Pellet boiler

# **BIOSTAR** FLEX/BOX/W

## Operating Instructions/System Log Book

BS-A-00-00-00-01-BAEN



EN-B30-003-V16-0411-V3.0

GUNTAMATIC

# Information on this documentation

Please read through this documentation carefully.

It is intended as a reference document and contains important information on the design, safety, operation, maintenance and care of your heating system.

We are always looking to improve our products and documentation. Any ideas and suggestions you may have will be gratefully received.

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**It is important that you pay particular attention to the safety issues highlighted in the text by these symbols.**



Subject to printing errors and technical amendments.

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## Contents

# 1 Introduction

BS-01-00-00-00-01-BAEN

You have made an excellent choice with the purchase of your GUNTAMATIC boiler.

It is a product of many year's experience in boiler-making and it is our sincere wish that your heating system provides you with many years of satisfaction.

These instructions are intended as a guide to operation and maintenance. Even the best boiler cannot operate effectively without proper care and maintenance, so please read through these instructions carefully and have your appliance commissioned by an engineer authorised by GUNTAMATIC. Most importantly, you should follow the safety instructions in Section 2.

## 1.1 Brief description

BS-01-01-00-00-01-BAEN

The BIOSTAR is a modern biomass boiler available with power outputs of 12, 15 or 23 kW. The fuel is fed either from a boiler-mounted hopper by an auger-type conveyer or from a separate fabric hopper or storeroom by an auger conveyor and vacuum system.

## 1.2 Type approval

BS-01-02-00-00-01-BAEN

The boiler is designed as a Class 3 appliance as defined by the draft standard ÖNORM EN 303-5 (CEN/TC7/WG 1 – Doc. N 36-D) of 15/12/1996 and the agreement of the [Austrian] Federal States according to Art. 15a BVG, in accordance with the Austrian fire safety regulations, safety systems, CE and on safety measures for small combustion heating systems and the combustion heating system approval regulations (LGBl. 33/1992) of the Federal State of Steiermark. The original type approval certificates are available for inspection at the manufacturer's offices.

## 1.3 Further information

BS-01-03-00-00-01-BAEN

The documentation consists of the following documents:

- Planning Document
- Installation instructions
- Operating instructions

If you have any questions, please consult our Customer Support.

# 2 Important notes

BS-02-00-00-00-01-BAEN

Your boiler has been designed and produced in accordance with the latest technical advances and all applicable safety regulations. Nevertheless incorrect operation, the use of unapproved fuels or the failure to carry out necessary maintenance and repairs can result in personal injury or damage to property. You will avoid dangerous situations by only using the boiler for the purpose for which it was designed and by operating, cleaning and maintaining it correctly. Only start up the heating system when it is in perfectly safe working order.

## 2.1 Intended use

BS-02-01-00-00-01-BAEN

The boiler is designed for heating central heating water and for use as a central heating boiler.

**Caution:**

**Do not use the boiler to burn rubbish!**

Burning rubbish will cause extensive corrosion and consequently to a substantial reduction in the service life of the boiler.

## 2.2 Operating the heating system

BS-02-02-00-00-01-BAEN

The heating system may only be operated and cleaned by demonstrably trained persons (as per check-list). Children, unauthorised persons or persons with a mental impairment may only enter the boiler room under the supervision of an authorised person. When unsupervised, the boiler room/fuel store must be locked and the key kept in a place where it is inaccessible to such persons.

**Caution:** even if the opposite is requested, servicing and repair work may only be carried out by authorised specialists.

## 2.3 Guarantee and liability

BS-02-03-00-00-01-BAEN

Guarantee and liability claims for personal injury and/or property damage are inadmissible if they are attributable to one or more of the following causes:

- use of the boiler for purposes other than that intended
- failure to follow the instructions, guidance and safety precautions given in the documentation
- incorrect commissioning, operation, maintenance or repair of the boiler
- operation of the boiler when safety systems are inoperative
- unauthorised modifications

## 2.4 Safety instructions

To prevent accidents, small children should not be allowed into the boiler room or the fuel storeroom. Please follow the safety instructions below. By doing so, you will protect yourself and prevent damage to your heating system.

Power switch

BS-02-04-00-01-01-BAEN

**Note:** The power switch must remain switched on at all times and may only be switched off when the system is not in operation.

Mains plug

BS-02-04-00-02-01-BAEN

**Danger:** **Risk of fatal injury from electric shock.**

The mains power supply is brought to the boiler via the plug marked Mains. That plug and other components of the system remain live even when the Power switch on the control panel is switched off.

Repair work

BS-02-04-00-03-01-BAEN

**Danger:** **Repair work may only be carried out by authorised technicians.**

Touching live electrical components can cause fatal injury.

Even when the Power switch is "OFF" some components of the system are still live.

Therefore, when carrying out repair work it is imperative that the power supply to the heating system is disconnected by means of the "mains plug" or a circuit breaker.

In an emergency: In the event of electric shock, disconnect the power supply immediately.
Administer first aid. Call the duty doctor.

Fault rectification

BS-02-04-00-04-01-BAEN

**Note:** If faults occur, the causes must first be eliminated on the basis of the information message on the display (F0...) before resuming operation by means of the "Quit" button.

Unauthorised modifications

BS-02-04-00-05-01-BAEN

**Note:** do not make any unplanned changes to the settings or any modifications to the heating system.

**Loss of guarantee entitlement**

Servicing work

BS-02-04-00-06-01-BAEN

**Note:** Service the boiler regularly or make use of our Customer Service.

Emptying ash

BS-02-04-00-07-01-BAEN

**Danger:** **Glowing embers can cause fires.**

Only remove the ash from the boiler or store it in non-combustible containers.

Boiler cleaning

BS-02-04-00-08-01-BAEN

**Caution:** **Touching hot components can cause skin burns.**

The boiler must only be cleaned when it is cold (flue gas temperature < 50°C)

Flue gas fan

BS-02-04-00-09-01-BAEN

**Danger:** **Risk of injury from rotating parts.**

The fan must only be removed when it is disconnected from the power supply (unplugged).

Gaskets

BS-02-04-00-10-01-BAEN

**Danger:** **Risk of gas poisoning.**

It is possible that flue gas could escape if gaskets are damaged.

Have defective gaskets replaced by an authorised technician.

In an emergency: Take the person affected into the open air immediately. Call the duty doctor.

Air supply

BS-02-04-00-11-01-BAEN

**Danger:** **Risk of suffocation**

Inadequate air supply can be fatal.

Make sure there is an adequate supply of air.

Note: If there is more than one boiler in the same room, a greater supply of fresh air must be provided.

## Flue draught regulator

BS-02-04-00-12-01-BAEN

**Danger:** **Risk of detonation.**

A flue draught regulator with a pressure surge compensator is an essential requirement.

## Safety clearances

BS-02-04-00-13-01-BAEN

**Danger:** **Fire risk.**

Do not store any flammable items in the close vicinity of the boiler.

Follow the local regulations.

## Entering the storeroom

BS-02-04-00-14-01-BAEN

**Danger:** **Potentially fatal health risk!**

As with all organic materials, stored pellets can produce gases, which then collect in the storeroom. Therefore, entering the storeroom is only allowed when it is empty (max. 1/5 full) and only after ventilating it thoroughly for at least 2 hours beforehand.

Storerooms that contain more than the above amount of fuel may only be entered by authorised service engineers after prior testing of the air quality inside the storeroom.

**Danger:** **Risk of injury!**

**Only enter the store room when the system is switched off. Always shut off the power supply before entering.**

Affix a sign to the storeroom door.
Keep the storeroom doors locked.

## Filling the storeroom

BS-02-04-00-15-01-BAEN

**Danger:** **Risk of poisoning and fire!**

When filling the fuel storeroom from a tanker truck or using a pressure-filling system, it is imperative that the boiler is shut down (OFF mode).

If this rule is ignored, flammable and poisonous gases can be drawn into the storeroom.

Protection against freezing

BS-02-04-00-16-01-BAEN

**Note:** **Anti-freeze function.**

The system can only perform its freezing prevention function if sufficient fuel is available and there are no faults.

Fire extinguisher

BS-02-04-00-17-01-BAEN

**Note:** **Provide a fire extinguisher.**

There must be a fire extinguisher placed immediately outside the boiler room door.

# 3 System components

## 3.1 Cutaway diagram of BIOSTAR Flex

BS-03-01-00-00-01-BAEN

1. Ash box door
2. Cleaning grate
3. Primary air
4. Self-cleaning grate
5. Secondary air
6. Swirl plate
7. Burn-back inhibiting fuel chute
8. Expansion zone
9. Automatic heat exchanger cleaning mechanism
10. Grate cleaner motor
11. Ignition fan
12. Ceramic insulation
13. Overall insulation
14. Helix baffles
15. Tube-type heat exchanger
16. Flue draught fan
17. Flue gas sensor
18. Oxygen sensor
19. Control panel (controller)
20. Sensor for fill-level indicator
21. Motor
22. Drive gear
23. Vacuum fan
24. Fuel hopper
25. Pellet auger
26. Photosensor
27. Rotary feeder

## 3.2 Cutaway diagram of BIOSTAR W

BS-03-02-00-00-01-BAEN


1. Ash box door
2. Cleaning grate
3. Primary air
4. Self-cleaning grate
5. Secondary air
6. Swirl plate
7. Burn-back inhibiting fuel chute
8. Expansion zone
9. Automatic heat exchanger cleaning mechanism
10. Grate cleaner motor
11. Ignition fan
12. Ceramic insulation
13. Overall insulation
14. Helix baffles
15. Tube-type heat exchanger
16. Flue draught fan
17. Flue gas sensor
18. Oxygen sensor
19. Control panel (controller)
20. Sensor for fill-level indicator
21. Motor
22. Drive gear
23. ---
24. Fuel hopper
25. Pellet auger

# 4 Safety systems

To prevent the boiler overheating, the controller reduces the heat output in certain situations. If the boiler still threatens to overheat, the controller responds according to a set of defined safety levels.

Safety level 1

BS-04-00-00-01-01-BAEN

**15°C above specified temperature**
The drive motor stops the fuel feed system and the flue draught fan shuts down.

Safety level 2

BS-04-00-00-02-01-BAEN

**Boiler temperature above 85°C**
All heating pumps and the cylinder charging pump are switched on to carry heat away from the boiler.

Safety level 3

BS-04-00-00-01-03-BAEN

**Boiler temperature above 100°C**
The STL (safety temperature limiter) trips and switches all boiler control functions off while the heating circulation pumps continue to run. The system remains switched off even if the boiler temperature drops back below 90 °C. The system must not be started up again until any faults have been rectified and the boiler has been checked.

Power failure

BS-04-00-00-04-01-BAEN

The controller, the flue draught fan and all circulation pumps switch off due to lack of electricity if there is a power cut. The glowing fuel bed on the grate continues burn with the natural draught of the flue. As this operating mode is not ideal, a larger amount of ash collects on the grate as well. As soon as the electricity supply is restored, the controller takes control of the heating system again.

Opening the ash box

BS-04-00-00-05-01-BAEN

- The auger motor stops feeding in fuel
- The flue draught fan switches to maximum extraction speed
- After the firebox door is closed, normal operation is resumed or re-ignition initiated

# 5 Control panel description

The appliance has a large touch-screen control panel with a menu-based interface. All setting and query options are shown on the display. All settings can be entered by pressing the "buttons" on the touch screen. Any system messages are displayed on the screen.

BS-05-00-00-01-01-BADE


Power switch (1)

BS-05-00-00-02-01-BAEN

Normally remains permanently switched on. The power switch may only be switched off when the system is not in operation.

| | |
|---|---|
| **Note:** | The system must also be disconnected from the mains by unplugging the power lead when carrying out repairs or servicing work. |

STL (2)

BS-05-00-00-03-01-BAEN

Excessive temperature (approx. 100°C) trips the safety temperature limiter (STL) located under the cap (2); → appliance operation is suspended; → if the STL has tripped, identify and eliminate the cause and then press in the STL (button) with a thin object.

| | |
|---|---|
| **Note:** | The system must not be started up again until any faults have been rectified and the boiler has been checked. If necessary, a heating engineer must be called in. |

Touch-screen display (3)

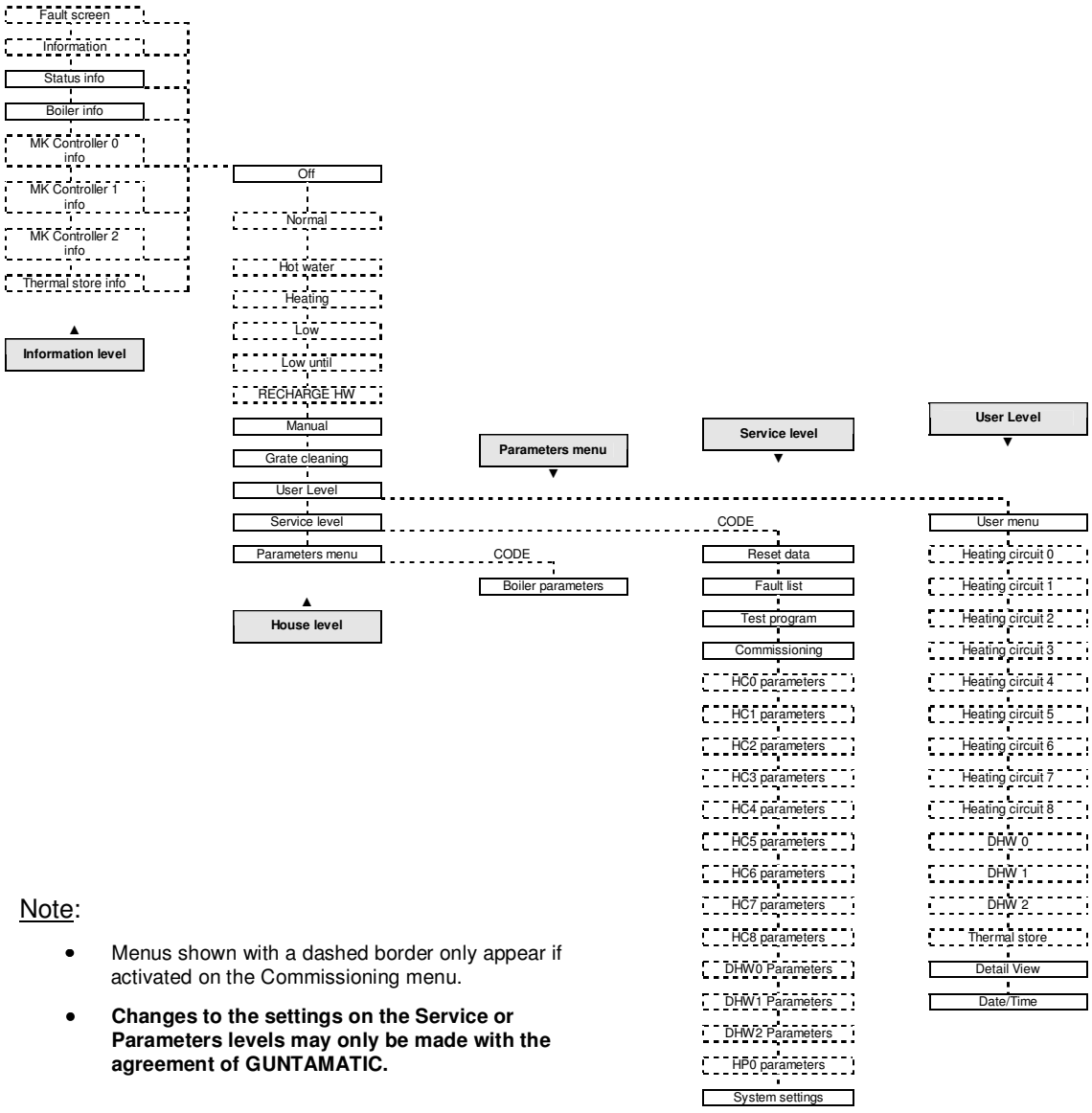
BS-05-00-00-04-01-BAEN

Pressing lightly with your fingertip on the relevant buttons on the display opens the various program levels, menus and submenus. All settings are made directly on the touch-screen display.

| | |
|---|---|
| **Note:** | Never use sharp objects such as ball-point pens or the like to operate the touch screen. |

# 6 Overview of menu and levels (menu structure)

BS-06-00-00-00-01-BAEN

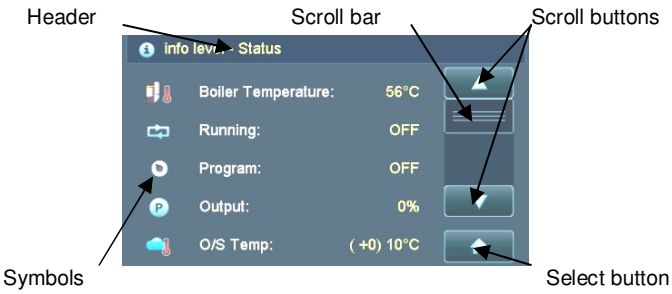



Note:

- Menus shown with a dashed border only appear if activated on the Commissioning menu.
- **Changes to the settings on the Service or Parameters levels may only be made with the agreement of GUNTAMATIC.**

## Layout of touch-screen display

BS-06-00-00-01-01-BAEN




The header contains information about the level or menu selected. Operating statuses, sensor readings and switch conditions can be queried in the Selection window. The various buttons can be used to change and save settings or switch to different levels or menus, for example. You switch between the levels and menus by touching the buttons directly on the display screen.

## 6.1 Information level (user)

BS-06-01-00-00-01-BAEN

You use the "DOWN" ▼ and "UP" ▲ buttons to navigate through the **Information Level** menu.


**Fault** → highest priority

Plain-language fault messages are displayed showing date and time of occurrence

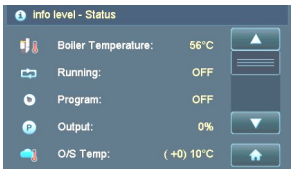
Fault is acknowledged by pressing "Quit" button

1)


**Information** → Only shown if the programme "Low until" has been activated

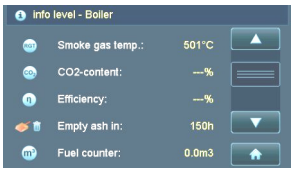
Disappears after the set time has elapsed

Can be prematurely deactivated by pressing "Quit" button




**Information – Status** → Shows boiler status
Shows boiler temperature
Shows boiler operating mode
Shows selected programme
Shows boiler output

1) Shows outside temperature → Figure in brackets = average temperature




**Information – Boiler** → Shows boiler data
Shows boiler temperature
Shows CO2 level
Shows efficiency
Shows time in hours until ash warning is triggered
Shows fuel gauge → Fuel quantity

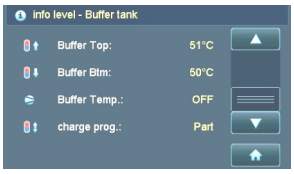
1)


**Information – Controller 0** → Heating circuit controller 0 (HCC 0)
Shows domestic hot water temperature and operating mode for cylinder 0
Shows operating mode for heating circuit 0
Shows operating mode for heating circuit 1
Shows operating mode for heating circuit 2

1) ▼ **Information – Controller 1** → Only shown if Heating circuit controller 1 is present

1) ▼ **Information – Controller 2** → Only shown if Heating circuit controller 2 is present

2)




**Information – Thermal store**
Shows thermal store temperature at top
Shows thermal store temperature at bottom
Shows thermal store pump HP0 operating mode
Shows thermal store charging programme

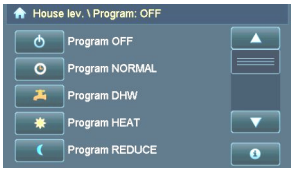
1) Only shown if one or more heating circuit controllers are activated.

2) Only shown if a thermal store is integrated in the system

## 6.2 House level (user)

BS-06-02-00-00-01-BAEN

All heating programmes and menus are listed and described below:




Heating and hot water switched off → Anti-freeze function active
Heating and hot water on as per timer programme
Hot water as per timer programme DHW summer → Heating mode switched off
Heating mode → Day and night (hot water heating as per timer programme)
Low-temperature mode → Day and night (hot water heating as per timer programme)


Low-temperature mode until a specified time → Hot water as per timer programme
Hot water heating outside programmed charging times → Max. duration 90 min
Constant heating to specified boiler temperature → Set on User menu
Manual opening of tipper grate for cleaning purposes
3) → Takes you to User level


3) → Takes you to Service level → CODE required
3) → Takes you to Parameters level → CODE required

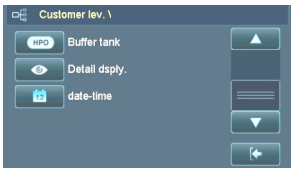
3) Pressing the buttons takes you to the relevant programme/level

## 6.3 User level (User)

BS-06-03-00-00-01-BAEN

Depending on the system configuration, the menu levels and submenus may contain different items.


4) User menu → User settings
Heating Circuit 0 menu → Timer controlled pump heating circuit (modulating control)
Heating Circuit 1 menu → Timer-controlled mixer-valve heating circuit
Heating Circuit 2 menu → Timer-controlled mixer-valve heating circuit
DHW 0 menu




5) Thermal store menu → Thermal store settings
6) Detail View menu → Boiler data and operating modes are shown
7) Date/Time menu

4) Setting options on User menu

5) Thermal store timings and charging programme settings

6) Facility for querying operating modes, sensor readings and switch conditions on Detail View menu

7) Facility for viewing/setting date and time on Date/Time menu

## 6.3.1 **Heating Circuit** menu (User)

BS-06-03-01-00-01-BAEN

The Heating Circuit menu allows you to enter the settings for the various heating circuits.


8) Heating circuit control status
9) Facility for setting heating and low-temperature times
10) Facility for setting daytime required temperature
11) Facility for setting night-time required temperature
Facility for setting room effect/thermostat function


12) Facility for setting heating characteristic
13) Changeover from low-temperature mode to night-time set temperature
14) Outside temperature mode cut-off for heating circuits

8) Options → **Auto** Heating circuit is switched ON/OFF according to demand and timer programme.
→ **Off** The heating circuit is switched off.
→ **Constant** The pump runs continuously; with mixer-valve heating circuits, the mixer valve is not operated

9) Modulation to "daytime required temperature" is only possible in conjunction with a room stat or room controller; raising or lowering the required temperature shifts the heating curve up or down accordingly.

10) Modulation to "night-time required temperature" is only possible in conjunction with a room stat or room controller; in addition, the outside temperature must be below that set in menu option "Night OFF OT" (hysteresis 2°C)

11) Options → **0**% No room effect programmed
→ **25**% Modulation of room temperature based 25% on room temperature and 75% on outside temperature.
→ **50**% Modulation of room temperature based 50% on room temperature and 50% on outside temperature.
→ **75**% Modulation of room temperature based 75% on room temperature and 25% on outside temperature.
→ **100**% Modulation of room temperature based 100% on room temperature.
→ **T 1°C** If the required room temperature is exceeded by 1°C the heating circuit pump is switched off.
→ **T 2°C** If the required room temperature is exceeded by 2°C the heating circuit pump is switched off.
→ **T 3°C** If the required room temperature is exceeded by 3°C the heating circuit pump is switched off.

12) A higher heating characteristic figure produces a higher required flow temperature at the same outside temperature

13) If the temperature drops below the set temperature during the low-temperature phase, the boiler heats to the required night-time temperature.

14) The set outside temperature is exceeded during the heating phase, the heating circuits are switched off.

## 6.3.2 **Hot Water** menu (User)

BS-06-03-02-00-01-BAEN

The Hot Water menu allows you to enter the settings for the various domestic hot water circuits.


15) Hot water circuit control status
16) Facility for setting hot water charging times
17) Facility for setting summer hot water charging times
Facility for setting required hot water temperature
18) Facility for setting hot water priority

15) Options → **Auto** Charging pump is switched ON/OFF according to demand and timer programme.
→ **Off** The charging pump is switched off.
→ **Constant** The charging pump runs continuously

16) All charging times programmed in the "DHW timer programme" are active when the programme is set to "Normal".

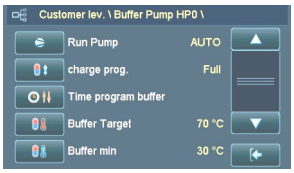
17) All charging times programmed in the "DHW summer timer programme" are active when the programme is set to "Hot Water".

18) Options → **No** During charging of DHW cylinder, heating circuits **can be enabled**.
→ **Yes** During charging of DHW cylinder, heating circuits **cannot be enabled** (factory setting = recommended).

## 6.3.3 **Heating Circuit** menu (User)

BS-06-03-03-00-01-BAEN

The Thermal Store HP0 menu allows you to enter settings for thermal store management.




19) Status of special output HP0
20) Facility for setting thermal store charging programme
21) Facility for setting thermal store charging times
Facility for setting the thermal store required temperature → sensor (T3)
Facility for setting the thermal store minimum temperature → sensor (T3)

19) Options → **Auto** Thermal store pump is switched ON/OFF according to demand and timer programme.
→ **Off** The thermal store pump is switched off
→ **Constant** The thermal store pump runs continuously

20) Options → **Full** The thermal store is fully charged
Charging switches off when the required thermal store temperature at T3 is reached and also the required thermal store temperature minus the parameter TSbtm-Boff (-10°C) is reached at T2
→ **Part** The thermal store is partially charged
Charging switches off when the required thermal store temperature is reached at T3 (= parameter TS top-B off)

21) Thermal store only charged during charging times enabled in "Thermal store timer programme"

## 6.3.4 **User** menu

BS-06-03-04-00-01-BAEN

Depending on the system configuration, the menus may contain different items.


Menu option Ash emptied → Press "YES" to confirm after emptying ash box
Maximum time in hours until ash warning is triggered → 0h = deactivated
Enable burner → Setting OFF = Burner does not start up – controller remains active
Facility for resetting the fuel gauge → Sets counter to "0"
22) Facility for setting average pellet size


For manually switching on drive motor G1 → Only possible in OFF mode
For manual (vacuum) filling of fuel hopper → Do not interrupt process
Fuel filling lock-out time → Force-filling still possible
23) Facility for setting operating mode
Menu language setting

22) Higher setting = the fuel gauge counts down faster

23) Options → **ECO optimum** Economy mode setting (factory setting)
→ **High output** Setting necessitates more frequent cleaning (only use temporarily)
→ **High dust** Setting for low-quality pellets with high dust content
→ **High clinker** Setting for if high levels of clinker form in the fire box

## 6.3.5 **Detail View** menu (User)

BS-06-03-05-00-01-BAEN

All possible system operating statuses, sensor readings and switch conditions can be queried in Detail View. No settings can be made on this menu. Its primary purpose is to aid telephone diagnosis of possible fault causes and to assist the GUNTAMATIC engineer with fault rectification.

## 6.3.6 **Date/Time** menu (User)

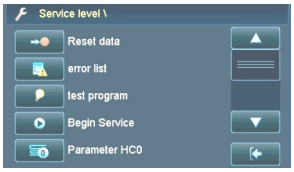
BS-06-03-06-00-01-BAEN

## 6.4 **Service Level** (Expert)

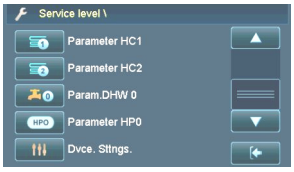
BS-06-04-00-00-01-BAEN

CODE entry required.

Changes to the settings on the Service Level may only be made with the agreement of GUNTAMATIC or an authorised GUNTAMATIC engineer.




Service menu Reset data → **Caution:** All system settings may be lost.
Service menu Fault screen → Fault memory
Service menu Test program → Function test of all system components
Service menu Commissioning → Activation of all system components
Service menu HC0 Parameters → Parameters for HC0



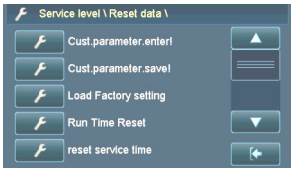

Service menu HC1 Parameters → Parameters for HC1
Service menu HC2 Parameters → Parameters for HC2
Service menu DHW0 Parameters → Parameters for DHW cylinder 0
Service menu HP0 Parameters → Parameters for HP0
Service menu System settings→ System parameters

### 6.4.1 Service menu **Reset Data** (Expert)

BS-06-04-01-00-01-BAEN

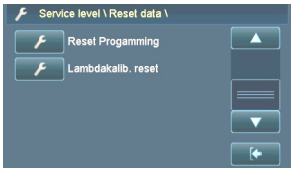
**Caution:** If the service menu option "Reset Data" is incorrectly used, reconfiguration of the entire system may be necessary.

24)




For importing stored customer data if necessary
For saving changes to system configuration in customer data
Imports only the modified parameters of a new software version
For resetting duty hours counter is to 0
For resetting service interval timer to 0

25)



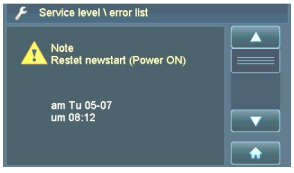

Loads factory settings → The system then has to be reconfigured!
For resetting calibration after replacing the oxygen sensor

24) After a change of software version, only those parameters that have changed or been added in the new version are imported.

25) **Caution:** → All system settings including hours of duty and service interval timer readings are lost;
→ after a controller reset, the system is in the as-delivered condition;
→ the system then has to be reconfigured;

### 6.4.2 Service menu **Fault Screen** (Expert)

BS-06-04-02-00-01-BAEN



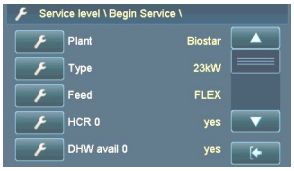

Plain-language fault messages are displayed showing date and time of occurrence

## 6.4.3 Service menu **Commissioning** (Expert)

BS-06-04-03-00-01-BAEN

All system components present can be programmed and activated from the service menu Commissioning.

26)




For setting boiler type
For setting boiler output → stated on rating plate
Setting for outfeed system type
For activating heating circuit controller 0
For activating DHW cylinder 0

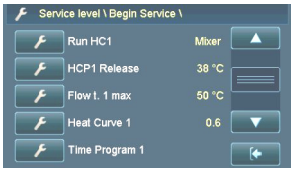
27)


For setting the DHW charging time → for NORMAL programme
For setting the DHW charging time → for HOT WATER programme
For setting required hot water temperature
For setting hot water priority
For activating Heating Circuit 0 → Pump heating circuit (modulating control without thermal store)

28)

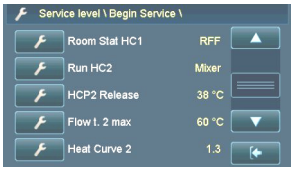

Enabling temperature for Heating circuit 0
For setting maximum flow temperature for heating circuit 0
Setting for heating characteristic for heating circuit 0
For setting heating times for heating circuit 0
For activating room stat or room controller for heating circuit 0

27)




For activating heating circuit 1
Enabling temperature for Heating circuit 1
For setting maximum flow temperature for heating circuit 1
Setting for heating characteristic for heating circuit 1
For setting heating times for heating circuit 1

28)
27)




For activating room stat or room controller for heating circuit 1
For activating heating circuit 2
Enabling temperature for Heating circuit 2
For setting maximum flow temperature for heating circuit 2
Setting for heating characteristic for heating circuit 2

28)
29)


For setting heating times for heating circuit 2
For activating room stat or room controller for heating circuit 2
For activating heating circuit controller 1 → external wall controller
For activating heating circuit controller 2 → external wall controller
For activating special output HP0

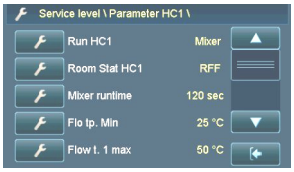

For setting vacuum pipe length → Set single pipe length
For first-time filling of fuel hopper → Do not interrupt process
For starting drive motor G1 → Fill stoker auger
After completing system configuration → save customer data

| | | | |
|---|---|---|---|
| 26) | Options | → **FLEX** | Vacuum outfeed from a storeroom |
| | | → **BOX** | Vacuum outfeed from a fabric hopper |
| | | → **HX** | Auger outfeed from a storeroom |
| | | → **B/HOP** | Auger outfeed from a boiler-mounted hopper |
| 27) | Options | → **None** | Heating circuit is deactivated |
| | | → **Pump** | The heating circuit pump will be controlled by the timer programme |
| | | → **Mixer** | The heating circuit pump and the mixer valve will be controlled by the timer programme |
| 28) | Options | → **None** | No room stat connected |
| | | → **RFF** | Analogue room stat is connected |
| | | → **RS Full** | Digital room controller is connected (facility for setting all heating circuits) |
| | | → **RS HC** | Digital room controller is connected (facility for setting assigned heating circuit only) |
| 29) | Options | → **None** | Output HP0 is deactivated |
| | | → **F pump** | Pump HP0 is operated as a feeder pump (only activate with heating circuit controller) |
| | | → **Th/store pump** | Pump HP0 is operated as thermal store charging pump |
| | | → **Pump** | Pump HP0 is operated as a pump (only activate without heating circuit controller) |
| | | → **FSO** | Fault signal output (230 V AC) |

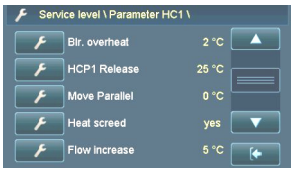
## 6.4.4 Service menu **Heating Circuit/Screed Drying Programme Parameters** (Expert)

**BS-06-04-04-00-01-BAEN**

Options for setting the heating circuit and screed drying parameters:

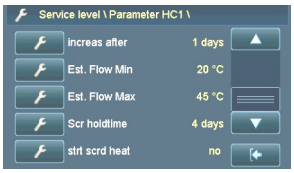



Heating circuit operating status
Room stat setting
For setting mixer valve running time
For setting minimum flow temperature
For setting maximum flow temperature




30)

For setting boiler overcompensation → added to required temp. = required boiler temp.
Enabling temperature for Heating circuit 1
For setting heating characteristic parallel shift
For activating screed drying programme
**Screed prog.** → For setting the flow temperature increment




**Screed prog.** → For setting time until next flow temperature increase
**Screed prog.** → For setting minimum flow temperature
**Screed prog.** → For setting maximum flow temperature
**Screed prog.** → For setting holding time for maximum flow temperature
**Screed prog.** → For starting the screed drying programme

**CAUTION:** **The screed drying parameters must be set in consultation with the floor layer.**

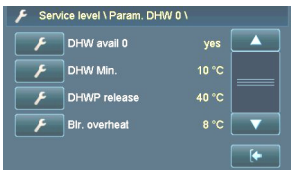
Maintaining the specified temperatures is not possible in modulating control mode but only when using automatic mixer valves. Maintenance of the specified temperatures cannot be 100% guaranteed – due to various safety circuits and special boiler functions, in exceptional cases the temperatures can be significantly exceeded. If that is a problem in terms of damage to building work, the screed drying function should be operated manually.

30) After activation of the screed drying programme, the menu expands to reveal the screed programme parameters.

## 6.4.5 Service menu **Hot water parameters** (Expert)

BS-06-04-05-00-01-BAEN

Facility for setting hot water parameters



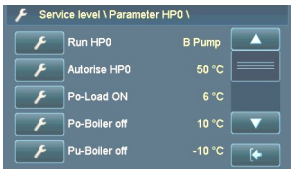

31) Hot water circuit operating mode
Facility for setting hot water hysteresis → Hot water cylinder recharging
Enabling temperature for cylinder charging pump → CCP 0
For setting boiler overcompensation → added to required temp. = required boiler temp.

31) If the temperature in the hot water cylinder falls 10°C (hysteresis) below the required temperature, the hot water cylinder is heated up again; the precondition is that the charging time is enabled in the timer programme on the "Hot water" menu.

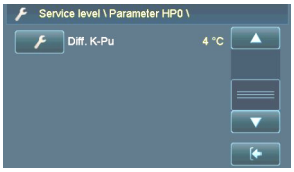
## 6.4.6 Service menu **HP0 parameters** (Expert)

BS-06-04-06-00-01-BAEN

Facility for setting the parameters for special output HP0




Operating status of special output HP0
Enabling temperature for output HP0
32) Setting for thermal store top – boiler ON
33) Setting for thermal store top – boiler OFF
34) Setting for thermal store bottom – boiler OFF




Setting for temperature difference between boiler and bottom of thermal store

32) Function → **TS top B ON** The boiler is started up when the thermal store temperature falls below the maximum temperature required by the heating circuit controller minus the temperature set in the parameter "TS top B ON"

Example: Maximum temperature required by heating circuit controller = 55 °C
Setting for "TS top B ON" = 6°C

**The boiler starts up when the temperature at the thermal store top sensor (T3) is 49°C**

33) Function → **TS top B OFF** The boiler is shut off when the temperature at the thermal store top sensor (T3) reaches the thermal store required temperature plus the temperature set for the parameter "TS top B OFF"

Example: Required thermal store temperature = 60°C
Setting for "TS top B OFF" = 5°C

**The boiler is shut off when the temperature at the thermal store top sensor (T3) is 65°C**

34) Function → **TS btm B OFF** The boiler is shut off as soon as the temperature at the bottom of the thermal store (T2) only differs from the temperature at the top of the thermal store (T3) by the amount set for the parameter "TS btm B OFF".

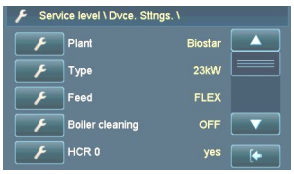
Example: Temperature at top of thermal store (T3) = 60 °C
Setting for parameter "TS btm-B off" = -10 °C

**The boiler is shut off when the temperature at the thermal store bottom sensor (T2) is 50°C**

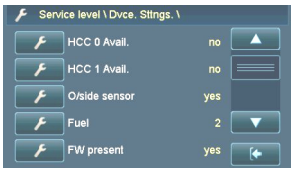
## 6.4.7 Service menu **System settings** (Expert)

BS-06-04-07-00-01-BAEN

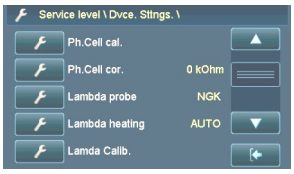
Facility for setting special boiler and system parameters



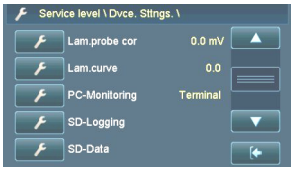

For setting system type → stated on rating plate
For setting boiler type → stated on rating plate
For setting outfeed system type
Automatic de-ashing → On systems with integral ash box, set to "Off"
For setting heating circuit controller 0



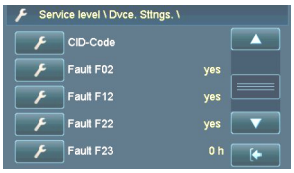

For setting heating circuit controller 1 → external wall controller
For setting heating circuit controller 2 → external wall controller
Outside-temperature sensor activation/deactivation
Fuel setting → Setting 1 = 15 kW, setting 2 = 23 kW
For photo-cell activation/deactivation → Combustion monitoring




For activating photoresistor calibration
For entering photoresistor compensation
35) For setting oxygen sensor type
36) For setting oxygen sensor heater
For activating oxygen sensor calibration

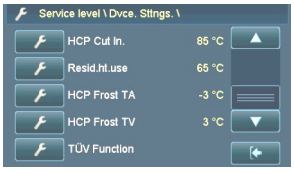



For entering oxygen sensor compensation
For setting oxygen sensor characteristic → only during "Controller" mode
37) For activating monitoring mode
Facility for data recording on SD memory cards
Facility for reading data from SD memory cards




For querying manufacturer code
Setting for fault signal from tipper grate motor position monitor
Setting for fault signal from speed monitor for drive motor G1
Setting for fault signal fuel level sensor
Setting for fault signal "Empty ash box" → 0h = Deactivated


For activating filling sequence → only in OFF mode – do not interrupt
Setting for flue draught fan operation
For selecting drive motor type
For selecting flue draught fan blade type
All pumps are activated once a week for the time set here




Activates all heating circuits up to maximum flow temperature
Pump HP0 continues running until temperature at boiler is below set temperature
If the outside temperature falls below "HCP A/F outside", the heating circuit pumps start running
"HCP A/F Flow" is required flow temperature → only in "OFF" mode
Raises boiler temperature until STL trips → in Controller mode

35) Options
→ **None** No oxygen sensor or oxygen sensor is deactivated
→ **NGK** Oxygen sensor type fitted is NGK
→ **BOSCH** Oxygen sensor type fitted is BOSCH

36) Options
→ **Auto** The oxygen sensor heater is switched on/off according to operating mode
→ **Constant** The oxygen sensor heater is permanently switched on
(Oxygen sensor heater does not switch off until boiler has been in "OFF" mode for more than 50 h)

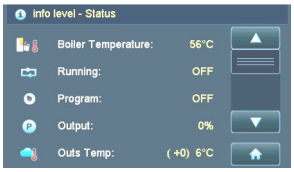
37) Options
→ **Terminal** Data querying via Windows hyper terminal/display
→ **DAQ** Data querying via online recorder (only usable at factory)
→ **GSM module** Data querying, information messages and boiler control via GSM module

# 7 User Settings

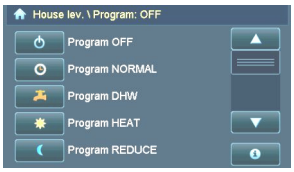
## 7.1 Activating a heating programme

BS-07-01-00-00-01-BAEN

To set the "NORMAL" programme, proceed as set out below, step by step:

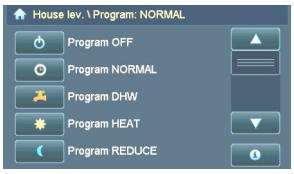



1) → Press the "**House level**" button 



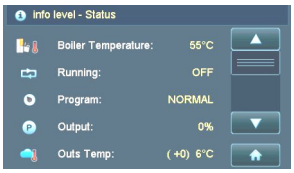

The programme currently selected, "**Off**", is shown in the header

2) → Press the "**Normal**" button 




The new programme selected, "**Normal**", is now shown in the header

3) → Press the "**Info**" button 



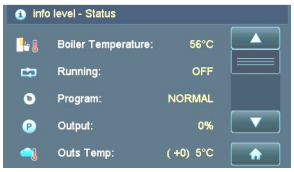

4) → The "**Normal**" programme is now shown on the "Status information" screen

After activating the "NORMAL" heating programme, check the selected programme on the "Status information" screen. As soon as heat is called for and there is sufficient heat in the thermal store, the heating circuits start up fully automatically.

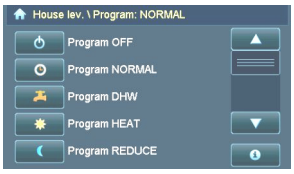
## 7.2 Deactivating a heating programme

BS-07-02-00-00-01-BAEN

To set the "NORMAL" programme to "OFF", proceed as set out below, step by step:

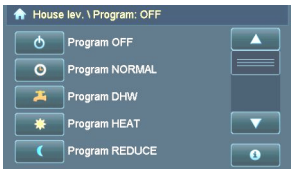



1) → Press the "**House level**" button 



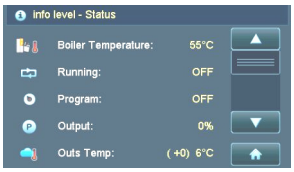

The programme currently selected, "**Normal**", is shown in the header

2) → Press the "**Off**" button 




The new programme selected, "**Off**", is now shown in the header

3) → Press the "**Info**" button 




4) → The "**Off**" programme is now shown on the "Status information" screen

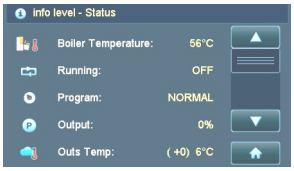
After deactivating the "NORMAL" heating programme, check the selected programme on the "Status information" screen.

## 7.3 Setting a timer programme

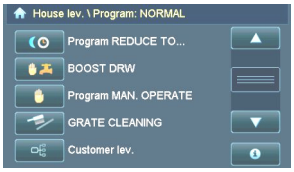
BS-07-03-00-00-01-BAEN

The heating circuits/charging pumps can only be called into action during the times enabled in the timer programme.

The example set out below illustrates programming the timer programme for heating circuit 1:




1) → Press the "**House level**" button




2) → Press the "**User level**" button


3) → Press the "**Heating circuit 1**" button

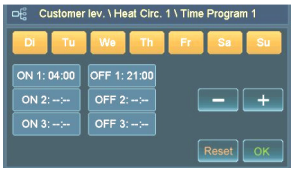

4) → Press the "**Timer programme 1**" button


5) → Press the button for the day of the week to be set
6) → Press the "ON" or "OFF" time to be altered
7) → Use the + and − buttons to set the time
8) → To save the setting, press the OK button

### 7.3.1 Programming en bloc

BS-07-03-01-00-01-BAEN

En bloc programming can be used to programme the same on and off times for every day of the week.



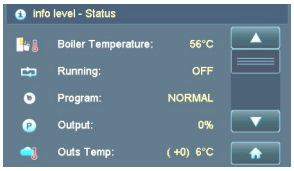

To activate programming en bloc, press the **same weekday button twice in succession**; all days are then highlighted and can be programmed collectively to the same times

## 7.4 Changing the heating characteristic

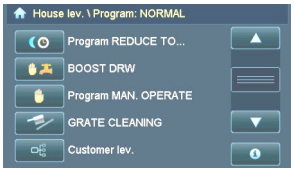
BS-07-04-00-00-01-BAEN

The heating circuits/charging pumps can only be called into action during the times enabled in the timer programme.

The example set out below illustrates programming the heating characteristic for heating circuit 1:

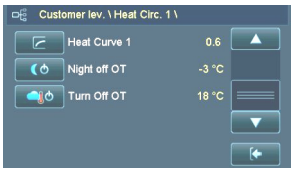



1) → Press the "**House level**" button 

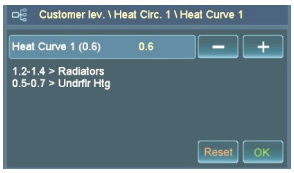



2) → Press the "**User level**" button 


3) → Press the "**Heating circuit 1**" button 



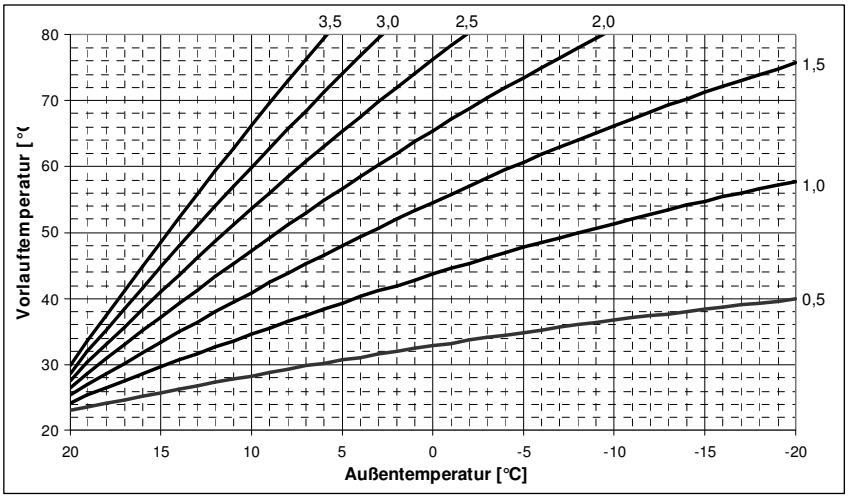

4) → Press the "**Heating characteristic 1**" button 




5) → Use the  and  buttons to set the heating characteristic

6) → To save the setting, press the  button

Heating characteristic graph

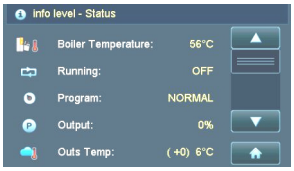


## 7.5 Changing the required hot water temperature

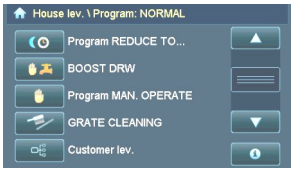
BS-07-05-00-00-01-BAEN

You can change the required hot water temperature on the Hot Water menu.

The example set out below illustrates programming the required temperature for DHW cylinder 0:




1) → Press the "**House level**" button 




2) → Press the "**User level**" button 


3) → Press the "**DHW cylinder 0**" button 

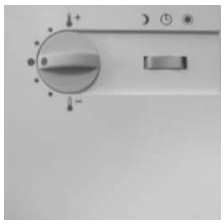

4) → Press the "**DHW required temp 0**" button 


5) → Use the  and  buttons to set the required temperature

6) → To save the setting, press the  button

## 7.6 Analogue room stat

BS-07-06-00-00-01-BAEN



If your system is fitted with an outside-temperature based heating circuit controller, each heating circuit can be equipped with an analogue room stat if desired.

The control knob on the room stat allows adjustment of the required room temperature preset on the Heating Circuit menu. Setting the control to a position in the positive range (+) raises the room temperature by up to 3°C. Setting it to a position in the negative range (–) lower lowers the room temperature by up to 3°C.

**Note:** This means that the room temperature shown in the Detail View will be inaccurate. The room temperature shown will only match the actual temperature when the control knob is in the centre position.

Operating modes

Low: Low-temperature mode → if, during the low-temperature phase, the outside temperature falls below the temperature set in the parameter "Night OFF OT", the system heats to the room temperature set in the parameter "Night-time Required Temperature".

Normal: Heating and low-temperature modes on as per timer programme

Heating: Continuous heating to "Required Daytime Temperature"

Installation site: Fix the room stat on an internal wall at a height of approx. 1m - 1.5m. The most effective room is the one that is most frequently occupied. In that room, the radiators must not be fitted with thermostatic radiator valves (valves must be fully turned on).

**Note:** The room stat should not be fitted in a position where it will be exposed to warm sunshine or the heat from a stove.

Connection: Pull off the control knob from the front, undo the fixing screw and remove the casing from the front.
Wire the room stat to terminals 1 and 2.

## 7.7 Digital room controller

BS-07-07-00-00-01-BAEN

An instruction manual is supplied with the room controller.

A maximum of 3 room controllers can be connected to the system.

Connection is established via the CAN bus.

# 8 Operating the heating system

## 8.1 Starting up/Shutting down the system

BS-08-01-00-01-01-BAEN

Initial commissioning

Initial commissioning and basic adjustment of the system may only be carried out by GUNTAMATIC engineers or authorised GUNTAMATIC agents.

BS-08-01-00-02-01-BAEN

Restarting

Before starting up the system again in the autumn/winter, carry out the annual check of the control and safety systems to ensure they are safe and functional. We recommend that you take out a maintenance contract so that the system operates safely and economically.

BS-08-01-00-03-01-BAEN

Day-to-day operation

Clean the heating system precisely according to the instructions in the section Cleaning/Care. The amount of cleaning work required is heavily dependent on the quality of the fuel used and lower-quality fuels may necessitate more cleaning work.

BS-08-01-00-04-01-BAEN

Shutting down the system

The system only needs to be shut down at the end of the heating season, if faults occur or in order to refill the fuel store. To do so, set the system to the programme "OFF" and allow it to cool down for approx. 120 minutes. The system can then be shut down.

If the system is not used for extended periods (summer) also isolate it from the power supply by disconnecting the mains plug in order to prevent unnecessary lightning damage.

## 8.2 Heating system checks

BS-08-02-00-01-01-BAEN

Checking system pressure

The operating pressure is normally between 1 bar and 2.5 bar. If the system pressure is too low, malfunctions may result. If necessary top up the water in the heating system.

Note: Completely draining and refilling the system or topping up a system filled with anti-freeze or treated water must only be carried out by a heating engineer.

Topping up the heating system water

- The heating system water must be cold when topping up → make sure the heating system water temperature is below 40°C.
- Add water slowly until the required system pressure is indicated on the system pressure gauge.
- Bleed the heating system.
- Check the system pressure again and add more water if necessary.

BS-08-02-00-02-01-BAEN

Pressure-relief valve

Turn the red knob on the safety set; → check for leaks and correct operation; → in the event of malfunctions or leaks, call in your installer or heating engineer.

BS-08-02-00-03-01-BAEN

Expansion vessel

If there are large pressure fluctuations between when the heating system is hot and cold, check the charge pressure in the expansion vessel; → in the event of malfunctions or leaks, call in your installer or heating engineer.

BS-08-02-00-04-01-BAEN

Boiler room ventilation

Check that the air supply vents/ducts are clear.

## 8.3 Fuel quality

To ensure trouble-free heating with the boiler, the fuel must be of the right quality.

Ensuring fuel quality

**Austria:** Always order pellets conforming to **ÖNORM M 7135**

**Germany:** Always order pellets conforming to **DIN 51731**

**Switzerland:** Always order pellets conforming to **SN 166000** and carrying the Swisspellets mark.

| | |
|---|---|
| **Note:** | Dust emission from the boiler flue is heavily dependent on the dust content of the fuel. |

## 8.4 Fuels

### 8.4.1 Pellets

BS-08-04-01-00-01-BAEN

There are a number of points to observe when ordering wood pellets in order to ensure that they are of perfect quality. Reliable and trouble-free operation of the boiler and the conveying systems can only be guaranteed with high-quality pellets. Therefore we strongly advise that only quality-assured products are used that are guaranteed as such by the manufacturer.

Important quality criteria

- Lowest possible dust content
- Surface should be shiny and very hard
- No additives or binding agents
- The ideal length is 20 mm

The price should always be a secondary consideration after the quality criteria. If the required quality criteria are not met, problems with combustion or conveying, increased wear and pellet consumption can result. Therefore, you should not accept quality standards that do not meet the above requirements.

Properties

| | |
|---|---|
| Calorific value | 4.9 kWh/kg |
| Bulk weight | >650 kg/m³ |
| Pellet size (length) | 5 - 30 mm |
| Pellet diameter | 5 - 6 mm |
| Water content | 8 – 10 % |
| Ash content | < 0.5% |

## 8.5 Fuel storage

BS-08-05-00-00-01-BAEN

As a general rule, wood pellets should be stored in absolutely dry storerooms. Those rooms can be fitted with pressure-filling and air extraction pipes (Type A/110/DIN14309/G4 ½") or be provided with a filling hatch and must be fire-rated to Class F90. The fire door must be protected by removable wooden boards. The wall opposite the pressure-filling pipe is to be protected by a blast guard. Alternatively, the pellets can be stored in fabric hoppers or plastic outdoor tanks.

**Note:** If pellets come into contact with water, they swell up and disintegrate.

**Therefore, the storeroom must be absolutely dry.**

## 8.6 Filling/refilling the fuel store

BS-08-06-00-01-01-BAEN

**Caution:** The heating system must be set to "Off" mode at least one hour before the fuel store is filled.

**On no account must the fuel store be filled while the heating system is in operation!**

BS-08-06-00-02-01-BAEN

Vacuum systems

When first filling the storeroom and every time it is refilled after being completely emptied, do not immediately fill the store completely. Instead, the fuel auger should first be filled with pellets up to a depth of approx. 10 cm over its entire length. The fuel storeroom can then be filled up to the maximum permissible bulk storage height.

**Note:** The fuel outfeed conveyor must be completely emptied (vacuumed out) every 3 years at least.

Emergency filling:

If automatic refilling of the fuel hopper should not be possible due to a fault on the fuel store outfeed system, the fuel hopper can be refilled manually as an "emergency" measure.

Before you do so, however, first try to rectify the fault by consulting the section "Rectifying faults" or the section "Information messages and fault codes" in the operating instructions.

Procedure:

Set the system to the "OFF" programme and wait until it switches to "OFF" mode. Then switch off the system on the control panel by setting the power switch to "0". Unscrew the top of the fuel hopper and fill it by hand – this is best done from a sack of pellets. Afterwards, refit the hopper cover so that it is tightly sealed, cancel the fault messages, set the boiler to the heating programme and start up the system again.

Maximum bulk storage height

| | |
|---|---|
| Pellets | max. 2.5 m bulk storage height |

BS-08-06-00-03-01-BAEN

Boiler-mounted hopper

The boiler-mounted hopper can be opened by pulling on the catch. The system detects that the hopper has been opened and shuts off the pellet auger/sets the flue draught fan to full speed. The hopper can be filled with pellets up to the edge of the seal. Lock the hopper cover again and operation will be automatically resumed. Once a year the hopper should be completely emptied and dust deposits completely vacuumed out.

## 8.7 Emptying the ash

BS-08-07-00-00-01-BAEN

The ash box has to be regularly emptied according to the amount of fuel used, its quality and heat output. The higher the dust content of the fuel, the shorter the intervals at which the ash must be removed. That is particularly the case with low-quality fuels with a high dust content.

The accumulated ash obviously contains the residues of the fuel in concentrated form. If you only use environmentally safe fuels, the ash residue represents a high-quality mineral fertiliser.

**Danger:** **Glowing embers can cause fires.**

Only deposit or store the ash from the boiler in non-combustible sites.

BS-08-07-00-01-01-BAEN

Procedure

Set the system to "Off" mode and wait until the status display changes to "Off" mode. Unfasten the ash box by lifting the handle upwards and pull the ash box out to the front. The display on the control panel shows the message "Ash box open (F01)".

After emptying the ash box, check the ash box gasket for wear and correct seating, slide the ash box back in the boiler and lock it in position by pressing the ash box handle firmly downwards. The message "Ash box open (F01)" disappears again.

Ensure the ash box is properly sealed.

On the Programme menu, set the system to the desired heating programme (NORMAL, HEATING, etc.) and the system will start up again.

BS-08-07-00-02-01-BAEN

Resetting the ash warning

If the ash warning appears on the display, it has to be reset on the "User" menu. To do so, go to the "User" menu and select the option "Ash emptied", change the setting to "YES" and press the "OK" button to confirm. The ash warning has now been reset to the maximum number of hours before it is next triggered. The time until the ash warning is issued is preset and can be adjusted to suit the fuel being used by selecting "Ash Warning" on the User menu on the User Level.

# 9 Cleaning/Care

BS-09-00-00-01-01-BAEN

**Note:**

For safety reasons you must only carry out servicing and cleaning when the heating system is switched off and disconnected from the mains, and has cooled down.

Servicing work inside the fuel storeroom must only be carried out under the supervision of a second person, who must be outside the storeroom.

**There is a risk that accumulation of carbon monoxide in the fuel storeroom could endanger your life.**

In particular, you should follow the safety instructions in Section 2.

BS-09-00-00-02-01-BAEN

Cleaning

The sophisticated cleaning system on a GUNTAMATIC heating system means that regular cleaning work is substantially reduced. All that is required is regular emptying of the ash.

The flue must be regularly swept. At the same time, the flue connecting pipe, the flue gas box and the boiler heat exchanger should be cleared of fly-ash.

Depending on how dirty the boiler becomes (which is determined by the quality of the fuel burned), interim cleaning may be required, for which the precise procedure is described in the section "Interim cleaning".

Depending on the load on the heating system, complete cleaning – for which the precise procedure is described in the section "Complete cleaning" – may be required twice a year but should be carried out at least once a year.

If the heating system is subject to exceptionally high loads, more extensive cleaning may be required.

BS-09-00-00-03-01-BAEN

Care

If the casing panels or the controls become dirty, they are best cleaned with a soft, damp cloth. Use only gentle, solvent-free cleaners to dampen the cloth. On no account should solvents such as alcohol, white spirit or thinners be used as they will attack the surface of the boiler.

## 9.1 Cleaning the fuel store

BS-09-01-00-00-01-BAEN

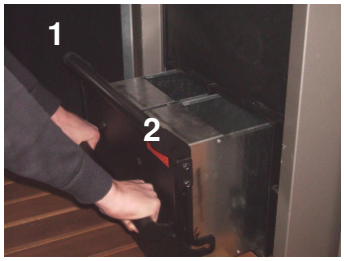
The fuel outfeed auger and the fuel store must be completely emptied (vacuumed out) at least once every 3 years so as to prevent problems with the outfeed system due to dust accumulation.

## 9.2 Interim cleaning

BS-09-02-00-00-01-BAEN

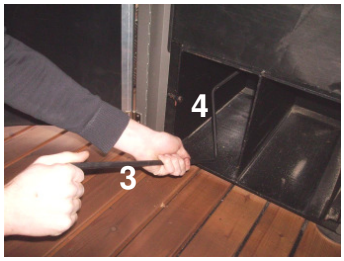
The ash box has to be emptied and interim boiler cleaning carried out at intervals depending on the amount of fuel used. How often interim cleaning is required can vary from every 2 weeks to every 3 months. The frequency of the cleaning work required is essentially dependent on the quality of the fuel. A higher fuel dust content necessitates more frequent cleaning.

Carry out the following steps for interim cleaning:




1. Set the system to the programme "OFF" and allow it to cool down for at least 1 hour.

2. Open the casing door (1), pull out the ash box (2) to the front and empty it.
   **Risk of fire from glowing embers in the ash**




3. Scrape off the ash above the swirl plate in the boiler burn-out zone using the fire box poker (3). Introduce the fire box poker through the left ash box opening (4).

4. On the "House level" menu, start the programme "Clean grate" and allow the tipper grate (5) to swing down. Do not carry out any cleaning operations while the tipper grate is moving.
   **Risk of injury from moving parts.**


5. Use the cleaning tools supplied to clean the grate surface (5) and "scrape" deposits cleanly off the grate. Also check the grate holes and clean them out if required.

6. Remove all remaining ash from the ash chamber (6) below the fire box. Slide the ash box back into the ash chamber and seal it tightly.


7. On the "User" menu, set the parameter "Ash emptied" to "Yes" and select "OK" to confirm.

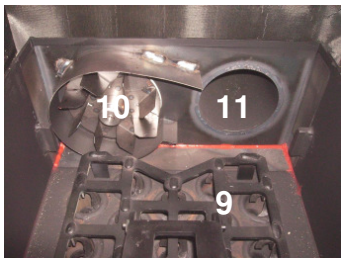
8. Then select the desired heating programme, e.g. "NORMAL", and start up the boiler. The controller takes over control of the boiler again and switches to fully automatic operation.

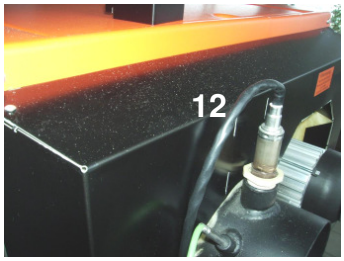
## 9.3 Complete cleaning

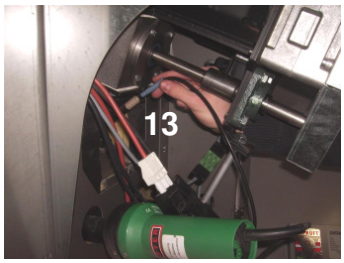
BS-09-03-00-00-01-BAEN

Depending on the load on the heating system, complete cleaning may be required twice a year but should be carried out at least once a year.





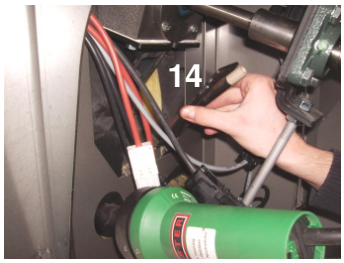

Carry out the following steps for complete cleaning:

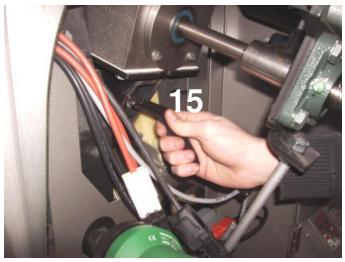
1. Set the system to the programme "OFF" and allow it to cool down for at least 2 hours.
2. Carry out steps 2 - 8 of the interim cleaning procedure.

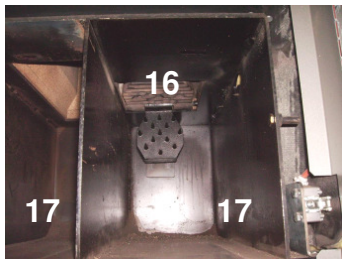
   **Before opening, isolate the system from the mains.**
3. Open the flue box (7) on the top of the boiler and remove the fan cover plate (8) by sliding it upwards.
4. Using an ash vacuum, clean out all ash from the flue draught fan (10), between the heat exchanger tubes (9) and in the flue connecting pipe.

   **Risk of fire from glowing embers in the ash**
5. Check that the oxygen sensor (12) is firmly seated and, if necessary, remove it, carefully clean it with a soft brush and refit it. Make sure the oxygen sensor is firmly seated.
6. Remove the photo-cell (13) and clean it with a soft cloth. Remove the inspection cover (14) and check whether the inner surface of the chute is free of deposits. If necessary, scrape off using the chute cleaner (15). Afterwards, refit the inspection cover and re-insert the photo-sensor in the socket.
7. On the "House level" menu, start the programme "Clean grate" and allow the tipper grate (5) to swing down. Do not carry out any cleaning operations while the tipper grate is moving. With the tipper grate open, inspect the surface of the fire box and clean it with the chute cleaner if necessary.

   **Risk of injury from moving parts.**
8. Check that the tipper grate (16) forms an air-tight seal with the fire box opening.
9. Clean out all remaining ash from the ash chamber (17) on the left and right using the poker then refit the ash box and seal it tightly.
10. Then select the desired heating programme, e.g. "NORMAL". The controller takes over control of the boiler again and switches to fully automatic operation.



# 10 Rectifying faults

BS-10-00-00-00-01-BAEN

| Fault | Cause/Function | Remedy |
|---|---|---|
| **Control panel cannot be switched on** | • Power supply disconnected<br>• Fuse blown | • Check external mains plug and/or power supply lead between circuit boards<br>• Check fuse in supply lead and on the control panel circuit board |
| **Smoke escaping into boiler room** | • Flue pipe leaking<br>• Flue draught regulator unfavourably positioned<br>• Flue not clear or not providing any draught | • Eliminate leaks<br>• Consult flue installer<br>• Check flue |
| **Heat output too low** | • Boiler very dirty<br>• Heating system inadequately balanced<br>• Boiler priority active<br>• Flue draught in chimney flue too low | • Carry out complete cleaning<br>• Balance heating system and heating pumps<br>• Wait until boiler charging has finished or deactivate boiler priority<br>• Increase flue draught in chimney flue if necessary |
| **Detonation** | • Detonation is only possible if the firebox is overfilled. | • Carry out complete cleaning or consult engineer if necessary |
| **Difficult to limit output** | • Flue draught is too great<br>• Wide demand fluctuations on the part of heating system components | • Re-adjust flue draught regulator<br>• Stagger heating system component demand over time |
| **Overheating**<br>**Fault code F04**<br>**STL tripped** | • The amount of heat produced cannot be dissipated. It may be that a heating pump has failed or has not started up. | • Ensure heat dissipation by switching on pumps, opening mixer valves or turning on hot water taps.<br>• The cause of the boiler overheating must be identified (if it happens frequently a heating engineer should be called in).<br>• Check fuses on the boiler circuit board |
| **Drive motor too noisy** | • Hopper misaligned<br>• Noise transmission | • Re-align hopper<br>• If necessary, place the adjustable feet of the boiler on rubber pads |
| **Fan too noisy** | • Fan is dirty<br>• Fan or blades loose<br>• Noise created by bends or rigid connecting pipe junctions with chimney flue<br>• Fan bearing defective | • Clean fan<br>• Eliminate cause<br>• Fit insulators/sleeves<br>• Order replacement motor |

# 11 Information/Fault messages

BS-11-00-00-00-01-BAEN

| No. | Category | Origin | Message | Cancellation | Possible causes |
|---|---|---|---|---|---|
| **F01** | **Note** | Input TKS1 open (door switch) | Ash box open<br>(F01) | Automatic | Door switch defective, connector faulty, ash box open |
| **F02** | **Fault** | Tipper grate unable to move into position within 200 sec (from activation) | Tipper grate unable to attain position. Inspect grate<br>(F02) | **Reset** button | Ash chamber too full, servo motor defective, faulty connection |
| **F04** | **Fault** | Boiler temperature too high (above parameter "BTW") | Boiler temperature too high. Check flue draught and boiler sensor.<br>(F04) | **Reset** button | Boiler or pump malfunction, boiler sensor defective or switch fault |
| **F05** | **Fault** (NS) | Flue gas sensor > in "control mode" > after time param. "X25" > FGT + ½ BT is less than param. "FGTb" betw. 30 and 100% | Combustion fault. Check grate, fuel chute and pellets.<br>(F05) | **Reset** button | No fuel, fuel chute overfilled, incorrect flue draught, defective flue gas sensor |
| **F06** | **Fault** (NS) | Photo-sensor via param. "FW" via time param. "Tübf" | Fire box overfilled. Check grate, fuel chute and pellets.<br>(F06) | **Reset** button | No fuel, fuel chute overfilled, photo-sensor not in position |
| **F07** | **Fault** (NS) | Flue gas sensor > in "ignition mode" no FGT increase after time parameter "X2" | Ignition not possible. Check grate and pellet supply<br>(F07) | **Reset** button | No fuel, fuel hopper not filled, faulty ignition fan, faulty connection |
| **F08** | **Entry in fault memory** | With vacuum outfeed, fill level not below limit after conveyor running time "RT G1 min" | Fill level sensor not reacting<br>(F08) | None | Fill level sensor dusty or defective<br>(terminals 28-30) |
| **F09** | **Note** | Fill-level switch open with vacuum outfeed | Fill level below limit. Replenish pellets.<br>(F09) | Automatic | Check connection<br>(terminals 28-30) |
| **F12** | **Fault** | No response from Hall-effect sensor G1 within time param. "Tsafe G1" | Drive motor G1 jammed<br>(F12) | **Reset** button | Fuel chute overfilled, drive unit jammed, connection faulty (test programme) |
| **F16** | **Fault** | STL tripped | Caution High-temperature STL tripped<br>(F16) | Press STL, **Reset** button | Boiler or pump malfunction, check fuses, STL test |
| **F19** | **Note** | Param. "O2 sensor comp" or adjusted setting above the limits of param. "mV top" or "mV btm" | Oxygen sensor readings above limits. Check<br>(F19) | **Reset** button | Oxygen sensor dirty or defective, carry out oxygen sensor test, clean sensor |
| **F20** | **Note** | If TKS2 sends no signals during cleaning | Ash box full or auto cleaning mech. jammed<br>(F20) | **Reset** button | Ash box full, objects in the ash auger, de-ashing motor jammed or TKS2 defective |
| **F21** | **Fault** (NS) | Fault F05 via oxygen sensor (due to prior O2 sensor off = G1 off) | Flue gas error due to O2 sensor off – Oxygen sensor test<br>(F21) | **Reset** button | Oxygen sensor reading incorrect, connection faulty, check flue draught, FGT too low |
| **F22** | **Note** | Fill level not reached within the time "Outfeed max" . | Fill level not reached. Check vacuum system<br>(F22) | **Reset** button | No fuel, fill level sensor defective, vacuum pipes clogged, vacuum system not air-tight, vacuum unit defective, outfeed motor jammed |
| **F23** | **Notification (fault)** | Ash box not emptied within set emptying interval | Empty ash box<br>(F23) | **Reset** button | Ash box not emptied or counter not reset |

# 12 Replacing fuses

BS-12-00-00-00-01-BAEN

**Danger:** **Repair work may only be carried out by authorised technicians.**

Touching live electrical components can cause fatal injury.

Even when the Power switch is "OFF" some components of the system are still live.

Therefore, when carrying out repair work it is imperative that the power supply is disconnected by means of the "mains plug" or a circuit breaker.

Fuse function is indicated on the relevant electrical wiring diagrams in the installation instructions.

Replacing fuses

1. Set the system to the programme "OFF" and allow it to cool down for at least 10 minutes.
2. Switch the Power switch to "0" and unplug the mains plug on the back of the boiler to fully disconnect it from the power supply.
3. Unfasten the controller cover and remove it.
4. Locate the defective fuse with the aid of the wiring diagram in the installation instructions and replace it.
5. Press in the fuse holder 2-3 mm using a medium-sized screwdriver and turn it half a turn anticlockwise to release it. The holder and fuse will then pop out a few mm.
6. Remove the blown fuse and replace with a new one.
7. Insert the fuse holder, press it in 2-3 mm and secure it in position by turning it half a turn clockwise.

# LOG BOOK

# for

# AUTOMATIC WOOD-BURNING BOILER SYSTEMS

as required by the Austrian Technical Directive H118
on Preventative Fire Safety
Please note: a log book is not legally required in the UK however it is recommended that one be kept.

**System operator:** ……....

……....

……....

**System installer:** ……....

……....

……....

**Boiler system:**

Make: ……

Type: ……

Year manufactured: ……

Heating output: ……

The following checks are to be carried out regularly on the automatic wood-burning boiler system by the system operator when it is in operation:

## 12.1 Weekly visual inspection:

Once a week the entire boiler system including the fuel store is to be visually inspected. Any deficiencies identified are to be rectified immediately.

## 12.2 Monthly checks:

The following monthly checks are to be carried out and, if a log book is maintained, should be recorded in the log book:

- Flue gas passages clean (flue gas channels in boiler, flue connecting pipe and smoke trap)
- Controller functioning properly
- Fault indication/warning system(s) functioning properly
- Combustion air and flue draught fans functioning properly
- Firebox in good order
- Portable fire extinguisher ready for use
- Correct storage of ash
- No combustibles stored in boiler room
- No accumulation of combustible deposits on roof
- Fire safety closures (fire doors self-closing)

## 12.3 Servicing:

The heating system must be serviced and inspected in accordance with the regional, local and statutory regulations of the country of use.

We recommend that a maintenance contract is taken out providing for annual servicing by an authorised technician.

| **Year:** ..... | **System operator:** ..... | | | | | | **Serviced by:** ..... | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Monthly Check** | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Remarks |
| Flue gas passages | | | | | | | | | | | | | |
| Controller | | | | | | | | | | | | | |
| Warning system(s) | | | | | | | | | | | | | |
| Fans | | | | | | | | | | | | | |
| Firebox | | | | | | | | | | | | | |
| Portable fire extinguisher | | | | | | | | | | | | | |
| Ash storage | | | | | | | | | | | | | |
| Items stored in boiler room | | | | | | | | | | | | | |
| Deposits on roof | | | | | | | | | | | | | |
| Fire safety closures | | | | | | | | | | | | | |
| Smoke trap cleaning | | | | | | | | | | | | | |
| **Signature/initials** | | | | | | | | | | | | | |

| **Year:** ..... | **System operator:** ..... | | | | | | **Serviced by:** ..... | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
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| Controller | | | | | | | | | | | | | |
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| Fans | | | | | | | | | | | | | |
| Firebox | | | | | | | | | | | | | |
| Portable fire extinguisher | | | | | | | | | | | | | |
| Ash storage | | | | | | | | | | | | | |
| Items stored in boiler room | | | | | | | | | | | | | |
| Deposits on roof | | | | | | | | | | | | | |
| Fire safety closures | | | | | | | | | | | | | |
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If you require more system log book pages, please photocopy them.

GUNTAMATIC

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