



... my heating system

## ETA SH

Wood gasification boiler with top  
fuel efficiency  
20 to 60 kW

## ETA SH-P with TWIN

The flexible boiler  
Heating with logs and pellets  
20 and 30 kW (SH-P)  
20 and 26 kW (TWIN)



A passion for perfection.

[www.eta.co.at](http://www.eta.co.at)

# ETA SH log boiler

## Convenient heating with wood

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### Just add wood — no need for matches

When you open the outer insulating door, the induced draught fan starts up automatically and quietly. Then you open the fuel chamber door and add half-metre logs. A carbonisation gas extraction duct above the fuel chamber door prevents the escape of smoke and odours from the open boiler. The fuel chamber accommodates enough half-metre logs to ensure that replenishment is only necessary once a day, or twice on cold winter days. When you close the fuel door, the replenished wood is ignited by the remaining embers from the last fire. No paper, kindling or matches are required, nor is there any need for an automatic ignition. You can clean the heat exchanger with a few pulls on the cleaning lever. The ashes only need to be removed from the boiler once a week, or every 14 days during transition periods. It sounds simple because it is – after all, user-friendliness is paramount at ETA.



### Logs and pellets

The SH-P model features flanges (left and right) for attachment of an automatic pellet burner, which activates automatically if no fuel is added over a specified period (adjustable interval, time of day or weekday).



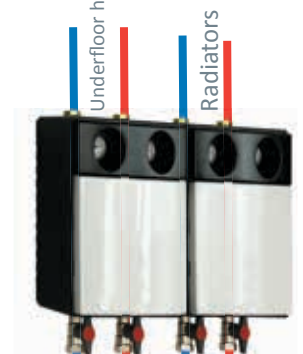
### Room temperature sensor alerts you when replenishment is needed

When it's time to add fuel, a green signal lamp lights up. Of course you can also set the desired room temperature or switch between day, night, and automatic mode.



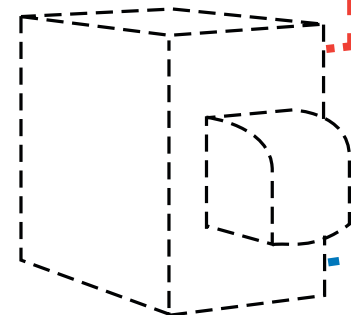
### Control system with 5.7" touchscreen

Perfect overview of the entire heating system.



### Safe return riser

The buffer charging pump reaches the full flow temperature immediately after ignition, while a return riser controlled by a mixing valve prevents condensation of flue gases in the heat exchanger, which could cause boiler corrosion. The mixing valve control also enables utilisation of the residual boiler heat at the end of the combustion phase.



### An oil, gas or pellet boiler can also be integrated

If no fuel is added for an extended period or no heating takes place up to a specific time of day, the wood boiler can activate an oil, gas or pellet boiler.

## Solar heating in the summer

With 8 to 12 m<sup>2</sup> of solar panels (2 m<sup>2</sup> per person), you can let the sun produce your hot water in the summer. And of course our control system can also regulate a solar heating system perfectly.



## Space-saving, hygienic hot water

With a fresh water module, hygienic hot water is produced exactly when it's needed and the water heater is integrated in the buffer, effectively minimising space requirements. A conventional hot water tank can also be used, of course.

## If you have a low ceiling

you can connect two smaller buffer storage tanks.



## Rapid heating

During ignition, the ETA buffer management reduces the buffer volume by means of a start relief valve (optional accessory). Your home then benefits from the full boiler output and any residual heat from the upper buffer section is used to accelerate the heating process.

## Whatever the season, with a buffer you can replenish fuel when you have the time

A wood fire that can't easily be turned down can have problems in autumn and spring, when minimal heating is required. A buffer can store any excess boiler output, allowing the ETA control system to store heat in the buffer storage tank overnight so you'll be welcomed by a warm bathroom in the morning and can enjoy a relaxing breakfast before adding more fuel. In the summer, your hot water supply will only require heating every three or four days, or maybe only once a week in combination with a fresh water module that better utilises the buffer with its low return temperatures.

In Germany, 1. BImSchV (first Federal Emission Control Act) stipulates a minimum buffer volume of 55 litres per kW of boiler output. For a 30 kW boiler, that's 1,650 litres, which is a thoroughly adequate buffer volume. The lower the return temperature to the buffer, the greater its heat storage capacity. For radiators, finely adjustable thermostat valves can be used to optimise buffer utilisation.

# ETA SH

## A clean fire with maximum fuel efficiency

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### Wood gasification

Before wood can burn, it must first be converted into gas by application of heat. The decomposition into 20% charcoal and 80% wood gas begins at 200°C, which explains the long gas flame of a wood fire.

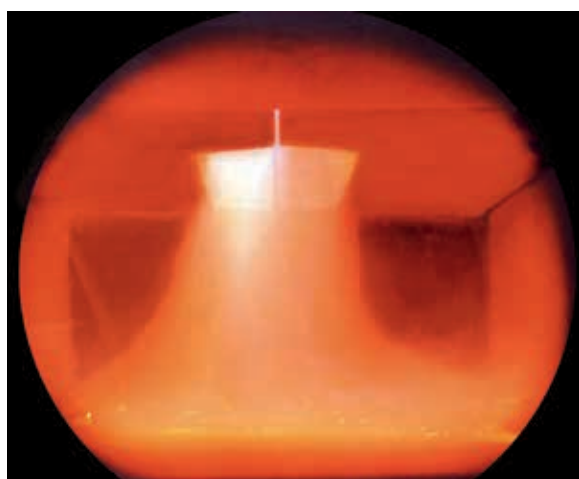
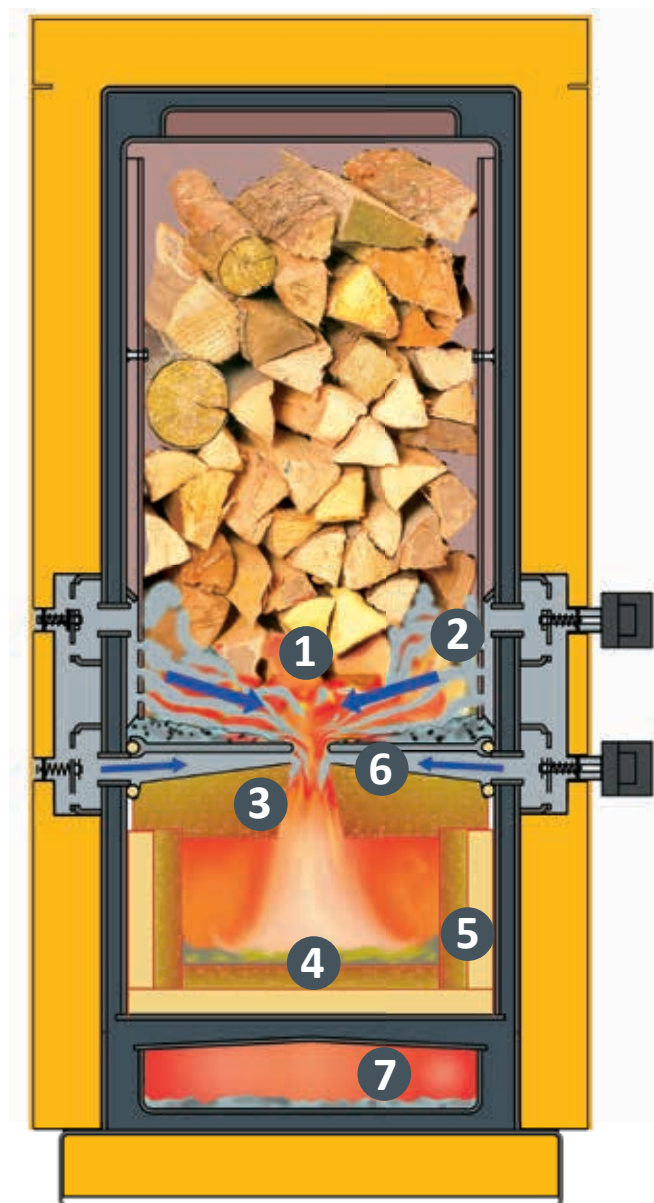
### Large wood supply in the fuel chamber

A small gasification fire burns at the base of the wood stack in the fuel chamber (1). The air supply must be kept to a minimum to prevent uncontrolled gasification and burning of the wood stack in the fuel chamber. The electronic controls of the ETA SH regulate the output of the gasification fire via the primary airflow (2) for slow and controlled burning and a long combustion period in a boiler with a large volume of wood. The wood gas in the fuel chamber is drawn downwards into a hot combustion chamber.

### No electrical ignition

After the fuel chamber door is closed, fresh wood is ignited by the remaining embers of the last fire, without the need for paper or matches. This is both simpler and more effective than an electrical ignition that requires fine kindling to start.

Igniting the ETA SH is also uncomplicated even after extended breaks in combustion. Just a few sheets of newspaper are needed to light the fire through the ignition door. The induced draught fan ensures rapid ignition and you can close the door and leave the boiler after just a few minutes, during which time you can prepare the wood for the next filling.



### Mixing nozzle and complete turbulence

A mixing nozzle (3) is located between the fuel and combustion chambers in the ETA SH. This is where preheated combustion air (secondary air) (6) is mixed with the wood gas. The flame exiting the mixing nozzle hits the hot bottom of the combustion chamber with high velocity and experiences further turbulence (4), ensuring that every bit of combustible gas finds sufficient oxygen for complete burnout.

### Complete burnout in patented glow zone chamber

To achieve combustion at high temperatures, the patented ETA glow zone combustion chamber is made of refractory ceramic material and is also thermally insulated (5). In this glow zone, the flame has enough time at temperatures between 900°C and 1100°C to break down and burn the very last of the resistant carbon rings (wood tar).

### Dust or minerals

The emission levels of the ETA SH are already below the extremely strict dust thresholds that will come into force in Germany on 1 January 2015. The fine dust produced by our wood fires consists primarily of non-toxic minerals such as calcium carbonate and other calcium and magnesium compounds.

### Wood isn't just wood

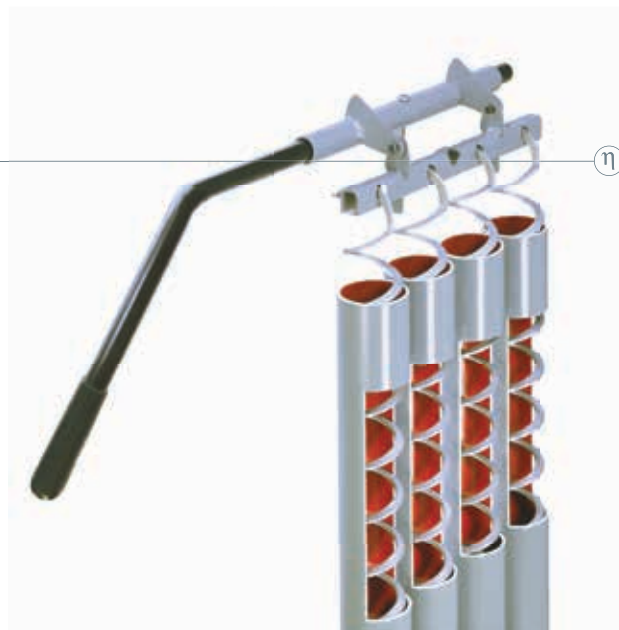
Theoretically, split beech logs that have been stored for one to two years are the ideal fuel. However, our forests contain many other trees such as spruce, poplar etc., each producing both thick logs and thin branches. The ETA SH features a combustion control system with lambda probe and can handle all types of wood. You can fill your boiler with mixed wood or even wood briquettes. It's not up to you to adapt the fuel to the boiler – the ETA SH automatically adapts to the supplied wood.

### Optimum fuel efficiency with lambda control

By means of the lambda-regulated secondary air (6), combustion is kept clean and highly efficient.

With too little air, there is not enough oxygen for complete combustion. On the other hand, too much air also results in incomplete combustion as it cools the fire. Below 700°C, not all of the wood gas is burned. Excessive air also draws too much heat out of the boiler unused.

The lambda probe in the ETA SH ensures optimum combustion and maximum fuel efficiency, not only with selected wood on the test stand but also in everyday operation.



### Turbulent heat exchanger with easy cleaning

Only when the combustion process is fully completed does the hot gas flow into the cold part of the boiler, where it transfers its heat to the boiler water. In the ETA SH, this process starts slowly via a long ash sedimentation channel (7) before becoming more turbulent through heat exchanger tubes equipped with turbulators. The more turbulent the flow, the more the gas comes into contact with the tube walls, ensuring maximum transfer of heat to the boiler water as well as low exhaust gas temperatures and high efficiency.

Two or three pulls on the cleaning lever following each fuel replenishment move the turbulators up and down in the heat exchanger tubes. The resulting flue ash drops into the ash collecting duct, leaving the heat exchanger clean.

### Induced draught keeps flue gas in boiler

Thanks to the induced draught concept, the entire interior of the boiler is under negative pressure. As a result, no flue gases can escape from the boiler, regardless of the phase of operation.

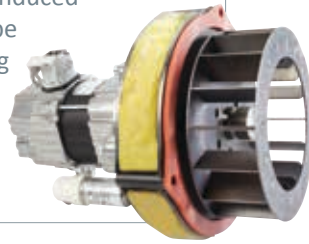


# ETA technology

## Perfection down to the last detail

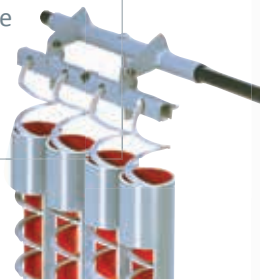
### A Reliable underpressure with draught fan

A quiet, variable-speed draught fan (just 76 watts) with feedback function ensures constant underpressure and high operating reliability independently of the flue draught. No draught limiter is required for flue draughts of up to 30 Pa. The induced draught also prevents the escape of carbonisation gas when adding fuel.



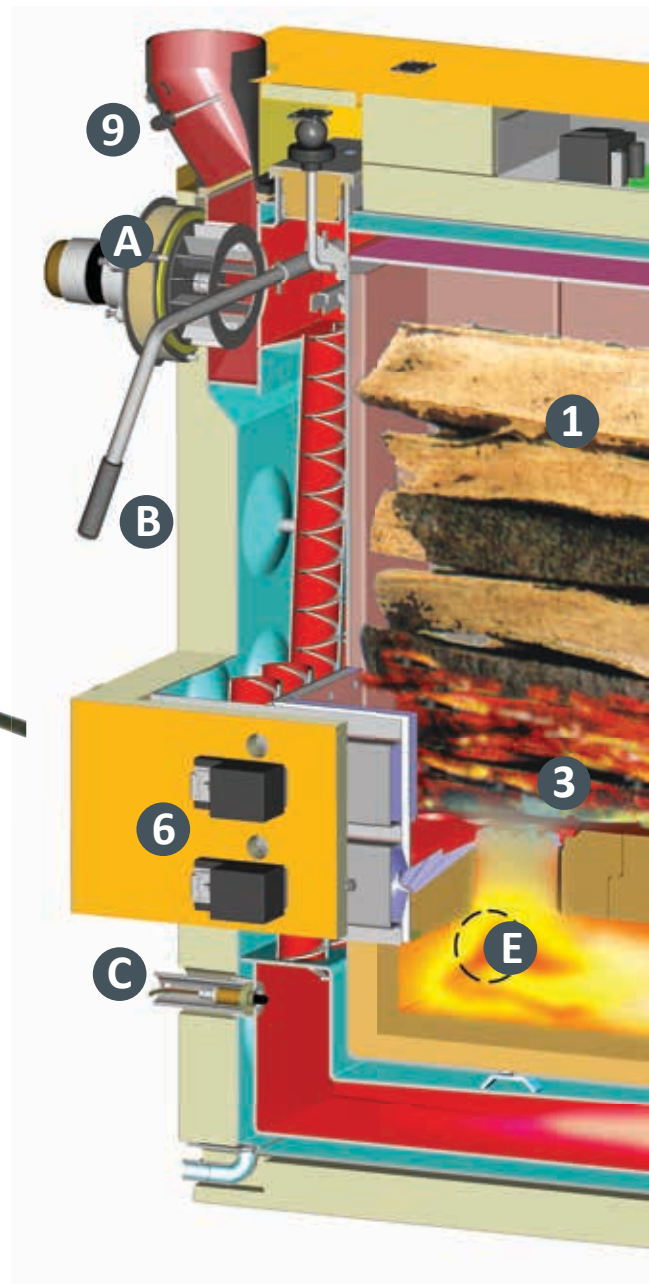
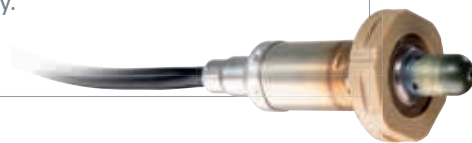
### B Heat exchanger cleaning

The heat exchanger tubes can be kept clean with a few daily pulls on the cleaning lever. A clean heat exchanger improves the efficiency of the boiler.



### C Lambda probe

The lambda probe allows the control system to regulate the use of different fuels (wood type and size) and optimise primary and secondary air depending on output. This ensures clean combustion with a high level of efficiency.



#### 1 Large fuel chamber

150 litres in SH 20/30 and 223 litres in SH 40/50/60, for half-metre logs with depth of 56 cm

#### 2 Carbonisation gas extraction

prevents escape of smoke when adding fuel

#### 3 Ignition without matches

thanks to long ember retention

#### 4 Ignition door

Simple ignition via the middle door if no embers remain in the boiler

#### 5 Easy ash removal

Ash removal just once a week via the combustion chamber door in front; no side-mounted doors

#### 6 Primary and secondary air valve actuator

with monitored position feedback



**D A complete control system for your heating system**

Combustion control, buffer management, hot water heating (tank or fresh water), weather-based heating circuit control with weekly programme for two circuits, solar heating system, active monitoring of all functions and drives, LAN connection for remote operation via Internet (PC, Smart TV or smartphone) and USB connection.



**E Patented glow zone combustion chamber**

To maintain temperatures of 900 to 1100°C in order to ensure full burnout, the patented ETA glow zone combustion chamber is thermally insulated. The multi-part construction with expansion joints allows the combustion chamber to withstand these stresses for extended periods.



**If it's tight in the boiler room**

Either side of the boiler can be positioned directly next to the wall. There are no cleaning doors on the rear or sides of the machine. The boiler is delivered with the hinges on the right, but they can easily be moved to the left side. The cleaning levers and actuators can also be mounted on the left or right.

**7 Insulated door**

With all-round thermal insulation and an additional insulated door, radiation losses amount to just 0.6%. The combustion air is sucked in behind the insulated door so that the heat loss from the boiler doors is used to pre-heat the air.

**8 5.7" touchscreen**

installed in front door to protect it during fuel re-filling

**9 Exhaust temperature sensor**

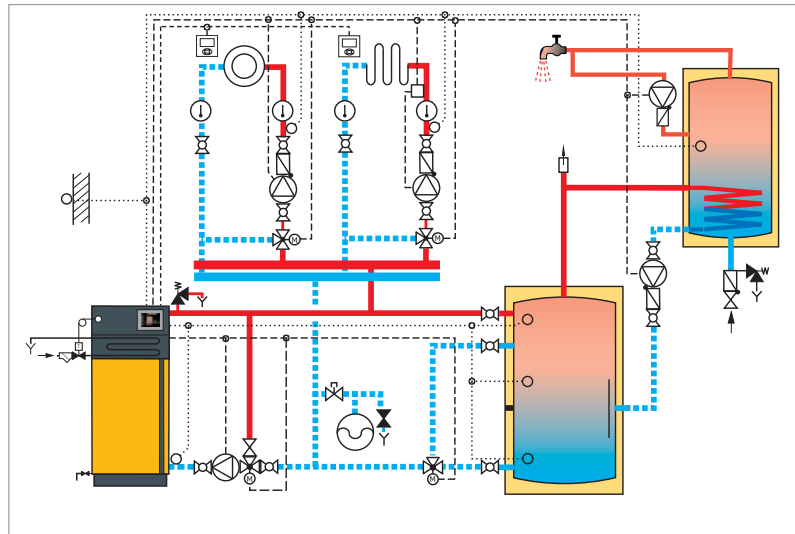
Fine adjustment of minimum and maximum exhaust temperature to enable adaptation to an existing chimney

**10 Delivery condition**

The boiler is supplied without attached panels. Only when installation is complete and the boiler room is clean should the plug-in electronics and the panels be unpacked and fitted to the boiler.

### Standard features

- ① Output modulation with variable-speed draught fan
- ① Combustion regulation with lambda-controlled fuel adaptation
- ① Continuous monitoring of operating state, including lambda and exhaust temperature, boiler and tank temperatures, return riser, speed feedback from draught fan and position feedback from air valve actuators; plain text notification of faults and troubleshooting instructions
- ① Buffer charging pump and return riser via mixing valve with output management
- ① Two weather-based heating circuits with weekly programme, three daily time slots, come-and-go function, holiday set-back mode; optionally expandable with room sensors and remote control
- ① Selection of 5 temperature displays
- ① Standard LAN connection for remote control via Internet, optional GSM modem for SMS notifications
- ① Automatic continuation of operation with oil/gas boiler or pellet burner



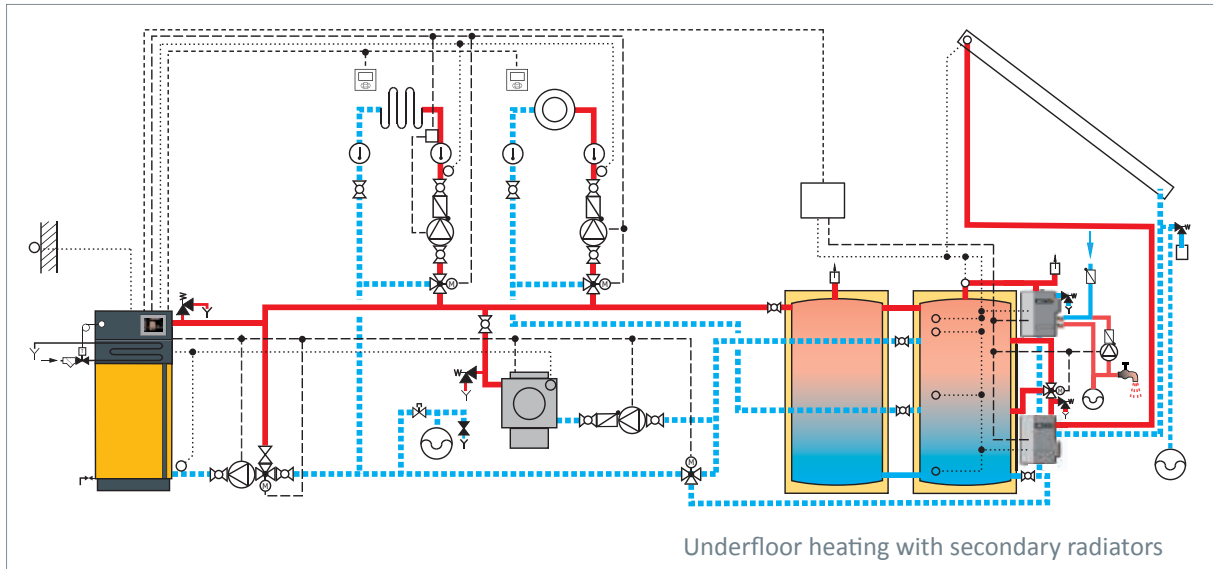
### 4 free outputs for a selection from the following 4 functions:

- ① Hot water supply with tank, fresh water module or internal water heat exchanger in a buffer with a weekly programme
- ① Hot water circulation pump with time programme or, in case of fresh water module, start with brief opening of tap by flow switch
- ① Solar heating system with variable-speed pump, solar heat quantity calculation

- ① Pump for heating pipeline or external consumer with/without mixing valve (one of the two heating circuit outputs is required for the mixing valve)

### Optional expansion with wall housing

- ① Two additional heating circuits
- ① 4 additional outputs
- ① Regulation of complex solar heating systems with stratified charging



Underfloor heating with secondary radiators



# ETA TWIN

## Automatic pellet replenishment

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What if you have wood, but not enough to heat your home for the entire winter? Or you want to use split logs but often like to go away for the weekend and would like to come back to a nice warm house? The ideal solution for you is the ETA SH-P split log boiler combined with the ETA TWIN pellet burner.

If you only want to use split logs for now and plan to introduce pellets at a later stage, your best choice of wood gasification boiler is the ETA SH-P model with pellet flanges, which allow the later attachment of an ETA TWIN pellet burner.

### Automatic switching

The pellet combustion chamber is separated from the split log furnace, thus enabling flexible switching between split logs and pellets. Once the split logs have been burned and the buffer is empty, a red signal on the room sensor in your living quarters alerts you to add more fuel. If you do not replenish within the interval set in the control system, the boiler automatically heats with pellets. When you open the boiler door to add more split logs, pellet operation is automatically deactivated.

### Self-cleaning rotating grate

The patented rotating grate developed by ETA is self-cleaning. After 25 to 35 kg of pellets, it is rotated through a cleaning comb in order to remove ash and slag from the air gaps. A clean grate ensures smooth air flow through the fuel, and during combustion the firebed is stoked by gentle movements of the grate. This results in a high level of pellet burnout, which in turn minimises ash production while ensuring optimum fuel efficiency.



### Options for ideal pellet storage

Thanks to the suction-based transport of the pellets to the boiler, the pellet store can be situated up to 20 m away and can also be either above or below the boiler room. To adapt an existing room, we recommend the use of our modular discharge screw system. However, you can also use suction heads, a bag silo or an underground tank outside the house. The pellet store and the boiler are linked via two flexible DN 50 hoses, one for sucking in the pellets and the other for the back air to the store.

For a 12 kW heating load, a 2 x 2.5 m room with a 2.4 m high ceiling can accommodate the entire annual pellet supply as well as a 20% reserve for especially cold winters. Pellets generally require a larger „tank room“ than is needed for oil heating.



# ETA SH-P and TWIN

## Heating with split logs and pellets

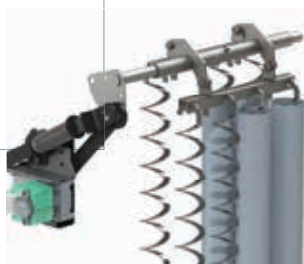
### A Pellet hopper

Pellet bin 60-kg pellet storage on boiler reduces the duration of pellet feeding between the store and the boiler to one daily ten-minute feed. The time of pellet transport can be set in the control system.



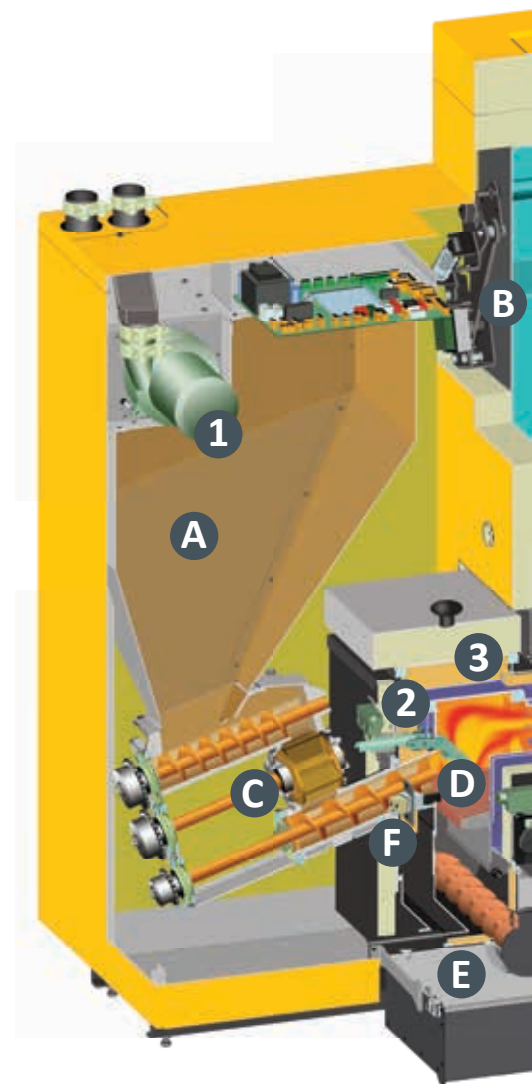
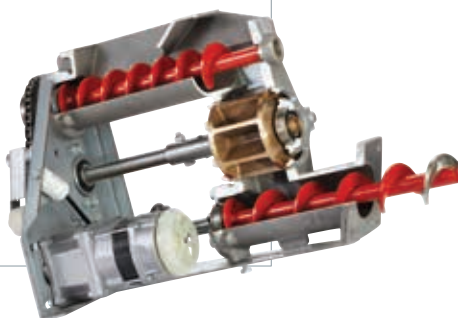
### B Heat exchanger cleaning

Fully automatic with turbulators. A clean heat exchanger improves the efficiency of the boiler.



### C Rotary valve for safety

The rotary valve ensures absolute burn-back protection. A metering screw feeds the pellets from the bin into the rotary wheel. There is no need to cut pellets and wear on the sealing edges is prevented, so burn-back protection is maintained throughout the service life of the boiler.

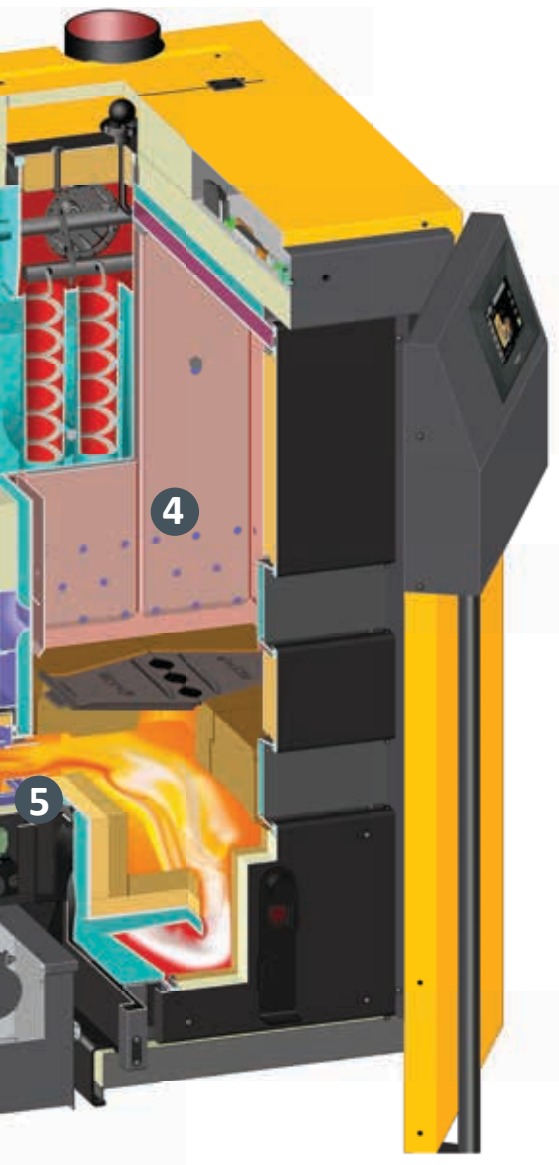


### 1 Vacuum motor for pellet transport

Transports pellets from the store to the pellet bin; suitable for distances up to 20 m and height differences of up to two floors

### 2 Closed gasification zone for pellets

prevents unburned pellets from falling into the ash removal system



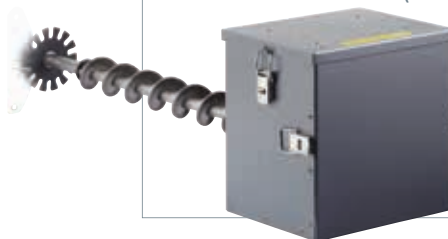
#### D Self-cleaning, patented rotating grate

The system performs a cleaning procedure after 25 to 35 kg of pellets. The grate is rotated through a comb to remove ash and slag from the air gaps. During combustion, the firebed is stoked by gentle movements of the grate, ensuring ideal burn-out with minimum ash production.



#### E Automatic ash removal

The ash from the pellet burner is compressed in a removable ash box (18 litres), which only has to be emptied two to three times per heating season.



#### F Continued operation with automatic ignition

When split logs are not being used for heating, the pellet burner starts automatically when heat is required. Ignition occurs automatically. The times of pellet operation are configurable; you can select a time of day, specific weekdays or a minimum period (up to 48 hours) since the last split log fire.



#### 3 Separate pellet combustion chamber

Optimises the fuel efficiency of the pellets and enables automatic switch from logs to pellets without manual conversion or switching even if you are not at home, since the pellet burner starts automatically before the temperature falls too far.

#### 4 Large fuel chamber for logs

Accommodates half-metre logs, making this a fully-fledged log boiler with a long combustion period; normally only one daily replenishment required, or two on very cold days

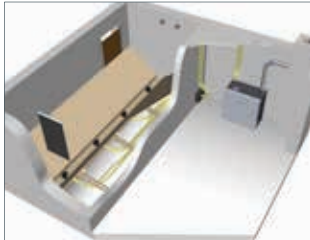
#### 5 Connection flange in glow zone chamber

The flue gases are transferred from the pellet combustion chamber into the hot post-combustion chamber of the log boiler. Following completion of the burnout process, the energy is transferred to the hot water in the boiler's heat exchanger



### Up to 20 m possible separation between boiler and store

The ETA storage concepts can be adapted to any room configuration and are combined with a suction-based transport system from the pellet store to the boiler via flexible hoses. The vacuum motor integrated in the boiler can easily overcome distances of up to 20 metres or height differences of up to two floors.



A 60-kg day bin in the boiler reduces the duration of pellet transport to 1 or 2 10-minute feeds per day, and you can set the preferred time of day for transport in the control system.

Thanks to ETA's modular fuel conveying systems, any existing room can be converted into an ideal pellet store – including an oil tank room.

### ETA's standard solution – the discharge screw



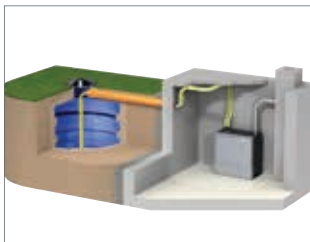
A screw, up to 5 m long, extends across the entire store, emptying it safely and completely. The separation of discharge conveyor (screw) and transport (vacuum motor) makes it possible to clear the hoses after every transport and overcome height differences of two floors.

### When a screw is impractical: pneumatic fuel conveyer



For stores in which installing a screw presents problems, ETA offers a pneumatic fuel conveying system with up to four suction heads, which are combined into a single system by means of an automatic switch unit. For stores with a surface area smaller than 2 m<sup>2</sup> and an annual pellet consumption less than 2 tons, a single suction head is possible.

### ETAbox – for a small store in a big room



The ETAbox was originally intended for auxiliary rooms. Now, changes to legislation in most German states allow 6.5 tons of pellets in the same room as the boiler (maximum 50 kW). In Switzerland, up to 6.5 tons of pellets can be stored in a separate boiler room. Individual states in Austria allow the storage of up to 10 tons of pellets in the boiler room.

### And if there's really no room in the house: an underground tank

An underground pellet tank is available from [www.geoplast.com](http://www.geoplast.com), for example.

Usable cross-section of pellet storeroom in square metres									
40° floor tilt, upper clearance of 0.40 m									
Width of store in metres	Height of store in metres								
	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6
2.0	2.10	2.50	2.90	3.30	3.70	4.10	4.50	4.90	5.30
2.4	2.32	2.80	3.28	3.76	4.24	4.72	5.20	5.68	6.16
2.8	2.47	3.03	3.59	4.15	4.71	5.27	5.83	6.39	6.95
3.2		3.20	3.84	4.48	5.12	5.76	6.40	7.04	7.68
3.6				4.73	5.45	6.17	6.89	7.61	8.33
4.0						6.52	7.32	8.12	8.92

Cross-section x room length (screw axis) = store volume  
 Store volume x 0.650 ton/m<sup>3</sup> = pellet store in tons

<b>Heating value of pellets</b> = 4.9 kWh / kg
<b>Density of pellets</b> = 650 kg / m <sup>3</sup>
<b>Rules of thumb for pellet requirements</b>
9 kW heating load / 3 = 3 tons of pellets per year
9 kW heating load / 2 = 4.5 cubic metres per year
1,470 l heating oil x 2.04 = 3,000 kg of pellets
1,550 m <sup>3</sup> natural gas x 1.94 = 3,000 kg of pellets
2,220 l LPG x 1.35 = 3,000 kg of pellets
1,820 kg coke x 1.65 = 3,000 kg of pellets
Ground source heat pump with COP 3.4
4,230 kWh of electricity x 0.71 = 3,000 kg of pellets
Air source heat pump with COP 1.8
8,110 kWh of electricity x 0.37 = 3,000 kg of pellets

## ETAtouch – Accessible anytime, anywhere

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### With two taps of your finger

you can reach your goal with the ETAtouch control system's touchscreen. The icons on the screen are self-explanatory. With the first tap, you select the part of the heating system you want to change. With the second, you select the function to change. And you get this convenience for the entire heating system, including solar panels.

### Remote control with ETAtouch

With ETAtouch, your boiler can be remotely operated via smartphone, tablet or PC if the boiler room has an Internet-capable LAN connection.

### Convenient holiday function

You can already enter your departure and return dates into the control system a few days before your holiday. During this time, the heating system will switch to set-back mode and start up again before your return. With remote control via smartphone, you can still change to set-back after your departure. And sometimes things don't go as planned. If you have to end your holiday prematurely, you can restart the heating system earlier via smartphone.

### Worldwide access via "meinETA"

Remote access is possible via the "meinETA" Internet platform, which is free of charge for ETA customers. After registering on this platform, you can access the boiler from anywhere in the world: from a tablet PC on the sofa in your living room, a hotel PC and of course any smartphone. And of course access to the boiler is protected by user name and password.

To see how remote operation of your boiler could work, visit [www.meinETA.at](http://www.meinETA.at).

### If you forget your boiler, it sends you an e-mail.

Since the ash box (on ETA TWIN) only needs emptying once or twice a year, when the boiler is running faultlessly you won't need to look after it every day. But if it does need human intervention, it will send you an e-mail.

### Better preparation for service

In the event of a malfunction, you can grant the heating technician or customer service remote access to the boiler. Then every service call can be better prepared, and the service technician can be assured of bringing the right spare parts. An expert can intervene via remote access, often making a service call unnecessary as smaller problems can often be diagnosed remotely by the expert and solved by the customer with over-the-phone assistance from the expert.

## Wood gasification boiler ETA SH 20 to 60 kW SH-P with 20 and 30 kW

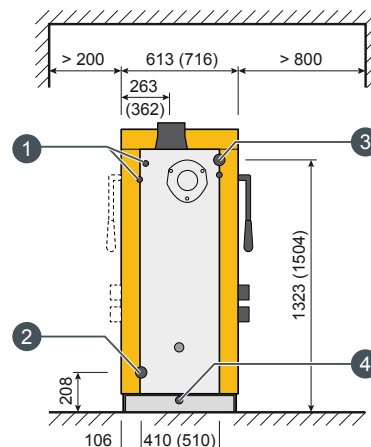
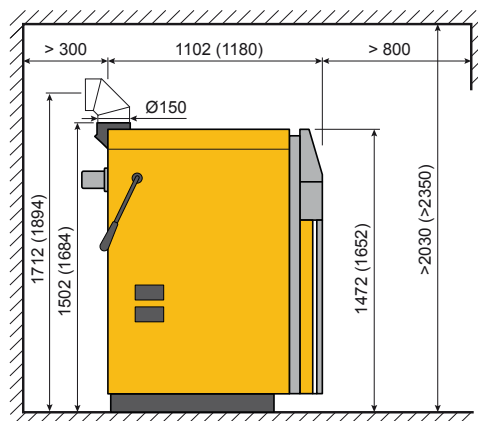
Numbers in brackets for 40, 50 and 60 kW

### SH 20-30 kW (40-60 kW)

- 1 Safety heat exchanger R1/2" outside thread
- 2 Return with coupling R5/4"
- 3 Flow with coupling R5/4"
- 4 Discharge with coupling R1/2"

Cleaning levers and actuators can be mounted on the left or right.

Dimensions in parentheses apply for the boilers with 40-60 kW



## Wood gasification boiler SH

20      30      40      50      60

Rated capacity	kW	10 - 20	15 - 30	20 - 40	20 - 49,9	20 - 60
Beech log efficiency, partial/full load*	%	95,4 / 92,9	92,7 / 89,3	93,6 / 91,4	93,6 / 91,4	93,6 / 91,4
Fuel chamber	mm	560 mm deep for 0,5 m logs, 340 x 365 mm door opening				
Fuel chamber volume	Litres	150		223		
Beech log combustion period, partial/full load*	h	19,2 / 8,6	12,1 / 6,3	14,1 / 7,1	14,1 / 5,6	14,1 / 4,7
Dimensions without housing, W x D x H	mm	588 x 940 x 1.495		688 x 1.015 x 1.675		
Weight	kg	580	583	791	793	795
Water content	Litres	110		170		
Waterside resistance ( $\Delta T = 20^\circ C$ )	Pa / mWs	190 / 0,019	370 / 0,037	220 / 0,022	340 / 0,034	480 / 0,048
Flue gas mass flow rate, partial/full load	g / s	7,0 / 12,8	10,4 / 18,6	12,2 / 24,0	12,2 / 30,2	12,2 / 35,4
CO <sub>2</sub> -content in dry flue gas, partial/full load*	%	12 / 14	12 / 14	14 / 14,5	14 / 14,5	14 / 15
Exhaust temperature, partial/full load*	°C	100 / 130	100 / 140	90 / 145	90 / 150	90 / 160
Flue draught		2 Pa for partial load / 5 Pa for full load required over 30 Pa draught limiter required				
Carbon monoxide (CO) emission Partial/full load*	mg/MJ mg/m <sup>3</sup> 13%O <sub>2</sub>	153 / 145 241 / 229	43 / 94 65 / 143	120 / 30 182 / 46		
Dust emissions full load*	mg/MJ mg/m <sup>3</sup> 13%O <sub>2</sub>	10 15	7 10	10 15		
Unburned hydrocarbon emissions (CxHy) Partial/full load*	mg/MJ mg/m <sup>3</sup> 13%O <sub>2</sub>	2 / 3 3 / 4	19 / 7 25 / 10	2 / < 1 3 / < 1		
Electrical power consumption Partial/full load*	W	69	86	87		
Recommended buffer storage tank volume	Litres	> 1.100, opt. 2.000		> 2.200, opt. 3.000		
Maximum permissible operating pressure	3 bar	Boiler rating		5 according to EN 303-5:2012		
Temperature adjustment range	70 – 85°C	Suitable fuels		Spruce and beech up to W20		
Maximum permissible operating temperature	95°C	Electrical connection		1 x 230 V / 50 Hz / 13 A		
Minimum return temperature	60°C					

\*Data from test reports of BLT Wieselburg, log numbers 041/10, 028/99 and 007/00.  
The test reports of BLT Wieselburg can be found on the Internet at: [blt.josephinum.at](http://blt.josephinum.at)



Conforms to  
EU standards



BLT Wieselburg  
Austria



TÜV  
South Germany



Quality seal of  
Holzenergie Schweiz



Austrian  
ecolabel



Listed on the Energy  
Technology List



The Certification Mark for Onsite  
Sustainable Energy Technologies

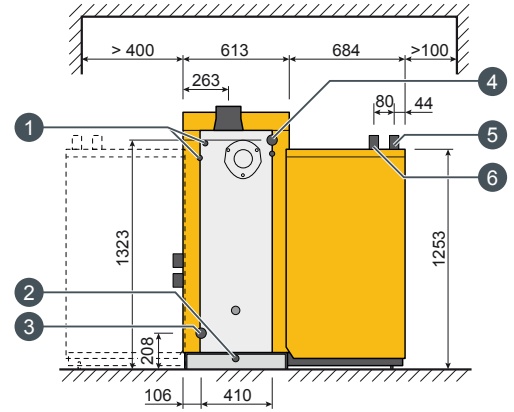
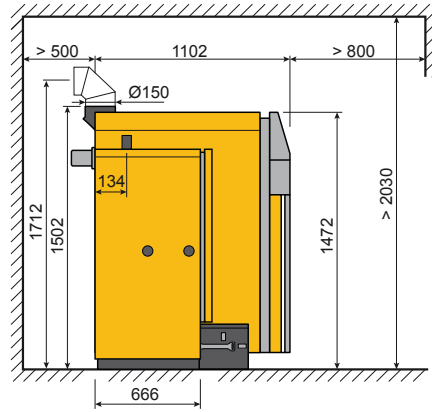
# Wood gasification boiler SH-P 20 and 30 kW and pellet burner ETA TWIN 20 and 26 kW

The boiler can be supplied with left- or right-mounted pellet feed.

## TWIN 20-26 kW

- 1 Safety heat exchanger R1/2" outside thread
- 2 Discharge with coupling R1/2"
- 3 Return with coupling R5/4"
- 4 Flow with coupling R5/4"
- 5 Pellet suction hose DN50
- 6 Pellet back air DN50

The pellet burner can be supplied for installation on the right or left side.



Pellet burner TWIN		20	26
Rated capacity, wood gasification boiler	kW	10 - 20	15 - 30
Rated capacity, pellet burner	kW	6 - 20	7,5 - 26
Efficiency of wood gasification boiler, partial/full load*	%	95,4 / 92,9	92,7 / 89,3
Efficiency of pellet burner, partial/full load*	%	87,8 / 92,0	87,7 / 91,5
Fuel chamber, log wood	mm	560 mm deep for 0,5 m logs, 340 x 365 mm door opening	
Fuel chamber volume, log wood	Litres	150	
Beech log combustion period, partial/full load	h	19,2 / 8,6	12,1 / 6,3
Dimensions, W x D x H	mm	684 x 666 x 1253	
Weight with / without pellet burner	kg	728 / 580	728 / 583
Water content	Litres	110	
Waterside resistance (ΔT = 20 °C)	Pa/mWs	190 / 0,019	370 / 0,037
Pellet bin on boiler (net)		60 kg (294 kWh)	
Maximum distance of boiler pellet store	m	20	
Ash box volume	Litres	11	
Flue gas mass flow rate, pellet partial/wood gasification full load	g / s	5,8 / 12,8	7,2 / 18,6
CO <sub>2</sub> -content in dry flue gas, partial/full load*	%	9,0 / 14,0	9,0 / 14,0
Exhaust temperature, pellet partial/wood gasification full load*	°C	90 / 140	95 / 160
Flue draught		2 Pa for partial load / 5 Pa for full load required over 30 Pa draught limiter required	
Carbon monoxide (CO) emissions Wood gasification boiler, partial/full load*	at 13%O <sub>2</sub>	153/145 mg/MJ 241/229 mg/m <sup>3</sup> 11 / 3 mg/MJ 17 / 4 mg/m <sup>3</sup>	43/94 mg/MJ 65/143 mg/m <sup>3</sup> 8 / 7 mg/MJ 13 / 10 mg/m <sup>3</sup>
Dust emissions Wood gasification boiler, partial/full load*	at 13%O <sub>2</sub>	6 / 9 mg/MJ 10 / 15 mg/m <sup>3</sup> 4 / 7 mg/MJ 6 / 11 mg/m <sup>3</sup>	7 mg/MJ 10 mg/m <sup>3</sup> 3 / 7 mg/MJ 5 / 7 mg/m <sup>3</sup>
Unburned hydrocarbons (CxHy) Wood gasification boiler, partial/full load*	at 13%O <sub>2</sub>	2 / 3 mg/MJ 3 / 4 mg/m <sup>3</sup> <1 / <1 mg/MJ <1 / <1 mg/m <sup>3</sup>	19 / 7 mg/MJ 25 / 10 mg/m <sup>3</sup> <1 / <1 mg/MJ <1 / <1 mg/m <sup>3</sup>
Electrical power consumption Pellet burner, partial/full load*	W	46 / 61	63 / 116
Recommended accumulator tank volume	Litres	> 1.100, optimal 2.000	
Maximum permissible operating pressure	3 bar	Boiler rating	5 according EN 303-5:2012
Temperature adjustment range	70-85°C	Suitable fuels	Spruce, beech logs up to W20, Pellets ÖNORM M 7135, DIN 51731, DIN Plus, EN plus-A1, EN 14961-2-A1
Maximum permissible operating temperature	95°C	Electrical connection	1 x 230 V / 50 Hz / 13 A
Minimum return temperature	60°C		

\* Data from test reports of BLT Wieselburg, log numbers 039/10, 040/10, 041/10 and 028/99.  
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ETA PU PelletsUnit 7 to 15 kW  
(7, 11 and 15 kW)



ETA PC PelletsCompact 20 to 32 kW  
(20, 25 and 32 kW)



ETA PE-K pellet boiler 35 to 90 kW  
(35, 50, 70 and 90 kW)



ETA SH wood gasification boiler 20 to 60 kW  
(20, 30, 40, 50 and 60 kW)



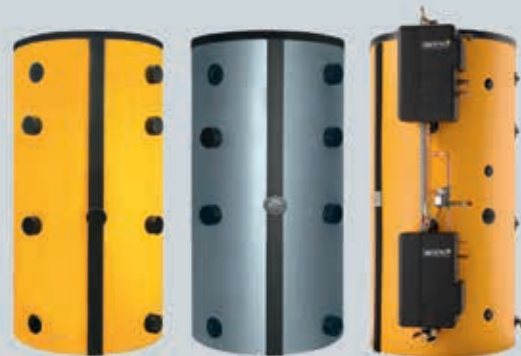
ETA SH-P wood gasification boiler  
20 and 30 kW  
with ETA TWIN pellet burner 20 and 26 kW



ETA HACK wood chip boiler 20 to 200 kW  
(20, 25, 35, 50, 70, 90, 130 and 200 kW)



ETA HACK VR wood chip boiler  
with moving grate 333 - 350kW



ETA stratified buffer SP and SPS  
(600, 825, 1.000, 1.100, 1.650 and 2.200 litres)  
with fresh water and stratified charging module



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Your heating specialist will be happy to advise you:

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