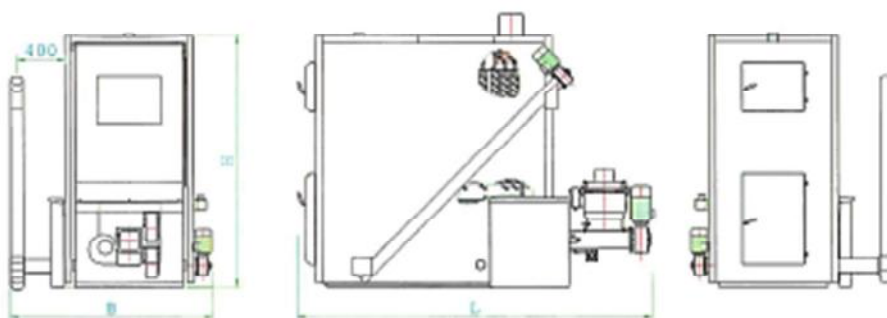


Boiler feature:



1. Service door from the top
2. modulating oxygen control
3. Inspection door
4. Service / cleaning door door
5. Bottom ash auger
6. Angular ash auger
7. Storage for ash.

Model	130	160	190	250
Nominal output	130 kW	160 kW	190 kW	250 kW
Weight	1300 kg	1500 kg	1700 kg	2200 kg
Length	2300 mm	2600 mm	2800 mm	3000 mm
Height	1800 mm	1900 mm	2000 mm	2100 mm
Width	1600 mm	1600 mm	1600 mm	1600 mm



2.0 Technical Data

Nominal output	950 kW
Fuel	Wood pellets
Maximum moisture content in fuel	10%
Adjustable output	20 - 100%
Design temperature	110°C
Design pressure	6 barg (gauge pressure)
Test pressure	9 barg (gauge pressure)
Capacity of wood pellet silo	70 m ³
Biomass boiler size	LxWxH: 4000x1900x3000mm

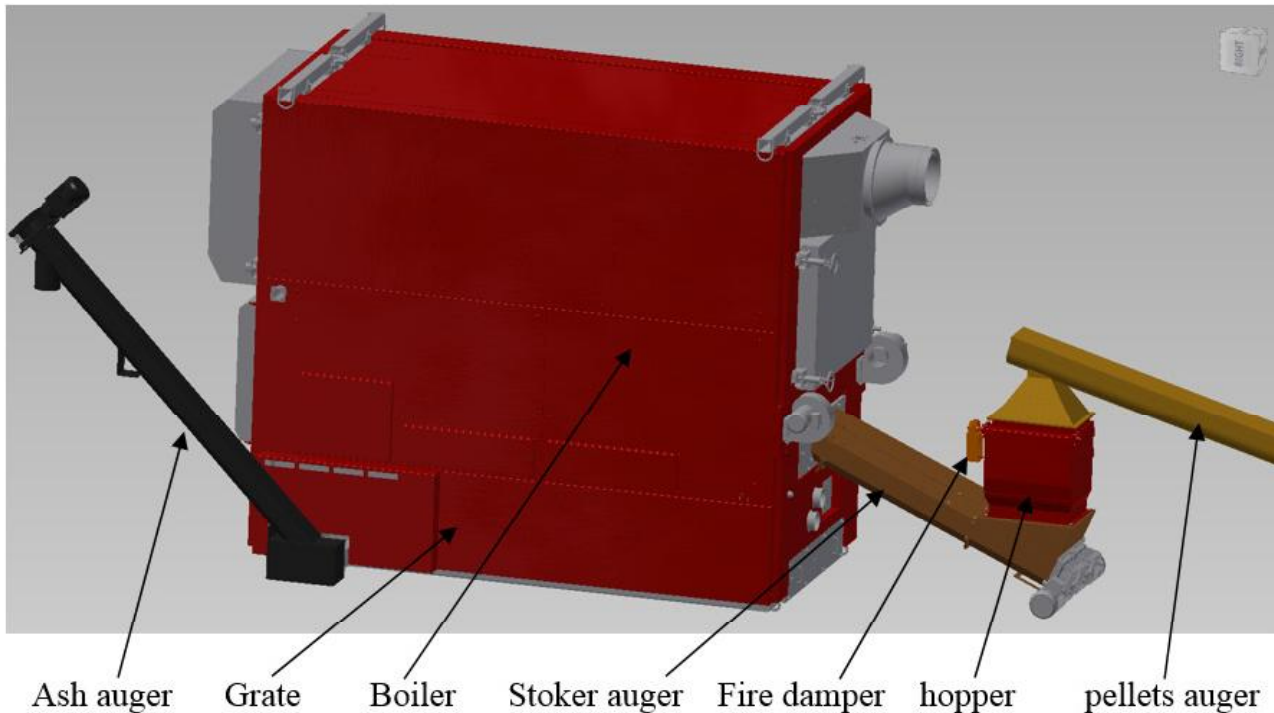
NH 200® XXL is produced to burn on wood pellets, but it can be rebuilt to burn on wood chips. During the rebuilding process, it is recommended to use chips with a moisture content of max. 40%, but the boiler can use wood chips with a moisture content of 50%, calorific value wood chips: 2,1kWh/kg, density: 330kg/m³. The size of the wood chips should correspond to the standard G50.

3.0 Description of Wood Pellet Boiler System

3.1 Main Parts

A wood pellet boiler system consists of the following main parts

1. Complete wood pellet silo (Not a Nordheat order).
2. Pellets auger (Not a Nordheat order).
3. Fire damper including hopper.
4. Stoker auger.
5. Grate with primary air fans, ash scraper and bottom ash auger.
6. Boiler with secondary air fans.
7. Cyclone, induced draft ventilator and fly ash bucket.
8. Chimney (Not a Nordheat order).
9. Ash auger and ash container.



3.2 Mode of Operation

- Wood pellets are transported in a lorry, which blows the wood pellets into the air injection pipe installed in the silo.
- A pellets auger transports the pellets from the silo, past the fire damper and into a hopper below the damper.
- The fire damper is open when the pellets auger is in operation. From here, the wood pellets are dropped down to the stoker auger, which is placed just below the aforementioned hopper.
- The stoker auger transports the wood pellets to the combustion grate.
- The grate leads the wood pellets towards the ash auger as they are being burned.
- Primary air is added through the grate blocks from below.
- Below the grate are the ash scrapers, which send falling through ash to the bottom ash auger.
- The bottom ash auger leads the ash to the ash auger. From here, the ash is unloaded into an ash container.
- The boiler is above the grate. Secondary air is added into the boiler room and the flue gas is passed on through the flue gas tubes in which the flue gas cools.
- From here, the flue gas is sent to the cyclone, in which particles are removed.
- The flue gas fan blows the flue gas further through the chimney.

3.3 Wood Pellet Silo (Not a Nordheat Order)

3.4 Pellets auger (Not a Nordheat Order)

3.5 Fire Damper and hopper

The fire damper is located under the outlet of the pellets auger and opens shortly before the pellets auger starts up, and shuts just after it stops. The fire damper prevents back burning as well as false air from the silo. The damper motor, which opens the fire damper, is equipped with a spring-driven clock and if power is lost during loading, the fire damper shuts down automatically. Under the fire damper is a hopper where the fuel falls in.

3.6 Stoker auger

The stoker augers is a double trough auger, which runs operation/interval based on the load at the time. The double auger leads the wood pellets from the hopper to the combustion grate. The stoker augers are equipped with fire extinguishing equipment, which automatically starts if temperatures become too hot.

3.7 Combustion Grate

The combustion grate is a push grate divided into three zones with two rows of grate blocks in each zone. One stationary and one movable in each zone. Each zone's movable grate rows operate independently of each other by means of separate actuating devices.

Primary air is added to the zones by use of separate air fans.

The ash scraper are at the bottom, and they push the ash that falls through the grate blocks to the bottom ash auger.

The bottom ash auger is placed crosswise at the end of the grate and from there, it sends the ash to the ash auger.

3.8 Boiler

The boiler is situated above the grate. Its combustion chamber consists of water-cooled walls in which a chamber (walls and roof) of fireproof stone has been constructed in order to reach a high combustion temperature. The temperature can reach up to 1200° C and contributes to a full combustion of flue gas, and with that, a high level of efficiency.

On the sides, there are secondary air nozzles constructed of stainless steel, as it can resist much higher temperatures than regular steel.

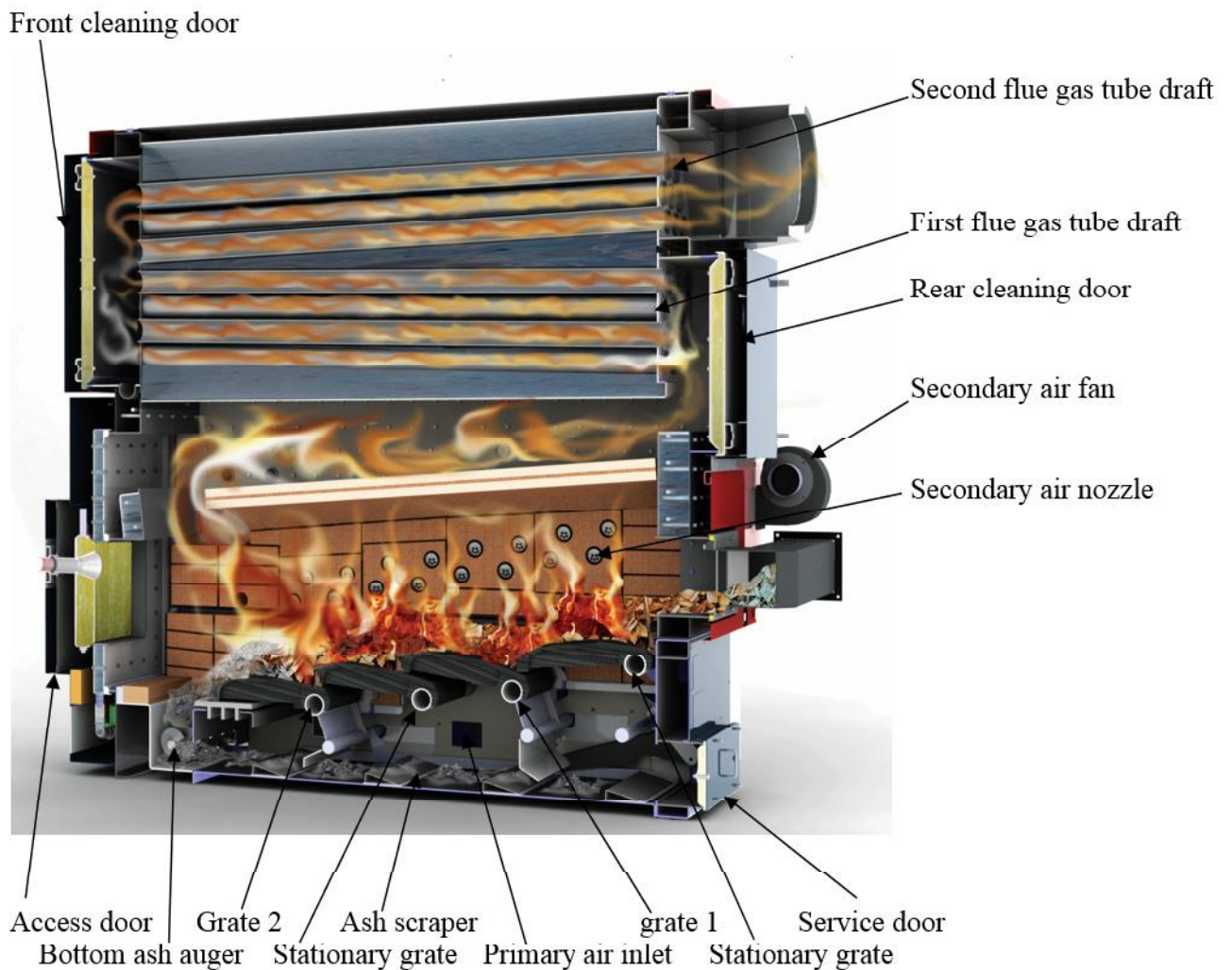
The fireproof roof has an opening (at the front) at which the flue gas turns and goes towards the water-cooled part at the back of the boiler. Here, the temperature peak is taken by the flue gas, before it turns again (at the rear cleanout door) and heads towards the first flue gas tube draft, before turning (at the front cleanout door) and reaches the second flue gas tube draft.

The flue gas tubes are equipped with turbulators that provide the flue gas tubes with turbulence, which results in a better cool down of flue gas.

In the front cleanout door, rotors rotate the turbulators thereby providing an automatic cleaning.

After the second fire tube draft, flue gas runs through a smoke channel and out to the multi-cyclone.

On the following picture, you can see the parts mentioned.



The illustration above has two zones. Note that the ordered boiler has three zones.

3.9 Multi-cyclone, Flue Gas Fan and Fly Ash Bucket

The multi-cyclone is a 2x3 cellular cyclone designed to intercept fly ash. It is equipped with two cleanout doors as well as a fly ash bucket at the bottom.

On the side of the multi-cyclone there is a frequency-controlled flue gas fan, which blows the flue gas out through the chimney

3.10 Chimney (Not a Nordheat order)

3.11 Ash Auger and Ash Container

The ash auger is a trough conveyor that is designed to transport the bottom ash from the bottom ash auger to the ash container.