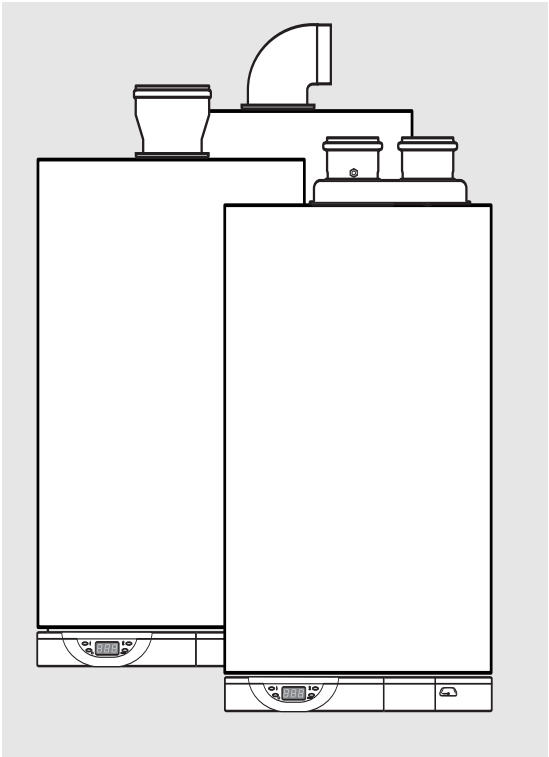
CALYDRA green

CONDENSING WALL HUNG COMBINATION BOILER

Heating and Instantaneous Domestic Hot Water with TSS®

Fanned Flue System

Installation and Operating Instructions



Calydra green 24
Calydra green 30

Manufactures N°	Model Type	Gas Council N°
200906823037.31	Calydra green 24 Nat	47-980-25
200906826037.31	Calydra green 30 Nat	47-980-26

GB IE

benchmark
The code of practice for the installation, commissioning & servicing of central heating systems

CE

C&M
CHAFFOTEAUX & MAURY

These instructions are suitable for the CALYDRA 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 Householder

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 your 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 on 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:

0 870 600 9888

To The Installer

As part of the commissioning of this appliance it is vital that the Log Book is completed and given to the Householder. 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 Ltd., as a leading manufacturer of domestic and commercial water heating appliances is committed to providing high quality products and a high quality after sales service. If it is necessary to contact an engineer, then telephone the national warranty helpline 0870 600 9888.

Advice on installation or servicing can also be obtained by contacting the Technical Department.on:

Tel: 0870 241 8180

Fax: 01494 459775

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 bylaws of Local Water Undertakings, Building Regulations, IEE Wiring Regulations, Local Authority Building Standards (Scotland) Regulations and the Safety Document 635 The Electricity at work Regulation. 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'S INSTRUCTIONS

This instruction booklet is especially designed for appliances installed in the United Kingdom and the Republic of Ireland

INTRODUCTION

The **CALYDRA 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 and a circulating pump, expansion vessel together with a pressure gauge and safety valve are included within the boiler.
The standard horizontal flue kit is suitable for lengths 300 mm minimum to 600 mm maximum and includes an elbow adapter that can be rotated through 360° . The horizontal flue can extend up to 3 metres using 1 metre flue extension kits. 45° and 90° flue bends are also available as accessories.

INSTALLER'S INSTRUCTIONS

1 Description

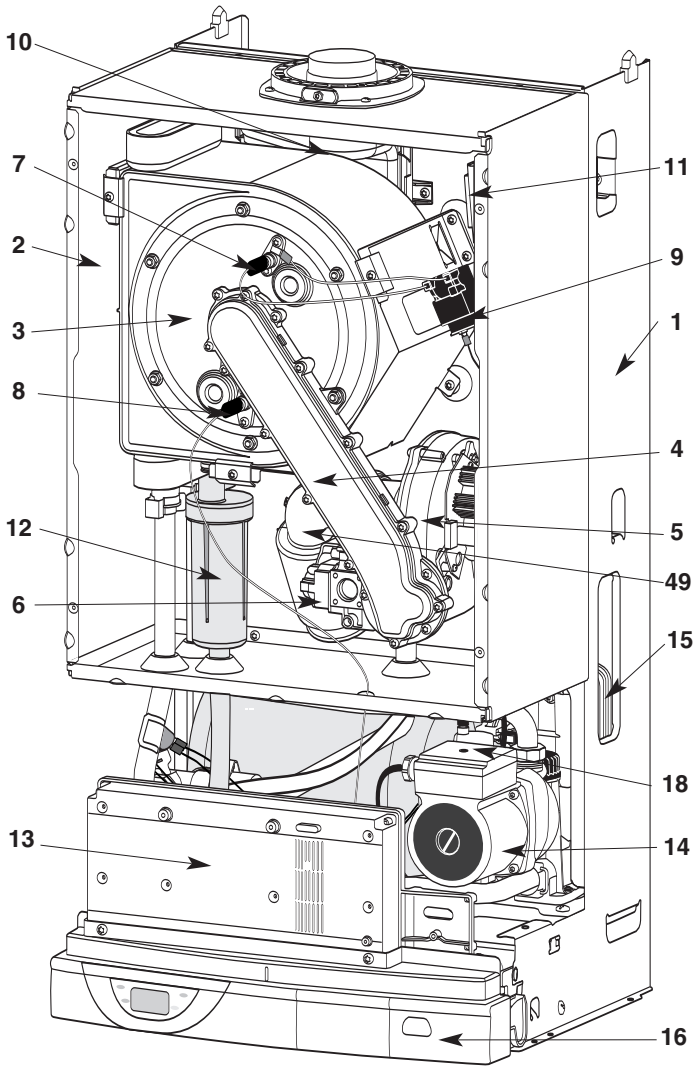


Fig. 1

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
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.- TSS Control thermistor
24 - Overheat sensor
25 - TSS ® (mini cylinder)
26 - DHW pressure relief valve
49 - Silencer.

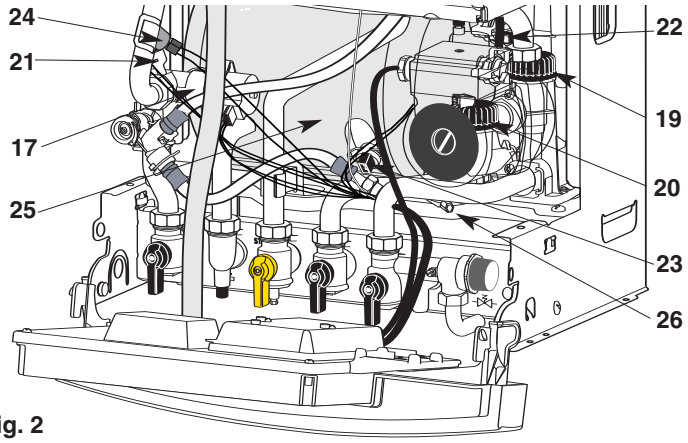


Fig. 2

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

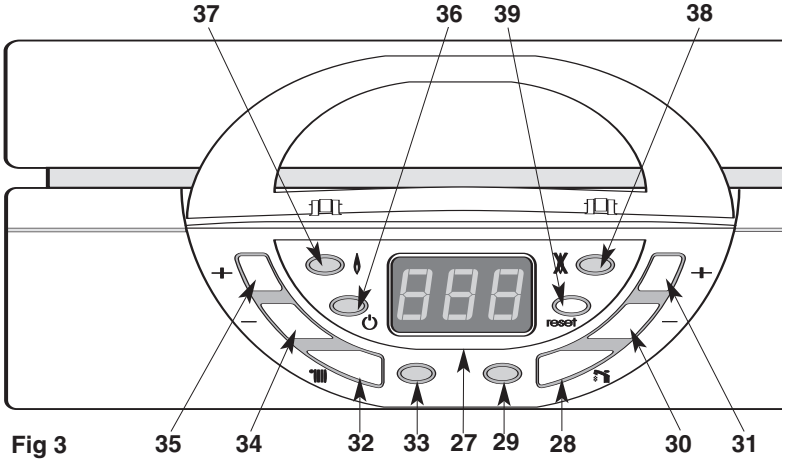


Fig 3

2 Dimensions

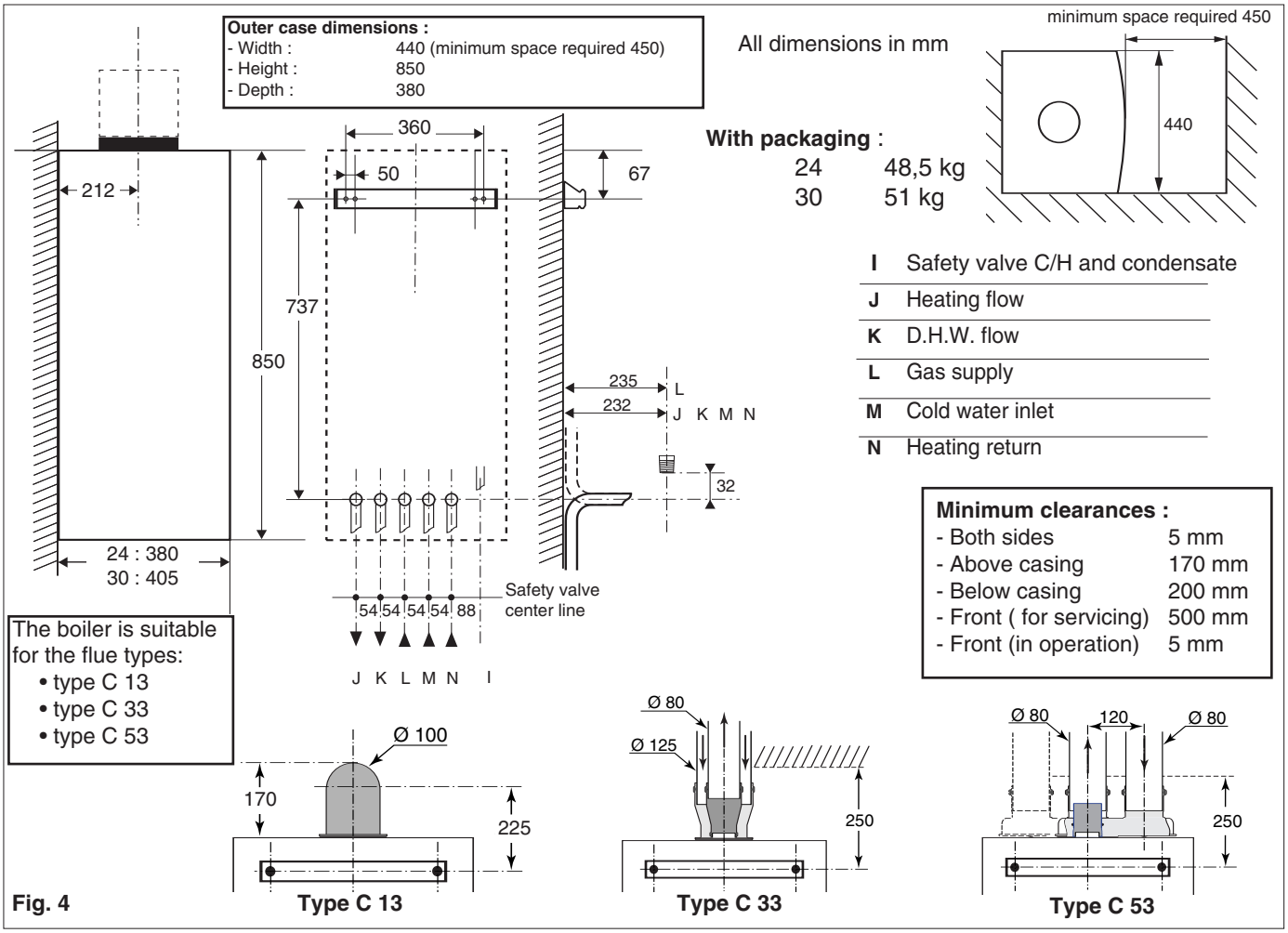


Fig. 4

3 Hydraulic Data

Pump head available

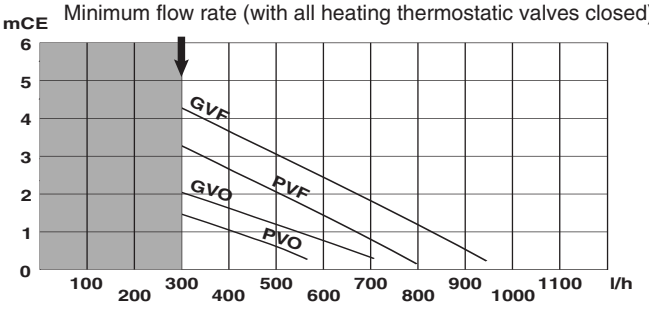
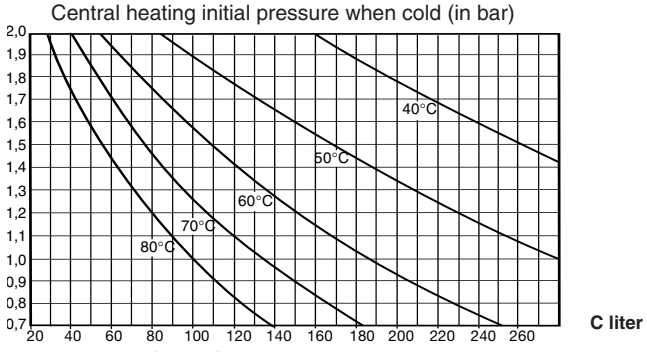


Fig. 5

Pump head chart available 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 regarding 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 8.

The minimum flow rate to ensure the correct functioning of the boiler should be over 300 l/h (with 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 a greater capacity an additional expansion vessel will be required. Refer to the chart (**Fig. 6**) 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 area), or ammonia (hair dresser), or alcalin products (launderette).

Flue

Detailed information on the 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: 0171 639 1357

Ventilation

The room in which the boiler is installed does not require specific ventilation. **If it is installed in a cupboard or compartment permanent ventilation is not required for cooling purposes.**

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/m^3 for a short period in a year
- average level of 30 mg/m^3 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 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:

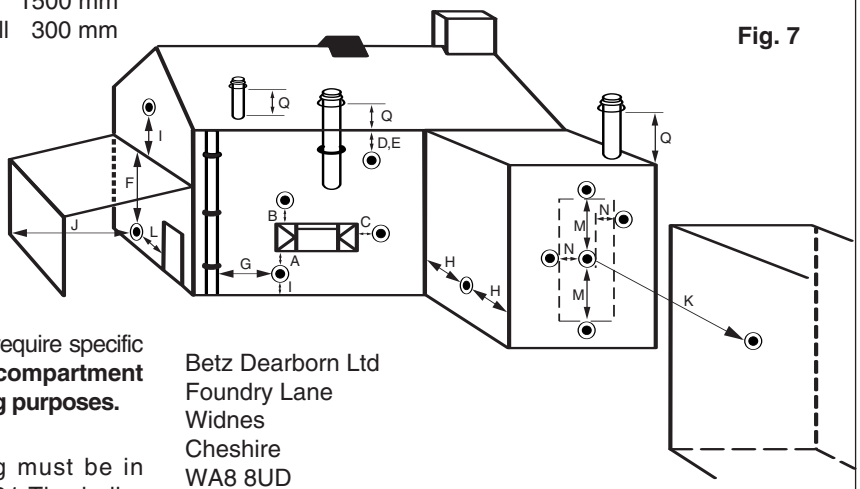


Fig. 7

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 6).
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 **(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 in the conditions described in the relevant Brittish regulations.

Pay special attention to not bend the condensates silicone drain pipe in such a way as to cause the flow to be interrupted. Please use only drain pipe material compatible with condensate products. (refer to **BS 6798 : 2000**)

The condensate flow can reach 2 litres/hour; because of the acidity of the condensate products (Ph close to 2), take care before operation.

Fitting the Horizontal Flue

Important!! 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 in the exhaust pipe as shown (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 let the condensate come back into the boiler.

Attention ! Use only specific condensation flue kit.

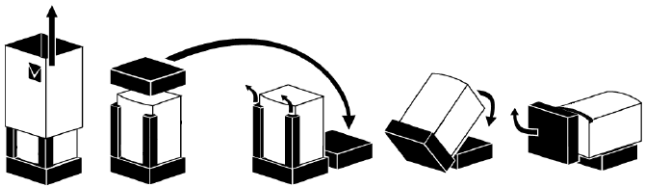


Fig. 8

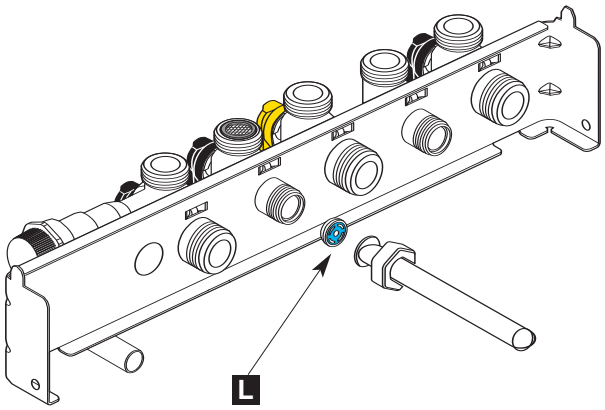


Fig. 10

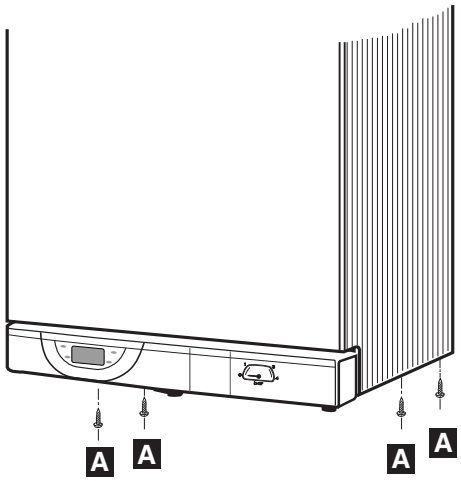


Fig. 9

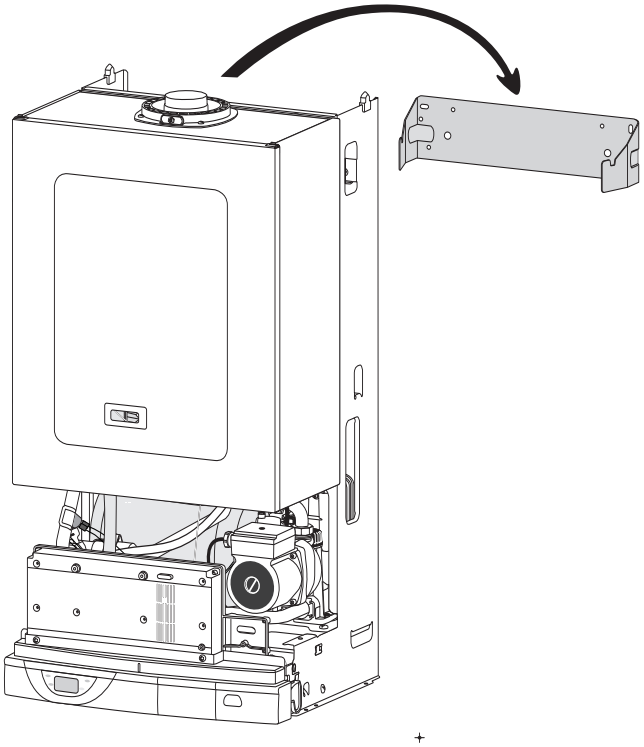


Fig.11

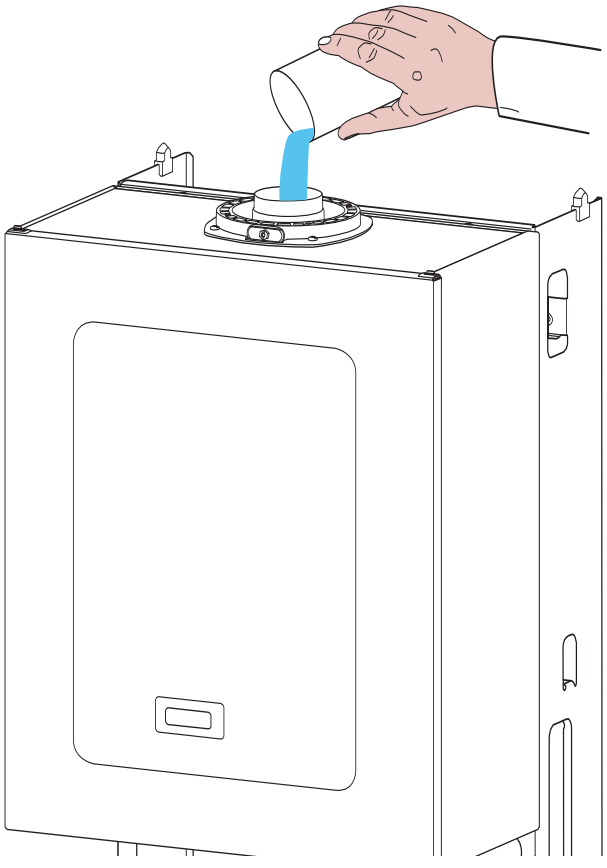


Fig.12

6 Electrical Connections

Making the Electrical Connections

Hinge down 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 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** on the multipin plug (see **Fig. 14).**

Note: Use only controls designed for voltage free switching or a 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 **J1 (Fig. 14)**.

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

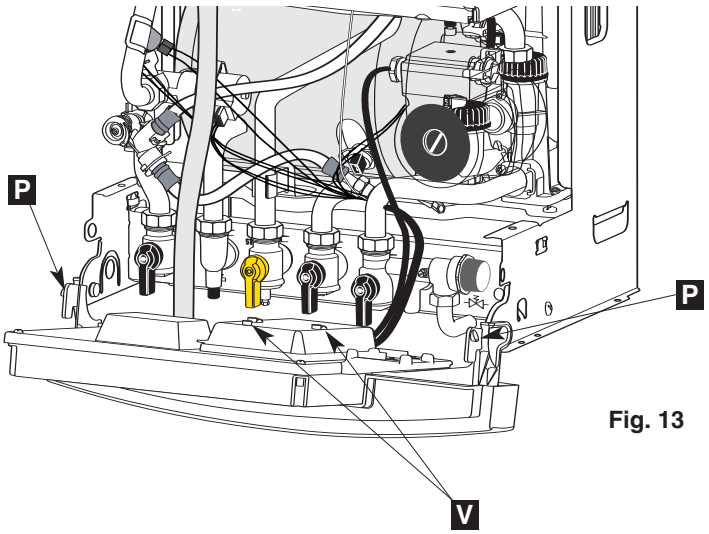


Fig. 13

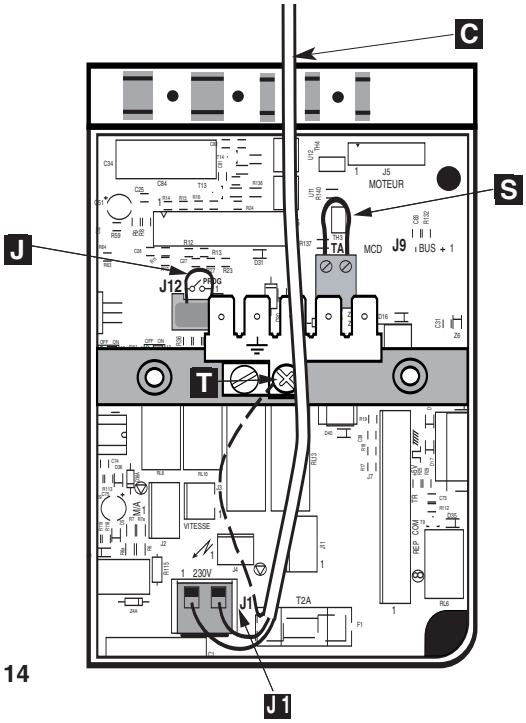


Fig. 14

7 Commissioning and Testing

Pre-commissioning

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

DHW

Open the main cold feed valve **43**.
Open all hot taps to purge the DHW system.
Check for water soundness.
Check flow rate at the bath tap is set correctly (see technical data).

Central Heating

Open the flow and return valves on the boiler **40** and **44 (Fig. 15)**
Open the automatic air vent **18 (Fig. 2)**
Fill the system and vent radiators.
Set the system pressure and remove the filling loop.
Check for leaks.
Manually check pump is free to turn.
Switch on electrical supply.
Press on 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 boiler and check water filter for installation debris.
Replace filter and recharge system.

Lighting the Boiler

Connect gas pressure gauge to test point **42 (Fig. 15)**.
Turn on the gas supply and boiler gas tap **42 (Fig. 15)**.
Ensure the electrical supply is on.
Ensure all the external controls are calling for heat.
Press on Central Heating switch **29 (Fig. 3)** to switch on heating mode.
Press on **+** 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 boiler is operating in hot water mode. (Refer to technical data).
Check the operation of the boiler controls and safety devices. (see separate servicing leaflet for details). Set the by-pass (refer to the paragraph Page 11).
Re-flush the system to remove any dissolved oils and fluxes.
Recharge the 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)** anti-clockwise to open the by-pass using the chart **(Page 6, Fig. 5)** 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 aforementioned chart indicates 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 10.** Speed selection is only available in C.H. mode.

Post Commissioning

Ensure system pressure has been set correctly.
Set all parameters of the boilers as shown in **Section 9 ADJUSTMENTS AND SETTINGS**.
Set boiler thermostat and controls.
Set programmer to householder's requirements.
Set external controls.
Ensure the Log Book is fully completed with your contact details and required readings and 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 guarantee.
Ensure the Householder countersigns the Log Book to confirm that these demonstrations have been carried out and understood.

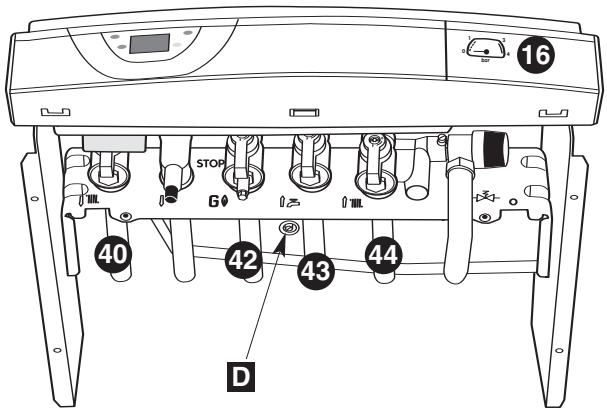


Fig. 15

8 Fitting the Casing

Fitting the casing

Remove the protecting film from the casing :
- Position the casing as shown **(Fig. 17)**
- Slide down the casing and put the casing holes on the plastic pins located on the top of the chassis
- Check the correct position of the casing onto the boiler
- Tighten the 4 screws located at the bottom as shown in (**Fig. 16)**.

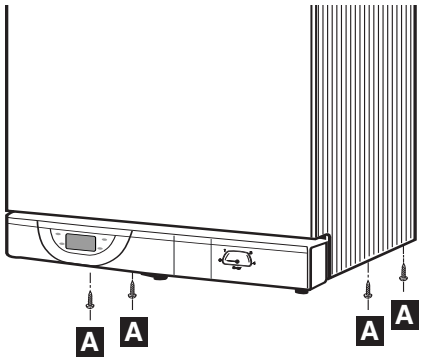


Fig.16

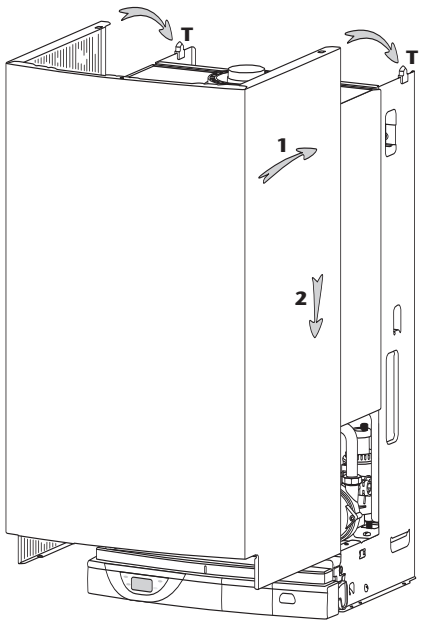


Fig. 17

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, open the front door **P (Fig. 18)**

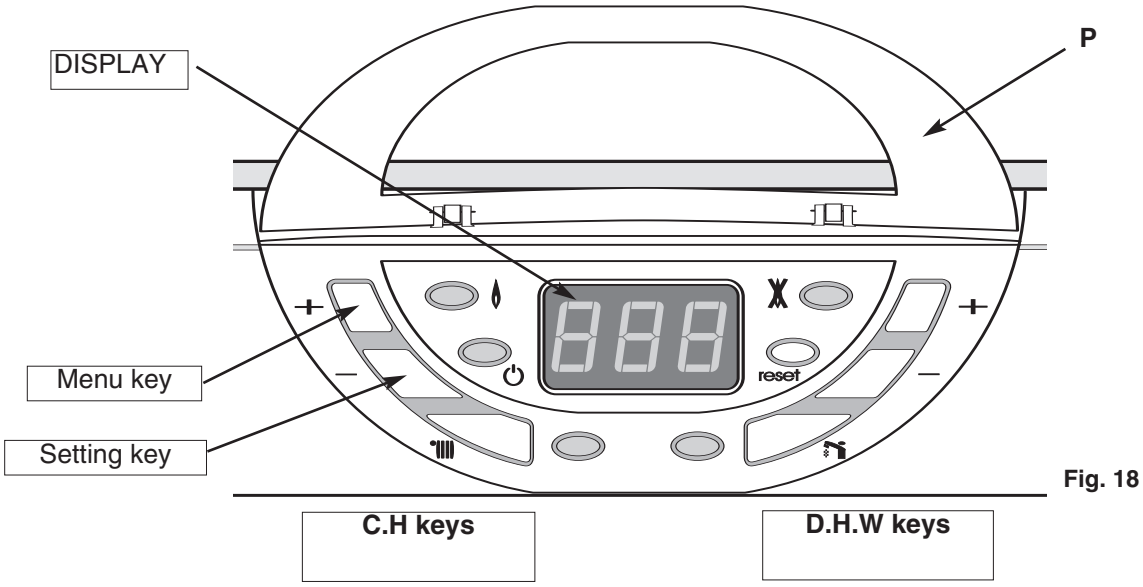


Fig. 18

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 Menu key (⊕ key on C.H. side) **(Fig.18)**. The menu number is displayed for 3 seconds. Press the menu key to change to the next menu.

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

Press either the ⊕ or ⊖ key on the DHW side to change from one section to the previous or the next one in a menu.

Note : When you arrive at the last section of a menu, pressing the ⊕ key will change to the 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 setting key (⊖ key of the C.H. side) to enter the modification mode. The 2nd and 3rd digits will flash. Press the ⊕ or ⊖ keys on the DHW side to select the correct value then press the Setting key to accept this modification and to exit the setting mode. The 2nd and 3rd digits will stop flashing.

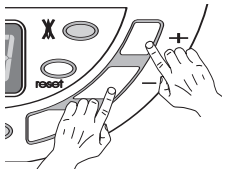
Recalling the basic configuration:

Select menu **3** or **4** then press both the ⊕ key on the DHW side and the setting key for more than 5 seconds. The digits will flash **CM** CM for a while to indicate that the operation is completed.

Erasing the default register **:**

Select menu **1** then press both the ⊕ key DHW side and setting key for more than 5 seconds. The digits will flash **CM** CM for a while to indicate that the operation is completed. **Note:** To exit from the setting mode, leave the boiler for approx. 1 minute, the boiler will then revert to the user mode.

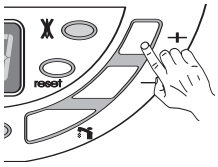
ACTION	CONFIGURATION	DISPLAY



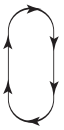
5 ”

Menu - 1 - Default register

Records the last 10 defaults

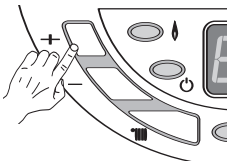


x times

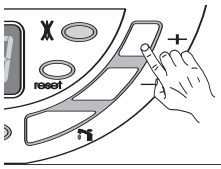


Section	Digit 1	Digits 2 and 3
Last default occured	0.	code from **01** to **99**
Last but one default occurred	1.	code from **01** to **99**
...	...	code from **01** to **99**
Last default occurred before the previous one	9.	code from **01** to **99**

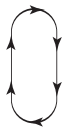
Note **--** is displayed if no default is recorded.



once



x times

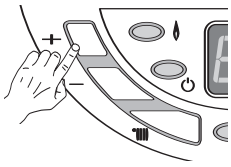


Menu - 2 - Boiler conditions

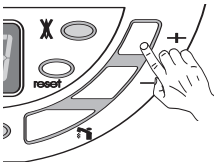
Indicates the conditions or the configurations of the boiler

Section	Digit 1	Digits 2 and 3
Software version of display PCB	0.	**10** to **99**
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** : DHW
	4.	**1** : CH
DHW flow temperature in Celsius degrees	5.	from **00** to **99**
TSS® temperature in Celsius degrees	6.	from **00** to **99**
CH flow temperature in Celsius degrees	7.	from **00** to **99**
Software version of main PCB	9.	**10** to **99**

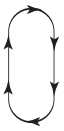
ACTION | CONFIGURATION | DISPLAY



once



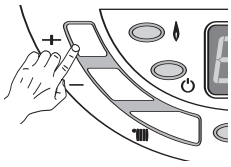
x times



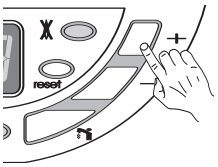
Menu - 3 - Boiler options

Section	Digit 1	Digits 2 and 3	DISPLAY	Factory setting
Under floor heating system	0	**0** : no	0 0	✓
		1 : yes	0 1	
DHW Delay (time before CH relights after a DHW cycle)	5	0 to 5 mn by step 0.5mn	5 3.0	✓
DHW flow swith Delay (time before DHW flow detection to override pressure peak problem)	6	0 to 20 1/10 seconds	6 0	✓

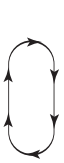
ACTION | CONFIGURATION | DISPLAY



once

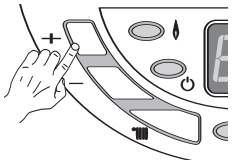
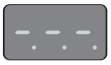
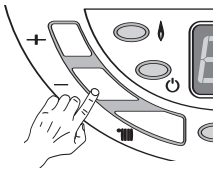
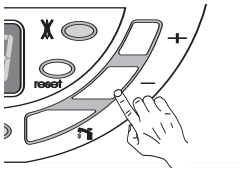
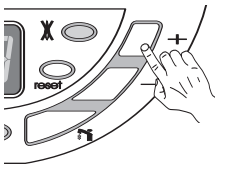
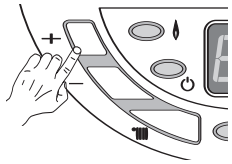


x times



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	
	4	**80°C**	4 8 0	✓
CH anti cycling delay	8	**0.0 min**	8 0.0	
From 0 to 7 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	
CH maximum output limitation Model 24 From step 0 (P. min.) 8 kW to step 10 (P. max.) 24 kW	9	Value from 0 to 10	9 0 6	✓
Model 30 From step 0 (P. min.) 9 kW to step 10 (P. max.) 28 kW	9	Value from 0 to 10	9 0 6	✓

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 reach the maximum power set in menu 4 section 9.	Central heating temperature is displayed in celsius degrees. 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 celsius degrees. 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 celsius degrees. 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 leaves menu 5
- after 15 minutes if there is no keys are pressed

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

9 Adjustments and Settings (continued)

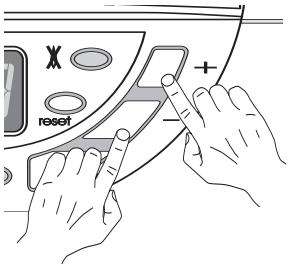
CH heat output setting :

If you would like to change the setting of the C.H. heat output, please proceed as follows :

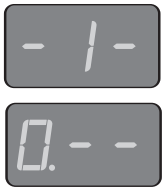
(Note: the factory setting is 18 kW and the following explanation refer to menu 4 section 9)

Display

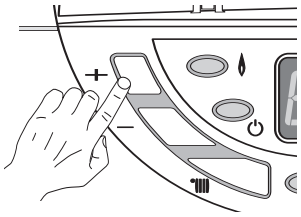
1 - Switch to the installer mode, press both the ⊕ and ⊖ keys on the DHW side for 5 seconds.
The display shows :
-1- then **0.--** if there is no default in the default register.



5 ”



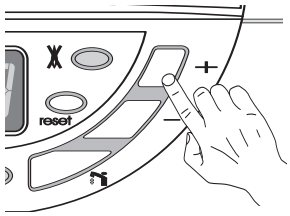
2 - press the menu key 3 times ⊕ (on CH side) to gain access to menu ***-4-***,
The display shows :
-4- then the value set for section 0 (**00** or **01** respectively Action on burner only or pump and burner)



x 3

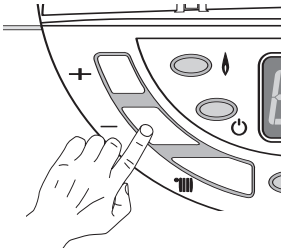
or

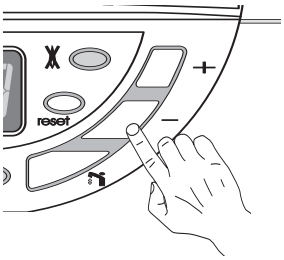
3 - change to Section 9 (Adjustment of C.H. heat output). Press the ⊕ key on the DHW side times.
The display shows :
(**906** which corresponds to 18 kW which is the factory setting)
9 = section 9 ***06*** = 18 kW

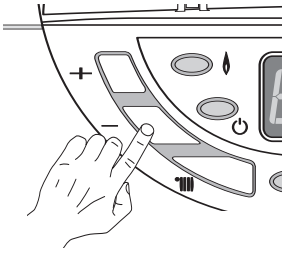


x 9

4 - press the setting key ⊖ (on CH side) once, the 2nd and 3rd digits flash together. Then press the ⊖ **or** ⊕ key on the DHW side to change the C.H. heat output step between **00** and **10**.
Press the setting key to confirm the value. The display stops flashing. The setting procedure is finished.
To exit from the setting mode, leave the boiler for approx. 1 minute, the boiler will then revert to the user mode.
After programming please close the door **P (Fig. 18)**







10 Incorrect Function

In case of problem, or when the boiler has to display a message, the display flashes 2 digits. Please refer to the table below to diagnose the default.

For default 01 and 03, the red indicator **38** will light **(Fig.19)**

Overheat lock out

FAULT -01

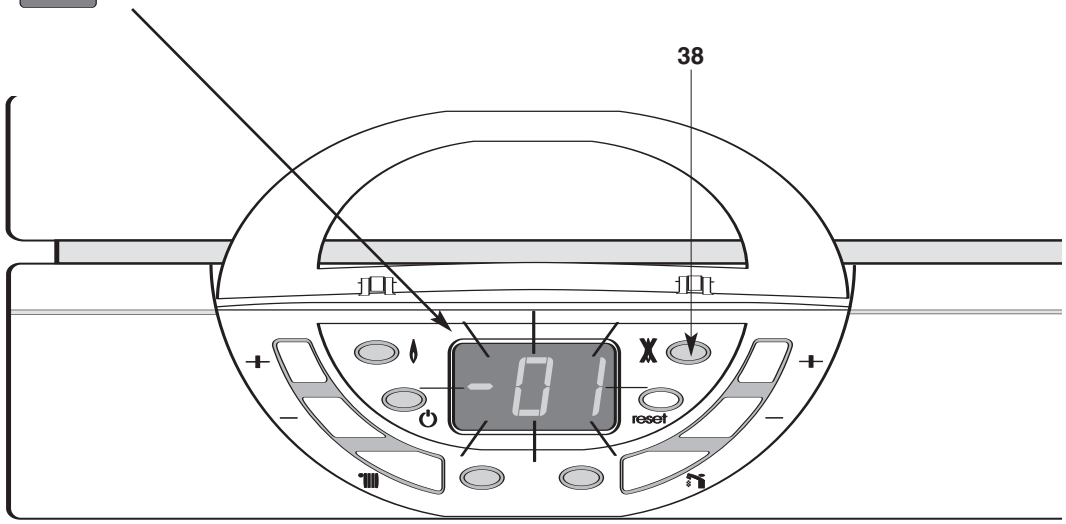


Fig. 19

Code display	Fault description	Information on functioning
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 ignite
20	Wiring problem	
23	Fan speed too low	
24	Fan control system defective	
25	Thermistor cylinder open	
26	Thermistor cylinder bypassed	
29	Three way valve blocked in CH mode	
31	Communication problem with the display PCB	
32	Communication problem with the main PCB	

11 Gas Conversion

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

12 Control Panel

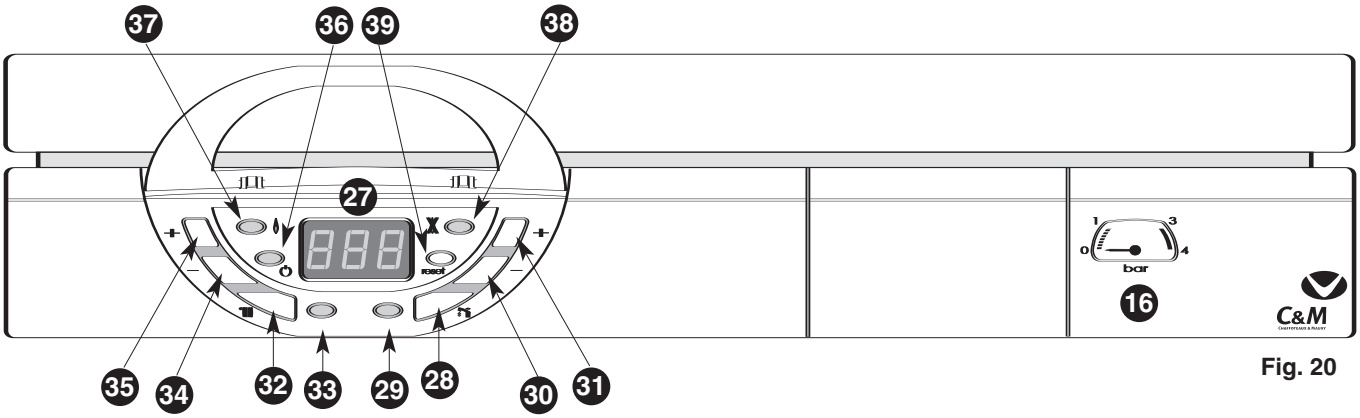


Fig. 20

Control panel (fig. 20)

16.- Pressure gauge

27.- Display

28.- Switch for Domestic Hot Water mode

29.- Green indicator Heating / Domestic Hot Water mode ON

30.- Key to reduce the Domestic Hot Water temperature ⊖

31.- Key to rise up the Domestic Hot Water temperature ⊕

32.- Switch for Central Heating (Winter) mode

33.- Green indicator Central Heating mode ON **RESET** Reset button

34.- Key to decrease the Central Heating temperature ⊖

35.- Key to increase the Central Heating temperature ⊕

36.- Green indicator - Power ON

37.- Orange indicator - Burner ON

38.- Red indicator - Lock out / flame failure

39.- **Reset** button

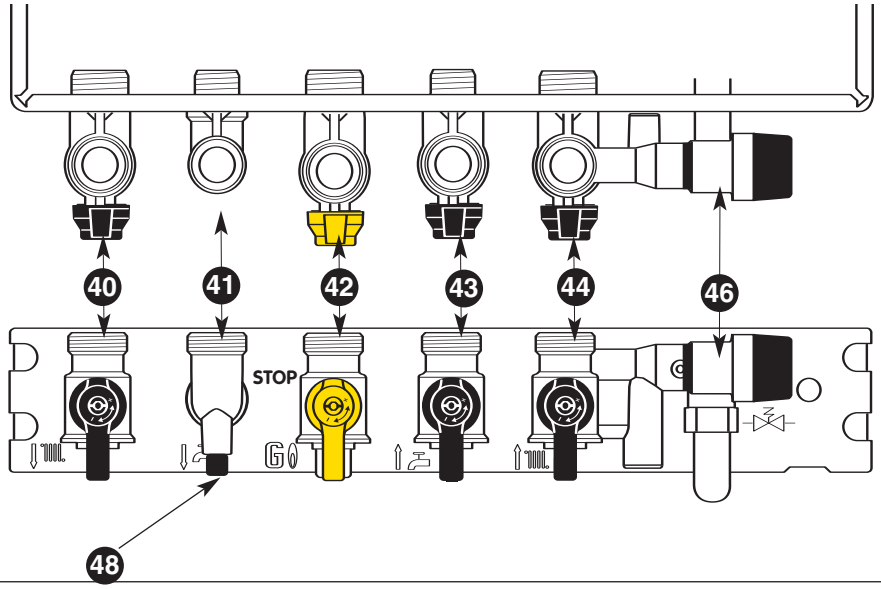


Fig. 21

Connecting bracket

Taps shown in Open position **(Fig. 21)**

40 : Central Heating flow isolating valve

41 : Domestic Hot Water outlet

42 : Gas service tap

43 : Water service tap

44 : Central Heating return isolating valve

46 : Central Heating pressure relief valve

48 : D.H.W. drain screw

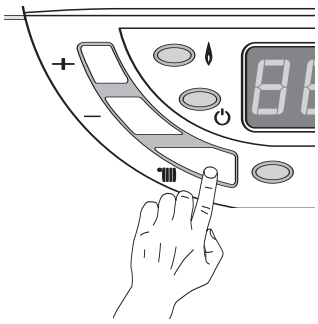
13 How to Use

Switching on

1. Check that pressure in 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 opened at the gasmeter and main power is on. Green indicator ⏻ Power ON **36**.
3. Open the gas tap **42 (Fig.21).**
   The boiler is now ready to use.

Attention ! If the boiler stays a long time without working, some air in the gas pipe can hinder the first lightings. (please refer to **Section 18 Incorrect Function**).

Switching on the Central Heating



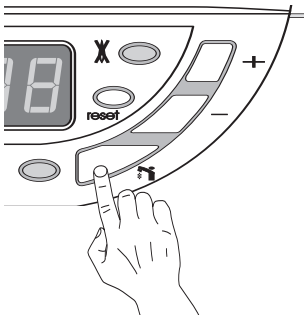
Press on key **32** , the green indicator **33** will light and the display will show the Heating flow temperature. 

Keys **34** ⊖ and **35** ⊕ allow the adjustment of the temperature required in the Central Heating system dependent on the weather conditions.

- press ⊕ to increase the temperature when the weather is cold
- press ⊖ to decrease 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 key **28** , the green indicator **29** will light :

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

the display will show the following graphic 

<u>In case of draw off</u>

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

Keys **30** ⊖ and **31** ⊕ allow the adjustment of the temperature 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 in DHW 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 during the summer period (Central Heating switched off) To close the Central Heating flow isolating tap **(40 Fig. 21).** Don't forget to open it before switching on the Central Heating mode again.

Switching on the Domestic Hot water and Central Heating together

Press key **32** the green indicator **33** will light.
Press key **28** the green indicator **29** will light.

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

<u>In case of 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 **36** on

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

Press key **32** and **28** , to switch off both DHW and C.H. mode. The green indicators **39** and **29** will stop.
During the duration of the stand-by mode, an automatic anti-sticking system will switch on the pump for 1 minute and activate 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 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 on key **32** and **28** , to switch off both DHW and CH mode. The green indicators **33** and **29** will go out
- Switch off the main electrical supply
- Shut off the gas service tap **42 (Fig. 21)**

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

14 Maintenance

As with your 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 on the Log Book.

15 Guarantee

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

16 Practical Information

Pump anti-sticking device

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

Precaution to avoid freezing

We recommend you contact your installer or local service centre to take precautions adapted to your system.

• **DHW system**

Turn off the main cold water supply and drain the boiler :
- Open a hot water tap
- Unscrew the cold water inlet tail
- Drain the water out the boiler with the drain valve **48 (Fig. 21)**

• **C.H. system**

Chose one of the following solutions :
- 1) Drain the Central Heating system completely
- 2) Protect the Central Heating system with anti-freeze chemical products and verify periodically the concentration
- 3) Leave the Heating mode switched on and set the room thermostat to anti-freeze mode (between 5 and 10°C)
- 4) Leave your boiler in stand-by mode, the anti-freeze device will switch on the pump and the burner if necessary.

17 Gas Conversion

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

18 Incorrect Function

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 8
		Set up the room thermostat
Red indicator lit	Room thermostat switched off	Wait for a few minutes Press the reset button **39 (Fig.21)** the red led will go out and the boiler will attempt to re-light. If red the indicator lights too frequently, please call your local service centre.
Noises in CH system	Air presence in C.H. system or. Insufficient pressure	Purge the system of air and increase the system pressure (Section 8)
Radiators rise in temperature during summer season	Gravity effect in the C.H. system	Close the Central Heating flow isolating valve **37**. Don't forget to open it again before starting the heating.

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

19 Technical Data

Model	Calydra green 24		Calydra green 30	
Appliance category	II 2H3P		II 2H3P	
Heat gross input C/H maxi	27.8 kW	94534 Btu/h	31.6 kW	107843 Btu/h
Heat gross input DHW maxi	27.8 kW	94534 Btu/h	31.6 kW	107843 Btu/h
Heat output C/H 50°/30° maxi	26 kW	88732 Btu/h	30 kW	102383 Btu/h
Heat output C/H 80°/60° maxi	24 kW	81907 Btu/h	28 kW	95557 Btu/h
Heat output DHW maxi	24 kW	81907 Bth/h	30 kW	102383 Btu/h
C/H operating temperature	80°C max	25°C min	80°C max	25°C min
C/H circuit pressures Min operating	0.7 bar	10 lb/in²	0.7 bar	10 lb/in²
C/H circuit pressures Max operating	2.5 bar	36.3 lb/in²	2.5 bar	36.3 lb/in²
DHW flow rates 30°C	12.5 l/min	2.77 gal/min	14.5 l	3.21 gal/min
DHW flow rates 35°C	10.7 l/min	2.38 gal/min	12.4 l	2.76 gal/min
Cold water mains pressures Min operating	0.5 bar	7.25 lb/in²	0.5 bar	7.25 lb/in²
Cold water mains pressures Max operating	10 bar	145 lb/in²	10 bar	145 lb/in²
Flow limiter rate	8 l/min		10 l/min	
Compartment ventilation	not required		not required	
Natural gas G20				
Gas rate C/H max	2.64 m³/h	93 ft³/h	3,01 m³/h	106 ft³/h
Gas rate DHW max	2.64 m³/h	93 ft³/h	3,01 m³/h	106 ft³/h
Gas rate C/H & DHW mini	0.87 m³/h	31 ft³/h	1 m³/h	35 ft³/h
Gas valve restrictor diameter	without		without	
Propane L.P.G G31				
Gas rate C/H max.	1.94 kg/h	36 ft³/h	2.21 kg/h	41 ft³/h
Gas rate DHW max.	1.94 kg/h	36 ft³/h	2.21 kg/h	41 ft³/h
Gas rate C/H & DHW mini	0.64 kg/h	12 ft³/h	0.73 kg/h	13 ft³/h
Gas valve restrictor diameter	4.40 mm		4.8 mm	
Safety discharge	3 bar	43.5 lb/in²	3 bar	43.5 lb/in²
Expansion vessel - Pre-charge pressure	0.7 bar	9.4lb/in²	0.7 bar	9.4lb/in²
Net capacity at 3 bar in liter	5.44		5.44	
Adjustable by-pass				
Electrical characteristicis				
Supply	230 v		230 v	
Consumption	150 w		150 w	
Protection	IP 44		IP 44	
Fuse F1	2 A		2 A	
Fuse F2	1.25 A		1.25 A	
Fuse F3	0.315 A		0.315 A	
Fuse F4	0.250 A		0.250 A	
External controls	24 v		24 v	

This appliance is suitable for Natural gas or LPG. A gas conversion must be made by a competent person.

Manufacturer: **Chaffoteaux & Maury - France**

Commercial subsidiary: **MTS (GB) Limited**
MTS Building
Hughenden Avenue
High Wycombe
Bucks HP13 5FT

Telephone: (01494) 755600
Fax: (01494) 459775
Internet: www.chaffoteaux.co.uk
E-mail: info@uk.mtsgroup.com

Technical Support Help Line: 0870 241 8180
Customer Service Help Desk: 0870 600 9888

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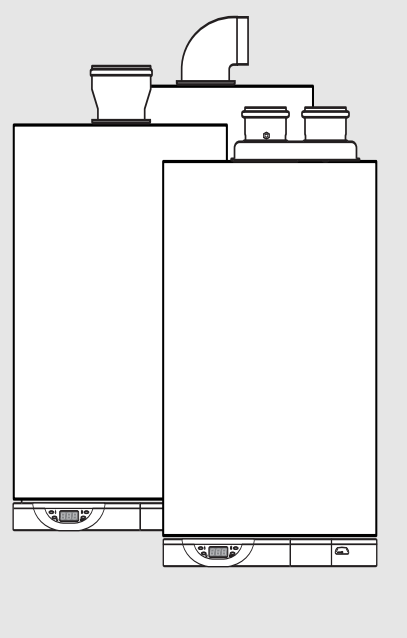
MAINTENANCE AND SERVICE GUIDE

C&M CHAFFOTEAUX & MAURY

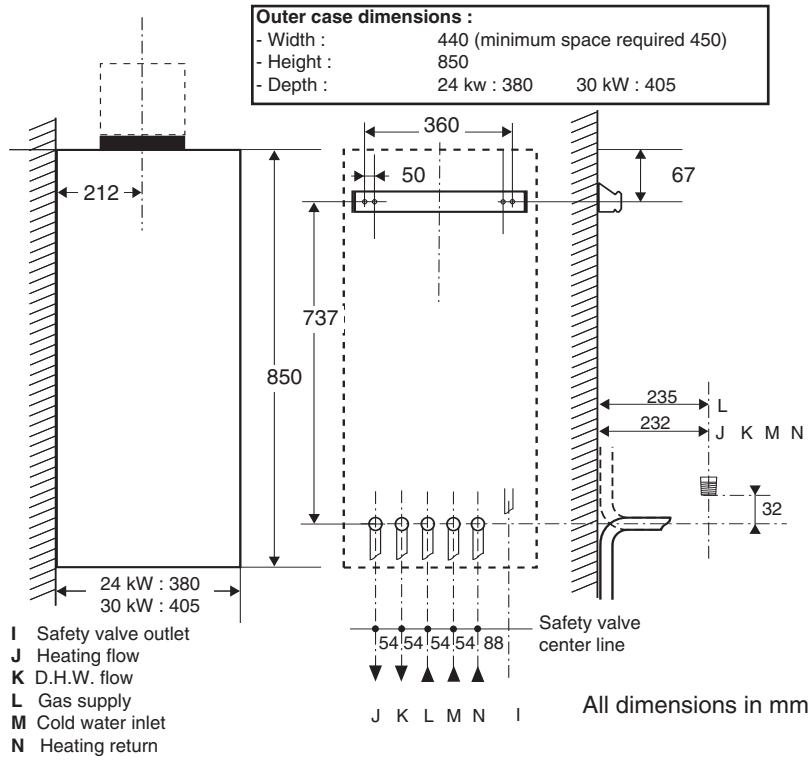
CALYDRA green

Fanned Flue Condensing Combination Boiler Heating and Storage Domestic Hot Water with TSS®

Dimensions



Flue types:
C 13: - C 33 - C 53



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

All dimensions in mm

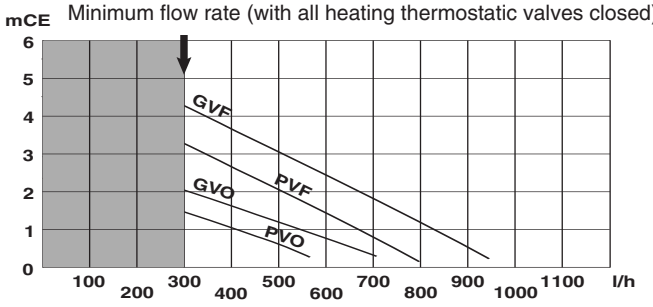
Technical data

	24 kW	30 kW
Heat gross input C.H. max	9.2-27.8 kW	10.4-31.6 kW
Heat gross input D.H.W. max	9.2-27.8 kW	10.4-31.6 kW
Heat output C.H. 50°/30° max	9-26 kW	10-30 kW
Heat output C.H. 80°/60° max	8-24 kW	9-28 kW
Heat output DHW maxi	8-24 kW	9-30 kW
C.H. operating temperature	80°C max	80°C max
C.H. circuit pressures Min operating	0.7 bar	0.7 bar
C.H. circuit pressures Max operating	2.5 bar	2.5 bar
D.H.W. flow rates 30°C	12.5 l/min	14.5 l/min
D.H.W. flow rates 35°C	10.7 l/min	12.4 l/min
Cold water mains pressures Min operating	0.5 bar	0.5 bar
Cold water mains pressures Max operating	10 bar	10 bar
Flow limiter rate	8 l/min	10 l/min
Safety discharge	3 bar	3 bar
Expansion vessel - Pre-charge pressure	0.7 bar	0.7 bar
Net capacity at 3 bar in litres	5.44	5.44
Supply	230 v	230 v
Consumption	150 w	150 w
Protection	IP 44	IP 44
Fuse F1/F2/F3/F4	2 A/1.25 A/0.315 A/0.250 A	
External controls	24 v	24 v

	24 kW	30 kW
Natural gas G20		
Gas rate C.H. max	2.64 m³/h	3.01 m³/h
Gas rate D.H.W. max	2.64 m³/h	3.01 m³/h
Gas rate C.H. & D.H.W. min	0.87 m³/h	1 m³/h
Gas valve restrictor diameter	without	without
Propane L.P.G G31		
Gas rate C.H. max.	1.94 kg/h	2.21 kg/h
Gas rate D.H.W. max.	1.94 kg/h	2.21 kg/h
Gas rate C.H. & D.H.W. min	0.64 kg/h	0.73 kg/h
Gas valve restrictor diameter	4.40 mm	4.8 mm

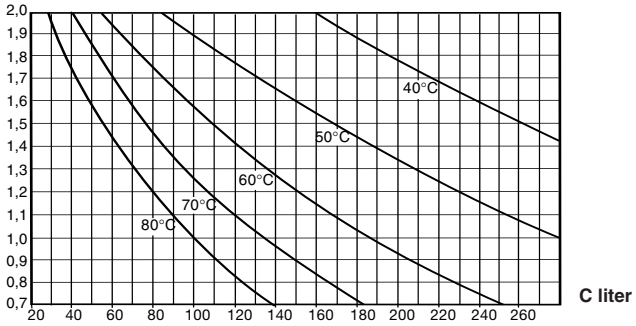
Pump and expansion vessel characteristics

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

Central heating initial pressure when cold (in bar)

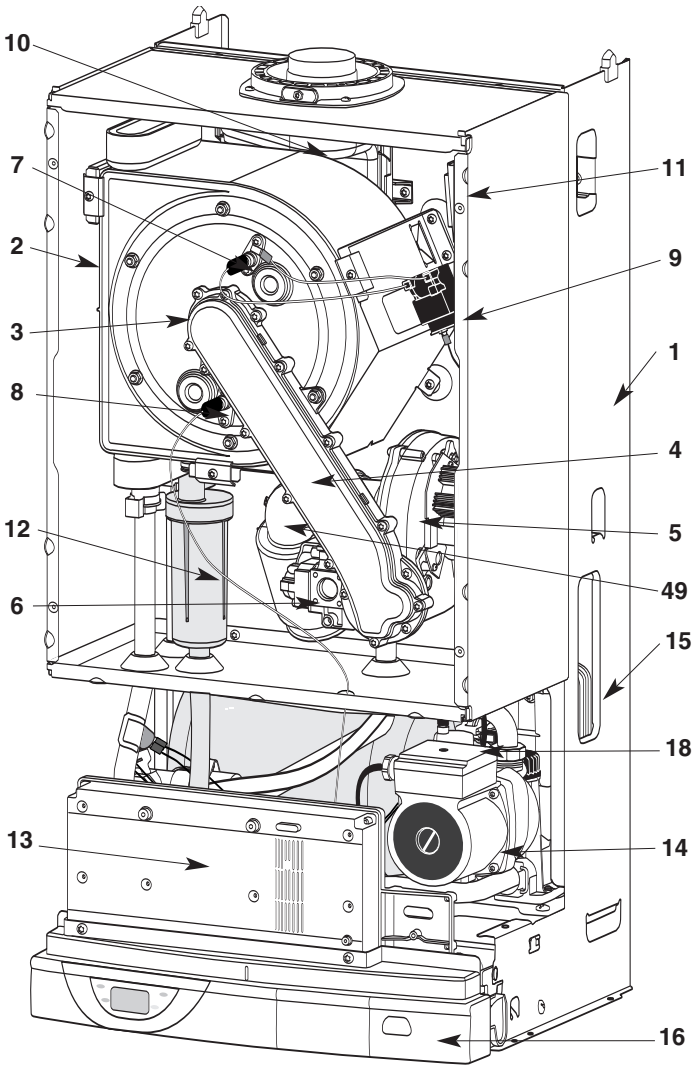


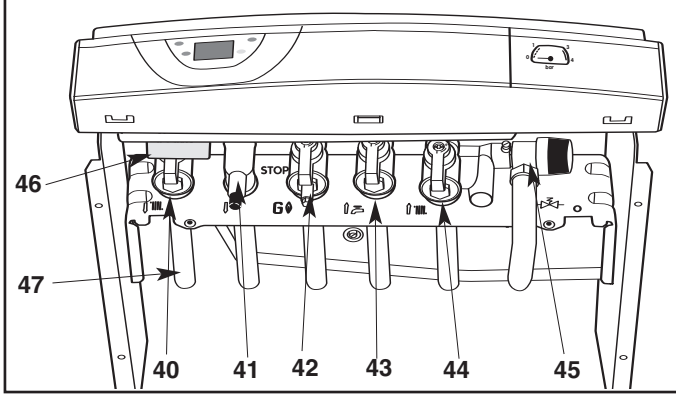
System capacity chart

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

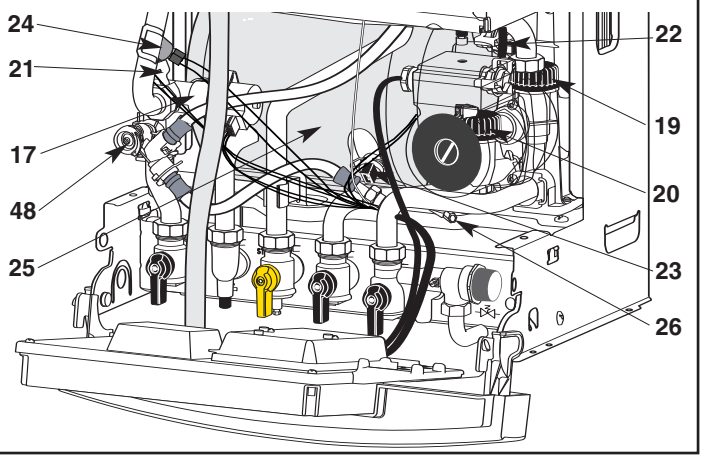
$$\frac{\text{System static height (in metre)}}{10} + 0.7 = \text{Initial pressure (in bar)}$$

Components location



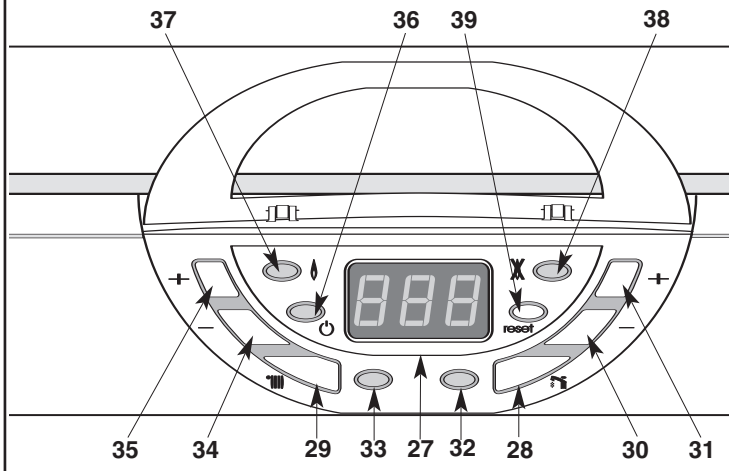


1.- Steel chassis complete with expansion vessel
2.- Sealed chamber
3.- Burner and heat exchanger assembly
4.- Air / gas connection
5.- 24 V modulating fan
6.- Gas valve
7.- Ignition electrode
8.- Ionisation probe
9.- Ignitor
10.- Combustion products manifold
11.- 24 V transformer
12.- Siphon
13.- Electrical box
14.- Pump
15.- Secondary heat exchanger
16.- Pressure gauge
17.- Three way valve
18.- Automatic air separator and automatic vent
19 - Central heating flowswitch
20.- Domestic hot water flowswitch
21.- Central heating control thermistor
22.- Hot water control thermistor
23.- TSS Control thermistor
24 - Overheat sensor
25 - TSS ® (mini cylinder)
26 - DHW pressure relief valve.
40.- Central heating flow isolating valve
41.- Domestic Hot Water outlet
42.- Gas service tap
43.- Water service tap
44.- Central heating return isolating valve
45.- Central heating pressure relief valve
46.- User's guide
47.- Connecting tails (x 5)
48.- Adjustable by-pass
49 - Silencer



FUNCTIONING

Control panel



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

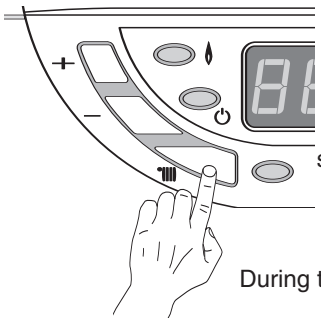
Switching on

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 opened at the gas meter and the main power is on. Green indicator ⏻ Power ON **36**.
3. Open the gas tap **42**.

The boiler is now ready to use.

Attention ! If the boiler remains off for a prolonged period of time, air may collect in the gas pipes and can hinder the boilers initial attempts to light. (please refer to section 18 Incorrect Function)

Switching on the Central Heating



Press key **29** , the green indicator **33** will light and the display will show the Heating flow temperature. 

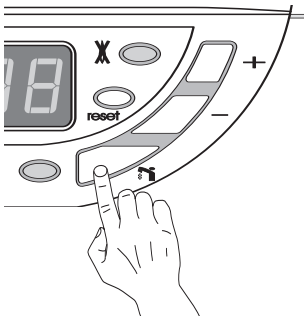
Keys **34** ⊖ and **35** ⊕ allow the adjustment of the temperature required in the Central Heating system depending on the weather conditions.

- press ⊕ to increase temperature when the weather is cold
- press ⊖ to reduce 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 key **28** , the green indicator **32** will light :

If there is no water demand

the display will show the following graphic

If the tank is heating up

the digit will move clockwise on the display

In case of draw off

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

Keys **30** ⊖ and **31** ⊕ allow the adjustment of the temperature 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 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 during the summer period (Central Heating switched off) the heating flow isolating tap (**40**). Don't forget to open it before switching on the Central Heating mode again.

Switching on the Domestic Hot water and Central Heating together

Press key **29** the green indicator **33** will light.
Press key **28** the green indicator **32** will light.

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

If the tank is heating up

the digit will move clockwise on the display

In case of 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 **36** on

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

Press keys **29** and **28** , to switch off both DHW and CH mode. The green indicators **33** and **32** will stop.

During the duration of the stand-by mode, an automatic anti-sticking system will switch on the pump for 1 minute and make a movement of 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 keys **29** and **28** , to switch off both D.H.W. and C.H. mode. The green indicators **33** and **32** will stop
- Switch off the main electrical supply
- Shut off the gas service tap **42**

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

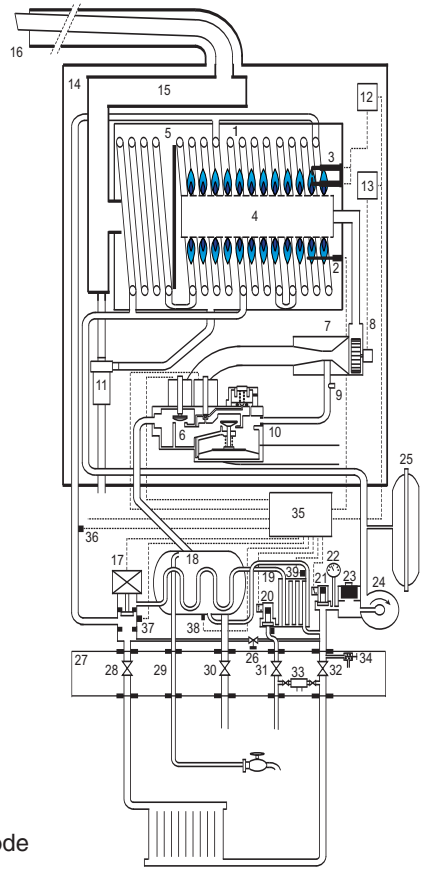
Domestic Hot Water Mode
To be able to supply hot water, the DHW mode should be ON. Press on key **28** , the green indicator **32** will light.
If there is no water demand, the display will show the following graphic if the TSS® is cold, the burner will light immediately. In case of draw off, a square made of 4 digits will move clockwise on the display .
Keys **30** ⊖ and **31** ⊕ allow the adjustment of the temperature required for D.H.W., flow. During the temperature setting operation, the display will flash.
When a tap or a shower is turned on, the flow of mains water, above 2 litres per min., will activate the DHW flow switch **20** or if the TSS® thermistor is calling for heat and allow the 3 way valve **17** to move to the DHW position. The pump can now circulate primary water heated by the main exchanger through the secondary heat exchanger and TSS® coil. The primary flow switch checks that this flow rate is over 4lt./min. before allowing the lighting 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 led **34** will light and the regulation system will be able to adjust the gas rate regarding the heat load. If the TSS® thermistor is calling for heat, the burner will stay in minimum output. If a flame is not detected, after 10 seconds, the security solenoids close together and shut off the gas. The red lockout indicator led **38** will light. Press the reset button to re-light the burner.
For flow rates of less than 2 l/min, the domestic hot water temperature is controlled by TSS® thermistor **23** and heating thermistor **21**. For flow rates over 2 l/min , the domestic hot water temperature is controlled by hot water control thermistor **22** and the central heating control thermistor **21**. This system anticipates the changes of temperature in the secondary heat exchanger and ensures accurate temperature regulation.
When the tap is closed the burner may stay alight until the TSS® cylinder is up to temperature. Then the burner is extinguished and the pump stops. The boiler will now stay in the hot water mode for 3 minutes to maintain temperature to ensure a fast response in the event of a subsequent hot water demand.
Priority will be given to a demand for hot water or re-heating of the TSS® cylinder. This will interrupt the central heating for the duration of hot water supply.

Central Heating Mode
To be able to supply heating, the mode should be switched ON. Press key **29** , the green indicator **33** will light, and the display will show the Heating Flow temperature.
Keys **34** ⊖ and **35** ⊕ allow the adjustment of the temperature required for the Central Heating system regarding 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 primary flow rate is over 4 lt./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 LED **37** will light and the regulation system will be able to adjust the gas rate regarding 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 LED **38** will light. Press the reset button to re-light the burner.
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 remain running for a further 3 minutes before it too stops.
Note: It is possible to override the 3 minute delay by pressing the Reset key **39**.

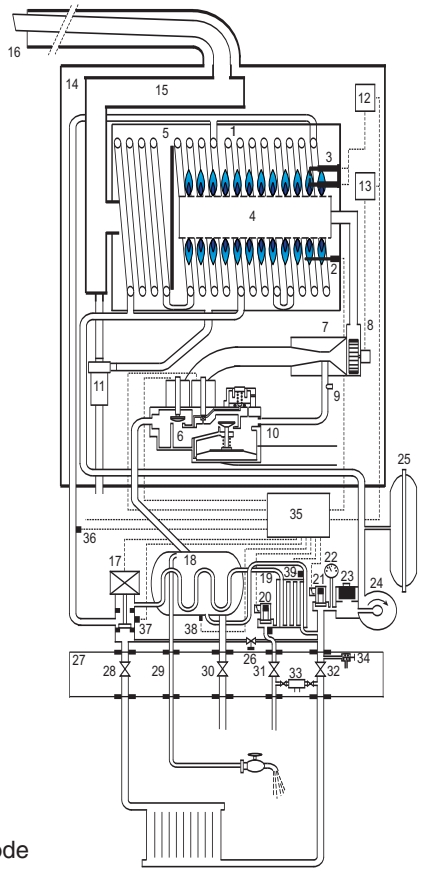
Lockout procedure
Flame disappearance :
When the ionisation electrode **8** does not detect flame presence. The orange indicator led **37** extinguishes. A lighting cycle starts. If a flame is not detected, before 10 seconds, the safety solenoids will close. The lockout red indicator **38** lights and 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 key **39**.

Overheat detection :
If an overheat (over 100°C) is detected in the primary circuit by the sensor **23**, the safety solenoids close and the fan stops. The orange LED **37** extinguishes and the pump remains running for 3 minutes. The reset will only be possible once the primary temperature has dropped below 76°C.

CALYDRA GREEN FUNCTIONAL DIAGRAM



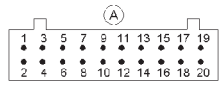
Heating mode



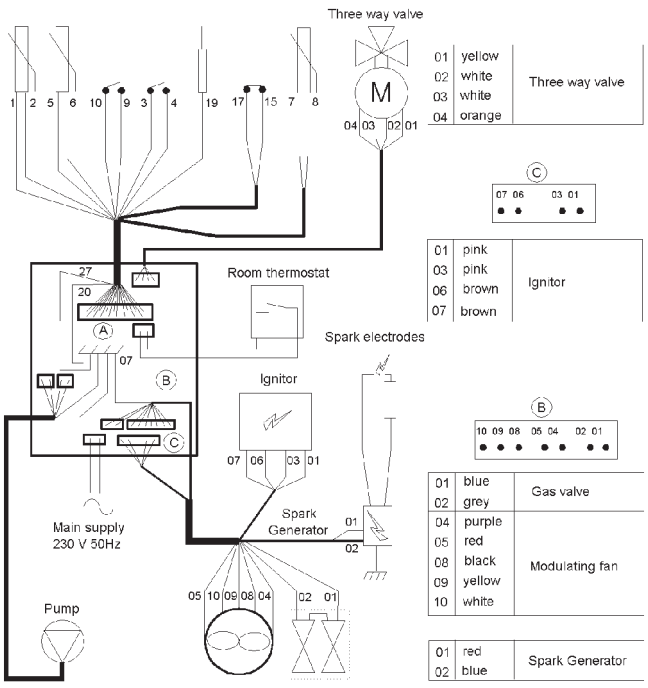
Hot Water mode

ELECTRICAL WIRING

DIAGRAM



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



01	yellow	Three way valve
02	white	
03	white	
04	orange	

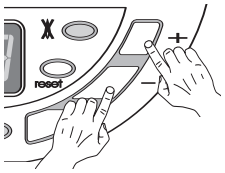
01	pink	Ignitor
03	pink	
06	brown	
07	brown	

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

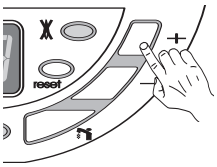
01	red	Spark Generator
02	blue	

1311419 /

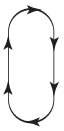
ACTION	CONFIGURATION	DISPLAY



5 ”



x times

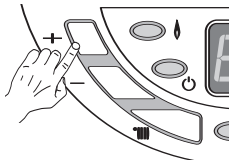


Menu - 1 - Default register

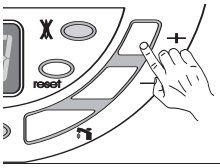
Record the last 10 defaults

Section	Digit 1	Digit 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. _ _

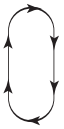
Note **--** is displayed if no default is recorded.



once



x times

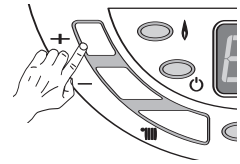


Menu - 2 - Boiler conditions

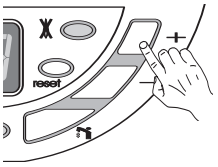
Indicates the conditions or the configurations of the boiler

Section	Digit 1	Digit 2 and 3	DISPLAY
			- 2 -
Software version of display PCB	0.	**10** to **99**	0. _ _
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** : DHW	4. 0
	4.	**1** : CH	4. 1
DHW flow temperature in Celsius degrees	5.	from **00** to **99**	5. _ _
TSS® temperature in Celsius degrees	6.	from **00** to **99**	6. _ _
CH flow temperature in Celsius degrees	7.	from **00** to **99**	7. _ _
Software version of main PCB	9.	**10** to **99**	9. _ _

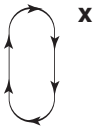
ACTION | CONFIGURATION | DISPLAY



once



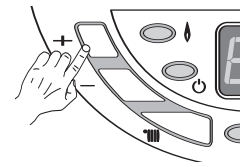
x times



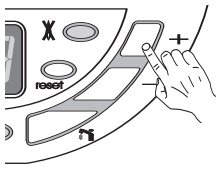
Menu - 3 - Boiler options

Section	Digit 1	Digit 2 and 3	DISPLAY	Factory setting
Under floor heating system	0	**0** : no	0 0	✓
		1 : yes	0 1	
DHW Delay (time before CH relight after a DHW cycle)	5	0 to 5 mn by step 0.5mn	5 3.0	✓
DHW flow swith Delay (time before DHW flow detection to override pressure peak problem)	6	0 to 20 1/10 seconde	6 0	✓

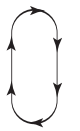
ACTION | CONFIGURATION | DISPLAY



once

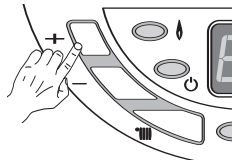
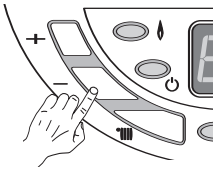
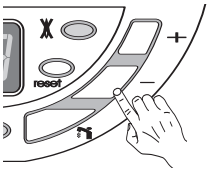
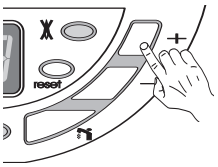
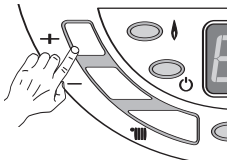


x times



Menu - 4 - Boiler settings

Section	Digit 1	Digit 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	
	4	**80°C**	4 8 0	✓
C.H. anti-cycling delay	8	**0.0 min**	8 0.0	
From 0 to 7 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 Model 24 From step 0 (P. min.) 8 kW to step 10 (P. max.) 24 kW	9	Value from 0 to 10	9 0 6	✓
Model 30 From step 0 (P. min.) 9 kW to step 10 (P. max.) 28 kW	9	Value from 0 to 10	9 0 6	✓

ACTION	CONFIGURATION	DISPLAY
 press once	**Menu - 5 - Combustion rate control mode**	- 5 -
	Effect / **Display**	
wait 5 ”	Combustion rate control mode OFF	- . - . - .
 press once	Switching on the combustion rate control mode. Central heating out put reaches the maximum power set in menu 4 section 9. / Central heating temperature is displayed in celsius degrees. The 3 dots indicate that the combustion rate control is ON at maximum output.	X.X. o.
 press once	Switching the combustion rate down to minimum power. / Central heating temperature is displayed in celsius degrees. The dot indicates that the combustion rate control is ON at minimum output.	X.X o
 press once	Switching on the combustion rate to maximum output set in menu 4 section 9. / Central heating temperature is displayed in celsius degrees. The 3 dots indicate that the combustion rate control is ON at maximum output.	X.X. o.
 press once	Switching off the combustion rate control mode.	- 1 -

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 leave menu 5
- after 15 minutes if there is no actions on keyboard

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

C.H. heat output setting :

If you would like to change the setting of the C.H. heat output, 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 key ⊕ and ⊖ on DHW side for 5 seconds.
The display shows :
-1- then **0.--** if there is no default in the default register.

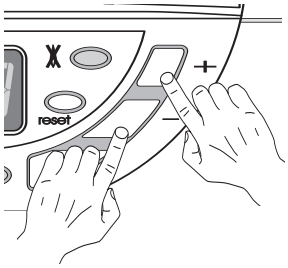
2 - press 3 times on menu key ⊕ (on C.H. side) to gain access to menu ***-4-***,
The display shows :
-4- then the value set for section 0 (**00** or **01** respectively Action on burner only or pump and burner)

3 - change to section 9 (Adjustment of C.H. heat output). Press key ⊕ on D.H.W. side 9 times.
The display shows:
906 (which corresponds to the 18 kW which is the factory setting)
9 = section 9 ***06*** = 18 kW

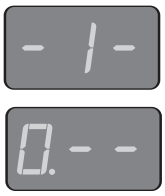
4 - press setting key ⊖ (on CH side) once, the 2nd and 3rd digits flash together. Then press the ⊖ or ⊕ key on the D.H.W. side to change the C.H. heat output step between **00** and **10**.
Press the setting key to confirm the value. The display stops flashing.
Setting procedure is finished.
To exit from setting mode, leave the boiler for approx. 1 minute, the computer will switch back to user mode.
After programming please close the door **P**.

Display

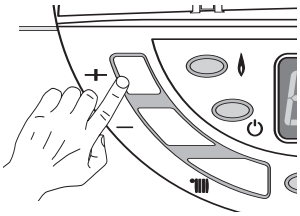
1



5 ”



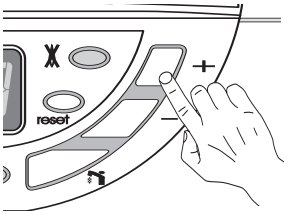
2



x 3

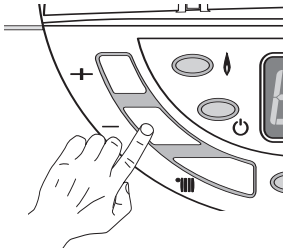
or

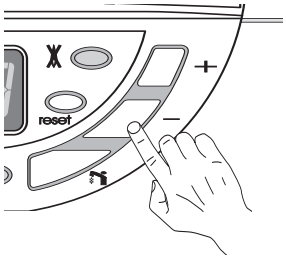
3

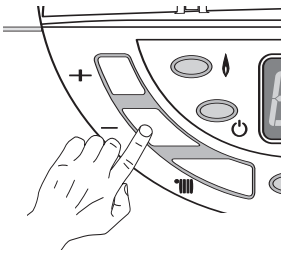


x 9

4







REGULATION

Temperature regulation for both C.H., TSS® and D.H.W. circuits are controlled by 3 thermistors. The C.H. knob allows the adjustment of temperature between 35 and 85°C. The D.H.W. temperature is limited to 60°C. TSS®, 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 Heating circuits are detected by 2 flow switches. A piston with a magnet at the top operates a REED switch. The piston is lifted by flow rates listed below :

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 regulars intervals. The frequency of servicing will depend upon the particular installation condition and usage, but in general, once a year should be adequate.

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

Attention ! the air/gas connection pipe between the gas valve and the burner should never open. The seal can be checked only 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 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 lighting and ionisation electrodes condition
- Clean the burner (Never use a metallic brush as this can damage the stainless steel)
- Clean the heat exchanger (Never use a metallic brush as this 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 gas and water filters
- Check 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 or 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 take care about the condensate products content in the siphon which are acid.

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

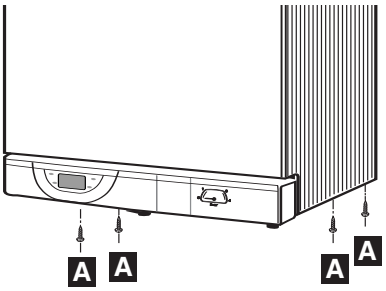
Preliminary checks

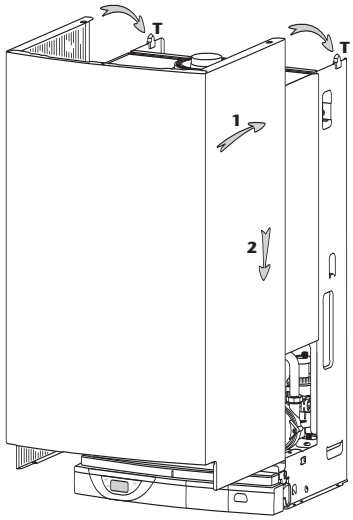
- Remove outer case
- Check the system pressure is at least 0.7 bar cold
- Check the modulation of the gas valve in DHW mode by reducing progressively the flow rate at a tap.
- Check that the burner is extinguished fully when both solenoids are closed and fan is off.
- Test ionisation functions and check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

REMOVAL AND REPLACEMENT OF PARTS

Before removing the appliance 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 **A** in the bottom of the case and lift free. When replacing,





carefully locate on lugs **T** on the top edge of the chassis.

2. Sealed chamber front panel
Unscrew the four self tapping screws securing the sealed chamber front panel and lift over the top 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 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 electrode
Carry out steps 1 and 2 as above. Disconnect the ionisation electrode from its wiring. Loosen the 2 screws and pull it out from the combustion chamber front panel. Replace the ionisation gasket provided. Reassemble in reverse order.

5. Lighting electrode
Carry out steps 1 and 2. Disconnect the lighting electrode from its wiring. Loosen the 2 screws and pull it out from the combustion chamber front panel. Replace the ionisation gasket provided. Reassemble in reverse order.

6. Burner
Carry out steps 1, 2 and 3. Remove the 4 Philips screw retaining the burner onto the combustion chamber. 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.

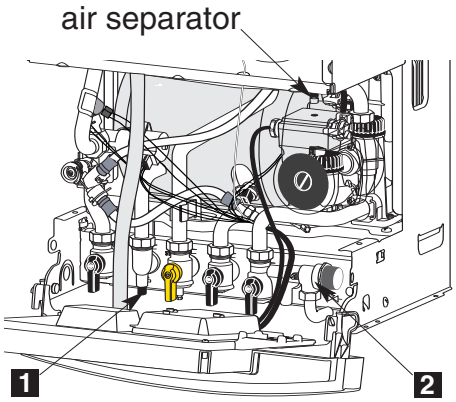
7. Gas vale assembly
Carry out steps 1 and 2 Unscrew the three screws securing the air/gas connection pipe onto the gas valve assembly. Disconnect the connectors from the gas solenoids and fan. Loosen the gas pipe nut. Unscrew the six nuts to release the combustion chamber front panel and pull the assembly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

8. Fan assembly
Carry out all the 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 all 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 2 screws located at the top of the gas valve. Replace all necessary gaskets before reassemble 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 2 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.



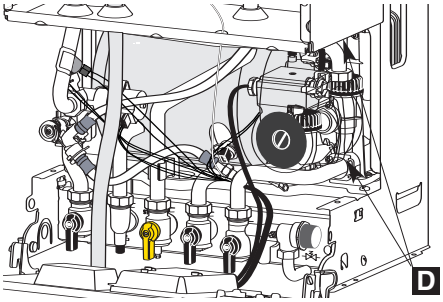
1 = DHW circuit drain point
2 = Heating circuit drain point

12. Water filters (DHW and Heating)
The DHW filter ensures a seal between the connecting bracket and the pipe to the DHW flow switch. Drain the boiler as in step 11. Unscrew the pipe nut and remove the clip on the hydraulic assy. Pull the pipe toward you and remove the water filter from its location.
The C.H. filter is located in the right hydraulic assembly. Remove the return pipe as described previously and withdraw the filter. Reassemble in reverse order.

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.

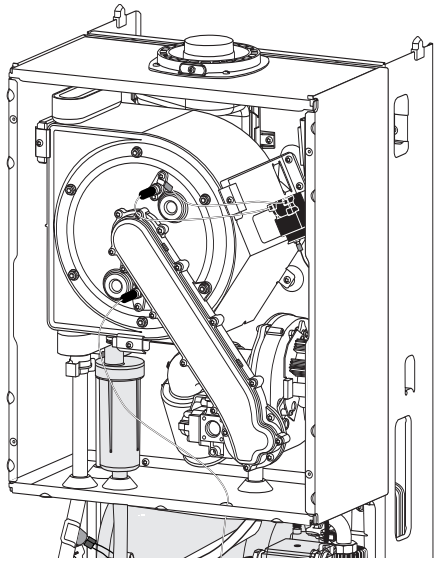
14. 3-Way valve
Drain boiler as in step 12. Remove the 3 clips on the 3 way valve. Remove the clip on the exchanger flow pipe. Pull the pipe down then pull it out of the 3 way valve. Disconnect the plug from the motor. Unscrew the nut on the pipe between the connecting bracket and the 3 way valve and pull it toward you. Rotate the 3 way valve body anti-clockwise to unclip it from the left hydraulic assembly.

15. Secondary heat exchanger
Drain both circuits of the boiler as in step 12. Unscrew the 2 fixing screws **D** and remove the DHW exchanger from the front. Prior to reassembly, check that the 4 gaskets are correctly positioned. The heat exchanger is so designed that it



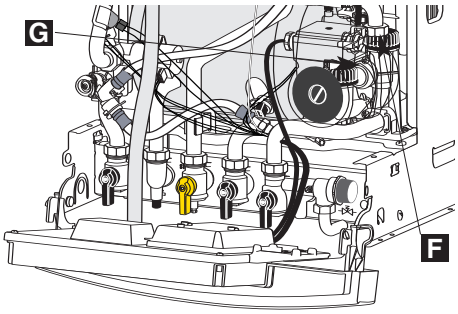
cannot be remounted incorrectly.

16. Main heat exchanger
Carry out steps 1 and 2. Drain down the boiler as in step 12. Unscrew the three screws securing the air/gas connection pipe onto the gas valve assembly. Disconnect 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. Undo the two clips of the pipes to the main exchanger and pull down the pipes. Unscrew the three screws located at the bottom, top left and 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 all necessary gaskets.

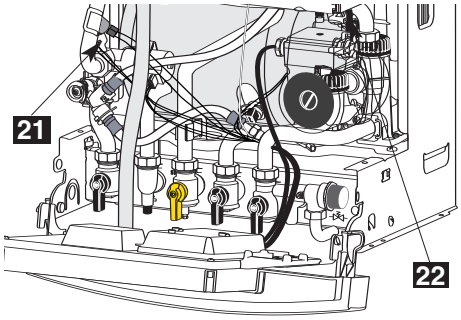
17. Pump
Drain boiler as in step 12. Pivot the electical box downwards. Open the electrical box cover removing the 2 screws. Remove the pump plug from the power board and the earth plug from the earth socket. Unscrew the nut **F** of the return pipe from the volute. Remove the clip **G** on the pump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



toward you. Reassemble in reverse order.

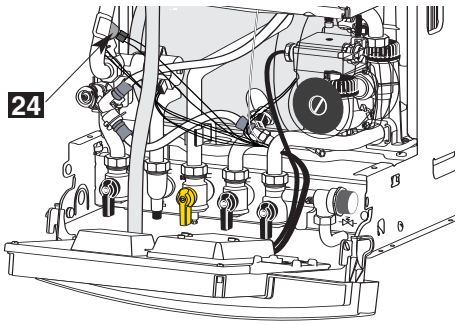
18. Pressure relief valve
The pressure relief valve can be serviced from the front of the appliance. Drain the boiler first, undo the retaining screw and pull out the valve. Reassemble in reverse order.

19. Thermistors
Drain the boiler as step 12. Disconnect



the plug, remove the retaining clip pull the thermistor out. Reassemble in reverse order.
22 = DHW thermistor
21 = Heating thermistor

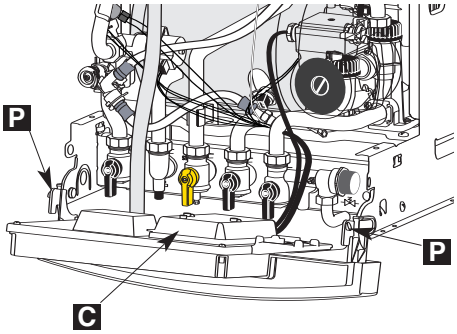
20. Safety thermostat
Remove the casing as step 1 and hinge down the electrical box as step 5.



Disconnect the 2 cables, pull out the sensor with the clip (13). Reassemble in reverse order.

21. Spark generator
Carry out steps 1 and 2. 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 hinge down the electrical box by pressing the retaining tabs **P** on either side. Remove wiring cover **C**. Undo the 4 screws of the electrical rear panel and remove it. Unplug all cables from the PCB, remove



the earth plug from the earth socket. Hang out the main PCB. Reassemble in reverse order.

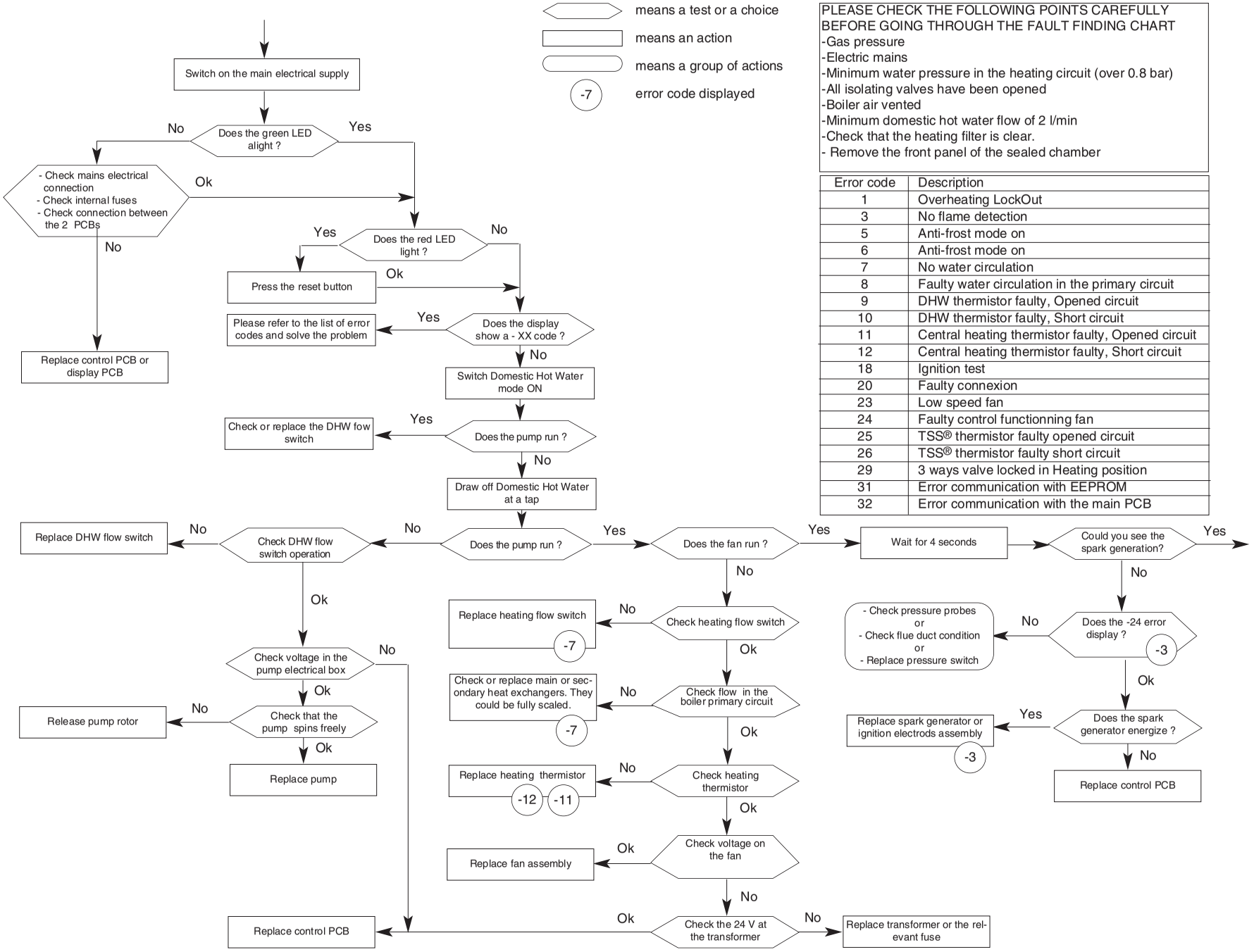
23. Display PCB
Carry out step 1 and hinge down electrical box by pressing the retaining tabs **P** on either side. Remove the pressure gauge clip. Rotate the electrical box back into the upper position. Undo the 2 screws retaining the front panel, put your two hands at the bottom of the front panel and pull it down to release it from the 2 clips. Hinge down again the electrical box. Undo the 4 screws of the electrical rear panel and remove it. Unplug the display board cables from the main PCB. 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 a side on the floor. Remove the expansion vessel bracket retaining screws, disconnect the pipe from the vessel and pull it toward you. Reassemble in reverse order.

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

26. TSS®
Drain both circuits of the boiler as in step 11. Unscrew all nuts from the connecting bracket and remove the gas pipe from the gas section. Remove the main exchanger flow pipe to the 3 way valve. Remove the pump as in step 17. Unplug all thermistors, 3 way valve, flow switches. Unscrew the 2 retaining screws of the hydraulic section to the chassis.
Pull the hydraulic assembly toward you. Reassemble in reverse order and check the gas section for soundness and the water circuits for leakages.

FAULT FINDING CHART Part 1

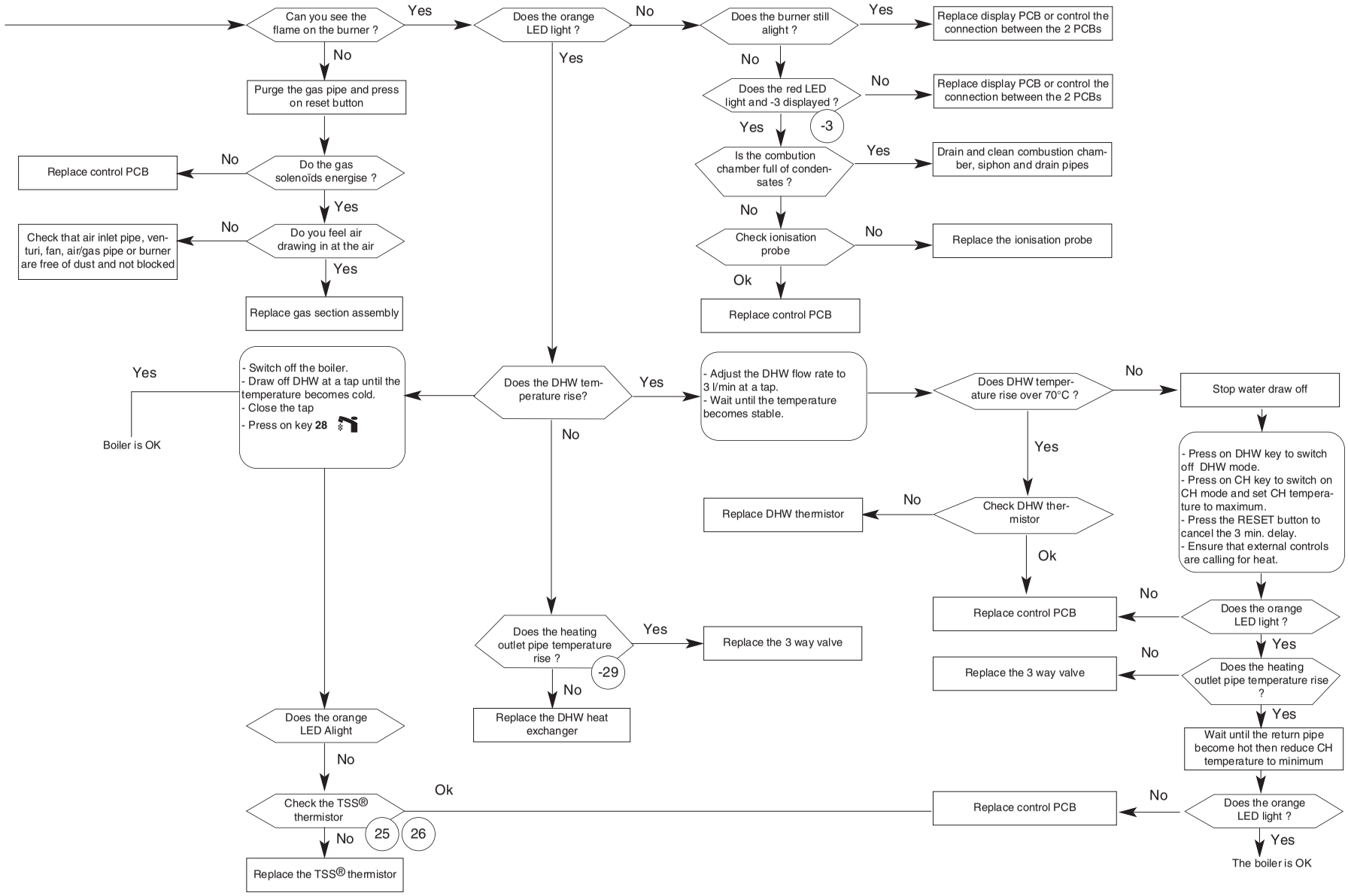


PLEASE CHECK THE FOLLOWING POINTS CAREFULLY BEFORE GOING THROUGH THE FAULT FINDING CHART

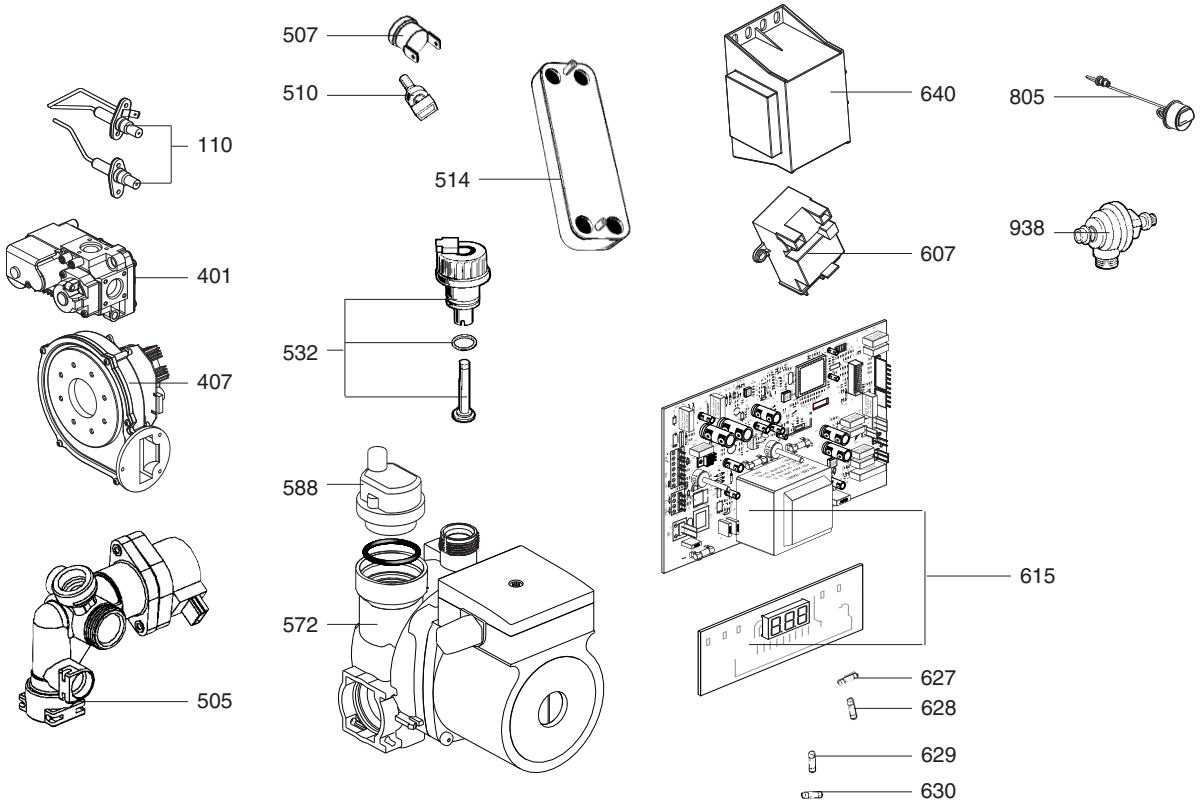
- -Gas pressure
- -Electric mains
- -Minimum water pressure in the heating circuit (over 0.8 bar)
- -All isolating valves have been opened
- -Boiler air vented
- -Minimum domestic hot water flow of 2 l/min
- -Check that the heating filter is clear.
- - Remove the front panel of the sealed chamber

Error code	Description
1	Overheating LockOut
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, Opened circuit
10	DHW thermistor faulty, Short circuit
11	Central heating thermistor faulty, Opened circuit
12	Central heating thermistor faulty, Short circuit
18	Ignition test
20	Faulty connexion
23	Low speed fan
24	Faulty control functionning fan
25	TSS® thermistor faulty opened circuit
26	TSS® thermistor faulty short circuit
29	3 ways valve locked in Heating position
31	Error communication with EEPROM
32	Error communication with the main PCB

FAULT FINDING CHART Part 2



SHORT LIST



Key N°	Description	G.C N°	Manf. Pt. N°	Type	CALYDRA GREEN 24	CALYDRA GREEN 30	Manf. date from	Manf. date to
110	ELECTRODE KIT		1309624		●	●		
401	GAS VALVE (24 kW)		1308957		●			
	GAS VALVE (30 kW)		1310129			●		
407	FAN ASSY		1307585		●	●		
505	THREE-WAY VALVE	E23510	81839		●	●		
507	OVERHEAT THERMOSTAT 100°C	277783	1010572		●	●		
510	THERMISTANCE	277834	1000733		●	●		
514	WATER/WATER HEAT EXCHANGER		1302409		●	●		
532	WATER THROTTLE	277846	81471		●	●		
572	PUMP + AIR SEPARATOR 15/50		1301964		●	●		
	PUMP + AIR SEPARATOR 15/60		1303461		●	●		
588	AIR SEPARATOR HEAD ASSEMBLY		1304608		●	●		
607	IGNITER		1002105.20		●	●		
615	PRINTED CIRCUIT BOARD		1310357		●	●		
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		●	●		
640	TRANSFORMER		1308149		●	●		
805	PRESSURE GAUGE		1303158		●	●		
938	PRESSURE RELIEF VALVE		1020933		●	●		

Manufacturer: **Chaffoteaux & Maury - France**

Commercial subsidiary: **MTS (GB) Limited**
MTS Building
Hughenden Avenue
High Wycombe
Bucks HP13 5FT

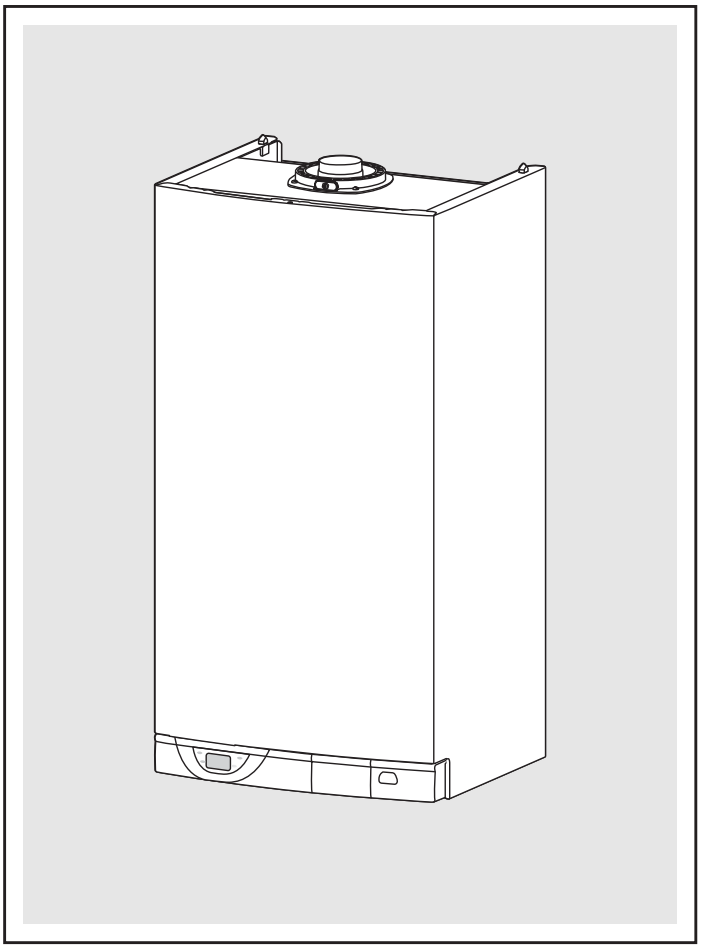
Telephone: (01494) 755600
Fax: (01494) 459775
Internet: www.chaffoteaux.co.uk
E-mail: info@uk.mtsgroup.com

Technical Support Help Line: 0870 241 8180
Customer Service Help Desk: 0870 600 9888

13112676 - 03/2003

DOMESTIC BOILERS

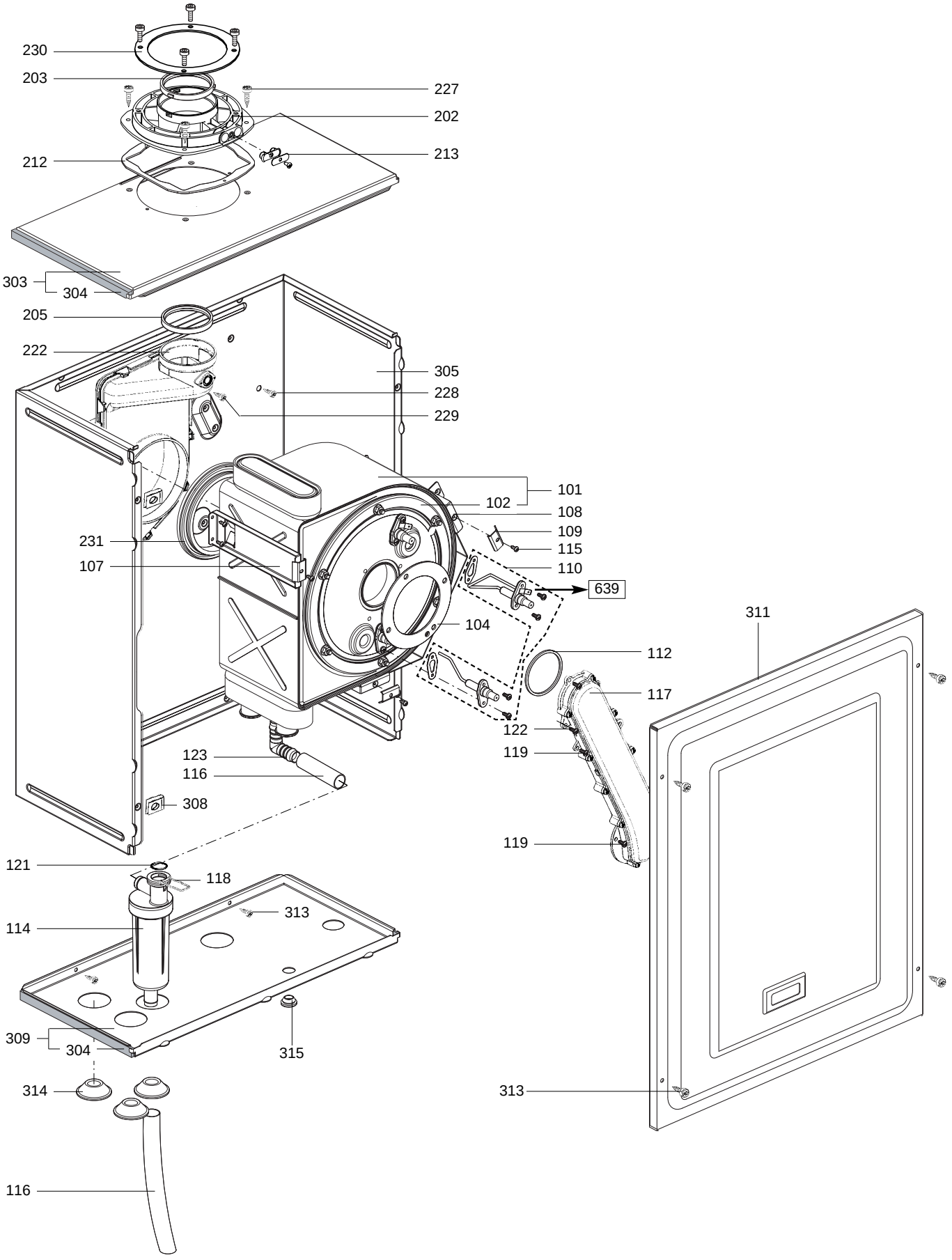
CALYDRA GREEN



CALYDRA GREEN 24
CALYDRA GREEN 30

Réf. 82026.28c - 07/03 - GB

100 BURNER
200 FAN
300 SEALED CASE



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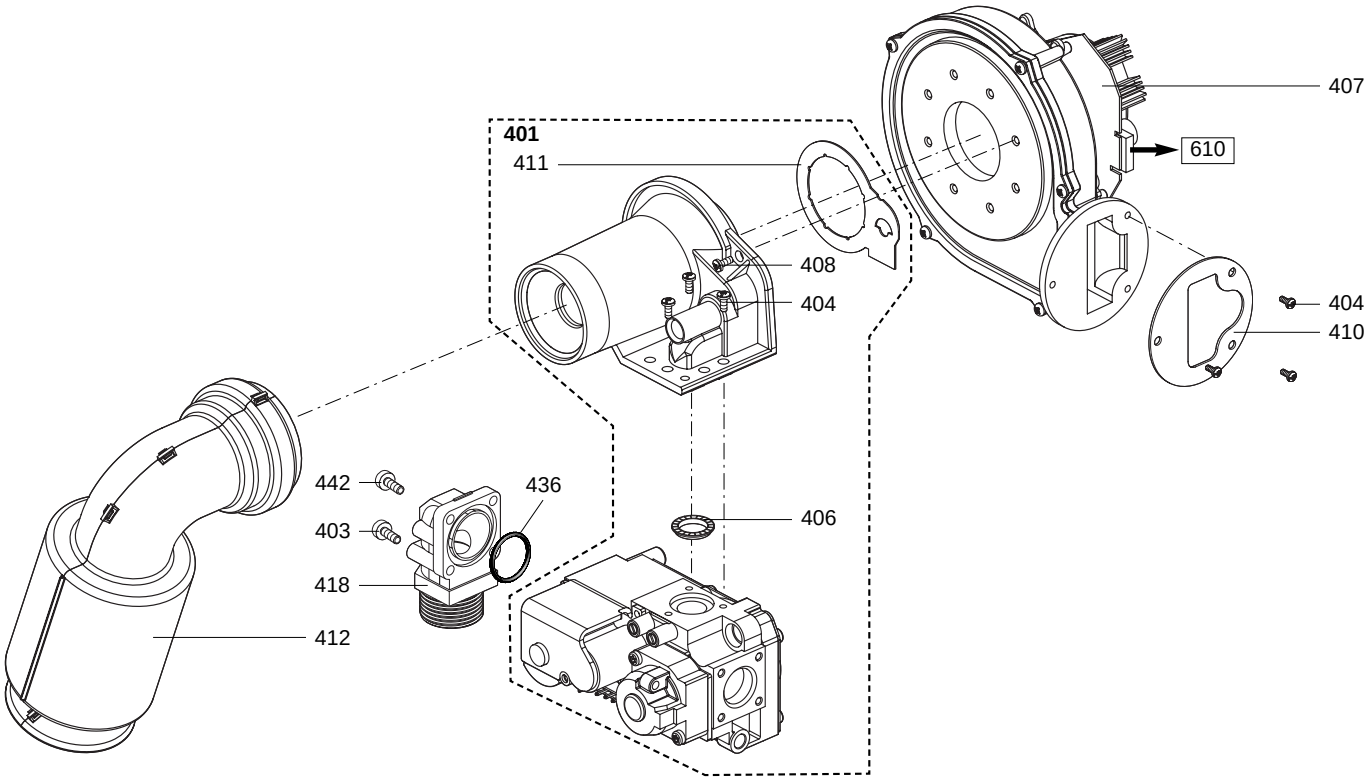
Key N°	Description	G.C N°	Manf. Pt. N°	Type	24 30 CALYDRA GREEN	CALYDRA GREEN	Manf. date from	to
100	**BURNER ASSEMBLY**							
101	BURNER		1306074		■			
	BURNER		61309327			■		
102	DOOR ASSY 24KW		1308492		■			
	DOOR ASSY 30KW		61308491			■		
104	GASKET D:110-75-2		1309658		■	■		
107	FIXING BRACKET		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		■	■		
200	**FAN ASSEMBLY**							
202	FLUE ADAPTOR		61309242		■	■		
203	GASKET D:66-58.4-9		61310088		■	■		
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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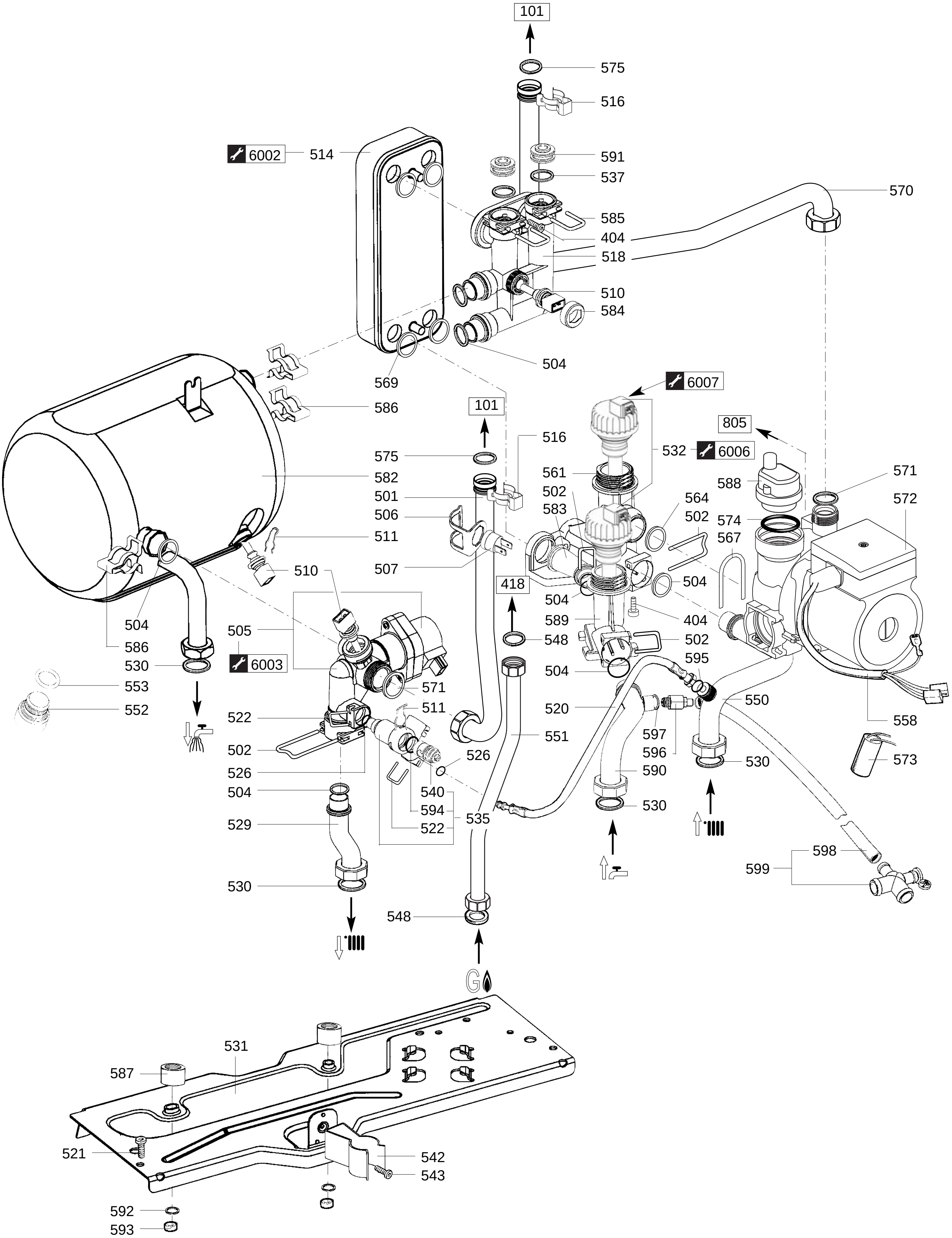
Key N°	Description	G.C N°	Manf. Pt. N°	Type	24 CALYDRA GREEN	30 CALYDRA GREEN		Manf. date from	Manf. date to
400	**GAS SECTION**								
401	GAS SECTION ASSY		61307584	GZ20	■				
	GAS SECTION ASSY		61310129	GZ20		■			
403	SCREW CLXS M 4-30		61310333		■	■			
404	SCREW HX M 5-12	277797	1010131		■	■			
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		■	■			
442	SCREW CBLSX M 4-12		1015222		■	■			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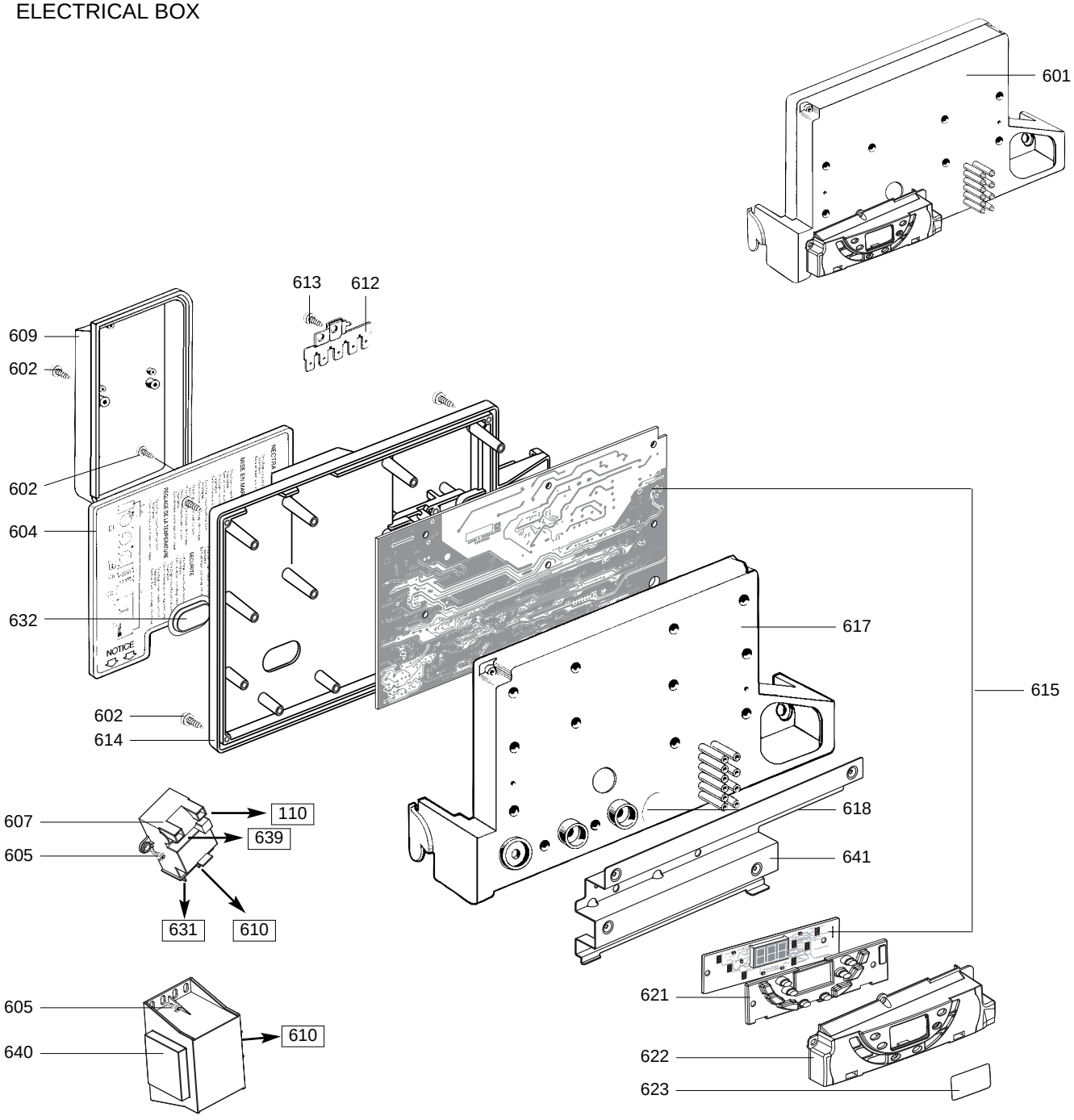
Key N°	Description	G.C N°	Manf. Pt. N°	Type	24 30 CALYDRA GREEN	CALYDRA GREEN		Manf. date from	to
500	**HYDRAULIC BLOCK**								
501	TUBE-EXCHAN TO 3-WAY VALVE		61310175		■	■			
502	HEATING CONNECTION PIN	E23507	1002399		■	■			
504	"O" RING D: 17-4	E00604	24164.51		■	■			
505	THREE-WAY VALVE	E23510	81839		■	■			
506	CLIP	277782	1010050		■	■			
507	OVERHEAT THERMOSTAT 100∞C	277783	1010572		■	■			
510	THERMISTOR TEMP. SENSOR	277834	1000733		■	■			
511	TEMPERATURE SENSOR CLIP	277835	1002083		■	■			
514	WATER / WATER HEAT EXCHANGER		1302409		■	■			
516	CLIP		1307589		■	■			
518	TOP INTERFACE SYSTEM	E23512	1014228		■	■			
520	FLEXIBLE PIPE	E23513	1012952		■	■			
521	TAPPING SCREW CBLSX D: 6.3-13	277865	1010648		■	■			
522	CLIP	277841	1010005		■	■			
526	"O" RING D: 8.9-2.7	E00605	1009834.14		■	■			
529	HEATING FLOW TUBE	E23515	1014220		■	■			
530	SHEET GASKET D: 24-17-1.5	265389	61855.19		■	■			
531	HYDRAULIC PLATE	E23516	1014214		■	■			
532	WATER THROTTLE	277846	81471		■	■			
535	TAP BODY		1012963		■	■			
537	"O" RING D: 13.6-2.7	366048	24164.18		■	■			
540	SPINDLE	E23519	1012946		■	■			
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	HEATING RETURN TUBE	E23520	1014218		■	■			
551	GAS TUBE		1307590		■				
	GAS TUBE		61309556			■			
552	PLUG	E23521	1015245		■	■			
553	"O" RING D: 8.9-1.9	264374	24164.13		■	■			
558	PUMP LEAD (2 SPEEDS)		1306995		■	■			
561	BOTTOM INTERFACE SYSTEM	E23522	1014172		■	■			
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		61310176		■	■			
571	"O" RING D: 16-1.9	E00615	1009833.37		■	■			
572	PUMP + AIR SEPARATOR 15/50		1301964		■	■			
	PUMP + AIR SEPARATOR 15/60		1303461		■	■			
573	CAPACITOR	E00616	1000652.10		■	■			
574	GASKET KIT		1304618		■	■			
575	"O" RING D: 17.86-2.62		1308091		■	■			
582	CYLINDER 6L	E23527	1012790		■	■			
583	LINKING TUBE	E23528	1012808		■	■			
584	NUT		1012886		■	■			
585	PIN		1012909.02		■	■			
586	CLIP	E23531	1012983		■	■			
587	WASHER D: 12.5-5.2-5	E23532	1015757		■	■			
588	AIR SEPARATOR HEAD ASSEMBLY		1304608		■	■			
589	STOPPED WATER THROTTLE BODY	E23540	1012743		■	■			
590	COLD WATER TUBE	E23542	1014983		■	■			
591	PLUG	E23554	1002490		■	■			
592	WASHER D: 12-6.2-1.2	366808	7059.03		■	■			
593	NUT H M 6-1	366758	26501.03		■	■			
594	"O" RING D: 2.7-10.5	E23557	1009834.15		■	■			
595	SHEET GASKET D: 10.5-6.2-1.5	E23563	22831.07		■	■			
596	PRESSURE RELIEF VALVE DRAIN		61014984		■	■			
597	SHEET GASKET D: 13.9-10.4-1.5	E23568	61853.02		■	■			
598	TUBE PVC D: 9x12 L: 1M	E00634	81266		■	■			
599	CONNECTION		1020242		■	■			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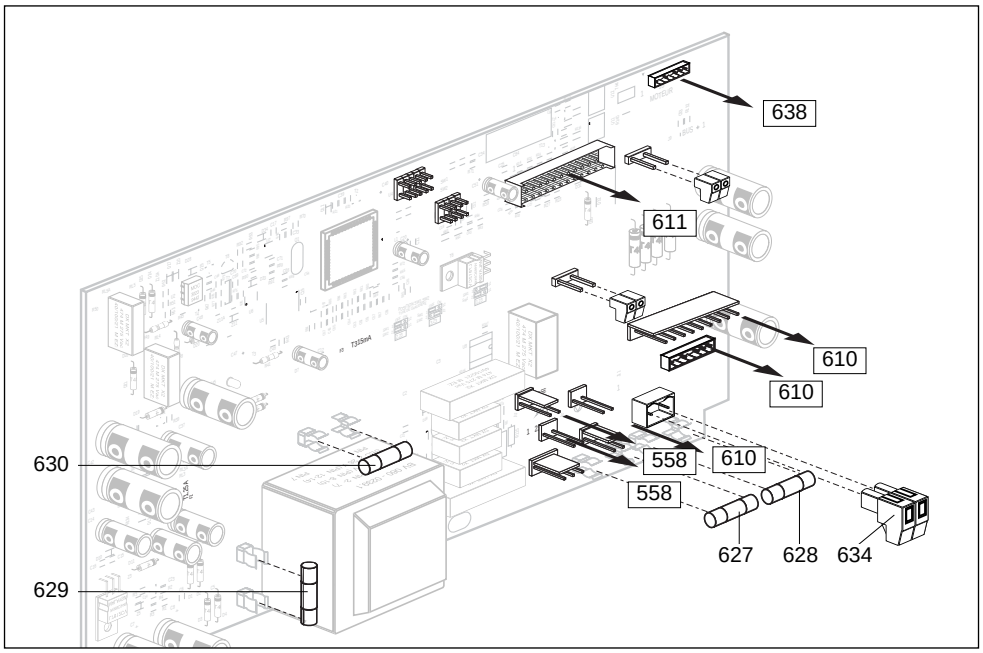
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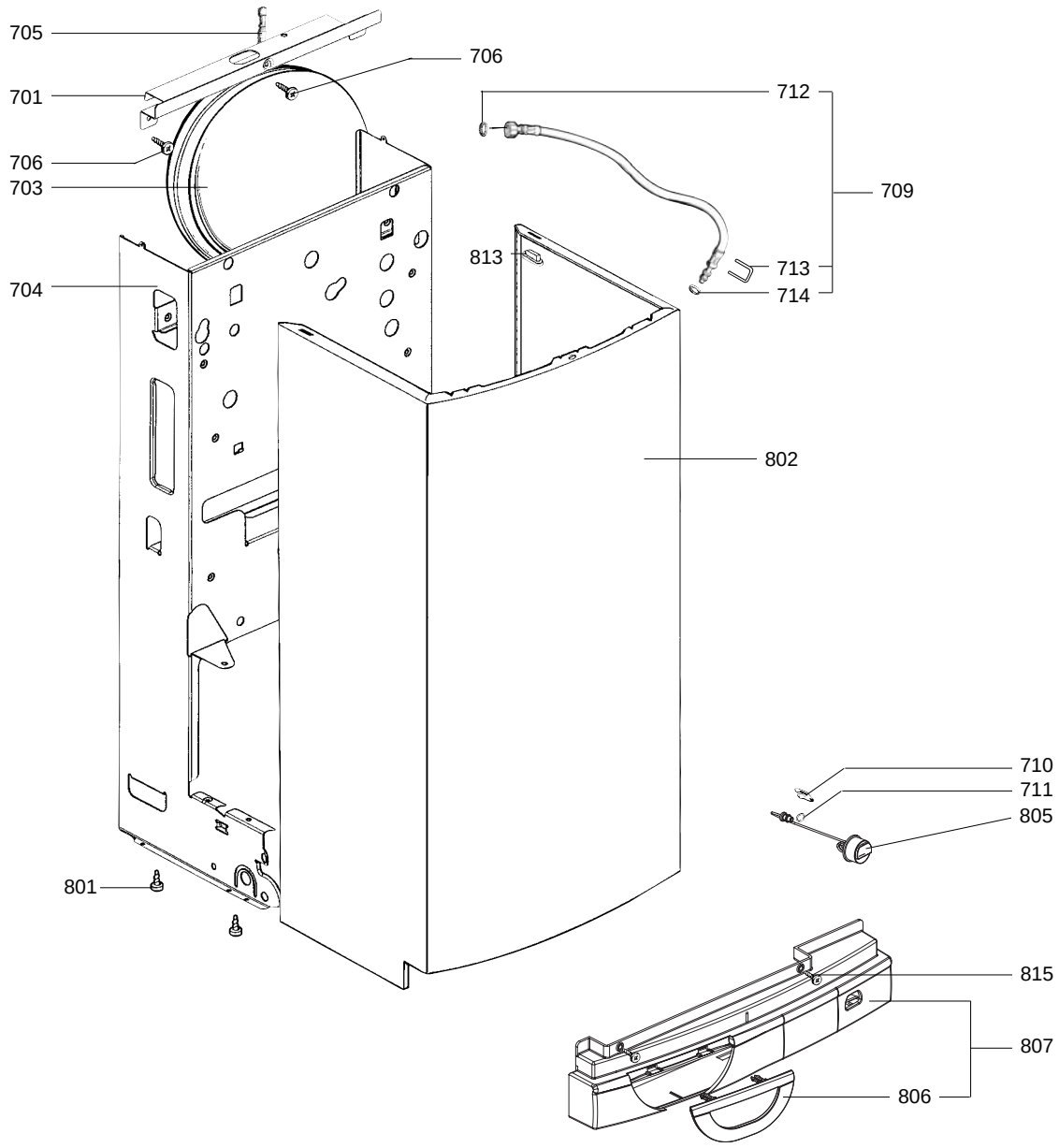
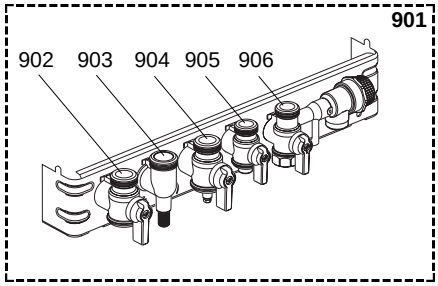
Key N°	Description	G.C N°	Manf. Pt. N°	Type	24 CALYDRA GREEN	30 CALYDRA GREEN		Manf. date from	Manf. date to
600	**ELECTRICAL BOX**								
601	ELECTRICAL BOX		1311319		■	■			
602	SCREW FX90 L:16		1020510		■	■			
604	INSTRUCTIONS SUPPORT		1309315		■	■			
605	TAPPING SCREW CBLSX D: 4.2-9.5	277792	1010125		■	■			
607	IGNITER	379075	1002105.20		■	■			
609	CONNECTOR COVER	277874	1010014		■	■			
610	FAN-IGNITER CABLE		1309837		■	■			
611	WIRE ASSEMBLY		61309454		■	■			
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		1306019		■	■			
623	SIGHT GLASS		1303830		■	■			
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	FEEDER		1308031		■	■			
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	24 30 CALYDRA GREEN	CALYDRA GREEN		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.)		61310207		■	■			
813	SPACER		1015797		■	■			
815	SCREW FX90 L:16		1020510		■	■			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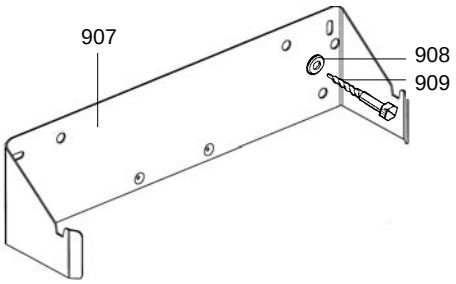
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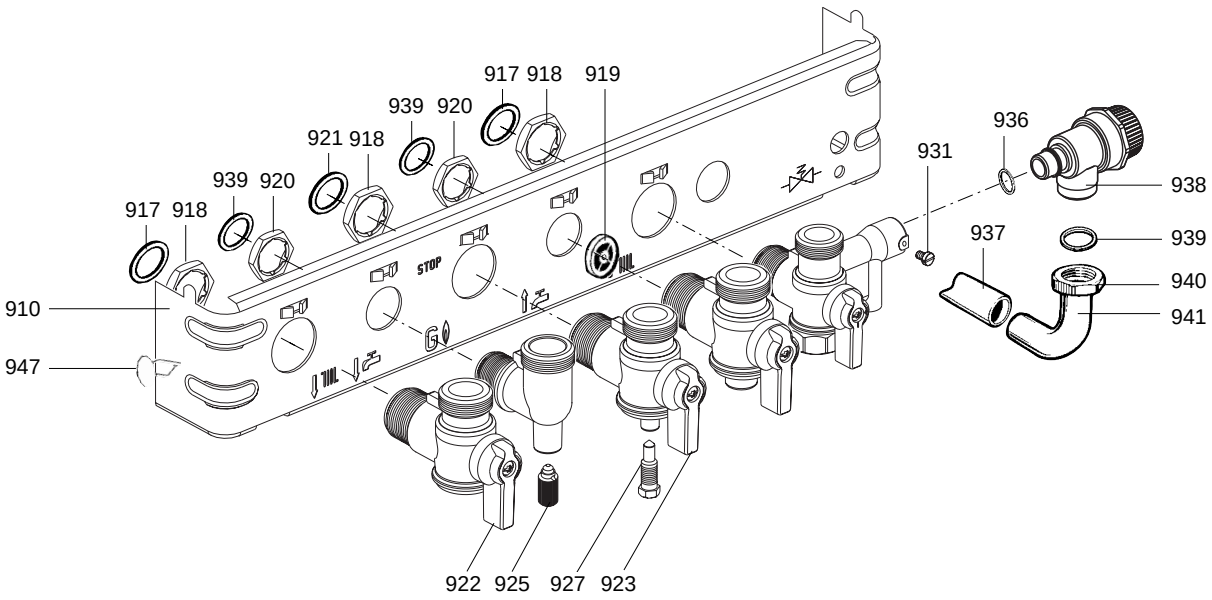
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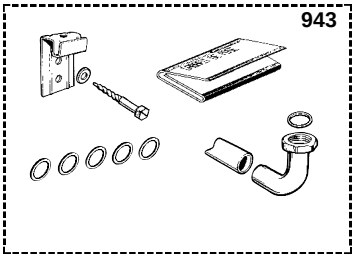
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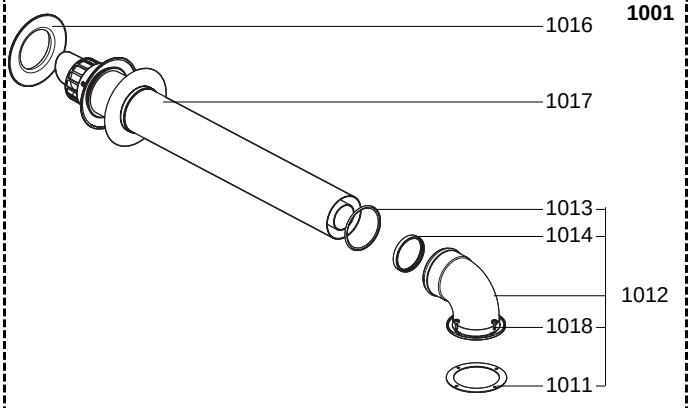
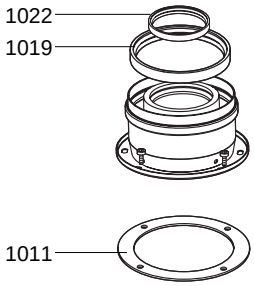
Key N°	Description	G.C N°	Manf. Pt. N°	Type	24 30 CALYDRA GREEN	CALYDRA GREEN		Manf. date from	to
900	**JIG PLATE & PIPE FITTING**								
901	PREFABRICATION	E00627	1012448		■	■			
902	WATER FLOW SERVICE TAP		1020388		■	■			
903	HOT WATER CONNECTION		1020916		■	■			
904	GAS SERVICE TAP		1020389		■	■			
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



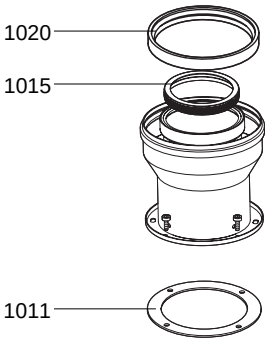
HORIZONTAL FLUE KIT | **D60-100**

1002



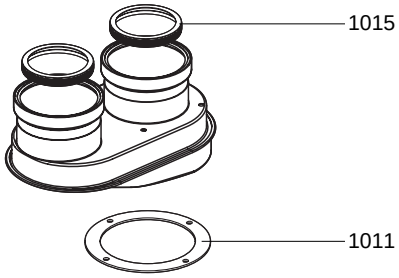
V./HORIZONTAL FLUE KIT | **D60-100**

1003



VERTICAL FLUE KIT | **D80-125**

1005



DOUBLE-FLOW FLUE KIT | **D80-80**

Key N°	Description	G.C N°	Manf. Pt. N°	Type	24 30 CALYDRA GREEN	CALYDRA GREEN		Manf. date from	to
1000	**FLUE CONNECTION**								
1001	HORZ. FLUE KIT D60-100 L:800		1309947		■	■			
1002	V./HORIZONTAL FLUE KIT D60-100		1309694		■	■			
1003	VERTICAL FLUE KIT D80-125		1309693		■	■			
1005	DOUBLE-FLOW FLUE KIT D80-80		1309715		■	■			
1011	GASKET (/ Flue bend turret)		1300258		■	■			
1012	FLUE BEND 90∞		1309692		■	■			
1016	SEALING RING TRIM	366995	62079		■	■			
1017	HORZ. TERMINAL D:60/100 L:800		61310156		■	■			
1018	SCREW CBLXS D:5-16		61310811		■	■			

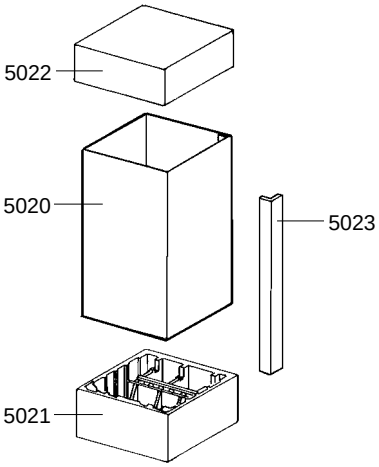
5000 ACCESSORIES

5002

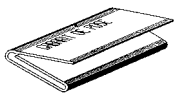
GZ20 > GZ31

5014
Connection
FIRST FITTING

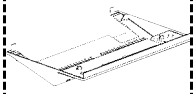
5015
Connection
REPLACEMENT



5030



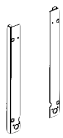
5033



5035
ACOUSTIC
KIT

5040

5045



6000 MAINTENANCE

6002

Descaling

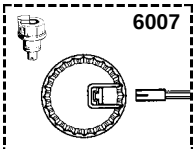
6003

Simulating

6006

Spanner

6007



Key N°	Description	G.C N°	Manf. Pt. N°	Type	24 30 CALYDRA GREEN	CALYDRA GREEN		Manf. date from	Manf. date to
5000	**ACCESSORIES**								
5002	CONVERSION KIT G20 > G31		1311759		■				
	CONVERSION KIT G20 > G31		1311760			■			
5014	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	EXTREMITY CHOCK DRAUG DIV SIDE		1014400		■				
	EXTREMITY CHOCK DRAUG DIV SIDE		61311303			■			
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		1311238		■	■			
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		■	■			