

# INDUSTRIAL HEATING SYSTEMS

Wood Chip / Pellet boilers 200 - 2,500 kW

**HARGASSNER**  
INDUSTRY





## Our vision is characterised by harmony between nature and satisfied customers.

We are proud of 37 years of experience and more than 120,000 satisfied clients. This, however, is not a reason for us to sit back. Quite the opposite is the case. Customer satisfaction combined with environmental friendliness are the primary goals of our philosophy and are the main attributes which determine the company's future direction. Lowest emissions combined with highest efficiency, maximum comfort and long lifetime characterise the brand HARGASSNER. Yet, we continue to improve elements of our products to launch even better products in the future. We continually invest in research and quality management.

PROUD  
PARTNER OF



Dynamism, team spirit, closeness to nature, family and success are image elements that characterise Hargassner. And they are precisely the values people associate with the members of Austria's ski jumping team. Hargassner became an official partner of the ÖSV ski jumping team in September 2018.



Markus, Elisabeth & Anton and Anton Hargassner

- Over 37 years of experience
- Worldwide Export
- Company premises covering over 36,000 m<sup>2</sup>
- More than 120,000 satisfied customers
- International awards





# Hargassner goes industry



Biomass boiler manufacturer Hargassner Ges mbH from Weng im Innkreis, Austria, announced the acquisition of Gilles GmbH & Co KG from Gmunden (Upper Austria) in August 2020. The companies collaborated on appropriate synergy strategy for product lines. These strategies are now being implemented at the new Competence Centre for Industrial Systems in Lenzing (Upper Austria). The integration focus is on growth. The objective is to merge the best features of the two companies.

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## Efficient – reliable – sustainable

### What benefits does heating with biomass offer?

#### **Wood chips are the most cost effective form of heating compared with fossil fuels, electricity or heat pumps.**

Wood chips are exclusively created from waste wood of domestic forests or the sawmill industry. The waste wood is stored for up to a year in the fresh air and in a sunny place outside the forest. In the autumn, the wood is shredded in a fully-automated process and conveyed into the fuel storage mechanically. Shredding the lumber directly after harvesting, and then drying the wood chips in a drying system (biogas system, solar plant, etc.) is another option.

#### **Benefits**

- Inexpensive fuel with maximum convenience
- Crisis-resistant, because locally sourced
- Independent of oil and gas
- Supplied by local farmers or forest operators
- Value creation process remains in the region
- Efficient and energy-saving boiler
- Waste wood utilisation
- Additional source of income through sale of wood chips
- Very low work overhead due to mechanical process
- Enormous time savings thanks to automatic heating system

In addition to companies in the woodworking industry, increasing numbers of contractors, municipalities and various commercial energy suppliers are opting for wood as a fuel. Heating with biomass is showing strong growth due to its many benefits. Inexpensive fuels, advanced biomass heating systems and growing environmental awareness mean that more and more people are opting for CO<sub>2</sub>-neutral and environmentally friendly heating.

#### **Pellets – the local, environmentally friendly and CO<sub>2</sub>-neutral fuel.**

Pellets consist of natural wood. They are made by pressing wood shavings and sawdust, large volumes of which are produced every day in the wood-processing industry all over the world.

#### **Benefits**

- Lower costs than oil or gas
- Crisis-resistant, because locally sourced
- Short transportation
- Easy refuelling through blown pellet delivery
- Dust-free, odourless blow-in
- Low storage volume (= low space requirements)
- Efficient and energy-saving boiler





Forest and sawmill waste wood



Waste wood, wood processing



Wood from landscape conservation work



Recovered wood



Fast growing wood



Wood shavings from planing and milling



Bark



Fine wood shavings



### Wood chips – a profile

(EN ISO 17225-4)

**Calorific value:** 4 kWh/kg at 25% W\*

**Density:** 200 - 250 kg/m<sup>3</sup>

**Size:** G30 - G50 / P16S - P45S (Class A1-A2)

**Water content:** W20 - W60 / M60 (Class A1-A2)

**Primary energy effort:** < 2.0%



### Wood pellets – a profile

(EN ISO 17225-2)

**Calorific value:** 5 kWh/kg

**Density:** 650 kg/m<sup>3</sup>

**Ø / length:** 6 mm / approx. 5 - 40 mm

**Water content:** w < 10%

**Primary energy effort:** 2 - 2.7%

\* The calorific value varies as a function of the water content in the fuel



## High-performance solutions with individual project planning

### Specialised industrial team

At Hargassner Industry, experienced engineers and project managers guarantee the development of industrial heating boilers in line with the latest technical standards, and precise tuning to the customer's individual requirements. The different requirements in the district heating and industrial sectors demand tailor-made solutions, from planning and delivery through to installation and commissioning. Everything is perfectly individualised according to the customer's requirements. Training and after sales service are provided directly by Hargassner or an authorised partner; there is nothing blocking the way of satisfying and safe operations!



**NOTE:** Both the state and local governments heavily subsidise biomass heating systems. When switching from fossil fuels to environmentally-friendly heating materials, you can therefore benefit in many cases from significant financial support.



# Sustainable solution for a large heating demand

**Hargassner – many years of practical experience in the development of state-of-the-art biomass heating technology combined with Gilles' experience in industrial plant construction.**

Hargassner has many years of experience in the field of biomass heating technology – a know-how which is resulting in enormous technological advances with Hargassner wood chip heating systems up to 330 kW. The experience of the two companies in the field of design engineering and control system design ensure the best ideas and solutions. This means that we have special know-how in the field of industrial heating systems. Depending on the specific requirements and the fuel used (wood chips, pellets, as well as other biogenic fuels), all projects are planned individually and adapted to the respective needs. Due to our experience with the practical requirements for various heating solutions in the industrial sector, all of our heating systems

are designed for continuous high-performance use.

We offer a wide range with systems offering an output of up to 2,500 kW! From hotels, catering and trade, through horticulture operations and heating plants, up to large commercial and industrial enterprises, our industrial heating systems stand for maximum reliability in tough continuous operation for decades. Massive reductions in heating costs through the use of pellets, wood chips or other biogenic fuels as well as the use of the wood waste generated within the company ensure a rapid return on investments.



Whether conventional wood chips or pellets of different qualities, wood waste or other biogenic fuels, Hargassner offers the right firing system for every type of fuel. Whether the fuel is very dry or very wet, Hargassner has the proper solution.

## Technology for all requirements

All Hargassner industrial boilers offer fully automatic heat exchanger cleaning without interrupting operation. Efficiency levels of up to 93% are no problem.



## MAGNO

### High-performance industrial boilers

**Magno-UF with underfeed furnace trough and fixed burnout grate.** The UF underfeed boiler is designed for the use of wood fuels with extremely low to medium residual water content. That is, for wood fuels with a water content of 8% to 40%. Steady combustion in the underfeed fire trough ensures the lowest possible particulate emission level in the exhaust gas.



Magno-UF with underfeed furnace trough and **fixed burnout grate**



## MAGNO VR

200 - 600 kW

Forward grate firing



## MAGNO SR

800 - 2,500 kW

Step grate firing



# MAGNO

## High-performance industrial boilers

**Magno-VR/SR with forward grate firing in two different performance classes and designs.** Forward grate firing boiler technology is used wherever wood chips, sawdust and bark with high residual water content or other biogenic fuels such as miscanthus, vine wood, etc., are used. That is, for wood fuels with a water content of 8%\* to 60% or

for fuels with a low ash melting point. The Magno-VR 200-600 kW models have an integrated forward grate firing. The Magno-SR 800-2,500 kW models have a step grate firing. Steady combustion on the firing grate ensures the lowest possible emission level in the exhaust gas. Automatic de-ash occurs at the end of the grate.

\*Exhaust gas recirculation (option) should be designed for with fuels which have a water content of <12%



Magno-VR with **forward grate firing**



Magno-SR with **step grate firing**

## These benefits make our industrial heating systems unique

A solid boiler body in stress-free welded design, as well as the use of high-quality refractory fireproven concrete, ensure high levels of system availability and a long lifetime of the boiler system. The heat-insulated front door can be swung out completely to allow perfect cleaning of the heat exchanger and the radiation vault. All system types are designed with low-NOx combustion chambers. The high combustion temperatures of the combustion gases guarantee clean and efficient combustion of the fuel. A modulating mode of operation and efficiency of up to 93% enable highest annual utilisation levels. In addition, the low NOx values can be reduced even further by means of exhaust gas recirculation (optional).

### **Automatic heat exchanger cleaning**

Our industrial heating systems are equipped with horizontal heat exchanger pipes and efficient turbulators. All Hargassner industrial boilers offer fully automatic heat exchanger cleaning via a pneumatic air blast as standard without needing to interrupt operation. This automated cleaning of the heat exchanger pipe keeps efficiency consistently high, thus ensuring low fuel consumption and low heating costs in the long term.



### **Flue gas recirculation (option)**

For fuels with a low ash melting point, there is also flue gas recirculation to prevent slag formation and to protect the refractory lining. It is mainly used with very dry fuels, as well as for combustion and performance optimisation. In addition, what are already low NOx values can be reduced even further.



### **Forward grate firing design**

In the MAGNO-VR and SR models, a hydraulic cylinder is used for robust control of the forward firing grate. The forward firing grate enables firing of wood chips with up to 60% water content.



### **Industrial standard control**

Hargassner has achieved sustainable added value with the newly developed innovative Touch Industry control system. The system components used, meet the highest industrial technology standards. The boiler can be monitored and controlled via internet.





## MAGNOUF 200 - 600 kW

- Under feed firing trough made of highly heat resistant, fire-proof cast alloy
- Under feed firing with fixed burnout grate**
- Dual-walled steel housing design to preheat the combustion air
- Combustion control via flue gas, boiler combustion chamber, boiler temperature and Lambda sensors
- Radiation vault in element structure for easy vault stone replacement
- Ceramic lining of the combustion chamber in high temperature resistant concrete
- Double-hinged combustion chamber door in front wall of combustion chamber
- Dynamic combustion air control with valve control and airflow metering
- Automatic, pneumatic heat exchanger cleaning
- Suitable for wood chips EN ISO17225-4 to G50/P31S, and pellets EN ISO-17225-2, Swisspellets DINplus, EN plus

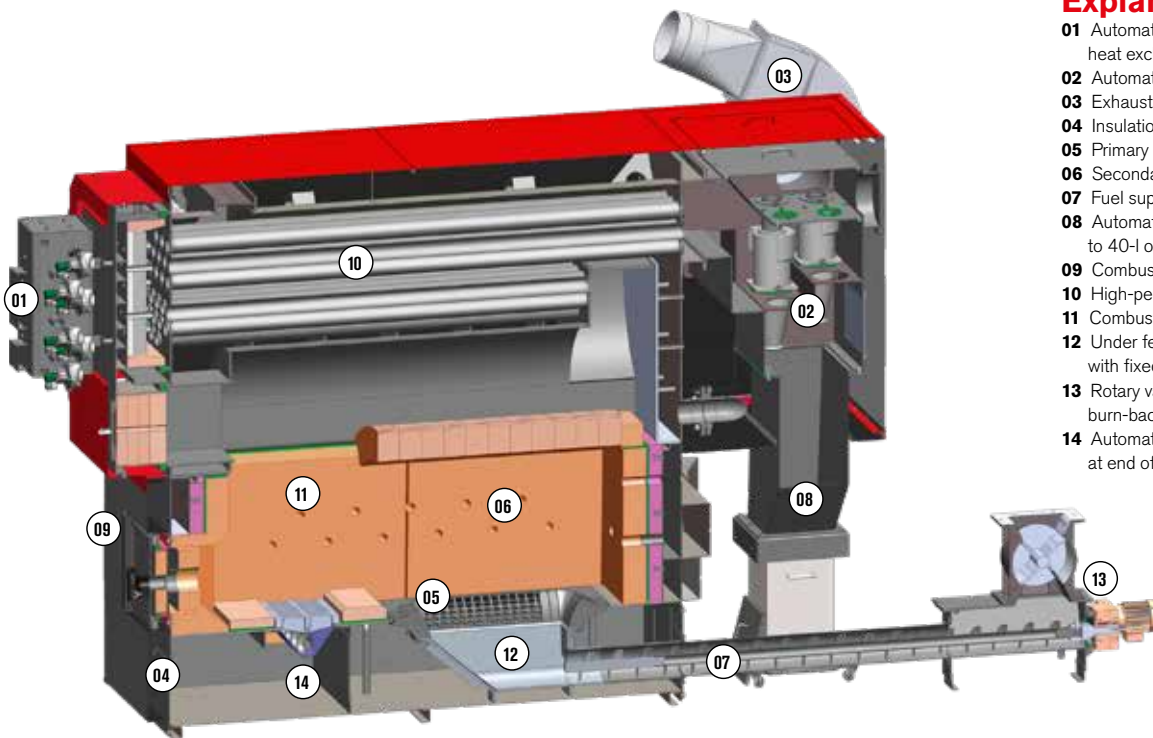


### Under feed firing with fixed burnout grate



### Optional

- Safety heat exchanger
- Flue gas recirculation
- Central de-ash



### Explanation

- 01 Automatic, pneumatic heat exchanger cleaning
- 02 Automatic flue gas cleaning
- 03 Exhaust fan
- 04 Insulation
- 05 Primary air
- 06 Secondary air
- 07 Fuel supply
- 08 Automatic cyclone ash extraction to 40-l or optionally 240-l ash bin
- 09 Combustion chamber door
- 10 High-performance heat exchanger
- 11 Combustion chamber with low-NOx design
- 12 Under feed furnace trough with fixed burnout grate
- 13 Rotary valve as burn-back protection
- 14 Automatic de-ash at end of grate

### TECHNICAL DATA MAGNO-UF 200 - 600 kW

	Unit	UF 200	UF 250	UF 300	UF 350	UF 500	UF 550	UF 600
Nominal heating output	KW	200	250	280	300	501	550	600
Dimensions L x W x H	mm	3,160 x 1,160 x 2,250	3,160 x 1,160 x 2,250	3,350 x 1,260 x 2,300	3,350 x 1,260 x 2,300	3,875 x 1,460 x 2,510	3,875 x 1,460 x 2,510	3,875 x 1,460 x 2,510
Dry weight	kg	4,250	4,250	5,200	5,200	6,830	6,830	6,830

## MAGNO VR 200 - 600 kW

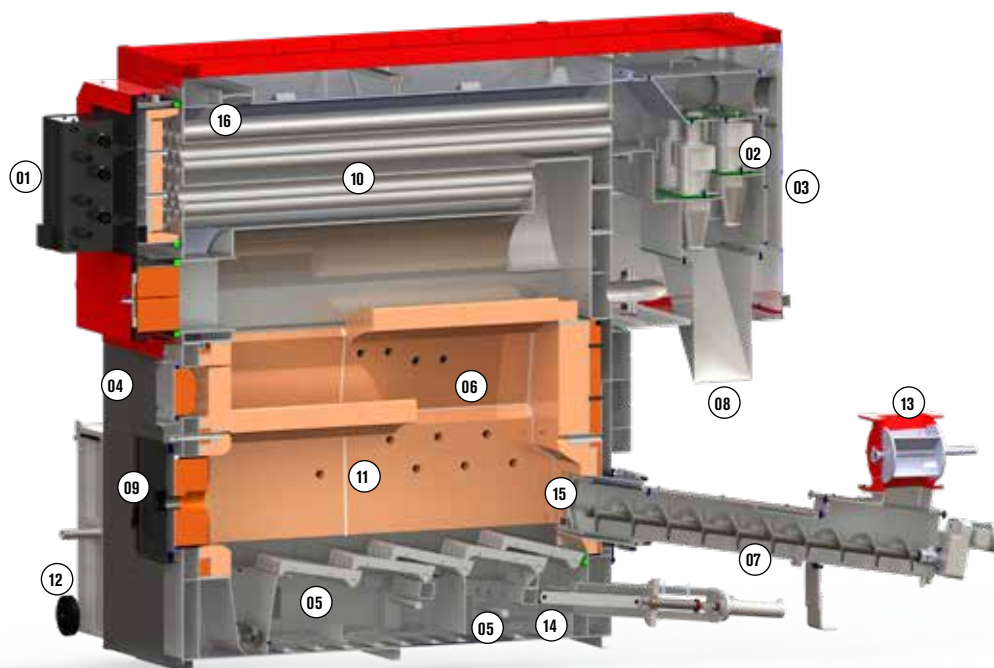
- Forward grate firing for drying, gasification and fuel combustion
- **Automatic de-ash at end of grate**
- Grate carriage with maintenance-free sliding guides
- **Forward grate firing powered by hydraulic drive**
- Dual-walled steel housing design to preheat the combustion air
- Combustion control via flue gas, boiler combustion chamber, boiler temperature and Lambda sensors
- Radiation vault in element structure for easy vault stone replacement up to Magno-VR 600
- Ceramic lining of the combustion chamber in high temperature resistant concrete up to Magno-VR 600
- Double-hinged combustion chamber door in front wall of combustion chamber
- Cleaning and service door below grate
- Dynamic combustion air control with valve control and airflow metering
- Automatic, pneumatic heat exchanger cleaning
- Suitable for wood chips EN ISO17225-4 to G50/P31S, and pellets EN ISO-17225-2, Swisspellets DINplus, EN plus



### Optional

- Safety heat exchanger
- Under grate de-ash by means of hydraulic drive
- Flue gas recirculation
- Central de-ash

### Forward firing grate



### Explanation

- 01 Automatic, pneumatic heat exchanger cleaning
- 02 Automatic flue gas cleaning
- 03 Exhaust fan
- 04 Insulation
- 05 Primary air (2 zones)
- 06 Secondary air (2 zones)
- 07 Fuel supply
- 08 Automatic cyclone ash extraction to 40-l ash bin  
optionally: 240-l or 800-l ash bin
- 09 Combustion chamber door
- 10 High-performance heat exchanger
- 11 Combustion chamber with low-NOx design
- 12 Automatic ash extraction to 240-l ash bin  
or optionally: 800-l ash bin
- 13 Rotary valve as burn-back protection
- 14 Under grate de-ash (optional)
- 15 Automatic ignition
- 16 Safety heat exchanger installed in boiler (optional)

### TECHNICAL DATA MAGNO-VR 200 - 600 kW

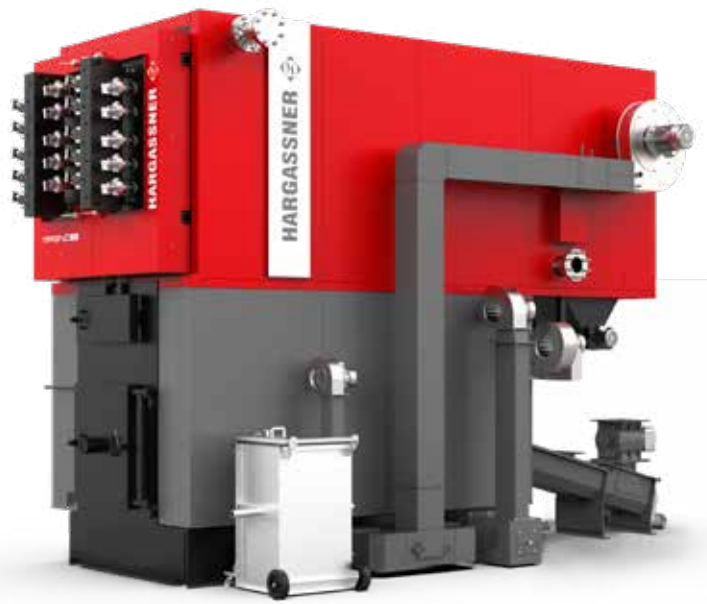
	Unit	VR 200	VR 250	VR 300	VR 350	VR 400	VR 450	VR 500	VR 550	VR 600
Nominal heating output	KW	200	250	300	350	400	450	500	550	600
Dimensions L x W x H (without add-on parts)	mm	3,007 x 1,012 x 2,013	3,160 x 1,160 x 2,610	3,160 x 1,160 x 2,610	3,350 x 1,260 x 2,650	3,350 x 1,260 x 2,650	3,875 x 1,460 x 2,950	3,875 x 1,460 x 2,950	3,875 x 1,460 x 2,950	3,875 x 1,460 x 2,950
Dry weight	kg	3,350	5,100	5,100	6,025	6,025	8,540	8,540	8,540	8,540



## MAGNO SR

### 800 - 2500 kW

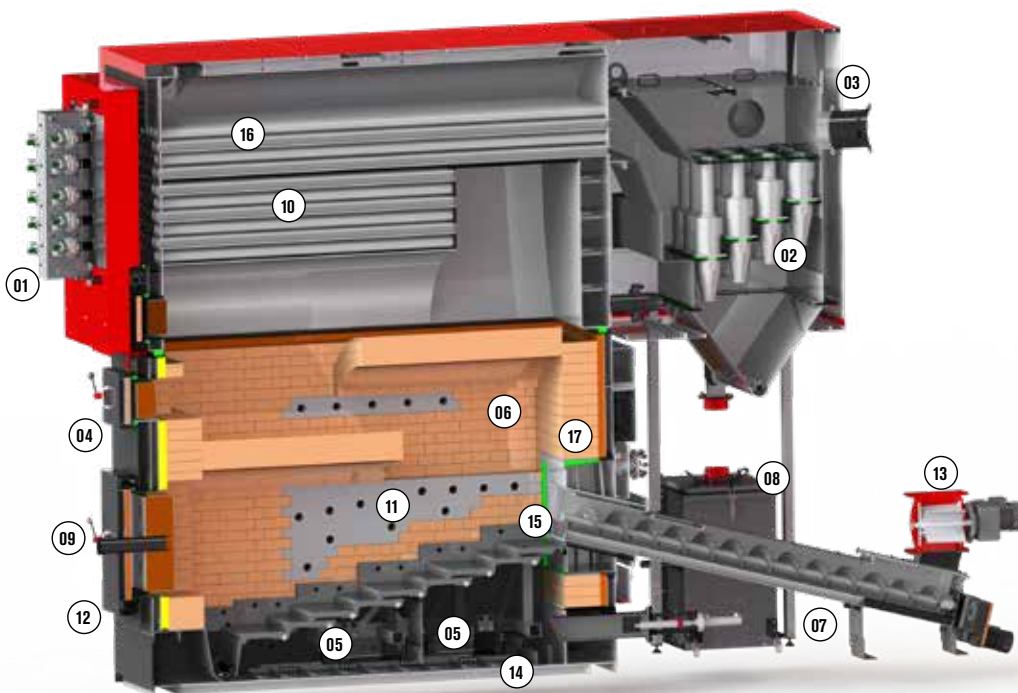
- Step grate firing for drying, gasification and fuel combustion
- **Automatic de-ash at end of grate**
- Grate carriage with maintenance-free sliding guides
- **Step grate powered by hydraulic drive**
- Dual-walled steel housing design to preheat the combustion air
- Combustion control via flue gas, boiler combustion chamber, boiler temperature and Lambda sensors
- Radiation vault with high-temperature resistant refractory bricks
- Double-hinged combustion chamber door in front wall of combustion chamber
- Cleaning and service door below grate
- Dynamic combustion air control with valve control and airflow metering
- Automatic, pneumatic heat exchanger cleaning
- Suitable for wood chips EN ISO17225-4 to G50/P45S, and pellets EN ISO-17225-2, Swisspellets DINplus, EN plus



#### Optional

- Safety heat exchanger
- Under grate de-ash by means of hydraulic drive
- Flue gas recirculation
- Central de-ash

#### Step grate



#### Explanation

- 01 Automatic, pneumatic heat exchanger cleaning
- 02 Automatic flue gas cleaning
- 03 Exhaust fan
- 04 Insulation
- 05 Primary air (2 zones)
- 06 Secondary air (2 zones)
- 07 Fuel supply
- 08 Automatic cyclone ash extraction to 240-l or optionally: 800-l ash bin  
800-l ash bin standard with SR 2,000/2,500
- 09 Combustion chamber door
- 10 High-performance heat exchanger
- 11 Combustion chamber with low-NOx design
- 12 Automatic ash extraction to 240-l or optionally: 800-l ash bin  
800-l ash bin standard with SR 2,000/2,500
- 13 Rotary valve as burn-back protection
- 14 Under grate de-ash (optional)
- 15 Automatic ignition
- 16 Safety heat exchanger installed in boiler (optional)
- 17 Water-cooled stoker hopper for SR 800 stoker

#### TECHNICAL DATA MAGNO-SR 800 - 2,500 kW

	Unit	SR 800	SR 995	SR 999	SR 1400	SR 2000	SR 2500
Nominal heating output	KW	800	995	999	1400	2000	2500
Dimensions L x W x H (without add-on parts)	mm	5,000 x 1,750 x 3,700	5,000 x 1,750 x 3,700	5,070 x 1,950 x 3,980	5,070 x 1,950 x 3,980	6,700 x 1,950 x 3,980	6,700 x 1,950 x 3,980
Dry weight	kg	18,000	18,000	21,400	21,400	28,500	28,500

# MAXIMUM OPERATING COMFORT



## Easy control & parameter adjustment

For optimal combustion of wood chips, pellets or the biogenic fuels mentioned above, many combustion parameters need to be configured for optimal combustion. This is supported in a simple and intuitive way by the specially developed Touch-Industry industrial control system: a convenient 10.1" colour touch screen, modern controllers and defined process sequences allow all settings to be done easily. Thanks to the many expansion options, the control system can be individually tailored to suit the customer's requirements. Modern features such as automatic fault reporting by email or the option of remote service by a Hargassner technician permanently ensure safe and reliable operation.



### Efficient drive system control

- Ignition blower
- Return pump
- Accumulator management
- Augers
- Hydraulic unit
- Combustion air fans
- Exhaust fan
- Compressors
- Gear motors
- Rotary valve



- Control cabinet with PLC control and 10.1" touch-screen
- Back-end protection control by means of high-efficiency pump and 3-way mixer
- Customer interface (3 inputs and 2 potential-free outputs freely configurable)
- Automatic grate de-ash
- Pneumatic heat exchanger cleaning
- Durable, premium hybrid motor starter for all 400 V drives
- Rotary valve monitoring by means of overcurrent relay
- Negative pressure control by frequency-controlled exhaust fan
- Combustion air control by means of combustion air fan, air valves, airflow sensors
- Automatic ignition by electric ignition blower
- TMF device with acoustic signal
- Boiler sensor system (flow sensor, return sensor, flue gas sensor, combustion chamber sensor)
- Combustion control via Lambda sensor

### Options

- Visualisation incl. remote service
- M-bus connection (data read-out for heat meters)
- Modbus (other bus types on request)

The biomass boiler can be configured and monitored at any time using a PC, tablet or smartphone.





Very easy operation via TOUCH control



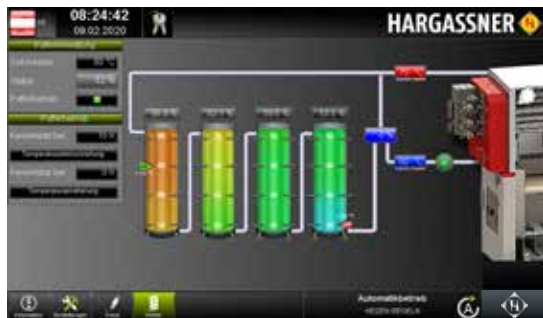
Multilingual control thanks to easy changeover possibility



Easy adjustment and display for all parameters



Graphical trend logging, easily configured



Accumulator management for up to 4 accumulator tanks with 4 sensors each

Status	Warnung	Messung
11.03.2020 11:00:00	141	Materialmenge bei Schmelze 1
11.03.2020 11:00:00	141	Materialmenge bei Schmelze 1
11.03.2020 11:00:00	141	Materialmenge bei Schmelze 1
11.03.2020 11:00:00	141	Materialmenge bei Schmelze 1
11.03.2020 11:00:00	141	Materialmenge bei Schmelze 1
11.03.2020 11:00:00	141	Materialmenge bei Schmelze 1
11.03.2020 11:00:00	141	Materialmenge bei Schmelze 1
11.03.2020 11:00:00	141	Materialmenge bei Schmelze 1
11.03.2020 11:00:00	141	Materialmenge bei Schmelze 1
11.03.2020 11:00:00	141	Materialmenge bei Schmelze 1

Continuous logging for monitoring and documentation



Control of external buildings



Function & relay test for all sensors and motors

## The best solution for every customer scenario

One of the most important aspects in the implementation of a wood chip system is planning the fuel storage room and choosing the right fuel extraction system. No matter whether you operate a local heating plant, a catering business, a wood-processing company or an industrial enterprise, Hargassner offers the ideal solution for every customer.



### Fuel extraction with spring blades

- ECO-RA energy-saving fuel extraction RA180
- Energy saving and cost-effective through 0.55-kW FE motor
- Modular system with removable lid
- Patented no-load disc at  $\varnothing 450 - \varnothing 500$  cm
- Agitator with high-efficient spur gear, 90% gear box efficiency
- Fuel extraction systems up to DM 400 with 3 springs
- Fuel extraction systems up to DM 500 with 4 springs
- **Sloping floor not needed**



### Fuel extraction with hinged arm sweep collected

This hinged arm sweep collector fuel extraction system was especially developed for use in the industrial sector and impresses with its robustness, reliability and function. The robust design of the double-armed telescopic milling arm is unrivalled. Two solid telescopic milling arms in heavy industrial design allow a clearing radius of up to 6 m diameter. It also comprises the robust fuel extraction spur gear, a pressure plate and a pretensioning device. These technologies, developed by us and improved over decades, are the prerequisites for safe, fully automated and convenient wood firing.



**01** Drive motor with spur gear and start-up relief, high efficiency, very low power consumption

**02** Robust transport auger: shaft with a diameter of up to 60 mm, continuously welded auger blade with 8 mm thickness, featuring progressive auger pitch and generously dimensioned auger channel suitable for wood chips EN ISO17225-4 to G50/P45S, industrial chips, wood briquettes

**03** Double-armed telescopic milling arm for optimum extraction from the wood chip storage room

**04** Pulling hook prevents interference. Larger wood chip pieces are automatically pushed down for shredding in the rotary valve

**05** Special extraction spur gear with optimum bearing sealing against dust and chips for high efficiency







## Fuel extraction with moving floor

Moving floor extraction is suitable for rectangular storage rooms in large boiler plants. They are equipped with one or more push rods depending on the volume of fuel material. The push rod is moved back and forth by a hydraulic cylinder, which is installed outside the storage room. The wedge

shape of the carriers pushes the fuel towards the cross conveyor trough. The fuel is transported to the boiler by means of a cross conveyor auger.



Solid hydraulic cylinders to enable movement of moving floor



Cross conveyor auger Ø 250 mm



2 moving floor containers for flexible loading of a boiler plant with fuel

## Customer-specific solutions

### Moving floor containers

Moving floor containers provide mobile fuel storage. The fuel is conveyed into the boiler by a moving floor. If one of the storage containers is empty, it is picked up by a truck, taken to the next filling station and returned completely filled. Moving floor containers are ideally suited for the storage and extraction of wood chips or other bulk materials. We find your individual solution for any scenario.

### Silo extraction

Various types of silo and bunker extraction systems are available depending on the dimensioning of the industrial biomass system, the matching transport routes and the fuel properties. The right type is determined by the local building situation. Reciprocating augers or hydraulic silo milling cutters are used for silo extraction. The fuel is fed into the boiler by means of an auger.



### Multiple-boiler systems

Depending on the specific customer requirements regarding fuel storage and the required storage space volume, various extraction systems have established themselves on the market. For multi-boiler plants, a fuel distribution container is recommended for loading.







## Pellet delivery systems

### RAP direct auger

The pellets can be transported from the pellet storage to the boiler by means of a direct auger. Open pellet troughs, optimally adapted to the length of the room, are located in the fuel storage room. Outside, they can be extended individually with closed extensions.



### RAP with ascending auger

In conjunction with the ascending auger, the RAP auger can be mounted horizontally in the pellet storage room. This increases the pellet store's fill volume.



### Flexible auger extraction

**Spiral transport auger** - The flexible, coreless spiral is made of hardened steel and is characterised by particularly high tensile strength and spring force. This makes it possible to transport pellets horizontally, vertically or in bends up for 30 metres.

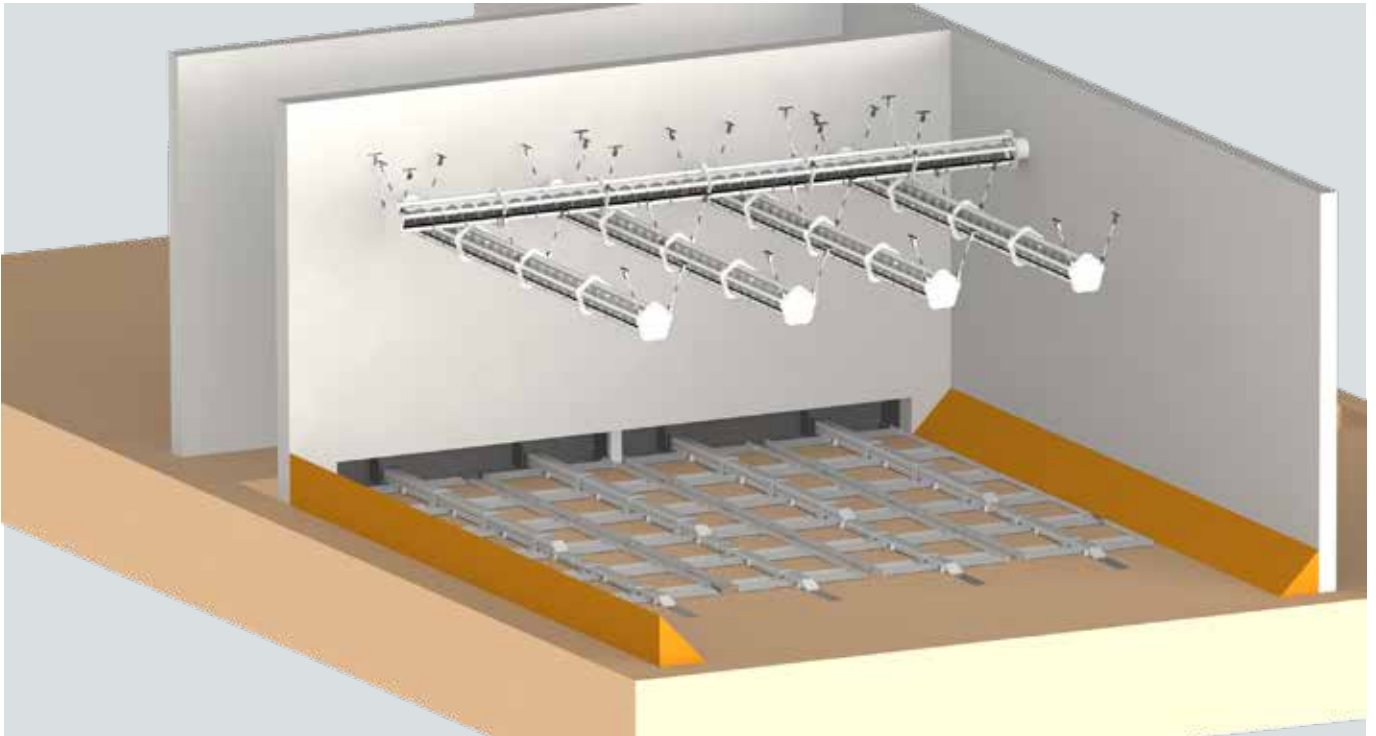


Spiral auger



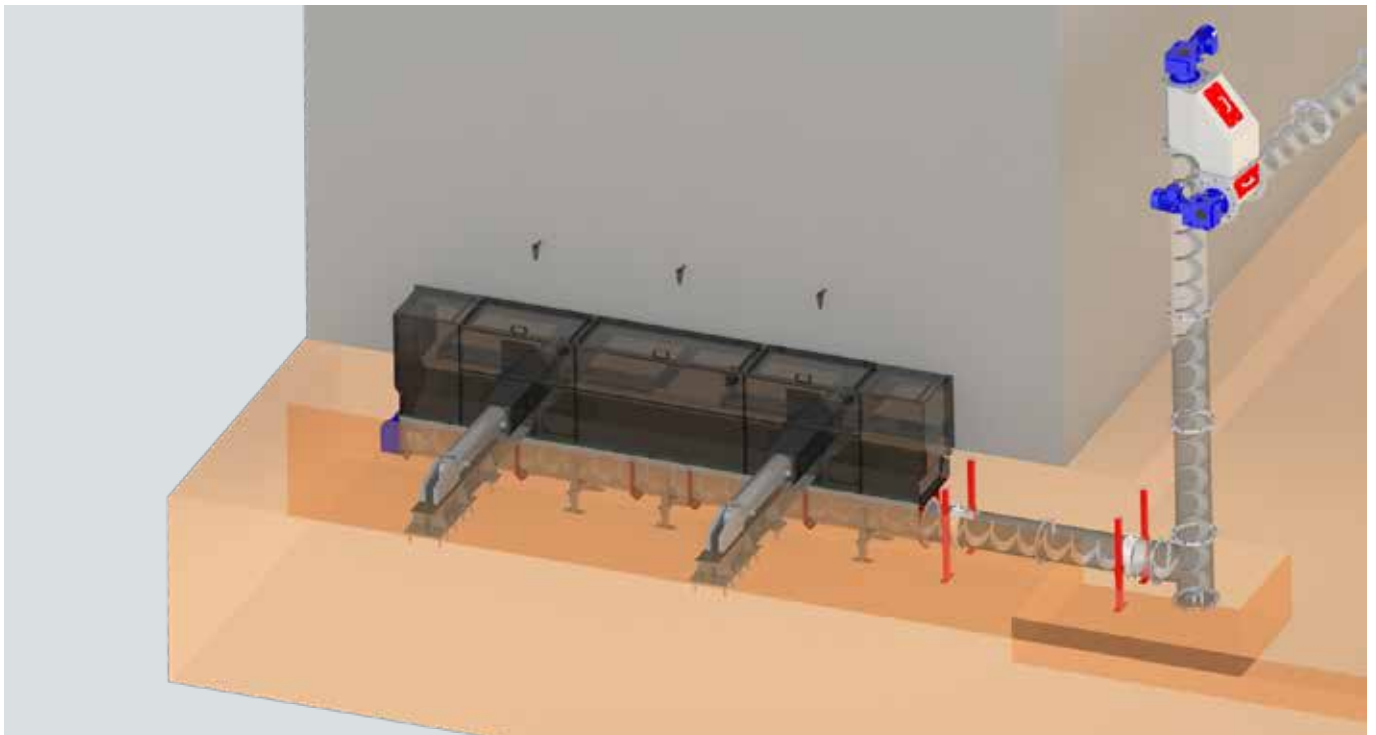
Fuel storage for 120-t pellets

# STORAGE LOADING AND UNLOADING SYSTEMS



## **Moving floor extraction**

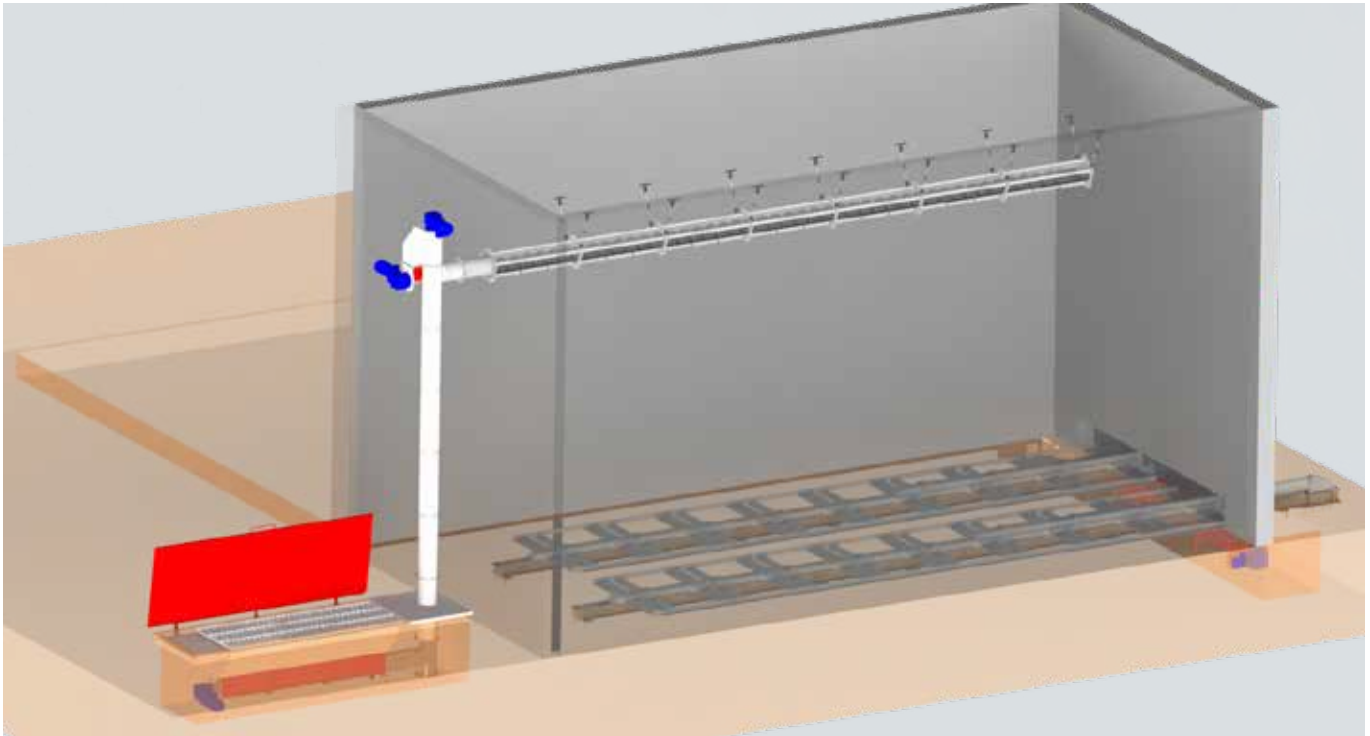
Model with 4 push rods. A cross motion auger and 4 bunker distribution augers are used to completely fill the fuel store with fuel.



## **Cross conveyor trough**

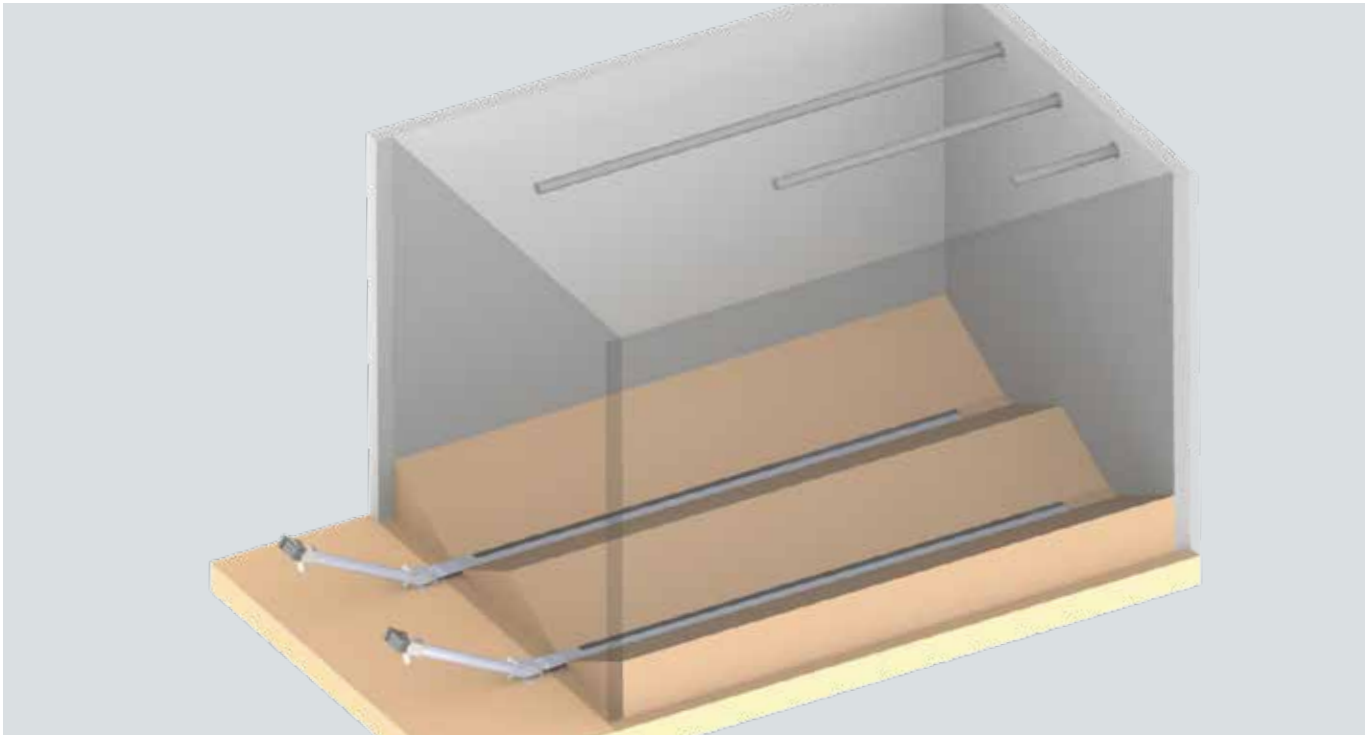
Conveying of fuel by means of 2 push rods, cross conveyor trough and vertical conveyor.





### Storage filling system

Storage filling system with filling pit, vertical conveyor and cross motion auger for uniform filling of the fuel storage.



### Pellet bunker

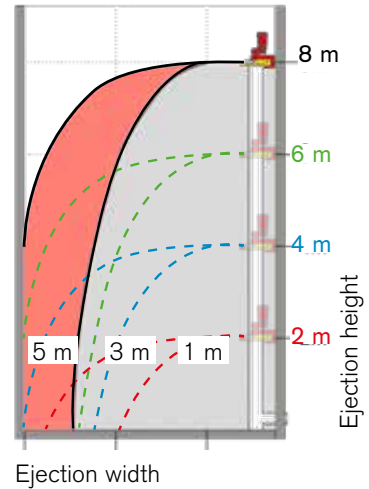
Pellet bunker with 2 industrial articulated augers and 3 air conveyor pipes.

# STANDARD FILLING SYSTEMS

## Automatic filling system with trough and vertical auger for wood chips

The Hargassner filling system for wood chips also enables convenient automatic refilling of hard-to-access rooms, e.g., for fuel storage on upper floors or rooms without suitable vehicle access. The base filling trough is available in two different lengths of 2.1 m and 2.8 m with and without wheels. The filling trough can also be recessed into the substrate. There is also a base filling trough with a top-mounted frame, side walls and a hinged cover for easy tipping. The horizontal auger is also available in various lengths. The vertical auger is available in lengths up to 8 m with an adjustable ejector for best-in-class wood chip distribution (low dust), depending on the auger position and fuel store shape. Conveying capacity up to 50 m<sup>3</sup>/h depending on the quality of the wood chips.

Spread pattern depending on the material size: the ejector throw range depends on the condition of the wood chips. The larger and heavier the parts are, the further they are ejected (see red line). Fine or lighter parts cannot be thrown as far (see black line). This results in various filling characteristics or filling heights depending on the fuel condition.



Other filling systems on request!

## Filling system with internal and external ejector

The wood chips are conveyed into the fuel storage room by a vertical internal auger. From there, low-dust distribution is ensured by patented ejector.



## Filling system with variable tilt auger

Here, a variable filling auger is used to fill the fuel storage. It is particularly suitable for high fuel storage rooms with a gable.



## Filling system with horizontal distribution auger

The fuel store is filled by a horizontal distribution auger here. It is perfectly suited for longish fuel storage rooms or if you need to work through intermediate rooms.





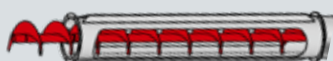


## Loading and unloading systems

The fuel storage room can be loaded via a filling pit with vertical conveyor. A bunker distribution auger ensures complete and even filling of the fuel storage with wood chips.



### Accessories



Horizontal distribution auger



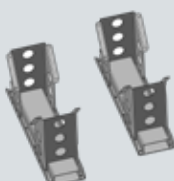
Angle piece



Horizontal extension and vertical extension (max. size 8 m)



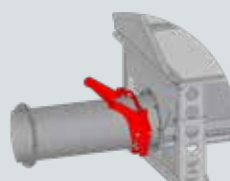
Hose mounting clips



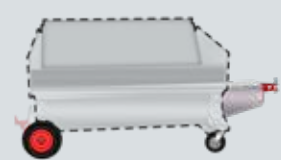
Fork lift console



Wheels 4 pcs.



Quick-connect coupling



Draw bar

# HEATING MODULES



## Ideal combination of boiler room & fuel storage

Depending on requirements, the heating modules can be supplied as single, double or triple container versions. Due to the cost-effective system design, this container can be set up quickly and easily. You can achieve enormous space savings in the building to be heated by outsourcing the heating and storage facilities. And they facilitate the changeover to biomass in the refurbishment sector. Heating modules are particularly suitable for public buildings, industrial/commercial enterprises, hotels/catering trade and public housing. Heating modules are also a perfect basis for heat contracting.



Double-floor wood chip heating module next to a public building.



Triple-floor heating module in a catering operation.



Quadruple wood chip heating module for an industrial building.



Double-floor heating module



Multiple heating modules

**Space saving & cost effective**

## Container variants

### Double-floor heating module

for 60 – 80 m<sup>3</sup> (20 – 30 t) pellets

for pellet boilers from 200 – 600 kW

- Apartment buildings
- Hotels
- Industry
- Contracting, etc.

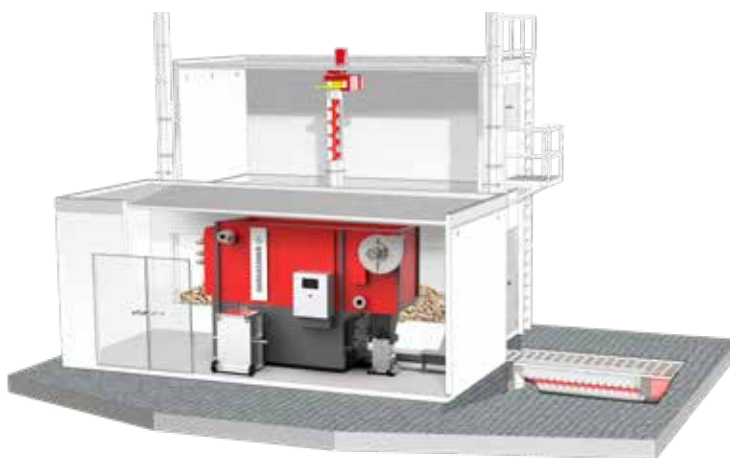


### Multiple heating modules

for 80 – 160 m<sup>3</sup> wood chips

for wood chip boilers from 200 – 600 kW

- Apartment buildings
- Hotels
- Industry
- Contracting, etc.



Technical Data		HEATING MODULES						
Example type	Options	BC 400	BC 500	BC 600	BC 700	BC 800	BC 900	DC 600
Length	200 – 900 cm	400 cm	500cm	600cm	700cm	800cm	900cm	600 cm
Width	280 – 348 cm	298 cm	298 cm	298 cm	298 cm	298cm	298cm	298 cm
Outside height	265 – 320 cm	265cm	265cm	265cm	265cm	265cm	265cm	540cm
Height inside	228 – 283 cm	228cm	228cm	228cm	228cm	228cm	228cm	505cm
Weight	9 – 35 t	ca. 15 t	approx. 20 t	approx. 25 t	approx. 28 t	approx. 32 t	approx. 35 t	approx. 24 t + approx. 16 t



## Professional Ash extraction

### A large ash bin means long maintenance intervals

Hargassner offers various ash transportation systems into a large ash bin. This massively extends the intervals between emptying the ash and improves convenience. The right solution for every application: the hot-dip galvanised steel container has stable rollers for easier unloading. With the help of a flexible auger, the ash is further compressed and automatically transported into the ash bin.



### AFS Ash auger system

Our ash auger system is available in the following sizes: a 240-litre ash bin is available for disposal by the waste collection service. For large industrial requirements, there is an 800-litre bin.



### AC Ash suction device

The Hargassner AC ash suction device consists of an industrial vacuum unit with a 300-l ash bin on wheels and is used for easy disposal of ash from the ash box or boiler. The filter in the unit can be cleaned by means of semi-automatic cleaning when the suction power is reduced. To do this, the end of the hose must be closed and the cleaning button pressed. After actuating the cleaning function 2-3 times, full vacuum power is available again.

**Important: The vacuum cleaner requires weather protection if installed outdoors!**

### Benefits

- For vacuuming the ash box
- For cleaning the boiler
- 300-l ash bin
- Semi-automatic filter cleaning

### Accessories

- Remote control (optional)
- 5 m or 10 m suction hose with nozzle



## Accumulators for any challenge

### SP Accumulator tank

This accumulator's design is specifically tuned for Hargassner hydraulic & control systems. The integrated return stratification plate offers one major benefit in particular: It guarantees precise stratification during the charge and discharge cycle. The integrated sensor strip enables a perfect sensor positioning for an optimal operation. Additionally, all Hargassner accumulator tanks come with two staggered sets of 90° connectors, each with four connecting sleeves (including sleeve insulation), which makes them ideal for parallel connection. Highly efficient non-woven fabric insulation of 120/140 mm and the visually appealing grey hard cover with aluminium hook rack round off the system.

- Return stratification plate for optimum accumulator utilisation
- Sensor terminal strip for easy and flexible installation
- Non-woven fabric insulation, hard cover and sleeve insulation
- Minimum space requirement
- Special lead-throughs for sensor cables from the top

### Substation & heat meter

The Hargassner substation unit ÜGS is especially designed for indirect heating of external buildings. The main advantage for the operator is they can read off all required information, such as heat consumption, etc. from the boiler control or on the web.

MULTICAL® 403 is a robust static heat meter, cold meter or combined cold/heat meter based on the ultrasound principle. This meter is almost for all types of water-based thermal installations.

### Hydraulics accessories to suit your requirements

Whether heat circuit controllers, fresh-water stations with high-efficiency pumps or heating circuit groups – Hargassner offers control & hydraulic components specially matched to its boilers. All control functions are handled by the Hargassner HKR heating circuit controller. For more details, go to [www.hargassner.at](http://www.hargassner.at)





## Efficient solutions for industry and trades

**The right boiler for any requirement** – from hotels, through vineyards and horticulture operations, up to large commercial enterprises: Hargassner industrial heating systems stand for maximum reliability in tough continuous operation. We offer you comprehensive know-how in the large-scale boiler sector from 200 kW. These systems are characterised by solid components including exclusive use of controls in line with industrial standards and motors by

well-known manufacturers from Austria and Germany. Depending on the specific requirements and the fuel used (wood chips, pellets, other biogenic fuels), all projects are planned to measure and adapted to the respective individual needs. With plants up to 2,500 kW output, Hargassner Industry offers a unique range!







## Public buildings

Giving customers the ability to rely absolutely on our products is one of our main goals. From community facilities, such as schools, to academic institutions or administrative complexes. We offer you a no-worries package. And our practical container modules also make us extremely flexible in terms of space.

### Reference project

#### School:

- Magno-UF 350 kW industrial boiler
- 2 moving floor containers & cross conveying auger

- Magno-UF 300 kW industrial boiler
- Heating for a school building



## High-performance industrial operation

Due to our experience with the practical requirements for heating solutions or the hot water supply in the industrial sector, all industrial heating systems are designed for continuous high-performance use: extremely robust components which use thick-walled steel sheets are just as much a matter of course for us as are control elements in line with industrial standards and motors sourced exclusively from premium manufacturers in Austria and Germany. As a manufacturer, we know all the individual parts of our systems inside out. This is why we are able to quickly identify the causes of any problems and guarantee an immediate solution.

### Reference project

#### Industrial operation:

- Magno-SR 1400 kW industrial boiler
- with flue gas recirculation
- 800-litre ash bin
- Heating of production shops and process heat



## Woodprocessing industry

In all industrial woodworking operations, there is a constant flow of waste wood in production.

### Heat from our own material

There is the option of supplying this waste wood to the paper or chipboard industry for further processing. However, the revenue opportunities are relatively low here. It makes more sense to use this valuable raw material to supply heat in the own company. No matter whether this is sawdust, wood shavings, wood chips, shredded material, wood briquettes or also various hybrid variants, we offer you the optimal heating system for your use case.

### Reference project

#### Window production company:

- 1x Magno-UF 550 kW industrial boiler
- 1x Magno-UF 350 kW industrial boiler
- Heating of production shops





## Carpentry

Carpentries set great store by sustainability. Purchasing a Hargassner industrial heater with a higher output therefore makes perfect sense in the scope of future-proofing investments. Hargassner has many years of experience in the field of biomass heating technology - a know-how lead with which Hargassner can provide wood chip heating systems an enormous technological boost. The best ideas and solutions in terms of both the design and the control strategy ensure highest-efficiency heating systems.

### Reference project

#### Joinery:

- Magno-UF 600 kW industrial boiler
- Heating of production shop and drying chamber



## Sawmill

Especially in sawmills, where enormous quantities of combustible wood waste is being produced, it is advisable to adapt the complete heating system to operation with biomass boilers. This ensures an optimal utilisation of waste wood. Make the move now and benefit from your waste wood. Distances between the material depot and the heating system are not important here; a solution tailored precisely to your company's needs will be elaborated and smoothly implemented.

### Reference project

#### Sawmill:

- Magno-VR 500 kW / 250 kW industrial boiler
- Heating of drying chambers







## Agriculture

From specialists for specialists – from planning and project management through to commissioning with all the necessary peripheral equipment, we provide you with everything from a single source. Our Power box in particular is ideally suited for usage in the agricultural sector, as maize, grain, hay or wood chips can be dried optimally, while the Power box is used for heating in winter.

### Reference project

#### Animal breeding operation:

- 3 x Magno-VR 500 kW industrial boiler
- Heating of stables

## Horticulture

Heating costs for greenhouses in horticulture are one of the most important cost factors in greenhouse production. With energy prices constantly on the rise, the question for many growers is how they can continue to operate profitably. To do so, they need to save energy; permanently improve energy efficiency and replace expensive energy sources such as oil and gas by cheaper ones. One alternative to fossil fuels is the use of a high-quality industrial system by Hargassner with wood pellets or wood chips as fuel.

### Reference project

#### Horticulture operation:

- Magno-SR 1400 kW industrial boiler
- Heating of greenhouses



## Hotels and catering

Good for the environment, good for your wallet – the savings compared to oil and gas alone are a positive result of investing in a Hargassner industrial system. More and more companies are opting for CO<sub>2</sub>-neutral and environmentally friendly heating with biomass. The benefits are obvious: biomass is crisis-proof, because it is a domestic fuel. You can save up to 50% on heating costs compared to fossil fuels, electricity heating systems and also ensure 100% supply reliability. The tourism sector has paid attention to having a green footprint for years. With a biomass heating system you can underline your company's green philosophy.

### Reference project

#### Hotel:

- Magno-UF 350 kW industrial boiler
- Heating of hotel complex & indoor pool



## District heating

Future-proof district heating solutions: sustainable heating systems. Extremely robust wood chip and pellet heating systems from 200 kW to 2,500 kW are Hargassner's speciality. This allows a carbon-neutral heating supply to be implemented. Thanks to our established experience in industry, our district heating boilers are designed for continuous high-performance operation: from the solid components to the exclusive use of controls in line with industrial standards and motors by well-known manufacturers from Austria and Germany. Direct service from the manufacturer and fast spare parts delivery round off the benefits of Hargassner wood chip and pellet heating systems.

### Reference project

#### District heating:

- Magno-SR 1400 kW industrial boiler
- Heating of production shops

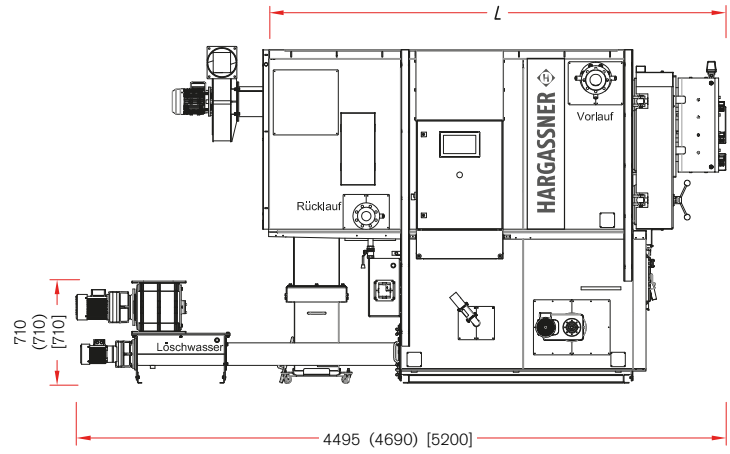
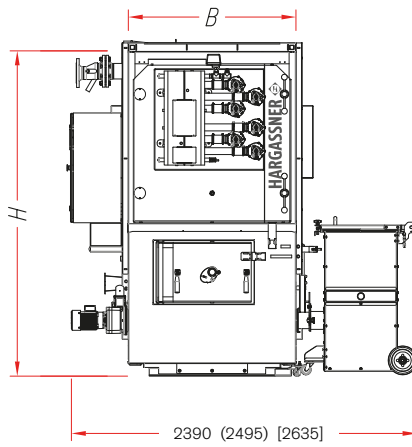


# TECHNICAL DATA

UF

Dimensions stated in mm for Magno-UF 200 - 250  
(Dimensions stated in mm for Magno-UF 300 - 350)  
[Dimensions stated in mm for Magno-UF 500 - 600]

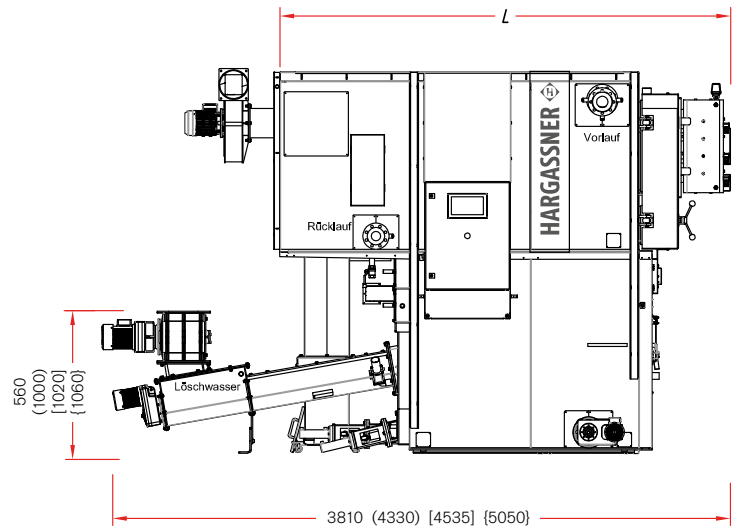
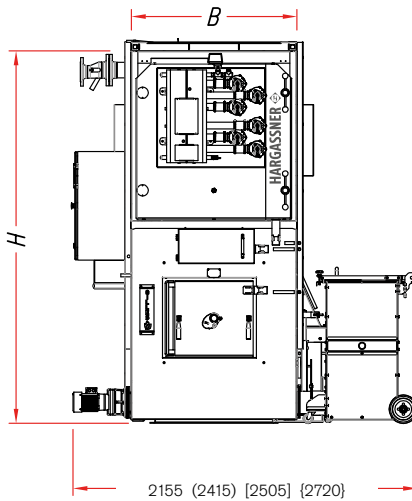
## MAGNO-UF 200 - 600 kW



VR

Dimensions stated in mm for Magno-VR 200  
(Dimensions stated in mm for Magno-VR 250 - 300)  
[Dimensions stated in mm for Magno-VR 350 - 400]  
{Dimensions stated in mm for Magno-VR 450 - 600}

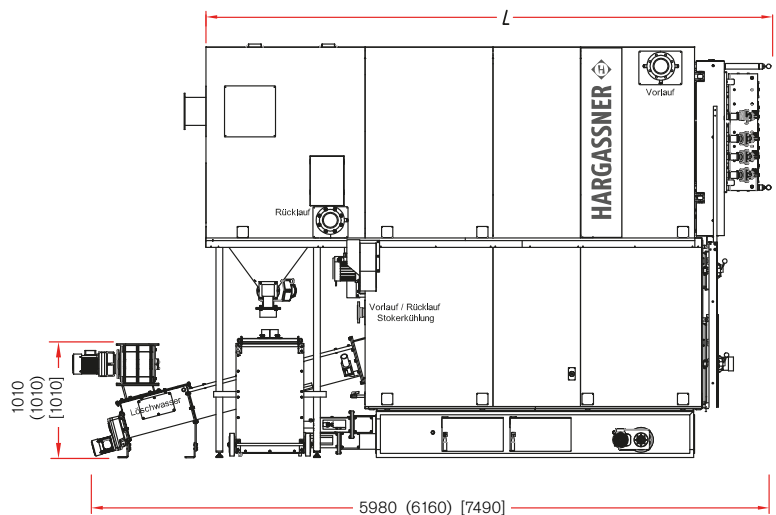
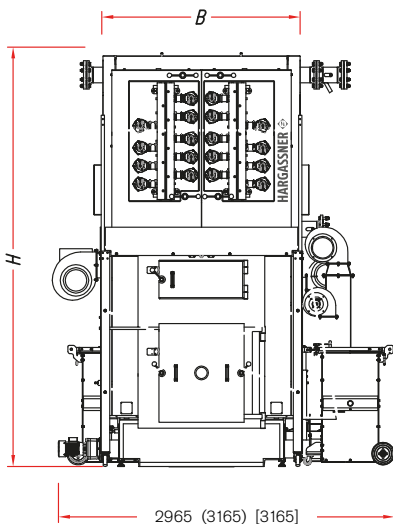
## MAGNO-VR 200 - 600 kW



SR

Dimensions stated in mm for Magno-SR 800 - 995  
(Dimensions stated in mm for Magno-SR 999 - 1400)  
[Dimensions stated in mm for Magno-SR 2,000 - 2,500]

## MAGNO-SR 800 - 2,500 kW





Technical Data	Magno-UF 200 - 600 kW							
General	Unit	UF 200	UF 250	UF 300	UF 350	UF 500	UF 550	UF 600
Nominal heating output	KW	200	250	280	300	501	550	600
Length L without add-on parts	mm	3,160	3,160	3,160	3,350	3,875	3,875	3,875
Width B without add-on parts	mm	1,160	1,160	1,160	1,260	1,460	1,460	1,460
Height H	mm	2,250	2,250	2,250	2,300	2,510	2,510	2,510
Dry weight add-on parts/casing	kg	4,250	4,250	4,250	5,200	6,830	6,830	6,830
Water content	l	830	830	830	1,100	1,550	1,550	1,550
Boiler details								
Weight of fire box excl. vault stones*	kg	1,590	1,590	1590	1,980	2,670	2,670	2,670
Weight of heat exchanger incl. cyclone*	kg	1,925	1,925	1925	2,320	3,065	3,065	3,065
Combustion chamber volume	m³	0.283	0.283	0.283	0.389	0.780	0.780	0.780
Heat surface	m²	13.42	13.42	13.42	18.54	28.42	28.42	28.42
Flue pipe connection	mm	Ø 200	Ø 200	Ø 200	Ø 250	Ø 250	Ø 250	Ø 250
Combustion								
Heat output full load / partial load	KW	200/60	250/75	280/90	300/105	501/150	550/165	600/180
Firing chamber load	kW/m³	707	883	1060	900	417	458	500
Heating area load	kW/m²	15	19	22	19	18	19	21
Maximum flue gas volume	m³/h	800	1000	1200	1600	2300	2475	2700
Hydraulics								
Flow/return connection	DN	80/65 PN16	80/65 PN16	80/80 PN16	80/80 PN16	100 / 100 PN 16	100/100 PN16	100/100 PN16
Flow coefficient at ΔT=10/20K	m³/h	85 / 73	110 / 90	130 / 106	166 / 113	272 / 155	271 / 169	300 / 184
Volume flow at ΔT=10/20K	m³/h	17 / 9	22 / 11	26 / 13	30 / 15	43 / 22	47 / 24	52 / 26
Pressure loss at ΔT=10/20K	kPa	4 / 1.5	4 / 1.5	4 / 1.5	3.25 / 1.75	2.5 / 2	3 / 2	3 / 2

Technical Data	Magno-VR 200 - 600 kW									
General	Unit	VR 200	VR 250	VR 300	VR 350	VR 400	VR 450	VR 500	VR 550	VR 600
Nominal heating output	KW	200	250	300	350	400	450	500	550	600
Length L without add-on parts	mm	3,007	3,160	3,160	3,350	3,350	3,875	3,875	3,875	3,875
Width B without add-on parts	mm	1,012	1,160	1,160	1,260	1,260	1,460	1,460	1,460	1,460
Height H	mm	2,013	2,610	2,610	2,650	2,650	2,950	2,950	2,950	2,950
Dry weight add-on parts/casing	kg	3,350	5,100	5,100	6,025	6,025	8,540	8,540	8,540	8,540
Water content	l	420	830	830	1,100	1,100	1,550	1,550	1,550	1,550
Boiler details										
Weight of fire box excl. vault stones*	kg	1,150	2,120	2,120	2,540	2,540	3,950	3,950	3,950	3,950
Weight of heat exchanger incl. cyclone*	kg	1,500	1,925	1,925	2,320	2,320	3,065	3,065	3,065	3,065
Combustion chamber volume	m³	0.225	0.410	0.410	0.660	0.660	1.200	1.200	1.200	1.200
Heat surface	m²	14.20	13.42	13.42	18.54	18.54	28.42	28.42	28.42	28.42
Flue pipe connection	mm	Ø 200	Ø 200	Ø 200	Ø 250	Ø 250	Ø 250	Ø 250	Ø 250	Ø 250
Combustion										
Heat output full load / partial load	KW	200/60	250/75	300/90	350/105	400/120	450/135	500/150	550/165	600/180
Firing chamber load	kW/m³	888	610	732	530	606	375	417	458	500
Heating area load	kW/m²	14	19	22	19	22	16	18	19	21
Maximum flue gas volume	m³/h	800	1,000	1,200	1,600	1,829	2,070	2,300	2,475	2,700
Hydraulics										
Flow/return connection	DN	65/65 PN16	80/65 PN16	80/65 PN16	80/80 PN16	80/80 PN16	100/100 PN16	100/100 PN16	100/100 PN16	100/100 PN16
Flow coefficient at ΔT=10/20K	m³/h	85/73	110/90	130/106	166/113	188/128	246/134	272/155	271/169	300/184
Volume flow at ΔT=10/20K	m³/h	17/9	22/11	26/13	30/15	34/17	39/19	43/22	47/24	52/26
Pressure loss at ΔT=10/20K	kPa	4/1.5	4/1.5	4/1.5	3.2/1.75	3.2/1.75	2.5/2	2.5/2	3/2	3/2

Technical Data	Magno-SR 800 - 2,500 kW						
General	Unit	SR 800	SR 995	SR 999	SR 1400	SR 2000	SR 2500
Nominal heating output	KW	800	995	999	1400	2,000	2,500
Length L without add-on parts	mm	5,000	5,000	5,070	5,070	6,700	6,700
Width B without add-on parts	mm	1,750	1,750	1,950	1,950	1,950	1,950
Height H	mm	3,700	3,700	3,980	3,980	3,980	3,980
Dry weight add-on parts/casing	kg	18,000	18,000	21,400	21,400	28,500	28,500
Water content	l	2,800	2,800	3,500	3,500	5,100	5,100
Boiler details							
Weight of fire box excl. vault stones*	kg	12,900	12,900	13,500	13,500	16,800	16,800
Weight of heat exchanger incl. cyclone*	kg	5,100	5,100	7,900	7,900	11,700	11,700
Combustion chamber volume	m³	2.280	2.280	3.250	3.250	4.740	4.740
Heat surface	m²	61.99	61.99	96.50	96.50	119	119
Flue pipe connection	mm	Ø 400	Ø 400	Ø 400	Ø 400	Ø 500	Ø 500
Combustion							
Heat output full load / partial load	KW	800/240	995/299	999/300	1400/420	2,000/600	2,500/750
Firing chamber load	kW/m³	351	436	307	431	422	527
Heating area load	kW/m²	13	16	10	15	17	21
Maximum flue gas volume	m³/h	3,296	4,100	4,100	5,000	8,000	10,000
Hydraulics							
Flow/return connection	DN	125/125 PN16	125/125 PN16	125/125 PN16	125/125 PN16	200/200 PN16	200/200 PN16
Flow coefficient at ΔT=10/20K	m³/h	218/215	272/272	192/200	268/280	384/388	480/487
Volume flow at ΔT=10/20K	m³/h	69/34	86/43	86/43	120/60	172/86	215/108
Pressure loss at ΔT=10/20K	kPa	10/2.50	10/2.50	20/4.59	20/4.59	20/4.90	20/4.90

Technical Data	UF 200 - 600 kW	
General	Unit	for all boilers
Efficiency	%	93
Boiler class		5
Fuel standard/wood chip quality		EN ISO 17225-4 / A1, A2, B1, B2
Wood chip grain size		P16S - P31S
Wood chip water content	%	8 - 40
Fuel standard/pellet quality		EN ISO 17225-2 / A1, DIN Plus
Boiler details		
Number of passes		3
Number of air zones primary/secondary		1 / 1
Pressure cleaning valves	Qty.	6
De-ash grate/cyclone	l	240 / 40
Flue gas temperature partial load / full load	°C	75 - 150
Electrical system		
Supply		400 V AC / 50Hz, 3Ph+N+PE
Max. prefuse ***	A	25
Hydraulics		
Maximum operating pressure	bar	5
Maximum flow temperature	°C	95 (110**)
Minimum return temperature	°C	60

\*without add-on parts and casing; \*\*model available as option; \*\*\*measurement excl. fuel loading

Technical Data	VR 200 - 600 kW	
General	Unit	for all boilers
Efficiency	%	93
Boiler class		5
Fuel standard/wood chip quality		EN ISO 17225-4 / A1, A2, B1, B2
Wood chip grain size		P16S - P31S
Wood chip water content	%	8**** - 60
Fuel standard/pellet quality		EN ISO 17225-2 / A1, DIN Plus
Boiler details		
Number of passes		3
Number of air zones primary/secondary		2 / 2
Pressure cleaning valves	Qty.	6 (VR200 only 4)
De-ash grate/cyclone	l	240 / 40
Flue gas temperature partial load / full load	°C	75 - 150
Electrical system		
Supply		400 V AC / 50Hz, 3Ph+N+PE
Max. prefuse ***	A	25
Hydraulics		
Maximum operating pressure	bar	5
Maximum flow temperature	°C	95 (110**)
Minimum return temperature	°C	60

\*without add-on parts and casing; \*\*model available as option; \*\*\*measurement excl. fuel loading; \*\*\*\* only in combination with flue gas recirculation

Technical Data	SR 800 - 2,500 kW	
General	Unit	for all boilers
Efficiency	%	93
Boiler class		5
Fuel standard/wood chip quality		EN ISO 17225-4 / A1, A2, B1, B2
Wood chip grain size		P16S - P45S
Wood chip water content	%	8**** - 60
Fuel standard/pellet quality		EN ISO 17225-2 / A1, DIN Plus
Boiler details		
Number of passes		3
Number of air zones primary/secondary		2 / 2 (SR 2,000/2,500: 3 / 2)
Pressure cleaning valves	Qty.	20 (SR 800/995: 18)
De-ash grate/cyclone	l	240 / 240 SR 2,000/2,500: 800
Flue gas temperature partial load / full load	°C	75 - 150
Electrical system		
Supply		400 V AC / 50Hz, 3Ph+N+PE
Max. prefuse ***	A	50 (SR 2,000/2,500: 100)
Hydraulics		
Maximum operating pressure	bar	5
Maximum flow temperature	°C	95 (110**)
Minimum return temperature	°C	60

\*without add-on parts and casing; \*\*model available as option; \*\*\*measurement excl. fuel loading

# INTERNATIONALLY SUCCESSFUL

**HARGASSNER**  
BIOMASS HEATING TECHNOLOGY



Awarded as an environmentally friendly product and distinguished by TÜV Austria for service and consulting quality. Awarded the Energie Genie in 2007, 2013, 2015, 2017 and 2020 at the Energy Saving Fair (Energiesparmesse) in Wels, Austria.

1st prize in the international innovation competition in 2000, 2007, 2008, 2009, 2010, 2014 and 2015 at the "Wood Energy" fair in France.

Awarded the Austrian Ecolabel in 2011 and the Austrian business award Pegasus, bestowed by the Upper Austrian Chamber of Commerce, in 2011 and 2012.

Best Business Award 2012!  
The "Innviertler" in Gold 2013!  
Hidden Champion 2014!  
Grand Prix Biomass 2014!  
Agrarfuchs 2016!  
Plus X Award in 2017

Honoured with the "Exemplary apprentice programme"



Your expert for **PELLET** | **WOOD LOG** | **WOOD CHIP-HEATING**



Hargassner product range:

Pellet boilers, wood chip boilers, wood log boilers, accumulator tanks, industrial boilers up to 2.5 MW, heating modules, filling auger, combined heat and power module CHP, thermal air module Power box & hydraulic accessories

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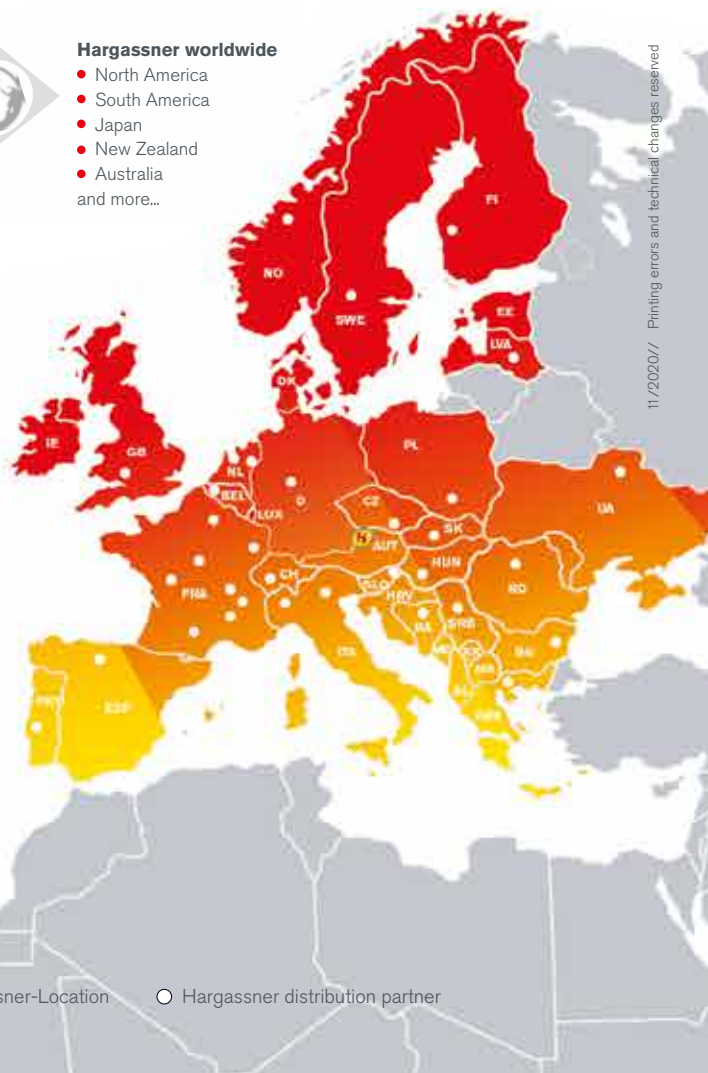
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## Hargassner worldwide

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Hargassner-Location

○ Hargassner distribution partner