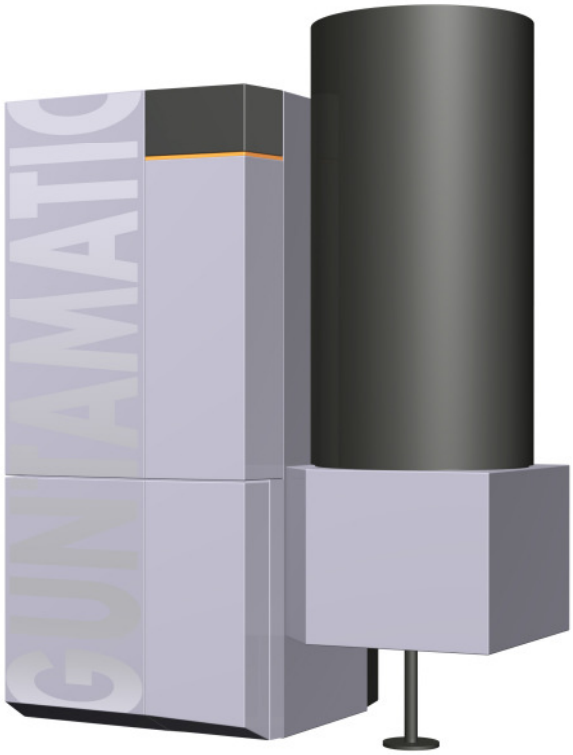
Grain-fuel boiler

englisch

POWERCORN

Operating Instructions / System Log Book

PC-01



EN-B30-008-V12-0315

GUNTAMATIC

Information on this documentation

Please read through this documentation carefully.

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

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

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

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PC-01

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1 Introduction

PC-01

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.

Short description

The firing POWERCORN is a modern heating system. The feed ocours from a store room with a suction system.

Type approval

The boiler is designed as a Class 5 appliance as defined by the draft standard EN 303-5 (and the agreement of the [Austrian] Federal States according to Art. 15a BVG, in accordance with the Austrian fire safety regulations, safety systems, CE and on safety measures for small combustion heating systems and the combustion heating system approval. The original type approval certificates are available for inspection at the manufacturer's offices

Further Information

The documentation consists of the following documents:

- Planning Document
- Installation instructions
- Operating instructions

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

2 Important notes

BS-01

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

2.1 Intended use

BS-01

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

Do not use the boiler to burn rubbish!

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

2.2 Operating the heating system

BS-01

The heating system may only be operated and cleaned by demonstrably trained persons (as per check list). Children, unauthorised persons or persons

Even if the opposite is requested, servicing and repair work may only be carried out by authorised specialists.

2.3 Gurantee and liability

BS-01

Gurantee 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

BC-01

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

Power switch

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

Mains plug

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

Repair work may only be carried out by authorised technichians!

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 emergeny: In the event of an electric shock, disconnect the power supply immediatly. Administer first aid and call the duty doctor

Fault rectification:

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

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

Loss of guarantee entitkement!

Servicing work

Service the boiler regularly or make use of our Costumer Service.

Emptying ash

Glowing embers can cause fires!

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

Boiler cleaning

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

Risk of injury from rotating parts!

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

Gaskets

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

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 frehs air must be provided.

Flue draught regulator:

Risk of detonation!

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

Safety clearances

Fire risk!

Do not store any flamable items in the close vivinity of the boiler.

Follow the local regulations!

when heating

Attention Danger of deflagration!

When the boiler is running please don't open the boiler door or cleaning openings

Entering the storeroom

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

Entering the storeroom

Attention LIFE DANGER!

In all biogenic substances may occur during storage in the formation of gases. You can enter the storeroom after 2 hours lifting.

Storerooms with a high level might be measured (the quality of air) from authorised stuff before you enter he room

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.

Frostschutz

Anti- freeze function

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

Fire extinguisher

Provide a fire extinguisher!

There must be a fire extinguisher placed immediatly outside the boiler room door!

2.5 Security advices for the heating system

PH-01

Warning of dangerous electric voltage

Warning of rotating components

Warning of hot surfaces

Warning of deflagration

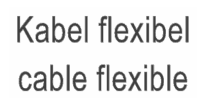
grounding

Observe operating or installation instructions

Separate electric system from the mains

Pull angle plug aside

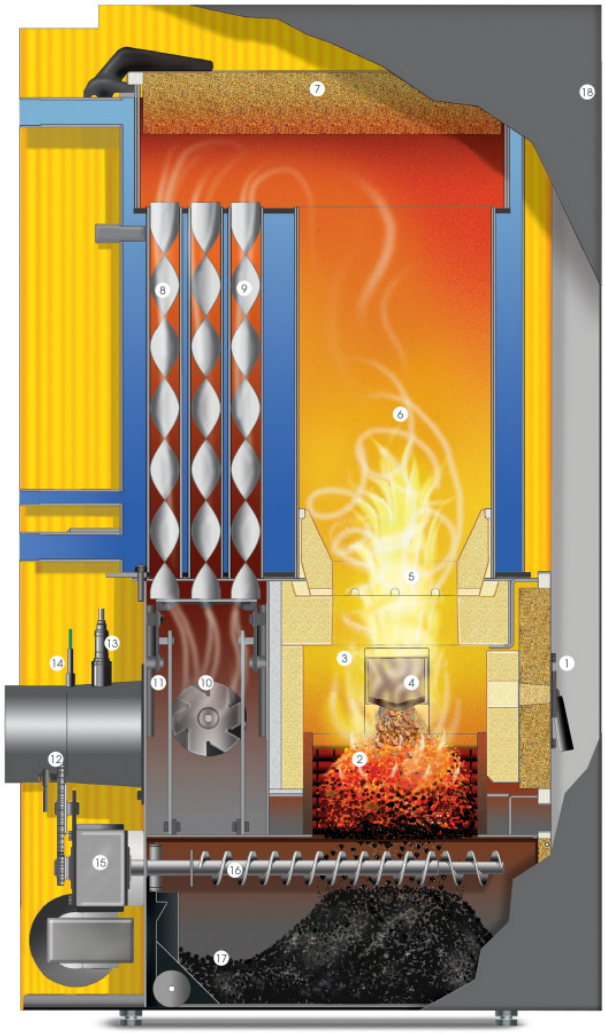
power Supply

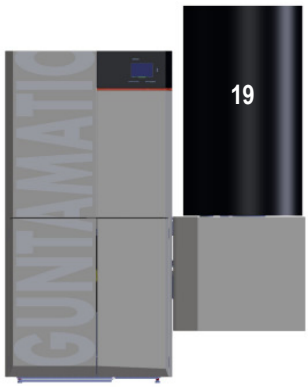


Do not use rigid cable for installations

3 System components

BC-01





1. Firebox door
2. Stepped grate – primary air
3. Combustion chamber
4. Fuel spout
5. Swirl jet – secondary air
6. Reaction tube
7. cleaning lid
8. turbulator
9. tube bundle heat exchanger
10. ID fan
11. Heat exchanger cleaning mechanism
12. Flue pipe
13. Lambdtube
14. smokegasfeeler
15. cleanings- or. rust impulse
16. Ash spiral
17. driveabler ashton
18. menuleaded Rule
19. storing tank

4 Safety systems

BC-01

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 set of defined safety level

Safety level 1 **15°C above specified temperature**

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

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

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

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

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

Power failure

The controller, the flue draught fan and all circulation pumps switch off due to lack of electricity if there is a power cut. The glowing fuel bed on the grate continues burn with the natural draught of the flue. As this operating mode is nit idea, a larger amount of ash collects on the grate as well. As soon as the electricity supply is restored, the controller takes control of the heating system again.

Opening ash box or firebox door

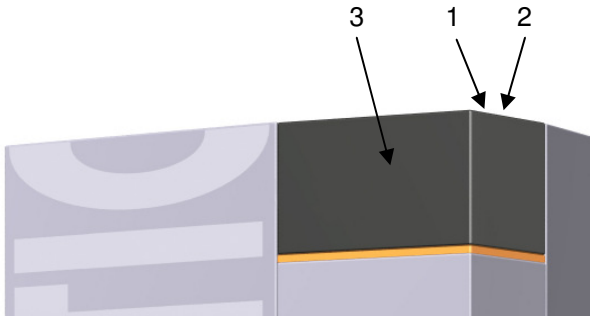
- The drive motors stop feeding the boiler with fuel
- The flue draught fan switches to maximum (100%) extraction speed;
- after the ash box/ firebox door is closedm normal operation is resumed

5 Control panel description

BS-01

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

PH-01



Power switch (1) Normally remains permanently switched on. The power switch may only be switched off when the system is not in operation.

> The system must be disconnected from the mains by unplugging the power lead when carrying out repairs or servicing work

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

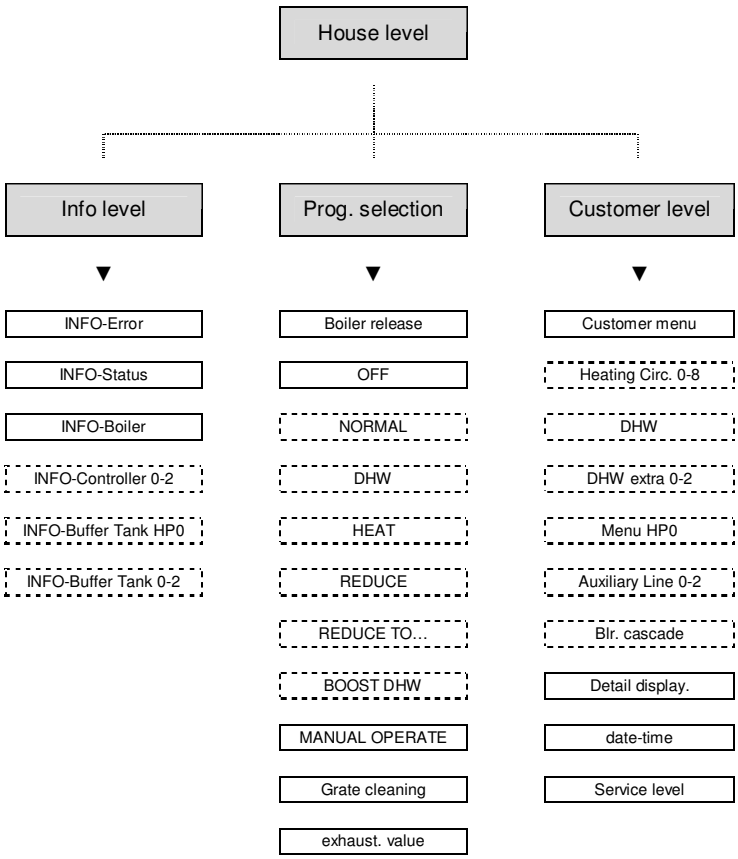
> The system must not be started up again until any faults have been rectified and the boiler has been checked. If necessary, a heating engineer must be called in.

Touch-Display (3) Pressing lightly with your fingertip on the relevant buttons on the display opens the various program levels, menus and submenus. All settings are made directly on the touch-screen display.

> Never use sharp objects such as ball-point pens or the like to operate the touch screen

6 Overview of menu levels

BC-01

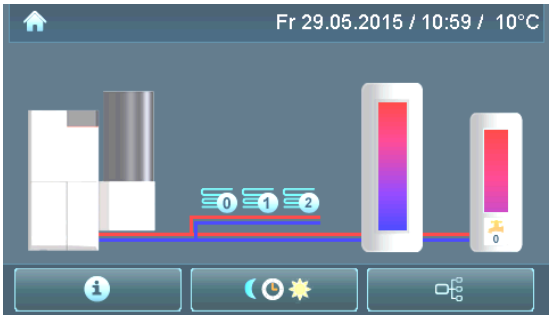


Menus shown with a dashed border only appear if activated on the Commissioning menu.

6.0 House level

BC-01

About the selection buttons, you switch to the different levels.



Info level

*)

Program selection

see Chapter 6.1

**)

Customer level

see Chapter 6.2

***)

INFOBOX

*) - Error messages, Temperatures, Scold and operational states, Buffer and Heating circles could be requested.

**) - Programmes for boilers and heating circulations could be chosen;
- the boilers release could be broken;

***) - the attitudes for boilers, heating circulations could be changed
- the attitudes in the service area and the parameter menu could just changed from authorised GUNTAMATIC staff.

6.1 PROGRAMMESELECTION

PH-01

	Boiler´s clearance	on Attitude „OFF" the boiler didn´t start
	Programme OUT	Heiatingrun turned off (mit wittgef. Regelung ist die Frostschutzfunktion aktiv)
1)	Programme NORMAL	Heizung und WW-Bereitung eingeschaltet (nach Uhrenprogramm)
1)	Programme WARMWATER	heating turned off – WW- Bereitung eingeschaltet (after Watchpr. summer)
1)	Programme HEATING	Day and Night heatingrun (Warmwater with watchprogramme)
1)	Programm LOWER	Day and Night reduced mote (Warmwater with watchprogramme)
1)	Programm DROP TO	Absenkbetrieb bis zu einem bestimmten Zeitpunkt
1)	RELOAD WARMWATER	Duration maximal 90 Minutes
	Programme MANUAL	Heatingservice on boilerstarget- or buffertargettrmperature
	gratecleaning	manual ON and OFF
	emissions measurement	Programm for Emissionsmeasure

back to HOUSELEVEL ..... look at Chapter 6.0

INFOBOX

1) the selectionbuttons wehre just shown,if a heatingcirculation is actived;

6.2 Costumer level

PH-01

	Customer menu	look at Chapter 6.2.1
2)	Heatingcirculatopn 0-8	look at Chapter 6.2.2
2)	Warmwater 0-2	look at Chapter 6.2.3
2)	addition Warmwater 0-2	look at Chapter 6.2.3
2)	Loadingpump 0-2	look at Chapter 6.2.4
2)	bufferpump 0-2	look at Chapter 6.2.4
2)	feederpump 0-2	look at Chapter 6.2.4
	buffer- / Z-pump HP0	look at Chapter 6.2.5
	boilerscascade	look at Chapter 6.2.6
	Detailscreen	attitudes, condition and measurement of construction will be shown!
	Date-time	Date and time from the machine could be attituded
	Servicelevel	look at Chapter 6.2.7

back to house level ..... look at chapter 6.0

INFOBOX

2) the selectionbuttons could just actived in connection with a heatingcircle;

6.2.1 COSTUMER LEVEL

PC-01


Ash empty ..... after cleaning the Ash the choose the Menüpoint and confirm with „YES“ and „OK“


Ashwarning ..... hours to the new „Ashewarning“ after confirmation of the Function „Ash emptiing“


Deashing .....manual deashing with Auto-Ash-Suctionsystem (turns automatically off)

3) 
Clearance HKR 0-2 ..... influenced the state of running of trunkblinkfunction


m³ set Counter to 0 .....turns the m³ Counter to 0


Attitude m³ Counter .....influenced the numberspeed (high Value = quicker count)


fill the spiral off time.....manueal refill of Stokerchannel (G1 turns off auslösen der Füllstandzunge ab)


fill the suction construction .....manual refilling of storing tank (is stopping automatically)


Feed .....no refilling with storingtank while the OFF time (excepted forefilling)


deashing off time ..... no deashing while the OFF time (ati auto-Ash-Suctionsystem)


Ashfactor.....adaption of Ashssuctioninterval in 0,1 Steps (higher value = more suction)


Language .....attiude of countries specific language


back to the Costumerlevel..... see Chapter 6.2

INFOBOX

3) **AUTO**..... the trunkblinkfunction will be turned automatically ON/OFF;
OFF..... the trunkblinkfunction is turned off
DURATION ..... the trunkblinkfunction is always released; (no mixer control)

6.2.2 HEATINGCIRCULATION

BS-01

4) 
Running with Pump ..... influenced the state of condition of heatingcirculation


Watchprogramme .....Attitude of heating- and Absenkphasen

5) 
Targettemperature Day ..... for Rule on targettemperature is a roommachine necacerry

6) 
Targettemperaturer Night.....zur Regelung auf Solltemperatur ist ein Raumgerät erforderlich

7) 
Roominfluence.....0% - 100% beeinflusst die Vorlauftemperatur / T1°C - T3°C beeinflusst die Heizkreispumpe

8) 
Heatingcurve.....beeinflusst die Vorlauftemperatur – (high attitudevalue = high flow temperature)

9) 
Night off OT..... influenced the heatingcirculation while the flow temperature

10) 
Turn OFF OT .....influenced the heatingcirculation while the heating measurement is running


back to the costumer level..... look at Chapter 6.2

INFOBOX

4) **AUTO**..... the trunkblinkfunction will be turned automatically ON/OFF;
OFF..... the trunkblinkfunction is turned off
DURATION ..... the trunkblinkfunction is always released; (no mixer control)

5) the rule on target temperature is just active, if the temperature´s value isntß exceeded;

6) the rule on target temperature´s value is just active, if the outsidetemperature´s value isn´t exceeded to the parameter “Night Out OT”

7) **0%– 100%**..... with an high outiside temperature „plus degree“ a low room temperatzre will turned on if the whised roomtemperature is reached;
T1C° - T3°C ..... the rooms target temperature the heatingcirculation pump will turned off;

8) a higher attituded value of the same outside temperature;

9) while the reduced mote will be fell below, you have to pot the heatingcirculation ON;
Attention: There is no Antifreezefunction up to the reached attitudet temperature!

10) if the heating period will be fell below the heatingcirculation turns off;

6.2.3 WARMWATER or ADITIONAL WARMWATER

PH-01

11)  Running Pump .....influenced the runningstate of warmwater circulation

 Watchprogramme WW .....influenced the warmwater loadingtime with **Programme NORMAL**

 Watchprogramme. WW Sommer ...influenced the warmwater loadingtimes while **Programme WARMWATER**

 WW Targettemperature.....influenced the watertargettemperature

12)  WW priority .....influenced the heatingcirculations while the warmwaterloading

 WW reload .....onced warmwaterloading possible outside the programmed loadingtimes

 back to the costumerlevel..... look at Chapter 6.2

INFOBOX

11) **AUTO**..... the trunkblinkfunction will be turned automatically ON/OFF;
OFF..... the trunkblinkfunction is turned off
DURATION ..... the trunkblinkfunction is always released; (no mixer control)

12) **NO**..... the heatingcirculations stay running;
YES..... the heatingcirculations will be shutted off

6.2.4 LOAD, BUFFER or FEEDERPUMP

PH-01

13)  Running Pump ..... influenced the runningstate of trunkblink.

14)  Loadingprogramme ..... influenced the warmwater loadingtime of buffer

 Watchprogramme ..... influenced the trunkblinks release

 Buffer target .....influenced the buffertargettemperature

15)  Buffer min.....influenced the bufferminimumtemperature

 back to the costumer level..... siehe Kapitel 6.2

INFOBOX

13) **AUTO**..... the trunkblinkfunction will be turned automatically ON/OFF;
OFF..... the trunkblinkfunction is turned off
DURATION ..... the trunkblinkfunction is always released;

Full..... the trunkblinkbuffer will be so long loaded, till the buffertargettemperature is reached on the buffersensor „ABOVE (T3)“ – and the temperaturedifference to the buffersensor „Below T 2“ is just 10 ° degrees;
Partly..... the trunkblinkbuffer will be loaded so long, till the buffertargettemperature is reached on the buffersensor „ABOVE (T3)“;

14) if the attituded „buffer min“ temperature will fell below, the buffer will loaded automatically loaded to the „buffer target“ temperature;

15) if the attituted temperature „buffer min“ will fell below, the buffer will be loaded automatically to the „buffer target“ temperature;

6.2.5 PUMP HP0 BUFFERPUMPE/ Z-PUMP / PUMP

PH-01

16) Running Pump ..... influenced the runningstate of trunkblink.

Boiler´s target.....influenced the buffertarget temperature (manual)

17) Loadingprogramme .....influenced the state of charge from the buffers

Watchprogramme .....influences the boiler´s free release

Buffer Target.....influenced the buffertargettemperature

18) Buffer min.....influenced the bufferminimumtemperature

Bufferloading min.....influenced the smalest bufferloading (just with 5 sensor-buffermanagement)

19) part kad border ..... influenced the smalest bufferloading (just with 5 sensor-buffermanagement)

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

INFOBOX

16) **AUTO**..... the trunkblinkfunction will be turned automatically ON/OFF;
OFF..... the trunkblinkfunction is turned off
DURATION ..... the trunkblinkfunction is always released; ;

Full..... the trunkblinkbuffer will be so long loaded, till the buffertargettemperature is reached on the buffersensor „ABOVE (T3)“ – and the temperaturedifference to the buffersensor „Below T 2“ is just 10 °degrees;
Partly..... the trunkblinkbuffer will be loaded so long, till the buffertargettemperature is reached on the buffersensor „ABOVE (T3)“;

17) if the attituded „buffer min“ temperature will fell below, the buffer will loaded automatically loaded to the „buffer target“ temperature;;

18) when the buffer part load border is reached, the spreading „RLM Delta T“ will be eased to „RLM Delta T min“, through that the boiler temperature will be reached (the wanted temperature value decreased);

19) when the part load is reached, the spreeding „RLM Delta T“ will be eased through that the target temperature will be reached in the following boardpower.;

6.2.6 Boiler´s cascade

PH-01

20) boiler replacement .....attitude of runtimedifference fort he leaderboilerchange (0 h= no boilerexchange)

21) engage time .....attitude of time fort the earliest connection for the next boiler´s step

21) Switching power.....attitude of **CLOSED** (ON) and **ABOVE** (OFF) breaking capacity of boilersteps.

22) AT Clearance.....attitude of boiler´s clearence after outsidetemperature

back to the costumer level..... look at chapter 6.2

INFOBOX

20) when in the cascade out lead boiler, the parameter will set in the boiler replacement operating hours will longer run then the boiler with the least number of working hours is the „GUIDE“ passed to this. That is after the boiler replacement starts the boiler with the fewest operating hours at the first.

21) hook the boiler:
when the hooked time 1 (30 Minutes) is runned away and boiler 1 with parameter hookpower P ON 1 attituded power (100%) the second boiler also will be connected;

turn the boiler off:
when the overall performance of both boiler (= power boiler 1+ powered boiler) the in the Parameter P OFF 1 attituded power (80%) is felled below, the second boiler will be turned off;

22) when the fort he boiler attituded outside temperature (OT clearance) will be exceeded, the boiler couldn´t started again in the cascade;

6.2.7 SERVICELEVEL Servicecooperator

PH-01

	Resetdata		look Chapter 6.2.7.1
	Error list	All errors are saved with date and time!	
	Test program	All systemcomponents could be undergo to an functioning test!	
	Begin Service		look Chapter 6.2.7.2
23)	Parameter HK 0-8	(heatingcirculation / Estrichheizen)	look Chapter 6.2.7.3
23)	Parameter Warmwater 0-2		look Chapter 6.2.7.4
23)	Parameter adition WW 0-2	(Adition warmwater)	look Chapter 6.2.7.4
23)	Parameter HP0	(Z-Pumpe / Pufferpumpe / Pumpe)	look Chapter 6.2.7.5
23)	Parameter FL 0-2	(trunk blinkl)	look Chapter 6.2.7.6
23)	Parameter RLM	(backrun mixer)	look Chapter 6.2.7.7
	Constructionattitude		look Chapter 6.2.7.8
	Parametermenu	entrance and changes just allowed with backspeech from GUNTAMATIC!	

back to the COSTUMERLEVEL..... look at Chapter 6.2

INFOBOX

23) the numbers of the shown parameters are dependent from the system configuration;

6.2.7.1 RESETDATA

BS-01

load Costumerparameter	saved costumerdatas could be imported new, if necaserry
save Costumerparameter	
load Costumerparameter!	just new or changed parameter were loaded with a new software
operatinghours reset	reset factorytimer to 0
Servicetime reset	reset factory hour timer to 0
Steerege reset	**Attention**: the factory setting will be loaded!
Lambdakalib. reset	reset it after every lambdasondchange

back to the SERVICELEVEL..... look at chapter 6.2.7

6.2.7.2 BEGIN SERVICE

PC-01

		Construction	Selection:	Powercorn	
		Type	Selection:	7-30 / 12- 50 / 21-75 kW	
		Feed	Selection:	Flex	
24)		Ashfeed	Selection:	Yes / No	
		Fuel	Selection:	Hackchips / barley / Triticale	
25)		HKR 0-2 available (heatingcirculationruler)	Selection:	No / CAN-Bus / SY-Bus / Yes	
		• WW availabe 0-2 (warmwatermemory)	Selection:	Yes/ No	
		• Running HK 0-8 (heatingcirculation)	Selection:	No/ pump/ mixer	
		○ flow temperature 0-8 max	Selection:	10°C – 90°C	
26)		○ Heatingcurve 0-8	Selection:	0,1 – 3,5	
27)		○ Room machine HK0-8	Selection:	No / RFF / RS-Voll / RS-HK / RS-HKR	
28)		• Run trunk blink 0-2	Selection:	No / ZUP / PUP / LAP / ERW	
29)		• Spring (on trunkblinkfunction LAP)	Selection:	buffer 0 / buffer 1 / buffer 2 / buffer HP0	
30)		• adition 0-2	Selection:	No / WWP / Extern	
31)		Running HP0	Selection:	Z-Pump / Bufferpump / Pump	
32)		Sensor HP0	Selection:	Kessel / HKR0 / HKR1 / HKR2	
		Backrunmixer	Selection:	Yes / No	
		A1 Suctionlength	Selection:	5 m / 10 m / 15 m / 20 m / 25 m	
		First filling (don´t breake)	Selection:	OK / OFF	
		Spiral´s filling	Selection:	OK / OFF	
		save costumer parameter	Selection:	Yes/ No	

back to the servicelevel ..... look at Chapter 6.2.7

INFOBOX

24) the attitude „YES“ is just possible with a builted Auto Ash system;

25) **No** ..... there is no heatingcirculation associated;
SY-Bus ..... the attituded is correct, when the boilerintern rule will be used as heatingruler 0;
CAN-Bus ..... the attitude is right, when the wall mounted construction is used as heatingcirculation;
Yes..... the standardattitude fort he underfloor heating is right, when the wall mounted construction is used as heatingcirculationruler 1 or 2;

26) **0,5 – 0,7**..... the standardattitude for underfloor;
1,2 – 1,4..... the standardattitude for the heater;

27) **None** ..... the heatingcirculation isn´t dedicated to a room machine;
RFF..... the heatingcirculation isn´t dedicated to an analouge machine;
RS-Voll ..... to the heatingcirculation there is an digital room construction with attituded possibilities for all heating circulations;
RS-HK..... to the heatingcirculation there is an digital room consturikton with attitudepossibillites for this heatingcirculationruler;
RS-HKR..... to the heatingcirculation there is an digital room construction with attitudepossibilities fort the whole heatingcirculationtuler;

28) **ZUP, PUP, LAP** ..... for the correct attitude have a look at the scheme;
ERW..... the attitude is correct, if a second heatingcirculationruler is attributed to an existing trunk blink;

29) this attitudion determinates from that buffermemory the Energy will get from the trunk blink;

30) the function „adition“ could be actived on the heatingcirculationrulerm, if the H (0, 3 or 6) ehere in service without a mixer;
WWP..... an aditional warmwatermemory could go in service;
Extern..... an external burner could be requested with cascadefunctions;

31) **Z-Pump**..... attitude for constructions without buffermemory with heatingregulation;
Pufferpump..... attitude for construction with buffermemory
Pump ..... attitude for construction without buffermemory and withour heatingcirculationruler;

32) This attituded determinates, on that ruler sensor of buffer HP0 is connected;

6.2.7.3 PARAMETER HK 0-8 HEATINGCIRCULATION / FLOORHEATING

BS-01

In Service HK	Selection:	None/ Pump / Mixer	
Roomconstruction HK	Selection:	None / RFF / RS-Voll / RS-HK / RS-HKR	
Mixerruntime	Selection:	10 – 300 seconds	
Flow temperature min	Selection:	10°C – 90°C	
Flow temperature max	Selection:	10°C – 90°C	
boiler cant	Selection:	0°C – 20°C	
Heatingcirculationpump Freigabe Temperatur	Selection:	20°C – 100°C	
Paralleldisplacement heatingcurve	Selection:	-10°C – 30°C	
Floorheating	Selection:	Yes/ No	
• advance increase (daily at programmestart)	Selection:	0°C – 10°C	
• advance increase to	Selection:	1 – 5 Days	
• Floor advance min.	Selection:	10°C – 30°C	
• Floor advance max.	Selection:	25°C – 60°C	
• Floor halftime (Runtime max.)	Selection:	0 – 20 Days	
• Start floorprogramme	Selection:	Yes/ No	

back to the servicelevel ..... look at Chapter 6.2.7

The attitude of floorparameter has to occur with the floormaker!

The compliance of specific temperatures is not in the slipped service possible, just by the automatic mixes. The compliance couldn´t guaranted by 100% because of security escapements and special boiler features could in exception clear temperaturedifferences. If there are some problems cause of builted damages, you have to make the floor heater by hand.

6.2.7.4 PARAMETER WARMWATER 0-2 or ADITION WW 0-2

PH-01

Warmwater / Adition WW availible	Selection:	Yes / No	
Warmwaterer Hysterese	Selection:	1°C – 30°C	
Warmwaterpump Clearance	Selection:	20°C – 90°C	
boilerscant	Selection:	0°C – 20°C	

back to the Servicelevel ..... look at Chapter 6.2.7

6.2.7.5 PARAMETER HP0 BUFFERPUMP / Z-PUMP / PUMP

PH-01

in Service HP0 ..... (for attitude hav a look above)	Selection:	Z-Pump / bufferpump / Pump	
Clearence HP0 ..... (Pumpclearence)	Selection:	65°C – 80°C	
Buffer above Loading ON..... (Unterschreitung Kesselanf.)	Selection:	0°C – 20°C	
Buffer above Loading OFF.....(Überhöhung Kesselanf.)	Selection:	0°C – 20°C	
Buffer below Loading OFF .....(Differenz Puffersoll zu T2)	Selection:	0°C – -20°C	
Delta T trunkblink..... (Temperaturverlust)	Selection:	0°C – 50°C	
Difference boiler-buffer above.....	Selection:	0°C – 50°C	
Sensor HP0.....(buffersensor conected on →)	Selection:	boiler/ HKR0 / HKR1 / HKR2	
aditional sensor.....(5 buffersensor)	Selection:	Yes / No	

back to the Servicelevel ..... look at chapter 6.2.7

6.2.7.6 PARAMETER FL 0-2 trunk blink

PH-01

Service trunkblink .....(Einstellung siehe Schema)	Selection:	None / ZUP / PUP / LAP / ERW	
Clearance trunkblink..... (Pumpenfreigabe)	Selection:	40°C / 65°C – 80°C	
buffer above Loading ON ..... (Unterschreitung Kesselanf.)	Selection:	0°C – 20°C	
Buffer above Loading OFF.....(Überhöhung Kesselanf.)	Selection:	0°C – 20°C	
Buffer below Loadung OFF .....(Differenz Puffersoll zu T2)	Selection:	0°C – -20°C	
Source..... (bei Fernleitungsfunktion LAP)	Selection:	buffer 0 / buffer 1 / buffer 2 / buffer HP0	
Delta T trunkblink..... (Temperaturverlust)	Selection:	0°C – 50°C	
Differenz boiler-buffer above.....	Selection:	0°C – 50°C	

back to the servicelevel ..... look at chapter 6.2.7

6.2.7.7 PARAMETER RLM Backrunmixer

PH-01

	Service Backrunmixer.....	Selection:	AUTO	
	Backrunmixer Runtim	Selection:	10 – 300 Seconds	
	Backrunmixer Soll.....	Selection:	40°C – 90°C	
33)	Backrunmixer Delta T	Selection:	5°C – 30°C	
34)	Backrunmixer Delta T min	Selection:	5°C – 30°C	
35)	Softstart.....	Selection:	Ja	

back to the servicelevel ..... look at chapter 6.2.7

INFOBOX

33) determinates the whised spreading between boilerstemperature and boilerbacktemperature;

34) determinates the whised spreading till the part load border is reached (just with 5 sensor buffermanagement);

35) increased the backtargettemperature on the attituded Value (purpose: the backstagetemperature ist faster reached)

6.2.7.8 System addition

PC-01

	Construction		Selection:	Powercorn	
	Type		Selection:	7-30 / 12-50 / 21-75 kW	
	Feed		Selection:	Flex	
	Ashfeed	(Auto Ash suction system)	Selection:	Yes/ No	
	Level 1	(just at feed HX)	Selection:	No	
	tongue of fire		Selection:	Yes	
	boiler´s cascade		Selection:	Nein / A / B / C / D	
	Rustmover		Selection:	ABM	
	Stokerconstruction	(just at feed HX)	Selection:	ABM	
	Suction draft		Selection:	pulse	
	HKR 0-2		Selection:	Yes/ No / CAN-Bus / SY-Bus	
	Outside sensor	(No = 0°C Outsidetemperature)	Selection:	Yes	
	Lambdasond		Selection:	NGK	
	Lambdaheater		Selection:	AUTO	
	Lambdasond coin		Selection:	ON / OFF	
	Lambdasonde Correctvalue	(-10,0 mV = target value)	Selection:	Correction maximal ± 6,0 mV	
	Lambdasonde head curve	(adaption)	Selection:	0,0%	
	TK Korr. 80°C		Selection:	80°C	
36)	PC-Überwachung		Selection:	Terminal / DAQ / GSM-Modul	
	GSM Rufnummer 1-3	(at activated GSM-Module)	Selection:	insert telephone number	
	SD-Logging	(before finish – save parameter)	Selection:	ON/ OFF	
	SD-Data		Selection:	Overview	
	CID-Data		Selection:	manufacturer code	
	Network	(VISU via Network)	Selection:	YES	
	DHCP	(VISU via Network)	Selection:	manual	
	IP-Adress	(VISU via Network)	Selection:	free Network insert IP-Adress	
	First filling	(don´t break this filling)	Selection:	OK	
	Menustructure		Selection:	3.1	
	Time ABS Pump	(1x a week)	Selection:	60 Seconds	
37)	HKP Forceactivation		Selection:	90°C	
38)	Using the restwarm		Selection:	70°C	
39)	HKP Freeze TA	(in Programme „OUT" active)	Selection:	-3°C	
39)	HKP Freeze TV	(in Programme „OUT" active)	Selection:	3°C	
40)	TÜV Function		Selection:	-	
	Alert message		Selection:	not deactivate !	

back to the servicelevel ..... look at chapter 6.2.7

INFOBOX

36) **Terminal** ..... data query via VISU;
DAQ ..... data query via Onlinewriter (use just factory side);
GSM-Modul ..... Info and Steerage above GSM-module;

37) all heatingcirculationpumps ON, till the boiler´s temperature is under 90 °c at the buffermemory;

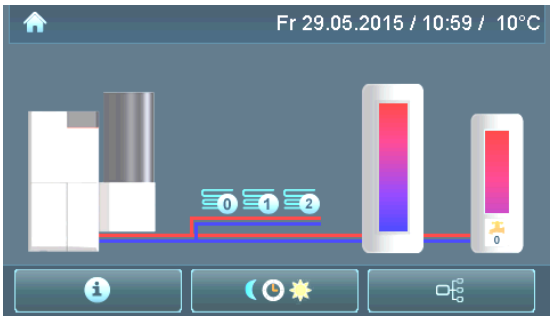
38) pump HP0 ON till the boiler´s temperature is under 70 °c;

39) if the outside temperature of parameter HKP freeze HA will be fall below, every heatingpumps get ON;
If the parameter HKP freeze TV ist he advancenning temperature (Freezefunction);
Attention: Through an error, the freezefunction could be failed! → install a glow bar!

40) the boilers temperature will be so long, till the STB function is broken;

7 User attitudes BC-01

7.1 Activing and Deactiviting a heatingprogramme ON/ OFF BC-01



press the programmeselection 

▼

Programme **OUT**.....  Heating and Warmwater turned off

Programme **NORMAL** .....  Heating and Warmwater on

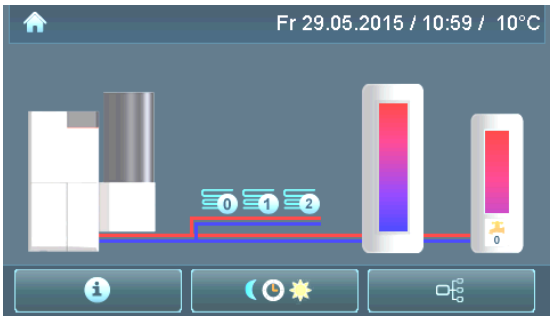
Programme **WARMWATER**.....  just Warmwater on

some INFO's more for Programme selection..... look at chapter 6.1

 back to HOUSELEVEL..... look at chapter 6.0

7.2 HEATINGTIMES how to PROGRAMME BC-01

For every heatingcirculation there could be up to 3 ON/ OFF switching times installed. Mittels Blockprogrammierung können alle Tage einer Woche gleichzeitig programmiert werden.



1) press Costumer level 

▼

2) press on the heating circulation button 

▼

3) press on the watchtime progtamme 

▼

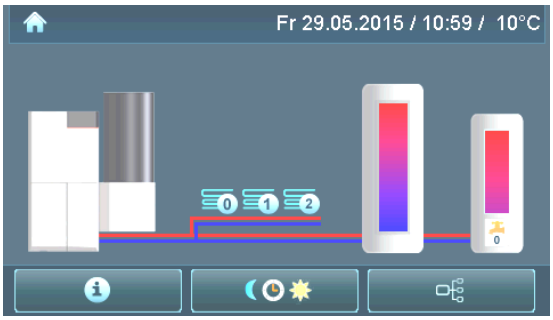
- Programme „DAILY“
  (press 1 x to the weekday)
- Programm „WEEKLY“
  (press 2x on the same weekday)

 back to houselevel ..... look at chapter 6.0

7.3 Room temperature adapt heating curve

BC-01

Through changing the heating curve, the room temperature could be adapted.
Through a higher heating curve you might reach a higher room temperature.
Change the heating curve just daily and maximum in a tenth area.



1) press COSTUMERLEVEL 

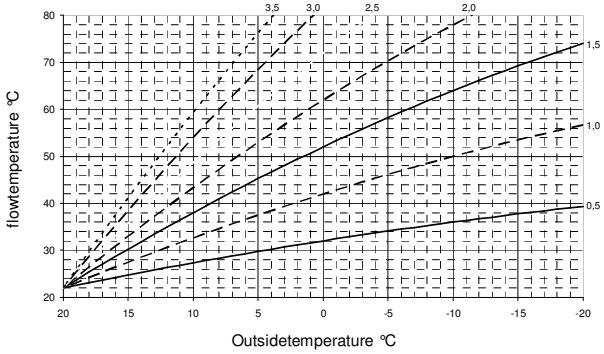
▼

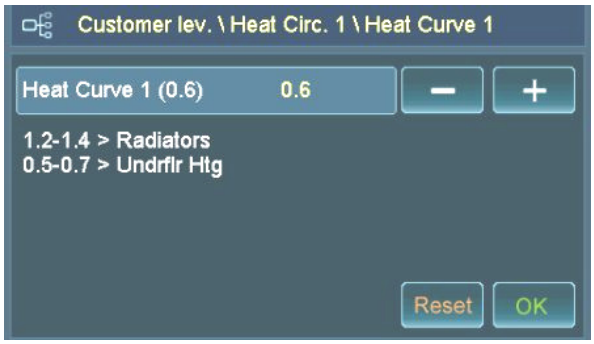
2) press to the heatingbend button 

▼

3) press on the heatingcurve button 

▼

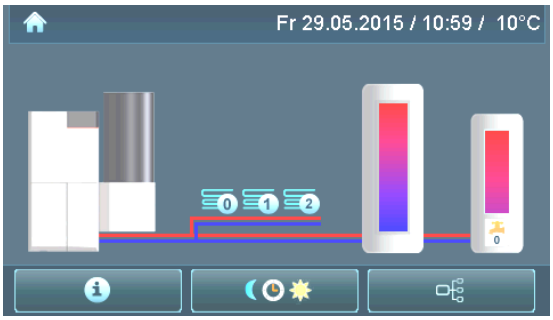




 back to HOUSELEVEL..... look at chapter 6.0

7.4 WARMWATERTEMPERATURE how to ADAPT BC-01

Through changing the targettemperature the warmwatertemperature could be adapted..



1) press COSTUMERLEVEL 

▼

2) press on the warmwaterbutton 

▼

3) press on the targettemperature button 

▼

- „CHANGE" with + or −
- „SAVE“ with OK

back to HOUSELEVEL..... look at Chapter 6.0

7.5 ROOMCONTROLLER how to serve

BS-01

place of construction

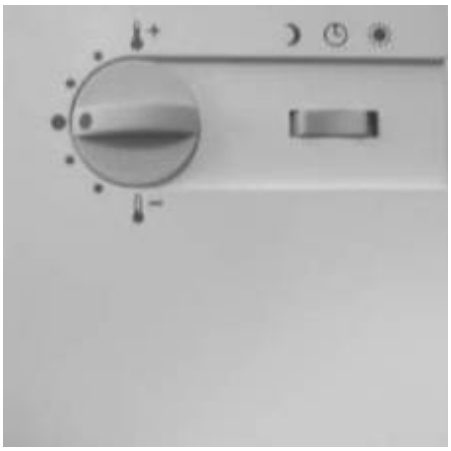
Mount the room construction in an high of 1,5 m on the internal wall. The functionalst room is there, where the occupants are the most of time (for example: living room). In this room it´s forbidden to furnish the thermostatvalve. (open the valves completly).

> ⚠ The room machine shouldn't stand in an area with strong influence of sun or a cockle stove.

adapt room temperature

The knobs bringst he the oportunity to change the roomtemperature. In the plus area (+) of the menu the roomtemperature could be lifted up to 3 ° C. In the control range the minus (-) temperature could be depressed up to – 3 degrees.

> ⚠ By turning in the plus (+) or minus (-) area in the menu the detail.



Low: **Heating run OFF**
(if the Outsidetemperature is higher then Parameter „Night out OT")

Heating run ON → to target temperature Night
(wenn die Außentemperatur niedriger ist als der Parameter „Nacht aus AT")

Normal: **Heating and reduced mote**
(after the in the watchprogramme attiuted times)

Heating: **Heat**→ on target temperature Day
(heat Day and Night without reduced mote)

8 Operating of the heating system

BS-01

Initial commissioning

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

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.

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.

8.1 Controlling of heating circulation system BC-01

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.

Expansion vessel

Check the air pressure in the expansion tank (circa 1,5 bar)

If necessary call a plumber!

Temperature-relief valve

Check the security functions to the right functions

If necessary call a plumber!

Sprinkler system

Check the safety device on right function!

If necessary call a plumber!

Heatungroomlifting

Control the air supply of free passage!

If necessary call a plumber!

8.2 Fuel

PC-01

8.2.1 PELLETS

BC-01

To achieve a smooth heating of the furnace, the quality of the fuel has to be right. Only with high-quality wood chips should help to ensure a reliable and trouble-free operation of the plant. The price should be evaluated always behind the quality requirements and it is therefore strongly advised to use only good quality.

Important quality criteria:

- solid;
- smooth surface;
- minimal small particle;
- minimal ash decay;
- high smelting point;

Properties

Calorific value	ca. 4,9 kWh / kg
Bulk weight	ca. 650 kg / m³
Pellet size (length)	5 – 30 mm
Diameter	5 – 6 mm
Water content	8 – 10 %
Fusion point	ca. 1200°C
Ash content	< 0,5 %

Quality classes use just Pellets with **EN plus** Quality class **A1**/**A2**!

The storing has to occour in an dry condition!

If the pellets are in Contact with water or moisture they swell and disintegrate!

8.2.2 Grain fuel

PC-01

Advanced cultivation, harvesting and storage methods combined with optimum conveying and metering qualities make grain an economical and convenient fuel. Fundamentally, all types of feed grain are suitable. The best suited to combustion are grain types with husks and a low protein nitrogen content such as triticale. As the fusion point of grain ash (clinker formation) is around 700°C (wood ash 1200°C), it is advisable to add approx. 0.3 - 0.5% by weight of slaked lime (calcium hydroxide $Ca(OH)_2$) to the fuel before use for boilers with ratings up to 50 kW and 0.5 - 0.8% for boilers with ratings over 50 kW. That increases the calcium content of the fuel, thereby raising the ash fusion point.

Important quality criteria:

- low protein content
- low nitrogen content;
- low fines;
- low content on hast and bowl content;
- use maximum 13% residual moisture

Properties

Calorific value barley	ca. 4,3 kWh / kg
Calorific value triticale	ca. 4,5 kWh / kg
Bulk weight barley	ca. 650 kg / m³
Bulk weight triticale	ca. 700 kg / m³
Fusion point barley	ca. 750°C
Fusion point triticale	ca. 720°C
Ash content barley	ca. 1,5 - 2,5%
Ash content triticale	ca. 1,5 - 2,0%

Must not be stored with a residual moisture content of more than 13%.

8.3 Fill the Storeroom

PC-01

The fuel store can´t be filled when the heater is in service!

Minimum 1 hour before filling, the construction should be turned off!

You have to empty the feed spiral minimum all 3 years!

You have to suct bigger dust quantity!

Firstfilling/ Refilling

Before first fillimng and after every complete emptying of fuil the storeroom couldn´t filled completly. The discharge screw should be filled prior to complete filling of the fuel storage over the entire screw length about 10 cm high with pellets. Thereafter, the fuel storage can be filled up to the maximum fill height.

dumping height

Pellets ..... max. 2,5 m

Emergency filling

If the automatically refilling of pellets isn´t able to run, the store room could be “emergency refilled”:

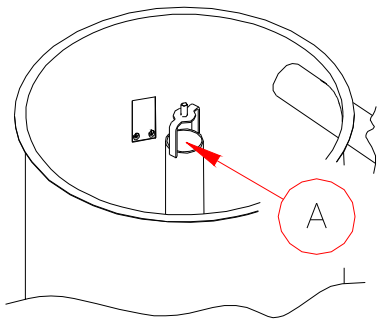
Versuchen Sie jedoch noch vorher, die Störung laut der Kapitel „Störungsbeseitigung“ oder „Hinweis und Fehlermeldungen“ in der Bedienungsanleitung zu beheben.

approach:

Put he construction to „programme out“and wait till it went to „run out“. Putt he power switch to „0“. Screw the store tunk in above direct and screw it and fill it with bagstuff.

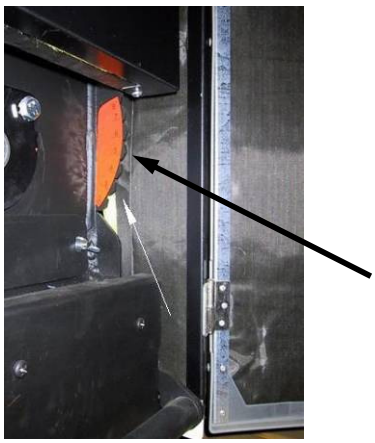
Attention: You have regard, which no Pellets went into the aspiration pipe (A-suction turbine, look at the picture). Through that the suction turbine will be destroyed! The best will be to plug the turbine with an rag.

After that, you have to close the dished cover. The shown allertmessage should be receipted. After that you have to attend the at least used heatingprogramme.



8.4 Attitude combustion air

PC-01



After every service or after the boiler has not been used for an extended period, the combustion air setting should be checked/reset.

The adjuster lever for the combustion air is located on the right above the right-hand ash box (see illustrations below).

		Position	CO2 at 100% Power
Powercorn 7-30	Pellets	6	10 – 12%
	Gerste	8	8 – 10%
	Triticale	5	8 – 10%
		Rod at hole 30	

		Position	CO2 at 100% Power
Powercorn 12-50	Pellets	6	10 – 12%
	Gerste	8	8 – 10%
	Triticale	6	8 – 10%
		Rod at hole 30	

		Position	CO2 at 100% Power
Powercorn 21-75	Pellets	5	10 – 12%
	Gerste	8	8 – 10%
	Triticale	7	8 – 10%

8.5 Emptying the ash

PH-01

Glowing embers can cause fires!

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

Touching of hot parts could lead to skin injury!

Let the boiler cool down minimum a half an hour before cleaning the ash!

Depending on the quality and quantity of uel the ash container must be emptied often. With inferior fuel quality is shortened by the higher proportion of dust in the fuel, the drain interval. The ash in concentrated form. In case of high quality used fuel you can use the ash as mineral fertilizer.

Asche entleeren

Put he construction to „Programme out“and let it cool down minimum a half an hour. Then you have to extract and clean the ashtank.

Attention: The Ashton could be hot!

Control the seal of ashtank on his correct condition. Then insert both ashtanks and close it.

Attitude the construction to the at least attituded heatingprogramme.

Resetting the ash warning

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

9 Cleaning/ Care

PH-01

Attention: Danger of injury!

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

Attention: Danger of live!

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

boiler

The sophisticated cleaning system on a GUNTAMATIC heating system means that regular cleaning work is substantially reduced. All that is required is regular emptying of the ash.
The flue must be regularly swept. At the same time, the flue connecting pipe, the flue gas box and the boiler heat exchanger should be cleared of fly-ash.

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

Depending on efficiency, and on ash production you have to lead interim and general cleaning, this Stepps are descriped here.
If the heating system is subject to exceptionally high loads, more extensive cleaning may be required.

Cover panel

Treten Verunreinigungen an Verkleidungsteilen und Bedienelementen auf, entfernen Sie diese am besten mit einem weichen, feuchten Lappen. Zum Anfeuchten dürfen jedoch nur milde, lösungsmittelfreie Reinigungsmittel verwendet werden. Lösungsmittel wie Alkohol, Waschbenzin oder Verdünner dürfen keinesfalls verwendet werden, da diese die Geräteoberfläche angreifen können.

fuel store

Das Brennstofflager und die Austragschnecke müssen zumindest alle 3 Jahre restlos entleert und ausgesaugt werden, damit Störungen am Austragsystem durch Staubablagerungen ausgeschlossen werden können.

9.1 Interim cleaning

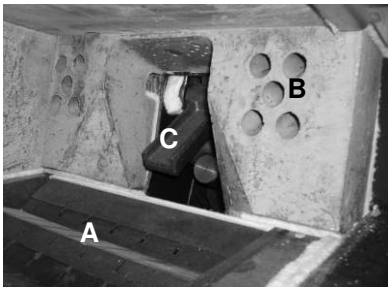
PH-01

Attention Danger of injury!

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.

INFO Interim cleaning must be carried out at intervals of between 2 week and 3 months , but minimum every half an year.

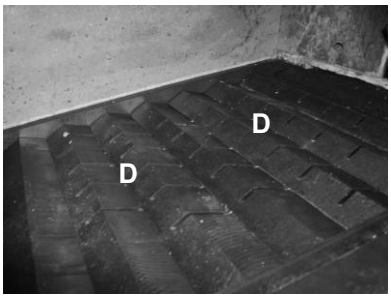
lead the following Steps in the numbered order:



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

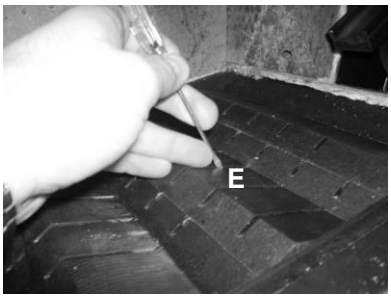
2) Remove ash from stepped grate (A) using a fire tool.

3) On the User menu, start the function "**Clean grate**" (see Section) and allow the stepped grate (A) to clean itself for a few minutes.
Risk of injury from moving parts!



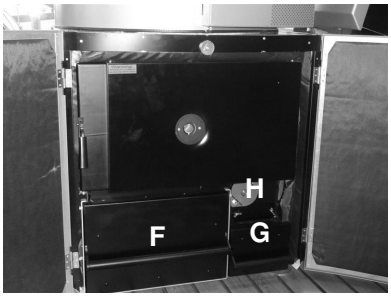
4) Clean out the air slots (D) in the grate using a small flat-bladed implement such as a screwdriver (E) to clear them of combustion residue.

5) Control the to pair vents (B) and clean it.
(just for constructions > 50 kW)



6) Check that the fuel spout (C) moves freely (move up and down several times).

7) Pull out the ash boxes on the left (F) and right (G) and empty them.
Fire danger through rest ember!



8) Unscrew the inspection cover (H) and remove the ash from under heat grate.

9) Close and tightly reset firebox door, ash boxes (F and G) and inspection cover.

10) For emptying the ash confirm with „YES“ and „OK“

9.2 General cleaning

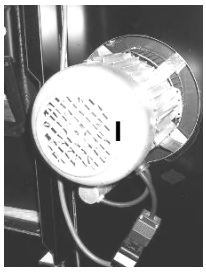
PH-01

Attention Danger of injury!

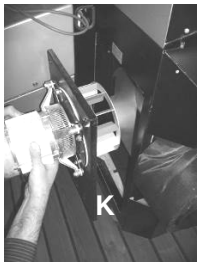
For safety reasons you must only carry out servicing and cleaning when the heating system is switched off and disconnected from the mains, and has cooled down.

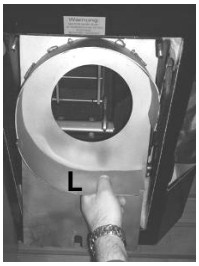
INFO You have to make the generalcleaning twice in one year. The minimum cleaning is anual. For that you have to lead the points 1-10 for intermediated cleaning:

Lead the following Steps sequentially:



11) Stick out the suctionsdraft blower (I). Then take of the cover panel (J). Then screw the butterfly nut (K) and controll the wingcircle and ckeck if it´s dirty. Lift the RRK sheet (L) and tike it out.





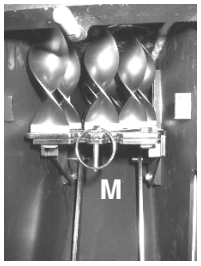
12) Take the securityclip aoutside of the wirbulator closing sheet and take off the belowed metal. At the opened warm exchanger lid put out the wirbulators in above directon.

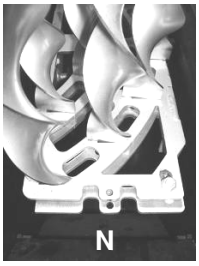
13) Clean the warmexchangepipe with a pipe brush. After that you have to clean the whole warmexchangearea.

14) Take the smokegasfeeler out and clean it. After cleaning put it inside again.

15) Control the lambdasond (G) i fit is a fixed seat. If it´s necaserry rebuilt the sond and clean it with an soft brush.

Don´t clean the lambdasond with high pressure ait!

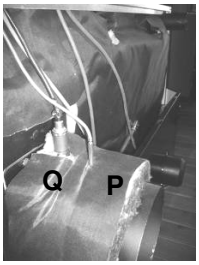




16) Mount the rebuildet parts carefully and have a look, that the cleaningsopenings are tight.

Cleaning on the end of the heatinperiod!

Cleaning on the end of the heatingperiod when the heatingboiler is out of order, you have to clean it with rust defence spray in the metallic areas like the fireroom, warm exchanger.



10 Error/ fault messages

BC-01

	Kategorie	activator	Message	Quit.	cause
F01	**Note**	Input TKS1 open longer than "t safe" (door switch)	Firebox door or ash box open (F01)	Automatic	Door switch defective, connector faulty, door or ash box open
F03	**Fault**	CO2 check: in "control mode" after time parameter "t reignition" if CO2 is < "CO2 safe" for longer than "t safe min"	Combustion fault Check fuel, grate or air vent (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 or pump malfunction, boiler sensor defective
F05	**Fault**	Flue gas check in "control mode" after time param. "X25" if FGT actual + 0.5xBT actual < "FGTb" - "FGT safe" for longer that "t safe min" (when output betw. 30 and 100%)	Combustion fault Check fuel, grate or air vent (F05)	**Reset** button	No fuel, incorrect air setting, incorrect flue draught, defective flue gas sensor
F06	**Fault**	Fuel spout "ON" for longer than param. "T overfill"	Firebox overfilled Check ash box, fuel spout. (F06)	**Reset** button	Ash box full, fuel spout sticking, oxygen sensor defective
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
F09	**Note**	Fuel level in storeroom below fill level sensor (optional)	Check fuel store (F09)	Automatic	Fill level sensor (optional) defective, no jumper across terminals 28 - 30
F10	**Fault**	Fire safety flap fails to open in time "t flap"	Fire safety flap not opening. Check fuel chute. (F10)	**Reset** button	Drop-down blocked, fire safety motor defective (check in test program)
F11	**Fault**	No response from Hall-effect sensor A1 within time param. "t safe A1"	Grate cleaner motor sticking or jammed (F11)	**Reset** button	Ash box full, grate cleaner jammed, grate jammed, motor or lead defective (check in test program)
F12	**Fault**	No response from Hall-effect sensor G1 within time "t safe"	Drive motor G1 jammed (F12)	**Reset** button	Fuel chute overfilled, stoker conveyor jammed, connection faulty
F13	**Fault**	Overfill cover "OFF" for longer than "t safe": A1 = 0 %	Outfeed conveyor overfilled, check fuel chute (F13)	**Reset** button	Fire safety flap closed, fuel chute overfilled
F15	**Fault**	Fire safety flap fails to close in time "t flap" Opening angle >5%	Fire safety flap not closing. Check fuel chute. (F15)	**Reset** button	Drop-down blocked fire safety motor defective (check in 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	**Note**	Param. "O2 sensor" or adjusted setting above the limits of param. "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**	TKS Ashton longer then 20 Minutes on the- OUT	Ashton is open (F20)	automatic	ashton open
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)

	Category	activator	message	Quit.	cause
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 set emptying interval: Fault deactivated = 0h (setting adjustable in system settings)	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 temperature too high. Check fuel chute. (F24)	**Reset** button	Fire safety flap not air-tight, service cover on fuel chute not air-tight
F25	**Fault**	Ash bin full or ash extractor motor jammed	Ash auger not moving freely or jammed (F25)	**Reset** button	Ashton full Ashchannel blocked; Ascheload open; Ashton or cover not in position or not closed;
F26	**Fault**	Temperature in ash bin higher than "T max bin"	Ash bin temperature too high. Check bin (F26)	**Reset** button	Glowing embers in ash bin Ash extraction system not air-tight (ash bin, vacuum hoses, inspection covers)

11 Fault clearence

PH-01

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

12 Replacing fuses

BS-01

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.

1) Set the system to the programme „OFF“ and allow it to cool down for at least 10 minutes.

2) Switch the Power switch to „0“ and unplug the mains plug on the back of the boiler to fully disconnect it from the power supply.

3) Unfasten the controller cover and remove it.

4) Locate the defective fuse with the aid of the wiring diagramme in the installation instructions and replace it.

5) Press in the fuse holder 2-3 mm using a medium sized screwdriver and turn it half a turn antilockwise to release it. The holder and fuse will then pop out a few mm.

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

7) Insert the fuse holder, press it in 2-3 mm and secure it in position by turning half a turn clockwise.

13 System log book

BS-01

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:

- **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.

- **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)

- **Servicing**

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

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

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

Year:	**System operator:**						**Serviced by:**						
Monthly Check	Jan	Feb	Jan	Feb	Jan	Feb	Jan	Feb	Jan	Feb	Jan	Feb	Remarks
Controller													
Warning system(s)													
Fans													
Firebox													
Portable fire extinguisher													
Ash storage													
Items stored in boiler room													
Deposits on roof													
Fire safety closures													
Smoke **trap cleaning**													
Signature/initials													

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

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

Year:	**System operator:**						**Serviced by:**						
Monthly Check	Jan	Feb	Jan	Feb	Jan	Feb	Jan	Feb	Jan	Feb	Jan	Feb	Remarks
Controller													
Warning system(s)													
Fans													
Firebox													
Portable fire extinguisher													
Ash storage													
Items stored in boiler room													
Deposits on roof													
Fire safety closures													
Smoke **trap cleaning**													
Signature/initials													

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

14 PARAMETER CHANGES

BS-01

No:	Parameter	Standard	1. Change	2. Change	3. Change

15 ATTITUDE HEATING CIRCULATION

BS-01

Heatingcirculation 0	Heatingcirculation 1	Heatingcirculation 2	Warmwater 0

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