nolting
Holzfeuerungstechnik

Sustainable. Innovative. Reliable.

Automatic
Biomass-Firing
Systems LCS-R

Underfeed or moving grate firing
for wood chips, chippings, briquettes,
moist/wet wood chips and pellets for
nominal outputs: 70–2400 kW

sustainable

carbon neutral

Why a biomass firing system for you?

Efficient biomass firing system: economical, sustainable and powerful

The furniture industry once shaped the East Westphalia region and led Nolting to specialize in the combustion of wood residues, such as wood chips and sawdust. We have been your partner for modern biomass firing systems for over 80 years. Wood residues, such as sawdust, milling chips, shavings, offcuts, etc., do not need to be disposed of at great expense or purchased separately, but can be used directly as fuel. This allows for cost-effective heating of commercial buildings, residential buildings, and adjacent properties. Thanks to this efficient use, the system pays for itself within a few years.

In addition, the generated heat can be used specifically for other operational processes: for example, for drying wood, gluing and bonding wood, or curing surface coatings, etc.

Our wood heating systems are eligible for various subsidy programs in Germany. For example,

KFW
Bank aus Verantwortung

Note: Please refer to the national subsidy programs.

If you generate more heat than you need, you could consider selling it through district heating networks. At the same time, the use of renewable energy sources reduces your dependence on fossil fuels, lowers your operating costs, and makes a valuable contribution to environmental and climate protection.

Sustainability through cascade utilization and circular economy

Modern biomass firing systems promote a sustainable circular economy. Cascade utilization ensures that wood resources are used as long and efficiently as possible before being recycled for energy at the end of their life cycle. This conserves valuable raw materials and minimizes waste.

They protect the environment and thus act in the interests of future generations.

LCS-R: Comfortable, powerful and versatile

The LCS-R boiler series offers a compact, low-maintenance solution with high efficiency. It can be equipped with either an underfeed (RU) or a moving grate (RV) firing system. This covers a wide range of fuels and ensures high efficiency as well as an efficient ash removal system.

Invest in a future-oriented, economical and environmentally friendly heating solution with the LCS-R biomass firing system!

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Our boilers represent true industrial quality – built to be heavy, durable, and robust. No mass-produced goods: We develop customized solutions that are perfectly tailored to your requirements and the specific fuel used:

- Selection of combustion technology (RU or RV)
- Fuels of classes 4–7, according to 1. BImSchV[1] §3 (1), as well as
- Waste wood of categories A I and A II, according to AltholzV[2]
- System control system and control cabinet built in-house
- Maximum design flexibility = tailor-made for customer needs

We have a high level of vertical integration » Made in Germany

Our standard at Nolting

- 3-pass boiler
- Horizontal heat exchanger
- Automatic heat exchanger cleaning with turbulators
- Safety heat exchanger
- Automatic ignition
- Automatic capacity regulation (modulation 30 %–100 %)
- Residual oxygen-dependent combustion control
- Combustion chamber temperature control
- Return temperature control
- Multi-stage burn-back protection
- Control system with 12.7" touch panel
- Network connection and remote access

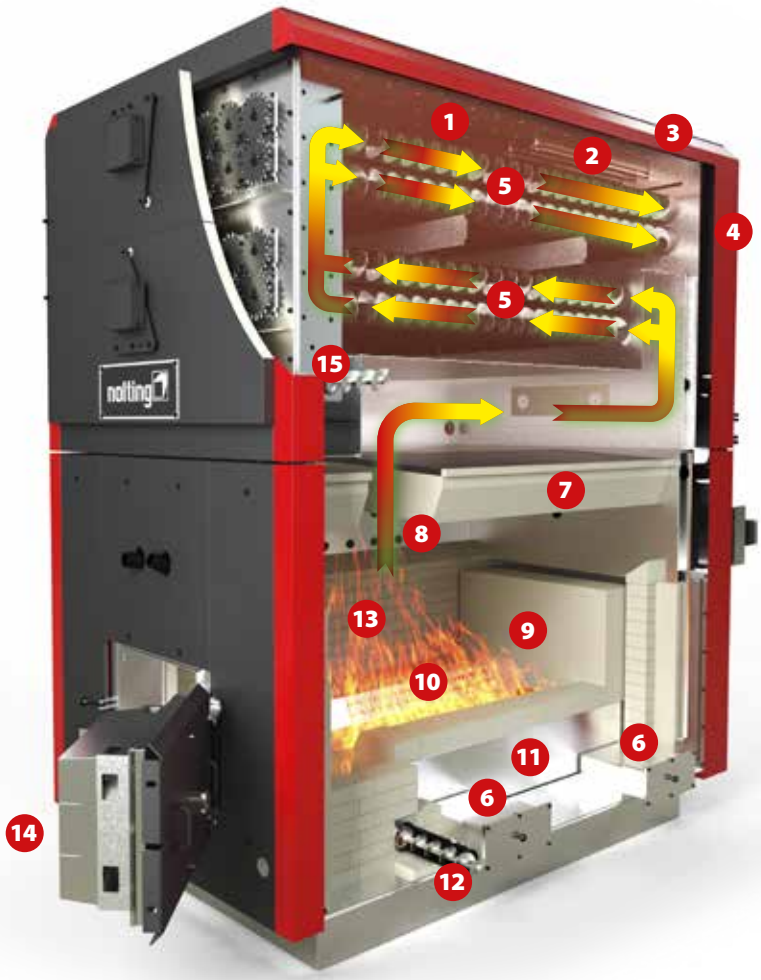
The following options are available for our combustion systems:

+ Automatic ash removal of the heat exchanger
+ Flue gas recirculation
+ Buffer storage management
+ Boiler sequence control
+ Hydraulic insert (for RV for coarse fuels >P45S)

A system consisting of our LCS-R combustion system and our NGFL ceramic filter meets the strict emission requirements of the 1. and 44. BImSchV[1]

Particulate matter safety[3] <2,5mg/m^3

1 BImSchV: german regulation; 2 AltholzV: german regulation; 3 fuel-dependent



MADE IN GERMANY

1 water-side connections
2 oulet
3 insulation
4 flue gas flange
5 heat exchanger with turbulators
6 cleaning openings
7 reflection arch
8 secondary air supply
9 stoker screw
10 primary air injections
11 underfeed pit
12 ash removal screw combustion chamber
13 refractory
14 combustion chamber door
15 ash removal screw heat exchanger

Underfeed firing system LCS-RU

The underfeed firing system is a proven, robust and efficient combustion system that has been steadily improved over the past two decades through continuous development and innovative solutions.

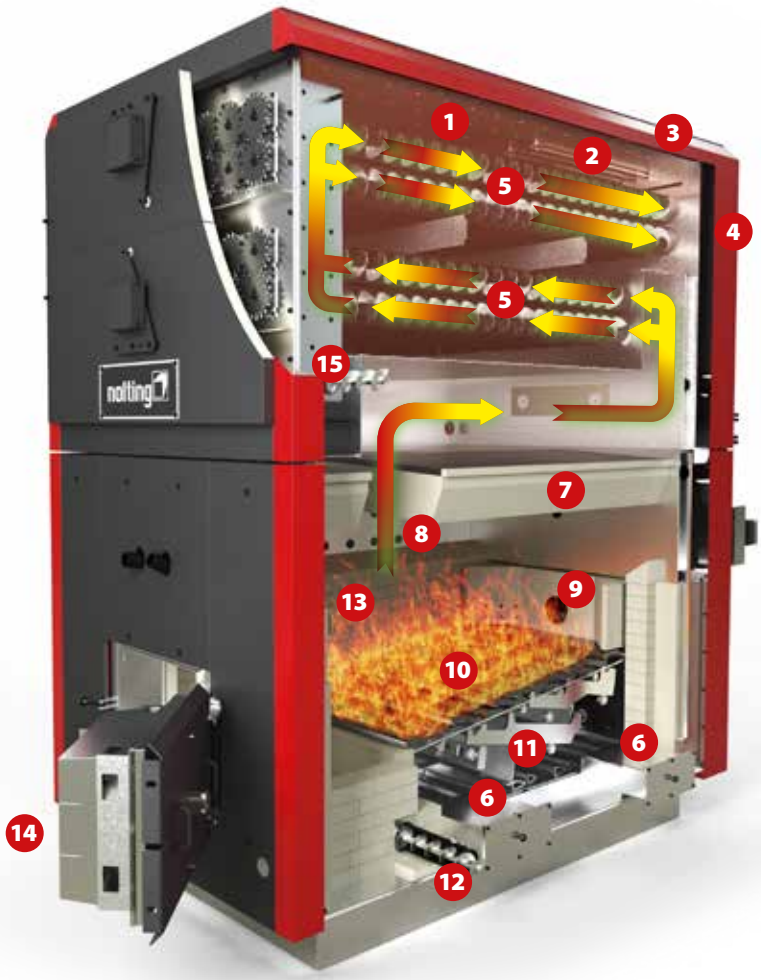
A significant advance is the optimized geometry of the underfeed trough, which is ideally adapted to the combustion conditions. This combustion system is particularly suitable for uniform fuels with low combustion residues, such as natural wood residues (e.g. wood shavings from wood processing or woodworking).

The fuel is metered into the underfeed furnace lined with ceramic bricks using a stoker screw conveyor. Complete combustion occurs there. The resulting ash is automatically transported to an ash collection container by a heat-resistant ash removal screw conveyor.

Suitable fuels for this system are:

- **Wood chips**
- **Chips from wood scraps**
- **Pellets**
- **Chip briquettes**

Thanks to continuous optimization, underfeed firing-system remains a reliable and efficient solution for clean and effective combustion.



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1 water-side connections
2 oulet
3 insulation
4 flue gas flange
5 heat exchanger with turbulators
6 cleaning openings
7 reflection arch
8 secondary air supply
9 insertion screw
10 moving grate
11 de-ashing
12 ash removal screw combustion chamber
13 refractory
14 combustion chamber door
15 ash removal screw heat exchanger

Moving grate firing system LCS-RV

The moving grate combustion system is a system for the controlled combustion of various fuels, particularly wood-based materials and moist, ash-rich materials.

The fuel is first conveyed to the moving grate via a metering and feeding screw. The material is pushed through the combustion chamber by the controlled movement of the grate rows. The grate is divided into zones, enabling staged combustion and air supply.

The fuel is first dried, then degassed and finally combusted. The combustion residues are automatically transported to a collection container via an ash removal screw.

The moving grate firing system is suitable for various fuels, including:

- **Wood shavings**
- **Chippings**
- **Forest wood chips**
- **Pellets**
- **Chip briquettes**

and is also suitable for materials with a high slag tendency, such as wood-based materials or those with a high bark content.

The complete firing system concept from a single source

The performance of a biomass firing system is decisively influenced by the quality of its complementary components:

- Discharge system
- Filter technology

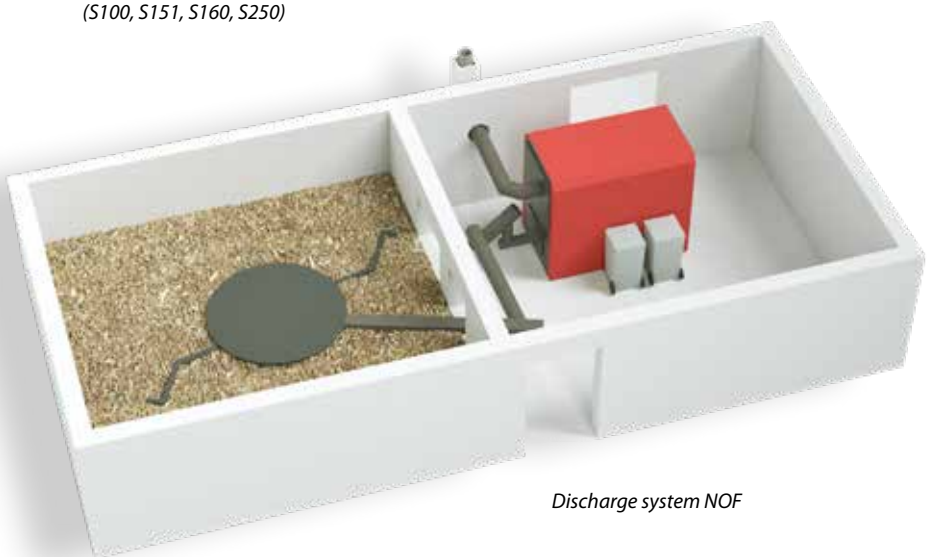
Our staff will support you in the planning process to create a suitable solution for the best possible overall concept.

Discharge systems

We can offer you various discharge systems:

Auger discharge system (S100, S151, S160, S250)

Pushing Floor Discharge SBA



Discharge system NOF

Depending on the fuel, fuel transport can be planned using scraper chain conveyors, screw conveyors, or even pneumatic conveying of chips.

Filter technology

Our filter technology ensures compliance with strict emission standards.

Ceramic Fine Dust Filter NGFL

The ceramic fine dust filter NGFL is characterized by its compact and modular design and is specifically designed for automatically fed, high-performance biomass firing systems.

It uses microporous ceramic filter elements that achieve outstanding separation efficiency of up to 99.99 % without the need for an additional upstream cyclone pre-separator. In practice, this often results in a dust content of less than 2.5 mg/Nm^3 (at 13 % O_2 residual oxygen content) in the flue gas, which is barely measurable.

The filter elements are temperature-resistant up to over 1000 °C and resistant to fire and flying sparks. They are fully automatically cleaned using compressed air controlled by time or differential pressure.

Fine Dust Filter HZF

The HZF high-performance cyclone filter combination was specially developed for automatically fed biomass firing systems. It combines a cyclone and a fine dust filter in one compact unit, thus offering a particularly space-saving filter solution that can be easily integrated even in tight spaces.

The system features controlled, automatic and mechanical cleaning of the filters and electrodes, ensuring low-wear and low-maintenance operation.

The flow conditions can be individually adjusted to ensure optimal efficiency for each system.

The HZF fine dust filters can be used for nominal heat outputs up to 260 kW.

We are Nolting

For over 80 years, Nolting, with more than 70 employees, has been developing and producing high-quality, environmentally friendly biomass firing systems in Detmold, with an output range of 70 to 2400 kW. Nolting is one of the market leaders in Germany and impresses worldwide with its high quality and innovative strength. The product range includes underfeed and moving grate firing systems, container solutions, special furnaces, silo discharge systems, conveyor technology, flue gas dedusting and fine dust filters and accessories.

Customer-specific production is our focus: Each system is individually designed and equipped according to requirements to ensure tailor-made, efficient solutions. Nolting supports its customers from trade and industry with sustainable heating systems based on renewable energies. Long-term customer satisfaction and close partnerships are core values of the company.

Benefit from our service and support offerings for our products and solutions. With excellent spare parts availability, we are setting new standards in after-sales service!

The highest quality in biomass firing technology more than
80 years

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