

Energy in Balance with Nature





## Innovative heating systems for:

Woodchips Biomass Pellets Shavings





German Quality since 1982

## Heizomat



## Energy in Balance with Nature

In 1982 Robert Bloos created the first discharging system for woodchips. The idea behind it was to burn wood from his own forest with the same comfort as with fossil fuels.

We now produce products encompassing all things around woodchips at two locations in Bavaria, Germany. The core business are our woodchip boilers, from which we have been able to install more than 35.000 units in more than 30 countries. Chipping machines, filling equipment for woodchip storages, woodchip transportation systems, grippers and innovative solar trackers round off our product range.

We are convinced that heating with woodchips continues to be the best alternative for fossil energy sources. Thanks to sustainable forestry, the planting of fast-growing trees on plantations, along streams and on the sides of fields and roads, we will be able to continue to generate affordable and CO<sub>2</sub> neutral energy in balance with nature.













## We are revolutionising heating with woodchips!

Many Heizomat inventions are industry standards today.

#### Milestones:

1982 The first Heizomat

1983 Agitator Ø 5 m

1984 Rotary valve

1987 Automatic deashing

1989 The first Heizohack

1990 Large boilers up to 850 kW

1992 Heizohack crane fed

1995 Lambda - control

1996 Autom. heat exchanger cleaning

1997 Automatic ignition

1998 Microchip-based regulation

2000 Chain deashing

2003 Channel in route form

2004 Heizogreif forestry grippers

2005 HM 14-800 KL lorry chipper

2005 Touch control panel

2005 Air jet ignition

2006 Discharger with separate drive

2008 Visualisation

2010 Parallel motion

2011 Vertical filling systems

2012 Siemens-Simatic control unit

2014 Chain discharging systems

2015 System manager

2016 Heizotruck - commercial vehicle

2017 Combustion chamber monitoring

# **Factory Maicha**



#### Office:

- Management
- Sales
- Construction
- Work preparation
- Development
- · Software programming
- Logistics
- Customer services

#### **Production:**

- Apprentice workshop (21 Apprentices)
- Controler box construction
- Chipper final assembly
- Sheet metal working
- Paint shop
- Auger welding shop
- Channel production
- Cladding construction
- Special construction
- Turning shop
- Shipping
- Laser
- Laundry
- Chipper repair

#### **Production area:**

13,000 m<sup>2</sup>

### Number of employees:

approx. 160













# **Factory Heidenheim**



#### **Production:**

- Boiler construction
- Chipper construction
- Sawmill
- Tube laser
- Mould construction of the boiler refractory
- · Production of the refractory lining
- · Production of small parts

#### TÜV-compliant test bench

#### **Production area:**

18,500 m<sup>2</sup>

#### **Number of employees:**

approx. 80













# **HSK-RA** woodchip boiler

#### Output range:

15 - 200 kW

#### Efficiency:

> 90 %

#### Fuel:

Woodchips as per EN 17225-4 A1/P45 M30, pellets, sawdust

#### Combustion chamber:

6 mm wall thickness, refractory lining with high-quality fireclay bricks

#### Heat exchanger tubes:

6.3 mm wall thickness, large volume register pipes with 200mm diameter, seamlessly welded with cleaning augers inside.

#### Horizontal heat exchanger:

A natural air draught is created by the horizontal heat exchanger, resulting in a reduced electricity demand and an improved heat yield. Thanks to the robust cleaning augers, rolled from 8 mm thick steel, the heat exchanger cleaning is practically maintenance free! A high level of efficiency is created at the lowest of fluegas temperatures.

#### Automatic ash removal:

The ash from the combustion chamber is moved by the ash scraper through the cast iron grate, the heat exchanger is cleaned via augers.

#### Ash container:

Optionally 40 I, 240 I or 900 I

#### Insulation:

60 mm

#### Air jet ignition:

A robust glow bar is used for ignition mode. Placed in the air jets protected from ash and soot. Energy saving, just approx. 0.15 kWh per ignition!

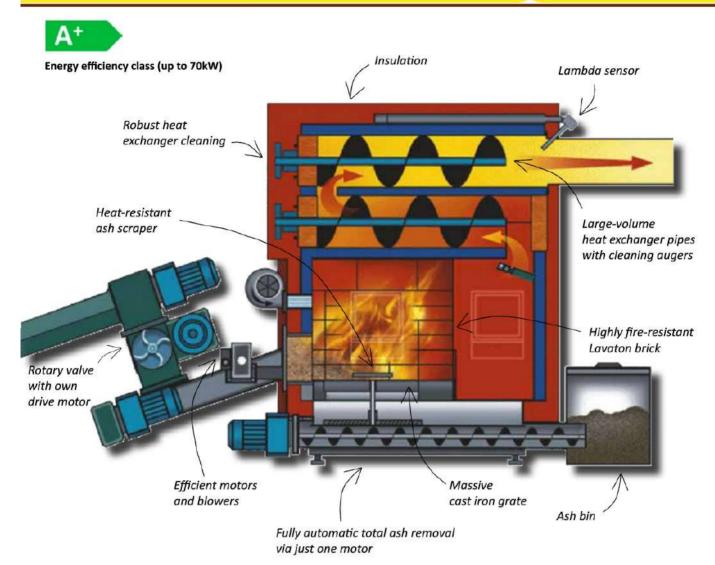














## **RHK-AK** biomass boiler

#### Output range:

30 - 990 kW

#### Efficiency:

> 90 %

#### Fuel:

Woodchips as per EN 17225-4 A1/P45 M30, pellets and biomass

#### **Combustion chamber:**

8 mm wall thickness, refractory lining in heart shape made from resistant refractory concrete

#### **Heat exchanger tubes:**

6.3 mm wall thickness, large volume register pipes with 200mm diameter, seamlessly welded with cleaning augers inside.

#### Horizontal heat exchanger:

A natural air draught is created by the horizontal heat exchanger, resulting in a reduced electricity demand and an improved heat yield. Thanks to the robust cleaning augers, rolled from 8 mm thick steel, the heat exchanger cleaning is practically maintenance free! A high level of efficiency is created at the lowest of fluegas temperatures.

#### Automatic ash removal:

The ash from the combustion chamber is moved through the patented de-ashing chain, the heat exchanger is cleaned via augers.

#### Ash container:

Optionally 40 I, 240 I or 900 I

#### Insulation:

80 mm sandwich panels

#### Air jet ignition:

A robust glow bar is used for ignition mode. Placed in the air jets protected from ash and soot. Energy saving, just approx. 0.15 kWh per ignition!

Approx. 0.15 kWh per ignition!





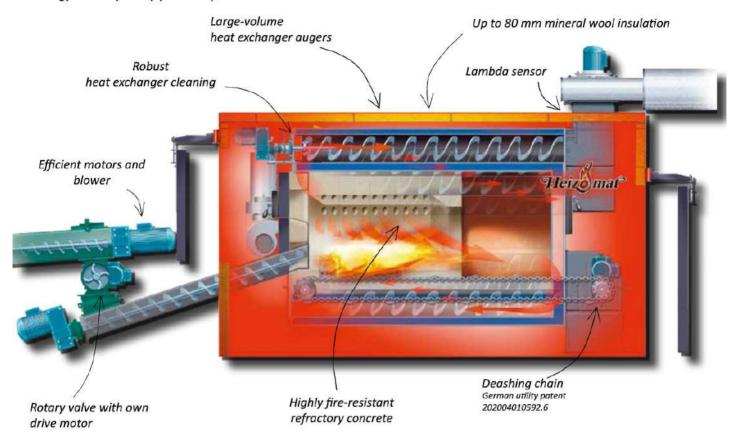








#### Energy efficiency class (up to 70kW)





# Trendsetting technology

#### Discharging technique

#### Articulated arm:

Robust milling arm for room sizes from Ø 1 m to 7 m, preloaded with chain and tension spring. No intermediate floor required. Loading heights of up to 10 m possible!

#### Parallel motion agitator:

Circular emptying of the silo! No swinging of the milling arms, no loading of the arms and connections.

- Patent -

#### Bunker gear box:

Specially sealed bevel helical gear box with 5.000 Nm transmittable torque. Completely maintenance-free, installed in a water-proof die-cast chassis.

#### Discharger auger:

On 50 mm solid shaft. Smooth transportation thanks to loosening geometry.

#### 4-chamber rotary valve:

Effective TÜV-checked burn-back protection with trimmer unit! There is hardly any chance of sticking for nails etc. thanks to the 4 chambers. Crossed edge for an easy cut. Installed in massive die-cast chassis.

#### Inclined chain conveyor:

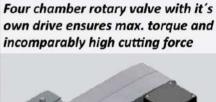
For horizontal or subjacent installation of the agitator. Drive of the inclined chain conveyor takes place via the motor of the discharger auger respectively chain.

P45 woodchips possible as standard



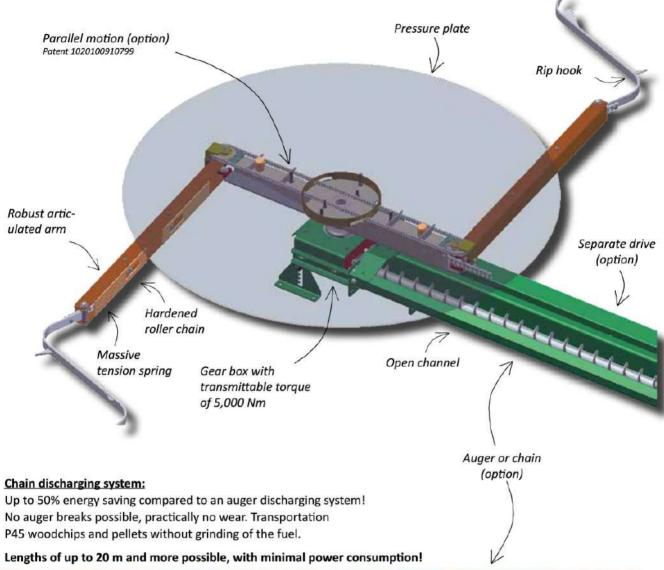


Discharge channel with inclined chain conveyor











## **Modern industrial control**

#### **Heizocontrol ET100**

Home Edition

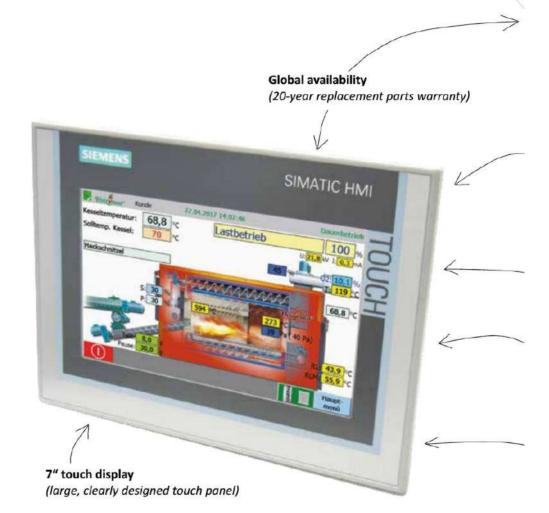
## Equipment options for the control of:

- Up to 2 heating circuits regulation dependant on atmospheric conditions
- Buffer tank with up to 3 temperature sensors
- Domestic water tank
- Control and visualisation of the E-filter
- Sm@rtServer for visualization on PC or smartphone
- Continuous load control
- Ignition-mode
- Lambda regulation
- Return temp. increase
- Chimney sweep mode for full and part load measurement
- E-mail messenger
- System diagnosis indicator
- Power control by heat quantity
- · Operating hours counter
- Measured value recordings
- Security key
- Different languages selectable

#### **Heizocontrol family**

Sensational technology with self-explanatory menu navigation together with our three decades worth of experience regarding the heating of wood is offered by Heizocontrol ET100 and ET200.

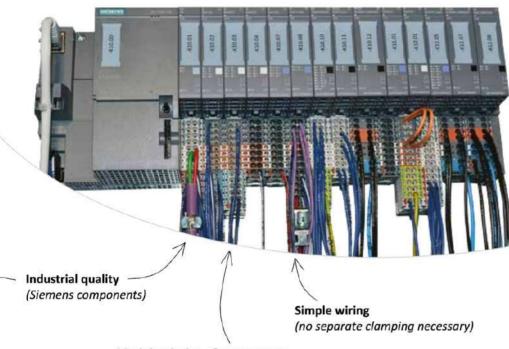
Thanks to the industrial quality and the use of Siemens components a global availability of replacement parts as well as a long life cycle are guaranteed.





Simple setting of the timer for every heating circuit Chimney sweep mode for a comfortable exhaust measurement





#### Modular design of components

(simple and convenient expansion of control unit)

#### Visualisation

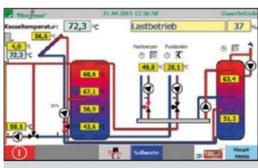
(display via PC, tablet or smartphone)

#### Self-explanatory use

(helpful info texts in every menu)

#### All at a glance

(an overview of all values)



Self-explanatory menu navigation with innovative touch interface



Selection of various fuels, which can be freely defined

Continuous load control for ideal combustion

#### **Heizocontrol ET200**

**Professional Edition** 

## Equipment options for the control of:

- Up to 6 heating circuits regulation dependant on atmospheric conditions
- Two buffer tanks with up to 8 or 2x4 temperature sensors
- Solar function
- Up to two domestic water tanks
  - Domestic water circulation
- Remote control
- Control and visualization of up to 2 e-filters
- Sm@rtServer for visualization on PC or smartphone
- Continuous load control
- Ignition-mode
- Lambda regulation
- · Return temp. increase
- Chimney sweep mode for full and part load measurement
- Boiler sequence control (Cascade)
- E-mail messenger
- System diagnosis indicator
- External boiler temperature control via 0-10 V signal
- External planned performance via 0-10 V signal
- Power control by heat quantity
- Modbus TCP
- Flexible planned performance
- · Operating hours counter
- Measured value recordings
- Security key
- Can be combined with the CX200

## Modern industrial control

#### **Heizocontrol CX200**

#### Home remote thermostat

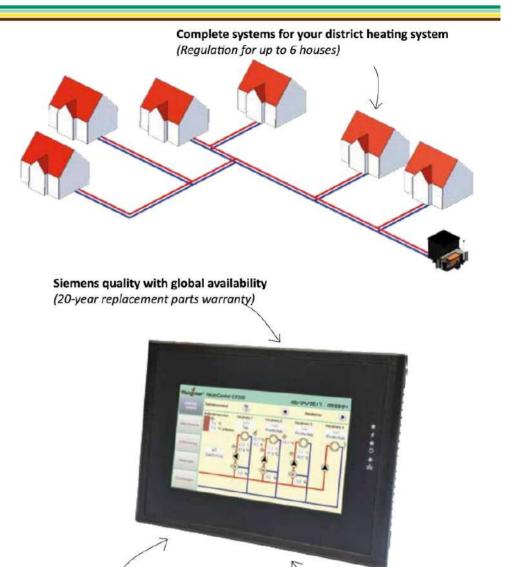
With the new Heizocontrol CX200 controller upgrade there is the complete solution for your district heating system. The local heat manager controls up to six houses each with up to four heating circuits, domestic water, solar function and much more

The CX200 is connected to the ET200 via bus connection and thereby allows the most optimum data exchange between heat generator and heat consumer.

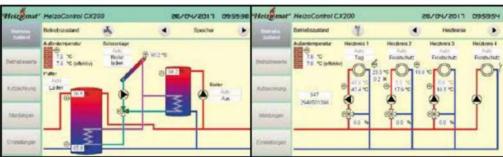
The Heizocontrol CX200 is designed and delivered in the familiar Siemens quality.

#### **Equipment options:**

- Up to 3 heating circuits dependend on atmospheric conditions
- · An unregulated heating circuit
- Buffer tank with up to 2 temperature sensors
- Domestic water with circulation and disinfection (Legionella)
- Solar system
- Plate heat exchanger can be used
- · Network flushing function
- Remote access
- and much more







Clear menu navigation with self-explanatory structure

7" touch display

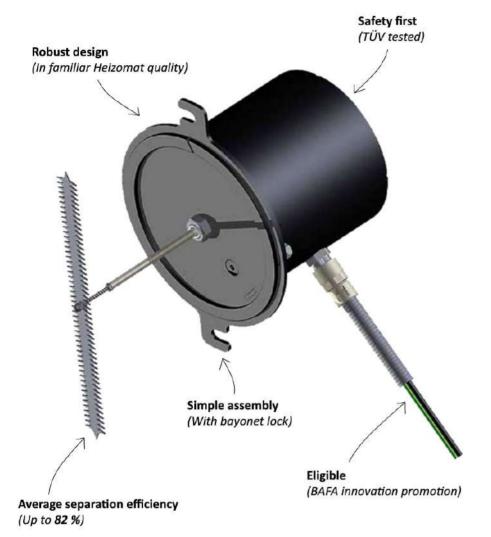
(Large, clearly designed touch panel)

Comfortable setting and programming of heating circuits

Visualisation

(Remote access via VNC client)





#### Heizoclean EF185

#### Clean, robust, efficient

With the HeizoClean EF185 electrostatic particle separator you can use the future of filter technology in your Heizomat today. Along with the innovative control concept the EF185 sets new standards in filter technology for biomass systems with its robust design, automatic cleaning and simple handling.

The HeizoClean EF185 charges dust particles flowing past in the flue gas using electrostatic charging. At the same time, via the HeizoControl ET, the current and the voltage are automatically adapted to the dust load, thereby achieving an average separation efficiency of up to 82 %.

Thanks to high-quality components, and a robust and easy-maintenance design the new EF185 particle separator is once again a real Heizomat product that justifiably carries the HeizoClean name and signifies a further milestone in the automatic combustion of wood.



# Perfect concept

#### Perfect concept

The Heizomat system is attuned all conventional heating systems. Be it underfloor heating, radiators, ceiling fan heaters, fresh water module or district heating. We can offer the perfect solution for each system. Do you want to expand your system with a matching return temperature increase, storage technology or domestic water heat pump? No problem, even your photovoltaic system will find the right place in the Heizomat system.

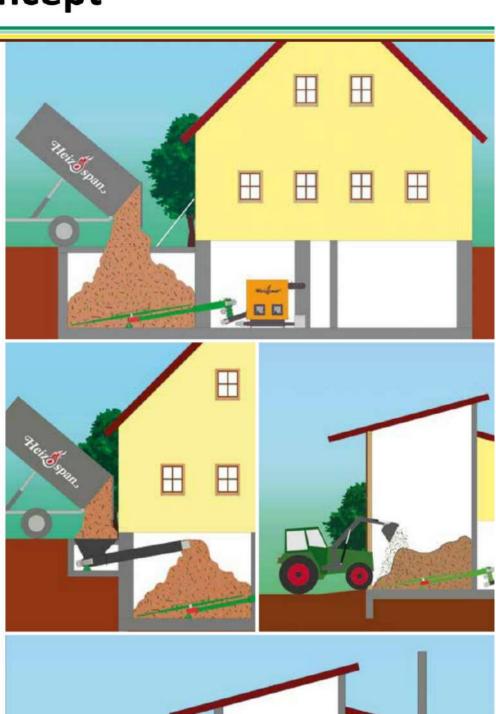
#### From A for agitator to Z for...

We don't just increase your quality of life in the boiler room with sophisticated and modern technology. Filling is also a part of the Heizomat system. That's why, besides different sizes of bunker cover, we also offer various systems for bunker filling. If you want to blow the material 8 m upwards, that's no problem.

Or rather use an auger pushing vertically upwards for low dust. We offer the right solution for your property.

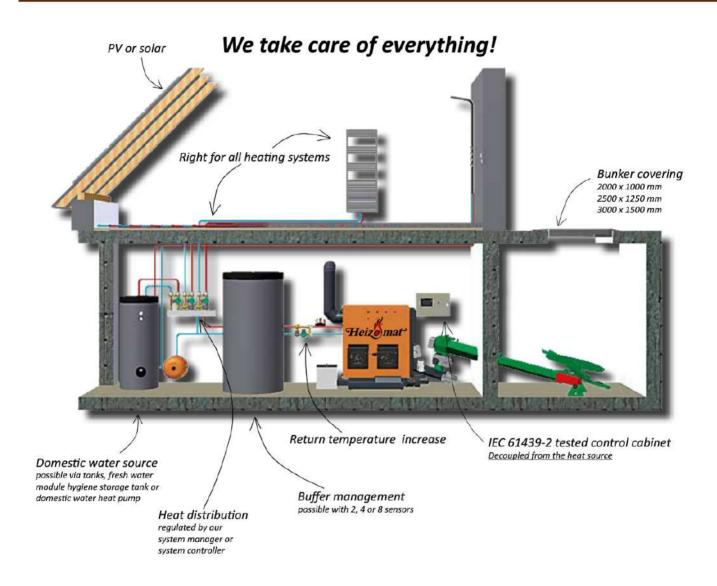
The Heizomat system begins with A for agitator and is far from done with Z for zinc coating.

You can also experience our Heizohack chippers, Heizotruck commercial vehicles, the Heizogreif forestry grippers or the Heizoschaufel bucket for light bulk material.













# **Technical data**



Energy efficiency class (up to 70kW)

	HSK-RA 15	30	40	HSK-RA 60	75	100	HSK-RA 150	200
Heat capacity (kW)	0 - 14.5	0 - 33	0 - 40	0 - 60	0 - 75	0 - 96	0 - 149	0 - 199
Heat exchange surface (m²)	2.60	3.80	4.90	5.90	8.10	10.50	15.70	20.90
Boiler / system weight (kg)	575 / 1018	770 / 1213	860 / 1303	950 / 1393	1300 / 1743	1470 / 1913	2140 / 2583	2660 / 3103
Water capacity (I)	170	188	210	255	280	360	625	810
Boiler length (mm)	800	935	1135	1335	1335	1635	1635	2135
Boiler width (mm)	775	775	775	775	925	925	975	975
Boiler height (mm)	1442	1442	1442	1442	1536	1536	1980	1980
Flue tube diameter (mm)	180	200	200	200	200	250	300	300
Operating pressure max (bar)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Boiler temperature max (°C)	95	95	95	95	95	95	95	95
Return temperature min (°C)	>55	>55	>55	>55	>55	>55	>55	>55
Heat flow	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2"	2"
Heat return	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2"	2"
Safety heat flow	1"	1"	1"	1"	1"	1"	1 1/4"	1 1/4"
Safety heat return	1"	1"	1"	1"	1"	1"	1 1/4"	1 1/4"



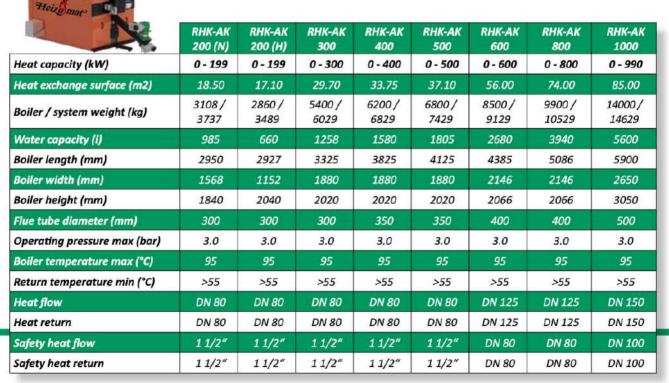




## A<sup>+</sup>

#### Energy efficiency class (up to 70kW)

	RHK-AK 30	RHK-AK 50	RHK-AK 60	RHK-AK 75	RHK-AK 100	RHK-AK 150 (N)	RHK-AK 150 (H)
Heat capacity (kW)	0 - 36	0 - <b>50</b>	0 - 60	0 - 75	0 - 101	0 - 149	0 -149
Heat exchange surface (m²)	3.40	4.50	5.60	7.20	8.90	13.93	13.10
Boiler / system weight (kg)	900 / 1343	1000 / 1443	1150 / 1593	1400 / 1843	1500 / 1943	2570 / 3010	2320 / 2763
Water capacity (I)	165	205	250	385	475	712	510
Boiler length (mm)	1383	1583	1783	1690	1940	2450	2427
Boiler width (mm)	860	860	860	1085	1085	1568	1152
Boiler height (mm)	1585	1585	1585	1645	1645	1840	2040
Flue tube diameter (mm)	200	200	200	200	250	300	300
Operating pressure max (bar)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Boiler temperature max (°C)	95	95	95	95	95	95	95
Return temperature min (°C)	>55	>55	>55	>55	>55	>55	>55
Heat flow	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	DN80	DN 80
Heat return	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	D <b>N 80</b>	DN 80
Safety heat flow	1"	1"	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
Safety heat return	1"	1"	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"



# More than heating technology

We don't just want the perfect heating system for our customers. The manufacturing and handling of the fuel are also very important to us. That's why we have been producing chippers under the name Heizohack since more than two decades. With our Heizogreif forestry grippers and the Heizoshovel bucket for light bulk material handling before and after chipping is optimised. Our latest member is the Heizotruck, a vehicle for forestry and agriculture as well as public services.

#### Heizohack handfed machines:

- Infeed diameter 30 to 40 cm
- Drive via PTO, e-motor or Diesel engine
- As 3-point or with trailing axle

#### Heizohack crane fed machines:

- Diameter up to 80 cm
- Drive via PTO, e-motor or Diesel engine
- With trailing axle, tandem or mounted on a lorry

#### Heizotruck:

- LoF approval (60 80 km/h)
- 510 hp drive
- ISO-BUS terminal
- · Rear PTO shaft, fifth-wheel plate
- Front- and rear hydraulics
- And much more

#### **Heizogreif forestry grippers**

- For crane, loader and tractor
- Opening width 1500 mm
- As version with 3/2, 4/3 or 5/4 massive steel prongs
- Also as HG 100 logging gripper
- With mounting bracket for Euro 3 or other cultivation systems

#### **Heizoshovel**

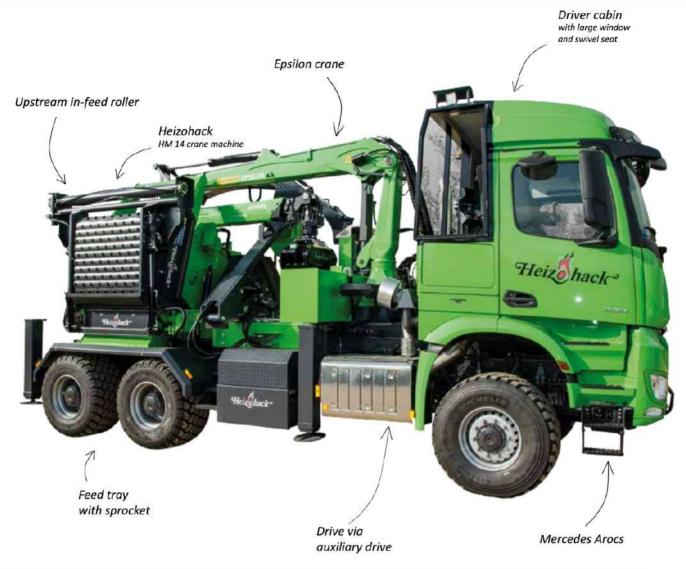
- With 1 m<sup>3</sup>, 2 m<sup>3</sup> or 3 m<sup>3</sup>
- With mounting bracket for Euro 3 or other cultivation systems















## **Gerd Wild**

RHK-AK 50

#### Property:

Idyllic old building in the Nuremberg countryside

# Area to be heated: approx. 350 m<sup>2</sup>

Fossil energy quantity replaced: approx. 6000 I heating oil per year

CO<sub>2</sub> saving: 16800 kg/year



Germany













## Bernhardseck Hütte HSK-RA 30 pellets

#### Property:

Hosted hut with accomodation for up to 55 guests in Tyrol at 1812m

#### Area to be heated:

Chalet with 40 beds

# Fossil energy quantity replaced: approx. 3,500 l heating oil per year

CO<sub>2</sub> saving: 9,100 kg/year



## Woodchip production Horst Nürnberger

HSK-RA 50 HSK-RA 100 HM-14-800 KTL 2x

#### **Property:**

Biomass farm with production and sales of woodchips in various quality classes, agriculture and forestry

#### Area to be heated:

**HSK-RA 50**: Residence with 420 m<sup>2</sup> **HSK-RA 100**: Air tank for heating a workshop of 1600 m<sup>3</sup>

Fossil energy quantity replaced: approx. 8,400 I heating oil per year

CO<sub>2</sub> saving: 21,840 kg/year









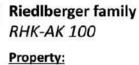








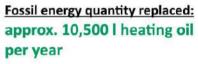




Agricultural estate with orchards

#### Area to be heated:

Two houses of approx. 400 m<sup>2</sup> and a workshop. A further house is planned.



CO<sub>2</sub> saving: 23,625 kg/year









## Hunde & Katzenpension Bartholomäus Grandinger RHK-AK 500

#### **Property:**

Animal hotel near Munich airport

#### Area to be heated:

approx. 4000 m<sup>2</sup>

Fossil energy quantity replaced: approx. 100,000 I heating oil per year

CO<sub>2</sub> saving: 260,000 kg/year























Agriculture and forestry, heating contracting, production and sale of woodchips



Farmhouse and numerous public buildings

Fossil energy quantity replaced: approx. 155,400 l heating oil per year

CO2 saving: 404,040 kg/year









## Wecker Martin

RHK-AK 150

#### **Property:**

Heating network for 4 residential buildings and a pigsty

#### **Connection points:**

5

2 plans

## **Heating network length:**

359 m

Fossil energy quantity replaced: approx. 30,500 I heating oil per year

CO<sub>2</sub> saving: 79,300 kg/year

























## Hüttenhof **Bavarian Forest Resort** RHK-AK 500

#### Property:

4-star nature and wellness hotel in the Bavarian Forest with 53 rooms, 9 chalets, large indoor swimming pool, saunas, cosy restaurant and much more

## Area to be heated:

approx. 8000 m<sup>2</sup>

Fossil energy quantity replaced: approx. 115,000 I heating oil per year

CO<sub>2</sub> saving: 322,000 kg/year



## Nahwärmegenossenschaft Dittenheim eG

RHK-AK 500

#### **Property:**

Heating network with biogas system

#### **Connection points:**

98 residential buildings 26 plans

#### **Heating network length:**

6601 m

Fossil energy quantity replaced: approx. 96,000 I heating oil per year

CO<sub>2</sub> saving: 216,000 kg/year















## Alexander von Humboldt Stiftung

RHK-AK 150 pellet

#### **Property:**

Administrative building of the Alexander von Humboldt Stiftung für Wirtschaftskooperationen (foundation for economic cooperation)

#### Property to be heated:

4-storey building approx. 7000 m<sup>2</sup>

Fossil energy quantity replaced: approx. 37,500 I heating oil per year

CO<sub>2</sub> saving: 105,000 kg/year



## Holzwerke Strunz GmbH RHK-AK 800

#### **Property:**

Instrument making company, specialising in soundboards for pianos and grand pianos

#### Properties to be heated:

approx. 6500 m<sup>2</sup> 2 x timber dryers

Fossil energy quantity replaced: approx. 165,000 I heating oil per year

CO<sub>2</sub> saving: 429,000 kg/year



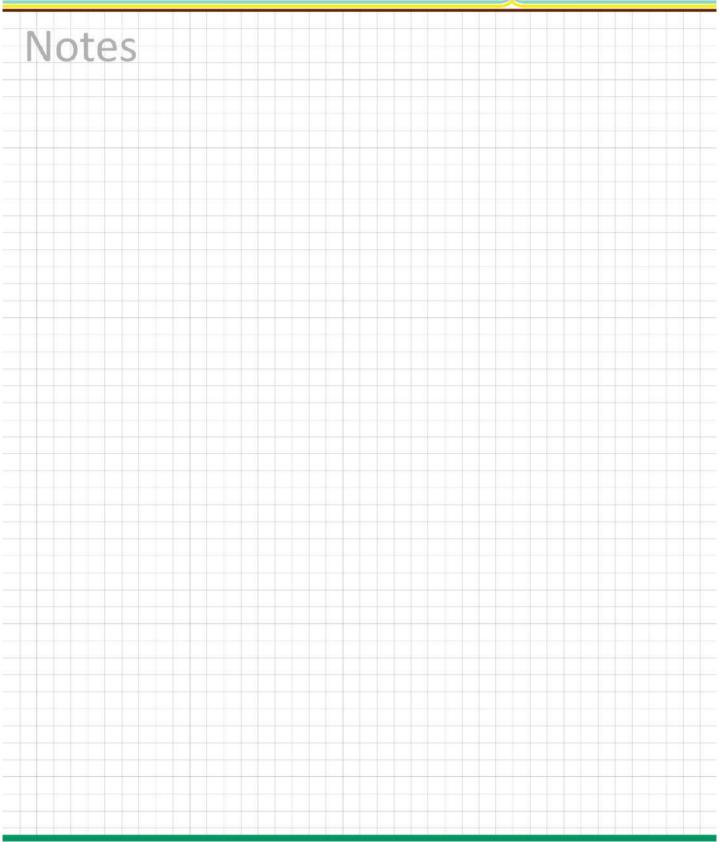
















Since 1982, with approx. 400 employees and more than 35,000 customers we have been operating an active heating revolution!Be a part of it!



technical changes, which serve the continuous further development, are reserved.

Dimensions and weights are all approximate!



**Energy in Balance with Nature** 

Our partner:

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