



# OPERATION MANUAL

## PELLET BOILER



Nano-PK 38-65 (eC)

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## Dear customer!

You have chosen an innovative wood-fired system from our company. The system from Hargassner Ges mbH is a state-of-the-art product and manufactured to the latest production standards. We are very pleased about your decision and guarantee that you have chosen a reliable quality product.

However, please be aware that even the best product can only work optimally if installed, commissioned and serviced correctly.

The enclosed hydraulic schematics as well as the connection and installation drawings provide assistance. To ensure cost-effectiveness and a long lifetime, please follow the enclosed manual. This way, you will avoid high repair costs and long downtimes.

This manual is intended to help to get to know the system and make use of the intended purposes.

The manual contains important information on how to operate the system

- safely
- appropriately
- in an environmentally friendly manner
- economically

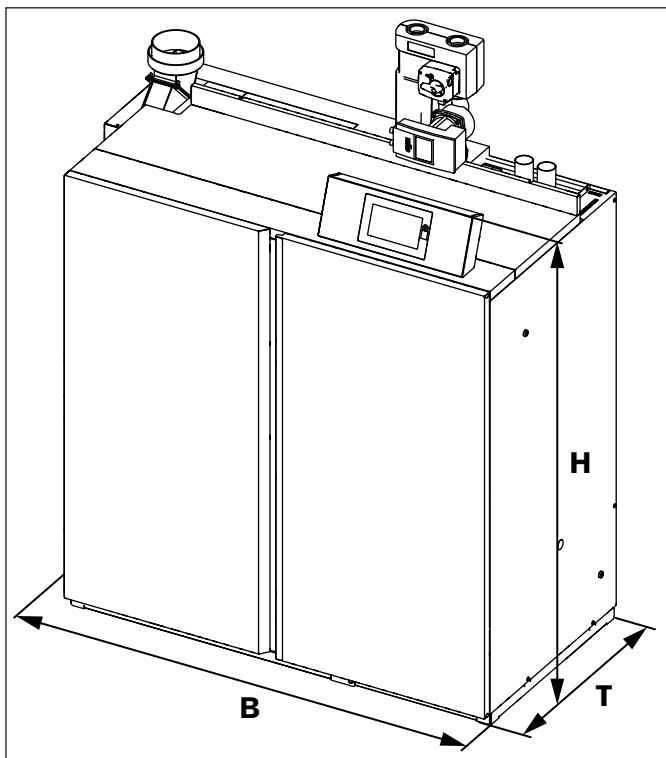
Guidelines within this manual will:

- Prevent hazards
- Reduce repair costs and downtimes
- Increase the reliability and lifetime of the system

Keep this manual within easy reach.

# Chapter I: Technical Data

## 1 Dimensions



Name		Nano-PK 38-65 (eC)
B	Width	1365 mm
T	Depth	710 mm
H	Height	1510 mm
	Weight	575 (580) kg

## 2 Intended use

The automatic wood pellet boiler is only intended for heating water. Only fuels permitted by Hargassner may be burned in this system. Only use the boiler in technically perfect working order. Rectify errors immediately.

Intended use also includes observing all items in this manual and adhering to the inspection and maintenance instructions.

## 3 Fuel quality

Only use fuels that comply with **EN ISO 17225-2**.

### **i** NOTE

Only use fuels approved and permitted by Hargassner Ges mbH.  
Have new fuels and feasibility checked and approved by Hargassner Ges mbH.

### 3.1 Pellets (A1)

Ensure quality standards, when wood pellets are ordered and delivered.

- Least possible dust content
- Pellets with a hard and shiny surface
- 100% natural wood, no additives, etc.
- Pellets class **A1** defined in **EN ISO 17225-2** and **EN ISO 20023**

Name	Worth
Calorific value	≥ 4.6 kWh/kg
Bulk density	600 - 750 kg/m <sup>3</sup>
Diameter	6 ± 1 mm
Length	3.15 - 40 mm
Fine material rate	≤ 1%

### 3.2 Inadmissible fuels

- Fuel with water content >15%
  - Formation of condensate
  - Increased corrosion in the boiler
- Paper, cardboard
- Chip boards, impregnated timber
- Black coal, brown coal or lignite
- Waste
- Plastics

## 4 Design of the boiler room

Boiler rooms must be designed in accordance with local regulations.

⇒ See assembly manual

- Keep the system air inlets clear
- Never store flammable materials in the boiler room
- Design the boiler room to be frost-proof
- Maximum ambient temperature up to 40°C
- Ensure fireproof, level and solid floor and ceiling construction
- In accordance with regulations, have the main heating switch installed by an electrician (depending on building regulations)
- Fire extinguisher

## 5 Design of the fuel storage room

Design your pellet fuel storage room in accordance with local regulations (e.g. EN ISO 20023 or VDI 3464).

⇒ [See assembly manual](#)

- Only install metal fill pipes, earthed and connected to outside
- Consider noise protection for wall openings
- Protection against moisture, water and dust
- Correctly position impact protection mat and install slant floor

### DANGER

#### Risk of explosion, risk of suffocation

##### Burns due to explosive burning of dust (pellet dust) in the storage room

- Ensure that the pellet hoses are earthed.
- No motors in the storage room.
- No other ignition sources (light) in the storage room.
- No electrical equipment (switches) in the storage room.
- No welding works in a dusty environment.

### DANGER

#### Risk of suffocation

##### Risk of suffocation from odourless carbon monoxide

- Ventilate sufficiently before entering the storage room.
- Keep window and door open while inside.
- Position second person outside to supervise.

## 6 Design of heat circuits

Proper design of the heat circuits is essential for optimum boiler operation.

⇒ [See enclosed hydraulic schemes](#)

Accumulators, pumps and mixers for heat circuits must be designed according to current standards by the commissioning engineer

## 7 Flue pipe, chimney connection

Description	Unit	Nano-PK 38 (eC)	Nano-PK 45 (eC)	Nano-PK 50 (eC)	Nano-PK 60 (eC)	Nano-PK 65 (eC)
Nominal heating output	kW	11.4 - 38.0	13.5 - 45.0	14.7 - 49.0	18.0 - 60.0	19.5 - 65.0
Flue gas temperature	°C	110	115	110	120	125
CO <sub>2</sub>	%	14				
Flue gas mass flow rate	kg/sec	0.0206 (0.0205)	0.0244	0.0266 (0.0267)	0.0327 (0.0328)	0.0355 (0.0357)
Req. delivery pressure	Pa	3				
Available delivery pressure	Pa	5				
Max. flue draught	Pa	10				
Flue pipe diameter	mm	130	150			

### **i** NOTE

A flue draught stabiliser with an explosion protection flap (set to 10 Pa) must be installed in the chimney or flue pipe.

### **i** NOTE

After a soot fire, clean your flue pipes and replace all the flue pipe seals.  
Ensure optimum seal tightness for the flue pipes and chimney connections.

## 8 Seasonal space heating emissions

Nano-PK 38-65 (eC)						
Name	Unit	38	45	50	60	65
Carbon monoxide	mg/m <sup>3</sup>	14 (11)	11 (9)	10 (8)	5 (4)	<3
Nitrogen oxide	mg/m <sup>3</sup>	98 (99)	102 (103)	105	111	114
Gaseous organic compounds	mg/m <sup>3</sup>	<1				
Dust	mg/m <sup>3</sup>	7 (<1)	6 (<1)	6 (<1)	5 (<1)	5 (<1)

## 9 Electrical supply

⇒ See [Electrical manual](#)

Description	Characteristics
Voltage	230 V ± 5%
Frequency	50 Hz ± 5%
Back-up fuse	13 A
Nano-PK power consumption (eC) <sup>1</sup>	max. 71 (87) W

- The electrical supply may only be established by a licensed and authorised electrician and must be in accordance with the enclosed electrical manual
- Attach a lockable main power switch outside the boiler room (as per building regulations)
- Max. back-up fuse **13 A** (C type)
- It is absolutely imperative that the intrinsically safe cables are permanently installed
  - Use suitable mechanical fixing material
- Establish mains supply L and N (see electrical manual)
- Connect equipotential bonding conductor
- Use highly flexible cables (e.g. H05VV-F)

<sup>1</sup> Calculated in accordance with the EN 303-5 testing requirements without the pumps and fuel extraction system

# Chapter II: Safety regulations

## 1 General safety regulations

### 1.1 Obligation to instruct, external visitors and children

#### DANGER

##### Danger to life

##### Risk of death, injuries, damage due to improper use by unauthorised persons

- Observe the safety instructions of the system and in the operation manual.
- Read the user manual prior to commissioning.
- Only let qualified and trained staff work on the system.
- Decide who is responsible for managing the system.
- Keep external, unauthorised people away from the system and the storage room.
- Do not disclose access codes for the control unit.
- Observe the legal minimum age of staff.
- Place prohibition sign on boiler room door and fuel storage door.

#### DANGER

##### Risk of suffocation

##### Risk of suffocation from odourless carbon monoxide

- Ventilate sufficiently before entering the storage room.
- Keep the windows and doors open while inside.
- Position second person outside to supervise.

Work on the boiler's electrical parts must only be carried out by an electrician and in accordance with the electrical engineering regulations.

Work on hydraulic systems must be carried out only by personnel with specialised knowledge and experience in heating engineering and pipework construction.

### 1.2 Special measures prior to commissioning by the operator

- Observe your local official regulations for system operation and accident prevention
- Carry out the required checks prior to commissioning  
⇒ „Checks prior to commissioning“, p. 12
- Carry out the required checks before switching the system/boiler on  
⇒ „Inspections before starting up the boiler“, p. 12

## 2 Remaining risks

The following residual risks must be particularly taken into account when the system is operated properly and in accordance with its intended purpose:

#### DANGER

##### Risk of burns, risk of scalding

##### Burns due to hot surfaces or hot ash

- Shut down the system and let it cool down before carrying out any maintenance or servicing work.
- Do not reach into the system during operation.
- Wear heat-resistant safety gloves. The ash in the ash container stores heat.
- Do not empty hot ash into dustbin.
- Put hot ash in closed, not-flammable vessels only.

##### Scalds due to sprinkling, hot water

- Check all lines, hoses and connections regularly for leaks and any other damage visible from the outside.
- Rectify damage immediately.
- Before performing any maintenance work on the water circulation system, depressurise the system.
- Check that all valves are in the correct position.

#### DANGER

##### Risk of fire, explosion and deflagration

##### Dust explosion due to electro-static charging in the storage room

- Ensure that the pellet hoses are earthed.
- No motors in the storage room (acc. to country-specific regulations).
- No other ignition sources (light) in the storage room.
- No electrical equipment (switches) in the storage room.
- No welding works in a dusty environment.

#### DANGER

##### Risk of fire, explosion and deflagration

##### Burns from explosive combustion of residual gases (CO)

- Carefully open the maintenance door slightly first.
- Keep your body and face away from the maintenance door.
- Do not open the maintenance door during or immediately after a power failure, as this increases the risk of deflagration.
- Do not open the maintenance door in heating mode.

**⚠ DANGER****Risk of injury****Risk of crushing and amputation due to moving parts**

- Refrain from accessing augers or motors when the boiler is switched on.
- Do not work on the system while people are in the danger zone. Secure and lock storage room.
- Only clean the augers and remove blockages using suitable tools and when the system is switched off.
- Only eliminate cavity formations using rods or shovels.
- Wear safety shoes.
- Observe the storage room sticker.

**⚠ DANGER****Danger to life****Electric shock from contact with live terminals**

- Only operate with safety devices and cover parts mounted and functional. Parts of the Nano eCleaner carry a high voltage.
- Observe information signs.
- Before starting work, check that no voltage is present using a voltmeter.

**⚠ DANGER****Risk of poisoning and suffocation****Death, poisoning or suffocation due to flue gas in the boiler room or in the building**

- Check system doors and seals for leaks.
- Burning treated wood (paints, varnishes, waterproofing) creates toxic ash. Avoid skin and eye contact.

**⚠ WARNING****Risk of injury and/or material damage****Injuries and/or damage due to unexpected operating conditions**

- When working in manual mode, limit switches and motors are not automatically monitored. Only run the augers backwards briefly (max. 2 seconds).
- Allow qualified and trained staff only to manually operate the system.

## 3.2 After a power outage

Do not open the boiler's doors or reach into it during a power failure.

- Danger of deflagration
- Danger of crushing by the augers

After the electrical supply is switched on again, the control starts in **Heat up** mode and monitors the flue gas temperature.

- If the flue gas temperature rises, the system heats up and regulates the transfer of heat according to the preset parameters

## 3.3 Leak in heating water system

When the water pressure is too low, not enough heat is transferred from the boiler to the heat circuits, the HWT and the accumulator.

- Danger of boiler overheating
- Stop heating up the boiler
- Fix leak
- Fill / refill water circulation system
- Check water pressure

## 3.4 Leaks in the system (escaping flue gas)

- Stop heating up the boiler
- Check the seals of the doors and cleaning covers, and have them replaced

## 3.5 Auger blockages

Do not touch the blocked augers.

- Danger of crushing from sudden release of blockage
- Briefly run the blocked auger backwards in manual mode (max. 2 seconds)
  - Danger of fuel being compressed in the auger
- Only clean the augers and remove blockages using suitable tools and when the main power switch is turned off and locked

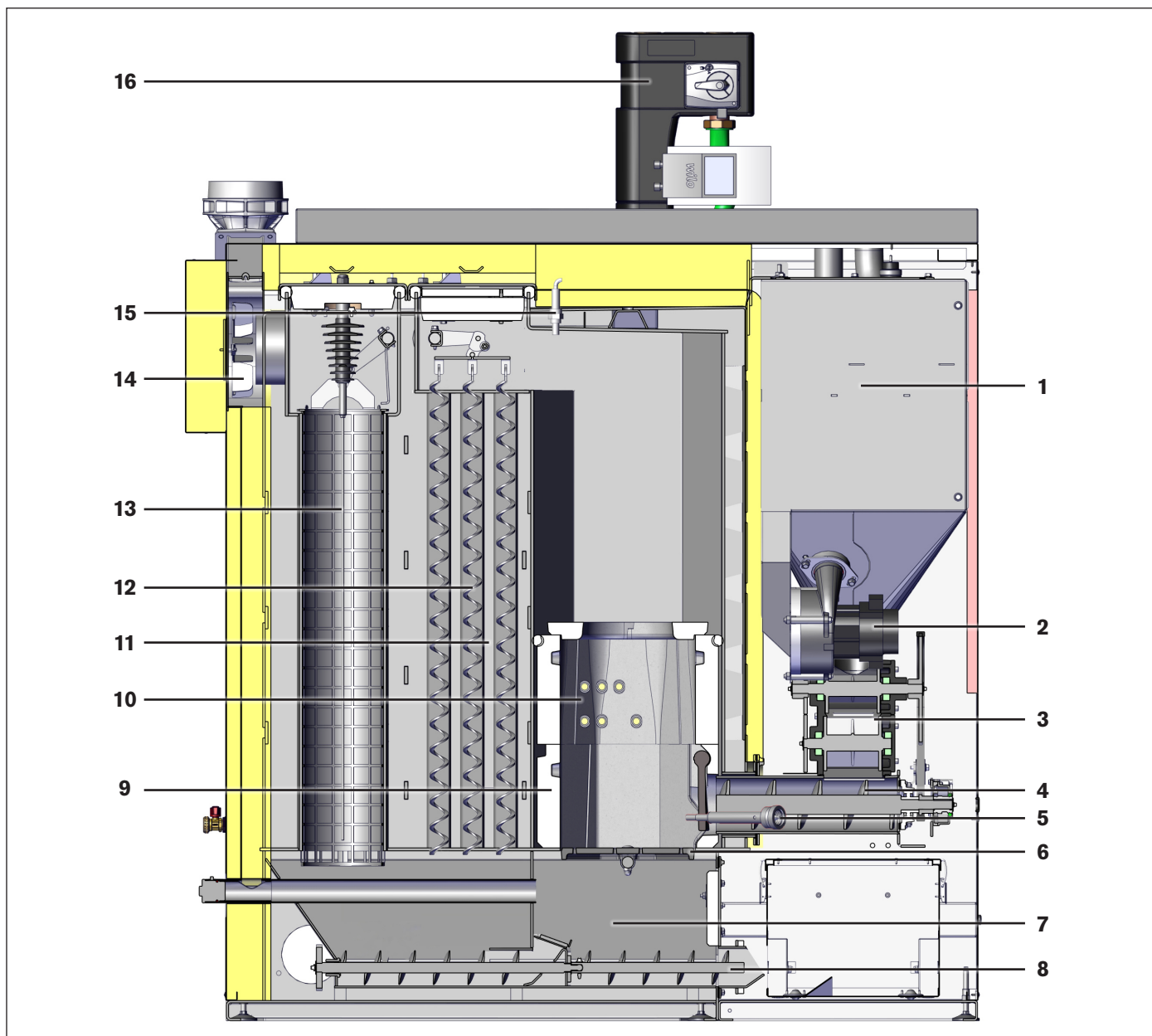
# 3 Measures in case of danger

## 3.1 Fire in the boiler room

- Switch off boiler emergency switch and disconnect power supply to boiler room
- Contact the fire service immediately
- Fight the fire with a fire extinguisher

## Chapter III: Operation

### 1 Overview of boiler components



Item	Description	Item	Description
1	Pellet day hopper with fill level indicator	9	Fully refractory-lined combustion chamber
2	Pellet vacuum turbine	10	Secondary air stream with inlet channels
3	Double rotary valve	11	Heat exchanger
4	Stoker auger	12	Turbulators with automatic boiler cleaning device
5	Automatic ignition	13	Nano eCleaner
6	Rotary grate	14	Exhaust fan
7	Primary air	15	Lambda sensor
8	Ash extraction system	16	Back-end protection unit

The system consists of the combustion chamber and the heat exchanger, and controls the combustion air with the exhaust fan. If a Nano eCleaner is installed, it reduces micro-dust emissions through electro-static charge.

The lambda sensor consistently monitors the flue gases. The integrated sensors monitor the temperatures of the system and the flue gas. The turbulators clean the heat exchanger using a rod.

The boiler cleans itself at regular intervals using the de-ash system. The ash extraction auger transports the fly ash, grate ash and residues of the Nano eCleaner into the ash box. The pellets are ignited by the automatic ignition.

## 1.1 Function

- Fuel transport from the storage room
- Transport of the fuel into the combustion chamber
- Ignition and combustion of the fuel
- Control of heat transfer to the heating-water system
- Cleaning of the boiler and the ash extraction into the box
- Evacuation of the flue gases

## 2 Prior to commissioning

### DANGER

#### Danger to life and risk of material damage

##### Death, personal injury and/or damage due to missing, defective or bypassed safety devices or system parts

- Check safety devices and system parts carefully to ensure they are working properly and as intended.
- Never modify or bypass safety devices.
- Perform repair measures immediately in case of a malfunction or defect.
- Place, position and function of all safety devices must be known.

### DANGER

#### Risk of injury

##### Injury and/or damage due to unexpected operating states

- Make sure that commissioning or start-up is performed by Hargassner GmbH or specially trained staff.

### WARNING

#### Risk of injury and crushing

##### Danger of crushing from moving system parts

- Make sure that no persons are in the danger zone.
- Do not reach into any reachable mechanical parts.
- Do not stand on the system.
- Make sure that no foreign parts (tools, etc.) remain in the system.

## 2.1 Checks prior to commissioning

- Safety on-site and plumbing and electrical installations
- Correct assembly of the boiler/system
- Check all necessary components
  - Check tightness, proper function, rotation of all motors, etc.
  - Check correct position of combustion chamber lining

## 2.2 Commissioning

Once the boiler has been installed properly and all the required safety devices have been checked, the boiler can be commissioned in accordance with the commissioning checklist in the inspection book.

### NOTE

The boiler must be commissioned by an engineer with a Hargassner commissioning certificate. The completed commissioning and handover report must be sent back to Hargassner Ges mbH with the commission number within 30 days of commissioning, otherwise the warranty becomes void. A copy remains in the commissioning book on-site.

## 2.3 Customer instructions

- Explain cleaning and maintenance intervals
- Explain inspections prior to each filling process
- Explain how to operate the boiler and resolve issues

## 2.4 Starting the boiler for the first time

The boiler can be started for the first time once commissioned.

- Switch the system to manual operation and fill the day hopper
  - Prevents an error due to missing fuel
- Switch the system to **Automatic** mode
  - Boiler starts automatically when hot water is needed

## 2.5 Inspections before starting up the boiler

- Check water pressure in boiler, heat, HWT and accumulator circuits
- Pay attention to the display for notifications (error messages and operating status)
- Rectify any errors
- Check and lock the fuel storage room

## 2.6 Procedure when filling the fuel storage room

### NOTE

Protect fuel against moisture.

### WARNING

#### Fire hazard

##### Danger of flue gas being sucked in from the system

- Always switch off the system before blowing pellets into the storage room.

## 3 Control unit



### Risk of injury

#### Injury and/or damage to the system due to unexpected operating states

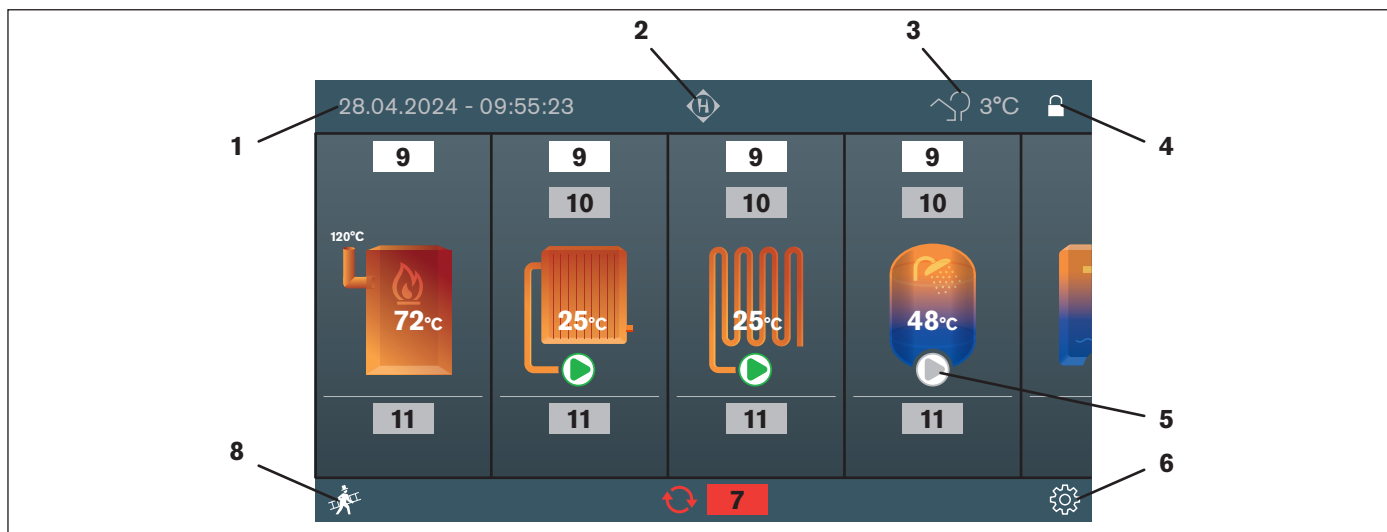
- Only allow trained staff to operate the control unit.
- Access to all functions of the control unit is protected by codes. Codes may not be disclosed to third parties.

### 3.1 Touchscreen

The control unit is designed as a touchscreen and it is operated using finger pressure on the display

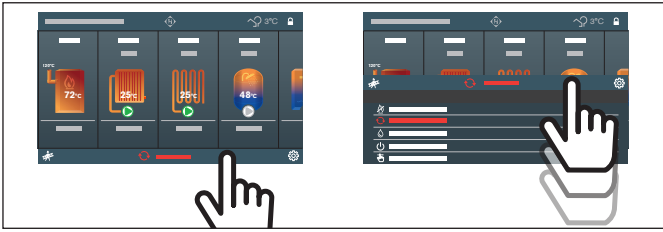
- Switch between menus by swiping up and down
- Activate the input field by pressing the value
  - Values are displayed in Red
  - If the set value differs from the factory setting, it is also displayed in Red in the menus
- Change the values with + and -
- To enter or save any changes, press
- Cancel the change with
- Back to the previous menu with
- Display the change history with
- More information about the current page with

## 4 Standard menu view



Item	Description	Function
1	Date and time	Display of the current date and time.
2	Hargassner logo	Press on the logo to display the system data.
3	Outdoor temperature	Display of the current outside temperature. Press the symbol to display the temperature forecast for the next 3 and 6 hours.
4	Log in or log out	Display of the logged in user group. <ul style="list-style-type: none"> <li>▪ Lock: Customer</li> <li>▪ Green person: Commissioning engineer</li> <li>▪ Yellow person: Service</li> </ul> Log in and log out by pressing the symbol.
5	Pump	Pump operating mode <ul style="list-style-type: none"> <li>▪ Green: Pump is running</li> <li>▪ Grey: Pump has stopped</li> </ul>
6	Settings	Switch to the various settings menus. <ul style="list-style-type: none"> <li>▪ Customer</li> <li>▪ Installer</li> <li>▪ Service</li> <li>▪ Setup</li> <li>▪ Parameters</li> <li>▪ System configuration</li> </ul>
7	Operating mode	Display and selection of the current operating mode. <ul style="list-style-type: none"> <li>▪ Heat production Off</li> <li>▪ Automatic</li> <li>▪ Hot water tank</li> <li>▪ Off</li> <li>▪ Manual operation</li> </ul>
8	Test mode (chimney sweep)	By pressing the test mode button, a special boiler status programme is started to measure the flue gas consistency.
9	Designation	Designation of the system component displayed in each case.
10	Name	Selectable name of the system component displayed in each case.
11	State	State of the system component displayed in each case.

## 5 Operating modes



☐ To select the operating mode, swipe the bottom bar upwards

### Heat production Off



Button for switching off firing. Firing can be switched off immediately or at a preset time.

→ Control of the heat circuits with the pumps and mixer continues; only firing is switched off

### Automatic



Standard mode in which the heating system is operated according to the preset temperatures and on and off times.

### Hot water tank



The heating system is only used to heat up the domestic hot water, not to heat up any floor heating system or radiators. Heat circuits are not controlled (except for frost protection function).

→ Pumps **Off** and mixers **Closed**

### Off



The boiler is **Off** and heat circuits are not controlled (except for frost protection function).

→ Pumps **Off** and mixers **Closed**

The boiler only controls the generation of external heat and delivery to the accumulator.

The exhaust fan is activated when the cover door is open.

### Manual operation



Allows various actions to be carried out manually, such as manual activation of individual pumps and mixers. Also shows additional information and values.

The Standard menu view is kept in the Automatic, Hot water and OFF operating modes.

## 6 Flue gas measurement



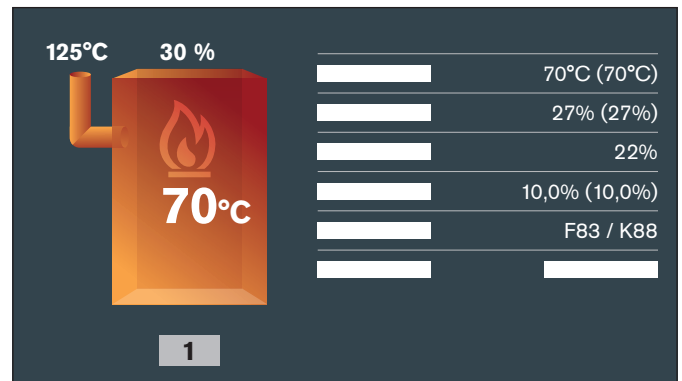
Press the test mode button to start the menu for emission measurement.

If an accumulator is present, only a full load measurement can be carried out. If there is no accumulator, you can choose between full load and partial load measurement.

If the accumulator is loaded, it can be emptied via the boiler and the heat circuits using the **Empty accumulator** button. If the flue gas measurement is to take place at a specific time, the time is set using the **Select time** button. Accumulator loading starts automatically 1 hour before this entered time.

The exhaust gas measurement is started automatically with the **Full load** or **Partial load** buttons.

## 7 Boiler statuses



The control unit uses the temperatures and flue gas values to detect the status **(1)** of the boiler. This status is displayed in the boiler's Info menu and in the associated widget.

### Off

The boiler switches to the status **Off** if there is no demand from the heat circuits or HWTs or if the accumulator covers the demand.

### Ignition monitoring

Fuel is transported into the combustion chamber and the system monitors if autonomous ignition occurs due to residual embers

### Ignition

The electric ignition starts and the fuel is ignited.

### Combustion

The control unit controls the exhaust fan (air volume) according to the heat demand and required boiler temperature, and the optimum fuel amount according to the lambda sensor signal.

### Burnout

The control unit regulates the burnout according to the O<sub>2</sub> content and the set burnout times.

### Slumber mode

If the heat demand drops below the minimum boiler output, the boiler switches to **slumber mode**.

### De-ash in x min

When the maximum combustion time is reached, the combustion chamber is burnt out and the de-ash process starts.

### **De-ash**

The grate is opened and closed again twice. The auger transports the ash into the ash box. The boiler returns to the required state afterwards.

### **Cleaning**

After each de-ash the grate opens completely and the turbulators clean the heat exchanger.

The ash falls into the ash extraction system and the boiler returns to the required status afterwards.

### **Filling pellets in**

If the minimum auger runtime and the set suction time are reached or the maximum auger run time is exceeded, the filling will be started after the displayed time.

### **Refill pellets**


The pellet vacuum turbine is started and the day hopper is filled with pellets again. The boiler returns to the required state afterwards.

### **ABS Automatic blockage protection**

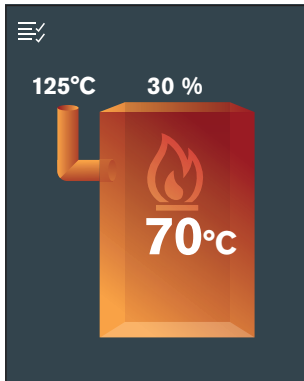
Exhaust fan ash auger and cleaning device are started (duration 10 seconds). The touch screen displays **Caution, ABP function is starting**.

→ During the **ABP** state, do not switch off the boiler, do not open the doors or reach into the boiler

## 8 Info menu

- Swipe down in the Standard menu
- Switch between menus by swiping up and down
- In the respective Info menu, press the  symbol to go straight to the settings

### 8.1 Boiler



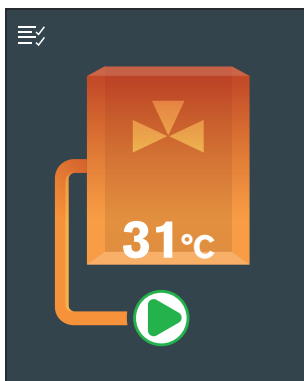
Info page about the current target and actual values of the boiler.  
→ The values in brackets are the target values

### 8.2 Fuel storage room



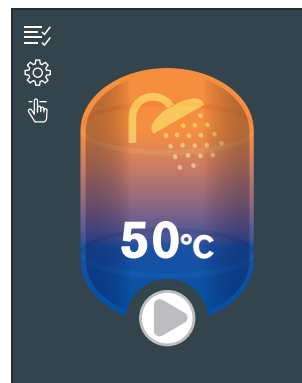
Display of the current filling quantity in the fuel storage room.

### 8.3 Back-end protection unit



Display of the current return temperature.

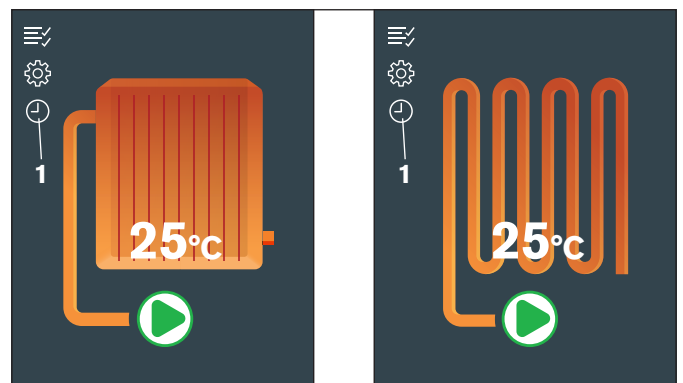
### 8.4 Hot water tank



Display of the current hot water tank temperature.

→ Press the **One-off loading** button  to recharge the HWT once to its target temperature

### 8.5 Heat circuit



Shows the status of the heat circuits and the current heat circuit temperature. One heat circuit is displayed per page. If there are several heat circuits, several info pages are available in the menu. If the mixer pump is running, this is indicated by a green pump icon.

Selection of the heating mode with the heating mode button (1).



#### Off (2)

The heat circuit is switched off (except for frost protection function).

#### Automatic (3)

The heat circuit runs according to the timer programme's settings.

#### Continuous reduction (4)

The room temperature is continuously being reduced to the preset room temperature (reduction mode).

#### Continuous heating (5)

The room temperature is continuously being heated to the preset room temperature (heating mode).

#### 1x heating (6)

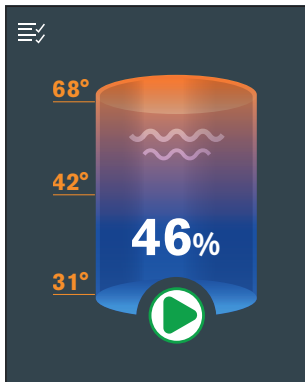
The heat circuit heats the room temperature to the target value (heating mode) and switches back to the automatic timer programme during the next heating cycle (or after 24 hours at the

latest).

### 1x reduction (7)

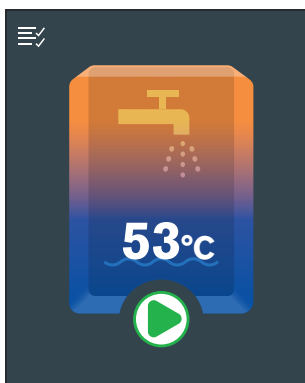
The heat circuit reduces the room temperature to the target value (reduction mode) and switches back to the automatic timer programme during the next heating cycle (or after 24 hours at the latest).

## 8.6 Central accumulator



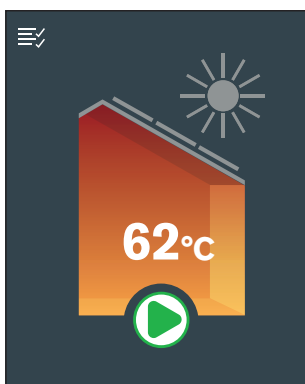
Display of the current filling level and the sensor temperatures.

## 8.7 Fresh-water station



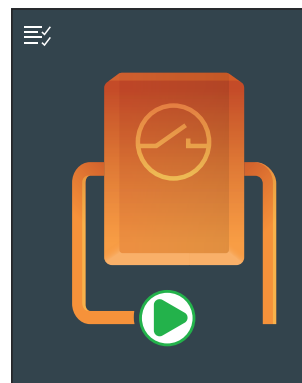
Display of the current outlet temperature of the hot water.

## 8.8 Solar



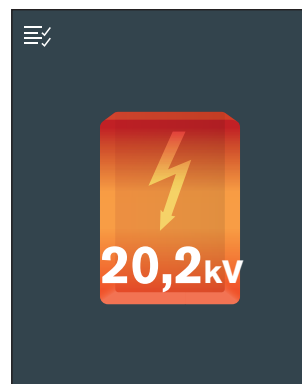
Display of the current return temperature of the collector.

## 8.9 External heat circuit



Display of the current state of the external pump.

## 8.10 eCleaner



Display of the current eCleaner voltage.

## 8.11 Web

Info page for connecting with the APP.

- Press the button to request the app code
- Scan the QR code with your mobile phone
- Follow the steps in the APP


## 8.12 Counter

List of current operating hours of the individual components.

## 8.13 Serial number

Overview of the relevant system data.

# 9 Widgets

Widgets display the statuses and the most important data and statuses of the individual system components in the Standard menu. The  button can be used to add or remove widgets and data from the corresponding pages of the Info menu.

## Arrangement of the widgets in the Standard menu



- Press the widget for approx. 2 seconds  
→ Widget is highlighted in light grey after selection
- Drag the widget to the left or right and release at the desired position

## 10 Manual operation

### WARNING

#### Risk of injury and/or material damage




##### Injuries and/or damage due to unexpected operating conditions

- When working in manual mode, limit switches and motors are not automatically monitored. Only run the augers backwards briefly (max. 2 seconds).
- Allow qualified and trained staff only to manually operate the system.

Manual operation is used to check all the electrical functions. All drives can be controlled manually in the event of a fault or for inspection purposes.

- Select **Manual operation** mode
- ⇒ „Operating modes“, p. 15

#### Function buttons

- To activate a function, press or press and hold the  button
- To open mixers and air flaps, press or press and hold the  button
- To close mixers and air flaps, press or press and hold the  button

The buttons light up red during activation.

- To activate continuous operation, (2 minutes maximum) press the button twice when the service settings are activated

### 10.1 Functions in manual operation

#### Cleaning device

Grate opens completely and cleaning motor starts running.

#### Ash extraction system

Manual forward or return of the motor.

#### Stoker motor

Manual forward and return to fill the stoker auger.

#### Vacuum turbine

Function check of the pellet vacuum turbine.

#### Refill pellets

Manual refilling of pellets.

#### Ignition

Function check of the ignition and fan.

- After a maximum of 1 minute, the coil should be hot
- The ignition switches off after 3 minutes at the latest

#### Exhaust fan

Function check of the exhaust fan.

#### Primary air flap

Function and position check of the primary air flap (target/actual).

- 100% - opened; 0% - closed
- Position at both extremes 0% and 100%
- Open or close and monitor the actual value as it changes

#### HWT 1

Function check or manual operation of HWT pump 1.

#### Heat circuit 1

Function and rotation check of heat circuit mixer 1. Function check of heat circuit pump 1.

#### District line pump / external heat valve

Function check or manual operation of district line pump or booster pump.

#### Boiler circulation or accumulator pump

Function check or manual operation of the parametrised pump.

#### Fault lamp / ext. pump / district line pump

Function check or manual operation of the external output.

#### Back-end protection unit

Function and rotation direction check of return mixer.

#### Lambda sensor

For testing the lambda sensor.

- Press Test start

After the preset periods of time, a correction value must be displayed. If the value is not reached, the message "Lambda sensor defective" will be displayed.

- After the test, tighten the lambda sensor sufficiently and reinsert the flue gas sensor

#### eCleaner

Function check of the eCleaner.


- Manual adjustment with + and - of U-HV

The value in brackets must be reached.

#### Sensor / counter

Display of the current sensor values and counter hours depending on the set heating system.

# 11 Settings menu

Press the  button on the Standard menu to access the Settings menu.

- Customer
- Installer
- Service
- Setup
- Parameters
- System configuration

## 11.1 Customer

This button will take you to the configuration screens, which can also be accessed by swiping up in the Standard menu.

⇒ „Customer settings“, p. 22

## 11.2 Installer

Permits advanced system settings and is only available to commissioning engineer and Hargassner service personnel. The individual parameter settings depend on the respective heating system configuration.

Code: 33

⇒ „Commissioning settings“, p. 25

## 11.3 Service

Allows more parameter details to be changed and is only available to service personnel. The individual parameter settings depend on the respective heating system configuration.

→ Commissioning engineer and service settings are protected by a PIN code. Only service personnel can use them, as the parameters may impair the functionality of the heating system if poorly selected

## 11.4 Setup

### 11.4.1 Boiler

#### Device name

Entry of the device name.

### 11.4.2 Display

#### Display standby

Activates or deactivates standby mode.

**Accumulator status** shows the current accumulator loading in standby mode.

#### Standby time setting

The display switches to standby mode after the set time.

#### Home view time setting

The display switches to the Home view after the set time.

#### Slideshow start

The display switches to slideshow mode after the set time.

#### Slideshow screen change

The display switches to the next screen after the set time.

#### Brightness

Setting the display brightness.

#### Display lock code selection

Select whether a lock code to unlock the display must be entered.

#### Display lock code

Enter 4-digit code.

#### Brightness in case of errors

Setting the display brightness in case of errors.

#### Date and time

Setting the date and time.

### 11.4.3 Network

#### Obtain IP address

Selection of whether the IP address is generated manually or automatically.

#### Remote control release

Selection of whether the boiler can be accessed remotely.

## 11.5 Parameters

Overview of all used parameters.

## 11.6 System configuration

Allows you to configure the system during commissioning and select which components are present in the heating system.

## 12 Customer settings

- Swipe up in the Standard menu
- Activate the input field by pressing the value
  - Values are displayed in Red
- Press the + and - buttons to set the values, the display flashes
  - Press and hold the + or - buttons to adjust the values quickly
- To enter or save any changes, press

### 12.1 HWT control

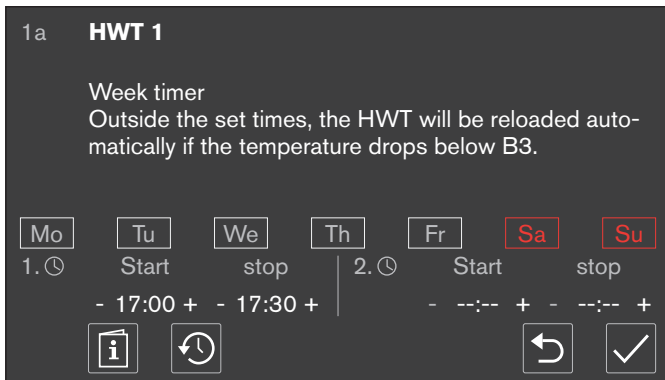
The day clock is set to weekly clock and the number of blocks is changed in the commissioning engineer settings (parameter D9 & D10).

#### No. 1 HWT 1 day timer



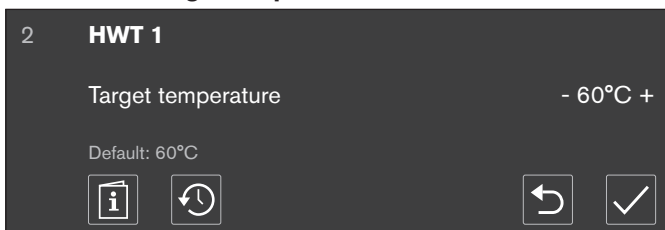
Setting the loading times of the HWT using the day timer.

#### No. 1a HWT 1 week timer



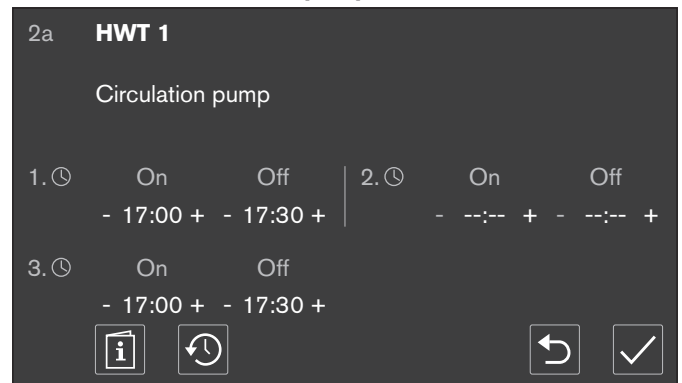
Setting the loading times of the boiler using the week timer.  
→ Selected day = red

#### No. 2 HWT 1 target temperature



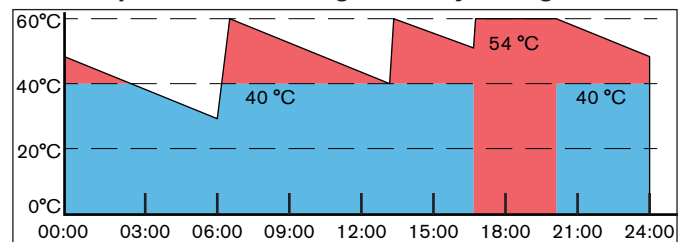
HWT loading is done only during the set loading times.

#### No. 2a HWT 1 circulation pump



Setting the switching times of the circulation pump (if available).

#### HWT temperatures according to factory settings



HWT loading starts as soon as the HWT temperature drops below 40 or 54°C.

## 12.2 Control of heat circuits

The day clock is set to weekly clock and the number of blocks is changed in the commissioning engineer settings (parameter D9 & D10).

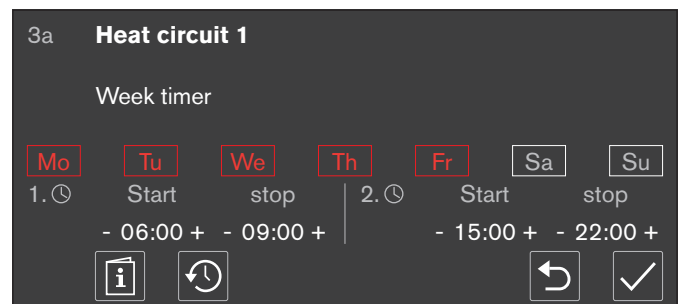
#### No. 3 Heat circuit 1 day timer



Setting the heating times using the day timer.

→ The selected times are the same for all weekdays

#### No. 3a Heat circuit 1 week timer



Setting the heating times using the week timer.

### No. 11 All heat circuits Off above outside temperature

11 **All heat circuits off**

above outside temperature - 16°C +

Default: 16°C

If the average outside temperature exceeds the set value, the heat circuits will be switched off (summer shut-down).




→ Only activated if parameter D12 is set to **All HC together** in the commissioning engineer settings

### No. 12 All heat circuits off during day reduction

12 **All heat circuits off**

above day reduction - 8°C +

Default: 8°C

If the average outside temperature exceeds the set value in day reduction mode, the heat circuits will be switched off.





→ Only activated if parameter D12 is set to **All HC together** in the commissioning engineer settings

### No. 13 All heat circuits off during night reduction

13 **All heat circuits off**

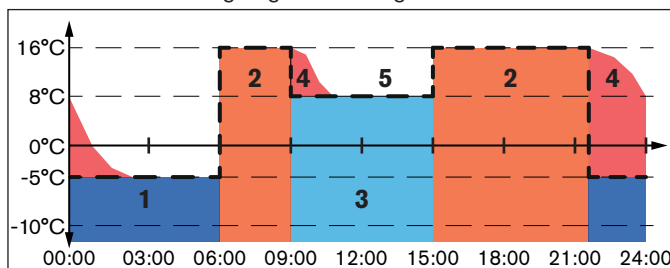
above night reduction - 5°C +

Default: -5°C

If the average outside temperature exceeds the set value during the night reduction time, the heat circuits will be switched off.

→ Only activated if parameter D12 is set to **All HC together** in the commissioning engineer settings

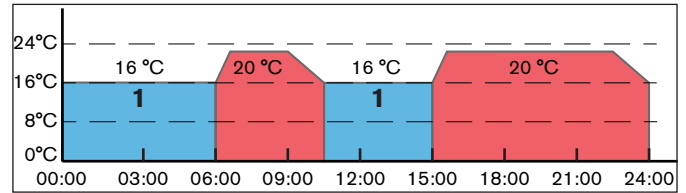


Item	Description
1	Night reduction active
2	Heating active
3	Day reduction active
4	Residual heat
5	Off

### No. 4 Day room temperature

### No. 5 Reduced room temperature

Setting the desired set temperature in the room.



Example: On and off switching times according to factory settings for day and reduced room temperature (1).





## 12.3 General settings

### Nr. 14 Filling pellets

14 **Automatically fill and suction times**

a. b. c. d.

- 19:00 + - --:-- + - --:-- + - --:-- +

Setting the pellet filling times in the pellet day hopper.

### No. 15 Holiday mode


15 **Holiday mode**

Default: Deactivated

Frost protection

Inactive

Reduction

Setting the holiday mode function.

### No. 16 Holiday time start

16 **Holiday time**

from

Date 04.04.2024 >

Time 10:09 >

Activated

Setting the holiday time during which holiday mode is started.

### No. 17 Holiday time end

17 **Holiday time**

until

Date 07.04.2024 >

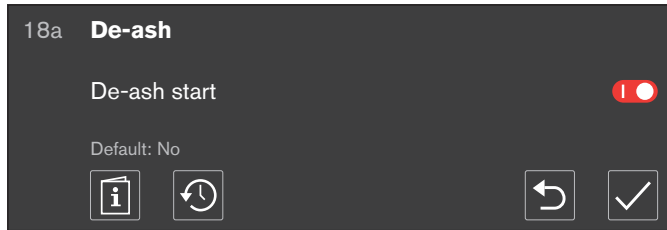
Time 11:20 >


Activated


   

Setting the holiday time during which holiday mode is ended.

### No. 18a Start de-ash



Use the slide control  to start the de-ash and cleaning process.

→ Only activated if parameter D50 is set to  in the commissioning engineer settings

### No. 21b Remote control release



Used to set whether the operating modes of the boiler can be controlled via the app.

### No. 22 Firing Off



Used to set the date and time for when firing is switched off.

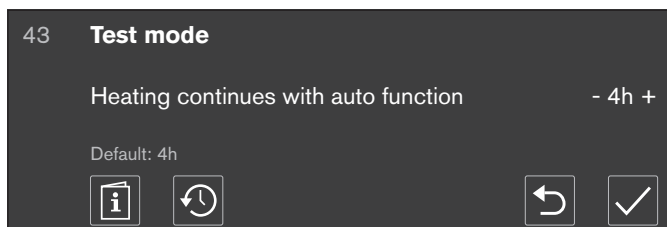
→ e.g. if test mode is logged on

### No. 42 Select test mode time



Used to set when test mode starts. The boiler switches off automatically.


### No. 43 Test mode auto function



Used to set the time after which the boiler starts automatically.

→ After the time of customer setting No. 42

## 13 Commissioning settings

- In the Standard menu, press the  and **Commissioning engineer** buttons
- Release by entering the code: 33

### 13.1 Parametrising the heat circuits and HWT

The parameters of the heat circuits, HWTs, heat circuit modules and the heat circuit board are only displayed when hardware is connected.

#### Standard parameters (on the boiler board)

- Heat circuit 1 (No. A1 - No. A10)
- Heat circuit 2 (No. A11 - No. A20)
- HWT 1 (No. B1 - No. B9b)

#### Heat circuit module 1 (HKM 1)

- Heat circuit 3 (No. A21 - No. A30)
- Heat circuit 4 (No. A31 - No. A40)
- HWT 2 (No. B11 - No. B19b)

#### Heat circuit module 2 (HKM 2)

- Heat circuit 5 (No. A41 - No. A50)
- Heat circuit 6 (No. A51 - No. A60)
- HWT 3 (No. B21 - No. B29b)

#### Heat circuit board (HC A)

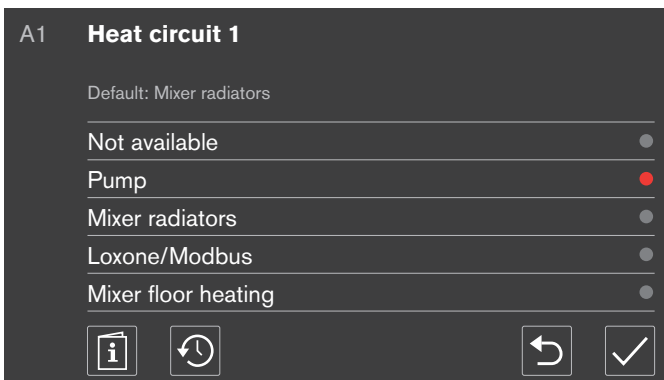
- Heat circuit A (No. A61 - No. A70)
- HWT A (No. B31 - No. B39b)

#### Heat circuit board (HC B)

- Heat circuit B (No. A71 - No. A80)
- HWT B (No. B41 - No. B49b)

### 13.2 Parameter A - heat circuits

#### No. A1 Heat circuit 1 version



A1 **Heat circuit 1**

Default: Mixer radiators

- Not available
- Pump
- Mixer radiators
- Loxone/Modbus
- Mixer floor heating

5 options:

- Heat circuit not available
  - Heat circuit with pump
  - Heat circuit with pump and mixer motor for radiator heat circuit
  - Heat circuit control by Loxone/Modbus
  - Heat circuit with pump and mixer motor for floor heat circuits
- Press **Enter name** to assign a different name to the heat circuit

#### No. A2 Heat circuit 1 steepness heating curve



A2 **Heat circuit 1**

Steepness

Calculated flow target temperature: - 1,60 +  
30,0°C

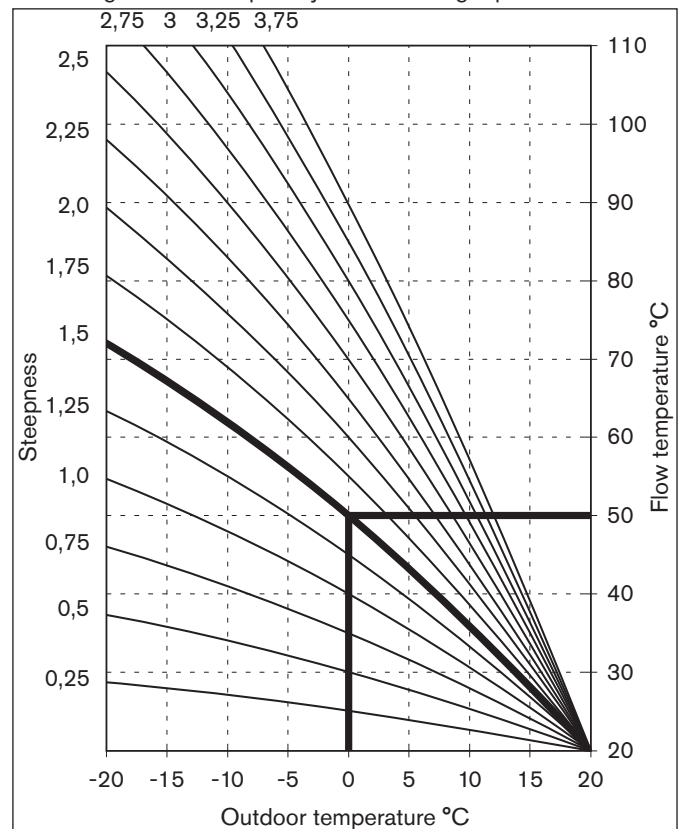
Default: 1.6

Describes the relationship between flow and outside temperatures (see heating curve).

Recommended settings:

- Floor heating: 0.3 - 1.0
- Radiator heating: 1.2 - 2.0
- Convector heating: 1.5 - 2.0

→ Change in small steps only and for a longer period



#### No. A3 Heat circuit 1 flow temperature minimum

Minimum limit for heat circuit 1 flow temperature.

→ This flow temperature won't be underrun in heating or reduction mode

#### No. A4 Heat circuit 1 flow temperature maximum

Maximum limit for heat circuit 1 flow temperature.

→ This flow temperature won't be overrun in heating or reduction mode

→ Floor heating: Integrate an additional electromechanical thermostat which interrupts the power supply to the relevant heat circuit pump

#### No. A5 Heat circuit 1 mixer runtime

Input of the actual mixer runtime (see type plate).

→ Duration from closed to open condition

#### No. A6 Heat circuit 1 remote control

7 options:

- Not available

- Heat circuit with analogue remote control FR25
  - Heat circuit with digital remote control FR35
  - Heat circuit with digital remote control FR40
  - External switch contact on terminals 54 and 55 or terminals 56 and 57
  - KNX
  - Modbus
- The terminals must be closed in order to be able to start heating operation

#### No. A6a, A6b and A6c Heat circuit 1 remote control with room sensor

The remote control can be installed with or without a room sensor.

- Heat circuit with analogue remote control **FR25 without room sensor**
  - No automatic adjustment of the room temperature
  - Wire FR25 at terminals 1 and 3 on the main board
- Heat circuit with analogue remote control **FR25 without room sensor**
  - Automatic adjustment of the room temperature
  - Wire FR25 at terminals 1 and 2
- Heat circuit with digital remote control **FR35** or **FR40**
  - If **FR35** is set, parameter **A6b** appears
  - If **FR40** is set, parameter **A6c** appears

The settings made here influence what is displayed on the remote control.

#### No. A6e Heat circuit 1 pump shutdown after room temperature is exceeded

- **Deactivated:** Standard heat circuit control
- **Activated:** If the room temperature is exceeded, the heat circuit pump switches **Off** and the mixer is **Closed**

#### No. A7 Heat circ. 1 district line pump

A district line transfers the temperature 1:1 to the district line network. With a controlled district line, the temperature is regulated down to a specific set temperature. The district line pump transports the hot water to the heat circuit pump and from there to the heat circuit.

#### No. A8 Heat circuit 1 summer bath heating

The heat circuit is activated at heating time (A8b) and supplied with temperature (A8c) until the accumulator tank has dropped to the minimum temperature (A8a). The heat circuit is then switched off.

When **On** is selected, **A8a - A8c** customer parameters appear.

→ Only works in HWT operating mode

#### No. A8a, A8b, A8c and A8e Set values of summer bath heating for accumulators

- **A8a:** Accumulator minimum temperature with setting option for 2 times
- **A8b:** Switch-on and switch-off times
- **A8c:** Flow set temperature
- **A8e:** Sensor selection

#### No. A9 Heat circuit 1 screed

Activation of screed dry-out function for the corresponding heat circuit. Pressing the **Heating curve** button will take you straight to parameter A100.

- When **On** is selected, customer parameters **A100 - A104** appear

#### No. A11 Heat circuit 2 version

Second heat circuit on the control unit.

- **A21, A31:** When using a heat circuit module 1
  - **A41, A51:** When using a heat circuit module 2
  - **A61:** When using a heat circuit board A
  - **A71:** When using a heat circuit board B
- Options: See heat circuit 1 (**A1 - A9**)

#### No. A99 Heat circuit accumulation

If this function is activated, the boiler will temporarily increase the heat circuit's flow temperature instead of switching to slumber mode. A greater heat consumption is generated as a result, which enables the boiler to stay on full load longer if an accumulator is not available.

#### No. A100 Screed temperature phases

Specifies the number of phases used to increase the temperature for the screed heating process.

#### No. A101a Screed graph (all HCs)

The target temperature and holding period can be specified for each phase.

#### No. A103 Screed hysteresis

If the flow temperature drops below the screed heating target temperature by this value, the timer for the holding period will be stopped and won't resume until the target value has been reached.

## 13.3 Parameter B - HWT

#### No. B1 HWT 1

3 options:

- Not available
- Available
- Loxone/Modbus

→ Control of HWT 1 by the Smart home control unit

→ If No. B1 is set to **Not available**, No. B2 - B7 are not displayed

Press on **Enter name** to name each HWT separately

#### No. B2 HWT 1 hysteresis

Value at which the HWT is switched on below the set minimum temperature.

#### No. B3 HWT 1 HWT temperature minimum

Lower HWT limit temperature. If the HWT temperature drops below the preset value, HWT loading starts within the set time (installer parameter no. B90) and independent of the HWT time programme (customer parameter no. 1).

#### No. B4 HWT 1 legionella protection

Legionella are bacteria that are dangerous to humans and can develop at low temperatures and in stagnant water (e.g. holiday homes). The legionella protection programme heats the hot water to a certain temperature at which legionella cannot survive.

#### No. B5 HWT 1 Legionella protection target temperature

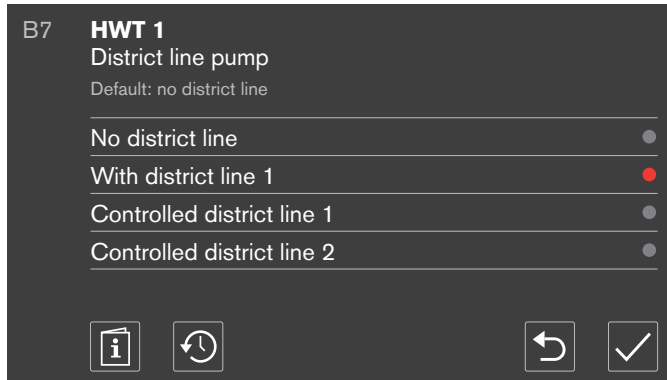
HWT target temperature for legionella protection.

→ Temperatures of 70°C or above for more than 3 minutes will kill all legionella in the HWT

#### No. B6 Legionella protection week programme

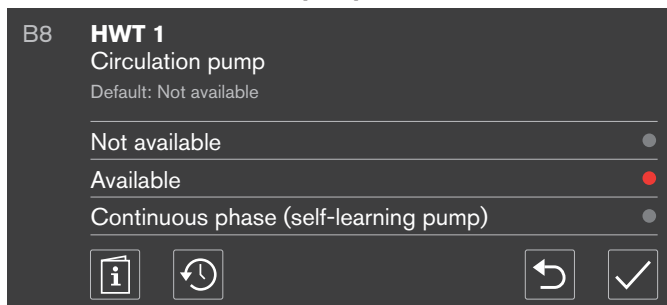
→ Start legionella protection programme during HWT loading only

## No. B7 HWT 1 district line pump



A district line transfers the temperature 1:1 to the district line network. With a controlled district line, the temperature is regulated down to a specific set temperature. The district line pump transports the hot water to the HWT pump and from there to the HWT.

## No. B8 HWT 1 circulation pump



A circulation pump is a circulating pump that circulates hot water in the circulation pipe, i.e. keeps it moving.

Self-learning pumps are always controlled. They recognise independently whether it is necessary to switch on and circulate.

## No. B8a HWT 1 circulation pump runtime

The runtime depends on the length of the heating pipes and on the heat loss (insulation) in the line.

## No. B8b HWT 1 circulation pump downtime

Defines the break time for the HWT circulation pump. After this break time has elapsed, the runtime set in commissioning engineer parameter B8a begins.

## No. B9 HWT 1 energy-saving mode

- **Not activated:** The HWT is loaded in accordance with the settings in the customer parameters
- **Activated:** The HWT is loaded regardless of the loading times if the following criteria are met for the set length of time (No. B9a) before setback/reduction:
  - HWT has nearly reached its minimum temperature
  - Outside temperature is higher than the temperature for day reduction
  - System is in lower partial-load operation (minimum output + 10%)

## No. B9a HWT 1 switch-on time of energy-saving mode

The HWT is loaded when the following criteria have been met for 30 minutes before reduction:

- Outside temperature above 16°C (customer parameter no. 5)
- HWT temperature below 50°C (commissioning engineer parameter no. B3 at 40°C + 10°C)
- Boiler output below 60%

## No. B9b HWT 1 pump runtime

Maximum pump runtime for HWT loading.

## No. B11 - B19b HWT 2

When using a heat circuit module 1

→ Options: See commissioning engineer parameters **No. B1 - B9**

## No. B21 - B29b HWT 3

When using a heat circuit module 2

→ Options: See commissioning engineer parameters **No. B1 - B9**

## No. B31 - B39b HWT A

When using a heat circuit board A

→ Options: See commissioning engineer parameters **No. B1 - B9**

## No. B41 - B49b HWT B

When using a heat circuit board B

→ Options: See commissioning engineer parameters **No. B1 - B9**

## No. B60 HWT priority operation

For quick HWT loading. For heat circuits with pumps, the heat circuit pumps are switched off throughout HTW priority operation. No heat is transferred from the boiler to the heat circuits. The heat circuit flow temperatures for heat circuits with mixers and pumps are reduced throughout priority operation.

## No. B90 Release HWT temperature minimum

Defines the time range in which the HWT is loaded when it falls below the minimum hot water tank temperature (commissioning engineer parameter B3) of the respective HWT. This happens independently of the respective HWT loading times from the customer settings.

### 13.3.1 Fresh-water station

## No. B106 Freshwater station 1

→ Set the parameter to **Available** if a freshwater station is available

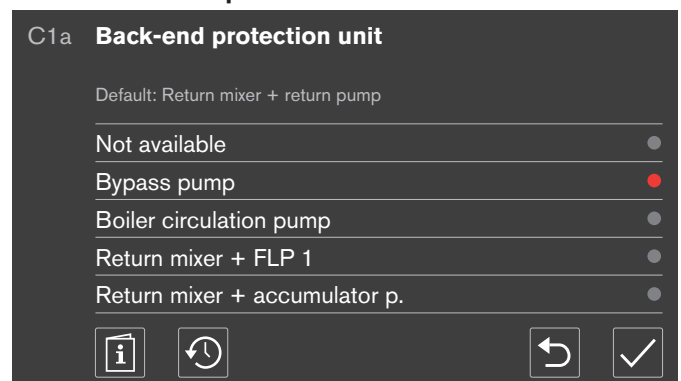
Commissioning engineer parameters **B104 - B104a** and **B106b - B108a** are only active if commissioning engineer parameter **B106** is set to **Available**.

- **B109 - B111a:** Freshwater station 2
- **B112 - B114a:** Freshwater station 3
- **B115 - B117a:** Freshwater station 4

⇒ To specify these settings, see the [FWS fresh-water station operation manual](#)

## 13.4 Parameter C - accumulator

### No. C1a Back-end protection



6 options:

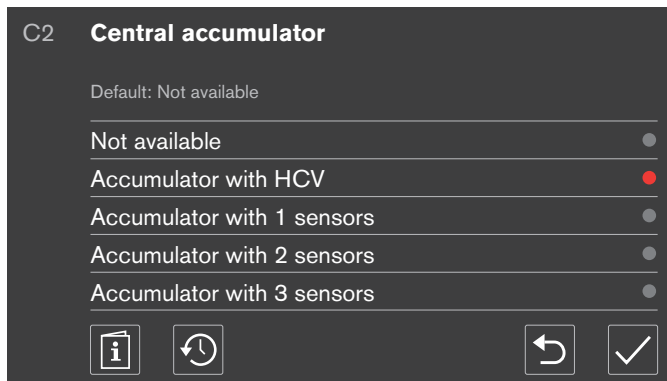
- Back-end protection not available
- Bypass pump

- Boiler circulation pump
- Return mixer with district line pump 1
- Return mixer with accumulator loading pump
- Return mixer with return pump (hydraulic separator)

### No. C1b Mixer runtime of return mixer

Specifying the actual mixer runtime.

### No. C2 Central accumulator



- Not available
- Central accumulator with heat circuit valve
  - For low-temperature heat circuits, (e.g. floor or wall circuits)
- Central accumulator with 1 sensor
  - For a hydraulic scheme with accumulator unloading control
- Central accumulator with 2 sensors
  - For a hydraulic scheme with loading and unloading control
- Central accumulator with 3 or 5 sensors
  - For an accumulator diagram with loading (partial-load operation) and unloading control

### No. C2a Central accumulator loading automatic

Used to specify whether the central accumulator should be loaded automatically.

### No. C2b Central accumulator volume

Used to set the central accumulator volume in litres.

### No. C2c Central accumulator filling level display

Used to specify whether the fill level of the central accumulator should be displayed in the home view, the central accumulator info page and on the screen saver.

### No. C3 Selection of hot water tank at central accumulator

- Accumulator / HWT internal (accumulator tank with integrated HWT - domestic hot water coil or external domestic hot water heat exchanger)
  - For on-site differential control between accumulator and HWT, set to **accumulator / HWT internal**
- Accumulator / HWT external (external HWT)

### No. C3a Sensor selection of central accumulator

Selection of the accumulator sensor connection:

- Accumulator sensor for boiler: Accumulator sensor will be connected to the main board
- Accumulator sensor for HKM 1 and 2: Accumulator sensor will be connected to the extension module

### No. C3b Central accumulator loading of internal hot water tank

Used to define which HWT is used as the internal HWT for the accumulator.

### No. C4 End central accumulator loading at temperature

Used to define the temperature, measured by the bottom accumulator sensor, above which central accumulator loading is

terminated. Due to hot water preparation, the sensor selected in commissioning engineer parameter C4b is used to end accumulator loading (summer switch-off, hot water tank operation).

→ Display only when commissioning engineer parameter C2 is set with **2, 3 or 5 sensors**

### No. C4a Central accumulator boiler target temperature for accumulator loading

Used to set the minimum boiler target temperature for accumulator loading.

→ Display only when commissioning engineer parameter C2 is set with **2, 3 or 5 sensors**

### No. C4b Sensor for ending central accumulator loading

Used to define which sensor is used for the temperature measurement (commissioning engineer parameter C4) to end accumulator loading. The selected sensor is only used to end accumulator loading (summer switch-off, HWT operation) due to hot water preparation, solar or external heat operation.

→ Display only when commissioning engineer parameter C2 is set with **2, 3 or 5 sensors**

→ Display of HWT sensor only when C3 commissioning engineer parameter is set to **HWT internal**

### No. C4c Central accumulator minimum temperature

Lower accumulator limit temperature. When the accumulator temperature is below the set value (top accumulator sensor), central accumulator loading starts.

→ C4c must be at least 10°C lower than C4a

### No. C4c1 Day timer for central accumulator minimum temperature

Defines the period in which the accumulator temperature C4c is monitored.

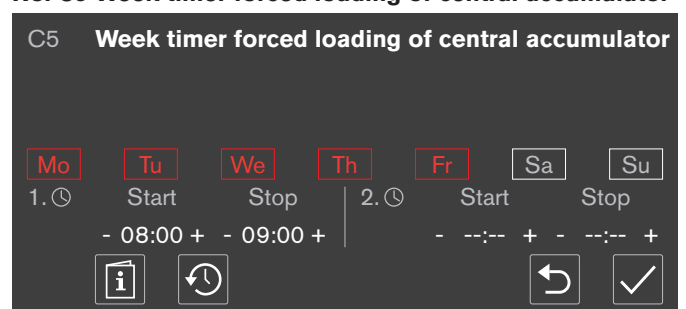
### No. C4d Central accumulator output reduction

When the preset central accumulator fill level is reached, the system output is reduced.

### No. C4e Central accumulator error recognition for accumulator sensor

A notice is issued when the mixer has been completely open for the set time and the temperature at the bottom accumulator sensor is 11°C below that of the return sensor.

### No. C5 Week timer forced loading of central accumulator



Used to set the time for central accumulator forced loading.

→ Display only if parameter C2 is set to **Accumulator with 2 sensors** or **Accumulator with 3 sensors**

→ Central accumulator is loaded at the set time regardless of the fill level

→ E.g. for peak loads in the morning

### No. C5a No forced accumulator loading at outside temperature

No central accumulator forced loading when the set outside

temperature is exceeded.

#### **No. C5c Boiler heat output for accumulator loading**

Defines the output to which the boiler is reduced once the temperature at the top accumulator sensor has reached the requested temperature.

#### **No. C6a External heat circuit target temperature**

Used to adjust the system set temperature for an activated external heat circuit.

→ If the value is changed and parameter C7 is set to **External pump**, service parameter L5 = 50 °C must be adjusted as well

→ L5 ca. 5 - 10 °C less than C6a

#### **No. C7 Function of terminal 83**

Set the function of the output at terminal 83 on the main board

- Fault lamp
  - Lights up for all faults
- External pump
  - System is heated to the temperature set in parameter C6a
  - External heat circuit pump is switched on at release temperature (service parameter L5)
- District line pump
  - District line runs when a heat circuit or HWT pump parameterised for **district line** is switched on

#### **No. C8 External heat circuit on district line pump**

A district line transfers the temperature 1:1 to the district line network. With a controlled district line, the temperature is regulated down to a specific set temperature. The district line pump transports the hot water to the external pump and from there to the external heat circuit.

#### **No. C9 External heat**

- Not available
- Oil or gas boiler
- Solid fuel boiler

#### **No. C30 Additional accumulator HKM1**

Defines whether an additional accumulator is present on the respective heat circuit module and how many sensors are used for measuring the accumulator temperature.

#### **No. C31e Additional accumulator volume**

Used to set the additional accumulator volume in litres.

#### **No. C31f Additional accumulator fill level display**

Used to specify whether the additional accumulator fill level should be displayed.

#### **No. C32 Selection of HWT on additional accumulator**

- Accumulator / HWT internal (accumulator tank with integrated HWT - domestic hot water coil or external domestic hot water heat exchanger)
  - For on-site differential control between accumulator and HWT, set to **accumulator / HWT internal**
- Accumulator / HWT external (external HWT)

#### **No. C33 End additional accumulator loading at temperature**

Used to define the temperature, measured by the bottom accumulator sensor, above which additional accumulator loading is terminated. Due to hot water preparation, the sensor selected in commissioning engineer parameter C33c is used to end accumulator loading (summer switch-off, hot water tank operation).

#### **No. 33a Additional accumulator heat source target temperature for accumulator loading**

Used to set the minimum heat source target temperature for accumulator loading.

#### **No. C33b Additional accumulator loading at each boiler start**

Indicates whether the accumulator is loaded when the boiler starts, although it could possibly still cover the demand.

#### **No. C33c Sensor for ending central accumulator loading**

Used to define which sensor is used for the temperature measurement (commissioning engineer parameter C33) to end accumulator loading. The selected sensor is only used to end accumulator loading (summer switch-off, HWT operation) due to hot water preparation, solar or external heat operation.

→ Display of HWT sensor only when C32 commissioning engineer parameter is set to **HWT internal**

#### **No. C33d Additional accumulator minimum temperature**

Lower accumulator limit temperature. When the accumulator temperature is below the set value (top accumulator sensor), additional accumulator loading starts.

→ C33d must be at least 10°C lower than C33a

#### **No. C33e Additional accumulator minimum temperature day timer**

Defines the period in which the accumulator temperature C33d is monitored.

#### **No. C33g Additional accumulator differential control**

With this function, the differential control between the central accumulator and the additional accumulator can be activated or deactivated.

#### **No. C34 Additional accumulator forced loading week timer**

Used to set the time for central accumulator forced loading.

→ Additional accumulator is loaded at the set time regardless of the fill level

→ E.g. for peak loads in the morning

#### **No. C34a No forced accumulator loading at outside temperature**

No additional accumulator forced loading when the set outside temperature is exceeded.

#### **No. C35 Output for pumps or zone valve for additional accumulator**

Defines which output for accumulator pump or zone valve is used for the additional accumulator connected to heat circuit module 1.

#### **No. C36 Additional accumulator on district line**

A district line transfers the temperature 1:1 to the district line network. With a controlled district line, the temperature is regulated down to a specific set temperature. The district line pump transports the hot water to the external pump and from there to the additional accumulator.

#### **No. C40 Additional accumulator HKM2**

Same settings as C30 - C36.

#### **No. CV3 Consumer at the central accumulator**

With this function, consumers can be assigned to the central accumulator.

#### **No. CV5 and CV6 Consumer at additional accumulator**

With this function, consumers can be assigned to the additional accumulator.

- The parameters are only displayed if an additional accumulator is available
- As only 1 additional accumulator is possible, only one of these parameters is displayed at a time

## 13.5 Parameter D - general

### No. D1 Operating mode of fuel extraction

7 options:

- Manual filling: Day hopper is filled by hand
- Suction and auger (RAS): Day hopper is filled automatically via auger and vacuum turbine
- Direct auger (RAD): System is automatically filled by the direct auger
- Point extraction: Day hopper is automatically filled by point extraction
- Auger and container: Day hopper is filled via direct auger
- Maulwurf Schellinger Classic and E3: Day hopper is filled automatically by Schellinger external extraction system

### No. D1a Changeover unit for feeding wood pellets

Used to set whether a changeover unit is available and how many suction points it has.

### No. D1b Position change of changeover unit

Used to define after how many days the changeover unit should change position.

### No. D1d Set the changeover unit's system

- Belimo (AUE)
- Step motor (AUP)

### No. D1e First suction process after filling the storage room

Used to define the first suction point after filling the storage room. After filling the storage room, the system starts at the current or first possible suction point according to this setting. The storage room can therefore always be emptied from one side.

### No. D1f Switching on the automatic pellet consumption display

When **Available** is selected, the extended **Fuel storage room** info page is enabled.

### No. D1g Air-independent operation

Set, if the pellet boiler is manufactured for air-independent operation.

- AIO note, see type plate

### No. D2 Frost protection

Heat circuit pumps are switched on when the value drops below the set value.

- Heat circuits with mixers are adjusted to the D3 commissioning engineer parameter temperature

### No. D3 Flow temperature with frost protection

Flow temperature when commissioning engineer parameter D2 is not reached.

### No. D4 Lambda sensor

- If the lambda sensor is defective, this setting can be changed to **Not available**

### No.D5 Changeover day reduction

Changeover point at which time the outside temperature reduction logic changes from night to day settings (customer parameters 12 and 13).

### No. D6 Cleaning device

Automatic cleaning is only performed within the set time.

- Irritating noise during the cleaning

### No. D7 Summer shutdown lock time of all heat circuits

If the outdoor temperature rises above 16°C for the duration of the set time (customer parameter no. 11), the system switches off.

### No. D8 Summer time

Automatic changeover of the system clock from summer to winter time.

### No. D9 Day timer/week timer

Display of day or week timer in the customer settings.

- Day timer: Heat circuits and HWT on day timer
- Week timer: Heat circuits on week timer, HWT on day timer
- HC + HWT week timer: Heat circuits and HWT on week timer

### No. D10 Number of blocks for the week timer

Defines the number of blocks for the week timer.

### No. D11 Holiday mode

Used to define whether one common switch-off time can be set for all the heat circuits or whether each heat circuit has to be given its own switch-off time.

### No.D12 Outside temp. shutdown

Used to define whether the outdoor temperature switch-off is the same for all heat circuits or can be set individually for each heat circuit. By selecting **separately**, the outdoor temperature switch-off can be set individually for each heat circuit. When selecting **all HC together**, the values set in customer parameter 12 apply to all heat circuits.

### No. D13 Outdoor sensor

Used to set whether an outdoor sensor is available.

- Set to **Not available** for active, external heat circuits

### No. D17 SD logging

Records the system's measurement data.

- Only visible when an SD card is inserted

### No. D23 Info / Trend

Used to specify whether the graphical representation of records in the **Info / History** menu field should be shown.

### No. D23g Heat quantity

Used to define whether a heat quantity calculation is carried out via the software and displayed in the info pages.

### No. D23h Pump strength of back-end protection

Defines the pump capacity for calculating the heat quantity.

### No. D24 Modbus activated

Used to set whether a Modbus is available.

- Only visible when a Modbus ID card is inserted

### No. D25 KNX activated

Used to set whether a KNX building controller is available.

- Only visible when a KNX ID card is inserted

### No. D32 Controlled district line

If there is a demand from a heat circuit, parameterised on a controlled district line, then the flow temperature of the controlled district line is increased by the set value.

### No. D33 Controlled district line mixer runtime

Mixer runtime from the closed to the open status.

### No. D40a Function of terminals 41 and 42

Set the function of the input at terminals 41 and 42 on the main board.

- Storage room switch
- External error
- External info

**No. D41 Text1 external error**

Text of the external error shown on the display.

**No. D42 Text2 external error**

Text of the external error shown on the display.

**No. D42a Input external error**

Used to set whether the external input is normally closed or normally open.

**No. D43 Text 1 external info**

Text of the external info shown on the display.

**No. D44 Text 2 external info**

Text of the external info shown on the display.

**No. D44a Input external notice**

Used to set whether the external input is normally closed or normally open.

**No. D45 Operating message output**

A lambda sensor detects the residual oxygen in the exhaust gas. It must heat up before operation in order to carry out the measurement correctly. If heating is active, an operating message signal is issued at the set terminal.

**No. D50 Customer manual de-ash**

Used to set whether de-ash can be carried out manually by the customer (customer setting No. 18a).

**No. D65 Error output**

Used to set whether the error output will emit a signal with info messages and errors or just with errors (terminal 83).

**No. D66 Heat circuit and HWT on the standard screen**

Used to select which heat circuits and HWTs will be displayed in the standard menu.

**No. D71 Pump on for frost protection**

Selection of the pumps that are active during frost protection.

**No. D73 Frost protection**

If the system is in frost protection and the boiler temperature or return temperature falls below this value, the return mixer is opened and the selected pumps (D71) are switched on.

**No. D75 Function of terminals 62 and 63**

Function for operating two boilers, which must never run simultaneously. The flue gas temperature monitoring (FGTM) is connected to the board of boiler 1 and installed in the flue pipe of boiler 2. If the flue gas temperature of boiler 2 is too high, boiler 1 is switched off.

External stoppage has the same effect with a switching contact.

**No. D80 Accumulator solar or external heat operation**

This function is used to enable solar or external heat operation. Solar or external heat operation is active for the period set in commissioning engineer parameter D80a. During this time, loading only takes place up to the accumulator sensor set in commissioning engineer parameter C4b.

**No. D80a Enable time for solar or external heat operation**

Used to define the period during which solar or external heat operation is active.

**No. D80b Temperature dropped below during solar or external heat operation**

Used to define how far the heat circuit demand may be undercut in

solar or external heat operation. If the temperature falls below the release temperature of the heat circuit pumps beforehand, accumulator loading is started as soon as the heat circuit pumps are switched off.

**No. D80c Accumulator loading for solar or external heat operation**

Used to define after how many combustions shorter than 30 minutes the accumulator is fully loaded.

**No. D90 eCleaner**

Used to select whether the Nano eCleaner is activated or deactivated.

## 13.6 Parameter E - languages

**No. E1 Language**

Language selection.

## 13.7 Parameter F - cascade

**No. F1 Cascade**

Defines whether a cascade is present.

**No. F2 Address**

Defines the cascade address of the boiler. The boiler with address **A** is the master boiler and controls the demand. Boilers **B-F** are slave boilers.

**No. F3 Priority**

Defines the order in which the boilers are requested by the master boiler. If equal priority is assigned, the boiler with the shorter runtime is requested (P1 = highest priority P5 = lowest priority).

**No. F4 Schematic**

Defines the accumulator or separator schematic of the cascade boiler.

**No. F4a Accumulator**

Defines the type of accumulator used.

**No. F6 Slave boiler**

Defines the number of slave boilers in the cascade, excluding external heat and master boiler.

**No. F6b Simultaneous modulation**

Defines the number of boilers in the cascade that may simultaneously reduce (modulate) output. If this parameter is set to 1, the counter **F10 or F11** may also take effect if only 1 boiler is running. For all other settings, 2 boilers must always fulfil the criteria.

**No. F6c Cascade system pressure monitoring**

Defines the boilers in the system that switch off in the event of a system pressure fault.

**No. F7 Minimum runtime superelevation**

Boilers that have not yet run for the duration set here longer than the boiler with the highest runtime are switched on preferentially.

**No. F8 Maximum runtime superelevation**

As soon as a boiler has run longer than the boiler with the highest runtime by the set duration and a de-ash or filling process begins, the system switches to another boiler with the same priority.

**No. F9 Maximum output**

Defines the output above which boiler operation is categorised as full-load operation.

**Nr. F10 Maximum runtime for full load**

If a boiler runs at full load for longer than the set duration, another

boiler is switched on. The time only runs when a pump that is not switched externally is running in the system. If, for example, only one accumulator is loaded and the withdrawal is controlled externally, this parameter does not work.

→ In full-load operation, the output is greater than commissioning engineer parameter **F9**

#### **No. F11 Maximum runtime minimum output**

The boiler runs at an output < 51% or at the minimum output entered under service parameter **K1** if this was set higher than 50% on the boiler.

#### **No. F12 Reset runtime for full load**

If a boiler runs below the output set in commissioning engineer parameter **F9** for longer than the duration set here, the "Max output" runtime counter is reset. This counter is used as a condition for commissioning engineer parameter **F10**.

#### **No. F13 Maximum deviation for boiler/separator**

**With accumulator:** The target temperature is deemed to have been reached if TSBT and F13 are greater than the maximum demand

**Without accumulator:** The target temperature is deemed to have been reached if TSBT and F13 are greater than the respective demand

The counter F10 is reset as soon as the target temperature is reached.

#### **F14 Minimum number of boilers**

Defines the number of boilers that are switched on when the buffer fill level falls below F14a.

#### **F14a Fill level below**

Setting the fill level for F14.

#### **F14b Maximum number of boilers**

Defines the number of boilers that may be active when the accumulator fill level F14c is exceeded.

#### **F14c Fill level above**

Setting the fill level for F14b.

#### **F15-F16a**

Same settings as F14 - F14c.

#### **No. F17 Number of boilers On external demand**

In the event of an external demand, the set number of boilers is switched on in addition to the running boilers.

#### **No. F17a Start next boiler after info**

A different boiler can be demanded if information is required. In the event of a fault, another boiler is always started.

#### **No. F17b Forced activation from**

If the accumulator changes to **Load accumulator**, a boiler is switched on after the set time if the top accumulator does not reach the boiler target temperature minus 5K.

#### **No. F17c External heat/CHP input**

Defines whether the status input for the IO38 for cascade, external heat boiler or CHP is evaluated as a normally closed or normally open contact.

#### **No. F17d Start delay of external heat/CHP**

Defines the start delay for the next boiler at IO38 if the status of the external heat boiler or CHP is not OK.

#### **No. F17e Start free boiler during de-ash**

Defines whether a free boiler is started when de-ash is initiated if the accumulator fill level is below the value set in parameter **C4d**. The boiler that carries out the de-ash then remains in the **Off** state

until a switch-on criterion is reached. If there is no free boiler, the boiler restarts immediately after de-ash.

#### **No. F18 Boiler target temperature during communication error**

Defines the boiler target temperature if CAN communication to the master has failed.

#### **No. F18a External boiler**

Activate existing external heat boiler in the cascade. The demand is made via the relay output of the heat circuit valve.

#### **No. F18a1 External heat cascade priority**

Defines the priority of the external boiler in a cascade. When parameterised to P8, the boiler switches off if TSBT = highest demand.

#### **No. F18a2 External heat boiler start delay**

Defines the time for which a fault must be present at the fault input before the external heat boiler is switched off.

#### **No. F18a3 External heat info message**

Defines whether an info message is issued if a fault is present at the input for the external heat boiler. If this function is deactivated, the feedback from the external heat boiler is ignored.

#### **No. F18a4 External heat input**

Used to set whether the input is normally closed or normally open

#### **No. F19 Reset cascade**

The operating hours of the functions related to the cascade are reset.

→ For all participants in the cascade

## 13.8 Parameter G - differential control

#### **No. G1 Differential controller function**

Used to define whether the differential controller is used for solar control with 1 or 2 circuits or for the return control of an external heat boiler.

#### **No.G2 Differential controller switch-on temp.**

Used to set the temperature the heat source sensor has to reach for differential controller to start regulating.

#### **No.G2a Differential contr. switch-off temp.**

Used to set the temperature the heat source sensor has to reach for differential controller to stop regulating.

→ Differential controller shutdown to protect system

#### **No. G2b Differential controller's switch-on temperature**

Used to set the temperature the heat source sensor has to reach for differential controller to start regulating.

→ Only activated if G1 is on **External heat boiler**

#### **No. G4 Circuit 1 (priority circuit) sensor selection**

Used to set which sensor is used for differential control.

→ The temperature will be determined using the heat source sensor and the sensor selected here

#### **No. G4a Superelevation of heat source**

Used to set the increase for the heat source.

If the heat source exceeds the first circuit's temperature plus the superelevation specified here, the pump will be activated.

#### **No. G4b Circuit 1 hysteresis**

Used to set the heat source's differential gap.

If the heat source drops below the circuit's temperature plus the increase minus the differential gap specified here, the pump will

be switched off.

#### **No. G4c Circuit 1 shutdown**

Used to set the shutdown temperature for circuit 1.

If circuit 1 reaches this shutdown temperature, the pump will be switched off.

#### **Nos. G5 - G5c Circuit 2**

Same settings as G4 - G4c.

#### **No. G5d Circuit 1 and 2 parallel operation**

Definition of parallel operation of the two circuits.

- No (no valve available): Pumps for two circuits will not run simultaneously
- No (valve available): A changeover valve will switch between two circuits
  - Only one pump is being used for both circuits
- Yes: The pumps for both circuits can be actuated at the same time
  - For two-circuit operation with a pump and a changeover valve, select **No (valve available)**

#### **No. G5e Temp. difference for changeovers to circuit 2**

Specify temp. differ. betw. circuit 1 and heat source dictating if changeover to circuit 2 occurs.

If this temperature difference is dropped below, the controller will switch to circuit 2 after the period specified in G5g.

#### **No. G5f Temperature for changeovers to circuit 2**

Used to define the temperature of the first circuit from which the system switches to the second circuit.

#### **No. G5g Time delay for changeovers to circuit 2**

Used to set the time delay for changeovers to circuit 2.

If G5e and G5f are fulfilled in this period, the controller will switch to circuit 2.

#### **No. G6 External heat boiler switch-on**

- With return mixer: Temperature is controlled via a mixer
- Only pump: The temperature must be controlled by switching the pump on and off
  - Only active if G1 is on External heat boiler
  - Return temperature regulated by sensor specified in G6e

#### **No. G6a External heat boiler mixer runtime**

Used to define the mixer runtime of the external heat boiler from closed to open state (for an external heat boiler with return mixer).

#### **No. G6b External heat boiler return temp.**

Return temperature of heat source according to the manufacturer.

#### **No. G6c Message if external heat boiler return temp. is not reached**

Set the return temperature the external heat boiler has to drop below for a message to be issued.

#### **No. G6d Period ext. heat boiler message**

Used to specify how long the external heat boiler's return temperature has to be below the temperature specified in G6c for a message to be issued.

#### **No. G6e Reference sensor selection for external heat boiler**

Used to set which sensor is used for differential control.

- The temperature will be determined using the heat source sensor and the sensor selected here

#### **No. G6f Superelevation of heat source**

Used to set from which temperature increase the differential controller is activated.

If external heat boiler exceeds the circuit's temperature plus superelevation specified here, the pump will be activated.

#### **No. G6g External heat boiler hysteresis**

Used to set the differential gap of the external heat boiler.

If the external heat boiler drops below the circuit's temperature plus the increase minus the differential gap specified here, the pump will be switched off.

#### **No. G7 Safety contro**

Used to set the maximum temperature for the external heat boiler.

If the external heat boiler exceeds this temperature, pump will be activated or remain activated and mixer will open.

#### **No. G8 Differential controller heat meter**

Defines whether a heat quantity calculation for the differential controller is carried out via the software.

#### **No. G8b, G8d and G8f Pump output**

Used to define the pump output of pumps 1-3 for calculating the heat quantity.

#### **No. G8g Carrier medium heat capacity**

Defines the heat capacity of the carrier medium.

Reference values:

- Water: 1.163 Wh/kgK
- Water/glycol 30%: 1.098 Wh/kgK
- Water/glycol 45%: 1.023 Wh/kgK

#### **No. G9 Differential controller defrost function**

A defrost function for the solar panels can be activated in the differential controller info page. If this function is activated, the corresponding pumps run for the duration set in commissioning engineer parameter G9a.

#### **No. G9a Differential controller defrost function duration**

Defines the runtime of the pumps for the defrost function.

#### **Nos. G11 - G17 External heat controller 2**

Same settings as G1 - G7.

#### **Nos. G21 - G28g PWM diff. controller**

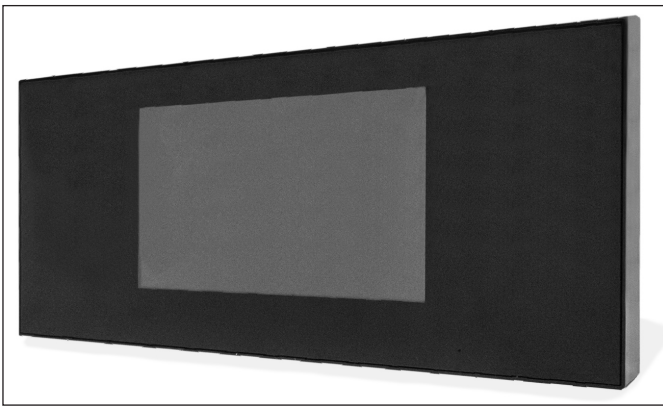
⇒ See installation manual for S additional board

## 14 Optional remote controls

Using a remote control makes it easy to adjust the room temperature and also the heating and setback settings. The heating temperatures and times can be set and changed with the FR35 and FR40 digital remote controls. One heat circuit may be parametrised per remote control, with or without using room temperature.

- 1 heat circuit on the extension board
  - HC A/B board only digital remote control
- 2 heat circuits per heat circuit module
  - HKM 1-2
- 2 heat circuits per heat circuit controller
  - HKR 0-15

### 14.1 Digital remote control FR40



With the FR40, all the heat circuit functions available on the boiler can be set from wherever the remote control is in the user's living space.

#### Operating states

##### • Off



The heat circuit is switched off (except for frost protection).

##### • Automatic



The heat circuit is operated according to set times.

##### • Permanent reduction (in automatic mode)



The heat circuit is in permanent reduced mode.

##### • Permanent heating (in automatic mode)



The heat circuit is in permanent heating mode.

##### • 1x heating (heating on a single occasion)



The heat circuit switches to permanent heating mode on a single occasion and automatically reverts to automatic mode at the next preset heating time.

##### • 1x reduction (reduction on a single occasion)



The heat circuit switches to permanent reduced mode on a single occasion and automatically reverts to automatic mode at the next preset heating time.

#### Fine adjustment of room temperature



Increase of up to 3°C.



Decrease of up to 3°C.

### 14.2 Digital remote control FR35



The remote control is also available in a wireless version. Different selection options are available on the remote control only when the system is in **Automatic** mode.

- Selection of the heat circuit's operating mode
- Selection of the display on the remote control

#### Operating states

##### • Off



The heat circuit is switched off (except for frost protection).

##### • Automatic



The heat circuit is operated according to set times.

- **Permanent reduction** (in automatic mode)



The heat circuit is in permanent reduced mode.

- **Permanent heating** (in automatic mode)



The heat circuit is in permanent heating mode.

- **1x heating** (heating on a single occasion)



The heat circuit switches to permanent heating mode on a single occasion and automatically reverts to automatic mode at the next preset heating time.

- **1x reduction** (reduction on a single occasion)



The heat circuit switches to permanent reduced mode on a single occasion and automatically reverts to automatic mode at the next preset heating time.

#### Fine adjustment of room temperature



Increase of 2 to 3°C.



Decrease of 2 to 3°C.

#### Fault lamp




Lights up if an error occurs on the boiler.

#### Display parameters

Selection on commissioning engineer parameter A6b of which temperature is displayed on the remote control.

## 14.3 Analogue remote control FR25



Different selection options are available on the remote control when the system is in Automatic mode .

#### Operating states

Selection of the operating status of the heat circuit with the rocker switch.

- **Continuous reduction**



The heat circuit switches to permanent reduced mode.

- **Automatic**



The heat circuit switches to day or week mode.

- **Continuous heating**



The heat circuit switches to permanent heating mode.

#### Fine adjustment of room temperature

Fine adjustment of the room temperature with the rotary knob. Increase / decrease by 2 or 3°C.

#### Fault lamp



Lights up if an error occurs on the boiler.

## Chapter IV: Cleaning

### DANGER

#### Risk of injury

##### Risk of crushing and amputation due to moving parts

- Refrain from accessing augers or motors when the boiler is switched on.
- Do not work on the system while people are in the danger zone. Secure and lock storage room.
- Only clean the augers and remove blockages using suitable tools and when the system is switched off.
- Only eliminate cavity formations using rods and shovels.
- Wear safety shoes.
- Observe the storage room sticker.

### DANGER

#### Danger to life

##### Electric shock from contact with live terminals

- Observe information signs.
- Disconnect the power supply prior to any cleaning or work.
- Check that no voltage is present using a voltmeter. Parts of the Nano eCleaner carry a high voltage.
- Switch off the system and secure it against restarting.

### DANGER

#### Risk of injury

##### Risk of crushing or injuries from reaching into the danger zone during recommissioning

- Before carrying out any work on the system, turn off the main power switch and prevent it from being turned on again by securing it with a padlock. Keep the key with you for the duration of your work. Hand out the key for a lock to the authorised person only.
- After triggering main power switch, do not reach into the danger zone without thinking.
- Rectify error.
- When recommissioning, check that nobody is in the danger zone or storage room.

### DANGER

#### Risk of fire, explosion

##### Risk of burning from inflammable materials

- Do not spray any inflammable sprays on hot surfaces (e.g. lubricating moving parts in the combustion chamber). Spray drops can cause explosive fire.
- Do not use any inflammable lubricants.
- Allow system (combustion chamber) to cool down.

##### Fire in the vacuum cleaner sack

- Let the ash cool down prior to vacuum cleaning.

### CAUTION

#### Material damage

##### Formation of dust due to system leakages

- Clean sealing surfaces with industrial alcohol and a dry and soft cloth only.
- Make sure the cleaning agent has evaporated before commissioning.

### CAUTION

#### Material damage

##### Dirt, boiler breakdown due to escaping ash when over-filling the ash container

- Regularly empty and clean the ash container.
- Properly position and close the ash container.

Small cracks may occur in the refractory in regular operation. These are stress cracks that form an expansion joint. This cracking is important and does not lead to any functional impairment. Hence there is also no claim under warranty.

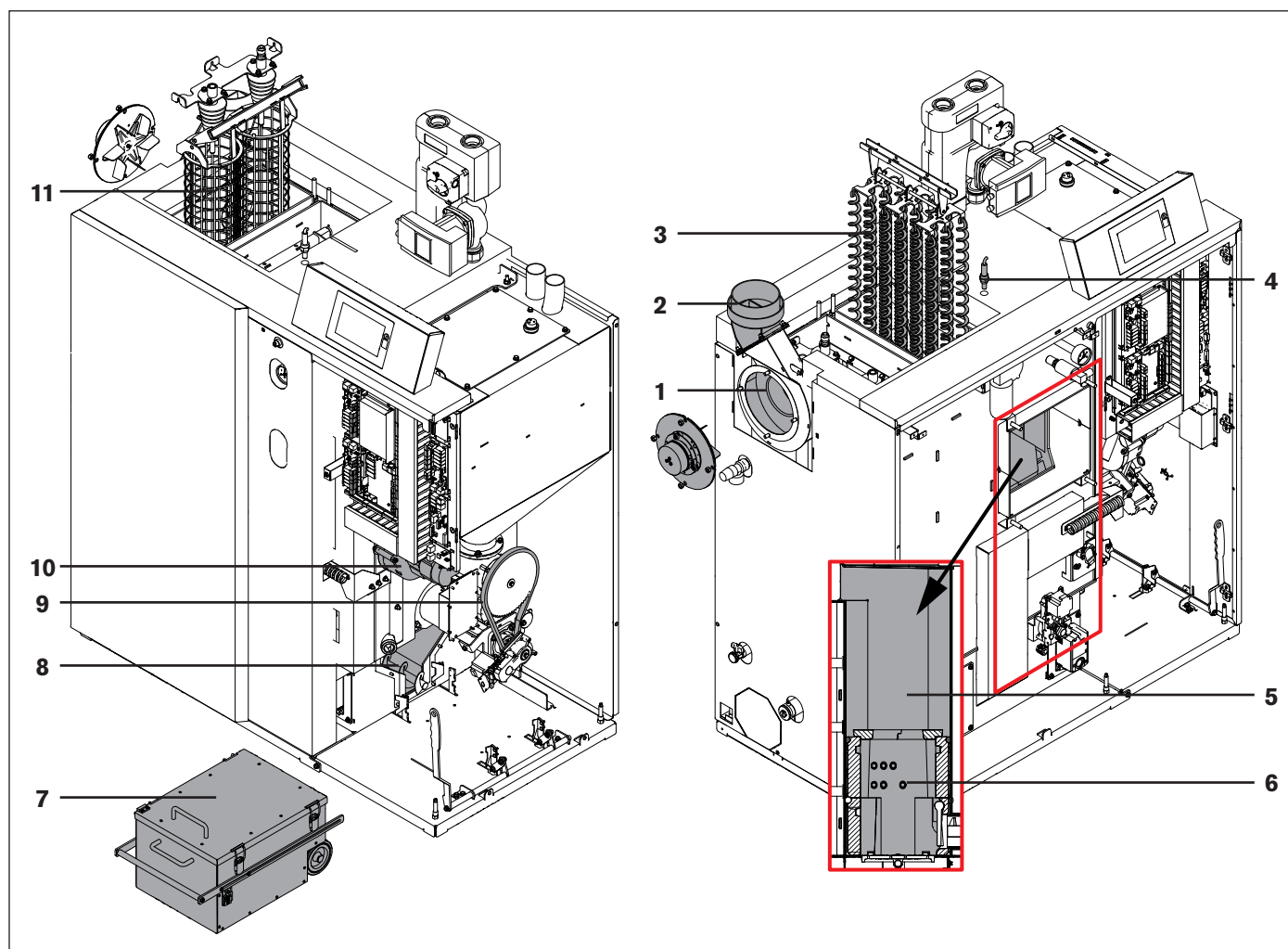
The specified cleaning and maintenance intervals are absolutely necessary for safe and clean operation of the system. Observe the state regulations and resulting chimney sweep's inspection and sweeping intervals dictated by these regulations.

## 1 Maintenance contract

If you sign a maintenance contract with Hargassner Ges mbH, the annual cleaning and maintenance takes place during the annual service performed by personnel authorised by Hargassner. Service must be carried out regularly by the manufacturer (every one to three years) depending on your country's regulations. This service must be carried out by the manufacturer or by trained and authorised individuals.

- To ensure optimum operation of the system, extensive cleaning of the boiler is required
  - At least once a year
  - After a set number of operating hours in the event of an error
- The cleaning intervals will change or shorten depending on the composition of the fuel and if low-grade material is used

## 2 Cleaning intervals



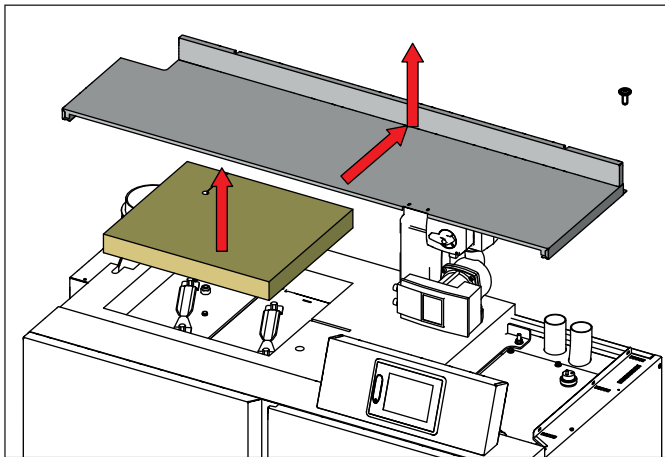
Item	Maintenance tasks	Frequency
1	Dismount exhaust fan and clean housing and impeller	1x a
2	Clean flue pipe	2x a
3	Tap off the turbulators and clean the turbulator space	1x a
4	Disconnect, remove and clean lambda sensor	1x a
5	Clean post combustion chamber with poker	1x a
6	Clean combustion chamber with poker	1x a
7	Empty ash box	as required
8	Remove ash channel and clean out ash under the grate	1x a
9	Lubricate stoker chain and check chain tension	1x a
10	Clean pellet vacuum turbine	1x a
11	Remove the basket from the Nano eCleaner and vacuum the contents	1x a

→ a = (at least) once annually, at the latest after 4000 full-load hours, 8000 partial-load hours or after a message has appeared on the control unit

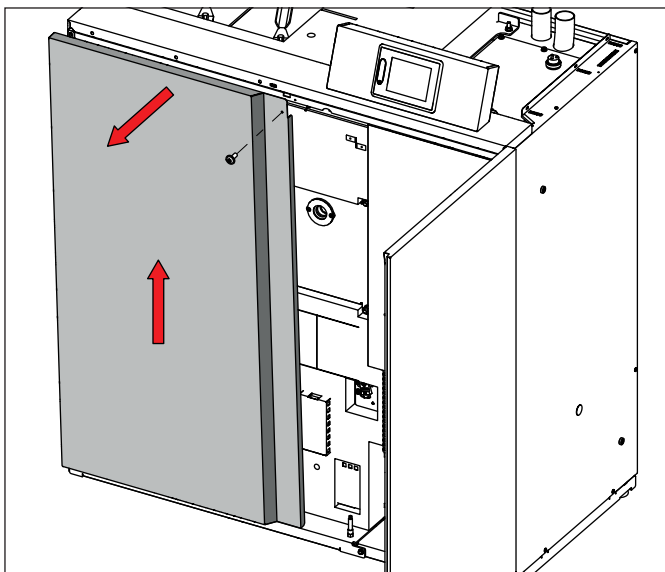
→ Boiler monitoring and cleaning intervals are based on the operation hours and fuel quality. Observe state regulations and the inspection and sweeping intervals dictated by these.

## 2.1 Preparation for cleaning

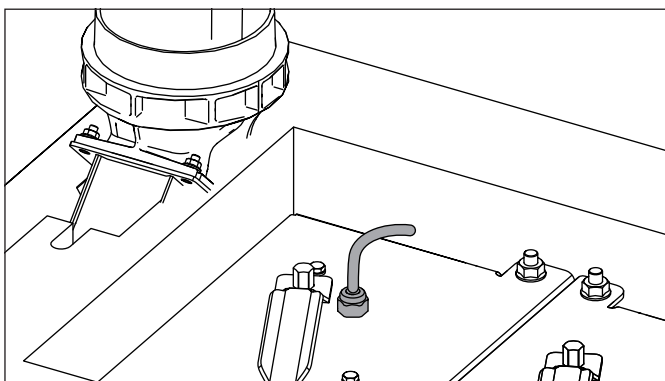
- Switch off system at the control unit (**Off** operating mode)
- Let boiler cool down
- Disconnect the system from the power supply (**Off** main switch)



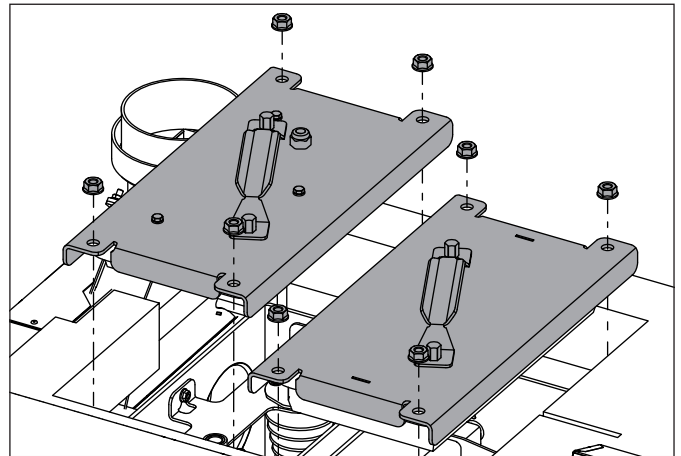
- Remove the fixing screw
- Slide the top cover backwards and remove
- Remove insulation



- Open the door
- Remove the fixing screw
- Fold the casing forwards and lift it out upwards

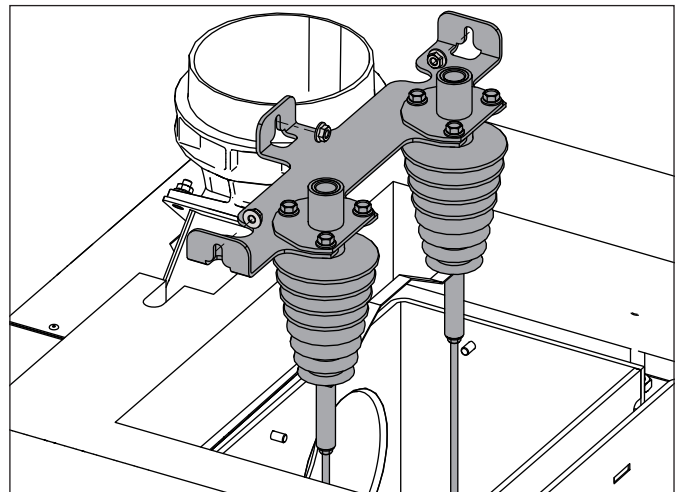


- Loosen the screw connection and remove the cable from the Nano eCleaner

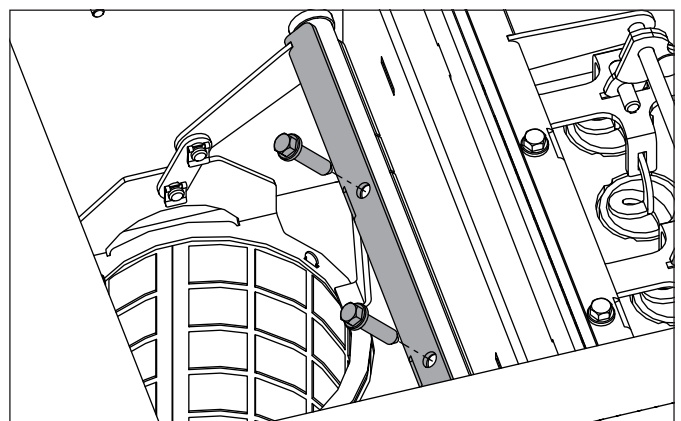


- Loosen 4 M10 nuts and remove the two maintenance covers

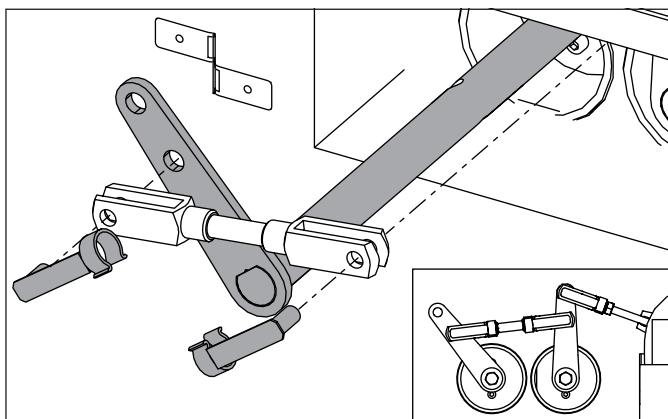
## 2.2 Cleaning the Nano eCleaner



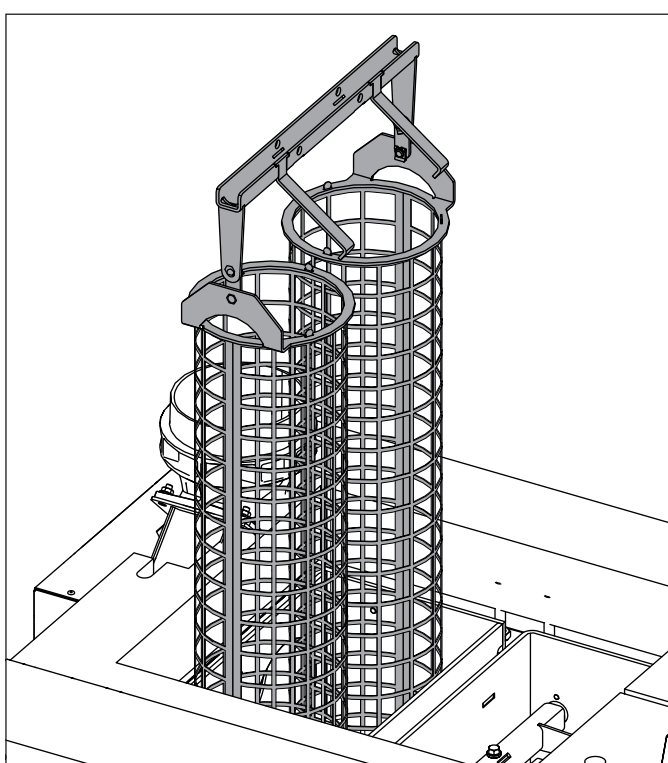
- Loosen or remove 3 M6 nuts on the electrode unit
- Pull out the electrode unit upwards



- Remove 2 M8x25 screws on the shaft

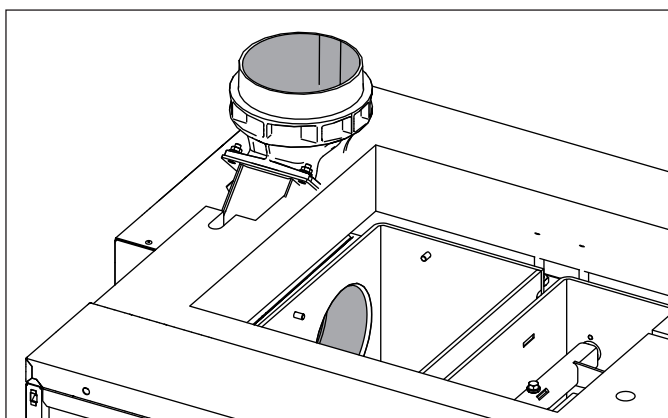


- Release both clasps of the cleaning device
- Pull out the shaft to the front

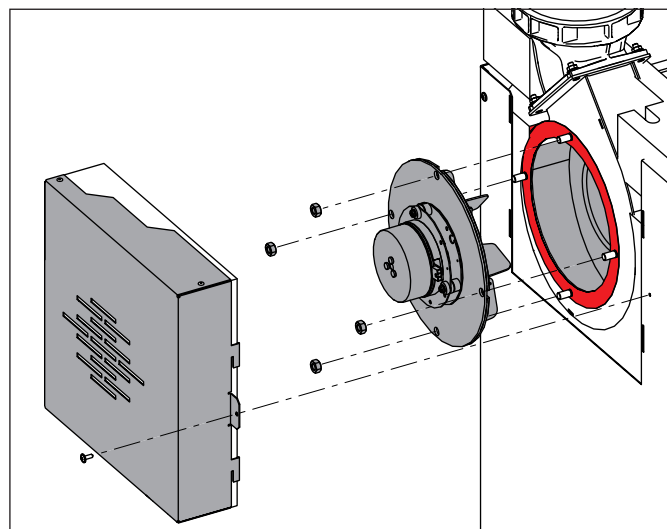


- Remove the wire basket upwards
- Vacuum using a vacuum cleaner

### 2.3 Cleaning the flue pipe



- Clean with vacuum cleaner

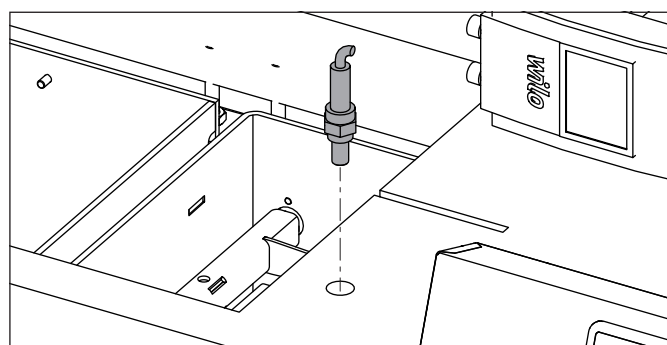


- Remove the exhaust fan and the insulation upwards
- Remove the exhaust fan
- Clean dirt from housing and impeller
  - Do not clean using compressed air
  - If necessary, replace the ceramic fibre seal

### 2.4 Cleaning the lambda sensor

**i NOTE**

Do not tap the lambda sensor.  
 Do not blow off with compressed air.  
 Do not touch the sensor with sharp items and do not use any chemicals for cleaning (brake cleaning fluid, etc.)

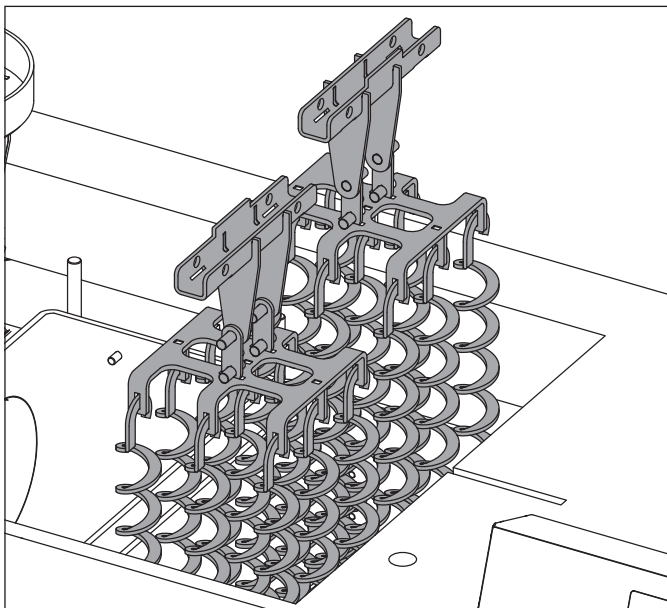


- Unscrew the lambda sensor
- Point sensor head downwards and wipe with a moist cloth.
  - Debris falls down

### 2.5 Cleaning the turbulators and the turbulator chamber

- Remove 4 M8x25 screws on the shaft
- Release the clasp of the cleaning device
- Pull out the shaft to the front

⇒ „Cleaning the Nano eCleaner“, p. 38



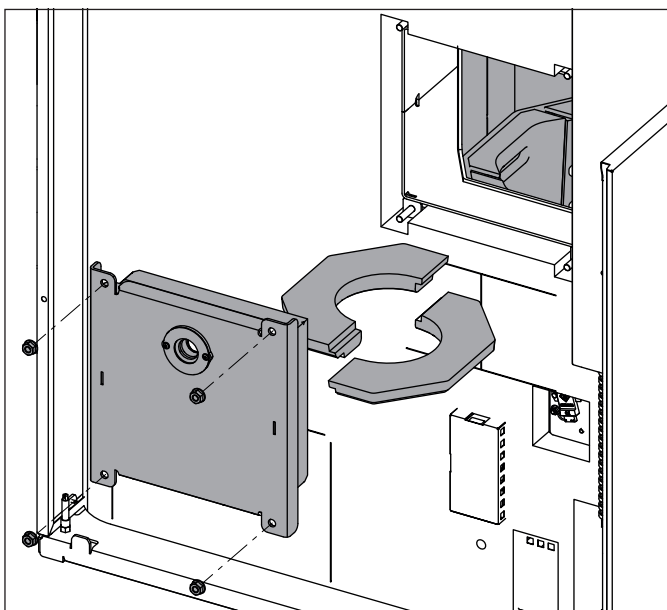
- Remove turbulators upwards
- Tap off the turbulators and clean the turbulator space

## 2.6 Cleaning the combustion chamber and post combustion chamber

### **i** NOTE

To minimise soiling of the boiler room, clean the combustion chamber when the exhaust fan is running. Ash can be whirled up during cleaning, which can be sucked out through the running exhaust fan.

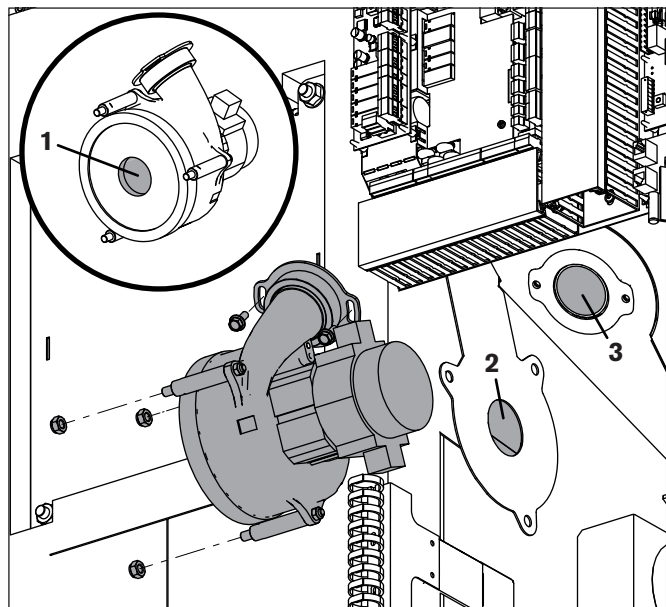
Open the rotary grate fully in manual operation



- Unscrew the maintenance door
- Remove the split flame concentration plate
- Clean the combustion chamber and post combustion chamber with a poker
  - Turn the rotary grate by 90° and vacuum out the combustion chamber

- Clean the rotating grates and ensure the holes are free of any dirt

## 2.7 Cleaning the pellet vacuum turbine



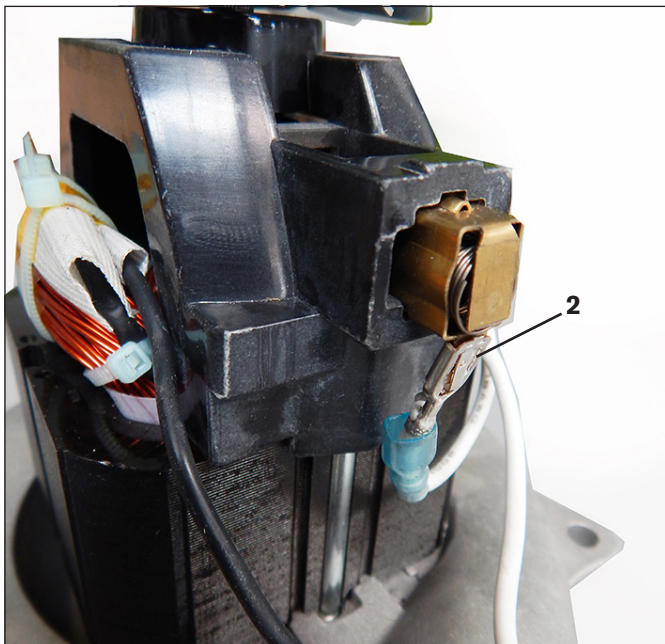
- Remove the cover sheet
- Loosen 3 M8 nuts on the channel
  - Studs remain on the vacuum turbine
- Loosen 2 M6x16 screws on the return air connection
- Remove deposits from the vacuum turbine (1), channel (2) and return air connection (3)

## 2.8 Replacing the carbon brushes of the pellet vacuum turbine

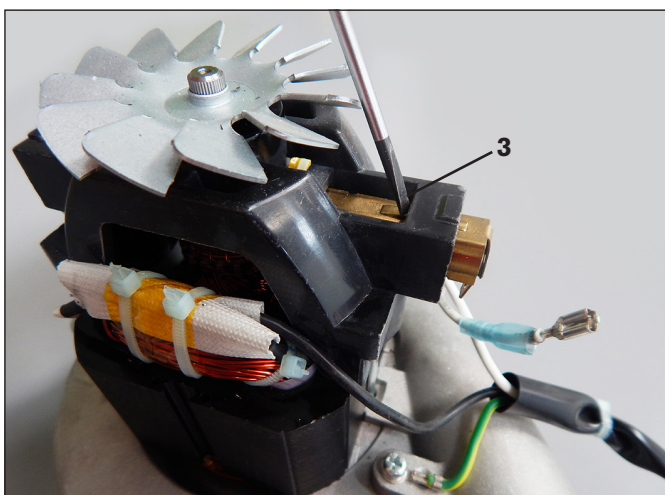


- Remove housing cover (1)

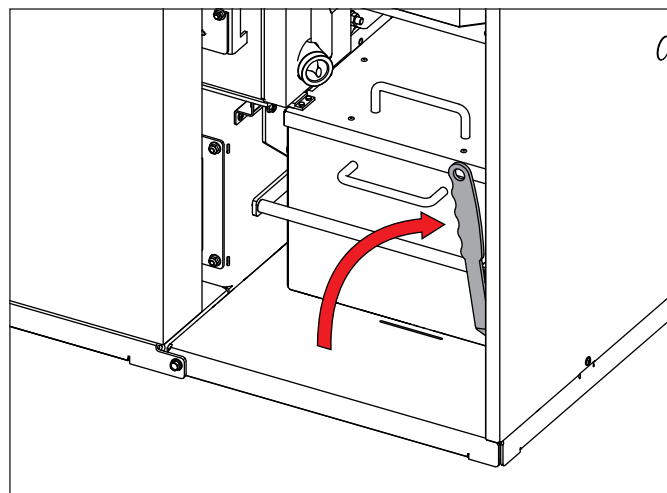
## 2.9 Emptying the ash box



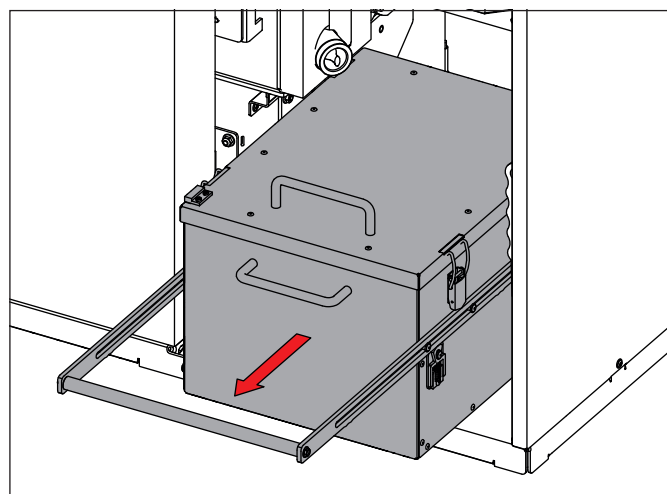
- Remove flat receptacle (2)



- Push in the leaf spring (3) on the carbon brush housing
- Pull out carbon brush
- Replace 2 carbon brushes with new ones
- Re-assemble in reverse order

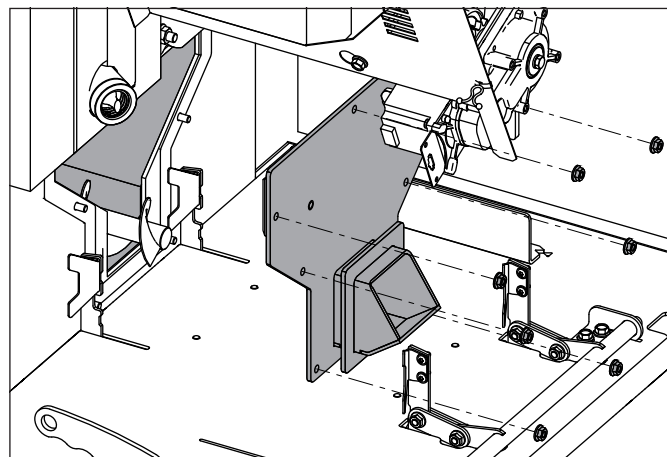


- Unlock the ash box with the lever



- Pull out the ash box by the transport handle
- Remove the ash box lid
- Empty ash box
- Fix the ash box cover again
- Push in the ash box and lock with the lever

### 2.9.1 Cleaning the ash channel



- Remove the cover
- Vacuum the ash extraction system

## 3 Disposal information

### 3.1 Disposal of created ash

- ❑ Ash must be disposed of according to your national waste management regulations

If natural wood is used as a fuel, then the ash can be regarded as a high-quality mineral fertilizer and can be used for composting

→ **Caution:** watch out for ember pockets

### 3.2 Disposal of wear and spare parts

- ❑ Wear and spare parts must be disposed of according to your national waste management regulations

→ Only use equivalent spare parts approved by Hargassner Ges mbH

### 3.3 Disposal of system components

- ❑ Ensure environmentally compatible disposal in accordance with national regulations
- ❑ Recyclable materials must be cleaned and sorted before being passed on for recycling
  - System (boiler)
  - Fuel extraction
  - Insulation material
  - Electrical and electronic parts
  - Plastics

# Chapter V: Troubleshooting

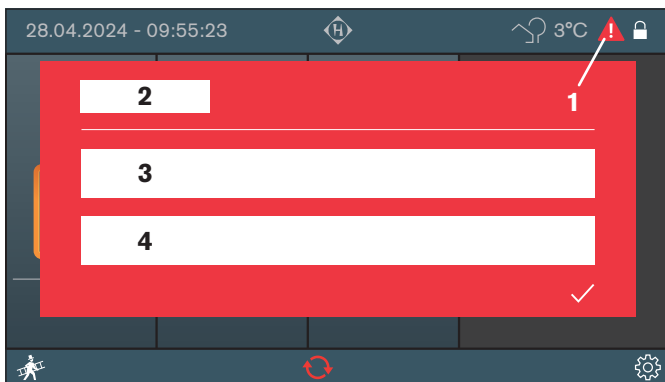
## CAUTION

### Material damage

#### Damage to the system due to defective parts or incorrect operating states

- Contact Hargassner Ges mbH or the commissioning engineer in case of higher power consumption, higher temperatures or vibrations of motors, unusual noises or smells, release of safety devices, etc.
- Perform mandatory maintenance tasks regularly.

## 1 Information and error display



A warning triangle (1) and the information or fault message appear on the display.

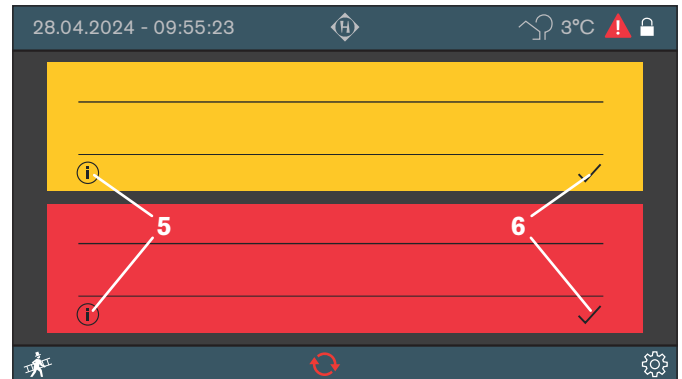
- Number of the information or fault message (2)
- Description of the problem (3)
- Date of occurrence and information on the software version (4)
- Yellow triangle and window = information
- Red warning triangle and window = error

The following instructions for rectifying errors are intended for the system operator.

If it is not possible to rectify the error through the operator, the commissioning engineer / Hargassner must be informed.

## 2 Viewing the error list

- Press the warning triangle (1) or swipe down in the Info menu when fault messages occur



Display of the current information and error messages.

## 3 Acknowledging and rectifying an error

- Press the Info button (5)
- Follow the instructions to rectify the error
- After rectifying the error, press the checkmark button (6)

## 4 BCE failure

### DANGER

#### Danger to life

#### Electric shock from contact with live terminals

- Observe information signs.
- Before starting work, check that no voltage is present using a voltmeter.

A BCE failure can occur due to a defective fuse, missing power supply or missing connection to the main board.

- Check the voltage supply and fuse
  - Fuse F16 on the main board
  - Mains supply of terminal L / PE / N
- Check LED H6 on the main board
  - Check bus cable
  - Replace BCE or cable

⇒ See [Electrical manual](#)

## 5 Temporary emergency operation (restart without HW test)

If the error is clearly a result of a defective boiler control board, and the connected component is working correctly, the control unit can be run in temporary emergency mode without a hardware test being performed on the respective component (until the service department steps in).

- Switch to **Manual** operating mode on the control unit
  - Switch to the respective manual parameter of the respective component
  - Confirm **Without HW test**
- Boiler operates with max. 60% output



## Supplement

### Note

Please be advised that we do not accept responsibility for damage or malfunctions resulting from non-observance of the manual

### Copyright notice

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### Special measures prior to commissioning by the operator

Observe your local official regulations for system operation and accident prevention. Work on hydraulic systems must be carried out only by personnel with specialised knowledge and experience in heating engineering and pipework construction.

### Liability

The product is a state-of-the-art product, manufactured and tested according to recognised safety regulations, and therefore reliable and safe to operate. However, improper use may cause lethal hazards for the operator or third parties or may damage the system and other property.

Ensure that the product is used in accordance with its intended purpose and in a safety-conscious and hazard-conscious manner, and that it is in perfect technical condition. Particularly errors tending to affect the safety shall be resolved immediately.

Liability for the product functioning correctly will always be borne by the owner or operator if the device has been improperly maintained or repaired by individuals who have not been authorised by Hargassner Ges mbH or has been handled or operated in a manner that does not comply with the device's intended use. In the interest of the continuous development and improvement of our products, we reserve all rights to make technical changes to the information contained in our printed material. Changes, errors and printer's errors do not justify claims for damages. Only original Hargassner spare parts and accessories must be used.

In addition to the guidelines in this operation manual, please follow general guidelines for safety and accident prevention. Hargassner Ges mbH is not liable for any damage resulting from failure to observe the instructions and guidelines in this manual. This system's reliability is guaranteed by Hargassner Ges mbH's vast experience, very modern production methods and extremely high quality standards. Hargassner Ges mbH cannot be held

liable for safe operation of the product if it has been handled or operated in a manner that does not comply with its intended use.

### Warranty claims

The customer has NO warranty claims:

- if fuel is missing, wrong or of poor quality
- if a non-licensed commissioning engineer or plumber installs the product
- if damages occur through incorrect assembly, commissioning, misuse or lack of maintenance
- if the installation manual and operation manual are not followed
- for damages that do not affect the performance of the system, such as paint defects, ...
- for damages arising from force majeure like fire, flooding, lightning stroke, electrical surge, power loss, ...
- for damage caused by air pollution, heavy dust, aggressive vapours, oxygen corrosion (non diffusion-tight plastic tubing), installation in inappropriate rooms (laundry room, hobby room, etc.) or continued use despite the occurrence of a defect

To ensure repair or maintenance work relating to defects and malfunctions not mentioned in this manual is carried out properly, always contact **Hargassner Ges mbH** beforehand. The warranty and liability terms in **Hargassner Ges mbH's** general terms and conditions will not be extended because of information in this manual. The **safety instructions** in this manual must be observed. Only use Hargassner spare parts or equivalent spare parts that have been approved by **Hargassner Ges mbH**. Constant technical innovations mean that we reserve the right to modify the design of our products and services without notice. For all queries, please be sure to quote the **serial number** of the product.

We wish you every success with the Hargassner product.

# Declaration of Conformity

Hargassner Ges mbH  
Anton Hargassner Strasse 1  
4952 Weng im Innkreis  
AUSTRIA

The manufacturer is also the party authorised to compile the technical documentation.

Type of product: Boiler for solid fuels with automatic loading

Type: Pellet boiler  
Nano-PK 38-65, Nano-PK 38-65 eC  
Optional with fuel extraction RAS 150-800, RAPS, PWB(N), AUP  
Optional Nano eCleaner particle filter available

Standard: From 01.02.2024

The versions of the stated products launched onto the market by us comply with the regulations laid down in the following European directives:

Machinery Directive 2006/42/EC  
Low Voltage Directive 2014/35/EU  
EMC Directive 2014/30/EU  
Ecodesign directive 2009/125/EG  
Ecodesign directive (EU) 2015/1189

Conformity with the directives is verified by the manufacturer's compliance with the relevant requirements of the following standards:

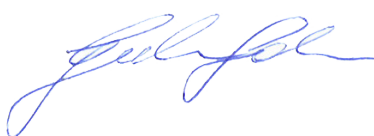
EN 303-5:2021 Heating boilers for solid fuels, manually and automatically stoked, nominal heat output of up to 500 kW  
EN ISO 12100:2010 Safety of machinery - General principles for design - Risk assessment and risk reduction  
ÖNORM EN 60335-2-102:2016 Household and similar electrical appliances - Safety - Particular requirements for gas, oil and solid-fuel burning appliances having electrical connections

The manufacturer hereby declares that the standard versions of the systems mentioned above comply with the stated regulations.

Place, date: Weng, 01.09.2023

Company: Hargassner Ges mbH

Name: Dr. Johann Gruber

Signature: 

Function: Head of Development



# UKCA Declaration of Conformity

Hargassner Ges mbH  
Anton Hargassner Straße 1  
4952 Weng im Innkreis  
AUSTRIA

Party authorised to compile the technical file:  
GILLES Biomass Heating Ltd.  
Unit 215b Holme Lacy Road, Hereford HR2 6BQ

Type of product: Boiler for solid fuels with automatic loading

Type: Pellet boiler  
Nano-PK 38-65, Nano-PK 38-65 eC  
optional with fuel extraction RAS 150-800, RAPS, PWB(N), AUP  
optional Nano eCleaner particle filter available

Standard: from 01.07.2024

The versions of the stated products launched onto the market by us comply with the regulations laid down in the following UK directives:

Supply of Machinery (Safety) Regulations 2008  
Electrical Equipment (Safety) Regulations 2016  
EMC Regulations 2016  
Ecodesign for Energy-Related Products and Energy Information (Amendment) (EU Exit) Regulations 2019

Conformity with the directives is verified by the manufacturer's compliance with the relevant requirements of the following standards:

BS EN 303-5:2021 Heating boilers. Heating boilers for solid fuels, manually and automatically stoked, nominal heat output of up to 500 kW  
BS EN ISO 12100:2010 Safety of machinery. General principles for design. Risk assessment and risk reduction  
BS EN 60335-2-102:2006 Household and similar electrical appliances. Safety. Particular requirements for gas, oil and solid-fuel burning appliances having electrical connections

The manufacturer hereby declares that the standard versions of the systems mentioned above comply with the stated regulations.

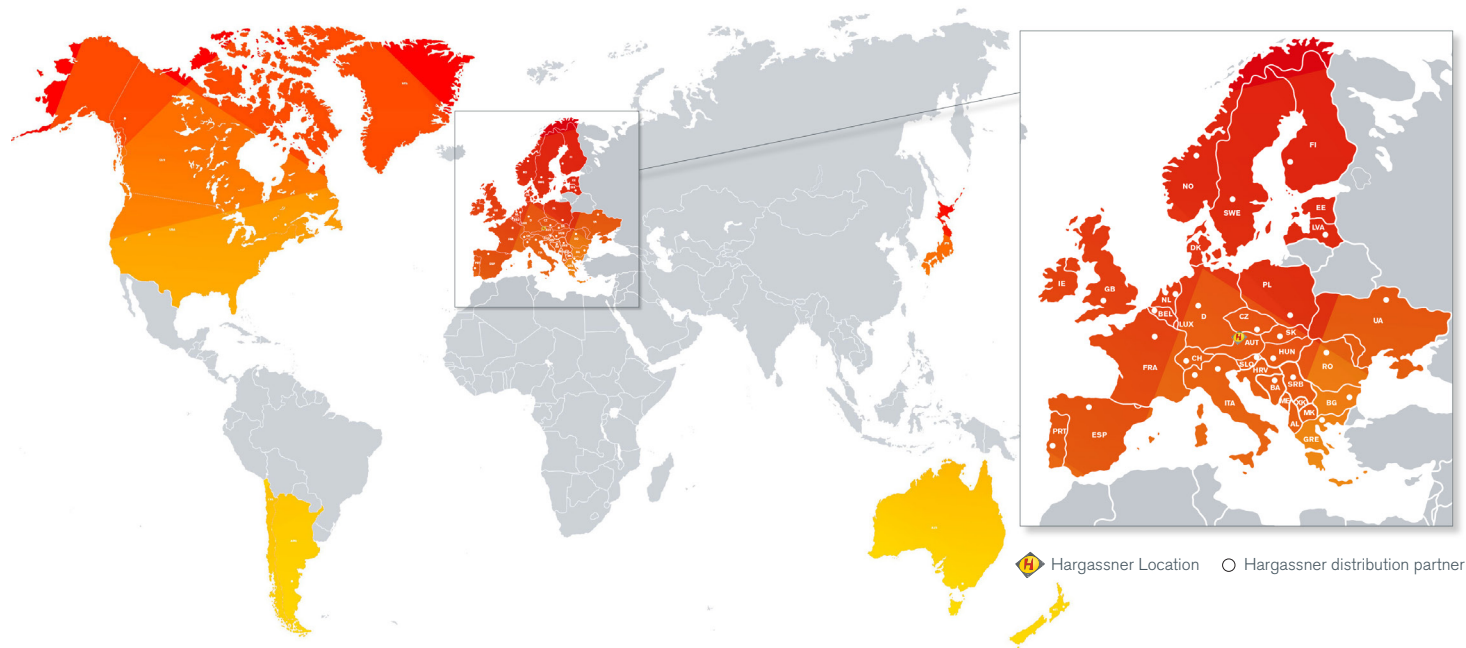
Place, date: Weng, 24.06.2024

Company: Hargassner Ges mbH

Name: Dr. Johann Gruber

Signature:

Function: Head of Development



 Hargassner Location     Hargassner distribution partner



## Your expert for **SUSTAINABLE HEATING**

Complete Hargassner range: pellet boilers, wood chip boilers, wood log boilers, accumulator tanks, industrial boilers up to 2.5 MW, heating modules, filling augers, combined heat power CHP, PowerBox warm-air module, heat pumps, solar panels and hydraulic accessories