

GENUS



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

Installation Instructions Type C Boilers

G.C.N: 41-116-01
47-116-20

LEAVE THESE INSTRUCTIONS
ADJACENT TO THE GAS METER



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1. GENERAL INFORMATION

This manual is an integral and essential part of the product. It should be kept with the appliance so that it can be consulted by the user and our authorised personnel.

Please carefully read the instructions and notices about the unit contained in this manual, as they provide important information regarding the safe installation, use and maintenance of the product.

For operating instructions please consult the separate User's Manual.



1.1 General Information

Read the instructions and recommendations in these Installation Instructions carefully to ensure proper installation, use and maintenance of the appliance.

Keep this manual in a safe place. You may need it for your own reference while our Servicing Centre technicians or your installer may need to consult it in the future.

This is a combined appliance for the production of central heating (C.H.) and domestic hot water (D.H.W.).

This appliance **must be used only** for the purpose for which it is designed. The manufacturer declines all liability for damage caused by improper or negligent use.

No asbestos or other hazardous materials have been used in the fabrication of this product.

Before connecting the appliance, check that the information shown on the data plate and the table on pages 4-5 comply with the electric, water and gas mains of the property. You will find the data plate on the reverse of the control panel. The gas with which this appliance operates is also shown on the label at the bottom of the boiler.

Do not install this appliance in a damp environment or close to equipment which spray water or other liquids.

Do not place objects on the appliance.

Do not allow children or inexperienced persons to use the appliance without supervision.

If you smell gas in the room, **do not turn on** light switches, use the telephone or any other object which might cause sparks.

Open doors and windows immediately to ventilate the room.

Shut the gas mains tap (on the gas meter) or the valve of the gas cylinder and call your Gas Supplier immediately.

If you are going away for a long period of time, remember to shut the mains gas tap or the gas cylinder valve.

Always disconnect the appliance either by unplugging it from the mains or turning off the mains switch before cleaning the appliance or carrying out maintenance.

In the case of faults or failure, switch off the appliance and turn off the gas tap. Do not tamper with the appliance.

For repairs, call your local Authorised Servicing Centre and request the use of original spare parts. For in-guarantee repairs contact MTS (GB) Limited

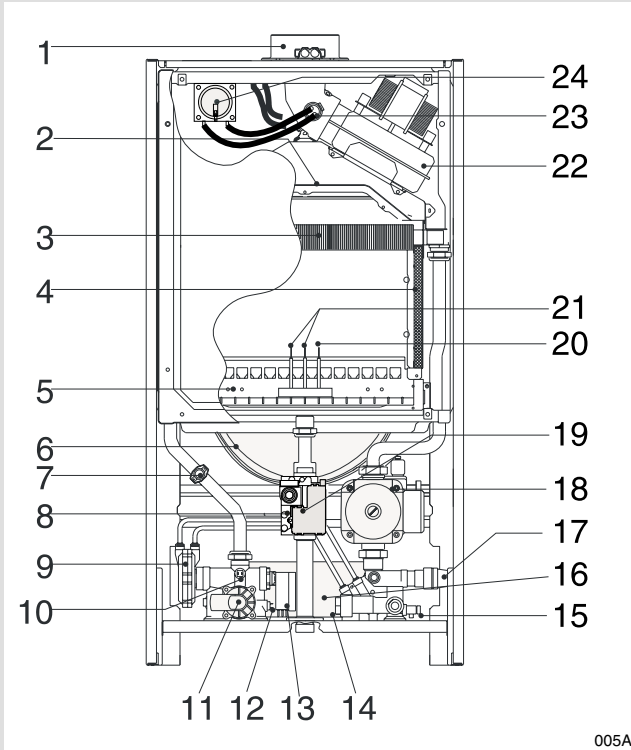
Check the following at least once a year:

- 1 - Check the seal of water connections, replacing the gaskets if necessary.
- 2 - Check the seal of the gas connections, replacing the gaskets if necessary.

- 3** - Check the general condition of the appliance and of the combustion chamber visually.
- 4** - Visual check of the combustion: clean burners if necessary.
- 5** - With reference to point 3, dismantle and clean the combustion chamber if necessary.
- 6** - With reference to point 4, dismantle and clean the injectors if necessary.
- 7** - Visual check of the primary heat exchanger:
 - check for overheating of the exchangers fins;
 - clean the exhaust side of the exchanger and fan if necessary.
- 8** - Regulate the gas pressure, ignition pressure, partial flame, maximum flame.
- 9** - Check proper operation of the heating safety system:
 - maximum safety temperature;
 - maximum safety pressure.
- 10** - Check the proper operation of the gas safety system:
 - gas or flame safety device;
 - gas valve safety device.
- 11** - Check that the electrical connections have been made in compliance with the instructions shown in the Installation Instructions.
- 12** - Check the efficiency of the hot water supply (flow and temperature).
- 13** - Check general operation of the appliance.
- 14** - Check the exhaust system for the combustion products.

1.2 Overall View

GENUS 30 MFFI



GENUS 27 RFFI SYSTEM

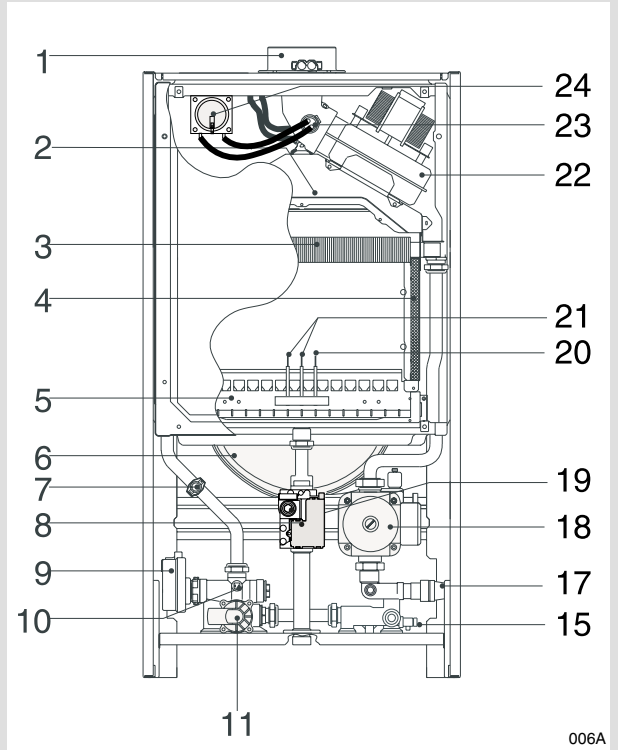


Fig. 1.1

Legend:

1. Flue Connector
2. Combustion Chamber Hood
3. Main Heat Exchanger
4. Combustion Chamber Insulation Panel
5. Burner
6. Expansion Vessel
7. Overheat Thermostat
8. Spark Generator
9. Diverter Valve (MFFI)
Motorised Valve (RFFI)
10. Main Circuit Temperature Probe
11. Main Circuit Flow Switch
12. Domestic Hot Water Temperature Probe
13. Diverter Valve Microswitch
14. Filter Seat
15. Drain Valve
16. Secondary Heat Exchanger
17. Safety Valve (3 bar)
18. Circulation Pump with Automatic Air Release Valve
19. Gas Valve
20. Detection Electrodes
21. Ignition Electrodes
22. Fan
23. Venturi
24. Air Pressure Switch

2. INSTALLATION

The technical information and instructions provided herein below are intended for the installer so that the unit may be installed correctly and safely.

2.1 Reference Standards

The installation and initial startup of the boiler must be by a CORGI Approved Installer in compliance with the installation standards currently in effect, as well as with any and all local health and safety standards i.e. CORGI.

This appliance must be installed by a competent installer in accordance with the 1984 Gas Safety (installation & use) Regulations (as amended)

The installation of this appliance must be in accordance with the relevant requirements of the 1984 Gas Safety (installation & use) Regulations, the Local Building Regulations, the current I.E.E. Wiring Regulations, the byelaws of the local water authority, and in Scotland, in accordance with the Building Standards (Scotland) Regulation and Health and Safety document No. 635 "Electricity at work regs. 1989".

Installation should also comply with the following British Standard Codes of Practice:

Low pressure pipes	BS 6891	1988
Boilers of rated input not exceeding 60 kW	BS 6798	1987
Forced circulation hot water system	BS 5449	1990
Installation of gas hot water supplies for domestic purposes (2 nd family gases)	BS 5546	1990
Flues	BS 5440-1	1990
Air supply	BS 5440-2	1989

2.2 Siting the Appliance

The appliance may be installed in any room or indoor area, although particular attention is drawn to the requirements of the current I.E.E. Wiring Regulations, and in Scotland, the electrical provisions of the Building Regulations applicable in Scotland, with respect to the installation of the combined appliance in a room containing a bath or shower.

Where a room-sealed appliance is installed in a room containing a bath or shower the boiler and any electrical switch or appliance control, utilising mains electricity should be situated so that it cannot be touched by a person using the bath or shower.

The location must permit adequate space for servicing and air circulation around the appliance as indicated in paragraph 2.4.

The location must permit the provision of an adequate flue and termination.

For unusual locations special procedures may be necessary.

BS 6798-1987 gives detailed guidance on this aspect.

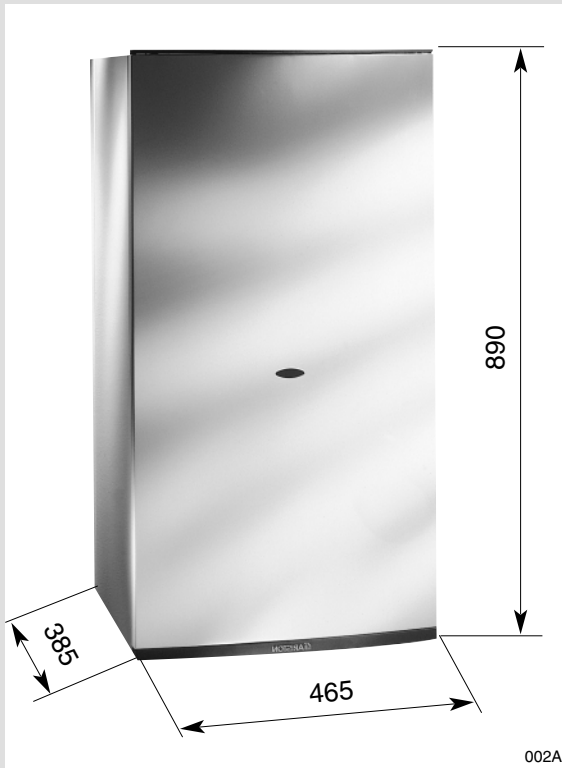
A compartment used to enclose the appliance must be designed specifically for this purpose. No specific ventilation requirements are needed for an installation within a cupboard

This appliance is not suitable for outdoor installation.

The type C appliances (in which the combustion circuit, air vent intake and combustion chamber are air-tight with respect to the room in which the appliance is installed) can be installed in any type of room.

There are no limitations with respect to ventilation and the volume of the room itself. The boiler must be installed on a solid, permanent wall to prevent access to the electrical parts (when live) through the aperture on the back frame.

2.3 Overall Dimensions

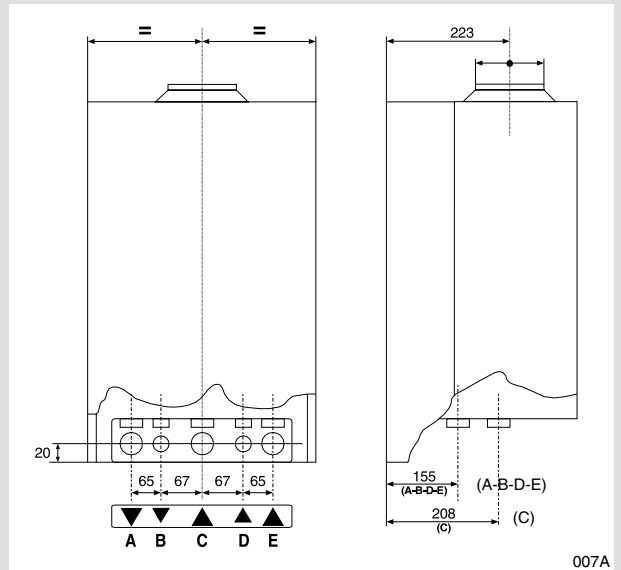


Legend:

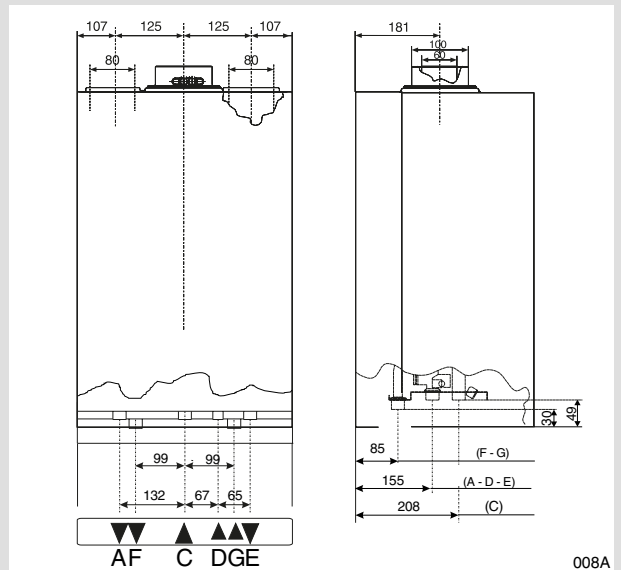
- A = Central Heating Flow (3/4")
- B = Domestic Hot Water Outlet (1/2")
- C = Gas Inlet (3/4")
- D = Domestic Cold Water Inlet (1/2")
- E = Central Heating Return (3/4")
- F = Cylinder Flow (3/4")
- G = Cylinder Return (3/4")

Fig. 2.1

GENUS 30 MFFI



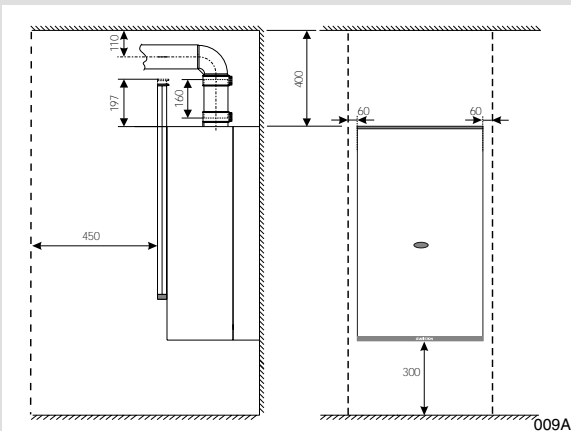
GENUS 27 RFFI SYSTEM



2.4 Clearances

In order to allow for access to the interior of the boiler for maintenance purposes, the boiler must be installed in compliance with the clearance requirements indicated in the diagram below.

GENUS 30 MFFI



GENUS 27 RFFI SYSTEM

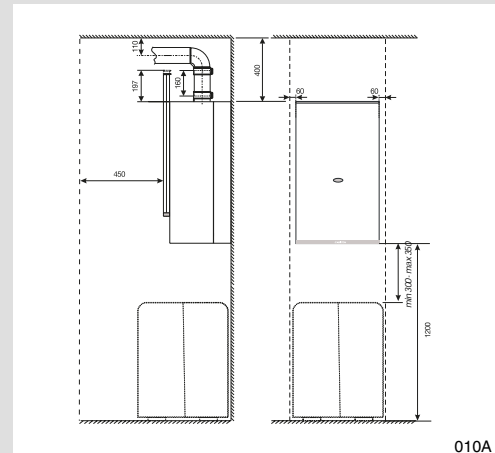
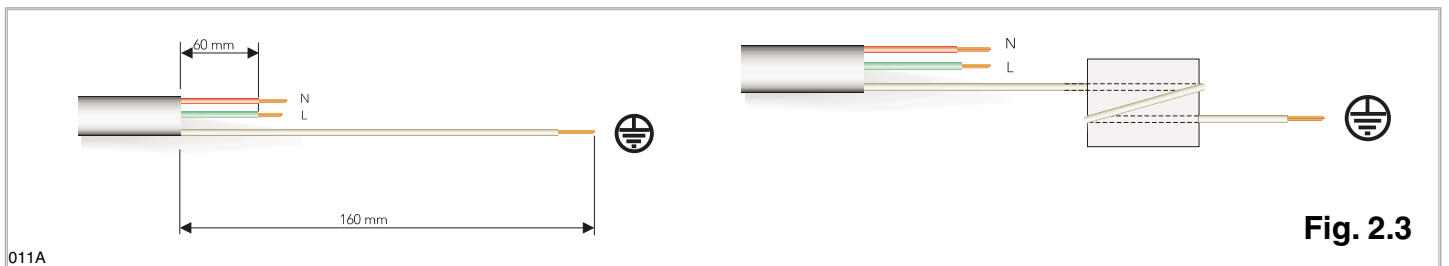


Fig. 2.2

2.5 Mounting the Appliance Fasten the boiler in place using the template and anchors supplied with the unit. It is highly recommended that a spirit level be used to position the boiler so that it is perfectly level.
For additional information, please consult the instructions contained in the connection kit and the flue kit.

2.6 Electrical Connection For safety purposes, have a competent person carefully check the electrical system in the property, as the manufacturer will not be held liable for damage caused by the failure to earth the appliance properly or by anomalies in the supply of power. Make sure that the residential electrical system is adequate for the maximum power absorbed by the unit, which is indicated on the rating plate. In addition, check that the section of cabling is appropriate for the power absorbed by the boiler.

The boiler operates with alternating current, as indicated in the technical data table (1.2), where the maximum absorbed power is also indicated. Make sure that the connections for the neutral and live wires correspond to the indications in the diagram. The appliance electrical connections are situated on the reverse of the control panel (see the servicing manual for further information)



Important!

In the event that the power supply cord must be changed, replace it with one with the same specifications. Make the connections to the terminal board located within the control panel, as follows:

- The yellow-green wire should be connected to the terminal marked with the earth symbol; make sure to re-use the ferrule mounted on the other supply cord;
- The blue wire should be connected to the terminal marked “N”;
- The brown wire should be connected to the terminal marked “L”.

Note: The diagrams for the electrical system are indicated in section 2.11.

Warning, this appliance must be earthed.

External wiring to the appliance must be carried out by a qualified technician and be in accordance with the current I.E.E. Regulations and applicable local regulations. The Genus range of boilers are supplied for connection to a 230 V-50 Hz supply.

The supply must be fused at 3 A.

The method of connection to the electricity supply must facilitate complete electrical isolation of the appliance, by the use of a fused double pole isolator having a contact separation of at least 3 mm in all poles or alternatively, by **means of a 3 A** fused three pin plug and unswitched shuttered socket outlet both complying with BS 1363.

The point of connection to the Electricity supply must be readily accessible and adjacent to the appliance unless the appliance is installed in a bathroom when this must be sited outside the bathroom.

2.7 Gas Connection

The local gas region contractor connects the gas meter to the service pipe. If the gas supply for the boiler serves other appliances ensure that an adequate supply is available both to the boiler and the other appliances when they are in use at the same time.

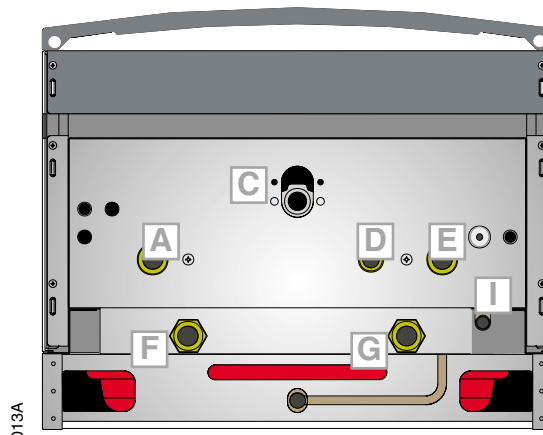
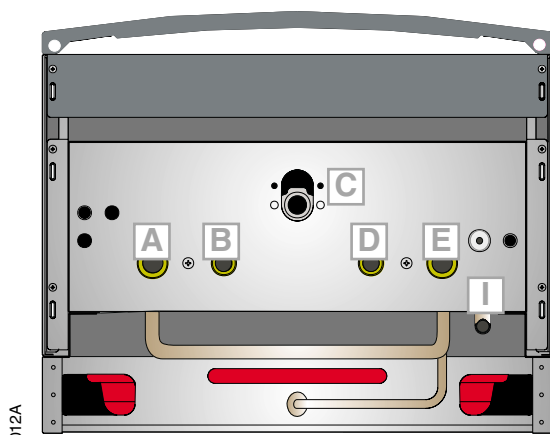
Pipe work must be of an adequate size. Pipes of a smaller size than the boiler inlet connection should not be used.

2.8 Water Connections

View of the Boiler Connections

GENUS 30 MFFI

GENUS 27 RFFI SYSTEM



Legend

- A = Central Heating Flow
- B = Domestic Hot Water Outlet
- C = Gas Inlet
- D = Domestic Cold Water Inlet
- E = Central Heating Return
- F = Cylinder Flow
- G = Cylinder Return
- I = Safety Valve

Fig. 2.4

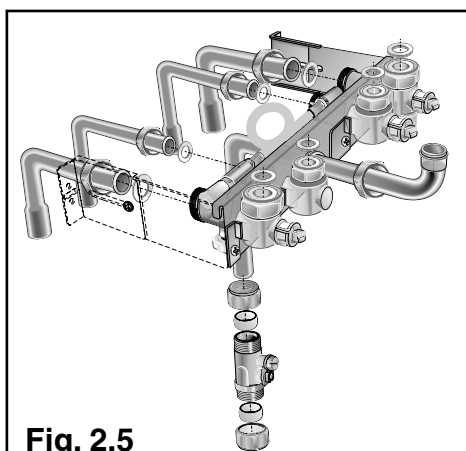


Fig. 2.5

Fitting the connection kit to the Genus 27 RFFI System only.

It will be noted that the kit has two connections not required for this boiler i.e. the domestic cold inlet "E" and the domestic hot water outlet "B" (see fig. 2.4).

Although the cold water main supply must be connected to the isolation valve for the purpose of operating the filling-loop, the isolation valve is NOT connected to the boiler and should be left in the OFF position.

The D.H.W. outlet is capped-off on the boiler, therefore not requiring the isolation valve to be used.

The Genus 27 RFFI System has 2 x 3/4" B.S.P. male threads for the cylinder flow and return. It is recommended that 2 x 22mm x 3/4" female iron fittings (not supplied) be used on these connections (using P.T.F.E. tape), before the boiler is mounted on the wall.

Central Heating

Detailed recommendations are given in BS 6798:1987 and BS 5449-1:1990, the following notes are given for general guidance.

Pipe Work:

Copper tubing to BS EN 1057:1996 is recommended for water pipes. Jointing should be either with capillary soldered or compression fittings.

Where possible pipes should have a gradient to ensure air is carried naturally to air release points and water flows naturally to drain taps.

The appliance has a built-in automatic air release valve, however it should be ensured as far as possible that the appliance heat exchanger is not a natural collecting point for air.

Except where providing useful heat, pipes should be insulated to prevent heat loss and avoid freezing.

Particular attention should be paid to pipes passing through ventilated spaces in roofs and under floors.

By-pass:

The appliance includes an automatic by-pass valve, which protects the main heat exchanger in case of reduced or interrupted water circulation through the heating system, due to the closing of thermostatic valves or cock-type valves within the system.

System Design:

This boiler is suitable only for sealed systems.

Drain Cocks:

These must be located in accessible positions to permit the draining of the whole system. The taps must be at least 15mm nominal size and manufactured in accordance with BS 2870:1980.

Safety Valve Discharge:

The discharge should terminate facing downwards on the exterior of the building in a position where discharging (possibly boiling water & steam) will not create danger or nuisance, but in an easily visible position, and not cause damage to electrical components and wiring.

The discharge must not be over an entrance or a window or any other type of public access.

Air Release Points:

These must be fitted at all high points where air naturally collects and must be sited to facilitate complete filling of the system.

The appliance has an integral sealed expansion vessel to accommodate the increase of water value when the system is heated.

It can accept up to 7 l (1.5 gal) of expansion water. If the heating circuit has an unusually high water content, calculate the total expansion and add an additional sealed expansion vessel with adequate capacity.

Mains Water Feed - Central Heating:

There must be no direct connection to the mains water supply even through a non-return valve, without the approval of the Local Water Authority.

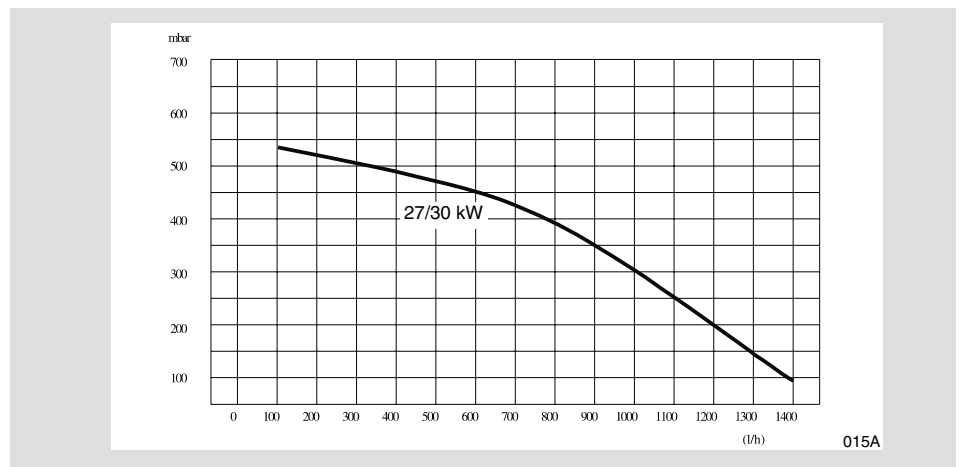
Filling:

A temporary method for initially filling the system and replacing lost water during servicing and initial filling (in accordance with Water Supply Byelaw 14), is provided as an integral part of the connection kit (see fig. 2.5). The flexible hose must be removed once the system has been filled. The D.H.W. inlet valve on the connection kit has two positions, one for winter and one for the summer. This enables the flow-rate through the appliance to be adjusted so that a sensible D.H.W. temperature may be achieved throughout the year.

Domestic Water

The domestic water must be in accordance with the relevant recommendation of BS 5546:1990. Copper tubing to BS EN 1057:1996 is recommended for water carrying pipe work and must be used for pipe work carrying drinking water.

Residual Head of the Boiler



2.9 Flue Connections

Flue System

The provision for satisfactory flue termination must be made as described in BS 5440-1.

The appliance must be installed so that the flue terminal is exposed to outdoor air. The terminal must not discharge into another room or space such as an out-house or lean-to.

It is important that the position of the terminal allows a free passage of air across it at all times.

The terminal should be located with due regard for the damage or discolouration that might occur on buildings in the vicinity.

In cold or humid weather water vapour may condense on leaving the flue terminal.

The effect of such "steaming" must be considered.

If the terminal is less than 2 metres above a balcony, above ground or above a flat roof to which people have access, then a suitable terminal guard must be fitted. When ordering a terminal guard, quote the appliance model number.

A suitable terminal guard is available from:
TOWER FLUE COMPONENTS
Morley Road
Tonbridge
Kent TN9 1RA

The minimum acceptable spacing from the terminal to obstructions and ventilation openings are specified in Fig. 2.6

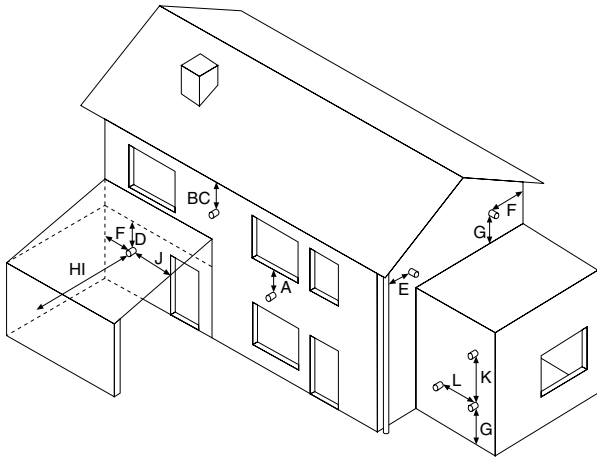


Fig. 2.6

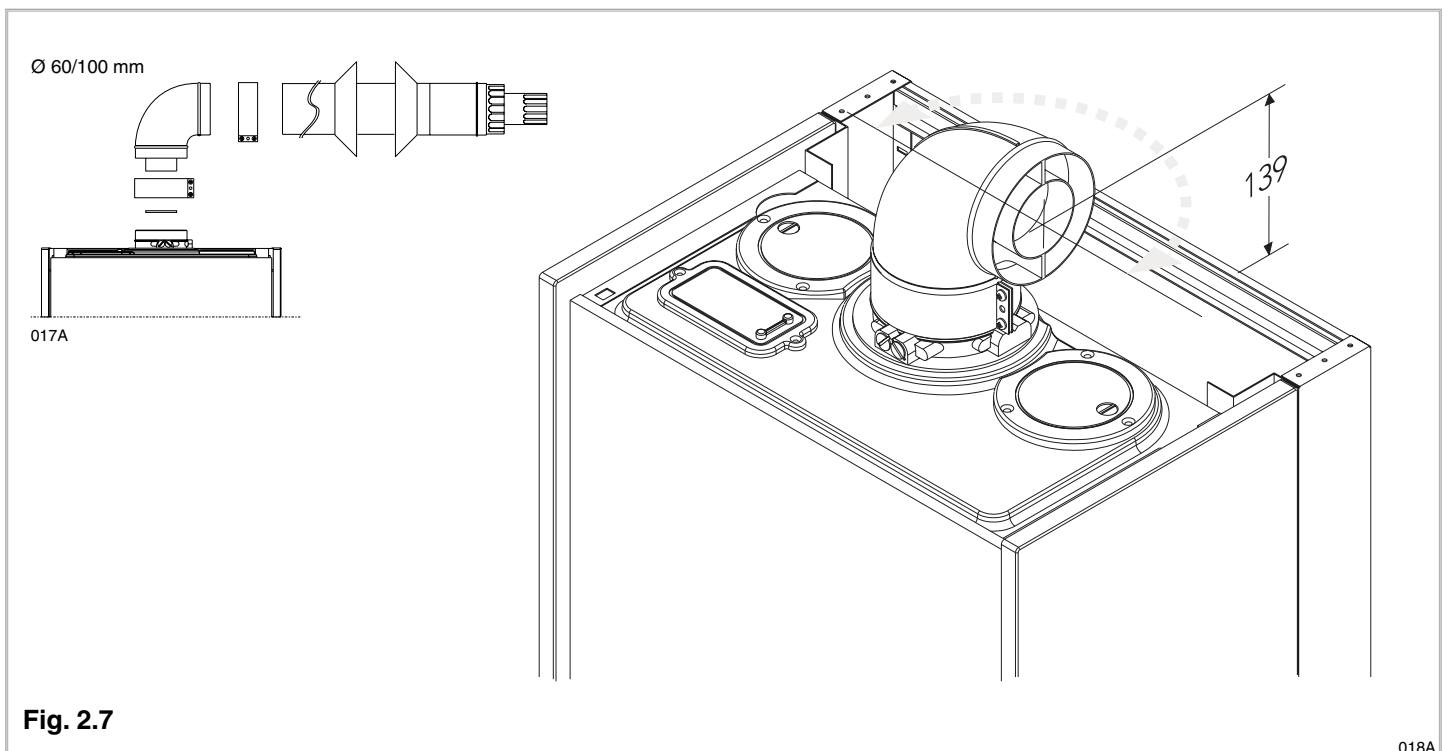
016A

TERMINAL POSITION

mm

A - Directly below an open window or other opening	300
B - Below gutters, solid pipes or drain pipes	75
C - Below eaves	200
D - Below balconies or car-port roof	200
E - From vertical drain pipes and soil pipes	75
F - From internal or external corners	300
G - Above ground or below balcony level	300
H - From a surface facing a terminal	600
I - From a terminal facing a terminal	1200
J - From an opening in the car port (e.g. door, window) into dwelling	1200
K - Vertically from a terminal in the same wall	1500
L - Horizontally from a terminal in the same wall	300

The boiler is designed to be connected to a coaxial flue discharge system.

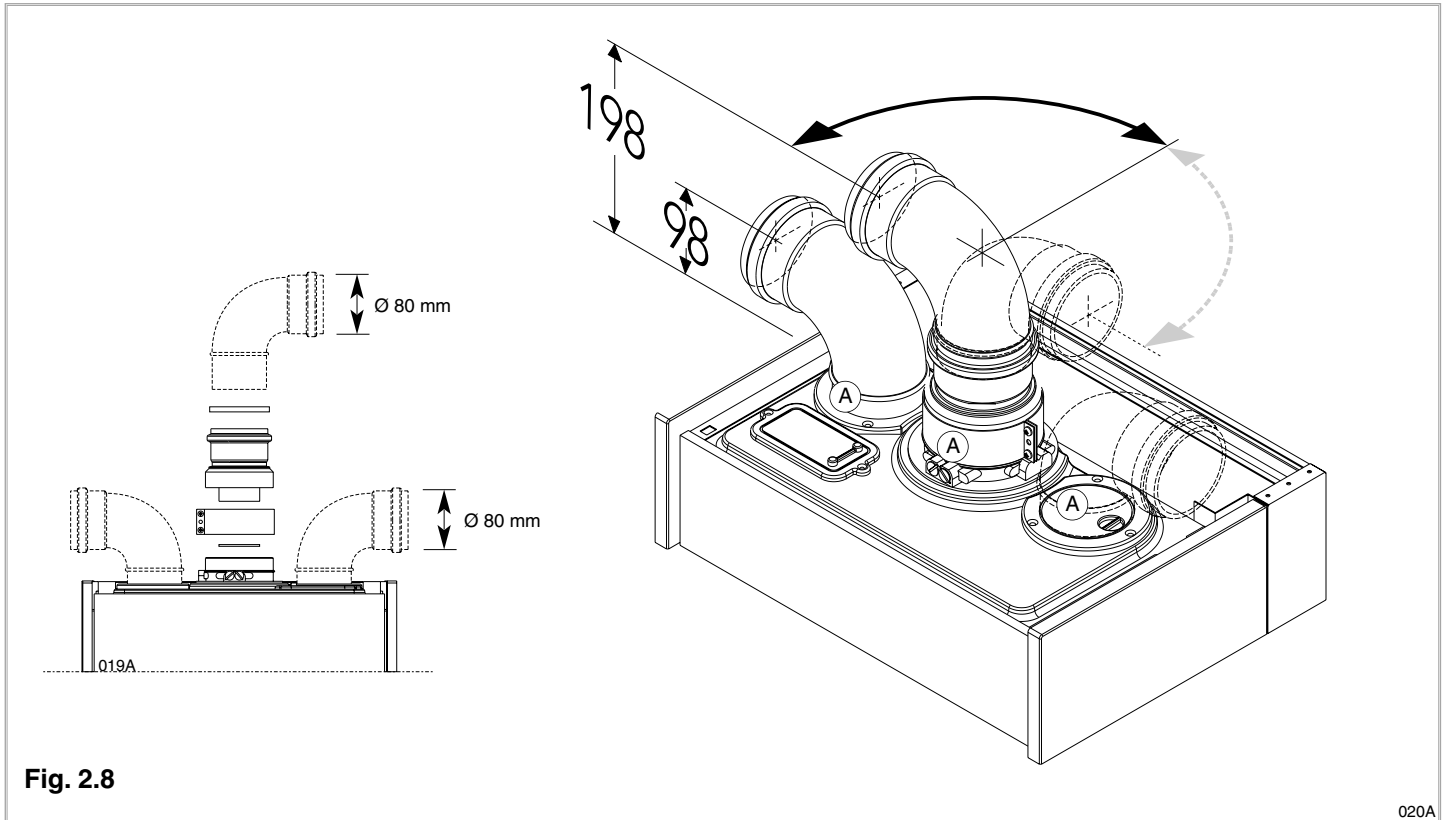


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Fig. 2.7

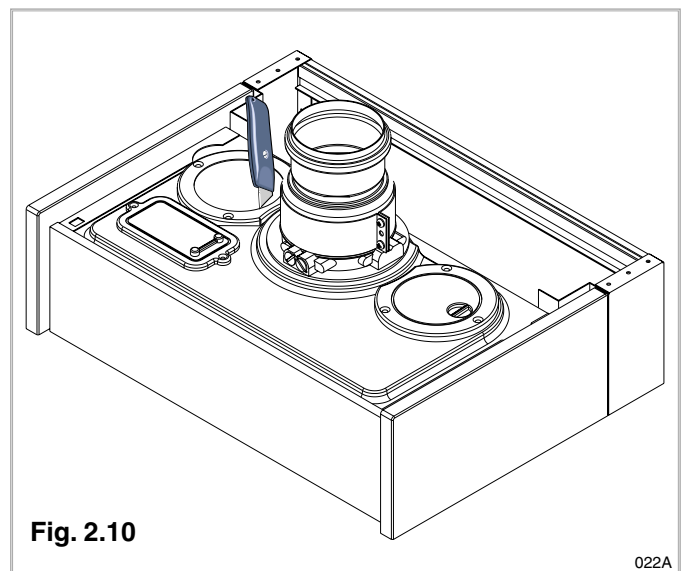
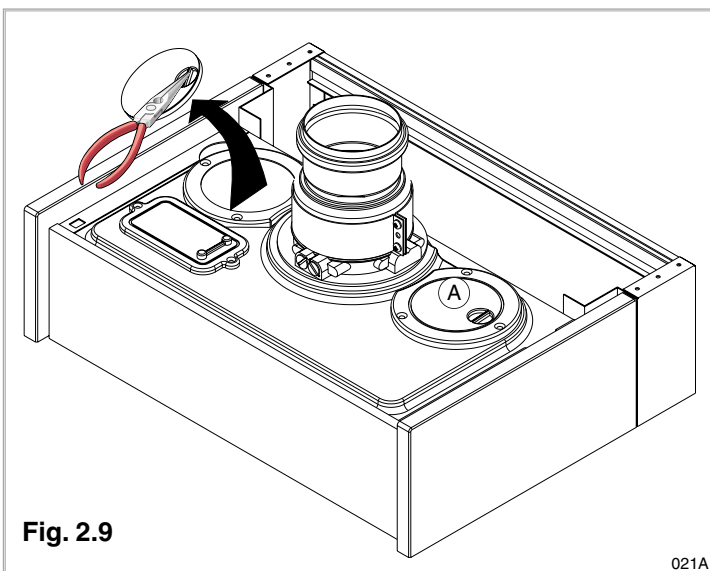
018A

In addition, it is also possible to use a split system by fitting a special adapter to the flue discharge collar and using one of the apertures for the air vent intake located on the top part of the combustion chamber (A).



This procedure must be done as follows:

- 1 - Remove the air vent intake you want to use, in the area indicated in Fig. 2.9, by breaking the perforated ring.
- 2 - Use a tool to grasp the lid and remove it completely.
- 3 - Clean any burrs or sharp edges with a knife or an appropriate tool.



In Fig. 2.11 below, several different types of flue systems are shown. For additional information regarding the flue accessories, please consult the Flue Pipe Accessories manual.

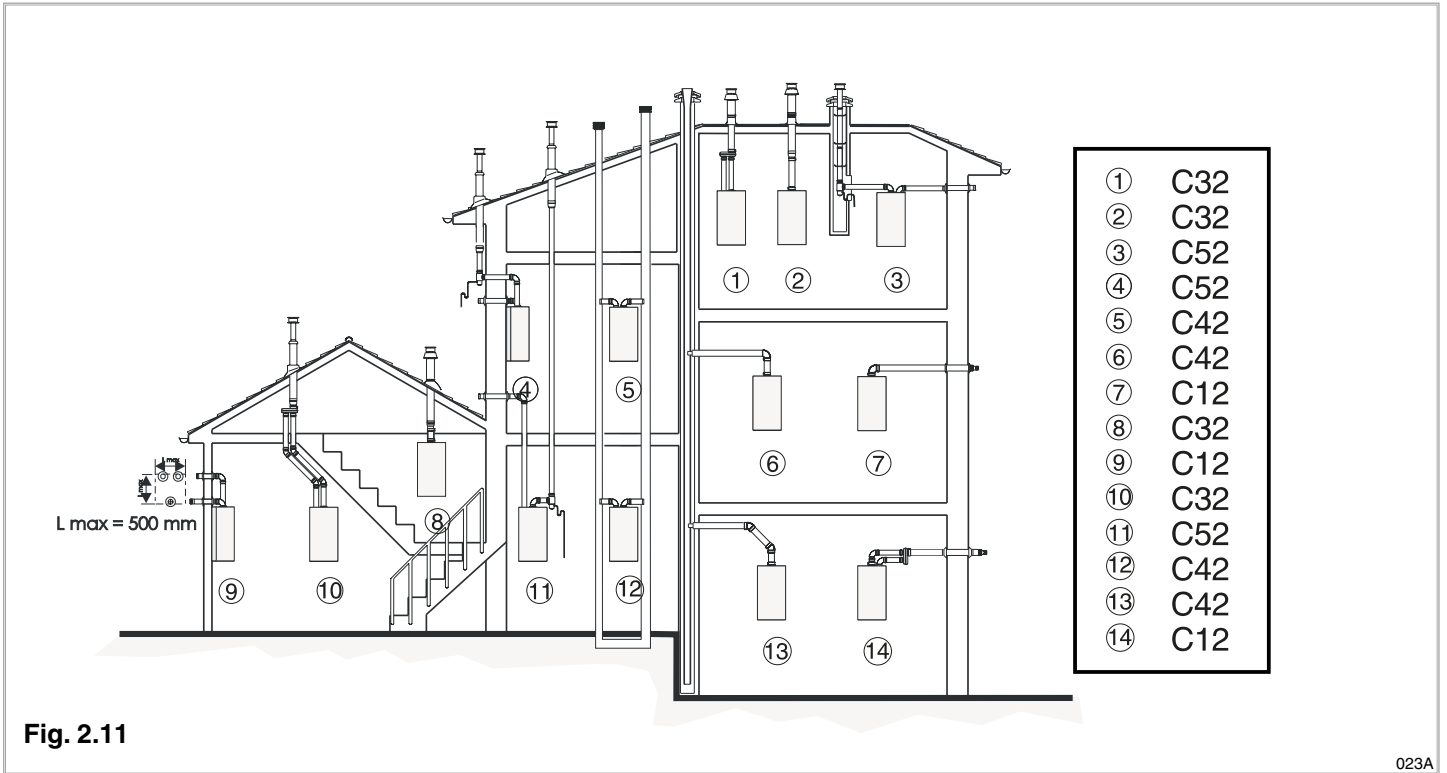


Fig. 2.11

023A

	Exhaust Type	Maximum Extension Exhaust/Air		Diameter of Pipes (mm)	Use of Restrictor on Discharge Side		Risk of Condensation Forming	
		27 kW	30kW		42 mm 27 kW	45 mm 30 kW	27 kW	30 kW
Coaxial Systems	C12 (xx)	4 m	3 m	ø 60/100	L * < 0.5 m	L * < 0.5 m		
	C32 (xx)	4 m	3 m	ø 60/100	L * < 0.5 m	L * < 0.5 m		
	C42 (xx)	4 m	3 m	ø 60/100	L * < 0.5 m	L * < 0.5 m		
Twin Pipe Systems	C12 (xy)	46 m	50 m	ø 80	L < 5 m	L < 7.5 m	L > 6.5 m	L > 4.5 m
	C32 (xy)	46 m	50 m	ø 80	L < 5 m	L < 7.5 m	L > 6.5 m	L > 4.5 m
	C42 (xy)	46 m	50 m	ø 80	L < 5 m	L < 7.5 m	L > 6.5 m	L > 4.5 m
	C52 (xy)	17 m	15 m	ø 80	L < 5 m	L < 7.5 m	L < 5.3 m	L > 4.5 m

(*) L = Length of Piping

In calculating the lengths of the pipes, the maximum length must also take into consideration the values for the exhaust/air intake end terminals, as well as 90° elbows for coaxial systems.

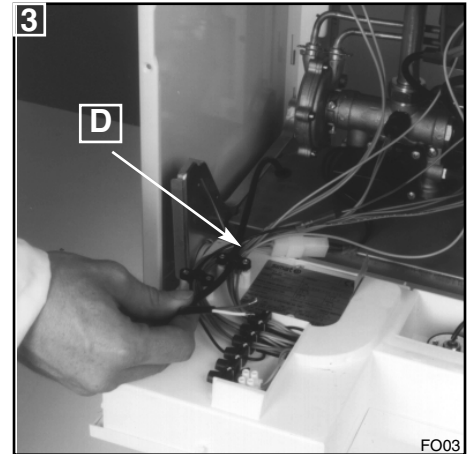
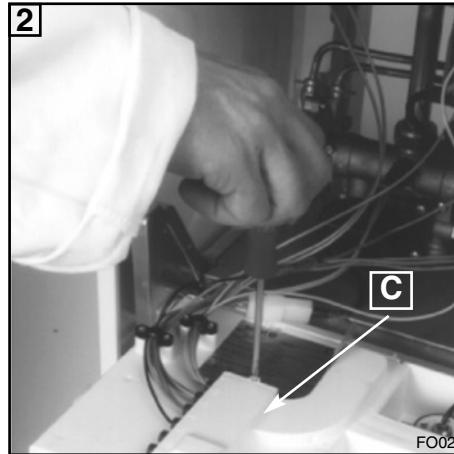
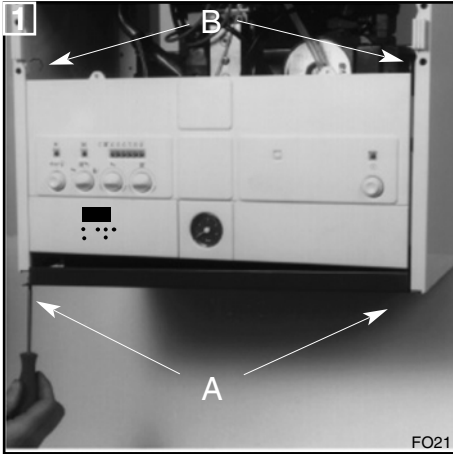
The C52 types must comply with the following requirements:

1. The discharge/intake vent pipes must have the same diameter of ø 80 mm.
2. If an elbow is inserted into the discharge/ventilation system, the calculation of the overall extension must take into consideration the values for each curve, as indicated in the table.
3. The exhaust pipe must extend at least 0.5 m above the ridge of the roof if it is located on a side other than that for the air intake (this is not obligatory if the exhaust and air intake pipes are located on the same side of the building).

2.10 Room Thermostat Connection

In order to perform this procedure, remove the boiler casing as indicated in section 3.2. Then proceed as follows:

- 1 Remove the two screws "A" in order to remove the cover, release the two clips "B" and lift and rotate down the control panel box.
- 2 Open the cover "C" on the left hand side of the compartment.
- 3 Insert the wire for the connection of the room thermostat into the cable clamp "D", as indicated in photo 3.

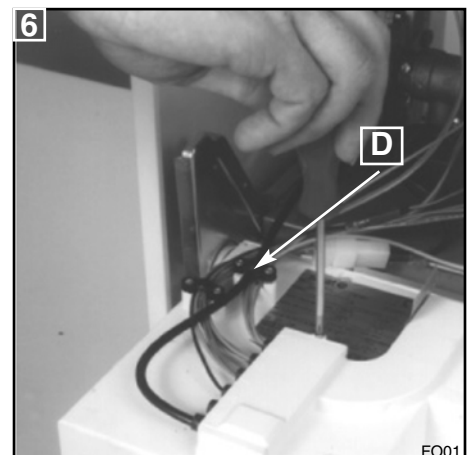
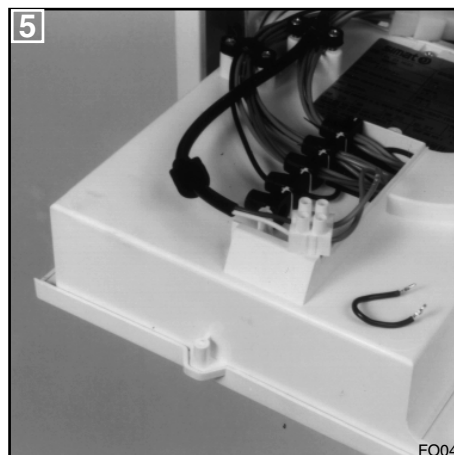
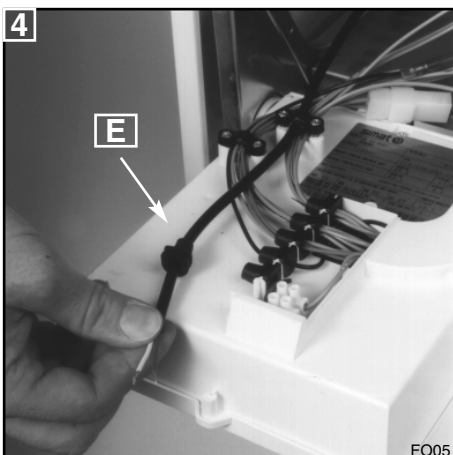


- 4 Remove the grommet "E" shown in the photo 4, make a hole in it and pass the room thermostat wire through.
- 5 Remove the link located in the terminal block and connect the wire.
- 6 Replace the grommet and the terminal block to their original positions, close the cover on the grommet compartment and fasten the wire-clamp "D" in place.
- 7 If a remote time clock is to be fitted, disconnect the integral time clock plug from the P.C.B.
- 8 Using a volt-free switching time clock, connect the switching wires from the time clock following points 1-6 above.
- 9 If using a time clock and room thermostat, these must be connected in series as per points 1-8 above.

Note: Only a two-wire type room thermostat can be used.

For details on fitting the D.H.W. probe (Genus 27 RFFI only), please consult the separate instruction sheet supplied with the probe.

An anti-frost device is built-in to the appliance's electronic regulation system.



2.11 Electrical Diagram

Legend:

AT = High Voltage P.C.B.
BT = Low Voltage P.C.B.
A = Remote Connector Kit
B = Flame Failure L.E.D.
C = Insufficient Water Pressure L.E.D.
D = Water Temperature Indicator L.E.D.s
E = Overheat Thermostat Warning L.E.D.
F = System Reset Button
G = Selector Knob for Operating Mode
H = Domestic Hot Water Temp. Adjustment
I = Central Heating Temp. Adjustment
J = Wire Connector for Room Thermostat
K = Connector for Total Check System
L = Selector for Local/Remote Control
M = Anti-cycling Device Adjustment for Heating
N = Soft-light Adjustment
O = Max Heating Temperature Adjustment
P = Time Clock Connection
Q = On/Off L.E.D.
R = On/Off Switch
S = Interface Wire for P.C.B.s
T = Relay Motorised Valve
U = Ignitor Relay
V = Gas Valve Relay
W = Fan Relay
X = Circulation Pump Relay
Y = Selector TCS2
Z = Link for Continuous Pump Run
Aa = Adaptor (British Gas use only)

A01 = Air Pressure Switch
A02 = Fan
A03 = Gas Valve
A04 = Ignitor
A05 = Motorised Valve
A06 = Circulation Pump
A07 = Flame Detector
A08 = Earth Terminal
A09 = Flame Detection Circuit
A10 = Flame Indicator L.E.D.
A11 = Transformer
A12 = Filter

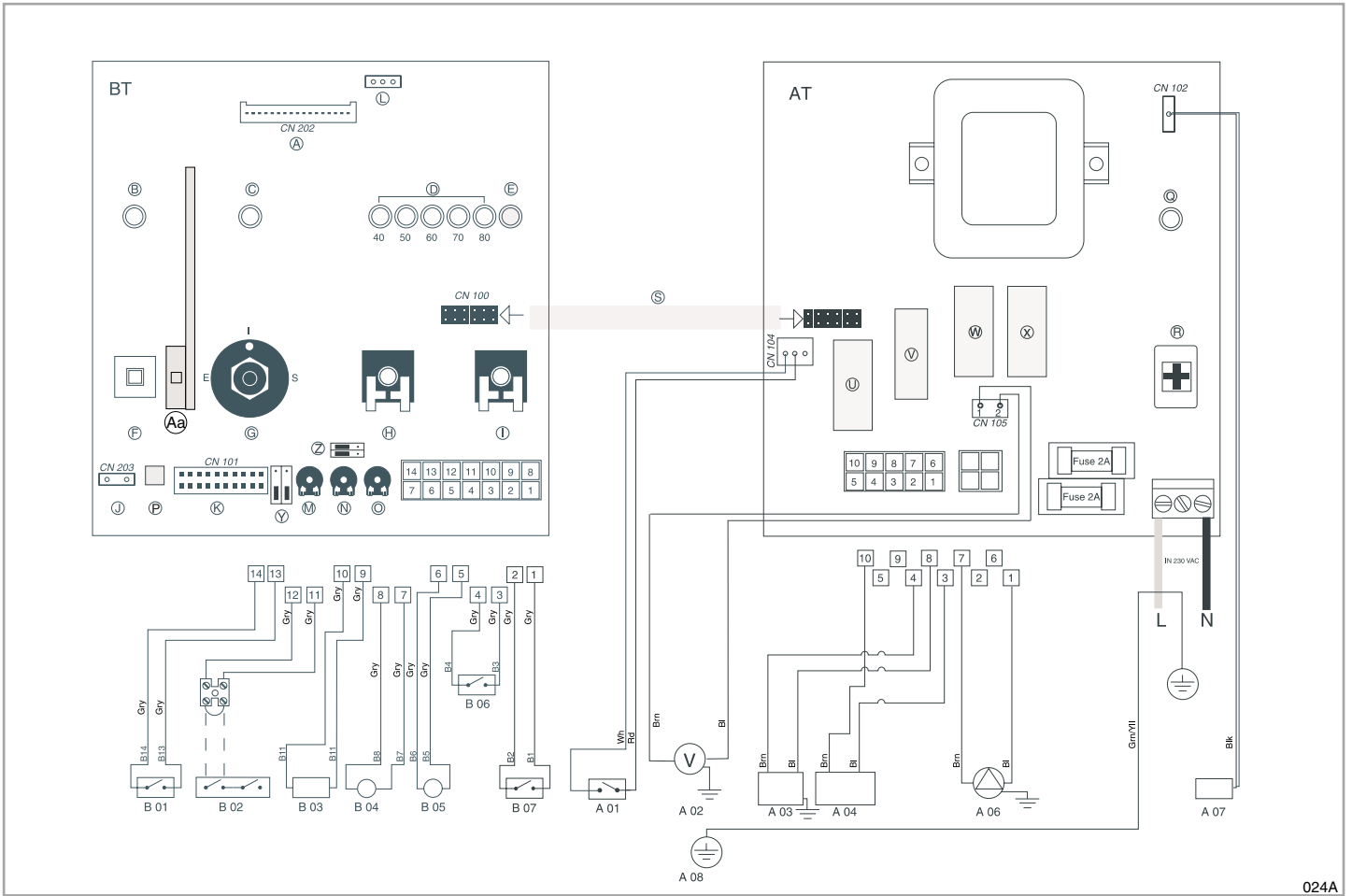
B01 = Over Heat Thermostat
B02 = External Thermostat
B03 = Gas Valve Modulator
B04 = D.H.W. Probe Sensor Cylinder (RFFI SYSTEM models only)

B05 = Heating Sensor
B06 = Pressure Switch for Heating Circuit
B07 = Microswitch for Diverter Valve (MFFI models only)

Colours

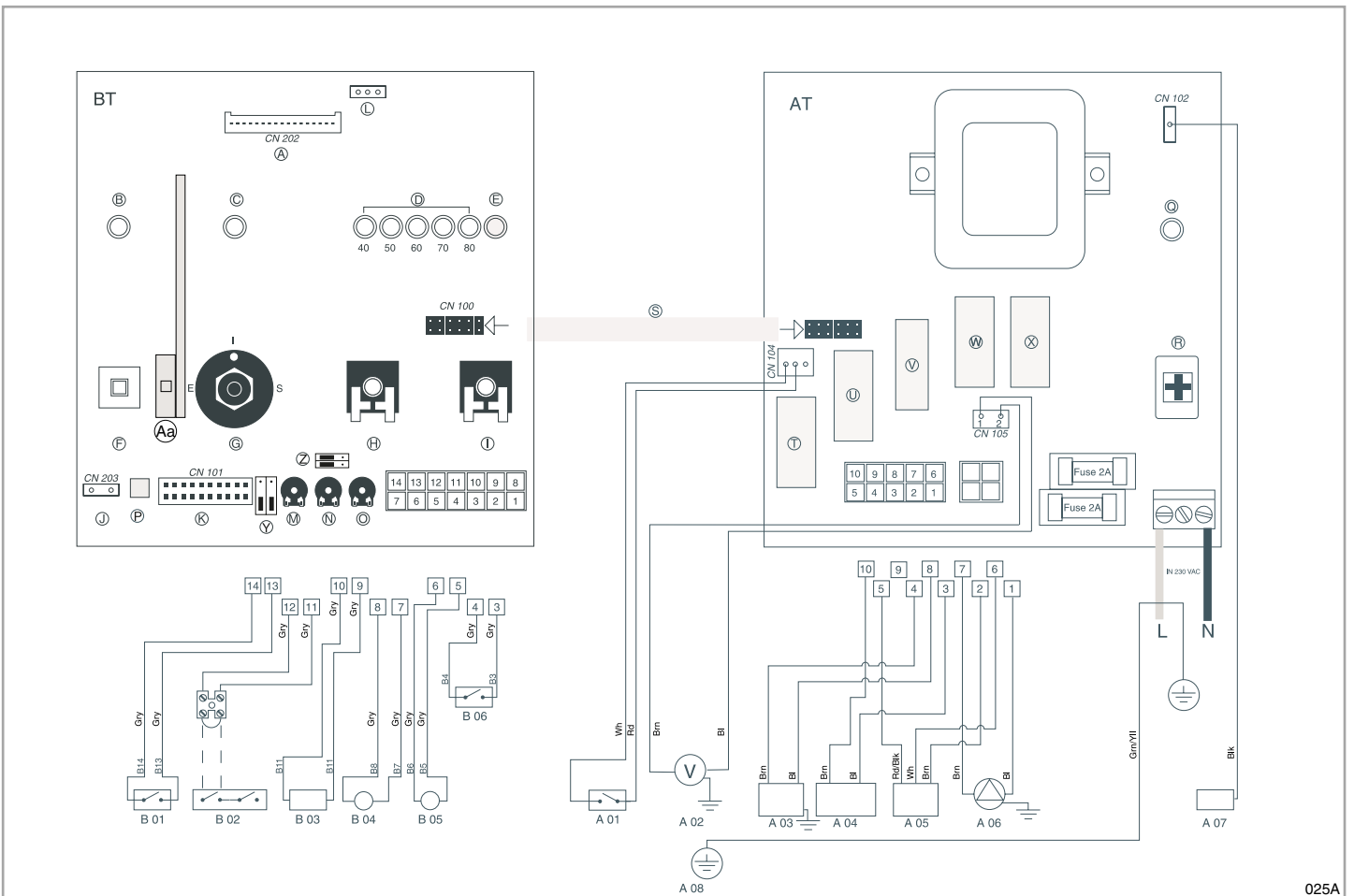
Gry = Grey
Rd = Red
Bl = Blue
Grn/Yll = Yellow/Green
Wh = White
Brn = Brown
Blk = Black
Wh/Rd = White/Red

GENUS 30 MFFI



024A

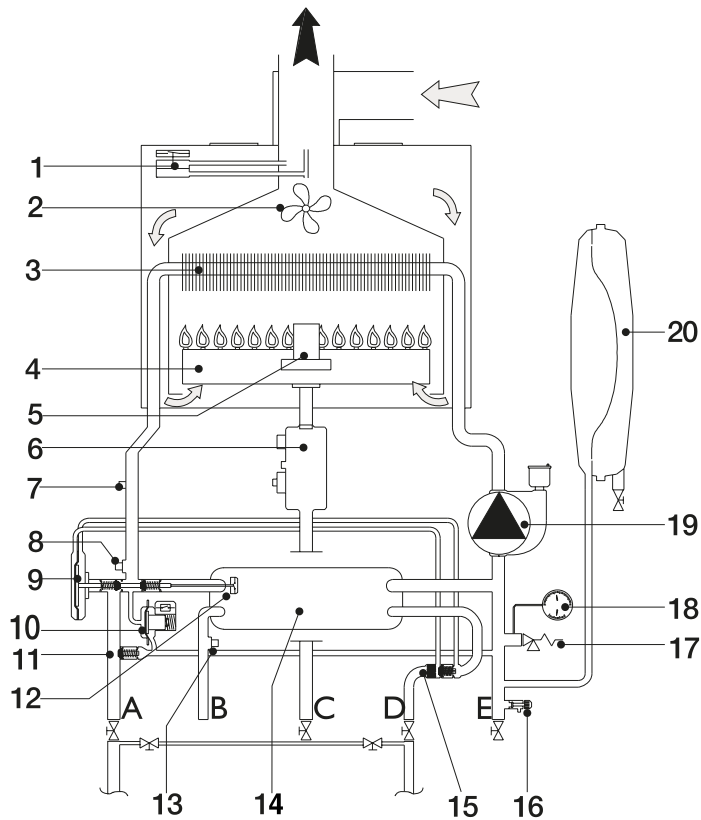
GENUS 27 RFFI SYSTEM



025A

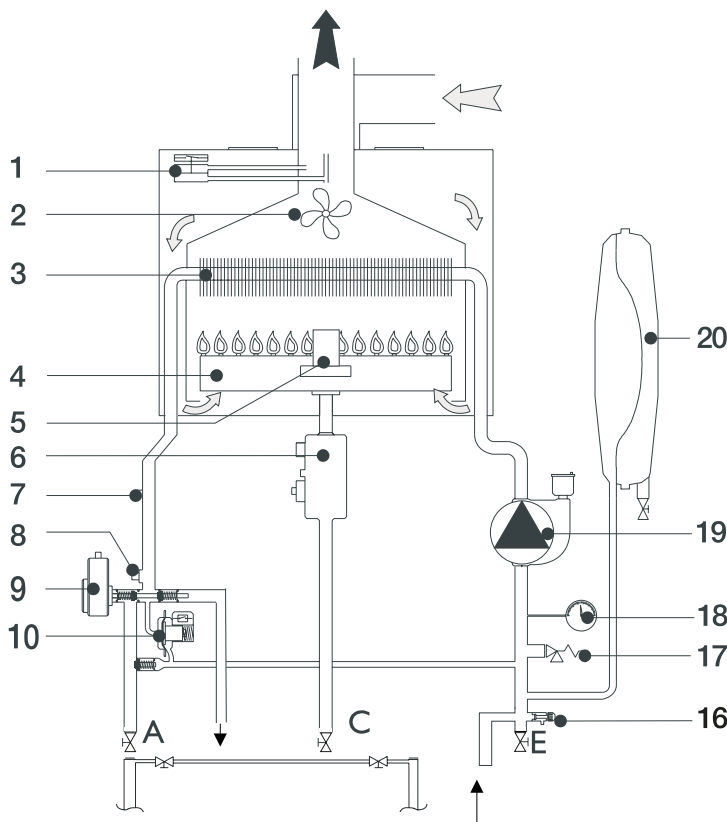
2.12 Water Circuit Diagram

GENUS 30 MFFI



028A

GENUS 27 RFFI SYSTEM



029A

Legend

1. Air Pressure Switch
2. Fan
3. Main Heat Exchanger
4. Burner
5. Electronic Ignitor and Electronic Flame Detector
6. Gas Valve
7. Overheat Thermostat
8. Heating Sensor
9. Diverter Valve (MFFI) Motorised Valve (RFFI)
10. Main Flow Switch Including Safety Pressure Switch for Primary Circuit
11. Automatic By-pass
12. Microswitch for Diverter Valve
13. Sensor for Domestic Hot Water
14. Secondary Heat Exchanger
15. Domestic Water Inlet Filter
16. Drain Valve
17. Safety Valve
18. Water Pressure Gauge
19. Circulation Pump with Automatic Air Valve
20. Expansion Vessel

- A. Central Heating Flow
- B. Domestic Hot Water Outlet
- C. Gas Inlet
- D. Domestic Cold Water Inlet
- E. Central Heating Return
- F. Cylinder Flow
- G. Cylinder Return

3. COMMISSIONING

3.1 Initial Preparation

MTS (GB) Limited support the *benchmark* initiative. Within the information pack you will find a copy of the *benchmark* logbook. It is important that this is completed in the presence of your customer, they are shown how to use it, and it is signed by them. Please instruct your customer that they must have their *benchmark* logbook with them whenever they contact a service engineer or us.

Preliminary electrical system checks to ensure electrical safety must be carried out by a competent person i.e. polarity, earth continuity, resistance to earth and short circuit.

Filling the Heating System:

Remove the panels of the case and lower the control panel (see point 3.2. for further information).

Open the central heating flow and return cocks supplied with the connection kit.

Unscrew the cap on the automatic air release valve one full turn and leave open permanently.

Close all air release valves on the central heating system.

Gradually open valve(s) at the filling point (filling-loop) connection to the central heating system until water is heard to flow, do not open fully.

Open each air release tap starting with the lower point and close it only when clear water, free of air, is visible.

Purge the air from the pump by unscrewing anticlockwise the pump plug and also manually rotate the pump shaft in the direction indicated by the pump label to ensure the pump is free.

Close the pump plug.

Continue filling the system until at least 1 bar registers on the pressure gauge.

Inspect the system for water soundness and remedy any leaks discovered.

Filling of the D.H.W. System:

Close all hot water draw-off taps.

Open the cold water inlet cock supplied with the connection kit.

Open slowly each draw-off tap and close it only when clear water, free of bubbles, is visible

Gas Supply:

Inspect the entire installation including the gas meter, test for soundness and purge, all as described in BS 6891:1988.

Open the gas cock (supplied with the connection kit) to the appliance and check the gas connector on the appliance for leaks.

When the installation and filling are completed turn on the central heating system (sect. 3.4) and run it until the temperature has reached the boiler operating temperature. The system must then be immediately flushed through.

The flushing procedure must be in line with BS 7593:1992 Code of practice for treatment of water in domestic hot water central heating systems.

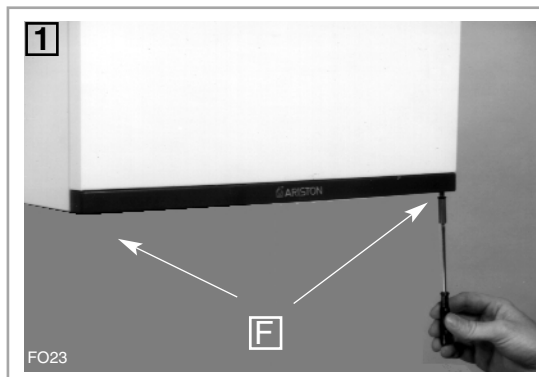
During this operation, we highly recommend the use of a central heating flushing detergent (Fernox Superfloc or equivalent), whose function is to dissolve any foreign matter that may be in the system.

Substances different from these could create serious problems to the pump or other components.

The use of an inhibitor in system such as Fernox MB-1 or equivalent is strongly recommended to prevent corrosion (sludge) damaging the boiler and system.

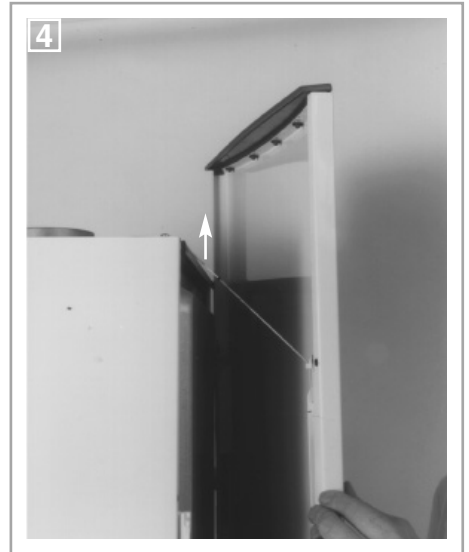
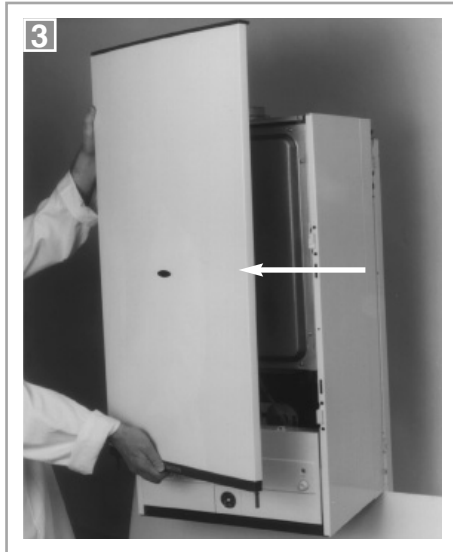
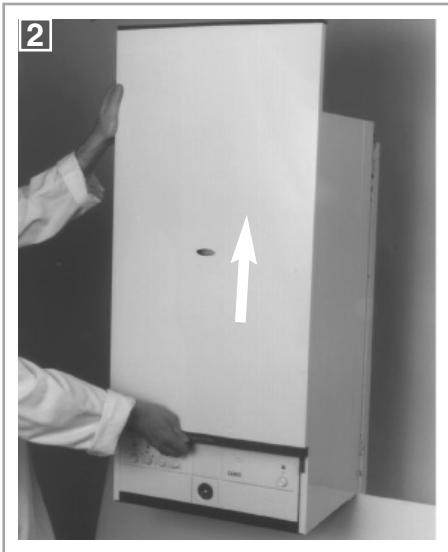
Failure to carry out this procedure may invalidate the appliance warranty.

3.2 Removing the Casing



To dismantle the front part of the casing, proceed as follows:

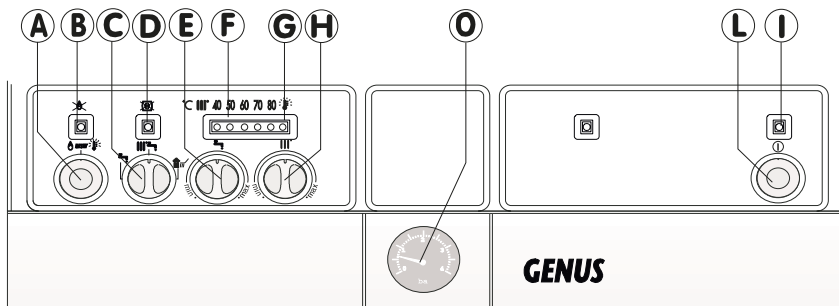
1. Loosen the two screws "F" located on the bottom part of the boiler until the first thread on the screws appears;



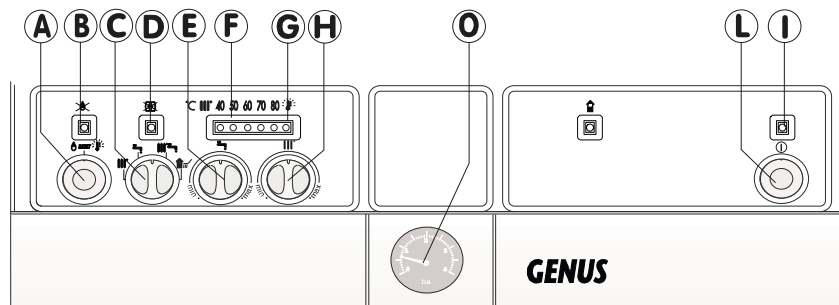
2. Lift the front panel up until it stops after the click;
3. Remove the front panel from the rest of boiler casing;
4. Unhook the two cords from the location slots.

3.3 Control Panel

GENUS 30 MFFI



GENUS 27 RFFI SYSTEM



- A - Ignition Lockout Reset Button/Safety (Overheat)Thermostat Reset
- B - Ignition Lockout L.E.D.
- C - Selector Knob for *Summer/Winter/Flue Analysis Modes**
- D - Low System Water Level L.E.D.
- E - Temperature Adjustment Knob for Domestic Hot Water
- F - Heating System Thermometer
- G - Safety (Overheat)Thermostat Intervention L.E.D.
- H - Adjustment Knob for Heating Temperature
- I - On/Off L.E.D.
- L - On/Off Switch
- O - System Pressure Gauge

* Warning the flue analysis mode must only be selected by a qualified service engineer.

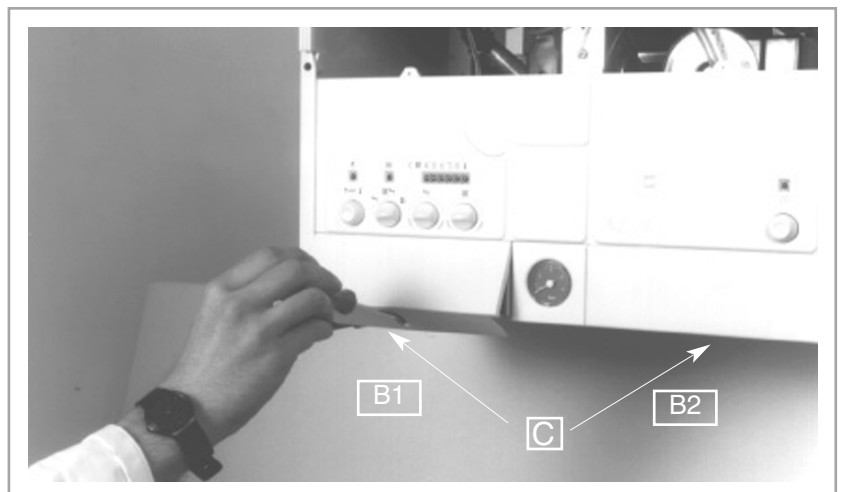
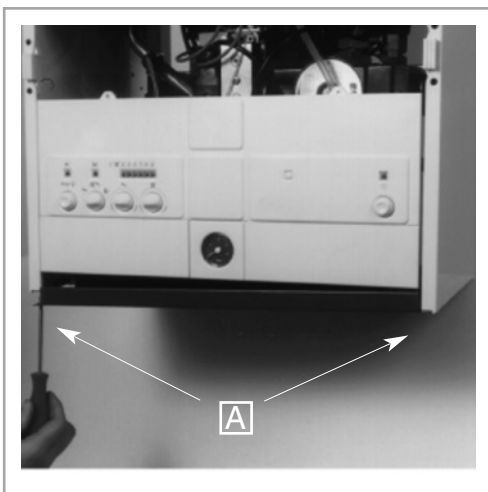
3.4 Initial Start-up

The checks to be run before initial start-up are as follows:

1. Make sure that:
 - the screw on the automatic air valve has been loosened when the system is full;
 - If the water pressure in the system is below 1 bar, bring it up to the appropriate level;
 - Check to see whether the gas cock is closed;
 - Make sure that the electrical connection has been made properly and that the earth wire is connected to an efficient earthing system;
 - Supply power to the boiler by pressing the On/Off switch <L> - the L.E.D. "I" will turn on - turn the selector knob "C" to the <winter> setting. This will start the circulation pump. After 7 seconds, the boiler will signal a shut-down due to failure ignition. Leave the boiler as it is until all of the air has been bled from the lines.
 - Loosen the cap on the head of the pump to eliminate any air pockets;
 - Repeat the procedure for bleeding the radiators of air;
 - Open the taps for a brief period;
 - Check the system pressure and, if it has dropped, open the filling loop again to bring the pressure back up to 1 bar.
2. Check the exhaust flue for the fumes produced by combustion.
3. Make sure that all gate valves are open;
4. Turn on the gas cock and check the seals on the connections, including the one for the burner, making sure that the meter does not signal the passage of gas. Check the connections with a soap solution and eliminate any leaks.
5. Press the reset button "A" for the lighting system; the spark will light the main burner. If the burner does not light the first time, repeat the procedure.
6. Check the minimum and maximum pressure values for the gas going to the burner; adjust it if needed using the values indicated in the table in section 4.
(See sect of the servicing manual).

3.5 Operational Adjustments

The boiler was designed to make regulation easy. To access the adjustment and control area, simply remove the cover by unscrewing the screws "A" and "C" and lift up the small service panels "B1" and "B2" respectively. The first provides access to the control (low voltage) P.C.B., while the second makes it possible to work on the power supply P.C.B.



The service panel "B2" also provides access to:

- the power supply cord connector;
- the fuses;
- the selector knob for continuous operation of the circulation pump.

The service panel "B1" also provides access to:

- the potentiometer for regulating the ignition delay (anti-cycling) feature, which can be set from 0 to 2 minutes (factory set at 1 minute);

- the potentiometer for regulating the soft-light feature, the setting for which can range from the minimum thermal power to the maximum:

G20	5 mbar
G25	18 mbar
G30-31	19 mbar

- the potentiometer for the maximum thermal power for the heating system, maximum thermal power setting (factory set at the maximum value, unless indicated otherwise on the adhesive sticker located in proximity to the potentiometer);
- The connection to the diagnosis device (TCS-TCS2).

3.6 *Combustion Analysis*

The boiler is designed to make it easy to analyse the combustion by-products.



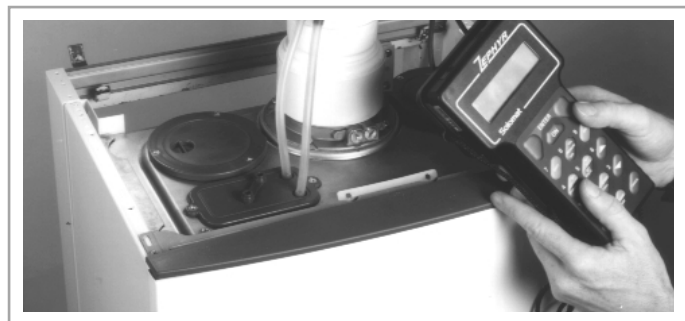
Using the especially designed apertures, readings can be taken on the temperature of the combustion by-products and of the combustion air, as well as of the concentrations of O₂ and CO₂, etc.

The best maximum-power test conditions for the heating system are when the selector “C” is turned to the flue analysis setting.

3.7 *Fume Discharge Monitoring*

The discharge/ventilation of the exhaust fumes can be monitored to check for losses in general pressure in the system. This is done to eliminate the cause of lighting failure with the main burner not indicated by a shutdown status.

With a differential manometer connected to the test socket on the combustion chamber, the DP value for the air pressure switch can be taken. The measured value should not be less than 10 mbar under maximum thermal power conditions (with the knob “C” on the flue test setting) in order for the unit to function properly and without interruption.



3.8 Boiler Safety Systems

The boiler is equipped with the following safety systems (see section 3.3 for references):

1. - Ignition Failure

This control signals an ignition failure on the burner 7 seconds after a lighting failure. The L.E.D. "B" will turn on to signal the shutdown status.

The system can be reset by pressing and releasing the button "A" after checking to make sure that the gas valve is open. Repeat this process until the burner lights.

2. - Circulation Failure

This control signals that the safety pressure switch on the primary circuit has not sensed a pressure of at least 1 bar within 40 seconds of the activation of the circulation pump, it shuts off the boiler and lights the L.E.D. "D". The system can be reset (after the pressure has been brought up to the proper level) by using the On/Off switch "L".

3. - Overheating

This control shuts off the boiler in the case where the primary circuit reaches a temperature in excess of 110°C. The L.E.D. "G" will come on to signal this shut-off status. After the system has been allowed to cool, the system can be reset by pressing the button "A".

4. - Limescale Build-up

This is an indirect control (actuated through the regulation of the temperature in the primary heat exchanger) on the formation of limescale in the secondary heat exchanger. Regardless of the flow rate and the temperature in the circuit for the domestic hot water, the temperature is limited to 62°C.

5. - Anti-frost Device

The boiler is equipped with a device that automatically lights the main burner when the temperature in the delivery line to the system drops below 5°C. The boiler will continue to operate until the temperature in question reaches about 58°C.

This device is activated on a properly operating boiler if:

- the system pressure is between the acceptable values;
- the power supply to the unit is on;
- the unit is supplied with gas.

This feature is enabled also when the boiler is in summer operating mode.

6. - Safety Shut-off

At the start of every lighting phase, the P.C.B. performs a series of internal controls. If a malfunction occurs, the boiler will shutdown until the problem has been resolved.

3.9 Draining the System

Draining the heating system.

The heating system must be emptied as follows:

- Turn off the boiler;
- Open the drain valve for the system and place a container below to catch the water that comes out;
- Empty the system at the lowest points (where present). If you plan on not using the heating system for an extended period of time, it is recommended that you add antifreeze with an ethylene glycol base to the water in the heating lines and radiators if the ambient temperature drops below 0°C during the winter.

This makes repeated draining of the entire system unnecessary.

Draining the domestic hot water system.

Whenever there is the danger of the temperature dropping below the freezing point, the domestic hot water system must be drained as follows:

- Turn off the general water valve for the household plumbing system;
- Turn on all the hot and cold water taps;
- Empty the remaining water from the lowest points in the system (where present).

4. GAS ADJUSTMENTS

CATEGORY I12H3+		Methane Gas G20	Liquid Butane Gas G30	Liquid Propane Gas G31
Lower Wobbe Index (15°C;1013mbar)	MJ/m ³ h	45.67	80.58	70.69
Nominal Delivery Pressure	mbar	20	30	37
Minimum Delivery Pressure	mbar	17	20	25
27 RFFI System				
Main Burner: n. 15 jets (ø)		1.25	0.72	0.72
Consumption (15°C; 1013mbar)	mc/h	3.16	----	----
Consumption (15°C; 1013mbar)	Kg/h	----	2.35	2.32
Gas Cock Outlet Pressure: max - min	mbar	11.4-2.0	(*) - 5.0	(*) - 7.0
30 MFFI				
Main Burner: n. 15 jets (ø)		1.30	0.77	0.77
Consumption (15°C; 1013mbar)	mc/h	3.49	----	----
Consumption (15°C; 1013mbar)	Kg/h	----	2.60	2.57
Gas Cock Outlet Pressure: max - min	mbar	11.4-1.4	(*) - 4.1	(*) - 5.6

(1mbar = 10,197column of water)

The outlet pressure of the gas cock is obtained by completely loosening the screw on the solenoid. The maximum pressure of the gas to the burner will be equal to the nominal delivery pressure minus the head loss within the gas valve.

4.1 Changing the Type of Gas

The boiler can be converted to use either methane (natural) gas (G20) or LPG (G30 - G31) by an Authorised Service Centre.

The operations that must be performed are the following:

1. Replace the jets on the main burner (see table in section 4);
2. Adjust the maximum and minimum thermal capacity values for the boiler (see table in section 4);
3. Replace the gas rating plate;
4. Adjust the maximum thermal power setting;

CATEGORY I12H3+	Methane Gas G20	Liquid Butane Gas G30	Liquid Propane Gas G31
Recommended Soft-light Pressure (mbar)	5-5.5	17 - 18	18 - 19

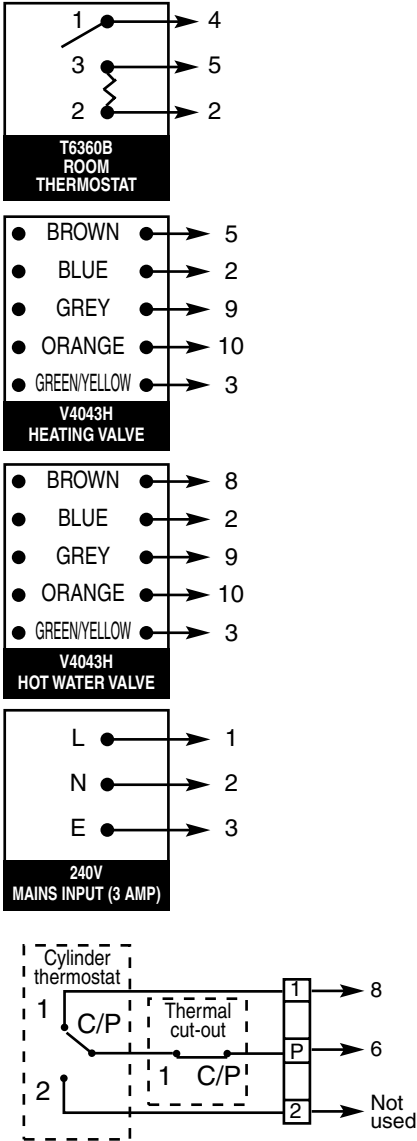
5. Adjust the soft-light feature;
6. Adjust the delayed lighting feature for the heating system (can be set from 0 to 2 mins.).

5. MAINTENANCE

It is recommended that the following checks be made on the boiler at least once a year:

- 1 - Check the seals for the water connections; replacement of any faulty seals.
- 2 - Check the gas seals; replacement of any faulty gas seals.
- 3 - Visual check of the entire unit.
- 4 - Visual check of the combustion process and cleaning of the burners if needed.
- 5 - If called for by check no. 3, dismantling and cleaning of the combustion chamber.
- 6 - If called for by check no. 4, dismantling and cleaning of the injectors.
- 7 - Visual check of the primary heat exchanger:
 - check for overheating in the blade assembly;
 - clean the exhaust fan if needed.
- 8 - Adjustment of the flow rate of the gas: flow rate for lighting, partial load and full load.
- 9 - Check of the heating safety systems:
 - safety device for maximum temperature;
 - safety device for maximum pressure.
- 10 - Check of the gas safety systems:
 - safety device for lack of gas or flame ionisation (detection electrode);
 - safety device for gas cock.
- 11 - Check of the electrical connection (make sure it complies with the instructions in the manual).
- 12 - Check of domestic hot water production efficiency (delivery rate and temperature)
- 13 - Check of the general performance of the unit.
- 14 - General check of the discharge/ventilation of the combustion by-products.

6.2 Wiring Diagram for Connection to Ariston Unvented Cylinder



TYPICAL JUNCTION BOX

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

BOILER ELECTRICAL SUPPLY CABLE		BOILER	
9	E	E	N
10	N	N	L
3	E	E	N
2	N	N	L
1	E	E	N
Remove internal time clock plug from the the P.C.B. then connect room stat terminal block on the reverse of the boiler control panel (see section 2.10) to 9 + 10 on the junction box.			
A17 MFI - A17 MFI Genus 252/3 MFI Genus 27 RFI System			
PROGRAMMER		PROGRAMMER	
6	2	2	2
4	5	5	5
3	4	4	4
2	3	3	3
1	1	1	1
Reolier Survic SP50/100 (Link L-3)	2	2	2
Switchmaster Symphony, Sonata	1	4	N
Switchmaster 400, 600	3	1	N
SWITCHMASTER 805, 900	3	1	N
Survic ET 1451 Link 2-3-6	7	4	E
Survic DHP 2201	6	3	E
Towerchron EP Link 1-5/4-7-9	6	10	2
Towerchron MP Link 1-4/6-11	6	10	2
Towerchron 2000		HW ON	HTG ON
ACL LS522 LS722	3	4	N
Randall 922, 972 Link L-2-5	3	6	E
Randall 3020 P and 3060	4	2	E
PROGRAMMER		PROGRAMMER	
6	6	6	6
4	3	3	3
3	4	4	4
2	4	4	4
1	4	4	4
Honeywell ST 699B 1002 Link L-5-8	3	4	N
ST 6400/ST 6300/ST 6200	3	4	N
Drayton Tempus 7	3	4	N
Horstmann 425, 525, 527 Link L-2-5	1	4	E
Lands & Gyr RWB2 Gloworm Mastermind	3	4	N
Lands & Gyr RWB20 Microgyr	3	4	N
Potterton Miniminder	3	4	N
Potterton EP2000/3000 - Link L-5 EP2001/3001	3	4	N
Randall 102/102 E Link 3-6	1	2	E
Randall 4033 Link L-6	4	2	E
Randall 701, 702 Link L-6-5	3	1	E
Sangamo M5 Link L-6	1	6	E
Sangamo 410 Form 1 Link 3-6	1	6	E

7. TECHNICAL INFORMATION

		27 RFFI SYSTEM	30 MFFI
CE Certification			
Heat Input	max/min kW	29.8/12.0	33.0/12.0
Heat Output	max/min kW	27.3/10.1	30.3/10.2
Efficiency of Nominal Heat Input	%	91.6	92.0
Efficiency at 30% of Nominal Heat Input	%	88.3	88.6
Heat Loss to the Casing ($\Delta T=50^{\circ}\text{C}$)	%	1.3	1.4
Flue Heat Loss with Burner Operating	%	7.1	6.6
Flue Heat Loss with Burner Off	%	0.4	0.4
Maximum Discharge of Fumes (G20-G25)	Kg/h	62	61
Residual Discharge Head	mbar	1.4	1.4
Consumption at Nominal Capacity (G20-G25)	m ³ /h	3.16/3.86	3.49/4.05
Gas Consumption after 10 Minutes* (15°C, 1013 mbar) (G30-G31)	m ³ Kg/h	0.37/0.45 2.35/2.32	0.41/0.47 2.60/2.57
Temp. of exhaust fumes at nominal capacity (G20-G25)	°C	128	135
CO ₂ Content	%	6.6	7.5
O ₂ Content	%	8.0	8.0
CO Content	ppm	34	49
Minimum Ambient Temperature	°C	+5	+5
Head Loss on Water Side (max) ($\Delta T=20^{\circ}\text{C}$)	mbar	200	200
Residual Head of System	bar	0.25	0.25
Heating Temperature	max/min °C	82/42	82/42
Domestic Hot Water Temperature	max/min °C	---	56/36
D.H.W. Flow Rate $\Delta T=35^{\circ}\text{C}$	l/min	---	12.3
D.H.W. Flow Rate $\Delta T=35^{\circ}\text{C}$	gal/min	---	2.7
D.H.W. Flow Minimum Rate	l/min	---	2.6
Pressure of Domestic Hot Water	max/min bar	---	6/.02
Expansion Vessel Capacity	l	7	7
Expansion Vessel Pre-load Pressure	bar	1	1
Maximum Water Content in System	l	145	145
Maximum Heating Pressure	bar	3	3
Nominal Pressure Natural Gas (G20-G25)	mbar	20-25	20-25
Liquid Gas (G30-G31)	mbar	30-37	30-37
Electrical Supply	V/Hz	230 / 50	230 / 560
Power Consumption	W	190	190
Protection Grade of Electrical System	IP	X4D	X4D
Internal Fuse Rating		FAST 2 AT	FAST 2 AT
Weight	Kg	46.5	47
G.C. Number		41-116-01	47-116-20

*Calculated at 70% maximum output

Manufacturer: **Merloni TermoSanitari SpA - Italy**

Commercial subsidiary: **MTS (GB) LIMITED**

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Technical Service Hotline: (01494) 539579

GENUS



**User's
Manual**



 **ARISTON**



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- 1) GENERAL INFORMATION page 5**
- 2) OPERATING INSTRUCTIONS page 8**
- 3) TIME CLOCK page 11**
- 4) USEFUL INFORMATION
AND TROUBLESHOOTING page 13**

IMPORTANT

Please read this manual carefully.

For additional information, please consult the
“Installation and Servicing Instructions.”

Please ensure manuals provided are kept with the
appliance so that they can be used by the end-user,
installer or our authorised engineer.



Dear Customer,

Thank you for choosing an ARISTON boiler.

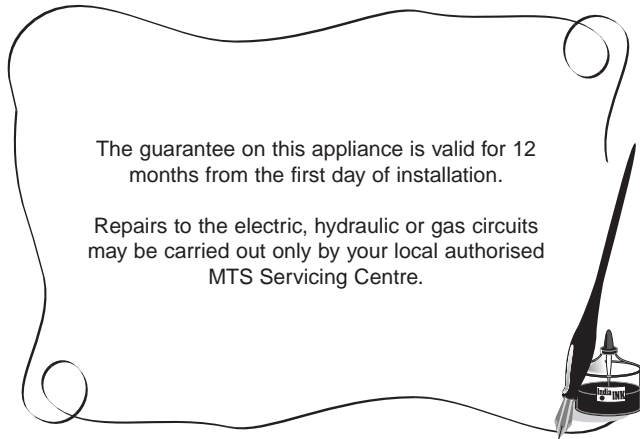
We guarantee that your boiler is a reliable and technically sound product.

This User's Manual provides detailed instructions and recommendations for proper installation, use and maintenance.

Remember to keep this manual in a safe place for future reference i.e. by the gas meter.

Your local MTS Servicing Centre is at your complete disposal for all requirements.

MTS (GB) Limited



The guarantee on this appliance is valid for 12 months from the first day of installation.

Repairs to the electric, hydraulic or gas circuits may be carried out only by your local authorised MTS Servicing Centre.

*Every attempt has been made to avoid errors of any kind in this User's Manual, the Management invites customers to inform of any inaccuracies which they may find.
This will help to improve our service*



TECHNICAL INFORMATION

GENERAL DATA

Heating input max	<i>kW(Btu/h)</i>	25.6 (87364)	29.8 (101707)	33.0 (112629)
Heating input min	<i>kW(Btu/h)</i>	11.0 (37539)	12.0 (40956)	12.0 (40956)
Heating output max	<i>kW(Btu/h)</i>	23.1 (78491)	27.1 (92492)	30.3 (103414)
Heating output min	<i>kW(Btu/h)</i>	9.2 (31396)	10.1 (34471)	10.2 (34813)
Efficiency at Maximum Thermal Capacity (see installation instructions)	%	90.2	91.6	92.0
Efficiency at Reduced Thermal Capacity (see installation instructions)	%	87.8	88.3	88.6

CENTRAL HEATING

Operating Temperature max	°C	82	82	82
Operating Temperature min	°C	42	42	42
Maximum Heating Pressure	bar	3	3	3
Minimum Heating Pressure	bar	1	1	1
Built-in expansion vessel - Total capacity	litres	7	7	7

DOMESTIC HOT WATER*

Maximum Temperature of Water for Domestic Use	°C	56	56	56
Minimum Temperature of Water for Domestic Use	°C	36	36	36
Working pressure max	bar	6	6	6
Working pressure min	bar	0.2	0.2	0.2
Flow rate ΔT 25°C	l/min	13.2	15.6	17.3
Flow rate ΔT 35°C	l/min	9.4	11.2	12.4
Minimum flow rate	l/min	2.6	2.6	2.6

ELECTRICAL DATA

Electrical Supply/Frequency	V/Hz	230/50	230/50	230/50
Wattage Rating	W	150	150	150
Protection of Electrical System	IP	X 4 D	X 4 D	X 4 D

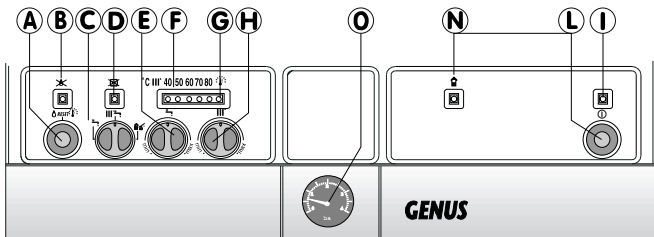
CATEGORY

Nominal Pressure/Methane Gas (G20)	mbar	20	20	20
Nominal Pressure/Liquid Gas (G30-G31)	mbar	30-37	30-37	30-37

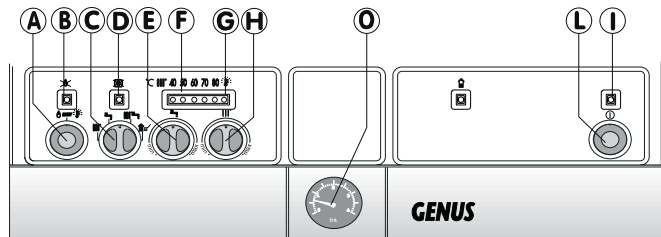
* Combination versions only



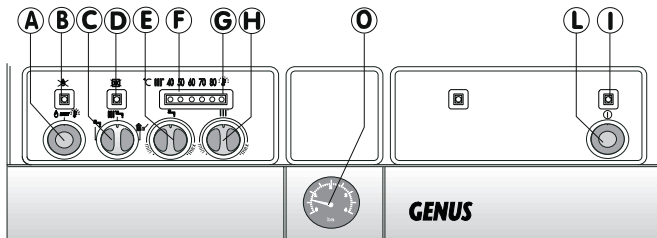
Genus 23 MI



Genus 27 RFFI SYSTEM



Genus 23/27/30 MFFI



LEGEND

- A) Ignition Lockout Reset Button/Safety (Overheat)Thermostat Reset
- B) Ignition Lockout L.E.D.
- C) Selector Knob for Summer/Winter/Flue Analysis Modes
- D) Low System Water Level L.E.D.
- E) Temperature Adjustment Knob for Domestic Hot Water
- F) Heating System Thermometer
- G) Safety (Overheat)Thermostat Intervention L.E.D.
- H) Adjustment Knob for Heating Temperature
- I) On/Off L.E.D.
- L) On/Off Switch
- N) Fume Sensor L.E.D.
- O) Heating System Pressure Gauge

Installation, start-up, adjustments and maintenance must be performed by a competent person only in accordance with the Gas Safety (Installation & Use) Regulations (1984) and the instructions provided. Improper installation may cause damage or injury to individuals, animals and personal property, for which the manufacturer will not be held liable.

To ensure efficient and safe operation it is recommended that the boiler is serviced annually by a competent person.

If it is known or suspected that a fault exists on the appliance, it must not be used until fault has been corrected by a competent person

HELPFUL SUGGESTIONS

To get the most out of your boiler, we have provided you with some useful advice on the proper use and maintenance:

- Periodically check the system pressure using the pressure gauge "O", make sure that the pressure is between 1.0 and 1.5 bar (the blue part on the gauge) when the system is off and cool. The warning L.E.D. "D" will indicate if the pressure is below the minimum recommended value. Consult your installer for checking and refilling the system.
- The outer panels of the unit's case must only be cleaned with a damp

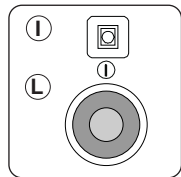


cloth. Do not use abrasive cleaners. The Control panel can be wiped with either a damp or dry cloth. Spray polishes must not be used on the control panel surface or knobs. Care must be taken in preventing any liquid entering the appliance.

- If the water is exceptionally hard, install a water softener so that the efficiency of the unit remains the same over time, as this will consume less gas.
- To improve comfort and take full advantage of the heat produced by the boiler, it is recommended that an external thermostat be installed.
- If the boiler is not going to be used for an extended period of time, turn off the supply of electricity to the unit by pressing the On/Off switch "L".

The green L.E.D. "I" will turn off. Then turn off the supply of gas to the unit itself.

- It is good practice to clean and service the appliance and central heating system every year. Call an Authorised Service Centre.





START-UP PROCEDURE LIGHTING

(FOR ALL MODELS)

Before starting the unit, check the following:

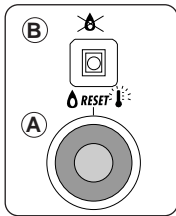
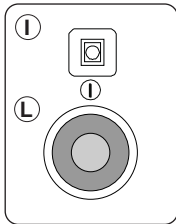
- The water pressure on the pressure gauge “O”;
- That the gas cock and the inlet for domestic water are open.

These models are equipped with electronic ignition which utilises contact ionisation.

To make the boiler operational, simply press the On/Off switch “L”.

The green L.E.D. “I” will then turn on.

At this point the boiler is ready for use: a centralised electronic control unit will automatically light the main burner when needed. If the burner does not light within the pre-set safety time limit, the red “B” L.E.D. will light up. To reset the ignition system, the reset button “A” must be pressed. Should the system fail to light a second time, check to make sure that the gas cock is open. If the problem persists, contact one of our Authorised Service Centres for assistance.

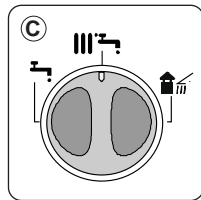


WINTER AND SUMMER OPERATING MODES

(FOR ALL MODELS)

The boiler is fitted with a selector knob “C” which allows you to switch between winter < IIII ̣ > and summer < ̣ > operating modes and vice versa. When the knob is set to < IIII ̣ >, the boiler can serve the dual purpose of providing heat and/or hot water for domestic use.

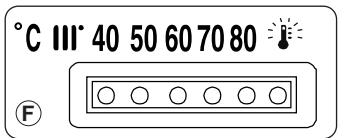
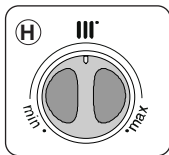
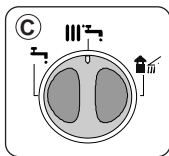
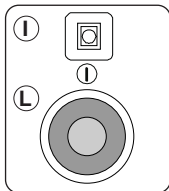
The supply of hot water for domestic use always takes precedence over heating. When the knob is set to < ̣ >, the boiler cuts out the heating system and only provides hot water for domestic use (when needed).



TURNING ON THE BOILER

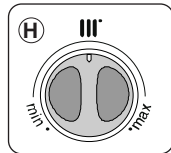
Installation without a room thermostat :

- Turn on the power supply to the boiler by pressing the On/Off switch "L"; the green L.E.D. "I" will then turn on;
- Turn the "C" selector knob to < III ↻ >;
- Regulate the temperature of the water in the boiler by turning the "H" knob. The temperature can vary between 42°C and about 82°C;
- Check the boiler temperature on the thermometer with the yellow L.E.D.s "F". With this type of installation, the ambient temperature does not influence the operation of the boiler and the circulation pump always remains in operation.



Installation with a room thermostat:

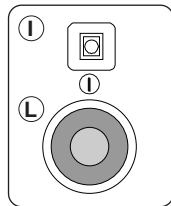
- Turn the "C" selector knob to < III ↻ >;
- Turn on the power supply to the boiler by pressing the On/Off switch "L"; the green L.E.D. will then turn on;
- Turn the thermostat knob "H" to the highest temperature setting.
- With this type of installation, the boiler is controlled by a room thermostat. Therefore, it runs until the ambient temperature has reached the temperature setting on the thermostat. At that point, the main burner will turn off and the circulation pump will stop.



TURNING OFF THE BOILER

Installation without a room thermostat:

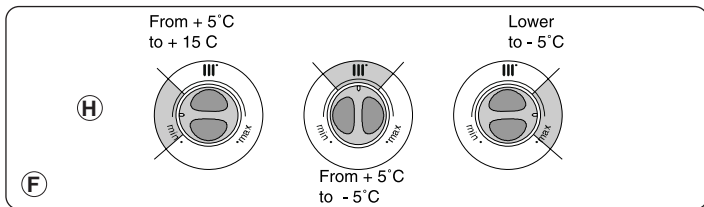
To turn off the heating, turn the "C" selector knob to < ↻ >. The boiler will still provide hot water for domestic use.





ADJUSTING THE HEATING TEMPERATURE

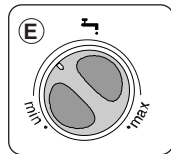
To economise on consumption while achieving the highest level of comfort, the temperature adjustment knob is designed with three different heating zones based on the temperature outside the home. Rotate the knob "H" as shown below.



PRODUCTION OF HOT WATER FOR DOMESTIC USE

(FOR ALL MODELS)

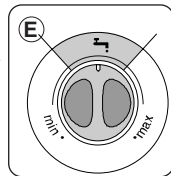
- Turn on the power to the boiler by pressing the On/Off switch "L";
- With these settings, the boiler is already ready for use, regardless of the position of the "C" selector knob.
- Turn the "E" knob to select the temperature for the hot water (between 36°C and about 56°C depending on the flow rate of the water).



ADJUSTING THE TEMPERATURE OF WATER FOR DOMESTIC USE

(FOR ALL MODELS)

It is recommended that the temperature for the hot water should not be set to high temperatures and then mixed with cold water. Setting the thermostat to medium temperatures is preferable (see figure).

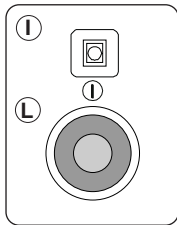


SHUTDOWN PROCEDURE

(FOR ALL MODELS)

To turn off the main burner, simply press the On/Off switch “L”; the green L.E.D. “I” will also turn off.

As a precautionary measure, it is recommended that the gas cock located on the bottom of the boiler be turned off as well.



TIME CLOCK

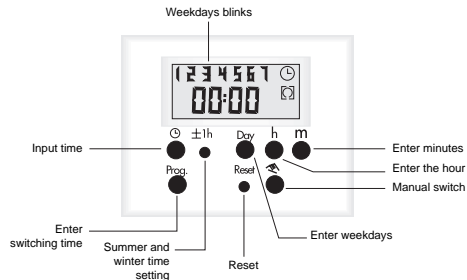
The steps marked with the symbol ► are necessary to carry out a switching program.

► PREPARING FOR OPERATION

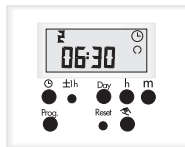
Activate the “Reset” switch to reset the time switch to it’s default settings (activate using a pencil or similar pointed instrument). Do this:

- every time you wish to “Reset” the time switch;
- to erase all switching times and the current time of day

After approximately two seconds the following display appears:



► ENTER CURRENT TIME AND WEEKDAY



Keep the “⌚” key pressed down. During the summer time period press the “+/-1h” key once. Enter the hour using the “h” key. Enter the minutes using the “m” key. Enter the day using the “Day” key.
1 = Mon 7 = Sun
Release the “⌚” key.





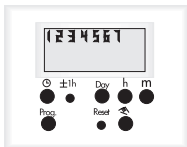
The colon now blinks once a second.

AM/PM TIME DISPLAY

If you press the “+/-h” and “h” keys at the same time, the time display switches into the AM/PM mode.

Notes: If you keep the “h” and “m” keys pressed down for more than 2 seconds, the display will enter fast forward scroll mode.

▶ ENTERING THE SWITCHING TIMES



If your entry is incomplete, the segments not yet selected will blink in the display.

You have 20 memory locations available. Each switching time takes up one memory location.

Keep pressing the “Prog” key until a free memory location is shown in the display “-- : --”.

Program ON or OFF with the “ ” key:

“ ” = ON - “ ” = OFF.

Enter the hour using “h”; enter the minutes using “m”.

If a switching command is to be carried out every day (1 2 3 4 5 6 7) then store using the “ ” key, otherwise select the days it is to be carried out on by using the “Day” key.

When the day selection is left blank, the programmed switching instruction

operates at the same time every day.

1 2 3 4 5 6 7	Monday Sunday
1 2 3 4 5 6	Monday Saturday
1 2 3 4 5	Monday Friday
6 7	Saturday Sunday
1	Monday
.....	(selection of single days)
7	Sunday


Store using the “ ” key or push “Prog” key if you are going to continue programming. The time switch enters the automatic operating mode and displays the current time of day. Begin any further entry of a switching time with the “Prog” switch.


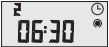
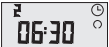


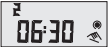
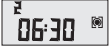


If necessary, once you have finished programming and have returned to the current time display, by pressing the “ ” button, the timer will not automatically switch to the current programmed status until the next timed setting. You can put the timer into the correct mode with the “ ” key.

ADDITIONAL FUNCTIONS

Switching from summer time to winter and vice versa.
Press the “+/-1h” key once.

MANUAL OVERRIDE KEY

With the “” key you can change the current switching settings at any time. The switching program already entered is not altered.

Automatic Operation	Manual Operation	Continuous Operation
  = ON  = OFF	  = OFF  = ON	[]  = ON  = OFF
The switching times correspond to the program entered.	If the current switching mode is changed manually, the next switching time will be carried out automatically again according to the entered switching program.	You can only return to automatic mode from the continuously ON and continuously OFF switching modes by pressing the “  ” key.

READING THE PROGRAMMED SWITCHING TIMES

Pressing the “Prog” key displays the programmed switching times until the first free memory location appears in the display “-- : --”.



If you now press the “Prog” key once again, the number of free memory locations will be displayed, e.g. “Fr 20”. If all memory locations are occupied, the display “Fr 00” appears.



CHANGING THE PROGRAMMED SWITCHING TIMES

Press the “Prog” key repeatedly until the switching time you want to change is displayed. You can now enter the new data. See “Entering the switching times”.



Notes on storing switching times:

If you end your entry of the switching times by pressing the “**Prog**” key, the switching time you have entered will be stored and the next memory location displayed.


Entry of further switching times is also carried out as described in “*Entering the switching times*”.

In addition, a complete switching command is stored automatically after around 90 seconds provided no other key is pressed.

The time switch then enters the automatic operating mode and displays the current time again.

DELETING INDIVIDUAL SWITCHING TIMES

Press the “**Prog**” key repeatedly until the switching time you wish to delete is shown in the display.

Then set to “--” using the “**h**” or “**m**” key and keep the “” key pressed down for around 3 seconds.

The switching time is now erased and the current time is displayed.

TECHNICAL DATA

Ambient temperature:	- 10°C to + 55°C
Running reserve:	5 h (not for 1,5 V DC)
Memory locations:	20
Shortest switching time:	1 minute
Programmable:	Every minute

USEFUL INFORMATION AND TROUBLESHOOTING

BOILER SHUTDOWN

The boiler unit is equipped with safety devices which intervene in certain situations to shutdown the boiler.

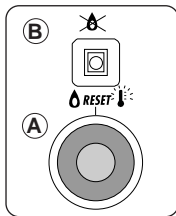
Some of these situations are signalled by the unit and can be corrected by the user.

SHUTDOWN DUE TO THE FAILURE OF THE BURNER TO LIGHT AUTOMATICALLY

This anomaly is indicated by the red “B” L.E.D.

To reset the unit, press and then release the “A” button. At this point, the electronic ignition system will attempt to light the burner again.

If lighting failure occurs repeatedly, it is recommended that you contact one of our Authorised Service Centres.



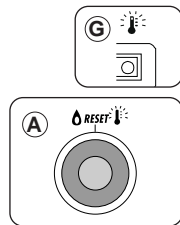
SHUTDOWN DUE TO OVERHEATING

This anomaly is signalled by the red “G” L.E.D.

The boiler shuts off because the safety thermostat detected that the boiler temperature has reached the temperature limit.

To reset the unit, wait until the boiler has cooled and then press the “A” button.

If the safety thermostat shuts off the unit on a frequent basis, contact one of our Authorised Service Centres for assistance.

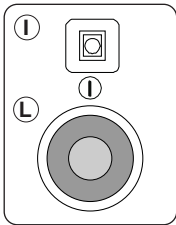
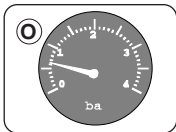
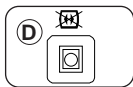





SHUTDOWN DUE TO INSUFFICIENT WATER CIRCULATION

This anomaly is indicated by the red “D” L.E.D. One of the possible causes of this shutdown situation could be the lack of water in the boiler or water circulation failure in the primary heating circuit. Check the system pressure on the pressure gauge “O” and, if it is less than 0.5 bar, consult your installer for checking and refilling the system.




Then reset the unit by turning the boiler off and then back on with the On/Off button “L”. If this situation persists, contact one of our Authorised Service Centres.

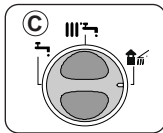


FLUE TEST FEATURE (only for authorised personnel)

The “C” Summer/Winter/Flue Test selector knob can be set to <  > to bypass temperature adjustment on the heating circuit for the purpose of analysing the fumes produced by combustion.

To access this mode, open a water tap or taps so that the flow rate is no less than 8 litres per minute.

Then press the “C” selector knob in and turn it from <  > or <  > to the <  >.



WARNING!

The flue test feature eliminates the slow-light feature.

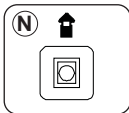
This mode must only be selected by a qualified service engineer.

MONITORING DEVICE FOR FUME DISCHARGE



(For Genus 23 MI)

These units are equipped with a device that monitors the discharge of the fumes produced by combustion and automatically shuts off the supply of gas to the main burner for approximately 12 minutes if it detects that the fumes have been discharged into the room where the unit is installed. The shutdown of the unit is immediately signalled by the yellow "N" L.E.D. which remains on for the entire shutdown period. This period lasts approximately 12 minutes, after which time the unit automatically resets to normal operation mode.



IMPORTANT!

In the event this safety device shuts off the system a number of times in succession, it is recommended that the unit be turned off and one of our Authorised Service Centres be contacted to inspect both the unit and the room to determine whether there is proper ventilation and discharge of the combustion fumes.





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