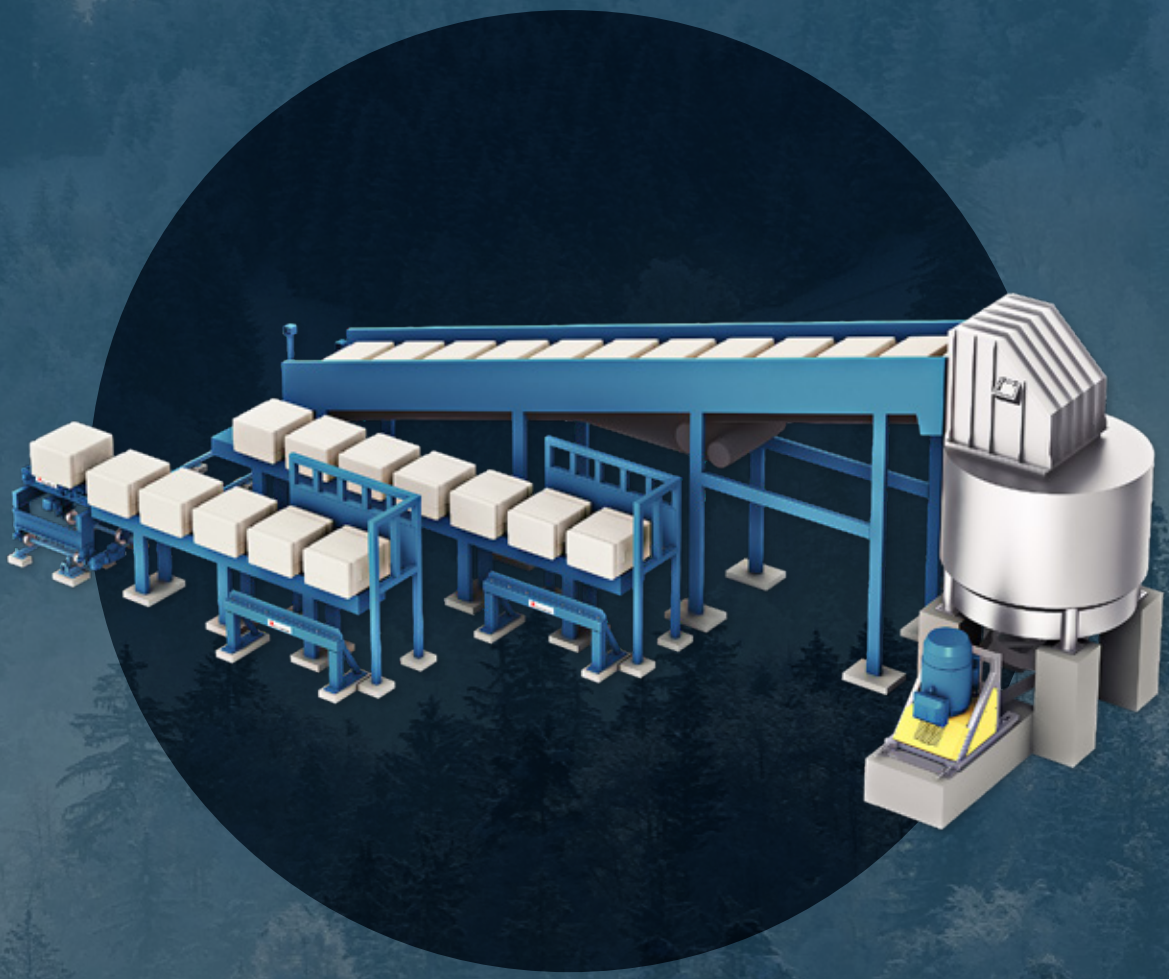
Cellwood Machinery

Grubbens Pulpers

Grubbens

Recycling solutions for paper and organic waste.

ENERGY EFFICIENT SOLUTIONS FOR PAPER DISSOLVING.
GRUBBENS PULPER RANGE DELIVERS SUPERIOR QUALITY, SHORT PULPING TIME, AS WELL AS A VERY LOW POWER CONSUMPTION.



Grubbens pulpers.
The result of 60 years of experience and continous development

The Grubbens product line provides solutions for under-the-machine, bale, broke and high consistency pulpers. These solutions apply not only to complete new units but also to upgrades of existing ones.

Given that many paper mills still operate pulpers of outdated design, characterized by substantial energy consumption, Cellwood specializes in the rebuilding of existing pulpers. This modernization significantly reduces energy consumption and enhances throughput capabilities.

Grubbens pulpers fulfill market requirements, such as:

- Gentle disintegration of pulp
- High pulping consistency
- Disintegration of wet-strength material without the use of chemical additives nor steam
- Low energy consumption
- Low maintenance costs
- Unique technical features such as reversible strainer plates, wear bars and counter knives
- Customized solutions.

Grubbens Vertical Pulpers
Type V

Grubbens V-Pulpers are used in the following positions

- Pulping of bales
- Broke handling
- Trim handling
- Pulping of wet strength material

Bale Pulper

- Cellwood Machinery AB has over 60 years of experience with different pulper installations and offers the most energy efficient and flexible pulping solutions.
- The design of the Grubbens vertical pulper and S-rotor allows for a high operating consistency in both batch and continuous operation.
- The optimal pulping conditions result in high pulping quality, short pulping time as well as a very low power usage (kWh/ton).
- High pulping quality is vital for the optimal performance of the following refining stage.

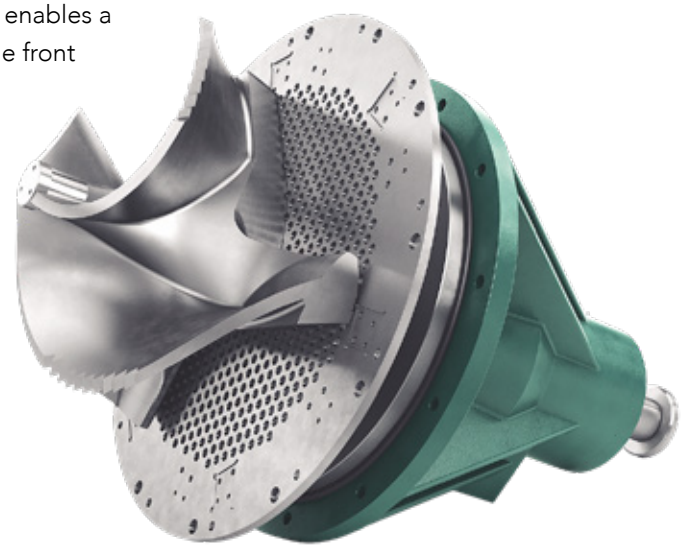
Trim / Broke Pulper

- Customized solutions allow flexible installations in regards to design and placement of feed hood, pulper tub and motor frame.
- The design of the Grubbens vertical pulper and S-rotor avoids a rotating flow, instead establishing a well-defined flow pattern of the pulp. Three main streams ensure strong fiber to fiber friction and a high velocity toward the center of the rotor.

Grubbens Pulper Rotor
Type S

Grubbens Rotor type S is specifically developed for dissolving virgin pulp and challenging paper qualities, including those with wet strength. The S rotor can be equipped with counter knives and wear bars.

The hydrodynamic design of the vanes enables a dual action handling of the pulp. On the front side of the vane, the pulp pressure is directed downward towards the screen plate, forcing the dissolved pulp out through the strainer holes. On the back side of the vanes, negative pressure cleans the strainer holes, eliminating the risk of holes getting blocked.

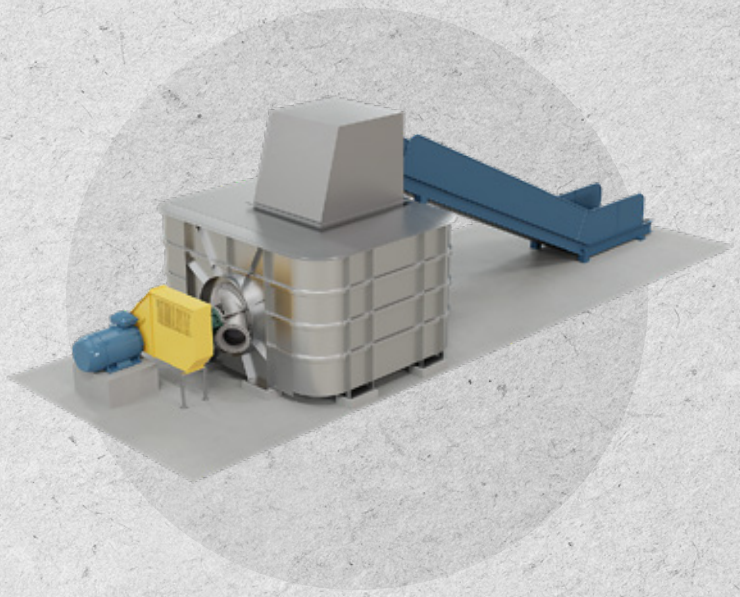


The advantages of the rotor type S are the following:

- The rotor combines hydrodynamical and mechanical dissolving of the pulp
- The design of rotor vanes prevents plugging of the strainer holes
- The rotor can dissolve tough paper qualities, especially wet strength qualities
- The rotor allows higher pulp consistency through the strainer holes
- The rotor enables a higher flow of pulp through the strainer plate
- The rotor facilitates the emptying of the pulper by creating an overpressure on the suction side of the pump

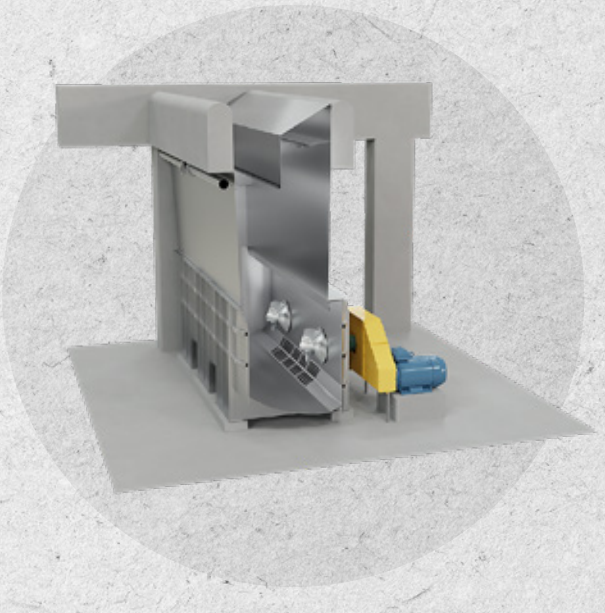
All these features combined contributes to a highly energy efficient dissolving of pulp.

Grubbens Horizontal Pulpers
Type W



Bale Pulper

- Because the overall height is much lower than a vertical pulper, a shorter and less costly bale conveyor can be used. This results in a better, more compact and simpler layout for the entire system.
- Under similar operating conditions, the Grubbens horizontal design consumes less energy than a traditional vertical pulper.
- The unique design of the unit and tub ensures optimal operation with minimal maintenance costs.



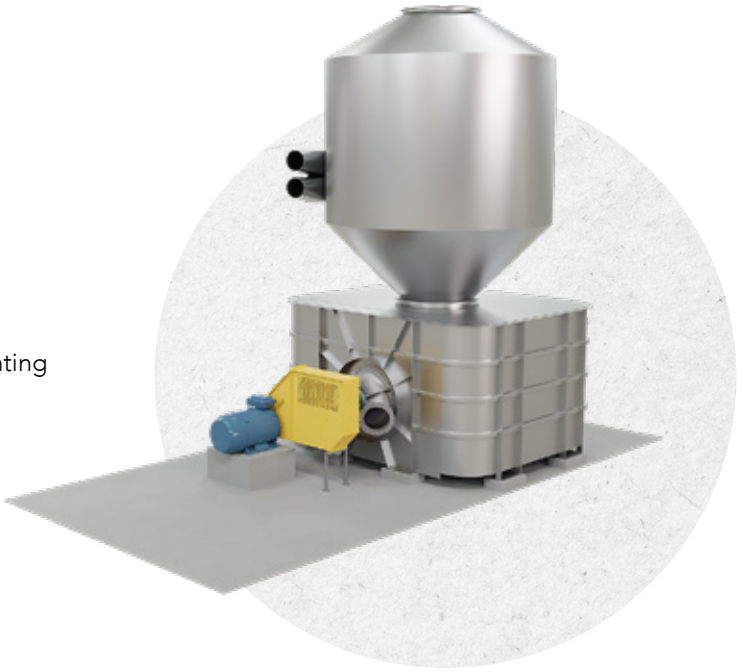
Couch and Press Pulper

- A Grubbens pulper unit offers a significantly reduced pulping volume and higher pulping consistency compared to an agitator.
- Grubbens G-rotors are installed in pulpers that process broke with a dry content of less than 50 percent. The design of the G-rotor enables optimum performance without strainer plate, resulting in minimal energy consumption.
- To further reduce energy consumption in trim processing, a frequency converter can be installed.

Dry end Pulper / Pulpers before and after coating

- The design of Grubbens pulpers permits flexible and fully custom engineered installation solutions.
- Grubbens S-rotors are installed in pulpers that process broke with a dry content of 50 percent or more.
- Cellwood designs and configures showers, venting systems and chutes in order to achieve optimum pulper operation.

Winder Pulper, Trim Pulper and Broke Pulper



- The robust construction and design of the Grubbens pulper enable optimal customization, such as the direct mounting of a cyclone on the pulper.

- Low power consumption and a high level of reliability results in a pulper with very low operating and maintenance costs.

Grubbens High Consistency Pulpers
Type HC

High-consistency pulping, efficient processing of recycled paper and virgin fiber.

The Grubbens HC-pulper is operated in batch mode. The high consistency enables a high capacity in a compact tank volume with low power consumption. The material dissolves fast due to high friction between the dissolving materials.

The customer-specific design of the tank and rotor optimizes the process based on desired capacity, raw material, and reject amount. The raw material can contain a large amount of waste which is efficiently removed during pulper emptying.

A Grubbens HC-pulper ensures a gentle treatment of the waste, facilitating its easy removal in the subsequent process step, the Grubbens reject separator.

The rotor design in combination with excellent circulation within the vat permits operation at consistencies up to 18%.

Grubbens Reject Separator

Description

The Grubbens reject separator is used in the stock preparation when emptying LC, MC and HC pulpers. GRS can be installed in new lines as well as in rebuilds and improvements of old ones. As the inlet is tangentially located it allows for a manhole in the front of the unit, reducing wear on the rotor and strainer plate.

Easy to incorporate into the process, the GRS guarantees a clean and efficient handling of rejects, it is also easy to maintain.

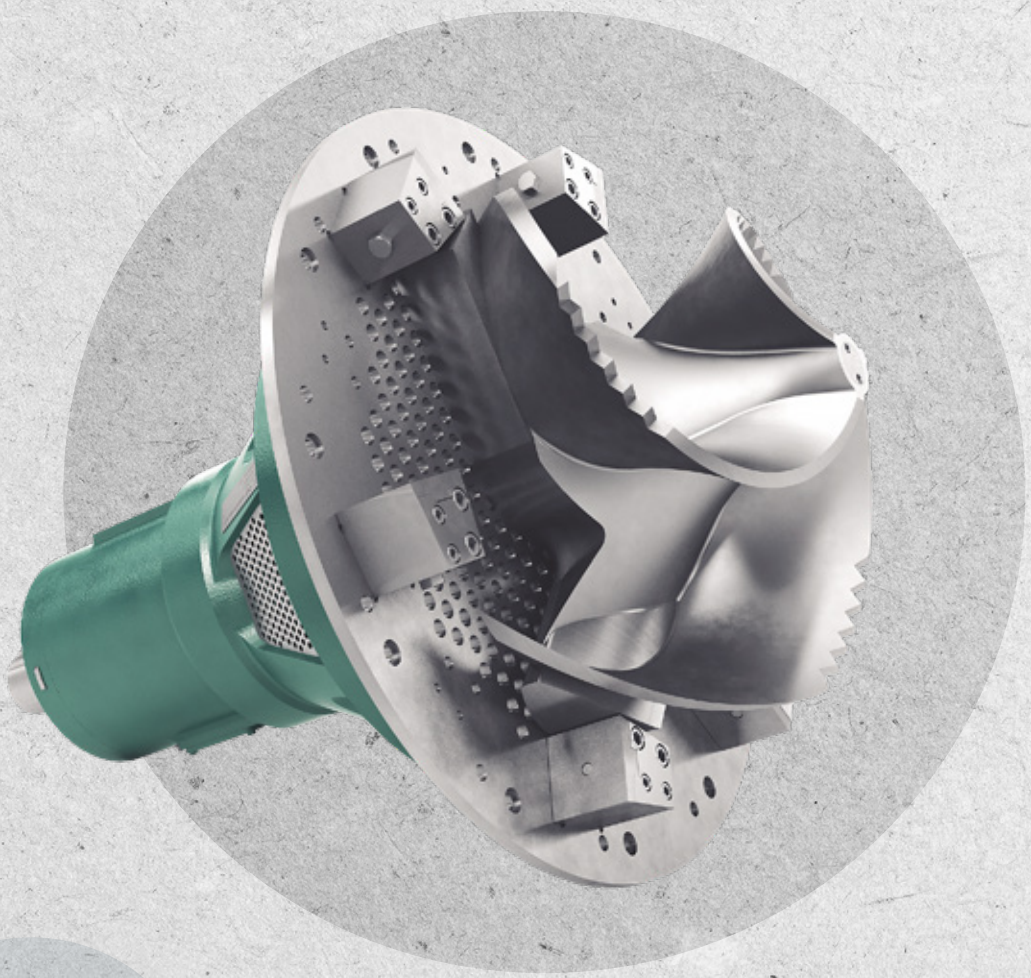
Our 60 years of experience in design of pulpers such as bale, broke and UTM allows us to provide an optimal solution tailored to your specific needs.

Pulping of wet strength material

The S rotor, paired with wear bars on the vanes and a strainer plate equipped with counter knives, enables the processing of exceptionally tough materials.

This is used in wet strength applications to eliminate the need for chemicals and excessive temperatures in the pulper.

It can also be used for rebuilds where the volume of the vat is slightly too small. The counter knifes then shortens the needed dwell time which makes it possible to use the existing vat.



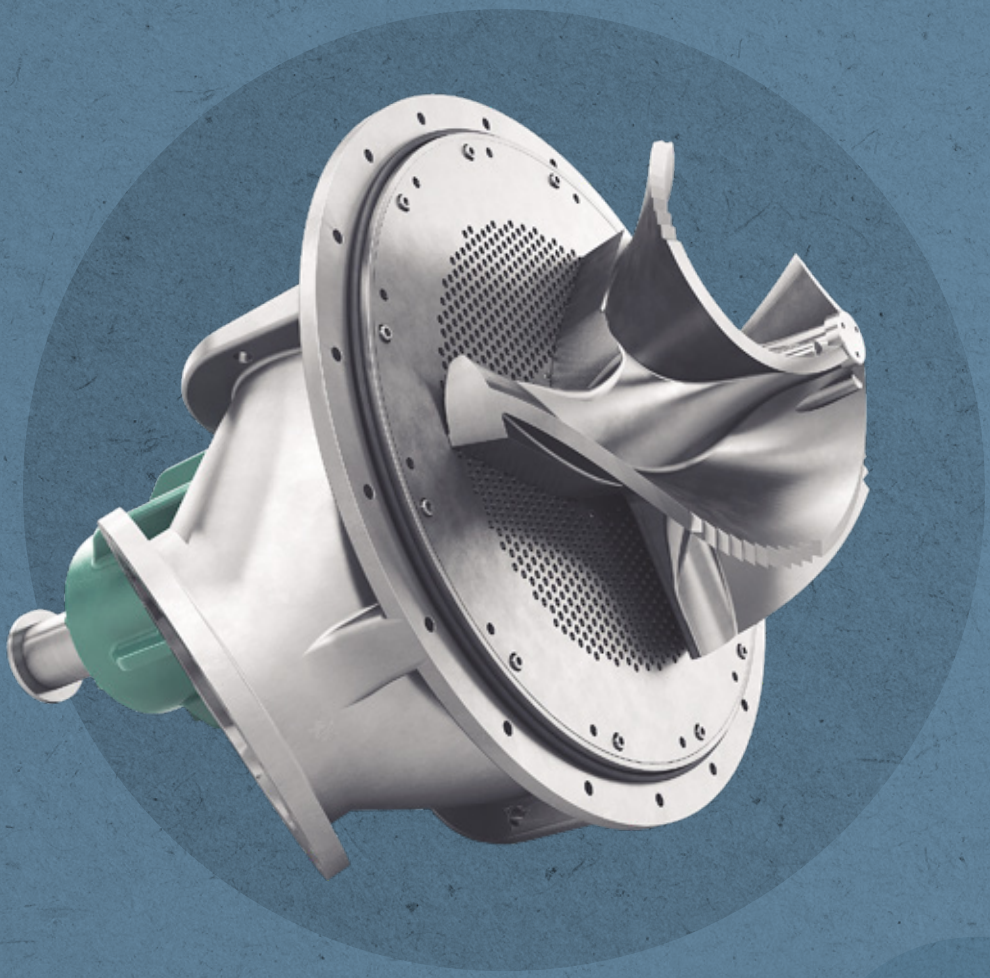
Grubbens Pulper Rebuild

Modern paper machines set high expectations for auxiliary equipment such as pulpers. Balancing low energy consumption with high capacities poses a significant challenge.

A good alternative to investing in a new pulper is the rebuilding of an existing one. Cellwood Grubbens extensive experience in rebuilds allows for cost effective solutions for both vertical and horizontal pulpers.

A Pulper rebuild often realizes the following benefits:

- Existing vat is reused
- Existing foundation is reused
- Existing piping is reused
- Existing motor is reused
- Fast installation and commissioning
- Large increase in capacity
- Energy savings
- Ability to run wet strength qualities
- Improved pulp quality
- Lower maintenance cost
- Low investment compared to a new installation



Enhancing recycling

We make the most of nature

Recycling solutions for paper and organic waste.

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