

FFU

Underfeed combustion 180 – 850 kW

EN



FUELS: Logging and sawmill scraps, Saw shavings,
Dust, MDF, Chipboard, Planing shavings

WOOD COMBUSTION SYSTEM

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»Minimal life cycle costs together with robust and reliable system engineering. Schmid Mawera places the utmost importance on durability and a long lifespan for our systems.«

Underfeed combustion

The underfeed combustion with double grate is particularly suitable for burning fuels with dust content, such as residues from wood processing (chipboard and MDF) and sawmill residues.

The dormant ember bed ensures low pollutant emissions with fluctuating and problematic fuels, while the complete insulation of the entire boiler system and the elaborate wall construction of the firing system ensure minimal heat radiation from the combustion chamber and thus a high level of efficiency of the system.

The grate design with double grate (outer and inner grate) is optimised for the fuel. The fuel is burnt out completely via the outer grate of the combustion chamber. The secondary and primary air can be regulated separately. The fuel can be inserted either at the rear, right or left of the combustion chamber. Depending on the fuel, the system can be operated fully modulating from 25 to 100 %.

Consistent quality

A solid steel construction and the use of high-quality brick lining material guarantee reliable system availability for many years. Thanks to frequency-controlled screws, drives and flue gas recirculation, we guarantee the lowest power consumption in all load states of the system.

Selecting the right wood firing system

In addition to the energy requirement, the type, lumpiness, water and ash content of the fuel are the most important factors for selecting the right firing system. However, the annual utilisation hours and the annual duration curve are also important factors.

The Schmid Mawera sales team will advise you on the choice of a firing system tailored to your needs.

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Design and performance



Take advantage of these benefits:

TYPE	POWER RANGE*
180 RIA	45 to 180 kW
220 RIA	55 to 220 kW
280 RIA	70 to 280 kW
350 RIA	87 to 350 kW
440 RIA	110 to 440 kW
550 RIA	137 to 550 kW
700 RIA	175 to 700 kW
850 RIA	212 to 850 kW

- Fully automatic biomass combustion plant with underfeed combustion 180 to 850 kW
- Water content in fuel: 5 to 50%
- High efficiency of up to 92 %
- Sliding load control from 25 to 100 %
- 3-pass flame tube smoke tube boiler with flue gas temperatures of less than 190 °C at full load operation
- Lowest power consumption thanks to frequency-controlled screws and drives
- Low pollutant emissions thanks to the static ember bed, even with MDF and chipboard
- System with minimum operating effort
- Complete burnout of all fuels thanks to the highly insulated, fully fireclayed combustion chamber construction and optimised combustion air supply, combustion chamber structure and the optimised combustion air supply
- Integrated safety heat exchanger for rapid controllability in accordance with DIN 4751 Part 2

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Design and performance

MODEL		180 RIA	220 RIA	280 RIA	350 RIA	440 RIA
Rated heating output	kW	180	220	280	350	440
Dimensions SE						
Length	mm	2,640	2,640	3,270	3,270	3,367
Width	mm	1,180	1,180	1,280	1,280	1,380
Width RIA-B	mm	1,410*	1,410*	1,490*	1,490*	1,590*
Height	mm	2,157	2,157	2,322	2,322	2,551
Max. operating pressure	bar (ü)	4	4	4	4	4
*incl. cover for movable grate SE = screw feed						

550 RIA	700 RIA	850 RIA
550	700	850
3,354	3,390	4,145
1,480	1,600	1,700
1,690*	1,780*	1,880*
2,767	2,950	3,097
4	4	4

Optional accessories::

- Automatic ignition device (for fuels with a water content of up to 35%)
- Remote maintenance and visualisation systems (full system access from a PC, tablet or mobile phone)
- Firebox camera for monitoring the firebox as an ideal addition to a visualisation system
- Compressor for pneumatic boiler cleaning (up to 700 kW)
- Cleaning kit for the boiler



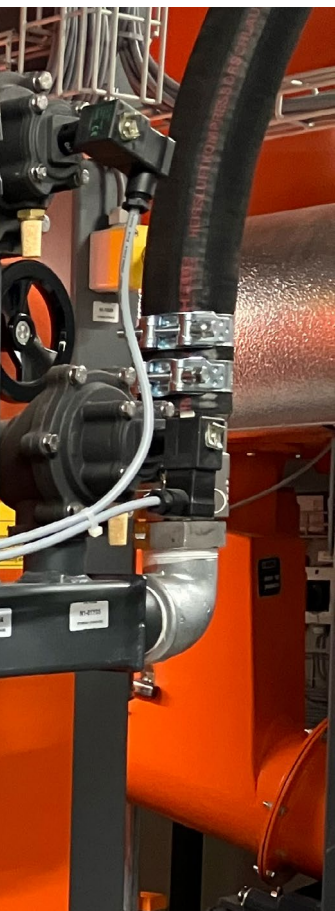


Design and function

A sophisticated design supports the series production of this quality product in our own factory. The use of a combined inner/outer grate retort (double grate) with separate combustion air supply ensures a wide range of applications for the energetic use of biomass, both in the wood industry and in residential complexes and public district heating systems.

The plant consists of a special design for the fully automatic combustion of dry to moist chips and wood chips. Optionally, the combustion chamber can be supplied with low-NO_x reduction technology for fuels with a high nitrogen content.

A bottom screw feeder feeds the fully fireclay-lined combustion chamber. Above this is the fully insulated, horizontal 3-pass fire-tube smoke tube boiler.



Automatic ash removal

Various options are available for ash removal from the combustion chamber, cyclone and electrostatic precipitator, depending on the fuel and ash content. The ash can be discharged together or separately. The ash is discharged into containers of up to 800 litres or into skips of 5.5 to 12 m². Discharge into big bags is also possible.

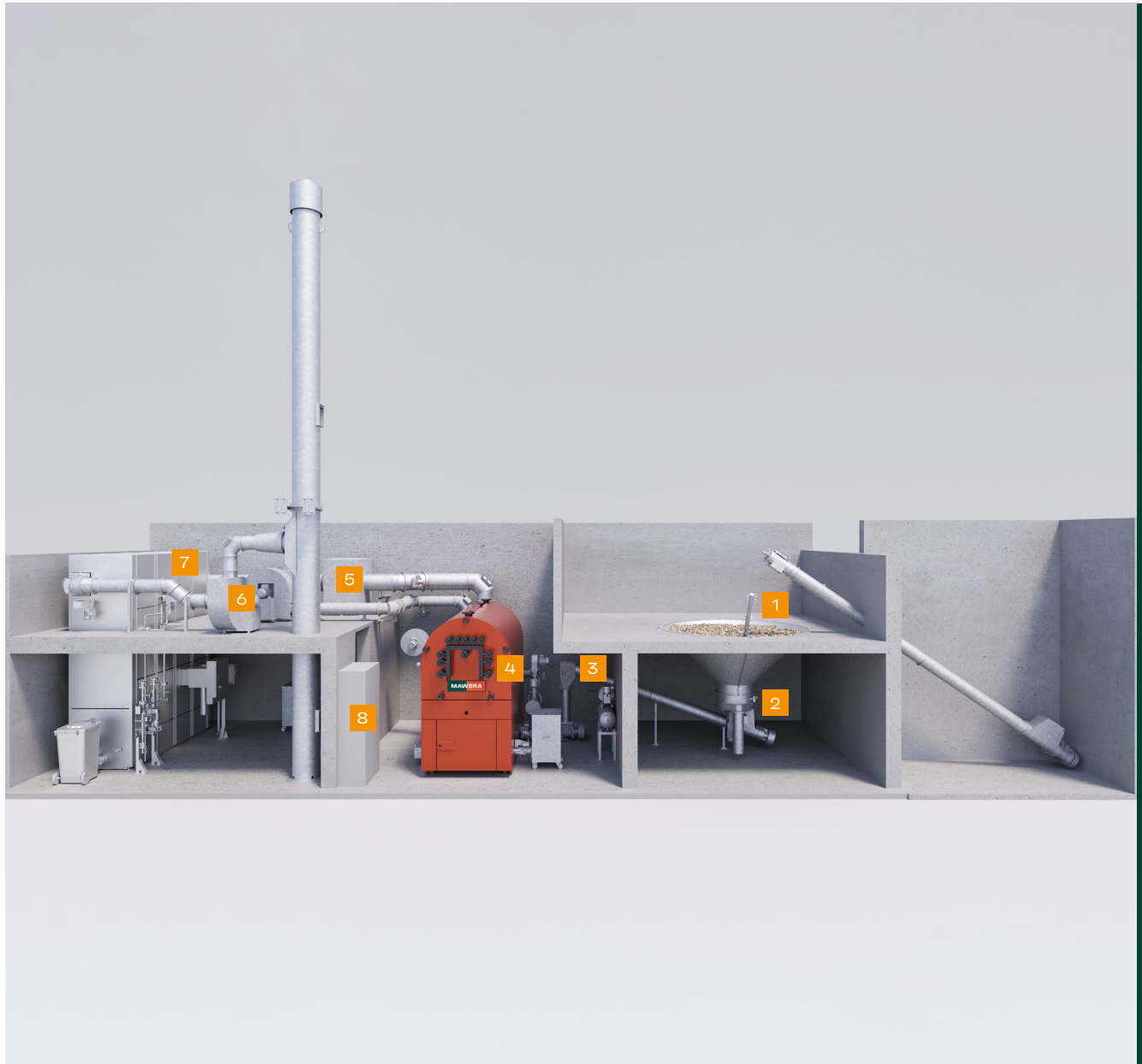
The following variants are available:

- Sideways from the combustion chamber
- By means of further screw conveyor systems

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System example



- 1 Fuel storage in the silo
- 2 Fuel discharge using a pendulum screw conveyor
- 3 Fuel transport with screw conveyor system
- 4 Combustion: FFU
incl. combustion chamber ash removal
- 5 Flue gas dedusting with multicyclone separator incl. ash removal
- 6 Flue gas fan
- 7 Fine dust separation with electrostatic precipitator incl. economizer and ash removal
- 8 Control cabinet

Example: Joinery (solid wood floors and profiled boards)

- Combustion: FFU
- Output: 440 kW
- Fuel: Sawdust, wood shavings and dust mixed with wood chips

Applicaton areas FFU:



Woodworking industry



Local and district heating



Municipal and public property



Hotels and hospitality industry



Plant nurseries

Fired up for energy from biomass.

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