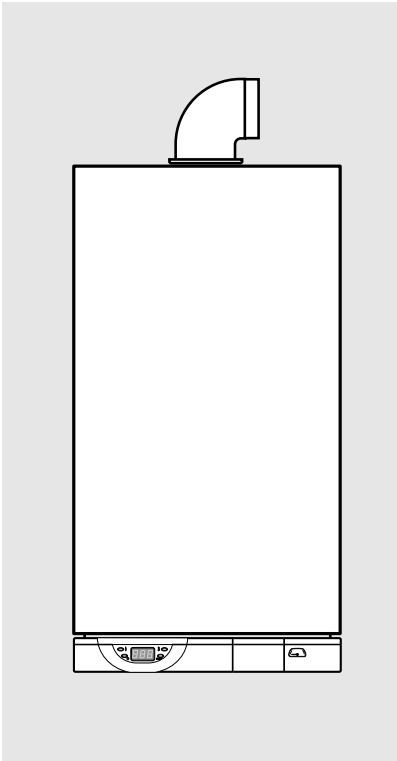
Centora green

CONDENSING WALL-HUNG COMBINATION BOILER

Central Heating and Instantaneous Domestic Hot Water - Fanned Flue system

Installation and Operating Instructions



Centora green 18-24

G.C.N: 47-980-21

PLEASE LEAVE THESE INSTRUCTIONS
WITH THE END-USER

CHAFFOTEAUX & MAURY

These instructions are suitable for 'CENTORA GREEN' boilers :

Do not forget the Log Book!

Chaffoteaux & Maury supports Benchmark, the heating industry code to ensure the correct installation, commissioning and servicing of domestic central heating systems.

To The End User

Make sure you have a completed Log Book for your boiler. This provides a record of the commissioning of your boiler.

It contains important information about your particular installation that may be required by service engineers. The Log Book will also provide contact details for the installer should you need guidance in the use of this appliance or if there are any problems.

As with a car, your boiler will work more reliably and efficiently if regularly serviced. We recommend an annual service check. The service history of the appliance will be recorded in the Log Book.

In the unlikely event of any problems with your boiler or system you should first contact your installer. If your installer cannot resolve the problem he should telephone our national service helpline.

A charge may be made if Chaffoteaux & Maury Service is called out to resolve a non-product related fault.

Your statutory rights are not affected.

TO CONTACT C&M SERVICE, PLEASE CALL THE NATIONAL WARRANTY HELPLINE ON:

0870 243 0224

To The Installer

As part of the commissioning of this appliance it is vital that the Log Book is completed and given to the End User. Please ensure that your customer is aware of the importance of keeping the Log Book safe as a record of the installation and the appliance service history.

Please ensure that your customer is aware of the correct operation of the system, boiler and controls.

CUSTOMER CARE

Chaffoteaux & Maury, 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 the national warranty helpline 0870 243 0224.

Advice on installation or servicing can also be obtained by contacting the C&M 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 invalidated 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 Water Regulations, Water Byelaws Building Regulations, IEE Wiring Regulations, Local Authority Building Standards (Scotland) Regulations and the Safety Document 635 The Electricity at work Regulation. The appliance named below does not contain any asbestos or asbestos products, or mercury derivatives. Additional CFC's have not been used in this product.

The appliance does not contain any potential hazard in relation to the COSHH regulations.

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 where pressures exceed 6 bars a pressure limiting is preferred.

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 ceramic lining, ensure that it is securely wrapped and wash hands after contact.

Contents

CUSTOMER CARE

USER INSTRUCTIONS

This instruction booklet is specifically designed for appliances installed in the United Kingdom

INTRODUCTION

The '**CENTORA GREEN**' is a fully automatic, wall mounted, low water content condensing 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. A circulating pump, expansion vessel, pressure gauge and safety valve are included within the boiler.

The standard horizontal flue kit is suitable for lengths 300 mm minimum to 600 mm maximum and includes an elbow adapter that can be rotated through 360° . The horizontal flue can be extended up to 3 metres using 1 metre flue extension kits, 45° and 90° flue bends are also available as accessories.

INSTALLATION INSTRUCTIONS

1 Description

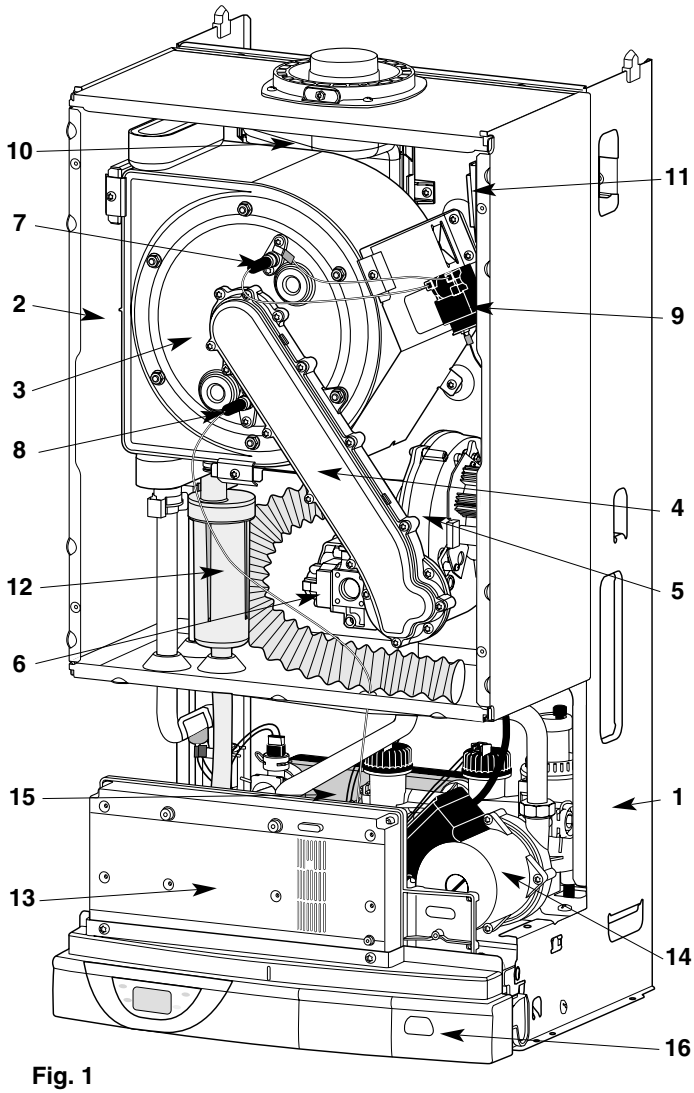


Fig. 1

1 - Steel chassis complete with expansion vessel
2 - Sealed chamber
3 - Burner and heat exchanger assembly
4 - Air/gas connection
5 - 24 V modulating fan
6 - Gas valve
7 - Ignition electrode
8 - Ionisation probe
9 - Ignitor
10 - Combustion products manifold
11 - 24 V transformer
12 - Siphon trap
13 - Electrical box
14 - Pump
15 - Secondary heat exchanger
16 - Pressure gauge
17 - Three way valve
18 - Automatic air separator and automatic vent
19 - Central heating flow switch
20 - Domestic hot water flow switch
21 - Central heating control thermistor
22 - Hot water control thermistor
23 - Overheat sensor

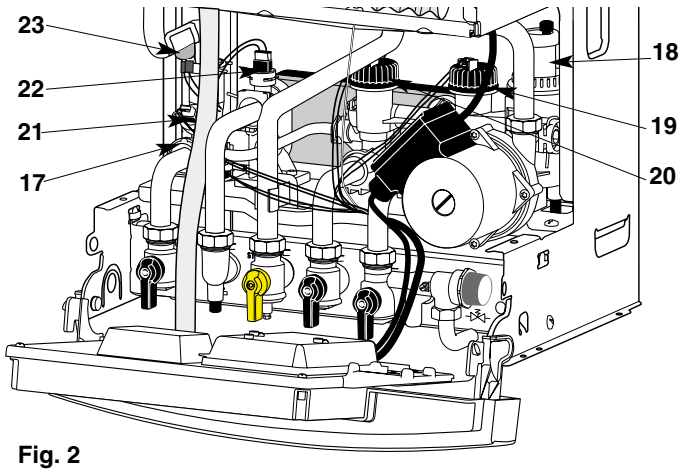


Fig. 2

24 - Display
25 - Domestic Hot Water switch
26 - Green indicator – Domestic Hot Water mode ON
27 - D.H.W. temperature reducing key
28 - D.H.W. temperature increasing key D.H.W. mode indicator
29 - Central Heating switch
30 - Green indicator – Central Heating mode ON
31 - Central Heating temperature reducing key
32 - Central Heating temperature increasing key
33 - Green indicator – Power ON
34 - Orange indicator - Burner ON
35 - Red indicator - Lock out/flame failure
36 - Reset key

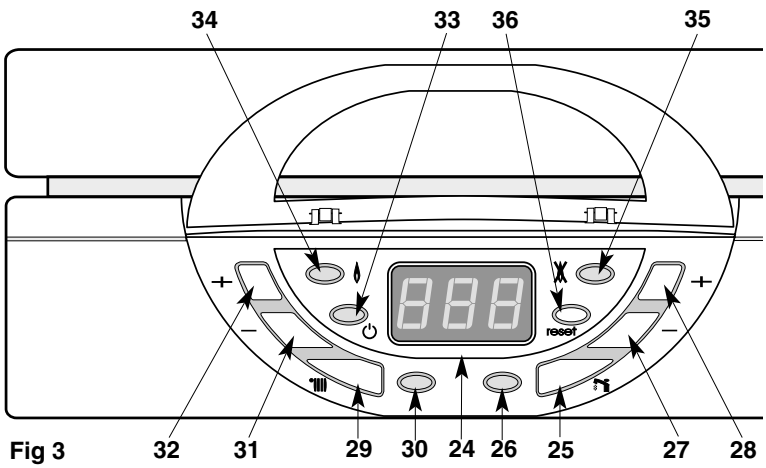
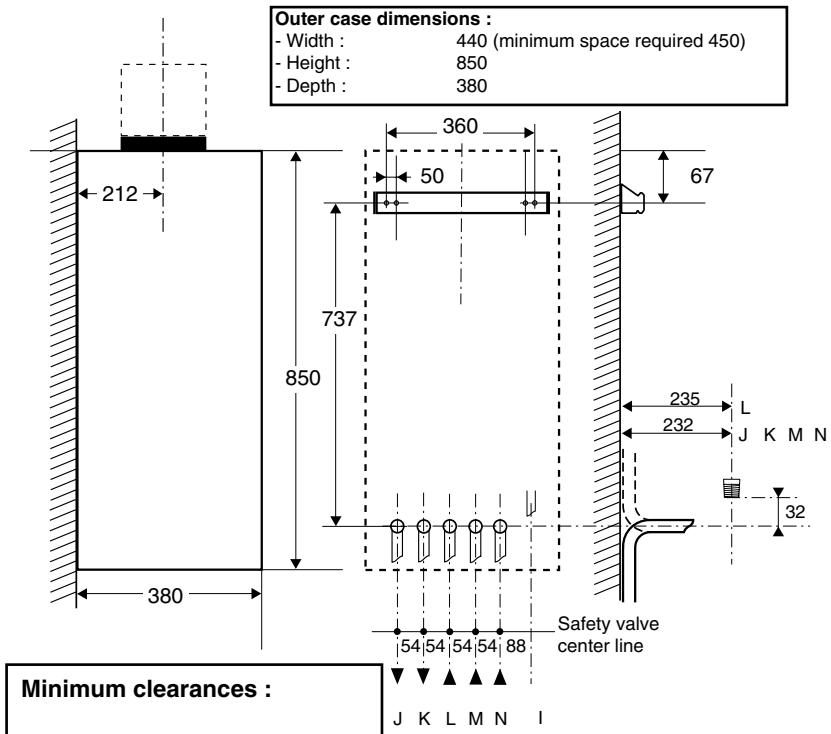


Fig 3

2 Dimensions

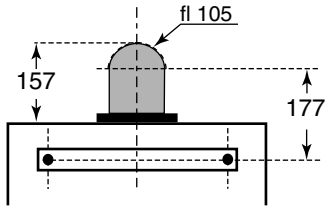


Minimum clearances :

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

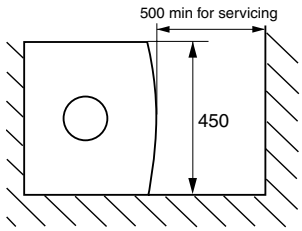
All dimensions in mm

Fig. 4



Type C 13

With packaging : 43 kg



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

3 Hydraulic Data

Pump head available

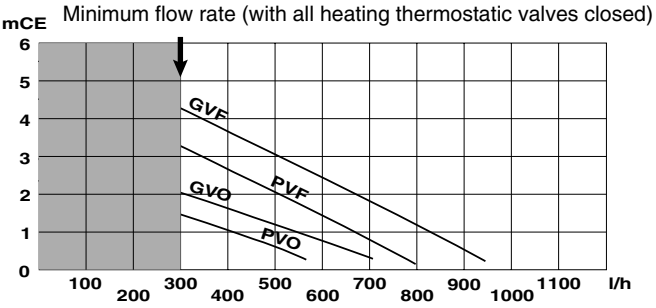
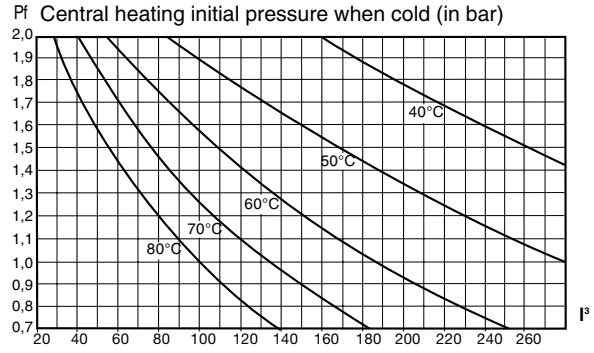


Fig. 5

Pump head chart measured at the outlet of the boiler



System capacity chart

Fig. 6

The boiler comprises a double speed pump and an adjustable by-pass.

The chart (fig. 5) shows the pump head available relating to the flow rate. GVF means high speed by-pass closed, PVF means low speed by-pass closed, GVO means high speed by-pass fully open, PVO means low speed by-pass fully open.

For adjustment procedure, please refer to section 9.

The minimum flow rate to ensure the correct function of the pump, should be over 300 l/h (with all heating thermostatic valves fully closed)

Maximum water capacity of Central Heating system :

The expansion vessel is pre-charged to 0.7 bar (10 lb/in 2).

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.

The minimum initial pressure of the system should be over 0.7 bar (1 to 1.5 bar is recommended).

4 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. A compartment or cupboard may be used provided that it has been purpose-built or modified for the purpose. It is not necessary to provide permanent ventilation for cooling purposes. 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.
Avoid installing the boiler where the air inlet can be polluted by chemical products such as chlorine (swimming pool aera), or ammonia (hair dresser), or alcaline products (launderette)

Flue

Detailed information on flue assembly is contained in the appropriate starter pack.
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 Above an opening, window, etc	300 mm
- C Horizontally to an opening, window, etc	300 mm
- D Below gutters, soils pipes or drain pipes	75 mm
- E Below eaves	200 mm
- F Below balconies or car port roof	200 mm
- G From a vertical drain pipe or soil pipe	150 mm
- H From an internal or external corner	300 mm
- I Above ground roof or balcony level	300 mm
- J From a surface facing the terminal	600 mm
- K From a terminal facing the terminal	1200 mm
- L From an opening in the car port into the dwelling	1200 mm
- M Vertically from a terminal on the same wall	1500 mm
- N Horizontally from a terminal on the same wall	300 mm
- Q Fixed by Ubbink Rolux 4 GM flue terminal	

It may be necessary to protect the terminal with a guard. 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: (020) 7639 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.**

Gas Supply

The gas installation and soundness testing must be in accordance with the requirements of BS 6891.The boiler requires a 22 mm supply. Ensure that the pipe size is adequate for demand including other gas appliances on the same supply.
Combustion system protection
The sulphur level contained in the gas should comply with the european Standards which are :

- maximum 150 mg/m3 for a short period in a year
- average level of 30 mg/m3 during one year

Electrical Supply

The appliance requires an earthed 230V - 50 Hz supply and must be in accordance with current I.E.E. Regulations. 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 a 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.

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:

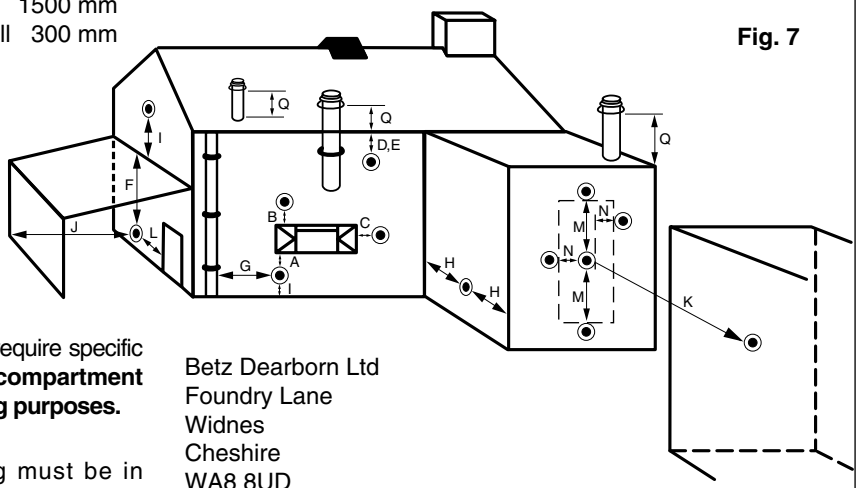


Fig. 7

Betz Dearborn 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.

5 Installing the Boiler

Please check that you are familiar with the installation requirements before commencing work.(section 4)
The installation accessories described in the following list are included in the boiler packaging.
- 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
- 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 locate the position of the hanging bracket and the centre for the flue hole.

Drill and plug the wall and secure the hanging bracket using the screws provided. Remove the boiler from its packaging as shown in fig. 8 and unscrew the 4 screws **A** and remove the casing (Fig. 9).
Place the boiler on the wall on the hanging bracket (Fig. 11).
If required, there is space for all piping to pass behind the boiler. Using Fig. 11 for reference, connect the gas and water pipes and the valves to 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.

Connecting the boiler to the system

- Push in the tabs "**P**" (Fig. 13) on either side of the boiler and pivot the electrical box forward to gain access to the valve connections

- Remove the yellow caps and connect the boiler to the taps using the washers provided in the plastic bag.

4 x fibre washers for the C/H flow and return, hot water outlet and cold water inlet connections

1 x rubber washer "**R**" for gas connection.
Provision must be made to fill and recharge the system pressure. This can be achieved using a filling loop or other methods approved by the local water authority.
Before fitting the tails onto the connecting bracket, please check the correct location of the flow restrictor **L** (Fig.10) on the main inlet.

Safety valve and condensate drains

The pressure relief valve tube is clear silicone. It should terminate below the boiler over a tundish or 22 mm pipe (see **I** Fig. 4) 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.

External termination via condensate siphon
The condensate drainage pipe should have a minimum diameter of 22 mm and the external pipe length should not be more than 3m. The external length should be kept as short as possible to minimize the effect of freezing.

Please refer to **BS 6798:2000**

The system should be carefully checked for leaks, as frequent refilling could cause premature system corrosion or unnecessary scaling of the heat exchanger. The pipe from the siphon 12 (Fig. 1) should be connected to a drain as described in the relevant Brittish regulations.

Pay a special attention to not bend the condensate drain pipe as the flow will be interrupted. Please use exclusively drain pipe material compatible with condensate products. (refer to **BS 6798:2000**)

The condensate flow can reach 2 l/hr; because of the acidity of the condensate products (Approx. Ph2), take care before operation.

Fitting the Horizontal Flue

Attention ! Before starting the boiler, the siphon (12 Fig. 1) must be filled with water. Before fitting the flue terminal onto the boiler, please pour 1/4 litre of water into the exhaust pipe as shown in (Fig. 12).

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

The standard flue supplied with the appliance is suitable for lengths from 300 mm minimum to 720 mm maximum.

This means for rear flueing, the standard kit will accommodate a maximum wall thickness of 600 mm, and for side flueing a maximum wall thickness of 587 mm. This takes into account the minimum appliance side clearances of 5 mm.

If the flue is a side exit installation, then calculate the position of the hole with a slope of 5 mm / metre towards
the boiler from the terminal. The flue should rise up slightly to the terminal in order to allow the condensate back into the boiler.

Attention ! Use only a C&M condensation flue kit.

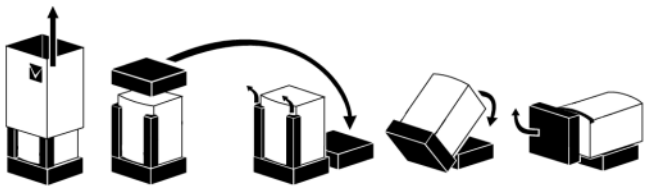


Fig. 8

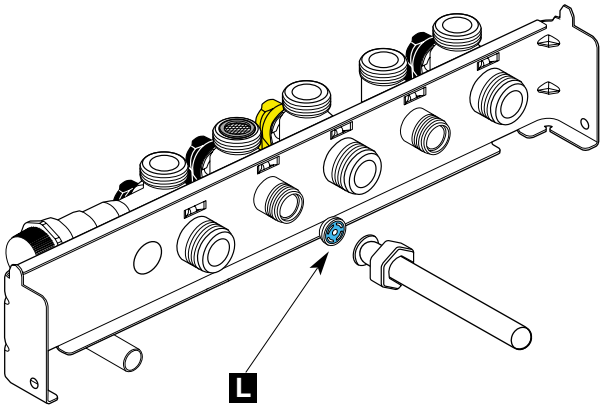


Fig. 10

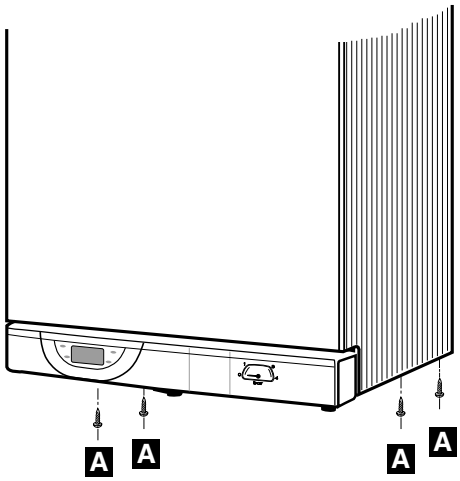


Fig. 9

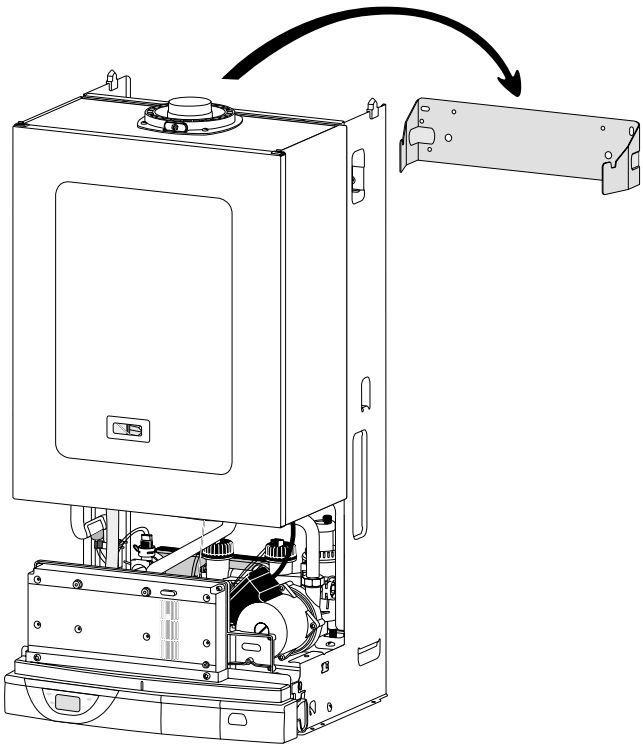


Fig.11

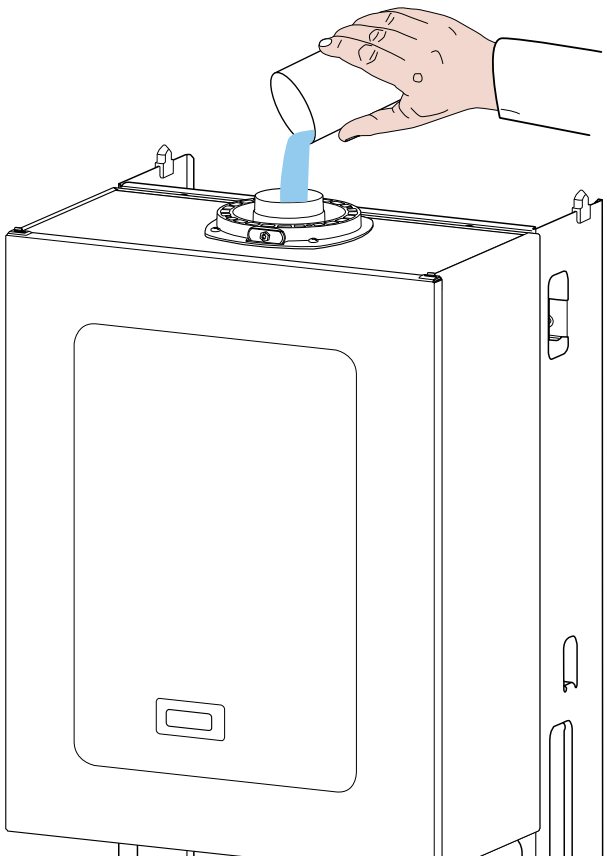


Fig.12

6 Electrical Connections

Making the Electrical Connections

Lower the electrical box to gain access to the electrical connections. Push in the tabs **P** (Fig. 13) on either side of the boiler and pivot the box forward. Undo the two retaining screws **V** , remove the cover and remove the cable clamp. **C** (Fig. 14)

Connect the live and neutral wires to the multipin plug **J1** (Fig. 14) leaving sufficient earth wire to connect to the earthing point **T** (Fig. 14).

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.

If using a room thermostat or other external control, they can be connected in place of the link **S** (Fig. 14) on the multipin Plug.

Note: Use only controls designed for voltage free switching or 24V supply. Do not connect to a 230V supply.

Connect the multipin plug into the socket on the printed circuit board. Secure the cable using the cable clamp and replace the cover. NB The room thermostat options setting can be made before replacing the electrical box cover **1** (Fig.14).

All necessary settings for room thermostat operations are described in Section 9 ADJUSTMENTS AND SETTINGS.

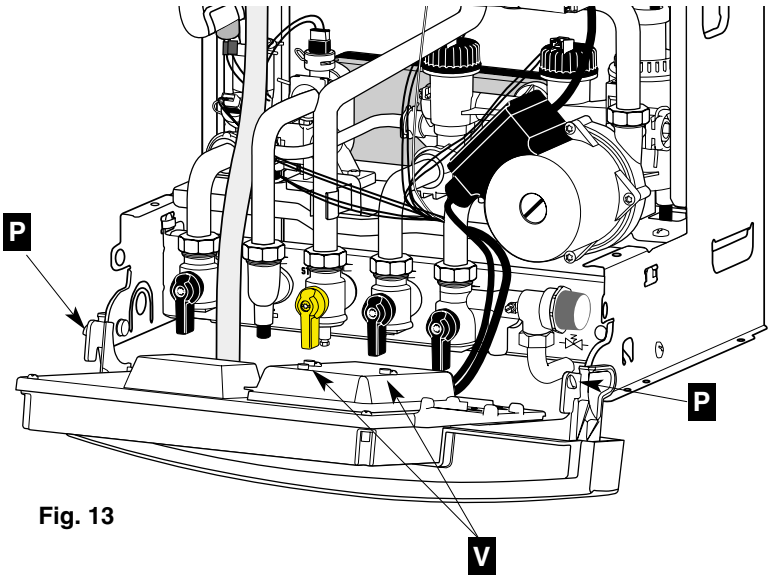


Fig. 13

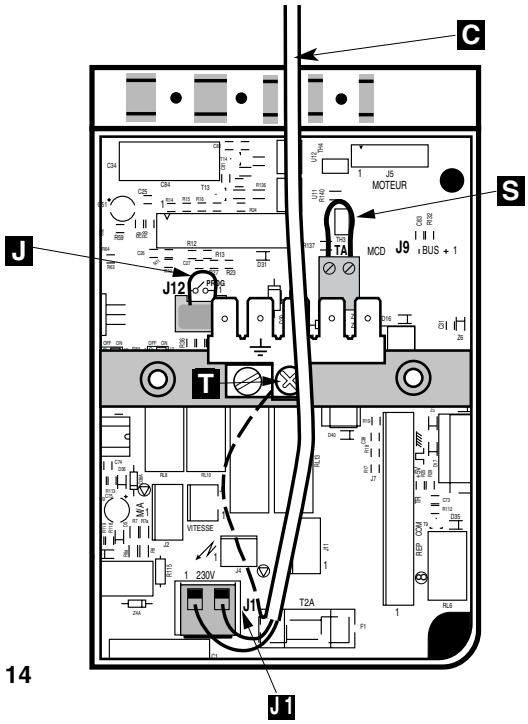


Fig. 14

7 Commissioning and Testing

Pre-commissioning

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

D.H.W.

Open the main cold feed valve **40** (Fig. 15).
Open all hot taps to purge the D.H.W. system.
Check for water soundness.
Check the flow rate at the bath tap is set correctly (see technical data).

Central Heating

Open the flow and return valves on the boiler **37** and **41** (Fig. 15)
Open the automatic air vent **18** (Fig. 2)
Fill the system and vent the radiators.
Set the system pressure and remove the filling loop.
Check for leaks.
Manually check the pump is free to turn.
Switch on the electrical supply.
Press the Central Heating switch **29** (Fig. 3) to switch on the heating mode. Press the '**+**' key **32** (Fig. 3) to set the heating temperature to maximum.
Allow the pump to run for several minutes.
Isolate the electrical supply.
Drain the boiler and check the water filter for installation debris.
Replace the filter and recharge system.

Lighting the Boiler

Connect a gas pressure gauge to the test point **39** (Fig. 21).
Turn on the gas supply and boiler gas tap **39** (Fig. 21).
Ensure the electrical supply is on.
Ensure all external controls are calling for heat.
Press the Central Heating switch **29** (Fig. 3) to switch on the heating mode.
Press the '**+**' key **32** (Fig. 3) to set heating temperature to maximum.
The boiler will light. Allow the boiler to heat the system.
Check the inlet gas pressure (working pressure) while the boiler is operating in D.H.W. mode. (Refer to technical data).
Check the operation of the boiler controls and safety devices. (see the servicing leaflet for details). Set the by-pass (refer to the page 12).
Re-flush the system to remove any dissolved oils and fluxes.
Recharge system pressure and introduce any water treatment as required.

7 Commissioning and Testing (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. 15) 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 300 l/hr. The enclosed charts indicate the residual head of the pump available for the system. The pump fitted on the boiler is a double speed model. (GV = High speed and PV = low speed). The speed setting is described in Section 9. Speed selection is only available in C.H. mode.

Post Commissioning

Ensure the system pressure has been set correctly.
Set all the parameters of the boilers as shown in Section 9 ADJUSTMENTS AND SETTINGS.
Set the boiler thermostat and controls.
Set the programmer to the requirements of the End User.
Set the external controls.
Ensure the Log Book is fully completed with your contact details and all the required details of the installation.

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 clock.
Explain the benefits of annual maintenance by a competent person.
Explain how to register the guarantee.
Ensure the End User countersigns the Log Book to confirm that these demonstrations have been carried out and understood.

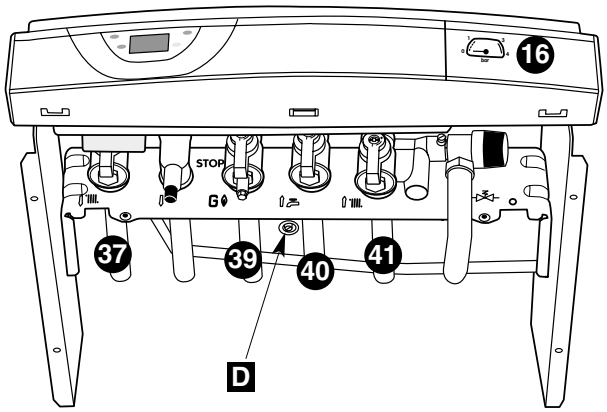


Fig. 15

8 Fitting the Casing

Fitting the casing

Remove the protective film from the casing :

- Position the casing as shown fig. 17
- Slide down the casing and locate the casing holes on the plastic pins on top of the chassis
- Ensure the correct positioning of the casing onto the boiler
- Tighten the 4 screws located at the bottom as shown in Fiig. 16.

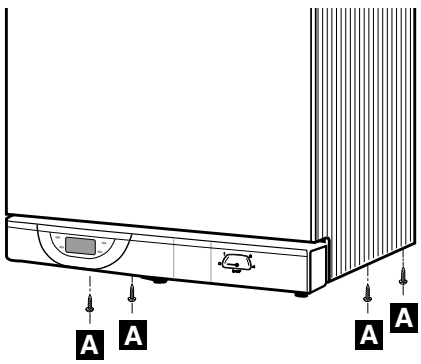


Fig.16

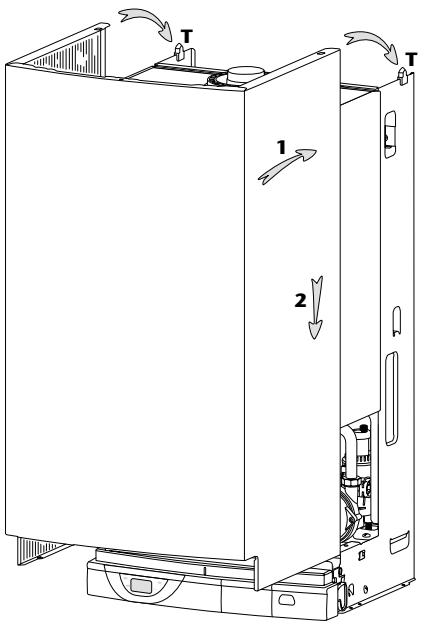


Fig. 17

9 Adjustments and Settings

The boiler is delivered with pre-set values described in menus 3 and 4.
All settings can be changed by the installer or a qualified person. To gain access to the setting keys please, open the front door **P**. (Fig. 18)

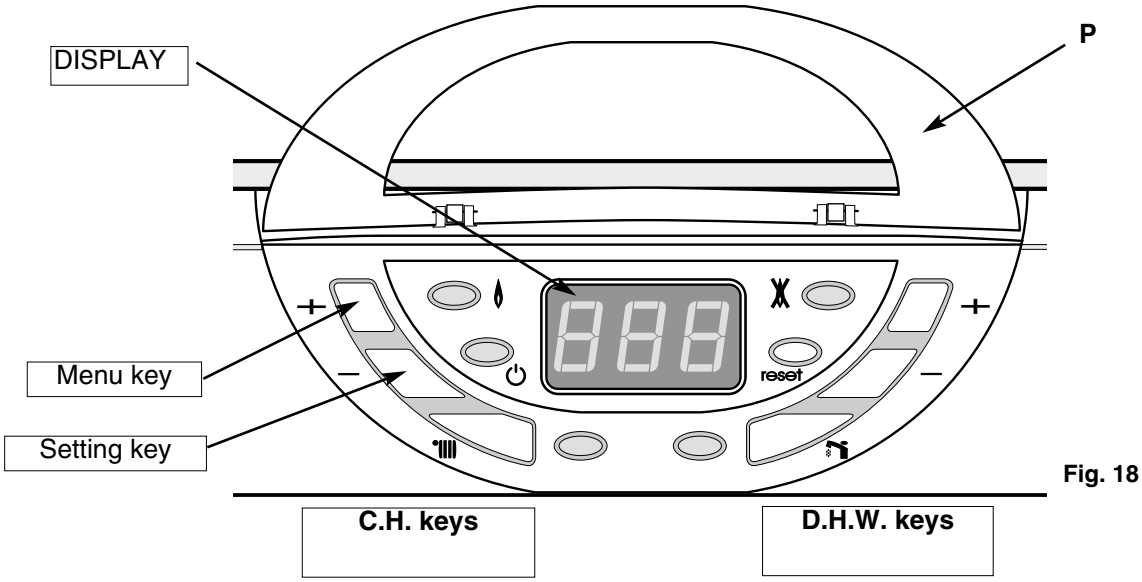


Fig. 18

To gain access to the setting menus press both the ⊖ and ⊕ keys on the D.H.W. side for 5 seconds. (Fig. 18). Menu 1 is displayed.

Changing the menu **:**

Press the ⊕ key (C.H. side) (Fig.18). The menu number is displayed for 3 seconds. Press the + key (C.H. side) again to show the next menu.

***Changing section in a menu (available only for menus 3 and 4)*:**

Press the ⊕ or ⊖ key (D.H.W. side) to change from one section to the next in a menu.

Note : When you arrive at the last section of a menu, pressing the ⊕ key will change to the 1st section. When you are at the first section, pressing the ⊖ key will change to the last section of the menu.

Setting a parameter in a section:

Press the ⊖ key (C.H. side) to enter the modification mode. The 2nd and 3rd digits will flash. Press the ⊕ or ⊖ key (D.H.W. side) to select the correct value then press the ⊖ key (C.H. side) to validate the modification and to exit the setting mode. The 2nd and 3rd digits will stop flashing.

***Recalling the basic configuration*:**

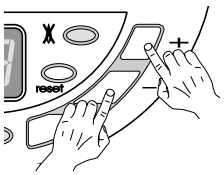
Select menu **3** or **4** then press the ⊕ key (D.H.W. side) and the ⊕ key (C.H. side) for more than 5 seconds. The digits will flash **CM**  for a while to indicate that the operation is completed.

Erasing the default register **:**

Select menu **1** then press both the ⊕ key (D.H.W. side) and the ⊕ key (C.H. side) for more than 5 seconds. The digits will flash **CM**  for a while to indicate that the operation is completed.

Note : To exit the setting mode, leave the boiler for approx. 1 minute, the computer will then switch back to user mode.

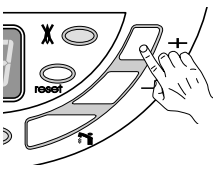
ACTION	CONFIGURATION	DISPLAY



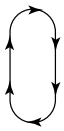
5 ”

Menu - 1 - Default register

Records the last 10 defaults

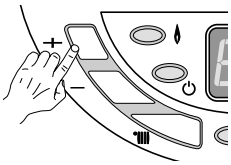


x times



Section	Digit 1	Digit 2 and 3
Last default occured	0.	code from **01** to **99**
Last but one default default occurred	1.	code from **01** to **99**
...	...	code from **01** to **99**
Last default occurred before the previous one	9.	code from **01** to **99**

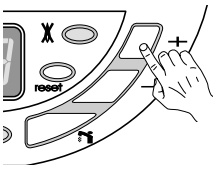
Note **--** is displayed if no default is recorded.



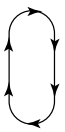
once

Menu - 2 - Boiler conditions

Indicates the conditions or the configurations of the boiler

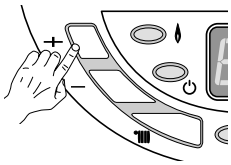


x times

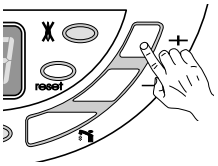


Section	Digit 1	Digit 2 and 3
Software version of display P.C.B.	0.	**10** to **99**
Nominal Power of the boiler (type 18 or 24 kW)	1.	**24**
Flue type	2.	**1** : FF variable speed
Room thermostat is calling for heat	3.	**0** : no
	3.	**1** : yes
Theoretical position of the 3 way valve	4.	**0** : D.H.W.
	4.	**1** : C.H.
DHW flow temperature in °**C**	5.	from **00** to **99**
CH flow temperature in °**C**	7.	from **00** to **99**
Software version of main P.C.B.	9.	**10** to **99**

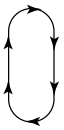
ACTION | CONFIGURATION | DISPLAY



once



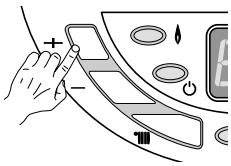
x times



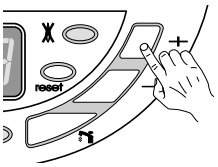
Menu - 3 - Boiler options

Section	Digit 1	Digit 2 and 3	DISPLAY	Factory setting
			-3-	
Under floor heating system	0	**0** : no	0 0	✓
		1 : yes	0 1	

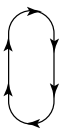
ACTION | CONFIGURATION | DISPLAY



once

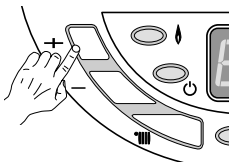
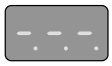
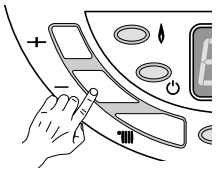
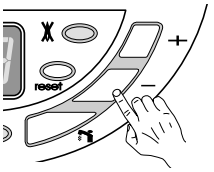
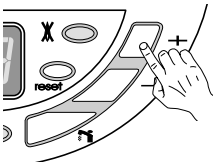
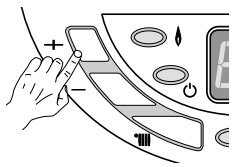


x times



Menu - 4 - Boiler settings

Section	Digit 1	Digit 2 and 3	DISPLAY	Factory setting
			-4-	
Room thermostat operation	0	**0** : Burner only	0 0	
	0	**1** : Burner and pump	0 1	✓
Pump speed	1	**0** : High speed	1 0	✓
	1	**1** : Low speed	1 1	
Pump post circulation duration	2	**0**,0 min	20.0	
From 0 to 5 minutes by step of 0.5 min.	2	**0,5** min	20.5	
	2	**1,0 min**	21.0	✓
	2	**5,0** min	25.0	
Maximum Central Heating flow temperature	4	**50°C**	450	
C.H. anti cycling delay	4	**80°C**	480	✓
TAC	8	**0,0** min	80.0	
From 0 to 5 minutes by step of 0.5 min.	8	**0,5** min	80.5	
	8	**2,5** min	82.5	✓
	8	**5,0** min	85.0	
C.H. maximum output limitation by step of 1 kW For a 24 kW model	9	Power value 8 to 18	918	✓

ACTION	CONFIGURATION	DISPLAY
 press once	**Menu - 5 - Combustion rate control mode**	
wait 5 ”	**Effect** / Combustion rate control mode OFF	**Display** 
 press once	Switching on the combustion rate control mode. Central heating output reaches the maximum power set in menu 4 section 9.	Central heating temperature is displayed in °**C**. The 3 dots indicate that the combustion rate control is ON at maximum output. 
 press once	Switching the combustion rate down to minimum power.	Central heating temperature is displayed in °**C**. The dot indicates that the combustion rate control is ON at minimum output. 
 press once	Switching on the combustion rate to maximum output set in menu 4 section 9.	Central heating temperature is displayed in °**C**. The 3 dots indicate that the combustion rate control is ON at maximum output. 
 press once	Switching off the combustion rate control mode.	

Locking conditions of the combustion rate control mode :

- boiler in stand by mode
- D.H.W. draw off
- room thermostat is not calling for heat
- room thermostat is calling for heat but the maximum temperature is reached
- boiler in lockout mode
- after a reset or if the main supply fails
- end of the mode if the operator exits menu 5
- after 15 minutes if no keys are pressed.

Note : As soon as the combustion rate control mode is on, the Central Heating and Domestic Hot Water keys will become inactive.

9 Adjustments and Settings (continued)

C.H. power output setting :

If you would like to change the setting of C.H. power output to 12 kW, please proceed as follows :
(**Note:** the factory setting is 18 kW and the following explanation refers to menu 4 section 9)

1 - Switch to installer mode, press the ⊕ and ⊖ keys on the D.H.W. side for 5 seconds.
The display shows :
-1- then **0.--** if there is no default in the default register.

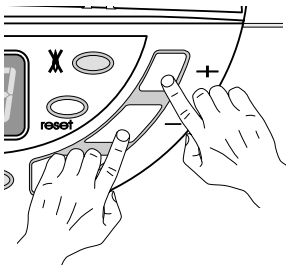
2 - press the ⊕ key (C.H. side) 3 times to gain access to menu *-4-,*
The display shows :
-4- then the value set for section 0 (**00** or **01** respectively (action on burner only or pump and burner)

3 - Select section 9 (Adjustment of C.H. heat output). Press the ⊕ key (D.H.W. side) 9 times.
The display shows :
918 (this corresponds to 18 kW which is the factory setting)
9 = section 9 ***18*** = 18 kW

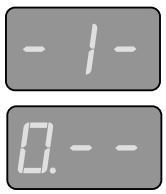
4 - press the ⊖ key (C.H. side) once, the 2nd and 3rd digits will flash together. Then press the ⊖ key (D.H.W. side) to change to 3.0 on the 2nd and 3rd digits.
The display shows :
912 press the - key (C.H. side) to confirm this value. The display will stop flashing. The setting procedure is finished.
To exit from the setting mode, leave the boiler for approx. 1 minute the computer will then return to the user mode.
After programming is completed please close the door. **P** (fig. 17)

Display

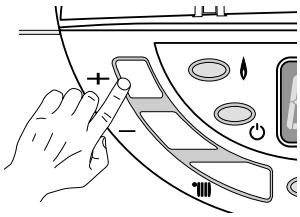
1



5 ”



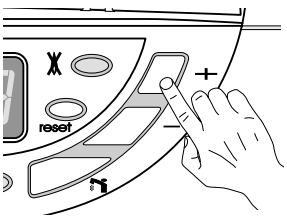
2



x 3

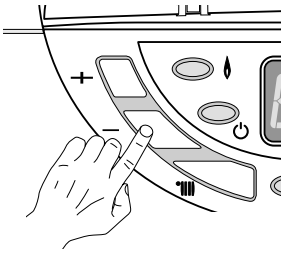
or

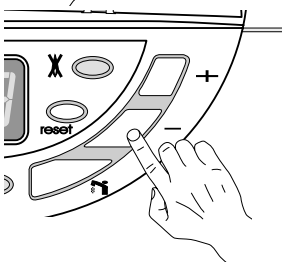
3

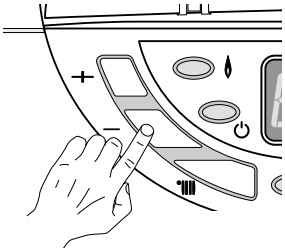


x 9

4







10 Incorrect Operation

In case of a problem, or when the boiler displays a message, the 2 digits will flash.. Please refer to the table below to diagnose the default.

For default 01 and 03, the red indicator **35** will light (Fig.19)

Overheat lock-out

FAULT -01

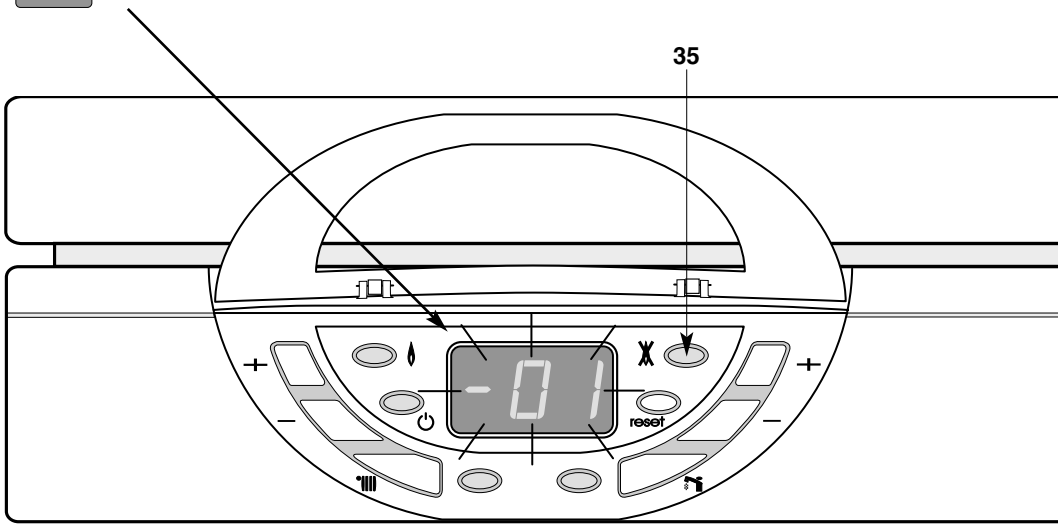


Fig. 19

Code display	Fault description	Operation Information
01	Overheat lock-out	
03	No flame detection	
05		Anti freezing system, pump on
06		Anti freezing system, pump and burner on
07	No water circulation in primary circuit	
08	No water in the primary circuit	
09	Domestic Hot Water thermistor faulty (open circuit)	
10	Domestic Hot Water thermistor faulty (short circuit)	
11	Central Heating thermistor faulty (open circuit)	
12	Central Heating thermistor faulty (open circuit)	
18		Attempt to re-light
20	Wiring problem	
23	Fan speed too low	
24	Fan control system defective	
29	Three way valve blocked in C.H. mode	
31	Communication problem with the display P.C.B.	
32	Communication problem with the main P.C.B.	

11 Gas Conversion

If the boiler is not set for the gas type, conversion kits are available. To convert the boiler, please use originally Chaffoteaux & Maury parts and proceed as is mentioned in the instruction manual provided with the conversion kit.

12 Control Panel

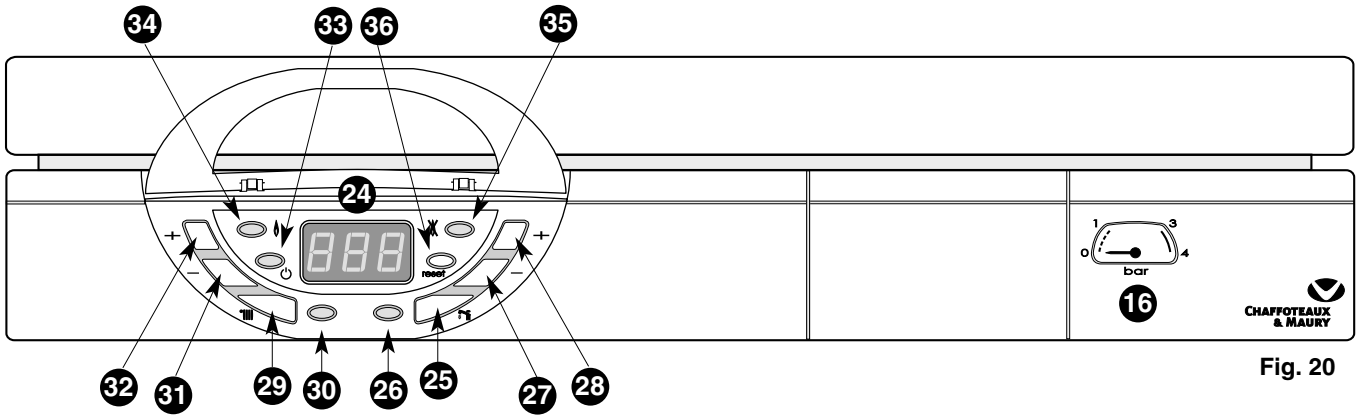


Fig. 20

Control panel (Fig. 20)

16.- Pressure gauge

24.- Display

25.- Switch for Domestic Hot Water mode

26.- Green indicator Heating Domestic Hot Water mode ON

27.- Key to reduce the Domestic Hot Water temperature

28.- Key to rise up the Domestic Hot Water temperature

29.- Switch for Central Heating mode

30.- Green indicator: Central Heating mode ON and **RESET** (Reset button)

31.- Key to reduce the Central Heating temperature

32.- Key to increase the Central Heating temperature

33.- Green indicator - Power ON

34.- Orange indicator - Burner ON

35.- Red indicator - Lock out/flame failure

36.- **Reset** button

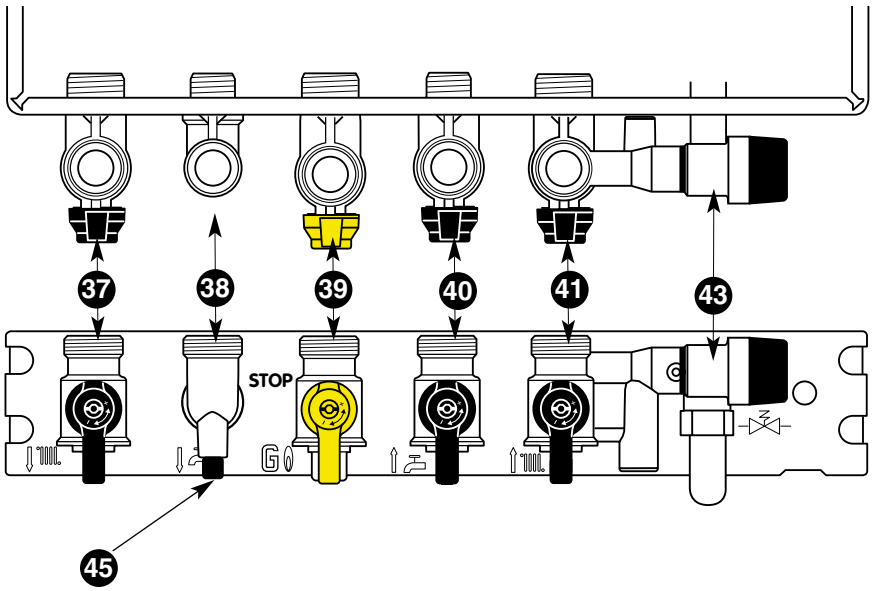


Fig. 21

Connecting bracket (Taps shown in the open position) (Fig. 21)

37 : Central heating flow isolating valve

38 : Domestic Hot Water outlet

39 : Gas service tap

40 : Water service tap

41 : Central Heating return isolating valve

43 : Central Heating pressure relief valve

45 : D.H.W. drain screw

13 How to Use

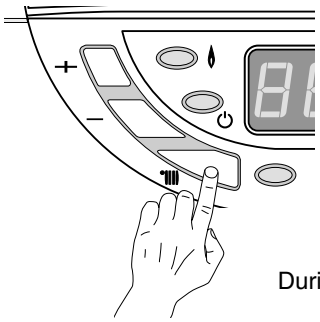
Switching on

1. Check that the pressure in the central heating system is above 0.7 bar and below 1.5 bar with the pressure gauge **16** (Fig.20)
2. Check that the gas service tap is opened at the gas meter and the main power is on. Green indicator ⏻ (Power ON) **33** (Fig.20).
3. Open the gas tap **39** (Fig.21).

The boiler is now ready to use.

Attention ! If the boiler has been off for a long period of time without working, some air in the gas pipe can hinder the first attempts to ignite. (please refer to section 18 (Incorrect Operation)

Switching on the Central heating



Press the key **29**, the green indicator **30** (Fig.20) light and the display will show the Heating flow temperature. 

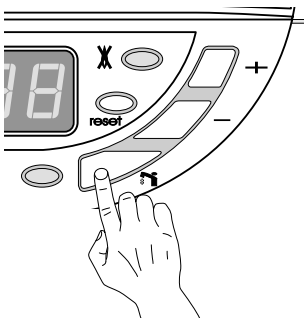
Keys **31** ⊖ and **32** ⊕ (Fig.20) allow the temperature to be adjusted as required in the Central Heating system depending on the weather conditions.

- press ⊕ to increase the temperature when the weather is cold
- press ⊖ to reduce the temperature when the weather is fair

During the temperature setting operation the display will flash.

If the room thermostat is calling for heat, a dot will be displayed at the bottom of the 3rd digit

Switching on the Domestic Hot water



Press the key **25**, the green indicator **26** (Fig.20) will light :

<u>If there is no water demand</u>

the display will show the following graphic 

<u>During draw off</u>

a square made of 4 digits will move clockwise on the display 

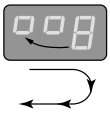
Keys **27** ⊖ and **28** ⊕ (Fig.20) allow the temperature to be adjusted as required for the Domestic Hot Water flow. During the temperature setting operation the display will flash.

Note : The configuration of the C.H. system can generate some gravity effect when the boiler is set to the D.H.W. mode only. It may result in a temperature rise of the heating pipes close to the boiler (or eventually a radiator). To avoid this, it is possible to close the heating flow isolating tap **37 (**Fig.21) during the summer period (Central Heating switched off) Don't forget to open it before switching on the Central Heating mode again.

Switching on the Domestic Hot Water and the Central Heating together

Press the key **29** the green indicator **30** (Fig.20) will light.
Press the key **25** the green indicator **26** (Fig.20) will light.

<u>If there is no water demand</u> the display will show the heating flow temperature 

<u>During draw off</u> a square made of 4 digits will move clockwise on the display 

13 How to Use (continued)

Stand by mode  A fixed digit at the centre of the display and the green indicator **33** **(**Fig.20) will light.

Putting the boiler in stand-by mode and anti-freeze system. :

Press the and keys, **25** and **29** (Fig.20) to switch off both the D.H.W. and the C.H. mode. The green indicators **30** and **26** (Fig.20) will go out.

During the duration of the stand by mode, an automatic anti-sticking system will activate the pump for 1 minute and operate the 3 way valve every 23 hours. The stand-by mode will disable the anti-freeze function of the room thermostat (if fitted). To leave the room thermostat anti-freeze system operative, please leave the Central Heating mode on.

The boiler is equipped with an automatic anti freeze system which is permanently on.

If the Central Heating temperature decreases below 7°C, the pump will start.

If the Central Heating temperature decreases below 4°C, the pump and the burner will start.

Turn off the boiler

- Press the and keys, **25** and **29** to (Fig.20) switch off both the D.H.W. and the C.H. mode. The green indicators **30** and **26** (Fig.20) will go out.
- Switch off the main electrical supply
- Shut off the gas service tap **39** (Fig. 21)

Note : In this condition, the **anti-freeze** system is inoperative.

14 Maintenance

As with a car, your boiler will work more reliably and efficiently if regularly serviced. We recommend an annual service check. The service history of the appliance will be marked in the Log Book.

15 Guarantee

The manufacturer's guarantee is valid for 12 months from the date of installation. 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.

16 Practical Information

Pump anti-sticking device

When the boiler is switched on, an automatic anti-sticking system will activate the pump for 1 minute and operate the 3 way valve every 23 hours. This is a normal function.

Precaution to avoid freezing

We recommend you to contact your installer or local service centre for further information.

• **D.H.W. system**

Turn off the mains cold water supply and drain the boiler :

- Open a hot water tap
- Unscrew the cold water inlet tail
- Drain the water from the boiler with the D.H.W. drain screw **45** (Fig. 21)

• **C.H. system**

Chose one of the following solution :

- 1) Drain the Central Heating system completely.
- 2) Protect the Central Heating system with anti freeze chemical products and periodically check the concentration
- 3) Leave the Central Heating mode switched on and set the room thermostat to its anti-freeze mode (between 5 and 10°C)
- 4) Leave the boiler in stand-by mode, the anti-freeze device will activate the pump and the burner if necessary.

17 Gas Conversion

This appliance is suitable for Natural gas or L.P.G. Any gas conversion must be made by a competent person.

18 Incorrect Operation

Fault	Cause	Solution
The boiler doesn't start	No gas, no water or no electricity	Control gas, water and electrical supply, fuses…
	Air in the gas pipe	Follow the procedure in section 7
		Set up the room thermostat
Red indicator illuminates	Room thermostat switched off	Wait for a few minutes Press the reset button **36** (Fig.21) the red L.E.D. goes out and the boiler attempts to re-light. If the red indicator illuminates frequently, please call your localfaîtes service centre.
Noises in the C.H. system	Air is present in the C.H. system or. system pressure is insufficient.	Purge the system of air and increase the system pressure (section 7)
Radiators rise in temperature During summer season	Gravity effect in the C.H. system	Close the C.H. flow isolating valve. Don't forget to open it again before you switch on the Central Heating.

If these solutions do not cure the fault, call a qualified professional

19 Technical Data

Model	Centora green 18-24	
Appliance category	II 2H3P	
Gross heat input C.H. max	20.9 kW	71,290 Btu/h
Gross heat input D.H.W. max	27.8 kW	94,800 Btu/h
Heat output C.H. 50°/30° max	19.5 kW	66,550 Btu/h
Heat output C.H. 80°/60° max	18 kW	61,430 Btu/h
Heat output D.H.W. max	24 kW	80,910 Bth/h
C.H. operating temperature	80°C max	25°C min
C.H. circuit pressure min operating	0.7 bar	10 lb/in^2
C.H. circuit pressure max operating	2.5 bar	36.3 lb/in^2
D.H.W. flow rate ΔT 30°C	12 l/min	2.66 gal/min
D.H.W. flow rate ΔT 35°C	10.3 l/min	2.29 gal/min
Cold water mains pressure min operating	0.5 bar	7.25 lb/in^2
Cold water mains pressure max operating	10 bar	145 lb/in^2
Flow limiter rate	8 l/min	
Compartment ventilation	not required	
Natural gas G20		
Gas rate C.H. max	1.98 m^3/h	70 ft^3/h
Gas rate D.H.W. max	2.65 m^3/h	93 ft^3/h
Gas rate C.H. & D.H.W. min	0.87 m^3/h	31 ft^3/h
Gas valve restrictor diameter	5.55 mm	
Propane L.P.G. G31		
Gas rate C.H. max.	1.46 kg/h	27 ft^3/h
Gas rate D.H.W. max.	1.94 kg/h	36 ft^3/h
Gas rate C.H. & D.H.W. min	0.64 kg/h	12 ft^3/h
Gas valve restrictor diameter	4.15 mm	
Safety discharge	3 bar	43.5 lb/in^2
Expansion vessel - Pre-charge pressure	0.7 bar	9.4 lb/in^2
Net capacity at 3 bar in litres	5.44	
Adjustable by-pass		
Electrical characteristics		
Supply	230V~	
Consumption	150W	
Protection	IP4 XD	
Fuse F1	2 A	
Fuse F2	1.25 A	
Fuse F3	0.315 A	
Fuse F4	0.250 A	
External controls	24V~	

Chaffoteaux & 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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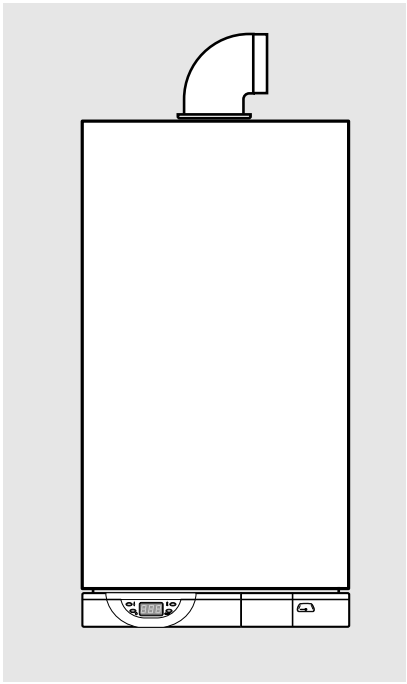
CHAFFOTEAUX & MAURY

MAINTENANCE AND SERVICE GUIDE

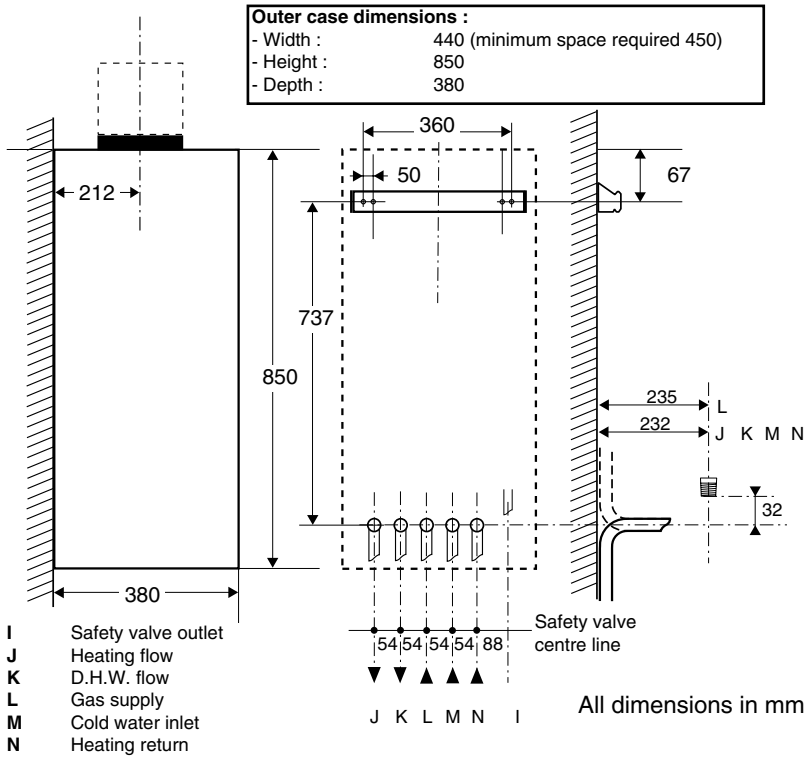
Centora green

Fanned Flue Condensing Wall Hung Combination Boiler Central Heating and Instantaneous Domestic Hot Water

Dimensions



Flue types:
C 13: horizontal



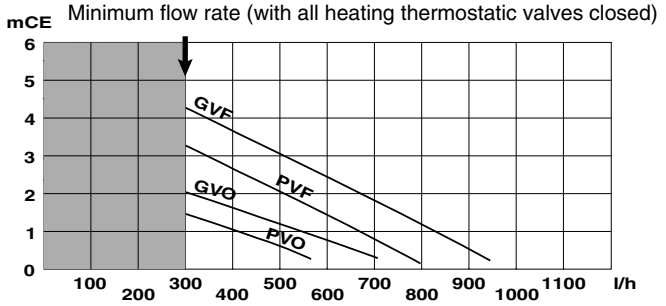
Technical Data

Gross heat input C.H. max	9.2 to 20,9 kW
Gross heat input D.H.W. max	9.2 to 27.8 kW
Heat output C.H. 50°C/30°C max	8.3 to 19.5 kW
Heat output C.H. 80°C/60°C max	8 to 18 kW
Heat output D.H.W. max	8.3 to 24 kW
C.H. operating temperature	80°C max
C.H. circuit pressures Min operating	0.7 bar
C.H. circuit pressures Max operating	2.5 bar
D.H.W. flow rates ΔT30°C	12 l/min
D.H.W. flow rates ΔT35°C	10.3 l/min
Cold water mains pressures Min operating	0.5 bar
Cold water mains pressures Max operating	10 bar
Flow limiter rate	8 l/min
Safety discharge	3 bar
Expansion vessel - Pre-charge pressure	0.7 bar
Nett capacity at 3 bar in litres	5.44
Supply	230 V~
Consumption	150 W
Protection	IPX4D
Fuse F1/F2/F3/F4	2 A/1.25 A/0.315 A/0.250 A
External controls	24 V~

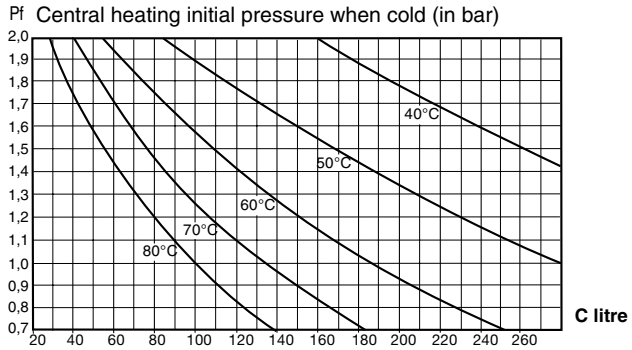
Natural Gas G20	
Gas rate C.H. max	1.98 m³/h
Gas rate D.H.W. max	2.65 m³/h
Gas rate C.H. & D.H.W. min	0.87 m³/h
Gas valve restrictor diameter	5.55 mm
Propane L.P.G. G31	
Gas rate C.H. max.	1.46 kg/h
Gas rate D.H.W. max.	1.94 kg/h
Gas rate C.H. & D.H.W. min	0.64 kg/h
Gas valve restrictor diameter	4.15 mm

Pump and Expansion Vessel Characteristics

Pump head available



GV F= high speed by-pass closed
GVO = high speed by-pass open
PV F= low speed by-pass closed
PVO = low speed by-pass open

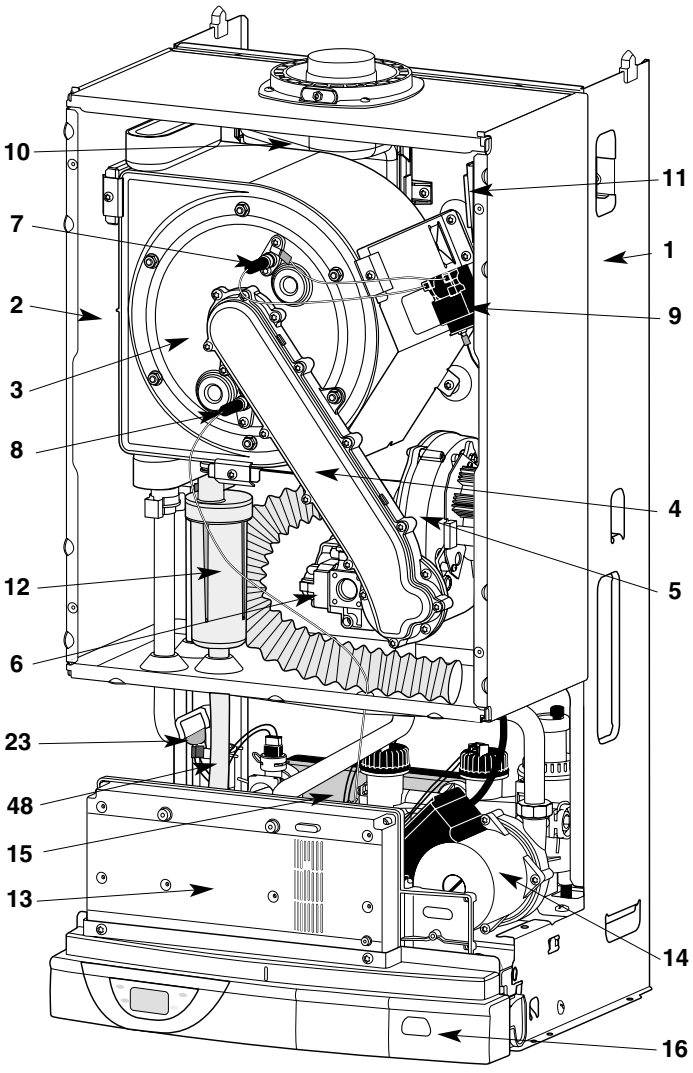


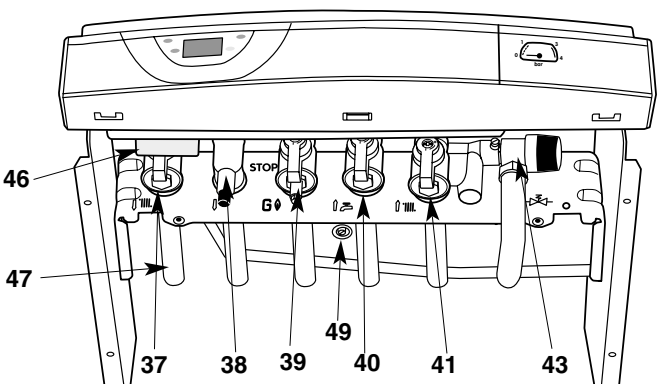
System capacity chart

Note : The system initial pressure should be over the following value :

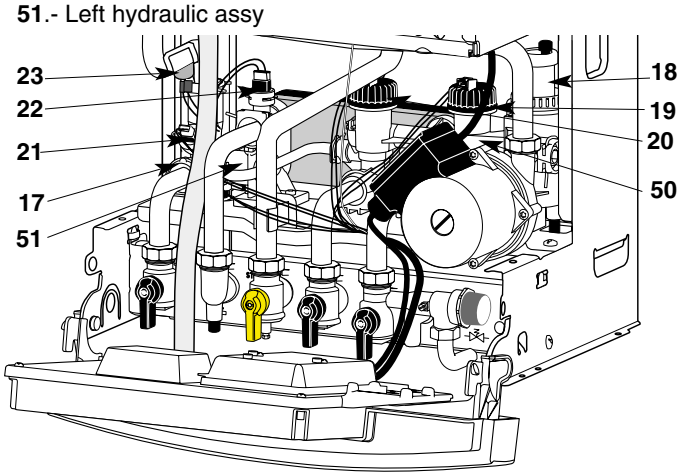
$$\frac{\text{System static height (in metre)}}{10} + 0.7 = \text{Initial pressure (in bar)}$$

Components Location



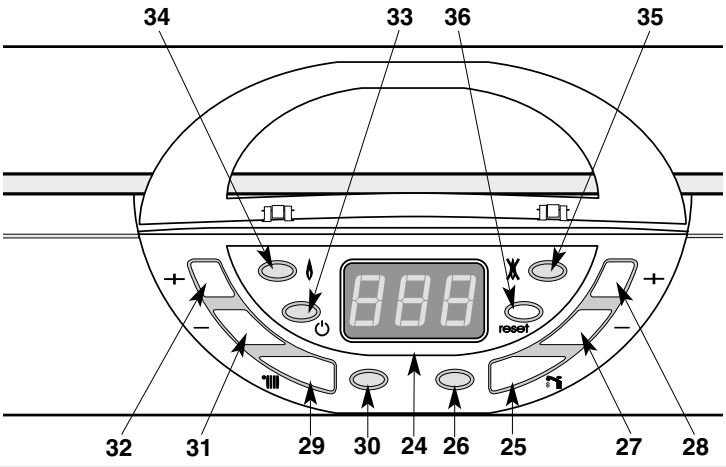


1.- Steel chassis complete with expansion vessel (not visible)
2.- Sealed chamber
3.- Burner and heat exchanger assembly
4.- Air/gas connection
5.- 24 V modulating fan
6.- Gas valve
7.- Ignition electrode
8.- Ionisation probe
9.- Ignitor
10.- Combustion products manifold
11.- 24 V transformer
12.- Siphon
13.- Electrical box
14.- Pump
15.- Secondary heat exchanger
16.- Pressure gauge
17.- Three way valve
18.- Automatic air separator and automatic vent
19 - Central Heating flow switch
20.- Domestic Hot Water flow switch
21.- Central Heating control thermistor
22.- Domestic Hot Water control thermistor
23.- Overheat sensor
37.- Central Heating flow isolating valve
38.- Domestic Hot Water outlet
39.- Gas service tap
40.- Water service tap
41.- Central Heating return isolating valve
43.- Central Heating pressure relief valve
46.- User instructions
47.- Connecting tails (x5)
48.- Condensate drain
49.- Adjustable by-pass
50.- Right hydraulic assy
51.- Left hydraulic assy



FUNCTIONING

Control Panel



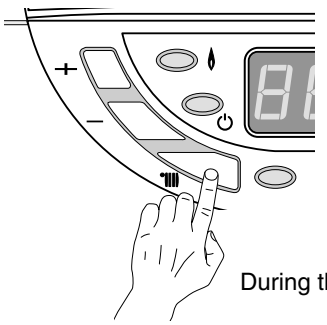
24.- Display
25.- Domestic Hot Water switch
26.- Green indicator – Domestic Hot Water mode ON
27.- D.H.W. temperature reducing key
28.- D.H.W. temperature increasing key D.H.W. mode indicator
29.- Central Heating switch
30.- Green indicator – Central Heating mode ON
31.- Central Heating temperature reducing key
32.- Central Heating temperature increasing key
33.- Green indicator – Power ON
34.- Orange indicator - Burner ON
35.- Red indicator - Lock out / flame failure
36.- Reset key

Switching On

1. Check that the pressure in the Central Heating system is above 0.7 bar and below 1.5 bar with the pressure gauge **16**.
2. Check that the gas service tap is open at the gas meter and the main power is on. Green indicator ⏻ Power ON **33**.
3. Open the gas tap **39** (Fig.21).
   The boiler is now ready to use.

Attention ! If the boiler has been off for a long period of time, some air in the gas pipe can hinder the first attempts to ignite. (please refer to Section 19 Incorrect Operation).

Switching on Central Heating



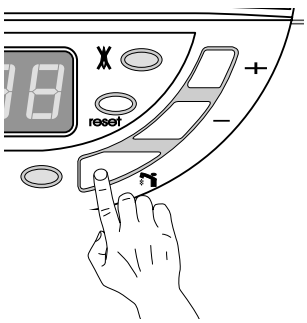
Press the key **29,** the green indicator **30** will light and the display will show the Central Heating flow temperature.

Keys **31** ⊖ and **32** ⊕ allow the temperature to be adjusted as required for the Central Heating system depending on the weather conditions.

- press ⊕ to increase the temperature when the weather is cold
- press ⊖ to reduce the temperature when the weather is fair

During the temperature setting operation the display will flash.
If the room thermostat is calling for heat, a dot will be displayed at the bottom of the 3rd digit

Switching on the Domestic Hot water



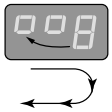
Press the key **25** the green indicator **26** will light :

<u>If there is no water demand</u>

the display will show the following graphic

<u>During draw off</u>

a square made of 4 digits will move clockwise on the display



Keys **27** ⊖ and **28** ⊕ allow the temperature to be adjusted as required for the Domestic Hot Water flow. During the temperature setting operation the display will flash.

Note : The configuration of C.H. system can generate some gravity effect when the boiler is set in D.H.W. mode only. It may result in a temperature rise of the heating pipes close to the boiler (or eventually a radiator). To avoid this, it is possible to close the heating flow isolating tap **37** (Fig. 21) during the summer period (Central Heating switched off). Don't forget to open it again before you switch on the Central Heating mode again.

Switching On the Domestic Hot Water and Central Heating Together

Press the key **29**, the green indicator **30** will light.
Press the key **25**, the green indicator **26** will light.

If there is no water demand the display will show the heating flow temperature 

During draw off a square made of 4 digits will move clockwise on the display 

Stand-by Mode  A fixed digit at the centre of the display and the green indicator **33 will** illumi nate.

Putting the boiler in stand-by mode and anti-freeze system. :
Press the key **29** and the key **25**, to switch off both the D.H.W. and C.H. mode. The green indicators **30** and **26** will go off.

During the duration of the stand by mode, an automatic anti-sticking system will activate the pump and 3 way valve for 1 minute every 23 hours.
The stand by mode will disable the anti-freeze function of the room thermostat (if fitted). To leave the room thermostat anti-freeze system operative, leave the Central Heating mode on.
The boiler is equipped with an automatic anti-freeze system which is permanently on.
If the Central Heating temperature falls below 7°C, the pump will start.
If the Central Heating temperature falls below 4°C, the pump and the burner will start.

Turn Off the Boiler

- Press the key **29** and the key **25**, to switch off both the D.H.W. and C.H. mode. The green indicators **30** and **26** will go off.
- Switch off the main electrical supply
- Shut off the gas service tap **39** (Fig. 21)

Note : In this condition, the **anti-freeze** system is inoperative.

Domestic Hot Water Mode

To be able to supply Hot Water, the D.H.W. mode should be ON. Press the key **25**, the green indicator **26** will illuminate.
If there is no water demand, the display will show the following graphic 
During draw off, a square made of 4 digits will move clockwise on the display  .

Keys **27** ⊖ and **28** ⊕ allow the temperature to be adjusted as required for D.H.W. flow. During the temperature setting operation, the display will flash.
When a tap or a shower is turned on, a flow of mains water above 2 l/min, will activate the D.H.W. flow switch **20**, the 3 way valve **17** will move to the D.H.W. position. The pump can now circulate primary water heated by the main exchanger through the secondary heat exchanger. The C.H. flow switch checks that the flow rate is over 4 l/min to allow the ignition sequence to begin.
The fan on the gas valve assembly starts and when the lighting speed is reached (detected by a hall effect sensor) the 2 safety solenoids 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 **34** will light and the regulation system will be able to adjust the gas rate according to the heat load. If a flame is not detected, after 10 seconds, the security solenoids close together and shut off the gas. The red lockout indicator bulb **35** will light. Press the reset button to re-attempt ignition.
The Domestic Hot Water temperature is controlled by the Hot Water control thermistor **22** and the Central Heating control thermistor **21**. The system anticipates 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 3 minutes to maintain temperature and 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 Central Heating, the C.H. mode should be switched ON.

Press the key **29**, the green indicator **30** will light, and the display will show the Heating Flow temperature.

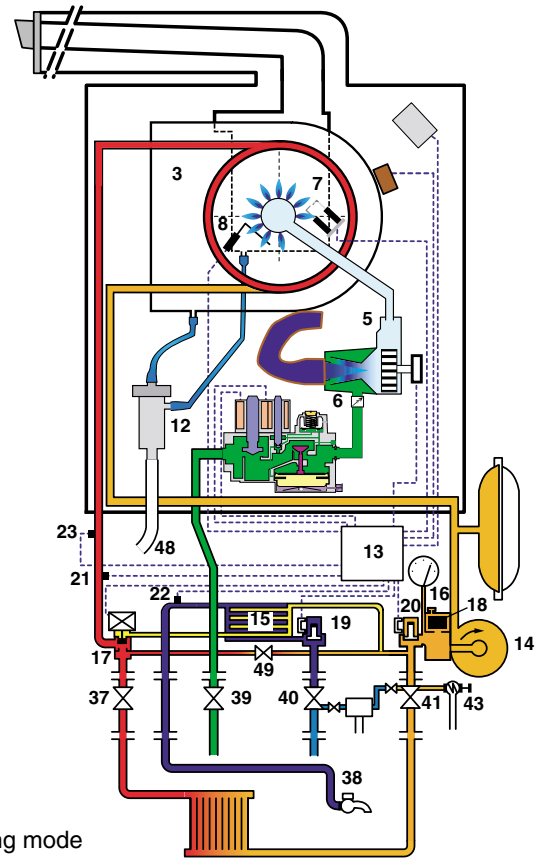
Keys **31** ⊖ and **32** ⊕ allow the temperature to be adjusted as required for the Central Heating system relating to the weather conditions. During the setting operation, the display will flash.

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 the Central Heating flow rate is over 4 l/min, the Central Heating flow switch operates, allowing the ignition sequence to begin. The fan on the gas valve assembly starts and when the lighting speed is reached (detected by a hall effect sensor) the 2 safety solenoids 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 **34** will light and the regulation system will be able to adjust the gas rate according to the heat load. If a flame is not detected after 10 seconds, the security solenoids close together and shut off the gas. The red lockout indicator bulb **35** will light. Press the reset button to re-attempt ignition.
The Central Heating flow temperature is controlled by the Central Heating control thermistor **21**. The boiler has been designed to minimise cycling and will not attempt to re-light for at least 3 min. after the boiler thermostat has been satisfied. When the room thermostat is satisfied, the burner will switch off and the pump will run for a further 3 minutes before stopping.
Note:
It is possible to override the 3 minute delay by pressing the reset button **36**.

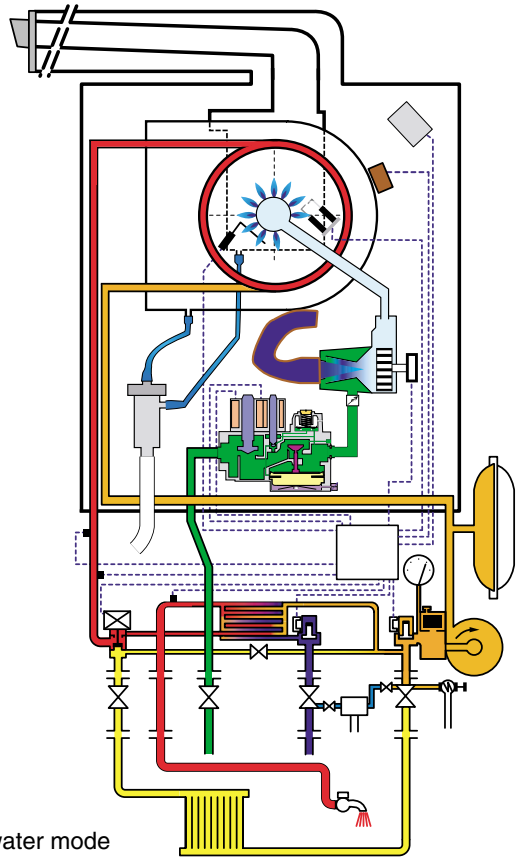
Lockout Procedure
Flame extinguishes:
When the ionisation probe **8** fails to detect flame presence. The orange indicator bulb **34** will go off and a lighting cycle starts. If a flame is not detected, within 10 seconds, the safety solenoids will close. The red lockout indicator **35** illuminates and the display shows the error code. The pump runs and the 3 way valve **17** stays in its position. After a few seconds, it will become possible to reset the boiler by pressing the reset button **36**.

Overheat Detection :
If a temperature over 100°C is detected in the primary circuit by the sensor **23**, the safety solenoids close and the fan stops. The orange bulb **34** will go off and the pump will run for a further 3 minutes. It is possible to reset the boiler when the primary circuit temperature falls below 76°C.

CENTORA GREEN FUNCTIONAL DIAGRAM



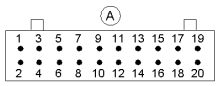
Heating mode



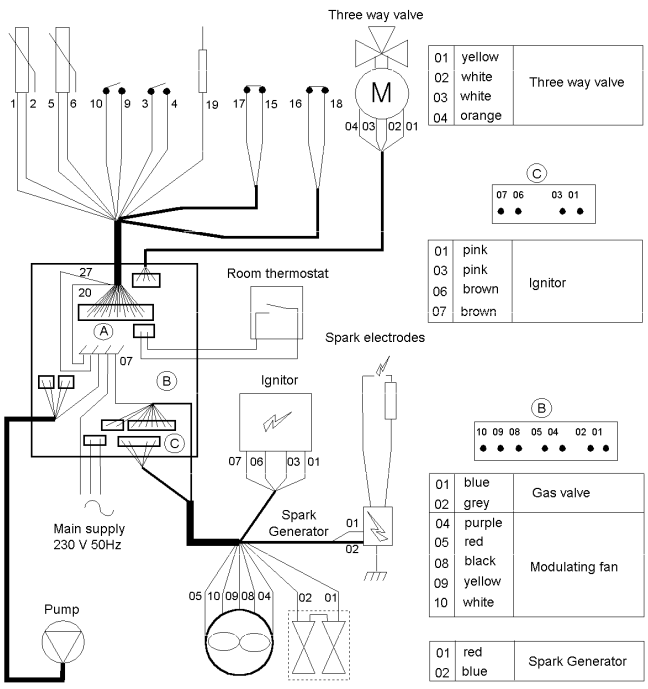
Hot water mode

ELECTRICAL WIRING

DIAGRAM



1 2	purple purple	Central heating control termistor
3 4	orange orange	Central heating flowswitch
5 6	green green	Domestic hot water control termistor
7 8		
9 10	black black	Domestic hot water flowswitch
11 12		
13 14		
15 17	brown brown	Overheat sensor
16 18	red red	Fumes overheat sensor
19	white	Ionisation probe
20 27	green / yellow	Mass



01 02 03 04	yellow white white orange	Three way valve

C
07 06 03 01

01 03 06 07	pink pink brown brown	Ignitor

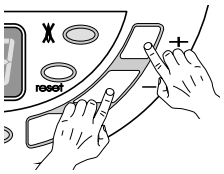
B
10 09 08 05 04 02 01

01 02	blue grey	Gas valve
04 05 08 09 10	purple red black yellow white	Modulating fan

01 02	red blue	Spark Generator

1309276 /

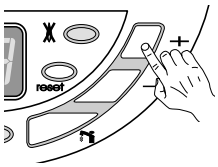
ACTION	CONFIGURATION	DISPLAY



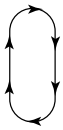
5 ”

Menu - 1 - Default Register

Records the last 10 defaults

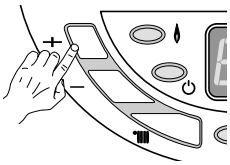


x times



Section	Digit 1	Digits 2 and 3	DISPLAY
			- 1 -
Last default occured	0.	code from **01** to **99**	0. _ _
Last but one default occurred	1.	code from **01** to **99**	1. _ _
...	...	code from **01** to **99**	
Last default occurred before the previous one	9.	code from **01** to **99**	9. _ _

Note **--** is displayed if no default is recorded.

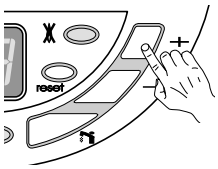


once

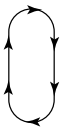
Menu - 2 - Boiler Conditions

Indicates the conditions or the configurations of the boiler

- 2 -

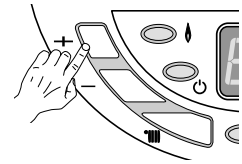


x times

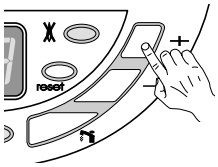


Section	Digit 1	Digit 2 and 3	DISPLAY
Software version of display P.C.B.	0.	**10** to **99**	0. _ _
Nominal Power of the boiler (type 18 or 24 kW)	1.	**24**	1.24
Flue type	2.	**1** : FF variable speed	2. 1
Room thermostat is calling for heat	3.	**0** : no	3. 0
	3.	**1** : yes	3. 1
Theoretical position of the 3 way valve	4.	**0** : D.H.W.	4. 0
	4.	**1** : C.H.	4. 1
D.H.W. flow temperature in °C	5.	from **00** to **99**	5. _ _
C.H. flow temperature in °C	7.	from **00** to **99**	7. _ _
Software version of main P.C.B.	9.	**10** to **99**	9. _ _

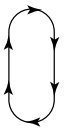
ACTION | CONFIGURATION | DISPLAY



once



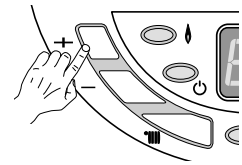
x times



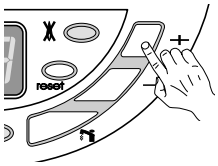
Menu - 3 - Boiler Options

Section	Digit 1	Digits 2 and 3	DISPLAY	Factory setting
Under floor heating system	0	**0** : no	0 0	✓
		1 : yes	0 1	

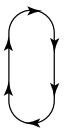
ACTION | CONFIGURATION | DISPLAY



once

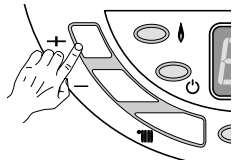
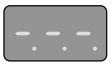
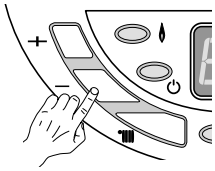
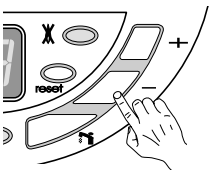
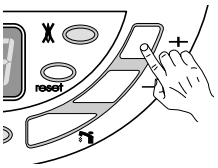
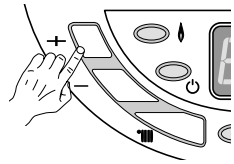


x times



Menu - 4 - Boiler Settings

Section	Digit 1	Digits 2 and 3	DISPLAY	Factory setting
Room thermostat operation	0	**0** : Burner only	0 0	
	0	**1** : Burner and pump	0 1	✓
Pump speed	1	**0** : High speed	1 0	✓
	1	**1** : Low speed	1 1	
Pump post circulation duration	2	**0.0 min**	2 0.0	
From 0 to 5 minutes by step of 0.5 min.	2	**0.5 min**	2 0.5	
	2	**1.0 min**	2 1.0	✓
	2	**5.0 min**	2 5.0	
Maximum Central Heating flow temperature	4	**50°C**	4 5 0	
C.H. anti cycling delay	4	**80°C**	4 8 0	✓
TAC	8	**0.0 min**	8 0.0	
From 0 to 5 minutes by step of 0.5 min.	8	**0.5 min**	8 0.5	
	8	**2.5 min**	8 2.5	✓
	8	**5.0 min**	8 5.0	
C.H. maximum output limitation by step of 1 kW For a 24 kW model	9	Power value 8 to 18	9 18	✓

ACTION	CONFIGURATION		DISPLAY
 press once	**Menu - 5 - Combustion Rate Control Mode**		
	Effect	**Display**	
wait 5 ”	Combustion rate control mode OFF		
 press once	Switching on the combustion rate control mode. Central Heating output reaches the maximum power set in menu 4 section 9.	Central Heating temperature is displayed in °C. The 3 dots indicate that the combustion rate control is ON at maximum output.	
 press	Switching the combustion rate down to minimum power.	Central Heating temperature is displayed in °C. The dot indicates that the combustion rate control is ON at minimum output.	
 press once	Switching on the combustion rate to maximum output set in menu 4 section 9.	Central Heating temperature is displayed in °C. The 3 dots indicate that the combustion rate control is ON at maximum output.	
 press once	Switching off the combustion rate control mode.		

Locking conditions of the combustion rate control mode :

- boiler in stand by mode
- D.H.W. draw off
- room thermostat is not calling for heat
- room thermostat is calling for heat but the maximum temperature is reached
- boiler in lockout mode
- after a reset or if the main supply fails
- end of the mode (if operator leaves menu 5)
- after 15 minutes if no keys are pressed.

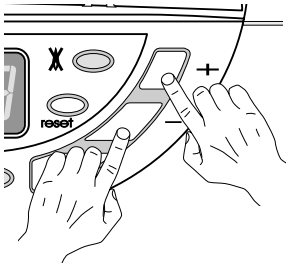
Note: As soon as the combustion rate control mode is on, the Central Heating and Domestic Hot Water keys will become inactive.

C.H. Power Output Setting :

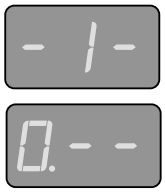
If you would like to change the setting of the C.H. power output to 12 kW, please proceed as follows :
Note: the factory setting is 18 kW and the following explanation refers to menu 4 section 9)

Display

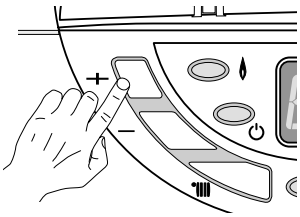
1 - Switch to installer mode, press both the ⊕ and ⊖ keys (D.H.W. side) for 5 seconds.
The display shows :
-1- then **0.--** if there is no default in the default register.



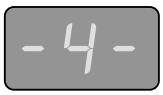
5 ”



2 - press the menu key ⊕ (C.H. side) 3 times to gain access to menu *-4-*,
The display shows :
-4- then the value set for section 0 (**00** or **01** respectively action on burner only or pump and burner)

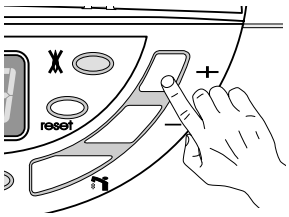


x 3



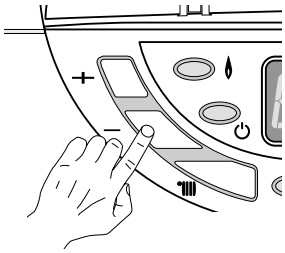
or

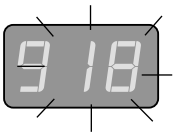
3 - change to section 9 (Adjustment of C.H. Power Output). Press the ⊕ (D.H.W. side) 9 times.
The display shows :
918 (which corresponds to the 18 kW which is the factory setting)
9 = section 9 ***18*** = 18 kW

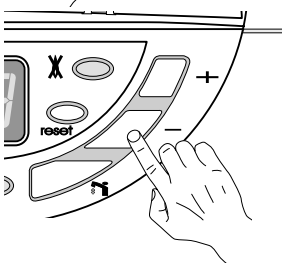


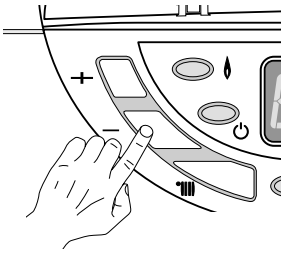
x 9

4 - press the ⊖ key (C.H. side) once, the 2nd and 3rd digits flash together.
Press the ⊖ key (D.H.W. side) to change to 3.0 on the 2nd and 3rd digits.
The display shows :
912 press the setting key to confirm this value. The display stops flashing.
Setting procedure is finished.
To exit the setting mode, leave the boiler for approx. 1 minute, the computer will revert to the user mode.
After programming is completed please close the door **P** (fig. 17)









REGULATION

Temperature regulation for both C.H. and D.H.W. circuits are controlled by 2 thermistors. The C.H. knob allows the temperature to be adjusted between 35°C and 85°C. The D.H.W. temperature is limited to 60°C. The D.H.W. and C.H. thermistors are identical and interchangeable.

Resistance value are

- 5000 Ω	at	25°C
- 2631 Ω	at	40°C
- 620 Ω	at	80°C
- 255 Ω	at	110°C

FLOW SWITCHES

Flow in both D.H.W. and Central 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 the flow rates listed below :

Flow rate threshold :

D.H.W.	120 l/h ±20 l/h
C.H.	250 l/h ±20 l/h

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, condition and usage. In general, once a year should be adequate.

It is the law that any service work must be carried out by a competent person such as your local Chaffoteaux Service Centre, British Gas or other CORGI registered personnel in accordance with the current Gas Safety (Installation and Use) regulations.

Attention! The air/gas connection pipe between the gas valve and the burner should never be opened. The seal can only be checked in the factory.

The service schedule should include the following operations :

- 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
- Clean the electronic board of the fan located on the gas valve assembly and the different transformers in the sealed chamber.
- Check combustion chamber insulation panels for damage
- Check the condition of the lighting and ionisation electrodes
- Clean the burner (Never use a metallic brush which can damage the stainless steel)
- Clean the heat exchanger (Never use a metallic brush which can damage the stainless steel)
- Clean the siphon and pay attention to the acidity of its contents
- Check the correct seal of the drain system
- Clean the gas and water filters
- Check the expansion vessel charge pressure
- Clean and check the operation of the safety valve
- Check the correct seal of the flue system.

Additional procedures that may be necessary :

- Check the burner pressure and the gas flow rates
- Check, clean and replace components as necessary
- Carry out combustion test utilising the test points in the flue turret

Suggested sequence for servicing :

Before disconnecting or removing any part, isolate the gas and electricity supplies. Ensure that the appliance is cool, and be careful of the condensate products content in the siphon which are acid.

(For detail, please see section on Parts Removal and Replacement)

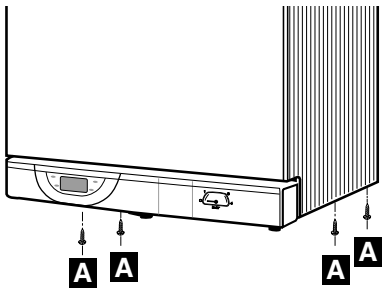
Preliminary checks

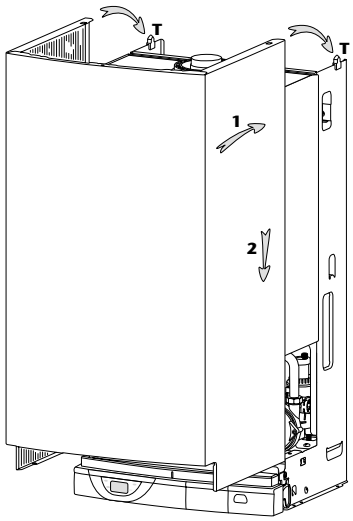
- Remove the outer case
- Check the system pressure is at least 0.7 bar when cold
- Check the modulation of the gas valve in D.H.W. mode by progressively reducing the flow rate at a tap.
- Check that the burner is extinguished fully when both solenoids are closed and the fan is off.
- Test ionisation functions and check that lockout occurs by turning off the gas tap.
- Whilst the boiler is operating, check the operation of the Central Heating flow switch by closing the Central Heating flow valve and the by-pass screw (turn clockwise) noting the number of turns so that it may be reset correctly.
- Check the correct flood of condensate in the siphon which is transparent.

REMOVAL AND REPLACEMENT OF PARTS

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

1. Outer Case
Remove the four screws in the base of the boiler and lift free. When replacing,





carefully place the casing on lugs **T** located on the top edge of chassis.

2. Sealed Chamber Front Panel
Unscrew the four self tapping screws securing the sealed chamber front panel and lift off of the corner locating lugs. Reassemble in reverse order.

3. Combustion Chamber Front Panel and Air/Gas Connection
Carry out steps 1 and 2 as above. Unscrew the three screws securing the air/gas connection pipe onto the gas valve assembly. Disconnect both the ionisation and lighting electrodes from their wiring. Unscrew the six nuts to release the combustion chamber front panel and pull the assembly towards you. Reassemble in reverse order.

4. Ionisation Probe
Carry out steps 1 and 2 as above. Disconnect the ionisation probe from its wiring. Loosen the 2 screws and pull it out from the combustion chamber front panel. Replace the gasket provided. Reassemble in reverse order.

5. Ignition Electrode
Carry out steps 1 and 2 as above. Disconnect the ignition electrode from its wiring. Loosen the 2 screws and pull it out from the combustion chamber front panel. Replace the gasket provided. Reassemble in reverse order.

6. Burner
Carry out steps 1, 2 and 3 as above. Remove the four Philips screws retaining the burner. Pull it out with care to avoid any damage to the ceramic panel protecting the combustion chamber front panel. Replace the burner gasket. Reassemble in reverse order.

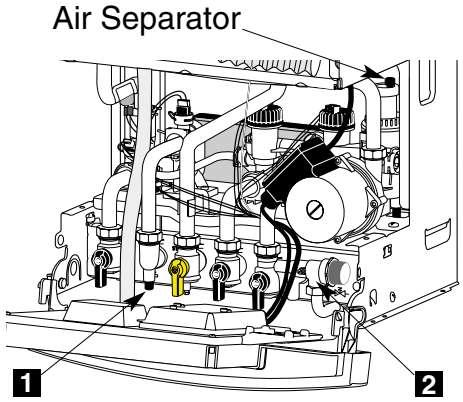
7. Gas Vale Assembly
Carry out steps 1 and 2 as above. Unscrew the three screws securing the air/gas connection pipe onto the gas valve assembly. Disconnect the connectors from the gas solenoids and fan. Loosen the gas pipe nut. Unscrew the six nuts to release the combustion chamber front panel and pull the assembly towards you. Replace the gas filter before fitting the full assembly back into the boiler.

8. Fan Assembly
Carry out all operations mentioned in step 7. Unscrew the three screws securing the air/gas connection pipe onto the gas valve assembly. Separate the gas valve assembly and the venturi from the fan assembly by loosening the two hexagonal head screws. Reassemble in reverse order and replace the necessary gaskets.

9. Gas Section
Carry out all operations mentioned in step 7. Unscrew the three screws securing the air/gas connection pipe onto the gas valve assembly. Separate the gas valve assembly and the venturi from the fan assembly by loosening the two hexagonal head screws. The venturi and the gas section can be separated by loosening the two screws located at the top of the gas valve. Replace all necessary gaskets before reassembling in reverse order.

10. Venturi in the Gas Section
Carry out all operations mentioned in step 7. Unscrew the three screws securing the air/gas connection pipe onto the gas valve assembly. Separate the gas valve assembly and the venturi from the fan assembly by loosening the two hexagonal head screws. The venturi and the gas section can be separated by loosening the two screws located at the top of the gas valve. Replace all necessary gaskets before reassembling in reverse order.

11. Drain Down
2 drain points are located on the boiler.



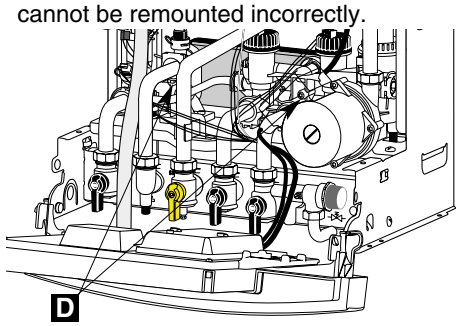
1 = D.H.W. circuit drain point
2 = Central Heating circuit drain point

12. Water Filters (D.H.W. and C.H.)
The D.H.W. filter ensures a seal between the connecting bracket and the pipe to the D.H.W. 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 remove the filter. Reassemble in reverse order.

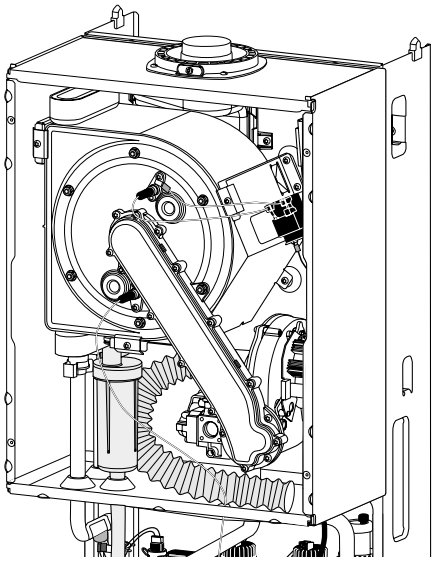
13. Flow Switches
Drain boiler as in step 12. Disconnect the electrical plug, turn the top cover anti-clockwise, remove the O-ring and the brass piston. Reassemble in reverse order.

14. 3-Way Valve
Drain boiler as in step 12. Remove the three 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.

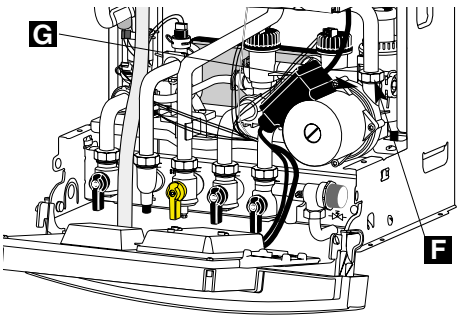
15. Secondary Heat Exchanger
Drain both circuits of the boiler as in step 12. Unscrew the 2 fixing screws **D** and remove the D.H.W. exchanger from the front. Prior to reassembly, check that the 4 gaskets are correctly positioned. The heat exchanger is designed so that it cannot be remounted incorrectly.



16. Main Heat Exchanger
Carry out steps 1 and 2 as above. Drain down the boiler as in step 12. Unscrew three screws securing the air/gas connection pipe onto the gas valve assembly. Disconnect the ionisation and ignition electrodes from their wiring. Unscrew the six nuts to release the combustion chamber front panel and pull the assembly towards you. Remove the two clips for the pipes to the main exchanger and pull down the pipes. Unscrew the three screws located at the bottom, top left and at the right with the retaining system to be able to pull the main heat exchanger towards you.
Reassemble in reverse order taking care about the location of the gasket on the fumes collector and replace the necessary gaskets.

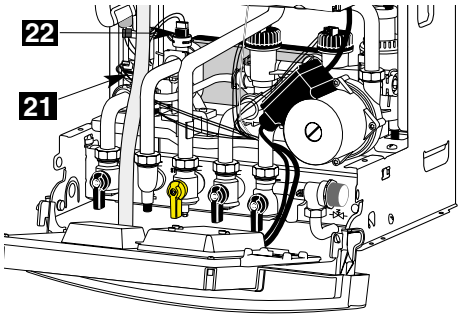


17. Pump
Drain the boiler as in step 12. Pivot the electical box downwards. Open the electrical box cover removing the 2 screws. Remove the pump plug from the power board and earth plug from earth socket. Unscrew nut **F** on the return pipe from the volute. Remove the clip **G** on the pump volute and pull the pump toward you. Reassemble in reverse order.



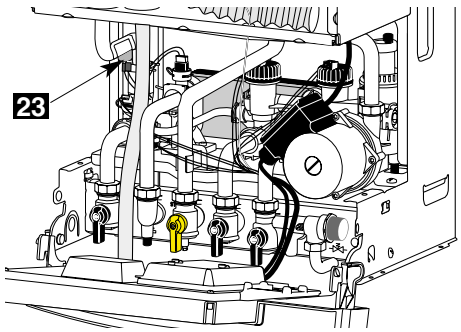
18. Pressure Relief Valve
The pressure relief valve can be serviced from the front of the appliance. Drain the boiler first, undo the retaining screw and pull out the valve. Reassemble in reverse order.

19. Thermistors
Drain the boiler as step 12. Disconnect the plug, remove the retaining clip pull the thermistor out. Reassemble in reverse order.



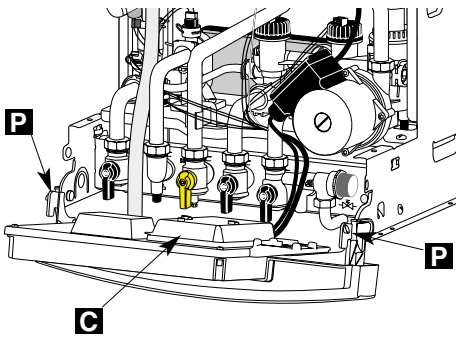
22 = D.H.W. thermistor
21 = Central Heating thermistor

20. Safety Thermostat
Remove the casing as step 1 and pivot the electrical box downwards. Disconnect the 2 cables, pull out the sensor with the clip **23**. Reassemble in reverse order.



21. Spark Generator
Carry out steps 1 and 2 as above. Unplug the connector from the spark generator located on the right hand side of the main heat exchanger. Loosen the two screws to remove the igniter. Reassemble in reverse order.

22. Main Control Board
Carry out step 1 as above and pivot the electrical box downwards by pressing the retaining tabs **P** on either side. Remove the wiring cover **C**. Undo the four screws of the electrical rear panel and remove it. Unplug all cables from the P.C.B., remove the earth plug from earth socket. Remove the Main P.C.B. Reassemble in reverse order.

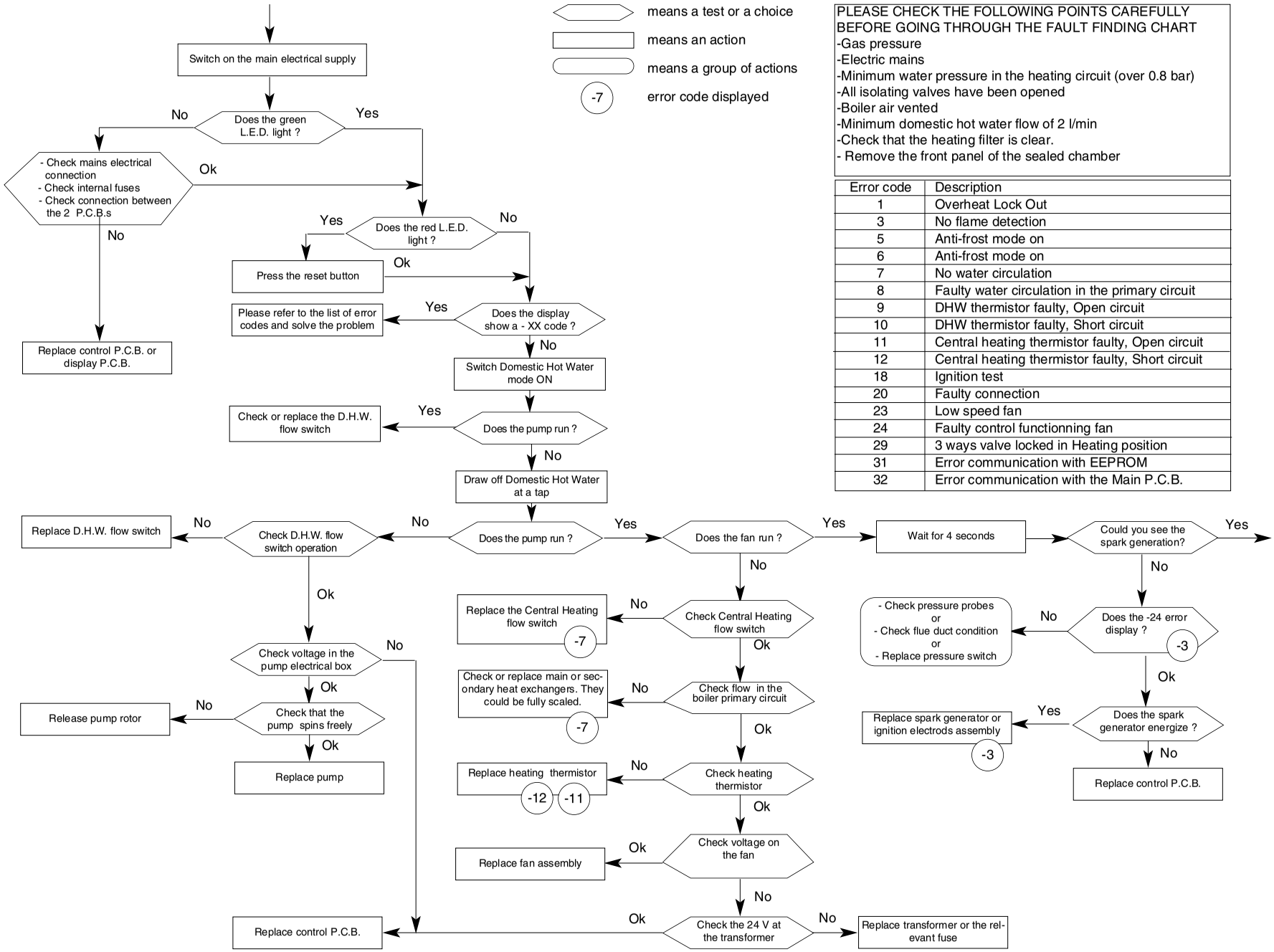


23. Display P.C.B.
Carry out step 1 as above and pivot the electrical box downwards by pressing the retaining tabs **P** on either side. Remove the pressure gauge clip. Rotate the electrical box back to the upper position. Undo the 2 screws retaining the front panel, put your two hands at the bottom of the front panel and pull it down to release it from the 2 clips. Pivot the electrical box downwards. Undo the four screws of the electrical rear panel and remove it. Unplug the display board cables from the Main P.C.B. Reassemble in reverse order.

24. 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 its 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.

25. Pressure Gauge
Carry out step 1 as above and drain the boiler as step 12. Pivot the electrical box downwards by pressing the retaining tabs **P** on either sides. Press the clip to remove it and pull it out. Remove the clip which holds the connection of the capillary on the pump hose. Pull out the pressure gauge with its capillary. Reassemble in reverse order.

FAULT FINDING CHART Part 1

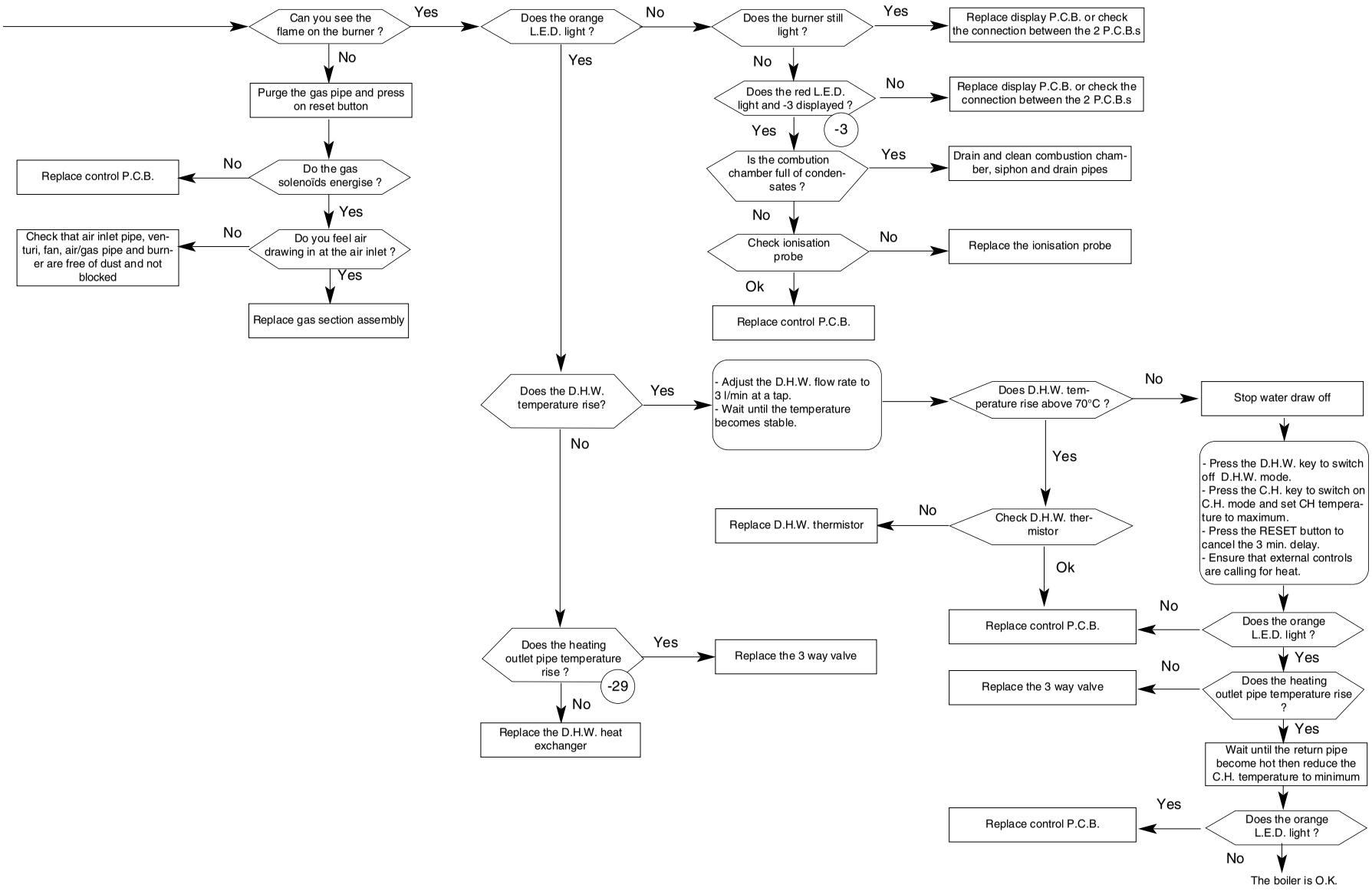


PLEASE CHECK THE FOLLOWING POINTS CAREFULLY BEFORE GOING THROUGH THE FAULT FINDING CHART

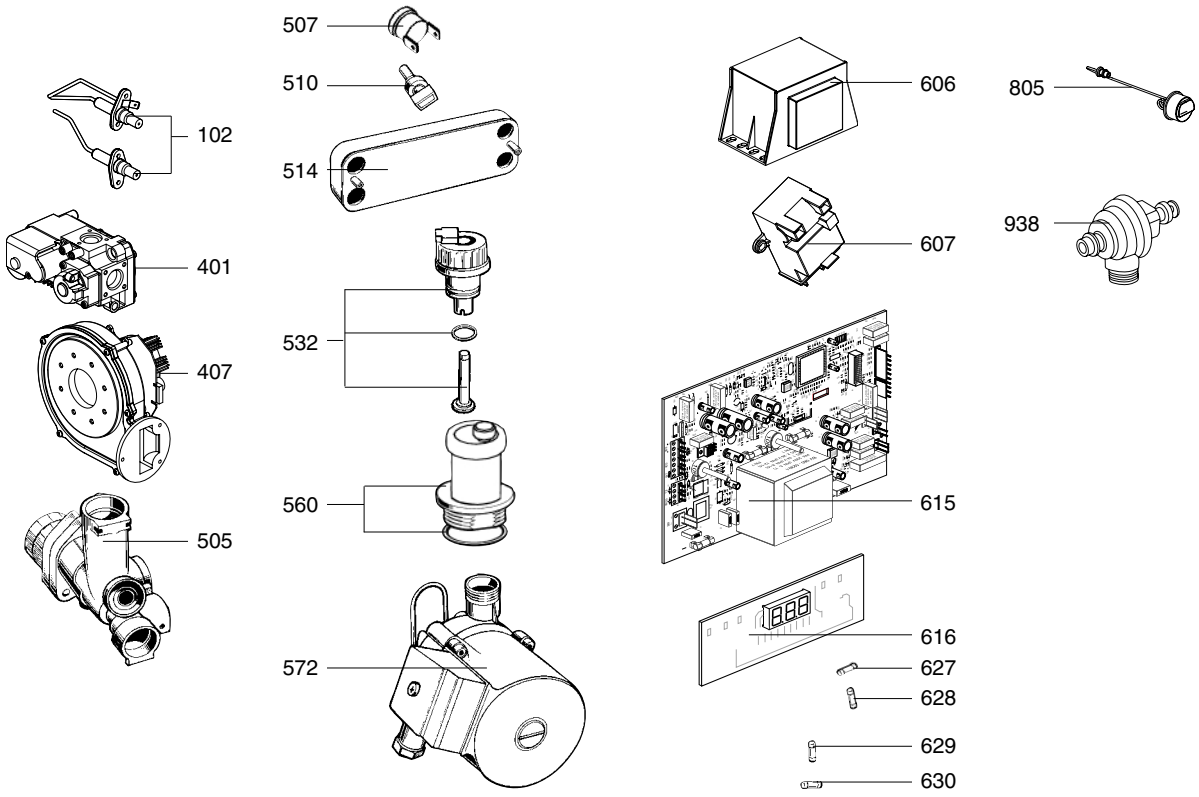
- -Gas pressure
- -Electric mains
- -Minimum water pressure in the heating circuit (over 0.8 bar)
- -All isolating valves have been opened
- -Boiler air vented
- -Minimum domestic hot water flow of 2 l/min
- -Check that the heating filter is clear.
- - Remove the front panel of the sealed chamber

Error code	Description
1	Overheat Lock Out
3	No flame detection
5	Anti-frost mode on
6	Anti-frost mode on
7	No water circulation
8	Faulty water circulation in the primary circuit
9	DHW thermistor faulty, Open circuit
10	DHW thermistor faulty, Short circuit
11	Central heating thermistor faulty, Open circuit
12	Central heating thermistor faulty, Short circuit
18	Ignition test
20	Faulty connection
23	Low speed fan
24	Faulty control functionning fan
29	3 ways valve locked in Heating position
31	Error communication with EEPROM
32	Error communication with the Main P.C.B.

FAULT FINDING CHART Part 2



SHORT LIST



Key N°	Description	G.C N°	Manf. Pt. N°	Type	CENTORA GREEN FF	Manf. date from	Manf. date to
102	ELECTRODE KIT		1309624		●		
401	GAS VALVE		1308957		●		
407	FAN ASSY		1307585		●		
505	3-WAY VALVE		1010000		●		
507	OVERHEAT THERMOSTAT 100°C		1010572		●		
510	THERMISTOR		1000733		●		
514	WATER/WATER HEAT EXCHANGER		1011164		●		
532	WATER THROTTLE		81471		●		
560	AIR SEPARATOR HEAD ASSEMBLY		1002653		●		
572	PUMP UP 15/50 230V		1010612		●		
606	TRANSFORMER		1308149		●		
607	IGNITER		1002105.20		●		
615	PRINTED CIRCUIT BOARD		1307645		●		
616	PRINTED CIRCUIT BOARD		1307647		●		
627	FUSE 250V 2A - TEMPORIZED		1003456		●		
628	FUSE 250V 1A - TEMPORIZED		1003634		●		
629	FUSE 250V 1.25A - TEMPORIZED		1003635		●		
630	FUSE 250V 0.315A - TEMPORIZED		1307845		●		
805	PRESSURE GAUGE		1303158		●		
938	PRESSURE RELIEF VALVE		1020933		●		

Chaffoteaux & 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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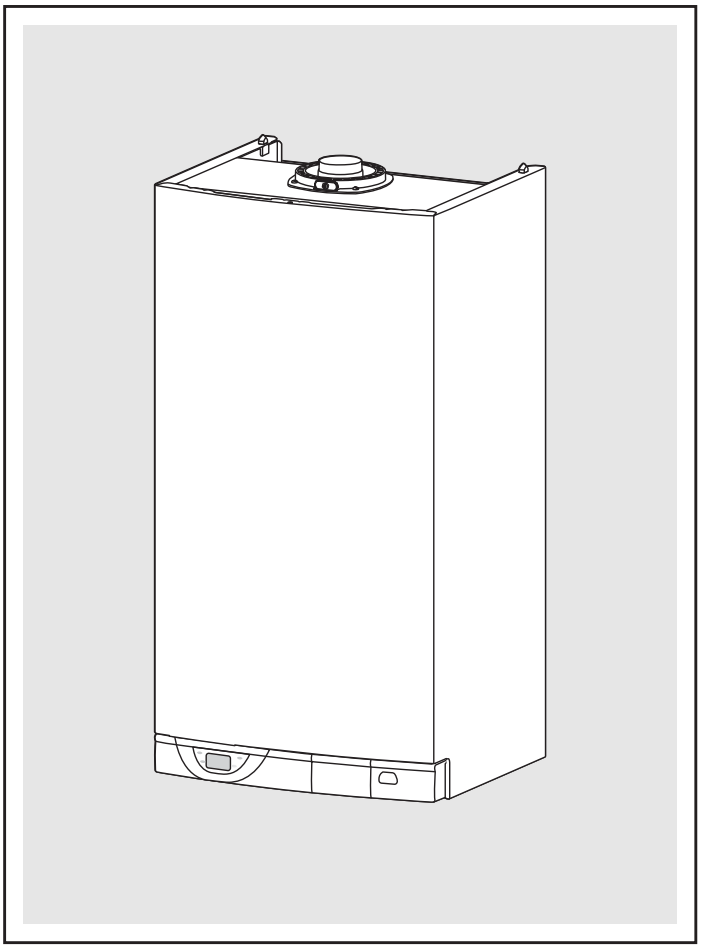
E-mail: info@mtsgb.ltd.uk
Technical Support Help Line: (01952) 222288

1309456 - 03/2002

DOMESTIC BOILERS

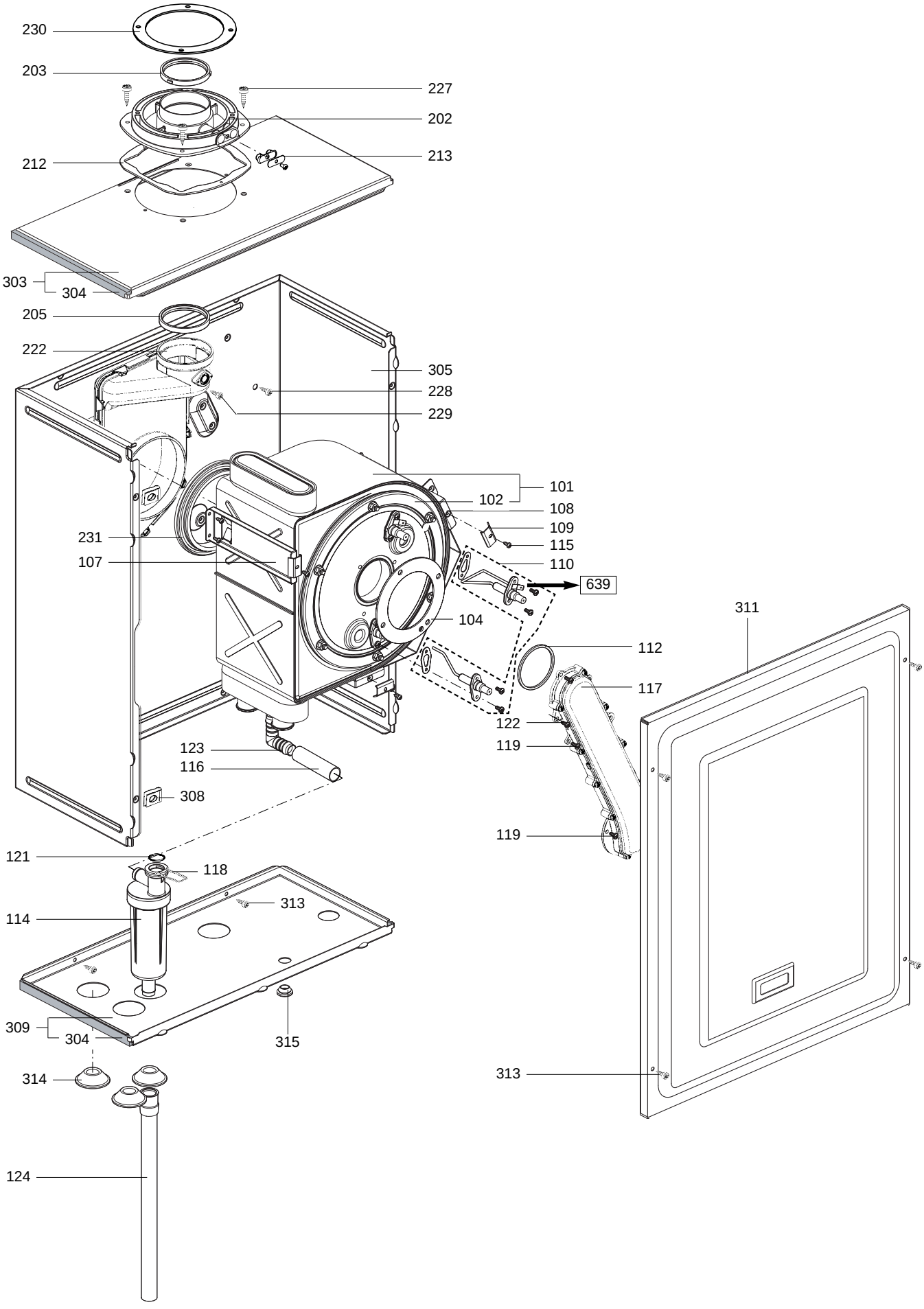
CENTORA GREEN



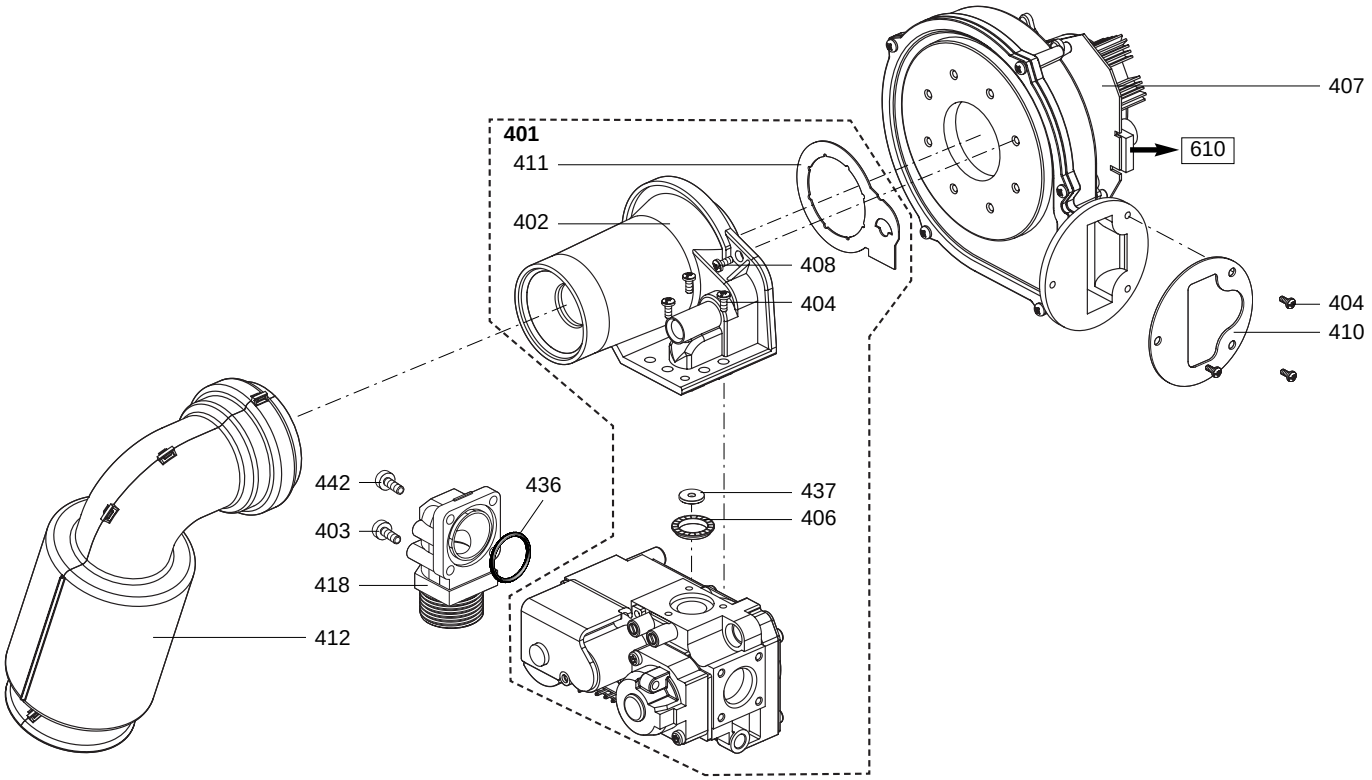
CENTORA GREEN SYSTEM 24
CENTORA GREEN 24
CENTORA GREEN SYSTEM 30
CENTORA GREEN 30

Réf. 82025.98d - 07/03 - GB

100 BURNER
200 FAN
300 SEALED CASE



Key N°	Description	G.C N°	Manf. Pt. N°	Type	Centora green system 24	Centora green 24	Centora green system 30	Centora green 30	Manf. date from	Manf. date to
100	**BURNER ASSEMBLY**									
101	BURNER		1306074		■	■				
	BURNER		61309327				■	■		
102	DOOR ASSY 24KW		1308492		■	■				
	DOOR ASSY 30KW		61308491				■	■		
104	GASKET D:110-75-2		1309658		■	■	■	■		
107	FIXING BRACKET		1306181		■	■				
	FIXING BRACKET		61309237				■	■		
108	FIXING BRACKET		1306180		■	■				
	FIXING BRACKET		61309238				■	■		
109	HOOKING BRACKET		1306448		■	■	■	■		
110	ELECTRODES		1309624		■	■	■	■		
112	WASHER D:65-59-2.6		1307588		■	■	■	■		
114	TRAP		1306078		■	■	■	■		
115	TAPPING SCREW CBLSX D: 4.2-9.5	277792	1010125		■	■	■	■		
116	SILICONE TUBE D: 21x2.5 L: 1M	277636	81265.02		■	■	■	■		
117	DUCT FIRST SECTION		1306026		■	■	■	■		
118	CLIP		1306070		■	■	■	■		
119	SCREW HX M 5-12	277797	1010131		■	■	■	■		
121	"O" RING D: 17.76-1.78		1308092		■	■	■	■		
122	SCREW D: 5-14		61308782		■	■	■	■		
123	BARBED NIPLE 90°		1309373		■	■	■	■		
124	TUBE PVC D:19 L:500		61311628		■	■	■	■		
200	**FAN ASSEMBLY**									
202	FLUE ADAPTOR		1306168		■	■			...	10/02
	FLUE ADAPTOR		61309242		■	■	■	■	11/02	...
203	GASKET D:66-60-7.5		61309786		■	■			...	10/02
	GASKET D:66-58.4-9		61310088		■	■	■	■	11/02	...
205	GASKET D:66.6		1306029		■	■	■	■		
212	GASKET		1300262		■	■	■	■		
213	PLUG KIT		1306698		■	■	■	■		
222	OUTGOING FLUE BOX		1306028		■	■	■	■		
227	TAPPING SCREW CBLSX D:4.2-12.5		1010847		■	■	■	■		
228	TAPPING SCREW CBLSX D: 6.3-13	277865	1010648		■	■	■	■		
229	TAPPING SCREW CBLSX D: 4.2-9.5	277792	1010125		■	■	■	■		
230	GASKET (/ Flue bend turret)		1300258		■	■	■	■		
231	GASKET D:129.4		1306030		■	■	■	■		
300	**SEALED CASE**									
303	TOP PANEL BOX		1305438		■	■	■	■		
304	FOAM SEAL 12.5x5 L: 2.5M	264425	81273		■	■	■	■		
305	CASE		1310355		■	■	■	■		
308	SPIRE CLIP	366787	57488		■	■	■	■		
309	BASE - BOX		1307613		■	■	■	■		
311	CASE COVER	E23478	81851		■	■				
	CASE COVER		61400102				■	■		
313	TAPPING SCREW CBLSX D:4.2-12.5		1010847		■	■	■	■		
314	GROMMET	277819	1010109		■	■	■	■		
315	GROMMET	366877	39017		■	■	■	■		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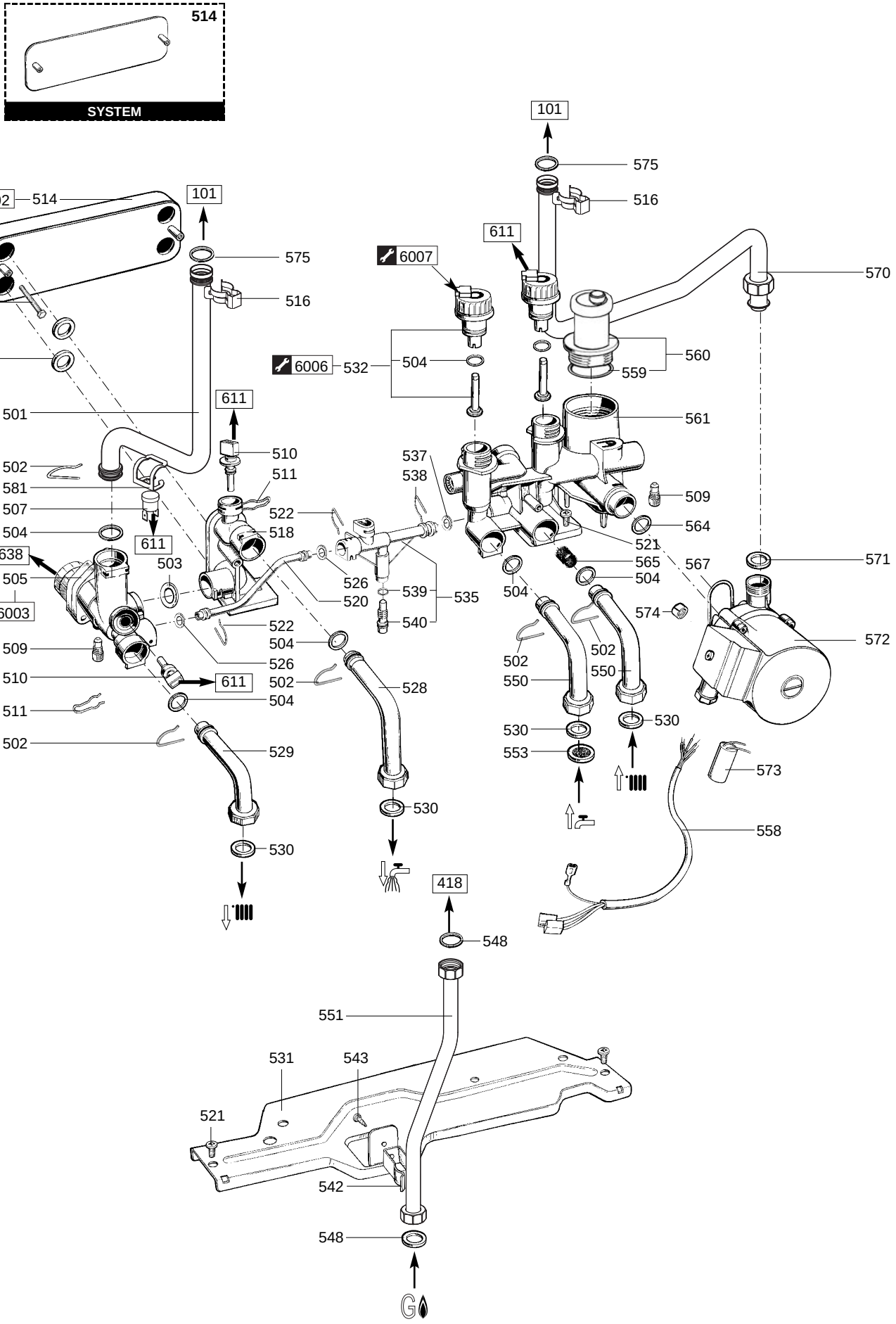
Key N°	Description	G.C N°	Manf. Pt. N°	Type	Centora green system 24	Centora green 24	Centora green system 30	Centora green 30		Manf. date from	Manf. date to
400	**GAS SECTION**										
401	GAS SECTION ASSY		61312986	B/P	■	■					
	GAS SECTION ASSY		61312987	B/P			■	■			
	GAS SECTION ASSY		61307584	NAT	■	■					
	GAS SECTION ASSY		61310129	NAT			■	■			
402	VENTURI D:20		1307649		■	■				...	11/02
	VENTURI D:22		61310128				■	■		...	11/02
403	SCREW CLXS M 4-30		61310333		■	■	■	■			
404	SCREW HX M 5-12	277797	1010131		■	■	■	■			
406	GASKET		1308335		■	■	■	■			
407	FAN ASSY		1307585		■	■	■	■			
408	SCREW CLSX M 5-12		1308327		■	■	■	■			
410	GASKET		1306072		■	■	■	■			
411	GASKET		1307587		■	■	■	■			
412	SILENCER		61310121		■	■	■	■			
418	CONNECTION		1012649		■	■	■	■			
436	"O" RING D: 22-2.6	E23502	21061.40		■	■	■	■			
437	RESTRICTOR D: 4.4		61310495	B/P	■	■					
	RESTRICTOR D: 4.8		61310370	B/P			■	■			
	RESTRICTOR D: 5.55		1308519	NAT	■	■				...	11/02
442	SCREW CBLSX M 4-12		1015222		■	■	■	■			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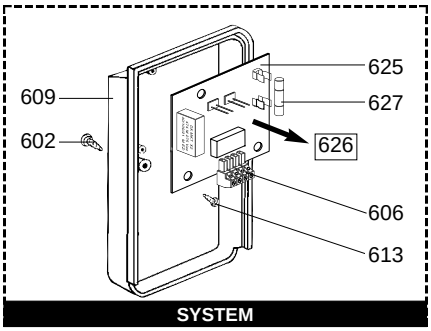
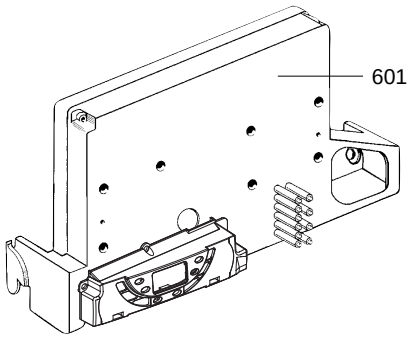
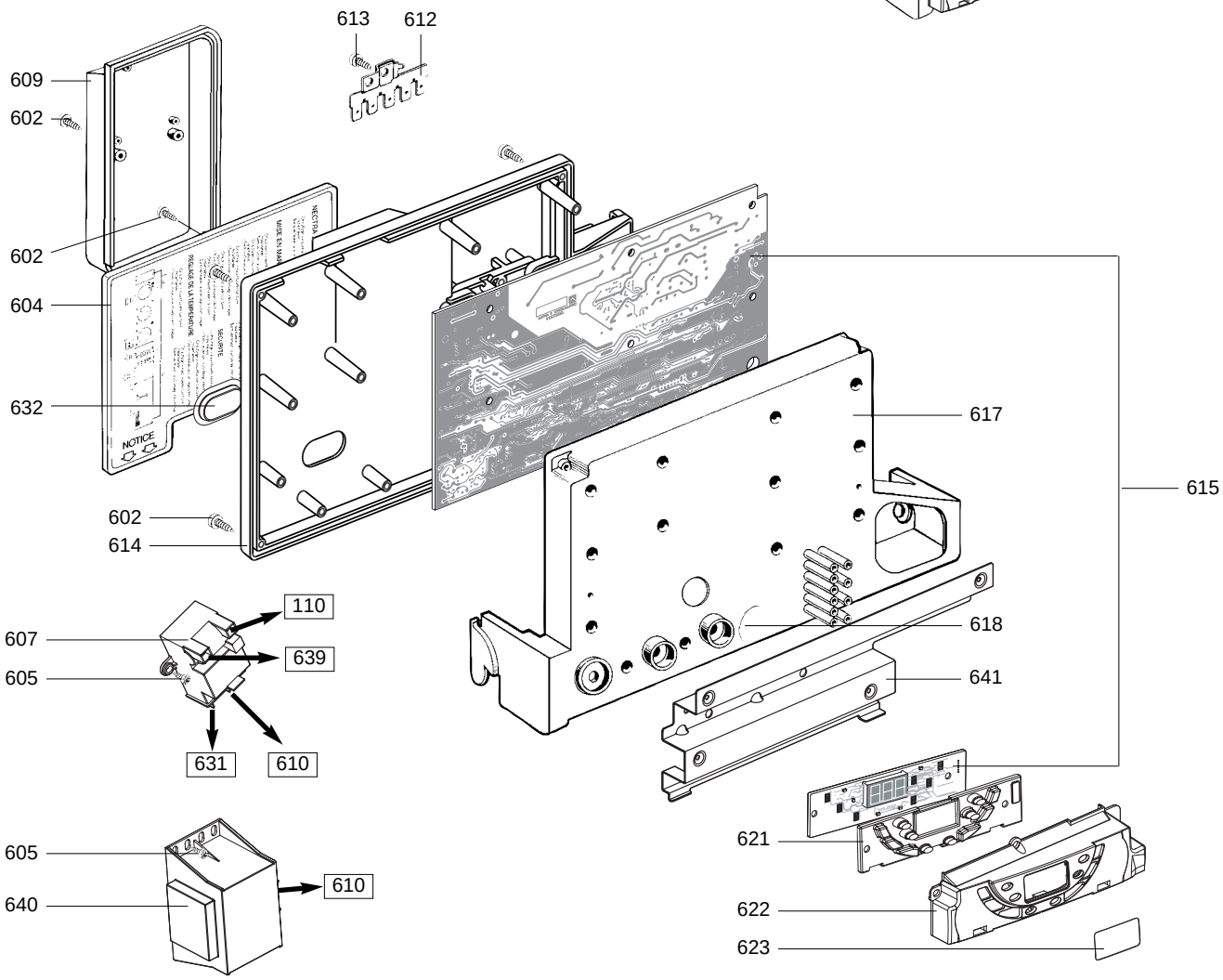
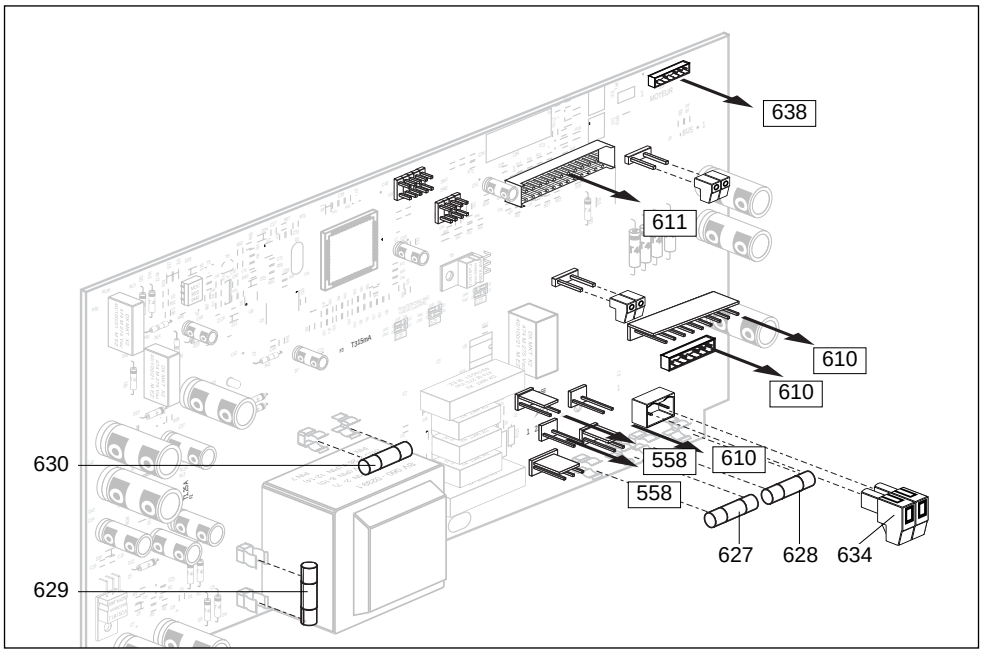
Key N°	Description	G.C N°	Manf. Pt. N°	Type	Centora green system 24	Centora green 24	Centora green system 30	Centora green 30	Manf. date from	Manf. date to
500	**HYDRAULIC BLOCK**									
501	TUBE-EXCHAN TO THREE-WAY VALVE		1307591		■	■	■	■		
502	CLIP	277830	1010012		■	■	■	■		
503	"O" RING D: 18.4-2.7	277831	24164.22		■	■	■	■		
504	"O" RING D: 17-4	E00604	24164.51		■	■	■	■		
505	VALVE BLOCK ASSY		1010436		■		■			
	THREE-WAY VALVE	277833	1010000			■		■		
507	OVERHEAT THERMOSTAT 100°C	277783	1010572		■	■	■	■		
509	DRAIN SCREW ASSY	266043	81028		■	■	■	■		
510	THERMISTOR TEMP. SENSOR	277834	1000733		■	■	■	■		
511	TEMPERATURE SENSOR CLIP	277835	1002083		■	■	■	■		
514	JOINING PLATE		1010439		■		■			
	WATER/WATER HEAT EXCHANGER	E00612	1011164			■		■		
515	SCREW CBLSX M 5-40	277837	1010129		■	■	■	■		
516	CLIP		1307589		■	■	■	■		
518	LEFT HAND HYDRAULIC BLOCK	277839	1010003		■	■	■	■		
520	BYPASS TUBE	277840	1010044		■	■	■	■		
521	TAPPING SCREW CBLSX D: 6.3-19	277785	1010127		■	■	■	■		
522	CLIP	277841	1010005		■	■	■	■		
526	"O" RING D: 8.9-2.7	E00605	1009834.14		■	■	■	■		
528	HOT WATER BEND	277842	1010056			■		■		
529	HEATING FLOW BEND	277843	1010057		■	■	■	■		
530	SHEET GASKET D: 24-17-1.5	265389	61855.19		■	■	■	■		
531	HYDRAULIC PLATE	277845	1010042		■	■	■	■		
532	WATER THROTTLE	277846	81471		■	■	■	■		
535	BYPASS BODY		1016387		■	■	■	■		
537	"O" RING D: 13.6-2.7	366048	24164.18		■	■	■	■		
538	CLIP	277830	1010112		■	■	■	■		
539	"O" RING D: 1.9-8	277849	1009833.34		■	■	■	■		
540	ADJUSTING SCREW OF BY-PASS	277850	1010111		■	■	■	■		
542	CLIP	277851	79845		■	■	■	■		
543	TAPPING SCREW CBLSX D: 4.2-9.5	277792	1010125		■	■	■	■		
548	SHEET GASKET D: 24-18.2-1.5	265091	22835.01		■	■	■	■		
550	BEND RETURN	277852	1010055		■	■	■	■		
551	GAS TUBE		1307590		■	■				
	GAS TUBE		61309556				■	■		
553	WATER FILTER	277854	1007727		■	■	■	■		
558	PUMP LEAD (2 SPEEDS)	277855	1004115		■	■	■	■		
559	"O" RING D: 45-3.5	E00613	1009833.46		■	■	■	■		
560	AIR SEPARATOR HEAD ASSEMBLY	277857	1002653		■	■	■	■		
561	RIGHT HAND HYDRAULIC BLOCK	277858	1010167		■	■	■	■		
564	"O" RING D: 24.6-3.6		1009834.30		■	■	■	■		
565	HEATING FILTER		1305560		■	■	■	■		
567	CLIP	366887	30898.03		■	■	■	■		
569	LIP SEAL	277860	1002249		■	■	■	■		
570	HEATING RETURN TUBE		1307592		■	■	■	■		
571	"O" RING D: 16-1.9	E00615	1009833.37		■	■	■	■		
572	PUMP UP 15/50 230V	E11662	1010612		■	■	■	■		
573	CAPACITOR	E00616	1000652.10		■	■	■	■		
574	PLUG M 10-100	277508	15709		■	■	■	■		
575	"O" RING D: 17.86-2.62		1308091		■	■	■	■		
581	CLIP	277782	1010050		■	■	■	■		

600 ELECTRICAL BOX









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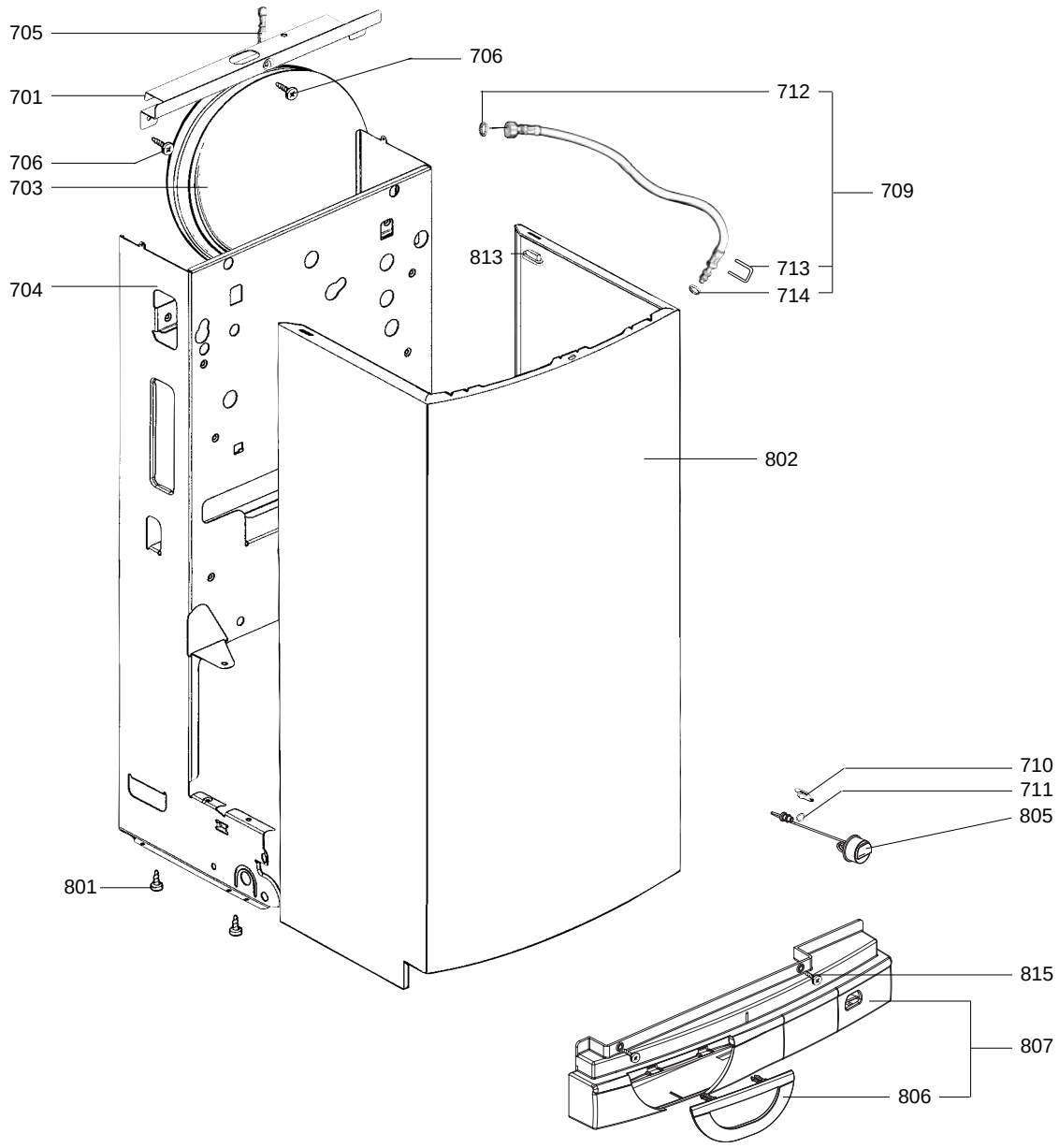
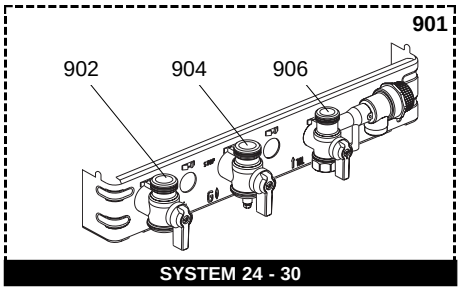
Key N°	Description	G.C N°	Manf. Pt. N°	Type	Centora green system 24	Centora green 24	Centora green system 30	Centora green 30	Manf. date from	Manf. date to
600	**ELECTRICAL BOX**									
601	ELECTRICAL BOX		1311320		■		■			
	ELECTRICAL BOX		1311319			■		■		
602	SCREW FX90 L:16		1020510		■	■	■	■		
604	INSTRUCTIONS SUPPORT		1309315		■	■	■	■		
605	TAPPING SCREW CBLSX D: 4.2-9.5	277792	1010125		■	■	■	■		
606	CONNECTOR		1011046		■		■			
607	IGNITER	379075	1002105.20		■	■	■	■		
609	CONNECTOR COVER	277874	1010014		■	■	■	■		
610	FAN-IGNITER CABLE		1309837		■	■	■	■		
611	WIRE ASSEMBLY		61310189		■		■			
	WIRE ASSEMBLY		1308085			■		■		
612	CONNECTION STRIP	277877	1010152		■	■	■	■		
613	TAPPING SCREW CBLSX L:10		1020509		■	■	■	■		
614	ELECTRICAL BOX COVER	277879	1010007		■	■	■	■		
615	PRINTED CIRCUIT BOARDS		1310357		■	■	■	■		
617	ELECTRIC BOX PLATE	277882	1010006		■	■	■	■		
618	PLUG	E00269	1011316		■	■	■	■		
621	TRANSMITTER OF LEDS		1306012		■	■	■	■		
622	CONTROL PANEL		61310292		■		■			
	CONTROL PANEL		1306019			■		■		
623	SIGHT GLASS		1303830		■	■	■	■		
625	PRINTED CIRCUIT BOARD T.A.		1011846		■		■			
626	PRINTED CIRCUIT BOARD LEAD		61310366		■		■			
627	FUSE 250V 2A - TEMPORIZED	277883	1003456		■	■	■	■		
628	FUSE 250V 1A - TEMPORIZED		1003634		■	■	■	■		
629	FUSE 250V 1.25A - TEMPORIZED	277884	1003635		■	■	■	■		
630	FUSE 250V 0.315A - TEMPORIZED		1307845		■	■	■	■		
631	EARTH WIRE		1309966		■	■	■	■		
632	CLOSURE PLATE		1304599		■	■	■	■		
634	CONNECTING TERMINAL		1308032		■	■	■	■		
638	CABLE THREE WAY VALVE		1305893			■		■		
639	ELECTRODE CABLE		1308086		■	■	■	■		
640	TRANSFORMER		1308149		■	■	■	■		
641	SPACER		61308945				■	■		

700 CHASSIS
800 FRONT CASE



Key N°	Description	G.C N°	Manf. Pt. N°	Type	Centora green system 24	Centora green 24	Centora green system 30	Centora green 30	Manf. date from	Manf. date to
700	**CHASSIS**									
701	TOP STAY PLATE	277864	1010029		■	■	■	■		
703	EXPANSION VESSEL	366979	56676.06		■	■	■	■		
704	CHASSIS	277866	1010028		■	■				
	CHASSIS		61310119				■	■		
705	EXPANSION VESSEL AIR HOSE	277867	1010170		■	■	■	■		
706	TAPPING SCREW CBLSX D: 6.3-19		1014516		■	■	■	■		
709	FLEXIBLE PIPE KIT	E23589	81824		■	■	■	■		
710	CLIP	277848	1002406		■	■	■	■		
711	"O" RING D: 5.7-1.9	E00621	1009834.10		■	■	■	■		
712	SHEET GASKET D: 12-8.1-2		1308868		■	■	■	■		
713	CLIP	277841	1010005		■	■	■	■		
714	"O" RING D: 8.9-2.7	E00605	1009834.14		■	■	■	■		
800	**FRONT CASE**									
801	TAPPING SCREW CBLSX D: 4.2-9.5	277792	1010125		■	■	■	■		
802	CASE	E00622	1010016		■	■				
	CASE		61309874				■	■		
805	PRESSURE GAUGE		1303158		■	■	■	■		
806	DOOR		1306020		■	■	■	■		
807	SERIGRA. STRIP (WITHOUT PROG.)		1307650		■	■	■	■		
813	SPACER		1015797		■	■	■	■		
815	SCREW FX90 L:16		1020510		■	■	■	■		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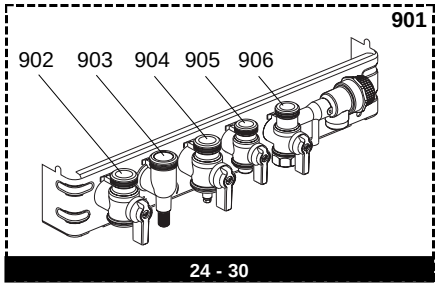
SYSTEM 24 - 30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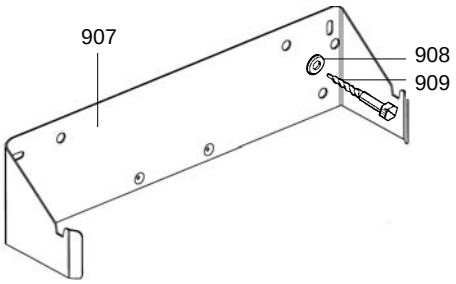
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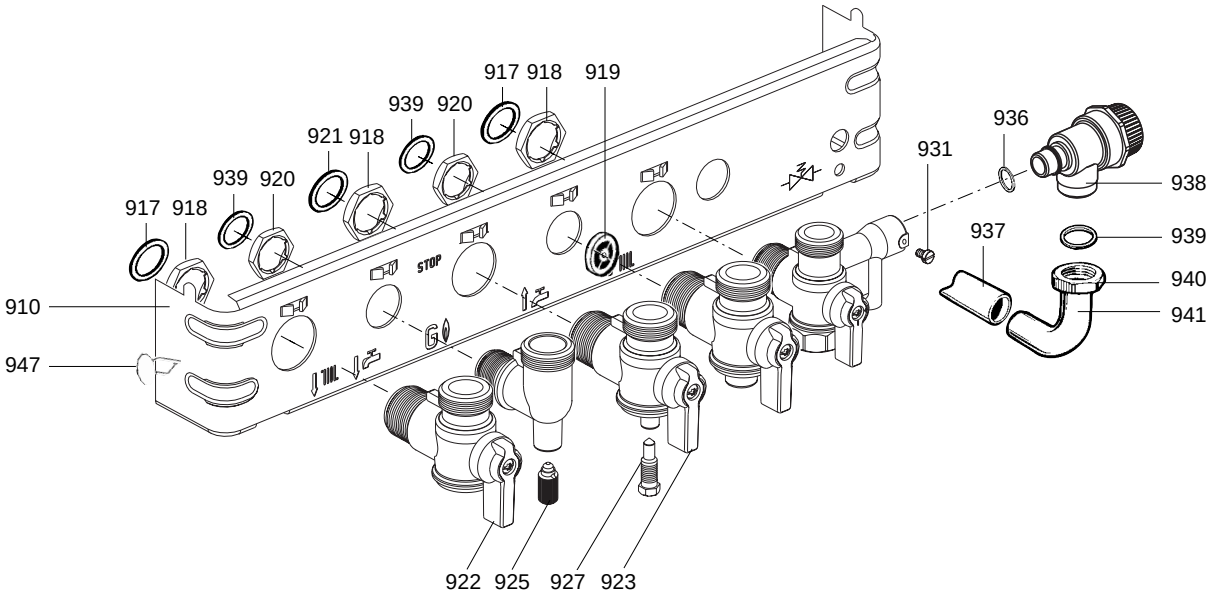
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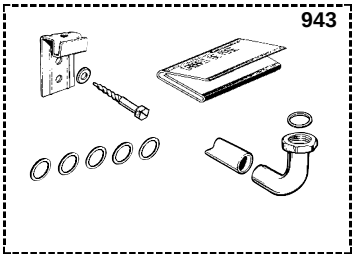
922 925 927 923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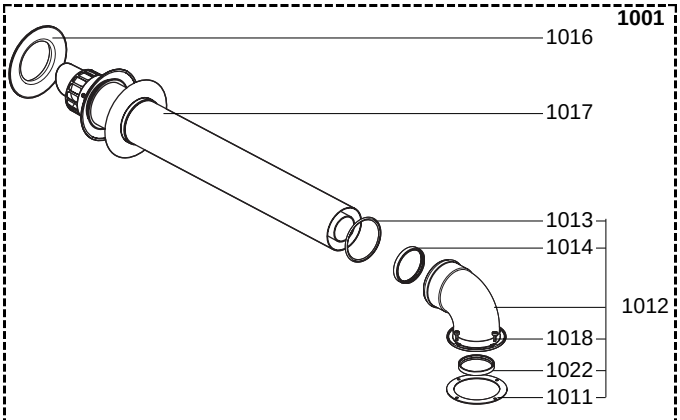
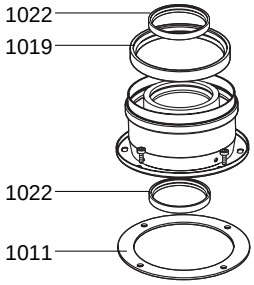
Key N°	Description	G.C N°	Manf. Pt. N°	Type	Centora green system 24	Centora green 24	Centora green system 30	Centora green 30	Manf. date from	Manf. date to
900	**JIG PLATE & PIPE FITTING**									
901	PREFABRICATION		1312381		■		■			
	PREFABRICATION	E00627	1012448			■		■		
902	WATER FLOW SERVICE TAP		1020388		■	■	■	■		
903	HOT WATER CONNECTION		1020916			■		■		
904	GAS SERVICE TAP		1020389		■	■	■	■		
905	COLD WATER TAP		1302612			■		■		
906	WATER RETURN SERVICE TAP		1312122		■	■	■	■		
907	HOOKING BRACKET	E23593	1012457		■	■	■	■		
908	WASHER D: 14.2-7.2-1.2	366764	5369.03		■	■	■	■		
909	WOOD SCREW	366017	25617.03		■	■	■	■		
910	BOTTOM STAY PLATE	E00630	1011683		■	■	■	■		
917	SHEET GASKET D: 24-17-1.5	265389	61855.19		■	■	■	■		
918	LOCK NUT	277909	31140		■	■	■	■		
919	FLOW REGUL. 7L/MIN(DARK GREEN)	277911	1002775.07			■		■		
	FLOW REGULATORE 8L/MIN (WHITE)	E23605	1002775.08			■		■		
	FLOW REGULATOR 10L/MIN (BLUE)	E00631	1002775.10			■		■		
	FLOW REGULATORE 12L/MIN (RED)	E23606	1002775.12			■		■		
	FLOW REGULATOR 14L/MIN (PINK)	277911	1002775.14			■		■		
	FLOW REGUL 15L/MIN(PALE GREEN)	E23607	1002775.15			■		■		
920	LOCK NUT H 1/2"	277910	31139			■		■		
921	SHEET GASKET D: 24-18.2-1.5	265091	22835.01		■	■	■	■		
922	HAND LEVER BLACK		1302611		■	■	■	■		
923	HAND LEVER YELLOW		1302610		■	■	■	■		
925	DRAIN SCREW ASSY	266043	81028			■		■		
927	PRESSURE TEST POINT SCREW		1016378		■	■	■	■		
931	GRUB SCREW		1304327		■	■	■	■		
936	"O" RING D: 13.6-2.7	E00633	1009834.18		■	■	■	■		
937	TUBE PVC D: 13x17 L: 1M	277912	81266.02		■	■	■	■		
938	PRESSURE RELIEF VALVE		1020933		■	■	■	■		
939	WASHER D: 18.4-12.2-1.5	265432	61855.14		■	■	■	■		
940	NUT 1/2" THICK: 10	262584	20747.38		■	■	■	■		
941	CONNECTING PIPE	277913	1010375		■	■	■	■		
943	ACCESSORY KIT		1309329		■	■	■	■		
947	CLIP	E23616	1012927		■	■	■	■		

1001



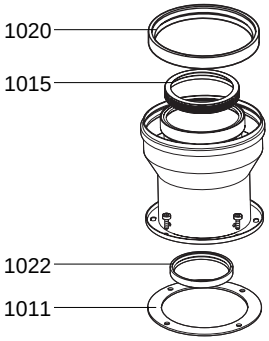
HORIZONTAL FLUE KIT — D60-100

1002



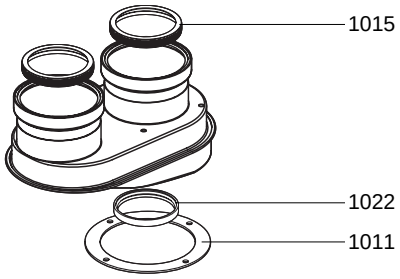
V./HORIZONTAL FLUE KIT — D60-100

1003



VERTICAL FLUE KIT — D80-125

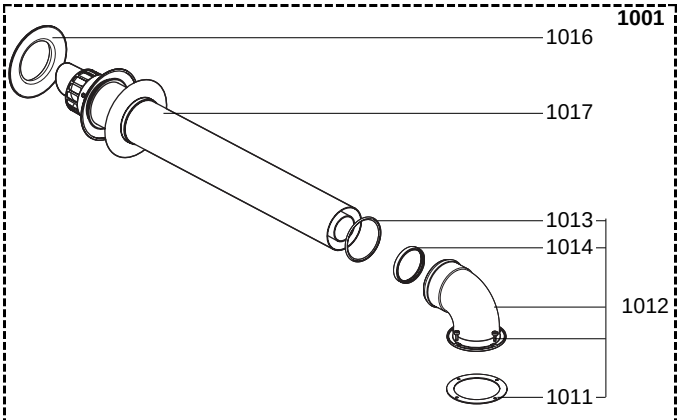
1005



DOUBLE-FLOW FLUE KIT — D80-80

from ... to 10/02

1001



HORIZONTAL FLUE KIT — D60-100

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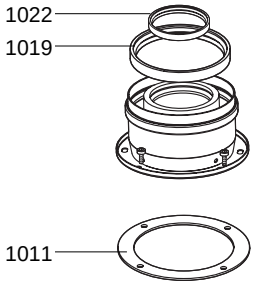

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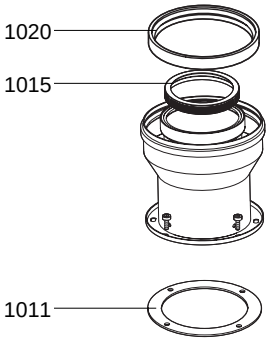
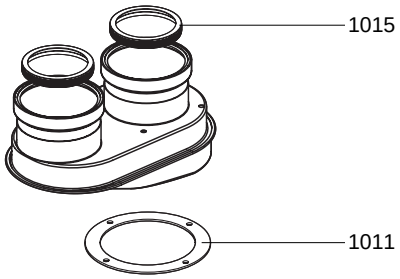


VERTICAL FLUE KIT — D80-125

1005



DOUBLE-FLOW FLUE KIT — D80-80

from 11/02 to ...

Key N°	Description	G.C N°	Manf. Pt. N°	Type	Centora green system 24	Centora green 24	Centora green system 30	Centora green 30		Manf. date from	Manf. date to
1000	**FLUE CONNECTION**										
1001	HORZ. FLUE KIT D60-100 L:800		1309941		■	■				...	10/02
	HORZ. FLUE KIT D60-100 L:800		1309947		■	■	■	■		11/02	...
1002	V./HORIZONTAL FLUE KIT D60-100		1309948		■	■				...	10/02
	V./HORIZONTAL FLUE KIT D60-100		1309694		■	■	■	■		11/02	...
1003	VERTICAL FLUE KIT D80-125		1309162		■	■				...	10/02
	VERTICAL FLUE KIT D80-125		1309693		■	■	■	■		11/02	...
1005	DOUBLE-FLOW FLUE KIT D80-80		1309175		■	■				...	10/02
	DOUBLE-FLOW FLUE KIT D80-80		1309715		■	■	■	■		11/02	...
1011	GASKET (/ Flue bend turret)		1300258		■	■	■	■			
1012	FLUE BEND 90°		1307942		■	■				...	10/02
	FLUE BEND 90°		1309692		■	■	■	■		11/02	...
1013	GASKET D:106-100-5		61310157		■	■	■	■			
1014	GASKET D:60		61310150		■	■	■	■			
1015	GASKET D:88-80-12		61310152		■	■	■	■			
1016	SEALING RING TRIM	366995	62079		■	■	■	■			
1017	HORZ. TERMINAL D:60/100 L:800		61310156		■	■	■	■			
1018	SCREW CLX M 5-20		1017600		■	■	■	■			
1019	GASKET D:106.5-100-12		61310151		■	■	■	■			
1020	GASKET D:133.5-125-12.5		61310153		■	■	■	■			
1022	GASKET D:66-60-7.5		61309786		■	■	■	■			

5000 ACCESSORIES

5001

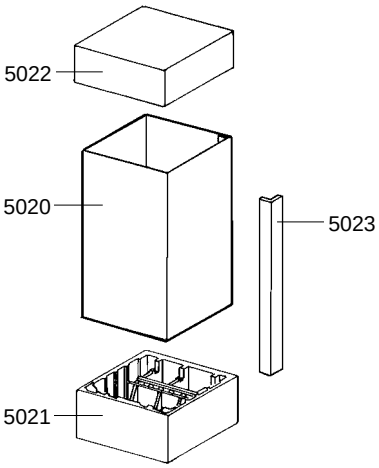
G20 > G25

5002

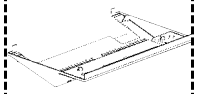
G20 > G31

5014
Connection
FIRST FITTING

5015
Connection
REPLACEMENT

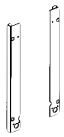


5030


5033


5035
ACOUSTIC
KIT

5040


5045


6000 MAINTENANCE

6002

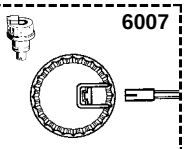
Descaling

6003

Simulating

6006

Spanner

6007


Key N°	Description	G.C N°	Manf. Pt. N°	Type	Centora green system 24	Centora green 24	Centora green system 30	Centora green 30		Manf. date from	Manf. date to
5000	**ACCESSORIES**										
5001	CONVERSION KIT > G25		1310865		■	■				...	10/02
5002	CONVERSION KIT > G31		1310866		■	■				...	10/02
	CONVERSION KIT G20 > G31		1311759		■	■				11/02	...
	CONVERSION KIT G20 > G31		1311760				■	■			
5014	CONNECTION - FIRST FITTING		1313069		■		■				
	CONNECTION - FIRST FITTING	277922	1010429			■		■			
5015	CONNECT. ELM	E00648	1010182		■	■	■	■			
	CONNECT. VAILLANT	E00649	1010183		■	■	■	■			
	CONNECT. CELTIC	E00650	1010517		■	■	■	■			
	CONNECT. JUNKER	E00652	1011063		■	■	■	■			
	CONNECT. SAULNIER DUVAL FF		1303293		■	■	■	■			
5020	SLEEVE		1018789		■	■					
	SLEEVE		61309802				■	■			
5021	CHOCK - BOTTOM SIDE	E00654	1010655		■	■					
	CHOCK - BOTTOM SIDE		61309803				■	■			
5022	CHOCK - DRAUGHT DIVERTER SIDE	E00655	1010080		■	■					
	CHOCK - DRAUGHT DIVERTER SIDE		61309804				■	■			
5023	SIDE CHOCK	E00656	1010081		■	■	■	■			
5030	JIG PLATE		1309325		■	■	■	■			
5033	ROD PLATE	E23679	1010932		■	■	■	■			
5035	SOUNDPROOFING KIT		1305676		■	■	■	■			
5040	USERS' INSTRUCTIONS		1309033			■		■			
	USERS' INSTRUCTIONS		1310360		■		■				
5045	WALL SPACER KIT	E23683	1016144		■	■	■	■			
6000	**MAINTENANCE**										
6002	DESCALING INTERFACE/WATER EXCH		1011075			■		■			
6003	SIMULATING BOX 3 WAY VALVE	E23686	1012597			■		■			
6006	SPANNER		1302650		■	■	■	■			
6007	STOPPED W/THROT. CONNECTOR KIT		1306970		■	■	■	■			