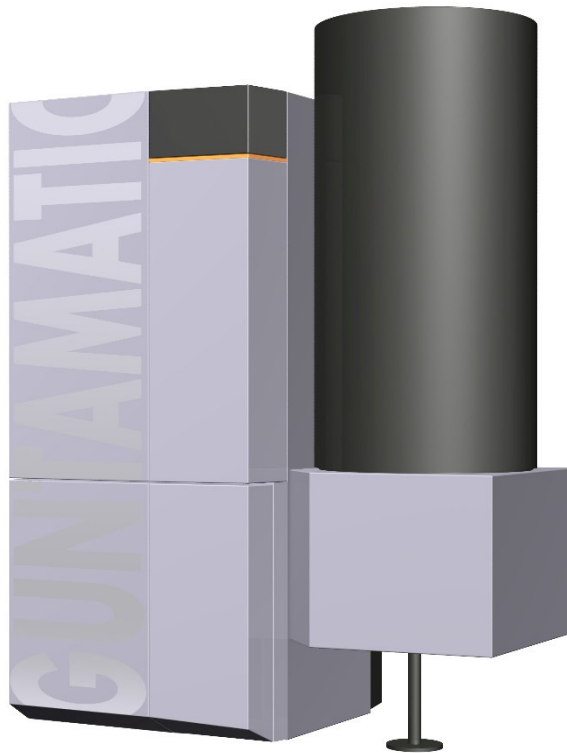


Grain-fuel boiler

englisch

# POWERCORN

Planning and installation



# GUNTAMATIC

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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Subject to printing errors and technical amendments.

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## 1.1 Safety instructions

GUNTAMATIC heating systems represent state-of-the-art technology and meet all applicable safety regulations. Incorrect installation can endanger life and limb. Heating boilers are combustion systems and are potentially dangerous if handled incorrectly. Installation, commissioning and servicing must, therefore, only be carried out by adequately qualified technicians observing all regulations and the manufacturer's instructions.

## 1.2 Guarantee and liability

The manufacturer's guarantee is subject to correct installation and commissioning of the heating system. Defects and damage caused by incorrect installation, commissioning or operation are not covered by the guarantee. To ensure that the system functions as intended, the manufacturer's instructions must be followed. Furthermore, only genuine replacement parts or parts explicitly approved by the manufacturer may be fitted to the system.

## 1.3 Commissioning

Commissioning of the boiler must be carried out by an authorised GUNTAMATIC specialist or other qualified persons. They will check whether the system has been installed according to the plans, adjust the system settings as required and explain to the system operator how to use the heating system.

## 1.4 Site requirements

When establishing the site requirements, it is absolutely essential to take account of the locally applicable planning, building and implementation regulations and the dimensional specifications in the fitting guidelines, installation examples and technical data. Compliance with the locally applicable regulations and the correct implementation of the measures required on site are solely the responsibility of the system owner and are a requirement of the manufacturer's guarantee. GUNTAMATIC provides no guarantee of any kind for any type of site work. Without making any claims as to completeness or non-applicability of official requirements, we recommend the following specifications based on the Austrian Guidelines pr TRVB H 118:

## 2 Planning

### 2.1 Fire safety

BS-01



**The fire security instructions are obligatory needed on the construction place**



**The Compliance from counties or states fire security law is obligatory and stands higher than the GUNTAMATIC fire security instruction**



Austria State legislation of the federal states  
Technical Directive on Preventative Fire Safety (pr TRVB H118)

Germany Standard boiler regulations (M-FeuVO)  
Hessen and Saarland – in these states §16 FeuVO Hessen applies

Switzerland Fire safety regulations ([www.vkf.ch](http://www.vkf.ch))

any other exporting countries Any fire safety office



**You have to follow your specific country fire safety rules obligatory. Your country safety rules are higher than our GUNTAMATIC minimum rules.**



**If there are no specific fire security rules in your country, you have to follow the GUNTAMATIC introductions**



## 2.2 Minimum fire safety requirements

BC-01

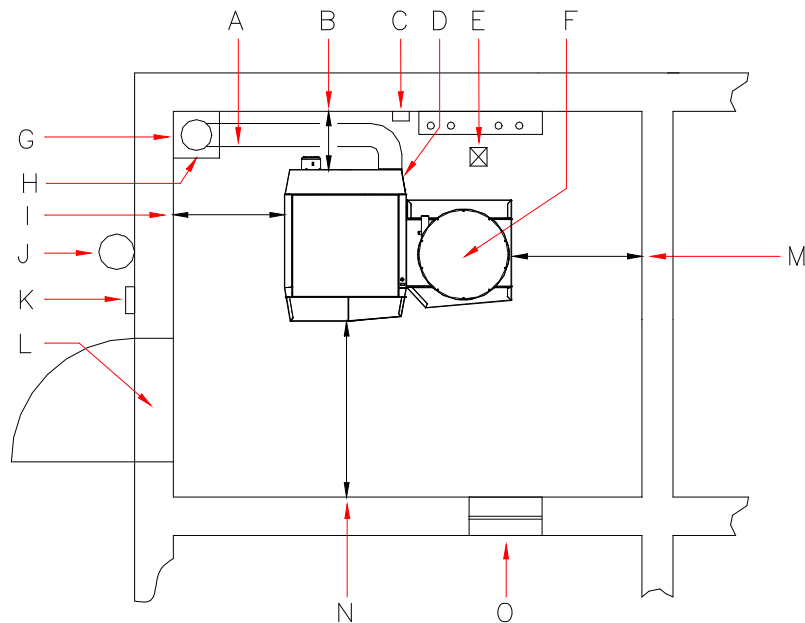
- Boiler room Floor of concrete construction, either bare or tiled. All materials for floor, walls and ceiling must be fire-resistant to F60/REI60 rating.
- Boiler rooms door:** The Boiler room's door also might close single handed and it has to be possible to close off the door. Connecting doors to the fuel storeroom must also be Class T30/EI<sub>2</sub>30-C fire doors, self-closing and lockable. There must be no direct connection to rooms in which flammable gases or liquids are stored.
- Fuel storeroom The same minimum fire safety requirements apply as for the boiler room.
- Storeroom doors/hatches:** Storeroom doors/hatches must be fire safe to Class T30/EI<sub>2</sub>30-C, self-closing and lockable. There must be a warning sign carrying the message "Do not enter when feeder system is running" attached to the storeroom door/hatch.
- Fireproof collars:** If the storeroom is not situated directly adjacent to the boiler room, a fireproof collar must be fitted to the extraction and air return pipes at their wall exit points from the boiler room. If the outfeed auger goes directly into the boiler room, it is factory fitted with a special fire safety lining. No additional fireproof collars are required on the air pipes. If the outfeed auger is sited entirely inside the storeroom (i.e. if the outfeed auger does not extend out of the storeroom), fireproof collars must similarly be fitted to the extraction and air return pipes at their wall exit points from the storeroom.
- > 50 m<sup>3</sup> **HLE - Manual fire extinguisher:** If 50 m<sup>3</sup> of fuel or more can be stored, a manually operated fire extinguishing facility must be installed. It must be protected against freezing and connected to a pressurised water pipe (DN20 conduit). The discharge point must be located directly above where the fuel outfeed channel exits the storeroom. The fire extinguishing facility must be identified by a sign carrying the inscription "Fuel storeroom fire extinguisher".
- Filler pipes:** Filler pipes through rooms where there is a fire risk must be provided with Class F90/REI90 cladding.

## 2.3 Boiler room requirements

01

<u>Minimum room height</u>	PC 30 / 50	ideal solution <b><u>H 225 cm</u></b> 1) possible <b><u>H 210 cm</u></b>
	PC 75	ideal solution <b><u>H 240 cm</u></b> 1) possible <b><u>H 230 cm</u></b>
		1) = minimum height on upscrewed heat exchanger
<u>Minimum room size</u>	PC 30	<b><u>B 240 cm x <sup>2)</sup> T 230 cm</u></b> ( <sup>3)</sup> T 240 cm)
	PC 50 / 75	<b><u>B 270 cm x <sup>2)</sup> T 230 cm</u></b> ( <sup>3)</sup> T 240 cm)
		2) T = The room with boiler's bodies front seeing from behind 3) = Minimum size from the automatic ash suction system
<u>Clear access opening</u>	PC 30	4) ideal <b><u>B 120 cm x H 205 cm</u></b>
		5) possible <b><u>B 80 cm x H 170 cm</u></b>
		6) possible <b><u>B 75 cm x H 165 cm</u></b>
	PC 50 / 75	4) ideal <b><u>B 180 cm x H 210 cm</u></b>
		5) possible <b><u>B 100 cm x H 190 cm</u></b>
		6) possible <b><u>B 90 cm x H 180 cm</u></b>
		4) = Contribution of ready mounted boiler on transportwood 5) = Contribution without Stoker, cleaning impulse and Transportwood 6) = Measures with additional to Point <sup>3)</sup> unriggered
<u>Combustion air supply</u>	The pressure in the boiler room must not be less than 3 Pa (0.3 mm H <sub>2</sub> O). The air vents for boiler rooms must have a clear, net cross-sectional area of at least 200 cm <sup>2</sup> and must not be sealable. With combustion boiler systems with a fuel heat output upwards of 50 kW, the net, clear cross-sectional area must be increased to at least 5 cm <sup>2</sup> per kW rated output according to the combustion air requirement of the boiler system. The air supply ducting must connect directly to the outside and if the ducting passes through other rooms, it must be jacketed to Class F90/REI90. On the outside of the building, air vents must be covered by a protective grille with a mesh size of > 5 mm. The supply of combustion air should, if possible, enter at floor level in order to prevent cooling of the boiler room.	
<u>Electrical installation</u>	The lighting and the electrical wiring in the boiler room must be permanently installed. There must be a clearly marked emergency off switch in an easily accessible position outside the boiler room, close to the boiler-room door.  The line connector 230 VAC, 50 Hz, 13 A is needed.	
<u>Fire extinguisher</u>	A hand-held fire extinguisher (6kg gross weight, EN3) must be mounted outside the boiler room near the boiler-room door.	
<u>Protection against freezing</u>	The boiler room, pipes carrying water and any district heating pipes must be protected against freezing.	

Installation site You have to plan the furnace in the near of the chimney to avoid a long flue pipe.



**A** → Integration version of Energy saving draft regulator with Ex flap and with fire tube  
respect the local fire security rules- dust information possible

**B** → BEHIND distance      ideal      **70 cm minimum**  
possible      **50 cm**      without Ash suction system  
   **60 cm**      with Ash suction system

**C** → The discharge for overheating

**D** → Line Connector 230 VAC 13A

**E** → Drain

**F** → Sparger complex

**G** → flue wet non- sensitive chamotte-flue advised

**H** → installation variant energy-saving damper with explosion damper in the flue  
Ca. 50 cm under the flue – please follow the local laws

**I** → LEFT distance      ideal      **70 cm minimum**  
possible      **40 cm**

**J** → fire extinguisher 6 kg filling weight EN3

**K** → escape switcher (emergency stop)

**L** → fireproof door T30 / EI<sub>2</sub>30-C lockable and self depended

**M** → RIGHT distance      ideal      **70 cm minimum**  
possible      **40 cm**

**N** → LEFT distance      ideal      **100 cm minimum**  
possible      **80 cm**

**O** → Combustion air supply



The system may generally be connected to chimneys dimensioned in accordance with DIN EN 13384. We recommend (without any obligation in this regard) for our firing systems that are moisture-insensitive, thermally insulated and resistant to over 400 ° C. If the system is correctly dimensioned, we also recommend heat-insulated, soot-fire-resistant stainless steel chimneys for automatically charged fireplaces. (Valid for the usual turbulators delivery condition "Set calorific value". For different situations, see notes in the chimney connection chapter). In order to be able to carry out an exact chimney design, the flue gas values listed below must be used as a basis for a chimney calculation. It is advisable to include the chimney sweeper in the planning phase, as he has to approve the chimney system.

**Flue height** The minimum flue height is 5 - 10 m depending on boiler output. The flue must terminate at least 0.5 m above the highest part of the building. In the case of flat rooves, the flue must terminate at least 1.5 m above the surface of the roof.

**Flue diameter** The flue has to adjust on the fire power. The following dates are approximate values and could be used for planning. We recommend calculating the flue by a professional.

PC 30 / (50)	eff. high above	6 m	D = 160 / (180) mm
	eff. high under	6 m	D = 180 / (200) mm
PC 75	eff. high above	6 m	D = 200 mm
	eff. high under	6 m	D = 220 mm

**Flue dimensioning data** Dimension the flue for rated output!  
(Averaged figures with used heat exchanger)

### **Rated output \*)**

Type	exhaust	CO <sub>2</sub>	massflow	draft requirement
PC 30	160°C	11,0%	0,025 kg/s	15 Pascal
PC50	180°C	11,0%	0,030 kg/s	15 Pascal
PC 75	180°C	11,0%	0,065 kg/s	15 Pascal

### **Sub-maximum output \*)**

Type	exhaust	CO <sub>2</sub>	massflow	draft requirement
PC 30	100°C	9,0%	0,010 kg/s	2 Pascal
PC50	110°C	9,0%	0,011 kg/s	2 Pascal
PC 75	110°C	9,0%	0,020 kg/s	2 Pascal

\*) Exhaust gas and CO<sub>2</sub> values are preset according to the fuel quality usual in practice - can be optimized through menu settings if the fuel quality is ideal.



**Fitting an energy-saving flue draught regulator/pressure-surge compensator (Class RE) is absolutely imperative.**

The flue draught should not differ by more than  $\pm 3$  pascals from the figure specified in the flue dimensioning data. If the flue draught cannot be reduced to the required figure, either a larger draught regulator should be fitted or an additional flue baffle fitted between the flue and the draught regulator.

Purpose

- To ventilate the flue when the system is not in operation
- To compensate for pressure surges
- To regulate and limit the flue draught

Fitting requirement

The energy-saving flue draught regulator must be fitted in accordance with the local regulations, preferably in the flue approx. 0.5 m below the point where the flue connecting pipe joins or alternatively in the flue connecting pipe close to its junction with the flue.

Flue draught setting

- Adjusting the flue draught is only of any use at outside temperatures below  $+5^{\circ}\text{C}$ .
- The system must have been in operation for at least an hour
- Ensure there is sufficient demand for heat for the boiler to be run at rated output for at least 15 minutes
- Measure the flue draught between the boiler and the flue draught regulator (distance of measuring point from boiler ideally 3 x flue diameter from connection between boiler and flue connecting pipe).



**Too much flue draught**

May cause the flue gas temperature to increase and accelerate combustion as a result. Poor boiler output adjustability, increased dust discharge and malfunctions can result.



**Too little flue draught**

Performance problems, incomplete combustion and malfunctions when operating below rated output can result.



Please note:

the specific national rules for your fuel store  
(for example. ÖNORM EN ISO 20023, ISO 20024, VDI  
3464,...) are strictly adhered blindly

### Annual requirement estimate

The fuel store should be able to pick up the stock for a year. The fuel store volume is circa 2/3 when the fuel supply is active. The storeroom should be rectangular and wider than 3,5 m. So narrower the store room is, so less storeroom is available.

→ per 1 kW/Year ca. 0,75 m<sup>3</sup> = ca. 550 kg Grain-fuel

→ per 1 kW/Year ca. 0,65 m<sup>3</sup> = ca. 450 kg Pellets

### wetprotection

The fuel is to protect from wet floors or walls. The storeroom has to be dry during the whole year. In case of temporary wetness walls, we advise you to install a ventilated facade on the wall. You also have to clad the walls with derived timber product.

### Cold area

Suction pipes and order units in the cold areas might be isolated freezeproof.

### **Danger of condensation!**

### filling set

There has to be mounted two filling stuts  
minimum distance 0,5 m – maximum distance 1,5 m.

### Location

The fuel will be delivered in a pump truck. The storeroom or the filling connections has to be ordered, that they are reachable from a tube which has a maximum length of 30 m. On the second filling connection the transport air will be aspirated the transport air.

### Statics

With FLEX storage systems, the subsurface and the surrounding walls must withstand the possible static requirements from the stored fuel and the pressure during filling.

In the case of BOX storage systems, particular attention must be paid to the load-bearing capacity of the subsurface, since when the BOX is full, high loads act on the individual support points.

### BOX placement

The box must be installed basically separated from the boiler in another room. In some countries, the fabric tank could be set up in the room where the furnace if there is a minimum distance of 2 m between the BOX and the boiler could be maintained and the thermal output does not reach 50 Kw.

Therefore observe the regulations in force addition! For outdoor positioning, no F90/ REI90 trim is required if the minimum distances were respected. The fabric tank must be protected against rain, wetness and UV Light.

FLEX wall breakthrough    Breadth 33 cm / High 25 cm    (for FLEX propulsive unit)

In order 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, storage rooms and storage containers must be designed and ventilated. Ventilation openings must lead to the outside and ensure that there is an exchange of air between the storage room and the ambient air. If the natural thermals are not sufficient, appropriate technical precautions must be taken. If the filling nozzles do not open into the open, ventilation must take place via a separate ventilation opening. It must be ensured that no rainwater can enter the storage room through the ventilation opening. The installation rooms for storage containers made of air-permeable fabric must have a ventilation opening opening into the open air.

INFO: The total ventilation cross-section of 2 closing lids of our filling sets is  $60 \text{ cm}^2$ .

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

#### **Flex storage room, agitator, screw ... with sloping floor**

##### 1) Storage room with Guntamatic filling set

- Can be used up to a maximum cable length of 2 m and a capacity of 15 t;
- Filling openings on the outside a maximum of 0.5 m higher or a maximum of 0 m deeper than on the inside;

##### 2) Storage room as above (1) but 15-100 t capacity

- with additional ventilation opening  $\geq 10 \text{ cm}^2 / \text{t}$  (at least  $150 \text{ cm}^2$ )

##### 3) Execution as above (1) but with a longer filling line or greater height difference

- Carry out ventilation according to EN ISO 20023

##### 4) Large storage area $> 100$ tons capacity

- Carry out ventilation according to EN ISO 20024

#### **Box tissue tank**

##### 1) Box fabric tank / version with $\leq 15$ tons capacity

- Ventilation opening to the outside --- opening  $\geq 15 \text{ cm}^2 / \text{t}$

##### 2) Box fabric tank / version with 15-100 tons capacity

- Ventilation opening to the outside --- opening  $\geq 8 \text{ cm}^2 / \text{t}$  (at least  $150 \text{ cm}^2$ )

Access doors/hatches Above-ground fuel stores must be provided with a door or hatch that opens outwards. So that the fuel cannot run out if the fuel store is opened by mistake, the inside of the access door/hatch opening must be covered with boarding (which must be removable from the outside). During to the risk of injury when the system is in operation, access doors/hatches must be lockable and kept locked when the system is in operation. There must be a warning sign carrying the message "Do not enter when feeder system is running" attached to the access door/hatch.

Electric Installation At FLEX storesystems electroinstallations in the fuil aren't permissible.

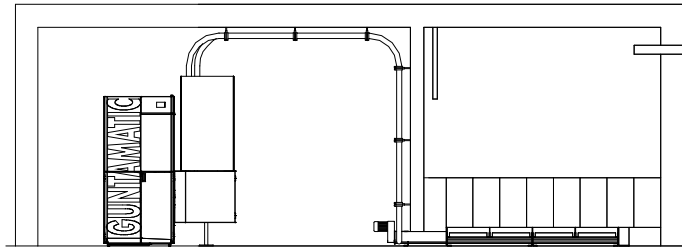
At box level systems electroinstallations in the show room aren't allowed.

Filling couplings have to be grounded.

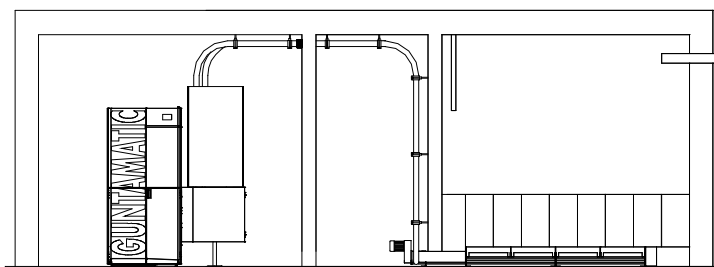
## 2.7 Examples for planning

BC-01

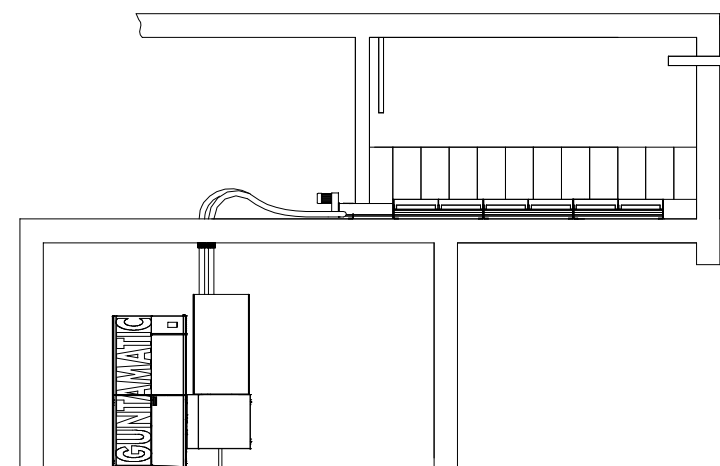
- Example 1 Construction with Flex fuel supply next to the heating room.  
The maximum length of agitator is 5m.  
The maximum suction length is 25 m.  
Minimum 2 fire security wristbands needed – please respect the minimum fire security rules!



- Example 2 Machine with Flex fuel supply with another building section.  
The maximal length of extracting screw amounts 5 m.  
The maximal suction length is 25 m.  
Minimum 2 fire security wristbands needed – please respect the minimum fire security rules!



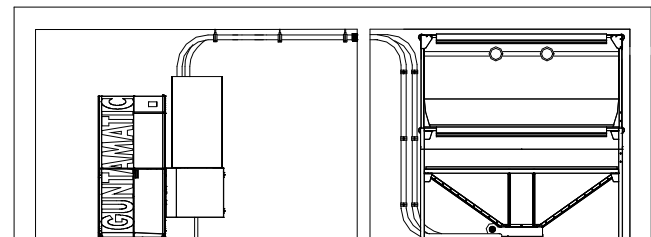
- Example 3 Machine with Flex fuel supply with another building section.  
The maximal length of extracting screw amounts 5 m.  
The maximal suction length is 25 m.  
Minimum 2 fire security wristbands needed – please respect the minimum fire security rules!



**Example 4** Construction with BOX- fabricktank directly above the heatingroom.

The maximum Suctionlength is 25 m.

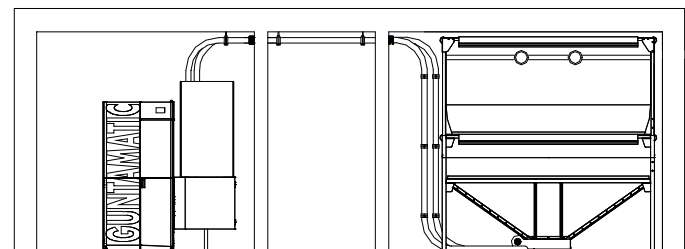
Minimum 2 fire security wristbands needed – please respect the minimum fire security rules!



**Example 5** Construction with BOX- fabricktank in a other building section.

The maximum Suction length is 25 m.

Minimum 4 fire security wristbands needed – please respect the minimum fire security rules!

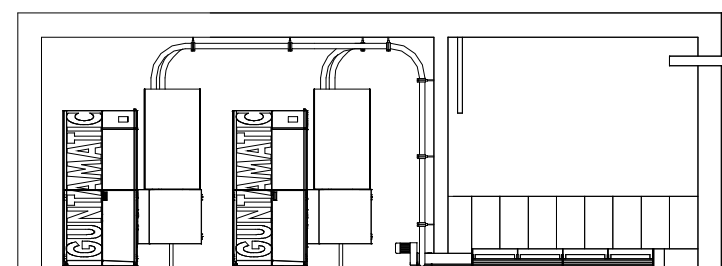


**Example 6** Cascade construction with 2 FLEX-R directly below with the heating room.

The maximal length of extruding screw constitutes 5 m.

The maximum suction length is 25 m.

No fire security wristbands needed – please respect the minimum fire security rules!





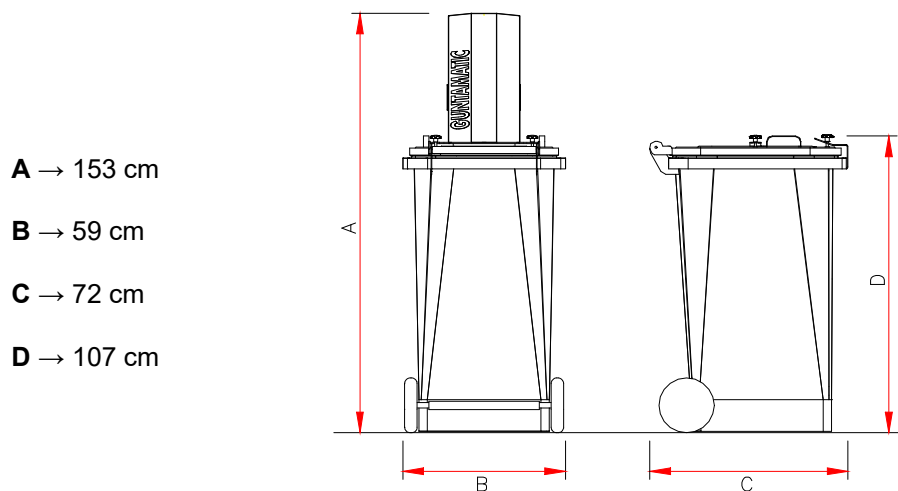
The following Introductions are for Device planning- for installation of ash vacuum suction system there is another Introduction included.

Optional there is a automatic ash vacuum system. The accumulated ash will go through the firing build Feedsystem and flexible metal tube in a big removable ashton. The deashing is automatically.

### Retrofit the system

The ash suction system can be retrofitted.

**INFO:** With Powerchip, Biocom and Powercorn systems, a distance of at least 60 cm from the wall is necessary behind the boiler.



### Construction side:

If possible, you have the opportunity to plan the ash ton at a ground level beside the boiler's body. Basic requirement for the construction is a good lifting through the installation site, The ash ton must have a 25 cm minimum difference to inflammable materials. You have to be a look that there is no inflammable ground.



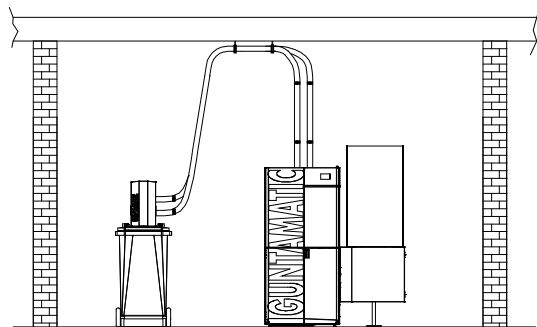
### Not permitted construction side for an ash ton:

- in an garage
- in the atmosphere in living rooms;
- in storerooms with inflammable materials or gases.;



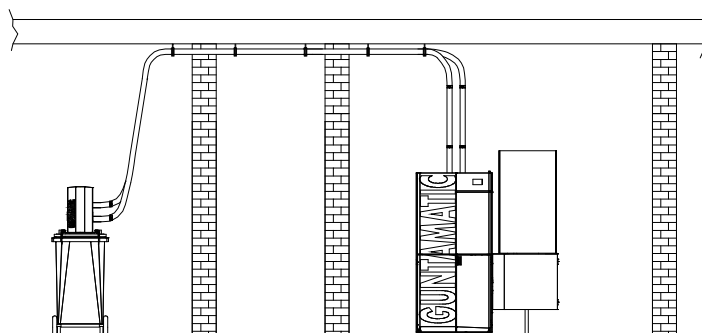
### Permitted Construction places for the ash ton:

- in the boiler room



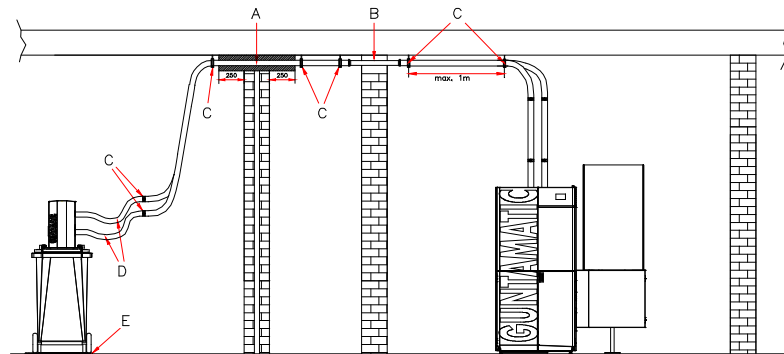
PC-01

- in an secondary room



PC-01

### Hauling of a suction pipe through fire zones



PC-01

- A** → wall penetration with Rockwoolpipesrialclamp;
- B** → wall penetration with boiled Steel pipe;
- C** → fire security clamps 54 – 60; (maximal 1 m difference)
- D** → flexible suction metal tube (minimum 10 cm difference)
- E** → not inflammable mad

The heating circle rule is optional offered.

You can decide between a MKR set or a wall mounted MK 261 set.



- per construction 3 controlled by atmospheric condition rules possible
- per construction could be activated just 1 MKR Set boiler
- pro Machine there are 3 remote control möglich;
- per heatingcircle one analogue room unit possible

### Limitations with Set-MKR on the boiler board:

- 1) If a 5-sensor buffer management is connected to the boiler board, no analog room devices can be connected if the Set-MKR for heating circuit 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) When connecting a 5-sensor buffer management and an EC filter in conjunction with a Set-MKR, no room units can be connected to the boiler circuit board for heating circuit 0, 1 and 2. Furthermore, in this equipment variant, the 5 sensor buffer management can only be operated with 4 sensors.

### Set-MKR Following functions could be activated:

- |  |  |
|--|--|
| Heatingcircle                            | • Warmwater-Memory   |
| Heatingcircle 0 optional available ..... | • pump heating circulation<br>• additional warmwater memory<br>• external heatingcirculation |
| Heatingcircle 1 optional available ..... | • Pumpenheizkreis<br>• gemischter Heizkreis  |
| Heatingcircle 2 optional available ..... | • Pumpenheizkreis<br>• gemischter Heizkreis  |

### wall mounted model set-MK261

### Following funtions could be active:

- |                                |   |
|--------------------------------|---|
| Heatingcircle WW               | • warmwater- memory   |
| Heatingcircle 0 optional ..... | 1) • pumpingheatingcircle<br>• third mixed heatingcircle  |
| Heatingcircle 1 optional ..... | • pumpingheatingcircle<br>• mixed heatingcircle   |
| Heatingcircle 2 optional ..... | • pumpingheatingcircle<br>• mixed heatingcircle   |
| Trunk link optional .....      | • feederpump (ZUP)<br>• dumping device pump (PUP)<br>• cargo pump (LAP)<br>2) • extension (ERW)<br>3) • third mixed heatingcircle |
| adition optional .....         | • additional warmwater memory<br>• external heatingcircle<br>4) • third mixed heatingcircle                                       |



### **INFO**

- 1) the third mixed heatingcircle could be activated, if the functions trunk link and addition are not used.
- 2) through „ERW“ function a heating circle controller with trunk blink can be assigned an other heating circle controller
- 3) if the function „third mixed heatingcircle“ is activated, the trunk blink functions are not available.
- 4) if the „third mixed heatingcircle“ is activated, the additional functions are not available.



## 3 Construction

### 3.1 Delivery

BS-01

The boiler system is delivered packed in a wooden crate wrapped in foil. Please check that the delivery is complete according to the delivery note and in perfect condition.

#### Deficiencies

Please make a note of the deficiencies identified directly on the delivery note and contact the supplier, heating installer or our Customer Service.

### 3.2 Carrying to installation site

BS-01

The system is delivered on a wooden pallet and can be lifted and carried to the installation site using a pallet truck.

#### Carrying in dismantled

The boiler body can be dismantled into parts for carrying in. If that is done, a person authorised by GUNTAMATIC must be consulted.

### 3.3 Positioning and aligning the boiler

PC-02

Keep to the minimum wall clearances specified by the system planner and manufacturer. If important details are missing, please refer to the planning documentation or ask our Technical Support. Position the system as close as possible to the flue to avoid having a long flue connecting pipe. The system must be accessible from the left or right side.

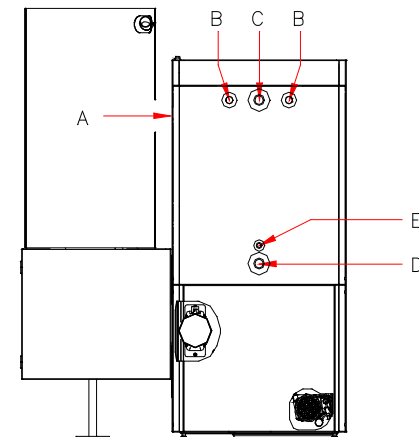
<u>Clearance at back</u>	ideal	<b><u>70 cm minimum</u></b>	
	possible	<b><u>50 cm</u></b>	without auto ash extraction system
		<b><u>60 cm</u></b>	with auto ash extraction system
<u>Clearance on left</u>	ideal	<b><u>70 cm minimum</u></b>	
	possible	<b><u>40 cm</u></b>	
<u>Clearance on right</u>	ideal	<b><u>70 cm minimum</u></b>	
	possible	<b><u>40 cm</u></b>	
<u>Clearance at front</u>	ideal	<b><u>100 cm minimum</u></b>	
	possible	<b><u>80 cm</u></b>	
<u>Floor clearance</u>	ideal	<b><u>3,5 cm minimum</u></b>	with screw feet triggered
	possible	<b><u>8 cm</u></b>	

#### Set the boiler at a slant

Unscrew the rear adjustable feet slightly further so that the boiler is slightly higher at the rear. That will allow the air inside the boiler to escape easily when the system is filled.

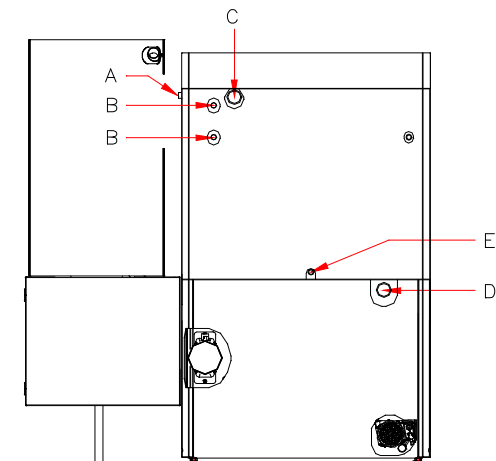
POWERCORN 30 / 50

- A → Sensor for temp. relief valve, 1/2"
- B → Temperature-relief heat exchanger 3/4"
- C → Heating return, 5/4"
- D → Heating flow, 5/4"
- E → External thermostat, 1/2"



POWERCORN 75

- A → Sensor for temp. relief valve, 1/2"
- B → Temperature-relief heat exchanger 3/4"
- C → Heating flow, 2"
- D → Heating return, 2"
- E → External thermostat, 1/2"

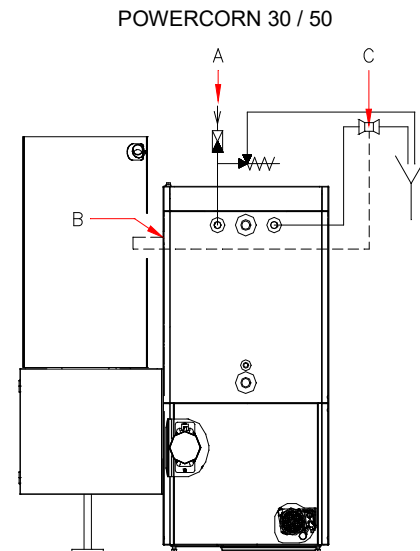


#### Temperature-relief heat exchanger

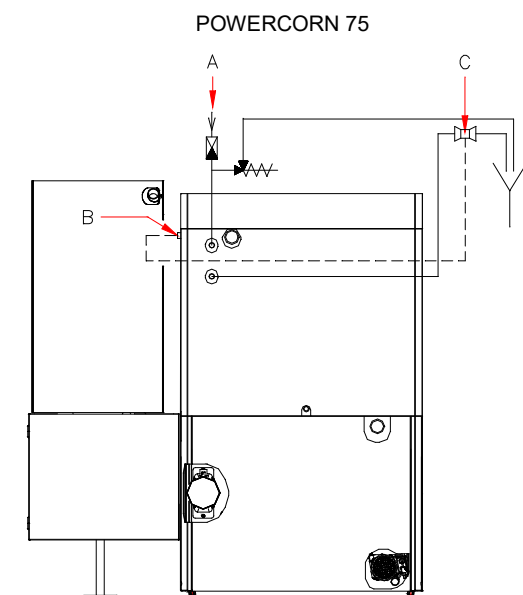
The maximum permissible operating temperature of the furnace is 110 ° C. In order to prevent the maximum permissible operating temperature from being exceeded, a thermal discharge safety device must be connected in accordance with, component-tested in accordance with EN14597, which responds at 95 ° C.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

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

- A** → Cold water supply  
**B** → Sensor for temp. relief valve, 1/2"  
**C** → Temp. relief valve, 95°C



- A** → Cold water supply  
**B** → Sensor for temp. relief valve, 1/2"  
**C** → Temp. relief valve, 95°C



**Buffer memory** Installing a thermal store is not necessary as the boiler is operated by a modulating control system and the system can be quickly shut down. However, if the required continuous heat output in the summer months is below 10 kW for systems up to 50 kW, or 22 kW for systems upwards of 50 kW, combination with a thermal store is necessary for reasons of efficiency



When you put the programme „OUT“, the antifreeze function has to be secured, if the E heating system is built with an manual thermostat.

Return boost The boiler return temperature must be at least 55°C and must be held at the required level by a bypass pump between the boiler flow and return pipes. If a thermal store is connected, the boiler return temperature must similarly be at least 55 °C, which must be ensured by a return boost (cross-over valve) set as shown in the plumbing diagram. If this requirement is not complied with, there is an increased risk of corrosion and guarantee entitlement will be lost as a result. Connect the return boost set precisely as specified in our plumbing diagrams.



The dimensioning of the return boost pump (set) is designed for the arrangements shown in GUNTAMATIC plumbing diagrams. If additional components such as heat meters are incorporated in the system plumbing, or if the overall thermal store pipe run (flow and return) is more than 30 m, re-dimensioning of the boiler charging pump (HP0) may be necessary.

Sludge separator with magnetite Magnetite and the sludge separator in the Heatngwater could become a problem for energysaver pumps. By installin a prperly sized and applied sludge sperator with a magnet can remided cost effeciently.

#### **Either old pipes could be meant**

Expansion vessel The boiler operates in a sealed heating system and must be provided with an expansion vessel for pressure compensation. To calculate the expansion volume, the volume of the system when cold must be known. Please select the expansion vessel on the basis of the manufacturer's specifications. The expansion volume of the system is calculated as follows:

#### **System volume x Expansion factor x Additional allowance factor**

- Expansion factor for wood-fuel boilers = 0.03
- Additional allowance factor = 3.0 for systems under 30 kW
- Additional allowance factor = 2.0 for 30-150 kW systems

Example calculation: 2500 litres x 0.03 x 3 = 225 litres

Pump selection The choice of pump must be made by the installer or building technology planner on the basis of the friction data, the pipe cross-sectional area and the required delivery pressure for the piping system planned.

Plastic piping If plastic piping for underfloor heating or district heating pipes are connected, they must be protected against excessive temperatures by using a limiting thermostat for the circulation pumps.

Danger of overheating Faulty operation, wrong fuil or disturbance could be load to overheating. To avoid disturbance you have to install additional fuse protections for maximum process water and fuses for heating circulation temperatures.



**Please note the guidelines on "Corrosion and boiler protection in heating and domestic water systems"!**

#### Water quality

The water quality of hot water systems with flow temperatures of max. 100 °C is subject to VDI 2035 Part 1 "Avoidance of damage in hot water heating systems". The fill and top-up water must be treated or, preferably, softened if the following limit values for total hardness [° dH] related to total heating output and system volume are exceeded.

Total heating capacity	Total hardness [° dH] depending on the system volume		
	< 20 liter/kW	≥ 20 liter/kW < 50 liter/kW	≥ 50 liter/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

#### Water heater

If a water heater is also used in addition to the GUNTAMATIC boiler, it should be filled according to the installation instructions for it.

#### Construction flushing

- Before charging you have to flush the system. When you do this, it's the best opportunity to clean magnetit and rust sludge from the pipe system.

#### Filling the system

- Match the pressure of the system when cold to the air charge pressure of the expansion vessel.
- Check the operating pressure on the pressure gauge.

#### Bleeding the system

- Switch off and bleed circulation pumps.
- Bleed boiler by opening the bleed valve on the boiler and allowing air to escape until water runs out.
- Bleed radiator heating system (if present) by opening the bleed valve on every radiator and allowing air to escape until water runs out.
- Bleed underfloor heating system (if present) by opening each heating circuit and flushing through thoroughly until there are no more air bubbles in the heating circuit pipes.
- Important: perform sequence in the correct order!  
Start bleeding in the cellar or on the ground floor and finish in the attic.
- Check the system operating pressure on the pressure gauge and add more water if necessary.
- Restart circulation pumps.



**Only systems that have been properly bled guarantee effective conveyance of heat.**



The boiler is connected to the flue by means of a flue connecting pipe which must be gas-tight and isolated between the heating boiler and the chimney.

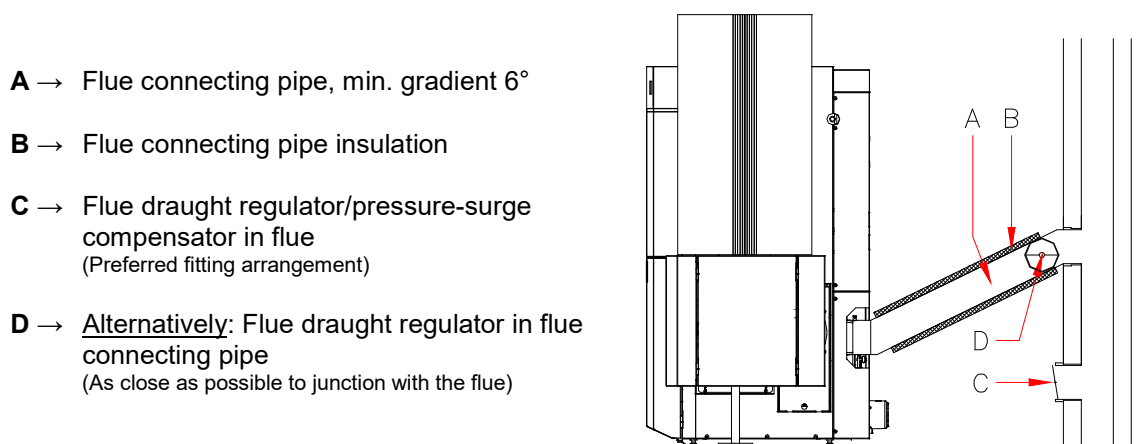
→ **up 4 m length and maximum 3 sheets:**

- PC 30                       $\varnothing = 150 \text{ mm}$
- BC 50 / 75               $\varnothing = 180 \text{ mm}$

→ **longer than 4 m or more than 3 sheets:**

- PC 30                       $\varnothing = 160 \text{ mm}$
- PC 50                       $\varnothing = 200 \text{ mm}$
- PC 75                       $\varnothing = 220 \text{ mm}$

The hole in the wall for connecting the flue pipe must be lined with a built-in double-skinned lining tube or fireproof material. The flue connecting pipe must rise upwards from the boiler to the flue at an angle of at least  $6^\circ$  and be connected with gas-tight joints. An inspection cover must be provided for cleaning the flue connecting pipe.



- The flue connecting pipe must be gas-tight
- isolate the flue pipe
- Insulate the flue connecting pipe
- Do not brick in the flue connecting pipe (noise transmission)
- The flue connecting pipe must not extend into the flue

General chimney information: The system may generally be connected to chimneys which are dimensioned according to DIN EN 13384. We recommend (without any obligation in this regard) for our firing systems that are moisture-insensitive, thermally insulated and resistant to over  $400^\circ \text{C}$ . If the system is correctly dimensioned, we also recommend heat-insulated, soot-fire-resistant stainless steel chimneys for automatically charged fireplaces. (Valid for the usual turbulators, delivery condition "Set calorific value". If the system is ordered with a different "Set partial condenser" turbulators, chimney systems suitable for condensing technology are required in accordance with the relevant standards. The system must be dimensioned in such a way that longer ember maintenance or standby phases are avoided (i.e. if necessary, provide large buffer tanks) to prevent tar deposits in the exhaust system and operational disruptions. The selection of the turbulator system must be made according to regional efficiency requirements and the available exhaust system. The efficiency difference of the turbulator systems can amount to a few percent (detailed values and tests please In the case of first delivery, the selection is cost-neutral (if no special information is given, the "Set calorific value" for normal chimneys will be delivered for safety reasons).

## 3.7 Construction holding

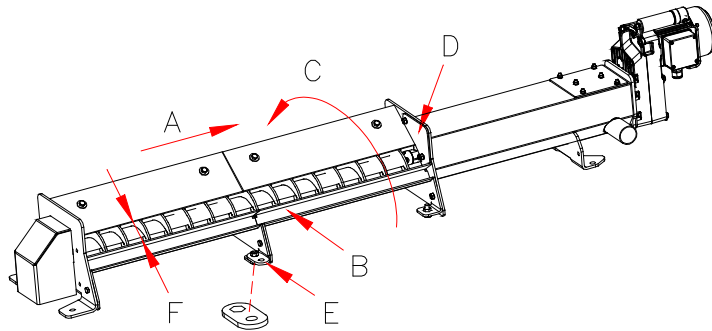
### 3.7.1 Assembly System Flex

BS-02



Please attent, that the inlet opening (B) has the correct assembly.

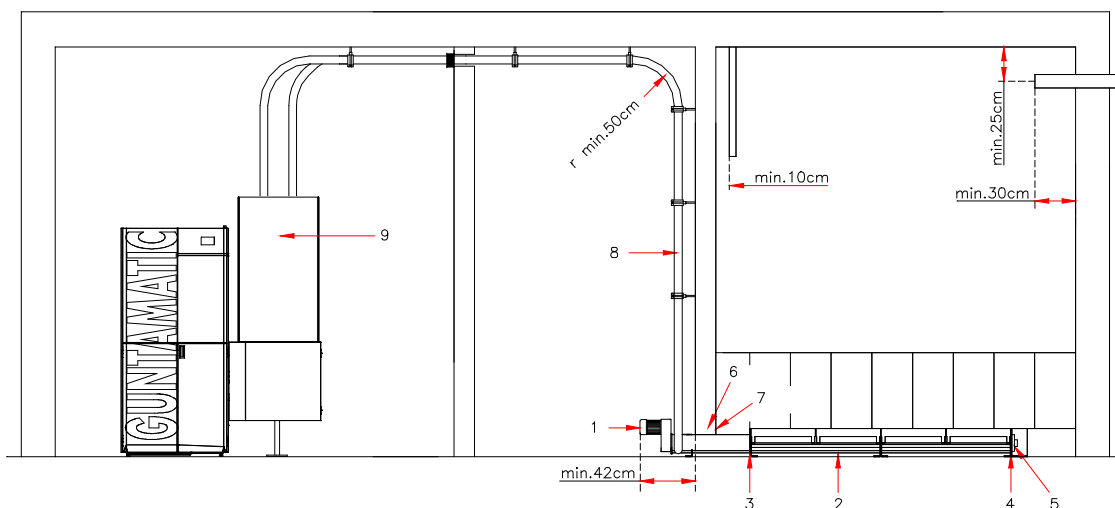
- A → support direction
- B → inlet opening
- C → direction of turning
- D → scraper
- E → bottom flap
- F → dimension 56 mm



Sketch:1

#### discharge screw

1. Lead the populsive unit (1) Sketch 2 through wall breakthrough of discharge screw
2. Dependent from screw length the snails tees stick it from the store room with hutch (2) Sketch 2 to the drive unit. The spiral piecex has to been stuck together, so that the rise slopes shortly with the spiral. Then srew the flange connections of troughs by means of M8x 30 screws (3) Sketch 2 and washeres firmly. Make sure that the screws are screwed through without impact on the inside. At the end of discharge screw the flange (4) Sketch 2 screw with bearings
3. Slacke the worm screw (5) Sketch 2 in the store room up to the block in the direction with the drive unit, then fix the worm screw.
4. Controll of concentricity through turning the spiral. The spiral may beat in the middle maximum 3 mm.
5. Arrange the auger feed system (Sketch 2), that minimum 42 cm salieniced from the roomwall.
6. Screw the spiral's through on the store rooms ground. Then screw the flange of the troughs by means of M8 x 30 screws (3) Fig. 2 and washers firmly. Make sure that the screws are screwed troughs without impact on the inside. At the end of the discharge screw the flange (4) Fig. 2 screw with bearings.
7. Fill the wall opening (6) Sketch 2 with rock wool. The opening with the cover plates (7) Sketch 2 cover inside and outside contact.



Sketch :2

BC-01

### Suction tubes

1. Connect the suction tubes (8) Sketch 2 by the cyclone container (9) or connect the blower at an arbitrary suction part on the auger. The suction hose to the cyclone container in the largest possible radii embarrassed.



The minimum radius is 0,5 cm !  
The tube shouldn't slaged. Use good mounts.

2. The suction and retour air line (8) are fixed with the declined clam and cyclone container (9) on the propulsive unit (1).



Check the tightness on the first suction operator. Leakage could lead to filling fails!

3. Don't lead suction pipes into the outside area or cold rooms, because of condensation. If no other place is available you have to isolate the suction pipe.

### **fire safety!**



Fire safety wristbands has to be mounted, when the suction pipe is misplaced through different rooms.

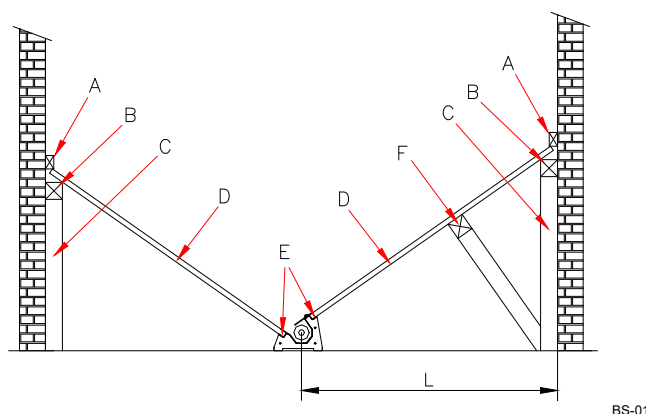
Please respect the minimum fire security rules.

### **ground the suction pipe!**



At the ends the cooper wires in the suction hoses and connect to the reservar, the suction far, the drive unit and the boiler ground or with clams

- A** → crossbar  
**B** → scantling  
**C** → scantling  
**D** → Verbretterung  
**E** → auger intake  
**F** → shoring



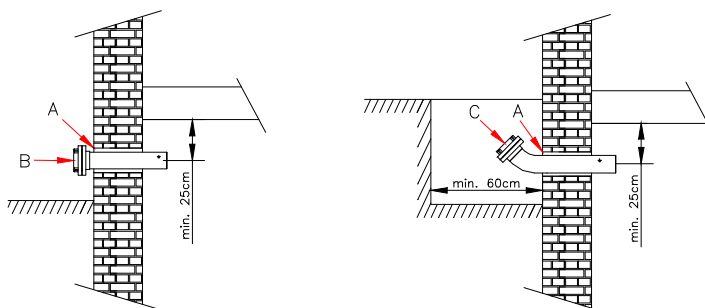
Sketch 3 View: → is seeing from host gear in direction to the storeroom

Store room boards:

1. Stick the wooden frame into the auger intake (E) when the slope is  $35^\circ$  left and right.
2. Mark and screw the wood circa 3 cm under the maximum fall.
3. Assure the assamble squared wood every 1,5 m with a standind wood (C). If ththe distance would be bigger than 1,5 between the screw and the wall, you have to install additional supporting beams (F).
4. You have to serrate 3 cm long strong woods or laminated records, lay it into the screw groove, that there is a gap between the wall and the construction.
5. You don't have to tight every board, but you have to screw on the wall on the boards.
6. If the spiral doesn't reach to thestore room's end, you have to built a board slant with  $35^\circ$ .
7. If the removal profile, doesn't reach to the wall passage, you have to use a under construction.

filling set There have to be constructed minimum 2 filling nozzles.

- A** → PVC pipe Ø150 mm  
**B** → filling set straight  
 (di 100 mm / Bördel 115 mm)  
**C** → filling set 45°  
 (di 100 mm / Bördel 115 mm)



Sketch 4

on the Outsidewall

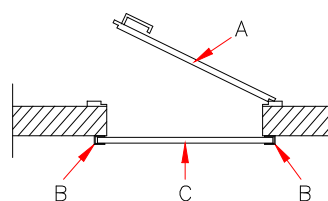
in the light well

- if possible order the filling nozzels 0,5 m on the narrow room sided with minimum 0,5 distance to each other;
- walls and Walldistance minimum 25 cm;
- wall drilling Ø 130–150 mm;
- fix the filler neck (for example lathering);
- the filling nozzels have to be grounded (1,5 mm²)

access door

It is a T30 / EI230-C fire door or install hatch which opens from the inside out. On the inside the manhole must be provided with a minimum of 3 cm thick planking, which is detachable from the outside, so that the fuel in erroneous opening can not fall out. Due to the risk of injury during operation manholes are closed execute. On the manhole of the boiler documentation Dremel warning label that says to install "fuel storage room". The manhole should be provided with a to-current seal.

- A** → Door or Luke (T30 / EI<sub>230</sub>-C)  
**B** → U or Z iron profile  
**C** → wooden blocking (minimum 3 cm strong)



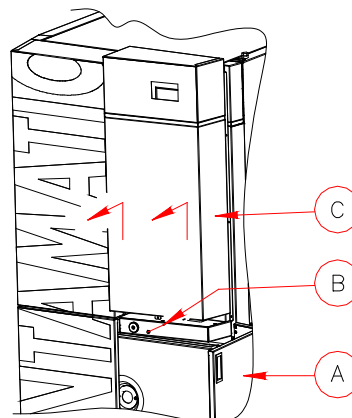
Sketch: 5

### 3.7.2 Assembly **SYSTEM BOX**

The assembly is carried out according to the separate assembly instructions. This is included with the BOX.

The electrical connections to the boiler system on site may only be made by an approved electrical installer observing all the applicable regulations. In addition, it is essential that electrical system components are protected against damage from heat radiation.

All boiler system internal wiring is wired up at the factory ready for use. The work required on site by the electrical installer consists only of connecting the mains power and wiring up and connecting the system components such as thermal store, CAN bus, heating circuit pumps, mixer valve motors, etc.



### Opening switch panel

- open the right cover panel (A);
- solve the lock screw (B)
- raise the control cover (C) and hang it below;
- the platine with the connecting plug under accessible positions

Mains power supply 230 VAC, 50 Hz, 13 A fuse (surge arrester recommend)

The mains power must be connected by means of the standard non-reversible power socket on the rear panel of the boiler. It must be possible to isolate the system entirely from the mains without opening the switch panel cover, e.g. by means of an automatic circuit-breaker.

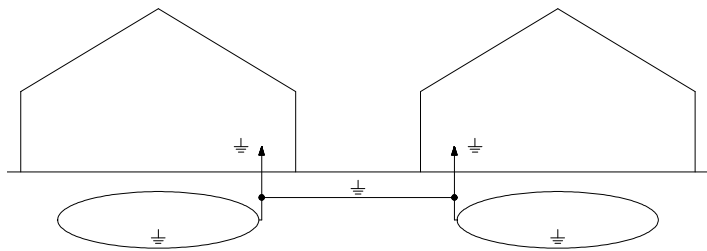
### Emergency off switch

According to prTRVB H 118, it must be possible to switch off the system using an emergency off switch fitted outside the boiler room near to the boiler room door. The burner must then shut down but the heating controller and all safety equipment must remain functional. Connected to the boiler enabling switch, terminals 22/23 on the boiler circuit board.

<u>Cabeling</u>	• Feeder	3 x 1,5 mm <sup>2</sup>
	• Sensor	2 x 1 mm <sup>2</sup>
	• Room stat	2 x 1 mm <sup>2</sup>
	• CAN-Bus	2 x 2 x 0,5 mm <sup>2</sup> (twisted pair, shielded)

For low voltage (sensores...) and high voltage, the cable duct on the boiler, is needed

Surge protection Where CAN bus cables run between different buildings, the earthing conductors of the buildings must be connected to each other for potential equalisation purposes. If the earthing conductors cannot be interconnected, a 10 mm ring earth must be laid along with the CAN bus cable in the ground. The earthing conductors and ring earth must then be connected to one another.



Wiring CAN bus **linear wiring:** (you have to prefer this kind of wiring)

The connection is rewire linear, further cabling the CAN bus, for example, from the operating unit to the wall unit and the wall-mounted unit to the remote unity.

**wirring radial:**

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

The terminals +/- and H / L connect each twisted pair.

Boiler cascade Up to four heating boilers can be operated in a cascade system and must be connected in-line via a CAN bus.

**The CAN bus lead must be wired without connecting the + terminal.**

Earthing The entire system is to be joined to the earth circuit conductor via the connected piping system according to the regulations.



**When connecting the earth circuit conductor pay particular attention to keeping the connecting runs as short as possible.**

Cabel non tensioned to avoid defects or errors all cables strain relieved

Emergency power supply Only use regulated generators.

## 4.1 Heating system electrical connections

PC-01

Mains connection • 230 VAC, 50 Hz, 13 A fuse

Standard specifications

- Boiler control panel (BCE)
- Boiler circuit board (230 VAC)
- Fault signal output (24VDC 200mA)
- Safety temperature limiter (STL)
- Boiler sensor (KVT20  $\Omega$ )
- Flue gas temperature sensor (thermocouple)
- Oxygen sensor (12V DC)
- Flue draught fan (230V AC)
- Grate cleaner motor (230V AC)
- TKS 1 (firebox and ash box door switch, 24VDC)
- Stoker drive motor G1 (230V AC)
- Outfeed drive motor A1 (230 VAC)
- Outfeed blower A2 (230 VAC)
- Stoker sensor (PT1000  $\Omega$ )
- Filling Sensor (12VDC)
- Ignition fan (230V AC)
- Boiler enabling switch (emergency off)
- HP0 output (230 VAC)
- Reflux mixers (230 VAC)

Optional equipment

- Pump outputs (230 VAC)
- Mixer valve outputs (230 VAC)
- sensor entrance (KVT 20  $\Omega$ )
- analaloug equipment for furnace
- Digital remote station

Restistances

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



### Final checks

- After completing installation of the system, check again that all joints and pipes are properly tightened and not leaking.
- Check that all covers are fitted and secured.
- Check that the fitting of all connections (water, flue, electrical, ...) has been done correctly.
- Check that all required safety signs and instructions are attached and hand over all documentation (operating and installation instructions) for the system.
- Check that all electrical connections have been properly wired before connecting the system to the power supply.
- Clean the system and clear up the installation site.
- Always leave the boiler room clean.

### Initial commissioning

Commissioning must only be carried out by GUNTAMATIC or a qualified specialist. The precondition is that the flue technician, heating installer and electrician have cleared the system for operation. The authorised GUNTAMATIC specialist will carry out the following work during commissioning:

- Check the entire system
- Check the electrical functions
- Adjust the programmer to the system
- Commission the system
- Explain to the user how the system functions and how to operate and clean it
- Record the details of the customer and the system and complete the commissioning log



Any deficiencies identified must be recorded in writing and rectified within the following 4 weeks in order to maintain guarantee entitlement.



The fully completed commissioning checklist must be sent to GUNTAMATIC immediately as otherwise the guarantee will be void.



These installation instructions should not be destroyed after commissioning but kept permanently with the system together with the operating instructions.

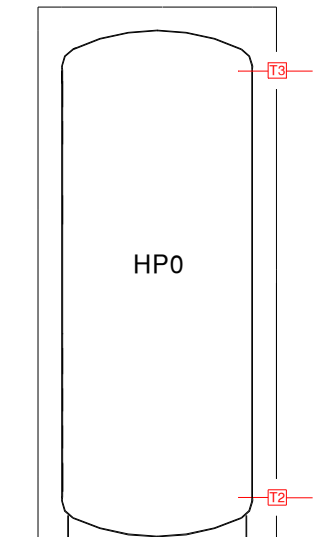
The heater equates Class 5 EN 303-5. The original certification report is deposited at the manufacture, Public Police and Fire safety rules have to be respected.

- **ÖNORM / DIN EN 303-5**  
Heaters for pillar fuel, automatic and manual sanded up to 500 KW. Terms, requirements, and checkups.
- **ÖNORM / DIN EN 12828**  
heaters for pillar fuel, automatic and manual sanded up to 300 kw, terms, requirements, checkups and marking.
- **ÖNORM / DIN EN 12831**  
Heating for Buildings; method for calculating usual heating board
- **ÖNORM EN ISO 20023 und ÖNORM EN ISO 20024**  
Requirements on the Pelletstorage at the private customer.
- **ÖNORM M 7510**  
Guideline for the review from central heaters
- **ÖNORM H 5195-1** (Austria)  
Prevention from damage through nest and Store origin with working temperature.
- **VDI 2035** (Germany)  
Avoidance from damages in Water heating systems
- **SWKI 97-1** (Suisse)  
Chalk and Rust Prevention in Waterheaters
- **TRVB H 118** (in Austria for automatic sended Machines)  
technical heating fire safety rule
- **DIN 1988**  
Technical Rules for drinking water installation
- **DIN 4751 Teil 1-4**  
Safety engineering equipment for water heaters
- Swiss decrees for aircleening
- Swiss decrees with smallfiremachines
- VKF Fire security thermaltechnical construction (Suisse)
- SIA 384 (Swiss)

## 7 Plumbing diagrams

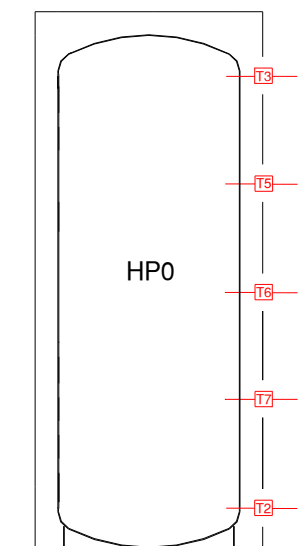
### 7.1 Backup Memory HP0

PR-01



#### **2 SENSOR – Buffer management**

- Attitude „Part-Charging“  
The buffermanagement is charged in the top art. ON and OFF Switching temperatures could be attitude with buffermanagement.
- Attitude „FULL-Charging“  
The buffermanagement is charged in the below art. ON and OFF Switching temperatures could be attitude with buffermanagement.



#### **5 SENSOR – Backup Memory**

##### **PLEASE NOTE:**

The buffer sensor additionally required T5, T6 and T7 must be connected to the boiler board or on a wall unit on the terminals of the analogue space devices. It can be programmed for heating circuits therefore this controller no analogue room device RFF. Alternatively, use digital space stations RS or an additional wall mounted set-MKR261 for connecting the analogue room sensor RFF.

- Attitude „part load border“  
The buffer storage tank is loaded up to the adjusted maximum part load limit at full boiler output. Once this limit is reached, the boiler output is reduced so much by the buffer management that this charge state of the buffer can be kept as long as possible and thus restart the plant are as far as possible avoided.

## off 50 kW boiler output High-/ lower temperature construction

**Attention:** In case of very low (less than 30%) decrease of performance like for example a low energy or a passivehouse and for oversizing, we advice you to install a backup memory.

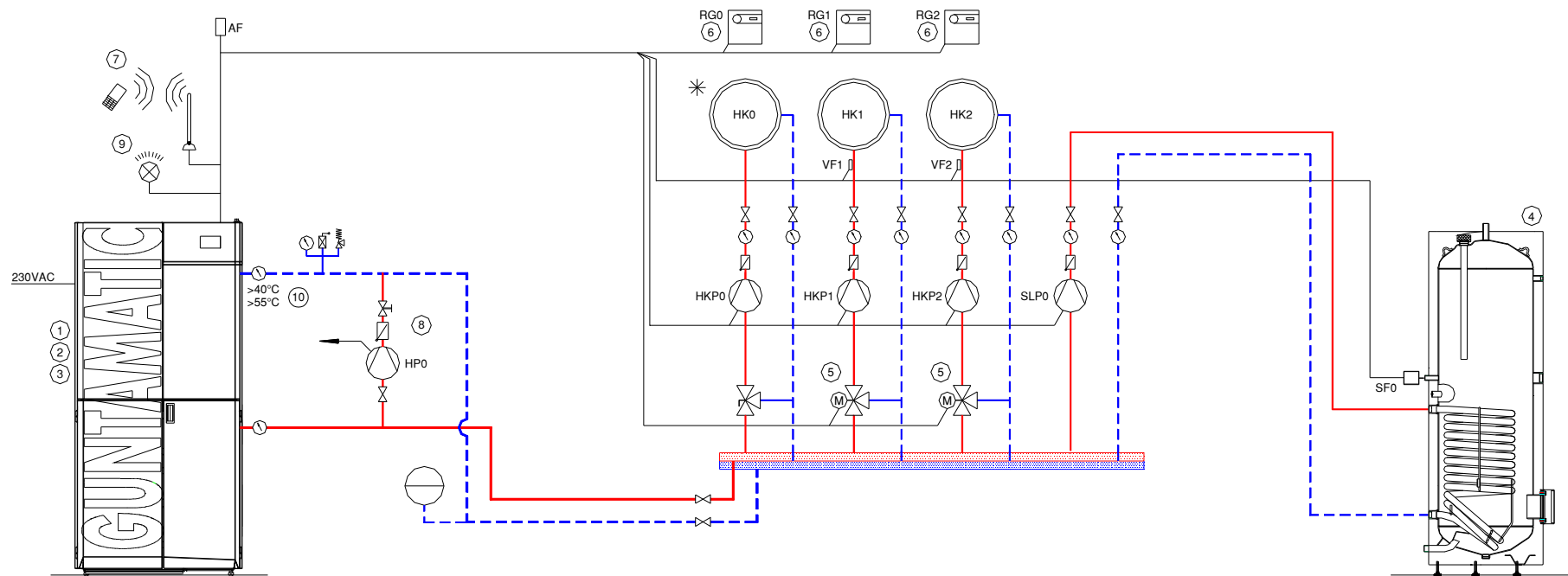
# GUNTAMATIC

### Diagram no. PC-01-15

Electrical connections as per operating and installation instructions

- \* Heating circuit 0 can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit 0 can be room-temperature controlled using an room stat for a radiator heating system.

- |  |  |                   |
|--|--|-------------------|
| 1.                                       | Powercorn                                | as per price list |
| 2.                                       | Flue draught regulator RE                | as per price list |
| 3.                                       | Outside temp. based controller set MKR   | S30-031           |
| 4.                                       | DHW cylinder ECO                         | as per price list |
| 5.                                       | Mixer valve positioner motor             | S50-501           |
| 6.                                       | Room stat                                | as per price list |
| 7.                                       | GSM module                               | S15-002           |
| 8.                                       | Branch control valve                     | by client         |
| 9.                                       | Fault indicator lamp                     | by client         |
| <b>Important: follow wiring diagram!</b> |  |                   |
| 10.                                      | >40°C bei Pellets / >55°C bei Grain-fuel |                   |



Attitude HP0 = Z-pump

## off 50 kW boiler output

High-/ lower temperature construction with backup memory PSF

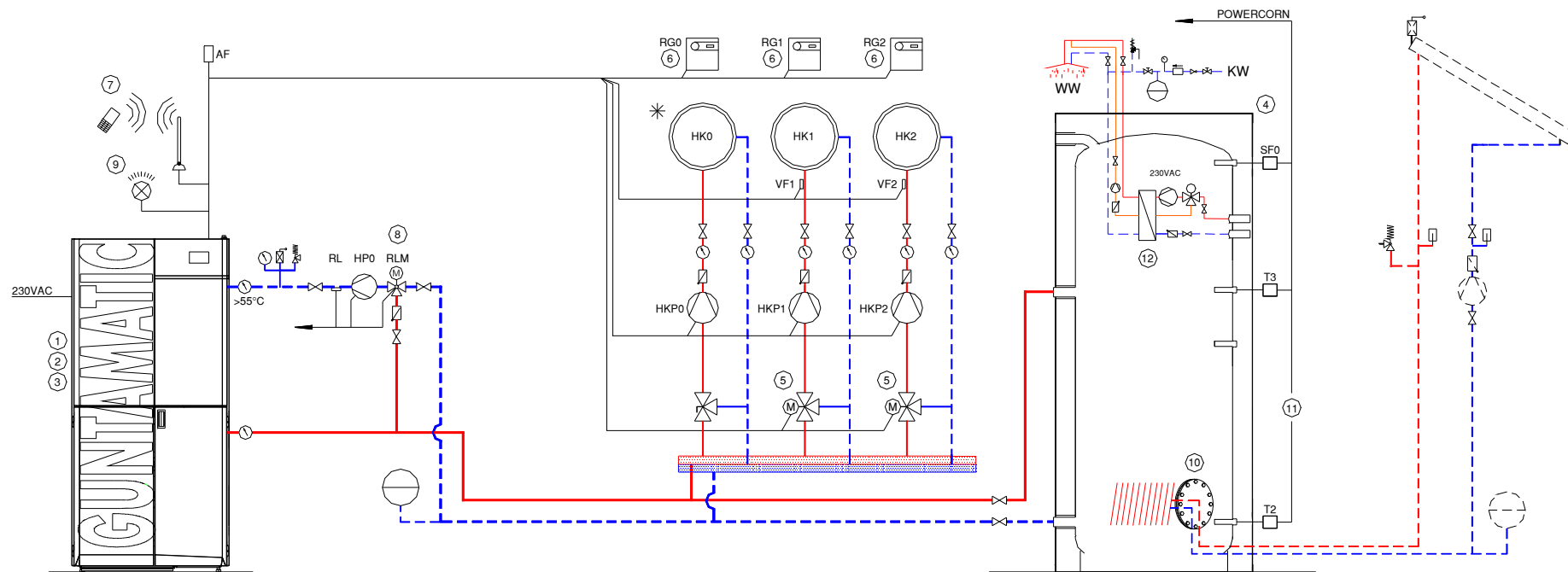
# GUNTAMATIC

### Diagram no. PC-02-15

Electrical connections as per operating and installation instructions

- \* Heating circuit 0 can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit 0 can be room-temperature controlled using an room stat for a radiator heating system.

- |  |                   |
|--|-------------------|
| 1. Powercorn                                 | as per price list |
| 2. Flue draught regulator RE                 | as per price list |
| 3. Outside temp. based controller set MKR    | S30-031           |
| 4. Thermal store PSF                         | as per price list |
| 5. Mixer valve positioner motor              | S50-501           |
| 6. Room stat                                 | as per price list |
| 7. GSM module                                | S15-002           |
| 8. Return boost set RA50 A                   | H39-021           |
| 9. Fault indicator lamp                      | by client         |
| <b>Important: follow wiring diagram!</b>     |                   |
| 10. <u>Option:</u> flange and heat exchanger | as per price list |
| 11. 2 Thermal store sensor                   | S70-003           |
| 12. <u>Option:</u> Secondary return unit     | 045-250           |



Attitude HP0 = buffer pump

## off 50 kW boiler output

High-/ lower temperature construction with backup memory PS

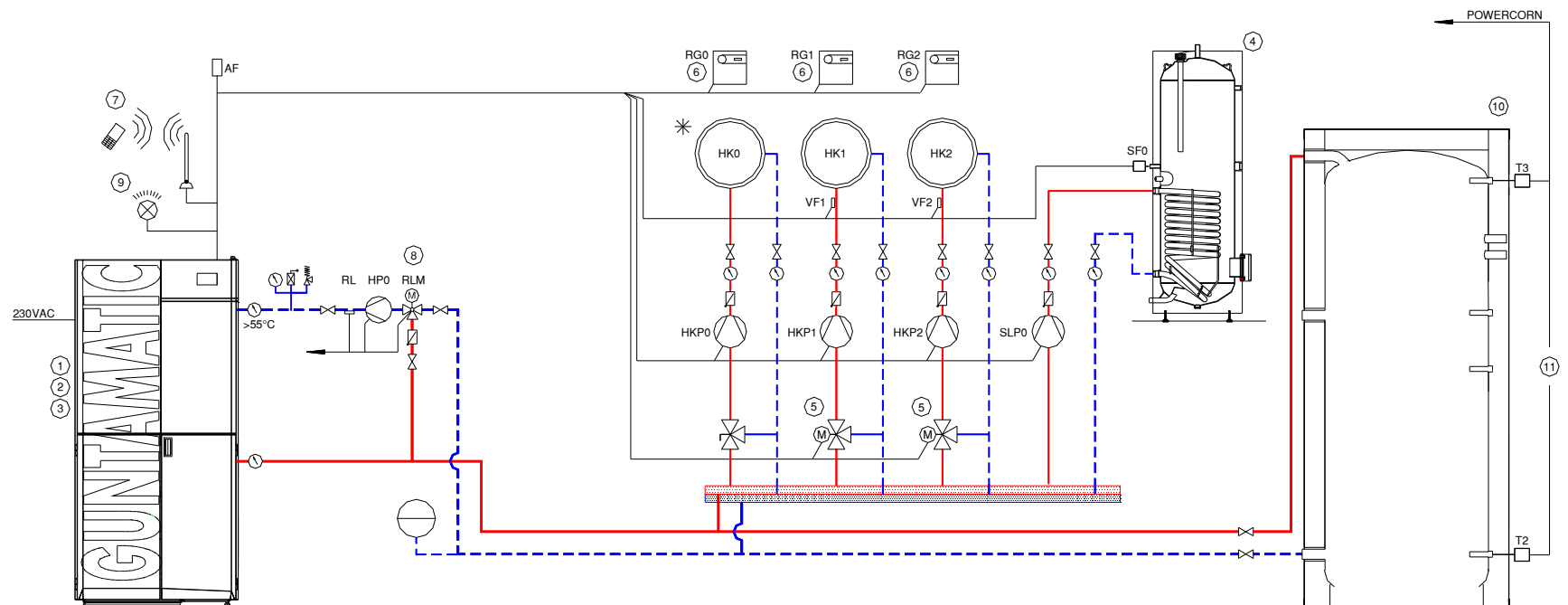
# GUNTAMATIC

### Diagram no. PC-03-15

Electrical connections as per operating and installation instructions

- \* Heating circuit 0 can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit 0 can be room-temperature controlled using an room stat for a radiator heating system.

- |   |                   |
|---|-------------------|
| 1. Powercorn                              | as per price list |
| 2. Flue draught regulator RE              | as per price list |
| 3. Outside temp. based controller set MKR | S30-031           |
| 4. DHW cylinder ECO                       | as per price list |
| 5. Mixer valve positioner motor           | S50-501           |
| 6. Room stat                              | as per price list |
| 7. GSM module                             | S15-002           |
| 8. Return boost set RA50 A                | H39-021           |
| 9. Fault indicator lamp                   | by client         |
| <b>Important: follow wiring diagram!</b>  |                   |
| 10. Thermal store PS                      | as per price list |
| 11. 2 Thermal store sensor                | S70-003           |



Attitude HP0 = buffer pump

## off 50 kW boiler output

High-/ lower temperature construction with backup memory PSF and existing boiler

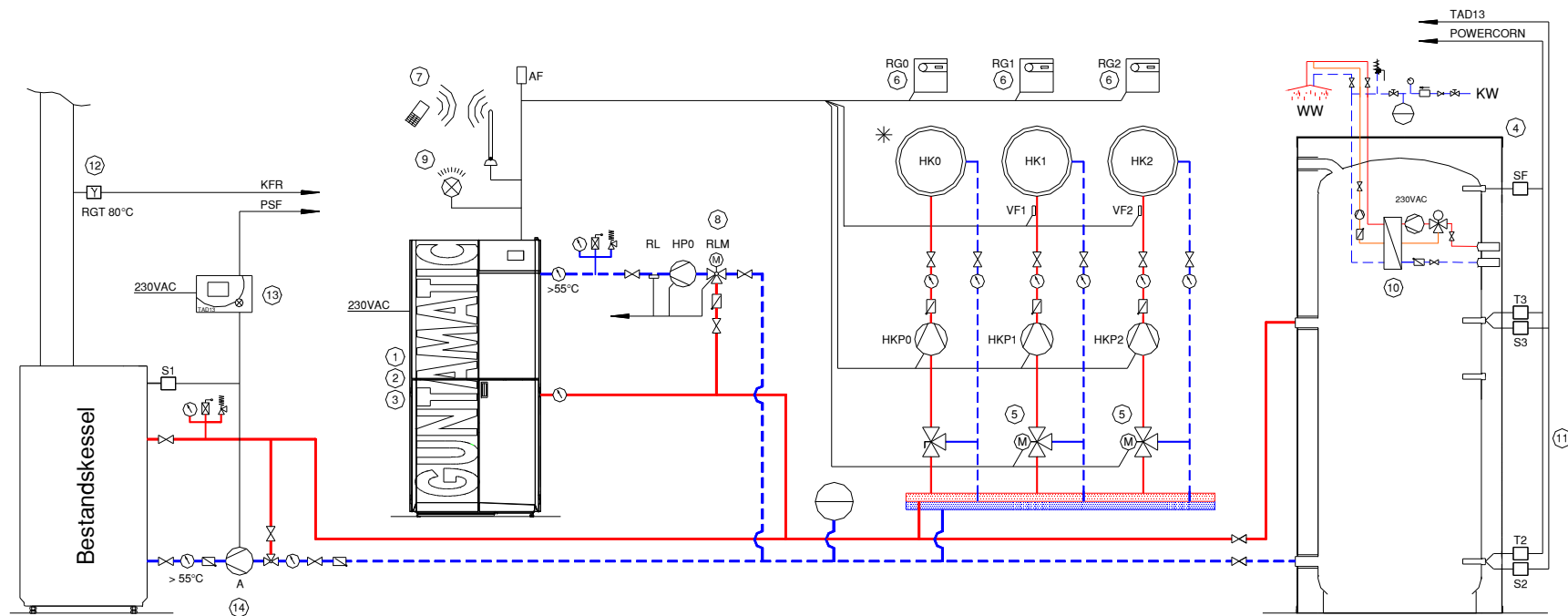
# GUNTAMATIC

### Diagram no. PC-04-15

Electrical connections as per operating and installation instructions

- \* Heating circuit can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit can be room-temperature controlled using an room stat for a radiator heating system.

- |  |                   |
|--|-------------------|
| 1. Powercorn                           | look at pricelist |
| 2. Flue draught regulator RE           | look at pricelist |
| 3. Ruler Set-MKR                       | S30-031           |
| 4. buffermemory PSF                    | look at pricelist |
| 5. Mixer valve positioner motor        | S50-501           |
| 6. Room stat                           | laut Preisliste   |
| 7. GSM-module                          | S15-002           |
| 8. Return boost set RA50 A             | H39-021           |
| 9. alert lamp (follow wirring diagram) | bauseits          |
| 10. Circulation unit                   | 045-250           |
| 11. 2 piece buffer                     | S70-003           |
| 12. exhaust guardian RGT 80°C          | H00-801           |
| 13. difference control TAD 13          | S35-101           |
| 14. return lift group RA50 TA          | H39-022           |



Attitude TAD13 = Prog. 4

Attitude HP0 = bufferpump

## off 50 kW boiler output High-/ lower temperature construction with trunk link

**Attention:** In some cases very low power consumption (<30%) such as at a very low energy or passive house, as well as over-dimensioning, we recommend installing a buffer!

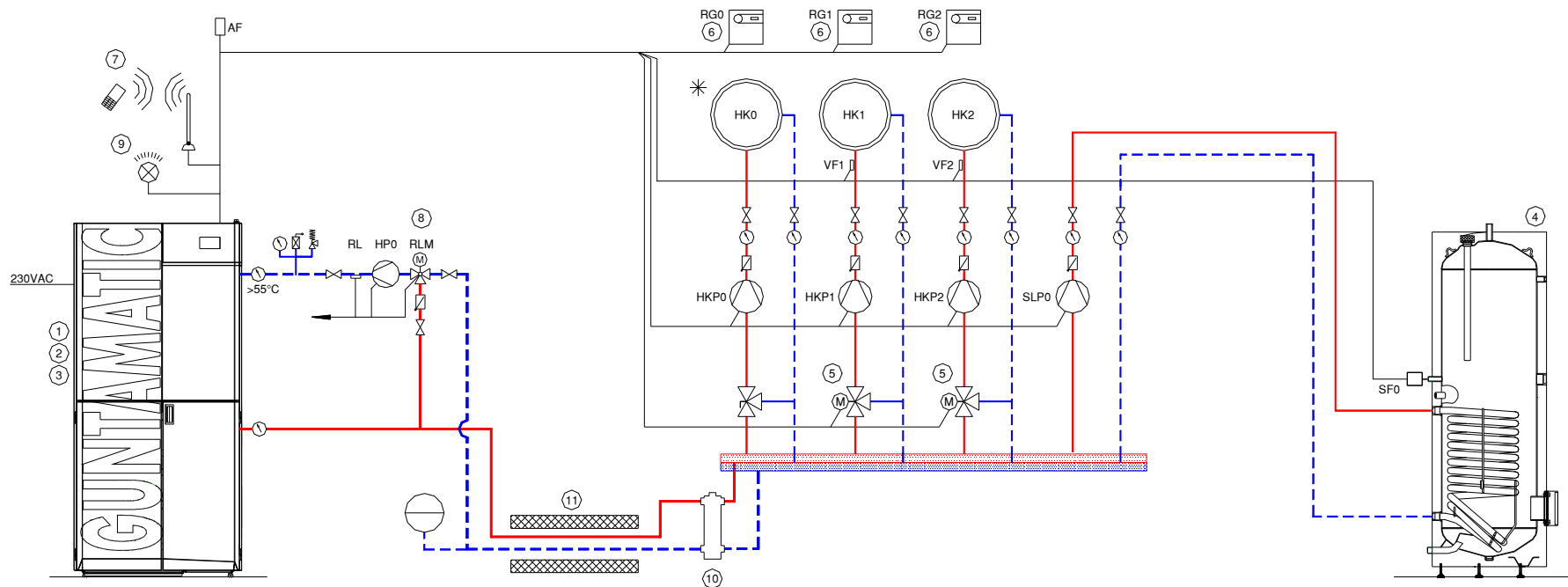
# GUNTAMATIC

### Diagram no. PC-05-15

Electrical connections as per operating and installation instructions

\* Heating circuit can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit can be room-temperature controlled using an room stat for a radiator heating system.

- |                                       |                   |
|---------------------------------------|-------------------|
| 1. Powercorn                          | as per price list |
| 2. Flue draught regulator RE          | as per price list |
| 3. ruler Set-MKR                      | S30-031           |
| 4. warmwater memory ECO               | as per price list |
| 5. Mixer valve positioner motor       | S50-501           |
| 6. Room stat                          | as per price list |
| 7. GSM module                         | S15-002           |
| 8. Return boost set RA50 A            | H39-021           |
| 9. alert lamp (follow wiring diagram) | by client         |
| 10. hydraulic duplexer                | by client         |
| 11. trunk link                        | by client         |



Attitude HP0 = Z-pump



## off 50 kW boiler output

High-/ lower temperature construction with backup memory PSF with trunk link.

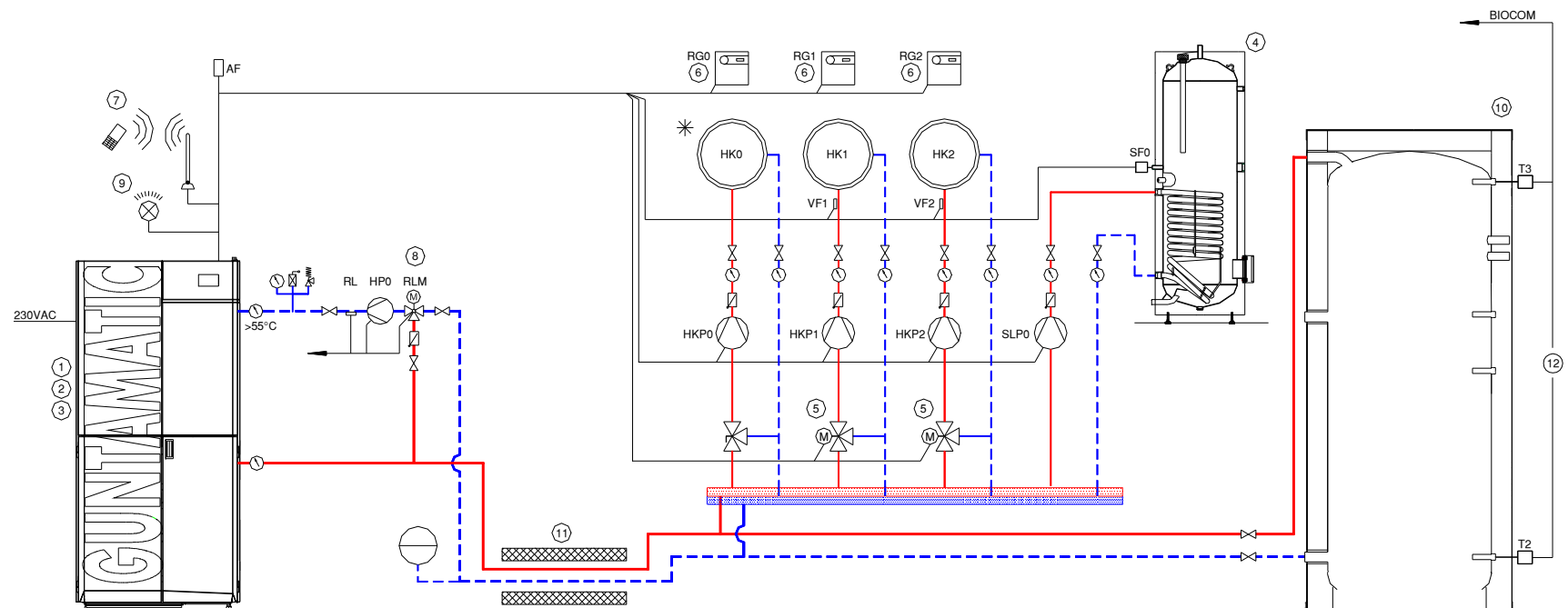
# GUNTAMATIC

### Diagram no. PC-06-15

Electrical connections as per operating and installation instructions

- \* Heating circuit 0 can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit 0 can be room-temperature controlled using an room stat for a radiator heating system.

- |   |                   |
|---|-------------------|
| 1. Powercorn                              | as per price list |
| 2. Flue draught regulator RE              | as per price list |
| 3. Outside temp. based controller set MKR | S30-031           |
| 4. DHW cylinder ECO                       | as per price list |
| 5. Mixer valve positioner motor           | S50-501           |
| 6. Room stat                              | as per price list |
| 7. GSM module                             | S15-002           |
| 8. Return boost set RA50 A                | H39-021           |
| 9. Fault indicator lamp                   | plumber           |
| <b>Important: follow wiring diagram!</b>  |                   |
| 10. Thermal store PS                      | as per price list |
| 11. District heating pipe                 | plumber           |
| 12. 2 Thermal store sensor                | S70-003           |



Attitude HP0 = buffer pump

**Attention:** In some cases very low power consumption (<30%) such as at a very low energy or passive house, as well as over-dimensioning, we recommend you to install a buffer!

**Attention:** In some cases very low power consumption (<30%) such as at a very low energy or passive house, as well as over-dimensioning, we recommend you to install a buffer!

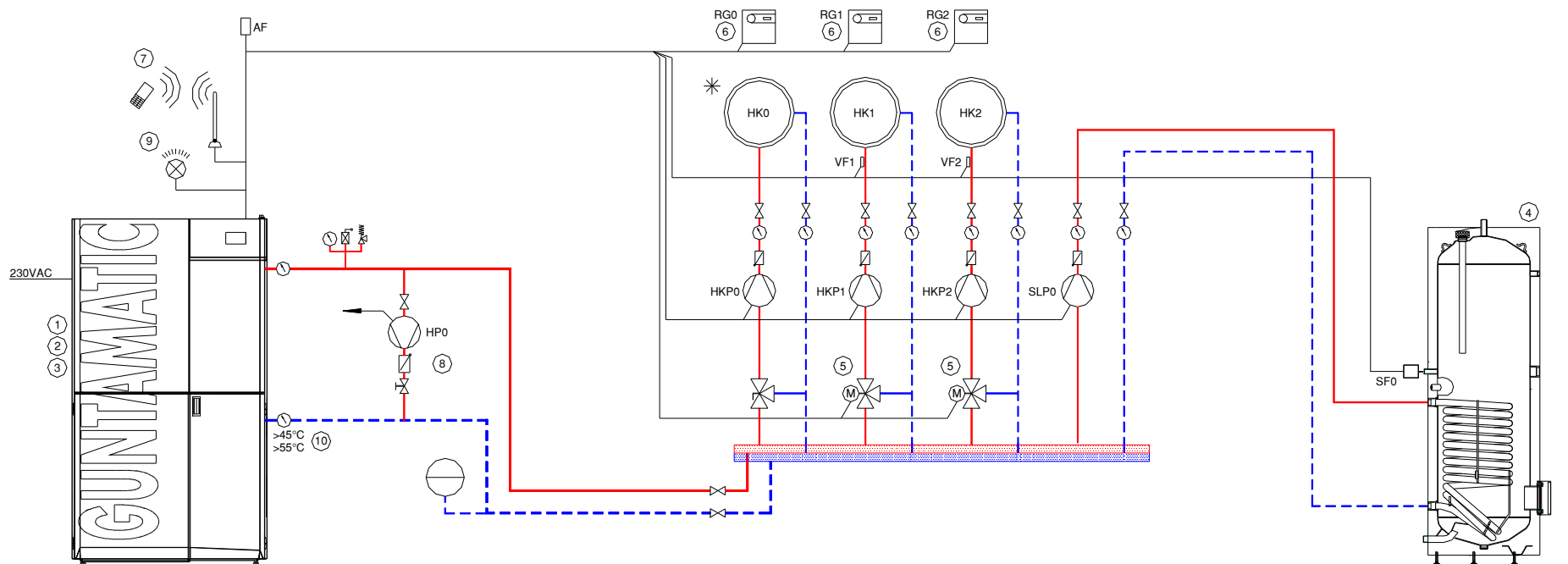
# GUNTAMATIC

Electrical connections as per operating and installation instructions

- |    |  |                   |
|----|--|-------------------|
| 1. | Powercorn                              | as per price list |
| 2. | Flue draught regulator RE              | as per price list |
| 3. | Outside temp. based controller set MKR | S30-031           |
| 4. | DHW cylinder ECO                       | as per price list |
| 5. | Mixer valve positioner motor           | S50-501           |
| 6. | Room stat                              | as per price list |
| 7. | GSM module                             | S15-002           |
| 8. | Return boost set RA100 A               | H39-023           |
| 9. | Fault indicator lamp                   | plumber           |

**Important: follow wiring diagram!**

\* Heating circuit 0 can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit 0 can be room-temperature controlled using an room stat for a radiator heating system.



Attitude HP0 = Z-pump

## off 50 kW boiler output

High-/ lower temperature construction with backup memory PSF

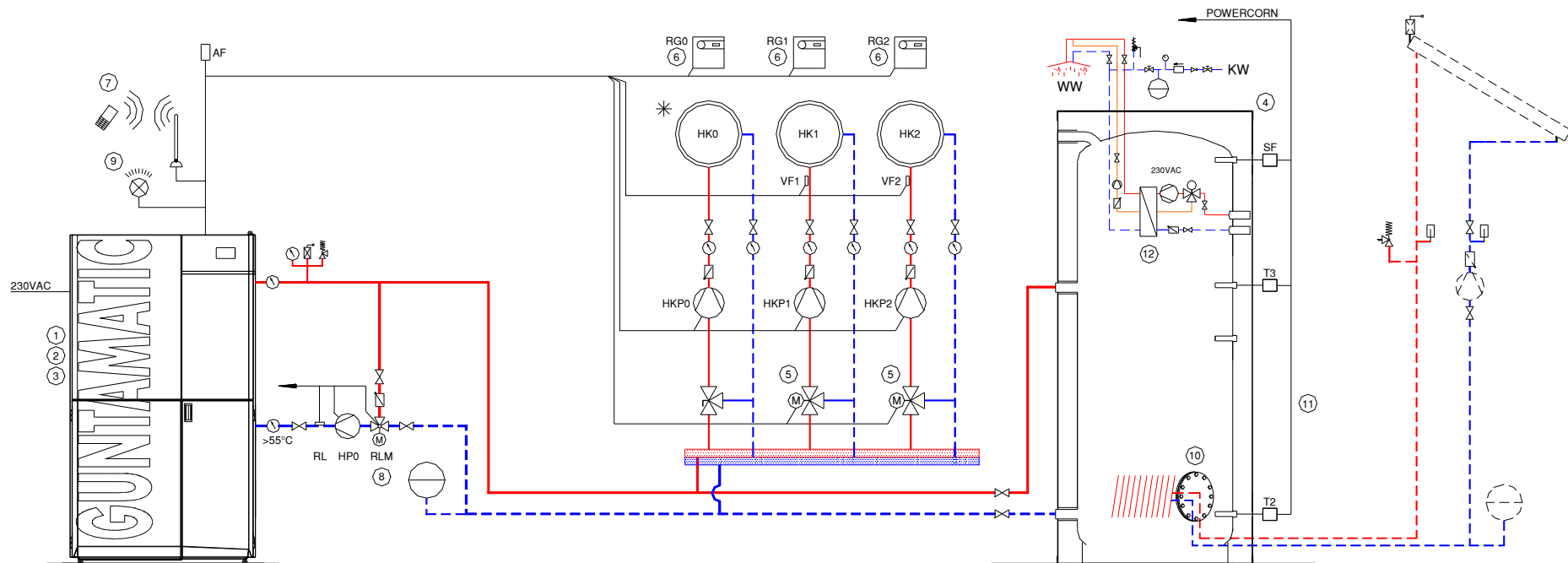
# GUNTAMATIC

### Diagram no. PC-08-15

Electrical connections as per operating and installation instructions

- \* Heating circuit 0 can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit 0 can be room-temperature controlled using an room stat for a radiator heating system.

- |  |                   |
|--|-------------------|
| 1. Powercorn                                 | as per price list |
| 2. Flue draught regulator RE                 | as per price list |
| 3. Outside temp. based controller set MKR    | S30-031           |
| 4. Thermal store PSF                         | as per price list |
| 5. Mixer valve positioner motor              | S50-501           |
| 6. Room stat                                 | as per price list |
| 7. GSM module                                | S15-002           |
| 8. Return boost set RA100 A                  | H39-023           |
| 9. Fault indicator lamp                      | by client         |
| <b>Important: follow wiring diagram!</b>     |                   |
| 10. <u>Option:</u> flange and heat exchanger | as per price list |
| 11. 2 Thermal store sensor                   | S70-003           |
| 12. <u>Option:</u> Secondary return unit     | 045-250           |



Attitude HP0 = buffer pump

## off 50 kW boiler output

High-/ lower temperature construction with backup memory PS

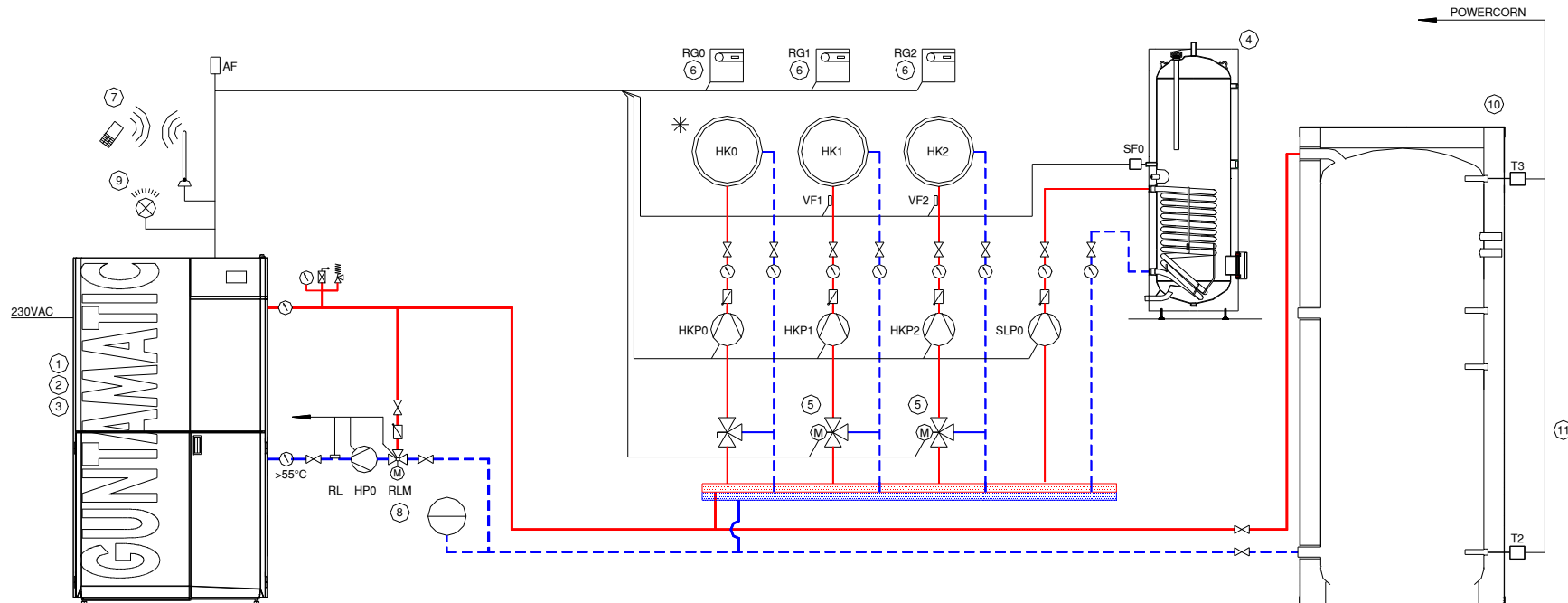
# GUNTAMATIC

### Diagram no. PC-09-15

Electrical connections as per operating and installation instructions

- \* Heating circuit 0 can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit 0 can be room-temperature controlled using an room stat for a radiator heating system.

- |   |                   |
|---|-------------------|
| 1. Powercorn                              | as per price list |
| 2. Flue draught regulator RE              | as per price list |
| 3. Outside temp. based controller set MKR | S30-031           |
| 4. DHW cylinder ECO                       | as per price list |
| 5. Mixer valve positioner motor           | S50-501           |
| 6. Room stat                              | as per price list |
| 7. GSM module                             | S15-002           |
| 8. Return boost set RA100 A               | H39-023           |
| 9. Fault indicator lamp                   | plumber           |
| <b>Important: follow wiring diagram!</b>  |                   |
| 10. Thermal store PS                      | as per price list |
| 11. 2 Thermal store sensor                | S70-003           |



Attitude HP0 = buffer pump

## off 50 kW boiler output High-/ lower temperature construction with backup memory with trunk blink

**Attention:** In some cases very low power consumption (<30%) such as at a very low energy or passive house, as well as over-dimensioning, we recommend you to install a buffer!

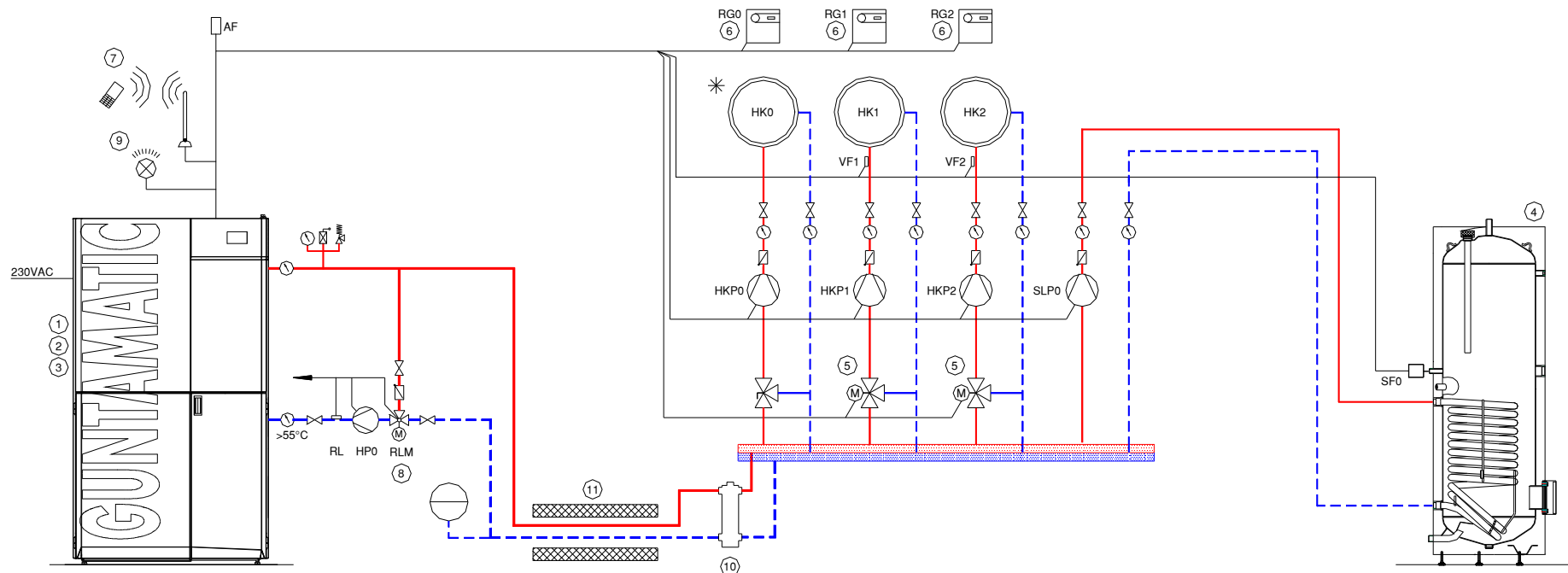
# GUNTAMATIC

### Diagram no. PC-11-15

Electrical connections as per operating and installation instructions

- \* Heating circuit 0 can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit 0 can be room-temperature controlled using an room stat for a radiator heating system.

- |   |                   |
|---|-------------------|
| 1. Powercorn                              | as per price list |
| 2. Flue draught regulator RE              | as per price list |
| 3. Outside temp. based controller set MKR | S30-031           |
| 4. DHW cylinder ECO                       | as per price list |
| 5. Mixer valve positioner motor           | S50-501           |
| 6. Room stat                              | as per price list |
| 7. GSM module                             | S15-002           |
| 8. Return boost set RA100 A               | H39-023           |
| 9. Fault indicator lamp                   | plumber           |
| <b>Important: follow wiring diagram!</b>  |                   |
| 10. Flow equaliser                        | plumber           |
| 11. District heating pipe                 | plumber           |



Attitude HP0 = Z-pump

## from 50 kW boiler power

High-/ lower temperature construction with PS and trunk blink

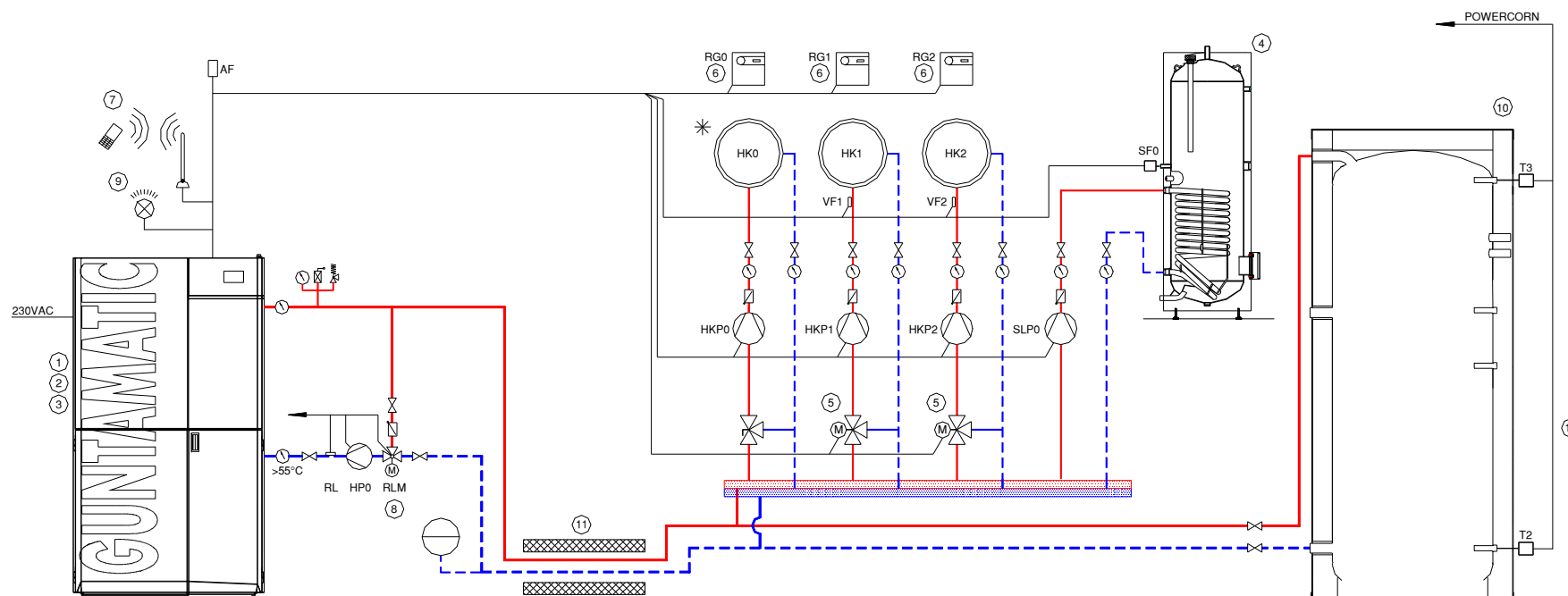
# GUNTAMATIC

### Diagram no. PC-12-15

Electrical connections as per operating and installation instructions

- \* Heating circuit 0 can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit 0 can be room-temperature controlled using an room stat for a radiator heating system.

- |   |                   |
|---|-------------------|
| 1. Powercorn                              | as per price list |
| 2. Flue draught regulator RE              | as per price list |
| 3. Outside temp. based controller set MKR | S30-031           |
| 4. DHW cylinder ECO                       | as per price list |
| 5. Mixer valve positioner motor           | S50-501           |
| 6. Room stat                              | as per price list |
| 7. GSM module                             | S15-002           |
| 8. Return boost set RA100 A               | H39-023           |
| 9. Fault indicator lamp                   | plumber           |
| <b>Important: follow wiring diagram!</b>  |                   |
| 10. Thermal store PS                      | as per price list |
| 11. District heating pipe                 | plumber           |
| 12. 2 Thermal store sensor                | S70-003           |



Attitude HP0 = buffer pump

## ject supply for maximal 3 buildings

trunkblink functions ZUP, LAP oder PUP

# GUNTAMATIC

### Site 1 / Diagram no. PC-13-15

Electrical connections as per operating and installation instructions

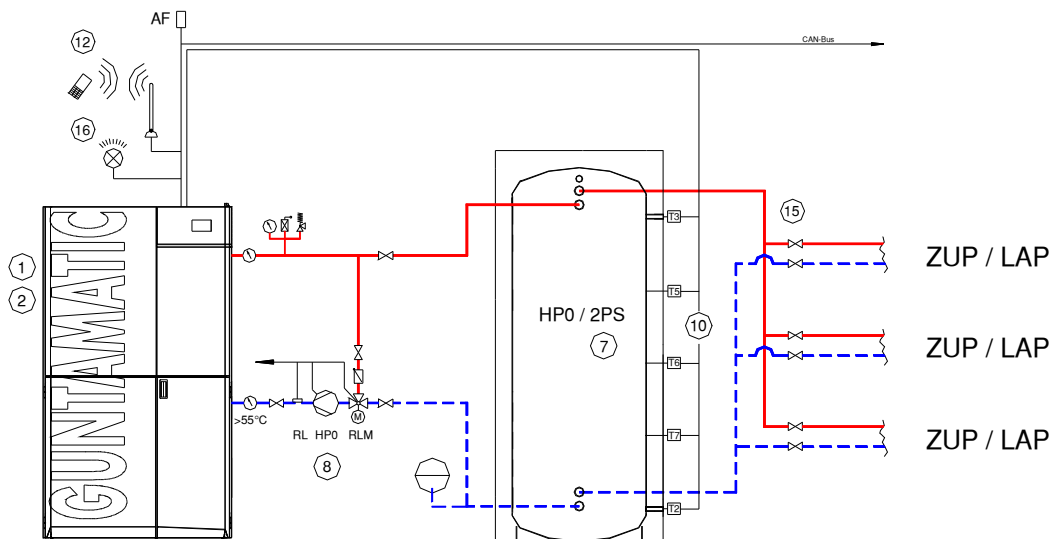


- Line connector 230 VAC / 13 A;
- per System just one Sensor;  
(if possible on the boiler)
- per System 3 Wall mounted Set-MK261 possible;
- per System 3 digital Remotestationens possible;
- per Heatingcircle one analouge Remot unit possible.

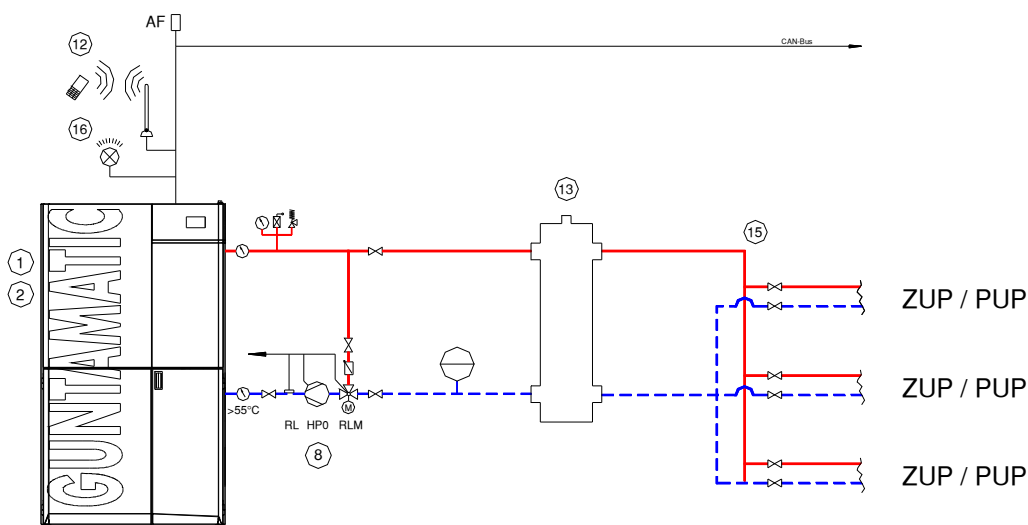
1. Firing Powercorn
2. Flue draught regulator RE with Ex-Clap
3. Regulation wall mounted unit Set-MK261
4. Warmwater memory ECO
5. Mixer Stellmotor
6. Remote / Remotestation
7. Backupmemory PS / PSF / 2PS
8. Reverse raising group
9. circulation unity
10. Backup memory sensor
11. Flange or recuperator
12. GSM-Modul
13. Hydraulic switch
14. trunk blink and trunkblinks pum
15. Pipesystem,
16. Alertlamp (look at the circuit diagram)

as Pricelist  
as Pricelist  
S30-030  
as Pricelist  
S50-501  
as Pricelist  
as Pricelist  
as Pricelist  
045-250  
S70-003  
as Pricelist  
S15-002  
by client  
by client  
by client  
by client

Heatingrooms opportunitys



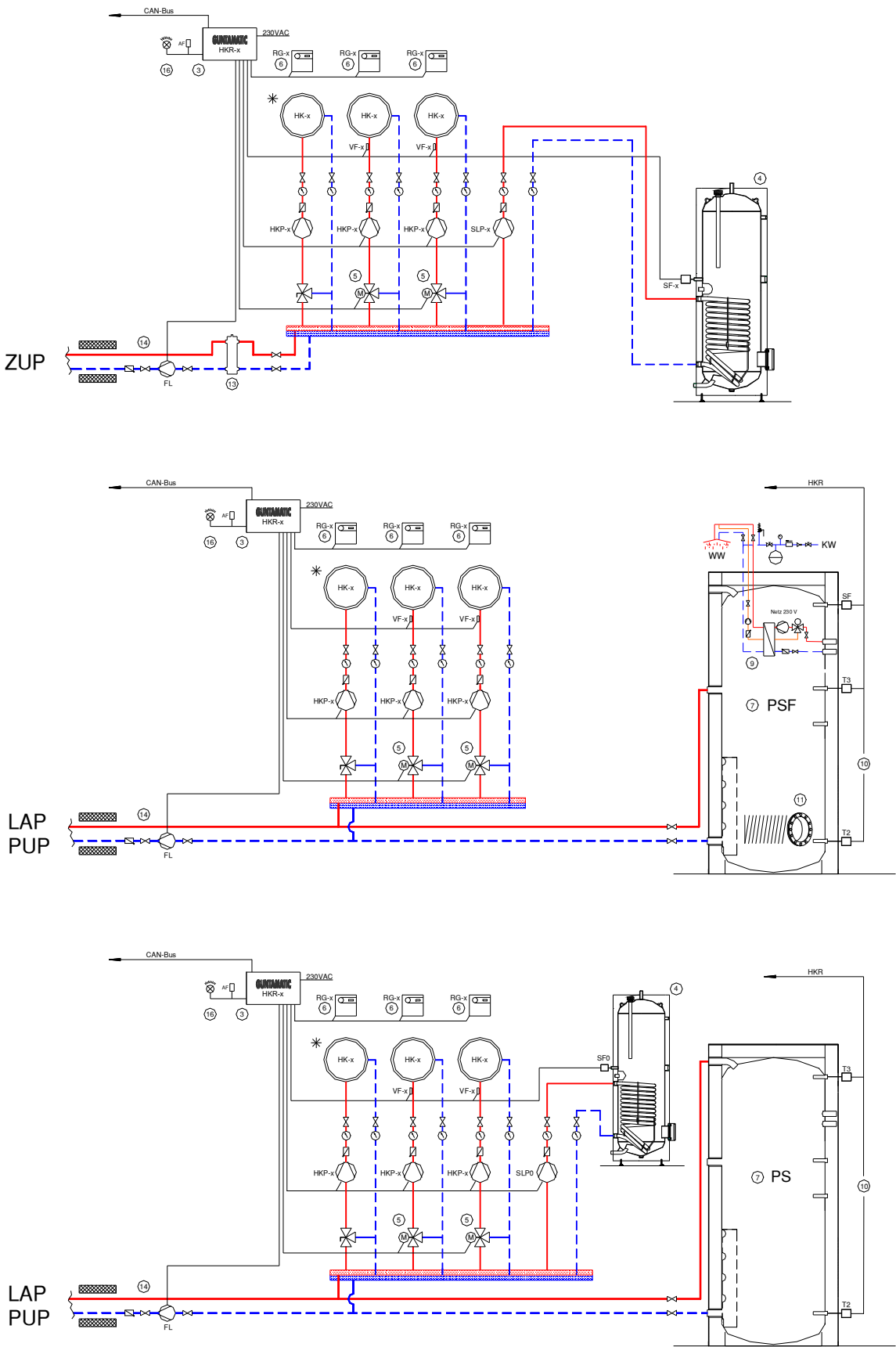
HP0 mode = B-pump



HP0 mode = Z-pump

Site 2 / Diagram no. PC-13-15

Connected size





## cascade circuit for 2 firings

# GUNTAMATIC

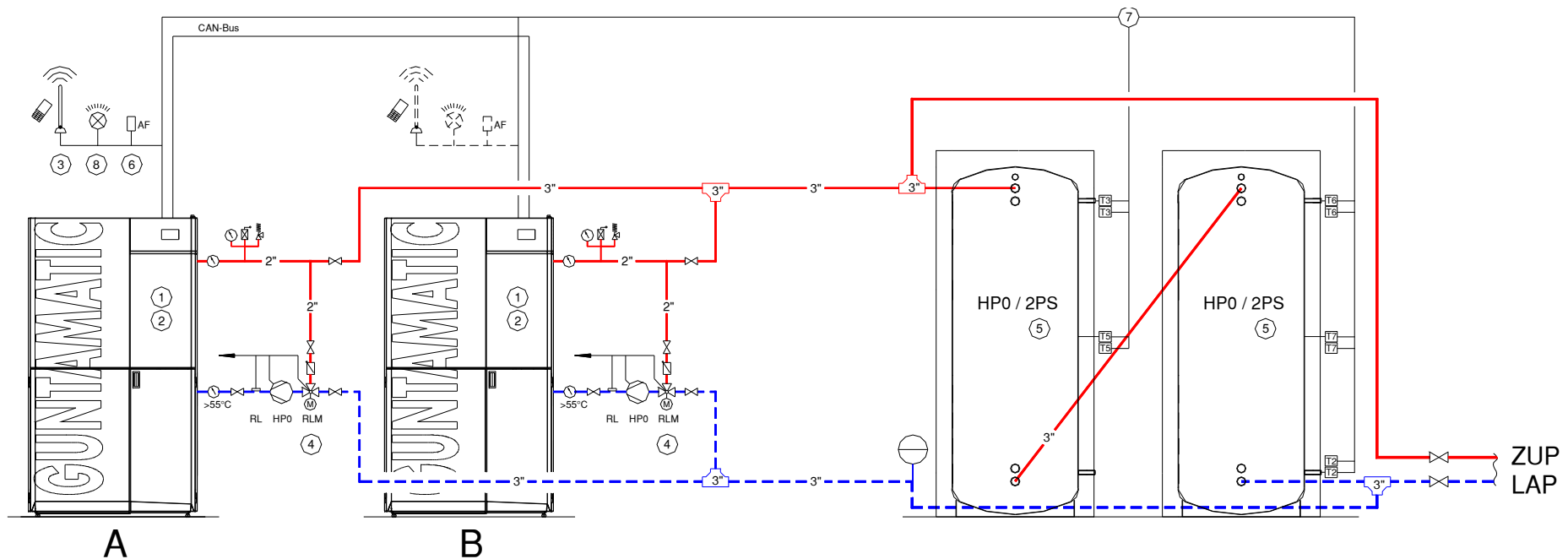
### Diagram no. PC-14-15

line connector with operation and construction introduction.



- line connector per Construction 230 VAC / 13 A;
- connect the CAN Bus linear with the construction; (the cabling without + the clip fulfill)
- per Construction 3 wall mounted machines Set-MK261 possible;
- per Construction 3 digital remote connector possible;
- per heating circulation one analoue possible; (exceptions at 5 sensor buffermanagement)
- on Cascades <150 kW could 3" T- Pieces and the 3" bufferconections where cancelled (2");

- |   |                   |
|---|-------------------|
| 1. Powercorn  | look at pricelist |
| 2. Flue draught regulator RE with Ex-Clap   | look at pricelist |
| 3. GSM- module  | S15-002           |
| 4. Return boost unit  | look at pricelist |
| 5. buffermemory PS  | look at pricelist |
| 6. Outside sensor   | S70-001           |
| required on every System without atmosperic Conditions, with additional above the turned of OFF Temperature |                   |
| 7. buffer memory sensor   | S70-003           |
| <u>Suggestion:</u> 5 sensores per construction- minimum 2 per construction necesarry.                       |                   |
| 8. alert lamp (attend circuit diagram)  | by client         |



Attitude HP0 = buffer pump

## Cascade connection for up to 4 firing

# GUNTAMATIC

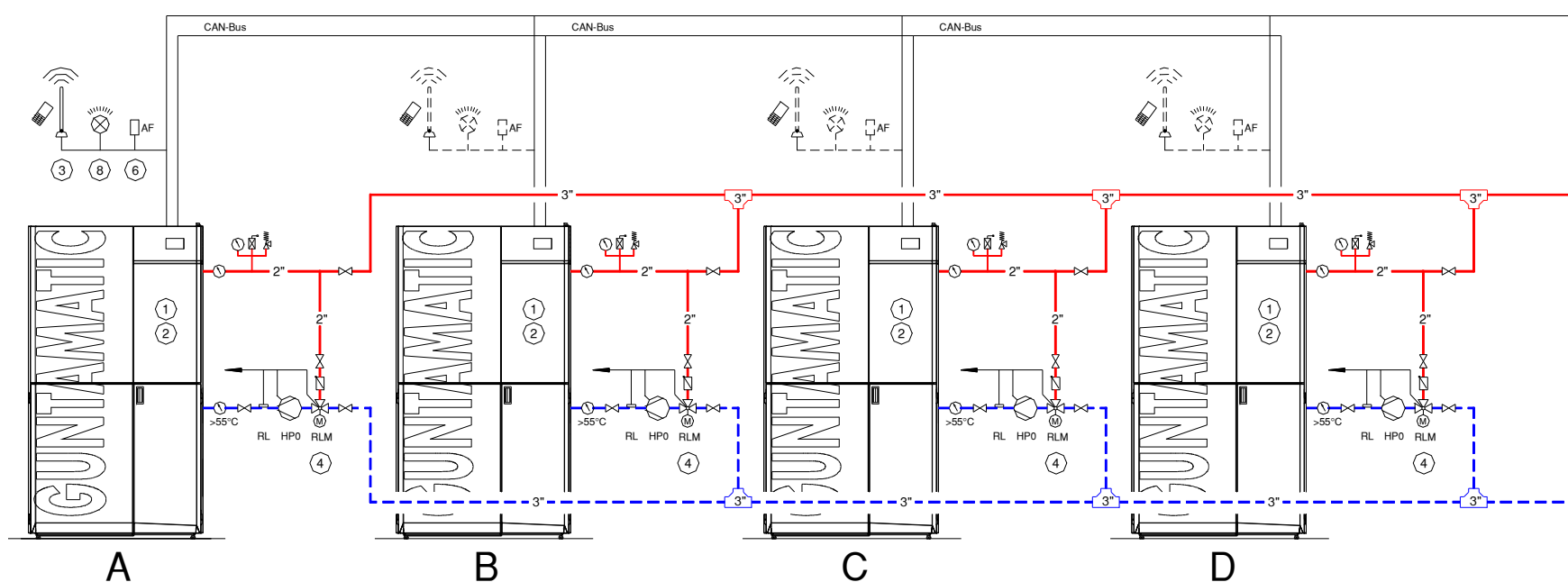
### Site 1 / Diagram no. PC-15-15

Electrical connections as per operating and installation instructions



- Line connector per construction 230 VAC / 13 A;
- per System 3 mounted system Set-MK261 possible;
- per System 3 digital mounted system possible;
- per Heatingcircle a analouges wall mounted unity possible; (Exceptions on 5 Feeler buffermanagement)
- the written dimensons fort he backup memory, pipes on T pipes refers to a Cascade with 400 KW and in maximum 2 x 25 m pipe length for buffer forward motion.

- Powercorn look at Pricelist
- Flue draught regulator RE with Ex-Clap look at Pricelist
- GSM-Modul S15-002
- recirculationincreasinggroup look at Pricelist
- Buffermemory PS look at Pricelist  
jeden Puffer mit 2 Stück 3" Sondermuffen bestellen;
- Outdoorsensor S70-001  
required on every System without atmosperic Conditions, with additional above the turned of OFF Temperature;
- Backup memory sensor S70-003  
Advice: alertlamp 5 Sensors per System - minimum 2 per System required
- alert lamp (important) by client



Site 2 / Diagram no. PC-15-15

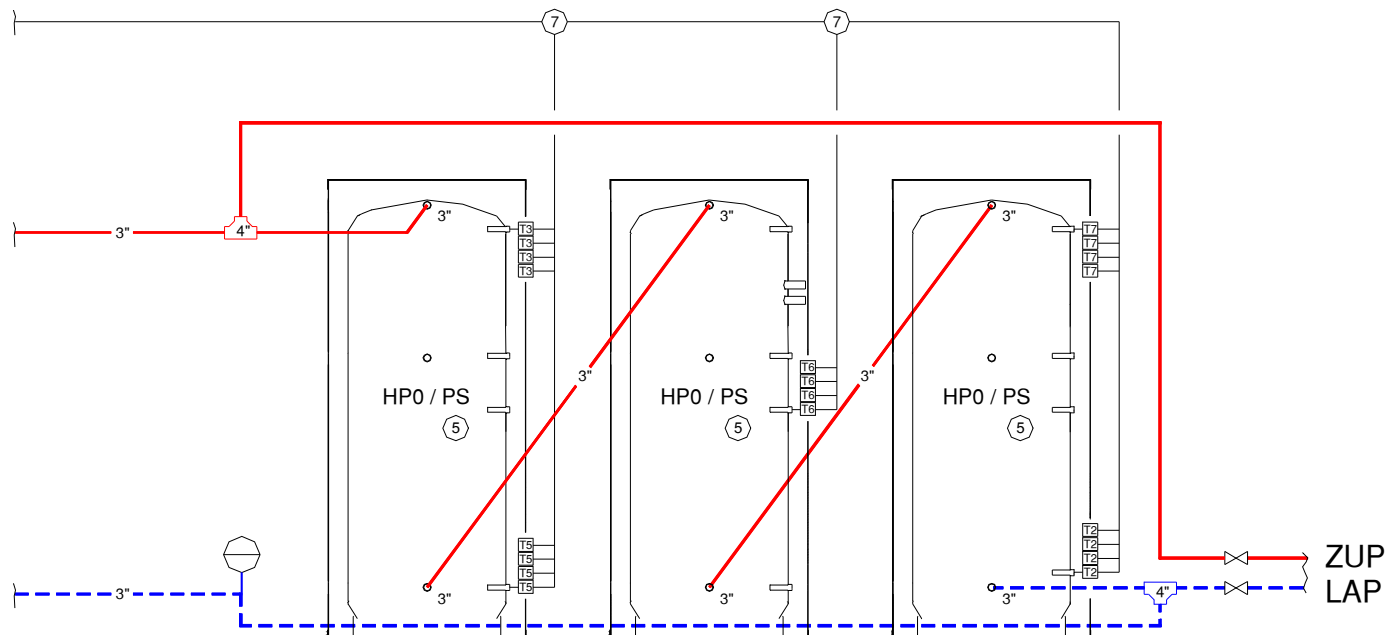
Attitude HP0 = buffer pump

Electrical connections as per operating and installation instructions



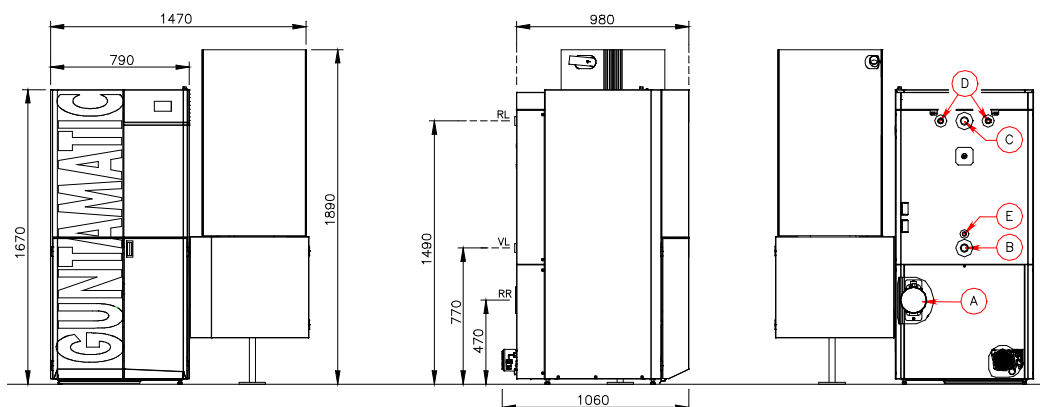
- Order every backup memory with 2 pieces with 3 muffles.
- the written dimensions for the backup memory, pipes on T pipes refers to a Cascade with 400 KW and in maximum 2 x 25 m pipe length for buffer forward motion.

Piece of Paper 1 / Diagram no. PC-15-15



Piece of Paper 2 / Diagram no. PC-13-15

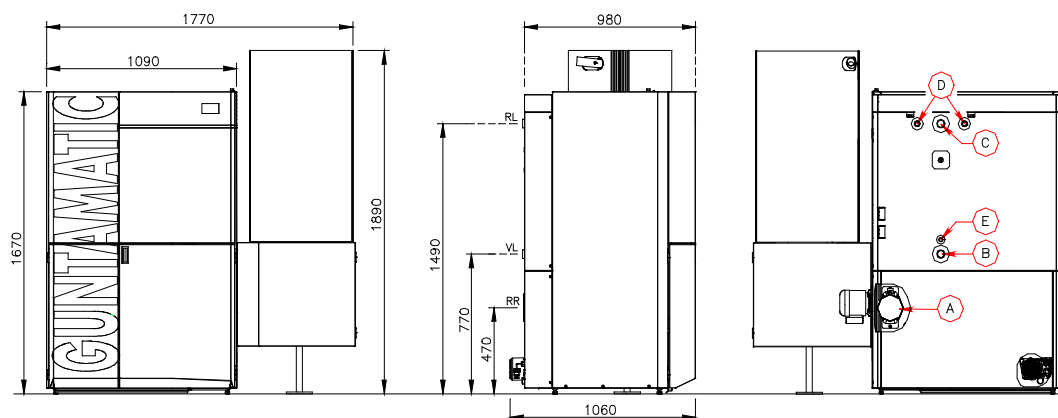
## Powercorn 30



	POWERCORN 30	
Fuel	Pellet EN Plus A1 <sup>3)</sup> Energiecorn <sup>1)</sup> Not woody biomass <sup>2)</sup>	EN 17225-2 - -
boiler´s power Pellet	34,5	kW
smallest performance	10,4	kW
boiler´s power Energiecorn	maximum 25	kW
boiler´s temperature Pellet	50 - 80	°C
boiler´s temperature Energiecorn	70 - 80	°C
backruntemperature	look at scheme	°C
flue draught	2 - 15	Pascal
Watercontent	128	Litre
Operationpressure	max. 3	bar
A - Smokepipe	150	mm
B - Flow	5/4	Zoll
C - backrun	5/4	Zoll
D - Securitywarmexchanger	3/4	Zoll
E - Emptying	1/2	Zoll
waterside difference	2140	kg/h
Difference 10K	16,4	mbar
waterside difference	1070	kg/h
Difference 20K	10,2	mbar
Ashdraw - grate	60	Litre
Ashdraw – warmexchanger	12	Litre
boiler´s complete weight	562 (without Stoker)	kg
weight Unterkasten	340	kg
weight warmexchanger	192	kg
weight stokerunit	70	kg
Gewicht drive unitt	26	kg
weight / m feed´s spiral	40	kg
power supply	230 VAC / 13 A	-
Energy efficiency class	You can find the energy efficiency classes either on the label attached to the boiler, in our brochures or on the product data sheets on our specialist partner website.	
<sup>1)</sup> the use of powercorn is just allowed, i fit is allowed by the specific local rules!		
<sup>2)</sup> the constructions are used for vegetable fuel, there are no typechecks!		
<sup>3)</sup> 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)		

Version EC describes the set consisting of the listed heater with an electrostatic precipitator EC 24P, 24, 85 or 250 to be attached.

## Powercorn 50



	POWERCORN 50	
Fuel	Pellet EN Plus A1 <sup>3)</sup> Energiecorn <sup>1)</sup> Not woody biomass <sup>2)</sup>	EN 17225-2 - -
boiler´s power Pellet	49,5 (49,0 <sup>4)</sup> )	kW
smallest performance	13,1 (13,2 <sup>4)</sup> )	kW
boiler´s power Energiecorn	maximal 40	kW
boiler´s temperature Pellet	50 – 80	°C
boiler´s temperature Energiecorn	70 - 80	°C
backruntemperature	look at scheme	°C
flue draught	2 - 15	Pascal
Watercontent	147	Litre
Operationpressure	max. 3	bar
A - Smokepipe	180	mm
B - Flow	5/4	Zoll
C - backrun	5/4	Zoll
D - Securitywarmexchanger	3/4	Zoll
E - Emptying	1/2	Zoll
waterside difference	3690	kg/h
Difference 10K	18,7	mbar
waterside difference	1840	kg/h
Difference 20K	4,7	mbar
Ashdraw - grate	80	Litre
Ashdraw – warmexchanger	12	Litre
boiler´s complete weight	667 (without Stoker)	kg
weight Unterkasten	410	kg
weight warmexchanger	227	kg
weight stokerunit	70	kg
Gewicht drive unitt	26	kg
weight / m feed´s spiral	40	kg
power supply	230 VAC / 13 A	-
Energy efficiency class	You can find the energy efficiency classes either on the label attached to the boiler, in our brochures or on the product data sheets on our specialist partner website.	

<sup>1)</sup> the use of powercorn is just allowed, i fit is allowed by the specific local rules!

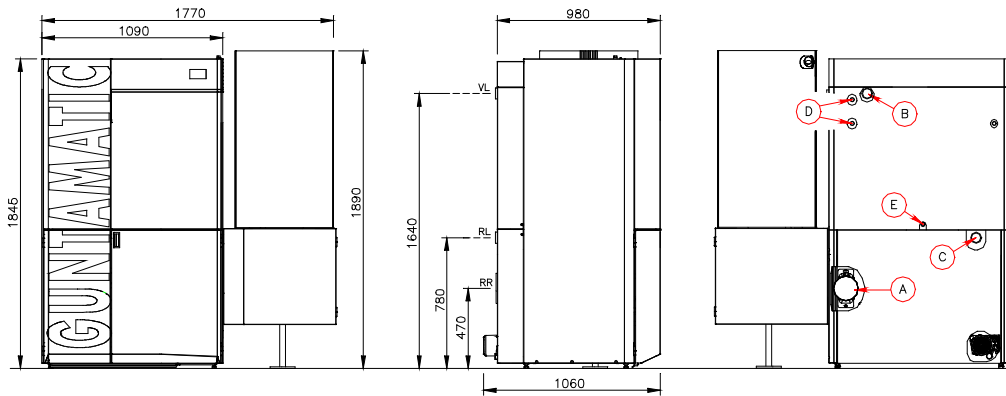
<sup>2)</sup> the constructions are used for vegetable fuel, there are no typechecks!

<sup>3)</sup> 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)

<sup>4)</sup> Performance rating Germany

Version EC describes the set consisting of the listed heater with an electrostatic precipitator EC 24P, 24, 85 or 250 to be attached.

## Powercorn 75



	POWERCORN 75	
Fuel	Pellet EN Plus A1 <sup>3)</sup> Energiecorn <sup>1)</sup> Not woody biomass <sup>2)</sup>	EN 17225-2 - -
boiler's power Pellets	75,0	kW
smallest performance	22,5	kW
boiler's power Energiecorn	maximal 40 (mit Additiv)	kW
boiler's temperature Pellet	60 - 80	°C
boiler's temperature Energiecorn	70 - 80	°C
backruntemperature	with scheme	°C
flue draught	2 – 15	Pascal
Watercontent	256	Litre
Operationpressure	max. 3	bar
A - Smokepipe	180	mm
B - Flow	2	Zoll
C - backrun	2	Zoll
D - Securitywarmexchanger	3/4	Zoll
E - Emptying	1/2	Zoll
waterside difference	6000	kg/h
Difference 10K	3,1	mbar
waterside difference	3000	kg/h
Difference 20K	1,1	mbar
Ashdraw - grate	80	Litre
Ashdraw – warmexchanger	12	Litre
boiler's complete weight	890 (without Stoker)	kg
weight Unterkasten	430	kg
weight warmexchanger	405	kg
weight stokerunit	70	kg
Gewicht drive unitt	26	kg
weight / m feed's spiral	40	kg
power supply	230 VAC / 13 A	-
Energy efficiency class	You can find the energy efficiency classes either on the label attached to the boiler, in our brochures or on the product data sheets on our specialist partner website.	

<sup>1)</sup> the use of powercorn is just allowed, i fit is allowed by the specific local rules!

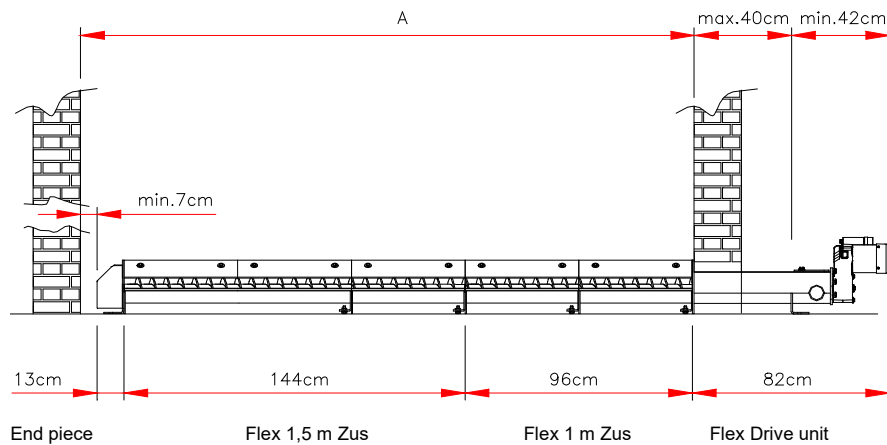
<sup>2)</sup> the constructions are used for vegetable fuel, there are no typechecks!

<sup>3)</sup> 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)

Version EC describes the set consisting of the listed heater with an electrostatic precipitator EC 24P, 24, 85 or 250 to be attached.

## 8.1 TECHNICAL SPECIFICATIONS SYSTEM FLEX

BS-03



### **Wall breakthrough:**

B 33 cm x H 25 cm

### **Wall thickness:**

max. 40 cm

### **Dumping height:**

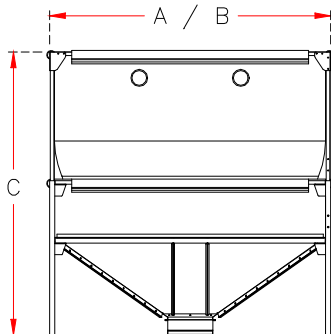
Pellets max. 2,5 m

### Required components according to internal storage space A

measure A =	Designation price list	Drive unit 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
up 5,0 m	Flex 5 m	1x	2x	2x

## 8.2 TECHNICAL SPECIFICATIONS SYSTEM BOX

BS-02



	A - B	C	m³	weight
<b>BOX 7,5</b>	2,1 x 2,1 m	1,8 - 2,5 m	5,0 - 7,5 m³	3,0 - 4,7 t
<b>BOX 8,3</b>	1,7 x 2,9 m	1,9 - 2,5 m	6,1 - 8,3 m³	4,0 - 5,4 t
<b>BOX 11</b>	2,5 x 2,5 m	1,8 - 2,5 m	8,3 - 11 m³	5,0 - 6,7 t
<b>BOX 14</b>	2,9 x 2,9 m	1,9 - 2,5 m	10 - 14 m³	6,5 - 9,1 t

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