

ETA HACK 110 to 200 kW

ETA 
... my heating system



The wood chip boiler for
agriculture and businesses



A passion for perfection.
www.eta.co.at

From Hausruckviertel to the world

ETA specialises in the manufacture of biomass heating, i.e. log, pellet and wood chip boilers. The most modern technologies combined with naturally growing resources.

ETA is efficient

Technicians designate the efficiency of a heating system with the Greek letter η , pronounced „eta“. ETA boilers stand for more heat with less fuel consumption, environmental soundness and sustainability.

Wood: old but excellent

Wood is our oldest fuel - and our most modern: There is a lot of history - from open fires in front of caves to modern biomass boilers. In the middle of the 20th century, the number of wood heating systems briefly fell. Oil heating became the new, hyped option. A brief interlude in comparison to the consistency of wood. Today, we know that heating with fossil fuel has no future. It contributes to global warming and harms the environment. Supply security is also not guaranteed in the long term, as fossil fuels are being depleted, aren't renewable and often come from unstable regions. While wood by contrast is a cheaper, locally grown, renewable raw material that does not pollute the climate when burnt. No wonder wood heating is booming!

Comfort with many components

Since December 1998, the Upper Austrian company ETA has been designing and building a new generation of wood-fired boilers. They are full of patented technologies and the most modern control technology – making them easy to use. Convenience and efficiency make ETA products so popular around the world. With a production capacity of over 20,000 boilers per year and a global export proportion of around 80%, ETA is one of the leading biomass boiler producers.

You get more than just a boiler

Anyone who decides on a wood or pellet boiler from ETA is choosing sustainability. This is not just in terms of fuel, but encompasses responsibility across the board, with sustainable workplaces in the region. More than 200 employees in Hofkirchen an der Trattnach have the best working conditions – including an in-house restaurant, bright assembly and storage halls, a fitness room and a sauna. There is even a free electric charging station for electric cars, which is supplied by the in-house photovoltaic system. This also covers all the power needed of a production hall and thus saves around 230 tonnes of CO₂ per year.



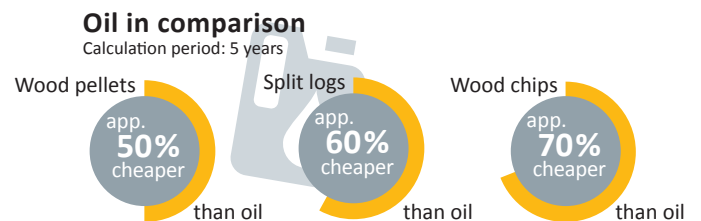
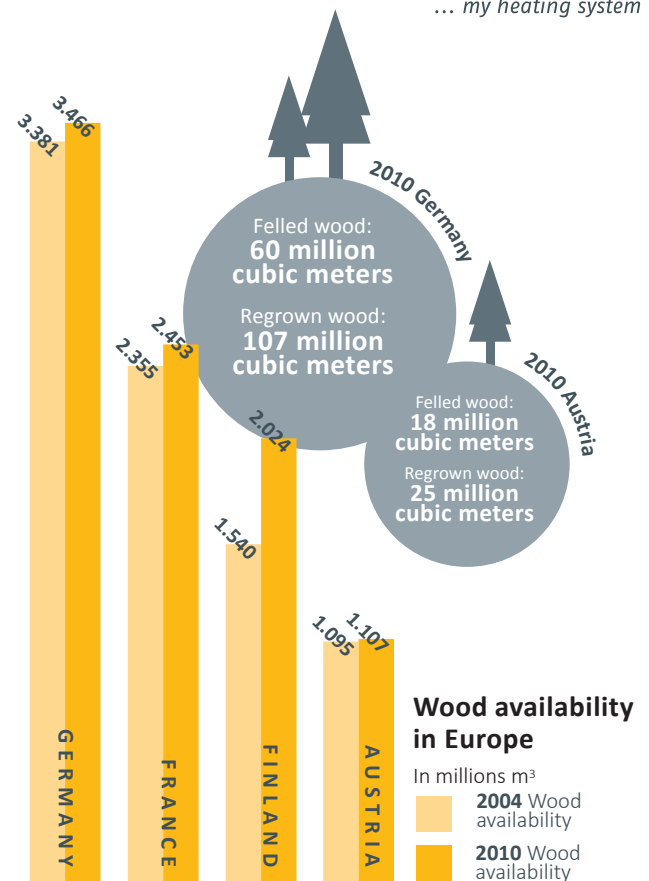
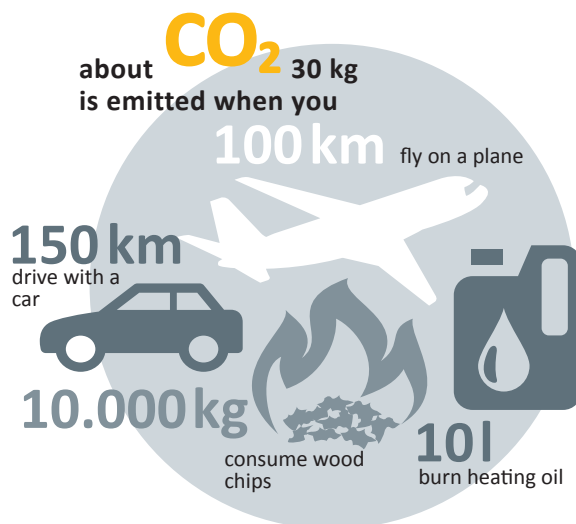
Those who decide in favour of an ETA Hack blue gas recirculation boiler choose from many others, because the best efficiency is not only achieved with wood chips, but also with pellets or miscanthus.

A win-win situation

Save on heating costs, strengthen your domestic economy and look after the environment in the process: heating with wood is worth it. Wood continuously regrows in our domestic forests, thus it is crisis-proof and economical. Forested areas are growing across Europe.

While the price of fossil fuels such as oil and gas is subject to heavy fluctuations in the international markets and will certainly rise long-term, the price of wood and pellets is reliable.

The natural raw material is CO₂-neutral, this means that during its combustion no more CO₂ will be released than tree absorbs during its growth. The same amount will also be released if the wood rots in the forest. So heating with wood doesn't burden our climate.



Heat, just the way you need it

The ETA wood chip boiler doesn't just produce heat, the ETA System also distributes it efficiently. Rely on the perfect control centre for your heating and hot water system.

The ETA wood chip boiler is equipped with a control system for the entire heating system. Whether you want to integrate a solar heating system, a conventional hot water preparation system or a buffer storage tank with fresh water module, whether the energy is transferred with radiators or via underfloor heating: You've got everything under control via a touchscreen on the boiler or also via computer or smartphone. Simple images show you if your solar heating system was successful or how full your buffer is.

With buffer, please

ETA buffer storage tank is a perfect partner. Above all, when heating in fall or in spring and for hot water preparation in the summer, often less energy is needed than what the boiler produces. The buffer stores this excess heat and releases it on demand.

Remote controlled via the meinETA communication platform.



This saves fuel and protects the boiler, because fewer boiler starts are needed.

The ETA stratified buffer is ideal for the integration of a solar heating system. In summer, hot water can be produced at virtually no operating costs. But in winter, the solar collectors seldom produce the 60 °C that are common for hot water preparation. Then the water that is heated by solar energy is fed through the underfloor heating. This usually works with hot water temperatures of just 30 to 40 °C.

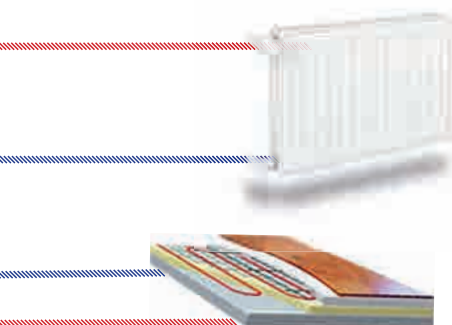
The ETA stratified buffer can also be equipped with a fresh water module, which constantly reheats the tap water with the help of a heat exchanger. Thus the risk of germs and bacteria is minimised.

The ETA mixing circuit module for two heating circuits saves a lot of time and money during installation, as no sensor lines, pumps and mixer cables have to be installed.





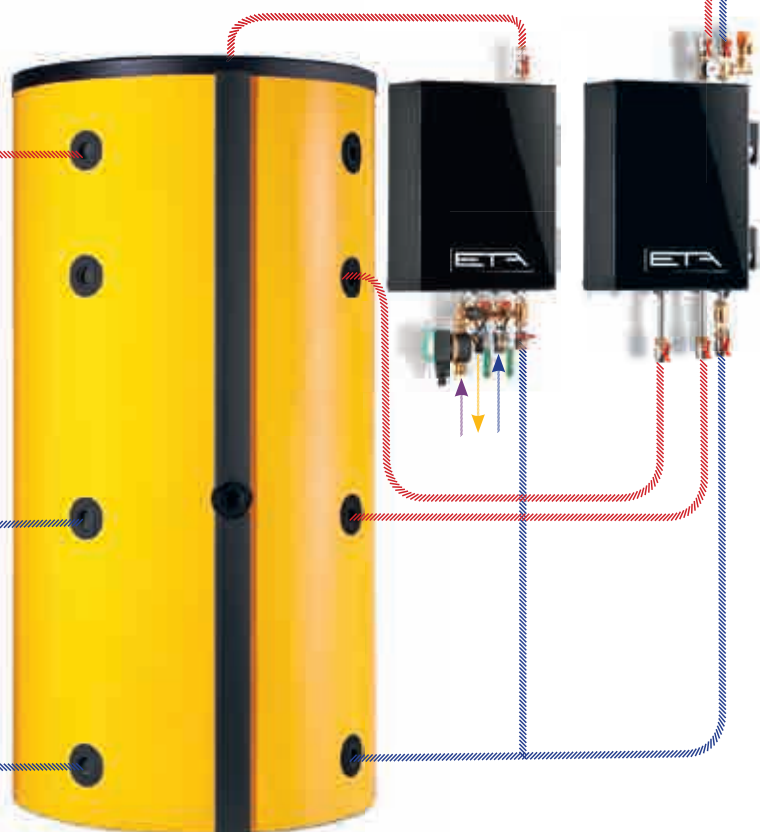
For smaller solar heating systems with large buffer storage tank volumes or for very large solar heating systems, the ETA stratified charging module ensures maximum efficiency.



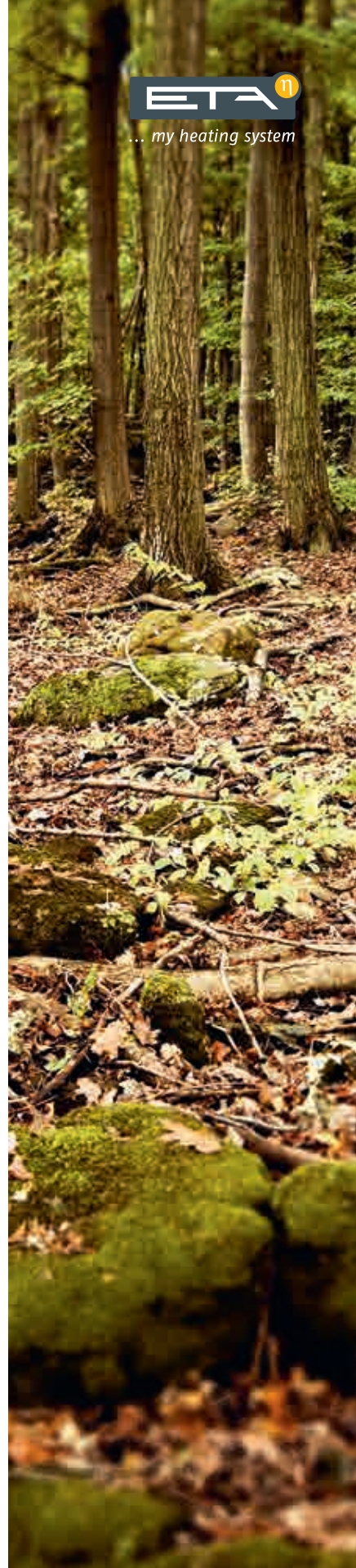
Forget about your boiler

It'll let you know when it needs you! When it's time to add fuel a green signal lamp lights up on the room temperature sensor. Of course you can also set the room temperature on this compact, simple to use device.

The ETA stratified buffer can also be equipped with a fresh water module, which constantly reheats the tap water with the help of a heat exchanger. Thus the risk of germs and bacteria is minimised.



An ETA stratified buffer is the ideal addition to a wood chip boiler. It stores energy that is not required and delivers on demand.





Away mode, night time reduction, vacation setting: intuitively, you know immediately which button does what.

Easy to control from anywhere

Good technology is characterised by its user friendliness. You don't have to be a technician to use the many functions of the ETAtouch.



You can control the boiler via smartphone, PC or tablet as well as directly on the touchscreen.

ETAtouch: the touchscreen on the boiler

Confusingly arranged buttons and control systems are a thing of the past, because with the touchscreen of the ETA HACK you can quickly and easily control all settings. The icons are self-explanatory. Whether you generally want to make it warmer or cooler, change the time for night-time reduction or want to switch to eco mode during your vacation - you will tap on the right symbol intuitively and completely without operating manuals!

You not only control your boiler via the touchscreen, but also have an overview of all connected components, such as buffer storage tank, pellet store, solar heating system or hot water preparation. You know straightaway, for example, how many pellets you still have in store or how effective your solar heating system was.

meinETA: the free internet platform

If your heating boiler is connected to the internet, you can see and change all heating settings on your

mobile, tablet or PC. So you always have a handle on your heating, wherever you are! When you login to www.meinETA.at, you see the touchscreen as if you were standing right in front of the boiler!

The ash bin must be emptied, it's time for the next heating service... You don't have to remember all these things yourself. meinETA reminds you for free by email.

Quick help

Give your installer or the ETA customer service representative temporary access rights to your meinETA account. So they can prepare for their visit to you. And maybe the technician doesn't even have to come visit, because thanks to meinETA they can tell you over the phone what you need to do to make your heater work again. You can see who can access your boiler via the status display. Only you decide who's in your network!



Technical requirements for meinETA

To be able to use meinETA, you need a broadband connection in your home. The ETA boiler's touch screen is connected to the Internet via a network cable. And anyone who doesn't have a network connection in the basement simply connects via the ETA PowerLine. It comfortably transfers the data from any socket to the modem.

For tablet, smartphone and PC

meinETA runs on all current operating systems, such as iOS or Android. Via PC, meinETA can be loaded by any modern internet browser, such as Mozilla Firefox, Safari, Google Chrome or Internet Explorer 9, for example.

Integration into Building Management

The integration into an on-site building management or master control system is relatively unproblematic. Values can be queried and changed with RESTful web services and Modbus/TCP.



There for you

ETA devices are characterised by the highest quality. They feature patented systems developed in Austria. The entire assembly takes place in-house in Hausruckviertal, Austria. In the unlikely event of a breakdown, ETA customer service is on the spot quickly. An experienced, competent on-call team is available to you.

Everything on one display: the ETA Standard

A modern heating system is only effective if it is well-controlled. ETAtouch takes care of that.

At no added cost, the ETAtouch control system already includes all functions for two heating circuits, hot water supply via tank or instantaneous hot water module, as well as for the integration of a solar heating system. All ETA heating boilers also come with a LAN connection as standard. If you connect the boiler to the internet, you can easily control all components from a PC, tablet or smartphone.

Boiler and combustion regulation*

Speed-controlling the several components save power. The lambda and ignition time regulation increases efficiency. All components relevant to operation are monitored.

Buffer storage tank management**

Three to five sensors in the tank control the heat generator in the system and distribute the energy to the different consumers. Using five sensors, cascading regulation, QM-Holz and peak load management are part of the ETA Standard.

Hot water preparation*

Is made possible both via the ETA instantaneous hot water module but also via the hot water tank or combination tank. For all variants, circulation pumps can be controlled with time and/or requirement programs.

Solar heating systems**

Single or double circuit solar heating systems with one or two tanks, zone loading via the ETA stratified charging module and also two collector fields as well as three consumers are controlled.

Two weather-controlled mixing heating circuits**

They run with a weekly program which allows many time windows and automatic and/or manual additional functions. The system can optionally be expanded with room sensors and remote control.



Comprehensible also without the need for an operating manual: The symbols on the touchscreen are self-explanatory. So controlling the heating system becomes child's play.

Additional system functions

Detection of third-party heating devices, such as oil boilers, gas boilers, heat pumps and wood burning stoves, thermostat or differential temperature thermostat, external demand from external devices such as heating fans, control of transmission lines, with or without mixers, and also of heat transfer stations, single room control systems, for example.

Wall-mounted control box for more complex systems

All control systems can be extended with wall-mounted control boxes, with or without touchscreen.

*Control system and sensor included in standard delivery scope

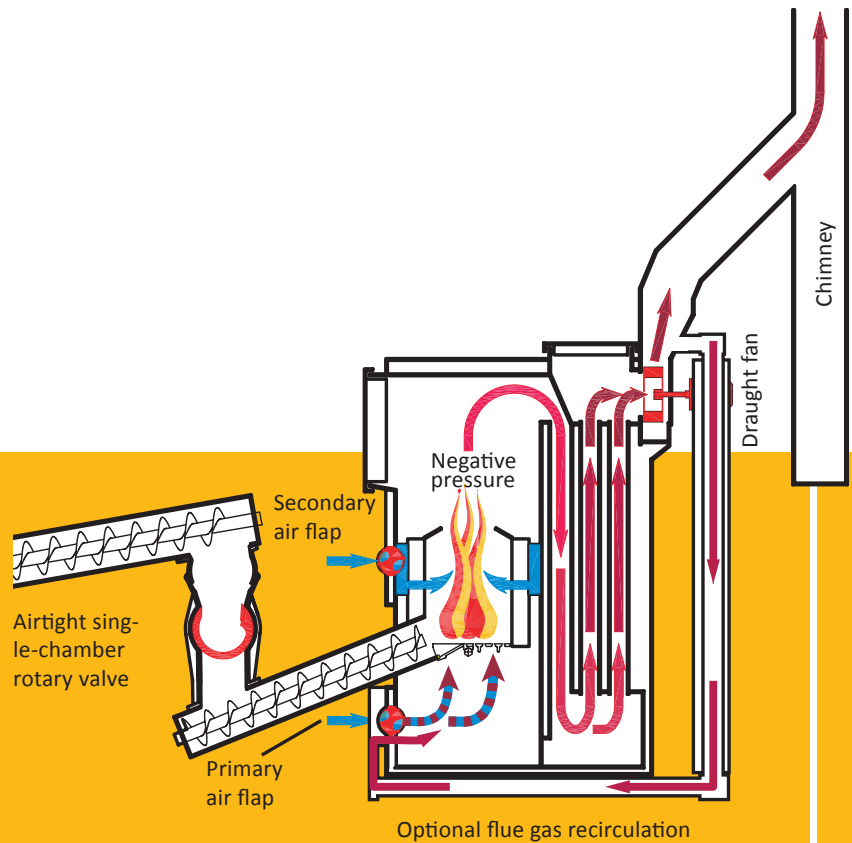
**Control system depends on configuration, sensors are available as accessory

Efficiency and flexibility

Proper airflow is essential to ensure that the combustion process takes place safely and efficiently. Optional flue gas recirculation ensures this even for very dry wood chips, miscanthus or pellets.

Targeted air flow

The air required for combustion is sucked in according to information from the lambda probe, and is directed by primary and secondary air valves in the combustion chamber to precisely where it is needed. Thus, the air supply can be adjusted perfectly according to fuel type. The airtight single-chamber rotary valve prevents any additional, unwanted air from entering the combustion chamber. This guarantees controlled and complete combustion.



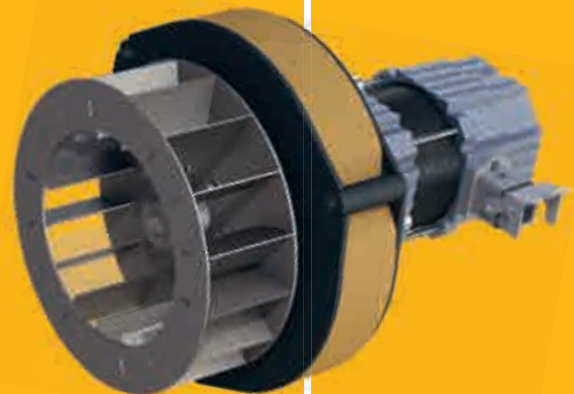
Flue gas recirculation

ETA wood chip systems offer the advantage that the operator can use wood chips of different qualities. Not just in terms of size. For very dry fuels, such as dried wood chips with a water content of less than 15% (M), miscanthus or pellets, flue gas recirculation is used; a tried and tested element from large-scale plants. Flue gas recirculation is optional and

is activated when required. The combustion temperature in the degassing zones is therefore kept exactly at an ideal temperature – above 800 °C, but below 1,000 °C. So, on the one hand, all components of the fuel are completely separated, and on the other, the thermal stress on the components is minimised. This increases the lifetime of the boiler. Combustion temperatures that are too high can also lead to undesirable slag formation.

Safely with negative pressure

Safety and efficiency. Quiet as a whisper, this speed-controlled fan ensures underpressure in the boiler. No matter how full the fuel chamber is, you can add fuel at any time – and completely without danger. As soon as you open the boiler door, the draught fan automatically switches on and thus prevents combustion gas from escaping. Additionally, the draught fan ensures oxygen supply in the combustion chamber and therefore ideal burning behaviour and best utilisation of the fuel.



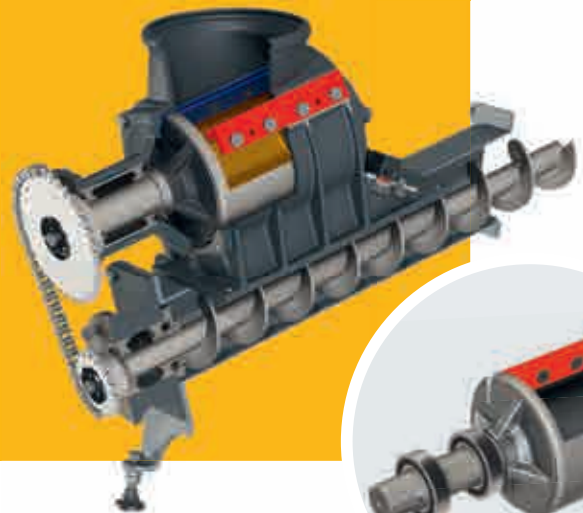
Patented single-chamber rotary valve

Uniquely safe: ETA sets new safety standards with the sealed one-chamber rotary valve. In contrast to conventional burn-back flaps, there is never a position that results in a direct connection between the combustion chamber and the fuel store. Dangerous burn-back is prevented, as no hot gas from the combustion chamber can reach the fuel feeding system.

Material-conserving fuel transport: The one-chamber rotary valve developed by ETA, which has been and tried and tested for years, can easily handle wood chips up to P31S (formerly G50). The power requirement is minimal, the one-chamber rotary valve is driven by the same motor as the stoker screw.

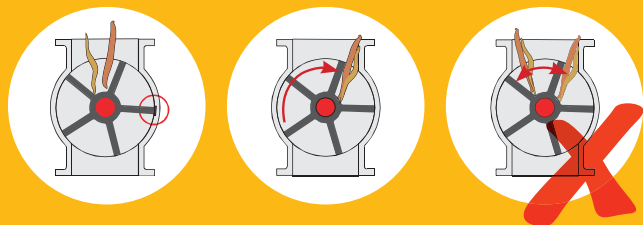
Rotary valve stop for a long service life: The material transport always takes place in a stationary large volume rotor (dia. 180 mm). A contact-free material transport with the rotor blade ensures quiet, low-wear and safe operation. Only very long pieces of woods which stand above the rotor, are easily cut by a knife-sharp, hardened blade and counter-blade. Neither when filling nor emptying the rotor from the bottom does material come into contact.

ETA info: The rotary valve stop functions like this The discharge screw conveys the material from the store room into the drop chute upper section. From there the material falls into the one-chamber rotary valve. Meanwhile the screw remains open pointing upwards. Because during the filling process it does not continue to turn and is only half filled, fuel material that is compliant with the standard is not constantly cut off. No material remains lying on the sealing surfaces. Thus ensuring a long lifetime for the blade and sealing surfaces.



Conventional double or multi-chamber rotary valve:

- larger power and energy requirement specially for coarse wood chips
- long pieces of wood bring the boiler to a standstill
- high wear
- noisy
- small sealing surfaces



ETA HACK one-chamber rotary valve

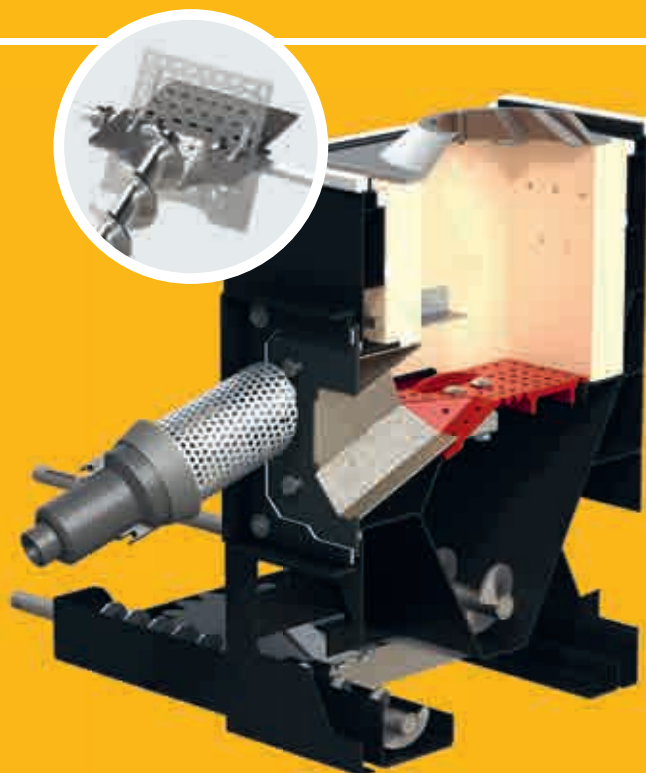
- low power and energy requirement also for coarse wood chips
- long parts are cut off with blades
- low wear
- quiet
- large sealing area and thus the highest burn-back safety



Intelligent technology in the combustion chamber

Optimal fuel utilization. The fuel is pushed from the side to the tilting grate in the combustion chamber and subjected to controlled burning. The refractory-lined combustion chamber with controlled air flow enables a high combustion temperature and thus optimal fuel utilization. If the material is completely burned, the ash is poured from the tilting grate at an angle of greater than 90° to ensure that the grate is thoroughly cleaned of ash and any foreign bodies.

Overfill protection. This is an important safety measure that ensures that no more fuel is in the chamber that could be combusted. Even if the boiler is cold or wet after a prolonged standstill, or a difficult-to-ignite fuel is used, overfilling of the boiler cannot happen, and thus deflagration is prevented. The fact that the amount of fuel tolerated by the overfill protection can be adapted to the fuel used is an advantage, particularly for alternative fuels such as pellets or miscanthus, but also for very dry wood chips.



Optimised ignition saves energy. With short combustion breaks, the refractory-lined combustion chamber still remains hot enough that any new fuel which is fed in can be ignited by remaining embers. The ignition fan only comes into use after prolonged boiler standstill. To save electricity, the ignition fan is deactivated as soon as the lambda probe and exhaust temperature sensor signal that ignition was successful. This saves energy!

Lambda probe

The right mix. Whether you heat with beech or spruce, supply large or small pieces of wood, the boiler is starting up or in full operation – ideal combustion always comes when the amount of supplied air is just right. The correctly placed lambda probe is as it were the brains of the combustion technology. It regulates how much oxygen is currently being used. The result: high efficiency and low emissions.



The lambda probe is an important part of the combustion technology. In conjunction with the ETA combustion control system, it determines the course and quality of combustion.

The way to heat

From the store room to the transport system into the combustion chamber: the interplay of high quality, flexible components and according to the room situation is needed!

1 Floor agitator: Depending on store room size, a floor agitator with a diameter of 3 m - 4 m can be used, with flat spring arms, or at 4.5 m - 6.0 m with articulated arms.

2 Universal joint: If the screw turns backwards due to blockages in the fuel supply, the joint decouples the agitator plate from the screw and thus protects the flat spring arms.

3 Open trough: Thanks to the generous trough cross-section, the progressive screw and the special trough geometry, even coarse wood chips are conveyed quietly, with little wear and in an energy-saving way.

4 Flexible building block system: Discharge of the fuel material can be flexibly arranged depending on room situation. Installation is quick and easy, the components do not have to be cut or welded, as they can simply be connected with the friction-locked PTO shaft.

5 Spur gear motors: They drive the whole transport system including the agitator. Thanks to active power monitoring, the control system immediately detects if too much force is applied to the transport, i.e. a blockage has occurred somewhere in the system. Then the rotation direction of the screw is changed up to three times to loosen the material.

6 Ball joint connection to drop chute: It ensures a flexible connection between transport system and boiler. The inclination and angle can be flexibly adapted to the structural situation. A built-in seal ensures clean operation without dust escaping.

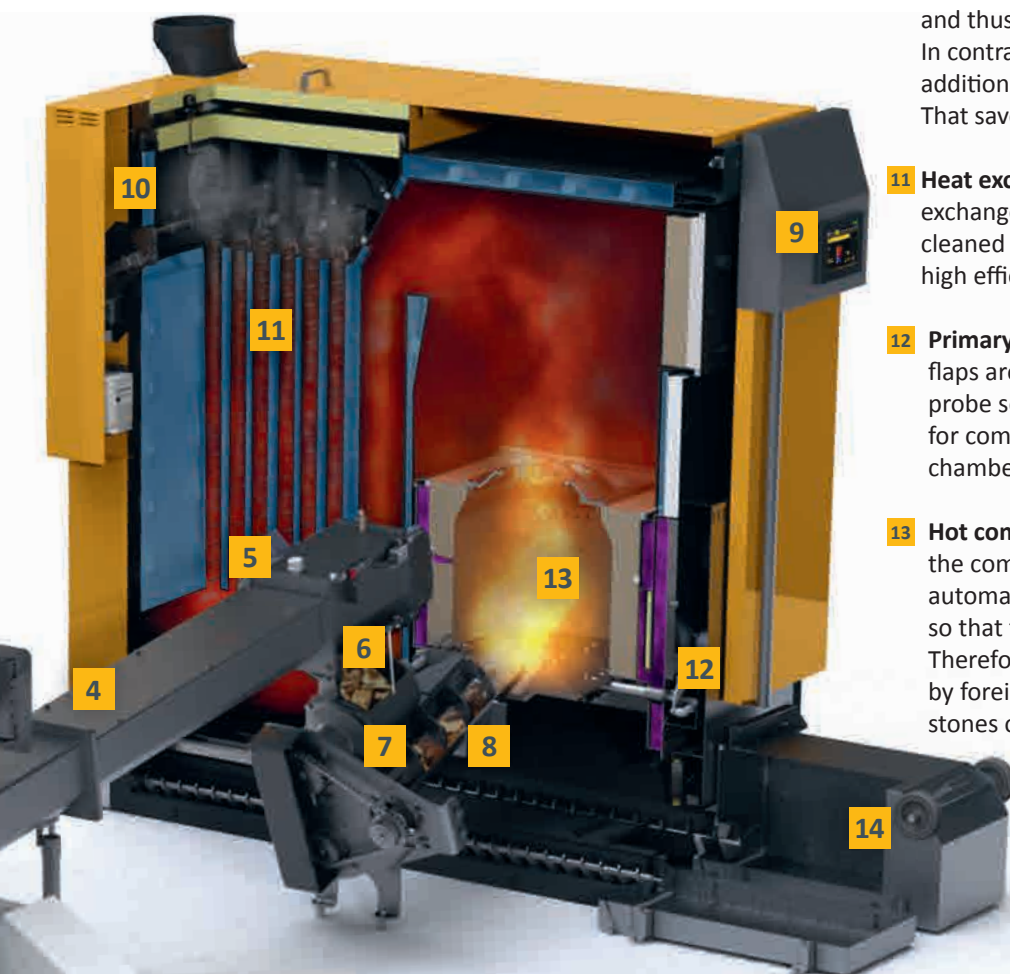
Optional maintenance opening at the bunker inner wall for easy access to and removal of large pieces of wood or foreign bodies.



7 Patented one-chamber rotary valve: It reliably prevents burn-back and thus ensures the highest safety. With 18 cm diameter it has a large chamber that is only filled at standstill thanks to the automatic rotary valve stop. That is why it works especially efficiently and energy-saving. It doesn't even need its own motor, but instead is driven with the stoker screw. A hardened blade with counter-blade reliably cuts off oversized fuel parts. So nothing gets jammed.

8 Rising stoker screw: Thanks to its large diameter, it even transports coarse material into the combustion chamber without resistance.

9 Touch control system with microprocessors: With just a few swipes of your finger you intuitively control the whole menu. If your boiler is connected to the internet, it tells you by email when the ash box has to be emptied, for example. Furthermore, you can use the free communication platform meinETA with partner network as well as free software updates via USB connection.



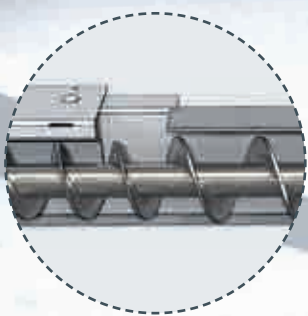
10 Draught fan: Quiet as a whisper, this fan ensures underpressure in the boiler. Additionally, it controls the air quantity and thus ensures safety in the boiler room. In contrast with conventional systems, no additional pressure blower is required. That saves energy!

11 Heat exchanger cleaning: The heat exchanger is completely automatically cleaned with turbulators. This ensures high efficiency.

12 Primary and secondary air flap: Both flaps are controlled via the lambda probe so that the ideal amount of air for combustion reaches the combustion chamber at all times.

13 Hot combustion chamber: To fully free the combustion chamber of ash, the grate automatically tilts at an angle of over 90° so that the ash can fall down smoothly. Therefore the operation is not impaired by foreign bodies in the ash, for example stones or nails.

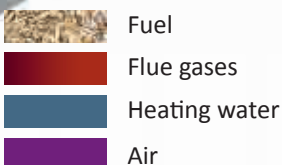
14 Fully automated de-ashing in an external ash box: The ash is transported out of the heat exchanger and the combustion chamber to the ash box via two separated screws but one common drive and compressed there so that the ash box has to be emptied less frequently than with conventional systems. It can be accessed easily and comfortably.



Progressive screw:

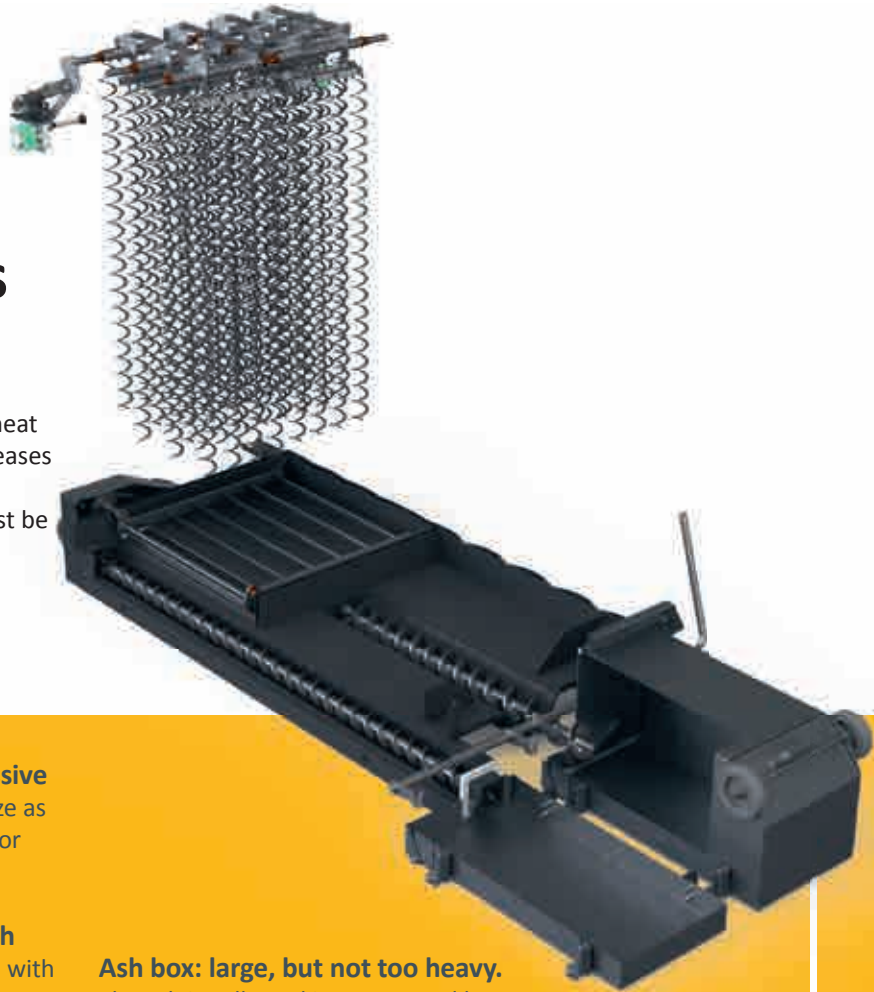
Through the change of pitch and diameter the material is transported quietly, with low-wear and in an energy-saving way.

The way through the boiler:



Cleanliness brings highest efficiency

In ETA systems, the combustion chamber and heat exchanger are automatically cleaned. This increases the efficiency and minimises the maintenance effort for the boiler. Eventually the ash box must be emptied – thanks to ash compression and large volumes of the ash box less frequently than with conventional systems.



Automatic de-ashing: conclusively progressive

As the screw for de-ashing is about the same size as the stoker screw, foreign bodies such as stones or nails in the ash are no problem either.

Heat exchanger cleaning: permanently high efficiency. A special mechanism that is applied with a pressure spring cleans the heat exchanger pipes and allow fly ash that occurs to fall down with a return movement. Clean and efficient! The falling ash is picked up from large areas of the boiler floor via a cast rotary table and fed to a separate screw.

Ash box: large, but not too heavy.

The ash is collected in an external box. Both de-ashing screws compress the ash and extend the emptying interval significantly in comparison with other systems. Optionally, ETA also offers an extra large ash box in waste bin format or ash transport system specially for large heating systems.

Long-lasting tilting grate. The combustion material is easily pushed into the combustion chamber from the side. If foreign bodies such as nails and stones are located in there, these do not impair the operation.



The fully automated cleaning of the grate runs smoothly too. The tilt angle lies above 90°, so that the ash can fall down with possible foreign bodies.

Complete combustion. The boiler automatically determines when to de-ash. It calculates its earliest and latest possible de-ashing date from the fuel quantity burnt since the last de-ashing. Within this time interval the control system itself chooses the ideal time to introduce a controlled combustion. Only when the flue gas temperature sensor and the lambda probe report that the fuel material has been completely used may the grate be tilted.

From the store into the boiler

A good wood chip boiler needs no maintenance, the fuel transport functions fully automatically. The ETA discharge system ensures that this also works smoothly and without blockages for coarse wood chips.

Universal joint with one-way clutch ensures that the motor can change direction to loosen blockages in the transport screw, without the floor agitator also rotating in the wrong direction.



Easy also for large pieces

With the ETA Hack you can also burn coarse wood chips (P31S). The ETA discharge system easily produces pieces with a length of up to 12 cm. Special progressive screws are responsible for the smooth transport from the store into the boiler. So that there are not stoppages – above all in the transition from the open trough in the store to the closed trough outside - the distance between the individual windings of the transport screw is increased. This loosens the material and a quiet, smooth, power-saving material flow is guaranteed.

No standstill, it does jam up If a material jam occurs regardless, the flow monitor notes this immediately in the control system and moves the screws in the other direction until the material has come loose and the fuel transport can proceed unhindered. To make sure the flat springs are not damaged, the agitator may not move in the counter-direction at the same time. The articulated arm ensures this: If the screws move backwards, the floor agitator is automatically decoupled from the motor.

In store rooms with diameters from 4 to 6 metres, the agitator is reinforced with an articulated arm. This means that fuel material on the edge of the store room is optimally picked up too.



Always optimum fuel pick-up

Floor agitators with strong flat springs for store rooms between 3 and 4 metres diameter, each made to fit in half-metre steps. For rooms of up to six metres, ETA offers articulated arm technology with a specially reinforced agitator.

The flexible system

For connecting screws, any length is possible up to six metres with standard parts – and in 125 mm intervals. The parts do not need to be welded or cut, but just plugged together.

No on-site welding and cutting: The parts of the discharge systems are simply plugged together as needed.



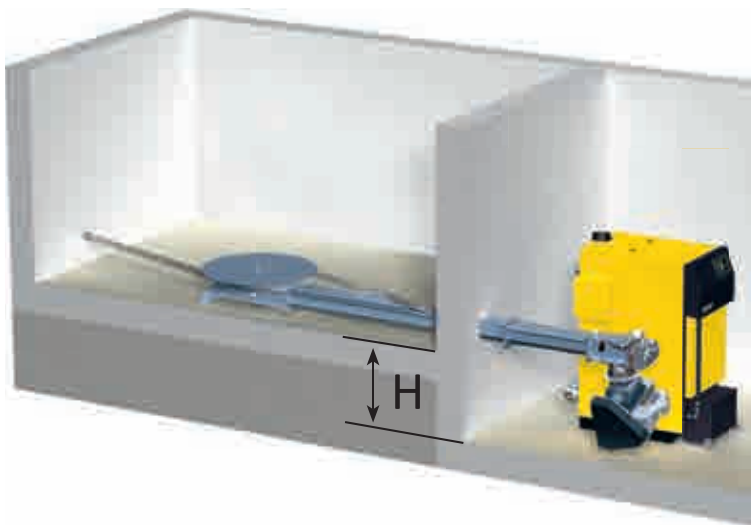
From store into the boiler

How should I design my store room? How to ensure the smooth transport of fuel from the store into the boiler? With the ETA systems you have the most varied of options.

One agitator for all eventualities

The ETA agitator adapts to the structural conditions.

Ideally there is a height difference between the store room and the boiler room, so that the agitator can run level. But with ETA even an inclined transportation is possible between store and boiler. Because the feet under the agitator plate can be adjusted. So the inclination of the conveying system can be precisely set.

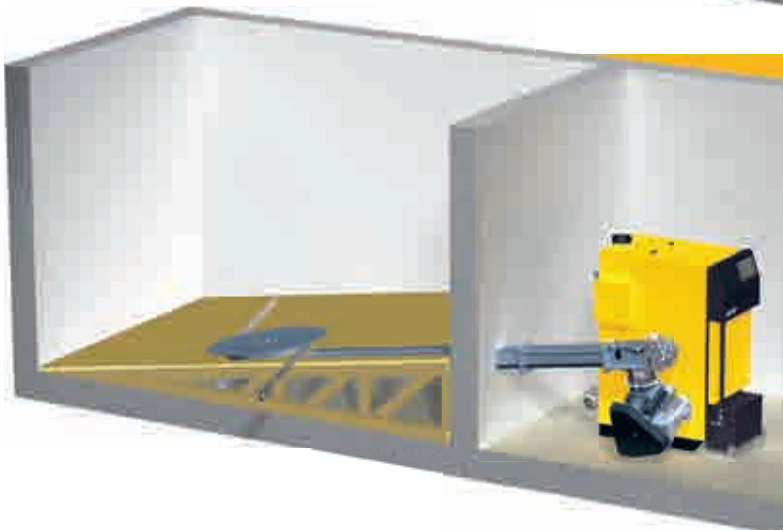


ETA tip: For horizontal discharge the following height differences between store room and boiler room are needed:
for boilers up to 130 kW: $H = 735 \text{ mm}$
for boilers with 200 kW: $H = 790 \text{ mm}$

ETA info: Planning advice for a wood chip store

The floor agitators are designed for a maximum wood chip fill height of 5 m.

- The trough screw between store outlet and boiler may be a maximum of 6 metres (L) long.



With or without tilted floor? Without a tilted floor the installation of the floor agitator is easier. You can rely on quiet operation. However, a small part of the store cannot be emptied fully automatically. This is simply filled with very dry wood chips during the first load. If you decide on an inclined tilting floor, fewer wood chips remain in the store.

The solution for pellet heaters

If there is little space for a wood chip store, pellets are the ideal solution, as the energy density of pellets is about four times as high as that of wood chips. So for the same heating performance you only need a quarter of the storage space.

Planning advice for a pellet store with agitator

- Pellets are much heavier than wood chips. That is why agitators may only be filled with pellets up to a height of 2 metres.
- To ensure that the pellets are not damaged, only flat-spring agitators up to max. 4 m in diameter may be used.
- A special cover plate for pellets is needed on the open trough screw in the store.
- The trough screw between store outlet and boiler may be a maximum of 1.5 metres long.

Those who want to operate their boiler with pellets only...

... should rely on the discharge screws specially developed by ETA for the transport of pellet fuel. Additionally, the fuel can also be heaped up significantly higher thanks to the ETA discharge screw.

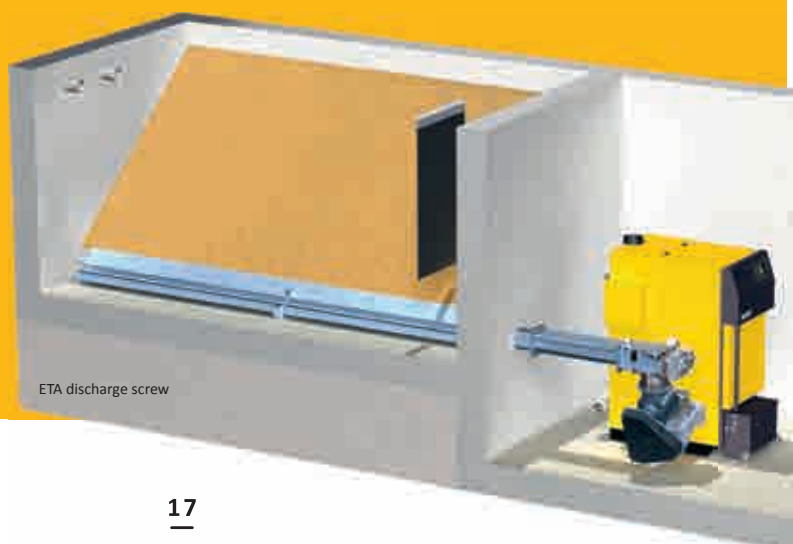
A numbers game

A business with 200 kW heating load annually consumes about 65 tonnes of pellets, that corresponds to a size of 100 loose cubic metres. If a pellet delivery arrives three times a year, including reserves, a store room volume of just 50 m³ is sufficient. For 4.5 metres fill height, a store room footprint of just 2 times 4 metres is required.



Planning advice for pellet store with discharge screw:

- The open trough screw in the store room may be a maximum of six metres long, the total length of the open and closed trough screws may be a maximum of eight metres.
- Taking into consideration the structural integrity of the building, the screws can be filled up to six metres high.



ETA discharge screw

Store filling: simple, safe, clean

Particularly when heating with wood chips, a thought-out solution is important for how the store is filled, because this saves money and gives piece of mind for many years



Ground level filling

This form of storage is the classic one used on the farmstead or commercially. It is the most economical and simplest way to store wood chips. If devices such as front-end loaders or push-off trailers are available, they are even better to use. Also the work and time expended when filling is reduced to a minimum. With large volume transport units such as dumpers or push-off trailers, the material is directly unloaded onto the discharge system. ETA discharge

systems allow extremely large fill heights. With a front end loader or telescopic loader the wood chips are just pushed up.

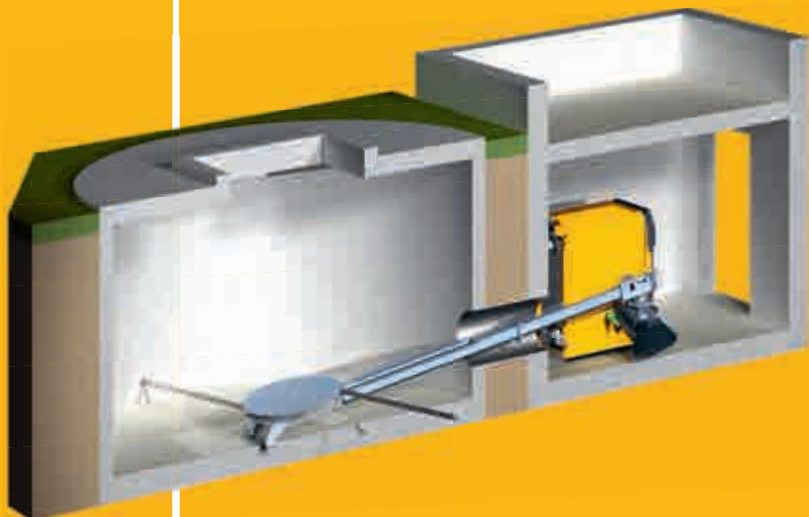
Collision protection, so that the floor agitator is not damaged.

ETA tip: Collision protection

It protects against accidental damage to the agitator during filling.

Dumping into a store below access level

To achieve a good filling level with a steep material cone of the wood chips, the filling opening should be as large as possible. In the best case, it is 2 m wide and extends across the entire diameter of the store. Store diameters up to 6 m are possible with this system. To prevent bridging, the agitator diameter chosen should never be less than the store diameter. If a new store is to be built, the best solution is a round layout that can be realised with typical manure pit formwork. That is especially economical.





Special solutions as required

With our modular system, we are able to build a technically perfect discharge system with a very good price-performance ratio for almost all situations. With ETA, two agitators can be implemented for one boiler or one agitator for two boilers, among other things. For fuel silos in carpentry workshops, ETA offer pivot augers.

You can use intermediate conveyor screws to overcome height differences, direction changes and distances up to 6 m. These should not be installed with inclinations greater than 30°. We also use intermediate conveyor screws to form connections to existing store room conveying systems.



Bunker filling screw or filling nozzle for cellar rooms

This solution is ideal if you want to use existing rooms or have your wood chip system directly in the house. Bunker filling screws can be very flexibly installed at an angle to the room's axis or also inclined and are continuously adjustable up to 45°. Here, floor agitator diameters up to 6 m are

possible. For room heights less than half the agitator diameter, we recommend two screws to be able to optimally fill the store room.

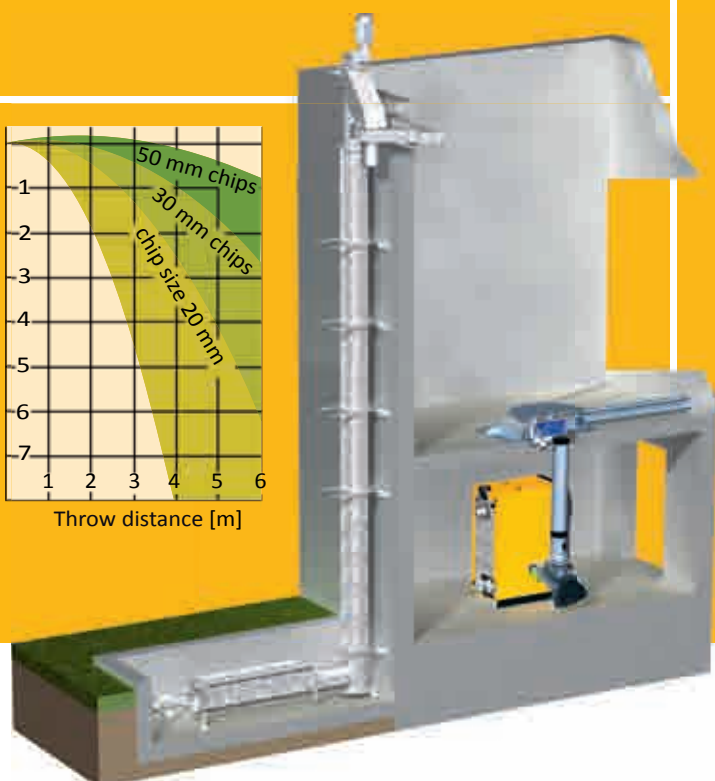
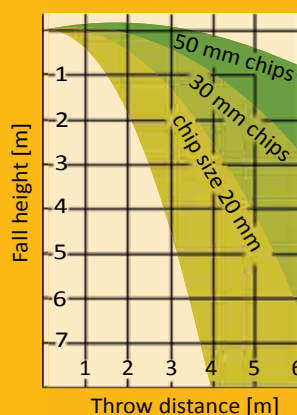
If the building situation does not allow a filling hopper or access to the wood chip transporter is difficult, wood chips can be fed from the tanker via a filling nozzle. If only pellets are to be used, filling nozzles are the best solution.

ETA extra: better safe than sorry

All open filling troughs have a protective screen. This not only protects against accidents when the screw is running, but also ensures the smooth transport of the wood chips without jamming thanks to the jogging motor. A protective screen that can be built in at the same level with the dimensions of 2.5 times 1 metre can also be delivered.

Vertical screw and centrifuge for high store rooms

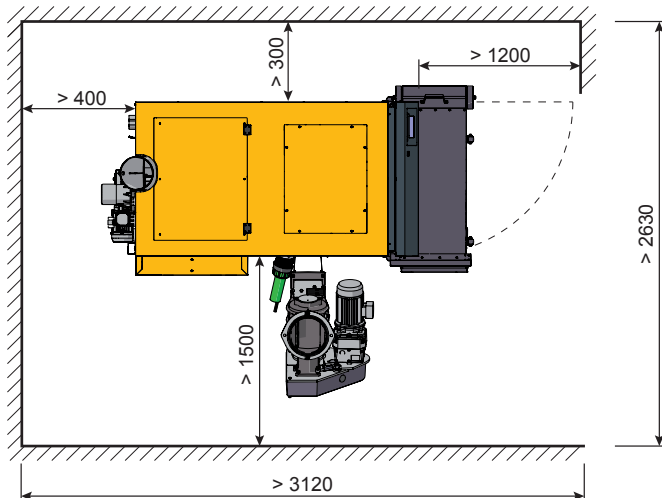
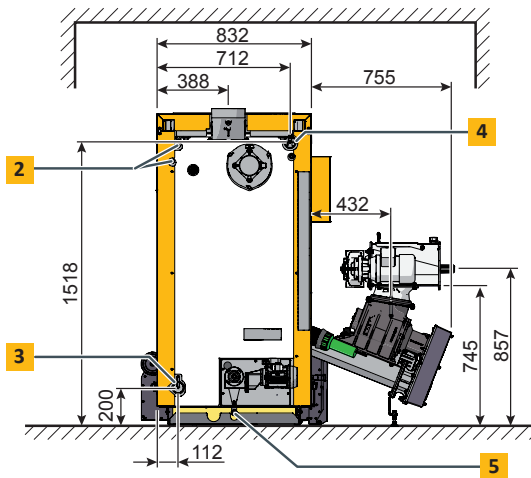
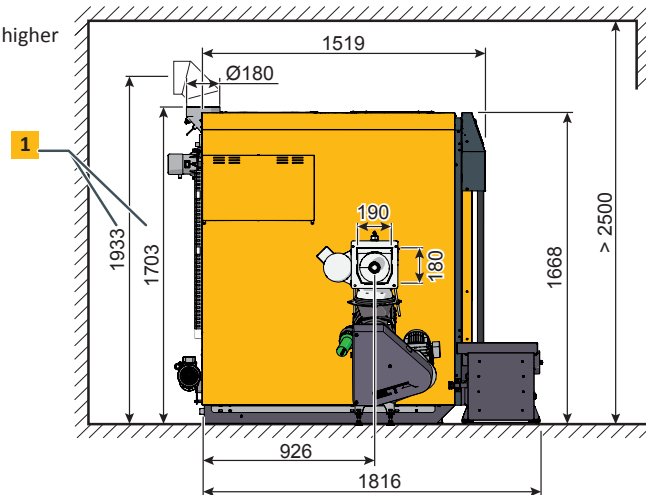
This solution is suitable for coarse wood chips with a small fine portion, but not for pellets. It is used for high store rooms, so for example when the boiler room is integrated into high rooms or there is little area available. With the vertical transport screw wood chips can be conveyed up to 8 metres high. In order for the centrifuge to eject the wood chips widely and optimally in the store room, the ratio of fine material may not be too high.



The 110 - 130 kW ETA wood chip boiler

- 1** Flue gas connections with flue gas recirculation are 65 mm higher
- 2** Safety heat exchanger R1/2" outside thread
- 3** Return with coupling R2"
- 4** Flow with coupling R2"
- 5** Discharge with coupling R1/2"

The boiler can be supplied with stoker on either the right or the left side.





Wood chip boiler	Unit	110 kW	130 kW
Rated capacity, wood chips (W25-S160)	kW	33,0 - 110,0	38 - 133
Rated capacity, pellets	kW	33,0 - 110,0	39 - 140
Efficiency with wood chips at partial / full load*	%	94,5 / 93,0	94,8 / 92,7
Efficiency with pellets at partial / full load*	%	92,3 / 92,8	92,0 / 91,7
Transport dimensions, W x D x H	mm	930 x 1.700 x 1.703	
Transport width with panels removed	mm	790	
Weight with / without rotary valve stoker	kg	1.334 / 1.189	
Water content	Litres	290	
Water-side resistance ($\Delta T = 20\text{ }^{\circ}\text{C}$)	Pa / mWs	1600 / 0,160	
Ash box volume	Litres	110	
Flue draught required at partial / full load	Pa	> 2 Pa / > 5 Pa a draught limiter is required above 15 Pa	
Electrical power consumption with wood chips at partial / full load*	W	178 / 458	
Electrical power consumption with pellets at partial / full load*	W	103 / 199	
Maximum permissible operating pressure	bar	3	
Temperature adjustment range	$^{\circ}\text{C}$	70 – 85	
Maximum permissible operating temperature	$^{\circ}\text{C}$	95	
Minimum return temperature	$^{\circ}\text{C}$	60	
Boiler class		5 acc. to EN 303-5:2012	
Suitable fuels		Wood chips ISO 17225-4, P16S-P31S (G30-G50), maximum water content 35%; Miscanthus ÖNORM C4000 and C4001; Pellets ISO 17225-2-A1, ENplus-A1	
Electrical connection		400V AC / 50 Hz / 13A / 3 P + N + PE	

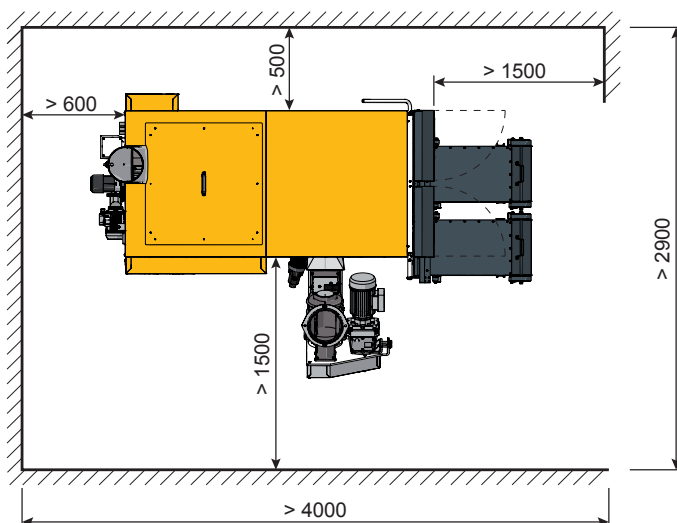
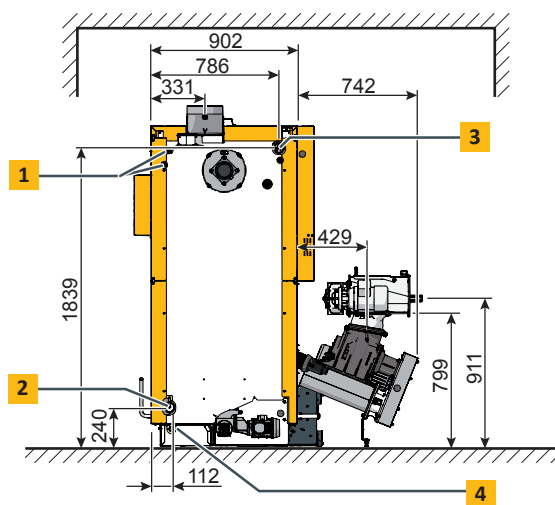
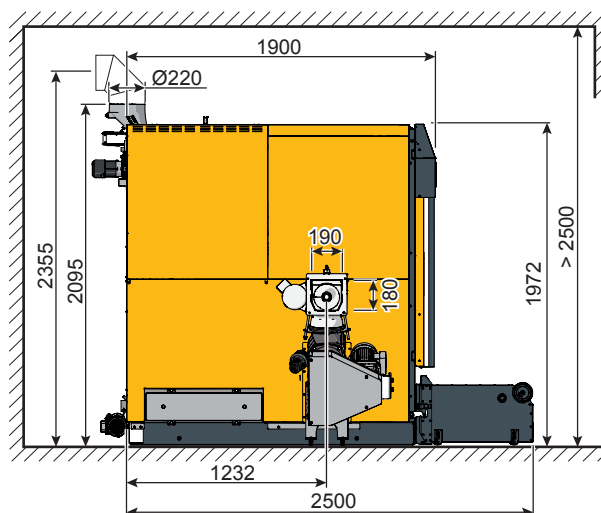
*Data from test reports by BLT Wieselburg



The 200 kW ETA wood chip boiler

- 1** Safety heat exchanger R1/2" outside thread
- 2** Return with coupling R2"
- 3** Flow with coupling R2"
- 4** Discharge with coupling R1/2"

The boiler can be supplied with stoker on either the right or the left side.





Wood chip boiler	Unit	200 kW
Rated capacity, wood chips (W25-S160)	kW	56 - 195
Rated capacity, pellets	kW	66 - 220
Efficiency with wood chips at partial / full load*	%	93,5 / 92,3
Efficiency with pellets at partial / full load*	%	91,1 / 91,1
Transport dimensions, W x D x H	mm	1.106 x 2.125x 2.095
Transport width with panels removed	mm	865
Weight with / without rotary valve and stoker	kg	1.950 / 1.800
Water content	Litres	448
Water-side resistance ($\Delta T = 20\text{ }^{\circ}\text{C}$)	Pa / mWs	1.700 / 0,170
Ash box volume	Litres	2 x 80
Flue draught required at partial / full load	Pa	> 2 Pa / > 5 Pa a draught limiter is required above 15 Pa
Electrical power consumption with wood chips at partial / full load*	W	195 / 535
Electrical power consumption with pellets at partial / full load*	W	118 / 300
Maximum permissible operating pressure	bar	3
Temperature adjustment range	$^{\circ}\text{C}$	70 – 85
Maximum permissible operating temperature	$^{\circ}\text{C}$	95
Minimum return temperature	$^{\circ}\text{C}$	60
Boiler class		5 acc. to EN 303-5:2012
Suitable fuels		Wood chips ISO 17225-4, P16S-P31S (G30-G50), maximum water content 35%; Miscanthus ÖNORM C4000 and C4001; Pellets ISO 17225-2-A1, ENplus-A1
Electrical connection		400V AC / 50Hz / 13A / 3 P + N + PE

*Data from test reports by BLT Wieselburg



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EU-Normen



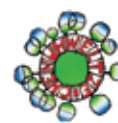
BLT Wieselburg
Österreich



TÜV
Süddeutschland



Qualitätssiegel
Holzenergie
Schweiz



Österreichisches
Umweltzeichen



ETA PU PelletsUnit 7 to 15 kW



ETA PC PelletsCompact 20 to 50 kW



ETA PE-K Pellet Boiler 70 to 220 kW



ETA SH Wood Gasification Boiler
20 to 60 kW



ETA SH-P Wood Gasification Boiler 20 and 30 kW
with ETA TWIN Pellet Burner 20 and 26 kW



ETA stratified buffer SP 500 to 5,000 lt
and SPS 600 to 2,200 lt



ETA Hydraulic modules



ETA eHACK Wood Chip Boiler
20 to 80 kW



ETA HACK Wood Chip Boiler
110 to 200 kW



ETA HACK VR Wood Chip Boiler
with moving grate 333-500 kW

Your heating specialist will be happy to advise you



...mein Heizsystem

ETA Heiztechnik GmbH

Gewerbepark 1

4716 Hofkirchen an der Trattnach, Austria

Tel.: +43 (0)7734 2288-0

Fax: +43 (0)7734 2288-22

info@eta.co.at

www.eta.co.at

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Hackgutkessel ETA HACK EN, 2017-09

