Salt Harvester

SH-1500

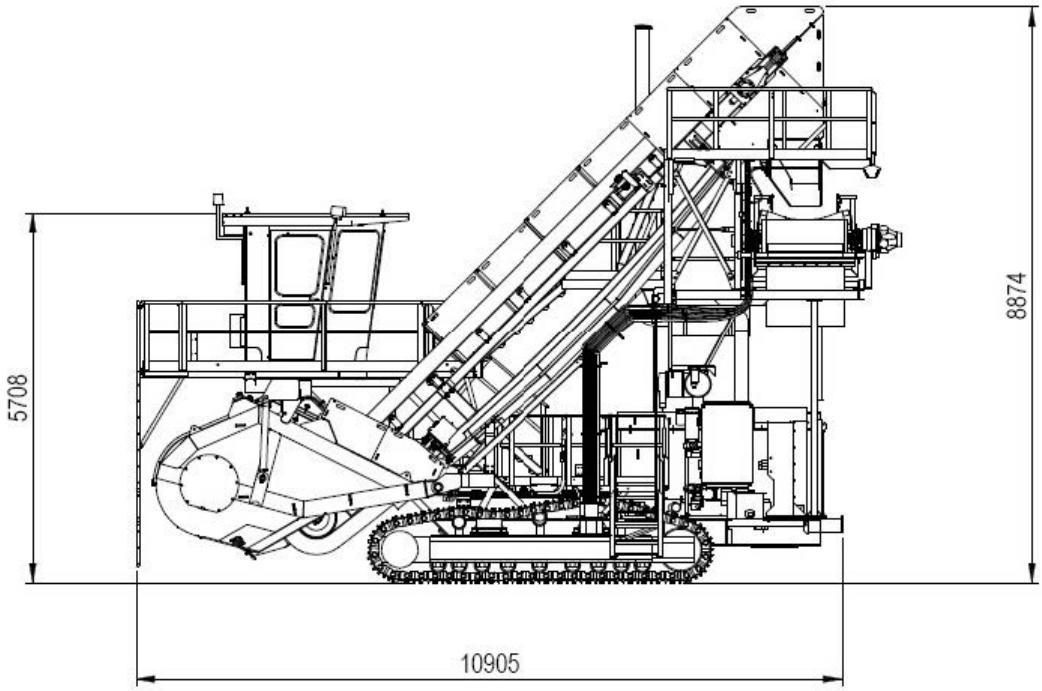
Model	SH-1500
Manufacture Date	MAY 2009
Height	8.9 m
Length	11.8 m
Width	8.0 m
Weight	62.5 TONNES
Engine Rating	328 BKW
Continuous Capacity	1500 TONNES/HOUR
Approach/Departure Angle	14°/11°

Machine Capabilities

The harvester is designed to pick up salt and load trailers on either side of the machine, while traversing evaporation ponds from end to end. The salt harvester design is based on an earthmoving track machine, and has a variable pitch blade feeding onto a screw lift auger, which in turn feeds two elevating conveyor belts that discharge onto a bi-directional conveyor belt.

The machine is designed to harvest salt at an average rate of 1,500 tonnes per hour. At this rate, no system or component of the machine has a demand greater than 80% of its rated capacity. The machine is however capable of harvesting salt at a peak rate of 2,000 tonnes per hour if necessary. Typical cutting depth for the machine should be between 250 to 300 mm, but the machine is capable of cutting to a depth of 400 mm.

The design involved salt flow analysis using Discrete Element Modelling (DEM), FEA structural analysis, conveyor system design, hydraulics and control system design, and selection of all major components including many Caterpillar items.

The harvester is operated by one person. The operator steers the machine, and varies the depth of the cutter drum and the ground speed of the harvester to suit the salt depth. At the same time the discharge conveyor is extended and retracted to trim the load on the salt trailer. The travel speed control can be handled automatically in order to optimise the power requirement and reduce the demands on the operator.

Dimensions