

Pellet boiler

# PRO-Flex

Operating Instructions/System Log Book

PRO-Flex-A-00-00-01-BADE



DE-B30-013-V02-1013-V3.0

# GUNTAMATIC

## Information on this documentation

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.**

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# 1 Introduction

PRO-Flex-01-00-00-01-BADE

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

It is a product of many years' 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

The PRO-Flex is a modern biomass boiler. The fuel is fed to the boiler from a fuel storeroom by a vacuum extraction system.

## 1.2 Type approval

The boiler is designed in accordance with Class 3 to EN 303-5 and the agreement of the Austrian Federal States according to Art. 15a BVG relating to safety measures for small combustion heating systems and energy saving. The original type approval certificates are available for inspection at the manufacturer's offices.

## 1.3 Further information

The documentation consists of the following documents:

- Installation instructions
- Planning and installation instructions
- Wiring diagram
- Operating instructions

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

## 2 Important notes

PRO-Flex-02-00-00-01-BADE

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

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 a drastic reduction in the service life of the boiler.

### 2.2 Operating the heating system

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

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

**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

**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

**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

**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

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

**Loss of guarantee entitlement**

Servicing work

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

Emptying ash

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



The ash should only be removed from the boiler or stored in non-combustible containers.

Boiler cleaning

**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

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



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

Gaskets

**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

**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

**Danger:**

**Risk of detonation.**



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

Safety clearances

**Danger:**

**Fire risk.**



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

Follow the local regulations.

Entering the fuel storeroom

**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

**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

**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

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

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

### 3 System components

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#### 3.1 Cutaway diagram of PRO



- 1.) Stepped grate – primary air
- 2.) Domed swirl chamber[?]
- 3.) Photosensor
- 4.) Inspection cover
- 5.) Helix baffles
- 6.) Heat exchanger
- 7.) Flue draught fan
- 8.) Automatic cleaning mechanism
- 9.) Flue pipe
- 10.) Oxygen sensor
- 11.) Flue gas sensor
- 12.) Grate motor
- 13.) Ash collecting device
- 14.) Menu-based touch-screen controller
- 15.) LED status indicator

## 4 Safety systems

PRO-04-00-00-01-BADE

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

#### **10°C above specified temperature**

The drive motor stops the fuel feed system and the flue draught fan shuts down.

### Safety level 2

#### **Boiler temperature over 95°C**

All heating pumps and the cylinder charging pump are switched on to carry heat away from the boiler.

### Safety level 3

#### **Boiler temperature over 100°C**

The STL (safety temperature limiter) trips and switches all boiler control functions off while the 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

The controller, the flue draught fan and all 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.

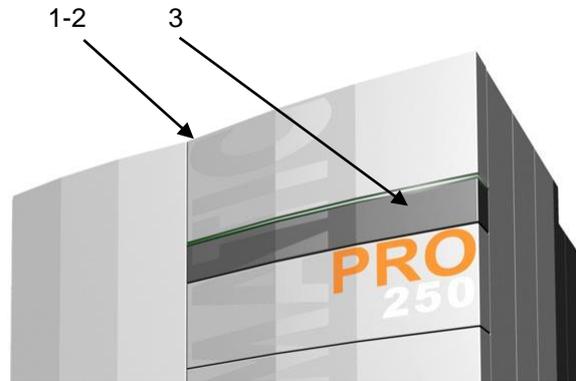
### Outer casing door open

- The drive motors stop feeding the boiler with fuel
- The flue draught fan switches to maximum extraction speed
- If the outer casing door is closed again within 60 seconds, combustion is continued

## 5 Description of control panel

PRO-05-00-00-00-01-BADE

The appliance has a large touch-screen control panel with a menu-based interface. All settings can be entered by pressing the "buttons" on the touch screen. Information messages and fault indications are displayed on the screen.



### Power switch (1)

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

**Note:** When carrying out repairs or servicing work, the system must also be fully isolated from the mains by unplugging the power lead.

### STL (2)

The safety temperature limiter (STL) trips if the system overheats → heating by the appliance is suspended.

If the STL has tripped, identify and eliminate the cause and then press in the STL button as far as it will go using a suitable 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.

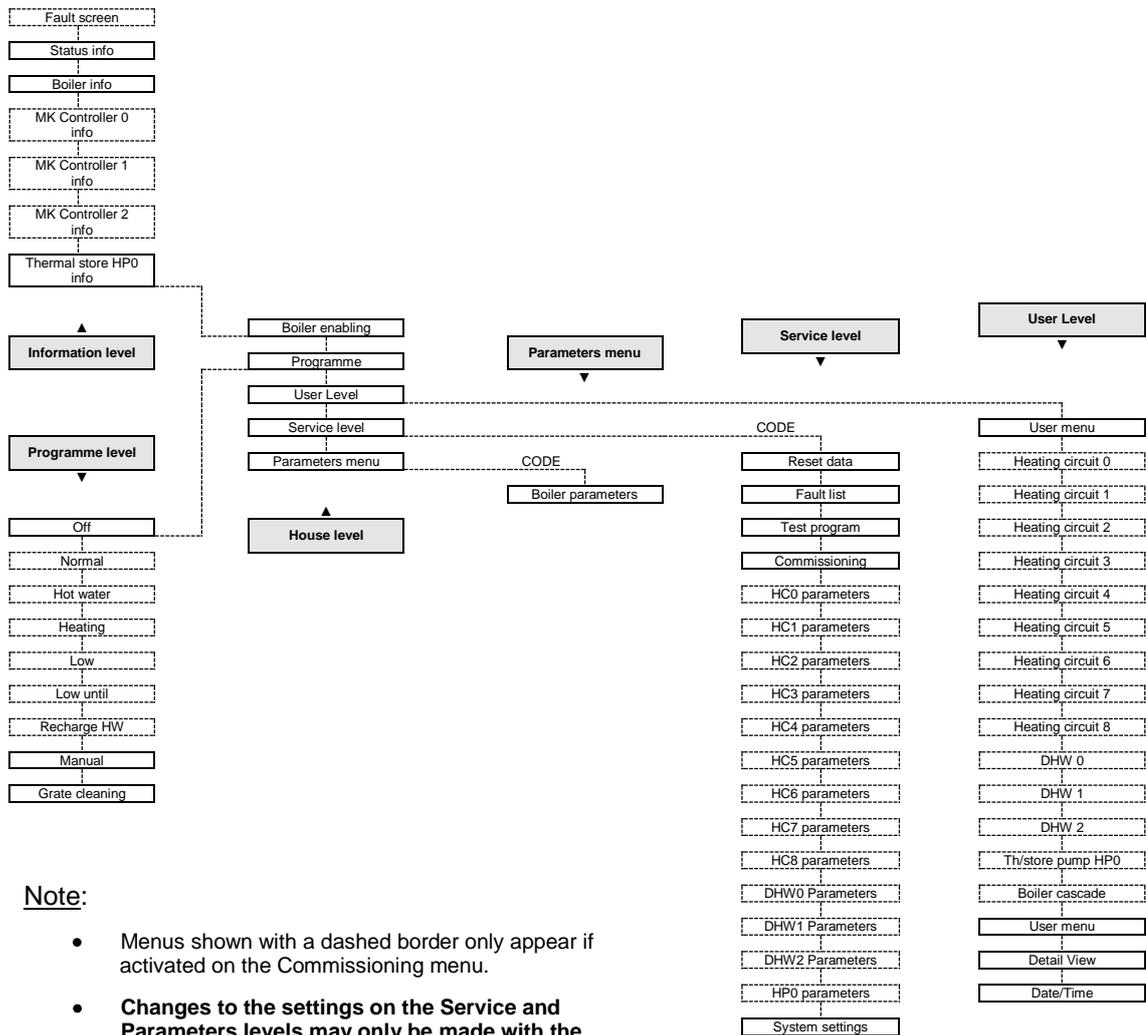
### Touch-screen display (3)

Pressing lightly with your fingertip on the relevant buttons on the display opens the various programme levels and menus where you can make changes to the settings.

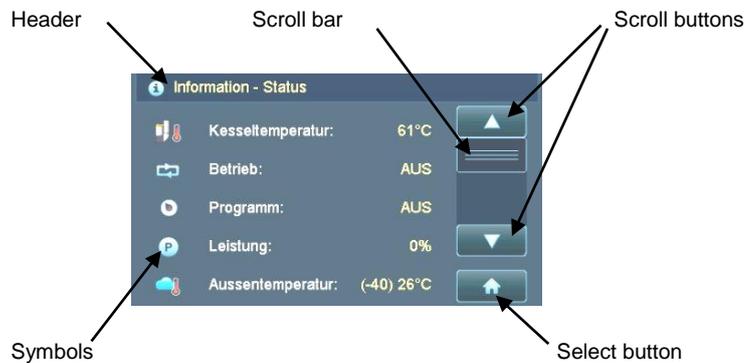
**Note:** Never use sharp objects such as ball-point pens or the like to operate the touch screen.

## 6 Overview of menu and levels

PRO-06-00-00-01-BADE



### Layout of touch-screen display



## 6.0 Information level

The scroll buttons are used to navigate up or down through the menus.

Touching the House button on the display opens the House Level menu.



**Fault screen** → highest priority

Plain-English fault messages are displayed and saved

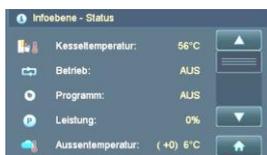
Fault is acknowledged by pressing Quit button



**Info level** → 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



**Info Level – Status**

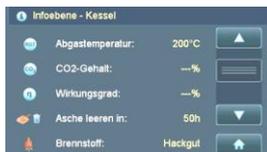
Shows boiler temperature

Shows boiler operating mode

Shows selected programme

Shows boiler output

Shows outside temperature → Figure in brackets = average temperature



**Info Level – Boiler**

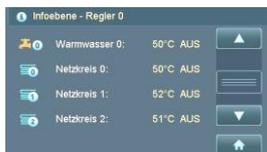
Shows flue gas temperature

Shows CO2 level

Shows efficiency

Shows time in hours until ash warning is triggered

Shows fuel setting



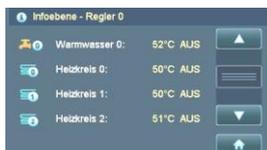
**Info Level – Network system controller** → (NSC)

Shows domestic hot water temperature and operating mode for cylinder 0

Shows operating mode for network system 0 → Pumped network system

Shows operating mode for network system 1 → Pumped or mixer-valve network system

Shows operating mode for network system 2 → Pumped or mixer-valve network system



**Info Level – Heating circuit controller 0** → (HCC 0)

Shows domestic hot water temperature and operating mode for cylinder 0

Shows operating mode for heating circuit 0 → Pumped heating circuit

Shows operating mode for heating circuit 1 → Pumped or mixer-valve heating circuit

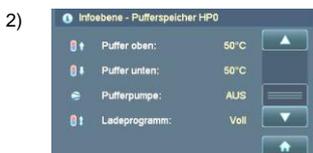
Shows operating mode for heating circuit 2 → Pumped or mixer-valve heating circuit



**Info Level – Heating circuit controller 1** → (HCC 1)



**Info Level – Heating circuit controller 2** → (HCC 2)



**Information – Thermal store** → (HP0)

Shows thermal store temperature at top

Shows thermal store temperature at bottom

Shows thermal store pump operating mode

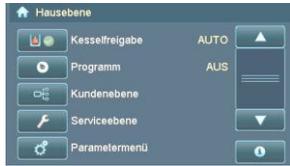
Shows charging programme

- 1) **Note:** Only shown if the function Network System Controller or Heating Circuit Controller has been activated.  
Only one of the functions **Network System Controller** or **Heating Circuit Controller** can be programmed.  
The two functions **cannot be used simultaneously** on the same boiler.
- 2) Only temperatures from the top and bottom thermal store sensors are shown on the Info Level.  
(If 5-sensor thermal store management is activated, the temperatures from the thermal store middle sensors are shown in Detail View.)

## 6.1 House level

Pressing the buttons on the left-hand side opens the various menus.

Touching the Info button returns you to the Info Level menu.



Boiler enabling	See Section 6.1.1
Programme	See Section 6.1.2
User Level	See Section 6.1.3
Service level → CODE required	See Section 6.1.4
Parameters menu → CODE required	See Section 6.1.5

### 6.1.1 Boiler enabling

Setting Boiler enabling to Off shuts down the boiler.

Network systems or Heating circuits continue to run.

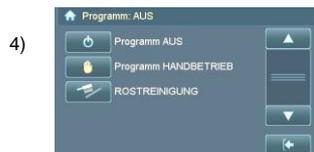


Facility for setting boiler enabling

- 3) Options → **AUTO** Boiler enabling dependent on enabling switch 22/23 on the boiler circuit board  
(Enabling switch closed > Burner active on demand, heating circuit controller active)  
(Enabling switch open > Burner off, heating circuit controller active)
- **OFF** Boiler not enabled regardless of enabling switch 22/23 on the boiler circuit board  
(Enabling switch closed > Burner off, heating circuit controller active)  
(Enabling switch open > Burner off, heating circuit controller active)

### 6.1.2 Programme

Pressing the buttons on the left-hand side opens the programme.



Heating and hot water switched off → Anti-freeze function active  
Heating mode without network system or heating circuit controller activated  
Manually switches on stepped grate for cleaning purposes

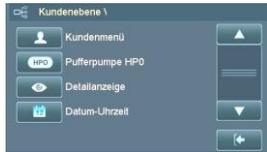
Other function buttons:

- |    |  |                                |   |
|----|--|--------------------------------|---|
| 5) |  | → NORMAL programme             | Heating and hot water mode (DHW as per timer prog.)                   |
| 5) |  | → HOT WATER programme          | Hot water on as per summer DHW timer programme                        |
| 5) |  | → HEATING programme            | Heating mode day and night (DHW as per timer programme)               |
| 5) |  | → LOW programme                | Low-temperature mode day and night (DHW as per timer programme)       |
| 5) |  | → LOW UNTIL programme          | Low-temp. mode until a specified time (DHW as per timer prog.)        |
| 5) |  | → RECHARGE HOT WATER programme | Water heating outside programmed charging times (max. duration 90min) |

- 4) The anti-freeze function is only active in OFF mode.  
5) Other programme buttons are only visible if network system or heating circuit controller is activated.

### 6.1.3 User Level

The number of menus depends on the configuration.



User menu → User settings  
 Thermal store pump HPO menu  
 Detail View menu  
 Date/Time menu

See Section 6.1.3.1  
 See Section 6.1.3.2

Other function buttons:

- 6) → Network System 0-2 menu See Section 6.1.3.3
- 6) → Network System 0-8 menu See Section 6.1.3.4
- DHW Cylinder 0-2 menus See Section 6.1.3.5
- 7) → Supplementary DHW Cylinder 0-2 menu See Section 6.1.3.5
- 7) → Feeder Pump 0-2 menu See Section 6.1.3.6
- 7) → Charging Pump 0-2 menu See Section 6.1.3.6
- Boiler Cascade menu See Section 6.1.3.7

- 6) **Note:** Only one of the functions **Network System Controller** or **Heating Circuit Controller** can be programmed. The two functions **cannot be used simultaneously** on the same boiler.
- 7) Functions are only displayed if external **heating circuit controller** is activated.

#### 6.1.3.1 User menu

The number of functions depends on the configuration.

Function buttons:

- 8) → Ash Emptied function
- Ash Warning function → Time interval until ash warning appears (adjustable)
- De-ashing function → For manually starting de-ashing
- 9) → Fuel parameters
- Enable HCC 0 function → Only affects the district heating function
- Enable HCC 1 function → Only affects the district heating function
- Enable HCC 2 function → Only affects the district heating function
- Fill Auger function → Sequence is not automatically switched off!
- Fill Extractor System function → For manually starting the ash extraction system
- Flue Gas Testing function → Controller set to FGT Test/CO2 Test
- Outfeed Auger function → For switching between A1a/b
- Outfeed Lockout function → Stops refilling of fuel hopper (except for forced refill)
- De-ashing Lockout function
- Language function

- 8) After the ash container has been emptied (box or auto ash extraction system) it has to be confirmed on the **Ash Emptied** menu by pressing the buttons **YES** and **OK**.
- 9) Options:
  - Pellets 1** Quality ENplus A1 (standard quality)
  - Pellets 2** Quality ENplus A2
  - Woodchips 1** Soft wood (W > 25% - low quality)
  - Woodchips 2** Mixed soft and hard wood (W > 15-30% - standard quality)
  - Woodchips 3** Hard wood (W < 15% - high quality)

### 6.1.3.2 Thermal store pump HPO menu

Function buttons:

- 10)  → Pump Mode function
-  → Thermal store timer programme parameters
-  → Thermal store required temp. → effective for thermal store top sensor (T3)
-  → Thermal store min temp. → effective for thermal store top sensor (T3)
-  → Thermal store min charge
- 11)  → Medium output limit parameters

- 10) Thermal store only charged during charging times enabled on menu
- 11) Linear boiler output reduction if the set medium output limit is exceeded

### 6.1.3.3 Network System menu

Function buttons:

- 12)  → Pump Mode function
-  → Timer programme parameters Facility for setting heating and low-temperature times
-  → Daytime base point parameters
-  → Night-time base point parameters
- 16)  → Heating curve parameters
- 17)  → Night OFF OT function
- 18)  → OT Off function

### 6.1.3.4 Heating Circuit menu

Function buttons:

- 12)  → Pump Mode function
-  → Timer programme parameters Facility for setting heating and low-temperature times
- 13)  → Daytime required temp parameter
- 14)  → Night-time required temp parameter
- 15)  → Room effect parameter
- 16)  → Heating curve parameters
- 17)  → Night OFF OT function
- 18)  → OT Off function

- 12) Options
  - **Auto** Network system/Heating circuit is switched ON/OFF according to demand and timer programme.
  - **Off** The network system/heating circuit is switched off.
  - **Constant** The network system/heating circuit pump runs continuously; with mixer-valve network systems/heating circuits, the mixer valve is not operated
- 13) 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.
- 14) 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)
- 15) Options
  - **0%** No room effect programmed
  - **25%** Modulation of room temperature based 25% on room temperature and 75% on outside temperature.
  - **50%** ...
  - **T 1°C** If the required room temperature is exceeded by 1°C the heating circuit pump is switched off.
  - **T 2°C** ...
- 16) A higher heating characteristic figure produces a higher required flow temperature at the same outside temperature
- 17) If the temperature drops below the set temperature during the low-temperature phase, the boiler heats to the required night-time temperature.
- 18) The set outside temperature is exceeded during the heating phase, the heating circuit is switched off.



### 6.1.3.7 Boiler Cascade menu

The Boiler Cascade menu is only visible on boiler A.

Function buttons:

- 26)  → Boiler Changeover function → 0h = No boiler changeover
-  → Cut-in Time parameter
- 27)  → Cut-in Output parameter
- 28)  → Enable OT function → Function can only be used if an outside-temperature sensor is connected to boiler A.
-  → EXTERNAL Mode function → An EXTERNAL boiler (e.g. peak load boiler) can be permanently switched off
- 29)  → P OFF EXT Hyst parameters

- 26) After the set time has elapsed, the boiler that has completed the fewest hours of duty in the cascade system is always started up first.
- 27) Options → **P ON** When the boiler already started reaches the output set for **P ON**, the parameter **Cut-in Time** is activated; if the boiler is still operating at the output set in the parameter **P ON** when the **Cut-in Time** has elapsed, the next boiler is started up.  
 → **P OFF** When the total output of the boilers running falls below the output set for **P OFF**, the last boiler started is shut down again.
- 28) If the set outside temperature is exceeded, the boiler concerned is switched off.
- 29) As soon as the output of the boiler in operation falls below the level set in the parameter **P OFF EXT Hyst**, the boiler operated via the EXTERNAL output (e.g. a peak load boiler) is switched off.  
 If multiple boilers are running, the total output of all boilers in operation applies.

### 6.1.4 Service Level (Expert)

The number of menus depends on the configuration.



- Reset Data menu → Service parameters/software update ..... See Section 6.1.4.1
- Fault List menu
- Test Program menu
- Commissioning menu
- HP0 Parameters menu → Thermal store HP0 ..... See Section 6.1.4.3



- System Settings menu → Service parameters ..... See Section 6.1.4.4

Other function buttons:

-  → Network System (NK) 0-2 ..... See Section 6.1.4.5
-  → Heating Circuit (HK) 0-8 Parameters ..... See Section 6.1.4.6
-  → DHW Cylinder 0-2 Parameters ..... See Section 6.1.4.7
-  → Supplementary DHW Cylinder 0-2 Parameters ..... See Section 6.1.4.7
-  → District Heating (FL) 0-2 Parameters ..... See Section 6.1.4.8
-  → Return Mixer Valve (RLM) Parameters ..... See Section 6.1.4.9

### 6.1.4.1 Service menu **Reset Data**

Function buttons:

-  → Load User Parameters function → For importing saved customer data if necessary
-  → Save User Parameters function
-  → Load Factory Parameters function → Imports only the modified or new parameters of a new software version
-  → Reset Duty Hours function → Resets the duty hours counter to 0
-  → Reset Servicing Time function → Resets the servicing timer to 0
-  → Controller Reset function → **Caution:** Loads factory settings
-  → Oxygen Sensor Calibration Reset function → Should always be carried out whenever oxygen sensor is replaced

### 6.1.4.2 Service menu **Commissioning**

Function buttons:

- |     |   |  |  |
|-----|---|--|--|
|     |    | → System:                                    | <u>Options:</u> PRO                              |
|     |    | → Type:                                      | <u>Options:</u> 175kW/250kW                      |
|     |    | → Fuel outfeed                               | <u>Options:</u> FLEX/AGIT                        |
|     |    | → Ash removal                                | <u>Options:</u> VAC/BOX                          |
|     |    | → Fuel                                       | <u>Options:</u> Pellets 1/Pellets 2              |
| 30) |    | → NSC present → Network sys. controller      | <u>Options:</u> No/Yes                           |
|     |    | → DHW 0 present                              | <u>Options:</u> No/Yes                           |
|     |    | → NS 0 mode                                  | <u>Options:</u> None/Pump                        |
|     |    | → NS 1 mode                                  | <u>Options:</u> None/Pump/Mixer                  |
|     |   | → NS 2 mode                                  | <u>Options:</u> None/Pump/Mixer                  |
| 30) |  | → HCC 0 present → Heating circuit controller | <u>Options:</u> No/Yes                           |
|     |  | → DHW 0 present                              | <u>Options:</u> No/Yes                           |
| 31) |  | → HC 0 mode                                  | <u>Options:</u> None/Pump/Mixer                  |
|     |  | → HC 1 mode                                  | <u>Options:</u> None/Pump/Mixer                  |
|     |  | → HC 2 mode                                  | <u>Options:</u> None/Pump/Mixer                  |
|     |  | → Source → Only with CP                      | <u>Options:</u> Thermal store HP0                |
| 32) |  | → District heating 0 mode                    | <u>Options:</u> None/FP/CP                       |
| 33) |  | → Supplementary 0                            | <u>Options:</u> None/HWP/External                |
|     |  | → HCC 1 present → Heating circuit controller | <u>Options:</u> No/Yes                           |
|     |  | → DHW 1 present                              | <u>Options:</u> No/Yes                           |
| 31) |  | → HC 3 mode                                  | <u>Options:</u> None/Pump/Mixer                  |
|     |  | → HC 4 mode                                  | <u>Options:</u> None/Pump/Mixer                  |
|     |  | → HC 5 mode                                  | <u>Options:</u> None/Pump/Mixer                  |
|     |  | → Source → Only with CP                      | <u>Options:</u> Thermal store HP0                |
| 32) |  | → District heating 1 mode                    | <u>Options:</u> None/FP/CP/EXTENSION             |
| 33) |  | → Supplementary 1                            | <u>Options:</u> None/HWP/External                |
|     |  | → HCC 2 present → Heating circuit controller | <u>Options:</u> No/Yes                           |
|     |  | → DHW 2 present                              | <u>Options:</u> No/Yes                           |
| 31) |  | → HC 6 mode                                  | <u>Options:</u> None/Pump/Mixer                  |
|     |  | → HC 7 mode                                  | <u>Options:</u> None/Pump/Mixer                  |
|     |  | → HC 8 mode                                  | <u>Options:</u> None/Pump/Mixer                  |
|     |  | → Source → Only with CP                      | <u>Options:</u> Thermal store HP0                |
| 32) |  | → District heating 2 mode                    | <u>Options:</u> None/FP/CP/EXTENSION             |
| 33) |  | → Supplementary 2                            | <u>Options:</u> None/HWP/External                |
|     |  | → HP0 mode                                   | <u>Options:</u> Th/store pump                    |
|     |  | → Return mixer valve                         | <u>Options:</u> No/Yes                           |
|     |  | → A1a Vacuum length                          | <u>Options:</u> 0m - 25m                         |
|     |  | → A1b Vacuum length                          | <u>Options:</u> 0m - 25m                         |
|     |  | → Initial Filling                            | <u>Options:</u> Automatic filling of fuel hopper |
|     |  | → Fill Auger                                 | <u>Options:</u> OFF/ON                           |
|     |  | → Save User Parameters                       | <u>Options:</u> No/Yes                           |

- 30) **Note:** Only one of the functions **Network System Controller** or **Heating Circuit Controller** can be programmed on the boiler.
- Network system mode or heating circuit mode
- **None** Network system/heating circuit is deactivated
  - **Pump** Operation of the pumped circuit is controlled by the timer programme
  - **Mixer** Operation of the pump and the mixer valve is controlled by the timer programme
- Room stat options (only possible with heating circuits)
- **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)
  - **RS HCC** Digital room controller is connected (facility for setting one heating circuit controller)
- 31) The heating circuit can only be set as a mixer-valve heating circuit if the Supplementary and District Heating functions are not activated.
- 32) The District Heating Mode function can only be activated if heating circuit 0 is not programmed as a mixer-valve heating circuit.
- **FP** The district heating pump is controlled as a feeder pump (for setting see plumbing diagram)
  - **TSP** The district heating pump is controlled as a thermal store pump (for setting see plumbing diagram)
  - **CP** The district heating pump is controlled as a charging pump (for setting see plumbing diagram)
- 33) The function Supplementary 0 can only be activated if heating circuit 0 is not programmed as a mixer-valve heating circuit.
- **None** Function is deactivated
  - **HWP** An additional DHW cylinder can be activated
  - **External** Heat from an external boiler (e.g. oil boiler) can be requested using the Cascade function

### 6.1.4.3 Service menu **HP0 Parameters**

#### Function buttons:

- |     |   |                                 |   |                          |
|-----|---|---------------------------------|---|--------------------------|
|     |  | → HP0 Mode function             | <u>Options:</u>   | Th/store pump            |
|     |  | → Enable HP0 parameter          | → Enabling temperature for output HP0                                   |                          |
| 34) |  | → Parameter TS top charge ON    | → Boiler demand via sensor T3   |                          |
| 35) |  | → Parameter TS top charge OFF   | → Boiler switched off via sensor T3 with charging programme <b>PART</b> |                          |
| 36) |  | → Parameter TS btm charge OFF   | → Boiler switched off via sensor T2 with charging programme <b>FULL</b> |                          |
|     |  | → Parameter Delta-T Dist/h      | → District heating pipe heat loss                                       |                          |
|     |  | → Parameter B-TS btm diff.      | → Temperature difference between boiler and bottom of thermal store     |                          |
| 37) |  | → Parameter Sensor HP0          | <u>Options:</u>   | Boiler/HCC 0/HCC 1/HCC 2 |
| 38) |  | → Supplementary Sensor function | <u>Options:</u>   | No/Yes                   |

- 34) 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 charge ON.
- Example: Maximum temperature required by heating circuit controller = 55 °C  
Setting for TS top charge ON = 6 °C
- The boiler starts up when the temperature at the thermal store top sensor (T3) is 49 °C**
- 35) With the partial charging programme 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 charge OFF.
- Example: Required thermal store temperature = 70 °C  
Setting for TS top charge OFF = 5 °C
- The boiler is shut off when the temperature at the thermal store top sensor (T3) is 75 °C**
- 36) With full charging programme, 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 charge OFF.
- Example: Temperature at top of thermal store (T3) = 70 °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 60 °C**
- 37) This parameter specifies which controller the sensors of thermal store HP0 are connected to. If the thermal store sensors are assigned to a heating circuit controller, no analogue room stats can then be used on that controller.
- 38) This function can be used to activate 5-sensor thermal store management (No = 2-sensor thermal store management).

6.1.4.4 Service menu **System Settings**

The number of parameters depends on the configuration.

Function buttons:

- System:
- Type:
- Fuel outfeed
- Ash removal
- PS present
- Calibrate PS
- PS compensation
- Air flap
- Boiler cascade
- Grate motor
- Flue draught
- NSC present
- HCC 0/1/2 present
- Outside temp sensor
- Oxygen sensor
- Oxygen sensor heating
- Calibrate oxygen sensor
- Oxygen sensor compensation
- Oxygen sensor characteristic
- BT comp 80°C
- 39) → PC monitoring
- GSM subscriber number 1
- GSM subscriber number 2
- SD logging
- SD data
- CID data
- Network
- DHCP
- IP address
- Subnet mask
- Gateway
- Pri DNS server
- Sec DNS svr
- NetBIOS
- Initial Filling
- ABS pump time
- HCP forced op
- Residual heat utilisation
- HCP A/F outside only with O/S-temp based controller
- HCP A/F Flow only with O/S-temp based controller
- TÜV function
- ▼▼ Fault messages ▼▼

- Options: PRO
- Options: 175kW/250kW
- Options: FLEX/AGIT
- Options: VAC; BOX
- Options: No/Yes
- Options: OFF/ON
- Options: Photosensor compensation setting
- Options: No/Yes
- Options: No/A/B/C/D
- Options: Benzler/ABM
- Options: Cyclic[?]
- Options: No/Yes
- Options: No/Yes
- Options: No/Yes
- Options: No/NGK/Bosch
- Options: AUTO/Constant
- Options: OFF/ON
- Options: Oxygen sensor compensation setting
- Options: 0.0%/0.5%/-3.0%
- Options: Boiler temp compensation setting
- Options: Terminal/DAQ/GSM module
- Options: Subscriber number entry
- Options: Subscriber number entry
- Options: OFF/ON – Save setting
- Options: Summary
- Options: Manufacturer code
- Options: No/Yes
- Options: Manual/Via DHCP (if network activated)
- Options: 10.0.0.25 (if DHCP set to Manual)
- Options: 255.255.255.0 (if DHCP set to Manual)
- Options: 10.0.0.1 (if DHCP set to Manual)
- Options: 10.0.0.1 (if DHCP set to Manual)
- Options: (if DHCP set to Manual)
- Options: Kessel0001 (if DHCP set to Manual)
- Options: Automatic filling of fuel hopper
- Options: Activates all pumps once a week for the set amount of time
- Options: If boiler or thermal store overheats all heating circuit pumps switch on
- Options: Pump HP0 runs until temperature at boiler is below this figure
- Options: Only in OFF mode – All heating circuit pumps switch on if outside temperature is below setting
- Options: Required flow temperature if HCP A/F Outside is active
- Options: Raises boiler temperature until STL trips

- 39) 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

### 6.1.4.5 Service menu **Network System Parameters**

The number of parameters depends on the configuration.

Function buttons:

- 40)  → NK0-2 Mode function Options: None/Pump/Mixer
  -  → Mixer Valve Runtime function
  -  → Min Flow Temperature function → Only with mixer-valve circuits
  -  → Max Flow Temperature 1-2 function → Only with mixer-valve circuits
  -  → Boiler Overcompensation parameter
  -  → Enable NSP 0-2 parameter
  -  → Parallel Shift parameter
  - 41)  → Twin Pump function Options: No/Yes
  -  → Twin Pump Off Differential parameter
  -  → Twin Pump On Differential parameter
  - 42)  → Enable Ext. NS function Options: No/Yes
- 
- 40) Options → **Pump** Setting for network systems without mixer-valve control (Diagram PRO-01-02-01)
  - **Mixer** Setting for network systems with mixer-valve control (Diagram PRO-01-02-02)
  - 41) If the twin pump function is activated, a return temperature sensor must be used for control purposes.
  - 42) Each network system can be called for/switched off by an external controller using a 0-10V signal.

### 6.1.4.6 Service menu **Heating Circuit Parameters**

The number of parameters depends on the configuration.

Function buttons:

-  → HC 0-8 Mode function Options: None/Pump/Mixer
-  → Room Stat 0-8 function Options: None/RFF/RS Full/RS HC/RS HCC
-  → Mixer Valve Runtime function
-  → Min Flow Temperature function → Only with mixer-valve circuits
-  → Max Flow Temperature function → Only with mixer-valve circuits
-  → Boiler Overcompensation parameter
-  → Enable HCP 0-8 parameter
-  → Parallel Shift parameter
-  → Floor Screed Heating function Options: No/Yes
-  → Flow Temp Increase parameter
-  → Increase After parameter
-  → Screed Heat Min Flow Temp parameter
-  → Screed Heat Max Flow Temp parameter
-  → Screed Heat Holding Time parameter → Number of days for which max flow temperature to be maintained
-  → Start Screed Heating function Options: No/Yes



**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.

### 6.1.4.7 Service menu Hot Water Parameters

#### Supplementary Hot Water parameters

The number of parameters depends on the configuration.

Function buttons:

-  → DHW Present function      **Options:** No/Yes/External
- 43)  → DHW Hysteresis parameter
-  → Enable DHW Pump parameter
-  → Boiler Overcompensation parameter

- 43) If the temperature in the hot water cylinder falls below the required temperature by the hysteresis setting, the hot water cylinder is heated up again.

### 6.1.4.8 Service menu Feeder Pump Parameters

#### Charging Pump parameters

The number of parameters depends on the configuration.

Function buttons:

-  → District Heating Mode function      **Options:** None/FP/TSP/CP
-  → Enable District Heating parameter → Enabling temperature for district heating pump
-  → Parameter TS top charge ON → District heating pump demand via sensor T3
-  → Parameter TS top charge OFF → District heating pump switched off via sensor T3 with charging programme **PART**
-  → Parameter TS btm charge OFF → District heating pump switched off via sensor T2 with charging programme **PART**
-  → Source parameter      **Options:** ThStore 0/ThStore 1/ThStore 2/ThStore HP0
-  → Parameter Delta-T Dist/h → District heating pipe heat loss
-  → Parameter B-TS btm Diff. → Temperature difference between boiler and bottom of thermal store

### 6.1.4.9 Service menu Return Mixer Valve Parameters

The number of parameters depends on the configuration.

Function buttons:

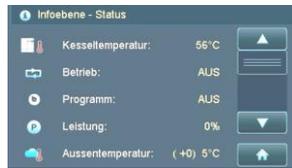
- 44)  → Return Mixer Mode function      **Options:** FIXED/AUTO/OPEN/CLOSED/OFF
-  → Return Mixer Valve Runtime parameter
-  → Required Return Temperature parameter
- 45)  → Return Mixer Valve Delta T parameter
- 46)  → Return Mixer Valve Delta T Min parameter
-  → Startup Relief parameter      **Options:** No/Yes

- 44) **Options** → **FIXED** Return temperature is modulated to the specified temperature
- **Mixer** Return temperature is modulated to the specified temperature depending on thermal store charge
- 45) Setting for temperature difference between boiler temperature and return temperature
- 46) Setting for minimum temperature difference between boiler temperature and return temperature at 100% thermal store charge

## 7 User settings

### 7.1 Activating a heating programme

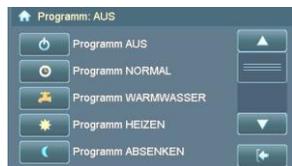
To activate the programme **NORMAL**, for instance, you proceed as follows:



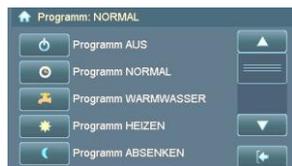
1) → Press the **House level** button



2) → Press the **Programme** button



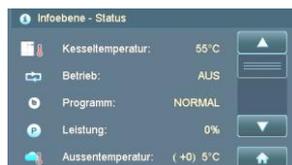
3) → Press the **NORMAL programme** button



4) → Press the **Back** button



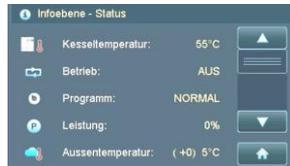
5) → Press the **Info** button



6) → The **Info Level** now shows the programme **NORMAL**

## 7.2 Deactivating a heating programme

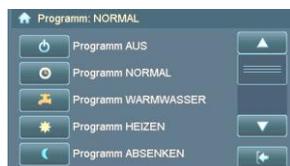
To deactivate the programme NORMAL, for instance, you proceed as follows:



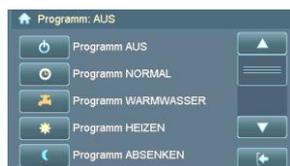
1) → Press the **House level** button



2) → Press the **Programme** button



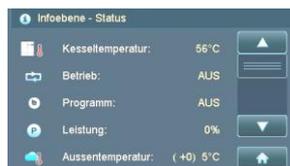
3) → Press the **Programme Off** button



4) → Press the **Back** button



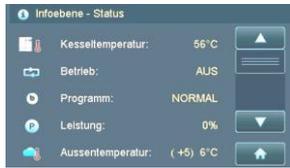
5) → Press the **Info** button



6) → The **Info Level** now shows the programme **OFF**

## 7.3 Programming heating times

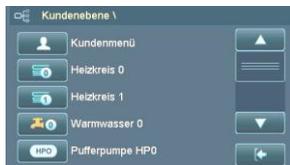
To program the timer programme for heating circuit 1, for instance, you proceed as follows:



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

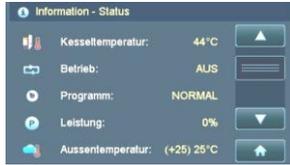
The same on and off times can be programmed for every day of the week.



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

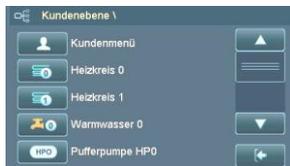
To change the heating curve for heating circuit 1, for instance, you proceed as follows:



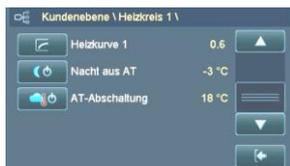
1) → Press the **House level** button 



2) → Press the **User level** button 



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



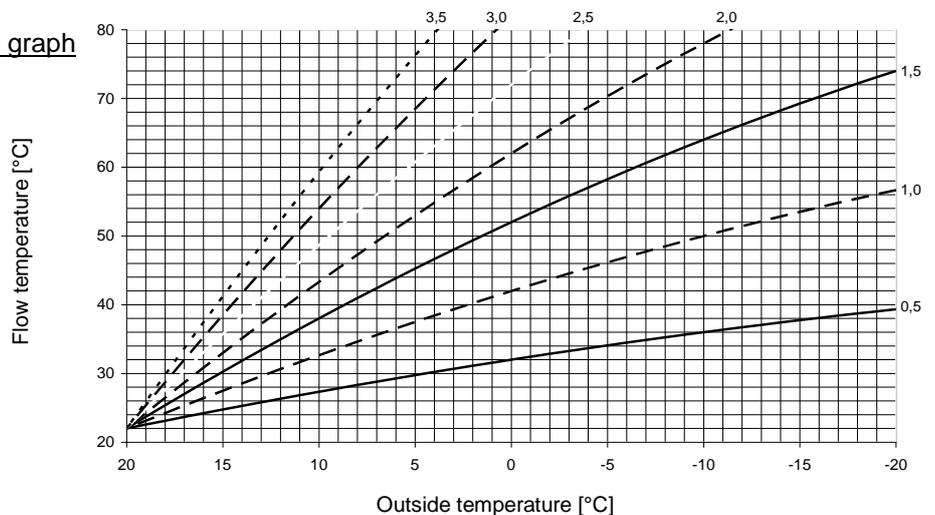
4) → Press the **Heating characteristic 1** button 



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

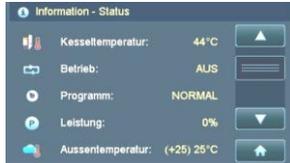
6) → To save the setting, press the  button

Heating characteristic graph



## 7.5 Changing the hot water temperature setting

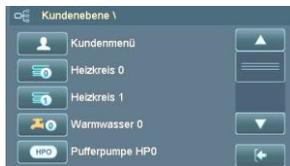
To change the required temperature for cylinder 0, for instance, you proceed as follows:



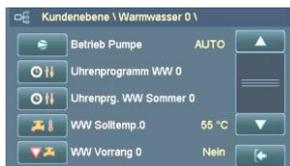
1) → Press the **House level** button 



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

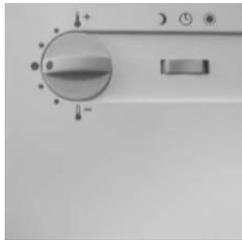
## 7.6 Analogue room stat

### Installation site

Fix the room stat on an internal wall at a height of approx. 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.

### Changing room temperature



The control knob on the room stat allows you to adjust the required room temperature. Setting the control to a position in the positive range (+) raises the required room temperature by up to 3°C. Setting it to a position in the negative range (-) lowers it by up to 3°C.

**Note:** Turning the control into the positive (+) or negative (-) range 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.



Low:

#### **Heating mode OFF**

(If the outside temperature is higher than the parameter Night Off OT)

#### **Heating Mode ON** → To Night-time Required Temperature

(If the outside temperature is lower than the parameter Night Off OT)



Normal:

#### **Heating and Low-temperature modes**

(According to the times set in the timer programme)



Heating:

#### **Constant Heating mode** → To Daytime Required Temperature

(Continuous heating day and night without low-temperature mode)

## 7.7 Digital room controller



The digital room controller offers various possible applications which are defined during commissioning.

If the room controller is used to control room temperature, it offers the same functions as the analogue room stat.

In addition, system data such as boiler operating mode, thermal store temperatures, etc. can be retrieved.

### Operating instructions

The room controller is supplied with its own instruction manual.

## 8 Operating the heating system

PRO-08-00-00-01-BADE

### 8.1 Starting up/Shutting down the system

#### Initial commissioning

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

#### 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.

#### 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.

#### 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

#### 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.

#### Temperature-relief valve

Firmly press in the red knob on the relief valve: → cools the boiler using water from the domestic water system if the boiler overheats; → in the event of malfunctions or leaks, call in your heating engineer.

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 heating engineer.

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 heating engineer.

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.

Pellets Quality assurance

<b><u>Europe</u></b>	<b>ENplus A1/A2</b>
<b><u>Austria:</u></b>	<b>ÖNORM M 7135</b>
<b><u>Germany:</u></b>	<b>DIN 51731</b>
<b><u>Switzerland:</u></b>	<b>SN 166000</b>

<b>Note:</b>	Dust emission from the boiler flue is heavily dependent on the dust content of the fuel.
--------------	--

## 8.4 Fuels

### 8.4.1 Pellets



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/m <sup>3</sup>
Pellet size (length)	5 - 30 mm
Pellet diameter	5 - 6 mm
Water content	8 – 10 %
Ash content	< 0.5%

## 8.5 Fuel storage

As a general rule, 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

**Caution:** The heating system must be set to Off mode at least 1 hour before the fuel store is filled.



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

### 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 augers 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".

### Procedure:

Set the system to the OFF programme and wait until it switches to OFF mode. Then switch off the system by switching the power switch to OFF (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, making sure that it is tightly sealed. Switch on the system again, cancel any fault messages displayed and set the boiler to the desired heating programme.

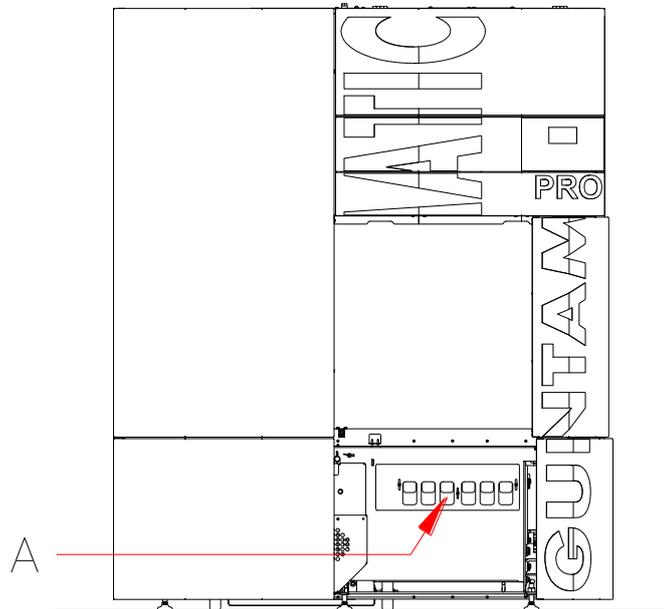
### Maximum bulk storage height

Pellets	max. 2.5 m bulk storage height

## 8.7 Combustion air supply

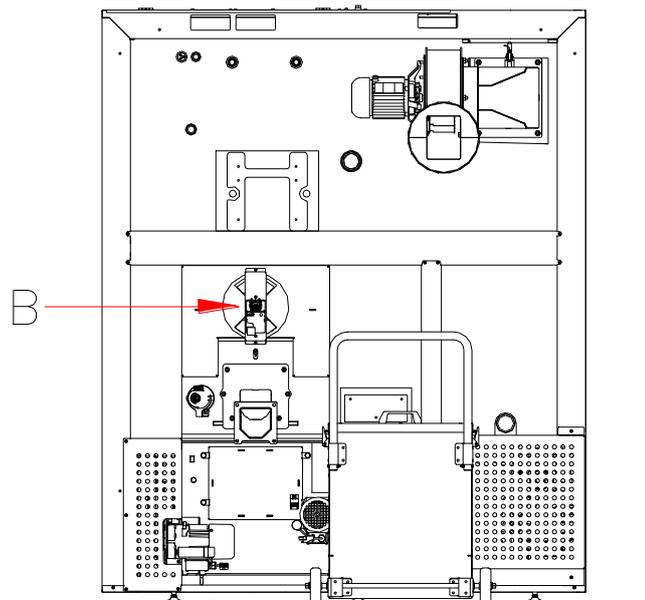
On PRO heating systems, no adjustments should be made to the combustion air supply. The diagrams below are intended only to illustrate the positions of the components.

### Primary air



The primary air supply (A) is preset on the front of the boiler and must not be altered.

### Secondary air



The secondary air supply is electronically controlled by a servo motor (B) on the rear of the boiler.

## 8.8 Emptying the ash

On a 250kW heating system operated at maximum output for approx. 10 hours a day, the ash box on the rear of the boiler requires emptying at intervals that can vary from every few days to as much as 8 weeks, depending on the fuel quality. The emptying interval is substantially shorter with low-quality fuels such as those with a high bark content, for instance. When burning pellets, the emptying interval can be as long as 100 days.

**Danger:**



**Glowing embers can cause fires.**

The ash should only be removed from the boiler or stored in non-combustible containers.

Procedure

On the Boiler Enabling menu set Boiler Enabling to OFF and wait until the mode indication changes to OFF mode. Unfasten the ash box and pull it out of the ash duct to the rear. You can then wheel the ash box easily to the emptying point by pulling up the handlebar and fitting the cover. The display shows the information message "Ash box open".

After emptying the ash box, replace it on the ash duct and fasten it in place. The information message "Ash box open" disappears.

Please pay particular attention to ensuring that it is properly sealed.

On the Boiler Enabling menu reset Boiler Enabling to AUTO.

Resetting the ash warning

Every time the ash box is emptied, you must reset the ash warning on the User menu. To do so, select the option Ash emptied, change the setting to YES and press the OK button to confirm.

The time until the ash warning is issued can be adjusted by selecting Ash Warning on the User menu.

Resetting the ash warning

Every time the ash box is emptied, or if the display is already showing the ash warning, you must reset the ash warning on the User menu. To do so, select the option Ash emptied, change the setting to YES and press the OK button to confirm.

The time until the ash warning is issued can be adjusted by selecting Ash Warning on the User menu.

## 9 Cleaning/Care

PRO-Flex-09-00-00-01-BADE

**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.

### 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 should be cleared of 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 on the following pages.

If the heating system is subject to heavy use, complete cleaning may be required twice a year but should be carried out at least once a year following the complete cleaning procedure, which is also described on the pages that follow.

### 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

The fuel outfeed auger and the fuel store must be completely emptied (ideally 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

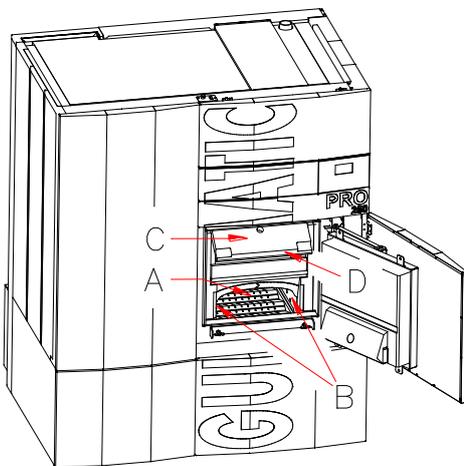
Interim cleaning must be carried out at intervals of between 1 week and 3 months depending on the load on the heating system and the quality of the fuel burned, and involves the following steps:

1. On the Boiler Enabling menu, set the system to OFF and allow it to cool down for at least 1 hour.
2. Before starting intermediate cleaning, start the function De-ashing on the User menu and wait until the system automatically completes the sequence.

**Caution: Risk of injury from moving parts.**



Do not carry out any other cleaning or maintenance operations while the De-ashing function is active.

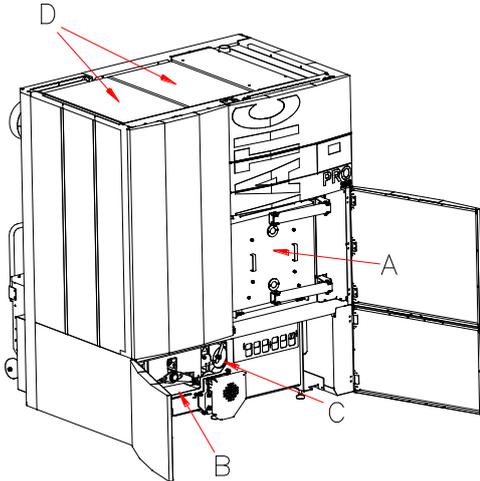


3. Undo the 4 screws on the combustion chamber door and open it.
4. Clean the ash off the stepped grate (A) and clean out the grate slots with a screwdriver, for example.
5. Clean the deposits off the sides of the combustion chamber (B) using the tools supplied.
6. Remove the combustion chamber firebrick cover (C).
7. Vacuum clean both sets of dome bricks (D), top and bottom.
8. Refit the combustion chamber firebrick cover (C).
9. Close the combustion chamber door and secure with the securing screws.
10. On the Boiler Enabling menu set Boiler Enabling to AUTO.

### 9.3 Complete cleaning

Depending on how heavily the system is used, complete cleaning may be required twice a year but should be carried out at least once a year.

1. Carry out steps 1-9 precisely as described in the section Interim cleaning. In addition, complete cleaning also requires the operations listed below.

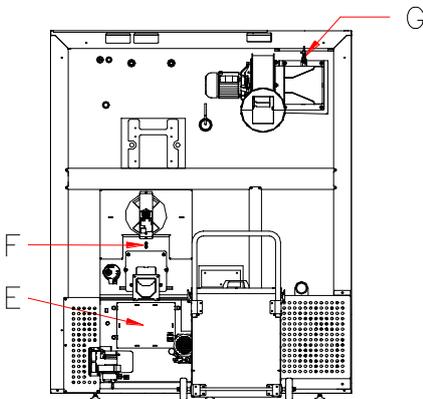


**Caution: Risk of injury from moving parts.**



Fully isolate the system from the mains power supply. Only then should you carry out any cleaning work on the heating system.

2. Isolate the system from the mains power supply.
3. Open the inspection cover (B) of the ash extraction system.
4. Roughly clean the inside and remove any foreign objects such as stones, etc.
5. Also check the ash flaps (C) of the transverse augers for foreign objects and free movement.
6. Open the two inspection covers (D) on the top of the boiler and vacuum out the flue gas headers – also vacuum out the flue connecting pipe as far as flue draught fan.
7. Open the inspection cover (E) on the rear of the boiler and check the inside for coarse particles.
8. Remove the photosensor from its holder and clean with a soft cloth – also check the opening into the combustion chamber and clean it if necessary.
9. Finally close all inspection covers again, taking care to secure and seal them properly.
10. Unscrew the oxygen sensor (G), clean it with a soft brush and screw it back in tightly.
11. On the Boiler Enabling menu set Boiler Enabling to AUTO.



### 9.4 Cleaning at the end of the heating season

If the system is unused for an extended period in the summer months, complete cleaning must be carried out.

Afterwards, all metallic components of the firebox, heat exchanger and flue gas box must be sprayed with an oil-based corrosion-proofing spray.

## 10 Rectifying faults

PRO-10-00-00-01-BADE

Fault	Cause/Function	Remedy
<b>Control panel cannot be switched on</b>	<ul style="list-style-type: none"> <li>• Power supply disconnected</li> <li>• Fuse blown</li> </ul>	<ul style="list-style-type: none"> <li>• Check master switch, mains plug and/or power supply lead between circuit boards</li> <li>• Check fuse in supply lead and on the control panel circuit board</li> </ul>
<b>Smoke escaping into boiler room</b>	<ul style="list-style-type: none"> <li>• Inspection covers on boiler leaking</li> <li>• Flue pipe leaking</li> <li>• Flue draught regulator unfavourably positioned</li> <li>• Flue not clear</li> <li>• Flue not providing any draught</li> </ul>	<ul style="list-style-type: none"> <li>• Eliminate leaks</li> <li>• Eliminate leaks</li> <li>• Consult flue installer</li> <li>• Check flue</li> <li>• Check flue</li> </ul>
<b>Heat output too low</b>	<ul style="list-style-type: none"> <li>• Boiler very dirty</li> <li>• Heating system inadequately balanced</li> <li>• Flue draught in chimney flue too low</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out complete cleaning</li> <li>• Balance heating system and pumps</li> <li>• Increase flue draught in chimney flue</li> </ul>
<b>Detonation</b>	<ul style="list-style-type: none"> <li>• Detonation is only possible if the firebox is overfilled.</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out complete cleaning or consult engineer if necessary</li> </ul>
<b>Difficult to limit output</b>	<ul style="list-style-type: none"> <li>• Flue draught is too great</li> <li>• Large fluctuation in heat draw</li> </ul>	<ul style="list-style-type: none"> <li>• Re-adjust flue draught regulator</li> <li>• Stagger heating system component demand over time</li> </ul>
<b>Overheating Fault code F04 STL tripped</b>	<ul style="list-style-type: none"> <li>• The amount of heat produced cannot be dissipated – it may be that a pump has failed or is not running.</li> </ul>	<ul style="list-style-type: none"> <li>• The cause of the boiler overheating must be identified. Consult engineer if necessary.</li> <li>• Check the fuses on the boiler</li> </ul>
<b>Drive motor too noisy</b>	<ul style="list-style-type: none"> <li>• Noise transmission</li> </ul>	<ul style="list-style-type: none"> <li>• If necessary, place the adjustable feet of the boiler on rubber pads</li> </ul>
<b>Fan too noisy</b>	<ul style="list-style-type: none"> <li>• Fan is dirty</li> <li>• Fan or blades loose</li> <li>• Noise created by bends or rigid pipe junctions with chimney flue</li> <li>• Fan bearing defective</li> </ul>	<ul style="list-style-type: none"> <li>• Clean fan</li> <li>• Eliminate cause</li> <li>• Fit insulators/sleeves</li> <li>• Order replacement motor</li> </ul>

## 11 Information/Fault messages

PRO-Flex-11-00-00-01-BADE

	Category	Origin	Message	Cancellation	Possible causes
F01	Fault	Input TKS1 open longer than "t safe" (door switch)	Firebox door or outer casing door open (F01)	Automatic	Door contact switch defective, faulty connection, door or outer casing doors open
F03	Fault	CO2 check: in "control mode" after time parameter "t reignition" if CO2 is < "CO2 safe" for longer than "t safe min"	Fuel combustion fault (F03)	Reset button	No fuel, incorrect air setting, incorrect flue draught, defective oxygen sensor
F04	Fault	Boiler temperature BTactual > "BTW"	Boiler temperature too high. Check flue draught and boiler sensor. (F04)	Reset button	Boiler sensor defective Boiler or pump malfunction, faulty contact
F05	Fault	Flue gas check in "control mode" after time param. "X25" if FGT actual + 0.5xBT actual < "FGTb" - "FGT safe" for longer than "t safe min" (when output betw. 30 and 100%)	Fuel combustion fault (F05)	Reset button	No fuel, incorrect air setting, incorrect flue draught, defective flue gas sensor
F06	Fault	Photosensor sensor signal greater than or equal to "FW" for the period "t safe F06"	No fuel or firebox overfilled (F06)	Reset button	No fuel, photosensor dirty or defective, sensor hole dirty, firebox overfilled
F07	Fault	After 2 reignition cycles another reignition condition is present within time window "t reignition" from start of control cycle	Ignition not possible. Check fuel (F07)	Reset button	No fuel, ignition fan defective, incorrect air setting, defective oxygen sensor Connection faulty
F08	Fault	With vacuum outfeed, fill level not below limit after conveyor running time "RT G1 min"	Fill level sensor not reacting (F08)	Automatic	Fill level sensor dusty or defective Terminals 28-30
F11	Fault	No response from Hall-effect sensor A1 within time parameter "t safe A1"	Grate cleaner motor sticking or jammed (F11)	Reset button	Ash box full, grate cleaner jammed, grate jammed, motor or lead defective
F12	Fault	No response from Hall-effect sensor G1 within time parameter "t safe"	Drive motor G1 jammed (F12)	Reset button	Stoker conveyor jammed, connection faulty (test program)
F16	Fault	STL tripped	Warning STL high-temperature limiter tripped (F16)	Press STL, Reset button	Boiler or pump malfunction, check fuses, STL test
F19	Fault	Param. "O2 sensor comp" or adjusted setting above the limits of parameter "mV top" or "mv btm"	Oxygen sensor readings above limits. Test oxygen sensor (F19)	Reset button	Oxygen sensor dirty or defective, carry out oxygen sensor test, clean sensor
F20	Fault	Ash bin cover switch "OFF" for more than 20min (=constantly)	Ash bin open (F20)	Automatic	Ash bin open Ash bin cover switch defective
F21	Fault	Length of an oxygen sensor pause longer than "t stop"	Oxygen sensor pause timeout. Test oxygen sensor. (F21)	Reset button	Oxygen sensor reading incorrect, connection faulty (carry out oxygen sensor test), check flue draught (FGT too low)
F22	Fault	Fill level not reached within the time "Outfeed max"	Fill level not reached. Check vacuum system (F22)	Reset button	No fuel, fill level sensor defective, vacuum pipes clogged, vacuum system not air-tight, vacuum unit defective, outfeed motor jammed
F23	Fault	Ash box not emptied within the set emptying interval	Empty ash box (F23)	Reset button	Ash box not emptied or counter not reset after emptying
F24	Fault	Stoker temperature higher than "T stoker"	Stoker temp. too high. Check fuel chute. (F24)	Reset button	Inspection cover on fuel chute leaking
F25	Fault	Ash bin full or ash extractor motor jammed	Ash auger not moving freely or jammed (F25)	Reset button	Ash bin full to brim or foreign object blocking ash duct

## Information/Fault messages

	Category	Origin	Message	Cancellation	Possible causes
<b>F26</b>	<b>Fault</b>	Temperature in ash bin higher than "T max bin"	Ash bin temperature too high. Check bin (F26)	<b>Reset</b> button	Glowing embers in ash bin Ash extraction system not airtight (ash bin, vacuum hoses, inspection covers)
<b>F40</b>	<b>Fault</b>	Flue draught fan motor not reaching specified speed	Flue draught fan speed monitor (F40)	<b>Reset</b> button	Flue draught fan motor jammed or defective
<b>F42</b>	<b>Fault</b>	Temperature in HE cleaner above "TWK[?] max"	Heat exchanger cleaner overheated (F42)	<b>Reset</b> button	Grate ash flap open or sticking; foreign object; sensor defective
<b>F45</b>	<b>Fault</b>	HE cleaner cannot reach position within "Clean run-on"	HE cleaner not moving freely or jammed (F45)	<b>Reset</b> button	Drive motor defective Cleaner door contact switch defective HE cleaner sticking

## 12 Replacing fuses

PRO-12-00-00-01-BADE

**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.

### 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 to fully disconnect the system from the power supply.
3. Unfasten the controller cover and open it.
4. With the aid of the list of fuses on the wiring diagram, locate the defective fuse and replace it.
5. To replace the fuse, press in the fuse holder 2-3 mm using a medium-sized screwdriver and turn it anticlockwise as far as the stop. Release the fuse holder. The holder and fuse will then pop out a few millimetres.
6. Remove the blown fuse and replace with a new one.
7. Re-insert the fuse holder, press it in 2-3 mm and secure it in position by turning it half a turn clockwise.

**13 System log book**

PRO-Flex-13-00-00-01-BADE

**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:

### **13.1 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.

### **13.2 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)

### **13.3 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.

<b>Year:</b>	<b>System operator:</b>						<b>Serviced by:</b>						
<b>Monthly Check</b>	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													
<b>Signature/initials</b>													

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

If you require more system log book pages, please photocopy them.

# GUNTAMATIC

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