

Pumping Wood Chips for Paper Pulp Production

Application market	Industry
Market segment	Pulp & Paper
Pumped medium	Process liquid with wood chips
Pump product	V-type hydraulic with Bearing frame
Country	Various around the World



Challenge

As a first process step, wood chips for the production of paper pulp are cut into small pieces of an as far as possible uniform size. Larger pieces of wood can nevertheless occur, stones and a sometimes high content of sand must also be taken into account. For further treatment, the chips are mixed in a pressure vessel with the process liquids, the so-called white and black liquor, at a temperature of approx. 100°C. Hidrostral was asked for a method in order to feed the wood chips in a further step, as economic as possible to the chemical digestion process into the top of the up to 70 meters high digester. High system availability and long service lives of the components used in continuous operation of several months were the main requirements.

Solution

Together with the pulp mill manufacturer, a multi-stage pump system was developed. The Hidrostral Screw Centrifugal Pump type V with closed impeller is used in series connection of two, three or four units. A broad product range with different pump sizes and types in a special design for the required increased pressure resistance, very good chemical corrosion and wear resistance was developed and introduced.

Benefits

The Hidrostral pump easily delivers and gentle handles a wood chips content of 25% or more of the overall flow rate that is pumped to the digester, enabling the operator to finally reach maximum productivity with the highest paper pulp production rates ever achieved in the world.

Quantity of units sold	62 in different countries
Pump type	I06V-SHN5R + ILC50 (of special design with two or three units in series)
Motor data	IEC frame size 355 / 355 kW / 4 pole / 50 Hz / 400 V
Material combination	Stainless steel and Duplex stainless steel wetted parts with Duplex stainless steel impeller
Duty point	Flow : 280 litres per second / Head : 120 meters (overall)
In operation since	2007 and later