User Manual

Wall Mounted Gas Condensing Boiler

Baxi MainEco Combi and System

Combi 24-28-35 / System 18-24
Dear customer,

Thank you for purchasing this appliance.

Please read this manual carefully before using the product and keep it in a safe place for future reference.

In order to ensure continued safe and efficient operation we recommend that the product is regularly maintained. Our Service and After Sales organization can assist with this.

We hope you will receive many years of satisfactory service.
Contents

1 Introduction .................................................................................................................4
   1.1 Symbols used ........................................................................................................4
   1.2 Abbreviations .......................................................................................................4
   1.3 General ................................................................................................................5
       1.3.1 Manufacturer's liability .................................................................5
       1.3.2 Installer's liability .................................................................................5
       1.3.3 User's liability ......................................................................................6
   1.4 Certifications ......................................................................................................6

2 Safety instructions and recommendations .........................................................7
   2.1 Safety instructions .............................................................................................7
   2.2 Recommendations .............................................................................................8
       2.2.1 Benchmark Commissioning Checklist .............................................8

3 Description ..............................................................................................................9
   3.1 Operating principle ...........................................................................................9
       3.1.1 Gas/air setting ......................................................................................9
       3.1.2 Combustion .........................................................................................9
       3.1.3 Heating and domestic hot water production ................................9
   3.2 Main parts .........................................................................................................10
   3.3 Clearances around the boiler ...........................................................................10
   3.4 Control system .................................................................................................11
       3.4.1 Adjustment .........................................................................................11
1 Introduction

1.1 Symbols used

In these instructions, various danger levels are employed to draw the user’s attention to particular information. In so doing, we wish to safeguard the user’s safety, highlight hazards and guarantee correct operation of the appliance.

⚠️ **DANGER**
Risk of a dangerous situation causing serious physical injury.

⚠️ **WARNING**
Risk of a dangerous situation causing slight physical injury.

⚠️ **CAUTION**
Risk of material damage.

ℹ️ Signals important information.

_signals a referral to other instructions or other pages in the instructions._

1.2 Abbreviations

- **LTH**: Low temperature heating
- **DHW**: Domestic hot water
- **HRU**: Heat Recovery Unit
- **PCU**: Primary Control Unit - Electronic system to control burner function
- **SCU**: Secondary Control Unit - Additional electronic system
1.3 General

1.3.1. Manufacturer’s liability

Our products are manufactured in compliance with the requirements of the various applicable European Directives. They are therefore delivered with CE marking and all relevant documentation.

In the interest of customers, we are continuously endeavouring to make improvements in product quality. All the specifications stated in this document are therefore subject to change without notice.

Our liability as the manufacturer may not be invoked in the following cases:

> Failure to abide by the instructions on using the appliance.
> Faulty or insufficient maintenance of the appliance.
> Failure to abide by the instructions on installing the appliance.

1.3.2. Installer’s liability

The installer is responsible for the installation and commissioning of the appliance. The installer must respect the following instructions:

> Read and follow the instructions given in the manuals provided with the appliance.
> Carry out installation in compliance with the prevailing legislation and standards.
> Perform the initial start up and carry out any checks necessary.
> Explain the installation to the user.
> If a maintenance is necessary, warn the user of the obligation to check the appliance and maintain it in good working order.
> Give all the instruction manuals to the user.
1.3.3. User’s liability

To guarantee optimum operation of the appliance, the user must respect the following instructions:

- Read and follow the instructions given in the manuals provided with the appliance.
- Call on qualified professionals to carry out installation and initial start up.
- Get your installer to explain your installation to you.
- Ensure the Appliance is serviced in accordance with the manufacturer’s instructions by a suitable qualified person.
- Keep the instruction manuals in good condition close to the appliance.

This appliance is not intended to be used by persons (including children) whose physical, sensory or mental capacity is impaired or persons with no experience or knowledge, unless they have the benefit, through the intermediary of a person responsible for their safety, of supervision or prior instructions regarding use of the appliance. Care should be taken to ensure that children do not play with the appliance.

If the mains power lead is damaged it must be replaced by the original manufacturer, the manufacturer’s dealer or another competent person to prevent hazardous situations.

1.4 Certifications

<table>
<thead>
<tr>
<th>CE identification no</th>
<th>PIN 0063CM3019</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx classification</td>
<td>5 (Standards EN)</td>
</tr>
<tr>
<td>Type of connection (Flue gas outlet)</td>
<td>C_{13}, C_{33}, C_{53}</td>
</tr>
</tbody>
</table>
| Gas Council number   | MainEco Combi 24: 47–075–93  
                        | MainEco Combi 28: 47–075–94  
                        | MainEco Combi 35: 47–075–95  
                        | MainEco System 18: 41–470–13  
                        | MainEco System 24: 41–470–14 |
2 Safety instructions and recommendations

2.1 Safety instructions

⚠️ DANGER
If you smell gas:
1. Do not use a naked flame, do not smoke, do not operate electrical contacts or switches (doorbell, light, motor, lift, etc.).
2. Shut off the gas supply.
3. Open the windows.
4. Evacuate the premises.
5. Call your fitter.

⚠️ DANGER
If you smell flue gases:
1. Switch the appliance off.
2. Open the windows.
3. Evacuate the premises.
4. Call your fitter.

⚠️ WARNING
Depending on the settings of the appliance:
- The temperature of the flue gas conduits may exceed 60°C.
- The temperature of the radiators may reach 85°C.
- The temperature of the domestic hot water may reach 65°C.

⚠️ CAUTION
Do not neglect to service the appliance:
- For completely safe and optimum operation, you must have your boiler regularly serviced by an approved installer.
2.2 Recommendations

![WARNING]

Only qualified professionals are authorised to work on the appliance and the installation.

- Regularly check the water pressure in the installation (minimum pressure 0.8 bar, recommended pressure between 1 and 2 bar).
- Keep the appliance accessible at all times.
- Never remove or cover labels and rating plates affixed to the appliance. Labels and rating plates must be legible throughout the entire lifetime of the appliance.
- The appliance should be on Summer or Antifreeze mode rather than switched off to guarantee the following functions:
  - Anti blocking of pumps
  - Antifreeze protection

2.2.1. Benchmark Commissioning Checklist

Please ensure that the installer has fully completed the Benchmark Checklist on the inside back pages of the installation instructions supplied with the product and that you have signed it to say that you have received a full and clear explanation of its operation. The installer is legally required to complete a commissioning checklist as a means of complying with the appropriate Building Regulations (England and Wales).

All installations must be notified, by the installer, to Local Area Building Control either directly or through a Competent Persons Scheme. A Building Regulations Compliance Certificate will then be issued to the customer who should, on receipt, write the Notification Number on the Benchmark Checklist.

This product should be serviced annually to optimise its safety, efficiency and performance. The service engineer should complete the relevant section of the Benchmark Service Record in the Installation & Service manual after each service.

The completed Benchmark Checklist & proof of annual servicing (where applicable) will be required in the event of any warranty work.
3  Description

3.1  Operating principle

3.1.1.  Gas/air setting

The casing fitted to the boiler is also used as an air box. Air is sucked in by the fan and gas injected into the venturi by the fan intake. The fan rotation speed is set according to the settings parameters, the thermal energy requirement and the temperatures measured by the temperature sensors. The gas and air are mixed in the venturi. The gas/air ratio ensures that the quantities of gas and air are adjusted to each other. This provides optimum combustion on the entire output range. The gas/air mixture is fed into the burner on top of the exchanger.

3.1.2.  Combustion

The burner heats the heating water circulating in the heat exchanger. At a return temperature lower than around 55°C, the flue gases cool down to a temperature lower than the dew point, thus causing the condensation of the water vapour contained in the flue gases in the lower section of the heat exchanger. The heat released during this condensation process (the latent heat or condensing heat) is also transferred to the heating water. The cooled combustion gases are evacuated via the combustion gas outlet flue. The condensation water is evacuated via a condensate trap.

3.1.3.  Heating and domestic hot water production

On combi boilers, an integrated plate exchanger heats the domestic water. A 3-way valve determines whether the heated water is fed into the heating system or the plate exchanger. A pick-up sensor signals that a hot water tap is being opened. This signal is transmitted to the control panel, which then switches the 3-way valve to the hot water position and trips the heating pump. The 3-way valve is spring-loaded but only consumes electricity when it switches to another position.

The heating water reheats the domestic water in the plate exchanger. In comfort mode, if there is no hot water draw-off, the boiler handles the periodic reheating of the plate exchanger. Any limescale particles are kept out of the plate exchanger by a self-cleaning water filter (self-cleans once every 76 hours).
3.2 Main parts

1. Flue gas outlet/Air intake (Combustion air/flue gas adapter 60/100)
2. Casing/air box
3. Outlet for measuring combustion gases
4. Ignition/ionization electrode
5. Flue gas discharge pipe
6. Gas/air system with a fan, gas block and automatic burner unit
7. Air intake silencer
8. Plate heat exchanger (DHW) (Only for Combi models)
9. Connection box
10. Condensate trap
11. Circulation pump
12. 3-way valve
13. Primary heat exchanger
14. Expansion vessel
15. Automatic air vent

3.3 Clearances around the boiler

(1) Clearance when operating
(2) Clearance for maintenance
3.4 Control system

3.4.1. Adjustment

The power of the boiler can be adjusted in the following ways:

- **On/Off setting**
  The output between the minimum and maximum values varies based on the heating flow set point temperature.

- **Adjustable control**
  The output between the minimum and maximum values varies based on the heating flow temperature determined by the modulating control system.

3.5 Control panel

**MainEco Combi 24 - 28 - 35**

1. Domestic hot water temperature rotary knob
2. Heating water temperature rotary knob
3. Sweep key and Status signals
4. RESET-button and on/off signal

**MainEco System 18 - 24**

1. No function
2. Heating water temperature rotary knob
3. Sweep key and Status signals
4. RESET-button and on/off signal

The instrument panel for the connection box has 2 push buttons with signals. The signals provide information about the operating condition of the boiler. The **RESET** button lights up green when the boiler is connected to the mains. The status signal for the button can flash in a range of colours and at different frequencies. The meaning of these signals can be found in the User instruction card supplied with the boiler. See also: "User instruction card", page 25

**CAUTION**

The instruction card must be slid underneath the connection box after the boiler installation or use of the card.

The instrument panel for the connection box also has 2 rotary knobs. The rotary knob can be used to set the temperature of the domestic hot water. The rotary knob can be used to set the maximum flow temperature of the heating water. The heating/domestic hot water function can be switched off by turning the rotary knob to position **off**.
4 Operating the boiler

4.1 Commissioning the boiler

1. Check the water pressure in the heating system. If the water pressure is lower than 0.8 bar, more water should be added. If necessary, top up the water level in the heating system (recommended hydraulic pressure between 1 and 2 bar).

See chapter: "Filling the system", page 15

2. Open the gas valve on the boiler.

3. Turn the boiler on.

4. The boiler will begin an automatic venting-programme (which lasts approx. 4 minutes) and will do this every time the power supply is isolated. Both push buttons on the instrument panel light up green during the venting cycle.

The current operating condition of the boiler is shown by the status signal on the instrument panel. The status signal for the button can flash in a range of colours and at different frequencies. The meaning of these signals can be found in the User instruction card supplied with the boiler.

See also:

"User instruction card", page 25
"Error codes", page 18

4.2 Reading the various current values

Boiler status information can be read using a suitable controller. The following current values can be read off the information menu:

- State.
- Sub-status.
- Flow temperature (°C).
- Return temperature (°C).
- Calorifier temperature (°C).
- Outside temperature (°C) (Only with an outside temperature sensor).
- Solar boiler temperature (°C).
- Ionization current (µA).
- Fan speed in rpm.
- Water pressure (bar (MPa)).
- Supplied relative heat output (%).
4.3 Installation shutdown

If the central heating system is not used for a long period, we recommend switching the boiler off.

- Switch off the boiler electrical power supply.
- Shut off the gas supply.
- Ensure that the boiler and system are protected against frost damage.

4.4 Antifreeze protection

---

**CAUTION**

Drain the boiler and central heating system if you are not going to use your home or the building for a long time and there is a chance of frost.

Set the temperature control low, for example at 10°C.

To prevent radiators and the system from freezing in rooms where there is a risk of frost (e.g. a garage or storage room), a frost thermostat or outside sensor can be connected to the boiler.

---

**CAUTION**

- The antifreeze protection does not function if the boiler is switched off.
- The integrated protection system only protects the boiler, not the installation.
- Open the valves on all radiators connected to the heating system
- If the boiler has been placed in a room at risk of frost, the condensate drain and condensate trap should preferably be protected against freezing with a frost protection cable.

When the heating water temperature in the boiler falls by too much, the integrated protection system in the boiler starts up. This protection functions as follows:

- If the water temperature is lower than 7°C, the heating pump starts up.
- If the water temperature is lower than 4°C, the boiler starts up.
- If the water temperature is higher than 10°C, the boiler shuts down and the circulation pump continues to run for a short time.
5 Checking and maintenance

5.1 General instructions

**WARNING**
- Maintenance operations must be done by a qualified engineer.
- An annual inspection is compulsory.
- Only original spare parts must be used.

- Carry out the inspection and standard maintenance operations once a year.
- Carry out specific maintenance operations if necessary.

**CAUTION**
- Maintenance operations must be done by a qualified engineer.
- We recommend taking out a maintenance contract.
- Only original spare parts must be used.

5.2 Periodic checks

- Check the water pressure in the installation.

  ![Image](T00181-8)

  If the water pressure is lower than 0.8 bar, more water should be added. If necessary, top up the water level in the heating system (recommended hydraulic pressure between 1 and 2 bar).

  "See chapter: "Filling the system", page 15.

- Carry out a visual check for the presence of any water leaks.

- Open and close the radiator valves several times a year (this prevents the valves from seizing up).

- Clean the outside of the boiler using a damp cloth and a light detergent.

**CAUTION**

Only a GasSafe Registered Installer is authorised to clean the inside of the boiler.
5.3 Filling the system

**Topping up without a refilling device:**

1. Use the pressure gauge to check the water pressure in the heating system.

   *If the water pressure is lower than 0.8 bar, more water should be added. If necessary, top up the water level in the heating system (recommended hydraulic pressure between 1 and 2 bar).*

2. Open the valves on all radiators connected to the heating system.

3. Set the room thermostat to as low a temperature as possible.

4. Wait until the temperature drops below 40°C and the radiators seem cold before filling the central heating system.

5. To fill with water, use a filling tube with two tap connections, a rag and a bleed key.

6. Connect the filling tube to a (cold) water tap.

7. Eliminate the air from the filling tube. Slowly fill the tube with water. Hold the end of the tube up, above a bucket. Turn off the tap as soon as water runs out of the pipe.

8. Unscrew the plug from the filling/draw-off valve.

   *The filling/draw-off valve is not necessarily located next to the boiler.*

9. Attach the tube to the filling/draw-off valve. Firmly tighten the nut on the filling tube.

10. Open the filling/draw-off valve on the heating system.

11. Open the running water tap.

12. Use the pressure gauge to check the water pressure in the heating system.

13. Close the water tap when the water pressure reaches 2 bar.

14. Close the filling/draw-off valve on the heating system. Leave the tube on the filling/draw-off valve until the air is purged from the installation.

   *When water is added, air gets into the heating system:*

   - Degas the installation.
   - After the air has been vented, the water pressure can drop below the required level.
   - Use the pressure gauge to check the water pressure in the heating system.
   - If the water pressure is lower than 0.8 bar, more water should be added.

15. After filling the installation, switch the boiler on.

   *Filling and bleeding the installation 2 times a year should be sufficient to obtain an adequate hydraulic pressure. If it is often necessary to top up the installation with water, contact your fitter.*
5.4 Bleeding the heating system

It is essential that you bleed any air in the heating system to prevent the annoying noises likely to be produced during heating or when tapping water. To do this, proceed as follows:

1. Open the valves on all radiators connected to the heating system.
2. Set the room thermostat as high as possible.
3. Wait until the radiators are hot.
4. Switch the boiler off.
5. Wait around 10 minutes until the radiators are cold.
6. Bleed the radiators. Start with the lower floors.
7. Open the bleed connection using the bleed key provided whilst keeping a rag pressed against the connection.
8. Wait until water comes out of the bleed valve and then close the bleed connection.

**CAUTION**
The water may still be hot.

9. Switch on the boiler. A vent cycle of a duration of around 3 minutes is carried out automatically.
10. After venting, check whether the pressure in the installation is still sufficient.

- If the water pressure is lower than 0.8 bar, more water should be added. If necessary, top up the water level in the heating system (recommended hydraulic pressure between 1 and 2 bar).
- See chapter: "Filling the system", page 15.

11. Set the room thermostat or the regulator.
5.5 Draining the installation

It may become necessary to empty the water from the heating system when the radiators have to be replaced, should there be a major water leak or a risk of frost. To do this, proceed as follows:

1. Open the valves on all radiators connected to the heating system.
2. Switch off the boiler electrical power supply.
3. Wait around 10 minutes until the radiators are cold.
4. Connect an evacuation hose to the plug located at the lowest level. Place the end of the hose in a discharge sump or in a place where the water discharged from the valve can not do any damage.
5. Open the filling/draw-off valve on the heating system. Vent the heating installation.

**WARNING**

The water may still be hot.

6. When no more water comes out of the drainage plug, close the drainage valve.

After draining the concentration of system corrosion inhibitor and anti-freeze may become excessively diluted - seek advice from your installer.
6 Troubleshooting

6.1 Error codes

In the event of a fault, the status signal for the button flashes red. The meaning of the error codes is given in the error table:

<table>
<thead>
<tr>
<th>Status signals</th>
<th>Description</th>
<th>Code(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error code 1</td>
<td>Sensor error</td>
<td>E-02 / E-03 / E-04 / E-05 / E-06 / E-07 / E-08 / E-09 / E-10 / E-11 / E-15</td>
</tr>
<tr>
<td>Error code 2</td>
<td>Overheat temperature protection</td>
<td>E-12 / E-47</td>
</tr>
<tr>
<td>Error code 3</td>
<td>Ignition fault</td>
<td>E-14 / E-16 / E-36</td>
</tr>
<tr>
<td>Error code 4</td>
<td>Fan fault</td>
<td>E-34</td>
</tr>
<tr>
<td>Error code 5</td>
<td>Parameter error</td>
<td>E-00 / E-01</td>
</tr>
</tbody>
</table>

(1) The code can be read using a suitable controller.

If one of the above mentioned error codes is shown, proceed as follows:

- Check the water pressure in the heating system.
  - The water pressure is higher than 0.8 bar. Degas the installation.
  - The water pressure is lower than 0.8 bar. Fill the system with clean tap water (advised water pressure is between 1.5 and 2 bar).
- Check that the gas valve is fully opened.
  - Open the gas valve if it is closed.

Press the key for 5 seconds: The status signals will flash red quickly and the boiler will start its reset procedure. The boiler will also start an automatic venting cycle lasting around 4 minutes. If the error code continues to display, contact the installer.

Before contacting the installer. Note the following information:

- Error code
- Boiler type
If your installer confirms that the fault is with the boiler, simply call heateam on 0844 871 1525.

Before contacting heateam, please have the following information to hand:

- Serial no. of the appliance
- Installer’s name and address
- Proof of purchase (if you do not have the serial number)

Our service division heateam is open:

- Monday to Friday 8am - 6pm
- Weekends and Bank Holidays 8.30am - 2pm, excluding Christmas Day and New Year’s Day

To ensure the highest level of customer service, heateam will text to you your engineer appointment details if you provide a mobile phone number. Following your engineer visit, we will ask you to rate your level of satisfaction with our service via text message.
## 6.2 Incidents and solutions

<table>
<thead>
<tr>
<th>Problem</th>
<th>Probable causes</th>
<th>Solution</th>
</tr>
</thead>
</table>
| There is no domestic hot water. | The boiler is not switched on. | ▶ Check that the boiler is switched on.  
▶ Check the fuses and switches.  
▶ Check that the gas valve is fully opened. |
| | The DHW mode is deactivated. | Activate the DHW mode using a suitable controller. |
| | The water pressure is too low (< 0.8 bar). | Top up the installation with water. |
| | The energy-saving shower head is restricting the water flow. | Clean the shower head; replace if necessary. |
| | The DHW temperature setting is too low. | Increase the temperature setting by using the rotary knob on the control panel or by using a suitable controller. |
| The radiators are cold. | The heating temperature setting is too low. | Increase the value of parameter $P_1$ using a suitable controller or, if a room thermostat is connected increase the temperature. |
| | The heating mode is deactivated. | Activate the heating mode using a suitable controller. |
| | The radiator valves are closed. | Open the valves on all radiators connected to the heating system. |
| | The boiler is not switched on. | ▶ Check that the boiler is switched on.  
▶ Check the fuses and switches.  
▶ Check that the gas valve is fully opened. |
| | The water pressure is too low (< 0.8 bar). | Top up the installation with water. |
| | The heating water temperature setting is too low. | Increase the temperature setting by using the rotary knob on the control panel or by using a suitable controller. |
| The boiler is not working. | The heating temperature setting is too low. | Increase the value of parameter $P_1$ using a suitable controller or, if a room thermostat is connected increase the temperature. |
| | No power supply. | ▶ Check that the boiler is switched on.  
▶ Check the fuses and switches. |
| | The water pressure is too low (< 0.8 bar). | Top up the installation with water. |
| | An error code appears on the display. | ▶ Press the Reset button for 2 seconds.  
▶ Correct the error if possible. |
| | The gas pressure is too low. | Check that the gas valve is fully opened. Open the gas valve. |
| The water pressure is too low (< 0.8 bar). | Not enough water in the installation. | Top up the installation with water. |
| | Water leak. | Contact the fitter. |
| Significant variations in domestic hot water temperature. | Insufficient water supply. | Open the valve. |
| Clicking in the central heating pipes. | The central heating pipe connections are too tight. | Contact the fitter. |
| | There is air in the heating pipes. | It is essential that you bleed any air in the calorifier, the conduits or the taps to prevent the annoying noises likely to be produced during heating or when tapping water. |
| | The water is circulating too quickly in the central heating system. | Contact the fitter. |
| Significant water leak under or close to the boiler. | The boiler or central heating pipes are damaged. | ▶ Close the water supply.  
▶ Contact the fitter. |
# 7 Technical specifications

## 7.1 Technical specifications

<table>
<thead>
<tr>
<th>Boiler type</th>
<th>MainEco</th>
<th>Combi 24</th>
<th>Combi 28</th>
<th>Combi 35</th>
<th>System 18</th>
<th>System 24</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input control</td>
<td>Adjustable</td>
<td></td>
<td>Modulating(1), Start/Stop</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal output (Pn) Heating System (80/60 °C)</td>
<td>min - max kW</td>
<td>5.5 - 19.5</td>
<td>5.5 - 23.4</td>
<td>7.7 - 29.2</td>
<td>5.5 - 17.7</td>
<td>5.5 - 23.4</td>
</tr>
<tr>
<td>Factory setting</td>
<td>kW</td>
<td>19.5</td>
<td>19.5</td>
<td>29.2</td>
<td>17.7</td>
<td>23.4</td>
</tr>
<tr>
<td>Nominal output (Pn) DHW System</td>
<td>min - max kW</td>
<td>5.5 - 23.4</td>
<td>5.5 - 27.5</td>
<td>7.7 - 33.9</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Factory setting</td>
<td>kW</td>
<td>23.4</td>
<td>27.5</td>
<td>33.9</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Data on the gases and combustion gases**

<table>
<thead>
<tr>
<th></th>
<th>max</th>
<th>2.54</th>
<th>2.98</th>
<th>3.68</th>
<th>1.90</th>
<th>2.54</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas consumption G20</td>
<td>m³/h</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOx annual emission (n=1)</td>
<td>mg/kWh</td>
<td>53</td>
<td>58</td>
<td>52</td>
<td>41</td>
<td>58</td>
</tr>
</tbody>
</table>

**Characteristics of the heating circuit**

<table>
<thead>
<tr>
<th></th>
<th>l/min</th>
<th>1.6</th>
<th>1.6</th>
<th>1.7</th>
<th>1.4</th>
<th>1.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water content</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water operating pressure</td>
<td>minimum</td>
<td>bar</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Water operating pressure (PMS)</td>
<td>maximum</td>
<td>bar</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Water temperature</td>
<td>maximum</td>
<td>°C</td>
<td>110</td>
<td>110</td>
<td>110</td>
<td>110</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>maximum</td>
<td>°C</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
</tbody>
</table>

**Characteristics of the domestic hot water circuit**

<table>
<thead>
<tr>
<th></th>
<th>l/min</th>
<th>9.8</th>
<th>11.4</th>
<th>14.3</th>
<th>-</th>
<th>-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific hot water flow</td>
<td>Rate</td>
<td>°C Rise</td>
<td>35</td>
<td>l/min</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow rate threshold(2)</td>
<td>minimum</td>
<td>l/min</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
<td>-</td>
</tr>
<tr>
<td>Operating pressure (Pmw)</td>
<td>maximum</td>
<td>bar</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>-</td>
</tr>
</tbody>
</table>

**Electrical characteristics**

<table>
<thead>
<tr>
<th></th>
<th>VAC</th>
<th>230</th>
<th>230</th>
<th>230</th>
<th>230</th>
<th>230</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply voltage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power consumption - Full load</td>
<td>maximum</td>
<td>W</td>
<td>105</td>
<td>117</td>
<td>145</td>
<td>92</td>
</tr>
<tr>
<td>Electrical protection index</td>
<td>IP</td>
<td>X4D(3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Other characteristics**

<table>
<thead>
<tr>
<th></th>
<th>kg</th>
<th>26</th>
<th>26</th>
<th>28.5</th>
<th>25</th>
<th>24.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (empty)</td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acoustic level at 1 metre</td>
<td>maximum Heating System</td>
<td>dB(A)</td>
<td>38</td>
<td>38</td>
<td>42</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>maximum DHW System</td>
<td>dB(A)</td>
<td>40</td>
<td>42</td>
<td>45</td>
<td>-</td>
</tr>
</tbody>
</table>

(1) A modulating boiler adapts the quantity of heat produced to the heat required in a flexible manner
(2) Minimum quantity of water coming out of the valve to start up the boiler
(3) Splash-proof; under certain conditions, the boiler can be installed in a wet room such as a bathroom
8 Energy savings

8.1 Energy-saving advice

- Keep the room in which the boiler is installed well ventilated.
- Do not block ventilation outlets.
- Do not cover the radiators. Do not hang curtains in front of the radiators.
- Install reflective panels behind the radiators to prevent heat losses.
- Insulate the pipes in rooms that are not heated (cellars and lofts).
- Close the radiators in rooms not in use.
- Do not run hot (or cold) water pointlessly.
- Install a water-saving shower head to save up to 40% energy.
- Take showers rather than baths. A bath consumes twice as much water and energy.

8.2 Room thermostat and settings

The room thermostat is available in the following versions:
- 2-wire ON/OFF thermostat
- Modulating thermostat
- Programmable room temperature thermostat

The type of thermostat and its settings have a considerable influence on energy consumption.

A few tips:
- A modulating thermostat, possibly in combination with thermostatic valve radiators, saves energy and offers considerable comfort. This combination allows you to set the temperature on each flow. In the room in which the room thermostat is installed, do not fit thermostatic valve radiators.
- Completely closing and opening thermostatic valve radiators causes undesirable temperature fluctuations. Open and close thermostatic valves in small steps.
- Lower the thermostat to around 20°C. This reduces heating costs and energy consumption.
- Lower the room thermostat when you air the rooms.
- When setting an hourly programmable thermostat, keep in mind the days you are absent or on vacation.
9 Warranty

9.1 General

Baxi would like to thank you for buying one of our appliances and for your trust in our product. In order to ensure continued safe and efficient operation it is essential that the product is regularly inspected and maintained. Your installer, annual service provider or our service division heateam can assist with this.

9.2 Warranty terms

9.2.1 Warranty registration, service & repair

For the warranty to be activated and maintained, please make sure:

- Benchmark Checklist is completed by your installer
- Warranty is registered with Baxi
- The boiler has an annual service

Please be aware that if you do not activate your warranty, a basic one year warranty will apply. For full terms and conditions, visit www.baxi.co.uk/terms.

9.2.2 Benchmark Commissioning Checklist

This checklist will be completed by your installer and records whether the boiler has been installed correctly. This checklist can be found at the back of the Installation and Service Manual and should be retained over the life of the boiler.

9.2.3 Ways to register your warranty

If your boiler is eligible for a promotional warranty, your installer will register the product on your behalf and will provide you with the relevant documentation. In such cases, there is no further action required on your part.

For a standard two year warranty, please use one of the following methods:

- Telephone 0800 013 7989
- Register online at www.baxi.co.uk/registration
- Return the enclosed registration card
9.2.4. Annual service

An annual service must be completed every 12 months from the date of installation. This service must be completed by:

- Your Gas Safe registered installer; or
- Our service division heateam (Telephone 0844 871 1525); or
- Another Gas Safe registered engineer
## 10. Appendix

### 10.1 User instruction card

<table>
<thead>
<tr>
<th>Group</th>
<th>Signal</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiler in service</td>
<td><img src="image" alt="Boiler in service signal" /></td>
<td>Central heating heat</td>
</tr>
<tr>
<td>(Intermittent green signal)</td>
<td><img src="image" alt="Boiler in service signal" /></td>
<td>Hot tap water</td>
</tr>
<tr>
<td>Maintenance message(1)</td>
<td><img src="image" alt="Maintenance message signal" /></td>
<td>Code A</td>
</tr>
<tr>
<td>(Flashing orange signal)</td>
<td><img src="image" alt="Maintenance message signal" /></td>
<td>Code B</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Maintenance message signal" /></td>
<td>Code C</td>
</tr>
<tr>
<td>Blockage</td>
<td><img src="image" alt="Blockage signal" /></td>
<td>Temperature protection</td>
</tr>
<tr>
<td>(Flashing green signal)</td>
<td><img src="image" alt="Blockage signal" /></td>
<td>Shutdown input</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Blockage signal" /></td>
<td>Flame loss</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Blockage signal" /></td>
<td>Communication fault</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Blockage signal" /></td>
<td>Parameter error</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Blockage signal" /></td>
<td>Miscellaneous</td>
</tr>
<tr>
<td>Repair</td>
<td><img src="image" alt="Repair signal" /></td>
<td>Sensor error</td>
</tr>
<tr>
<td>(Flashing red signal)</td>
<td><img src="image" alt="Repair signal" /></td>
<td>Overheat temperature protection</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Repair signal" /></td>
<td>Ignition fault</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Repair signal" /></td>
<td>Fan fault</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Repair signal" /></td>
<td>Parameter error</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Repair signal" /></td>
<td>Miscellaneous</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Repair signal" /></td>
<td>Reinitialisation</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Repair signal" /></td>
<td>Resetting...</td>
</tr>
<tr>
<td>Chimney-sweeping position</td>
<td><img src="image" alt="Chimney-sweeping position signal" /></td>
<td>Part load</td>
</tr>
<tr>
<td>(Intermittent orange signal)</td>
<td><img src="image" alt="Chimney-sweeping position signal" /></td>
<td>Full load Central heating heat</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Chimney-sweeping position signal" /></td>
<td>Full load Hot tap water</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Chimney-sweeping position signal" /></td>
<td>PC programming mode</td>
</tr>
</tbody>
</table>

(1) This function is not applicable to every type
For Baxi Customer Support, contact us at

0844 871 1525
Please note calls may be monitored or recorded

www.baxi.co.uk

Register now to activate your warranty:
www.baxi.co.uk/registration

For the warranty to be maintained, please make sure...

1 Benchmark checklist is completed
2 Warranty is registered with Baxi
3 The boiler has an annual service

For full terms and conditions, visit www.baxi.co.uk/terms

Book your service or repair online:
www.baxi.co.uk/booking

Baxi, Brooks House
Coventry Road, Warwick, CV34 4LL.

All descriptions and illustrations provided in this document have been carefully prepared but we reserve the right to make changes and improvements in our products which may affect the accuracy of the information contained in this leaflet. All goods are sold subject to our standard Conditions of Sale which are available on request.