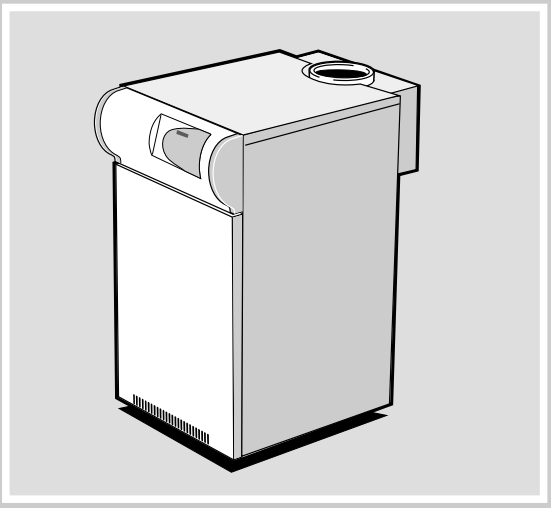
# THE IDEAL USER'S GUIDE



## *Concord*

## *CXSD 40/H-120/H*

BOILERS Ideal

User's guide to commercial central heating boilers

**CAUTION. To avoid the possibility of injury during the use or cleaning of this appliance care should be taken when handling edges of sheet steel components.**

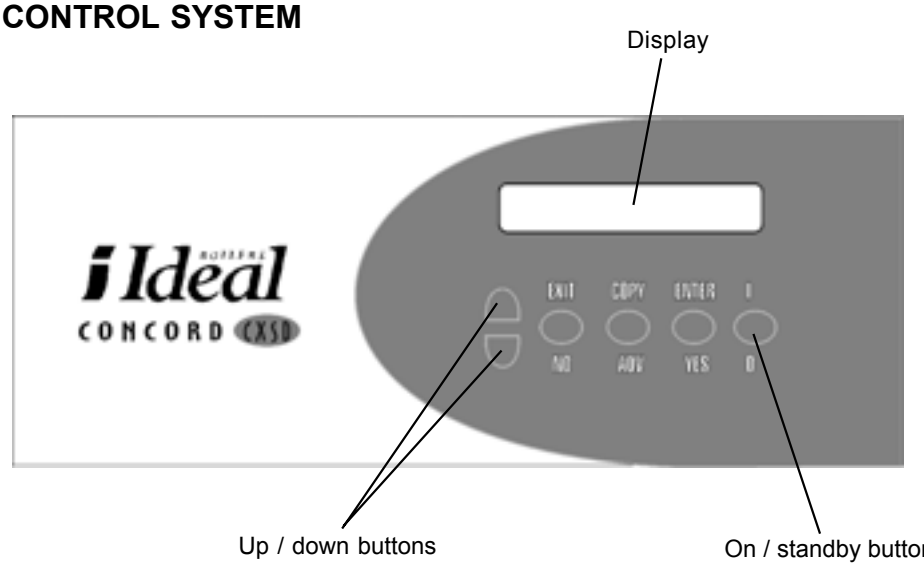
**The Gas Safety (Installation and Use) Regulations or rules in force** impose certain statutory obligations on gas users. This appliance must be installed by a CORGI registered installer.

***WARNING.***
The ON/STANDBY [1/0] button does **NOT** electrically isolate the boiler.

***WARNING.***
This appliance **MUST** be efficiently earthed.

This appliance must not be subject to incorrect use: It is **ESSENTIAL** that the instructions in this booklet are strictly followed, for safe, economical operation of the boiler.

## 1 THE CXSD CONTROL SYSTEM




The **CXSD/H** incorporates an advanced microprocessor based control system which operates all electrical functions of the boiler including automatic ignition, flame detection, thermostatic control, and high/low burner operation. In addition, the microprocessor also has onboard commissioning and servicing instructions and a fault diagnosis programme.

**ON / STANDBY [1/0] BUTTON**

Turns the boiler ON and to STANDBY.

When this switch is in the STANDBY position the display will show :-

| STANDBY 0 |
|---|

On initial start up the boiler will indicate the hardware and software code, the boiler type, and indicate if the boiler is ON or at STANDBY.
To switch the boiler ON press the On/Standby [1/0] button. The display will show :-

| BOILER ON 1 |
|---|

This display will be retained for 5 seconds before the information screens are displayed.

**INFORMATION SCREENS**

If the boiler is at STANDBY the rotating information screens will not be in evidence.

See Frame 6 for details on information screens.

## 2 FEATURES OF THE CONTROL SYSTEM

In addition to the operational characteristics described above, the control system incorporates the following features accessible to the user or service engineer:

**ADJUSTABLE BOILER TEMPERATURE CONTROL**

This is factory preset at 85 °C but may be adjusted by the user between 60 and 85 °C.

**PROGRAMMER TIMER**

A maximum of 3 time periods per day can be programmed in to the boiler.

**Note**. *This is a boiler timer only and does not replace a conventional system programmer serving more than one heating zone.*

**OUTSIDE SENSOR (Optional extra)**

If the optional outside sensor is fitted, the control system will recognise this and automatically regulate the boiler flow temperature with respect to changes in the external temperature. If the sensor is fitted, an extra status information screen will appear stating whether the device has been activated or not (i.e. Sensor on/off).

**COMMISSIONING INSTRUCTIONS**

These are provided to assist the installer to commission the boiler.

## 3 FEATURES OF THE CONTROL SYSTEM - continued

**SERVICING INSTRUCTIONS**

These are provided to assist the service engineer.

**FAULT DIAGNOSIS**

In the unlikely event of a fault condition, the microprocessor will identify the fault area and display a suitable message on the display.

Further to these accessible features, there are other features present in the system which the installer/service engineer should be aware of.

**HOURS RUN LOG**

This feature enables the engineer to determine the workload of the boiler.

**PUMP OVERRUN**

If the flow temperature is above 75 °C at the time of boiler shutdown, the controls will maintain pump operation until the residual heat within the appliance has been dispersed and the flow temp is below 75°C.

**ANTI-CYCLE DEVICE**

On any heating system, if the heating load is very low, there is a tendency for the boiler to cycle on and off rapidly. This is inefficient and can lead to shortened boiler life. The high/low operating system of the CXSD minimises the risk of this but, in addition, the controls prevent the boiler from short-cycling by preventing subsequent ignition within a period of 2 minutes. When active, the display will show "ANTICYCLE (Flow temp)".

## 4 TO LIGHT THE BOILER CONTROLS

***WARNING***.
*STANDBY does **NOT** electrically isolate the boiler.*

1. Turn on the electricity supply. The display will initially show a start-up code followed by:

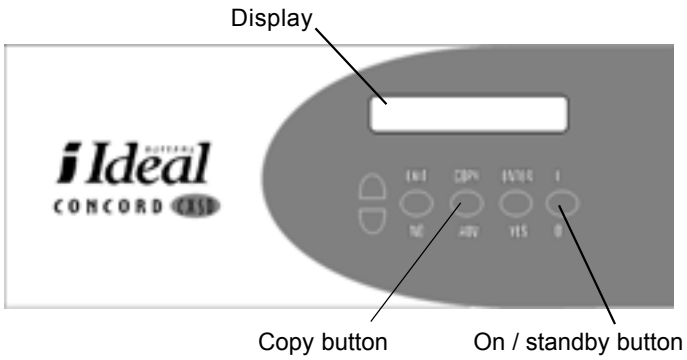
   STANDBY 0

2. To switch the boiler on press the On/Standby [1/0] button. The display will show :

   BOILER ON 1

   then change every few seconds to indicate the boiler status. The boiler will commence its ignition sequence.

3. The boiler should light, initially at low rate, for a period of approximately 30 seconds before proceeding to maximum rate. If the boiler fails to light, allow the controls to cycle until ignition is established.




If the boiler fails to light after 5 attempts, the display will show:

DETECTION FAULT

In this case, the ignition sequence should be reset by pressing the [COPY] button.

4. If required adjust the programme timer temperature set point or weather compensation (if fitted) as described in "Using the boiler features and controls".

## 5 TO SHUT DOWN THE BOILER

**FOR SHORT PERIODS (2-3 DAYS)**

1. Turn the boiler off by pressing the On/Standby [1/0] button and viewing "Standby...0 " on the display.

2. Wait 5 minutes, then switch off or unplug the electricity supply to the boiler.

**Note.** *In severe weather, reduce the temperature set point to 60 °C but **do not** turn off the electricity supply and do leave the "Boiler ON.....1".*

**FOR LONG PERIODS (End of the heating season)**

1. Turn the boiler off by pressing the On/Standby [1/0] button and viewing "Standby...0" on the display.

2. Wait 5 minutes, then switch off or unplug the electricity supply to the boiler.

3. Remove the casing lower front panel. Turn off the main gas cock (The groove in the square head must be at right angles to the line of the pipe) and refit the lower casing panel.

**Note.**
*If severe weather (frost) conditions are anticipated during the period of shutdown the system must be completely drained.*

## TO RELIGHT THE BOILER

**AFTER SHORT PERIODS (2-3 DAYS)**

Switch on the electricity supply to the boiler and press the On/Standby [1/0] button to turn the boiler ON. If necessary adjust the temperature set point etc. as required.

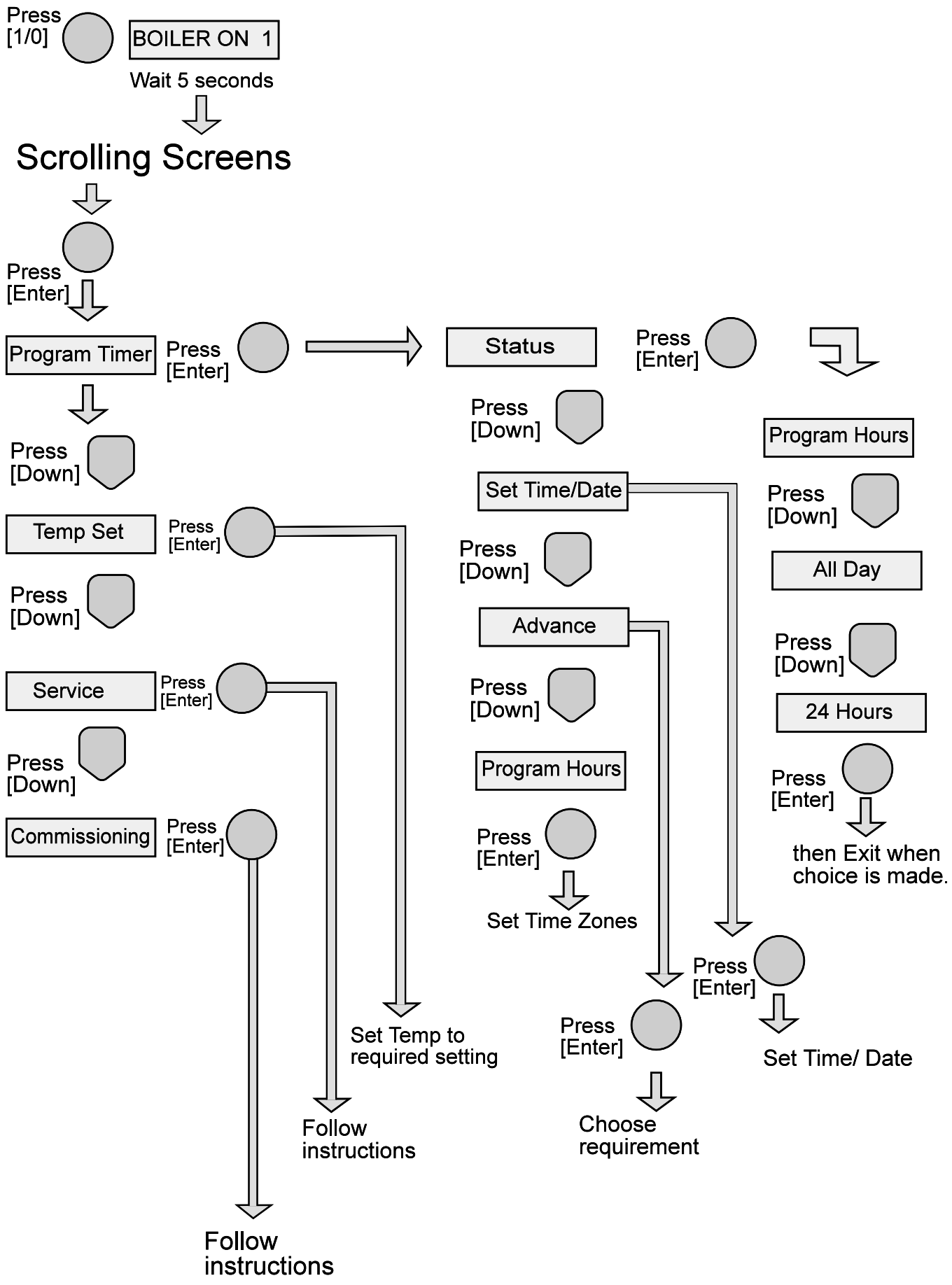
**AFTER LONG PERIODS**

Remove the casing lower front panel and turn the gas cock ON.

Refit the casing front panel and follow the lighting instructions above.

## 6 USING THE BOILER FEATURES AND CONTROLS

The diagram below shows the sequence of steps to be taken when reading the instructions on the following pages.



## 7 USING THE BOILER FEATURES AND CONTROLS - continued

**ON / STANDBY [1/0] BUTTON**

Turns the boiler ON and to STANDBY.

***WARNING***.
*STANDBY does **NOT** electrically isolate the boiler.*

When this switch is in the STANDBY position the display will show :-

| STANDBY 0 |
|---|

To switch the boiler ON press the On/Standby [1/0] button. The display will show :-

| BOILER ON 1 |
|---|

This display will be retained for 5 seconds before the information screens are displayed.

**INFORMATION SCREENS**

On initial start up the boiler will indicate the hardware and software code, the boiler type and indicate if the boiler is ON or at STANDBY.

If the boiler is at STANDBY the rotating information screens will not be in evidence.

If the optional outside temperature kit, enabling weather compensation, has been fitted the display will indicate the compensated set point temperature.
An example of the display is as follows :-

**MONDAY**
**14 : 10 19 / 09 / 94**
**ON HIGH 50°C**
**HOURS RUN 250**
**TEMP SET 82° C**
**PROGRAMMER ON**
**"ENTER" FOR MENU**

**MENU**

To access the menu screen ensure that the information screens are being displayed.
Any key, except the [1/0] button, may now be pressed to access this feature but, as indicated on the information screen, the [ENTER] button is the preferred means.

On entering this option the first screen displayed will be:-

| PROGRAM TIMER |
|---|

The [DOWN] button can be pressed consecutively to access the features required, which are as follows:-

| TEMP SET |
|---|

| SERVICE |
|---|

| COMMISSIONING |
|---|

If the weather compensation option is fitted then a further screen will be displayed after commissioning.

The [UP] button will access the above options in reverse. When the option required is displayed and the [ENTER] button pressed another set of menus will be available as discussed on the following pages.

**PROGRAMMER TIMER**

The programmer has 3 time zones per day for each day of the week. Each day can be programmed for the requirements of that day, giving 7 programmed days, or, using the [Copy] facility, any number of days can be the same. If a particular time zone is not required then the ON and OFF periods should be programmed for the same time.

Each button has an auto repeat function.

The programmer is based on a 24 hour clock and the boiler comes with a default programme set for :-

**All Day**

The boiler will respond to this programme unless an alternative is programmed in.

Using the [UP] or [DOWN] button select the "Programmer Timer" from the menu and press [ENTER]. The following menus will be available using the [UP] or [DOWN] buttons:-

| STATUS |
|---|

**or**

| SET TIME/DATE |
|---|

**or**

| ADVANCE |
|---|

**or**

| PROGRAM HOURS |
|---|

To select any of the above use the [UP] or [DOWN] button until the option required is displayed and press [ENTER].

## 8 USING THE BOILER FEATURES AND CONTROLS - continued

### STATUS

Enables the selection of programme hours, all day usage or 24 hour.

If the "Programme Hours" option is selected the boiler will go on and off subject to the times programmed.

If ALL DAY usage is selected the boiler will come on at the first "ON" period selected and off on the last "OFF" period selected, ignoring all other time settings. Based on the above default programme this means the boiler would run, subject to any other external controls, from 07:30 to 22:00 hours.

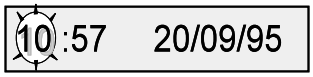
If 24 HOUR is selected the programme times will be ignored and the boiler will run subject to the external controls until one of the other options is again selected.

#### SET TIME/DATE

Enables the correct time and date to be entered.

The display will show a flashing day of the week as follows :-


The correct day can be selected by use of the [UP] or [Down] button and when correct the [ENTER] button should be pressed. The time and date will now be displayed as follows:-




with, first, 2 digits, the hours, flashing.

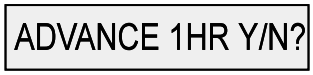
By use of the [UP] or [Down] button the correct hour is selected and the [ENTER] button pressed. The minutes will now be flashing and, by use of the [UP] or [DOWN] button, the correct minutes selected and the [ENTER] button pressed.

This method is repeated until the correct day, month and year are selected. On selecting the correct year and pressing [ENTER] the hours will flash then, if all the data is correct, the [EXIT] button should be pressed for the control to accept this information.

### ADVANCE

Enables the programme to be advanced by one hour.

The following display will be available:-




If the [YES] button is pressed and the programmer is in an OFF period the boiler will be brought on for one hour, subject to external controls. If the boiler is ON with less than one hour to a programmed OFF period then the difference between this time and one hour is the time of the extended on period. If the boiler is in the 24 hour mode then this option will have no effect.

If this advance has been selected, to cancel it then the same procedure should be followed but the [NO] button pressed.

#### PROGRAMME HOURS

Enables a user-timed programme to be entered.

The following display will be available:-


with the hours, 06, flashing.

Using the [UP] or [DOWN] button select the correct hour, and press [ENTER]. The *minutes* will now flash and the correct minutes should be selected, using the [UP] or [DOWN] button followed by pressing [ENTER].

This will cause the hours to flash and if the correct ON time has been entered the [EXIT] button should be pressed. The display will now show the OFF for time zone one.

This procedure should be repeated for all 3 time zones for Monday.

After the last [EXIT] the display will ask if this day's programmes require to be copied to Tuesday. If the [YES] button is pressed Tuesday's programme will be the same as Monday. This action can be repeated for all the days or as many as required,

If the [NO] button is pressed then all 3 time slots will need to be programmed with the required times.

#### TEMPERATURE SET POINT

Enables the temperature at which the boiler is required to operate to be set. It has a range of 60 - 85 °C.

Using the [UP] or [Down] button select the TEMP SET from the menu and press [ENTER]. The following will be displayed:-


with the temperature flashing.

## 9 USING THE BOILER FEATURES AND CONTROLS - continued

The [UP] and [Down] button should be pressed until the correct temperature is selected and then the [ENTER] button should be pressed and the temperature selected will become stationary.

Pressing the [EXIT] button will ensure that the control accepts the new setting and return to the menu.

**High / Low Operation**

In the example above, when the boiler flow temperature is equal to 82 °C the high rate gas valve will close, allowing the boiler to run at low rate.

When the flow temperature exceeds the set temperature by 3 °C, in the example above 85 °C, the low rate gas valve will close and the boiler will be off. The information screen will display :

STANDBY.....85. C

The boiler will remain OFF for a minimum of 3 minutes or until the boiler flow temperature has dropped by 3 °C, whichever is the greater time.

If the boiler load is such that it cycles between high and low operation the boiler will fall through $3^0$ before the high rate gas valve is energised.

**Delayed High Rate Gas valve Operation**

When the boiler is started from cold the high rate gas valve will be delayed for 3 minutes and then energised. If the boiler flow temperature is equal to or greater than 55 °C then this delay will NOT occur.

**Notes.**

1. *If a fault occurs with the boiler thermostat the fault display screen will show "C/H Sensor Fault".*
2. *When the low rate gas valve is de-energised as the temperature required has been obtained the boiler will go into an anticycle route for 2 minutes. The display will indicate anticycle and the current flow temperature.*

**SERVICING**

This is for use by the installer / service engineer only.

**COMMISSIONING**

This is for use by the installer / service engineer only.

**OUTSIDE SENSOR (if fitted)**

Information will be provided with the kit.

## 10 GENERAL CARE

***WARNING.*** This appliance **MUST** be efficiently earthed.

**1.** Always follow these instructions.

**2.** Correct ventilation is essential for safe operation of the boiler. Do NOT obstruct ventilation ducts, grilles or openings in the boiler room, or the passage of combustion and ventilation air to the boiler.

**3.** Do NOT store objects around or on the boiler, and keep access clear at all times.

**4.** Switch OFF and disconnect the electricity before carrying out maintenance work.
***Remember !*** The ON/STANDBY [1/0] button does **NOT** electrically isolate the boiler.

**5.** Do NOT turn off the boiler if it is to be left unattended in frosty weather.

**CLEANING**

For normal cleaning simply dust with a dry cloth.

To remove stubborn marks and stains use a damp cloth and mild detergent.

Do NOT use abrasive cleaning materials.

**MAINTENANCE**

The boiler should be serviced at least once a year by a CORGI registered installer.

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