Recommended by nature.

CO₂ neutral and environmentally friendly. Hargassner – Heating technology for the future. Hargassner focuses on renewable energy and well-engineered combustion technology with highest efficiency and lowest emission values.

Recommended by everybody, who loves comfort.

Comfortable warmth and maximum operating convenience as a matter of course. Fully automatic and proven in technology. Feel the advantage of Hargassner – heating systems.

Our vision is characterised by a harmony with nature and satisfied customers.

Without harmony with nature, a healthy life is impossible. Hargassner has pioneered eco-friendly heating systems since the company was established in 1984. This pioneering spirit remains unabated and our aim to be on top still persists to this day.

For the sake of our environment

We are proud of 25 years of experience and of thousands of 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 primary goals of our philosophy and are the main attributes, which determine a successful path into the company’s future. Lowest emissions by highest efficiency, maximum comfort and long lifetime characterise the brand HARGASSNER. Yet, we do not hesitate to scrutinise proven elements of our products to launch better products tomorrow. The emphasis on research and quality management is our modern understanding of tradition.

HARGASSNER FACTS:

✔ Wood Chip, Pellet, Gasification Boilers from 9-800 kW
✔ 45,000 Operating boilers
✔ 6,000-8,000 Boilers per annum
✔ 160 qualified employees

Our name is our guarantee.
Recommended by cost-saving customers.

Thousands of satisfied clients all over Europe. You can easily save money with every biomass heating system. Reduce your annual heating costs and your heating workload.

Recommended and honoured by experts.

For decades, Hargassner worked extremely hard and efficiently to attain the advances in quality and technology. This was honoured through numerous national and international awards.

Recommended by our clients

In order to accomplish lower emission values in oil- or gas-reliant countries, Hargassner is endeavoured to make high-performance biomass heating technology available to everyone. Currently, the company exports into 20 countries. Most important markets are France, Germany, Italy and Switzerland. But also Ukraine, Czech Republic, Bulgaria, Slovenia, Hungary, Belgium, United Kingdom, the Netherlands and Spain are growing markets, which are step-by-step strengthening their efforts to realise a lower CO₂ – emission environment. Hargassner is a globally recognised brand, and have just installed their first projects in New Zealand and Canada.

At this time, exports account for 60% of the annual turnover. Numerous awards confirm that our philosophy is more than just lip-service.

Hotel Schiff, 55 kW Wood Chip Boiler, Switzerland

Carpentry Salland, 100 kW Wood Chip Boiler, Netherlands

University of Otago, 100 kW Wood Chip Boiler, New Zealand
Wood Chip and Pellet-Heating Systems

Wood Chip Boilers
WTH 25 - 55 kW

AGROFIRE 25 - 40 kW

What is the benefit of heating with wood chips?

For the production of wood chips, residual wood from domestic forests and wood from the sawmill industry is used. This wood waste material should ideally be stored for one year in breezy and sunny conditions. In autumn, the wood can be chipped and stored. Farmers and forest owners use wood chips for their own heat production, or supply wood to local companies or public buildings.

Advantages for industrial companies and public facilities:
✓ Cost-efficient fuel with maximum comfort
✓ Increased energy security
✓ Independent from oil or gas
✓ Delivery through regional partners
✓ Value creation within the local economy
✓ Effective and energy-efficient heating system

Therefore wood chips are the most inexpensive fuel for heating systems compared to fossil fuels like electricity or heat pumps.

Advantages for farmers and forest owners:
✓ Use of residual wood
✓ Additional income through selling wood chips
✓ Minimal workload through automatic chip production
✓ Maximum workload reduction through a fully automatic heating system
✓ Effective and energy-efficient heating system

Wood Chip Characteristics

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating value</td>
<td>4 kWh / kg (Water content: 25%)</td>
</tr>
<tr>
<td>Weight</td>
<td>200-250 kg / m³</td>
</tr>
<tr>
<td>Size</td>
<td>G30 / G50</td>
</tr>
<tr>
<td>Water content</td>
<td>15 - 35%</td>
</tr>
<tr>
<td>Primary energy</td>
<td>1.8 - 2%</td>
</tr>
</tbody>
</table>
Wood Pellets
Pellets are made through compression of wood shavings in natural condition. Tonnes of wood waste materials are produced every day in regular wood-processing industries all over Europe.

Obvious advantages for pellets:
- Crisis-resistant
- Easy refuelling through blown pellet delivery
- Dust-free, odourless refilling
- Small storage volume
- Effective and energy-efficient heating system

Miscanthus
For sustainable energy supply in the future, all latest researched fuels have to be considered.

Advantages of Miscanthus:
- Enormous agricultural yields
- Little cultivation
- Can be used for more than 20 years
- No fertilisers needed
- Perfect cost-benefit ratio

Additional Agro-fuels
Energy grain & Straw-Pellets

<table>
<thead>
<tr>
<th>Pellets Characteristics</th>
<th>5 kWh / kg</th>
<th>650 kg / m³</th>
<th>6 mm / approx 5-40 mm</th>
<th>w &lt; 10%</th>
<th>2-2.7%</th>
</tr>
</thead>
</table>

Miscanthus pellets and –briquettes
Energy grain

Content
- WTH 25 - 55 kW
- AGROFIRE 25 - 40 kW
- WTH 70 - 110 kW
- INDUSTRIAL BOILER WTH 150 - 200 kW
- LAMBDA-HATRONIC CONTROL UNIT
- AGITATORS
- TRANSPORTATION AND FUEL STORAGE
- STORAGE ROOM SITUATIONS
- REFUELLING SYSTEMS
- CONTAINERS
- TECHNICAL DATA
Hargassner Boiler Technology

Hargassner – Modern wood chip heating technology for small and medium-sized heating output.

Hargassner stands for pioneering spirit and a wide range of experience. An excellent design and the high quality construction provides best functionality and optimal performance, resulting in high customer satisfaction and a long boiler lifetime.

Lambda sensor with fuel-quality detection

It doesn’t matter which fuel quality you have stored – soft or hard, dry or damp wood chips or pellets – the control unit uses the lambda sensor to detect the relevant calorific value and regulates the optimum transport volume of the stoker auger. Your system is always working with the needed heat output at optimum combustion values. This is how convenient controls will be in the future – constant manual adjustment of the system to the fuel is a thing of the past.

Latest Boiler Technology

Hargassner’s outside temperature measurement system allows the boilers control unit to smoothly regulate the heating output. The boiler temperature will be adjusted to the current requirements. Only the required energy is being generated.

3-path heat exchanger including fly ash separator

Years of experience have taught us that the flames of a wood fire must not be disturbed. In the Hargassner heat exchanger, the large burnout zone ensures an uninterrupted combustion process. Following this, the hot flue gases stream through one down-flow and one up-flow channel, including a fly ash separator.

Heat exchanger gas flow design

In order to use the energy obtained to its full potential, we use the turbulators to force the heated air into an elongated spiral flow path as near as possible to the heat exchanger.

Heat exchanger cleaning system

Gone are the times where you have to clean the boiler! The control unit manages our fully automatic heat exchanger cleaning device. Depending on heating times programmed, the system automatically switches on. The turbulators remove fly ash from the pipes, which directly falls down onto the ash extraction auger.

Fully refractory-lined high performance combustion chamber with flame concentration plates for optimum post-combustion

Refractory has proven itself as the best material available in terms of heat storage, function and durability. The result, even at partial loads, is optimal combustion and fewer ignitions. Optimum afterburning and brilliant emission values are guaranteed by special flame concentration plates and pre-heated secondary air.

Automatic sliding grate

Primary air is systematically blown in via the grate and the ignition takes place automatically by a hot-air fan. The grate cleans itself in periodic intervals. For this process only the front third opens and the remaining grate stores the ember for re-ignition of the upcoming wood chips.

Automatic heating with hot air

The electric ignition fan is employed efficiently by Hargassners’ control unit. When the system starts up and following pauses in operation, the fan only runs as long as necessary thanks to the flue gas temperature sensor for standby mode, which keeps the power consumption low – and still maintains full functional reliability.
WTH 25 - 55 kW

Option: Wood log combustion
For heating with wood logs it is also possible to order a special grate with more primary air entrance. The change-over will be easy and clean.

Wood chip boiler with agitator – room extraction
The extract auger transports the wood chips through the burn-back flap into the stoker auger. The stoke auger doses the chips into the combustion chamber.

Detailed information about agitator and storage room situations see page 16-21.

Fully automatic boiler cleaning system
Hargassner heating technology now brings you even more convenience. The ash removal system cleans the boiler at regular intervals. The fly ash falls automatically down after cleaning-movements of the special-constructed turbulators. Inside the ash box, all the ash is compacted to a quarter of its original volume – thereby saving space and lengthening the emptying interval.

(Optional: with 240l ash bin; see page 11)

One motor for everything
Boiler cleaning system, fly ash transport, grate ash removal and ash transport into the ash box – only one drive is required for all these systems. The ingenious drive technology in the Hargassner wood chip system only needs a single maintenance-free gear motor for this. This not only reduces the number of electrical components and yet again increases operating reliability; it also saves power and energy.

Only one motor for cleaning and ash removal
Hargassner offers you a maximum degree of convenience with superior heating technology.

<table>
<thead>
<tr>
<th>Type</th>
<th>Heat output kW</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTH 25</td>
<td>7 - 25</td>
</tr>
<tr>
<td>WTH 31</td>
<td>9 - 31</td>
</tr>
<tr>
<td>WTH 35</td>
<td>10 - 35</td>
</tr>
<tr>
<td>WTH 45</td>
<td>13 - 45</td>
</tr>
<tr>
<td>WTH 49</td>
<td>14 - 49</td>
</tr>
<tr>
<td>WTH 55</td>
<td>16 - 55</td>
</tr>
</tbody>
</table>

Excerpt from certified test reports

<table>
<thead>
<tr>
<th>HSV 50 WTH 49 Wood Chips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output kW</td>
</tr>
<tr>
<td>49,5</td>
</tr>
<tr>
<td>13</td>
</tr>
</tbody>
</table>
Hargassner Boiler Technology

Hargassner – Energy heating technology for small and medium-sized heating output.

Hargassner stands for pioneering spirit and a wide range of experience. An excellent design and the high quality construction provides best functionality and optimal performance, resulting in high customer satisfaction and a long boiler lifetime. Especially with the AgroFire – Multifuel boiler, Hargassner showed how to combust all common biomass fuels, such as Miscanthus, energy grain or straw pellets with one exclusive boiler.

Lambda sensor with fuel-quality detection

It doesn’t matter which fuel type you have stored – Wood chips, pellets, miscanthus (loose, briquettes, or pellets), energy grain or straw pellets – the control unit uses the lambda sensor to detect the relevant calorific value and regulates the optimum transport volume of the stoker auger. This means the boiler is maintained at optimum combustion values. This is how convenient controls will be in the future – constant manual adjustment of the system to the fuel is a thing of the past.

Speed-controlled induced draught fan with negative pressure regulation

Hargassner’s air temperature compensation system allows the boilers control unit to regulate the heating output. The boiler temperature will be adjusted to the current requirements. Only the required energy is being generated.

Latest Boiler Technology

Hargassner’s air temperature compensation system allows the boilers control unit to regulate the heating output. The boiler temperature will be adjusted to the current requirements. Only the needed energy is being generated.

3-path heat exchanger including fly ash separator

Years of experience have taught us that the flames of a wood fire must not be disturbed. In the Hargassner heat exchanger, the large burnout zone ensures an uninterrupted combustion process. Following this, the hot flue gases stream through one down-flow and one up-flow channel, including a fly ash separator.

Optional: When heating with alternative fuels (Energy grain, etc.), special stainless steel insets are included to ensure longer lifetime of the boiler.

Swirl in the round pipe

In order to use the energy obtained to its full potential, we use the turbulators to force the heated air into an elongated spiral flow path as near as possible to the heat exchanger.

Heat exchanger cleaning system

Gone are the times where you have to clean the boiler! The control unit manages our fully automatic heat exchanger cleaning device. Depending on heating times programmed, the system automatically switch on. The turbulators remove fly ash from the pipes, which directly falls down onto the ash extraction auger.

Fully refractory-lined high performance combustion chamber with high density bricks for optimum post-combustion emissions

Refractory has proven itself as the best material available in terms of heat storage, function and durability. The result, even at partial loads, is optimal combustion and fewer ignitions. Optimum afterburning and brilliant emission values are guaranteed by special high density bricks and pre-heated secondary air.

Automatic heating with hot air

The electric ignition fan is employed extremely efficiently by Hargassners’ control unit. When the system starts up and following pauses in operation, the fan only runs as long as necessary thanks to the flue gas temperature sensor for standby mode, which keeps the power consumption low – and still maintains full functional reliability.

Fully automatic boiler cleaning system

Hargassner heating technology now brings you even more convenience. The ash removal system cleans the boiler at regular intervals. The fly ash falls automatically down after cleaning-movements of the special-constructed turbulators. Inside the ash box, all the ash is compacted to a quarter of its original volume – thereby saving space and lengthening the emptying interval. (Optional: with 240l ash bin; see page 11)
**Combustion chamber with moving grate**

A constantly moving step grate is one of the main differences to our regular wood chip or pellet boilers. Agrofire is characterised through a special forward/backward and upward/downward grate movement to dispense the provided heating material equally for a systematic burning process. At the same time, the combustion residues are transported slowly throughout the main combustion zone down to the ash extraction auger. Primary air is sucked in via sliding grate and the ignition occurs with our hot-air fan. Before the secondary air is mixed with the burning wood gas it surrounds the combustion chamber. Preheated for most efficient combustion!

**Possible AgroFire Fuels:**

- Wood Chips
- Miscanthus loose
- Miscanthus pellets
- Miscanthus briquettes
- Straw pellets
- Energy grain

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**Multifuel Boiler**

**AgroFire 25 - 40 kW**

**Excerpt from certified test reports**

<table>
<thead>
<tr>
<th>Agro Fire Wood Chips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output kW</td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td>40,6</td>
</tr>
<tr>
<td>11,5</td>
</tr>
</tbody>
</table>

**Recommended by NATURE**

1. Automatic boiler cleaning system
2. Heat exchanger
3. Fully refractory-lined underfeed stoker
4. Primary air
5. Secondary air
6. Automatic ignition
7. Stoker auger
8. Burn-back flap
9. Stoker auger motor
10. Agitator
11. Agitator motor

**Agrofire Suction System**

Please see Pellets Leaflet for detailed information about AgroFire suction model and relating storage room situations.

**Agrofire Agitator System**

The room extraction auger transports the fuel through the burn-back flap into the stoker auger, which is dosing the fuel into the combustion chamber.

Detailed information about agitator and storage room situations see page 16-21.
Hargassner – Modern wood chip heating technology for medium and large heating output.

Hargassner stands for pioneering spirit and a wide range of experience. An excellent design and the high quality construction provides best functionality and optimal performance, resulting in high customer satisfaction and a long boiler lifetime.

**Lambda sensor with fuel-quality detection**

It doesn’t matter which fuel quality you have stored – soft or hard, dry or damp wood chips or pellets – the control unit uses the lambda sensor to detect the relevant calorific value and regulates the optimum transport volume of the stoker auger. This means the boiler is maintained at optimum combustion values. This is how convenient controls will be in the future – constant manual adjustment of the system to the fuel is a thing of the past.

**Speed-controlled induced draught fan with negative pressure regulation**

The negative-pressure unit constantly measures the pressure conditions in the combustion chamber. The Lambda-Hatronic uses this data to control the speed of the draught fan, thus keeping the negative pressure at an ideal level. This concept ensures combustion with minimal exhaust gas temperatures and therefore maximum efficiency. Highest operating safety – independent of the natural chimney draught.

**Latest Boiler Technology**

Hargassner’s air temperature compensation system allows the boilers control unit to regulate the heat output. The boiler temperature will be adjusted to the current requirements. Only the required energy is being generated.

**3-path heat exchanger including fly ash separator**

Years of experience have taught us that the flames of a wood fire must not be disturbed. In the Hargassner heat exchanger, the large burnout zone ensures an uninterrupted combustion process. Following this, the hot flue gases stream through one down-flow and one up-flow channel, including a fly ash separator.

**Heat exchanger gas flow design**

In order to use the energy obtained to its full potential, we use the turbulators to force the heated air into an elongated spiral flow path as near as possible to the heat exchanger.

**Heat exchanger cleaning system**

Gone are the times where you have to clean the boiler! The control unit manages our fully automatic heat exchanger cleaning device. Depending on heating times programmed, the system automatically switch on. The turbulators remove fly ash from the pipes, which directly falls down onto the ash extraction auger.

**Fully refractory-lined high performance combustion chamber with high density bricks for optimum post-combustion emissions**

Refractory has proven itself as the best material available in terms of heat storage, function and durability. The result, even at partial loads, is optimal combustion and fewer ignitions. Optimum afterburning and brilliant emission values are guaranteed by special flame concentration plates and pre-heated secondary air.

**Automatic heating with hot air**

The electric ignition fan is employed extremely efficiently by Hargassners’ control unit. When the system starts up and following pauses in operation, the fan only runs as long as necessary thanks to the flue gas temperature sensor for standby mode, which keeps the power consumption low – and still maintains full functional reliability.

**Automatic sliding grate**

Primary air is systematically blown in via the grate and the ignition takes place automatically by a hot-air fan. The grate is cleaning itself in periodic intervals. For this process only the front third opens and the remaining grate stores the ember for re-ignition of the upcoming wood chips.

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1. Fully refractory-lined underfeed stoker
2. Boiler heat exchanger
3. Turbulators
4. Fly ash separation
5. Flue pipe tap
6. Lambda sensor
7. Speed-controlled induced draught fan
8. Negative pressure control
9. Turb concentration bricks
10. Drive motor for ash extraction and boiler cleaning
11. Fly ash and grate ash extraction auger
12. Ash box
Fully automatic boiler cleaning system

Hargassner heating technology now brings you even more convenience. The ash removal system cleans the boiler at regular intervals. The fly ash falls automatically down after cleaning-movements of the special-constructed turbulators. Inside the ash box, all the ash is compacted to a quarter of its original volume – thereby saving space and lengthening the emptying interval. (Optional: with 240l ash bin; see page 11)

One motor for everything

Boiler cleaning system, fly ash transport, grate ash removal and ash transport into the ash box – only one drive is required for all these systems. The ingenious drive technology in the Hargassner wood chip system only needs a single maintenance-free gear motor for this. This not only reduces the number of electrical components and yet again increases operating reliability; it also saves power and energy.

Wood chip boiler with agitator – room extraction

The extract auger transports the wood chips through the burn-back flap into the stoker auger. The stoke auger does the chips into the combustion chamber.

Ash bin 240l with appropriate diagonal ash removal auger

Longer emptying intervals – more comfort! With Hargassners’ diagonal ash removal auger – including a 240l ash bin – clients experience even more convenience.

<table>
<thead>
<tr>
<th>Type</th>
<th>Fuel-dependent heat output in kW</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTH 70</td>
<td>21-70</td>
</tr>
<tr>
<td>WTH 80</td>
<td>24-80</td>
</tr>
<tr>
<td>WTH 100</td>
<td>30-100</td>
</tr>
<tr>
<td>WTH 110</td>
<td>30-102</td>
</tr>
</tbody>
</table>

Weight kg: 1010
Voltage V: 400
Dimensions HxBxD [mm]: 1720x840x1500

Excerpt from certified test reports

<table>
<thead>
<tr>
<th>HSV 100S WTH 100 Wood Chips</th>
<th>Output kW</th>
<th>Efficiency %</th>
<th>Carbon Dioxide CO₂ %</th>
<th>Carbon Monoxide CO mg/MJ</th>
<th>Dust mg/MJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTH 70</td>
<td>21.7</td>
<td>91.5</td>
<td>15</td>
<td>24</td>
<td>14</td>
</tr>
<tr>
<td>WTH 80</td>
<td>24.0</td>
<td>91.1</td>
<td>14</td>
<td>24</td>
<td>14</td>
</tr>
<tr>
<td>WTH 100</td>
<td>30.1</td>
<td>91.4</td>
<td>14</td>
<td>24</td>
<td>14</td>
</tr>
<tr>
<td>WTH 110</td>
<td>30.2</td>
<td>91.4</td>
<td>14</td>
<td>24</td>
<td>14</td>
</tr>
</tbody>
</table>
Hargassner – Modern wood chip heating technology for large heating output.

Hargassner stands for pioneering spirit and a wide range of experience. An excellent design and the high quality construction provides best functionality and optimal performance, resulting in high customer satisfaction and a long boiler lifetime.

**Lambda sensor with fuel-quality detection**

It doesn’t matter which fuel quality you have stored – soft or hard, dry or damp wood chips or pellets – the control unit uses the lambda sensor to detect the relevant calorific value and regulates the optimum transport volume of the stoker auger. This means the boiler is maintained at optimum combustion values. This is how convenient controls will be in the future – constant manual adjustment of the system to the fuel is a thing of the past.

**Speed-controlled induced draught fan with negative pressure regulation**

The negative-pressure unit constantly measures the pressure conditions in the combustion chamber. The Lambda-Hatronic uses this data to control the speed of the draught fan, thus keeping the negative pressure at an ideal level. This concept ensures combustion with minimal exhaust gas temperatures and therefore maximum efficiency. Highest operating safety – independent of the natural chimney draught.

**Latest Boiler Technology**

Hargassner’s air temperature compensation system allows the boilers control unit to regulate the heat output. The boiler temperature will be adjusted to the current requirements. Only the requested energy is being generated.

**3-path heat exchanger including fly ash separator**

Years of experience have taught us that the flames of a wood fire must not be disturbed. In the Hargassner heat exchanger, the large burnout zone ensures an uninterrupted combustion process. Following this, the hot flue gases stream through one down-flow and one up-flow channel, including a fly ash separator.

**Heat exchanger cleaning system**

Gone are the times where you have to clean the boiler! The control unit manages our fully automatic heat exchanger cleaning device. Depending on heating times programmed, the system automatically switch on.

The turbulators remove fly ash form the pipes, which directly falls down onto the ash extraction auger.

**Fully refractory-lined high performance combustion chamber with double vault and high density bricks for optimum post-combustion emissions**

Refractory has proven itself as the best material available in terms of heat storage, function and durability. The result, even at partial loads, is optimal combustion and fewer ignitions. Optimum afterburning and brilliant emission values are guaranteed by our special double vault and turbo concentration bricks. Primary air is systematically blown in via the grate and the ignition takes place automatically by a hot-air fan. The massive heat-resistant combustion chamber – including outside air cooling system and speed-controlled pre-heated secondary air streaming in over three levels – leads our industrial boiler to lowest emission values.

**Automatic heating with hot air**

Two electric ignition fans are employed extremely efficiently by Hargassners’ control unit. When the system starts up and following pauses in operation, the fans only run as long as necessary thanks to the flue gas temperature sensor for standby mode, which keeps the power consumption low – and still maintains full functional reliability.

**Flue gas cyclone – Fly ash separator optional:**

for flue gas purification when high amount of fine material
Industrial Boilers 150 - 200 kW

Wood chip boiler with agitator – room extraction
The extract auger transports the wood chips through the burn-back flap into the stoker auger. The stoke auger dose the chips into the combustion chamber.

Step grate for best Combustion
Optimum Combustion is guaranteed through our large-scale grate area including 3 steps with separate controllable slide and de-ash grate. Highly heat resistant grate bars with dedicated air nuzzling and self-cleaning effect ensure a longer lifetime of the boiler. Consequently, the grate cleans itself fully automatic and at the same time the ash residues are delivered automatically to the ash extracting auger.

Fully automatic boiler cleaning system
Hargassner heating technology now brings you even more convenience. The ash removal system cleans the boiler at regular intervals. The fly ash falls automatically down after cleaning-movements of the special-constructed turbulators. Inside the ash box, all the ash is compacted to a quarter of its original volume – thereby saving space and lengthening the emptying interval.

(Optional: with 240l ash bin; see page 11)

Ash bin 240l with appropriate diagonal ash removal auger
Longer emptying intervals – more comfort! With Hargassners’ diagonal ash removal auger – including a 240l ash bin – clients experience even more convenience.

**New**

Wood chip boiler with agitator – room extraction
The extract auger transports the wood chips through the burn-back flap into the stoker auger. The stoke auger dose the chips into the combustion chamber.

Detailed information about agitator and storage room situations see page 16-21.

**Optional**

**NEW**

Industrial Boilers 150 - 200 kW

**Step grate for best Combustion**
Optimum Combustion is guaranteed through our large-scale grate area including 3 steps with separate controllable slide and de-ash grate. Highly heat resistant grate bars with dedicated air nuzzling and self-cleaning effect ensure a longer lifetime of the boiler. Consequently, the grate cleans itself fully automatic and at the same time the ash residues are delivered automatically to the ash extracting auger.

**Fully automatic boiler cleaning system**
Hargassner heating technology now brings you even more convenience. The ash removal system cleans the boiler at regular intervals. The fly ash falls automatically down after cleaning-movements of the special-constructed turbulators. Inside the ash box, all the ash is compacted to a quarter of its original volume – thereby saving space and lengthening the emptying interval.

(Optional: with 240l ash bin; see page 11)

**Ash bin 240l with appropriate diagonal ash removal auger**
Longer emptying intervals – more comfort! With Hargassners’ diagonal ash removal auger – including a 240l ash bin – clients experience even more convenience.

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14. Calorifiers for thermal discharge safety device
15. Combustion air draught fan
16. Primary air
17. Secondary air
18. Automatic ignition
19. Stoker auger
20. Sliding grate
21. De-ashing grate
22. Motor sliding grate
23. Motor de-ashing grate
24. Step feeding grate
25. Fly ash agitator
26. Motor fly ash agitator

**Type**

<table>
<thead>
<tr>
<th>Type</th>
<th>Fuel-dependent heat output in kW</th>
</tr>
</thead>
<tbody>
<tr>
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<td>44-149</td>
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<tr>
<td>WTH 200</td>
<td>59-199</td>
</tr>
</tbody>
</table>

**Weight**

<table>
<thead>
<tr>
<th>Weight</th>
<th>2100 kg (1500 kg)</th>
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</thead>
</table>

**Dimensions**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>HxBxT (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HxBxT (mm)</td>
<td>2010x1000x1670</td>
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**Excerpt from certified test reports**

<table>
<thead>
<tr>
<th>Output kW</th>
<th>Efficiency %</th>
<th>Carbon Dioxide CO2 %</th>
<th>Carbon Monoxide CO mg/MJ</th>
<th>Dust mg/MJ</th>
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<tbody>
<tr>
<td>149</td>
<td>93,4</td>
<td>14,8</td>
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<tr>
<td>42,8</td>
<td>93,1</td>
<td>10,3</td>
<td>15</td>
<td>18</td>
</tr>
</tbody>
</table>

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**Recommended by NATURE**

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**NEW**

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**Optional**

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Lean back and enjoy – Your heating system is doing the work for you

The Lambda-Hatronic controls the entire heating system from the supply of the wood chip, to the combustion, to the mixers for the heating circuits and hot-water tanks. It works according to external conditions, recognising the changes in conditions as soon as they occur and adjusting the boiler output consequently. The lambda sensor in the flue pipe provides data for optimum combustion values.

Hot-water tank heating

It is only necessary to set the desired hot water tank temperature and loading time. Your control unit will take care of the remaining steps automatically.

The minimum temperature control for the hot-water system is a useful feature. The Lambda-Hatronic reacts immediately when the temperature of the hot-water drops below the minimum temperature outside the programmed heating time. Advantage for you: 24 hours hot water a day.

The hot water system is heated according to prioritisation rules: Traditionally, there is only one type of hot-water system regulation: if the hot-water system is cold, the heating circuit is switched off. Hargassner will never leave you out in the cold. If the hot water is cold, the heating is only reduced temporarily and the heating elements remain warm; there is no reduction in room temperature.

As different as night and day – 3G day/night reduced temperature logic – exclusively from Hargassner

Using three adjustable outside temperature thresholds, the Lambda-Hatronic controls the heating system and switches it on or off. This reduces the energy consumption and saves money, without compromising comfort or convenience.

- **Threshold 1**: For heating during the day
  - If the outside temperature increases above a selected threshold value (factory setting 16°C), the system is switched off.

- **Threshold 2**: For reduced temperature heating during the day
  - If the outside temperature increases above the set threshold value (factory setting 8°C) during the reduced temperature phase in the daytime, the system is switched off.

- **Threshold 3**: For reduced temperature heating during the night
  - If the outside temperature increases above the set threshold value (factory setting 8°C) during the reduced temperature phase at night, the system is switched off.

Back end protection

**Speed-regulated Bypass pump:** Based on measurements of the return flow temperature sensor, the Lambda Hatronic continuously adjusts the return pump, thus ensuring a return flow temperature of 58°C; above this, it switches off, meaning that electrical power consumption is kept to a minimum (no return temperature control valves required).

**Pump with Mixing motor:** Having a long distance connection, an accumulator or a low loss header, the back end protection will be realised through a 3-way-mixer including mixing motor. These two parts are responsible for controlling back end protection and heat recirculation.
ACCESSORIES

Accumulator Control Option (PSP)
The PSP optimises the accumulator loading and unloading process. As a result, Hargassner reaches 100% utilisation of the accumulator. So that solar technology and automatic wood-fired heating technology can be combined, Hargassner has developed a practical option for the Lambda Hatronic. Initially, solar energy stored in the accumulator is used and the system only switches to the wood chip or pellet system when required. At this time the heat is conveyed directly into the home and not stored in the accumulator. For peak performance the PSP provides also an option for a steadily loaded accumulator.

External Boiler Controlling
If desired, an additional external boiler, e.g. wood gasification boiler, oil or gas boiler, can be integrated. The change-over between those two boilers occurs fully automatically.

Cascade Controller
For using the heating output of two or more (up to 4) parallel connected boilers; you need Hargassner’s cascade controller. The cascade controller combines the boilers through a CAN-Bus system. Special settings like the prioritisation of boilers or equalisation of boiler operation hours can be adjusted. Every system, including more than one boiler, must have an accumulator or low loss header.

Remote Control
- Analog FR25: This remote control measures the actual internal temperature and also applies corrections to the control unit. You can use the temperature controller to adjust the set room temperature up or down. If you press the switch to SUN, the heating switches on – even during the reduced temperature phase or following a switch-off threshold. In the MOON position, you activate the reduced temperature program and in the CLOCK position, the heating system runs according to the set Lambda-Hatronic program. To inform the client about the status of the heating system a warning light is integrated.
- Digital FR 30: This digital controlling device enables you to reset all heating temperatures and heating times from your living room. On a graphic display you can see all the information about heating circuits and the boiler status.
- SMS: With this special tool you can have your heating under control even when you are not at home. Faults are automatically sent to your mobile and you can issue commands by yourself, e.g. switch the heating circuits on or off or set new temperatures, all from your mobile with completely reliably.

Visualisation
This software allows you to monitor and adjust different settings of your heating system from your PC.

HKM: Extension Module
Used to integrate a maximum of 2 additional heating circuits, 2 hot water tanks and 1 external heating circuit. (through CAN-Bus). 2 extension modules can be used per boiler.

HKR: External Controller
Our external controller is an independent control unit, which can be used to control 2 heating circuits, 2 hot water tanks, 1 external heating circuit, 1 accumulator or external boiler and a district heating pump. (Max. 8 external controllers with 6 additional extension modules)

The Lambda-Hatronic at a glance:
- Modulating Boiler Output (energy-saving)
- Heating Circuits (increases living comfort)
- 2 separate heating circuits, regulated by external conditions and mixers
- Possibility to extend with Hargassner’s extension module (HKM)
- Bus system with control module
- Efficient use of residual heat
- Screed dry-out program
- Hot water tanks
- Possibility to extend with several hot-water tanks
- Performance-related automatic hot-water tank prioritisation
- Boiler Minimum Controlling
- Legionella termination program
- Speed-regulated back end protection
- Three switch-off thresholds
- All values set at factory, individually adjustable
- Fault indicator on the display
Hargassner Agitators

Going backwards to move forwards: Conveying technology with intelligence

It doesn’t matter how much material you’ve stored, the Hargassner agitator easily transports your fuel out of the storage room and therefore only needs minimum electrical power. Professional material conveying is a case of efficient mechanics rather than raw power!

Stoker auger and auger channel made of STAINLESS-STEEL: High-quality material for a long service life

This conveys the wood chips into the combustion chamber and is optimally designed for the thermal and mechanical loads that occur: the NIROSTA auger has a dual bearing on the gear motor and therefore works quietly and without abrasion wear in the NIROSTA auger channel.

The breaker box:

At the end of the extraction conveyor, directly above the drop shaft, the “breaker” forces even excessively long or bulky wood chips downwards. In particularly difficult cases, the drive motor switches to reverse, the breaker turns the offending wood chips the other way around – and the problem is solved!

Certified Burn-back flap

In order to protect against burn-back, the flap seals the drop shaft so that it is completely airtight between the extraction and stoker auger. It opens electrically when conveying starts and closes – under the force of a spring (without electrical power) – during pauses in heating.

A sensor on the stoker auger (ETUE: No.:16) is constantly monitoring the auger temperature, to close the flap as soon as possible in case of burn back. Ensuring perfect safety!

Low hand-over height

A very low constructional height of the drop shaft results in maximum fuel volume in the storage room.

1. Boiler
2. Fan
3. Primary air
4. Preheated secondary air
5. Automatic Ignition
6. Stoker auger
7. Drop shaft with burn-back flap
8. Servomotor for burn-back flap
9. Drive motor for stoker auger
10. Drive motor for extraction auger
11. Extraction auger
12. Ground agitator with spring blades
13. Agitator gearbox
14. Electronic control unit
15. Safety lid
16. Stoker auger temperature sensor
17. Storage room temperature sensor
18. Storage room service door
Four or five arms in form of steel spring blades ensure that the wood chips are conveyed evenly and without interruption. Following a movement in the conveying direction, the agitator turns back a third of the way, thus loosening the material. This well-constructed extraction system guarantees a complete emptying of the wood chip storage room with minimum effort!

No underfloor construction needed!

Through this special-constructed four or five arms system, a time-consuming and costly underfloor to stabilise the springs is unnecessary! Furthermore, foreign objects like stones or steel straps are falling down under the level of the auger and therefore be not conveyed through the extraction auger. "Natural foreign objects separation"; a significant advantage: Less wear on the auger, longer auger life time, less faults of the heating system overall!

4 or 5 spring blades

Up to 4m diameter = 4 spring blades

Above 4m diameter = 5 spring blades

Tapered extraction auger

Whereas augers with a simple rectangular cross-section are usually used, we have given this important component an efficient tapered profile – and the auger flights are also hardened. Therefore, in the Hargassner extraction auger, bigger chips are not squeezed onto the auger wall, but are conveyed without any problems by the tapered auger profile. A “dynamic” auger pitch prevents a material jam in the filling area. The clear benefit is that there is less power need, reduced energy consumption and maximum operating reliability.

“Special”- Agitator gearbox

A gear motor drives the agitator gear mechanism via the extraction auger. The extremely flat construction of the gear mechanism enables an essentially more efficient use of space without “material segregation”. On the one hand the special design of this gearbox enables a constantly reverse motion of the auger without rotation change of the spring blades and on the other hand an extraordinary flexibility of the extraction system.

Special hardened auger windings
Hargassner Wood Chip Transportation- and Storage Systems

Heating room and storage room in an auxiliary building
The refuelling of the storage room occurs directly from the chipper or from a tractor with front-loader.

Heating room and storage room in the basement of the residential building
The refuelling of the storage room occurs through Hargassner’s horizontal filling auger on the ceiling with external shaft.
The “Special” – Solution

Heating room and storage room in a heating container

The refuelling occurs through Hargassner’s vertical filling system including auger trough and wood chip ejector.

Heating room on ground floor, storage room on 1st floor

The refuelling occurs through Hargassner’s vertical filling system including auger trough and wood chip ejector. The chips fall via a elongated drop shaft into the stoker auger.

District heating service

Independent building for heating room and storage room. Storage room is recessed on basement level for easy refuelling.
One of the most important things to realise about a Wood chip – heating system, is to plan the storage room. It doesn’t matter where your fuel is stored – in the first floor, in an auxiliary building or in the basement of your residential building – Hargassner provides the right solution for every client’s situation.

Of course the wood chips storage room should be designed to be easy to refuel and as large as possible or necessary. In the majority of cases, an auxiliary building can be an advantage because of the easier refuelling and the higher capacity of the storage volume.

Storage Ground level:

![Large and open storage room with direct refilling.](image1)

![Large storage room with vertical filling system.](image2)

Storage 1st floor:

![Large and open storage with direct refilling.](image3)

![Large storage room with vertical filling auger and elongated drop shaft.](image4)
Double-, Three- or Four boiler heating systems:

Multiple boilers systems are often recommended for medium and large heating outputs. By controlling the operating mode of two or more boilers, the heating load can optimally be adapted to the particular season of a year. The operating security and the storage room capacity are doubled and this through a perfect price-performance ratio.

**PROS:**
- Maximum operating safety
- Most favourable for reduced heating output
- More wood chip storage capacity
- Best price-performance ratio

**NEW:**
Cascade Controller – up to 4 boilers parallel

Double-Agitator:

An optimum system for rectangular rooms. This solution extends storage volume and refuelling intervals.
Hargassner – Refuelling Systems

**Vertical filling auger for wood chips**

With the new developed vertical refill system for wood chips, difficult accessible room can be easily refuelled. For instance, storage rooms in upper floors without appropriate access roads or also containers can be handled very comfortably. The refill trough is available in two different formats: 2.10 m and 2.80m in length, either with or without suitable transportation wheels. Depending on the situation on-site, it is also possible to sink the trough into the ground floor. Additionally, Hargassner offers a special framework and rain protection cover for trouble-free opening and comfortable unloading the chips from a trailer.

The vertical filling system can handle heights up to 8m and uses at the top a specially constructed ejecting system including an adjustable metal sheet cover (yellow) to ensure best distribution in the storage room. Output: 50m³/h; depending on wood chips quality!

**Spread pattern depending on wood chips size**

The casting distance of the ejector depends of the condition of the wood chips. The larger or heavier the wood chips pieces, the more intensively they will be thrown away (see red chart on diagram). In contrast, fine or light parts fall down earlier (see black chart on diagram). Therefore, we have a different refill performance, according on refill height and fuel quality.

**Spread patterns for a vertical refuel system**

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**Horizontal filling auger for wood chips**

For refilling wood chips in basement rooms or bunkers, Hargassner’s horizontal auger is the optimal solution. Easily installed in combination with a trough, best distribution is guaranteed.
Automatic refuelling for 1st or 2nd floor

Automatic refuelling of a basement storage room

Best distribution in a bunker

Automatic refuelling for double-floor storage rooms

Refuelling with wood chips blower

Nasty dust generation!

Fields of application

Refuel system with trough sunk in ground floor

Automatic refuelling for 1st or 2nd floor

Refuel system with trough sunk in ground floor

Using Hargassner refuel trough including a quick-connect coupling and wheels for trouble-free removing

The refuel trough can easily be removed through a quick-connect coupling

Technical details and dimensional sketches

Adjustable vertical feet: up to 200mm

Hargassner refuel trough including a quick-connect coupling and wheels for trouble-free removing

NEW
Concrete Heating Containers – best combination of plant room and storage room

Containers are available in single-, double- or triple design, according to requirements. Because of a modular construction concept, our containers are easily positioned, assembled and installed. Main advantage is the enormous space and cost saving, either in new or refurbished buildings. Concrete Containers are especially aimed for official buildings, industrial enterprises, hotels or shared housing communities. Because of the comparatively low investment costs, Hargassner’s containers are also perfectly suited for heat contracting businesses.

Fields of application:

Single-Container for a residential building
Double-Container next to an industrial company

Container-Types:

For larger storage, please use double or triple containers.
Technical data:

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<th>BC 600</th>
<th>BC 700</th>
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<td>228 cm</td>
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<tr>
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<td>266 cm / 280 cm</td>
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<tr>
<td></td>
<td>15 m³ Wood Chips</td>
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<td>25 m³ Wood Chips</td>
<td>60 m³ Wood Chips</td>
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</table>

Container – Details
Prefabricated concrete walls F90, wall thickness 13cm, epoxy coating on floor, interior wiping resistant emulsion coating and exterior high quality spray render (2-3 mm granularity white). Containers include all openings for augers, ventilation, chimney, district heating connection, pellet fill sockets.

Auxiliary Equipment:
Roof covering, dividing wall F90, Steel door, Fire protection wall T30, Fuel storage door T30, Stainless steel chimney and additional openings.

Technical details on page 26-27.
## Technical data:

<table>
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<th>WTH 25</th>
<th>WTH 31</th>
<th>WTH 35</th>
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<th>WTH 55</th>
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### Technical supply:
- 400 V AC, 50 Hz, 16A fuse (230 V AC, 50 Hz, 16A fuse for AGROFIRE Suction)

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**For hydraulic schemes please ask your distribution partner**

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**Agro Fire 25-40 kW**

### Stoker auger length

**400-2000**

### Transporting hook

**FL**

### Transporting sleeve 5/4”

**RT**

### Turning induced draught fan

90° left or right depending on stoker auger length

### Stoker auger either right or left side of the boiler
WTH 25 - 55 kW

WTH 70 - 110 kW

WTH 150 - 200 kW

Agro Fire 25-40 kW

Technical data:

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<td>Nominal heat output</td>
<td>%</td>
<td>%</td>
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<td>6,8</td>
<td>5,5</td>
<td>6,8</td>
<td>6,8</td>
<td>13,7</td>
</tr>
<tr>
<td>Amount of water in heat exchanger:</td>
<td>80</td>
<td>80</td>
<td>115</td>
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<td>112</td>
</tr>
<tr>
<td>Nominal heat output:</td>
<td>kW</td>
<td>kW</td>
<td>kW</td>
<td>kW</td>
<td>kW</td>
<td>kW</td>
</tr>
<tr>
<td>Efficiency (at nominal heat output):</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Power range:</td>
<td>kW</td>
<td>kW</td>
<td>kW</td>
<td>kW</td>
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<td>kW</td>
</tr>
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<td>kW</td>
<td>kW</td>
<td>kW</td>
<td>kW</td>
</tr>
<tr>
<td>Flue pipe diameter:</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
</tr>
<tr>
<td>Max. operating pressure:</td>
<td>bar</td>
<td>bar</td>
<td>bar</td>
<td>bar</td>
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<td>bar</td>
</tr>
<tr>
<td>Boiler temperature range:</td>
<td>°C</td>
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<td>°C</td>
<td>°C</td>
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<td>°C</td>
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<tr>
<td>Water-side resistance ΔT 10 [k]: mbar</td>
<td>15</td>
<td>24</td>
<td>17,5</td>
<td>24</td>
<td>24</td>
<td>51,3</td>
</tr>
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<td>Water-side resistance ΔT 20 [k]: mbar</td>
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<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
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</table>

(Attention: Numbers in brackets for HSV 30)

(Attention: Numbers in brackets for HSV 150)

(Attention: Numbers in brackets for HSV 30) (All numbers in cm)
Hargassner Biomass – Heating technology Centre:
Hargassner offers its clients and interested parties a manufacturing base with over 22,000 m², including a large-scale R&D department and a training centre for service and installation staff all over the world. Latest production technology and qualified employees are responsible for high performance products – Made in Austria

Hargassner’s products have received numerous awards and certifications. The deciding factors for the large international acceptance include, in addition to the pioneering work in the field of biomass heating, many technological achievements concerning the combustion of wood chips and wood pellets.

Energy Genie 2007 award at the ‘Energy Saving Fair’ in Wels/Austria.