

# *PRESS STEAM EXTRACTION*



In the last few years, in addition to the need to adopt stricter environmental standards at plants manufacturing wood boards and fibreboard, attention has also been focussed on the importance of the availability of such plants. Especially in the case of continuous press steam systems with ever-increasing production capacities, as well as collecting the steam, it is more important than ever to maintain the plants themselves clean.

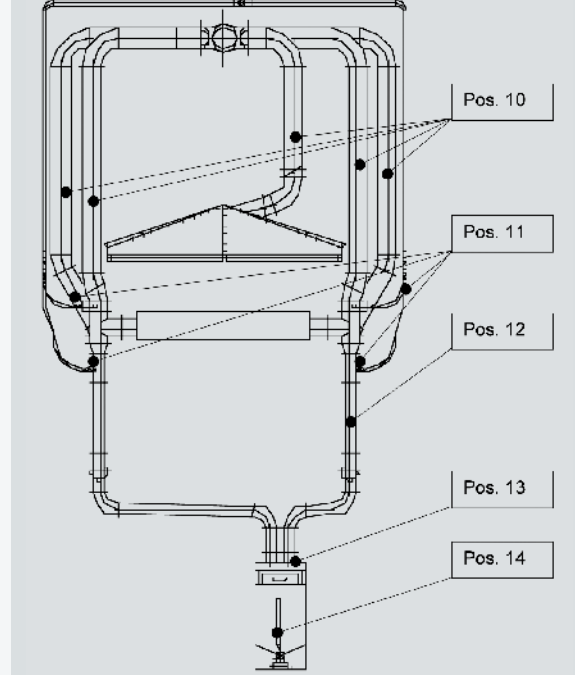
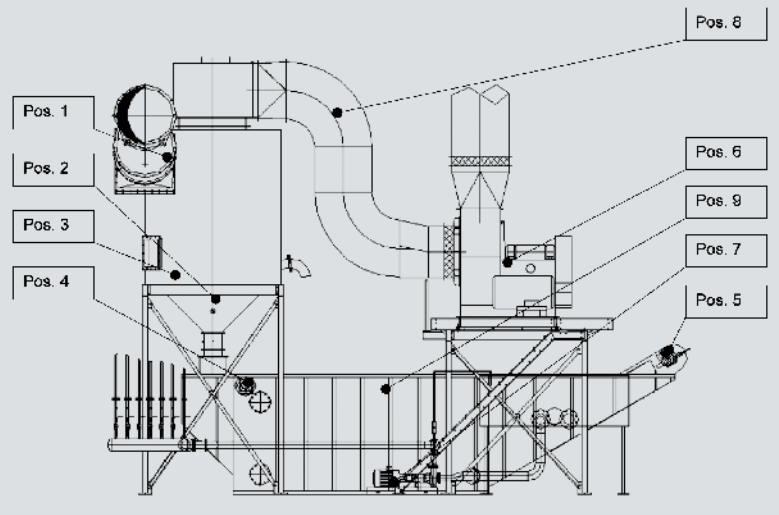
The press exhaust gas can be aspirated in the press steam intake, return tunnel or the press steam outlet. The crude gas arriving from the suction points (pos. 10) is immediately cooled behind the suction intake points in the crude gas pipe by jets of water (pos. 11). This procedure also prevents cake formation inside the crude gas pipe (pos. 10). Water and solid materials that are not sucked off together with the gas stream towards the water separator pass through the drain pipes (pos. 12) into the reclaim tank (pos. 13). The accumulated matter in the reclaim tank (pos. 13) is separated into water and large particles by a sieve. The water so collected is fed back through a return pump (pos. 14) into the crude gas pipe. The return pipe is triggered by a level control system in the reclaim tank. All the crude gas that has been suctioned is

carried towards the Venturi scrubber (pos. 1) and the water separator (pos. 2). The crude gas is quenched in the Venturi scrubber (pos. 1). This means that the crude gas is compressed and saturated with water. As a result, the solid matter in the crude gas binds to the water thus allowing it to be separated in the water separator. The liquid is separated from the solid matter in the water separator (pos. 2). The separated water passes to the sedimentation tank (pos. 9) for processing while the solid matter is once again separated from the water. The heavy solid materials are conveyed by a mechanical discharge system (pos. 5) away from the sedimentation tank (pos. 9) to a container.

The accumulated floating sludge is drawn off by a discharge screw (pos. 4) and likewise deposited in the container. Inside the collecting contain-

**ceATec** press steam extraction systems can be employed in processes used to manufacture chipboards, OSB and MDF/HDF boards.

er, both fractions are conveyed to a sieve tray where the water is allowed to drain away. The water is sent back to the sedimentation tank by a submersible pump. The water level in the sedimentation tank is maintained at a constant level by a level control system in a storage tank. From here, the cleaned process water is fed back into the process water cycle by means of a circulation pump (pos. 7).



Overview and design of a press steam scrubber with a water separator and a sedimentation tank.

**The advantages of *ceATec* press steam extraction systems:**

- The wet scrubber designed by *ceATec* does not require any additional hot water since no curved screen is employed.
- No process water is accumulated that has to be subsequently disposed of. This means no expensive disposal processes.
- The solid materials are immediately carried away by the *ceATec* system together with the air stream, passing through the Venturi scrubber and the water separator to reach the sedimentation tank. This eliminates the risk of the standpipes clogging up.
- Comparatively lower energy requirements since the system operates under less pressure because of the absence of standpipes.
- The large sedimentation tank (capacity between 30 m<sup>3</sup> and 45 m<sup>3</sup>) means that expensive chemical additives do not have to be employed.



## Emissions:

The main component of emissions produced by press steam systems is water vapour which at the same time is a carrier for wood components such as terpene.

Other components are solid matter (fibres, shavings or strands), components used to make adhesives (formaldehyde, phenol, cyanate), anti-caking agents such as paraffin and oils from the lubricants used in the press steam system.

However, it should be noted that the proportion and the composition of these harmful substances depend on the type of installation, type of wood or board and the adhesives employed.

Measurement report available upon request.

## Technical data:

- Volume flow rates ranging from 60,000 m<sup>3</sup>/h to 155,000 m<sup>3</sup>/h
- Power output of extraction ventilators ranging from 132 kW to 315 kW
- Water flow rates in process water cycle ranging from 30 m<sup>3</sup>/h to 90 m<sup>3</sup>/h
- Power output of circulation pumps ranging from 5.5 kW to 22 kW
- Water requirements ranging from 100 l/h to 400 l/h