

SRT

Step grate combustion 1,700 – 10,000 kW

EN



DESIGNED FOR CONTINUOUS OPERATION

FUELS: Wood from landscape cultivation, bark, green cut, waste wood, short rotation wood, special fuels

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Energy Pioneers

WOOD COMBUSTION SYSTEM

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»The SRT is particularly suitable for the combustion of wood fuels with a high water and ash content. These requirements enable flexible use of affordable, not pre-dried fuels.«

Step grate combustion

The step grate combustion is particularly suitable for the combustion of wood fuels with a high water content of up to 60 % and an ash content of up to 10 %. These conditions allow the flexible use of inexpensive, not pre-dried fuels such as green cut, bark, wood from landscape cultivation and waste wood. The wood combustion system SRT with step grate is designed for continuous operation of up to 8,000 hours per year.

Flue gas recirculation »over« and »below« grate

The flue gas is sucked in the exhaust pipe and fed via a fan of the combustion chamber »over« or »below« the grate again. This causes a reduction of the flame temperature and a reduction of nitrogen oxides. The efficiency of the system is increased because a lower residual oxygen content in the exhaust gas can be used even with dry fuels.

In flue gas recirculation »below« grate, the recirculated exhaust gas is mixed in mixing chambers with primary air and fed back under the grate. The flue gas recirculation »below« grate also improves burnout and prevents slagging on the grate.

Lowest life cycle costs

We attach great importance to durability and a long service life of the system. That's why we rely on a robust system technology. Solid steel construction and the use of high-quality lining material guarantee reliable plant availability over many years. Lowest power consumption in all load conditions of the plant is guaranteed by frequency-controlled screws, grate drives and exhaust gas recirculation.

Selecting the right wood combustion system

In addition to energy needs, the most important factors for selecting the correct combustion system are the type, lumpiness, the water content and the ash content of the fuel. But also the annual utilisation hours and the load duration curve are important factors. The sales team of Schmid Mawera wood combustion systems advises you on the choice of your tailor-made combustion system.

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Design and accessories



Take advantage of these benefits:

TYPE	POWER RANGE*
1700	340 to 1,700 kW
2100	420 to 2,100 kW
2600	520 to 2,600 kW
3300	660 to 3,300 kW
4200	840 to 4,200 kW
5200	1,040 to 5,200 kW
6500	1,300 to 6,500 kW
8000	1,600 to 8,000 kW
10000	2,000 to 10,000 kW

*depends on fuel and water content

- Fully automatic biomass combustion system with step grate 1,700 to 10,000 kW
- Water content in fuel: 5 to 60 %, ash content (foreign parts) up to 10 %
- High efficiency of up to 92%
- Modulating load control from 25 to 100%
- 3-pass fire-tube boiler or cooling screen boiler with exhaust gas temperatures below 190 °C at full load
- Step grate combustion technology with up to four independent primary air and hydraulically driven grate zones
- Low power consumption is achieved in all of the system's load ranges through the use of frequency-controlled screw conveyors, grate drives and fans such as flue gas, secondary air and recirculation fans
- Low flow velocities over the fuel bed prevent turbulence and ensure low-emission combustion in all load conditions
- The optimized and generously dimensioned firebox geometry guarantees reduced stress on components and the refractory lining. As a result, the combustion system is recommended for continuous operation of up to 8,000 hours

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Design and performance

MODEL		1700	2100	2600	3300
Rated heating output	kW	1,700	2,100	2,600	3,300
Dimensions SE					
Length ESH	mm	6,470	6,470	7,120	7,120
Length SE	mm	6,180	6,180	6,710	6,710
Width	mm	2,438	2,414	2,800	2,800
Height	mm	6,057	7,050	7,190	8,185
Max. operating pressure	bar (ü)	6 or 10* or 16*	6 or 10* or 16*	6 or 10* or 16*	6 or 10* or 16*

*on request

**Cooling screen boiler

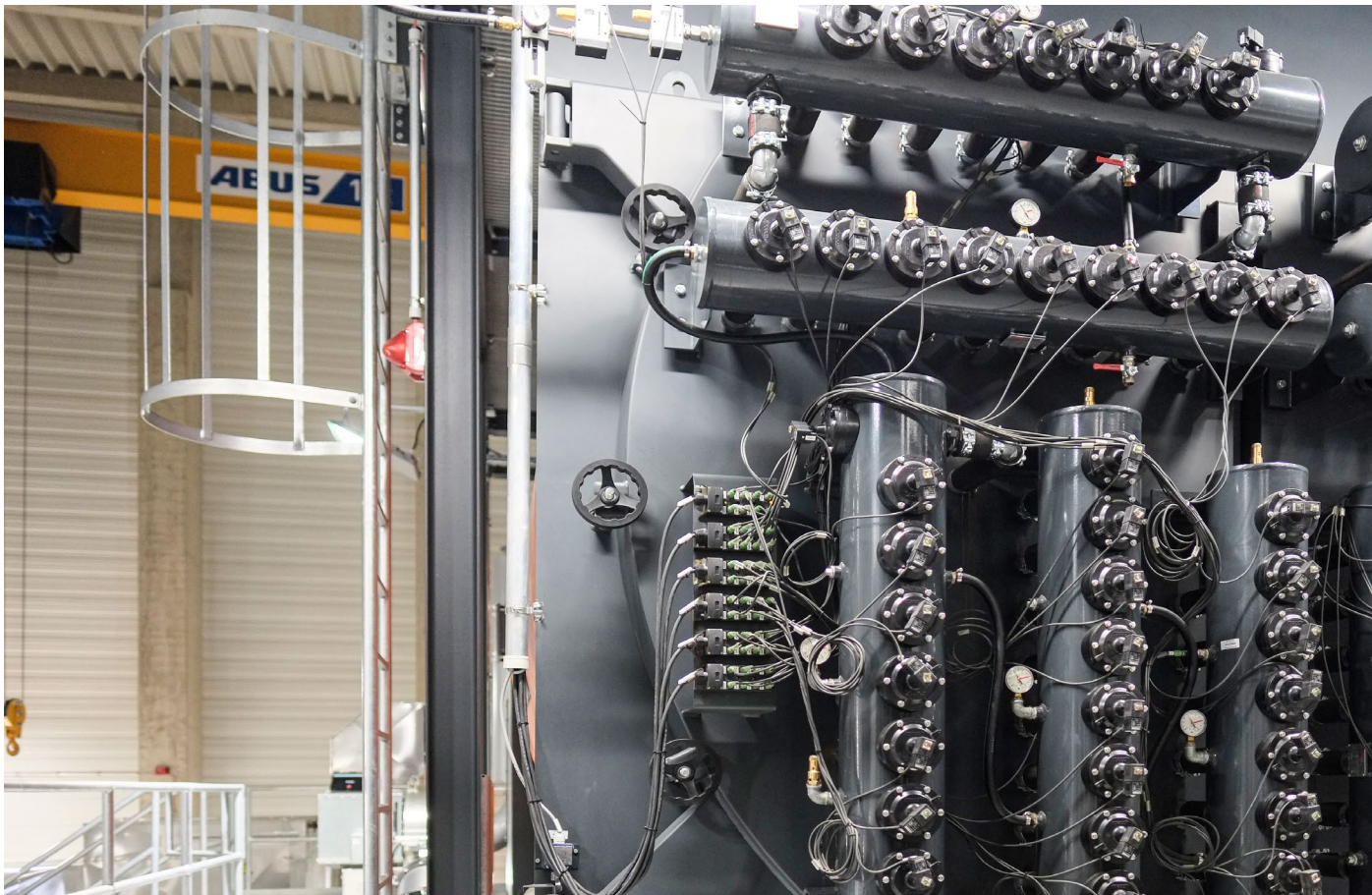
ESH = Feed neck

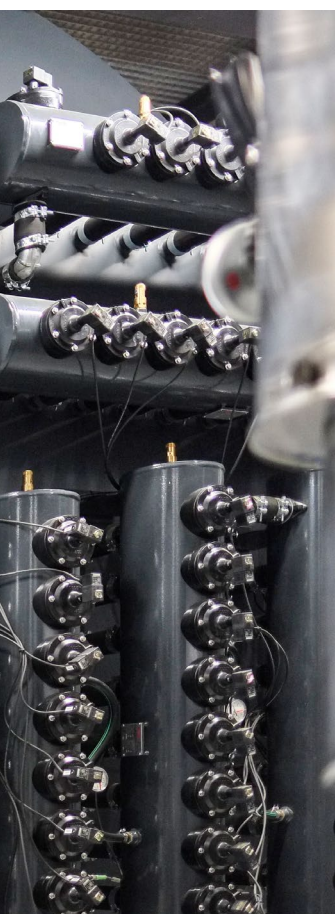
SE = Screw feed

4200**	5200**	6500**	8000**	10000**
4,200	5,200	6,500	8,000	10,000
7,120	7,750	7,750	9,010	10,000
-	-	-	-	-
3,200	3,200	3,600	3,680	4,200
8,535	9,425	9,825	10,332	11,206
6 or 10* or 16*	6 or 10* or 16*	6 or 10* or 16*	6 or 10* or 16*	6 or 10* or 16*

Optional accessories:

- Automatic ignition system (automatic ignition for fuels up to a water content of 35%)
- Remote maintenance and visualization systems (full system access from PC, tablet or mobile phone)
- Exhaust gas temperature increase (to avoid condensation in exhaust gas pipes and downstream components)
- Denitrification system (to reduce NO_x emissions using the SNCR method)
- Continuous emission measurement
- Furnace camera for monitoring the firebox as an optimal supplement to a visualization system
- Cleaning kit for the boiler





Measurements of primary and recirculated air

In order to ensure optimal combustion results and emission values in all load levels, even with difficult fuels, the volume flows of the primary air and flue gas recirculation are measured and the required air quantities are calculated in advance. The grate of the SRT is divided into four independent primary air zones. As a result, the required air volumes can be adapted to the fuel.

Use of high quality O₂-probes

The secondary air volume flow is regulated to the actual oxygen value. Through the use of high quality O₂ probes a constant low residual oxygen content in the exhaust gas is possible (about 4–5 % O₂ (moist) – depending on the fuel). As a result, highest efficiencies are achieved even in modulating part-load operation.

Automatic ash removal

Depending on fuel and ash content, various variants are available for the ash removal of the combustion chamber as well as cyclone and the electrostatic precipitator. The ash can be discharged together or separately. The removal is carried out in containers up to 800 l or in skips of 5.5 to 12 m³. In addition, the ash removal is also possible in big bags.

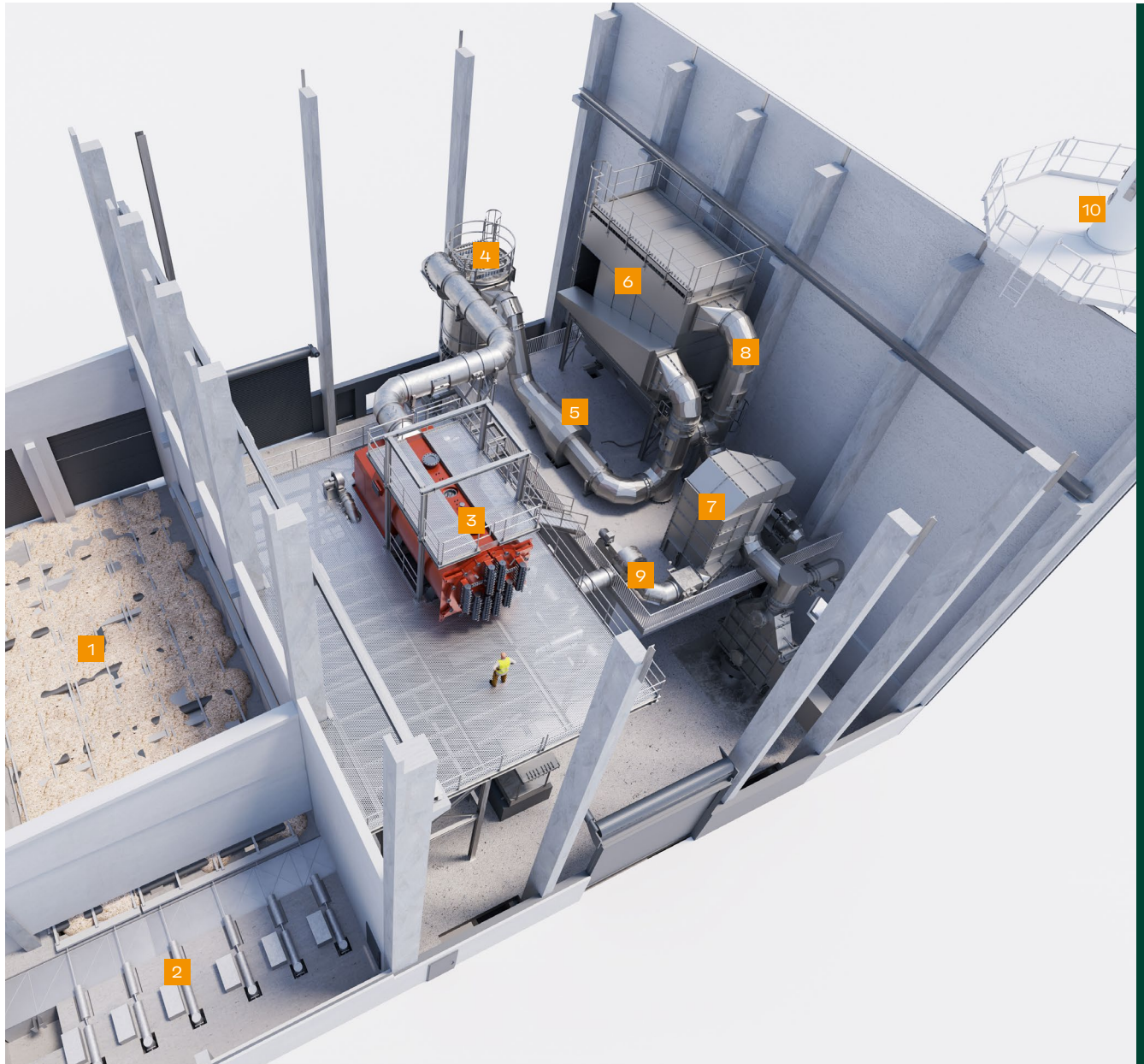
The following variants are available:

- Laterally from the combustion chamber
- Directly below the combustion chamber
- With screws
- With chain conveyors

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System example



- 1 Fuel storage with moving floor
- 2 Fuel transport: Trough chain conveyor and hydraulic feeder
- 3 Combustion system: SRT
- 4 Hot water economizer
- 5 Spark arrester
- 6 Fabric filter
- 7 Condensation system incl. economizer
- 8 Flue tube connection
- 9 Recirculation
- 10 Chimney

Example: Process steam for industry

- Combustion: SRT
- Output: 8,000 kW
- Fuel: wood from landscape cultivation M55, A10

Application areas SRT:



Woodworking industry



Wood processing industry



Industry



Local and district heating



Municipal and public property



Food industry

Fired up for energy from biomass.

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