Stacker- **R**eclaimer 30 Stand 600/600 t/h (Turkey)

General infomation

- ✓ *Year: 2001*
- ✓ *Customer: Techint per Alstom*
- ✓ *Location: Can Thermal Plant (Turkey)*

Structural and executive design of the structures of a stacker-reclaimer machine.

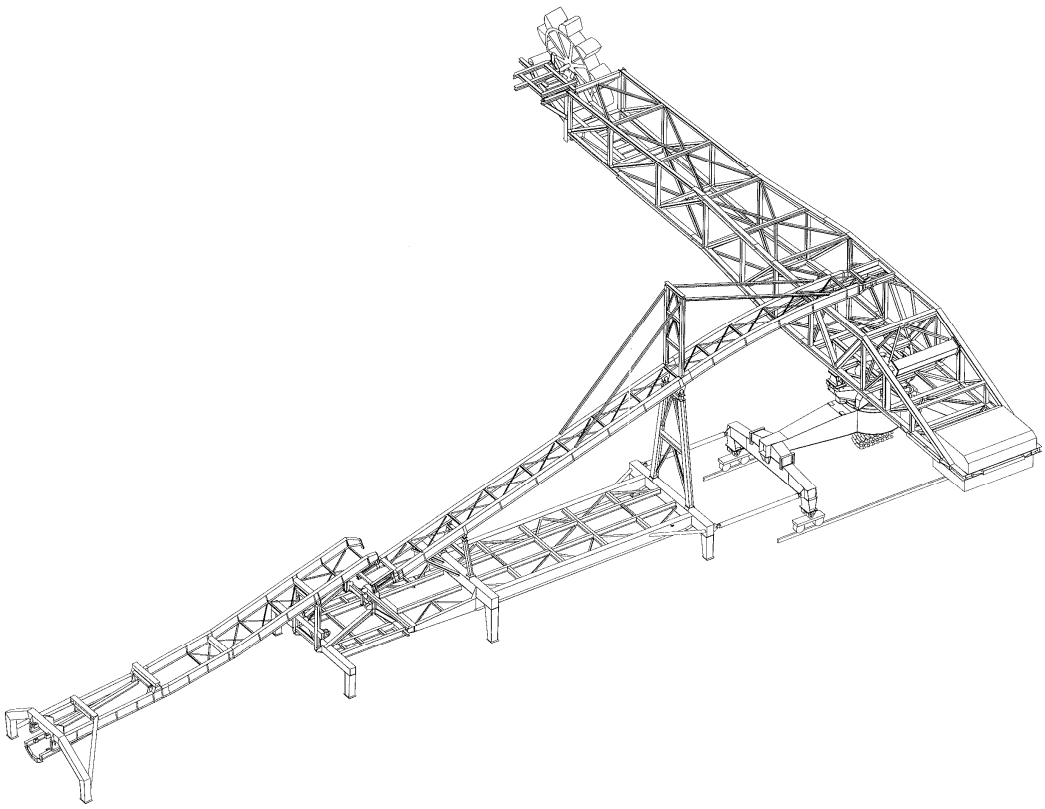
Characteristics of the project

The stacker-reclaimer was designed for the Can power station in Turkey and has a potential of 600 t/h

Steel structures

The machine consists of the following macro-parts:
wheel boxes, gantry, boom with counterweight, bucket wheel with reclaimer, tripper/trailer
It is self-propelled on rails that run to the edge of the park with a wheelbase of 7 m.
A conveyor belt, using the tripper/trailer, conveys the iron ore to the boom which is then stored in the park.

Alternatively, a rotating wheel with buckets fitted at the end of the boom allows the material to be recovered from the park and sends it via conveyor belts to the place of use.
The boom, consisting of a steel reticular structure 35 metres in length, is able to pivot horizontally and tilt from +8 to -13 degrees from the horizontal; a fifth wheel is fitted between the arm and the wagon, while the inclination of the arm is controlled by the action of hydrodynamic cylinders.



TEKLA model of the Stacker-Reclaimer
General load-bearing structure

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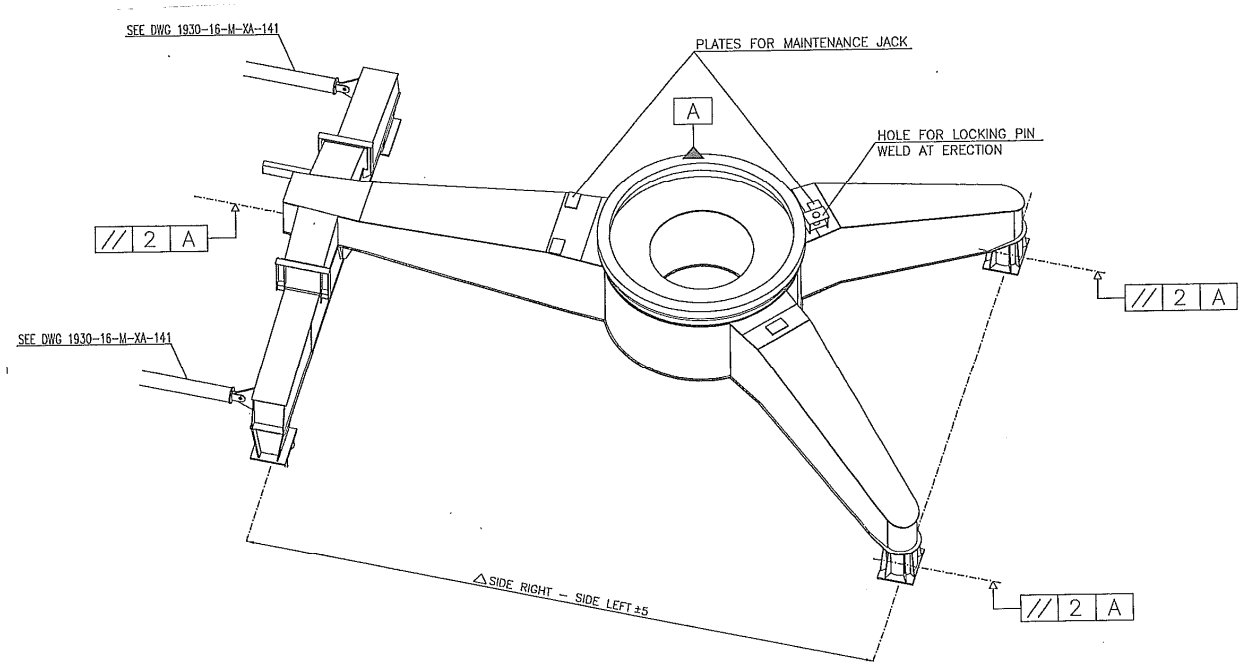
The structure of the tripper-trailer also consists of a steel trussed structure.
The structure of the wagon, however, is welded in composition from sheets, some of which are of considerable thickness.
Particular attention was paid to details of welding to prevent fatigue phenomena.
The main structures house the working platforms, substations, walkways and engines for the drives.

Design tools

The structural calculation was performed according to FEM regulations and Turkish laws governing seismic action with a STAAD/Pro finite element program (Bentley U.S.A.), modelling the structure with slab or beam elements.
The design was performed entirely using TEKLA, which also allowed the extraction of the working drawings.



3D model: fifth wheel support and rolling wagon