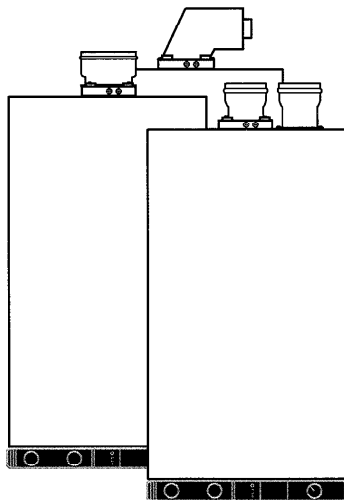


Britony



Combi 80

Combi 100

COMBINATION BOILER

Heating and Instantaneous Domestic Hot Water

Fanned Flue system

Installation and Operating instructions

Chaffoteaux
et Maury



These instructions are suitable for the following boilers :

Britony Combi 80
Britony Combi 100

CUSTOMER CARE

Chaffoteaux et Maury Ltd., as a leading manufacturer of domestic and commercial water heating appliances, is committed to providing high quality products and a high quality after sales service. If it is necessary to contact an engineer, then telephone your local Chaffoteaux Service Centre. The number can be obtained from the leaflet enclosed in the customer care pack with your boiler or by telephoning the Chaffoteaux Customer Services Department at Telford.

Advice on installation or servicing can also be obtained by contacting the Chaffoteaux Customer Services Department at Telford.

CUSTOMER SERVICES DEPARTMENT

Tel: 01952 222288

Fax: 01952 260915

GUARANTEE

The manufacturer's guarantee is for 12 months from the date of purchase. The guarantee is voidable if the appliance is not installed in accordance with the recommendations made herein or in a manner not approved by the manufacturer. To assist us in providing you with an efficient after sales service, please return the guarantee registration card enclosed with the boiler without delay.

STATUTORY REQUIREMENTS

The installation of this appliance must be carried out by a CORGI Registered person or other competent person and in accordance with the requirements of the Gas Safety (Installation and Use) Regulations.

In addition, the installation must also comply with the current byelaws of Local Water Undertakings, Building Regulations, IEE Wiring Regulations, Local Authority Building Standards (Scotland) Regulations and the Safety Document 635 The Electricity at work Regulation.

It should also be carried out in accordance with current editions of the following British Standards Codes of practice: BS 6891, BS 5440 parts 1 and 2, BS 5449 part 1, BS 7593, BS 6798, BS 5546, BS 4814, BS 7074 part 1 and 2, BS 7671 and BG DM2.

If there is a possibility of the incoming mains water pressure exceeding 10 bar then a suitable pressure limiting valve must be fitted.

To comply with the Control of Substances Harmful to Health Regulation 1988 we are required to provide information on the following substance that is contained within the appliance.

Description: Combustion Chamber Lining

Material: Alumino Silicone Fibre

Precautions: During servicing, keep the dust generation to a minimum and avoid inhaling any dust and contact with the skin and eyes. Normal handling and use will not present any discomfort, although some people with a history of skin complaints may be susceptible to irritation. When disposing of the lining, ensure that it is securely wrapped and wash hands after contact.

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1 - Introduction

The BRITONY COMBI is a fully automatic, wall mounted, low water content combination boiler. It is a room sealed, fan assisted, balanced flued appliance providing central heating and mains pressure domestic hot water on demand. It has electronic ignition and is suitable for all modern electrical control systems. The boiler is designed for sealed systems only and a circulating pump, expansion vessel together with a pressure gauge and safety valve are included within the boiler.

The standard horizontal flue kit is suitable for lengths 300 mm minimum to 610 mm maximum and includes an elbow adapter that can be rotated through 360°. The horizontal flue can extend up to 3 metres using 1 metre flue extension kits. 45° and 90° flue bends are also available as accessories.

The BRITONY COMBI is also suitable for concentric vertical flueing and twin pipes. Adapters and accessories are available.

The boiler is packed in two cartons:

1. the boiler
2. the flue assembly and the pre installation kit

2 - Description

Location of components

1. Air pressure switch
2. Steel chassis complete with expansion vessel
3. Main heat exchanger
4. Combustion chamber
5. Multi- gas burner assembly comprising ignition and ionisation electrodes
6. Automatic air separator and automatic vent
7. Heating circuit flow switch
8. Pump
9. Electrical box
10. DHW circuit flow switch
11. Overheat thermostat
12. Gas valve assembly
13. Sealed chamber
14. Flue hood with fan
15. Hot water control thermistor
16. Central heating control thermistor
17. Three way valve
18. CH Flow isolating valve
19. Three position Selector switch
20. User's instruction panel.
21. Heating flow temperature adjustment
22. Green indicator - Power ON

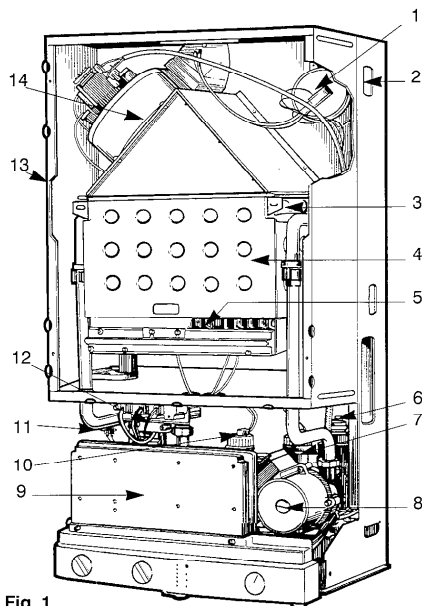


Fig. 1

Description (continued)

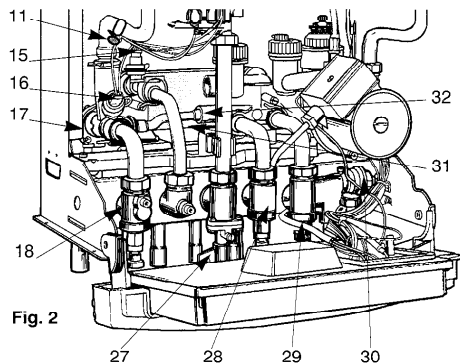


Fig. 2

- 23. Orange indicator - Burner ON
- 24. Red indicator - Lock out / flame failure
- 25 Reset button
- 26. Pressure gauge
- 27. Gas service tap
- 28. Water service tap
- 29. CH Return isolating valve
- 30. Pressure relief valve

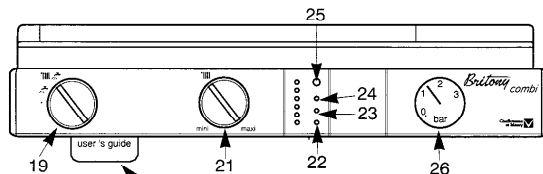
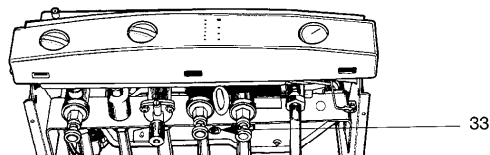


Fig. 3



- 31. Secondary heat exchanger
- 32. By pass
- 33. By pass adjustment screw

3 - Technical data

Britony combi type	80	100
Appliance category	Cat II _{2H 3+}	Cat II _{2H 3+}
Heat input C/H & DHW		
Maximum in kW	28.7	31.1
Maximum in Btu/h	97946	106133
Heat output C/H & DHW		
Maximum in kW	23.25	28.2
Maximum in Btu/h	79347	96236
C/H circuit pressures		
Min operating in bar	0.7	0.7
in lb/in ²	10	10
Max operating in bar	2.5	2.5
in lb/in ²	36.3	36.3
DHW flow rates		
@ 30°C in l/min	11.1	13.4
in gal/min	2.45	2.95
@ 35°C in l/min	9.54	11.48
in gal/min	2.10	2.53
DHW circuit pressures		
Min operating in bar	0.1	0.1
in lb/in ²	1.45	1.45
Max operating in bar	10	10
in lb/in ²	145	145
Flow limiter rate in l/min	10	12

Britony combi type	80	100
Natural gas G20		
Gas rate		
Maximum in m ³ /h	2.74	3.34
Maximum in ft ³ /h	97	118
Inlet pressure		
Nominal in mbar	20	20
Nominal in in wg	8	8
Burner pressure		
Nominal in mbar	11	12.8
Nominal in in wg	4.4	5.12
Burner injector diameter		
Natural gas G20 in mm	1.23	1.26
PROPANE L.P.G. G31		
Gas rate		
Maximum in kg/h	2.00	2.42
Maximum in ft ³ /h	4.41	5.34
Inlet pressure		
Nominal in mbar	37	37
Nominal in in wg	14.8	14.8
Burner pressure		
Nominal in mbar	35	30.4
Nominal in in wg	14	12.16



Technical data (continued)

Britony combi type 80 100

BUTANE L.P.G. G30

Gas rate

Maximum in kg/h	2.04	2.45
Maximum in Lbs/h	4.50	5.40

Inlet pressure

Nominal in mbar	28	28
Nominal in in wg	11.2	11.2

Burner pressure

Nominal in mbar	26,7	24
Nominal in in wg	10,7	9.6

Burner injector diameter

LPG G30 and G31 in mm	0.72	0.76
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Burner injector diameter

LPG G30 and G31 in mm	0.72	0.76
-----------------------	------	------

Compartment ventilation

n o t r e q u i r e d

Britony combi type 80 100

Safety discharge

in bar	3	3
in lb/in ²	43.5	43.5

Expansion vessel

Pre-charge pressure in bar	0.7	0.7
Pre-charge pressure in lb/in ²	9.4	9.4
Net capacity at 3 bar in liter	5.44	5.44

Adjustable by-pass

Minimum flow rate in l/h	100	100
Minimum flow rate in gal/min	0.36	0.36
Maximum flow rate in l/h	700	700
Maximum flow rate in gal/min	2.56	2.56

Electrical characteristics

Supply	230 v	50 Hz
Consumption	150 w	150 w
Protection	IP 44	IP 44
Fuse n°1	2 A	2 A
Fuse n°2	1.25 A	1.25 A
External controls	24 v	24 v

4 - Dimensions

Weights

With packaging :

-Britony combi 80 :	44.2kg
-Britony combi 100 :	45.2 kg

Without packaging :

-Britony combi 80 :	42.2kg
-Britony combi 100 :	43.2 kg

Lift weight :

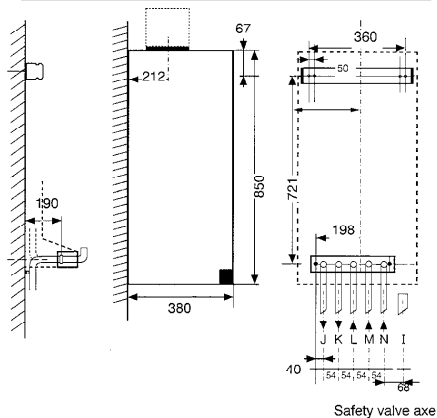
-Britony combi 80 :	36.2 kg
-Britony combi 100 :	37.2 kg

Tails diameter

I	Safety valve outlet	Ø 15 mm
J	Heating flow	Ø 22 mm
K	D.H.W. flow	Ø 15 mm
L	Gas supply	Ø 22 mm
M	Cold water inlet	Ø 15 mm
N	Heating return	Ø 22 mm

Outer case dimensions :

- Width :	440 (minimum space required 450)
- Height :	850
- Depth :	380



All size in mm

Fig. 4

Dimensions (continued)

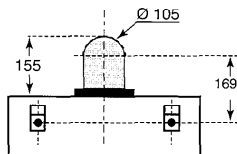
Minimum clearances :

- Both sides 5 mm
- Above casing 170 mm
- Below casing 200 mm
- Front (for servicing) 500 mm
- Front (in operation) 5 mm

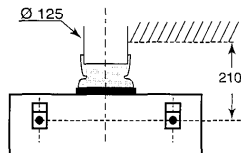
The boiler is suitable for the 3 flue types :

- type C 12 C 22 or C 42
- type C 32 xx or C 32 xy

TYPE C12 or C42



TYPE C32 xx



TYPE C32 xy

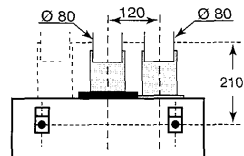





Fig. 5 Sizes in mm



5 - Operation

Domestic Hot Water Mode

To be able to supply hot water, the selector switch 19 Fig. 6 must be in either on  or   position. This will be

confirmed by the green indicator light  22 Fig. 6

When a tap or shower is turned on, the flow of mains water, above 2 litres per min., will activate the DHW flow switch 10 Fig 7 and allow the 3 way valve 17 Fig. 7 to move to the DHW position. The pump can now circulate primary water heated by the main heat exchanger through the secondary heat exchanger.

The first stage solenoid 12a Fig. 7 and safety solenoid 12c Fig. 7 open together to allow gas to the burner. The ignition sequence begins and a continuous high speed spark ignites the gas. As soon as a flame is detected the orange indicator bulb  23 Fig. 6 will light and the second stage solenoid 12b Fig. 7 opens to allow the full gas rate. If a flame is not detected, after 8 seconds, the security solenoid closes and shuts off the gas. The red lockout indicator bulb  24 Fig. 6 will light. The domestic hot water temperature is controlled by the hot water control thermistor 15 Fig. 7 and the central heating control thermistor 16 Fig. 7. This system anticipates the changes of temperature in the secondary heat exchanger

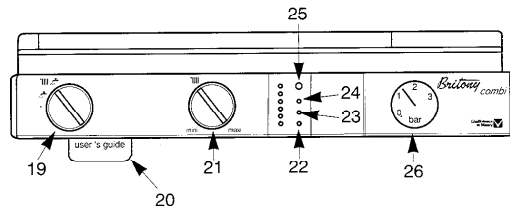


Fig. 6

and ensures accurate temperature regulation.

When the tap is closed the burner is extinguished and the pump stops. The boiler will now stay in the hot water mode for three minutes to maintain temperature to ensure a fast response in the event of a subsequent hot water demand.

Priority will be given to a demand for hot water. This will interrupt the central heating for the duration of hot water delivery.

Central Heating Mode





To be able to supply hot water, the selector switch 19 Fig. 6 must be in either on  or   position. This will be confirmed by the green indicator light  22 Fig. 6

Fig. 7

When there is a demand for heating (either from the room thermostat or the clock) and the boiler temperature control is calling for heat. The pump starts and at a flow rate of 4 ltr/min the central heating flow switch operates allowing the ignition sequence to begin. The first stage solenoid 12a Fig. 7 and safety solenoid 12c Fig. 7 open together to allow gas to the burner. The ignition sequence begins and a continuous high speed spark ignites the gas. As soon as a flame is detected the orange indicator bulb 23 Fig. 6 will light. After 45 seconds the second stage solenoid 12b Fig. 7 opens to allow the full gas rate. If a flame is not detected, after 8 seconds, the security solenoid closes and shuts off the gas. The red lockout indicator bulb 24 Fig. 6 will light.

The central heating flow temperature is controlled by the central heating control thermistor 16 Fig. 7. The boiler has been designed to minimise cycling and will not attempt to relight for at least 3 minutes after the boiler thermostat has been satisfied. When the room thermostat is satisfied the burner will switch off and the pump will remain running for a further 3 minutes before it to stops.

It is possible to override the 3 minute delay by pressing the RESET button 25 Fig. 6.

6 - Installation requirements

Location

The boiler can be installed on any suitable internal wall. Provision must be made to allow the correct routing of the flue and siting of the terminal to allow the safe and efficient removal of the flue products. The appliance may be installed in any room, although reference must be made to the IEE regulations if it contains a bath or shower. A compartment or cupboard may be used provided that it has been purpose-built or modified for the purpose. Provision must be made for permanent ventilation. Detailed recommendations are given in BS 5440 pt 2. If it is proposed that it is installed in a timber framed building then reference must be made to British Gas Document DM2, or advice sought from CORGI.

Flue

The boiler must be installed so that the flue terminal is exposed to the free passage of external air at all times. It must not be allowed to discharge into another room or space such as an outhouse or closed lean-to. The minimum acceptable clearances are shown below:

- A Directly below an opening, window, etc	300 mm
- B Below gutters soils pipes or drain pipes	75 mm
- C Below eaves	200mm
- D Below balconies or car port roof	200 mm
- E From a vertical drain pipe or soil pipe	75 mm

- F From an internal or external corner 300 mm
- G Above ground roof or balcony level 300 mm
- H From a surface facing the terminal 600 mm
- I From another terminal facing the terminal 600 mm
- J From an opening into the dwelling when under a car port 1200 mm
- K Vertically from a terminal on the same wall 1500 mm
- L Horizontally from a terminal on the same wall 300 mm
- M fixed by the flat roof ubbink rolux 4GM flue terminal
- N fixed by a pitched roof ubbink rolux 4GM flue terminal

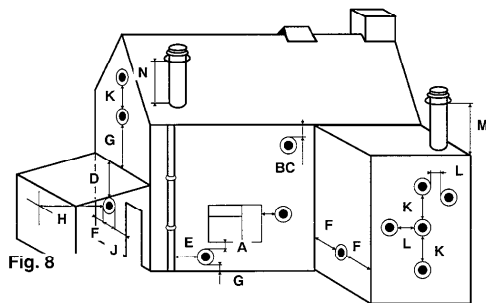


Fig. 8

Installation requirements (continued)

It may be necessary to protect the terminal with a guard if it is accessible and could be damaged. Reference should be made to the Building Regulations for guidance. Suitable guards may be obtained from the following manufacturer:

Quinnel Barret & Quinnel Wireworks
Old Kent Road
London SE15 1NL
Tel: 0171 639 1357

Ventilation

The room in which the boiler is installed does not require specific ventilation. **IF IT IS INSTALLED IN A CUPBOARD OR COMPARTMENT PERMANENT VENTILATION IS NOT REQUIRED FOR COOLING PURPOSES.** If vents are installed, they must communicate with the same room or be on the same wall to outside air.

outside air.

Gas Supply

The gas installation and soundness testing must be in accordance with the requirements of BS 6891. The boiler requires: 2.74 m³/hr and a 22 mm supply. Ensure that the pipe size is adequate for the demand including other gas appliances on the same supply.

Electrical Supply

The appliance requires an earthed 230V - 50 Hz supply and must be in accordance with current I.E.E. It must also be possible to be able to completely isolate the appliance electrically. Connection should be via a 3 amp fused double-pole isolating switch with contact separation of at least 3 mm on both poles. Alternatively, a fused 3 Amp. 3 pin plug and unswitched socket may be used, provided it is not used in a room containing a bath or shower. It should only supply the appliance.

6 - System guidance

The boiler is suitable for sealed systems only. The maximum working pressure for the appliance is 10 bar. All fittings and pipework connected to the appliance should be of the same standard. If there is a possibility of the incoming mains pressure exceeding 10 bar, particularly at night, then a suitable pressure limiting valve must be fitted.

The boiler is designed to provide hot water on demand to multiple outlets within the property. If there is a requirement for greater demands, for example if the property has several bathrooms and cloakrooms, a vented or unvented hot water storage system may be used.

Showers

Any shower valves used with the appliance should be of a thermostatic or pressure balanced type. Refer to the shower manufacturer for performance guidance and suitability.

Flushing and Water Treatment

The performance of the appliance could be impaired by system debris or the effects of corrosion. The system must be flushed thoroughly to remove metal filings, solder, machining oils and other fluxes and greases before connecting the boiler. If it is an existing system, an appropriate flushing and descaling agent should be used. Refer to BS 7593 (1992) for

guidance. For more information on the use of corrosion inhibitors, flushing and descaling agents, advice can be sought from the manufacturers of water treatment products such as:

Betz Dearbon Ltd
Foundry Lane
Widnes
Cheshire
WA8 8UD
Tel: 0151 424 5351

Fernox Manufacturing
Britannica Works
Clavering
Essex
CB11 4QZ
Tel: 01799 550811

System Controls

The boiler is electrically controlled and is suitable for most modern electronic time and temperature controls. The addition of such external controls can be beneficial to the efficient operation of the system. The boiler connections for external controls are 24V and so only controls of 24V or that have voltage free contacts should be used.

System guidance (continued)

By pass and Pump

The boiler is fitted with a pre-adjusted by pass. Although adjustment is not normally necessary, the by pass can be reset by turning screw (D Fig. 9) anticlockwise to open the by-pass using the chart below for guidance.

If used on a system with thermostatic radiator valves, the flow rate with the thermostatic valves closed should be adjusted to at least 100 l/hr. The chart below indicates the residual head of the pump available for the system.

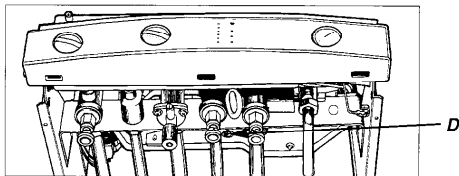


Fig. 9

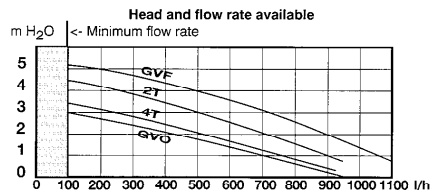


Fig. 10

System guidance (continued)

Expansion Vessel

The expansion vessel is pre-charged to 0.7 bar (10 lb/in²). The vessel is suitable for systems up to 145 litres capacity. For systems of greater capacity an additional expansion vessel will be required. Refer to the chart below and BS 7074 pt 1 or BS 5449.

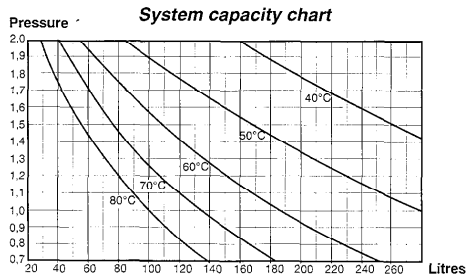


Fig. 11

Filling Point

Provision must be made to be able to charge the system on commissioning and to make up any subsequent pressure loss. The method of connection must utilise approved equipment and must comply with the water regulations. A filling loop can be so installed as to be hidden beneath the boiler.

Fig. 12

7 - Installing the boiler

Please check that you are familiar with the installation requirements before commencing work.(section 6)

Installation

The installation kit included with the flue components comprise following items :

- Hanging bracket
- A paper template (showing the dimensions of the boiler with 5 mm side clearances, fitting instructions and commissioning instructions)
- Connection tails
- Screws and wall plugs
- Connection washers and filters
- Pre-piping jig
- Installation manual

Method of positioning the boiler on the wall.

The paper template can be used to ensure the correct positioning of kitchen cabinets etc. It also details the commissioning instructions.

The paper template has to be fixed to the wall and used to fix the position of the hanging bracket, the centre for the flue hole and and, if required, the fixings for the pre-piping jig.

Drill and plug the wall and secure the hanging bracket using the screws provided. Remove the boiler from its packaging as shown in Fig. 13 and remove the outer case as shown in Fig.14. Place the boiler on the wall on the hanging bracket. If required, there is space for all piping to pass behind the

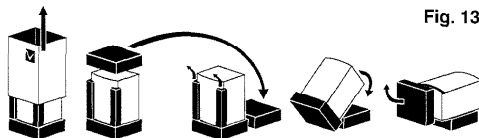


Fig. 13

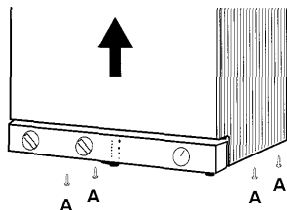


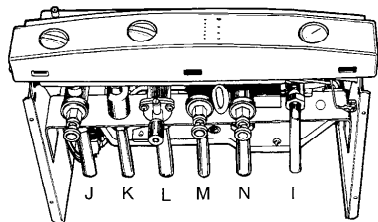
Fig. 14



7 - Installing the boiler (continued)

boiler. Using Fig. 15 for reference, connect the gas and water pipes to the valves located at the base of the appliance using the tails provided. There is a 190 mm space between the valves and the wall to make these connections.

Provision must be made to fill and recharge the system



I	Safety valve outlet	Ø 15 mm
J	Heating flow	Ø 22 mm
K	D.H.W. flow	Ø 15 mm
L	Gas supply	Ø 22 mm
M	Cold water inlet	Ø 15 mm
N	Heating return	Ø 22 mm

Fig. 15

pressure. This can be achieved using a filling loop or other methods approved by the local water authority.

The pressure relief should terminate below the boiler over a tundish or 22 mm pipe (see Fig. 15) which should in turn discharge safely outside the premises. Care should be taken that it does not terminate over an entrance or window or where a discharge of heated water could endanger occupants or passers by.

The system should be carefully checked for leaks, as frequent refilling could cause premature system corrosion or unnecessary scaling of the heat exchanger.

Fitting the Horizontal Flue

The instructions for the vertical and biflux (twin pipe) flue options are included with the relevant adaptor kits.

The standard flue supplied with the appliance is suitable for lengths from 300 mm minimum to 610 mm maximum. This means for rear flueing, the standard kit will accommodate a maximum wall thickness of 490 mm, and for side flueing a maximum wall thickness of 477 mm. This takes into account the minimum appliance side clearances of 5 mm.

If the fixing is a rear exit flue, the template provides the position of the centre for drilling the flue hole with a core drill.

If the flue is a side exit installation then calculate the position of the hole with a slope of 5 mm / metre to the outlet.



7 - Installing the boiler (continued)

Connection of the boiler to the system.

- Hinge down the electrical box to gain access to the valves connections. Push in the tabs (P Fig 19) on either side of the boiler and pivot the box forward.
 - Remove the yellow caps from connecting pipes and connect the boiler to the taps using gaskets provided in the plastic bag.
- Washer "R" for gas connection.
Filter "F" for cold water inlet

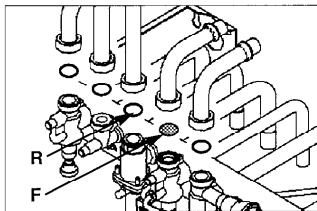


Fig 16

7 - Installing the boiler (continued)

Making the Electrical Connections

Hinge down the electrical box to gain access to the electrical connections. Push in the tabs (P Fig 19) on either side of the boiler and pivot the box forward.

Undo the two retaining screws, remove cover and remove cable clamp. (A Fig 19)

Connect the live and neutral wires to the multipin plug leaving sufficient earth wire to connect to the earthing point. (B Fig 20) Note: The connections should be made so that should the lead be pulled from its anchorage, the current carrying wires become taut before the earth wire.

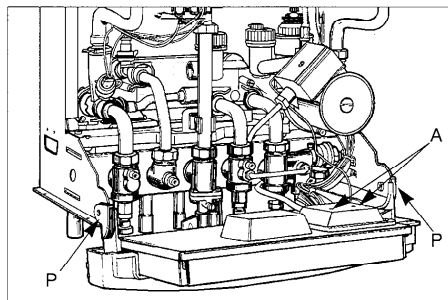
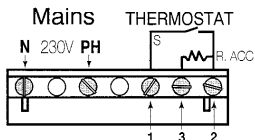


Fig. 19



Installing the boiler (continued)



connector **C**

Fig. 20

If using a room thermostat or other external control, they can be connected in place of the link on the multipin plug. (fig 21)

Note: Use only controls designed for voltage free switching or 24V supply.

Connect multipin plug onto into the socket on the power board. Secure the cable using the cable clamp and replace the cover. To prevent damage, the cable should then be routed through the cable support on the right hand side of the chassis.

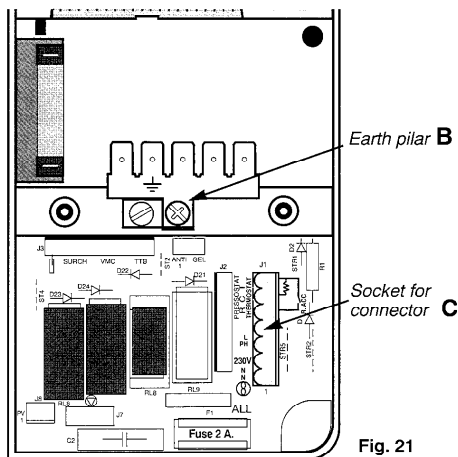


Fig. 21

8 - Commissioning and testing


Pre-commissioning

Ensure that the system has been adequately flushed.
Purge gas supply of air and test for soundness.
Carry out final electrical tests to ensure the correct polarity and earthing continuity.

DHW

Open the main cold feed valve.
Open all hot taps to purge DHW system.
Check for water soundness.
Check flow rate at the bath tap is set at 11 ltr/min for a 30°C temperature rise.

Central Heating

Open flow and return valves on the boiler.(18 and 29 Fig 22)
Open the automatic air vent (6 Fig 23)
Fill system and vent radiators.
Set system pressure and remove filling loop.
Check for leaks.
Manually check pump is free to turn.
Switch on electrical supply.
Turn selector switch (19 Fig 23) to Winter position
(heating and hot water). 

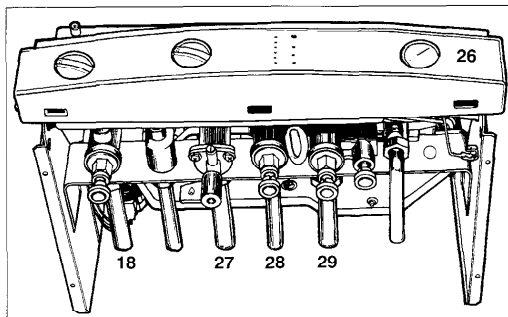


Fig. 22

Allow pump to run for several minutes.
Isolate electrical supply.
Drain boiler and check water filter for installation debris.
Replace filter and recharge system.

Lighting the Boiler

Connect gas pressure gauge to test point (43 Fig. 23).
Turn on the gas supply and boiler gas tap (27 Fig. 22).
Ensure electrical supply is on.
Ensure all external controls are calling for heat.

8 - Commissioning and testing (continued)

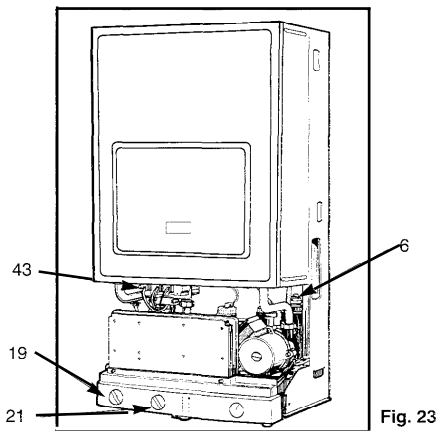



Fig. 23

Turn selector switch (19 Fig. 23) to Winter position (heating and hot water). 

Turn the boiler thermostat to maximum (21 fig 23).

The boiler will light.

Allow the boiler to heat system.

Check that the inlet gas pressure is 20 mbar (8 in wg) with

boiler operating. (working pressure).

Check the operation of the boiler controls and safety devices.(see separate servicing leaflet for details)

Re-flush the system to remove any dissolved oils and fluxes.

Recharge system pressure and introduce any water treatment as required.

Post Commissioning

Ensure system pressure has been set correctly.

Set boiler thermostat and controls.

Set programmer to householder's requirements.

Set external controls.

Handing Over to the Householder

Demonstrate the lighting and operation of the boiler.

Demonstrate how to maintain the system pressure.

Demonstrate the operation and setting of the built-in programmer.


Explain the benefits of annual maintenance by a competent person.

Explain how to register guarantee.




Leave users instructions, installation manual and all other documentation with the householder.

9 - User's instructions (continued)






Switching on

- 1) Check that the gas service tap is opened at the gasmeter and main power is on.
- 2) Check that pressure in central heating system is above 0.7 bar and below 2.5 bar with the pressure gauge (26).
- 3) Open the gas tap (27) by turning from right to left. 
- 4) The boiler is now ready to use.

Hot Water


- 1) Turn selector switch (19) to position . The green "power on" indicator  will light.
- 2) Turn on a hot water tap, the orange "burner on" indicator  will light and the water will become hot.

Heating and Hot Water


- 1) Turn selector switch (19) to position  . The green "power on" indicator  will light.
- 3) If the room thermostat (if fitted), the boiler temperature control  and the clock (if fitted) are all calling for heat, the orange "burner on" indicator  will

light and the heating will be on.

When there is a need for hot water while the heating is on, it is only necessary to turn on a hot tap. The heating will be interrupted momentarily while the hot water is being delivered. The boiler will switch back automatically to heating when the tap is turned off.

Note: If the boiler has been turned off for some time the first attempt to light it may result in a lockout . If this happens press the reset button (25) and the boiler will light.

To Turn Boiler Off Completely

- 1) Turn the selector switch (19) to the off position .
- 2) Turn the gas tap (27) from left to right "STOP".

Instruction for setting the built in clock

MECHANICAL PROGRAMMER

1. General layout

The mechanical clock covers a 24 hour period. Each tappet represents 20 minutes (A Fig. 27). An override switch is located on the right hand side of the clock (B Fig 27).

2. To set the time

To set the time of day, grasp the outer edge of the dial and turn slowly clockwise until the correct time is lined up with the arrow.

3. To Set the "On" and "Off" times

The clock uses a 24hours system. e.g. 8 =8.00 am and 18 = 6.00 pm "ON" periods are set by sliding all tappets between the "ON" time and the "OFF" time to the outer edge of the dial. The tappets remaining at the centre of the dial are the "OFF" periods.

4. To select function mode

Put the selector switch (B) to Automatic to control the boiler by the clock. Put the switch (B) to ON to select permanent operation or to OFF to turn heating off permanently.

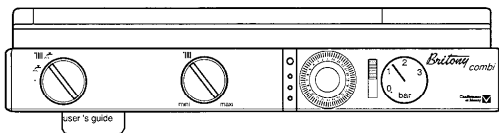


Fig. 26

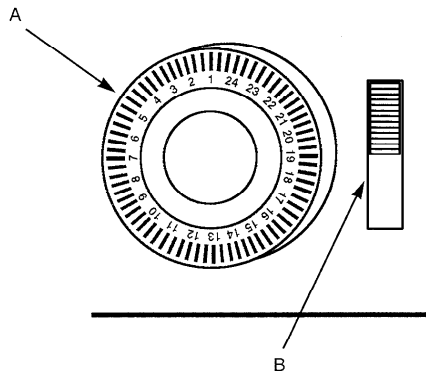


Fig. 27



Instruction for setting the built in clock (cont.)

ELECTRONIC PROGRAMMER

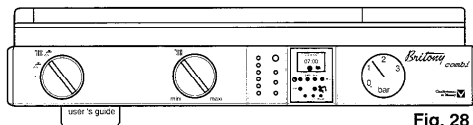
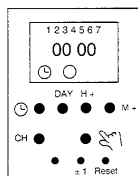


Fig. 28

1. General Layout

In normal use the LCD display shows the day, the time and control status. In other words whether the boiler is on or off, whether it is permanently on or permanently off or whether the override button has been pressed.



2. To Set the "On" and "Off" times

There is the facility for easy programming.

1. All seven days can be programmed as a block.

or

2. Monday to Friday as a block.

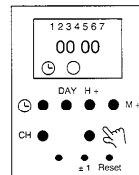
and then

3. Saturday and Sunday as a block

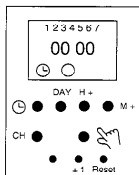
as well as

4. Changing the programme for any individual days.

It is advisable to clear the memory before starting. This is done by pressing the reset button for a few seconds with a pencil or similar implement. The screen will show all the symbols.



Instruction for setting the built in clock (cont.)



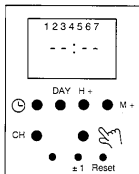
Example 1.

The boiler switches on at the same time every day of the week.



Step 1. Press Reset button with a pencil or similar tool to clear the memory.

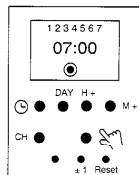
Step 2. Press CH button. To select display

Step 3. Press DAY button once. Mon to Sun are displayed at the top of the screen.



Step 4. Press the H+ (hours) button and the M+ (minutes) button to set the first "on" time of the day.



Step 5. Press the  button to select "Switch on" symbol 



Step 6. Press CH button to store in memory.

Step 7. Press day button to display all of the days of the week again.

Step 8. Press the H+ and the M+ to set the first "off" time of the day.

Step 9. Press on  button to select "Switch off" symbol 

Step 10. Press CH to store.

Step 11. Press day, H+, M+ and then CH for each on and off period for a single day. The whole week has now been stored.

Step 12. By repeatedly pressing CH each of the times entered can be viewed and checked. At this stage an individual day's times can be changed. When that day is displayed, press H+ and M+ as required.

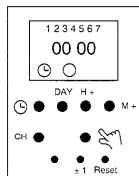
Then it is necessary to set the current day and time. Please refer to the relevant section page 32.

Instruction for setting the built in clock (cont.)

Example 2

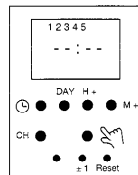
The boiler switches on at the same time Monday to Friday, but at a later time at the weekend.

Step 1. Press reset button with a pencil or similar tool to clear the memory and time (only if necessary). The screen will show all the symbols for a few seconds.





Step 2. Press CH button. To select display

Step 3. Press day button twice. Mon to Fri is displayed at the top of the screen.





Step 4. Press the H+ (hours) button and the M+ (minutes) button to set the first "on" time of the day.

Step 5. Press on  button to select "Switch on" symbol 

Step 6. Press CH button to store in memory.

Step 7. Press day button twice to display Mon to Fri again.

Step 8. Press the H+ and the M+ to set the first "off" time of the day.

Step 9. Press on  button to select "Switch off" symbol 

Step 10. Press CH to store.

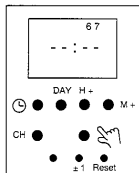
Step 11. Press day twice, H+, M+ and then CH for each on and off period for a single day. The times for Mon to Fri have now been stored

Then it is necessary to set the current day and time. Please refer to the relevant section page 32.

Instruction for setting the built in clock (cont.)

For the weekend times:

Step 1. Press day three times to display Sat and Sun.



Step 2. As before Press the H+ and the M+ to set the first "on" time of the day.

Step 9. Press day three times, H+, M+ and then CH for each on and off period for a single day. The times for the whole weekend have now been stored

Step 10. By repeatedly pressing CH each of the times entered can be viewed and checked. At this stage an individual day's times can be changed. When that day is displayed, press H+ and M+ as required.

Note: If only partial information is entered and stored in memory e.g. only hours, or no days are set, then the switching sequence will be ignored.

To Set The Current Day And Time

Press and hold the button whilst pressing the day, H+

(hours) and M+ (minutes) buttons to set the current day and time.

The Override Button

The override button has four functions.

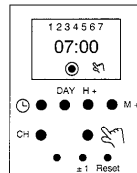
Auto (starting position)

The boiler will turn on and off as programmed.

Press once for advance /override

If boiler is in "off" mode will switch it on.

If boiler is in "on" mode will switch boiler Off.



Press again for "FIX ON"

Boiler is now permanently on.


Press again for "FIX OFF"

Boiler is now permanently off.

Press again to go back to Auto.

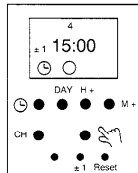
Instruction for setting the built in clock (cont.)

Note :

When a manual override is used, the boiler will revert back to the auto setting at the next switching time. When the "Fix On" or "Fix Off" position is used, the boiler will only revert back to the auto position by pressing the  button.

One Hour Button $\pm 1h$

This button is used to advance or set back the time by one hour for British Summer / Winter time. There is an indicator on the screen.



Chaffoteaux et Maury are continuously improving their products and therefore reserve the right to change specifications without prior notice and accepts no liability for any errors or omission in the information contained in this document.

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January 1999

ESP036

**Chaffoteaux
et Maury**

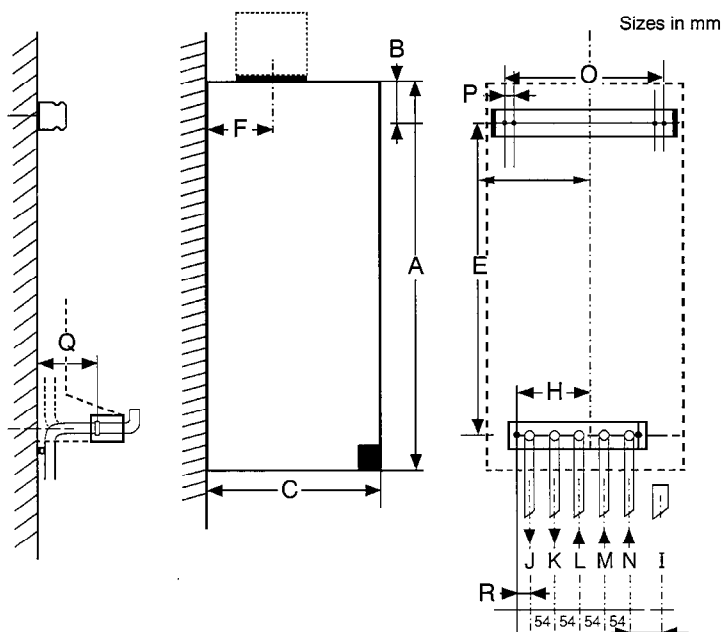
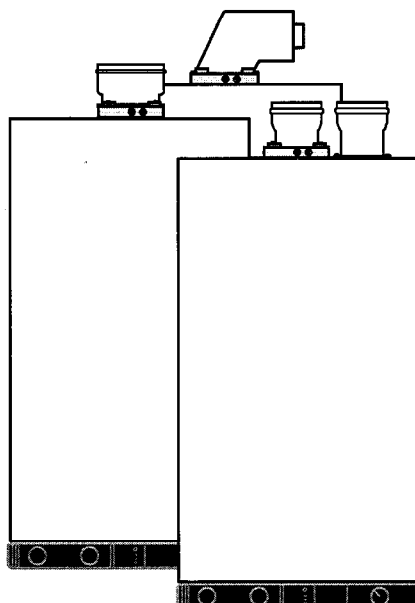


92220-14b Ag509E07F09b

Britony combi 80 and 100

Fanned Flue Combination Boiler Heating and Instantaneous Domestic Hot Water

Dimensions



A	850
B	67
C	380
D	440
E	721
F	212
H	198
O	360
P	50
Q	190
R	40
S	155

Flue types:

C 12 C 22 or C 42: horizontal
C 32 xx: vertical concentric
C 32 xy: Twin flue

Boiler outer case dimensions :

- Height : 850
- Boiler width : 440 (minimum space required 450)
- Depth : 380

- I Safety valve outlet
- J Heating flow
- K D.H.W. flow
- L Gas supply
- M Cold water inlet
- N Heating return

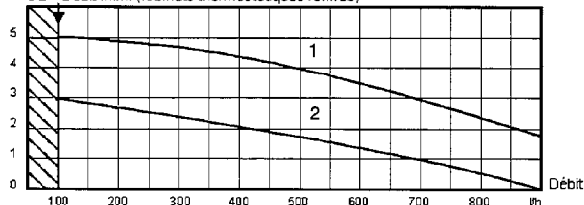
Technical data

Heat input C/H & DHW Combi 80 :	11.73 to 28.70 kW	DHW flow rate at @ 30°C Combi 80 :	11.1 l/min
Combi 100 :	15.43 to 34.57 kW	Combi 100 :	13.4 l/min
Heat output C/H & DHW Combi 80 :	9.5 to 23.25 kW	DHW flow rate at @ 35°C Combi 80 :	9.54 l/min
Combi 100 :	12.5 to 28 kW	Combi 100 :	11.5 l/min
Max. operating pressure C/H circuit :	2.5 bar	Minimum DHW operating flow rate :	2 l/min
Expansion vessel net capacity :	5.4 l	Minimum DHW working pressure :	0.1 bar
Expansion vessel initial pressure :	0.7 bar	Maximum DHW working pressure :	10 bar
Electrical consumption :	150 w	Gas category :	II 2E+ 3+
Voltage :	230 v		
Electrical protection index :	IP24		
Fuses :	2 A and 1.25 A		

Nominal gas flow rate at 15°C and 1013 mbar	BRITONY Combi 80		BRITONY Combi 100	
	Maximum power 23.25 kW	Minimum power 9.5 kW	Maximum power 28.2 kW	Minimum power 12.5 kW
-Natural gas (G 20) at 20 mbar	2.74 m ³ /h	1.22 m ³ /h	3.34 m ³ /h	1.57 m ³ /h
-Butane gas (G 30) at 28 mbar	2.04 kg/h	0.91 kg/h	2.45 kg/h	1.17 kg/h
-Propane gas (G 31) at 37 mbar	2.00 kg/h	0.89 kg/h	2.42 kg/h	1.15 kg/h
Injectors and gas valves seat diameter	BRITONY Combi 80		BRITONY Combi 100	
	Natural gas	Butane or Propane	Natural gas	Butane or Propane
-Blue solenoid restrictor diameter	2.40 mm	1.74 mm	2.80 mm	1.90 mm
-Black solenoid restrictor diameter	4.25 mm	5.00 mm	5.20 mm	3.80 mm
-Manifold injectors (16)	1.23 mm	0.72 mm	1.26 mm	0.76 mm

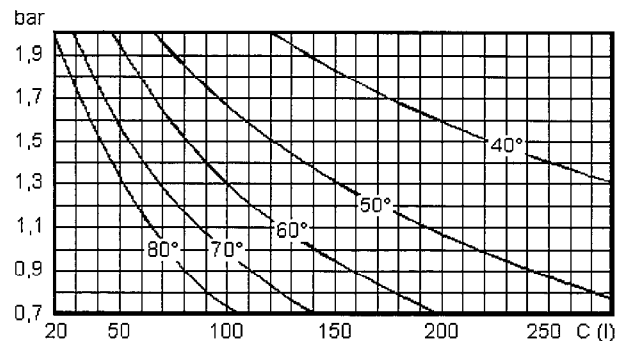
Pump and expansion vessel characteristics

Hauteur m anométrique
m CE Débit mini. (robinets thermostatiques fermés)



1 = by-pass closed
2 = by-pass open

Head available / flow

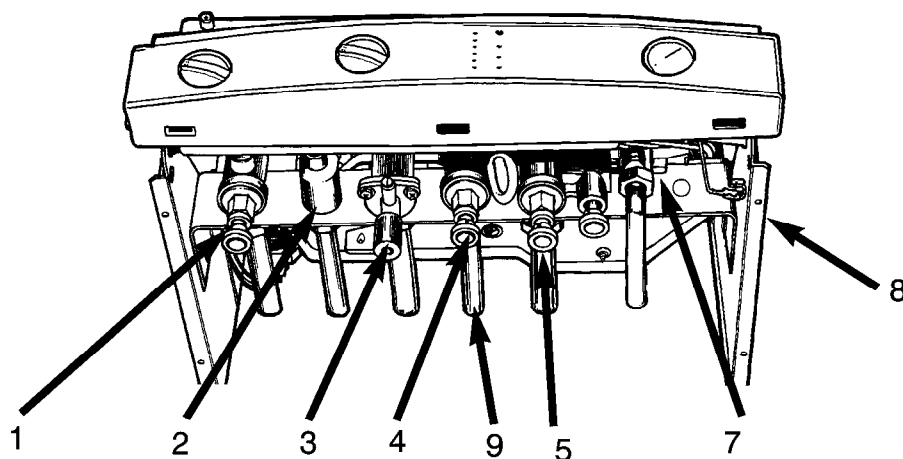


Note : The system initial pressure should be over the following value :
 $\frac{\text{System static height (in metre)} + 0.7}{10} = \text{Initial pressure (in bar)}$

Components location

1. CH Flow isolating valve
2. DHW outlet
3. Gas service tap
4. Water service tap
5. CH Return isolating valve

7. Pressure relief valve
8. Chassis
9. Connecting tails (x 5)



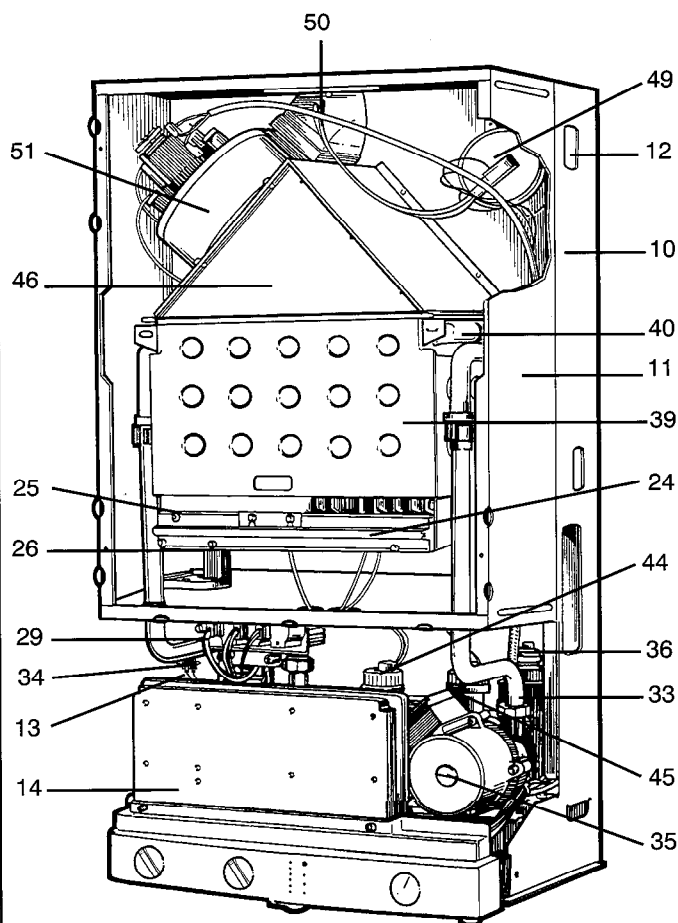
10. Steel chassis complete with expansion vessel
11. Sealed chamber
12. Expansion vessel (not visible)
13. Overheat thermostat
14. Electrical box
15. Three position selector switch
16. User's guide
17. Heating flow temperature adjustment
18. CH pressure gauge
20. Green indicator - Power ON
21. Orange indicator - Burner ON
22. Red indicator - Lock out / flame failure
23. Reset button

24. Multigas burner comprising:
 - 25. 16 burner head
 - 26. Manifold
 - 27. 2 Ignition electrode
 - 28. Ionization electrode
29. Gas section comprising:
 - 30. Security valve (grey)
 - 31. 1/3 gas stage (blue)
 - 32. 2/3 gas stage (black)
33. Right hydraulic assy
34. Left hydraulic assy
35. Single speed pump
36. Air separator
37. Heating thermistor
38. DHW thermistor

39. Combustion chamber made of aluminium coated steel with 4 ceramic fibre panels to insure heat insulation
40. Copper main exchanger
41. Stainless steel secondary plate exchanger
42. Three way valve
43. connecting bracket
44. DHW flowstat
45. Heating flowstat
46. Flue hood
47. Adjustable by-pass
49. Air Pressure switch
50. 45° elbow comprising venturi
51. Fan

FUNCTIONING

COMPONENTS LOCATION



Switching on

- 1) Check that the gas service tap is opened at the gasmeter and main power is on.
- 2) Check that pressure in central heating system is above 0.7 bar and below 2.5 bar with the pressure gauge (8).
- 3) Open the gas tap (3) by turning from right to left. (8)
- 4) The boiler is now ready to use.

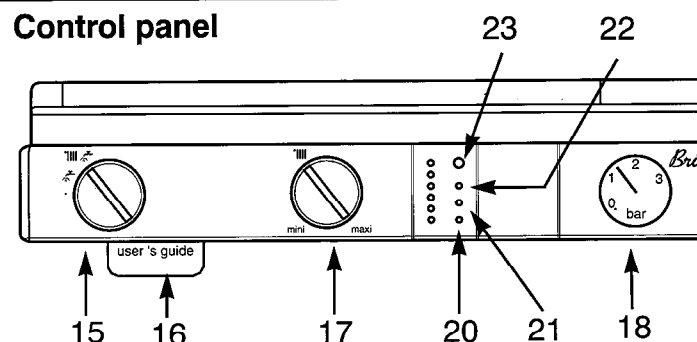
Hot Water

- 1) Turn selector switch (15) to position . The green "power on" indicator (20) will light.
- 2) Turn on a hot water tap, the orange "burner on" indicator (21) will light and the water will become hot.

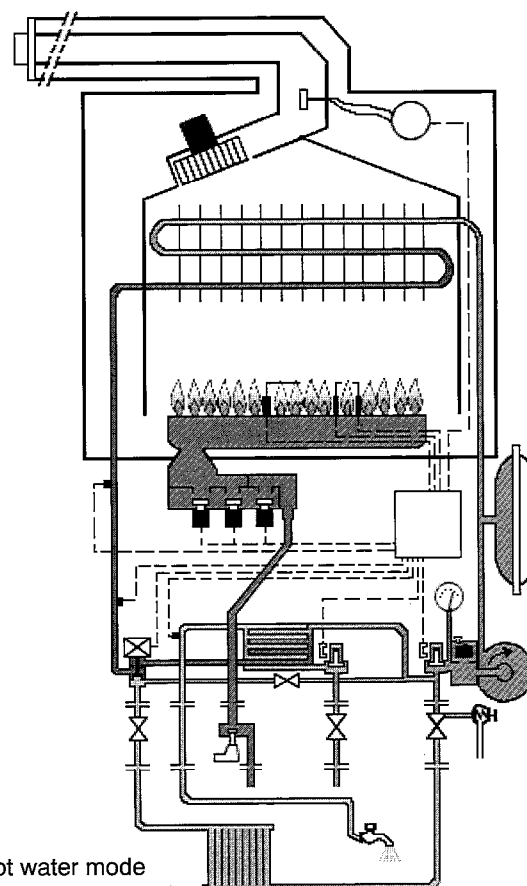
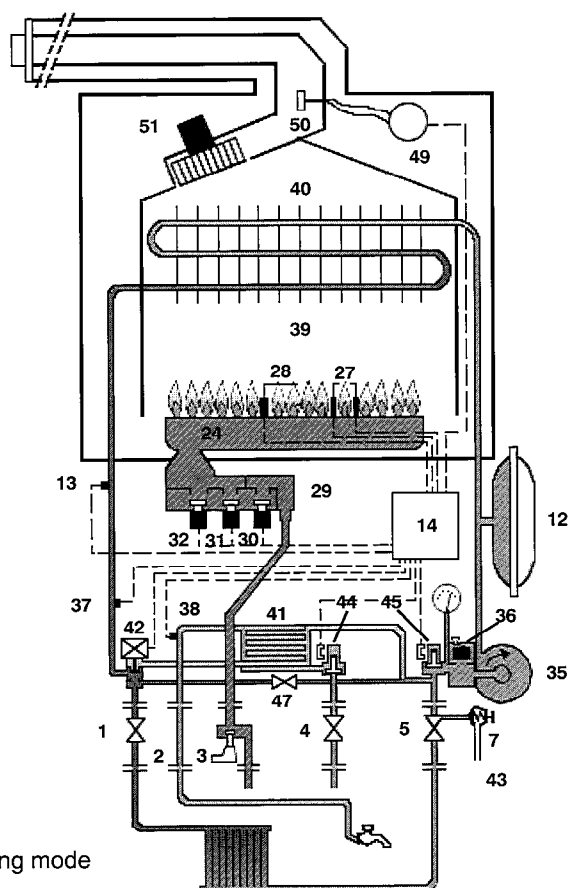
Heating and Hot Water

- 1) Turn selector switch (15) to position . The green "power on" indicator (20) will light (20).
- 3) If the room thermostat (if fitted), the boiler temperature control and the clock (if fitted) are all calling for heat, the orange

Control panel



BRITONY COMBI FUNCTIONAL DIAGRAM



"burner on" indicator (21) will light and the heating will be on.

When there is a need for hot water while the heating is on, it is only necessary to turn on a hot tap. The heating will be interrupted momentarily while the hot water is being delivered. The boiler will switch back automatically to heating when the tap is turned off.

Note: If the boiler has been turned off for some time the first attempt to light it may result in a lockout (22). If this happens press the reset button (23) and the boiler will light.

Domestic Hot Water Mode

To be able to supply hot water, the selector switch 15 must be in either on (21) or (22) position. This will be confirmed by the green indicator light (20).

When a tap or shower is turned on, the flow of mains water, above 2 litres per min., will activate the DHW flow switch (44) and allow the 3 way valve (42) to move to the DHW position. The pump can now circulate primary water heated by the main heat exchanger through the secondary heat exchanger.

The first stage solenoid (31) (blue) and security solenoid (30) (grey) open together to allow gas to the burner. The ignition sequence begins and a continuous high speed spark ignites the gas. As soon as a flame is detected the orange indicator bulb (21) will light and the second stage solenoid (32) (black) opens to allow the full gas rate. If a flame is not detected, after 8 seconds, the security solenoid closes and shuts off the gas. The red lockout indicator bulb (22) will light. The domestic hot

water temperature is controlled by the hot water control thermistor 38 and the central heating control thermistor (37). This system anticipates the changes of temperature in the secondary heat exchanger and ensures accurate temperature regulation.

When the tap is closed the burner is extinguished and the pump stops. The boiler will now stay in the hot water mode for three minutes to maintain temperature to ensure a fast response in the event of a subsequent hot water demand.

Priority will be given to a demand for hot water. This will interrupt the central heating for the duration of hot water delivery.

Central Heating Mode

To be able to supply heating, the selector switch (15) must be on (21) position. This will be confirmed by the green indicator light (20).

When there is a demand for heating (either from the room thermostat or the clock) the pump starts. If the boiler temperature control is calling for heat and primary flow rate over 4 ltr/min, the central heating flow switch operates allowing the ignition sequence to begin. The first stage solenoid (31) (blue) and security solenoid (30) (grey) open together to allow gas to the burner. The ignition sequence begins and a continuous high speed spark ignites the gas. As soon as a flame is detected the orange indicator bulb (21) will light. After 45 seconds the second stage solenoid (32) (black) opens to allow the full gas rate. If a flame is not detected, after 8 seconds, the security solenoid closes and

shuts off the gas. The red lockout indicator bulb (22) will light.

The central heating flow temperature is controlled by the central heating control thermistor (37). The boiler has been designed to minimise cycling and will not attempt to relight for at least 3 minutes after the boiler thermostat has been satisfied. When the room thermostat is satisfied the burner will switch off and the pump will remain running for a further 3 minutes before it too stops.

NB

It is possible to override the 3 minute delay by pressing the RESET button (23).

Lock out procedure

Flame disappearance :

When the ionisation electrode (28) does not detect flame presence. The orange indicator lamp (21) extinguishes. A lighting cycle starts. If a flame is not detected before 8 seconds, the grey security solenoid (30) and the blue 1/3 solenoid (31) will close. The lock out red indicator (22) lights, the pump (35) runs and the 3 way valve (42) stays in its position.

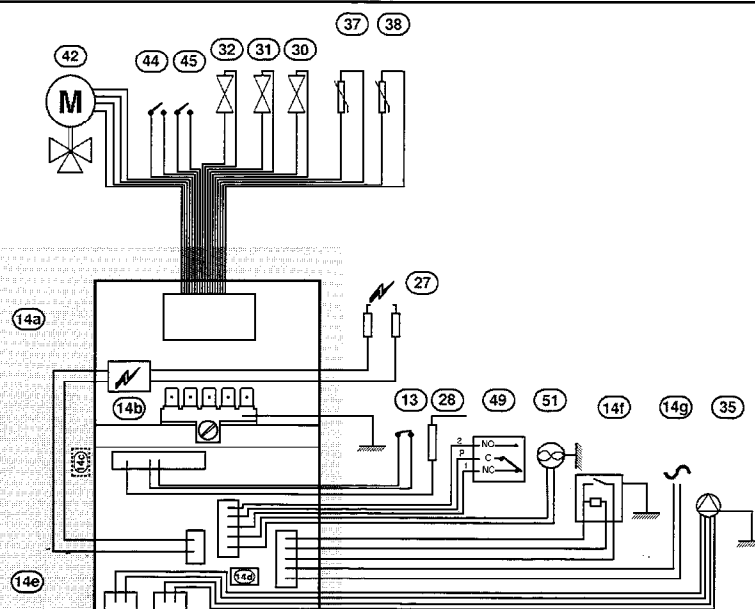
After a few seconds, it will become possible to reset the boiler by pressing the reset button (23).

Overheat detection :

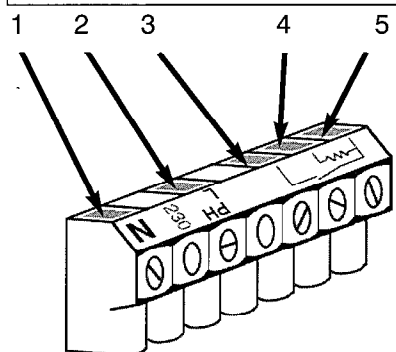
If an overheat is detected by the sensor (13), the grey security solenoid (30) and the blue 1/3 (31) closes, the orange indicator lamp (21) extinguishes. The ignitor is energised for 8 seconds and the red lockout indicator (22) lights. If the burner cannot relight the boiler will go to lockout.

WIRING

DIAGRAM

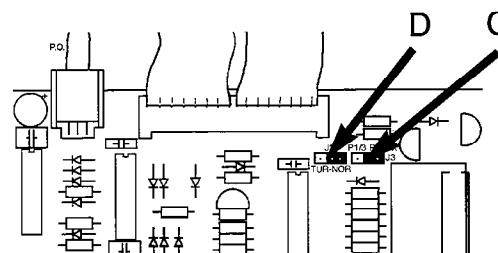


Plug for main power and Room thermostat connection



1. Neutral
2. Phase
3. Room thermostat live
4. Accelerator resistor
5. Common for Accelerator and room thermostat.

ELECTRICAL WIRING continuation			ADJUSTMENTS ON CONTROL PCB
N°	Designation	Wiring colours	<p>The following adjustments are available on the regulation PCB. To gain access to them, pivot down electrical box, remove the rear cover and the rear panel of electrical box, unplug connectors from regulation PCB and pull it toward you.</p> <p>Heating output limitation :</p> <ul style="list-style-type: none"> - Functioning without limitation plug C on "P MAX" - Functioning at 1/3 gas rate only plug C on "P 1/3" <p>Burner functioning:</p> <ul style="list-style-type: none"> - Regulation available 3/3, 1/3, 0 plug D on "NOR" - Functioning at full gas rate only plug D on "TUR"
13.	-Overheat sensor	Brown	
14.	-Electrical box		
14a.	-Regulation PCB		
14b.	-Ignitor	Red, Black	
14c.	-Fuse 1.25 A		
14d.	-Fuse 2A		
14e.	-Power PCB		
14f.	-Room thermostat		
14g.	-Mains 230V 50 Hz		
18.	-Pressure switch	2: Black P: Orange 1: White	
27.	-Spark electrodes	White	
28.	-Ionisation probe	White	
30.	-Security solenoid (grey)	Grey	
31.	-2/3 gas stage solenoid (black)	Black	
32.	-1/3 gas stage solenoid (blue)	Blue	
35.	-Pump		
37.	-C/H thermistor	Violet	
38.	-DHW thermistor	Green	
42.	-3 way valve	White, Yellow, Orange	
44.	-DHW flow switch	Brown	
45.	-C/H flow switch	Red	
51.	-Fan	Brown, Blue	



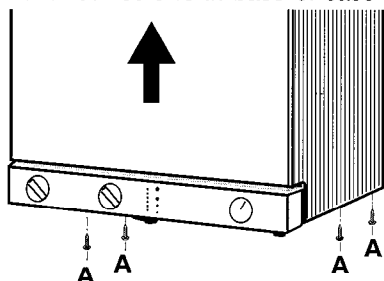
REGULATION	ROUTINE SERVICING	
<p>Temperature regulation for both C/H and DHW circuits are controlled by 2 thermistors. The C/H knob allows the adjustment of temperature between 35 and 85°C. The DHW temperature is limited to 60°C. DHW and C/H thermistors are identical and interchangeable.</p> <p>Resistance value are</p> <ul style="list-style-type: none"> -5000 Ω at 25 °C -2631 Ω at 40 °C -620 Ω at 80 °C -255 Ω at 110 °C 	<p>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 condition and usage, but in general, once a year should be adequate.</p> <p>It is the law that any service work must be carried out by a competent person such as your local Chaffoteaux Service Centre, British Gas or other CORGI registered personnel in accordance with the current Gas Safety (Installation and Use) Regulations.</p> <p>The service schedule should include the following operations:</p> <ul style="list-style-type: none"> - Check the pressure in the system. - Check the correct operation of the appliance. - Check the correct operation of the gas controls. - Check the functions of the safety controls. - Check combustion chamber insulation panels for damage. - Clean the burner. - Clean the heat exchanger. - Check the burner manifold injectors. - Clean gas and water filters. - Check expansion vessel charge pressure. - Clean and check operation of safety valve. <p>Additional Procedures that may be necessary:</p> <ul style="list-style-type: none"> - Check burner pressure and gas flow rates. 	
<p>Flow in both D.H.W. and Heating circuits are detected by 2 flow switches. A piston with a magnet at the top operates a REED switch. The piston is lifted by flow rates listed below :</p> <p>Flow rate threshold :</p> <p>D.H.W. 120 l/h \pm 20 l/h</p> <p>C/H 250 l/h \pm 20 l/h</p>	<p>- Check that the fan blades are clean.</p> <p>- Check, clean and replace components as necessary.</p> <p>- Carry out combustion test utilising the test points in the flue turret.</p> <p>SUGGESTED SEQUENCE for SERVICING</p> <p>Before disconnecting or removing any parts, isolate the gas and electricity supplies. Ensure that the appliance is cool.</p> <p>(for detail please see section on Parts Removal and Replacement)</p> <p>Preliminary Checks</p> <ul style="list-style-type: none"> - Remove outer case - Check the system pressure is at least 0.7 bar cold - Check operation of 1/3 and 2/3 solenoids. - Check that the burner is extinguished fully when both solenoids are closed in both DHW and C/H modes. - Test ionisation functions and check that lockout occurs by turning off gas tap. - Whilst boiler is operating, check operation of primary flow switch by closing heating flow valve and by pass screw (turn clockwise) noting the number of turns so that it may be reset correctly. 	
<p>AIR PRESSURE SWITCH</p> <p>The air flow rate is detected by a pressure differential created by a venturi located in the flue duct.</p> <p>ON threshold $\Delta P > 130$ Pa</p> <p>OFF threshold $\Delta P < 100$ Pa</p>		

REMOVAL AND REPLACEMENT OF PARTS

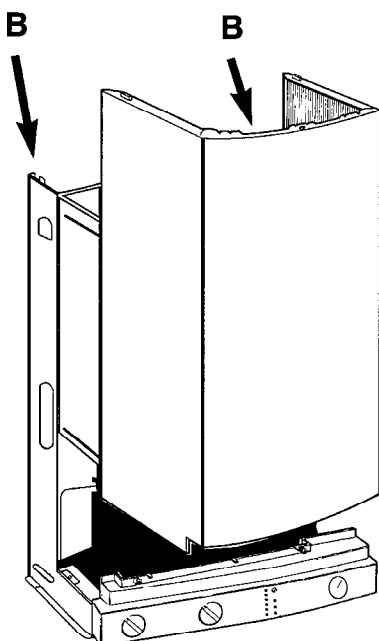
Before removing appliance case, isolate the gas and electrical supplies. Isolate boiler from the system and drain before removing any component in the waterways. Ensure that the appliance is cool.

1. Outer Case

Remove four screws in base of case and



lift free. When replacing, carefully locate on lugs (B) on top edge of chassis.



2. Combustion Chamber

Unscrew four self tapping screws securing the sealed chamber front panel and lift over top corner locating lugs. Unscrew four self tapping screws to release combustion chamber front plate and lift clear. Reassemble in reverse order.

3. Burner Manifold

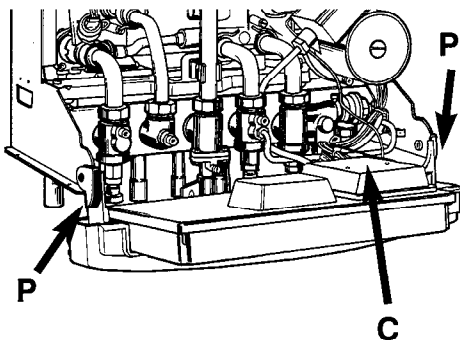
Carry out steps 1 and 2 as above. Remove two screws securing the closure plate and the remaining four screws to release the manifold. Lift clear. Replace the manifold gasket. Reassemble in reverse order.

4. Ionisation Electrodes

Carry out steps 1 and 2 as above. Loosen screws securing the closure plate and remove. Disconnect the lead from the main wiring loom. Remove screw securing electrode to burner. Thread wire through grommet and lift clear. Reassemble in reverse order.

5. Ignition Electrodes

Carry out steps 1 and 2 as above. Hinge down electrical box by pressing retaining tabs P on either side. Remove wiring cover C. Disconnect leads



from spark generator. Loosen screws securing the closure plate and remove. Remove grommet from base of sealed chamber. Remove screw securing electrode bracket and lift clear easing spade connectors through the grommet. Reassemble in reverse order, twisted together electrodes cable at least 10 times to avoid electrical interference.

6. Burner Assembly

Carry out steps 1,2, disconnect electrodes as mentioned in section 4 and 5. Remove two screws securing burner assembly to the back panel of the boiler. Lift right hand back corner first. Reassemble in reverse order.

7. Gas Solenoids

Disconnect colour coded leads. Remove six screws. The solenoids are attached to their base plate. Lift clear taking care not to lose the three plungers and springs. Reassemble in reverse order replacing the cork gasket.

8. Fan Assembly

Remove outer case and sealed chamber front panel (See Steps 1 and 2). Disconnect spade connectors noting positions. Remove two screws securing the front of the fan assembly and loosen screw on flue outlet. Twist fan assembly anticlockwise to disengage from flue outlet and lift clear. Re-assemble in the reverse order ensuring that the wiring is re-connected correctly and the screw on the flue outlet tightened.

9. Flue Hood

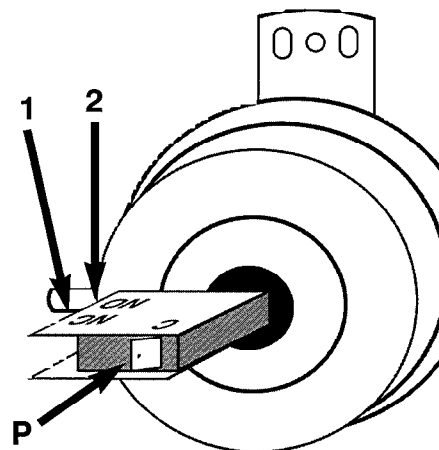
Carry out steps 1 and 2 as above. Remove the three screws securing the angled top of the hood to the chassis. Lift and remove taking care not to snag the pressure switch cables. Re-assemble in the reverse order ensuring that the hood is located behind the combustion chamber rear panel.

10. Pressure Switch

Remove outer case and sealed chamber

front panel as in steps 1 and 2. Disconnect three pressure switch cables noting their positions.

1 = white cable connected to NC
2 = black cable connected to NO



P = orange cable connected to C

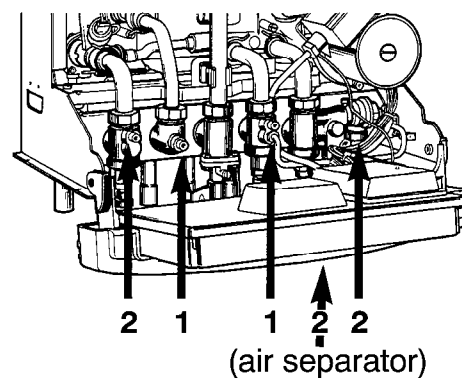
Remove screw securing the switch bracket to the chassis. Disconnect the sampling tubes again noting their positioning (+ and -). Remove switch. Reassemble in reverse order.

11. Pressure Switch Venturi

Carry out steps 1, 2 and 8, as above. Disconnect the sampling tubes and remove the screw securing the venturi to the flue outlet. Remove venturi by the bottom of the 45° elbow. Reassemble in reverse order.

12. Drain down

5 drain points are located on the boiler.



1 = DHW circuit drain point

2 = Heating circuit drain point

13. Water filters (DHW and Heating)

The DHW filter ensures a seal between the connecting bracket and the pipe to the DHW flow switch. Drain the boiler as in step 12. Unscrew the pipe nut and remove the clip on the hydraulic assy. Pull the pipe toward you and remove the water filter from its location.

The C/H filter is located in the right hydraulic assembly. Remove the return pipe as described previously and withdraw the filter. Reassemble in reverse order.

14. Flow switches

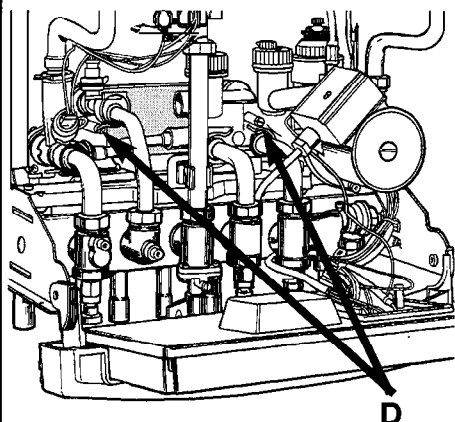
Drain boiler as in step 12. Disconnect the electrical plug, turn the top cover anti-clockwise, remove the O-ring and the brass piston. Reassemble in reverse order.

15. 3-Way valve

Drain boiler as in step 12. Remove the 3 clips on the 3 way valve. Remove the clip on the exchanger flow pipe. Pull the pipe down then pull it out of the 3 way valve. Disconnect the plug from the motor. Unscrew the nut on the pipe between the connecting bracket and the 3 way valve and pull it toward you. Rotate the 3 way valve body anti-clockwise to unclip it from the left hydraulic assembly.

16. Secondary heat exchanger

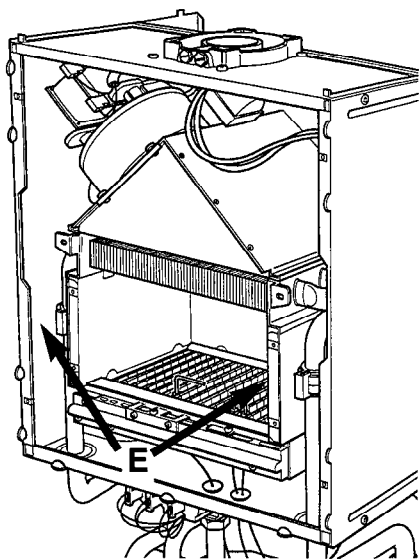
Drain both circuits of the boiler as in step 12. Unscrew the 2 fixing screws (D) and remove the DHW exchanger from the front.



Prior to reassembly, check that the 4 gaskets are correctly positioned. The heat exchanger is so designed that it cannot be remounted incorrectly.

17. Main heat exchanger

Carry out steps 1 and 2 as above. Drain boiler as in step 12. Remove the 2 clips (E) located on return and flow pipes and pull

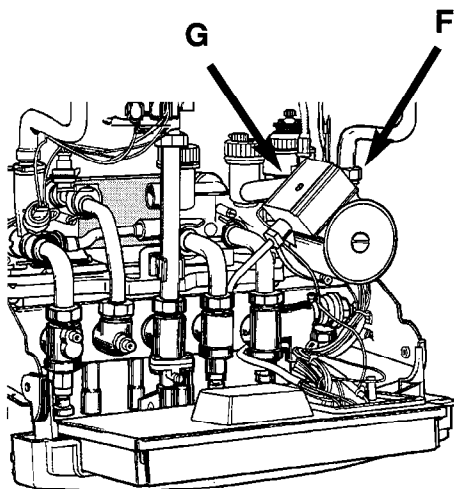


them downwards. Pull the main exchanger

toward you to remove. Reassemble in reverse order.

18. Pump

Drain boiler as in step 12. Pivot the electrical box downwards. Open the electrical box cover removing the 2 screws. Remove the pump plug from the power board and earth plug from earth socket. Unscrew the nut (F) of the return pipe from the volute. Remove



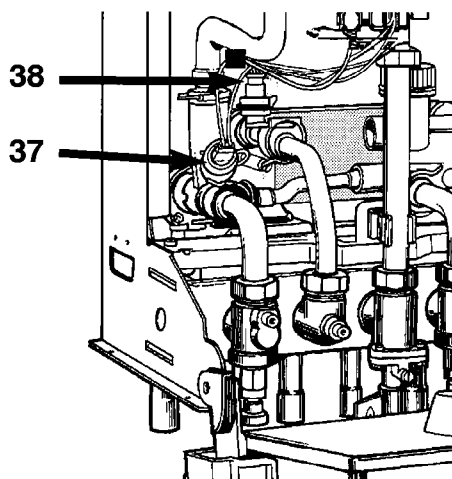
the clip (G) on the pump volute and pull pump toward you. Reassemble in reverse order.

19. Pressure relief valve

The pressure relief valve can be serviced from the front of the appliance. Drain the boiler first, undo the retaining screw and pull out the valve. Reassemble in reverse order.

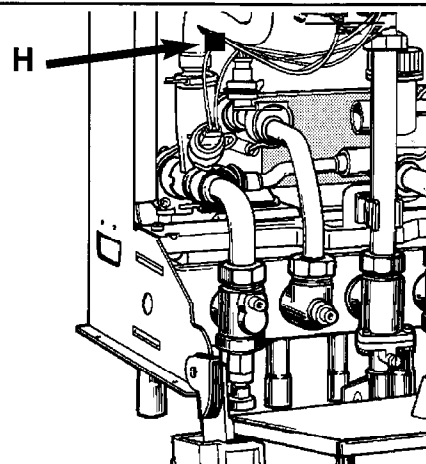
20. Thermistors

Drain the boiler as step 12. Disconnect the plug, remove the retaining clip pull the thermistor out. Reassemble in reverse order.
38 = DHW thermistor
37 = Heating thermistor



21. Safety thermostat

Remove the casing as step 1 and hinge down the electrical box as step 5. Disconnect the 2 cables, pull out the sensor with the clip (13). Reassemble in reverse order.



22. Spark generator

Carry out steps 1, 2, and open the electrical box cover as mentioned in step 5. Undo the 4 screws of the electrical rear panel and remove it. Unplug electrodes wires, remove the ignitor connector from the PCB, remove earth plug from earth socket. Hang out the ignitor. Reassemble in reverse order.

23. Power board

Carry out steps 1, 2, and open the electrical box cover as mentioned in step 5. Undo the 4 screws of the electrical rear panel and remove it. Unplug all cables from the PCB, remove earth plug from earth socket. Hang out the power board. Reassemble in reverse order.

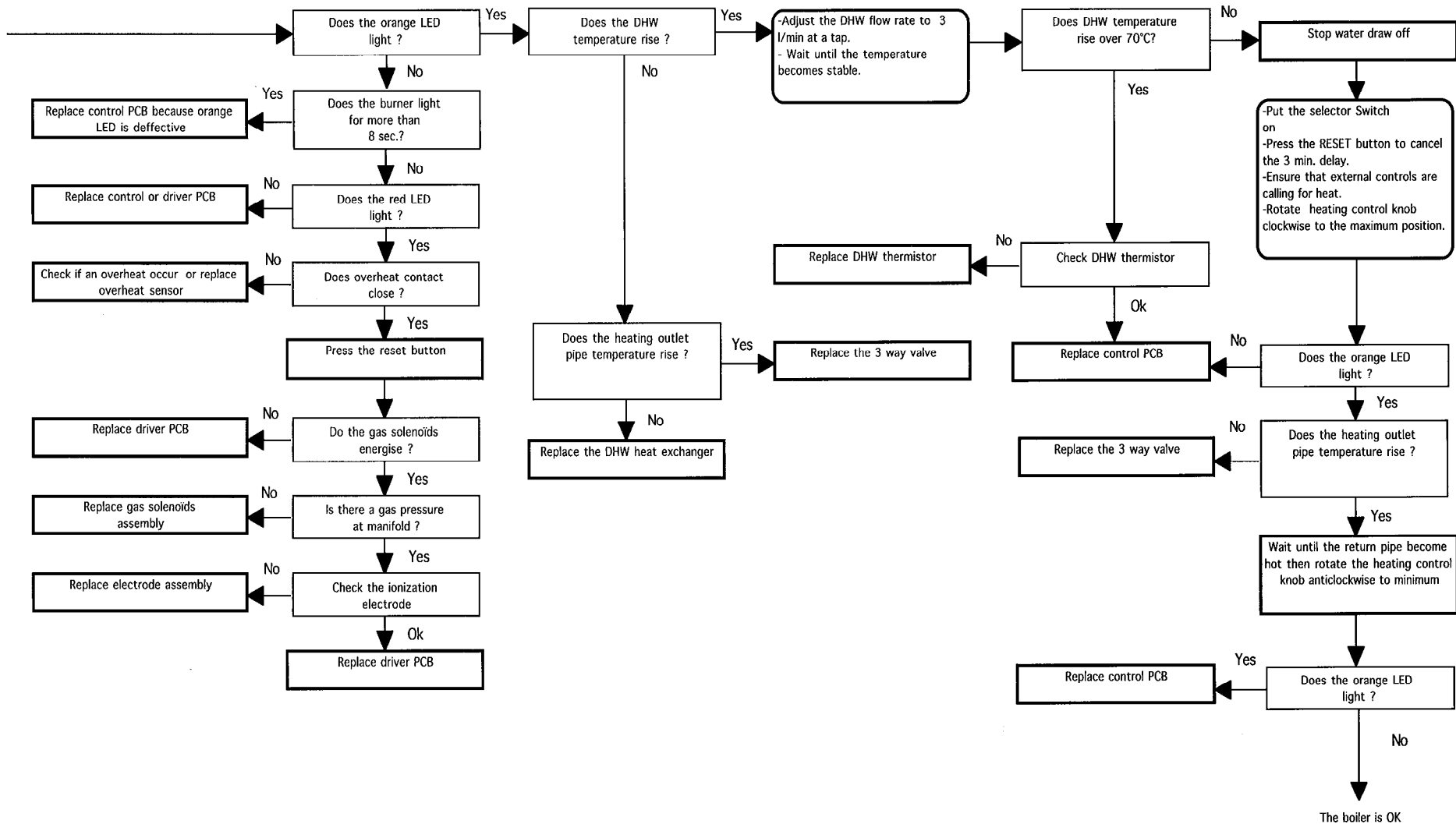
24. Control board

Pull out plastic knob from the front panel and proceed as step 23. Reassemble in reverse order.

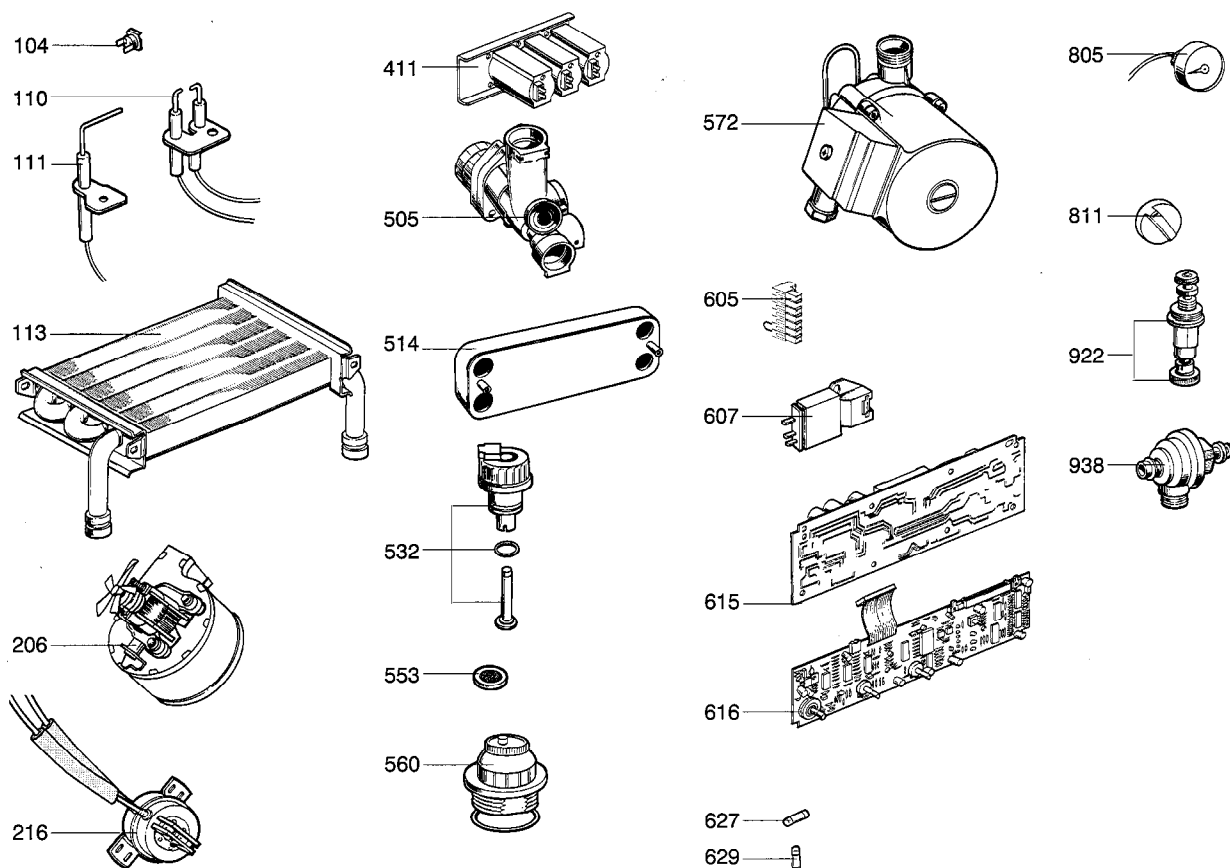
25. Expansion vessel

Remove the casing as step 1 and drain the boiler as step 12 above. Unscrew the connecting tails nuts and lift out the boiler from the wall. Place it on a side on the floor. Remove the expansion vessel bracket retaining screws, disconnect the pipe from the vessel and pull it toward you. Reassemble in reverse order.

FAULT FINDING CHART Part 2



SHORT LIST



Key n°	Description	BRITONY COMBI 80		BRITONY COMBI 100	
		G.C. N°	Manf. Pt. N°	G.C. N°	Manf. Pt. N°
104	OVERHEAT THERMOSTAT 100°C	277783	1010572	277783	1010572
110	IGNITION ELECTRODE ASSY	277788	1002801	277788	1002801
111	IONIZATION ELECTRODE	277789	1002802	277789	1002802
113	HEAT EXCHANGER	277790	1010017		1011136
206	FAN ASSY	277804	1010212		1003011
216	PRESSURE SWITCH KIT	277808	81725	277808	81725
411	SOLENOID VALVE KIT	277812	81432	277812	81432
505	THREE-WAY VALVE	277833	1010000	277833	1010000
514	WATER/WATER HEAT EXCHANGER	277836	1002540		1011164
532	WATER THROTTLE HEAD ASSY	277846	81471	277846	81471
553	WATER FILTER	277854	1007727	277854	1007727
560	AIR SEPARATOR HEAD ASSY	277857	1002653	277857	1002653
572	PUMP 1 SPEED 240V	277862	1010774	277862	1010774
605	CONNECTOR	277872	1010349	277872	1010349
607	IGNITER	379075	1002105.20	379075	1002105.20
615	PRINTED CIRCUIT BOARD OF POWER	277880	1010592	277880	1010592
616	PRINTED CIRCUIT BOARD OF REGULATION	277881	1010047	277881	1010047
627	FUSE 250V 2A - TEMPORIZED	277883	1003456	277883	1003456
629	FUSE 250V 1.25A - TEMPORIZED	277884	1003635	277884	1003635
805	PRESSURE GAUGE		1012561		1012561
811	BLACK KNOB		1011699		1011699
922	TAP HEAD ASSY	366937	67704	366937	67704
938	PRESSURE RELIEF VALVE	277770	76584	277770	76584

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