User's Instructions

Condensing gas boiler
GB142-24/30/45/60

Buderus

This manual must be retained for future use.

Warning: If the information in these instructions is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

- **Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other boiler.**
- **What to do if you smell gas**
  - **Do not try to light any boiler.**
  - **Do not touch any electrical switch; do not use any phone in your building.**
  - **Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.**
  - **If you cannot reach your gas supplier, call the fire department.**
- **Installation and service must be performed by a qualified installer, service agency or the gas supplier.**

CAUTION !

The operating manual is part of the documentation that is delivered to the installation's operator. Go through the information in this manual with the owner/ operator and make sure that he or she is familiar with all the necessary operating instructions.

Contents

Preface

About these instructions

These user's Instructions contain important information for the safe and proper operation of GB142-24/30/45/60 condensing gas boilers.

If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

Subject to technical changes!

Changes may be made following technical improvements!

Updating of documentation

Please contact us if you have any suggestions for improvements or corrections.

1 For your safety

GB142 condensing gas boilers are designed and built according to the latest technological advances and safety requirements.
The design is specifically focused on ease of use. To ensure the safe, economical and environmentally friendly use of the heating system we urge you to read and observe the User's Instructions.

1.1 Designated use

The GB142 was designed for heating water for a central heating system and for generating domestic hot water. The boiler can be fitted with a modulating outdoor reset control AM10 (scope of delivery), a room controller RC35 (optional) or an On/Off thermostat (accessory).

Hazard definitions

DANGER:
Indicates the presence of hazards that will cause severe personal injury, death or substantial property damage.

WARNING:
Indicates the presence of hazards that can cause severe personal injury, death or substantial property damage.

CAUTION:
Indicates presence of hazards that will or can cause minor personal injury or property damage.

CAUTION:
Risk of electric shock.
Indicates presence of hazards due to electric shock.

NOTICE
Indicates special instructions on installation, operation or maintenance that are important but not related to personal injury or property damage.

1.2 Safety instructions

Make sure to observe these safety instructions. Failure to do so can result in property damage, personal injury or loss of life.

- Installation, gas and flue connection, commissioning, electrical connection and maintenance activities must only be carried out by a trained service provider.
- Certain work, e.g. on gas lines, may require a professional license. Only carry out such work if you are licensed to do so.
- Only use the boiler for its intended purpose and only when it is in working order.
- Have a trained service provider check, clean and service the heating system once a year. Buderus recommends a contract for annual service and maintenance.
- The condensate collection and disposal system must be periodically cleaned by a trained service technician.
- Have your trained service provider give you detailed instructions about the operation of the heating system.
- Carefully read these user's instructions.
- Immediately have all defects to the heating system repaired.
- Ensure that air intake and outlet openings are open and free from obstructions at all times.
- Do not store any flammable material or liquids in the immediate vicinity of the boiler.

- Never use chlorinated detergents or halogenated hydrocarbons (e.g. in spraycans, solvents and detergents, paints, adhesives) in the room where the boiler is installed.
- When Calcium Chloride is present in concrete floors (when poured in winter) it is necessary to seal the floor with a suitable paint.
- Do not allow too much dust to collect on the device.
- Do not use the boiler if any part has been under water. Immediately call a trained service technician to inspect the boiler and to replace any part of the control system and any gas control which has been under water.
- Should overheating occur or the gas supply fail to shut off, do not turn off or disconnect the electrical supply to the pump. Instead, shut off the gas supply at a location external to the boiler.
- The venting system must be inspected annually. Replace any parts which show deterioration from corrosion or any other sources.
- This boiler does not have a pilot. It has an ignition device which automatically lights the burner.
- Check for smell of gas around the boiler area. Be sure to smell next to the floor because propane gas is heavier than air and will settle on the floor.
- Use only your hand to turn the gas control knob (fig. 3 on page 15). Never use tools. If the knob will not turn by hand, don't try to repair it, call a trained service technician. Force or attempted repair may result in a fire or an explosion.

2 Lighting Instructions

STOP!
Read the chapter "For your safety" on page 5 before lighting the boiler.

2.1 Operating the BC10 basic controller

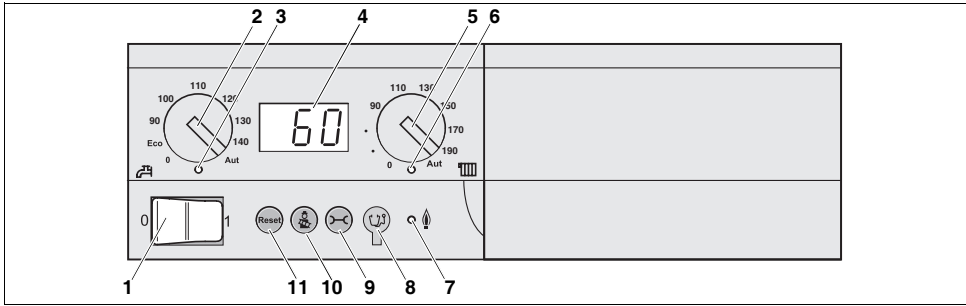


Fig. 1 Logamatic BC10 basic controller – Controls

pos. 1: Main switch
pos. 2: DHW temperature knob [1)]
pos. 3: LED "DHW status"
pos. 4: Display
pos. 5: Space heating water temperature knob
pos. 6: LED "Burner status"
pos. 7: LED "Burner Operation"
pos. 8: Service Tool connector
pos. 9: "Service" button
pos. 10: "Chimney sweep" button
pos. 11: "Reset" button

1) ECO mode means that the temperature inside the hot water tank is 140 °F.

2.2 Opening and closing the control panel

- Briefly push the drawer to open the control panel (fig. 2). The drawer will come out. The control panel consists of the Logamatic BC10 basic controller (fig. 1).
- Close the control panel by pushing it back into the boiler.

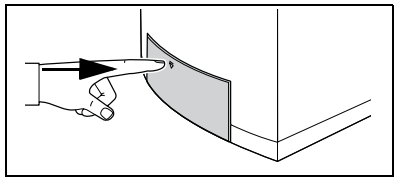
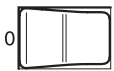


Fig. 2 Opening and closing the control panel

2.3 Switching on and off

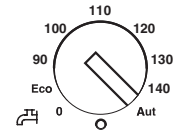
- Set the main switch on the BC10 to position "1" (On) to switch on the boiler and set it to "0" to switch it off.



CAUTION
Risk of electric shock.
If a hazardous situation occurs, shut off power to the boiler using the emergency shutoff switch or the boiler circuit breaker (see chapter 3 "Starting up and shutting down the boiler", page 15). Make yourself familiar with the location of the emergency shutoff switch and the boiler loop circuit breaker.

2.4 Setting the DHW temperature value

- Check the local code for the max. DHW temperature.
- Turn the "DHW temperature" rotary knob to set the desired temperature of the hot water in the DHW tank.



	Condition	Explanation	LED
0	Off	No hot water supply (only heating mode).	Off
Eco [1]	Economy mode, Hot water temperature 140 °F	The DHW will only be reheated to 140 °F, if the temperature has signifcantly fallen. This reduces the number of burner starts and saves energy. As a result the water may be a bit cooler initially.	On [2]
90 – 140	Direct setting on BC10 in °F	The temperature set on the BC10 is a temperature that cannot be changed using a RC thermostat.	On [2]
Aut	Entry via thermostat (presetting)	The temperature is set on the thermostat (e. g. RC35). If no thermostat is connected, the maximum DHW temperature is 140 °F.	On [2]

Table 1 Settings of "DHW temperature" knob

[1] This function has been optimized for boilers with combined DHW heating (combi-units).

[2] The LED under the rotary knob lights up if the DHW temperature is below the target value (heat request for DHW).

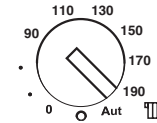
Anti-scald table

Temperature of water in degrees F	Minimum time for first degree burn	Minimum time for second or third degree burn
111	5 hours	7 hours
116	35 minutes	45 minutes
118	10 minutes	14 minutes
122	1 minute	5 minutes
131	5 seconds	25 seconds
140	2 seconds	5 seconds
149	1 second	2 seconds
158	–	1 second

Table 2 Temperature/Time/Burn Chart

2.5 Entering the space heating water temperature

- Turn the "space heating water temperature" knob to set the upper limit value of the heater water for the heating operation. This limitation does not apply to DHW preparation.



	Condition	Explanation	LED
0	Off	No supply to heating system (only DHW heating operation).	Off
90 – 190	Direct setting on BC10 in °F (90 – 190 °F)	The temperature set on the BC10 is a temperature that cannot be changed using a RC thermostat. Supply temperature does not rise above the set temperature.	On [1]
Aut	Entry via thermostat (presetting)	The temperature is automatically determined on the basis of the heating characteristic. If no thermostat is connected, the maximum heater temperature is 190 °F.	On [1]

Table 3 Settings of "space heating water temperature" rotary knob

[1] *The LED under the rotary knob lights up when the heating system is switched on and heat is requested. In summer mode the heating system is switched off (LED off).*

2.6 "Burner on" LED

The LED indicates the operating condition of the burner.

LED	Condition	Explanation
On	Burner active	The water in the boiler is being heated.
Off	Burner off	The water in the boiler has reached the required temperature or there is no heat request.

Table 4 LED indication

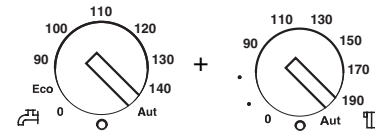
2.7 Other functions and economic heating

The functions described above are basic functions, carried out directly on the boiler using the Logamatic BC10 basic controller.

3 Starting up and shutting down the boiler

3.1 Starting up the boiler

- Turn the "space heating water temperature" and "DHW temperature" rotary knobs to "Aut" (automatic mode). The control unit will now take control.



- Open the gas shut-off valve (fig. 3, pos. **1**).
  Lightly push on the gas shut-off valve and turn it to the left (counterclockwise). In "open" position the gas shut-off valve is parallel to the gas pipe.
- Open the boiler manifold shut-off valves (fig. 3, pos. **2**).

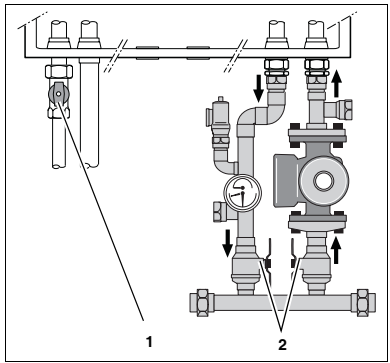
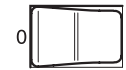


Fig. 3 Opening the gas shut-off valve and the boiler manifold shut-off valves
pos. 1: gas shut-off valve
pos. 2: boiler manifold shut-off valves

- Set the main switch on the basic controller to position "1" (On). The basic controller checks the current system status and the burner becomes operational as soon as there is a heat request. This procedure takes approx. 30 seconds.
- Adjust the settings on the control unit (see the Operating Instructions for the control unit).



3.2 Shutting down the boiler

- Set the main switch on the basic controller to position "0" (Off).
- Close the gas shut-off valve and disconnect the boiler from the power supply.

DANGER!
The heating system may freeze if it is not operational in times of freezing weather.

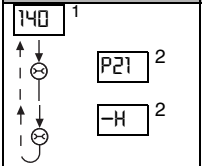
– Protect the heating system against freezing if there is a danger of frost affecting the system.
– Drain the heating system water from the lowest point of the heating system using the boiler drain. The vent screw at the highest point of the heating system must then be open.

4 Operating and error messages

4.1 Displaying operating messages

In normal operating mode the display will show the current heater water temperature. You can display other information using the "Service" button.

- Push the "Service" button a number of times to switch between the various status displays.

Display (example)	Meaning
	Current boiler water temperature (in °F) Current system pressure (in psi) Operating message (see table 5): Current condition of heating system

[1] *Standard display for this operating condition. This display appears after 5 minutes if no button is pushed.*

[2] *Other values may be displayed depending on the operating condition. You can return to the starting point by repeatedly pushing the "Service" button.*

Display	Meaning
Normal operation =/– [1]	
–H	Boiler in space heating mode
=H	Boiler in DHW heating mode
Normal operation 0 [1]	
0A	Burner interval circuit, burner will restart automatically after 10 minutes
0C	Burner is started
0E	More capacity was delivered than required
0H	Ready for operation
0L	The gas valve is open
0U	Initializing, Pre Purge
0Y	Flow temperature higher than set

Table 5 Messages in normal operation mode

[1] Push the "Service" button to display this operation message.

[2] Is shown automatically, i. e. without you pushing a button.

Display	Meaning
Test mode – [1]	
–A. Dot displayed in right-hand bottom corner	Boiler in flue gas test mode (chimney sweep mode)
Manual operation – [1]	
–H Flashing dot in right-hand bottom corner	Boiler in manual mode
Water pressure too low H 7 [2]	
H 7 / P12 Alternating display codes	Water pressure is too low (between 3 and 12 psi). The value marked "P" indicates the current water pressure in psi. Contact the installer.

Table 5 Messages in normal operation mode

[1] *Push the "Service" button to display this operation message.*

[2] *Is shown automatically, i. e. without you pushing a button.*

4.2 Identifying and resetting faults

If a fault occurs, the error code flashes on and off on the display of the BC10 basic controller.

- Push the "Reset" button for approx. 5 seconds to reset the fault.

The display shows "rE" while resetting. Reset is only possible if there is a flashing error message.

If the display then shows a normal operation message from table 5, this means that the fault has been remedied. If the fault recurs, you must repeat resetting two or three more times.

If the fault cannot be reset:

Write down the error message and contact your heating equipment servicing company.

Make sure that the heating system is not damaged by frost (see the safety instructions in chapter “Shutting down the boiler” on page 18).

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