

# Osby Parca HVTS-G

Biomass boiler 1- 7 MW for moist fuels

## A TURNKEY, RELIABLE UNIT WITH HIGH EFFICIENCY RATE

### Osby Parca HVTS-G

is a fully automatic biomass boiler with integrated combustion equipment made for moist wood fuels (25-55 % in moisture level). The boiler is a turnkey unit that meets all requirements regarding efficiency, accessibility and ease of use –  
**Beneficial for both the environment and the operation economy!**

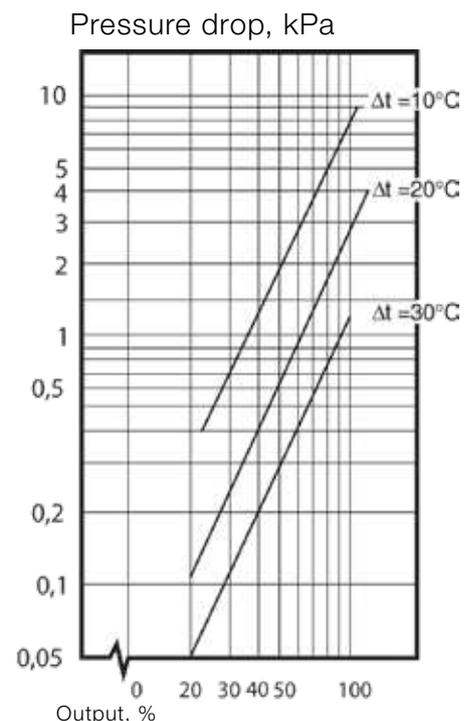


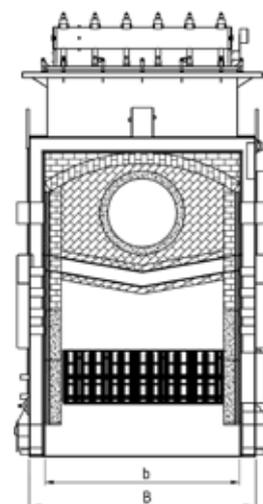
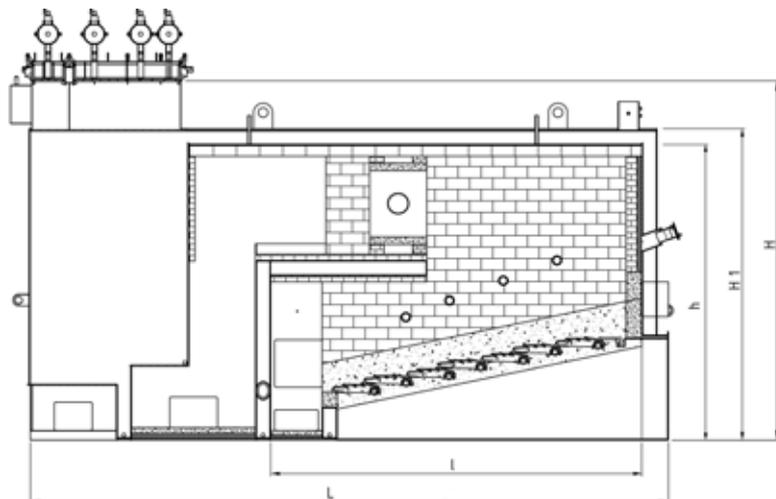
Illustration: HVTS-G - 2 MW

- ✓ Osby Parca **HVTS-G** is a modern biomass boiler with vertical flue gas tubes with low emission, **HIGH BOILER EFFICIENCY** and high accessibility.
- ✓ The **INTEGRATED COMBUSTION EQUIPMENT** works with moist wood chips in **MOISTURE LEVEL** between **25 - 55 %** depending on the masonry in the furnace.
- ✓ **HVTS-G** is built as a complete unit and has **LOW MAINTENANCE COSTS**.
- ✓ The boiler has a **UNIQUE WATER COOLED STAIR GRATE** which distributes the combustion air in zones. The tilting of the grate is 14°.
- ✓ We offer a **TAILORMADE CONTROL SYSTEM**, based on the powerful software "Freelance" from ABB to control the whole facility.
- ✓ The control system is **EASY TO USE** thanks to a smart and user-friendly interface.
- ✓ Safety systems and other settings in the boiler control system can be easily integrated and means **GREAT FLEXIBILITY** as all parameters can be changed.
- ✓ The boiler comes with **COMPRESSED AIR CLEANING** of the convection part as a standard and the handling of the ash is done automatically by the control system.
- ✓ Our **FLUE GAS CLEANING** by Osby Parca **PFM DUST FILTER** fulfills both current and forthcoming legal requirements.
- ✓ The boiler may also be equipped with **FLUE GAS RECIRCULATION** and **FLUE GAS CONDENSATION** depending on conomy and moisture of the fuel.



DESIGN DATA HVTS-G	
Output	1 – 7 MW
Min. inlet temperature	80°C
Design temperature	110-165°C
Design pressure	6 bar
Fuel moisture content	25 - 55 %
Min. water flow (m³/h)	Output in kW / 464
Flue gas temperature	<160°C
Boiler efficiency	90 %





### TECHNICAL DATA AND DIMENSIONS

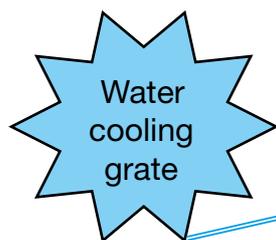
Output w. max 50% moisture	Dimensions (mm)				Furnace* (mm)			Net weight** (tonnes)	Water vol. (m <sup>3</sup> )	No of grate rows	Grate load (kW/m <sup>2</sup> )	No of PFM modules***
	L	B	H	H1	l	b	h					
1 MW	6800	1850	3400	2850	2955	1350	2600	30	11	5 (3 fixed)	450	2
2 MW	7500	2300	3800	3250	3755	1790	3030	36	13	7 (4 fixed)	460	4
3 MW	7500	2800	3800	3250	3755	2300	3030	43	16	7 (4 fixed)	520	6
4 MW	8700	3300	4200	3610	4535	2700	3330	50	20	9 (5 fixed)	450	8
5 MW	8850	3300	4200	3610	4535	2700	3330	58	25	9 (5 fixed)	560	10
6 MW	9650	3300	4200	3610	5335	2700	3330	65	30	11 (6 fixed)	560	12
7 MW	10450	3300	4200	3610	6135	2700	3330	72	35	13 (7 fixed)	550	14

\* The inner dimensions of the furnace depends on the thickness of the masonry which in turn is dependent on the moisture content of the fuel, i.e the higher the moisture content the more masonry.

\*\* Approximate weight including masonry.

\*\*\* Refers to **Osby Parca PFM** dust filter. For more information, see separat data sheet.

The ash screws are Ø350(invx8) mm and for sizes 1 and 2 MW these are placed inside the boiler. For bigger sizes, the ash screws are mounted in the foundation.



# Osby Parca HVTS-G

## Biomass boiler 1 – 7 MW



### The details make the good deal

- The boilers vertical flue gas tubes are equipped with compressed air cleaning which guarantees a high boiler efficiency. The automatic cleaning reduces the need of shutting down due to maintenance, under normal circumstances only once a year (e.g summer), which reduces costs for operation and alternative fuel.
- An automatic conveying of ash and dust is included in the deal. This also reduces the work effort during heating season.
- The tubes are welded with special countersinks according to Osby Parca's standard, (see image).



### Technical description

The combustion takes place on a moving, stepped grate that pushes the fuel forward while it's burning. Since the fuel bed is kept in motion, slag formation is minimized, and the slag formed is automatically ejected along with the ash via the internal ash screw.

The boiler is controlled by a computerized system whose task is to adapt the combustion to the prevailing load so that the supply temperature is kept constant. The control system receives a signal from a temperature sensor and then regulates the fireplace's suppression, the grate's movement and the fuel supply, all while a level sensor continuously monitors the fuel supply. The amount of combustion air is thus regulated by variation of the vacuum in the stove. It is a simple and reliable method we call capacity regulation.

### Maintenance and cleaning

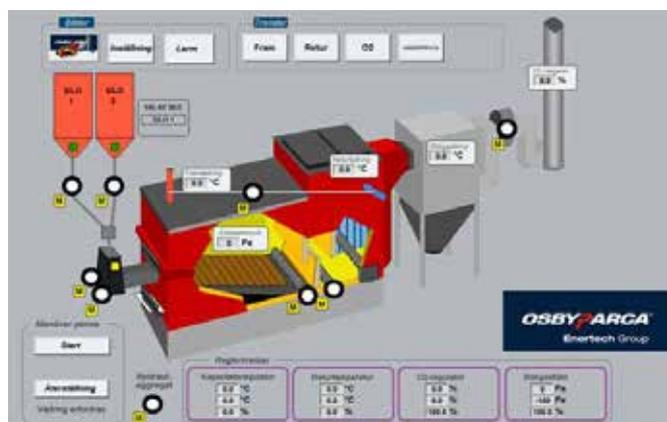
HVTS-G is designed to minimize stop, even when bigger repairs.

- The grate is built as a unit and is easily deattached by removing some bolts.
- The control system has a complete alarm system with clear alarm texts. The operator may easily watch the monitor and see what action to needs to be taken.
- Ash and dust is automatically handled by integrated scrapes and screws. The cleaning of soot is done by compressed air, which is the optimal solution when using moist fuels.

### Air control

Combustion air is mixed via primary, secondary and tertiary air fans which supply air partly through slots in the grate and partly through nozzles in the combustion chamber. The supplies are adapted to fuel type and moisture content. The primary air is added via zones with damper control to facilitate low load operation. The frequency controlled flue gas fan is the engine in the plant and is regulated depending on the prevailing power output.

### Control system



Our control systems are flexible and adjusted to the customers need and demands. Since we have the skills, we may offer total solutions which are customized regardless if it's just a boiler or a complete heating plant. (The image above shows an exemple.)

The high precision of our control systems results in low emission values, regardless of the boiler load. The display shows the plant and its components with clear graphic images.

In addition, the entire boiler system can be remotely controlled.

### Cooled moving stair grate

The grate has both moving and fixed steps. The fixed steps are water-cooled and theirs grate pipes / shafts are drawn through the furnace section's paths with passages for connecting the water cooling on the outside of the boiler.

The movable parts are located on hydraulically driven trolleys, which cause the movable grids to push the fuel bed during combustion so that at the end of the grate, the ash falls into the ash shaft.

HVTS-G boilers are approved according to **AFS 2016:1** (Pressure-bearing devices)

Use renewable **WOOD CHIPS**  
– can handle up to 55 % in moisture level