TYPES OF PULPERS FOR REBUILD

Most rebuilds are made with the goal of increased pulper capacity, which means that the operating consistency and in some cases the pulper volume are increased. This is achieved by installing a more modern rotorunit in the pulper.

For UTM pulpers the focus of a rebuild is normally increased consistency and optimization of the controls surrounding the pulper.

Broke pulpers and bale pulpers are most commonly upgraded by a change from batch to continuous operation.

In many cases the rebuild is done to lower maintenance costs as well as an energy savings project.

Maintenance Problems

Capacity Increase

Operational problems, wetstrength towel

As of today Cellwood Grubbens have many other installations on specialty materials such as wetstrength, viscose, heavy fiberboard for the electrical industry, fiberglass, nonwoven and digester rejects.

CAPACITY INCREASE AND ENERGY SAVINGS – REBUILDS

1. Fine Paper Mill – UTM Pope pulper
Volume 36 m^3
The pulper was operating at 350 Tpd
After a rebuild to type W36-105/84S the capacity was 720 Tpd. This lowered the energy consumption from 8,91 kWh/Ton to 6,67 kWh/Ton. A reduction of 25%.

2. Fine Paper Mill – UTM Pope pulper
Volume 36 m^3
The pulper was originally operating at 350 Tpd.
After a second rebuild in 2008 to type W36-105/84S the capacity was 960 Tpd. The existing motor could be kept. This lowered the original energy consumption from 8,91 kWh/Ton to 4,5 kWh/Ton. A reduction of 50%.

3. Liner Mill – UTM Pope Pulper
Volume 80 m^3
The pulper was commissioned in 1984 at a capacity of 616 Tpd. It was rebuilt in 1992 to type 2W80SR-82/84G with a capacity of 1186 Tpd. This without changing the motor or rpm. This lowered the energy consumption from 19,86 kWh/Ton to 10,32 kWh/Ton. A reduction of 48%. This rebuild changed the pulper from L to W meaning a 20% increase in volume. It was rebuilt again in 1999 to type 2W80-105/84S at a new capacity of 1725 Tpd. This time the motor was changed but the energy consumption was lowered from 10,32 to 7,51 kWh/Ton. A decrease with 27%. Total energy reduction after the 2 rebuilds was 62%.

4. Newsprint Mill – TMP Pulper
The pulper is installed in the bleach plant.
Volume is 23 m^3. Originally it ran continuous at 4–5% consistency at a capacity of 800Tpd. Installed motor was 160kW.
During the rebuild the capacity was increased to 1200 Tpd. The operating consistency was increased to 6–6,5% and the motor changed to 200 kW.

5. Vertical Pulper
Volume 30 m^3
Change of operating mode from batch to continuous.
Batchmode with V30-105/84S
Consistency: 8,25%
Batches/hr: 4
Capacity: 2475 kg/ batch – 237,6 Tpd
Energy: 22,42 kWh/Ton
Continuous with V30-105/84S
Consistency: 6%
Capacity: 617 Tpd
Energy: 8,64 kWh/Ton
The lowest energy consumption is for batch mode achieved at a consistency of 6–8 percent and for continuous at 5–6 percent.

Cellwood Machinery
FOR BETTER PULP AND PAPER

Cellwood Machinery AB ▪ Box 65 ▪ SE-571 21 Nässjö ▪ Sweden ▪ Phone +46 380-760 00 ▪ Fax +46 380-141 23
Street Address ▪ Storgatan 53 ▪ SE-571 32 Nässjö ▪ Sweden ▪ E-mail: sales@cellwood.se ▪ www.cellwood.se

PULPEROMBYGGNAD REV. 1 (ENG) 2013-10

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FOR BETTER PULP AND PAPER

Pulper Rebuild

Before After

Grubbens

CELLWOOD
MACHINERY

Grubbens Pulper Rebuild

Modern Paper machines bring high expectations on auxiliary equipment such as pulpers. Low energy consumption in combination with high capacities is a big challenge.

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

CAPACITY
ENERGY
PRODUCTION
MAINTENANCE

Before Rebuild

After Rebuild

Concrete Pulpers can also be Rebuilt

A pulper rebuild has the following advantages:

- Large increase in capacity
- Energy savings
- Ability to run wet strength qualities
- Improved pulp quality
- Lower maintenance costs
- Low investment in comparison to a new installation

REBUILD HORIZONTAL PULPER

A pulper rebuild brings many significant advantages all due to the combination of the Grubbens rotor and the unique design of the Grubbens vats.

High operating consistency in combination with an optimal pulp movement also allows for higher capacity and improved pulping quality.

Cellwood Grubbens long experience of customer tailored projects delivers cost effective rebuild alternatives. With a new mounting flange, alternatively a new front, as well as improved bottom design and deflectors the desired target can be achieved.

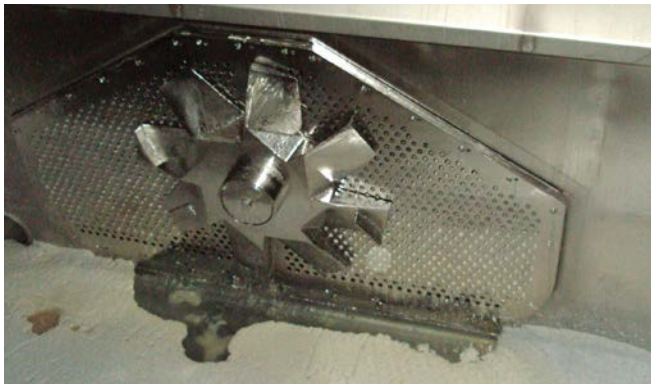
Grubbens robust rotorunit and improved pulper design guarantees longevity and low maintenance demands. The rotorunit is well suited for both belt and gear drives, this opens the possibility for flexible installation layouts. A pulper rebuild will reduce the energy demand and savings in the range of 30–70% are quite common.

CAPACITY

ENERGY

PRODUCTION

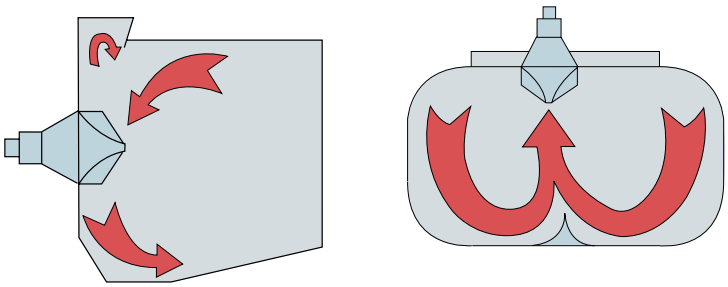
MAINTENANCE



Before Rebuild

After Rebuild

Flow pattern in Vat



A rebuild often realizes the following economic benefits:

- Existing vat is reused
- Existing foundation is reused
- Existing piping is reused
- Existing motor is reused
- Fast installation and commissioning

REBUILD VERTICAL PULPER

When rebuilding a vertical pulper the largest capacity increase is reached when changing operating mode from batch to continuous.

In these cases both pumps and piping are normally sufficient for the new capacity.

The lowest energy consumption is for batch mode achieved at a consistency of 6–8% and for continuous at 5–6%.

Non wetstrength paper grades normally leads to capacity increases after rebuild.

Pulpers are commonly rebuilt due to a change in furnish and paper grades. Especially pulpers for wet strength paper grades with operating issues are rebuilt as they require a more efficient pulping.

CAPACITY

ENERGY

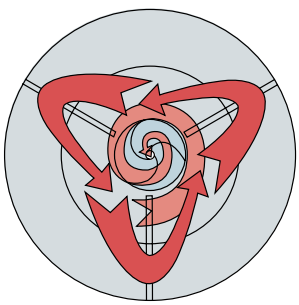
PRODUCTION

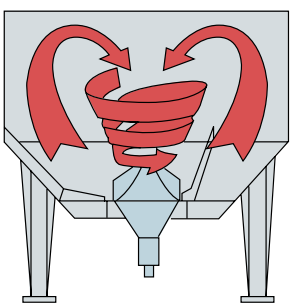
MAINTENANCE

Before Rebuild

After Rebuild

Flow pattern in Vat





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