Pellet furnace

Planning and installation

englisch



GUNTAMATIC

EN-B31-007-V17-0423

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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1.1 SAFETY INSTRUCTIONS

GUNTAMATIC heating systems are state of the art and comply with all relevant safety regulations. Improper installation can mean danger to life. Boilers are firing systems and represent sources of danger if handled improperly. Installation, initial start-up and service may therefore only be carried out by adequately qualified personnel in compliance with all regulations and the manufacturer's instructions.

1.2 GUARANTEE AND WARRANTY

Warranty and guarantee by the manufacturer require proper installation and commissioning of the heating system. Defects and damage resulting from improper installation, commissioning or operation are excluded from this. The manufacturer's instructions must be followed to ensure that the system functions as intended. Furthermore, only original parts or parts expressly approved by the manufacturer may be installed in the system.

1.3 COMMISSIONING

The initial commissioning of the furnace must be carried out by a GUNTAMATIC specialist or by qualified personnel. He will check if the system has been built according to the scheme, tune the system and explain the operation of the heating system to the system operator.

1.4 STRUCTURAL REQUIREMENTS

When creating the structural requirements, it is imperative that the locally applicable, legal submission, construction and execution regulations as well as the dimension specifications in the installation guidelines, installation examples and technical data are observed! Compliance with the locally applicable regulations and the proper implementation of the construction measures are the sole responsibility of the system owner and are a guarantee and warranty requirement. GUNTAMATIC does not assume any warranty or guarantee for structural measures of any kind. Without any claim to completeness or override of official requirements, we recommend the following designs based on the Austrian guideline pr TRVB H 118:

2.1 **FIRE PROTECTION**







Compliance with these regulations is the sole responsibility of the operator. A check during commissioning is not provided.



<u>Austria</u>	Law gazettes of the federal states technical guideline preventive fire protection (pr TRVB H118)
<u>Germany</u>	Model Firing Ordinance (M-FeuVO) Hesse and Saarland - here §16 FeuVO Hesse applies
<u>Switzerland</u>	Fire safety regulations (www.vkf.ch)
other export countries	Responsible fire protection authorities

Compliance with the respective country fire protection regulations is mandatory and overrides the **GUNTAMATIC** minimum fire protection requirements.



In the absence of specific country regulations, the **GUNTAMATIC minimum fire protection** requirements must be followed exactly.



<u>Boiler room</u> Floor made of concrete, raw or tiled. All materials for floor, walls and ceiling must be fire resistant in F60 / REI60. If a fabric tank is installed in the boiler room (not permitted in all countries), the floor, walls and ceiling must be constructed in F90 / REI90.

Boiler room door: The boiler room door is to be designed as a T30 / EI_2 30-C fire door, opening in the direction of escape, automatically closing and lockable. Connecting doors to the fuel store are also to be designed as T30 / EI_2 30-C fire doors, automatically closing and lockable. No direct connection to rooms in which flammable gases or liquids (garage) are stored.

<u>Fuel storage room</u> The same minimum fire protection requirements apply as for the boiler room.

Storage room openings: Storage room openings are to be made in T30 / El₂ 30-C, automatically closing and lockable. A sign with the inscription "Do <u>not enter during operation</u>" must be affixed to each storage room opening.

Fire protection collars: If the storage room is not directly adjacent to the boiler room, a fire protection collar must be fitted to each hose at the wall outlet of the suction and return air lines from the boiler room. If the discharge screw goes directly into the boiler room, it is secured at the factory with a special fire protection packing. No additional fire protection collars need to be used on the air lines. If the discharge screw does not protrude from the storage room, i.e. if the discharge screw does not protrude from the storage room, fire protection collars must also be fitted at the wall outlet of the suction and return air lines from the storage room.

> 50 m³ <u>HLE</u>: If it is possible to store 50 m³ or more, an extinguishing device (HLE) that can be triggered manually from the boiler room must be installed directly above the passage of the room discharge duct into the fuel store, connected in a frost-proof manner to a pressurized water pipe, designed as an empty DN20 pipe. The extinguishing device must be marked with a sign "Extinguishing device fuel storage room".

<u>Filling lines</u>: Filling lines through rooms at risk of fire must be F90 / REI90 clad.

<u>Minimum room height</u>	BC 30 / 40 / 50		ideal	<u>H 225 cm</u>
		1)	possible	<u>H 210 cm</u>
	BC 75 / 100		ideal	<u>H 240 cm</u>
		1)	possible	<u>H 230 cm</u>
			¹⁾ = Minimum	headroom with heat exchanger cover unscrewed
<u>Minimum room size</u>	BC 30 / 40 / 50		<u>W 240 cr</u>	n x ²⁾ D 230 cm (³⁾ D 240 cm)
	BC 75 / 100		<u>W 270 cr</u>	n x ²⁾ D 230 cm (³⁾ D 240 cm)
			 ²⁾ T = the space ³⁾ = Minimum 	ce seen from the front of the boiler to the rear dimension for car ash suction system
Minimum insertion opening	BC 30 / 40 / 50	4)	ideal	<u>W 120 cm x H 185 cm</u>
		5)	possible	<u>W 80 cm x H 170 cm</u>
		6)	possible	<u>W 75 cm x H 165 cm</u>
	BC 75 / 100	4)	ideal	<u>W 195 cm x H 210 cm</u>
		5)	possible	<u>W 100 cm x H 190 cm</u>
		6)	possible	<u>W 90 cm x H 180 cm</u>
			$\frac{4}{5}$ = insertion of	of the ready assembled boiler on the transport timber

⁵⁾ = Insertion without stoker, cleaning drive and transport wood
 ⁶⁾ = Dimensions with cladding removed in addition to point ⁵⁾

- Combustion air supply The negative pressure in the boiler room must not exceed 3 Pa (0.3 mmWS). The ventilation openings of boiler rooms must have a free cross-section of at least 200 cm² and be unclosable. For combustion systems with a fuel heat output of 50 kW or more, the free cross-section must be increased to at least 5 cm² per kW of rated output, in accordance with the combustion air requirement of the combustion system. The supply air duct must lead directly to the outside; if other rooms are crossed for this purpose, this air duct must be encased in F90 / REI90. Outside ventilation openings must be closed with protective grids > 5 mm mesh size. If possible, the combustion air supply should be close to the floor to prevent the boiler room from cooling down.
 - Electrical installation The lighting and the electrical supply line to the heating system must be permanently installed in the boiler room. A marked escape switch (emergency stop) must be installed in an easily accessible location outside the boiler room near the boiler room door.

A 230 VAC, 50 Hz, 13 A mains connection must be provided.

- Fire extinguisher A hand-held fire extinguisher (6 kg filling weight EN3) must be placed outside the boiler room next to the boiler room door.
 - Antifreeze Frost resistance for the boiler room, water-carrying pipes and any district heating pipes, must be ensured.

Plan the furnace as close to the fireplace as possible to avoid a long flue pipe. The furnace must be accessible from the left or right. The projection of the filling chamber door must be kept clear.



A → Installation variant energy-saving draught regulator with Ex-flap in the flue pipe as close as possible to the chimney connection - observe local regulations - possible dust formation

$B \rightarrow$	Distance BACK	ideal	<u>70 cm at</u>	least	
		possible	<u>50 cm wi</u>	<u>thout</u>	ash suction system
			<u>60 cm</u>	with auto	ash suction system

- $\mathbf{C} \rightarrow \mathbf{D}$ rain for thermal overtemperature protection
- $D \rightarrow$ Mains connection 230 VAC 13A
- $E \rightarrow$ Drain
- $\mathbf{F} \rightarrow \mathbf{F}$ uel storage tank
- $\mathbf{G} \rightarrow \mathbf{Fireplace}$ moisture insensitive fireclay fireplace recommended
- $H \rightarrow$ Installation variant energy-saving draught regulator with Ex damper in the chimney approx. 50 cm below the chimney connection observe local regulations
- $I \rightarrow \underline{Distance \ LEFT}$ ideal $\underline{70 \ cm \ at \ least}$ possible $40 \ cm$
- $\mathbf{J} \rightarrow \mathbf{Fire\ extinguisher\ 6}$ kg filling weight EN3
- $\mathbf{K} \rightarrow \mathbf{Escape \ switch \ emergency \ stop}$
- $\textbf{L} \rightarrow \quad Fire \; door \; \text{T30} \, / \, \text{EI}_2 \; \text{30-C lockable and self-closing}$
- $\mathbf{O} \rightarrow$ Combustion air supply

<u>Site</u>

The system may always be connected to fireplaces dimen-sioned according to DIN EN 13384. For our furnaces, we recommend (without any obligation to do so) moisture-resistant, thermally insulated fireclay chimneys that are resistant to temperatures above 400°C. For automatically fed furnaces, we also recommend heat-insulated, soot fire-resistant stainless steel chimneys, provided the system is correctly dimensioned. (Valid for the usual Wirbu-lator delivery condition "Set calorific value". For deviating situation, see notes in the chimney connection chapter). In order to be able to carry out an exact chimney design, the exhaust gas values listed below must be used as the basis for a chimney calculation. It is advisable to involve the chimney sweep already in the planning phase, since he has to approve the chimney system.

- <u>Chimney height</u> The minimum chimney height is 5-10 m, depending on the firing capacity. The chimney mouth must project above the highest part of the building by at least 0.5 m. In the case of flat roofs, the chimney mouth must project above the roof surface by at least 1.5 m.
- <u>Chimney diameter</u> The chimney must be adapted to the firing capacity. The following data are reference values and can be used for planning. However, we recommend having the fireplace calculated by a professional.

BC 30 / 40 / 50	eff. Height over6	mD	= 160 mm
	eff. Height under6	mD	= 180 mm
BC 75 / 100	eff. Height above6	mD	= 200 - 220 mm
	eff. Height below6	mD	= from 220 mm

Fireplace calculation data Design the chimney for nominal load! (averaged values with contaminated heat exchanger)

Nominal load *)

Туре	Exhaust gas	CO2	Mass flow	Train requirement
BC 30	160°C	12,5%	0.024 kg/s	15 Pascal
BC 40	170°C	13,0%	0.030 kg/s	15 Pascal
BC 50	175°C	13,0%	0.030 kg/s	15 Pascal
BC 75	190°C	13,0%	0.042 kg/s	15 Pascal
BC100	190°C	13,0%	0.055 kg/s	15 Pascal

Partial load *)

Туре	Exhaust gas	CO2	Mass flow	Train requirement
BC 30	100°C	9,5%	0.010 kg/s	2 Pascal
BC 40	105°C	10,0%	0.012 kg/s	2 Pascal
BC 50	115°C	10,0%	0.009 kg/s	2 Pascal
BC 75	120°C	10,0%	0.013 kg/s	2 Pascal
BC100	120°C	10,0%	0.017 kg/s	2 Pascal

*) Exhaust gas and CO2 values preset according to the fuel qualities commonly used in practice - can be optimized by menu settings at ideal fuel quality.



The installation of a draught regulator and an explosion damper is mandatory!

The flue draught specified in the flue calculation data must not deviate by more than +/- 3 Pascal. If the chimney draught cannot be reduced to the required value, either a larger draught regulator must be used, or an additional throttle valve must be installed between the chimney and the draught regulator.

- <u>Task</u> Ventilation of the chimney while the unit is out of operation;
 - Compensation of the overpressure when a pressure surge occurs;
 - Regulation and limitation of the conveying pressure;

Installation instructions The installation of a draught regulator and an explosion damper must preferably be carried out in the chimney, approx. 0.5 m below the flue pipe connection, or alternatively in the flue pipe as close to the chimney as possible, in accordance with local regulations.

- Adjust chimney draft Adjustment of the chimney draft is only useful at outdoor temperatures below +5°C.
 - The equipment must be in operation for at least 1 hour.
 - Ensure heat removal so that the boiler can be operated at nominal load for at least 15 minutes.
 - Measure the flue draft between the boiler and the draft regulator. Measuring hole as far as possible 3 x flue pipe diameter from the flue pipe connection of the boiler.

Too high chimney draft!

The exhaust gas temperature is increased and combustion accelerated. Poor power adjustment, increased ejection of dust and malfunctions can be the result.





In the case of <u>BOX storage systems, particular attention must be</u> paid to the load-bearing capacity of the substrate, as high loads act on the individual support points when the BOX is fully filled.

BOX lineup The BOX must always be installed separately from the boiler in another room. In some countries, the fabric tank may also be installed in the same room as the furnace if a minimum distance of 1 m between the BOX and the boiler can be maintained and the fuel heat output does not reach 50 kW. For this, additionally observe the locally valid regulations!

For outdoor installation, F90/REI90 cladding is not required if the minimum distances for fire flashover are observed. The fabric tank must be protected from rain, moisture and UV light.

FLEX Wall Breakthrough Width 33 cm / Height 25 cm (for FLEX drive unit)

- <u>Storage room ventilation</u> Storage rooms and storage containers must be designed and ventilated to avoid life-threatening CO concentrations up to \leq 100 tons according to ÖNORM EN ISO 20023 and > 100 tons according to ÖNORM EN ISO 20024. Ventilation openings must lead to the outside and ensure that there is an air exchange between the storage room and the ambient air. If natural thermal conditions are not sufficient, appropriate technical precautions must be taken. If the filling ports do not open into the open air, ventilation must be provided via a separate ventilation opening. It must be ensured that no rainwater can enter the storage room via the ventilation opening. Storage rooms of storage containers made of air-permeable fabric must have a ventilation opening leading into the open air.
 - INFO: The total ventilation cross-section of 2 closing lids of our filling sets is 60 cm².

The following information is based on the above-mentioned standards and is a recommended guide without any guarantee of completeness or correctness. Relevant mandatory standards and national regulations must be observed with priority.

Storage room Flex, agitator, screw ... with sloping floor

- 1) Storage room with Guntamatic filling set
 - applicable up to a maximum of 2 m line length and 15 t capacity;
 - Filling openings outside max. 0.5 m higher or max. 0 m lower than inside;
- 2) Storage room as above (1) but 15-100 t capacity
 - with additional ventilation opening ≥ 10 cm²/t (at least 150 cm²)
- 3) <u>Design as above (1) but with longer filling line or greater height</u> <u>difference</u>
 - Execute ventilation according to EN ISO 20023
- 4) Large capacity storage > 100 tons capacity
 - Execute ventilation according to EN ISO 20024

Box fabric tank

- 1) Box fabric tank / version with \leq 15 tons capacity
 - Ventilation opening into the open --- Opening ≥ 15 cm²/t
- 2) Box fabric tank / 15-100 ton capacity design
 - Ventilation opening into the open --- Opening ≥ 8 cm²/t (at least 150 cm²)

Entry openings Above-ground fuel storage facilities must be provided with a door or hatch (opening outward). On the inside, the access opening must be provided with a planking that can be removed from the outside so that the fuel cannot trickle out if the storage room is opened by mistake. Due to the risk of injury during operation, access openings must be designed to be closable and kept closed during operation. A sign with the inscription "Do not enter during operation" must be affixed to the access opening.

<u>Electrical installations</u> For <u>FLEX storage systems</u>, electrical installations in the fuel storage system are not permitted.

For <u>BOX storage systems</u>, electrical installations are permitted in the installation room. However, light lamps must not be mounted in the vicinity of the fabric tank.

Filling couplings must be grounded.

2.7 PLANNING EXAMPLES

Example 1 Boiler with FLEX room discharge directly next to the boiler room.

The maximum length of the discharge screw is 5 m.

The maximum suction length is 25 m.

No fire protection collars required - observe minimum fire protection requirements!



Example 2 Boiler with FLEX room discharge from another section of the building. The <u>maximum length of the discharge screw is 5 m</u>. The <u>maximum suction length is 25 m</u>.

The <u>maximum socion length</u> is 20 m.

At least 2 fire protection collars required - observe minimum fire protection requirements!



Example 3Boiler with FLEX room discharge from another section of the building.The maximum length of the discharge screw is 5 m.The maximum suction length is 25 m.

At least 2 fire protection collars required - observe minimum fire protection requirements!



<u>Example 4</u> Boiler with BOX fabric tank right next to the boiler room.

The maximum suction length is 25 m.

At least 2 fire protection collars required - observe minimum fire protection requirements!



<u>Example 5</u> Boiler with BOX fabric tank in another section of the building. The <u>maximum suction length</u> is 25 m.

At least 4 fire protection collars required - observe minimum fire protection requirements!



Example 6 Cascade system with 2 FLEX room discharges directly next to the boiler room. The <u>maximum length of each discharge screw is 5 m</u>.

The maximum suction length is 25 m in each case.

No fire protection collars required - observe minimum fire protection requirements!





<u>Site</u> If possible, plan the ash garbage can at ground level and in the boiler room next to the boiler. A basic requirement for the installation of the ash garbage can is good ventilation in the installation room. The ash bin must be placed at a minimum distance of 25 cm from combustible materials and must be permanently placed on a non-combustible base that overhangs the bin by at least 5 cm on all sides.



Non-permissible locations for the installation of the ash garbage can:

- in garages;
- outdoors; (except frost-proof installation with ventilation).
- in rooms used for residential purposes;
- in storage rooms for flammable liquids and gases;

Permitted locations of the ash garbage can:

• In boiler room



• in the next room



Suction line routing through fire sections:



- $\mathbf{A} \rightarrow \text{Wall penetration with rock wool pipe clamps};$
- $\textbf{B} \rightarrow \text{Wall}$ duct with bricked-in steel pipe;
- $\textbf{C} \rightarrow Fire \ protection \ clamps \ 54 \ \ 60; \ (maximum \ distance \ 1 \ m)$
- $D \rightarrow$ metal suction hoses; (at least 10 cm distance)
- $\textbf{E} \rightarrow \text{non-combustible base;}$

PH-03

The heating circuit control is offered as an option.

There is a choice of the <u>Set-MKR</u> on the boiler or the <u>Set-MK261</u> for wall mounting.



3 weather-compensated controls possible per system;

- 1 Set-MKR can be activated on the boiler per system;
- 3 digital space stations possible per system;
- one analog room unit possible per heating circuit;

Restrictions for Set-MKR on the boiler board

- 1) If a 5-sensor buffer management system is connected on the boiler board, no analog room devices can be connected if the Set-MKR for heating circuits 0, 1 and 2 is used at the same time.
- 2) If an EC filter is connected, no analog room unit can be connected for heating circuit 0.
- 3) If a 5-sensor buffer management system and an EC filter are connected in conjunction with a Set-MKR, room units can no longer be connected to the boiler board for heating circuits 0, 1 and 2. Furthermore, in this equipment variant, the 5-sensor buffer management can only be operated with 4 sensors.

Set-MKR The following functions can be activated:

	Heating circuit WW		 Hot water tank 		
	Heating circuit 0 optionally as	5)	 Pump heating circuit Addition hot water tank External heater 		
	Heating circuit 1 optionally as		Pump heating circuitMixed heating circuit		
	Heating circuit 2 optionally as		Pump heating circuitMixed heating circuit		
Wall unit set-MK261	The following functions can be activated:				
	Heating circuit WW		 Hot water tank 		
	Heating circuit 0 optionally as	1)	Pump heating circuitthird mixed heating circuit		
	Heating circuit 1 optionally as		Pump heating circuitMixed heating circuit		
	Heating circuit 2 optionally as		Pump heating circuitMixed heating circuit		
	Capillary optionally as	2) 3)	 Feeder pump (ZUP) Buffer pump (PUP) Charge pump (LAP) Extension (ERW) third mixed heating circuit 		
	Add-on optionally as		Addition hot water tank		

- External heater
- ⁴⁾ third mixed heating circuit



<u>INFO</u>

- 1) the "third mixed heating circuit" can be activated only if the functions capillary and supplement are not used;
- 2) by means of the "<u>ERW</u>" function, another heating circuit controller can be assigned to a heating circuit controller with remote line;
- 3) if the "third mixed heating circuit" function is activated, the <u>remote line functions</u> are not available;
- 4) if the "third mixed heating circuit" function is activated, the <u>additional functions are not</u> available;
- 5) if the boiler is equipped with heat meter and ash suction system, the function addition hot water tank is not applicable;



3.1	DELIVERY	BS-01
	<u>Deficiencies</u>	The heating system is delivered foil packed in a board crate. Please check on the basis of the delivery bill whether the delivery is complete and in perfect condition. Note any defects directly on the delivery bill and contact the supplier, heating engineer or our customer service.
3.2	INSERT	BS-01
		The unit is delivered mounted on a transport lumber and can be lifted and moved to the installation site with a lift truck.
	Multi-part insertion	The boiler body can be disassembled into parts and brought in. If this is the case, a GUNTAMATIC authorized person must be consulted.

3.3 PLACE AND ALIGN

Observe the minimum wall clearances specified by the system designer and the manufacturer. If you are missing important information, please refer to the chapter "Planning" or ask our technical information. Place the system as close to the chimney as possible to avoid a long flue pipe. The system must be accessible from the left or right.

02

Distance BACK	ideal	<u>70 cm at least</u>
	possible	50 cm without car ash suction system
		60 cm with auto ash suction system
Distance LEFT	ideal	<u>70 cm at least</u>
	possible	<u>40 cm</u>
Distance RIGHT	ideal	<u>70 cm at least</u>
	possible	<u>40 cm</u>
Distance FRONT	ideal	<u>100 cm at least</u>
	possible	<u>80 cm</u>
Floor distance	ideal	3.5 cm minimum adjust by means of screw feet
	possible	<u>8 cm</u>
<u>Align rising</u>	Unscrew " <u>rising to</u> easily wl	the rear screw feet a little further so that the boiler is aligned the rear". This allows the air present in the boiler to escape then filling the system.

- $\textbf{A} \rightarrow$ Sensor therm. Drain value 1/2"
- $\textbf{B} \rightarrow$ Safety heat exchanger 3/4"
- $\mathbf{C} \rightarrow \text{Back on 5/4"}$
- $D \rightarrow$ Flow 5/4"
- $E \rightarrow Drain 1/2"$





- $A \rightarrow$ Sensor therm. Drain value 1/2"
- $\mathbf{B} \rightarrow$ Safety heat exchanger 3/4"
- $\mathbf{C} \rightarrow \text{Flow 2"}$
- $D \rightarrow Return 2"$
- $\textbf{E} \rightarrow \text{Drain } 1/2"$

Safety heat exchanger The maximum permissible operating temperature of the furnace is 110°C. In order to prevent the maximum permissible operating temperature from being exceeded, it is necessary to connect a thermal discharge safety device in accordance with EN14597, which responds at 95°C. The connection pressure must be at least 2 bar. The connection pressure must be at least 2 bar and must not exceed 6 bar.

Safety valve A non-shut-off 1/2" safety valve for heating systems up to 50 kW or 3/4" safety valve for heating systems up to 100 kW nominal power according to EN12828 or EN ISO 4126-1 with opening pressure 3 bar must be installed. The outlet of the drain pipe must be laid and designed in such a way that the functionality is not impaired and that no danger can occur when the safety valve responds. The instructions for safety valves must be observed!

- $\textbf{A} \rightarrow \text{Cold}$ water connection
- $\textbf{B} \rightarrow$ Sensor therm. Drain value 1/2"
- $\mathbf{C} \rightarrow$ therm. Drain value 95°C



BIOCOM 75 / 100



- $\textbf{A} \rightarrow \text{Cold}$ water connection
- $B \rightarrow$ Sensor therm. Drain value 1/2"
- $\bm{C} \rightarrow$ therm. Drain value 95°C

<u>Buffer tank</u> The installation of a buffer tank is not necessary, since the boiler is operated in modulating mode and the system can be switched off quickly. If the required continuous heating capacity in the summer months is less than 10 kW for systems up to 50 kW, or 22 kW for systems above 50 kW, the combination with a buffer tank is necessary for reasons of efficiency.



In order to ensure the frost protection function in the "OFF" program, it is recommended to install an electric heater with adjustable thermostat.

Observe country-specific regulations for the buffer size!

Return hold-up The return temperature of the firing system must be at least 40 °C for systems up to 50 kW or 45 °C for systems from 50 kW and must be ensured by a bypass pump between boiler flow and return. If a buffer tank is connected, the return temperature of the firing system must be at least 55 °C and must be ensured by a return flow boosting group according to the system diagram. Failure to observe this requirement may result in increased risk of corrosion and thus loss of warranty and guarantee. Connect the return high-maintainer exactly according to the specifications in our connection diagrams.



The design of the return lift pump is adapted to the GUNTAMATIC boiler schemes. If additional components such as heat meters are integrated into the system hydraulics, or if the total buffer line length exceeds 30 m, it may be necessary to redesign the boiler charging pump.

<u>Sludge separator with magnet</u> Magnetite and rust sludge in heating water can be problematic for energy-saving pumps. Installing a properly sized and applied magnetite sludge separator can provide a cost-effective, effective remedy.

Older line systems in particular can be increasingly affected!

Expansion vessel The boiler is operated in a closed system and must have an expansion vessel for pressure compensation. For the calculation of the expansion volume, the volume of the system in the cold state must be known. Please select the expansion vessel on the basis of the manufacturer's specifications. The expansion volume of the system is calculated from:

Boiler volume x expansion factor x surcharge factor

- Expansion factor for wood firing = 0.03
 - Surcharge factor (nominal power < 30 kW) = 3
- Surcharge factor (nominal power 30-150 kW) = 2

<u>Calculation example:</u> 2500 liters x 0.03 x 3 = 225 liters

- <u>Pump selection</u> The pump selection is to be made by the installer or building services planner according to the friction data, the pipe cross-section and the required delivery head for the planned pipe system.
 - <u>Plastic piping</u> When connecting plastic pipes for underfloor heating or district heating pipes, these must be additionally protected against excessive temperatures with a limiting thermostat for the circulation pumps.
- <u>Risk of overheating</u> Incorrect operation, incorrect fuel or faults in the unit can lead to overheating. To prevent damage, additional fuses must be provided for the maximum domestic hot water temperature and the maximum heating circuit temperatures.



Please observe the guidelines for corrosion and boiler protection in heating and service water systems!

<u>Water quality</u> The water quality of hot water systems with flow temperatures of max. 100°C is subject to VDI 2035 sheet 1 "Avoidance of damage in hot water heating systems". The filling and supplementary water must be treated or preferably softened if the following limit values of the total hardness [°dH] related to the total heating capacity and system volume are exceeded.

Total heating	Total hardness [°dH] depending on the volume of the boiler				
capacity	< 20	liters/kW	≥ 20 liters/kW < 50 liters/kW		≥ 50 liters/kW
< 50 kW	≤16	.8 °dH	≤11 .2 °dH		<0 .11 °dH
50 - 200 kW	≤11	.2 °dH	≤8 .4 °dH		<0 .11 °dH
200 - 600 kW	≤8	.4 °dH	≤0 .11 °dH		<0 .11 °dH
> 600 kW	<0	.11 °dH	<0	.11 °dH	<0 .11 °dH

<u>Third-party devices</u> If an external device is operated in addition to the GUNTAMATIC firing system, its installation instructions must also be observed for filling.

- Before filling the system, flush the entire piping system thoroughly to remove magnetite and rust sludge from the piping system as best as possible.
 - Fill boiler Adjust the pressure of the cold water seal to the air pressure of the expansion vessel.
 - Check the operating pressure on the pressure gauge.

<u>Vent system</u> • Switch off and vent the circulation pumps.

- Vent the boiler by opening the vent valve on the boiler and allowing the air to escape.
- Vent the radiator heating circuit by opening the vent tap on each radiator and allowing air to flow out until water flows out.
- Vent the underfloor heating circuit by opening each heating circuit and flushing it thoroughly so that there are no more air bubbles in the heating circuit pipes.
- Important, pay attention to the sequence! Start venting in the basement or ground floor and end in the attic.
- Check the system operating pressure on the pressure gauge and top up with water if necessary.



Only properly vented heating systems guarantee problem-free heat transport!

The connection to the chimney is made through a flue pipe, which must be gas-tight and insulated between the boiler and the chimney.

\rightarrow up to 4 m exhaust pipe length and maximum 3 bends:

- BC 30 / 40 / 50 Ø = 150 mm
- BC 75 / 100 Ø = 180 mm

\rightarrow Exhaust pipe longer than 4 m or more than 3 bends:

- BC 30 / 40 / 50 Ø = 160 mm
- BC 75 / 100 Ø = 220 250 mm

The wall opening for the connection of the flue gas pipe must be provided on site with a walled-in double-flue pipe or lined with fireproof material. The flue gas pipe must be routed from the furnace to the chimney with an incline of at least 6° and connected in a gas-tight manner. An opening must be provided for cleaning the exhaust pipe.

- A → Smoke pipe (at least 6° pitch)
- $\mathbf{B} \rightarrow \text{Insulation}$ (e.g. rock wool)
- C → Draft regulator with explosion damper in the chimney (prefer this installation variant)
- D → Draft regulator with Ex-flap in the flue pipe (Alternatively, as close as possible to the chimney connection)





- the flue pipe must be gas-tight;
- insulate the flue pipe;
- not brick the flue pipe;
- the flue pipe must not protrude into the chimney;
- a draught regulator with explosion damper must be installed

<u>General chimney information</u>: The system may always be connected to chimneys which are dimensioned according to DIN EN 13384. We recommend (without any obligation in this respect) for our firing systems moisture-insensitive, thermally insulated fireclay fires resistant to temperatures above 400°C. For automatically fed furnaces, we also recommend heat-insulated, soot fire-resistant stainless steel chimneys as an alternative, provided the system is correctly dimensioned. (Valid for the usual "Set calorific value" turbulators as delivered. If the system is ordered with "Set Partial Condensing" turbulators, the chimney systems must comply with the relevant standards. The system must be dimensioned in such a way that longer annealing or standby phases are avoided (i.e. if necessary, provide large buffer storage) in order to prevent tar deposits in the flue gas system and operating faults. The choice of the turbulator system has to be made according to regional efficiency requirements and available exhaust gas system. The difference in efficiency of the turbulator systems can be several percent (please ask for detailed values and tests if necessary). For initial delivery, the selection is cost-neutral (if no special specification is made, the "heating value set" for normal fireplaces is supplied for safety reasons). Later or subsequent modifications of the turbulator system are subject to a charge.

3.7.1 ASSEMBLY FLEX

A → Conveying direction

 $\mathbf{C} \rightarrow \text{Direction of rotation}$

 $\mathbf{F} \rightarrow \text{Control dimension}$ 56 mm

 $\mathbf{B} \rightarrow$ Inlet opening

 $D \rightarrow Scraper$

 $\mathbf{E} \rightarrow \text{Bottom tab}$



Fig:1

BS-02

- <u>Discharge screw</u> 1. Guide the drive unit (1) Fig. 2 of the discharge screw through the wall opening of the storage room.
 - 2. Depending on the screw length, attach the screw sections together with the trough (2) Fig. 2 to the drive unit (1) Fig. 2 from the bearing chamber. Connect the screw sections so that the pitch of the screw continues to run flush. Then screw the flange connection of the troughs tightly using M 8 x 30 screws (3) Fig. 2 and lock washers. Make sure that the screw troughs are screwed together without a joint on the inside. At the end of the discharge screw, screw on the flange plate (4) Fig. 2 with bearing.
 - 3. Loosen the worm screws (5) Fig. 2 on the bearing and push the worm as far as it will go in the direction of the drive unit, then retighten the worm screws.
 - 4. Check the concentricity by turning the screw. The screw must not beat by more than 3 mm in the center.
 - 5. Set up the discharge screw so that at least 42 cm of the drive unit (see Fig. 2) protrude from the storage room wall.
 - 6. Screw the screw trough to the storage room floor.

The screw trough must be aligned by means of the bottom bracket (E) Fig. 1 and screwed straight to the floor without sagging or overheight of the trough.

7. Fill the wall opening (6) Fig. 2 with rock wool. Cover the opening with the cover plates (7) Fig. 2 inside and outside without contact.



Fig:2

Suction lines



container (9) or from the blower to any suction connection on the screw. Lay the suction hose to the cyclone container in as large a radius as possible.

1. Connect the suction hoses (8) Fig. 2 from the cyclone

The minimum radius for laying the hose is 0.5 m! In addition, the hose should not sag. Use sufficient brackets!

2. The suction and return air lines (8) must be clamped airtight to the cyclone vessel (9) and to the drive unit (1) using the clamps supplied.



Check for leaks during the first suction process. Leaks can lead to filling malfunctions!

3. Do not lay the suction hoses outdoors or in cold rooms, as this may cause condensation to form in the suction hoses. If necessary, insulate the suction hoses sufficiently.

Λ

Fire protection!

Fire protection collars must be fitted if the suction hoses are routed into or through other rooms.

Observe minimum fire protection requirements!

Ground the suction lines!



To do this, disconnect the copper wires in the suction hoses at the ends of the lines and connect or clamp them to the storage tank, the suction blower, the drive unit and the boiler grounding.

BREAKDOWN

- $\mathbf{A} \rightarrow \text{Crossbar}$
- $\textbf{B} \rightarrow \text{canthus wood}$
- $\mathbf{C} \rightarrow \text{canthus wood}$
- $\mathbf{D} \rightarrow \text{Boarding}$
- $E \rightarrow$ Snail groove
- $\mathbf{F} \rightarrow \text{Support beam}$



Fig: 3 $\underbrace{\text{View:}}_{\text{storage room;}}$ \rightarrow seen from the discharge gearbox in the direction of the storage room;

Storage room boarding

- 1. Insert a piece of roof batten into the screw groove (E) to mark the 35° slope on the left and right.
- Mark the slope height on both sides of the wall and screw one squared lumber member (B) each to the wall approx. 3 cm below the maximum slope height.
- 3. Support the assembled squared lumber every 1.5 m with a standing squared lumber member (C). If the distance (L) between the auger and the wall is greater than 1.5 m, provide additional support beams (F).
- 4. Cut 3 cm thick planed boards or glue laminated boards (D) approx. 3 cm shorter and insert them in the worm groove so that a gap to the wall remains.
- 5. Do not screw down each board, but screw a crossbar (A) to the wall over all boards.
- If the auger does not extend to the end of the storage room, a 35° board slope must also be provided by the customer in the direction of the auger at the end of the storage room.
- 7. If the removal profiles do not extend to the wall penetration, an additional substructure must be used up to the wall.

Filling set At least 2 filling nozzles must be mounted.

- $A \rightarrow PVC$ pipe Ø150 mm
- **B** → Filling set straight (di 100 mm / flare 115 mm)
- $\mathbf{C} \rightarrow \mathbf{Filling \ set} \ 45^{\circ}$ (di 100 mm / flare 115 mm)



on the outer wallin the

light well

- if possible, arrange the filling spouts centrally on the narrow side of the room; at least 0.5 m apart;
- Ceilings and wall distance at least 25 cm;
- Masonry hole Ø 130-150 mm;
- fix the filling spouts (e.g. foam them);
- the filling spouts must be grounded (1.5 mm²)
- Access opening A T30/El₂ 30-C fire door or access hatch must be installed which opens from the inside to the outside. On the inside, the access opening must be provided with at least 3 cm thick planking that can be removed from the outside so that the fuel cannot trickle out in the event of an accidental opening. Due to the risk of injury during operation, access openings must be designed to be closable. The warning sticker enclosed with the boiler documentation with the inscription "Fuel storage room" should be attached to the access opening. The access opening should be provided with a circumferential seal.
- $A \rightarrow$ Door or hatch (T30 / El₂ 30-C)
- $\mathbf{B} \rightarrow \mathbf{U}$ or Z iron profile





Fig: 5

The electrical connection of the system on site may only be carried out by a licensed electrical installation company in compliance with all relevant regulations. In addition, it must be ensured that electrical system parts are not damaged by thermal radiation.

The entire internal cabling of the system is ready to plug in at the factory. On site, the electrician only has to connect the mains and, depending on the system equipment, the cabling and the connection of all system components.



- <u>Open switch field</u> open the right panel door (A);
 - loosen the locking screw (B);
 - lift the control cover (C) and unhook it to the front;
 - the circuit board with connection plugs and fuses is located underneath in an easily accessible position;

Mains connection

230 VAC, 50 Hz, 13 A (surge arrester recommended)

The mains connection must be made using the standard reverse polarity protected plug connection at the rear of the boiler. It must be possible to disconnect the system from the mains at all poles without having to open the control panel cover - e.g. via an automatic circuit breaker.



Ensure that the mains connection is in phase! Phase (L) and neutral (N) must not be interchanged.

Escape switch (emergency stop)

According to prTRVB H 118, the system must be switched off via an emergency switch (emergency stop), which is mounted outside the boiler room near the boiler room door. The burner then goes out of operation, but the heating circuit control and all safety devices must remain active. Connection to the KFR contact on the boiler board.

- Wiring Mains lead 3 x 1.5 mm²
 - Probe 2 x 1 mm²
 - Room unit 2 x 1 mm²
 - CAN bus 2 x 2 x 0.5 mm² (twisted pair / shielded)

For low current (sensors, ...) and high current (pumps, ...) use the appropriate cable ducts on the boiler.

<u>Overvoltage protection</u> In the case of CAN bus cables between different buildings, the grounding electrodes of the buildings must be connected to each other for equipotential bonding. If it is not possible to connect the earth electrodes, a 10 mm round earth electrode must be laid in the ground along with the CAN bus cable. The earthing strips of the buildings and the round earth electrode must then be connected to each other.



<u>CAN bus wiring</u> Wiring <u>linear</u>: (prefer this variant)

Wiring the connection linearly means, for example, wiring the CAN bus from the operating unit to the wall-mounted unit and from the wall-mounted unit on to the space station.

Star-shaped wiring:

Star wiring the connection means wiring the CAN bus, for example, from the operating unit to the wall unit and to the space station. The total length of the CAN bus connection must not exceed 100 m.

Connect the +/- and H/L connections in pairs.

<u>Cascade wiring</u> Up to four boilers can be operated in cascade connection and must be connected linearly via CAN bus.

Do not connect the + terminal of the CAN bus line.



<u>!\</u>

Potential equalization

n The entire system and the connected piping system must be connected to the equipotential bonding rail in accordance with the regulations.



When connecting the potential equalization bar, make sure that the connections are as short as possible!

Strain relief for cables To avoid electrical defects and malfunctions as far as possible, relieve the strain on all cables.

<u>Emergency power supply</u> Use only regulated generators.

4.1 CONNECTIONS OF THE BOILER

Mains connection • 230 VAC, 50 Hz, 13 A

•

Standard equipment

• Boiler board (230 VAC)

Boiler control unit (BCE)

- Fault signal output (24VDC 200mA)
- Safety temperature limiter (STB)
- Boiler sensor (KVT 20 Ω)
- RGT sensor (thermocouple)
- Lambda probe (12 VDC)
- Induced draft fan (230 VAC)
- Cleaning drive (230 VAC)
- TKS 1 (monitoring of combustion chamber door and ash box 24 VDC)
- Stoker drive G1 (230 VAC)
- Discharge drive A1 (230 VAC)
- Discharge blower A2 (230 VAC)
- Stoker sensor (PT1000 Ω)
- Level sensor (12VDC)
- Ignition fan (230 VAC)
- Boiler release contact (230 VAC)
- Output HP0 (230 VAC)
- Return mixer (230 VAC)

Equipment optional

- Pump outputs (230 VAC)
- Mixer outputs (230 VAC)
- Sensor inputs (KVT 20 Ω)
- Analog room devices
- Digital space stations

Resistance values	Temperatur e	KVT20 Ohm (Ω)	Temperatur e	PT1000 Ohm (Ω)
	-16°C	1434 Ω	0C°	1,000 Ω
	-8°C	1537 Ω	10C°	1,039 Ω
	0°C	1644 Ω	30C°	1,117 Ω
	10°C	1783 Ω	40C°	1,155 Ω
	20°C	1928 Ω	50C°	1,194 Ω
	30°C	2078 Ω	60C°	1,232 Ω
	40°C	2234 Ω	70C°	1,271 Ω
	50°C	2395 Ω	80C°	1,309 Ω
	60°C	2563 Ω	100C°	1,385 Ω
	70°C	2735 Ω	125°C	1,480 Ω

5 FINAL CONTROLS

<u>Final inspection</u> • Check again whether all screw connections and piping are tightened and tight.

- Check that all covers are fitted and secured.
- Check if the assembly of all connections (chimney, electric, ...) has been done correctly.
- Check that all necessary safety instructions are attached and provide all documentation (operating and installation instructions) for the equipment.
- Check that all electrical connections have been made properly before energizing the equipment.
- Clean the equipment and clean up the site.
- Always leave a clean room.

Initial commissioning The initial commissioning may only be carried out by GUNTAMATIC or qualified personnel. The prerequisite for this is that the chimney sweep, the heating installer and the electrical installer have approved the system for operation. The specialist from GUNTAMATIC will carry out the following work during commissioning:

- Control of the entire boiler;
- electrical function check;
- adjust the regulation to the boiler;
- put the boiler into operation;
- Explain the function, operation and cleaning of the equipment;
- Acquisition of customer and boiler data and creation of the boiler checklist



Any defects must be recorded in writing and must be rectified within the next 4 weeks in order to maintain the warranty claim!



The fully completed system checklist must be sent to GUNTAMATIC immediately. Otherwise the warranty claim will expire!



These installation instructions should not be destroyed after initial commissioning, but should be kept permanently with the heating system together with the operating instructions!

6 STANDARDS / REGULATIONS

The heater is designed according to 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 combustion boilers and saving of energy. The original test certificates are available at the manufacturer. When connecting the boiler, in addition to the local fire and building regulations, the following generally applicable standard and safety regulations must be observed:

OEN STANDARD / DIN EN 303-5

Boilers for solid fuels, manually and automatically fed up to 500 kW; Terms, requirements, tests and markings

• OEN STANDARD / DIN EN 12828

Heating systems in buildings; planning of hot water heating systems

• OEN STANDARD / DIN EN 12831 Heating systems in buildings; method of calculating the standard heating load.

ÖNORM EN ISO 20023 and ÖNORM EN ISO 20024
 Requirements for pellet storage at the end customer's premises

ÖNORM M 7510

Guideline for the inspection of central heating systems

• ÖNORM H 5195-1 (Austria)

Prevention of damage due to corrosion and scale formation in hot water heating systems with operating temperatures up to 100°C.

- VDI 2035 (Germany)
 Prevention of damage in hot water heating systems; corrosion on the heating water side.
- SWKI 97-1 (Switzerland) Lime and corrosion protection in heating systems
- **TRVB H 118** (in Austria for automatically fed boilers) Technical guideline preventive fire protection
- DIN 1988 Technical Rules for Drinking Water Installations (TRWI)
- Swiss Ordinance on Air Pollution Control LRV
- Swiss Ordinance on Small Combustion Boilers
- VKF fire protection guideline thermotechnical systems (Switzerland)
- SIA 384 (Switzerland)

7 CONNECTION DIAGRAMS

7.1 BUFFER TANK HP0



-T3

-T5-

-<u>T6</u>-

-<u>T7</u>-

-T2-

HP0

2 Sensors - Buffer management

Setting "<u>PART load</u> The buffer tank is mainly loaded in the upper part only. ON and OFF switching temperatures can be set via buffer parameters.

 Setting "<u>FULL charge</u> The buffer tank is fully loaded from top to bottom. ON and OFF switching temperatures can be set via buffer parameters.

5 Sensor - buffer management

NOTICE:

The additionally required buffer sensors T5, T6 and T7 must be connected on the boiler board or on a wall unit on the connection terminals of the analog room units. Therefore, no analog room devices RFF can be programmed for heating circuits on this controller.

Alternatively, use digital room stations RS or an additional wallmounted unit Set-MKR261 for connecting the analog room sensors RFF.

<u>Partial load limit</u>" setting

The buffer tank is loaded with full boiler output until the set partial load limit is reached. As soon as this limit is reached, the boiler output is reduced by the buffer management to such an extent that this state of charge of the buffer can be maintained for as long as possible, thus avoiding restarts of the boiler as far as possible.

PR-01

up to 50 kW boiler output high/low temperature boiler

<u>Attention:</u> In some cases of very low power consumption (< 30%), such as in a low-energy or passive house, as well as in cases of oversizing, we recommend the installation of a buffer tank.

Scheme: BC-01

Electrical connection according to operating and assembly instructions

* The heating circuit can be used with a fixed-setpoint controller for a low-temperature heating system. The heating circuit can be operated with a room unit for room temperature control.

GUNTAMATIC

1.	BIOCOM	price list
2.	Draft regulator with Ex-clapper	price list
3.	Regulation Set-MKR	S30-031
4.	Hot water tank according to	price list
5.	Mixer actuator	S50-501
6.	Space device / space station	price list
7.	GSM module / APP	price list
8.	Pump and line regulating valve	on side
9.	Fault signal lamp (observe wiring diagram)	on side
10.	Heat meter	H40-002

RG1 0 == RG2 🖵 RGO 🗔 7 HKU HK1 HK2 9 \otimes VF1 VF2 (4)00 Ś k (10) >40°C HKP0 HKP1 HKP2 SLP0 _ (8) 1 2 3 (5) SF0 (M) 05

High/low temperature system with system buffer tank

Scheme: BC-02

Electrical connection according to operating and assembly instructions

* The heating circuit can be used with a fixed-setpoint controller for a low-temperature heating system. The heating circuit can be operated with a room unit for room temperature control.

GUNTAMATIC

1.	BIOCOM	price list
2.	Draft regulator with Ex-clapper	price list
3.	Regulation Set-MKR	S30-031
4.	System buffer tank	price list
5.	Mixer Servomotor	S50-501
6.	Space device / space station	price list
7.	GSM module / APP	price list
8.	Return lift group	H39-021
9.	Fault signal lamp (observe wiring diagram)	on-site
10.	Flange and heat exchanger	price list
11.	2 pieces buffer sensor	S70-003
12.	Circulation unit	045-250
13.	Heat meter	H40-002



Setting HP0 = Buffer pump

High/low temperature system with buffer tank

Scheme: BC-03

Electrical connection according to operating and assembly instructions

* The heating circuit can be used with a fixed-setpoint controller for a low-temperature heating system. The heating circuit can be operated with a room unit for room temperature control.

GUNTAMATIC

1.	BIOCOM	price list
2.	Draft regulator with Ex-clapper	price list
3.	Regulation Set-MKR	S30-031
4.	Hot water tank	price list
5.	Mixer actuator	S50-501
6.	Space device / space station	price list
7.	GSM module / APP	price list
8.	Return lift group	H39-021
9.	Fault signal lamp (observe wiring diagram)	on-site
10.	Buffer tank according to	price list
11.	2 pieces buffer sensor	S70-003
12.	Heat meter	H40-002



High/low temperature system with system buffer tank and existing boiler

Scheme: BC-04

Electrical connection according to operating and assembly instructions

The heating circuit can be used with a fixed-setpoint controller for a low-temperature heating system. The heating circuit can be operated with a room unit for room temperature control.

GUNTAMATIC

1.	BIOCOM	price list
2.	Draft regulator with Ex-clapper	price list
3.	Regulation Set-MKR	S30-031
4.	System buffer tank	price list
5.	Mixer actuator	S50-501
6.	Space device / space station	price list
7.	GSM module / APP	price list
8.	Return flow lifting group	price list
9.	Fault signal lamp (observe wiring diagram)	on-site
10.	Circulation unit	045-250
11.	2 pieces buffer sensor	S70-003
12.	Exhaust gas monitor RGT 80°C	H00-801
13.	Differential control	on-site
14.	Heat meter	H40-002

14. Heat meter



Setting HP0 = Buffer pump

up to 50 kW boiler output high/low temperature boiler with long-distance line

Attention:

In some cases of very low power consumption (< 30%), such as in a low-energy or passive house, as well as in the case of oversizing, we recommend the installation of a buffer tank!

Scheme: BC-05

Electrical connection according to operating and assembly instructions

The heating circuit can be used with a fixed-setpoint controller for a low-temperature heating system. * The heating circuit can be operated with a room unit for room temperature control.

GUNTAMATIC

1.	BIOCOM	price list
2.	Draft regulator with Ex-clapper	price list
3.	Regulation Set-MKR	S30-031
4.	Hot water tank	price list
5.	Mixer Servomotor	S50-501
6.	Space device / space station	price list
7.	GSM module / APP	price list
8.	Return lift group	H39-021
9.	Fault signal lamp (observe wiring diagram)	on-site
10.	Hydraulic	soft side
11.	Long-distance line construction	
12.	Heat meter	H40-002



Setting HP0 = Z-pump

High/low temperature boiler with buffer tank and long-distance pipeline

Scheme: BC-06

Electrical connection according to operating and assembly instructions

* The heating circuit can be used with a fixed-setpoint controller for a low-temperature heating system. The heating circuit can be operated with a room unit for room temperature control.

GUNTAMATIC

1.	BIOCOM	price list
2.	Draft regulator with Ex-clapper	price list
3.	Regulation Set-MKR	S30-031
4.	Hot water tank	price list
5.	Mixer actuator	S50-501
6.	Space device / space station	price list
7.	GSM module / APP	price list
8.	Return lift group	H39-021
9.	Fault signal lamp (observe wiring diagram)	on-site
10.	Buffer tank	price list
11.	Long-distance line construction	
12.	2 pieces buffer sensor	S70-003
13.	Heat meter	H40-002



Setting HP0 = Buffer pump

from 50 kW boiler output high/low temperature boiler

<u>Attention:</u> In some cases of very low power consumption (< 30%), such as in a low-energy or passive house, as well as in cases of oversizing, we recommend the installation of a buffer tank.

Scheme: BC-07

Electrical connection according to operating and assembly instructions

* The heating circuit can be used with a fixed-setpoint controller for a low-temperature heating system. The heating circuit can be operated with a room unit for room temperature control.

GUNTAMATIC

1.	BIOCOM	price list
2.	Draft regulator with Ex-clapper	price list
3.	Regulation Set-MKR	S30-031
4.	Hot water tank	price list
5.	Mixer Servomotor	S50-501
6.	Space device / space station	price list
7.	GSM module / APP	price list
8.	Pump and line regulating valve	on side
9.	Fault signal lamp (observe wiring diagram)	on-site
10.	Heat meter	H40-002



Setting HP0 = Z-pump

from 50 kW boiler output

High/low temperature boiler with system buffer tank

Scheme: BC-08

Electrical connection according to operating and assembly instructions

* The heating circuit can be used with a fixed-setpoint controller for a low-temperature heating system. The heating circuit can be operated with a room unit for room temperature control.

GUNTAMATIC

1.	BIOCOM	price list
2.	Draft regulator with Ex-clapper	price list
3.	Regulation Set-MKR	S30-031
4.	System buffer tank	price list
5.	Mixer Servomotor	S50-501
6.	Space device / space station	price list
7.	GSM module / APP	price list
8.	Return lift group	H39-023
9.	Fault signal lamp (observe wiring diagram)	on-site
10.	Flange and heat exchanger	price list
11.	2 pieces buffer sensor	S70-003
12.	Circulation unit	045-250
13.	Heat meter	H40-002



Setting HP0 = Buffer pump

from 50 kW boiler output

High/low temperature system with buffer tank

Scheme: BC-09

Electrical connection according to operating and assembly instructions

* The heating circuit can be used with a fixed-setpoint controller for a low-temperature heating system. The heating circuit can be operated with a room unit for room temperature control.

GUNTAMATIC

1.	BIOCOM	price list
2.	Draft regulator with Ex-clapper	price list
3.	Regulation Set-MKR	S30-031
4.	Hot water tank	price list
5.	Mixer actuator	S50-501
6.	Space device / space station	price list
7.	GSM module / APP	price list
8.	Return lift group	H39-023
9.	Fault signal lamp (observe wiring diagram)	on-site
10.	Buffer tank	price list
11.	2 pieces buffer sensor	S70-003
12.	Heat meter	H40-002



Setting HP0 = Buffer pump

from 50 kW boiler output high/low temperature boiler with long-distance line

<u>Attention:</u> In case of partly very low power consumption (< 30%) as e.g. in a low-energy or passive house as well as in case of oversizing, we recommend the installation of a buffer tank!

Scheme: BC-11

Electrical connection according to operating and assembly instructions

* The heating circuit can be used with a fixed-setpoint controller for a low-temperature heating system. The heating circuit can be operated with a room unit for room temperature control.

GUNTAMATIC

1.	BIOCOM	price list
2.	Draft regulator with Ex-clapper	price list
3.	Regulation Set-MKR	S30-031
4.	Hot water tank	price list
5.	Mixer actuator	S50-501
6.	Space device / space station	price list
7.	GSM module / APP	price list
8.	Return lift group	H39-023
9.	Fault signal lamp (observe wiring diagram)	on-site
10.	Hydraulic soft side	
11.	Long-distance line construction	

12. Heat meter

H40-002



Setting HP0 = Z pump

from 50 kW boiler output

High/low temperature boiler with buffer tank and long-distance pipeline

Scheme: BC-12

Electrical connection according to operating and assembly instructions

* The heating circuit can be used with a fixed-setpoint controller for a low-temperature heating system. The heating circuit can be operated with a room unit for room temperature control.

GUNTAMATIC

1.	BIOCOM	price list
2.	Draft regulator with Ex-clapper	price list
3.	Regulation Set-MKR	S30-031
4.	Hot water tank	price list
5.	Mixer Servomotor	S50-501
6.	Space device / space station	price list
7.	GSM module / APP	price list
8.	Return lift group	H39-023
9.	Fault signal lamp (observe wiring diagram)	on-site
10.	Buffer tank	price list
11.	Long-distance line construction	
12.	2 pieces buffer sensor	S70-003
13.	Heat meter	H40-002



Setting HP0 = Buffer pump

Object supply for maximum 3 buildings

Telecontrol function ZUP, LAP or PUP

Scheme: BC-13 / Sheet 1

Electrical connection according to operating and assembly instructions



Mains connection 230 VAC / 13 A;

Heating room variants

- Connect only one outdoor sensor per system; (if possible on the boiler)
- 3 wall-mounted units Set-MK261 possible per system;
- 3 digital space stations possible per system;
- one analog room unit possible per heating circuit;

GUNTAMATIC

- 1. BIOCOM price list 2. Draft regulator with Ex-clapper price list 3. Control wall unit set-MK261 S30-030 4. Hot water tank price list 5. Mixer actuator S50-501 6. Space device / space station price list 7. Buffer tank price list Return lift group price list 8. Circulation unit 045-250 9. 10. Buffer tank sensor S70-003 Flange and heat exchanger 11. price list 12. GSM module / APP price list Hydraulic soft side 13. Capillary and capillary pump construction 14. side 15. Piping system on site on-site
- Fault signal lamp (observe wiring diagram) 16.
- 17. Heat meter







Setting HP0 = Z pump

Scheme: BC-13 / Sheet 2

H40-002



GUNTAMATIC

Cascade connection for 2 firings

Scheme: BC-14

Electrical connection according to operating and assembly instructions



- Mains connection per unit 230 VAC / 13 A;
- connect the equipment linearly via CAN bus; (do the wiring without the + terminal).
- 3 wall units Set-MK261 possible per system;
- 3 digital space stations possible per system;
- One analog room unit possible per heating circuit; (exceptions with 5-sensor buffer management)
- for cascades <150 kW, 3" tees and the 3" buffer connection can be omitted (2");

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1.	BIOCOM	price list
2.	Draft regulator with Ex-clapper	price list
3.	GSM module / APP	price list
4.	Return lift group	price list
5.	Buffer tank	price list
6.	Outdoor sensor	S70-001
	Required for any system without weather-compensated control that is switched off via the outdoor temperature;	also to be
7.	Buffer tank sensor	S70-003
	Recommendation: 5 sensors per boiler - at least 2 per boiler required	
8.	Fault signal lamp (observe wiring diagram)	on-site
9.	Non-return flap in the return construction	side
10.	Heat meter	H40-002



Setting HP0 = buffer pump (for each system)

Cascade connection for up to 4 firings

Scheme: BC-15 / Sheet 1

Electrical connection according to operating and assembly instructions

- Mains connection per unit 230 VAC / 13 A;
- connect the equipment linearly via CAN bus; (do the wiring without the + terminal).
- 3 wall-mounted units Set-MK261 possible per system;
- 3 digital space stations possible per system;
- One analog room unit possible per heating circuit; (exceptions with 5 sensor buffer management)
- the dimensions given for piping and tees refer to a cascade with 400 kW and a maximum of 2 x 25 m pipe length for buffer flow and buffer return;

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1.	BIOCOM	price list
2.	Draw regulator with Ex-clapper	Price list
3.	GSM module	S15-002
4.	Return lift group	price list
5.	Buffer tank	price list
	order each buffer with 2 pieces of 3" special sleeves;	•
6.	Outdoor sensor	S70-001
	Required for any system without weather-compensated control that is switched off via the outdoor temperature;	also to be
7.	Buffer tank sensor	S70-003
	Recommendation: 5 sensors per boiler - at least 2 per boiler required	
8.	Fault signal lamp (observe wiring diagram)	on-site
9.	Non-return flap in the return construction	side
10	Heat meter	H40-002



Setting HP0 = buffer pump (for each system)

Scheme: BC-15 / Sheet 2

Cascade connection for up to 4 firings

Scheme: BC-15 / Sheet 2

Electrical connection according to operating and assembly instructions



- Order each buffer tank with 2 pieces of 3" special sleeves;
- the dimensions given for the buffer tank, piping and tees refer to a cascade with 400 kW and a maximum of 2 x 25 m pipe length for buffer flow and buffer return;



Scheme: BC-13 / Sheet 2

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	BIOCOM 30	BIOCOM 40	BIOCOM 50	
Fuel	Pellets EN Plus A1 ¹⁾	Pellets EN Plus A1 ¹⁾	Pellets EN Plus A1 ¹⁾	EN 17225-2
Nominal power	34,5	40,0	49,0	kW
Smallest power	10,4	12,0	13,3	kW
Boiler temperature Return temperature	50 - 80 According to scheme	50 - 80 According to scheme	50 - 80 According to scheme	℃ ℃
Chimney flue	2 - 15	2 - 15	2 - 15	Pascal
Water content	128	128	147	Liter
Operating pressure	max. 3	max. 3	max. 3	bar
A - Flue pipe	150	150	150	mm
B - Preliminary run	5/4	5/4	5/4	Customs
C - Return	5/4	5/4	5/4	Customs
D - Safety heat exchanger	3/4	3/4	3/4	Customs
E - Drainage	1/2	1/2	1/2	Customs
Water side resistance	2570	3430	4257	kg/h
Difference 10K	14,2	28,3	24,7	mbar
Water side resistance	1290	1710	2180	kg/h
Difference 20K	3,8	13,5	6,2	mbar
Ash pan - grate	60	60	60	Liter
Ash pan - heat exchanger	12	12	12	Liter
Total boiler weight	550 (without stoker)	553 (without stoker)	585 (without stoker)	kg
Weight lower box	340	340	340	kg
Weight heat exchanger	180	183	215	kg
Weight stoker unit	70	70	70	kg
Weight drive unit	26	26	26	kg
Weight / m discharge screw	40	40	40	kg
Power connection	230 VAC / 13 A	230 VAC / 13 A	230 VAC / 13 A	-
Energy efficiency class You can find the energy efficiency classes either on the label enclosed with the boiler, brochures, or on the product data sheets on our specialist partner site.			with the boiler, in our	

1)

2)

Tested and recommended with low fines and dust content from low potassium, low nitrogen and low bark pellet quality. (for poorer material an optional EC filter is available) The maximum operating time of the boiler for a 24-hour day is 80%, since automatic cleaning cycles cause downtimes during which no heat can be produced. This must also be taken into account for the power design of the system.

EC version describes a set of the specified heater with the EC 24P, 24, 85 or 250 electrostatic precipitator to be attached.



	BIOCOM 75	BIOCOM 100	
Fuel	Pellets	Pellets	
Fuel	EN Plus A1 ¹⁾	EN Plus A1 ¹⁾	EN 17225-2
Rated power	75,0	99.0 (101.0 ²⁾)	kW
Smallest power	22,5	26,2	kW
Boiler temperature	60 - 80	60 - 80	°C
Return temperature	According to scheme	According to scheme	°C
Chimney flue	2 - 15	2 - 15	2 - 15
Water content	256	256	Liter
Operating pressure	max. 3	max. 3	bar
A - Flue pipe	180	180	mm
B - Preliminary run	2	2	Customs
C - Return	2	2	Customs
D - Safety heat exchanger	3/4	3/4	Customs
E - Drainage	1/2	1/2	Customs
Water side resistance	6450	8490	kg/h
Difference 10K	4,3	6,2	mbar
Water side resistance	3250	4240	kg/h
Difference 20K	1,8	2,5	mbar
Ash pan - grate	80	80	Liter
Ash pan - heat exchanger	12	12	Liter
Total boiler weight	865 (without stoker)	865 (without stoker)	kg
Weight lower box	430	430	kg
Weight heat exchanger	405	405	kg
Weight stoker unit	70	70	kg
Weight drive unit	26	26	kg
Weight / m discharge screw	40	40	kg
Power connection	230 VAC / 13 A	230 VAC / 13 A	-
	You can find the energy efficiency classes either on the label enclosed with the boiler in		

Energy efficiency class our brochures, or on the product data sheets on our specialist partner site.

1)

2) 3)

Tested and recommended with low fines and dust content from low potassium, low nitrogen and low bark pellet quality. (an optional EC filter is available for poorer material). Powerchip 101 power rating. The maximum operating time of the boiler for a 24-hour day is 80%, since automatic cleaning cycles cause downtimes during which no heat can be produced. This must also be taken into account for the power design of the system.

EC version describes the set of the heater with the EC 24P, 24, 85 or 250 electrostatic precipitator to be attached.



Required components according to storage room internal dimension A				
Dimension A =	Designation price list	Drive unit incl. trough end piece	Flex 1 m Zus	Flex 1,5 m Zus
1.2 m - 1.7 m	Flex 1 m	1x	1x	-
1.7 m - 2.2 m	Flex 1,5 m	1x	-	1x
2.2 m - 2.6 m	Flex 2 m	1x	2x	-
2.6 m - 3.1 m	Flex 2,5 m	1x	1x	1x
3.1 m - 3.6 m	Flex 3 m	1x	-	2x
3.6 m - 4.1 m	Flex 3,5 m	1x	2x	1x
4.1 m - 4.6 m	Flex 4 m	1x	1x	2x
4.6 m - 5.0 m	Flex 4,5 m	1x	-	3x
from 5.0 m	Flex 5 m	1x	2x	2x

8.2 TECHNICAL DATA BOX



	A - B	С	m³	Weight
BOX 7,5	2,1 x 2,1 m	1,8 - 2,5 m	5,0 - 7,5 m³	3,0 - 4,7 t
BOX 8.3	1,7 x 2,9 m	1,9 - 2,5 m	6,1 - 8,3 m³	4,0 - 5,4 t
BOX 11	2,5 x 2,5 m	1,8 - 2,5 m	8,3 - 11 m³	5,0 - 6,7 t
BOX 14	2,9 x 2,9 m	1,9 - 2,5 m	10 - 14 m³	6,5 - 9,1 t

BS-03

BS-02

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