Figure 23.

b) Check that the gas supply is turned ON and the gas service cock is OPEN.

c) Switch on the electrical supply.

d) Turn the CH temperature Control knob to the midpoint between the minimum and maximum setting. The display changes from '0' to 'h'.

e) Ensure programmer and room thermostat (if fitted) are calling for heat.

f) The display changes to 'H'. The fan should start and after a few seconds an ignition will commence.

g) If the burner fails to light the fan will stop. Initially this may be due to air in the gas supply line. The boiler will automatically have five attempts at ignition. It may be necessary to turn the CH Temperature Control knob fully anti-clockwise to reset position and repeat step (d). (See also section 5.4).

h) When the boiler has lit the display will show 'H.'. Allow the appliance to run for at least 10 minutes and check that the gas supply pressure measured at the appliance inlet pressure test point is 20 ± 1 mbar.

## 5.3 Final Checks

a) Turn off the appliance and remove the manometer. Tighten the appliance inlet pressure test point screw. Re-light the burner and test for gas tightness.

b) Fit the appliance casing as illustrated in Figure 24. Position and secure both side panels and the decorative front cover with screws at the top and bottom.

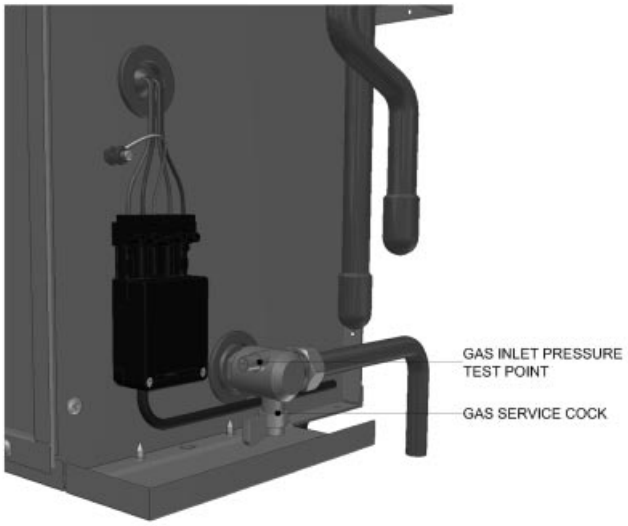
c) Set the CH Temperature Control to the required setting. Set the room thermostat (if fitted) to the required setting. Refer to hot water cylinder instructions.

**If the boiler is connected to a hot water cylinder the CH temperature has to be set to high.**

## 5.4 Lockout/Reset Indication

In the event of failure during an ignition sequence, (5 attempts) the LED displays fault code '3'. In order to reset the boiler turn the CH Temperature Control anticlockwise to 'STANDBY' position and then back to 'ON' within **two** seconds.

**Fig. 23. Inlet Pressure Test Point**




## 5.5 Frost Protection

The appliance is fitted with a frost protection device. In the event of very cold conditions, the external pump may operate and the appliance light for a few minutes to protect the appliance and system from potential frost damage. This can only function if the gas and electricity supplies are maintained.

## 5.6 Overheat Protection

The appliance incorporates flow and return thermostats, which monitor the operating temperature. Abnormal temperatures such as overheating will cause the appliance to go to lockout and the LED display will show code '1'. Allow the appliance to cool and turn the CH Temperature Control knob fully anti-clockwise to the reset position to clear.

## 5.7 Other Features

The following additional features are included in the appliance specification:

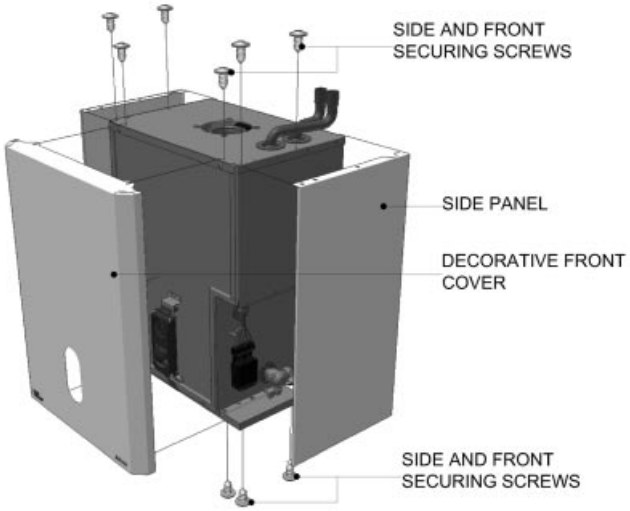
**ANTI-CYCLE DEVICE:**
When the appliance cycles on its central heating control thermostat, a slow cycle device operates. The timer (set to 5 minutes) is activated after the end of each burn cycle to prevent rapid cycling of the burner.

**CH SOFT START DEVICE:**
After every burner start the burner output stays at low for 30 seconds, to ensure smooth heat up of the system and maximum efficiency.

**SERVICE MODE:**
The appliance enters the SERVICE mode by turning the control knob fully clockwise. The LED displays a flashing 'H.'. In this mode the appliance runs at the minimum CH output. This mode allows the gas valve offset and $CO_2$ emissions to be measured.

**Note: The appliance can be placed into maximum output by briefly turning the control knob out of and back into service mode.**

**Fig. 24.**




## 5.8 Users Instructions

Upon completion of commissioning and testing the system, the installer must instruct the user in how to operate the appliance by drawing the user's attention to the following.

a) Give these Instructions to the householder and emphasise their responsibilities under the 'Gas Safety (Installation and Use) Regulations or rules in force.

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 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 CH Temperature Control knob, and how to reset the appliance. Emphasise that if cutouts persists, the appliance should be turned off and the installer or service engineer consulted.

f) Stress the importance of an annual service by a registered heating engineer.

g) The electrical mains supply to the appliance must remain ON for the frost protection circuit to operate.

## 5.9 Appliance Log Book

A logbook is supplied with this appliance to record installation and commissioning details and to make future servicing of the appliance easier.

This logbook forms part of the industry's Benchmark code of practice for the installation, commissioning and servicing of central heating systems.

Please ensure that the logbook is fully completed and left with the customer for future reference, along with Users Instructions and this Installation and Servicing Instruction manual.

# 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 a competent person, such as British Gas or other CORGI registered personnel, must carry out any service work.

Service the appliance by following the full procedure detailed below:

## 6.1 Combustion Check

The appliance incorporates a flue sampling point on the appliance flue elbow, or appliance vertical flue adaptor. If the service engineer has suitable equipment to analyse the flue gas, the plastic cap may be removed and an adequately sized sample tube fitted. Operate the appliance in Service mode, (see section 5.7). After ten minutes operation check the $CO_2$/CO values and compare with those figures stated in section 2.3. Do not forget to replace the plastic cap after use.

When the appliance is operating at maximum output check that the gas supply pressure is 20.0 mbar, using the inlet pressure test point, located on the gas cock.

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

## 6.2 Gas Control Valve, Fan & Burner Assembly

**Refer to Figures 25, 26, 27 and 28**

a) Remove the hinges and take off the hinged front panel.

b) Remove the decorative front cover (4 screws).

c) Remove the sealed chamber door (6 screws)

d) Disconnect the igniter plug, earth lead and detection plug from the igniter and detection electrodes.

e) Unscrew the screw holding the gas valve lead plug, and disconnect the plug.

f) Disconnect the electrical leads from the fan (2 plugs).

g) Undo the nut holding the gas valve feed pipe to the gas isolating cock, and disconnect.

h) Remove the gas control valve, fan & burner assembly, by carefully pulling forward the combustion chamber front and rotating the assembly anticlockwise so that the burner points forward, then disengage the gas valve feed pipe from the casing, by lifting up the assembly. Take care not to damage the insulation.

i) The assembly may then be inspected.

j) Re-assemble in reverse order.

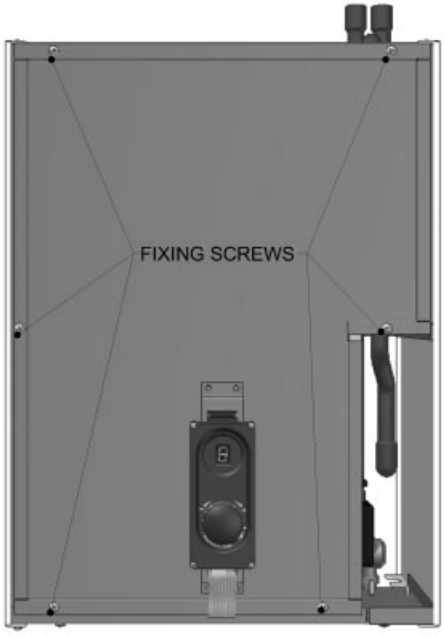
## 6.3 Burner

Inspect, and if necessary clean the main burner ports using a soft brush or vacuum cleaner. Do not use a wire brush or any abrasive material.

**Fig. 25. Control Panel**




**Fig. 26. Combustion Case Panels**



## 6.4 Ignition & Detection Electrodes

a) Inspect the ignition and detection electrodes in situ. If necessary, clean using a soft brush. If either the electrode or the ceramic insulation shows signs of damage or wear, replace the electrode(s) and their gasket.

b) Check that the alignments of the ignition and detection electrodes are correct. Refer to Figure 29. Adjust by carefully bending the tip of the electrode rod whilst supporting the base of the rod. Do not put any pressure on the ceramic insulation.

## 6.5 Combustion Chamber & Heat Exchanger

Inspect the inside of the combustion chamber for debris. If necessary, clean the inside of the tubes with a soft brush. Do not brush the insulation at the rear, check the integrity of the combustion chamber insulation panels, if damaged they will require replacement.

## 6.6 Condensate Drain

The condensate Drain has a removable cap, Figure 30, which allows the removal of debris that may be caught within it. Place a bowl under the cap to catch the condensate and remove the cap. Any debris inside will be expelled at this point. Replace the cap ensuring a good seal is made. Discard the condensate and debris.

**Fig. 27.**

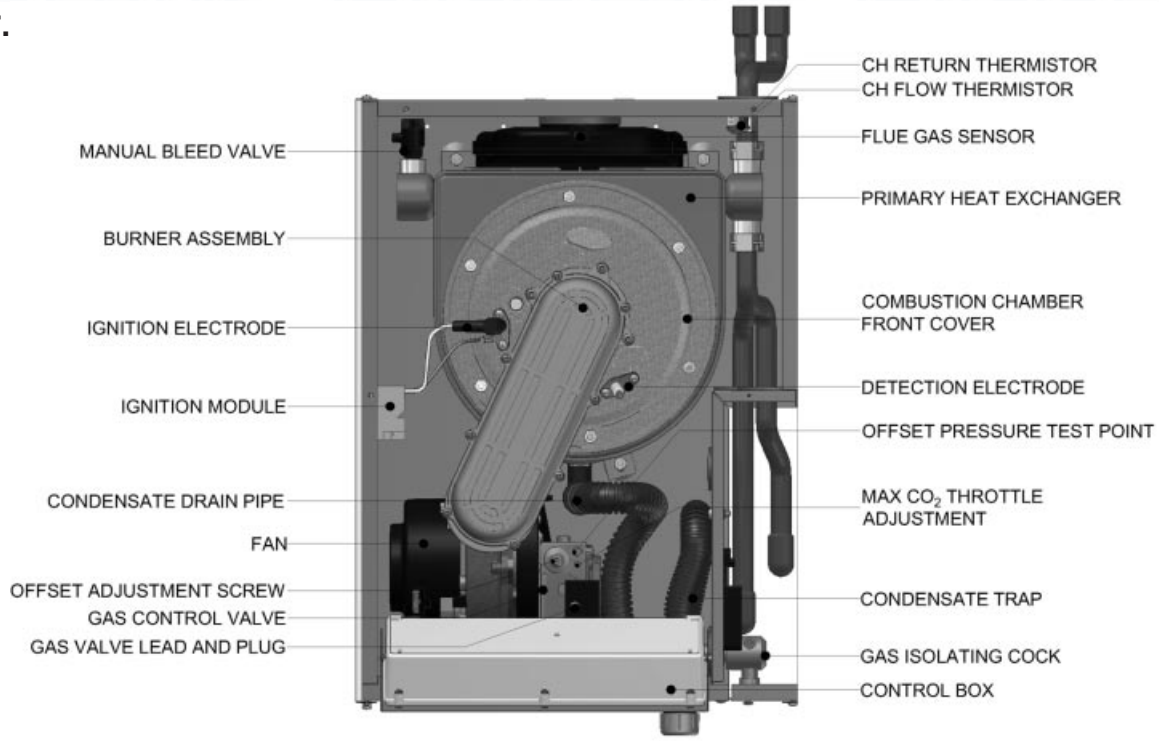
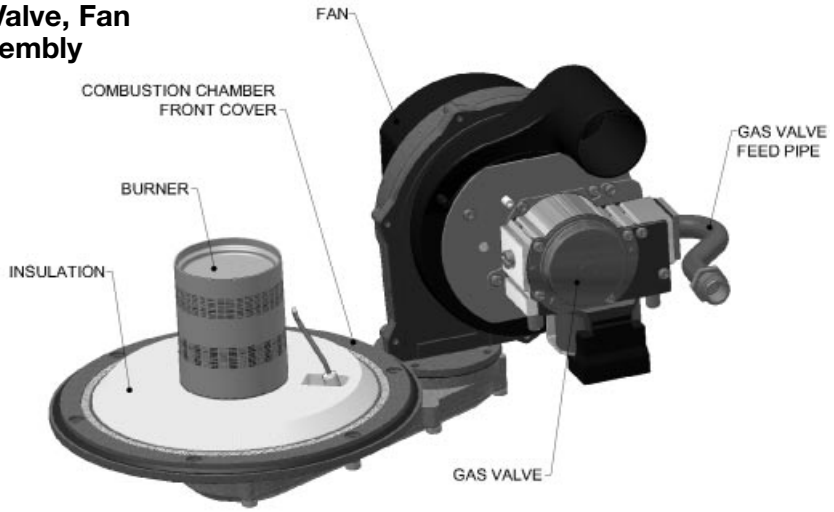
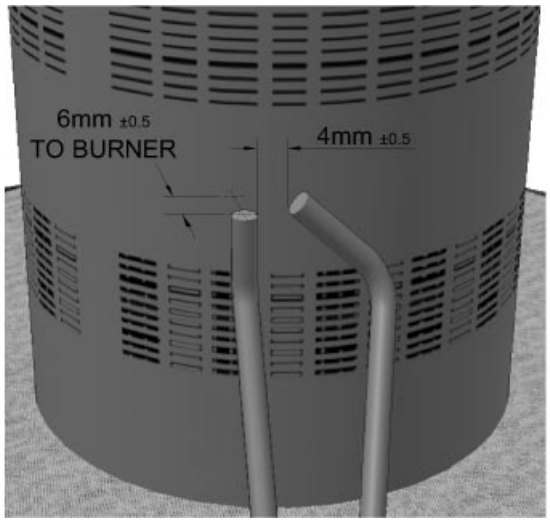



**Fig. 28. Gas Control Valve, Fan & Burner Assembly**




MAINTENANCE

**Fig. 29. 29a Spark Electrode**




**29b Detector Electrode**

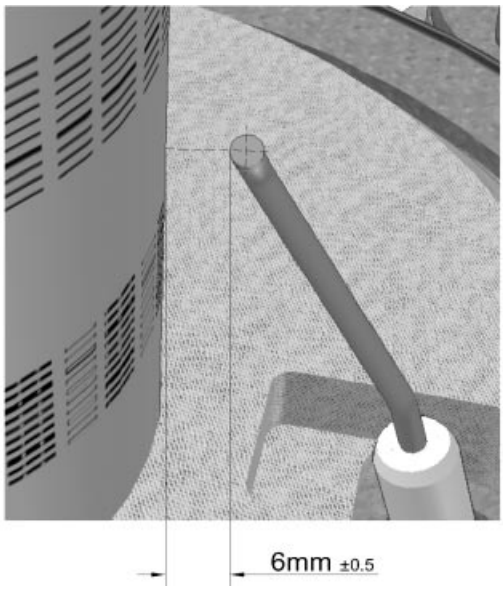



**Fig. 30. Condensate Drain**




## 6.7 Sealed Water System

a) Check the operation of the pressure relief valve as described in section 5.1 (b).

b) Check the correct operation of the pressure gauge by noting the reading when cold and check that the pressure increases with temperature. Replace the gauge if readings are suspect.

c) Check that the system is at its original (cold) design pressure. If necessary, re-pressurise the system as described in section 5.1 (b) and search for and rectify any leaks causing loss of water.

d) In case of heavy pressure fluctuations during the heat and cool down cycle, check the pre-charge pressure of the expansion vessel. If the air pressure is less than 0.75 bar recharge vessel with an air pump.

## 6.8 Re-assembly & Re-commissioning

a) Re-assemble all components in reverse order.

b) Check that all joints and seals are correctly fitted.

c) Turn on the gas and electricity supply and light the appliance, as described in section 5.2.

d) Re-perform a combustion check, as described in section 6.1.

e) Check the operation of the appliance in CH mode.

f) Remove the manometer and tighten the inlet pressure test point sealing screw.

g) Test for gas tightness.

## 6.9 Final Checks

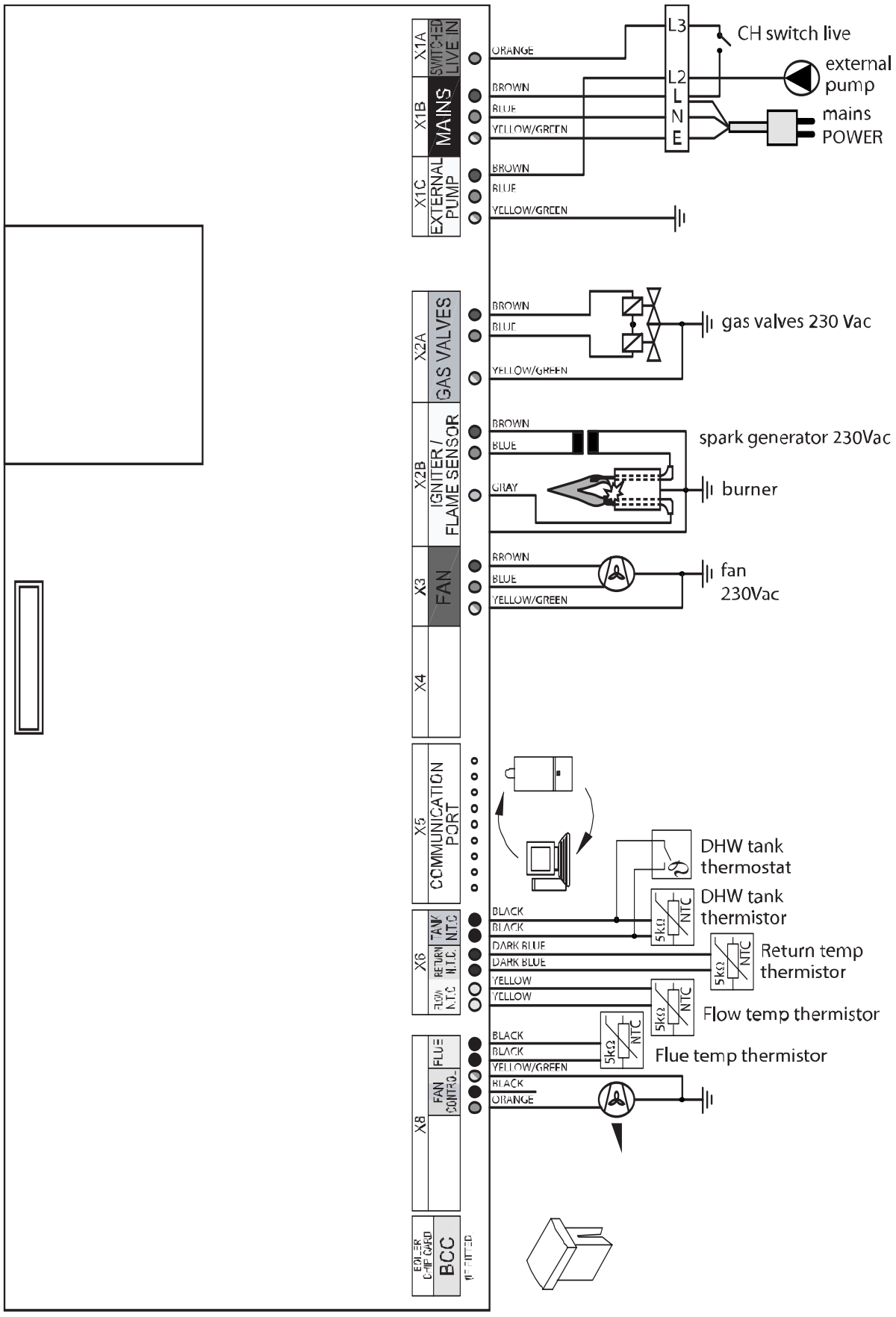
a) Ensure the sealed chamber door is secure with the six fixing screws.

b) Re-fit all decorative casing panels.

c) Return all appliance and external controls (if fitted) to their original settings.

# 7 Internal Wiring Diagrams

**Fig. 31. Functional Flow Wiring Diagram**



# 8 Fault Finding

## 8.1 General

Before looking for a fault condition, check that:

- The mains electrical supply is turned on.
- The room or cylinder/tank thermostat (where fitted) are calling for heat.
- The gas service cock is open.
- 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.

For further information contact: BIASI UK Ltd Technical helpline: 0121 506 1350.

## 8.2 Diagnostic LED Indicators

**FASCIA PANEL - Refer to Figure 32.**

The LED shows code '3' in a lockout condition.

For fault finding refer to the diagnostic chart shown below.

## 8.3 Fault Finding Codes

In the event of the appliance failing to light, refer to the Diagnostics Chart.

## 8.4 Central Heating Fault Finding

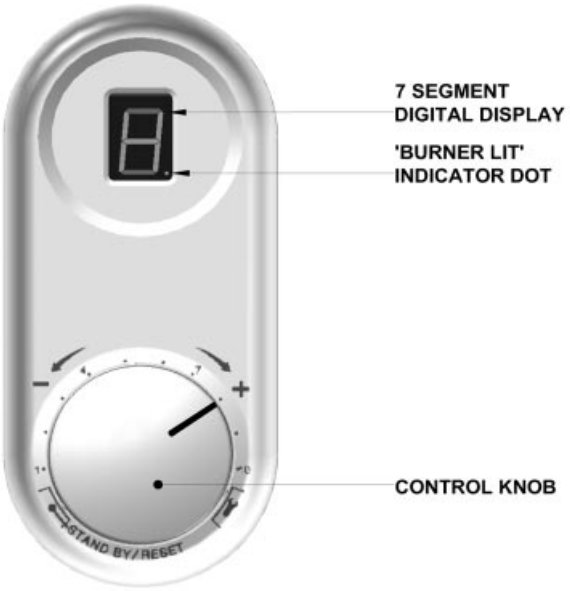
Upon a demand for Central Heating, (closure of the time switch and room thermostat, where fitted), the controls should carry out a set of start up checks, followed by an ignition sequence. Refer to Section 5.2.

If the control has powered up correctly but does not respond to a CH demand. Remove plug cover and check voltage between L3 (orange) and N (blue). If 0 V ac, check external programmer / room thermostat. If 230 V ac, check control for lockout or blocking codes, (refer to section 8.3), check operation of the external pump.

**Note:** Whenever a CH demand is removed, an anti cycle mode is initiated which prevents the appliance from firing in CH mode for 5 minutes. Ensure that the control is not in this mode by removing power from the control and restoring it after a delay of 10 seconds.

If the Switch Live input is OK and no lockout or blocking code exists and the control is not in anti cycle mode, then replace PCB.

**Fig. 32. Fascia Panel**




MAINTENANCE

## RESET LOCK-OUT CODES

| LED CODE | FAULT/EFFECT | REASON | ACTION |
|---|---|---|---|
| 1 | Overheated appliance | Water temperature greater than 105 °C | ● Check no air is in heat exchanger/CH system<br>● Check external pump operation<br>● Check PCB/X1C connector<br>● Check flow thermistor |
| 2 | Water flow failure or Differential check faulty/Flame for a short period only | Sensor temperature differential incorrect | ● Check water pressure<br>● Check external pump/CH system blockage<br>● Check no air is in heat exchanger/CH system<br>● Check flow, and return sensors<br>● Check wires to sensors not crossed |
| 3 | No gas or Lockout flame signal/No flame, Lockout after 5 ignition attempts | Low gas pressure No flame signal on ignition, or loss of signal during operation | ● Check gas supply<br>● Check gas service cock<br>● Check gas valve and lead<br>● Check detection electrode/lead<br>● Check gas supply<br>● Check gas valve and lead<br>● Check PCB/X2A & X2B connectors<br>● Check spark generator/spark electrode<br>● Check mains earth lead continuity |
| 4 | Flue gas sensor/ No flame | Flue gas temperature greater than 95 °C | ● Check flue sensor<br>● Check flue system<br>● Check no air is in heat exchanger/ CH system<br>● Check external pump<br>● Check PCB/PCB connectors |

## BLOCKING CODES

| LED CODE | FAULT/EFFECT | REASON | ACTION |
|---|---|---|---|
| 5 | Defective sensor/ No flame | Defective flow, return or flue sensor | ● Check flow, return and flue sensors<br>● Check wiring to sensors<br>● Check PCB/X6 & X8 connectors |
| 6 | Defective gas valve/Flame continues after demand ends | 5 sect flame signal after burner is switched off | ● Check gas valve and lead<br>● Check PCB |

MAINTENANCE

## BLOCKING CODES (Cont'd)

| LED CODE | FAULT/EFFECT | REASON | ACTION |
|---|---|---|---|
| 7 | Defective fan/ No flame | Missing or Erroneous RPM signal | ● Check fan<br>● Check mains fan lead & connector<br>● Check low voltage fan lead & connector<br>● Check PCB/X3 connector |
| A | PCB error/No flame | Internal Error | ● Check PCB |
| b | Activate BCC/ No flame | New BCC | ● Turn CH control knob to reset twice to activate |
| C | Safety system failure/ No flame | Failure of internal self checking system | ● Check PCB<br>● Check BCC is initialised |
| E | BCC error/No flame | Incorrect/ Missing BCC | ● Reseat or replace BCC |
| h | No flame | No demand/ Faulty connector | ● Check PCB/X1A connector<br>● Check programmer/room thermostat |
| 0 | Differential check faulty/Flame for 15 seconds | Water flow rate too low | ● Check water pressure<br>● Check external pump/CH system blockage<br>● Check no air is in heat exchanger/CH system<br>● Check flow, and return sensors<br>● Check wires to sensors not crossed |
| P | Error in power supply/No flame | Low mains voltage | ● Check mains voltage<br>● Check PCB connectors |
| | No light indication | Defective power supply | ● Check power supply<br>● Check PCB/X1B connector<br>● Check PCB fuse |

**NOTE:**

RPM SIGNAL - FAN SPEED SIGNAL IN REVOLUTIONS PER MINUTE

BCC - BOILER CHIP CARD (A SMALL MICROCHIP THAT PUSH FITS ONTO THE CONTROL PCB AND ALTERS OPERATING PARAMETERS) SEE SECTION 7 FIG.31)

**FAULT CODES 1-4 CAN BE RESET BY FOLLOWING THE PROCEDURE IN SECTION 1.4.5. HOWEVER, IF ANY OTHER FAULT CODE IS SHOWING PLEASE CONTACT YOUR INSTALLER OR BIASI UK LTD. TECHNICAL HELPLINE: 0121 506 1350.**

# 9 Short Parts List

**Refer to Figure 33**

| KEY | G.C. PART NO. | DESCRIPTION | MAKERS PT. NO. |
|---|---|---|---|
| 1 | | Ignition Electrode | OV1022100 |
| 2 | | Detection Electrode | OV1022101 |
| 3 | | Spark Generator Kit | OV1022102 |
| 4 | | Gas Control Valve | OV1033100 |
| 5 | | Fan Assembly | OV1044100 |
| 6a | | Burner OV 18 | OV1055100 |
| 6b | | Burner OV 30 | OV1055101 |
| 7a | | Heat Exchanger OV 18 | OV1066101 |
| 7b | | Heat Exchanger OV 30 | OV1066102 |
| 8 | | Water Temperature Sensor | OV1066103 |
| 9 | | Flue Sensor | OV1011101 |
| 10 | | Manual Bleed Valve | OV1066104 |
| 11 | | Control PCB | OV1077100 |
| 12 | | User Interface | OV1077101 |
| 13 | | Heat Exchanger Seal Kit | OV1066105 |

**Fig. 33.**



**BENCHMARK No.** | | | | | | | |

# GAS BOILER COMMISSIONING CHECKLIST

**BOILER SERIAL No.** _____ **NOTIFICATION No.** _____

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

| | | |
|---|---|---|
| TIME & TEMPERATURE CONTROL TO HEATING | ROOM T/STAT & PROGRAMMER/TIMER ☐ | PROGRAMMABLE ROOMSTAT ☐ |
| TIME & TEMPERATURE CONTROL TO HOT WATER | CYLINDER T/STAT & PROGRAMMER/TIMER ☐ | COMBI BOILER ☐ |
| HEATING ZONE VALVES | FITTED ☐ | NOT REQUIRED ☐ |
| HOT WATER ZONE VALVES | FITTED ☐ | NOT REQUIRED ☐ |
| THERMOSTATIC RADIATOR VALVES | FITTED ☐ | |
| AUTOMATIC BYPASS TO SYSTEM | FITTED ☐ | NOT REQUIRED ☐ |

## FOR ALL BOILERS CONFIRM THE FOLLOWING

| | |
|---|---|
| THE SYSTEM HAS BEEN FLUSHED IN ACCORDANCE WITH THE BOILER MANUFACTURER'S INSTRUCTIONS | ☐ |
| THE SYSTEM CLEANER USED | |
| THE INHIBITOR USED | |

## FOR THE CENTRAL HEATING MODE, MEASURE & RECORD

| | | | |
|---|---|---|---|
| GAS RATE | ☐ | m3/hr ☐ | ft3/hr |
| BURNER OPERATING PRESSURE (IF APPLICABLE) | ☐ N/A | ☐ | 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 & RECORD

| | | | |
|---|---|---|---|
| GAS RATE | ☐ | m3/hr ☐ | ft3/hr |
| MAXIMUM BURNER OPERATING PRESSURE (IF APPLICABLE) | ☐ N/A | ☐ | mBar |
| COLD WATER INLET TEMPERATURE | | ☐ | °C |
| HOT WATER OUTLET TEMPERATURE | | ☐ | °C |
| WATER FLOW RATE | | ☐ | lts/min |

## FOR CONDENSING BOILERS ONLY CONFIRM THE FOLLOWING

| | |
|---|---|
| THE CONDENSATE DRAIN HAS BEEN INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS | YES ☐ |

## FOR ALL INSTALLATIONS CONFIRM THE FOLLOWING

| | |
|---|---|
| THE HEATING AND HOT WATER SYSTEM COMPLIES WITH CURRENT BUILDING REGULATIONS | ☐ |
| THE APPLIANCE AND ASSOCIATED EQUIPMENT HAS BEEN INSTALLED AND COMMISSIONED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS | ☐ |
| IF REQUIRED BY THE MANUFACTURER, HAVE YOU RECORDED A $CO/CO_2$ RATIO READING | N/A ☐ YES ☐ $CO/CO_2$ RATIO |
| THE OPERATION OF THE APPLIANCE AND SYSTEM CONTROLS HAVE BEEN DEMONSTRATED TO THE CUSTOMER | ☐ |
| THE MANUFACTURER'S LITERATURE HAS BEEN LEFT WITH THE CUSTOMER | ☐ |

**COMMISSIONING ENG'S NAME**

PRINT _____ CORGI ID No. _____

SIGN _____ DATE _____

# SERVICE INTERVAL RECORD

It is recommended that your heating system is serviced regularly
and that you complete 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.

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

# SERVICE INTERVAL RECORD

It is recommended that your heating system is serviced regularly
and that you complete 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.

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

**SERVICE 11** DATE:
ENGINEER NAME
COMPANY NAME
TEL No.
CORGI ID SERIAL No.
COMMENTS

SIGNATURE

**SERVICE 12** DATE:
ENGINEER NAME
COMPANY NAME
TEL No.
CORGI ID SERIAL No.
COMMENTS

SIGNATURE

**SERVICE 13** DATE:
ENGINEER NAME
COMPANY NAME
TEL No.
CORGI ID SERIAL No.
COMMENTS

SIGNATURE

**SERVICE 14** DATE:
ENGINEER NAME
COMPANY NAME
TEL No.
CORGI ID SERIAL No.
COMMENTS

SIGNATURE

**SERVICE 15** DATE:
ENGINEER NAME
COMPANY NAME
TEL No.
CORGI ID SERIAL No.
COMMENTS

SIGNATURE

**SERVICE 16** DATE:
ENGINEER NAME
COMPANY NAME
TEL No.
CORGI ID SERIAL No.
COMMENTS

SIGNATURE

**SERVICE 17** DATE:
ENGINEER NAME
COMPANY NAME
TEL No.
CORGI ID SERIAL No.
COMMENTS

SIGNATURE

**SERVICE 18** DATE:
ENGINEER NAME
COMPANY NAME
TEL No.
CORGI ID SERIAL No.
COMMENTS

SIGNATURE

**SERVICE 19** DATE:
ENGINEER NAME
COMPANY NAME
TEL No.
CORGI ID SERIAL No.
COMMENTS

SIGNATURE

**SERVICE 20** DATE:
ENGINEER NAME
COMPANY NAME
TEL No.
CORGI ID SERIAL No.
COMMENTS

SIGNATURE

Biasi U.K. Ltd.
Newman Park
Western Way
Wednesbury
WV10 7BJ
Technical Helpline: 0121 506 1350
Web site: www.biasi.co.uk

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