

**WARNING:**

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.

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

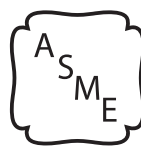
WHAT TO DO IF YOU SMELL GAS

- ▶ Do not try to light any appliance.
 - ▶ 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.

Logano plus GB312

For the operator

Please read carefully
before use.



H



Contents

1	General safety instructions and explanation of symbols	3
1.1	Safety instructions	3
1.2	Explanation of symbols	4
<hr/>		
2	Details of the product	4
2.1	Intended use	4
2.2	Certification and testing mark	4
2.3	Heating system water quality	4
2.4	Disposal	4
2.5	Product description	5
<hr/>		
3	Recommissioning the heating system	7
3.1	Turning the heating system on	7
3.1.1	Starting up the heating system using the programmer and the control unit	7
3.2	Turning the heating system off	7
3.3	Action in an emergency	8
3.4	Checking the operating pressure, topping off the heating water and bleeding the system	8
3.4.1	Checking the operating pressure	8
3.4.2	Topping off the heating water and bleeding the system	8
3.4.3	The right fuel	9
<hr/>		
4	Troubleshooting	9
4.1	Identifying operating modes and resetting faults	9

1 General safety instructions and explanation of symbols

1.1 Safety instructions

If you smell gas

- ▶ Turn off the gas cock (→ page 7).
- ▶ Open windows and doors.
- ▶ Do not operate any electrical switches or equipment such as telephones, power plugs and doorbells.
- ▶ Extinguish all open flames. Do not smoke. Do not use lighters of any kind.
- ▶ Warn all occupants of the building, but do not ring doorbells.
- ▶ If you can actually hear gas escaping, leave the building immediately. Prevent others from entering and notify the police and fire department **from outside** the building.
- ▶ **From outside the building**, call gas supplier and approved heating contractor.

If you smell flue gas

- ▶ Switch off the boiler (→ page 7).
- ▶ Open windows and doors.
- ▶ Inform an authorized heating contractor.

Installation and conversion

- ▶ Correct and proper installation and adjustment of the burner and the programmer are the fundamental requirements for safe and economical operation of the boiler.
- ▶ The boiler may only be installed or converted by an approved heating contractor.
- ▶ Do not modify any parts that carry flue gas.
- ▶ With **balanced flue appliances**: do not cover or reduce the size of ventilation openings in doors, windows and walls. If draft-proof windows are fitted, ensure there is an adequate supply of air to the room for combustion.
- ▶ The hot water tank may only be used for heating domestic hot water.
- ▶ **Never shut off safety valves**. Water may escape from the safety valve for the hot water system and piping when the water is being heated.

Maintenance and servicing

Heating systems should be regularly maintained for the following reasons:

- to achieve a high level of efficiency and to operate the system economically (low fuel consumption),
- to achieve a high level of operational reliability,
- to maintain the cleanest possible combustion.
- ▶ **Recommendation for users**: take out a maintenance and servicing contract with an approved heating contractor covering annual servicing and condition-based maintenance.
- ▶ Servicing and repairs may only be carried out by an approved heating contractor.
- ▶ Have any faults immediately put right in order to prevent damage to the system.
- ▶ The operator is responsible for the general and environmental safety of the heating system.
- ▶ Use only genuine spare parts. Damage caused by the use of parts not supplied by Buderus is not covered by the Buderus warranty.

Danger of failure to consider your own safety in an emergency such as a fire

- ▶ Never put yourself at risk of fatal injury. Your own safety must always take the highest priority.

Dangers posed by explosive and easily combustible materials

- ▶ Any work on components that carry gas may only be carried out by an approved heating engineer.
- ▶ Do not use or store easily combustible materials (paper, thinners, paints, etc.) near the boiler.
- ▶ Maintain a clearance of 16 inches from the boiler.

Risk of poisoning. An insufficient supply of air can result in dangerous escape of flue gas.

- ▶ Never close off or reduce the size of air inlet or outlet vents.
- ▶ The boiler must not be operated until the obstruction has been removed.

Risk of water damage

- ▶ Do not use the appliance if any part of it has been under water.
- ▶ Call in a qualified customer service contractor immediately to check the appliance and replace any programming or gas valve components that have been under water.

Combustion air

- ▶ Keep the combustion air free of corrosive substances (e.g. halogenated hydrocarbons that contain chlorine or fluorine compounds). In that way you will prevent corrosion.

Instructing the customer

- ▶ The operator must read the information on how the boiler works and have the heating system installer (approved heating contractor) explain how to operate it.

Other important information

- ▶ If the system overheats or the gas supply does not shut off, on no account should you switch off or disconnect the power supply to the pump. Instead, you should shut off the gas supply somewhere else separate from the heating system.
- ▶ The flue system must be inspected once a year. Have all parts that show any signs of damage from corrosion or other causes replaced.
- ▶ The boiler must be serviced by qualified boiler service company once a year. Servicing must include the main burner, the entire flue and air supply system and any air inlet/outlet vents. All parts that show any signs of damage from corrosion or other causes must be replaced.

1.2 Explanation of symbols



Warnings are indicated by a warning triangle and a grey background.

Signal words are used to indicate the seriousness of the ensuing risk if measures for minimising damage are not taken.

- **Caution** indicates that minor damage to property may occur.
- **Warning** indicates that minor personal injury or severe damage to property may occur.
- **Danger** means that severe personal injury may occur. Very serious cases may result in death.



Notes are identified in the text by this symbol. They are bounded by horizontal lines above and below the text.

Notes contain important additional information.

Notes do not contain any warnings or information about hazards or risks.

2 Details of the product

To ensure safe, economical and environmentally friendly use of the heating system, we recommend that you carefully read the safety instructions and operating instructions.

These instructions provide the operator of the heating system with an overall view of the use and operation of the boiler.

2.1 Intended use

The Logano plus GB312 is designed for heating central heating system water and domestic hot water with the use of an indirect heated tank, for instance in apartment buildings. Using it for any other purpose will be considered improper use.

The boiler can be fitted with a programming unit such as the RC35 (available separately).

2.2 Certification and testing mark

This appliance has been tested and certified and meets the basic standards for the US and Canadian markets.

2.3 Heating system water quality

Notes on water quality can be found in the shipment enclosed "Water quality requirements for Logano plus GB312" document.

2.4 Disposal

- ▶ Dispose of boiler packaging in an environmentally responsible manner.
- ▶ All heating system components that have to be replaced should be disposed of in environmentally responsible manner at an authorized disposal site.

2.5 Product description

The Logano plus GB312 (→ Fig. 1) is supplied with a fully factory-fitted and ready-wired Logomatic BC10 basic control unit (→ Fig. 2, page 6).

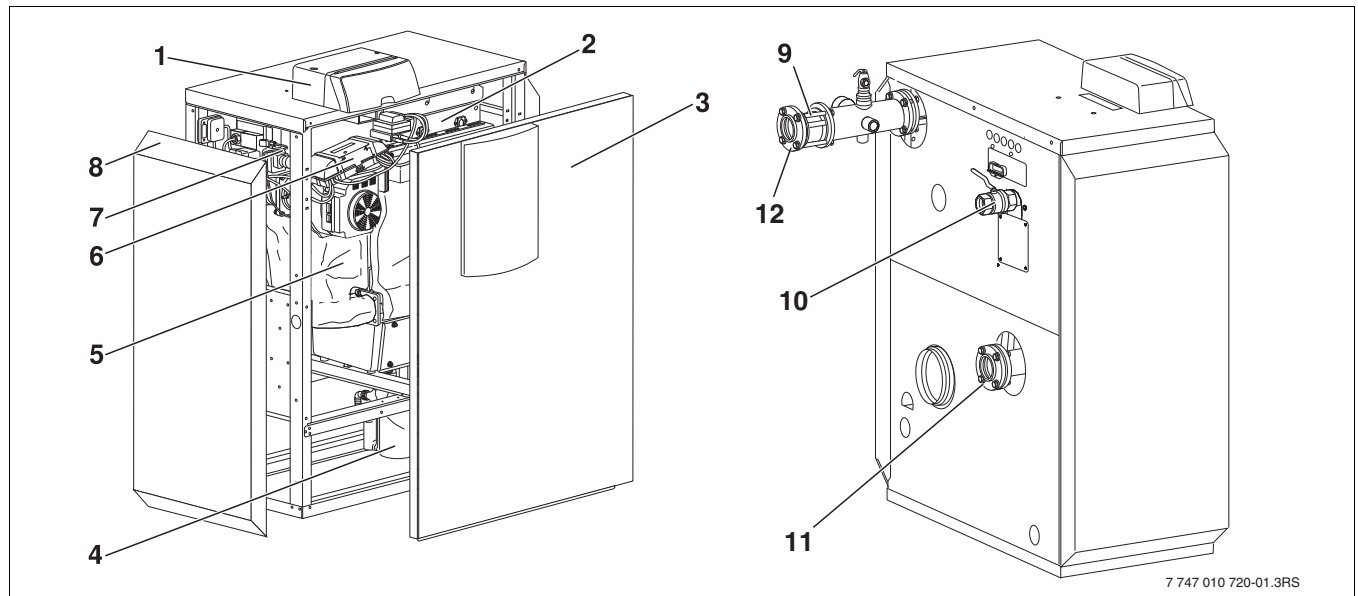


Fig. 1 Logano plus GB312 - main components

- [1] Programmer (MC10 and BC10)
- [2] Gas burner
- [3] Boiler front panel
- [4] Trap
- [5] Boiler heat exchanger with insulation
- [6] Burner control unit
- [7] Gas valve
- [8] Boiler outer jacket
- [9] B-kit with non-return check valve
(supplied as standard, not factory installed)
- [10] Gas isolating valve (supplied as standard, not factory installed)
- [11] Mating flange, 2½"
- [12] Bolts, washers, Lock washers and nuts
(to mount supply manifold and mating flanges)

The main components of the Logano plus GB312 (→ Fig. 1) are:

- Control
- Frame and jacket
- Boiler heat exchanger with insulation
- Gas burner
- B-kit (standard B-kit comprising temperature/pressure gauge, pressure relief valve, supply manifold, flow check valve, mating flange for flow/return piping, not factory installed)
- Gas isolating valve

The programming unit monitors and controls all electrical boiler components.

The boiler heat exchanger transfers the heat generated by the burner to the heating water. The thermal insulation reduces radiant and standby heat loss.

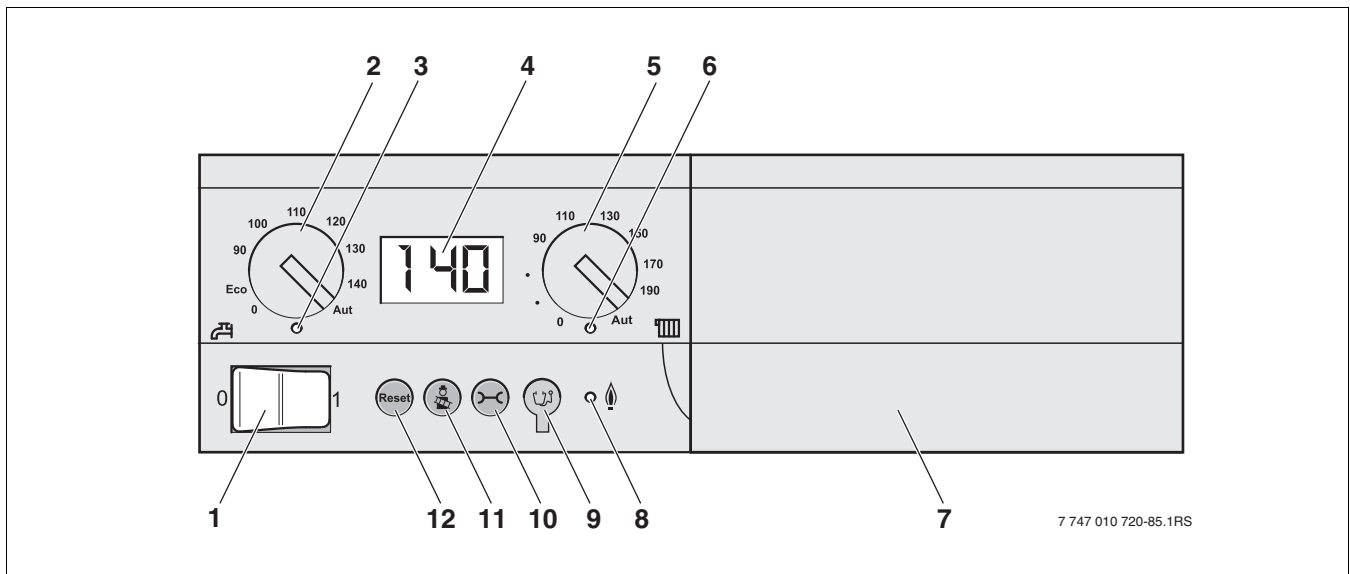


Fig. 2 Logamatic BC10 basic control unit - controls

- [1] On/off switch
- [2] Dial for DHW set point
- [3] "DHW heating" LED
- [4] Status display screen
- [5] Control knob for maximum boiler temperature
- [6] "Heat demand" LED
- [7] Base plate with slot for a programming unit e.g. RC35 (behind the cover panel)
- [8] "Burner" LED (ON/OFF)
- [9] Socket for connecting diagnostic plug
- [10] "Status display" button
- [11] "Flue gas test" button
- [12] "Reset" button

Logamatic BC10 basic control unit (→ Fig. 2). The Logamatic BC10 basic control unit enables basic operation of the heating system. It provides functions such as the following for that purpose:

- Turning the heating system on/off
- Setting the DHW temperature and the maximum boiler temperature in heating mode
- Status display

On overall picture of the controls of the Logamatic BC10 basic control unit can be obtained from Fig. 2.

Many other functions for the convenient control of your heating system are available with a programming unit (such as the RC35*).

* Available separately

3 Recommissioning the heating system

3.1 Turning the heating system on

Before switching on, make sure that

- the operating pressure is sufficient
- the fuel supply has been turned on at the main shut-off valve, and
- the heating system emergency stop switch is in the on position

3.1.1 Starting up the heating system using the programmer and the control unit

- ▶ Set both control knobs on the control unit to "AUT" (Automatic mode). In that setting, the programming unit takes over control of the boiler.

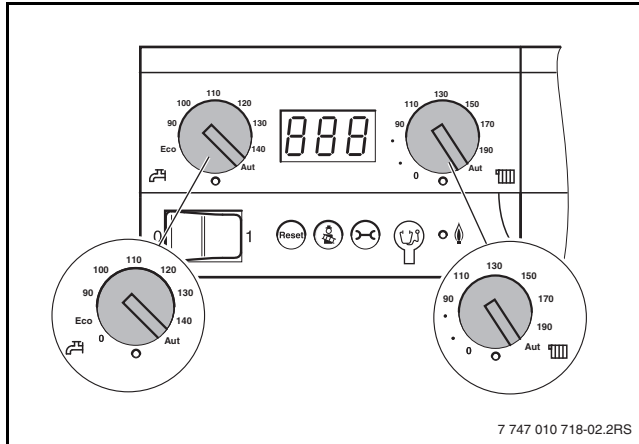


Fig. 3 Setting the control unit

- ▶ Set the ON/OFF switch on the basic control unit to position "1". The control unit checks the current status of the system, and the burner may start up.

When the boiler detects a demand for heat, the startup sequence begins and the burner ignites after about 30 seconds. Heat demand arises when the central heating or DHW temperature falls below the set temperature. The LED below the relevant control knob lights up.

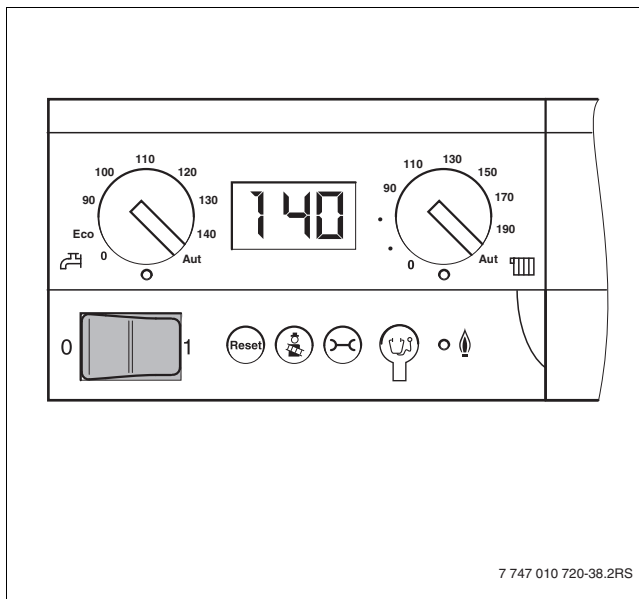


Fig. 4 Turning the heating system on

- ▶ Check the following settings on the programming unit and adjust as required:

- Automatic mode
- Desired room temperature
- Desired DHW temperature
- Desired heating program



For details of how to alter settings such as temperatures on the control unit, refer to the programming unit documentation.

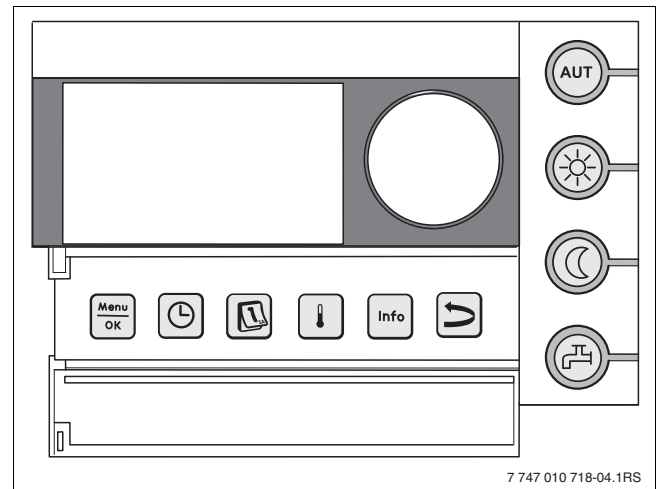


Fig. 5 Programming unit (e.g. RC35, with flap open)

3.2 Turning the heating system off

Turn off the heating system on the Logamatic BC10 basic control unit. When the Logamatic BC10 basic control unit is switched off, the burner is automatically shut down at the same time.

- ▶ Switch off the heating system at the BC10 ON/OFF switch (position "0"). This switches off the boiler and all its components (such as the burner).
- ▶ Turn off the main isolating valve.



CAUTION: Risk of system damage due to freezing. If the heating system has been switched off, it may freeze up at sub-zero temperatures.

- ▶ Leave the heating system permanently switched on as much as possible.
- ▶ Protect your heating system against freezing by draining the heating system and hot water pipes at the lowest possible point.

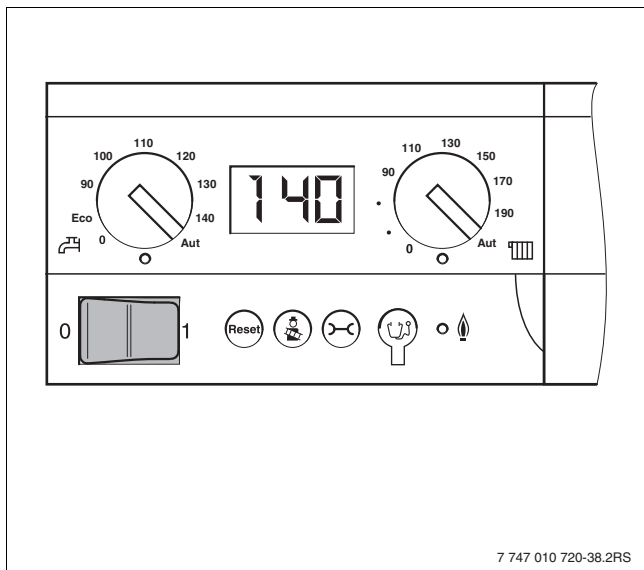


Fig. 6 Logamatic BC10 basic control unit

Information about freeze protection can also be found in the "Water quality requirements for Logano plus GB312" document.

3.3 Action in an emergency



The circuit-breaker for the boiler room or the heating emergency stop switch should only be used to switch off the heating system in an emergency.

In the event of an emergency, e.g. a fire, proceed as follows:

- ▶ Never put yourself at risk of fatal injury. Your own safety must always take the highest priority.
- ▶ Turn off the main isolating valve.
- ▶ Isolate the heating system from the mains power supply by means of the heating system emergency stop switch or the appropriate electrical fuse/circuit breaker.

3.4 Checking the operating pressure, topping off the heating water and bleeding the system

The water with which the heating system is first filled loses a substantial amount of volume in the first few days due to the release of gas content. This causes air pockets to form and the heating water starts to make noises.

- ▶ With new heating systems, check the operating pressure daily at first, topping off the heating water and bleeding the radiators if needed.
- ▶ Later on, check the operating pressure monthly, topping off heating water and bleeding the boiler and radiators if needed.

3.4.1 Checking the operating pressure

Your heating contractor will have set the system to the required operating pressure (at least 15 psi) and entered the setting in → Table 1.

- ▶ If the temperature/pressure gauge needle drops below the minimum pressure marker, the operating pressure is too low. The heating system must be topped off.

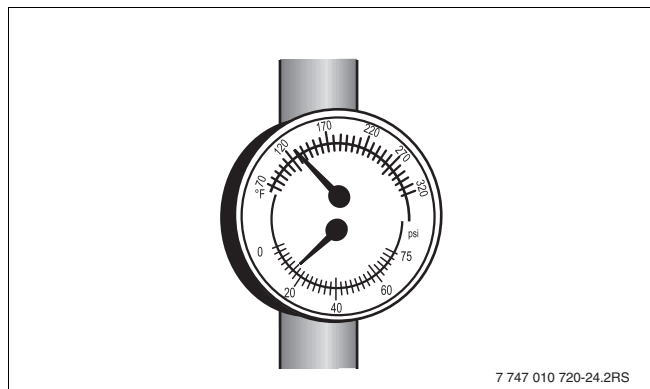


Fig. 7 Pressure/temperature gauge

3.4.2 Topping off the heating water and bleeding the system

Ask your heating contractor to show you where the boiler fill & drain valve for topping up the heating system is located in your heating system.

- ▶ Connect the hose to the water tap. Push a hose filled with water onto the hose connection of the boiler fill & drain valve, fasten with a hose clip and open the valve.
- ▶ Slowly fill the heating system. Observe the pressure gauge (pressure/temperature gauge) while doing so.
- ▶ Close the water tap and the boiler fill & drain valve once the required operating pressure has been reached.
- ▶ Bleed the boiler by carefully opening the relief valve or an automatic vent (supplied separately) on the boiler supply pipe when the boiler circulation pump is running.
- ▶ Bleed the system via the radiator bleed valves.
- ▶ Top off with water if the pressure drops as a result of bleeding the system.
- ▶ Remove the hose from the boiler fill and drain valve.



CAUTION: Health risk from contaminated domestic water.

- ▶ It is imperative that you observe all regulations and standards applicable in your country regarding prevention of domestic water contamination.



CAUTION: Risk of system damage due to frequent topping up.

- If you have to top up the heating water frequently, the heating system may suffer damage from corrosion or scaling, depending on the water quality.
- ▶ Ask your heating contractor if the local water can be used untreated or whether it needs to be treated.
 - ▶ Pay attention to the water quality specified in the "Water quality requirements for Logano plus GB312" document. Record the top off volume as instructed from your heating contractor in the operator's log.
 - ▶ Notify your heating contractor if you find you need to top off your heating system frequently.

Operating pressure	
Design operating pressure (optimum setting)	_____psi
Maximum heating system operating pressure (standard = 30 psi, max. = 50 psi)	_____psi

Table 1 Operating pressure (entered by system installer)

3.4.3 The right fuel

To ensure it operates properly, the heating system requires fuel of the correct type and grade.

CAUTION: Risk of system damage from use of incorrect fuel.

- ▶ Only use the fuel specified. The correct fuel is entered in → Table 2 by the heating system installer.

Use only this fuel

Stamp/Date/Signature

Table 2 Fuel to be used (entered by heating system installer)

4 Troubleshooting

4.1 Identifying operating modes and resetting faults

In the event of a fault, the fault code will flash on the control unit display. The programming unit shows faults as messages in plain language.

A fault is present if the display flashes and indicates something other than the current boiler water temperature or a message related to normal operation.

Example: "6A" = Burner has failed to ignite

- ▶ Press and hold down the "Reset" button for about 5 seconds to clear the fault.

The display shows "rE" while the reset is being carried out. A reset is only possible if a flashing fault indication is shown.

If the display then reverts to a normal operation message, the fault has been eliminated. Should the fault recur, repeat the reset two or three times.

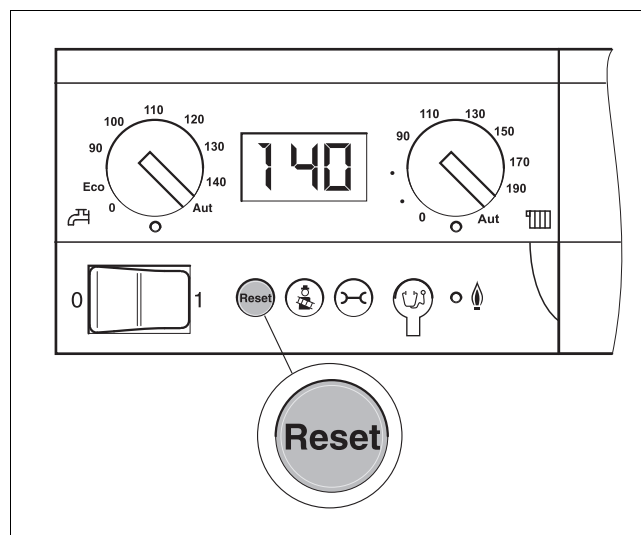


Fig. 8 Clearing a fault with the Reset button

If the fault cannot be reset:

- ▶ Note down the fault message and notify your heating contractor accordingly.

CAUTION: Risk of system damage due to freezing. The heating system can freeze up in cold weather if it has been switched off by a fault shutdown.

- ▶ Rectify the fault immediately and restart the heating system.
- ▶ If that is not possible, protect the heating system against freezing by draining the heating system and hot water pipes from the lowest point.

More information about possible faults can be obtained from the installation and servicing instructions and the control unit and programmer documentation.

Notes

Notes

United States and Canada

Bosch Thermotechnology Corp.
50 Wentworth Avenue
Londonderry, NH 03053
Tel. 603-552-1100
Fax 603-965-7581
www.buderus.us
U.S.A.

Products manufactured by
Bosch Thermotechnik GmbH
Sophienstrasse 30-32
D-35576 Wetzlar
www.buderus.com

Bosch Thermotechnology Corp. reserves the right
to make changes without notice due to continuing
engineering and technological advances.

Buderus