

COMMERCIAL BOILERS

Eco-HK / Eco-PK 150 – 225 KW

HARGASSNER
HEATING TECHNOLOGY FOR BIOMASS



Features and benefits of the Eco-HK & Eco-PK

Energy-saving **ECO**-Operation

Speed-controlled EC-exhaust fan with negative pressure monitoring

Hargassner uses energy-efficient EC-exhaust fans in the Eco-HK & Eco-PK. The main advantage of this GreenTech EC-technology is the significantly higher efficiency rate of up to 95 %. This saves energy and reduces electricity costs. The negative pressure unit constantly measures the pressure conditions in the combustion chamber. The Lambda-Touchtronic uses this data to control the speed of the draught fan, thus keeping the negative pressure at an ideal level. A flame temperature sensor optimises combustion. This concept ensures combustion with minimal exhaust gas temperatures and therefore maximum efficiency.

Energy-saving ignition

Due to the new design of the ignition element, electrical power consumption has been reduced to just 2 x 300W, (up to 2000W less) and, at the same time, the efficiency of the ignition process has been increased.



- Energy savings of over 88%
- Smart ignition monitoring
- Silent

Energy saving agitator system in the **ECO**HK

Due to the very low driving power of just 0.37 / 0.55 kW and the highly-efficient and robust spur gear, the agitator is very energy-efficient and reduces customers' electricity costs. Savings of up to 67 % may be made compared to conventional agitator systems.

The impressive gear box efficiency of over 90 % has replaced the traditional worm gear drive.



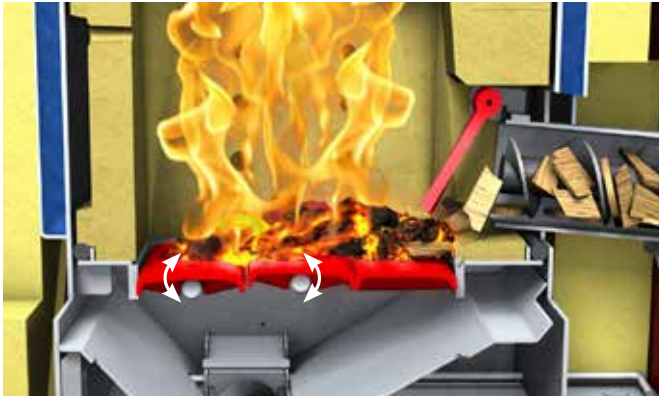
INGENIOUS
energy efficiency
&
INGENIOUS
cost saving

Unique double rotary step grate

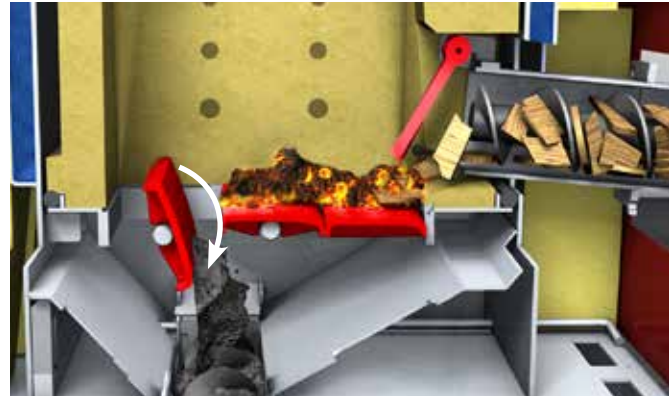
PATENTED

The grate consists of three consecutive and stepped grates which may be moved independently.

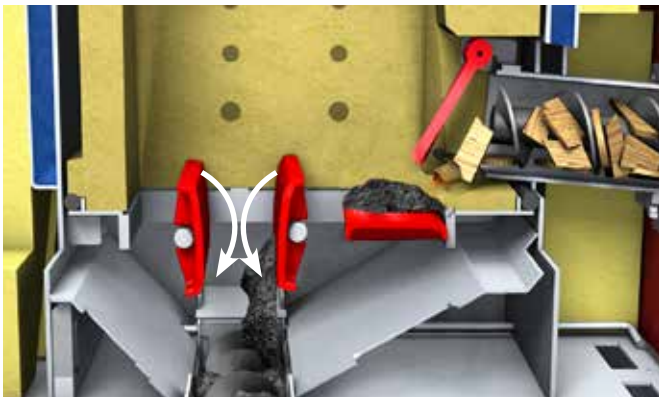
As a result, wood chips, as well as other agricultural fuels, are burned efficiently.



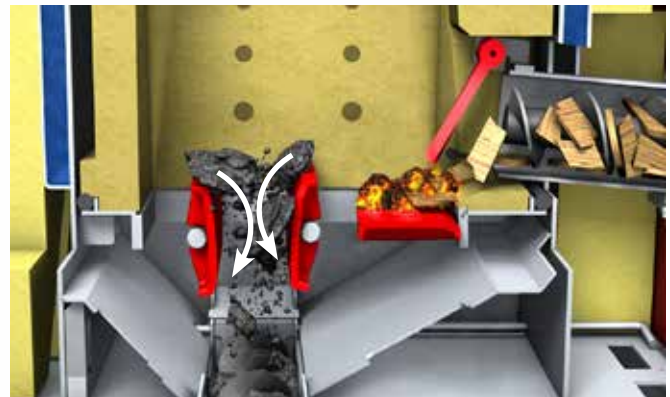
Furthermore, the grates are able to **precisely level the firebed** to ensure a homogeneous combustion process.



If regular wood chips/pellets are used, only the **rear de-ash grate** opens. The ash falls down and the embers remain.



If the boiler is completely cold, a full cleaning process is executed. **Both grates rotate**, so all foreign objects like stones, nails, etc. are removed, as well as the cold ash.



For **miscanthus**, or materials which tend to slag, the added "**breaker function**" forces the ash into the ash box.

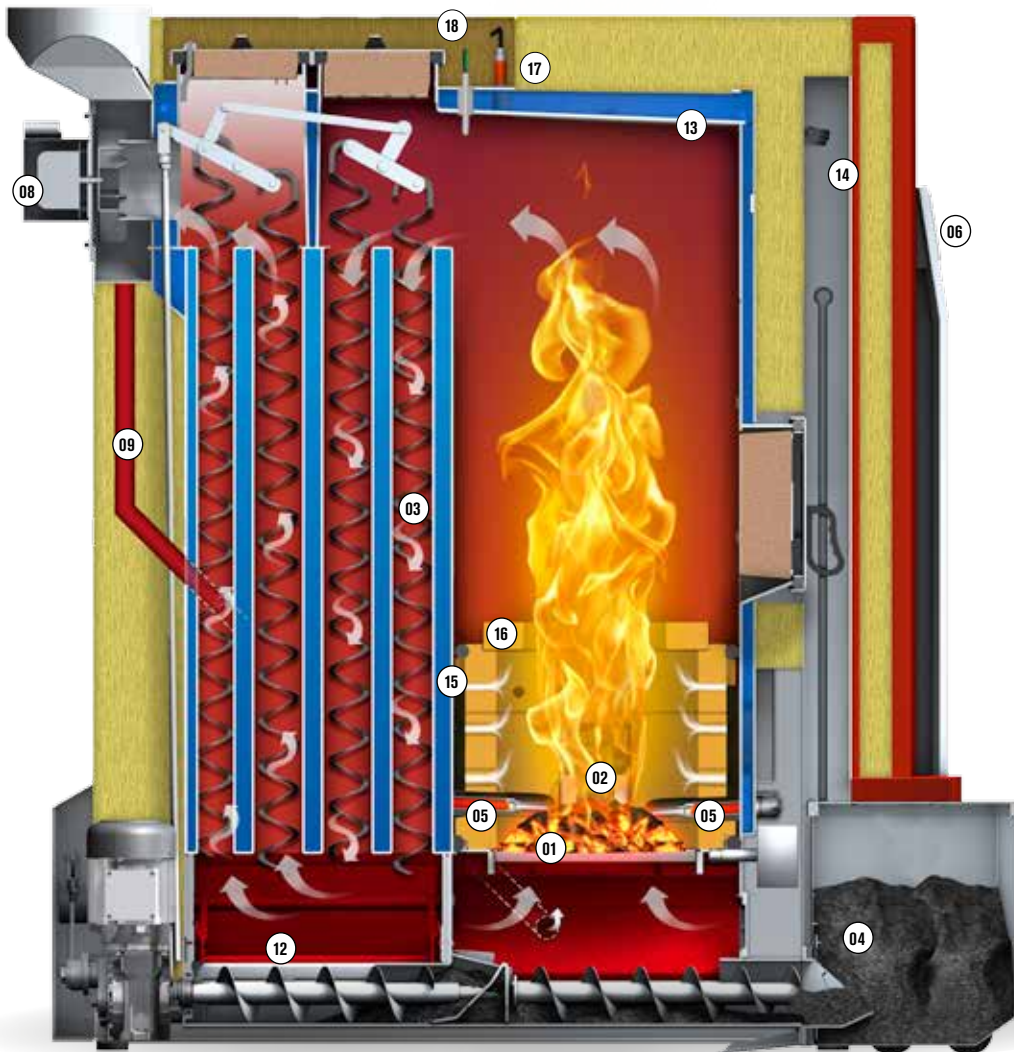


UNIQUE
step grate system:
Burned efficiently with
different fuels

WOOD CHIP Eco-HK 150 - 225 kW

WOOD CHIPBOILER EcoHK

- **Cost-effective** due to Eco-Mode
- New grate system: **Rotary step grate**
- New Eco-extraction, **energy-saving** through 0.37 / 0.55 kW-Motor
- Latest combustion technology Eco-Control
- Firebed level control with Lambda sensor and automatic fuel quality detection
- **Z-shaped bicameral rotary valve** for 100% burn back protection
- Patented ash extraction system for fly & grate ash
- Flame temperature monitoring & one adjustable secondary air motor



- 01 New double rotary grate
 - a) De-ash grate
 - b) Stoker grate
 - c) Fixed grate
- 02 Firebed levelling
- 03 Heat exchanger cleaning (also in the 1st tube)
- 04 Large ash box (75 l)
- 05 New ignition: 2 x 300 W, without fan
- 06 Innovative integrated Touch-control
- 07 Z-shaped bicameral rotary valve
- 08 Exhaust fan (EC-motor) with negative pressure monitoring
- 09 Recirculation - **standard**
- 10 Optional: Integrated back end protection
- 11 Eco-RA – Energy-efficient agitator system
- 12 Patented ash extraction for fly and grate ash
- 13 No thermal discharge safety device necessary
- 14 Negative pressure monitoring
- 15 Combustion chamber fully integrated in heat exchanger
- 16 Flame concentration jets out of high-end refractory
- 17 Lambda sensor
- 18 Flame temperature monitoring





Firebed monitoring & Lambda sensor control

Through the precise and contactless firebed-height monitoring system with sensors, the most effective combustion conditions depending on fuel quality are detected.

It doesn't matter which fuel type is stored. Soft, hard, dry or damp wood chips – the control unit uses the Lambda sensor to detect the relevant calorific value and regulates the optimum fuel-air mixture.

Your heating system is always working with the required 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.

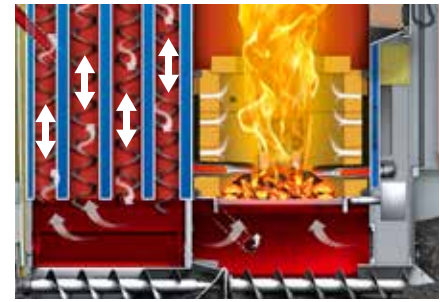


Fully refractory-lined combustion chamber with recirculation

The refractory combustion chamber guarantees high combustion temperatures through optimum heat storage (also at part-load), minimises the ignition procedure and reduces emissions.

To reduce clinker in the ash, Hargassner offers flue gas recirculation, especially for very dry material and agricultural fuels. Every Eco-HK boiler features flue gas recirculation as standard.

Due to the cooling of the firebed during combustion, the relatively low ash melting point of miscanthus or corn cobs can be reduced. The ash can be easily removed into the ash extraction auger.



Perfect cleaning - increases efficiency

The newly-designed cleaning approach cleans ALL heat exchanger tubes at regular intervals and now also the 1. down draught (heat resistant material). The turbulators remove the fly ash from the pipes, which falls directly down into the ash extraction auger.

The latest developed de-ash system cleans the boiler at regular intervals. The ash extraction auger transports the fly ash, as well as the grate ash, into the completely integrated ash box. During transportation the ash is crushed and compressed in the ash box.

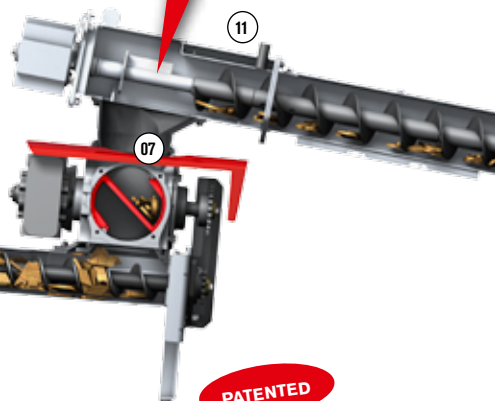
The result is easier cleaning and increased overall efficiency.

PATENTED

Z-shaped bicameral valve

A z-shaped rotary valve designed especially for wood chip

- 100 % burn-back safety
- depth of chamber 22 cm for extra long wood pieces
- smooth operation
- little effort
- with hardened cutting edges



PATENTED

Integrated Touch-Control, plug&play

The all new Lambda-Touchtronic leaves nothing to be desired.

The control system is characterised by its exceptional design and simple handling.



Integrated back end protection

An integrated back end protection with energy-efficient pump and motor mixer is available.

- Fast and easy installation
- Compact and cost-effective
- Pre-wired



Wood chip boiler with ECO-Agitator



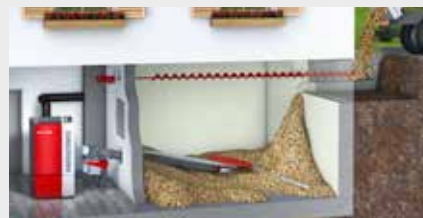
Boiler room and storage room at ground level in adjacent building

The storage room is filled directly from the chipper or from a tractor with front loader.



Boiler room and storage room in an adjacent building

The storage room is filled by a vertical filling system (VFS) The extraction is performed by an agitator system with downpipe



Boiler room and storage room in the basement of a residential building

The storage room is filled by a horizontal filling auger with outside shaft.



District heating station

Stand-alone building with boiler and storage room The storage room is counter-sunk and filled from the top.

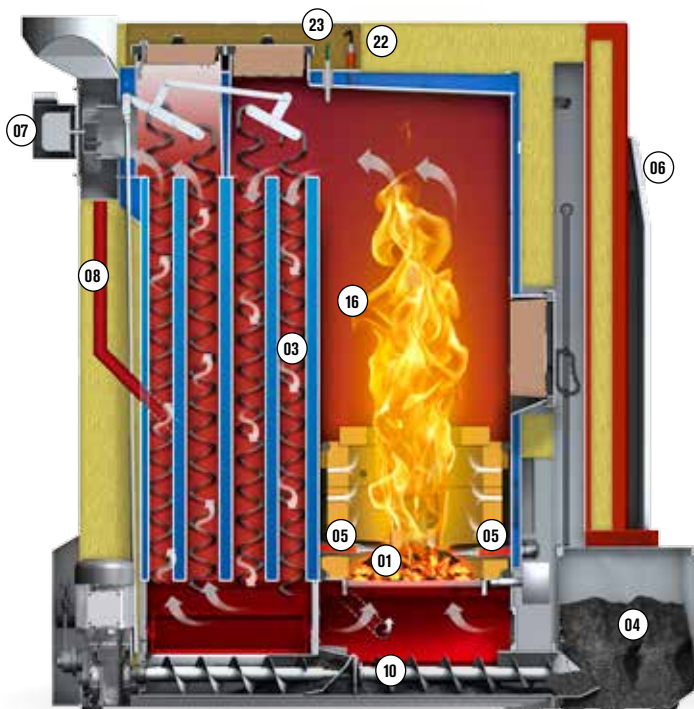
PELLET Eco-PK 150 - 225 kW

PELLETBOILER ECO PK

- **Cost-effective** due to Eco-Mode
- New grate system: **Rotary step grate**
- Latest combustion technology Eco-Control
- Firebed level control with Lambda sensor and automatic fuel quality detection
- Two **double rotary valves** for a 100% burnback protection
- Suction of pellets during combustion
- Patented ash extraction system for fly & grate ash
- Flame temperature monitoring & one adjustable secondary air motor



- | | |
|--|--|
| <ul style="list-style-type: none"> 01 New double rotary grate <ul style="list-style-type: none"> a) De-ash grate b) Stoker grate c) Fixed grate 02 Firebed levelling 03 Heat exchanger cleaning (also in the 1st tube) 04 Large ash box (75 l) 05 New ignition: 2 x 300 W, without fan 06 Innovative integrated Touch-control 07 Exhaust fan (EC-motor) with negative pressure monitoring 08 Recirculation - standard 09 Optional: Integrated back end protection 10 Patented ash extraction for fly and grate ash 11 No thermal discharge safety device necessary | <ul style="list-style-type: none"> 12 Combustion chamber fully integrated in heat exchanger 13 Flame concentration jets out of high-end refractory 14 Cyclone-Pellet-Storage 15 Closed suction system – maintenance-free, without filter 16 Fuel indicator 17 Stoker auger 18 Double-rotary valve with pressure balance 19 Drive unit 20 Pellet-Vacuum turbine 21 Acoustic insulation 22 Lambda sensor with fuel quality detection 23 Flame temperature monitoring |
|--|--|





Firebed monitoring & Lambda sensor control

Through the precise and contactless firebed-height monitoring system with sensors, the most effective combustion conditions depending on fuel quality are detected.

It doesn't matter which fuel type is stored. Soft, hard, dry or damp wood chips – the control unit uses the Lambda sensor to detect the relevant calorific value and regulates the optimum fuel-air mixture.

Your heating system is always working with the required 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.

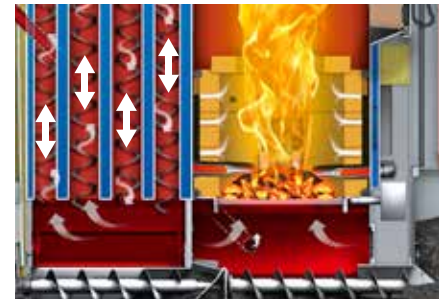


Fully refractory-lined combustion chamber with recirculation

The refractory combustion chamber guarantees high combustion temperatures through optimum heat storage (also at part-load), minimises the ignition procedure and reduces emissions.

To reduce clinker in the ash, Hargassner offers flue gas recirculation, especially for very dry material and agricultural fuels. Every Eco-PK boiler features flue gas recirculation as standard.

Due to the cooling of the firebed during combustion, the relatively low ash melting point of miscanthus or corn cobs can be reduced. The ash can be easily removed into the ash extraction auger.



Perfect cleaning – increases efficiency!

The newly-designed cleaning approach cleans ALL heat exchanger tubes at regular intervals and now also the 1. down draught (heat resistant material). The turbulators remove the fly ash from the pipes, which falls directly down into the ash extraction auger.

The latest developed de-ash system cleans the boiler at regular intervals. The ash extraction auger transports the fly ash, as well as the grate ash, into the completely integrated ash box. During transportation the ash is crushed and compressed in the ash box.

The result is easier cleaning and increased overall efficiency.

PATENTED

Integrated Touch-Control, plug&play

The all new Lambda-Touchtronic leaves nothing to be desired.

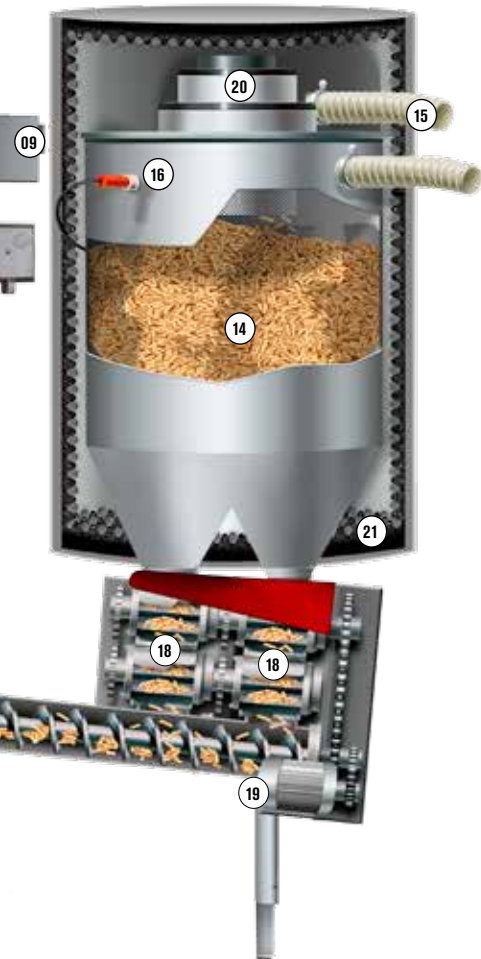
The control system is characterised by its exceptionally design and simple handling.



Integrated back end protection

An integrated back end protection with energy-efficient pump and motor mixer is available.

- Fast and easy installation
- Compact and cost-effective
- Pre-wired



Pellet extraction systems



Extraction RAS

Auger-suction combination. Maximum operation safety through dosed pellet feeding system and low electrical power consumption through short suction periods.



Extraction BAG SILO

Bag silo with steel tube frame. The extraction takes place through a fail-safe single point suction pan with one pellet suction and one air-return port. Highest operation safety and minimum space required.



Extraction RAPS

The suction points may be positioned according to size and shape of the storage room. Available as a manual changeover box (2, 3 or 4 points) or an automatic changeover unit for 2, 3 or 4 points.

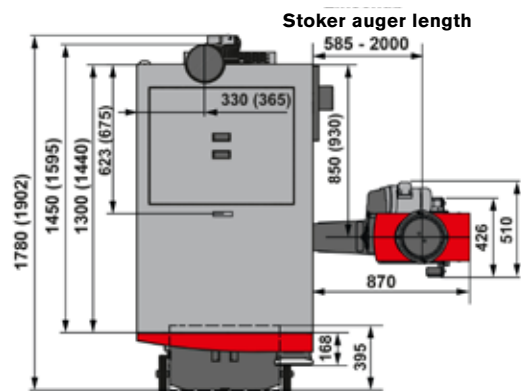
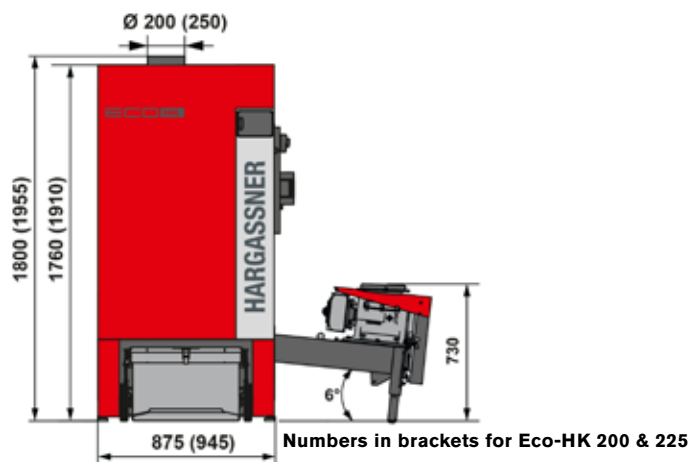


Extraction PET

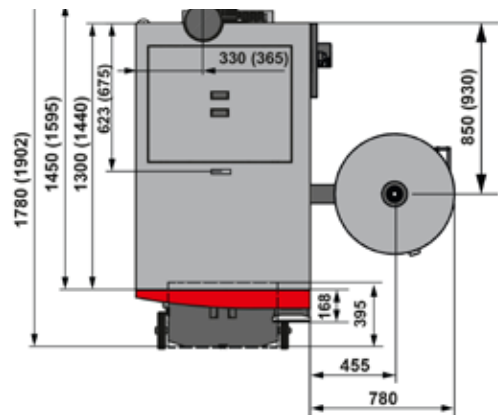
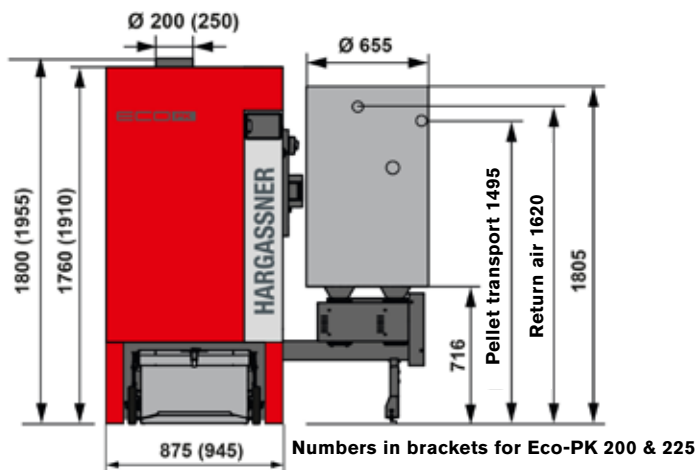
Space-saving underground storage of pellets. The pellet tank includes a specially designed extraction system that can be easily installed in the backyard or at gateways.

TECHNICAL DATA

Eco-HK 150 - 225



Eco-PK 150 - 225



Technical data	Eco-HK / Eco-PK 150 - 225						
	Unit	Eco-HK 150	Eco-PK 150	Eco-HK 200	Eco-PK 200	Eco-HK 225	Eco-PK 225
Power range	kW	44-149		59-199		68-225	
Efficiency Full load / Efficiency Partial load	%	94,7 / 96,5	93,8 / 96,1	94,4 / 97,0	94,7 / 97,4	94,4 / 97,0	94,7 / 97,4
Flue pipe diameter	mm	200		250		250	
Water content	Litre	253		360		360	
Ash box size	Litre	75		75		75	
Pellet hopper size	kg	-	115	-	115	-	115
Water-side resistance ΔT 10 [K]	mbar	51.3		58.5		58.5	
Water-side resistance ΔT 20 [K]	mbar	13.7		14.5		14.5	
Flow/Return	Inches	2" / 2"		2.5" / 2.5"		2.5" / 2.5"	
Weight	[kg]	1120		1250		1250	
Boiler height:	H mm	1760		1910		1910	
Boiler width:	W mm	875		945		945	
Boiler depth:	T mm	1780		1902		1902	
Transport dimensions H / W / D	W mm	1800 x 875 x 1450		1955 x 945 x 1595		1955 x 945 x 1595	

AUSTRIA

Hargassner GmbH
A-4952 Weng, Upper Austria
Anton Hargassner Strasse 1
Phone: +43 7723 5274
Fax: +43 7723 5274-5
office@hargassner.at
www.hargassner.com

HARGASSNER
HEATING TECHNOLOGY FOR BIOMASS

