

ETA HACK VR 250 to 500 kW

ETA 
... my heating system



The powerful wood chip boiler for
industry, businesses and heating networks



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



The ETA Hack VR is therefore ideal where heating needs to be economical, environmentally-friendly and fully automatic, above all in agricultural businesses, industry, commerce and in the form of local or district heating networks.

High quality and flexible

In times of rising raw material costs, it is really a challenge to heat larger properties – not, however, if you rely on a crisis-proof and domestic fuel such as wood chips. Wood chips are produced from wood that is difficult to reuse, such as thinning materials, splinters of wood after storm damage and sawing residue from domestic wood processing plants. It is chopped in powerful chippers and according to predefined standards. The size of wood chips is standardised. Sizes from P16S - P31S are suitable for our systems.

A system that can handle coarse chips too

Every ETA wood chip conveyor system is well thought out, tried, tested and designed for the toughest use: the transport of coarse, uneven wood chips. So that pieces of wood of up to 12 cm can be transported, all parts must work together perfectly. That starts already in the bunker. The wood chips reach the screw via generously designed open troughs. In the process, a relief plate prevents the material from exerting too much pressure on the discharge screw and thus enables fill heights of up to five metres. Bottlenecks are avoided in the enclosed trough channel thanks to the spacious discharge connections. A smooth material transport is supported by the progressive screw, which additionally loosens the wood chips. Even the installation is easy thanks to the modular design. The screw modules with sizes of 25 to 200 cm are produced and aligned in automated machines, the specially shaped trough channels only have to be screwed together.

The right temperature in the combustion chamber

thanks to permanently regulated flue gas recirculation: to achieve optimum result as regards emissions and efficiency during combustion, you need an even ideal temperature in the combustion chamber and therefore the permanent control system of the flue gas recirculation. As in the draught fan, a highly efficient fan is used here too to keep the combustion temperature in the de-gassing zones above 800 °C but under 1,000 °C at all times. In this temperature window, all components of the fuel are completely split for one. And on the other hand the thermal load on the components is kept as low as possible, which enormously increases the lifetime of the boiler. Too high combustion temperatures can also lead to undesirable slag formation.

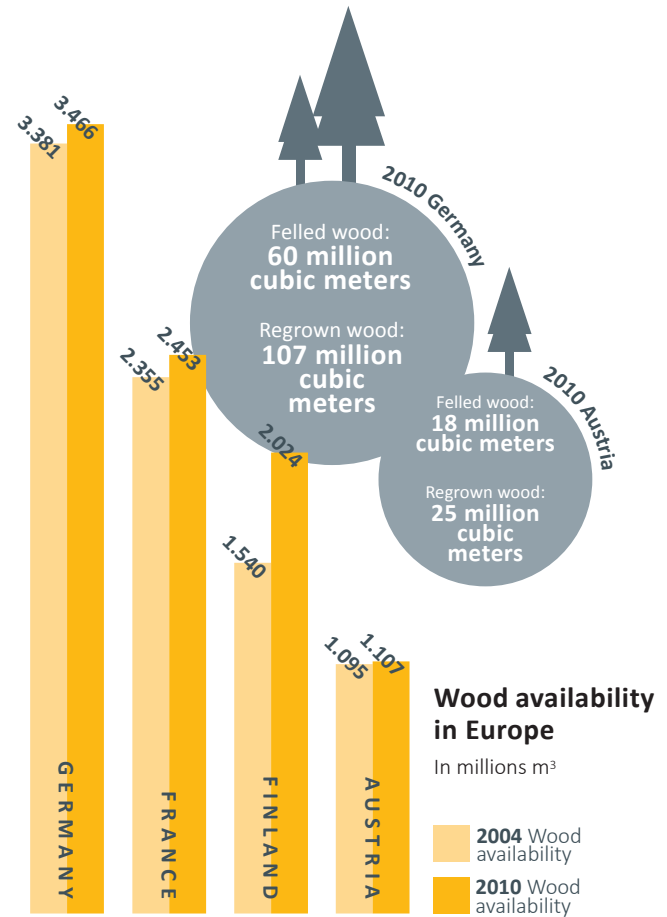


With the standard ETA Hack VR flue gas recirculation, you are flexible in your choice of fuel, because the best efficiency is achieved not just with wood chips, but also with pellets.

A win-win situation

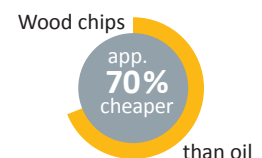
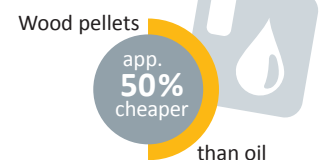
Save on heating costs, strengthen your domestic economy and look after the environment in the process: heating with wood is worth it. Wood continuously regrows in our domestic forests, thus it is crisis-proof and economical. Forested areas are growing across Europe.

The natural raw material is CO₂-neutral, this means that during its combustion no more CO₂ will be released than the 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.



Oil in comparison

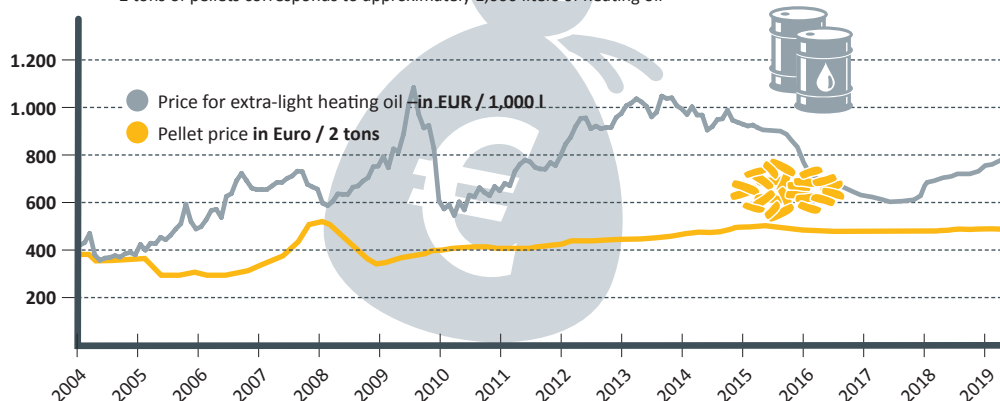
Calculation time period: 5 years



Fuel costs:

oil and wood pellets in comparison

2 tons of pellets corresponds to approximately 1,000 liters of heating oil



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.

Wood chips: It's all about simple feeding

With the ETA system, you can find the right solution for the most varied of structural situations to harmonise optimal storage volumes with simple feeding. Pellet operation is also possible with agitator discharges, but then the maximum feed height is 2 metres, the largest possible agitator diameter 4 metres. For an overhead conveyor, an

intermediate conveyor screw with a minimum length of 500 mm is needed for material dosing. Also with moving-floor conveyors, pellet operation is possible under certain conditions. Talk to an ETA technician about the details of individual cases.



Floor agitator with articulated arms and flat spring arms.

This standard variant is made for the feeding of one or two boilers. It is ideal for underground storage rooms, ramps and filling by loader. The maximum possible effective diameter is 6 metres, the maximum fill height is 5 metres.



ETA info

Planning advice for a wood chip storage room.

- The floor agitators are designed for a maximum fill height of 5 metres.
- The auger screw between the store outlet and boiler may be a maximum of 6 metres long.



Boiler cascade

Up to six boilers can be connected and controlled as needed with the boiler control system. Systems of up to 3 megawatts are possible.

Pivot auger discharge system

This space-saving variant is ideal for high, pneumatically filled silos or for material with poor flow characteristics. The maximum possible effective diameter is 6 metres, the maximum fill height is 8 metres.



Moving floor discharge

This XXL variant is ideal for large storage quantities as well as rapid filling via push-off trailer, dumper or hall crane. The maximum possible pushrod width is 2 metres, whereby a maximum of 3 pushrods can be used alongside one another. The maximum fill height is 5 metres. Operation with pellets is optionally possible in consultation with ETA.



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°. Intermediate conveyor screws are used to form connections to existing store room conveying systems.

Floor agitator with centred outlet

This very economical variant is ideal for pneumatically or mechanically filled silos. The maximum possible effective diameter is 6 metres, the maximum fill height is 5 metres.



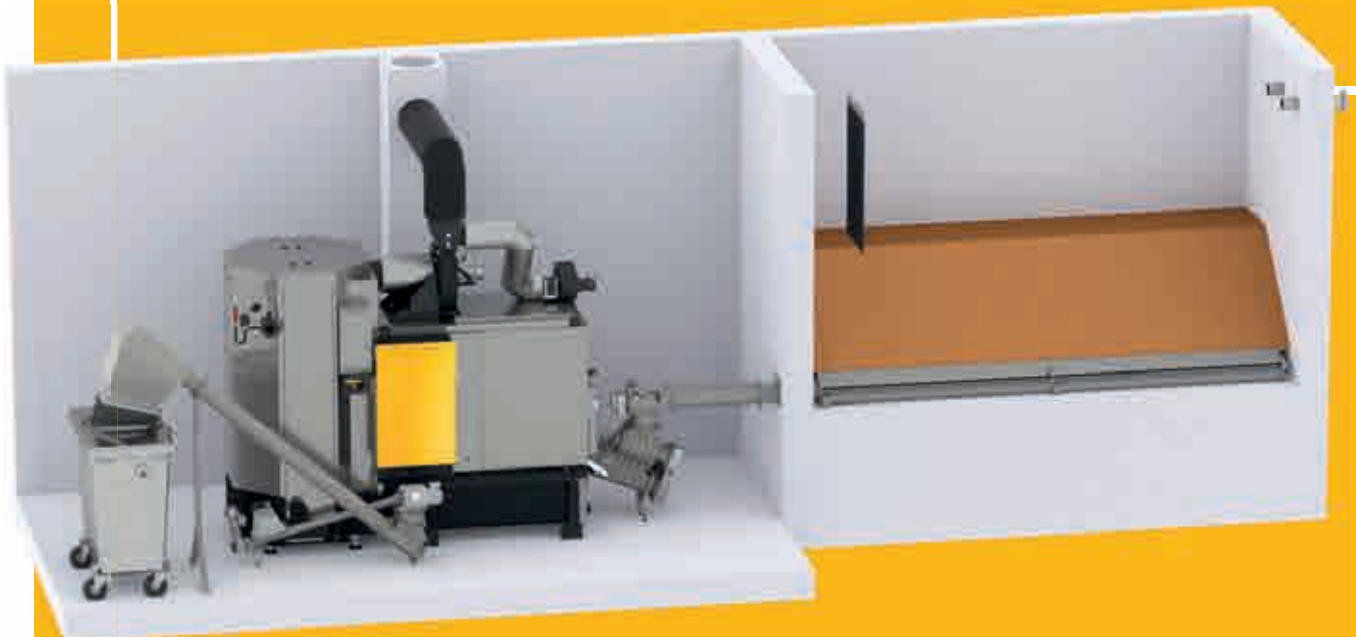
Pellets: A lot of energy that needs little space

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 metres in diameter may be used, and the angle of inclination may not exceed 12°.
- A special cover plate for pellets is needed on the open auger screw in the store.
- The auger 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.



Planning advice for pellet store with discharge screw:

- The open auger screw in the storage room may be a maximum of 6 metres long, the total length of the open and closed trough screws may be a maximum of 8 metres.
- Taking into consideration the structural integrity of the building, the screws can be filled up to 6 metres high.

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.

The universal joint 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 VR you can also burn coarse wood chips (P31S/G50). The ETA discharge system easily transports pieces with a length of up to 15 cm. Special progressive screws are responsible for the smooth transport from the store into the boiler. So that there are no 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 still occurs, 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 spring arms are not damaged, the agitator may not move in the counter-direction at the same time. The universal joint ensures this: If the screws move backwards, the floor agitator is automatically decoupled from the motor.

Strong flat spring arms from 1.5 m to 4.0 m

Massive articulated arm or double hinge arm technology from 4.5 m to 6.0 m

Always optimum fuel pick-up

Floor agitators with strong flat spring arms for store rooms between 1.5 and 4 metres diameter, each made to fit in half-metre steps. For rooms of 4 to 6 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.



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.

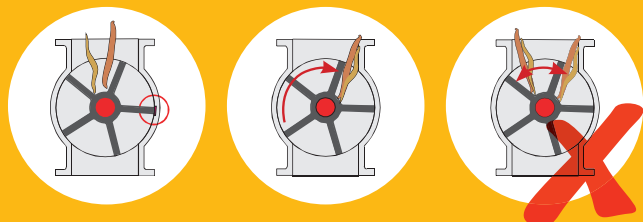
Rotary valve stop for a long service life: The material transport always takes place in a stationary large volume rotor (dia. 180 mm). A contact-free material transport with the rotor blade ensures quiet, low-wear and safe operation. Only very long pieces of woods which stand above the rotor, are easily 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
- lower wear
- quiet
- large sealing area and thus the highest burn-back safety



PRODUCT HIGHLIGHTS



Innovative combustion technology The combustion chamber is built up in multiple layers, the expansion joints between the layers also ensure a long lifetime of the boiler as does the cooling air jacket. This extends throughout the boiler construction and, along with the water-cooled grate side rails, ensures low radiation losses and therefore high efficiency. The individual, angled grate elements that work upwards ensure a complete burnout for the lowest emissions. Slack formation is consistently prevented. The uniform distribution of primary air over the entire grate is ensured by an energy-efficient draught fan in combination with an underpressure control system. Furthermore, specially positioned secondary air inlets, supplied with pre-warmed air through a separate lambda-controlled fan provide for clean and low-emission burnout. The combustion is optimally adapted to the different fuels via the constantly regulated flue gas recirculation. This protects all components and also allows the efficient burning of even the driest fuels within a stable temperature window.

Permanent de-ashing The moving grate and ash rake are driven by just one motor. The stoking interval of the rake is fully automatically adapted to the requirements - and from the residual fuel that the lambda probe measures, the combustion chamber temperature and the relevant required output. So grate de-ashing takes place permanently. The system therefore does not need to be switched during ash removal.

The combustion chamber and the heat exchanger are mechanically separate So thermal stresses are no problem as a connecting flange absorbs them. This makes the boiler safe even at the highest loads. Furthermore, this construction makes the transport, placement and the installation easier.

Heat exchanger: automatically always clean Since the heat exchanger stands vertically in the boiler, an ideal heat transfer is enabled. Additionally, the ash can simply just fall off the entire heat exchanger surface. Only a heat exchanger that is always clean can ensure high efficiency for years to come. The ash is safely removed and taken away below with a special compression spring mechanism.

Multi-cyclone against dust and sparks It consists of two standing cyclone tubes with welded rotary vanes and is already integrated into the heat exchanger. So it needs less space than an external device and generates no extra costs. The multi-cyclone separates coarse dust through rotation, thus reducing dangerous sparks and at the same time lowering the dust emission values.



Automatic removal of the ash



De-ashing variants:

Two solutions for ash removal are available.

- Transfer flap with sealing flange into a 770-litre ash bin or an external container
- De-ashing into a 240-litre or 320-litre container

The systems are individually adaptable to the structural conditions and also the possibility of ash removal. De-ashing from the boiler can either be on the right or left or can be freely swivelled through the ball transfer.

In the de-ashing variant with the transfer flap, the ash screw can be extended up to 6 m. Height differences are also no problem here.



Electrostatic precipitator

Reducing emissions - even when using fuels of varying qualities

What type of wood is processed into wood chips? How high is the water content? How much bark was included in processing? – Depending on the quality of the wood chips, the flue gas contains varying concentrations of dust particles. Complying with mandated emission values is not always easy.

Up to 85% less dust in the flue gasses

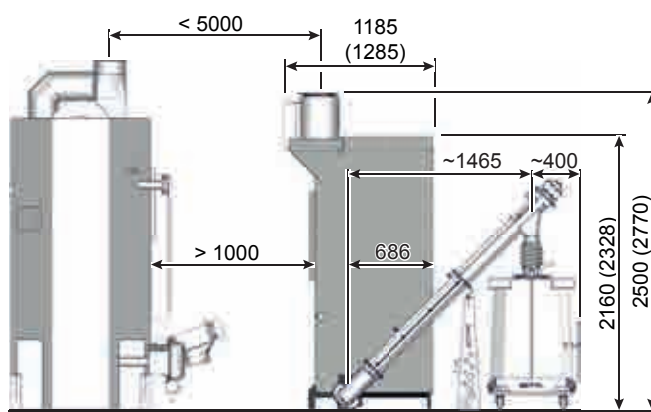
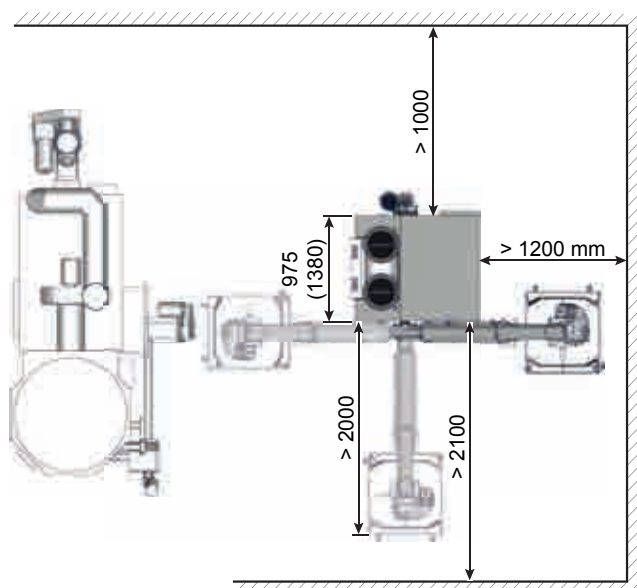
The precipitator from ETA guarantees worry-free operation in this regard. It filters 80 to 85% of dust particles out of flue gas. It fits perfectly into the ETA system, runs via the ETAtouch control system and is nearly maintenance-free. The precipitator area features automatic cleaning in regular intervals: The dust particles separated from flue gas are transported fully automatically via a screw into an ash bins located outside.



Complete de-ashing with automatic ash removal into a 240 or 320 litre container.



EEP precipitator 250 to 500



Precipitator	Unit	EEP 250	EEP 333 / 500
Weight	kg	553	841
Electrical power consumption during operation (maximum value/regular operation)	W	518 / 187	578 / 247
Electrical power consumption in ready mode	W	4	4
Electrical connection	400 V AC / 50 Hz / 13 A / 3P+N+PE		

The way to heat

The ETA HACK VR – reliable technology with moving grate

- 1 **Highly efficient draught fan:** It ensure underpressure and thus safety in the boiler – and is especially energy-saving: The ideal speed required for the underpressure is passed on to the motor via a frequency converter.
- 2 **Separately controlled flue gas recirculation:** Also controlled via a frequency converter, flue gas recirculation ensures a stable temperature range in the burner, thus protecting the boiler. So there is no slag on the grate, even with different fuels.
- 3 **Primary and secondary air:** The primary and secondary air supply is pre-heated and thus cools the boiler's outer layer. This minimises radiation losses. The efficiency of the whole system is increased. From 333kW on, a frequency converter controlled motor ensures optimum speed
- 4 **Patented one-chamber rotary valve:** It reliably prevents burn-back and thus ensures the highest safety. The large chamber is only filled at standstill thanks to the automatic rotary valve stop. So the rotary valve works particularly efficiently and energy-saving and can be driven by just one motor together with the stoker screw. A hardened blade with counter-blade reliably cuts off oversized fuel parts. So nothing gets jammed.
- 5 **Stoker screw:** Thanks to a special trough geometry and the progressive stoker screw, it operates with low-wear and largely without disruptions.
- 6 **Lambda and combustion chamber temperature regulation:** Through the adaptation of the oxygen supply to the relevant fuel quality, the boiler achieves the highest efficiency with the lowest emissions. The temperature of the combustion chamber is controlled by the flue gas recirculation flap as needed.



The way through the boiler:

Flue gases	
Heating water	
Air	



- 7 Combustion chamber with moving grate:** The combustion chamber with its multi-layered, high temperature resistant construction is made for the highest loads. The firebed is constantly stoked. The combustion chamber area on the sides is provided with extra protection by water-cooled side rails. This ensures the long lifetime for the boiler. De-ashing takes place automatically, whereby a common drive is sufficient for grate and ash rake.
- 8 Touch control system with microprocessor control:** The whole touchcontrol system of the heating system is located directly on the boiler and is already wired. Four different mounting positions are possible. The menu guidance works via touchscreen with clear images. Visualisations of the working processes of the heating system as well as remote control are possible via the internet with meinETA, including email messaging system, partner network and software updates via USB connection.
- 9 Standing plain tube heat exchanger:** Automatic cleaning ensures constantly high efficiency. An integrated multi-cyclone cuts coarse dust through rotation, thus preventing dangerous sparks and at the same time lowering the dust emissions. It is already integrated into the system and thus needs less space than an external device and also generates no extra costs. The smoke tube connection is designed to pivot.
- 10 Automatic full de-ashing:** The grate and cyclone ash are collected and transported away via a high quality shaftless inclined screw with temperature monitoring, for which also coarse foreign bodies in the ash are no problem. Further disposal takes place via a spherical transition on which the de-ashing variants can be connected.

Interaction of the products

ETA not only offers the most diverse of products, but also links them logically. Everything runs smoothly and safely. The components in the heating system that are needed always get automatic priority.

The whole system is controlled by ETA so that the interaction works perfectly. It is conveniently controlled via a touchscreen on the boiler or via the internet, mobile or PC.

The integration of existing components or systems in the ETA system is no problem. There are hardly any requirements that the system cannot handle. As the standardized control system is very extensive, very complex systems can also be implemented without a lot of effort. The ETA module family takes over the most diverse of tasks – and is delivered ready to plug in. Each module is connected to the central hub with just one data cable – perfect plug & play for the entire central heating system!

An interface for superordinate instrumentation and control systems and for the QM wood heating stations, a quality management system that is important not only for public systems and subsidies, is already integrated into the system.

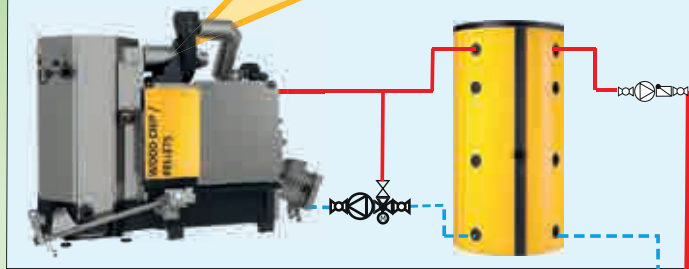
All data from the boiler and buffer storage tank can be regularly downloaded using a USB stick. It is very easy to evaluate the data, for example also via common systems like Excel spreadsheets. Superordinate control systems can be fed information via ModBus TCP too.



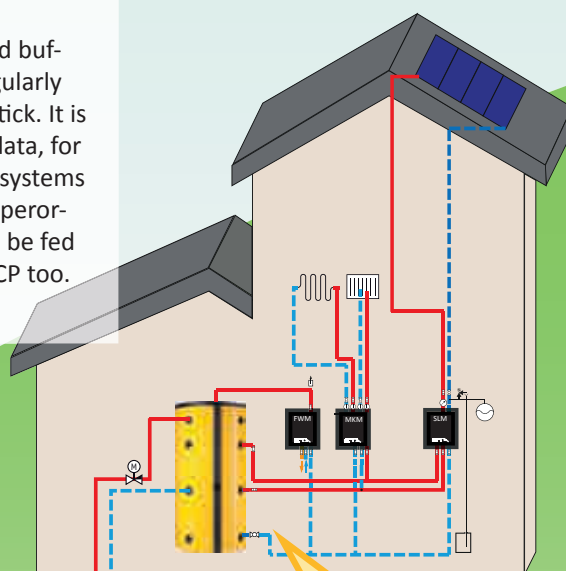
You can control the boiler via smartphone, PC or tablet as well as directly on the touchscreen.

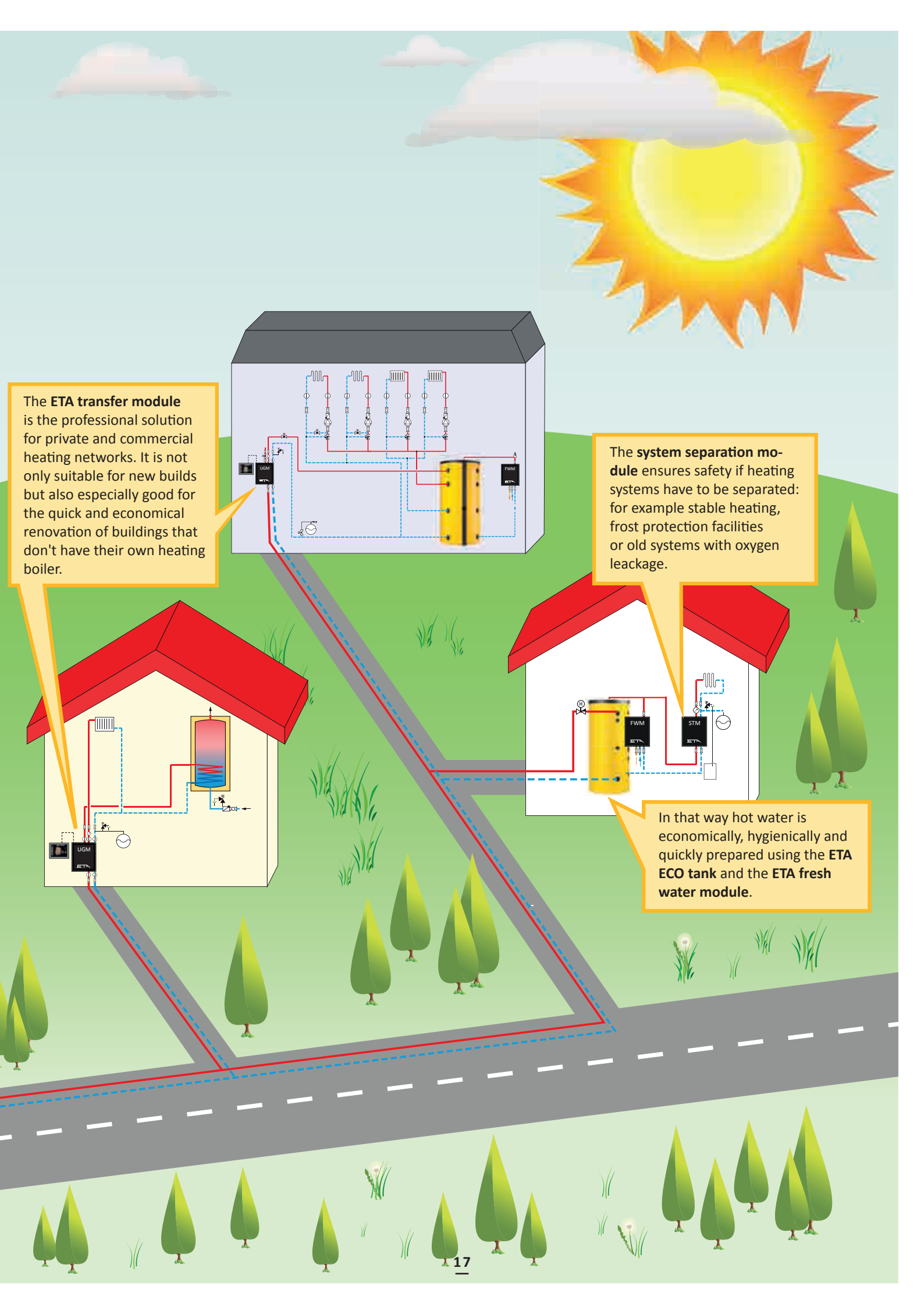
ETA planning service or support.

You don't have to reinvent the wheel, just know how it turns. The **ETA control system** offers a lot of possibilities to integrate existing systems. We support our customers with design advice and a multitude of suggested hydraulic systems.



Here, the **ETA stratified buffer**, the **fresh water module**, **mixing circuit module** and the **stratified charging module** work together perfectly.





The **ETA transfer module** is the professional solution for private and commercial heating networks. It is not only suitable for new builds but also especially good for the quick and economical renovation of buildings that don't have their own heating boiler.

The **system separation module** ensures safety if heating systems have to be separated: for example stable heating, frost protection facilities or old systems with oxygen leakage.

In that way hot water is economically, hygienically and quickly prepared using the **ETA ECO tank** and the **ETA fresh water module**.



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 VR 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 worry about all of 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 nine sensors in the tank control the heat generator in the system and distribute the energy to the different consumers. From 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

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 up to 20,000 boilers per year and a global export proportion of around 80%, ETA is one of the leading biomass boiler producers.

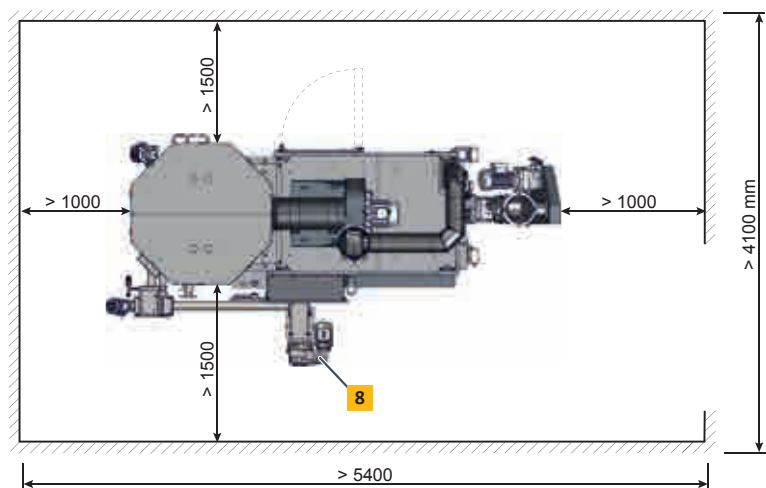
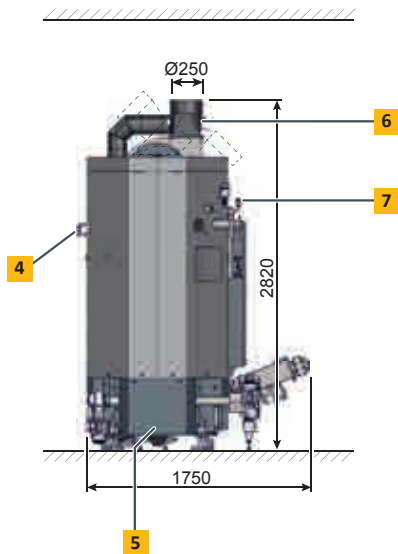
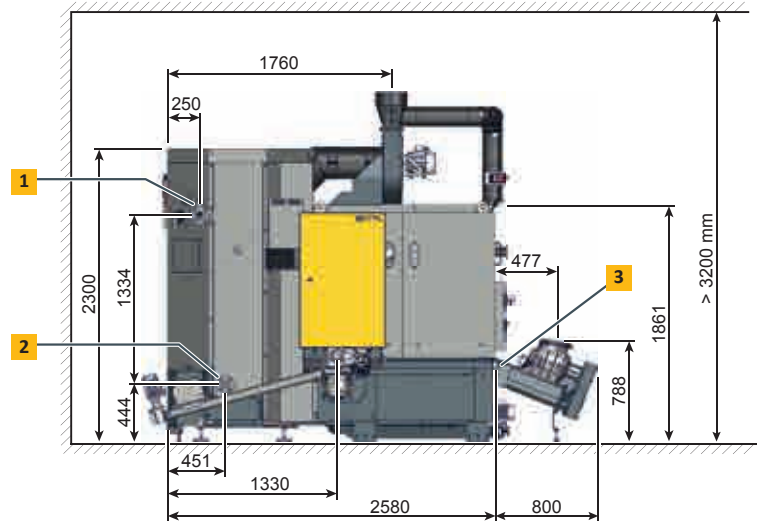
You get more than just a boiler

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.



ETA HACK VR 250

- 1 Flow with DN50 connecting flange
- 2 Return with DN50 connecting flange
- 3 Safety heat exchanger of the grate duct, connection R1/2" inside thread
- 4 Safety heat exchanger for heat exchanger, connection R1/2" inside thread
- 5 Discharge with coupling R1" (below panel)
- 6 Flue tube connector pivotable in 45° steps
- 7 Connection for safety valve R5/4"
- 8 De-ashing connection (left or right)





Wood chip boiler VR		250
Rated capacity, wood chips M25 BD 150 (W25-S160)	kW	74,9 - 249,9
Rated capacity, pellets	kW	74,9 - 249,9
Efficiency with spruce wood chips at partial / full load*	%	92,6 / 92,8
Efficiency with pellets at partial / full load*	%	92,4 / 92,7
Retort transport dimensions W x D x H	mm	1.375 x 1.685 x 1.890
Heat exchanger transport dimensions W x D x H	mm	1.240 x 1.300 x 2.210
Weight of combustion chamber	kg	1.850
Weight of heat exchanger	kg	1.060
Weight of one-chamber rotary valve with stoker	kg	124
Total weight	kg	3.144
Water content	litres	580
Flue draught required at partial / full load	Pa	>5 a draught limiter is required above 15 Pa
Maximum permissible operating pressure	bar	6
Temperature adjustment range	°C	70 – 95
Maximum permissible operating temperature	°C	95
Minimum return temperature	°C	60
Boiler class		5 acc. to EN 303-5:2012
Suitable fuels		Wood chips ISO 17225-4, P16S-P31S (G30-G50), maximum 40 % water content; pellets ISO 17225-2-A1, ENplusA1
Electrical connection		400 V AC / 50 Hz / 13 A / 3P + N + PE

* Values from test report of TÜV Industrie Service GmbH

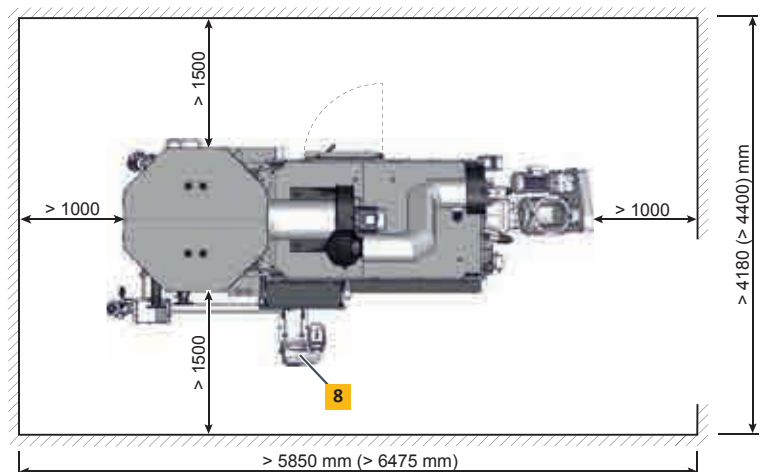
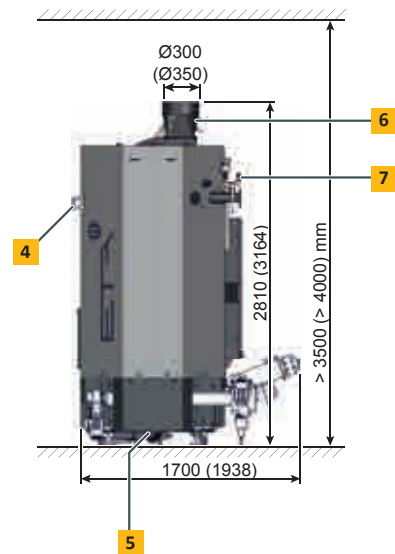
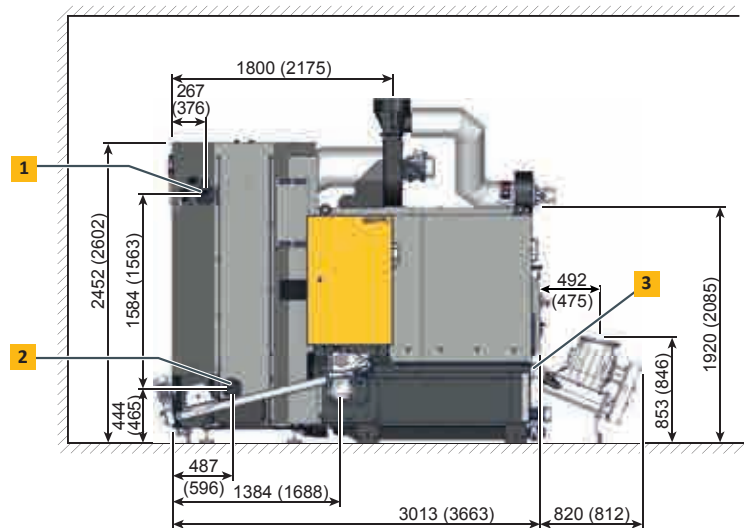
Technical changes and mistakes reserved!



ETA HACK VR 333 to 500

- 1 Flow with DN65 connecting flange
- 2 Return with DN65 connecting flange
- 3 Safety heat exchanger of the grate duct, connection R1/2" inside thread
- 4 Safety heat exchanger for heat exchanger, connection R1/2" inside thread
- 5 Discharge with coupling R1" (below cover)
- 6 Flue tube connector pivotable in 45° steps
- 7 Connection for safety valve 6/4" external thread
- 8 De-ashing connection (left or right)

Dimensions in brackets apply to the 500 kW boiler.





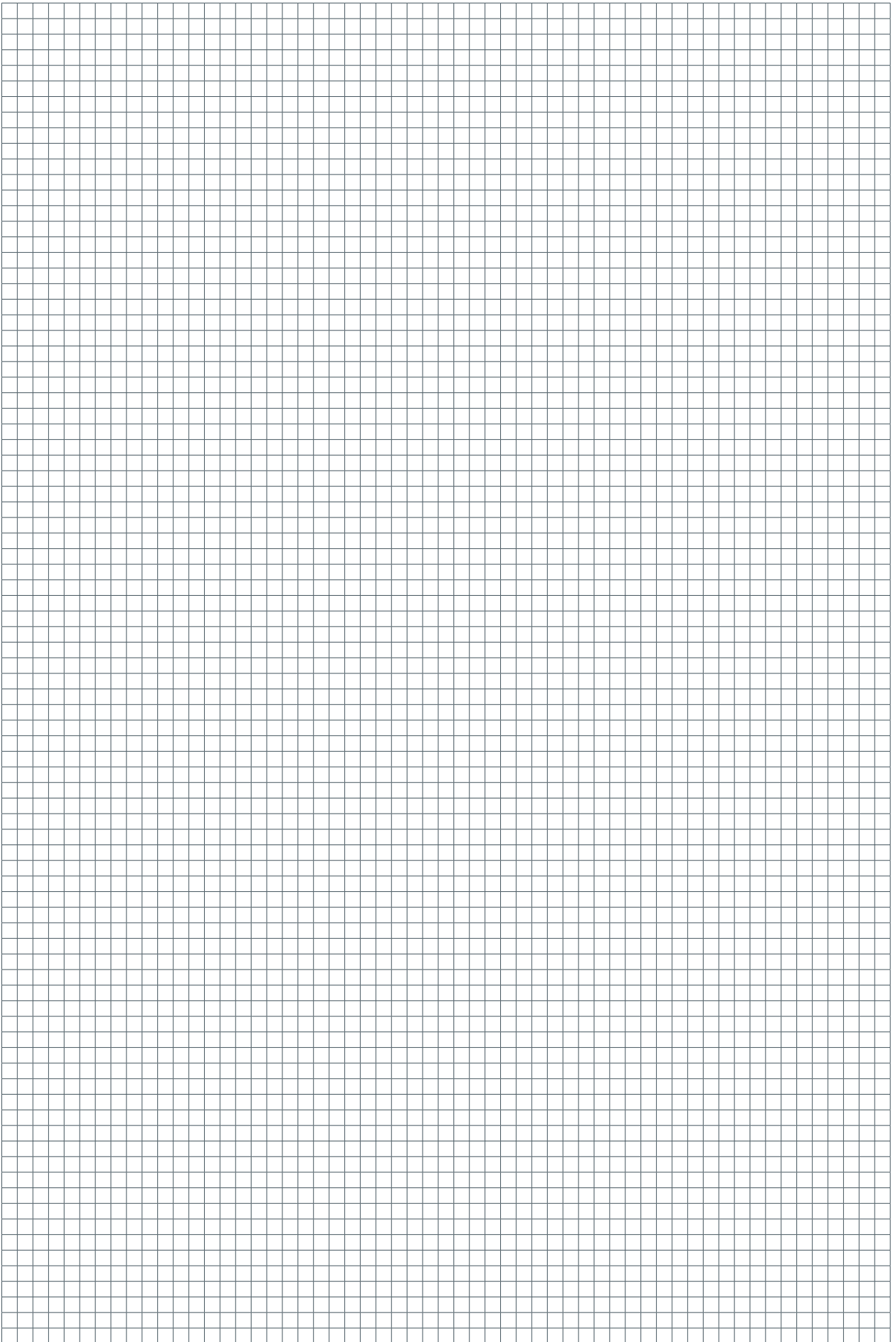
WOOD CHIP BOILER VR 333 - 500 kW		333	350	463	500
Rated capacity Wood chips M25 BD 150 (W25-S160)	kW	99 - 333	105 - 350	126 - 463	135 - 499
Rated capacity, pellets	kW	99 - 333	105 - 360	126 - 463	135 - 499
Required efficiency with spruce wood chips at partial / full load*	%	93.1 / 92.2	93.2 / 92.9	93,8 / 93,0	94 / 93
Efficiency with pellets at partial / full load*	%	92.9 / 92.9	93.0 / 92.9	93,6 / 93,1	93.8 / 93.2
Retort transport dimensions W x D x H	mm	1,300 x 2,000 x 2,000		1,600 x 2,300 x 2,200	
Heat exchanger transport dimensions W x D x H	mm	1,300 x 2,000 x 2,500		1,600 x 2,300 x 2,700	
Weight of combustion chamber	kg	2,505		3,170	
Weight of heat exchanger	kg	1,454		1,980	
Weight of single-chamber rotary valve / stoker	kg	211		221	
Total weight	kg	4,170		5,371	
Water content	Litres	747		1,095	
Water-side resistance (ΔT = 20 °C)	Pa/mws	9,000 / 0.9		12,000 / 1.2	
Flue draught required at partial / full load	Pa	>2 / >5			
Maximum permissible operating pressure	bar	6			
Temperature adjustment range	°C	70 – 90			
Maximum permissible operating temperature	°C	95			
Minimum return temperature	°C	60			
Boiler class		5 acc. to EN 303-5:2012			
Suitable fuels		Wood chips ISO 17225-4, P16S-P31S (G30-G50), maximum 40% water content; pellets ISO 17225-2-A1, ENplusA1			
Electrical connection		400 V AC / 50 Hz / 16 A / 3P+N+PE			

* Values from test report of TÜV Industrie Service GmbH

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NOTES





ETA PU PelletsUnit 7 to 15 kW



ETA PC PelletsCompact 20 to 105 kW



ETA ePE-K Pellet Boiler 100 to 240 kW



ETA SH Wood Gasification Boiler
20 to 60 kW



ETA SH-P Wood Gasification Boiler 20 to 60 kW
with ETA TWIN Pellet Burner 20 to 50 kW



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



ETA eHACK Wood Chip Boiler
20 to 240 kW



ETA HACK VR Wood Chip Boiler
with moving grate 250-500 kW



ETA Hydraulic modules

Your heating specialist will be happy to advise you:



... my heating system

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94601-EN, Prospekt ETA HACK VR 250-500 kW EN, 2020-05

