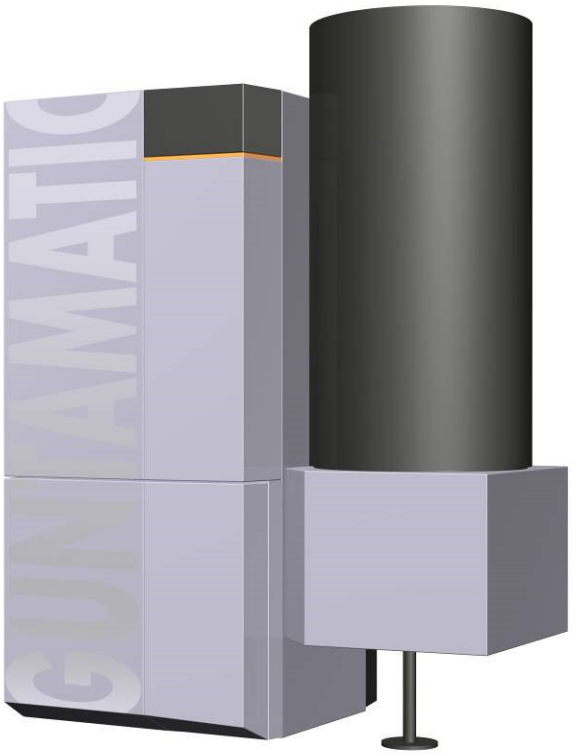
Pellet boiler

englisch

# BIOCOM

Instruction manual




EN-B30-007-V15-0123

GUNTAMATIC

# INFORMATION ON DOCUMENTATION



Please read this documentation carefully.

It is intended to serve as a reference guide and contains important information on the construction, safety, operation, maintenance and care of your heating system.

We are always trying to improve our products and documents. We thank you in advance for your comments and suggestions.

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Notes that you should observe in any case in your own interest are designated in this manual as adjacent.

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# 1 INTRODUCTION 01

You have made a good choice with GUNTAMATIC.

We provide you with a product of many years of boiler building experience and it is our most urgent wish that your heating system will always give you only pleasure.

The following instructions are intended to assist you in the operation and maintenance of the boiler. Please remember that even the best boiler cannot do without care and maintenance. Therefore, read these operating instructions carefully and have the initial commissioning carried out by a GUNTAMATIC-authorized specialist. Above all, follow the safety instructions in chapter 2.

Brief description

The firing BIOCOM is a modern boiler. Discharge is from a storage room by means of suction system.

Type testing

The boiler is designed in accordance with the class 5 according to the EN 303-5, as well as the agreement of the federal states according to Art. 15a BVG on protective measures for small boilers and energy saving. The original type test certificates are available at the manufacturer.

More information

The documentation consists of the following volumes:

- Planning and installation instructions
- Circuit diagram
- Instruction manual

If you have any questions, please contact our information desk.

## 1.1 SERVICES PROVIDED BY THE MANUFACTURER BS-01

Valid for acceptance findings, commissioning, maintenance and other services by the manufacturer.

**ATTENTION**: Installed GUNTAMATIC units must be checked and approved in writing by the responsible chimney sweep, heating engineer and electrician with regard to the chimney, chimney connection, hydraulic connection, functioning safety devices, storage room condition and electrical connections, irrespective of GUNTAMATIC acceptance certificates, commissioning and other GUNTAMATIC services. Operators and system installers are themselves liable for compliance with the corresponding professionally required or legally prescribed inspections. GUNTAMATIC acceptance confirmations and commissioning are limited exclusively to a check of the device function without claiming a complete check, i.e. hydraulics, electrical connection, chimney connection, storage room and safety technology are not checked by GUNTAMATIC or, if necessary, only randomly. GUNTAMATIC is not liable for defects and accidents resulting from faulty installation, insufficient safety technology or lack of inspection of the system by the responsible specialist companies.

# 2 IMPORTANT NOTES

BS-01

The boiler is built according to state-of-the-art technology and recognized safety rules. Nevertheless, incorrect operation, use of unauthorized fuels or failure to carry out necessary repairs can result in personal injury and damage to property. You can avoid dangerous situations by using the boiler only for what it was designed for and by operating, cleaning and maintaining it properly. Only put the heating system into operation if it is in perfect condition in terms of safety.

## 2.1 INTENDED USE

BS-01

The heating system is designed to heat heating water and serves as a central heating system.

**Do not use the heating system for waste incineration!**

Waste incineration leads to massive corrosion and consequently to a drastic reduction in the service life of the heating system!

## 2.2 OPERATION OF THE HEATING SYSTEM

BS-01

The heating system may only be operated and cleaned by demonstrably trained persons (according to the checklist). Children, unauthorized persons or persons with mental disabilities may only enter the boiler room under the supervision of an authorized person. Without supervision, the boiler room or fuel store must be locked and the key kept out of reach of these persons.

Even if requested to the contrary, maintenance and repair work may only be carried out by authorized specialist companies!

## 2.3 WARRANTY / LIABILITY

BS-01

Warranty and liability claims for personal injury and property damage are excluded if they are due to one or more of the following causes:

- non-intended use;
- non-observance of the notes, guidelines and safety instructions given in the documentation;
- improper commissioning, operation, maintenance and repair;
- Operate when safety devices are defective;
- unauthorized changes

## 2.4 SAFETY INSTRUCTIONS

PC-02

To prevent accidents, small children are not allowed in the boiler room or fuel storage room. Please observe the following safety instructions! This will protect you and prevent damage to your heating system.

Power switch

The mains switch must always remain switched on and may only be switched off in a non-functional state!

Power plug

**Danger to life due to electric shock!**

The main supply line leads to the boiler via the "Mains" plug. This plug and some components of the system remain live even if the mains switch on the control unit is switched off!

Repair work

**Only authorized specialists may carry out repair work!**

Touching components that are live is life-threatening!

Even with the mains switch "OFF", some components of the system are still live.

During repair work, it is therefore essential to interrupt the power supply to the heating system by means of the "mains plug" or a circuit breaker!

**Emergency:** In case of electric shock, disconnect the power supply immediately!
Provide first aid → Alert emergency physician!

Troubleshooting

In the event of malfunctions, the causes of the malfunction must first be eliminated using the messages on the display (F0...) before operation can be continued by pressing the "Quit" key!

Manipulations

Do not make any unplanned changes to the settings or any modifications to the heating system!

**Loss of warranty and guarantee!**

Maintenance

Carry out maintenance work regularly or make use of our customer service!

Ash discharge

**Residual embers can lead to fires!**

Empty or store ash from the boiler only in non-flammable containers!

Boiler cleaning

**Touching hot parts can lead to skin burns!**

The boiler may only be cleaned when it is cold!
(Exhaust gas temperature < 50°C)

Exhaust fan

**Risk of injury from rotating parts!**

The blower may only be removed in a de-energized state (unplugged)!

Seals

**Attention Danger of Poisoning!**

Leakage of flue gas is possible as a result of a damaged seal!

Have defective seals replaced by an authorized specialist.

**Emergency:** Immediately bring the person into the open → Alert the emergency physician!

Fresh air supply

**Caution: Danger of suffocation!**

Insufficient fresh air supply is life-threatening!

Ensure sufficient fresh air supply!

**Notice:** If there are several boilers in the same room, additional fresh air must be provided!

Draft regulator / Ex flap

**Caution Danger of deflagration!**

A chimney draft regulator with explosion damper is absolutely necessary!

Safety distances

**Attention Fire Hazard!**

Do not store any flammable objects in the vicinity of the boiler!
Observe the regulations in force on site!

Heating mode

**Caution Danger of deflagration!**

Do not open any boiler doors or cleaning openings during heating operation!

Fill storage room

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

When filling the storage room by means of a blower or pump truck, the boiler must be switched off (Prog. OFF)!

If this is not observed, flammable and toxic gases may enter the storage room!

Enter storage room

**Attention Danger to life!**

With all biogenic substances, the formation of gases can occur during storage.

Entering the storage room is therefore only permitted when the storage room is empty (max. 1/5 residual content) and after at least 2 hours of prior good ventilation.

Storage rooms with a higher filling level may only be entered by authorized customer service technicians after prior measurement of the air quality in the storage room.

Enter storage room

**Caution: Risk of injury!**

**Only enter the storage room when the system is switched off! Always disconnect the power supply before entering!**

Place information sign on storage room door!

Keep storage room doors locked!

Antifreeze

**Frost protection function!**

The system can only fulfill the frost protection function if sufficient fuel is available and there is no malfunction!

Fire extinguisher

**Provide fire extinguisher!**

A fire extinguisher must be provided directly in front of the boiler room door!

Overtemperature

**Caution: Risk of injury!**

If the boiler temperature exceeds 100 °C, leave the boiler room immediately!

Under no circumstances must boiler doors or maintenance openings on the boiler be opened!

Remote plant access

**Attention risk of injury**

If remote access to the system is activated, e.g. by means of APP, GSM module, etc., then the heating system must be disconnected from the power supply. ... work of any kind may only be carried out on the heating system when it is de-energized.

## 2.5 SAFETY INSTRUCTIONS ON THE HEATING SYSTEM

BS-01

Warning of dangerous electrical voltage

Warning against rotating components

Hot surface warning

Warning of deflagration

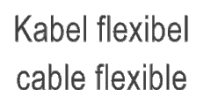
Grounding

Observe operating or installation instructions

Disconnect the heating system from the mains

Pull off angle plug to the side

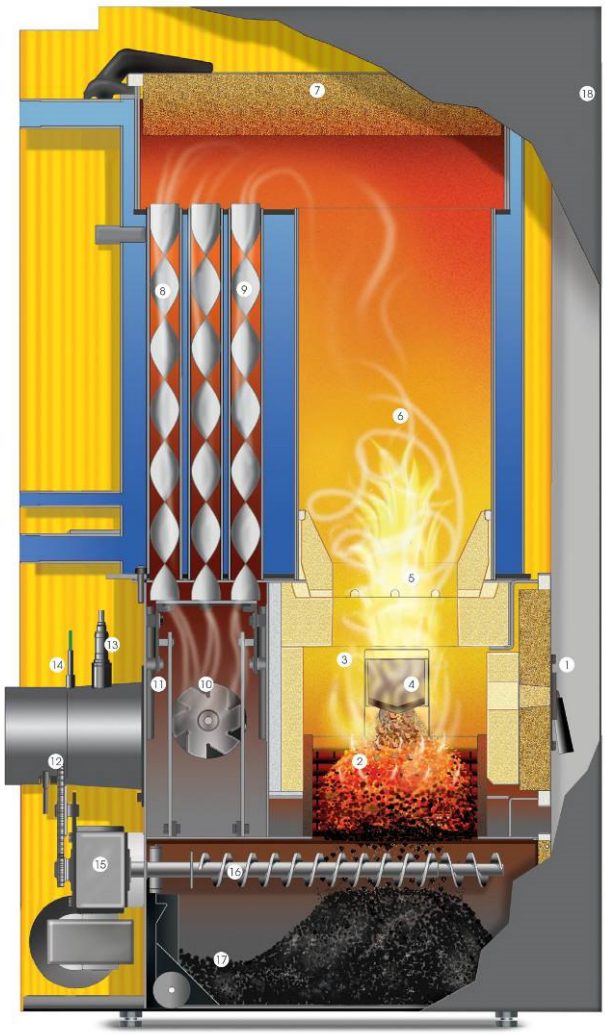

Power supply




Do not use rigid cables for installations

# 3 PLANT COMPONENTS

PC-02




1. Firebox door
2. Stair grate - primary air
3. Combustion chamber
4. Level tongue
5. Swirl nozzle - secondary air
6. Reaction tube
7. Cleaning cover
8. Vertebrators
9. Shell and tube heat exchanger
10. Induced draft fan
11. Heat exchanger cleaning
12. Flue pipe
13. Lambda sensor
14. Flue gas sensor
15. Cleaning or grate drive
16. Ash screw
17. mobile ash pan
18. Menu-driven control
19. Reservoir

# 4 SAFETY DEVICES

PC-01

To prevent the boiler from overheating, the control system reduces the heating output. If the boiler nevertheless threatens to overheat, the control distinguishes between several safety levels.

Safety level 1 **15°C above the boiler set temperature**

The geared motor stops the firing material feed and the induced draft fan stops.

Safety level 2 **Boiler temperature above 90°C**

All heating pumps and the storage tank charging pump are activated for heat dissipation.

Safety level 3 **Boiler temperature above 100°C**

The STB (safety temperature limiter) responds and switches off all boiler control functions, but the pump control remains active! The system remains switched off even if the boiler temperature drops below 90°C again. The system may only be put back into operation after any fault has been rectified and the boiler has been checked.

Power outage The control system, the induced draft fan and all pumps switch off for lack of electrical power. The ember bed on the grate continues to burn with natural chimney draught. Since this operating state is not optimal, a larger ash formation also remains on the grate. As soon as electrical energy is available again, the control system takes over control of the heating system again.

Open ash box / firebox door

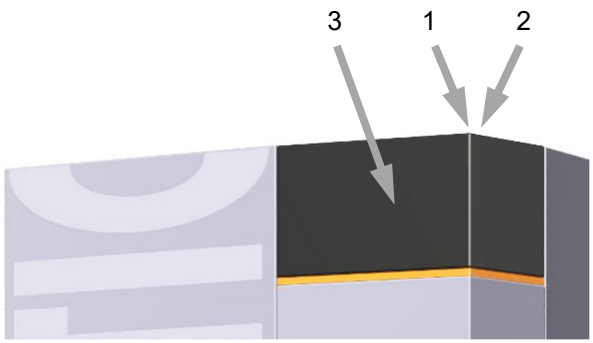
- the geared motor stops the fuel feed;
- the induced draft fan goes to 100% suction speed;
- After closing the ash box or the firebox door, operation continuation or re-ignition is initiated.

# 5 PANEL DESCRIPTION

BS-01

The device has a touch control unit with menu guidance. Settings can be made by pressing the "buttons" on the display. Information and error messages are shown on the display.

PH-01




Power switch (1) The mains switch normally remains switched on at all times and may only be switched off in a non-functional state.

> For repair or maintenance work, the system must also be disconnected from the mains at all poles at the mains plug!

STB (2) In case of overtemperature, the safety temperature limiter (STB) is triggered; → the heating operation of the unit is interrupted;

After overtemperature, eliminate the cause of the fault and press the STB deeply with a suitable object.

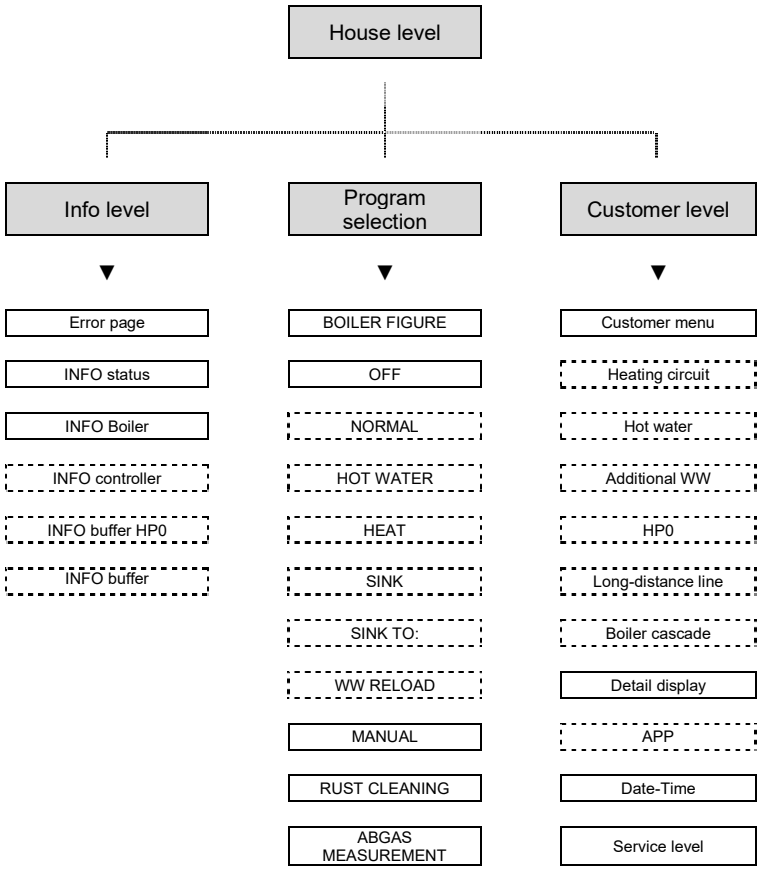
> The system may only be put back into operation after any malfunction has been rectified and the boiler has been checked. If necessary, a specialist must be called in!

Touch display (3) By lightly pressing the buttons on the display with your fingertip, you can access the various levels and menus where settings can be made.

> Do not use any pointed objects, such as ballpoint pens or similar, to operate the touch display!

# 6 MENU / LEVEL OVERVIEW

PH-02

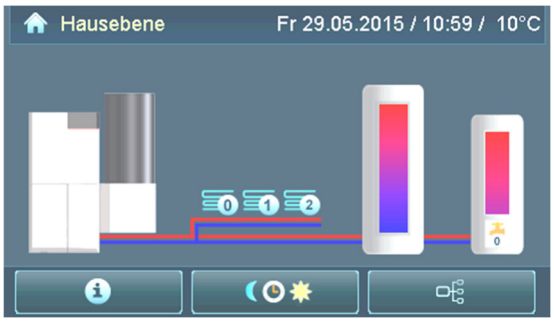



Line-framed menus are only displayed if they have been activated in the commissioning menu!

## 6.0 HOME Level

BS-01

Use the selection buttons to switch to the different levels.




PC-01

**Info level** *)

**Program selection** see chapter 6.1 **)

**Customer level** see chapter 6.2 ***)

**INFO**

*) -fault messages , temperatures, switching and operating states for boiler, buffer and heating circuits can be queried;

**) - Programs for boilers and heating circuits can be selected;
- the boiler release can be interrupted;

***) -the settings for boiler, heating circuits, etc. can be changed;
- the settings in the service level and parameter menu may only be changed by GUNTAMATIC authorized technical personnel

## 6.1 PROGRAM SELECTION

PH-03

| | | |
|---|---|---|
| Boiler enable | If set OFF, the boiler will not start. | |
| Program OFF | Heating mode is switched off. | |
| * Program | NORMAL | Heating and WW preparation switched on (according to clock program). |
| * WARM WATER program | | Heating switched off - WW preparation switched on (after clock p. summer). |
| * HEATING program | | Day and night heating mode (hot water according to clock program). |
| * SINK program | | Day and night setback mode (hot water according to clock program). |
| * SINK TO program. | | Setback operation until a certain time (hot water after clock p.). |
| * RELOAD HOT WATER | | Duration maximum 90 minutes. |
| MANUAL OPERATION program | | Heating operation at boiler setpoint or buffer setpoint temperature. |
| Grate cleaning | | Manual ON/OFF switching. |
| Emission measurement | | Emission measurement program |

back to the home page ..... see chapter 6.0

**INFO**

* **The** program buttons are only visible when a heating circuit control is activated.

## 6.2 CUSTOMER LEVEL

PH-03

| | | |
|---|---|---|
| Customer menu | | see chapter 6.2.1 |
| * Heating circuit | | see chapter 6.2.2 |
| * Hot water | | see chapter 6.2.3 |
| * Charge pump | | see chapter 6.2.4 |
| * Buffer pump | | see chapter 6.2.4 |
| * Feeder pump | | see chapter 6.2.4 |
| Buffer tank | | see chapter 6.2.5 |
| Boiler cascade | | see chapter 6.2.6 |
| Detail display | Settings, states and measured values of the plant are displayed! | |
| APP | | see chapter 6.2.7 |
| Date-time | Date and time of the plant can be set! | |
| Service level | | see chapter 6.2.8 |

back to the home page ..... see chapter 6.0

**INFO**

* **The** selection buttons can only be activated in conjunction with a heating circuit control.

## 6.2.1 CUSTOMER MENU

02

| | | |
|---|---|---|
|  | Ash emptied | Select the menu after emptying the boiler ash and confirm with YES and OK. |
|  | Ash warning | Hours until the next ash warning on the display / the boiler ash must be emptied. |
|  | Ash removal | manual start of the ash suction system (switches off automatically). |
|  | Filter ash emptied | Select the menu after emptying the filter ash and confirm with YES and OK. |
|  | Ash warning filter | Hours until the next ash warning on the display / the filter ash must be emptied. |
| 1)  | Filter operation | Affects the filter performance. |
|  | Cleaning the filter | Manual start of filter cleaning - the boiler goes to operation overrun. |
| 2)  | Enable HKR | Affects the release of the LAP and PUP trunk line function (not for ZUP). |
|  | Set m³ counter to 0 | Sets the m³ counter to 0. |
|  | Setting m³ counter | Influences the counting speed (higher value = counts faster). |
|  | Filling the screw | Manual filling of the stoker channel (G1 switches off when the filling level tongue is triggered). |
|  | Filling the suction unit | Manual filling of the reservoir (stops automatically). |
|  | Discharge blocking time | No refilling of the reservoir during the blocking time (except for forced filling). |
|  | Ash removal blocking time | No ash removal during the blocking time (only with optional ash suction system). |
|  | Boiler blocking time | Only visible if output HP0 is programmed as Z-pump. |
|  | Ash factor | Adjustment of the ash suction interval in 0.1 steps (higher value = sucks more often). |
|  | Language | Setting of the national language. |

 back to the CUSTOMER LEVEL ..... see chapter 6.2

### INFO

1) **optimal2** ..... stage operation - highest performance of the filter
**reduced1** ..... stage operation - reduced performance of the filter
**deactivated** ..... **Filter** deactivated - no filter performance

2) **AUTO** ..... The remote line function (pump) is automatically switched ON/OFF.
**OFF** ..... The capillary function (pump) is switched off.
**DURATION** ..... The capillary function (pump) is enabled permanently.

## 6.2.2 HEAT CIRCLE

BS-04

1) Pump operation ..... Affects the operating status of the heating circuit.

2) * Weather ..... Automatic or manual activation of the multiple clock programs COLD, MILD or WARM.

** clock program ..... Setting of heating and lowering phases for heating program NORMAL.

* clock program (cold)..... Setting of heating and lowering phases for heating program NORMAL.

* clock program (mild)..... Setting of heating and lowering phases for heating program NORMAL.

* clock program (warm) ..... Setting of heating and lowering phases for heating program NORMAL.

3) Day setpoint temperature ..... A room unit is required for control to room setpoint temperature.

4) Night setpoint temperature ..... A room unit is required for control to room setpoint temperature.

5) *** Room influence ..... 0% - 100% influences the flow temperature / T1°C - T3°C influences the heating circuit pump.

6) Heating curve ..... Influences the flow temperature - (higher setting value = higher flow temperature).

7) Night off AT ..... Affects the heating circuit during the setback phase.

8) **** AT limit..... cold/mildSwitching threshold for change between clock program COLD and MILD.

8) **** AT limit..... mild/warmSwitching threshold for the change between clock program MILD and WARM.

9) AT shutdown ..... Affects the heating circuit during the heating phase.

back to the CUSTOMER LEVEL ..... see chapter 6.2

## INFO

* The menu button is only visible when the multiple clock program is activated in the start-up menu.
** When the Multiple clock program is activated, this menu button is not visible.
*** The menu button is only visible when the room unit/room station is activated in the commissioning menu.
**** The menu buttons are only visible when **AUTO** is set in the **Weather** menu item.

1) **AUTO**..... When the heating program NORMAL is activated, the heating circuit is switched ON and OFF fully automatically according to the heating and lowering times set in the clock program. If the outdoor temperature exceeds the value set in the AT switch-off parameter, the heating circuit switches off.
**OFF**..... The heating circuit is switched off.
**DURATION**..... The heating circuit pump runs continuously (no mixer control).

2) **AUTO**..... Automatic change between the multiple clock programs COLD, MILD and WARM depending on the outdoor temperature. The setting of the outdoor temperature switching threshold for the automatic change of the multiple clock programs can be made in the menus AT limit COLD/MILD and MILD/WARM.
**COLD**..... Axclusively heating mode according to clock program KALT.
**MILD**..... Axclusively heating mode according to clock program MILD.
**WARM**..... Axclusively heating mode according to clock program WARM.

3) The control to room TEMPERATURE DAY is only possible during the heating phase of the heating circuit and requires a room unit/room station assigned to the heating circuit. This adjusts the heating curve fully automatically so that the desired room temperature can be reached in all weather conditions.
- Without a room unit, only heating operation according to the preset heating curve is possible without taking the room temperature into account. Increasing the day setpoint temperature only causes an "upward" shift of the preset heating curve.
- If the outdoor temperature exceeds the value set in the AT switch-off parameter, the heating circuit switches off.

4) The control to room SET POINT TEMPERATURE NIGHT is only possible in the setback phase of the heating circuit after the outdoor temperature has fallen below the value set in the menu Night from AT and requires a room unit/room station assigned to the heating circuit. This adjusts the heating curve fully automatically so that the desired room temperature is reached.
- Without a room unit, only reduced heating operation is possible according to the preset heating curve without taking the room temperature into account. Increasing the night setpoint temperature only causes an "upward" shift of the preset heating curve.
- If the outdoor temperature exceeds the value set in the Night off AT parameter, the heating circuit switches off again.

5) **0% - 100%** ..... When the outdoor temperature is high (plus degrees) and the room temperature is too low, increasing the room influence allows the desired room temperature to be reached more quickly.
**T1C° - T3°**..... CIf the room setpoint temperature is exceeded by the set value, the heating circuit pump is switched off;

6) A higher heating curve causes a higher flow temperature at the same outdoor temperature.

7) If the outdoor temperature falls below the value set in the Night off AT parameter during the setback phase, the heating circuit switches on.
ATTENTION No frost protection function until the outdoor temperature falls below the value set in the Night off AT menu.

8) Setting the switching threshold for switching between the COLD/MILD and MILD/WARM clock programs.
ATTENTION Switching between the weather controlled clock programs depends on the average temperature of the previous day and may be delayed until one day later.

9) If the set outdoor temperature is exceeded during the heating phase, the heating circuit switches off.

## 6.2.3 HOT WATER

BS-04

1) Pump operation.....Setting the SLP pumps operating mode

Clock program WW .....Setting the hot water charging times for **program NORMAL** (winter mode).

Clock prg. WW summer.....Setting of hot water charging times for **program WARMWASSER** (summer mode).

WW set temperature .....Setting the hot water setpoint temperature

2) WW priority .....Affects the heating circuits during hot water charging

WW Recharge.....Enables one-time hot water charging outside the programmed charging times

back to the CUSTOMER LEVEL ..... see chapter 6.2

### INFO

1) **Auto**.....Automatic hot water charging according to clock program WW or WW summer.
**Off**.....The hot water circuit is switched off.
**Duration** .....The hot water pump (SLP) runs continuously.

2) **No** .....The heating circuits remain in operation during hot water charging.
**Yes**.....The heating circuits are switched off during hot water charging.

## 6.2.4 CAPILLARY BUFFER PUMP / CHARGE PUMP / FEEDER PUMP

PH-02

1) Pump operation..... Affects the operation status of the capillary.

2) * Charge program..... Influences the state of charge of the capillary buffer.

* Clock program..... Adjustable release times for capillary operation.

* Buffer target ..... Recommended setting up to maximum 70°C.

3) * Buffer min ..... Setting of the lowest temperature at the capillary buffer TOP (T3).

back to the CUSTOMER LEVEL ..... see chapter 6.2

### INFO

* The menu buttons are only visible when the PUP or LAP remote control function is activated in the startup menu.

1) **AUTO**.....The remote line function is switched ON/OFF depending on the request and clock program.
**OFF**.....The remote line function is switched off.
**DURATION**.....The capillary pump runs continuously.

2) **Full** .....The buffer is charged until the buffer set temperature is reached at the buffer sensor UP (T3) and the temperature difference to the buffer sensor DOWN (T2) is only 10°C (default setting).
**Part**.....The buffer is charged until the buffer setpoint temperature is reached at the buffer sensor ABOVE (T3).

3) If the buffer temperature falls below the set buffer min. temperature at the buffer sensor UPPER (T3), the buffer is fully automatically charged again to the set buffer target temperature according to the set charging program FULL or PART.
ATTENTION The enable HKR 0-2 must be ON in the detailed display. (Contact FFR on the wall device)

## 6.2.5 HP0 BUFFER PUMP / Z-PUMP / PUMP

PH-02

1) Pump operation ..... Affects the operating status of the pump.

* Boiler setpoint ..... Setting of boiler set temperature with activated Z-pump HP0 or pump HP0.

2) ** Charge program ..... Setting of the buffer loading program with activated buffer pump HP0.

** clock program ..... Adjustable release times for boiler and buffer charging operation.

** Buffer setpoint ..... Setting of the buffer setpoint temperature at buffer tank HP0.

3) ** Buffer min ..... Setting of the lowest temperature at the buffer tank HP0 TOP (T3).

4) *** Buffer charge min ..... Setting of the lowest buffer charge in % (only with 5 sensor buffer management).

5) *** Part load limit ..... Affects the performance of the boiler (only with 5 sensor buffer management).

back to the CUSTOMER LEVEL ..... see chapter 6.2

### INFO

* The menu button is only visible when the Z-pump HP0 or pump HP0 is programmed in the commissioning menu.

** The meu buttons are only visible when the HP0 buffer pump is programmed in the commissioning menu.

*** The menu button is only visible with active 5 sensor buffer management.

Setting: RLM = Yes / RLM = Auto / HP0 = Buffer tank / Additional sensor = Yes

1) **AUTO** ..... The pump is switched ON/OFF automatically.
**OFF** ..... The pump is switched off.
**DURATION** ..... The pump runs continuously (no mixer control).

2) **Full** ..... The buffer is charged until the buffer set temperature plus 6°C rise is reached at the buffer sensor at the top. In addition, the buffer set temperature difference minus 10°C must be reached at the buffer sensor at the bottom so that buffer charging is terminated with Full status.
**Part** ..... The buffer is charged until the buffer set temperature plus 6°C rise at the buffer sensor at the top is reached.

3) If the temperature at the top of the buffer sensor falls below the set buffer min. temperature, the buffer is fully automatically charged again to the set buffer setpoint temperature according to the set charging program.

4) If the buffer charge falls below the set buffer charge min in % at the buffer with activated additional buffer sensors, the buffer is fully automatically charged again to the set buffer setpoint temperature according to the set charging program Full or Part.
Attention: When set to 0%, the function is ineffective.

5) If the buffer load reaches the set partial load limit in % when the additional buffer sensors are activated, the temperature difference RLM Delta T between boiler flow and return is reduced linearly to the temperature difference RLM Delta T min up to 100% buffer load. This causes the boiler temperature to rise, which leads to a reduction in boiler output.

## 6.2.6 KESSELKASKADE

PH-02

1) Boiler exchange ..... Setting of the running time difference for the boiler exchange (0h = no boiler exchange).

2) Switch-on time ..... Setting of the time for the earliest switch-on of the next boiler stage.

2) Switch-on power ..... Setting of the power for switching on and off boiler stages.

AT Enable ..... Setting the outdoor temperature for enabling the individual boiler stages.

* Operation EXTERNAL ..... Setting of peak load boiler enable AUTO = enable / OFF = no enable.

3) * P OFF EXT Hysteresis ..... Setting of the peak load boiler switch-off hysteresis.

back to the CUSTOMER LEVEL ..... see chapter 6.2

### INFO

* The menu buttons are only visible when the Additional / External function is programmed in the Startup menu.

1) As soon as the first boiler in the cascade has run more than the last boiler in the cascade by the hours set in the Boiler swap menu (runtime difference), the boiler is swapped. The boiler with the fewest operating hours now starts first.

2) As soon as the first boiler in the cascade starts, the connection time 1 (30 minutes) begins to run. After the 30 minutes have elapsed, the switch-on power P ON 1 (100%) is queried. If the boiler started first is still running at 100%, the second boiler is started and the connection time 2 (30 minutes) begins to run. After 30 minutes have elapsed again, the switch-on power P ON 2 (200%) is queried. If both boilers are running at 100% each (total 200%), the third boiler is started and the connection time 3 (30 minutes) begins to run. This continues in this way until all boilers are running. A maximum of 4 cascade boilers and one peak load boiler can be operated via the Additional / External function.
The possible total output of, for example, 3 running boilers is 300%. If the total output of these boilers falls below the 180% set in the parameter P OFF 2 (180%), one boiler in the cascade is switched off again, since the possible total output of 2 boilers is 200% and is therefore higher.

3) In case of high output of the peak load boiler, the standard setting of 50% of the P OFF EXT hysteresis is recommended. A smaller setting value leads to early shutdown of the peak load boiler in the cascade.

## 6.2.7 APP

BS-03

| | | |
|---|---|---|
| 1) | Network | Establish the connection to the Internet with **YES (Terms of use accepted)**. |
| 2) | W-LAN Visibility | Activation of the W-LAN visibility. |
| | Serial number | Enter the device serial number. |
| | Key | Displays the security key recommended by GUNTAMATIC. |
| | Hot water display | Defines which hot water tank is visualized online. |
| | Diagram Interval | Sets the update interval of the online diagrams. |
| | Data update | Sets the update interval for the online boiler data. |
| 3) | Recording file size | Sets the maximum size of the recording file (1 MB = approx. 1 day). |
| | Recording storage rate | Sets the interval for saving the recording data. |

back to the CUSTOMER LEVEL ..... see chapter 6.2

**INFO**

1) The boiler must be connected to the Internet router via a network cable.
2) In the absence of an Internet connection and activated W-Lan visibility, the boiler can be reached in-house via the W-Lan of the Internet router.
3) A recording can be started online on the APP, which is automatically sent to the e-mail address saved under Contacts once the set file size is reached.

## 6.2.8 SERVICE LEVEL SPECIALIST PARTNER

PH-02

**ATTENTION:**
Changes in all menus of the service level may only be carried out by persons authorized by GUNTAMATIC. Unauthorized changes are not permitted and can lead to serious defects in the heating system and possibly even to life-threatening situations!

| | | |
|---|---|---|
| Reset data | | see chapter 6.2.8.1 |
| Error list | All error messages are stored with date and time! | |
| Test program | All system components can be subjected to a function test! | |
| Commissioning | | see chapter 6.2.8.2 |
| * Parameters heating circuit | Screed heating | see chapter 6.2.8.3 |
| * Parameter hot water | | see chapter 6.2.8.4 |
| * Parameter HP0 | | see chapter 6.2.8.5 |
| * Parameter capillary | | see chapter 6.2.8.6 |
| * Parameter return mixer | | see chapter 6.2.8.7 |
| Plant settings | | see chapter 6.2.8.8 |
| Parameter menu | Entry and changes only allowed in consultation with GUNTAMATIC! | |

back to the CUSTOMER LEVEL ..... see chapter 6.2

**INFO**

* The number of parameters displayed depends on the plant configuration.

## 6.2.8.1 RESET DATA

BS-02

| | |
|---|---|
| Load customer parameters | Stored customer data can be read in again if necessary. |
| Save customer parameters | |
| Load factory parameters! | Only changed or new parameters of a new software are loaded. |
| Operating hours reset | Only the operating hours counter is set to 0. |
| Service time reset | Only the service time counter is set to 0. |
| Filter time reset | The filter time counter is set to 0. |
| Control reset | **Attention**: The factory setting is loaded! |
| Lambda calib. reset | Reset after each lambda sensor replacement. |

back to SERVICEEBENE..... see chapter 6.2.8

## 6.2.8.2 COMMISSIONING

03

| | | | | | |
|---|---|---|---|---|---|
| | | Attachment | Selection: | Biocom | |
| | | Type | Selection: | According to nameplate | |
| | | Outlet | Selection: | Flex | |
| | | Boiler number | Selection | According to nameplate | |
| 1) | | Ash discharge | Selection: | No / with scraper | |
| 2) | | Filter present | Selection | No / from year of manufacture 2017 | |
| | | Fuel | Selection: | Pellets | |
| | | Watch programs | Selection | single / multiple | |
| 3) | | HK controller present | Selection: | No / CAN bus / SY bus / Yes | |
| | | • WW available ... Hot water | Selection: | No / Yes | |
| | | • Operation HK ... Heating circuit | Selection: | None / Pump / Mixer | |
| | | ○ Supply temperature max | Selection: | 10°C - 90°C | |
| | | ○ Heating curve | Selection: | 0,1 - 3,5 | |
| 4) | | ○ Room unit HK | Selection: | None / RFF / RS-Full / RS-HK / RS-HKR | |
| 5) | | • Transmission line operation | Selection: | None / ZUP / PUP / LAP / ERW | |
| 6) | | • Source | Selection: | Boiler / Buffer HP0 / Buffer 0 / ... | |
| 7) | | • Addition | Selection: | None / WWP / External | |
| 8) | | Operation HP0 | Selection: | Z-pump / buffer pump / pump | |
| 9) | | Probe HP0 | Selection: | Boiler / HKR0 / HKR1 / HKR2 | |
| | | Return mixer | Selection: | No / Yes | |
| | | Fill screw | Selection: | OK / OFF | |
| | | Save customer parameters | Selection: | No / Yes | |

back to SERVICEEBENE ... see chapter 6.2.8

### INFO

1) **No** ... Setting for boilers with ash boxes integrated in the boiler.
**without scraper** ... Setting for older boilers with ash suction system and screws in the ash chamber.
**with scraper** ... activation of the ash suction system in new boilers.

2) **No** ... Setting for boilers without EC filter.
**Year 2016** ... Setting for boiler with EC filter and year of manufacture 2016 on the nameplate.
**Year 2017** ... Activation of the EC filter for new boilers.

3) **No** ... Setting for systems without heating circuit control.
**SY-Bus** ... activation of the boiler internal heating circuit control Set-MKR as HK controller 0.
**CAN bus** ... activation of the external heating circuit controller Wall-mounted unit Set-MK 261 as HK controller 0.
**Yes** ... activation of the external heating circuit control wall unit Set-MK 261 as HK controller 1 or 2.

4) **None** ... Setting for heating circuits without room unit/room station.
**RFF** ... activation of an analog room device.
**RS full** ... activation of a digital space station with setting options for all heating circuits.
**RS-HC** ... activation of a digital room station with setting options only for the assigned heating circuit.
**RS-HKR** ... activation of a digital space station with setting options for the entire heating circuit exciter.

5) **ZUP / PUP / LAP** ... Activate the correct capillary function according to the installed system diagram.
**ERW** ... Activation of a heating circuit extension with additional wall-mounted unit Set-MK 261.
Assignment of the wall-mounted device: Service level / Remote line parameter 0-2 / Source.

6) The setting determines from which source the energy for the capillary is obtained.

7) The Additional function can only be activated if the following settings are programmed in the commissioning menu.
Boiler internal on set MKR: Operation HK0 = None
External to wall-mounted unit Set-MK 261: Operation HK0, 3 or 6 = None or Pump.
**WWP** ... Activation of an additional hot water tank.
**External** ... Activation of an additional heating source (peak load boiler) via the cascade function.

8) Activate the correct pump function according to the installed system diagram.

9) Select the controller on which the HP0 buffer tank sensors are connected.

Nominal capacity: The maximum unit capacity (as required or type series) can be reduced by hydraulic tuning by the customer. In addition, it is possible to adjust the unit output by a trained specialist via the parameter for limiting the max. flue gas temperature.

## 6.2.8.3 PARAMETERS HEATING CIRCUIT / SCREED HEATING

BS-05

| | | | | | |
|---|---|---|---|---|---|
| | Operation HK | Selection: | None / Pump / Mixer | ✓ |
| | Room unit HK | Selection: | None / RFF / RS-Full / RS-HK / RS-HKR | ✓ |
| | Mixer runtime | Selection: | 10 - 300 seconds | ✓ |
| | Flow temperature min. | Selection: | 10°C - 90°C | ✓ |
| | Flow temperature max. | Selection: | 10°C - 90°C | ✓ |
| 1) | Boiler superheat | Selection: | 0°C - 20°C | ✓ |
| | Heating circuit pump enable temperature | Selection: | 20°C - 100°C | ✓ |
| 2) | Parallel shift heating curve | Selection: | -10°C - 30°C | ✓ |
| | Heating circuit designation | Selection: | Change of designation possible | ✓ |
| | Screed heating | Selection: | Yes / No | ✓ |
| | • Advance rise/descent ..... daily from program start | Selection: | 0°C - 10°C | ✓ |
| | • Pre-run rise/descent after | Selection: | 1 - 5 days | ✓ |
| | • Screed pre-run min. | Selection: | 10°C - 30°C | ✓ |
| | • Screed flow max. | Selection: | 25°C - 60°C | ✓ |
| | • Screed holding time ..... Lead time max. | Selection: | 0 - 20 days | ✓ |
| | • Start screed program | Selection: | Yes / No | ✓ |

back to SERVICEEBENE ..... see chapter 6.2.8

**The screed parameters must be set in consultation with the screed layer!**

In principle, it is not possible to maintain the specified set temperatures in modulating operation, but only when automatic mixers are used. Compliance with the specified set temperatures cannot be 100% guaranteed - due to various safety circuits and special boiler functions, significant temperature overshoots may occur in exceptional cases. If this should be problematic in terms of structural damage, the screed heating must be carried out manually.

1) Increases the boiler set temperature compared to the flow set temperature by the set value.
2) Increases or decreases the flow setpoint temperature by the set value with unchanged heating curve.

## 6.2.8.4 PARAMETERS HOT WATER

BS-06

| | | | | | |
|---|---|---|---|---|---|
| | Hot water available | Selection: | Yes / No | ✓ |
| 1) | Hot water hysteresis | Selection: | 1°C - 30°C | ✓ |
| 2) | Hot water pump enable | Selection: | 20°C - 90°C | ✓ |
| 3) | Boiler superheat | Selection: | 0°C - 20°C | ✓ |
| | Hot water circuit designation | Selection: | Change of designation possible | ✓ |

back to SERVICEEBENE ..... see chapter 6.2.8

**INFO**

1) Is the temperature difference between the beginning of hot water charging and the end of hot water charging.
   Example: Hot water set temperature = 60°C / Hot water hysteresis = 10°C
   If the hot water temperature drops below 50°C, the hot water charging starts and ends again as soon as the hot water temperature reaches 60°C. Condition: Enable by the hot water timer program.
2) When the boiler or buffer temperature at the top (T3) exceeds the set temperature, the pump can start.
3) Increases the boiler set temperature compared to the hot water set temperature by the set value.

## 6.2.8.5 PARAMETER HP0 BUFFER PUMP / Z-PUMP / PUMP

PH-04

| | | | | | |
|---|---|---|---|---|---|
| 1) | | Operation HP0 ..... | Selection: | Z-pump / buffer pump / pump | ✓ |
| | | * Release HP0..... Pump enable | Selection: | 65°C - 80°C | ✓ |
| 2) | | ** Po charge ON ..... | Selection: | 0°C - 20°C | ✓ |
| 3) | | ** Po charge OFF (Full) ..... | Selection: | 0°C - 20°C | ✓ |
| 4) | | ** Po charge OFF (part)..... | Selection: | 0°C - 20°C | ✓ |
| 3) | | ** Pu charge OFF ..... | Selection: | 0°C - -20°C | ✓ |
| 5) | | ** Delta T trunk line..... | Selection: | 0°C - 50°C | ✓ |
| | | ** Difference boiler-buffer below..... | Selection: | 0°C - 50°C | ✓ |
| 6) | | ** Sensor HP0 ..... | Selection: | Boiler / HKR0 / HKR1 / HKR2 | ✓ |
| 7) | | ** Additional sensor ..... | Selection: | Yes / No | ✓ |

back to SERVICEEBENE..... see chapter 6.2.8

### INFO

* The menu button is only visible with the buffer pump or pump function programmed under operation HP0.
** The menu buttons are only visible with the buffer pump function programmed under operation HP0.

1) Activate the correct pump function according to the installed system diagram.

2) In buffer heating mode, the temperature at the top of the buffer sensor must fall below the highest demand temperature of a heating or hot water circuit by 6°C (factory setting) for the boiler to restart.
Example: highest demand temperature = 60°CBoiler start when temperature falls below 54°C at the top of the buffer sensor.

3) The switch-off condition for charging program FULL is fulfilled at buffer tank HP0 when using the factory setting at 76°C at the buffer sensor above and 60°C at the buffer sensor below.

| | | | | | |
|---|---|---|---|---|---|
| 76°C Buffer UP temperature | = | Buffer set temperature 70°C | plus | Po charge OFF (Full) | 6°C |
| 60°C Buffer LOW temperature | = | Buffer set temperature 70°C | minus | Pu charge OFF | -10°C |

4) The switch-off condition for loading program PART is fulfilled when using the factory setting at 76°C at the top of the buffer.

| | | | | | |
|---|---|---|---|---|---|
| 76°C Buffer UP temperature | = | Buffer set temperature 70°C | plus | Po charge OFF (part) | 6°C |

5) For (long-distance) lines, for example, a temperature loss caused by the length of the line can be compensated. A setting of, for example, 2°C loss causes an increase in the set temperature by the set value.

6) Specification of the controller (board) on which the sensors of the HP0 buffer tank are connected.

7) Activation of additional buffer sensors. The buffer management can be extended by up to 3 additional buffer sensors.

## 6.2.8.6 PARAMETER FL LONG-DISTANCE LINE

PH-02

| | | | | |
|---|---|---|---|---|
| 1) | Operation trunk line ..... | Selection: | None / ZUP / PUP / LAP / ERW | ✓ |
| | * Release capillary..... Pump release | Selection: | 40°C / 65°C - 80°C | ✓ |
| 2) | * Po charge ON ..... | Selection: | 0°C - 20°C | ✓ |
| 3) | * Po charge OFF (Full) ..... | Selection: | 0°C - 20°C | ✓ |
| 4) | * Po charge OFF (part)..... | Selection: | 0°C - 20°C | ✓ |
| 3) | * Pu charge OFF ..... | Selection: | 0°C - -20°C | ✓ |
| 5) | ** Source ..... | Selection: | Buffer 0 / Buffer 1 / Buffer 2 / Buffer HP0 | ✓ |
| 6) | Delta T remote ..... | Selection: | 0°C - 50°C | ✓ |
| | * Difference source buffer below..... | Selection: | 0°C - 50°C | ✓ |

back to SERVICEEBENE..... see chapter 6.2.8

### INFO

* The menu buttons are visible when the PUP and LAP remote control functions are programmed.
** The menu button is visible when the ZUP and LAP remote line functions are programmed.

1) **ZUP / PUP / LAP** .....Activate the correct capillary function according to the installed system diagram.
**ERW** .....Activation of a heating circuit extension with additional wall-mounted unit Set-MK 261.

2) During heating operation, the temperature at the top of the capillary buffer must fall below the highest demand temperature of a heating or hot water circuit by 6°C (factory setting) so that the buffer is loaded again.
Example: highest demand temperature = 60°CStart charging when temperature falls below 54°C at the top of the buffer sensor.

3) The switch-off condition for charging program FULL is fulfilled at the capillary buffer when using the factory setting at 76°C at the buffer sensor at the top and 60°C at the buffer sensor at the bottom.

| | | | | | |
|---|---|---|---|---|---|
| 76°C Buffer UP temperature | = | Buffer set temperature 70°C | plus | Po charge OFF (Full) | 6°C |
| 60°C Buffer LOW temperature | = | Buffer set temperature 70°C | minus | Pu charge OFF | -10°C |

4) The switch-off condition for loading program PART is fulfilled when using the factory setting at 76°C at the top of the buffer.

| | | | | | |
|---|---|---|---|---|---|
| 76°C Buffer UP temperature | = | Buffer set temperature 70°C | plus | Po charge OFF (part) | 6°C |

5) Indication of the source from which the energy for the buffer tank is obtained.

6) For (long-distance) lines, for example, a temperature loss caused by the length of the line can be compensated. A setting of, for example, 2°C loss. causes an increase in the set temperature by the set value.

## 6.2.8.7 PARAMETERS RLM RETURN MIXER

PH-02

| | | | | |
|---|---|---|---|---|
| 1) | Operation return mixer ..... | Selection: | AUTO | ✓ |
| | Return mixer Running time..... | Selection: | 10 - 300 seconds | ✓ |
| | Return temperature set ..... | Selection: | 40°C - 90°C | ✓ |
| 2) | Return mixer Delta T ..... | Selection: | 5°C - 30°C | ✓ |
| 3) | Return mixer Delta T min..... | Selection: | 5°C - 30°C | ✓ |
| 4) | Start-up relief..... | Selection: | Yes | ✓ |

back to SERVICEEBENE..... see chapter 6.2.8

### INFO

1) **AUTO**.....Variable control of the return temperature with active start-up relief and/or partial load limit.
**FEST**.....Fixed control to the return setpoint temperature set under parameter RLT Soll.
**OFF**.....function for test or emergency operation --- Manual opening of the RLM bypass line.
**CLOSE** .....function for test or emergency operation --- Manual closing of the RLM bypass line.
**OFF**.....function for test or emergency operation --- Manual switch-off of the RLM mixer.

2) Sets the difference (spread) between boiler set temperature and boiler return temperature.

3) Defines the minimum difference (spread) between the boiler setpoint temperature and the boiler return temperature after reaching 100% buffer charge in the case of partial load control.
ATTENTION: Partial load control only possible with active additional sensors (5-sensor buffer management).

4) When start-up relief is activated, the return setpoint temperature increases by a maximum of the set value after the boiler start to enable the boiler setpoint temperature to be reached more quickly.

## 6.2.8.8 PLANT SETTINGS

02

| | | | | |
|---|---|---|---|---|
| | Attachment | | Selection: | Biocom |
| | Type | | Selection: | According to nameplate |
| | Outlet | | Selection: | Flex |
| | Boiler number | | Selection | According to nameplate |
| 1) | Ash extraction system | Ash suction system | Selection: | No / without scraper / with scraper |
| | Fire tongue | | Selection: | Yes |
| | Boiler cascade | | Selection: | No / A / B / C / D |
| 2) | Grate drive | | Selection: | ABM |
| | Induced draft | | Selection: | Clock |
| | EC detection | | Selection | No |
| 3) | Watch programs | | Selection | single / multiple |
| 4) | HK controller 0 present | | Selection: | Yes / No / CAN bus / SY bus |
| 4) | HK controller 1 present | | Selection: | Yes / No |
| 4) | HK controller 2 present | | Selection: | Yes / No |
| 5) | Filter present | | Selection | Yes / No |
| 6) | Outdoor sensor | | Selection: | Yes |
| 7) | Lambda sensor | | Selection: | NGK |
| 8) | Lambda heating | | Selection: | AUTO |
| 9) | Calibrate lambda sensor | | Selection: | ON / OFF |
| 10) | Lambda sensor correction | | Selection: | Input according to test result |
| 11) | Lambda sensor characteristic curve | | Selection: | Adjustment in operation |
| | TK Corr. 80°C | | Selection: | 80°C |
| 12) | PC monitoring | | Selection: | Terminal / DAQ / GSM module |
| | GSM phone number 1-3 | | Selection: | Enter phone numbers |
| | SD-Logging | Exit before - Save parameters | Selection: | ON / OFF |
| | SD data | | Selection: | Overview |
| | CID data | | Selection: | Manufacturer identification |
| | Network | VISU via network | Selection: | Yes |
| | DHCP | VISU via network | Selection: | manual |
| | IP address | VISU via network | Selection: | Enter free network IP address |
| 13) | Operation KFR | | Selection | Normal / Service |
| | Menu structure | | Selection: | 3.1 |
| 14) | Time ABS pump | 1x a week | Selection: | 60 seconds |
| 15) | HKP forced switching | | Selection: | 90°C |
| 16) | Residual heat utilization | | Selection: | 70°C |
| 17) | HKP Frost TA | active in "OFF" program | Selection: | -3°C |
| 17) | HKP Frost TV | active in the "OFF" program | Selection: | 3°C |
| 18) | TÜV function | | Selection: | - |
| | Fault messages | | Selection: | Do not deactivate |

back to SERVICEEBENE..... see chapter 6.2.8

## INFO

1) **No** ..... Setting for boilers with ash boxes integrated in the boiler.
**without scraper** ..... Setting for older boilers with ash suction system and screws in the ash chamber.
**with scraper** ..... activation of the ash suction system in new boilers.

2) **Benzler** ..... Adjustment for older systems with Benzler gearbox and Hanning drive motor.
**ABM** ..... Adjustment for new installations with ABM gearmotor.

3) **Simple** ..... For each heating circuit, a daily clock program with up to 3 switching times can be programmed.
**Multiple** ..... For each heating circuit, three weather-controlled clock programs (COLD, MILD and WARM) with up to 3 switching times can be programmed daily.
ATTENTION Switching between the weather controlled clock programs depends on the average temperature of the previous day and may be delayed until one day later.

4) **No** ..... Setting for systems without heating circuit control.
**SY-Bus** ..... activation of the boiler internal heating circuit control Set-MKR as HK controller 0.
**CAN bus** ..... activation of the external heating circuit controller Wall-mounted unit Set-MK 261 as HK controller 0.
**Yes** ..... Activation of the external heating circuit control wall unit Set-MK 261 as HK controller 1 or 2.

5) **No** ..... Setting for boilers without EC filter.
**Year 2016** ..... Setting for boiler with EC filter and year of manufacture 2016 on the nameplate.
**Year 2017** ..... Activation of the EC filter for new boilers.

6) **No** ..... Disables the outdoor sensor and gives the control 0°C outdoor temperature.
**Yes** ..... Default setting for weather-controlled heating systems.

7) **No** ..... Deactivates the lambda sensor.
**Bosch** ..... Adjustment for older boilers with Bosch lambda probe.
**NGK** ..... Adjustment for new boilers with NGK lambda probe.

8) **DURATION** ..... adjustment for older boilers with Bosch lambda probe.
**AUTO** ..... Setting for new boilers with NGK lambda probe.

9) Manual start of automatic lambda sensor calibration.
CAUTION This process may take a long time (about 30 minutes).

10) The ideal measured value of the lambda probe results in -10mV in the test program. Deviations up to a maximum of ± 6 mV are permissible and may be entered as a correction value. If the deviation is greater, the lambda sensor must be replaced.

11) After calibrating the lambda sensor in the lower measuring range to 0.0%, the sensor can be calibrated in the upper measuring range (nominal load range at approx. 10-12% CO2) by adjusting the lambda characteristic curve.
EXAMPLE The CO2 value displayed on the boiler at nominal load differs in the control measurement by means of a calibrated emission meter by, for example, 2% (display on the boiler 10%, on the meter 12%). The deviation of 2% can be entered in the parameter as a correction value and thus causes the calibration of the probe in the upper measuring range.

12) **Terminal** ..... data query via VISU;
**DAQ** ..... data query via online recorder (can only be used in the factory);
**GSM** ..... moduleInfo and control via GSM module;

13) Affects the boiler release menu display in the boiler program selection.
**Normal** ..... Possible selection = AUTO or OFF.
**Service** ..... Possible selection = AUTO, OFF or DURATION.

14) Anti-blocking system for all pumps, mixers and valves (every Monday 12 o'clock).

15) Forced switching on for all heating circuits and hot water pumps until the boiler or buffer tank temperature falls below 90°C.

16) Pump HP0 on until boiler temperature falls below 70°C.

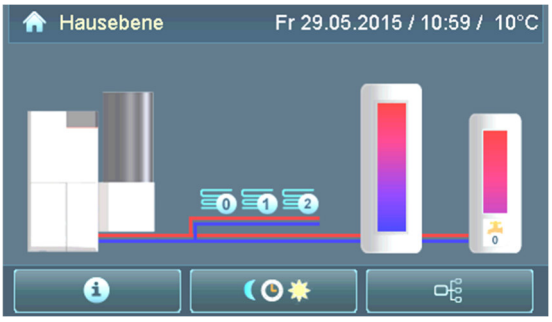
17) If the outdoor temperature falls below the temperature set in the HKP Frost TA parameter, the frost protection function is activated. All heating circuit pumps switch on and control to the flow setpoint temperature set in the HKP Frost TV parameter.
ATTENTION: The frost protection function may fail due to a fault in the boiler! → Provide an electric heating rod!

18) TEST FUNCTION The boiler temperature is increased until the STB interrupts the function.

# 7 CUSTOMER SETTINGS

## 7.1 HEATING SWITCH ON / SWITCH OFF

BS-01




PC-01

Press PROGRAM SELECT 

▼

Program **OFF** .....  Heating and hot water switched off

Program **NORMAL**.....  Heating and hot water switched on

**WARMWATER** program.....  only hot water switched on

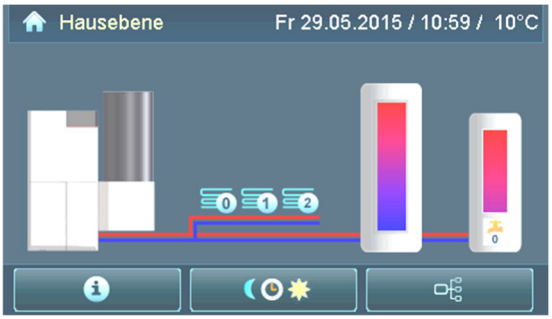
further INFO's for program selection..... see chapter 6.1

 back to the home page..... see chapter 6.0

## 7.2 HEATING TIMES



Up to three "ON / OFF" switching times can be programmed per day for each heating circuit. By means of block programming, all days of a week can be programmed simultaneously.




PC-01

1) Press CUSTOMER LEVEL

▼

2) press the heating circuit button

▼

3) press the clock program button

▼


- Programming "DAILY
  (press 1 x on the day of the week)
- Programming "WEEKLY
  (press 2 times on the same day of the week)

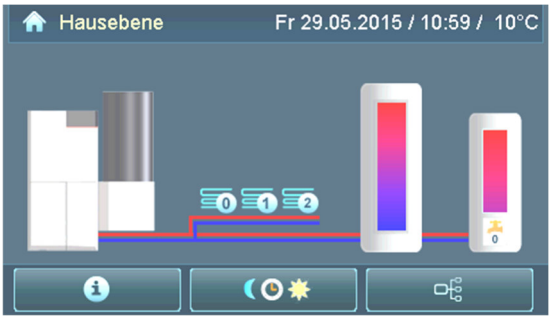
 back to the home page..... see chapter 6.0

## 7.3 ROOM TEMPERATURE

BS-01

By changing the heating curve, the room temperature can be adjusted.
A higher heating curve results in a higher room temperature.
Change the heating curve only on a daily basis and in the tenths range at the most.

PC-01




1) Press CUSTOMER LEVEL

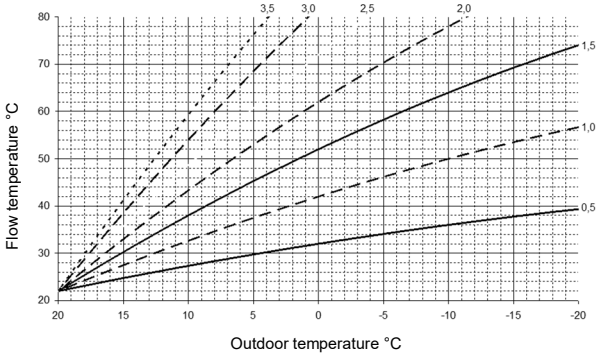
▼

2) press the heating circuit button

▼

3) press the heating curve button

▼



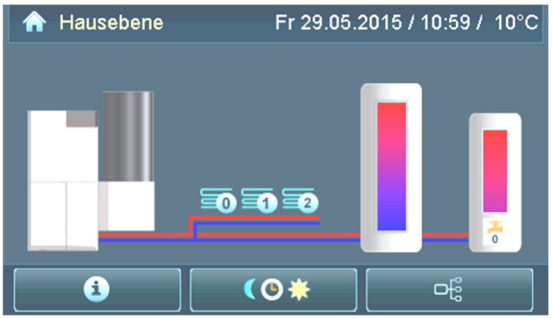


back to the home page..... see chapter 6.0

## 7.4 HOT WATER TEMPERATURE

BS-01

By changing the set temperature, the hot water temperature can be adjusted.




PC-01

1) Press CUSTOMER LEVEL

▼

2) press the hot water button

▼

3) press the set temperature button

▼


- "EDIT" with + or −
- "SAVE" with OK

back to the home page..... see chapter 6.0

## 7.5 ROOM UNIT

BS-01

Mounting location

Mount the room unit at a height of approx. 1.5 m on an interior wall. The most suitable room is the one where the occupants spend most time. In this room, the radiators must not be equipped with thermostatic valves (open valves fully).

> ⚠ The room unit should not be placed in the area of strong sunlight or in the area of influence of a tiled stove.

Adjust room temperature

The rotary knob offers the possibility to change the room temperature. In the plus range (+) of the controller, the room temperature can be raised by up to 3°C, and in the control range minus (-), it can be lowered by up to 3°C.

> ⚠ By turning to the plus (+) or minus (-) range, the displayed room temperature is falsified in the Detail display menu.

Lowering: **Heating mode OFF**
(if the outdoor temperature is higher than the parameter "Night off AT")

**Heating mode ON** → to set temperature night
(when the outdoor temperature is lower than the "Night off AT" parameter).

Normal: **Heating and lowering mode**
(according to the times set in the clock program).

Heating: **Continuous heating mode** → to set temperature day
(day and night heating without setback operation)

# 8 OPERATION OF THE HEATING SYSTEM

BS-03

Initial commissioning

The initial commissioning and basic setting of the system may only be carried out by GUNTAMATIC specialist personnel or authorized partners.

Daily operation

Clean the heating system exactly according to the instructions in the chapter "Cleaning/Care". The cleaning effort is highly dependent on the quality of the fuel and may require more cleaning effort if inferior fuels are used.

Switch off plant

Switching off the heating system is only necessary at the end of the heating season, for maintenance, in case of malfunctions or for refilling the fuel store. To do this, switch the system to the "OFF" program and allow it to cool down for approx. 120 min. After that, you can switch off the system.

During longer breaks in operation, additionally disconnect the heating system from the power supply at the mains plug in order to avoid unnecessary lightning damage!

Recommissioning

Before putting the fireplace back into operation in the fall, have it inspected and have the control and safety devices checked annually to make sure they are in good working order. We recommend that you sign a maintenance contract to ensure that the system operates safely and economically.

## 8.1 CONTROLS ON THE HEATING SYSTEM PC-01

Check system pressure

The operating pressure is normally between 1 and 2.5 bar. Too low a system pressure can lead to malfunctions.

**The complete draining or filling of the system, as well as the refilling of a system filled with treated water, is the responsibility of the specialist!**

Refill heating water:

- the heating water must be below 40 °C;
- slowly add heating water until the required operating pressure is indicated;
- completely vent the heating system and check the system pressure again - if necessary, top up the heating water again.

Expansion tank

Check the air pressure in the expansion tank (approx. 1.5 bar)!

**Request the installer if necessary!**

Relief valve

Check the safety device for correct function!

**Request the installer if necessary!**

Thermal discharge safety device

Check the safety device for correct function!

**Request the installer if necessary!**

Heating room ventilation

Check the air supply for free passage.

**Request the installer if necessary!**

## 8.2 FUEL

### 8.2.1 PELLETS

BS-04

To achieve trouble-free heating operation of the boiler, the quality of the fuel must be right. Only high-quality pellets can ensure reliable and trouble-free operation of the system. The price should always be evaluated behind the quality requirements and it is therefore strongly recommended to use only quality-assured products.

recommended quality criteria:

- fixed;
- smooth surface;
- low fines content;
- low ash accumulation;
- high ash melting point;
- use only recommended fuels;
- tested and recommended with low fines and dust content from low-potassium, low-nitrogen, low-bark wood;

Features

| | |
|---|---|
| Calorific value ..... | approx. 4.9 kWh / kg |
| Bulk weight ..... | approx. 650 kg / m³ |
| Length ..... | 5 - 30 mm |
| Diameter ..... | 5 - 6 mm |
| Water content ..... | 8 - 10 % |
| Sintering start ..... | approx. 1200°C |
| Ash content ..... | < 0,5 % |

Quality assurance

Only use pellets according to **EN 17225-2** quality class **A1**!

**The storage must be dry!**

If pellets come into contact with water or moisture, they swell and disintegrate!

## 8.3 FILLING THE FUEL STORE

01

**The fuel store must never be filled during heating operation!**

At least 1 hour before filling, the system must be set to program "OFF"!

**Empty the discharge screw completely at least every 3 years!**

Vacuum larger amounts of dust with a vacuum cleaner!

Initial filling / refilling

During initial filling and after each complete emptying of the fuel store, the store must not be completely filled immediately. The discharge screw should be filled to a height of approx. 10 cm with pellets over the entire length of the screw before the fuel store is completely filled. After that, the fuel store can be filled up to the maximum permissible dumping height.

Bulk height

Pellets ..... max. 2.5 m

Emergency filling

If automatic refilling of the pellets is not possible due to a defect in the discharge system, the supply container can be "EMERGENCY FILLED".

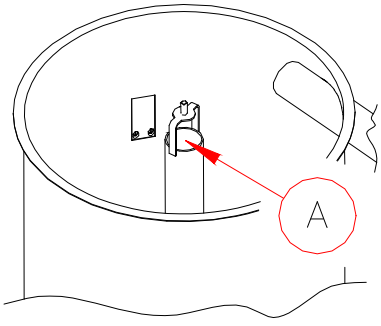
However, before doing so, try to correct the fault according to the "Troubleshooting" or "Notes and error messages" sections in the operating instructions.

Procedure:

Set the unit to "Program OFF" and wait until it goes to "Operation OFF". Then switch the plant to "0" by means of the power switch. Screw on the top of the storage container and fill it preferably with bagged material.

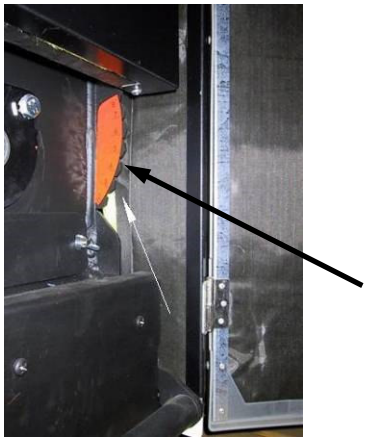
**Caution**: Make absolutely sure that no pellets get into the suction pipe (A) of the suction turbine (see illustration). The suction turbine can be destroyed by this! It is best to plug the suction pipe with a soft cloth.

Then close the container lid tightly again. Acknowledge the displayed error messages and reset the last heating program used.



## 8.4 COMBUSTION AIR

01



After each maintenance or even after longer breaks in operation, the combustion air setting must be checked or readjusted according to the table below.

The adjustment lever is located on the bottom right of the boiler above the right ash box (see picture).

| | | Position | CO2 at 100% power |
|---|---|---|---|
| Biocom 30 | Pellets | 6 | 10 - 12%<br>Rod on hole 30 |
| Biocom 40 | Pellets | 7 | 10 - 12%<br>Rod on hole 40 |
| Biocom 50 | Pellets | 7 | 10 - 12%<br>Rod on hole 40 |
| Biocom 75 | Pellets | 5 | 10 - 12% |
| Biocom 100 | Pellets | 5 | 10 - 12% |

## 8.5 EMPTY ASH

BS-02

**Residual embers can lead to fires!**

Store ash from the boiler only in non-combustible places!

**Touching hot parts can lead to skin burns!**

Let the boiler cool down for at least 1/2 hour before emptying the ash!

Depending on the quality and the amount of fuel burned, the ash container must be emptied correspondingly often. If the fuel quality is inferior, the emptying interval is shortened due to the higher dust content in the fuel. The resulting ash clearly contains the residues of the fuel in concentrated form. If you use only harmless fuels, the residual ash represents a high-quality mineral fertilizer.

Empty ash

Set the unit to program OFF and allow it to cool down for at least 1/2 hour. Then pull out the ash container to the front and empty it.

**Caution**: The ash containers can be hot!

Replace the ash pan after checking that it is in proper condition and lock it tightly.

Set the system back to the last heating program set.

Ash warning / reset

If the ash warning appears on the display, you must empty the ash and reset the parameter Ash emptied. To empty the ash, proceed as described in the previous point. To reset the ash warning in the meantime, switch to the customer menu, select the parameter Ash emptied and confirm with YES and OK that you have emptied the ash. The duration until the ash warning appears on the display is preset and can be adjusted in the Ash warning parameter.

# 9 CLEANING / MAINTENANCE

BS-02

**Caution: Risk of injury!**

For safety reasons, maintenance and cleaning work may only be carried out when the heating system has cooled down and is disconnected from the power supply!

**Attention Danger to life!**

For safety reasons, maintenance and cleaning work in the fuel store may only be carried out under the supervision of a second person who is outside the store!

Boiler

The sophisticated cleaning system reduces ongoing cleaning work to a minimum. Only the ash has to be emptied regularly.

Depending on the utilization and ash accumulation of the heating system, intermediate cleaning and general cleaning must be carried out, which are described in detail on the following pages.

In addition to the usual sweeping appointments, the flue pipe, the flue gas box and the heat exchanger of the boiler must also be cleaned of ash.

In case of exceptionally heavy load on the heating system, increased cleaning effort may be required.

Cladding

If soiling occurs on the trim parts and operating elements, it is best to remove it with a soft, damp cloth. However, only mild, solvent-free cleaning agents may be used for moistening. Solvents such as alcohol, petroleum ether or thinner must not be used under any circumstances, as they can attack the surface of the device.

Fuel storage

The fuel store and the discharge screw must be completely emptied and sucked out at least every 3 years, so that malfunctions of the discharge system due to deposits can be excluded.

## 9.1 INTERMEDIATE CLEANING

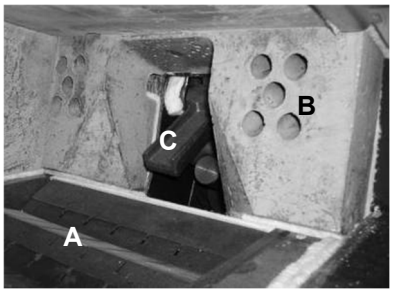
PC-01

**Caution: Risk of injury!**

For safety reasons, maintenance and cleaning work may only be carried out when the heating system has cooled down and is disconnected from the mains!

INFO Intermediate cleanings may be required every 2 weeks to 3 months, but must be performed at least semi-annually.

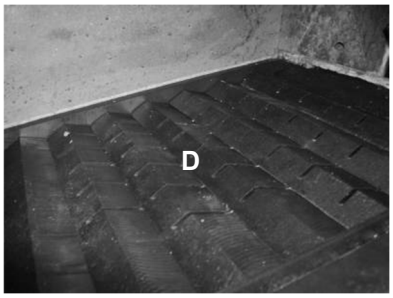
Perform the following steps in order:




1) Set the unit to "Program OFF and allow it to cool down for at least 1 hour.

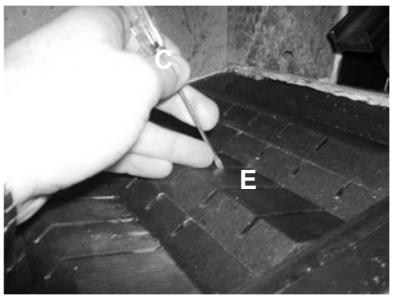
2) In the combustion chamber, clean the ash from the stair grate.

3) Start the "RUST CLEANING" program and allow the staircase grate (A) to clean for a few minutes. Then switch off the cleaning program again.
**Risk of injury from moving parts!**




4) Clean the air slots (D) of the grates from combustion residues using a small screwdriver (E).

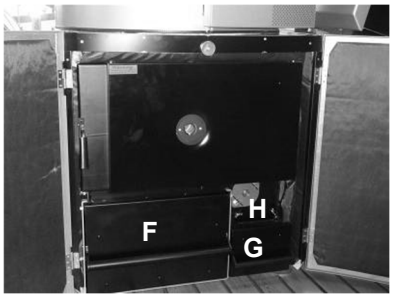
5) Check and clean the upper air openings (B).
(only for plants > 50 kW)




6) Check the fire tongue (C) for ease of movement.
(move up and down several times).

7) Empty the ash boxes on the left (F) and right (G).
**Fire hazard due to residual embers!**

8) Unscrew the cleaning opening (H) and clean the area under the grate.




9) Then close the combustion chamber door, the ash boxes (F and G) and the cleaning opening (H) again.

10) In the customer menu, confirm the emptying of the ash in the parameter Ash emptied with YES and OK.

## 9.2 GENERAL CLEANING

PC-03

**Caution: Risk of injury!**

For safety reasons, maintenance and cleaning work may only be carried out when the heating system has cooled down and is disconnected from the mains!

**Safety note!**

Check the function of the safety valve at least once a year.

INFO Perform general cleaning every six months, but at least once a year. To do this, carry out points 1-10 of the intermediate cleaning beforehand:

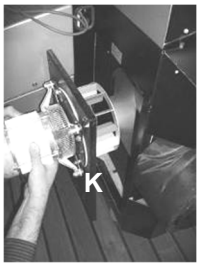
Perform the following steps in order:



11) Disconnect the induced draft fan (I). Then lift the casing (J) and remove it. Unscrew the wing nuts behind it, remove the induced draught fan (K) and check the impeller for contamination. Lift the RRK adjusting plate (L) and remove it.

12) Remove the locking pin (M) of the turbulator closure plate and then pull out the lower closure plate (N). With the heat exchanger cover open, remove the turbulators upwards.

13) Clean the heat exchanger tubes with the tube brush. Then clean the entire upper heat exchanger area (O).



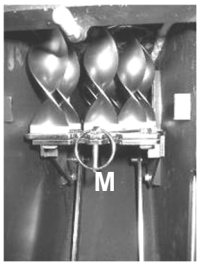


14) Pull the flue gas sensor (P) out of the flue pipe, clean it and plug it back in.

15) Check the lambda sensor (Q) for tight fit. If necessary, remove the probe, clean it carefully with a soft brush and vacuum it.

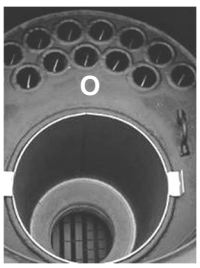
**Do not clean the lambda sensor with compressed air!**

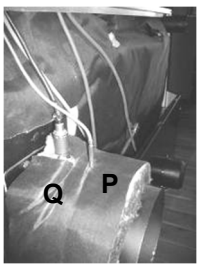
16) Carefully reassemble the dismantled boiler parts and make sure that all cleaning openings are tight.





17) Have the overpressure valve of the heating system (safety valve) checked for proper function at least once a year by a heating specialist.




### CLEANING AT THE END OF THE PERIOD!

If the boiler is taken out of operation over the summer months or for a longer period of time, a general cleaning must be carried out. Subsequently, all metallic parts in the boiler, heat exchanger and flue gas box must be sprayed with an oil-based preservative spray.

# 10 TROUBLESHOOTING

PC-03

| | Category | Trigger | Message | Quit. | Causes |
|---|---|---|---|---|---|
| **F01** | **Note** | Input TKS1 open | Burner door or ash pan open | automatic | Door contact switch defective;<br>Combustion chamber door open;<br>Ash drawer open; |
| **F03** | **Malfunction** | CO2 control in regulation<br>CO2 is less than "CO2 itself"<br>after "t nachzünd" and "t sich min". | Burn disorder<br>Fuel, grate, air slide control | via **Quit** key. | no fuel;<br>Air setting incorrect;<br>Fireplace draft incorrect;<br>Lambda sensor defective; |
| **F04** | **Malfunction** | Boiler temperature too high | Boiler temperature too high! Check chimney draught and boiler sensor! | via **Quit** key. | Boiler functions not OK;<br>Pump functions not OK;<br>Boiler sensor defective; |
| **F05** | **Malfunction** | Flue gas sensor > in "Control" > after time Param. "X25" > RGT is + ½ KT is smaller Param. "RGTk" zw.30-100% | Burn disorder<br>Fuel, grate, air slide control | via **Quit** key. | no fuel;<br>incorrect air setting;<br>Fireplace draft incorrect;<br>Flue gas sensor defective; |
| **F06** | **Malfunction** | Fire tongue longer than parameter "T übf" set to "ON | Combustion chamber overfill<br>Fire tongue control<br>Ash pan control | via **Quit** key. | Ash drawer full;<br>Fire tongue jammed;<br>Lambda sensor defective; |
| **F07** | **Malfunction** | in the time window "t afterfiring if from the beginning of the control after 2 re-ignitions a further re-ignition condition is present | Ignition not possible!<br>Control fuel | via **Quit** key. | no fuel;<br>Ignition fan defective;<br>Air setting incorrect; |
| **F08** | **Note** | The level in the reservoir tank does not fall below "LZ G1 min" after the screw running time. | Level sensor does not react! | none | Level sensor<br>dusty or defective |
| **F09** | **Note** | Level in the storage room undershot | Check fuel storage! | automatic | Level sensor defective;<br>no bridge between connection 28 and 30; |
| **F10** | **Malfunction** | Fire damper!<br>does not open in time "t flap | BSK does not open!<br>Drop shaft control! | via **Quit** key. | Fire damper defective;<br>Drop chute clogged; |
| **F11** | **Malfunction** | No feedback from Hall sensor A1 in the time "t sich A1". | Cleaning motor blocked! | via **Quit** key. | WT cleaning blocked;<br>Rust blocked;<br>Gear motor defective; |
| **F12** | **Malfunction** | No feedback from Hall sensor G1 in the time "t sich". | Gear motor blocked! | via **Quit** key. | Drop chute overfilled;<br>Stoker screw blocked |
| **F13** | **Malfunction** | Overfill lid set to "OFF" for longer than "t sich". | Dispensing overcrowded<br>Falling shaft control! | via **Quit** key. | Drop chute overfilled;<br>BSK closed; |
| **F15** | **Malfunction** | Fire damper does not close in the time "t itself<br>Opening angle > 5% | BSK does not close!<br>Drop shaft control! | via **Quit** key. | Drop chute overfilled;<br>BSK motor defective; |
| **F16** | **Malfunction** | STB fallen | Attention overtemperature<br>STB fallen | Press STB<br>via **Quit** key. | Boiler functions not OK;<br>Pump functions not OK;<br>Boiler sensor defective;<br>Check fuses;<br>STB defective; |
| **F19** | **Note** | Param. "O2 probe corr." or corrected value above the limits of Param. "mv up" or "mV down" respectively | Lambda sensor value above the limits! Control | via **Quit** key. | Lambda sensor dirty;<br>Lambda sensor defective; |
| **F20** | **Malfunction** | TKS ash garbage can on off for longer than 20 minutes | Ash garbage can open | automatic | Ash garbage can open; |
| **F21** | **Malfunction** | Lambda stop duration greater than "t stop | Timeout in Lambdastop!<br>Lambda probe test! | via **Quit** key. | Lambda sensor defective;<br>Fireplace draft incorrect;<br>RGT too low; |
| **F22** | **Malfunction** | the level is not reached within the "Discharge max" time | Fill level not reached!<br>Check suction system | via **Quit** key. | no fuel;<br>Level sensor defective;<br>Suction lines clogged;<br>Suction system leaking;<br>Suction fan defective;<br>Discharge motor blocked; |

| | Category | Trigger | Message | Quit. | Causes |
|---|---|---|---|---|---|
| **F23** | **Note (malfunction)** | Ash was not emptied | Empty ash container | via **Quit** key. | Ash container not emptied;<br>Ash warning not reset; |
| **F24** | **Malfunction** | Stoker temperature higher than "t stoker | Stoker temp. too high | via **Quit** key. | Fire damper leaking;<br>Service cover leaking; |
| **F25** | **Malfunction** | Ash garbage can full or the ash discharge motor blocked | Ash discharge blocked | via **Quit** key. | Ash garbage can full;<br>Ash channel blocked;<br>Ash drawer open;<br>Ash garbage can or lid not in position or not closed; |
| **F26** | **Malfunction** | Temperature in the ash garbage can higher than "T max ton". | Overtemperature in the ash garbage can! | via **Quit** key. | Embers in the ash garbage can;<br>Suction system leaking; |

| NOTES |
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# 11 TROUBLESHOOTING

BS-02

| Malfunction | Cause | Elimination |
|---|---|---|
| **Boiler no function** | • Power supply interrupted<br>• Fuse defective | • Check power supply, mains plug and main switch<br>• Check fuses in the house and on the boiler |
| **Smoke leakage in boiler room** | • Flue pipe is leaking<br>• Chimney draft regulator mounted awkwardly<br>• Fireplace is not free<br>• Chimney does not provide delivery pressure | • Fix leaks<br>• Clarify with chimney builder<br>• Check chimney |
| **Heating power too low** | • Boiler is very dirty<br>• Heating system not tuned<br>• Boiler priority is active<br>• Too little delivery pressure in the chimney | • Perform general cleaning<br>• Tuning heating pumps<br>• wait until boiler charging is finished<br>• Increase delivery pressure in the chimney |
| **Deflagration** | • deflagration is only possible when the combustion chamber is overfilled | • Carry out general cleaning, consult specialist if necessary |
| **poor power matching** | • Chimney Delivery pressure too high<br>• Strong fluctuations in demand from consumers | • Set chimney delivery pressure<br>• Stagger consumers |
| **Burn disorder** | • Lambda sensor dirty<br>• Lambda sensor loose<br>• Lambda sensor defective<br>• Combustion air ducts dirty | • Clean lambda sensor<br>• Tighten lambda sensor<br>• Renew lambda sensor<br>• Clean combustion air ducts |
| **STB triggered** | • the generated heat cannot be dissipated - possibly a heating pump has failed | • Ensure heat dissipation by manually switching on the pumps and opening the mixers<br>• the cause is to be determined<br>• Check fuses on the boiler |
| **Overheating** | **Attention!**<br>If the boiler temperature exceeds 100 °C, leave the boiler room immediately!<br>Under no circumstances must boiler doors or maintenance openings on the boiler be opened! | |
| **Exhaust fan too loud** | • Blower is dirty<br>• Blower or sash is loose<br>• rigid chimney flue pipe inlet<br>• Blower bearing defective | • Clean blower<br>• Fix cause<br>• Insert cuff<br>• Request exchange motor |
| **Gear motor too loud** | • Sound transmission | • If necessary, place the equipment on sound-absorbing feet or rubber pads. |

| NOTES |
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# 12 FUSE CHANGE

BS-01

**Only authorized specialists may carry out repair work!**

Touching live components is life-threatening!

Even with the mains switch "OFF", some components of the system are still live.

During repair work, it is therefore essential to interrupt the power supply to the heating system by means of the "mains plug" or a circuit breaker!

1) Set the unit to the "OFF" program and allow it to cool down for at least 10 minutes.

2) Set the mains switch to "0" and disconnect all poles of the mains plug at the rear of the boiler.

3) Unlock and remove the control cover.

4) Use the circuit diagram to locate the defective fuse and replace it.

5) Press the fuse holder in 2-3 mm with a medium-sized screwdriver, turn it half a turn to the left and loosen the fuse holder. This will push out the fuse holder together with the fuse by a few millimeters.

6) Remove the defective fuse and replace it with a new one.

7) Insert the fuse holder, push it in 2-3 mm and fix it again with a half turn to the right.

# 13 PARAMETER CHANGES

BS-01

| No: | Parameter | Standard | 1. change | 2. change | 3. change |
|---|---|---|---|---|---|
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# 14 HEATING CIRCUIT SETTINGS

BS-01

| Heating circuit 0 | Heating circuit 1 | Heating circuit 2 | Hot water 0 |
|---|---|---|---|
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# 15 ENTSORGEN

BS-02

**Observe disposal regulations!**

Observe the locally applicable regulations for the disposal of waste and machine parts.

Contact your installer or the GUNTAMATIC customer service. Disassembly is carried out analogously in the reverse order of assembly.

# 16 DECLARATION OF CONFORMITY

03

CE GUNTAMATIC

**Manufacturer**

GUNTAMATIC Heating Technology Ltd.
Bruck 7
A-4722 Peuerbach
AUSTRIA

**Product**

BIOCOM 30 / 40 / 50 / 75 / 100 / 101

We hereby declare that the aforementioned boiler as placed on the market by us complies with the basic safety and health protection requirements of the directives and standards listed below. In the event of a subsequent modification of system parts or the entire system not agreed with us, this declaration automatically loses its validity.

**Guidelines**

| | |
|---|---|
| 2006/42/EC | Machinery Directive |
| 2009/125/EC | Environmental design requirements for energy-related products - "Ecodesign" with implementing Directives 2015/1187 and 2015/1189. |
| 2011/65/EU | Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment. |
| 2014/30/EU | Directive on electromagnetic compatibility. |
| 2014/35/EU | Electrical equipment for use within certain voltage limits. |
| 2014/68/ EU | Application of Article 4, Paragraph (3) in the Pressure Equipment Directive and Guideline I-19- PED/2014/69/EU |

**Standards**

| | |
|---|---|
| ÖNORM EN 303-5 | Boilers for solid fuels, manually and automatically fed firing systems, rated thermal output up to 500 kW. |
| ÖNORM EN 60335-1/2007 | Safety of household and similar electrical appliances - Part 1: General requirements. |
| ÖNORM EN 60335-2-102 | Safety of household and similar electrical appliances. Particular requirements for gas, oil and solid fuel appliances with electrical connections. |

GUNTAMATIC

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