

# PELLET BOILERS

3-200 KW



# HARGASSNER



[www.hargassner.com](http://www.hargassner.com)



## Recommended by Nature.

CO<sup>2</sup>- neutral and environmental 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 experience and 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



Anton, Elisabeth, and their sons Anton & Markus Hargassner

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 has endeavoured to make high-performance biomass heating technology available to everyone. Currently, the company exports into 18 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 CO<sub>2</sub> – emission environment. Hargassner are 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.



Apartment house, 49 kW Pellet Boiler, Ukraine



Fire department, 100 kW Pellet Boiler, Spain



Lingfield Racecourse, 100kW Pellet Boiler, United Kingdom

# PELLET - BOILERS

HSV 9 - 22 kW



CLASSIC 9 - 22 kW



## Pellets – An environmentally friendly and CO<sub>2</sub>-neutral fuel from your local area.

Pellets are made from 100% natural wood without any additives. Tonnes of wood waste materials are produced every day in regular wood-processing industries all over Europe.

The advantages for homeowners and industrial companies are obvious:

- ✓ Lower costs than oil or gas
- ✓ Crisis-resistant, because of locally sourced fuel
- ✓ Short transportation
- ✓ Easy refuelling through blown pellet delivery
- ✓ Dust-free, odourless refill
- ✓ Small storage volume
- ✓ Effective and energy-efficient heating system

Therefore, pellets are an outstanding fuel for heating systems compared to fossil fuels like oil, electricity or heat pumps.



Family house

Pellets Characteristics (EN14961)	
Heating value	5 kWh / kg
Weight	650 kg/m <sup>3</sup>
Diameter:	6mm
Length:	approx. 5-40mm
Water content:	<10%
Dust content:	max. 1%
Ash content:	max. 0,5%

## CLASSIC LAMBDA 25 - 60 kW

## WTH 70 - 200 kW



### Pellets raw material: Natural wood waste materials

Absolutely no chemical additives!

Energy expended for pellets production: approx. 2 – 2.7% of energy content

Pellets  $\Leftrightarrow$  Oil / Gas  
Massive cost reduction



## CONTENT

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# Hargassner Boiler Technology

## Hargassner guarantees highest efficiency by lowest emissions – Over 95% - tested and certified under strict conditions!

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

### Lambda sensor with fuel-quality detection

The lambda sensor regulates exactly the right quantity of fuel in every output range according to the pellet quality. This is the only way to guarantee an optimum (i.e. economical and low-emission) combustion that can save energy and money with more than 95% efficiency.

### Induced draught fan

An ID-fan on the exhaust gas pipe ensures optimum air draught within the boiler.

System advantage: Highest operating safety – independent of the natural chimney draught!

### Low-temperature boiler

Hargassner's outside temperature measurement system allows the boilers control unit to smoothly regulate the heating output. Boiler flow temperature, from 38°C to 75°C – with constant 95% efficiency! Only the required energy is being generated.

### Heat exchanger with integrated back end protection

The newly developed counter flow system within the compact tubular heat exchanger warms up the boiler return water (integrated back end protection) and is the basis for a smooth operation.

### Circulation zone for best burn-out

Airbourne particles from the combustion chamber end in a circling stream of gas before fully burning out.

### Fully refractory-lined high-temperature combustion chamber

Refractory has proven itself as the best material available in terms of heat storage, function and durability. The high combustion chamber temperature contributes to a complete combustion and over 93 % efficiency at full and partial load.

### Automatic sliding grate

The well-engineered sliding grate system of Hargassner's pellet boilers cleans itself fully automatically and combustion residues end up in the ash box. Primary air is consistently blown in via the grate and the ignition takes place automatically by a hot-air fan. Optimum afterburning and excellent emission values are guaranteed by a pre-heated secondary air.

### Ash box with integrated compression

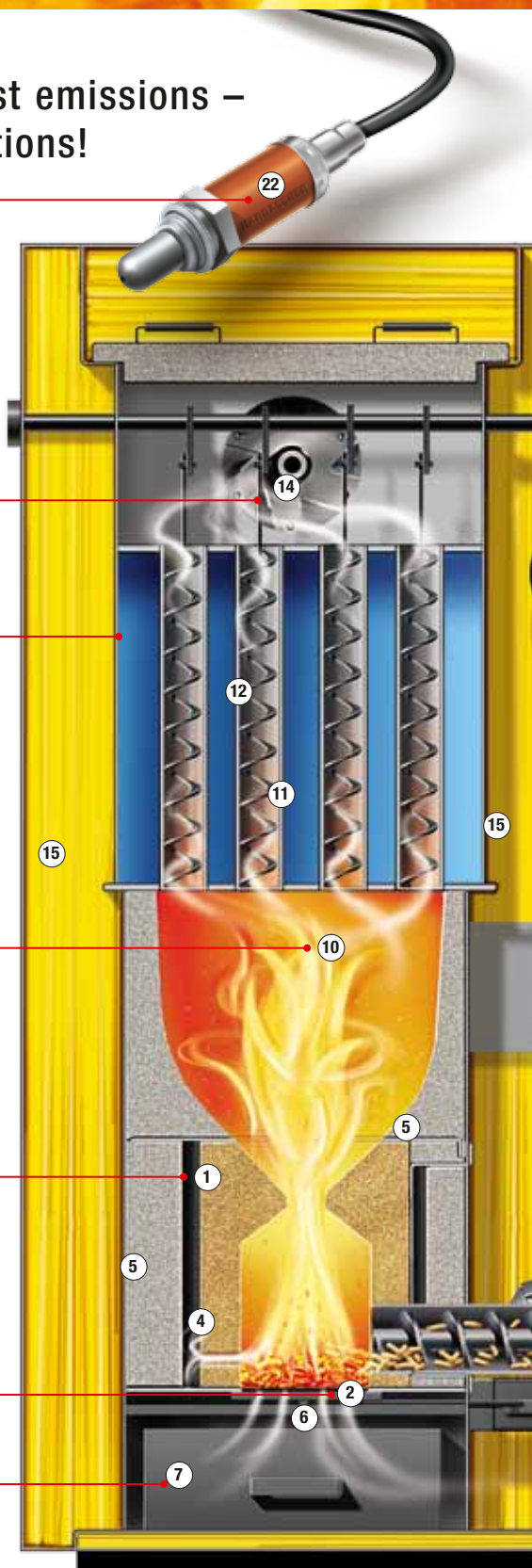
A distribution mechanism mounted below the moving sliding grate ensures that the ash will be compressed and filled to the top of the box. This leads to extended emptying intervals and therefore more convenience.

### Automatic ash level indication

Once the ash box is full, you are reminded on the display to empty it. When the warning appears the remaining space lasts for one more week. There should be no overfilling of the box and the boiler stays clean for years.



38°



- |   |  |                                     |
|---|--|-------------------------------------|
| 1 Fully refractory-lined combustion chamber | 5 High temperature resistant insulation plates | 9 Stoker auger                      |
| 2 Sliding grate                             | 6 Primary air                                  | 10 Circulation zone                 |
| 3 Drive motor for sliding grate             | 7 Ash box                                      | 11 Boiler heat exchanger            |
| 4 Secondary air flow                        | 8 Automatic ignition                           | 12 Turbulators                      |
|   |  | 13 Automatic boiler cleaning system |

# HSV 9 - 22 kW

- ✓ Low temperature boiler
- ✓ Refractory covered
- ✓ Lambda sensor



## Pellets suction up to 20m

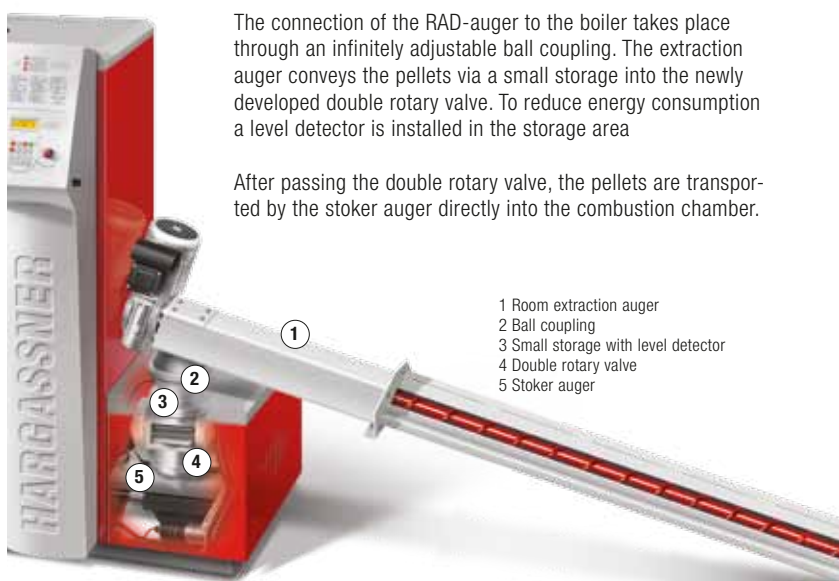
The Hargassner pellet vacuum turbine sucks the pellets into the hopper; either from an extracting auger, a single-, double-, three- or four-point vacuum feeding system, or a bag silo. A hose length up to 20m makes it easy to overcome architectural barriers and handle complex heating and storage room combinations. To turn off the vacuum turbine after refilling the hopper, a level detector is integrated.



## Pellet Boiler with direct auger connection RAD

The connection of the RAD-auger to the boiler takes place through an infinitely adjustable ball coupling. The extraction auger conveys the pellets via a small storage into the newly developed double rotary valve. To reduce energy consumption a level detector is installed in the storage area

After passing the double rotary valve, the pellets are transported by the stoker auger directly into the combustion chamber.



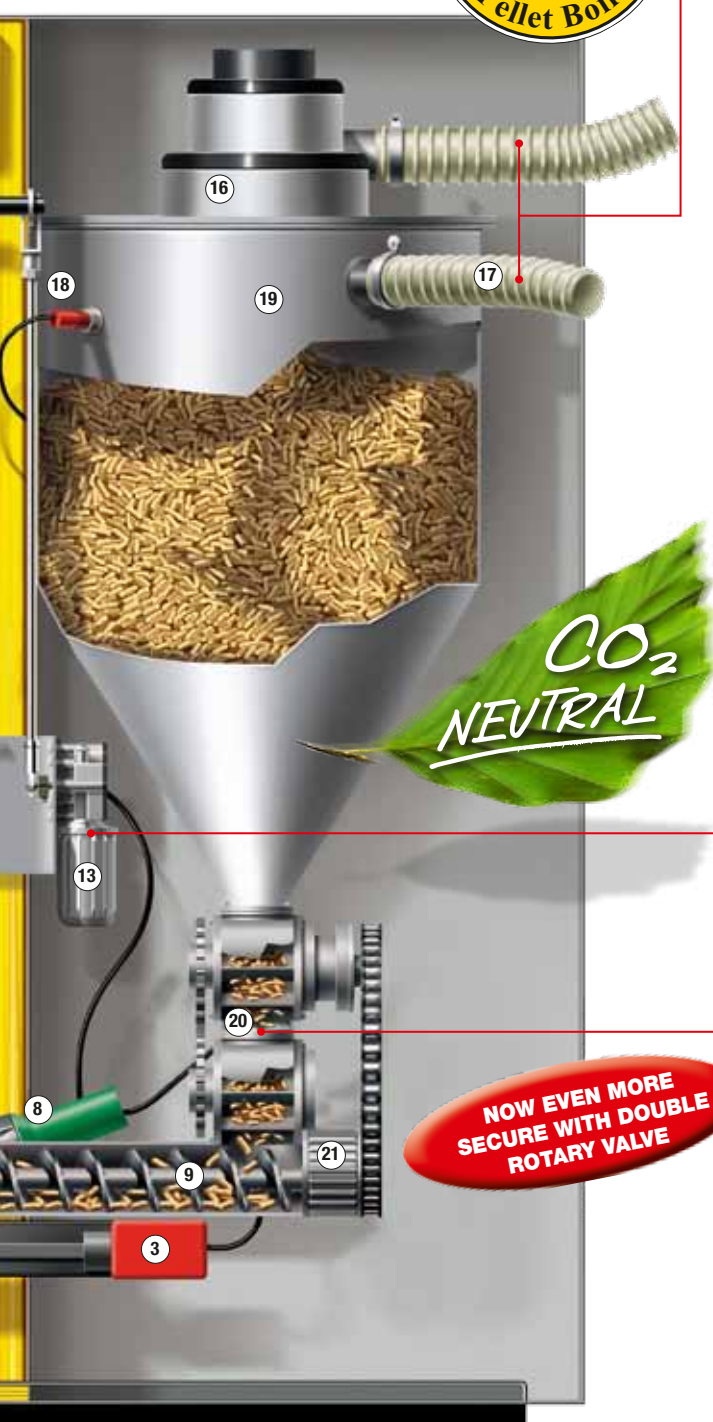
- 1 Room extraction auger
- 2 Ball coupling
- 3 Small storage with level detector
- 4 Double rotary valve
- 5 Stoker auger

## 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.

## Double rotary valve NEW

Hargassner's new double rotary valve guarantees a 100% burn-back protection. A constant amount of pellets fall through the valves and the stoker auger transports the pellets into the refractory-lined combustion chamber.



**NOW EVEN MORE  
SECURE WITH DOUBLE  
ROTARY VALVE**

- 14 Induced draught fan
- 15 Cover insulation
- 16 Pellets vacuum turbine
- 17 Closed vacuum system, maintenance-free, no filter
- 18 Level detector

- 19 Cyclone hopper
- 20 Double rotary valve
- 21 Motor drive unit
- 22 Lambda sensor

Type	Heat Output kW
HSV 9	2,8-9,5
HSV 12	3,5-12
HSV 14	4-14,9
HSV 15	4,5-16,8
HSV 22	6,5-22
Weight	300 kg
Voltage	230 V
Dimensions HxBxD [mm]	1470x1165x825

Excerpt from certified test reports				
HSV 15		Nominal Output	Partial Output	Nominal Output
Output	kW	15,5	5	16,1
Boiler temp.	°C	70	70	38
Efficiency	%	94,3	93,2	96,3
Carbon dioxide	%	15,1	12	15,2
Carbon monoxide	mg/MJ	18	26	22
Dust	mg/MJ	9	n.g.	6





# Hargassner Boiler Technology

## Hargassner – “Classic” – Pellets Heating for small heating output

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

### Advanced Combustion Controlling

A new control process regulates the right amount of fuel at every performance range. The “Classic” – boiler ensures an economic and low-emission combustion. Optional: with Lambda sensor, which controls the amount of pellets depending on pellets quality.

### Induced draught fan

An ID-fan on the exhaust gas pipe ensures optimum air draught within the boiler. System advantage: Highest operating safety – independent of the natural chimney draught!

### Latest Boiler Technology

Hargassner’s outside temperature measurement system allows the boiler’s 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.

### Heat exchanger with integrated back end protection

The newly developed counter flow system within the compact tubular heat exchanger warms up the boiler return water (integrated back end protection) and is the basis for a smooth operation.

### Circulation zone for best burn-out

Airborne away particles from the combustion chamber end in a circling stream of gas before fully burning out.

### Fully refractory-lined high-temperature combustion chamber

Refractory has proven itself as the best material available in terms of heat storage, function and durability. The high combustion chamber temperature contributes to a high level combustion and over 93 % efficiency at full and partial load.

### Automatic sliding grate

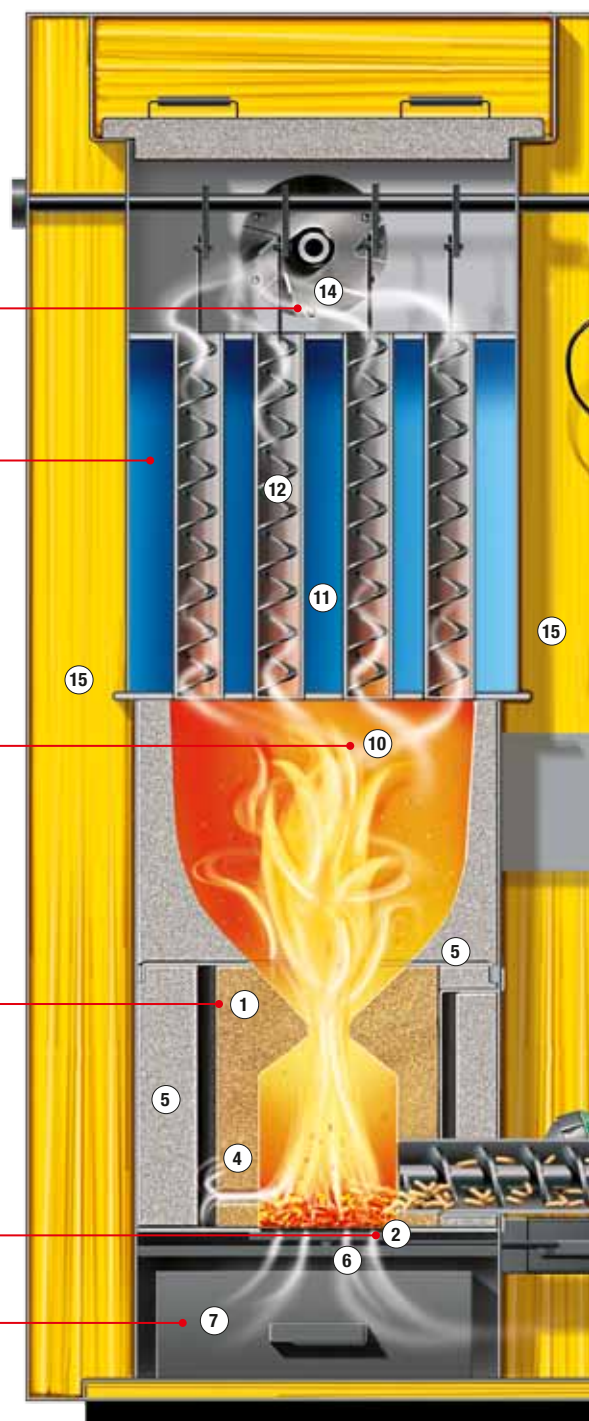
The well-engineered sliding grate system of Hargassner’s pellet boilers cleans itself fully automatically and combustion residues end up in the ash box. Primary air is consistently blown in via the grate and the ignition takes place automatically by a hot-air fan. Optimum afterburning and excellent emission values are guaranteed by a pre-heated secondary air.

### Ash box with integrated compression

A distribution mechanism mounted below the moving sliding grate ensures that the ash will be compressed and filled to the top of the box. This leads to extended emptying intervals and therefore more convenience.

### Automatic ash level indication

Once the ash box is full, you are reminded on the display to empty it. When the warning appears the remaining space lasts for one more week. There should be no overfilling of the box and the boiler stays clean for years.



- |   |  |                                     |
|---|--|-------------------------------------|
| 1 Fully refractory-lined combustion chamber | 5 High temperature resistant insulation plates | 9 Stoker auger                      |
| 2 Sliding grate                             | 6 Primary air                                  | 10 Circulation zone                 |
| 3 Drive motor for sliding grate             | 7 Ash box                                      | 11 Boiler heat exchanger            |
| 4 Secondary air flow                        | 8 Automatic ignition                           | 12 Turbulators                      |
|   |  | 13 Automatic boiler cleaning system |



# Classic 9 - 22 kW



- 14 Induced draught fan
  - 15 Cover insulation
  - 16 Pellets vacuum turbine
  - 17 Closed vacuum system, maintenance-free, no filter
  - 18 Level detector
  - 19 Cyclone hopper
  - 20 Double rotary valve
  - 21 Motor drive unit
- Optional: Lambda sensor

**NOW EVEN MORE  
SECURE WITH DOUBLE  
ROTARY VALVE**

## Pellets suction up to 20m

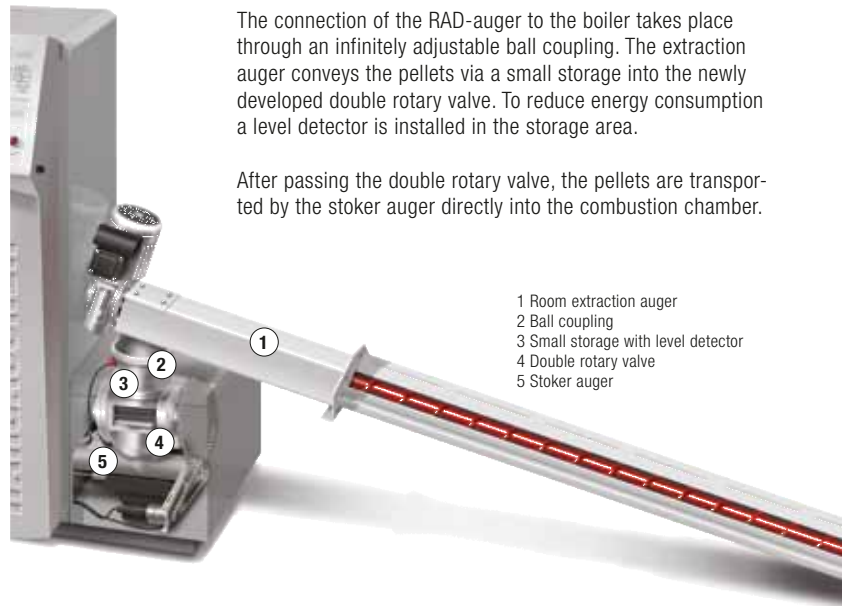
The Hargassner pellet vacuum turbine sucks the pellets into the hopper; either from an extracting auger, a single-, double-, three- or four-point vacuum feeding system, or a bag silo. A hose length up to 20m makes it easy to overcome architectural barriers and handle complex heating and storage room combinations. To turn off the vacuum turbine after refilling the hopper, a level detector is integrated.



## Pellet Boiler with direct auger connection RAD

The connection of the RAD-auger to the boiler takes place through an infinitely adjustable ball coupling. The extraction auger conveys the pellets via a small storage into the newly developed double rotary valve. To reduce energy consumption a level detector is installed in the storage area.

After passing the double rotary valve, the pellets are transported by the stoker auger directly into the combustion chamber.



- 1 Room extraction auger
- 2 Ball coupling
- 3 Small storage with level detector
- 4 Double rotary valve
- 5 Stoker 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 a cleaning-movements by 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.

## Double rotary valve

**NEW**

Hargassner's new double rotary valve guarantees a 100% burn-back protection. A constant amount of pellets fall through the valves and the stoker auger transports the pellets into the refractory-lined combustion chamber.

Type	Heat Output kW
Classic 9	2,8-9,5
Classic 12	3,5-12
Classic 14	4-14,9
Classic 15	4,5-16,8
Classic 22	6,5-22
Weight	300 kg
Voltage	230 V
Dimensions HxBxD [mm]	1470x1165x775

Excerpt from certified test reports			
Classic 12		Nominal Output	Partial Output
Output	kW	12,4	2,7
Boiler temp.	°C	70	70
Efficiency	%	93,6	90,4
Carbon dioxide	%	13,7	7,1
Carbon monoxide	mg/MJ	45	31
Dust	mg/MJ	11	n.g.



# Hargassner Boiler Technology

## Hargassner – Advanced pellets heating for medium-sized heating output.

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

### Lambda sensor with fuel-quality detection

The lambda sensor regulates exactly the right quantity of fuel in every output range according to the pellet quality. This is the only way to guarantee an optimum (i.e. economical and low-emission) combustion that can save energy and money with more than 95% efficiency.

### Induced draught fan

An ID-fan on the exhaust gas pipe ensures optimum air draught within the boiler.

System advantage: Highest operating safety – independent of the natural chimney draught!

### Latest Boiler Technology

Hargassner's outside temperature measurement system allows the boiler's 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.

### Fully refractory-lined high-temperature combustion chamber

Refractory has proven itself as the best material available in terms of heat storage, function and durability. The high combustion chamber temperature contributes to a high level combustion and high efficiency at full and partial load.

### Automatic sliding grate

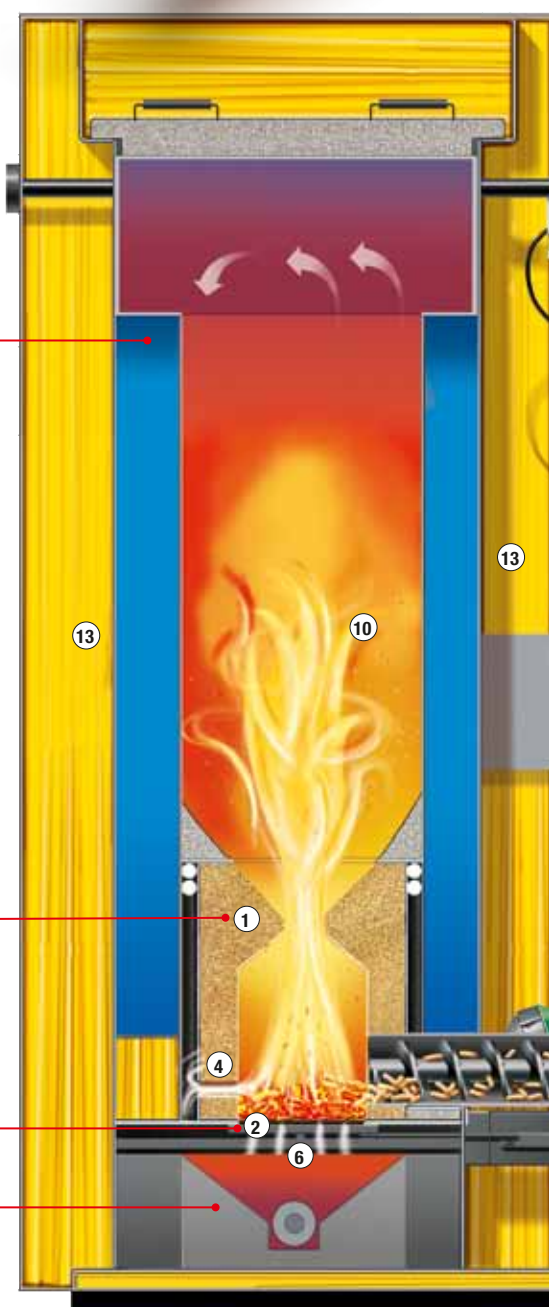
The well-engineered sliding grate system of Hargassner's pellet boilers cleans itself fully automatically and combustion residues end up in the ash box. Primary air is consistently blown in via the grate and the ignition takes place automatically by a hot-air fan. Optimum afterburning and excellent emission values are guaranteed by a pre-heated secondary air.

### Ash box with integrated compression

The ash extracting auger transports the fly ash and also the sliding grate ash into the ash box. On the way to the ash box, all the ash is compacted to a quarter of its volume – thereby saving space and lengthening emptying intervals.

### Automatic ash level indication

Once the ash box is full, you are reminded on the display to empty it. When the warning appears the remaining space lasts for one more week. There should be no overfilling of the box and the boiler stays clean for years.



- |   |  |                                     |
|---|--|-------------------------------------|
| 1 Fully refractory-lined combustion chamber | 5 High temperature resistant insulation plates | 9 Stoker auger                      |
| 2 Sliding grate                             | 6 Primary air                                  | 10 Circulation zone                 |
| 3 Drive motor for sliding grate             | 7 Ash box                                      | 11 Automatic boiler cleaning system |
| 4 Secondary air flow                        | 8 Automatic ignition                           | 12 Induced draught fan              |
|   |  | 13 Cover insulation                 |
|   |  | 14 Pellets vacuum turbine           |



# Classic Lambda 25 - 60 kW



- 15 Closed vacuum system, maintenance-free, no filter
- 16 Level detector
- 17 Cyclone hopper
- 18 Double rotary valve
- 19 Motor drive unit
- 21 Lambda sensor

**NOW EVEN MORE  
SECURE WITH DOUBLE  
ROTARY VALVE**

Recommended  
by  
**NATURE**

## Pellets suction up to 20m

The Hargassner pellet vacuum turbine sucks the pellets into the hopper; either from an extracting auger, a single-, double-, three- or four-point vacuum feeding system, or a bag silo. A hose length up to 20m makes it easy to overcome architectural barriers and handle complex heating and storage room combinations. To turn off the vacuum turbine after refilling the hopper, a level detector is integrated.



## Pellet Boiler with direct auger connection RAD

The connection of the RAD-auger to the boiler takes place through an infinitely adjustable ball coupling. The extraction auger conveys the pellets via a small storage into the newly developed double rotary valve. To reduce energy consumption a level detector is installed in the storage area.



## 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 a cleaning-movements of the special-constructed turbulators. Inside the ash box, all the ash is compacted to a quarter of its volume – thereby saving space and lengthening the emptying interval.

## Double rotary valve

Hargassner's new double rotary valve guarantees a 100% burn-back protection. A constant amount of pellets fall through the valves and the stoker auger transports the pellets into the refractory-lined combustion chamber.

Type	Heat Output kW
Classic L 25	7-25
Classic L 31	9-31
Classic L 35	10-35
Classic L 40	12-42
Classic L 49	14-48
Classic L 60	17-58
Weight	480 kg (430 kg)
Voltage	230 V
Dimensions HxBxD [mm]	(1480x1210x1290)
Values in () are for CL 25-35	

Excerpt from certified test reports			
Classic L 40		Nominal Output	Partial Output
Output	kW	41,6	12,3
Boiler temp.	°C	70	70
Efficiency	%	95,7	93,8
Carbon dioxide	%	16,4	10,1
Carbon monoxide	mg/MJ	21	56
Dust	mg/MJ	14	14



# Hargassner Boiler Technology

## Hargassner – Advanced pellets heating for medium-sized and large heating output.

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

### Lambda sensor with fuel-quality detection

The lambda sensor regulates exactly the right quantity of fuel in every output range according to the pellet quality. This is the only way to guarantee optimum (i.e. economical and low emission) combustion that can save energy and money with more than 93% efficiency.

### 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. This fan ensures the highest operating safety – independent of the natural chimney draught.

### 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.

### Fully refractory-lined high-temperature combustion chamber

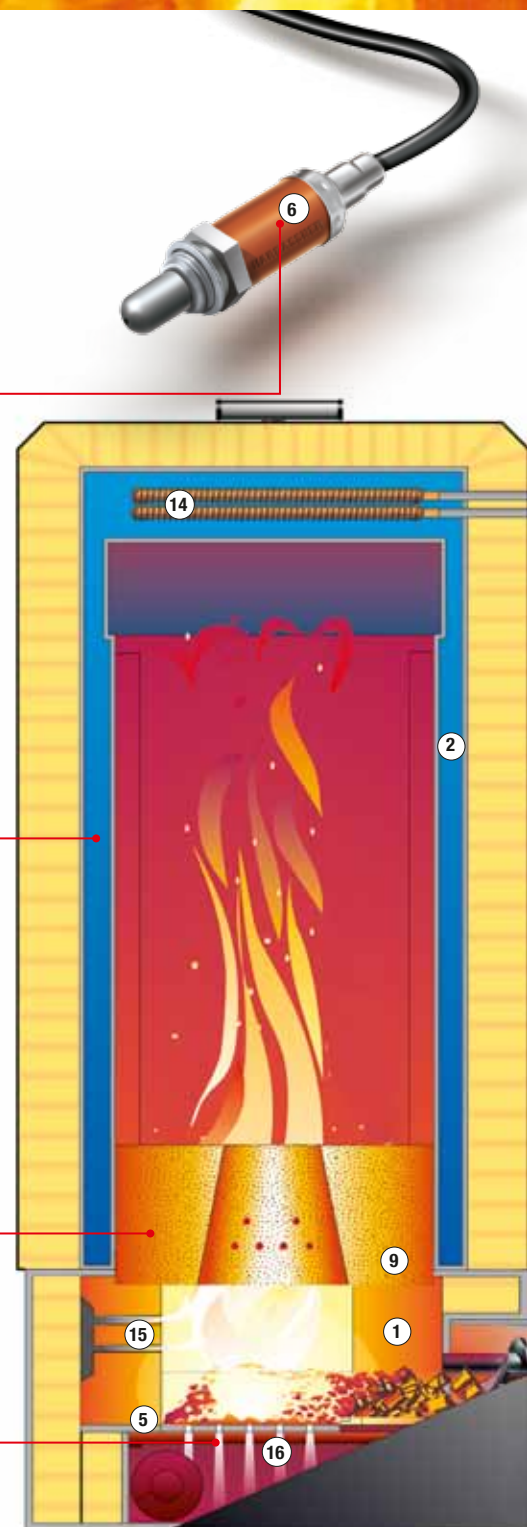
Refractory has proven itself as the best material available in terms of heat storage, function and durability. The high combustion chamber temperature contributes to a high level combustion and over 93% efficiency at full and partial load.

### Automatic sliding grate

The well-engineered sliding grate system of Hargassner's pellet boilers cleans itself fully automatically and combustion residues end up into the ash box. Primary air is consistently blown in via the grate and the ignition takes place automatically by a hot-air fan. Optimum afterburning and excellent emission values are guaranteed by a pre-heated secondary air.

### Ash box with integrated compression

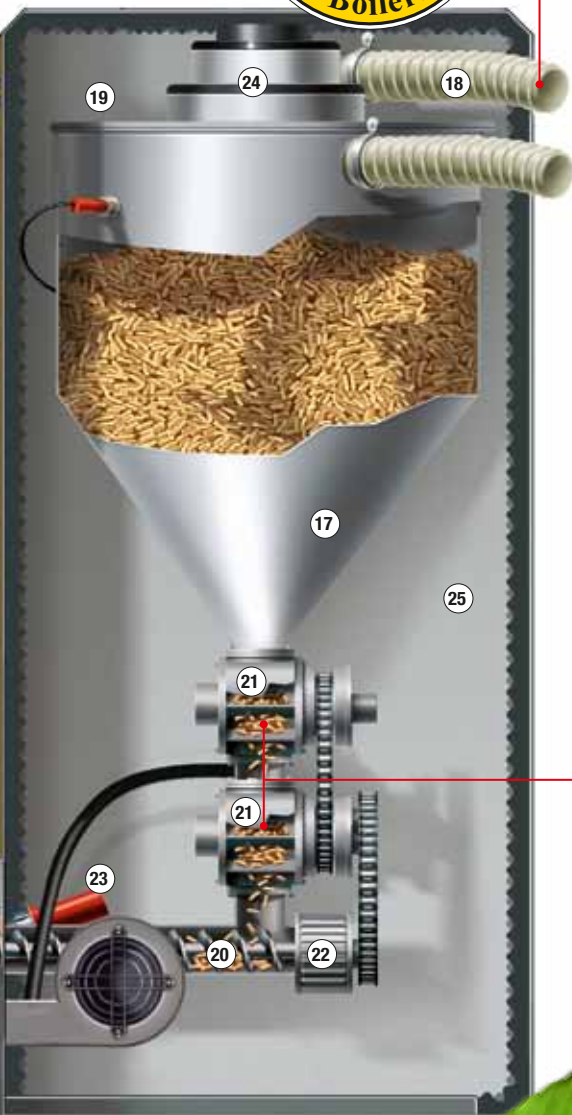
The ash extracting auger transports the fly ash and also the sliding grate ash into the ash box. On the way to the ash box, all the ash is compacted to a quarter of its volume – thereby saving space and lengthening emptying intervals.



1. Fully refractory-lined stoker
2. Boiler heat exchanger
3. Turbulators
4. Fly ash separation
5. Flue pipe outlet
6. Lambda sensor
7. Speed-controlled induced draught fan
8. Negative pressure control
9. Twin chamber including boiler throat extraction
10. Drive motor for ash extraction
11. Fly ash and grate ash extraction auger
12. Ash box
13. Automatic boiler cleaning system
14. Heat exchanger for thermal discharge safety device
15. Secondary air
16. Primary air
17. Cyclone hopper
18. Closed vacuum system, maintenance-free, no filter
19. Level detector



# WTH 70 - 110 kW



- 20. Stoker auger
- 21. Double rotary valve with ventilation
- 22. Motor drive unit
- 23. Automatic ignition
- 24. Pellets vacuum turbine
- 25. Acoustic insulation



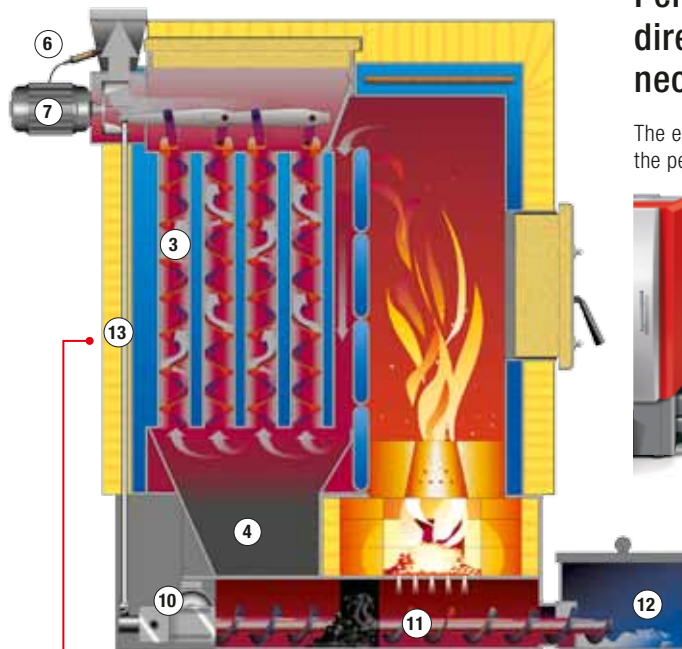
## Pellets suction up to 20m

The Hargassner pellet vacuum turbine sucks the pellets into the hopper; either from an extracting auger, a single-, double-, three- or four-point vacuum feeding system, or a bag silo. A hose length up to 20m makes it easy to overcome architectural barriers and handle complex heating and storage room combinations. To turn off the vacuum turbine after refilling the hopper, a level detector is integrated.



## Pellet Boiler with direct auger connection RAP

The extraction auger conveys the pellets via a small storage into the drop shaft with burn-back flap.



## 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.

## Pellet Suction process during combustion

The double rotary valve with ventilation allow refilling pellets into the cyclone hopper during the regular combustion process. => no loss of power – optimum heat supply.



## Double rotary valve

Hargassner's new double rotary valve guarantees a 100% burn-back protection. A constant amount of pellets fall through the double rotary valve and the stoker auger transport the pellets into the refractory-lined combustion chamber.

Type	Heat Output kW
WTH HSV 70S	21-70
WTH HSV 80S	25-85
WTH HSV 100S	30-100
WTH HSV 110S	32-109
Weight	1135 kg
Voltage	400 V
Dimensions HxBxD [mm]	1720x1450x1500

Excerpt from certified test reports			
HSV WTH 110S		Nominal Output	Partial Output
Output	kW	102,5	32,7
Boiler temp.	°C	70	70
Efficiency	%	93,6	92,2
Carbon dioxide	%	15,3	11
Carbon monoxide	mg/MJ	11	44
Dust	mg/MJ	13	n.g.



# Hargassner Boiler Technology

## Hargassner – Advanced pellets heating for large heating output.

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

### Lambda sensor with fuel-quality detection

The lambda sensor regulates exactly the right quantity of fuel in every output range according to the pellet quality. This is the only way to guarantee an optimum (i.e. economical and low emission) combustion that can save energy and money with more than 93 % efficiency.

### 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. This fan ensures the highest operating safety – independent of the natural chimney draught.

### 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.

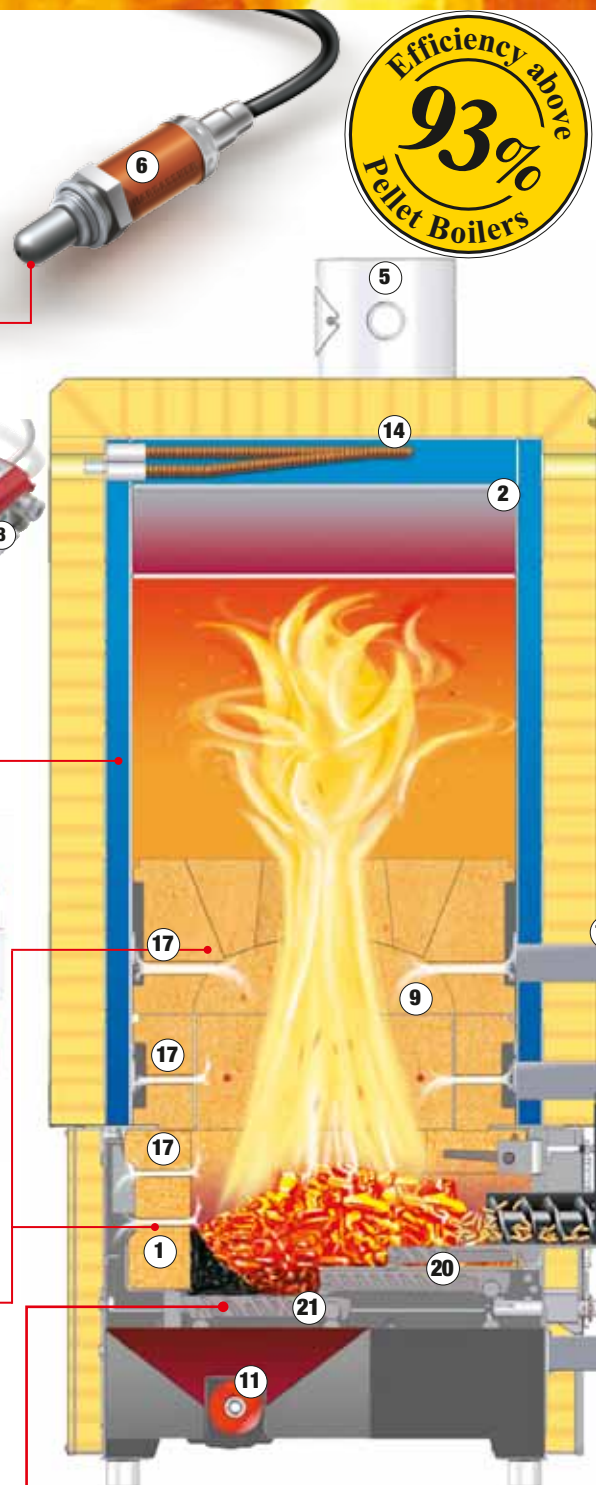
**Flue gas cyclone – Fly ash separator optional:**  
for flue gas purification when high amount of fine material

### Fully refractory-lined high performance combustion chamber with double vault and turbo concentration bricks for optimum post-combustion.

Refractory has proven itself as the optimum material available in terms of heat storage, function and durability. Fewer ignitions and best combustion – also at partial load – are the results. Optimum afterburning is guaranteed by our special twin chamber and boiler throat. Primary air is consistently 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 fed in over three levels – leads our industrial boiler to lowest emission values. (Certified in Austria)

### Step grate for best Combustion

Optimum Combustion is guaranteed through our large-scale grate area including 3 steps with separately controllable sliding and de-ash grates. Highly heat resistant grate bars with dedicated air nozzling and self-cleaning effect ensure a longer lifetime of the boiler. Consequently, the grate is cleaning itself fully automatically and at the same time the ash residues are delivered to the ash extract auger.



- |  |  |
|--|--|
| 1. Fully refractory-lined stoker           | 14. Heat exchanger for thermal discharge safety device |
| 2. Boiler heat exchanger                   | 15. Combustion air draught fan                         |
| 3. Turbulators                             | 16. Primary air  |
| 4. Fly ash separation                      | 17. Secondary air                                      |
| 5. Flue pipe outlet                        | 18. Automatic ignition                                 |
| 6. Lambda sensor                           | 19. Stoker auger                                       |
| 7. Speed-controlled induced draught fan    | 20. Sliding grate                                      |
| 8. Negative pressure control               | 21. De-ashing grate                                    |
| 9. Twin chamber including boiler throat    | 22. Motor sliding grate                                |
| 10. Drive motor for ash extraction         | 23. Motor de-ashing grate                              |
| 11. Fly ash and grate ash extraction auger |  |
| 12. Ash box                                |  |
| 13. Automatic boiler cleaning system       |  |

**NEW**



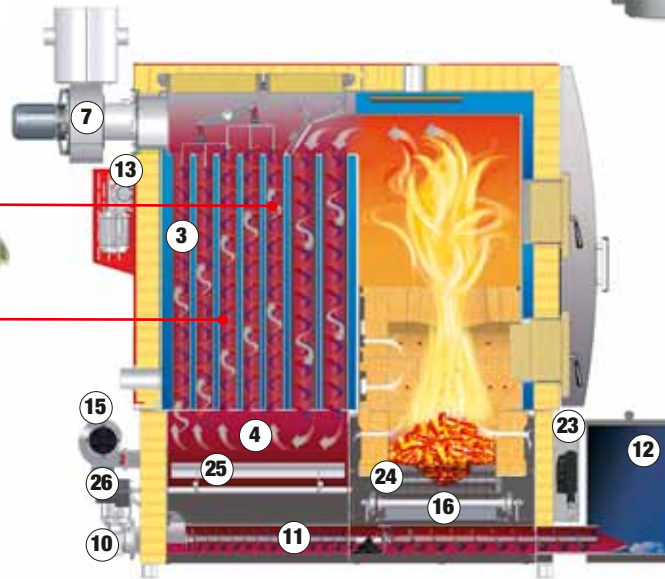
# WTH 150 - 200 kW

## Pellets suction up to 20m

The Hargassner pellet vacuum turbine sucks the pellets into the hopper; either from an extracting auger, a single-, double-, three- or four-point vacuum feeding system, or a bag silo. A hose length up to 20m makes it easy to overcome architectural barriers and handle complex heating and storage room combinations. To turn off the vacuum turbine after refilling the hopper, a level detector is integrated.

## Swirl in the fire tubes

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



## Pellet Boiler with direct auger connection RAP

The extraction auger conveys the pellets via a small storage into the drop shaft with burn-back flap.



## 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.

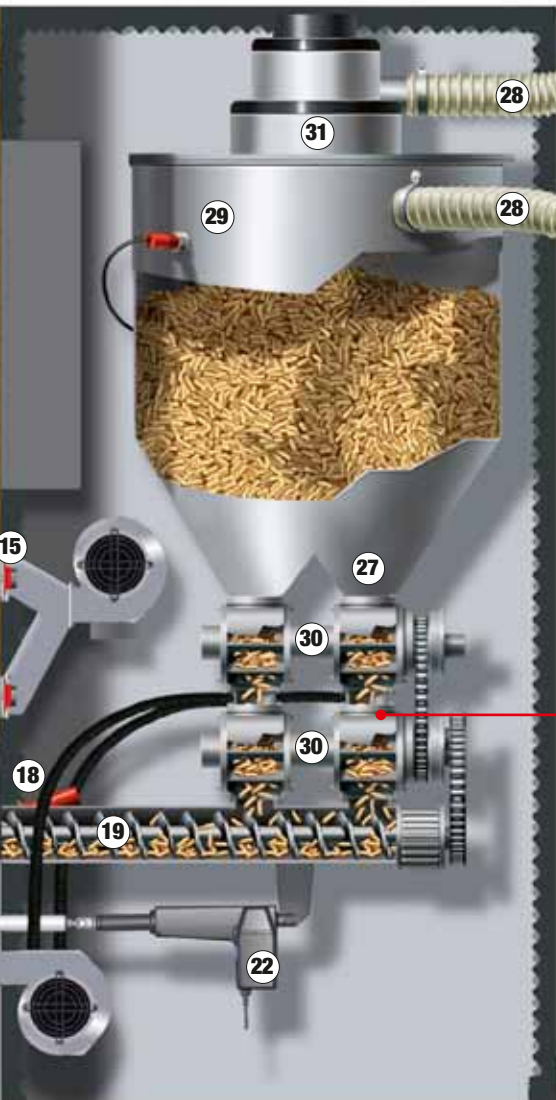
## Pellet Suction process during combustion

The double rotary valve with ventilation allow refilling pellets into the cyclone hopper during the regular combustion process. => no loss of power – optimum heat supply.

**NEW**

## Double rotary valve

Hargassner's new double rotary valve guarantees a 100% burn-back protection. A constant amount of pellets fall through the double rotary valve and the stoker auger transports the pellets into the refractory-lined combustion chamber.



- 24. Step feeding grate
- 25. Fly ash agitator
- 26. Motor fly ash agitator
- 27. Cyclone hopper
- 28. Closed vacuum system, maintenance-free, no filter
- 29. Level detector
- 30. 2 double rotary valves with ventilation
- 31. Pellets vacuum turbine



Type	Heat Output kW
<b>WTH 150</b>	<b>44-149</b>
<b>WTH 200</b>	<b>59-199</b>
Weight	2250 kg (2050 kg)
Voltage	400 V
Dimensions HxBxD [mm]	2010x2010x1670 (1910x2010x1500)
Values in () are for WTH 150	

Excerpt from certified test reports				
WTH 200 Pellets				
Output kW	Efficiency %	Carbon dioxide CO <sub>2</sub> %	Carbon monoxide CO mg/MJ	Dust mg/MJ
214,1	93,1	14,8	8	14
59,8	95,4	9,2	38	13



# Hargassner Control Unit

Lambda Sensor with automatic fuel-quality detection

## 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.

### Heating Time 1: 6 a.m. – 9 a.m.:

Outside it is -7°C, so considerably less than the threshold value of +16°C - the heating switches on.

Combustion				
Boiler	78°	Smoke	175°	
HC1	60°	HC2	52°	
HWS 1	55°			
Outs.	-7°			
We, 18. 02. 2009 7:03				

6 a.m. – 9 a.m.

Heating

### Day-reduced temperature 9 a.m. – 3 p.m.:

Outside temperature increases the -1°C considerably less than the day time reduced temperature threshold of +5°C. Heating day-reduced temperature operation.

Combustion				
Boiler	68°	Smoke	160°	
HC1	45°	HC2	38°	
HWS 1	50°			
Outs.	-1°			
We, 18. 02. 2009 11:43				

9 a.m. – 3 p.m.

Intelligent use of residual heat Day reduction

### Heating Time 2: 3 p.m. – 10 p.m.:

The outside temperature climbs to +1°C; so considerably less than the threshold value of +16°C. The heating remains switched on.

Combustion				
Boiler	73°	Smoke	170°	
HC1	52°	HC2	45°	
HWS 1	60°			
Outs.	+1°			
We, 18. 02. 2009 18:33				

3 p.m. – 10 p.m.

Heating

### Night-reduced temperature 10 p.m. – 6 a.m.:

The temperature cools to -2°C, so above the threshold value for the night-reduced temperature of -5°C. The heating switches off.

Heating Off				
Boiler	39°	Smoke	50°	
HC1	60°	HC2	60°	
HWS 1	58°			
Outs.	-2°			
Th, 19. 02. 2009 3:18				

10 p.m. – 6 a.m.

Intelligent use of residual heat Night reduction

E.g.: Standard - Display with estimated values





# Best ease of operation through Lambda-Hatronic

## ACCESSORIES

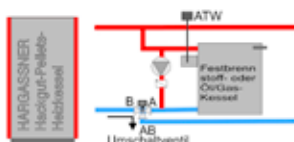
### Accumulator Control Option (PSP)

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.



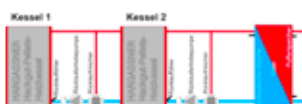
### External Boiler Controlling

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
  - Scaled 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**

# Fuel Storage



## Extraction RAS

This auger-suction combination is used for large or elongated storage rooms. Distances up to 30m from the boiler room to the storage room can be overcome.



## Extraction RAPS

Pure suction system; used for small and ideally squared storage rooms. For larger rooms three or four-point suction systems are available, either with manual or auto suction changeover unit.

## Pellets storage room requirements:

### Storage room – Size

Calculate the storage room as follows:

Building heating load in:

$\text{kW} \times 0.90 = \text{Storage size in m}^3$

$\text{kW} \times 0.40 = \text{Pellets requirement in tonnes}$

**Example:** A single house with a calculated heating load of 15kW needs, according to the formula, 13.50m<sup>3</sup>. Room size: 2 x 3 x 2,2m (lxbxh). Because of the storage volume, you are able to buy pellets when they are most inexpensive.

### Location

Every tanker uses an air pump to transport the pellets up to 30m distance. Thereby, the filling tube is completely flexible and is able to fit complex and difficult storage room situations.

### Storage room – Requirements

To prevent swelling, the pellets storage room should be as dry as possible. Electrical installation is prohibited and water-carrying tubes should be avoided. To install the room extraction system and ensure maximum fire protection, a door has to be installed. Inside the door, Hargassner offers a door protection set to constantly monitor the pellets level.







## Extraction GWTS

Hargassner's bag silo represents a complete storage room solution. The silo can be placed inside or outside the boiler room (depends on building regulations).



## Extraction RAD

This pure auger system delivers the pellets from the storage room into the stoker auger directly. For standard (optimum) storage room situation only!



Additionally, you can store the pellets in a heating container or underground tank as well. Please see detailed information: [www.hargassner.com](http://www.hargassner.com)

## Auxiliary equipment

### Pellet fill- and ventilation sockets

A minimum of two sockets have to be installed in every storage room. One to fill, and one to close the vacuum circuit. As a result, dustfree filling is guaranteed.



### Impact protection mat

To ensure best pellets quality, impact protection mats has to be installed, opposite every socket.

### Door protection set

To relieve pressure on doors and enable a constant monitoring of the Pellets level, Hargassner offers a special door protection set.



Z-section profiles, wooden boards, etc.

## Sloping floor

To guarantee a full emptying of the storage room, Hargassner recommends a 35° wooden sloping floor. The sloping floor has to be provided on site.

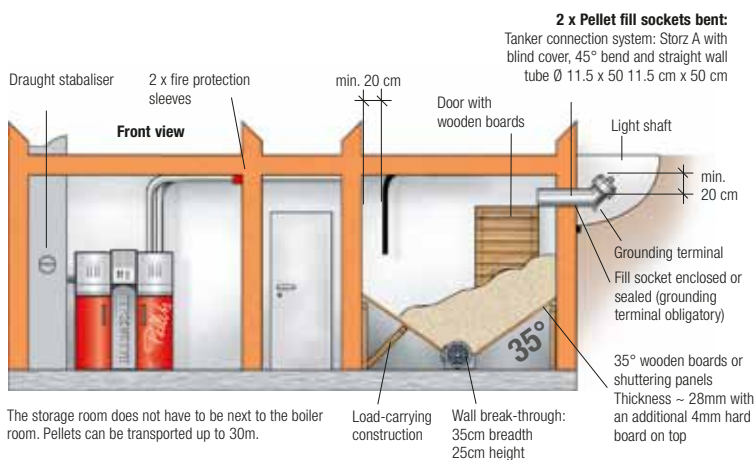


Load-carrying construction



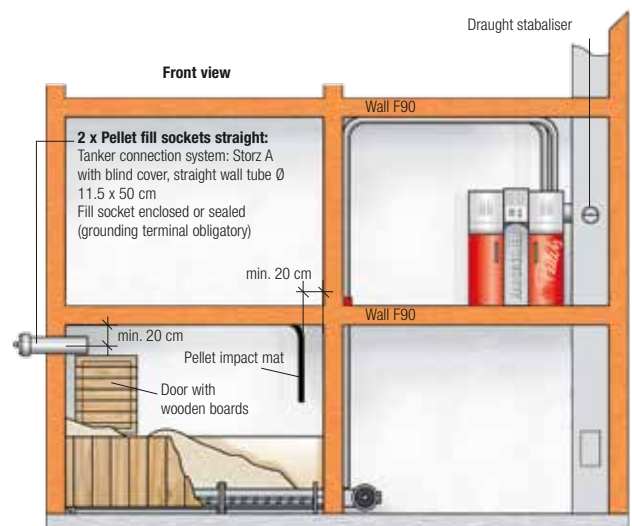
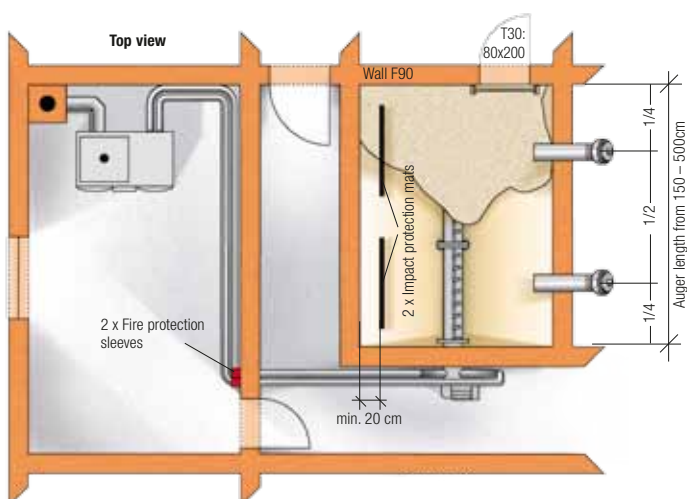
Hard board on top recommended

# Extraction RAS



## Pellets boiler with RAS

RAS stands for "Room extraction Auger-Suction". This system is mostly used for large and elongated storage rooms. Distances up to 30m from the boiler room to the storage room can be overcome. The pellets are transported outside the storage room through the auger into the vacuum system. A special construction of the auger trough prevents overfilling and guarantees a constant delivery rate. As a result, the storage room will be emptied to the last pellet. The storage room has to be equipped with a 35° sloping floor.



Because of Hargassner's vacuum transporting system, the storage room can be located on lower or higher level!



# Extraction RAPS



RAPS  
Single Point

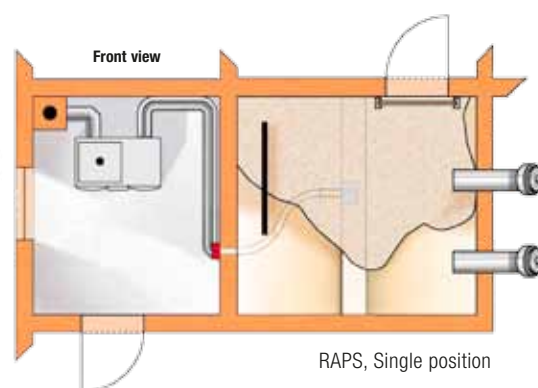
## Pellets boiler with RAPS

The RAPS-System is a pure suction system. Mostly used for small and ideally squared storage rooms. The suction points are installed in the middle of the room and accommodate for complex room situations. In order to unload large storage rooms, three- and four-position vacuum feeding systems are available, optionally with manual or auto changeover unit. The storage room has to be equipped with a 35° sloping floor.

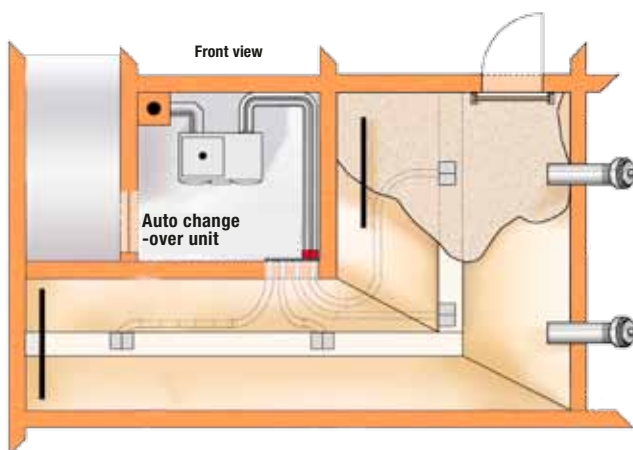


Auto changeover unit for double-, three- or four-position vacuum feeding system.

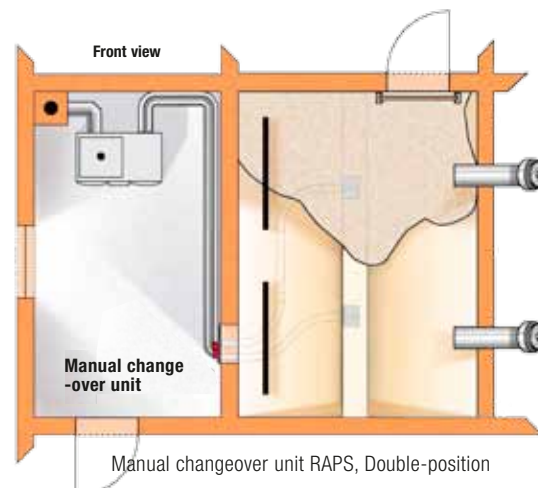
Manual changeover unit for double- and three-position vacuum feeding system.



RAPS, Single position



Auto changeover unit RAPS, Four-positions



Manual changeover unit RAPS, Double-position

# Extraction GWTS



Bag Silo (GWTS)

**NEW**



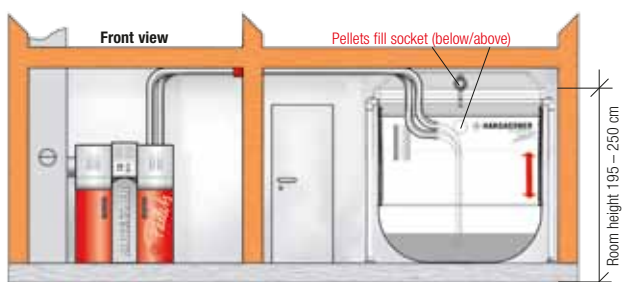
Bag Silo (GWTS XXL)

## Pellet boiler with GWTS

Hargassner's bag silo represents a complete storage room solution. The silo can be placed (depending on building regulations) either inside or outside the boiler room. If installed outside, the silo has to have a stable floor and need to be covered against UV-radiation and rain. Equipped with a single-position feeding system, the silo is made out of a special, high-quality, anti-static and dust-proof textile. Because of this textile, only one pellet fill socket is needed. Depending on the room height, the pellet fill socket can be installed above or below the easy assembled steel construction.

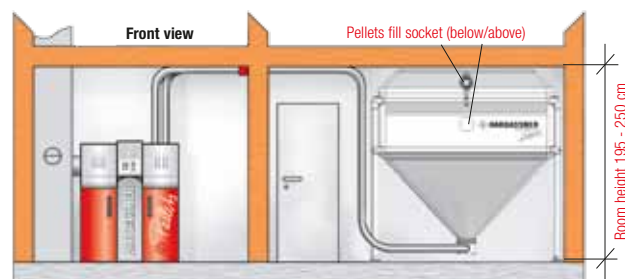
## Pellet boiler with GWTS XXL

The bag silo XXL is made of a static steel construction with an elastic floor element, including tension springs. If refilled, the springs get extended and the silo is filled to a maximum. Because of the steadily emptying, the elastic construction gets pulled up, and after emptying the silo looks like a four-sided sloping floor. The bottom of the silo is water-resistant.



Bag Silo (GWTS-XXL)

Type	Capacity	Breadth	Depth	Height
<b>GWTS 200x200 XXL</b>	<b>4.0 - 5.1 t</b>	208 cm	208 cm	195 - 250 cm



Bag Silo (GWTS)

Type	Capacity	Breadth	Depth	Height
<b>GWTS 200 x 200</b>	2.7 - 3.6 t	208 cm	208 cm	<b>195</b> - 250 cm
<b>GWTS 200 x 250</b>	3.3 - 4.3 t	208 cm	258 cm	<b>195</b> - 250 cm
<b>GWTS 250 x 250</b>	4.0 - 5.3 t	258 cm	258 cm	<b>195</b> - 250 cm
<b>GWTS 250 x 250 XL</b>	<b>6.1 t</b>	258 cm	258 cm	<b>270 cm</b>

**NEW**

## Special bag silos

Type	Capacity	Breadth	Depth	Height
<b>GWT 170 x 290</b>	3.6 - 5.4 t	170 cm	290 cm	190 - 250 cm
<b>GWT 290 x 290</b>	6.0 - 9.0 t	290 cm	290 cm	190 - 250 cm

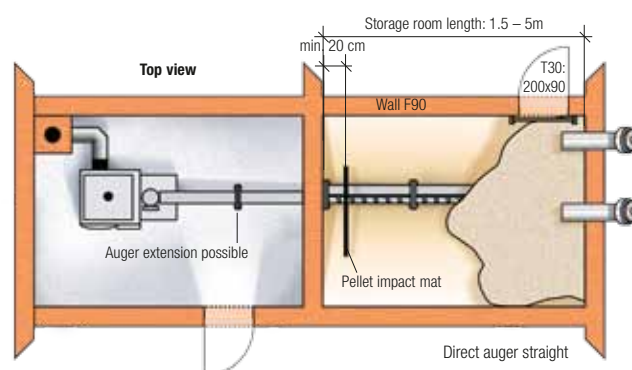
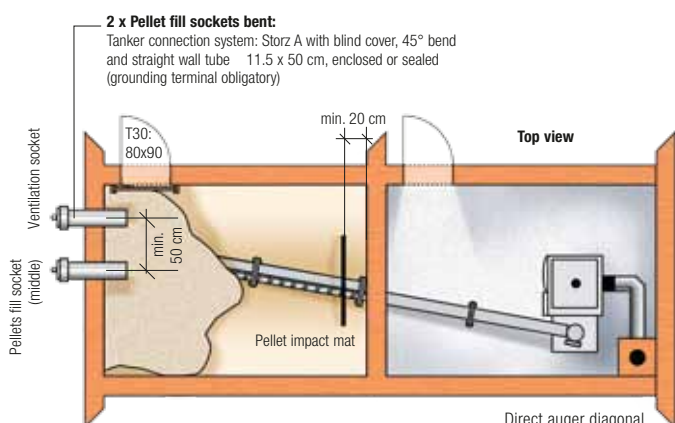
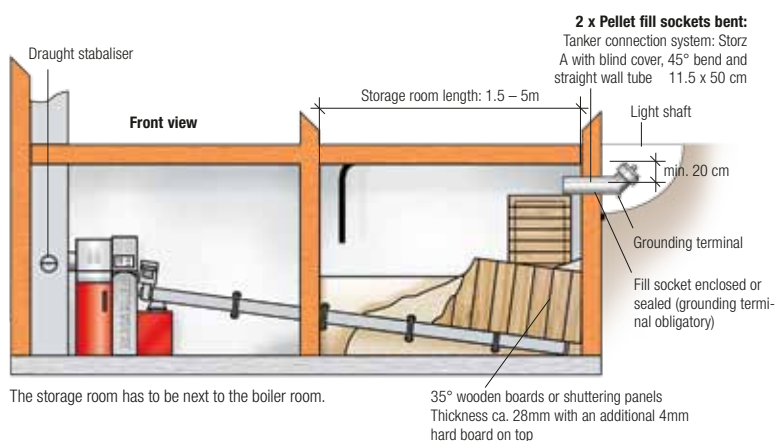


# Extraction RAD



## Extraction RAD

The RAD-, pure auger system-, delivers the pellets from the storage room in to the stoker auger directly. For standard (optimum) storage room situation only! The storage room has to be equipped with a 35° sloping floor.



# Hargassner – Containers

## 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.



Single-Container

## Fields of application:

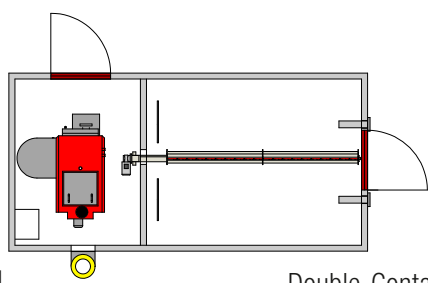


Single- Pellet Container with roof-truss next to a home

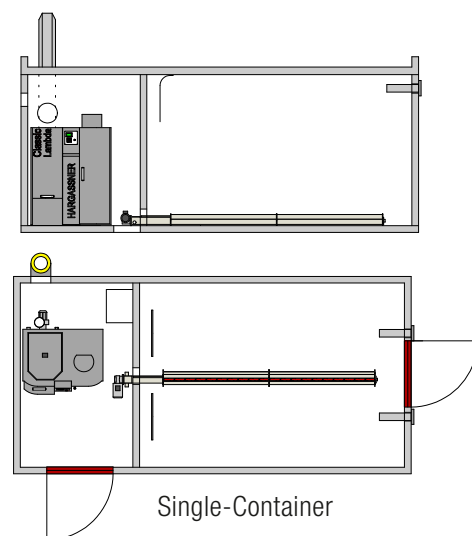
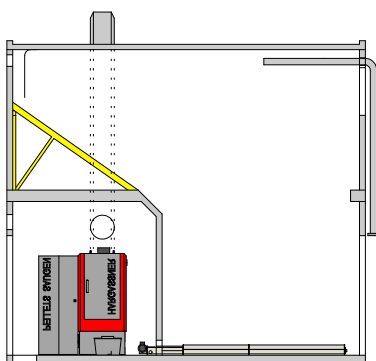


Single- Pellet Container with wood covering and landscaped roof

## Container-Types:



Double-Container

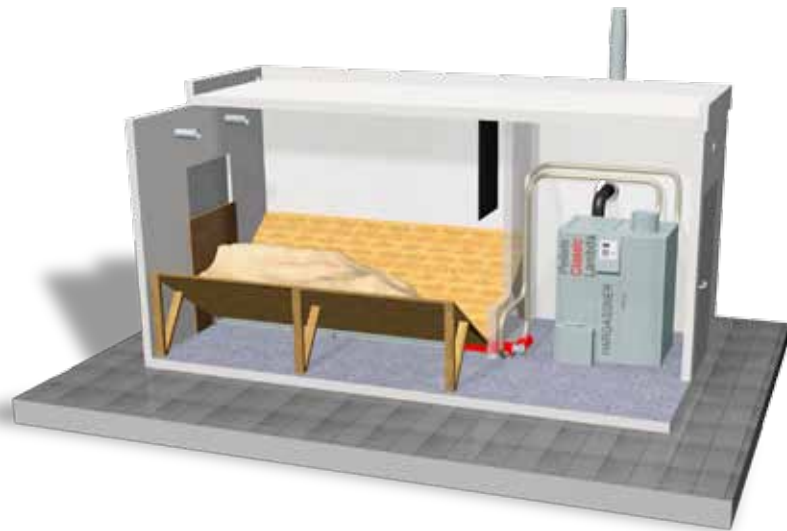


Single-Container





Double-Container



Cutaway – Heating Container



Single- Pellet Container with wood covering, Ski-Jumping Arena, Austria



Two Single- Pellet Containers for a medium-sized business

#### Technical data:

Type	BC 400		BC 500		BC 600		BC 700		BC 600 Double-Container
Length	400 cm		500 cm		600 cm		700 cm		600 cm
Width	300 cm		300 cm		300 cm		300 cm		300 cm
Height outside	265 cm		265 cm		265 cm		265 cm		540 cm
Height inside	228 cm		228 cm		228 cm		228 cm		490 cm
Additional height outside	308 cm / 320 cm								
Additional height inside	266 cm / 280 cm								
Weight	ca. 17 t		ca. 20 t		ca. 25 t		ca. 30 t		23+16 t
Filling volume/mass	5 t Pellets	9 m³ Wood Chips	8 t Pellets	15 m³ Wood Chips	11 t Pellets	20 m³ Wood Chips	14 t Pellets	25 m³ Wood Chips	60 m³ Wood Chips

#### 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.

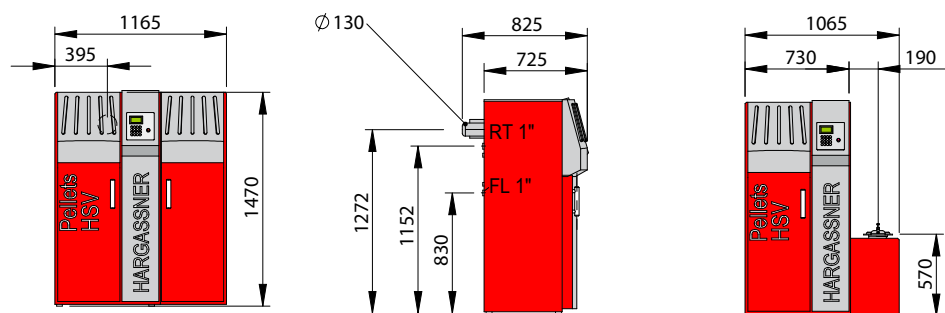
#### Auxiliary Equipment:

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

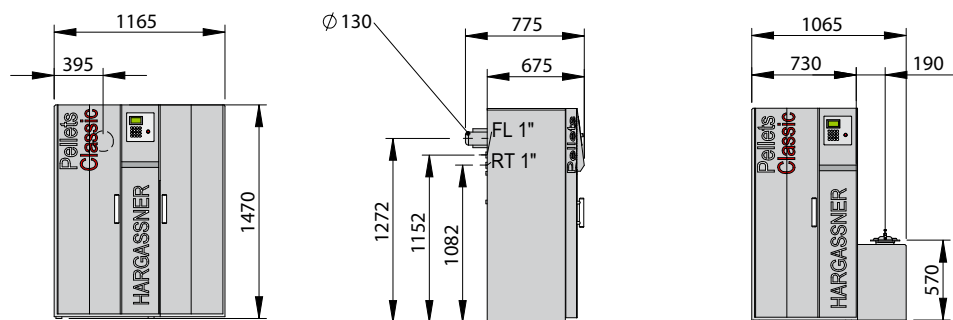
Technical details on page 26-27.

# Dimensions and technical details:

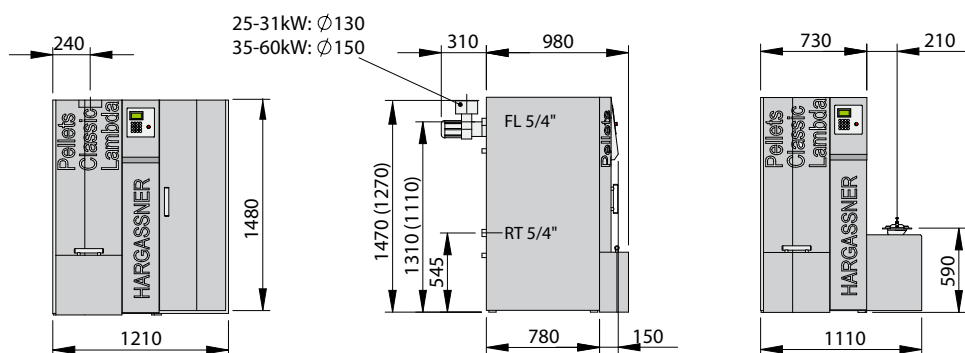
HSV 9 - 22 kW



CLASSIC 9 - 22 kW

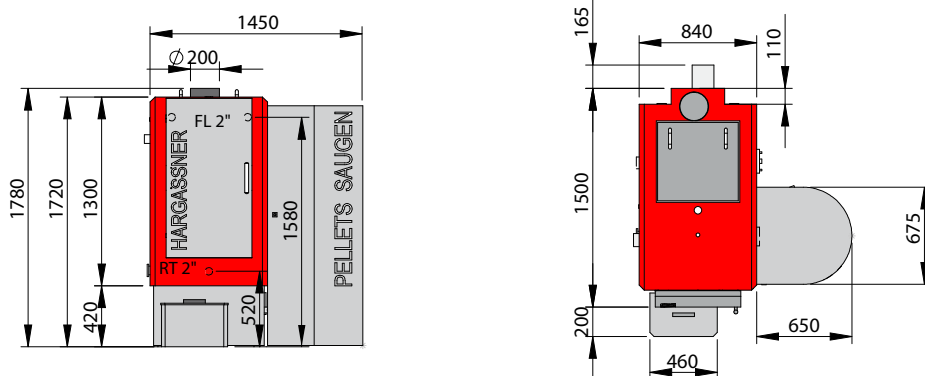


CLASSIC LAMBDA 25 - 60 kW

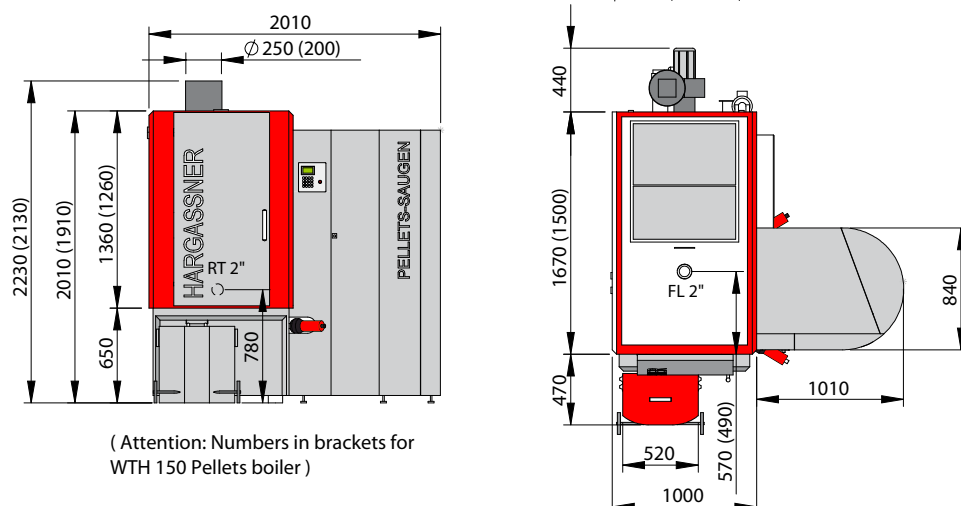


( Attention: Numbers in brackets for Type Classic-Lambda 25-35 )

HSV WTH 70 - 110 kW



WTH 150 - 200 kW



( Attention: Numbers in brackets for WTH 150 Pellets boiler )



Technical data:		Pellet Boiler HSV 9 - 22					
		HSV 9	HSV 12	HSV 14	HSV 15	HSV 22	
Power range:	kW	2,8-9,5	3,5-12	4-14,9	4,5-16,8	6,5-22	
Efficiency (at nominal heat output)	%	94,2	93,8	95	96,3	96,1	
Nominal heat output:	kW	10,1	12,8	15,7	17,4	22,9	
Flue pipe diameter:	mm	130	130	130	130	130	
Amount of water in heat exchanger:	Litre	38	38	38	38	38	
Max. operating temperature:	°C	95	95	95	95	95	
Boiler temperature range:	°C	38-75	38-75	38-75	38-75	38-75	
Back end protection temperature:	°C	acc. heating scheme	acc. heating scheme	acc. heating scheme	acc. heating scheme	acc. heating scheme	
Max. operating pressure:	bar	3	3	3	3	3	
Water-side resistance ΔT 10 / 20 [K]	mbar	4,1 / 1,3	6,2 / 2,2	8,1 / 4,1	8,3 / 4,2	17,1 / 6,2	
Flow / Return flow:	inch	1"	1"	1"	1"	1"	
Weight:	kg	300	300	300	300	300	
Boiler height:	mm	1470	1470	1470	1470	1470	
Boiler width Suction/RAD	mm	1165/1065	1165/1065	1165/1065	1165/1065	1165/1065	
Boiler depth	mm	825	825	825	825	825	
Transporting Dimensions	mm	1165 / 730	1165 / 730	1165 / 730	1165 / 730	1165 / 730	
Total / disassembled	mm	825 / 670	825 / 670	825 / 670	825 / 670	825 / 670	
Electrical supply:	-	230 V AC, 50 Hz, 16 A Absicherung					

Technical data:		Pellet Boiler Classic 9 - 22					
			Classic 9	Classic 12	Classic 14	Classic 15	Classic 22
Power range:		kW	2,8-9,5	3,5-12	4-14,9	4,5-16,8	6,5-22
Efficiency (at nominal heat output)		%	93,4	93,6	93,1	92,7	91,9
Nominal heat output:		kW	10,2	12,8	16,0	18,1	23,9
Flue pipe diameter:		mm	130	130	130	130	130
Amount of water in heat exchanger:		Litre	38	38	38	38	38
Max. operating temperature:		°C	95	95	95	95	95
Boiler temperature range:		°C	72-75	72-75	72-75	72-75	72-75
Back end protection temperature:		°C	integrated	integrated	integrated	integrated	integrated
Max. operating pressure:		bar	3	3	3	3	3
Water-side resistance ΔT 10 / 20 [K]		mbar	4,1 / 1,3	6,2 / 2,2	7,2 / 2,3	7,7 / 2,5	18,3 / 3,8
Flow / Return flow:		inch	1"	1"	1"	1"	1"
Weight:		kg	300	300	300	300	300
Boiler height:		mm	1470	1470	1470	1470	1470
Boiler width Suction/RAD		mm	1165/1065	1165/1065	1165/1065	1165/1065	1165/1065
Boiler depth		mm	775	775	775	775	775
Transporting Dimensions Total / disassembled	Width	mm	1165 / 730	1165 / 730	1165 / 730	1165 / 730	1165 / 730
	Depth	mm	775 / 670	775 / 670	775 / 670	775 / 670	775 / 670
Electrical supply:		-	230 V AC, 50 Hz, 16 A fuse				

Technical data:		Pellet Boiler Classic Lambda 25 - 60						
		Classic 25	Classic 31	Classic 35	Classic 40	Classic 49	Classic 60	
Power range:	kW	7-25	9-31	10-35	12-42	14-48	17-58	
Efficiency (at nominal heat output)	%	95,1	94,5	94,1	94,3	94,3	94,6	
Nominal heat output:	kW	26,3	32,8	37,2	44,5	50,9	61,3	
Flue pipe diameter:	mm	130	130	150	150	150	150	
Amount of water in heat exchanger:	Litre	100	100	100	124	124	124	
Max. operating temperature:	°C	95	95	95	95	95	95	
Boiler temperature range:	°C	69-75	69-75	69-75	69-85	69-85	69-85	
Back end protection temperature:	°C	58	58	58	58	58	58	
Max. operating pressure:	bar	3	3	3	3	3	3	
Water-side resistance ΔT 10 / 20 [K]	mbar	9,7 / 2,6	12 / 3,2	18,5 / 5	24 / 6,4	32 / 8,6	56,4 / 14,4	
Flow / Return flow:	inch	5/4"	5/4"	5/4"	5/4"	5/4"	5/4"	
Weight:	kg	430	430	430	480	480	480	
Boiler height:	mm	1480	1480	1480	1480	1480	1480	
Boiler width Suction/RAD	mm	1210/1110	1210/1110	1210/1110	1210/1110	1210/1110	1210/1110	
Boiler depth	mm	1290	1290	1290	1290	1290	1290	
Transporting Dimensions Total / disassembled	Width	mm	1210/760	1210/760	1210/760	1210/760	1210/760	
	Depth	mm	1290/800	1290/800	1290/800	1290/800	1290/800	
Electrical supply:	-	230 V AC, 50 Hz, 16 A fuse						

Technical data:		Pellet Boiler HSV WTH 70 - 200						
		WTH HSV 70S	WTH HSV 80S	WTH HSV 100S	WTH HSV 110S	WTH 150	WTH 200	
Power range:	kW	21-70	25-85	30-100	32-109	44-149	59-199	
Efficiency (at nominal heat output)	%	92,1	91,1	93,3	93,6	93	93,1	
Nominal heat output:	kW	76	93,3	107,2	116,5	160,2	213,7	
Flue pipe diameter:	mm	200	200	200	200	200	250	
Amount of water in heat exchanger:	Litre	185	190	190	190	410	505	
Max. operating temperature:	°C	95	95	95	95	95	95	
Boiler temperature range:	°C	69-75	69-75	69-75	69-75	75-80	75-80	
Back end protection temperature:	°C	58	58	58	58	58	58	
Max. operating pressure:	bar	3	3	3	3	3	3	
Water-side resistance ΔT 10 / 20 [K]	mbar	15 / 5	17,5 / 5,5	24 / 6,8	24 / 6,8	51,3 / 13,7	38,5 / 14,5	
Flow / Return flow:	inch	2"	2"	2"	2"	2"	2"	
Thermo Valve	conection	inch	3/4"	3/4"	3/4"	3/4"	3/4"	
	Sensor	inch	1/2"	1/2"	1/2"	1/2"	1/2"	
Weight:	kg	1115	1135	1135	1135	2050	2250	
Boiler height:	H mm	1720	1720	1720	1720	1910	2010	
Boiler width Suction/RAD	B mm	1450	1450	1450	1450	2010	2010	
Boiler depth	T mm	1500	1500	1500	1500	1500	1670	
Transporting Dimensions	Width	B mm	840	840	840	888	888	
	Depth	T mm	1420	1420	1420	1470	1640	
min. room height	Hr mm	1750	1750	1750	1750	2500	2600	
Electrical supply:	-	400 V AC, 50 Hz, 13 A fuse						

# International successful!

Hargassner's products have received numerous awards and certifications. The deciding factors for the large international awards received by Hargassner 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.

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

## Hargassner Biomass – Heating technology Centre:

Hargassner offers its clients and interested parties a manufacturing base with over 22,000 m<sup>2</sup>, 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 – **M a d e i n A U S T R I A**

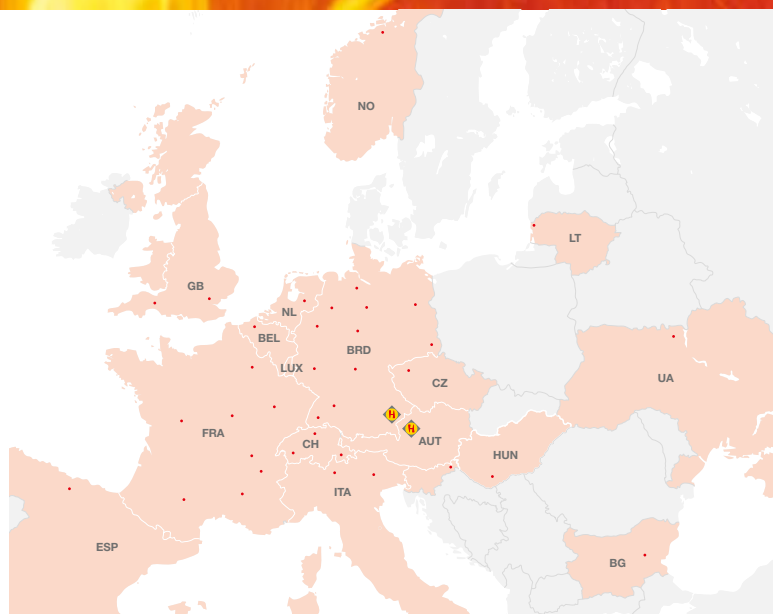


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