

Dan-Web Machinery A/S

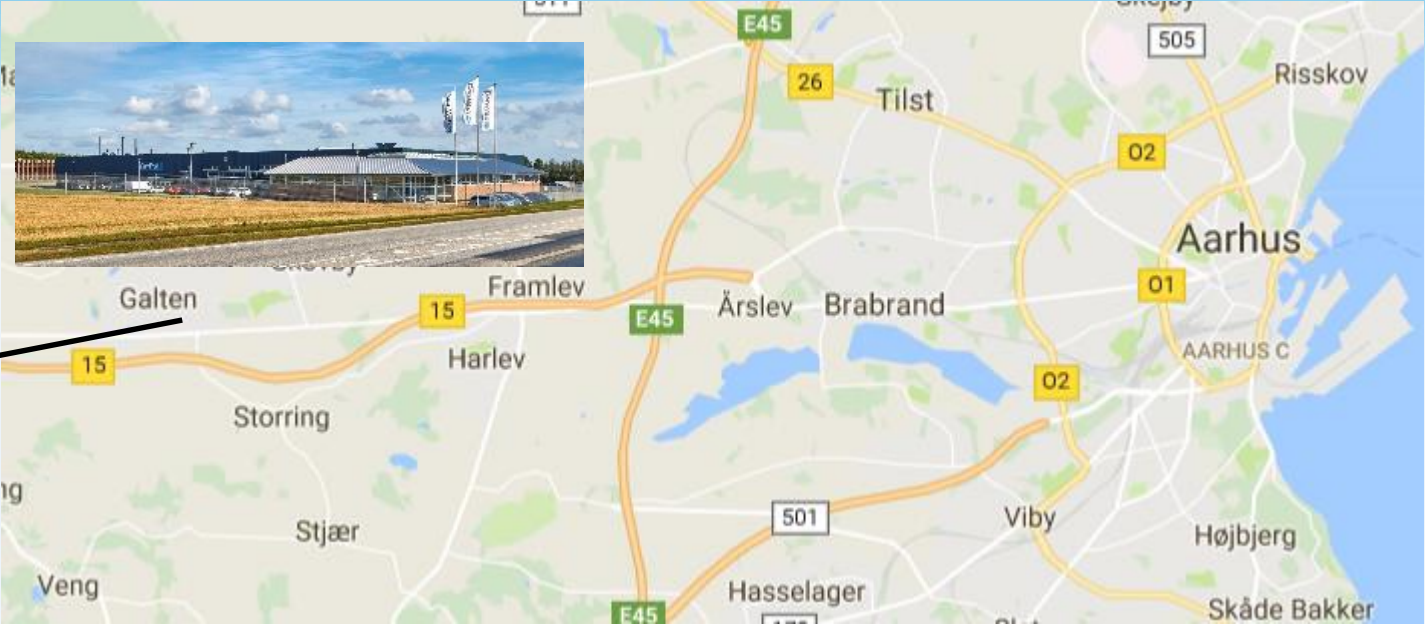
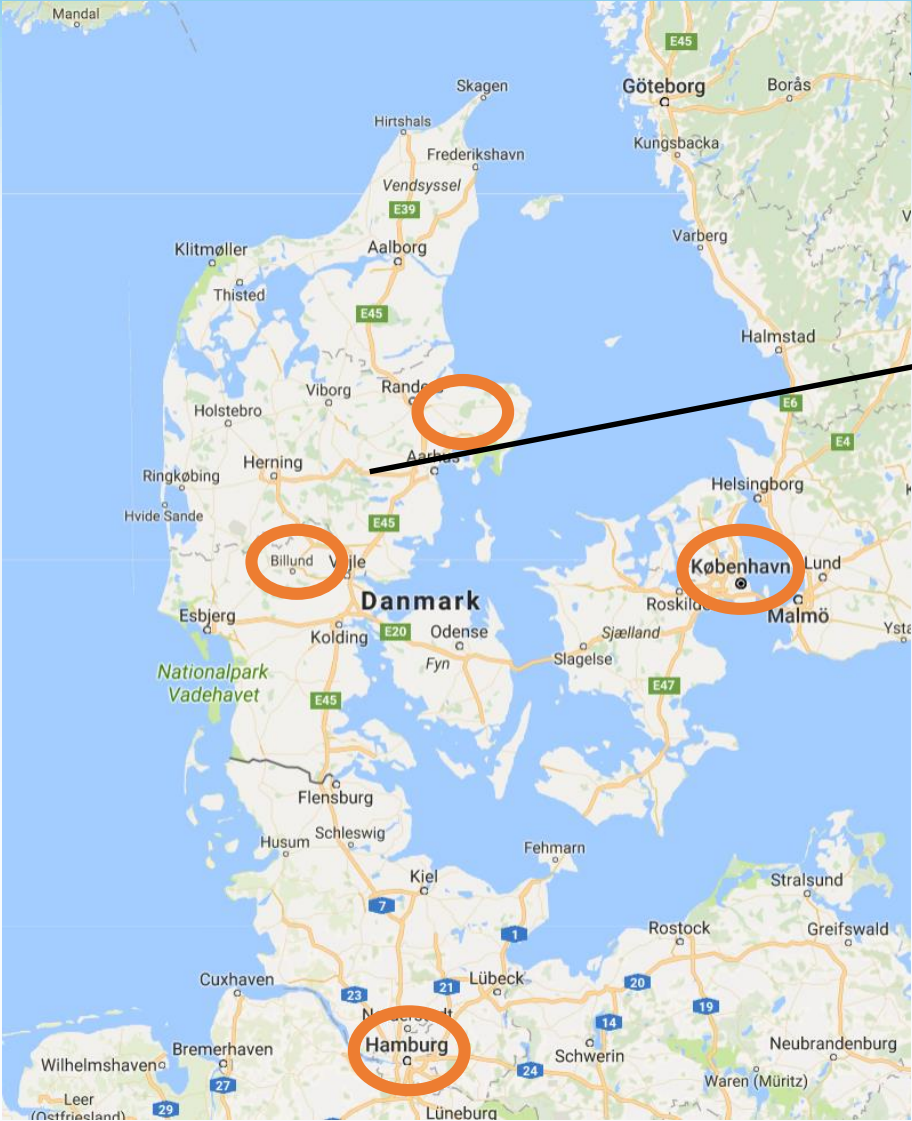
Defibration Technology



Dan-Web Machinery A/S



Central location



- 59 km from Aarhus airport
- 95 km from Billund airport
- 308 km from Copenhagen airport
- 334 km from Hamburg airport

Dan-Web Machinery A/S



- 40,000 m² total land area
- 10,000 m² total building area with overhead cranes for assembly work



- 1,000 m² modern office space
- Fully equipped meeting rooms

Dan-Web Machinery A/S



Pre-assembly and factory testing

Dan-Web Machinery Supplies:

- Airlaid lines for production of all types of airlaid products
- Airlaid web forming systems for combination with other nonwoven technologies
- **Defibration systems**
- Airlaid pilot lines
- Customized solutions
- Auxilliary equipment and upgrade projects for existing airlaid lines

Defibration systems

Complete Defibration systems

Over the years an increased demand for low environmental emissions, and cost savings in general, has prompted DAN-WEB to focus the development work to meet these criteria, and to help our customers meet their energy saving targets.

Our main issues:

- Energy savings
- Throughput
- Low operational cost
- Degree of defibration



Today we believe our Hammer Mill is the most efficient, low energy consuming, and lowest operational cost Mill on the market!

Key benefits

- Low energy consumption
- Higher throughput
- Low maintenance cost
- Handles all commercial pulp types, both treated and untreated
- Rapid on-site change of hammers, breaker bars and screens.
- Single and double feeding available.
- Pulp widths up to 1130mm

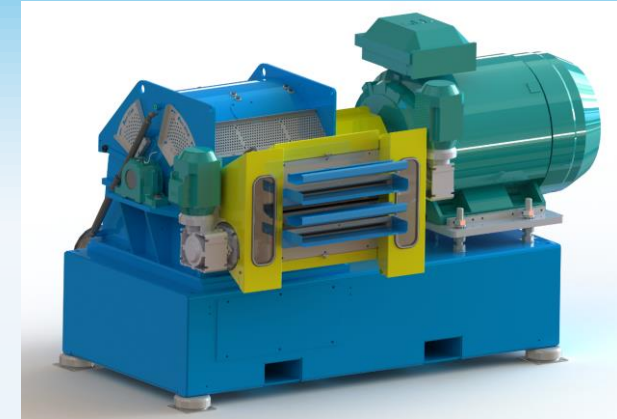


Defibrator sizes

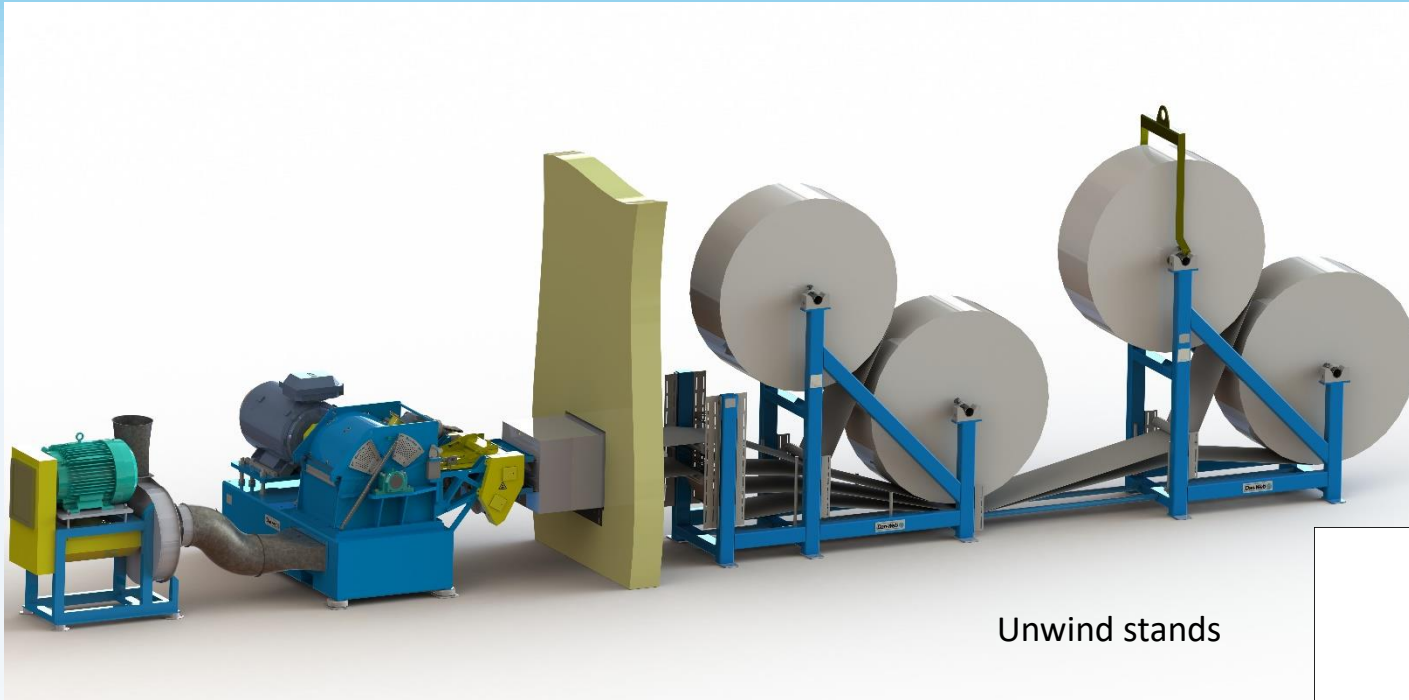
Our Defibrators/Hammermills are available in the standard widths of 10" (254mm) and 20" (508mm), as well as other common widths.

Type	Max Pulp Width
HM-DW254	254 mm
HM-DW508	508 mm
HM-DW635	635 mm
HM-DW1016	1016 mm
HM-DW1100	1100 mm

Other widths are available upon request.



Complete hammermill systems



Pulp roll lifting device

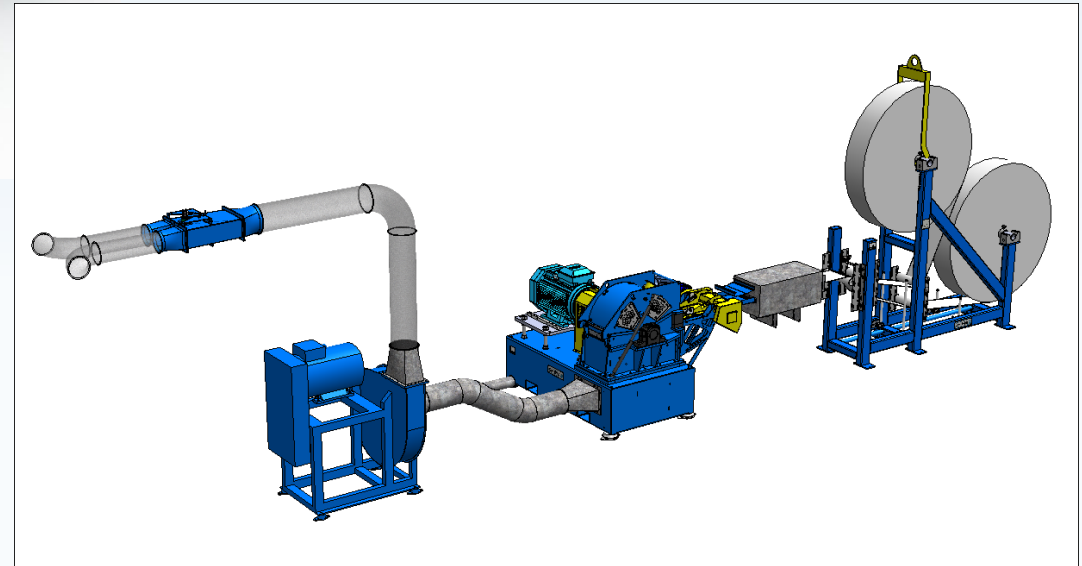
Pulp rolls

Unwind stands

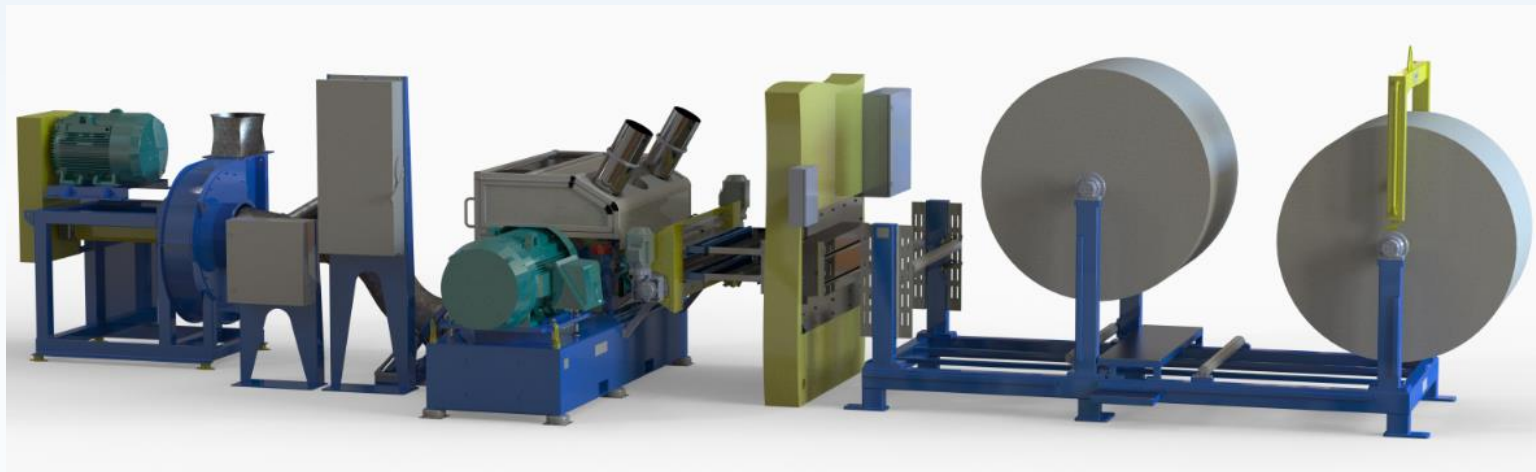
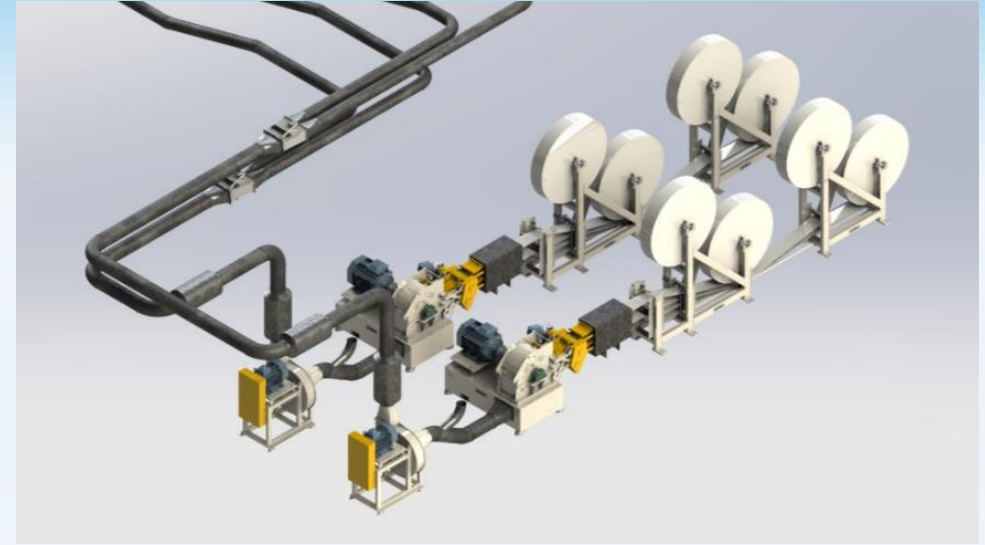
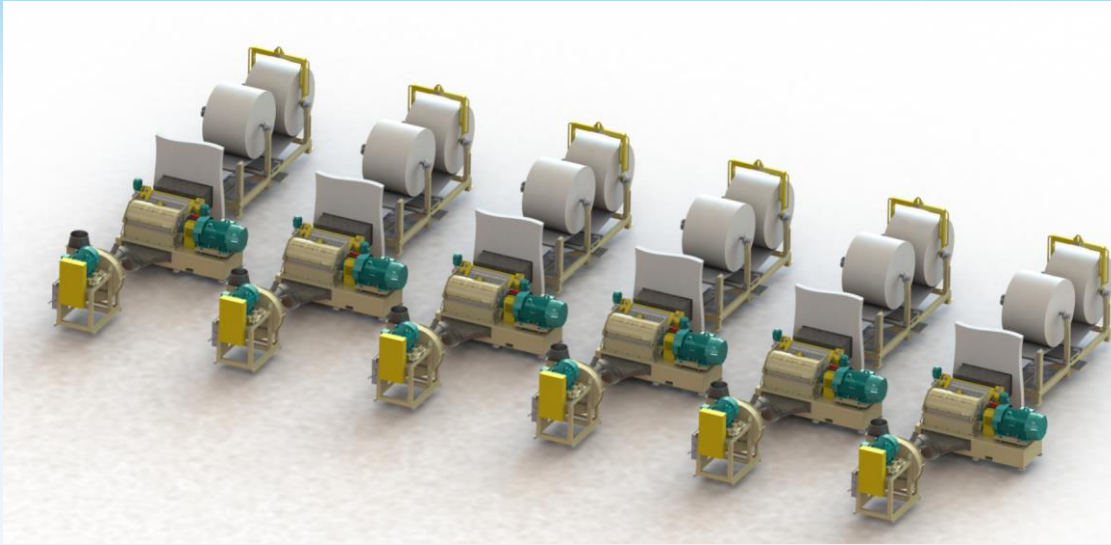
Noise reduction wall unit

Hammermill

Transport fan

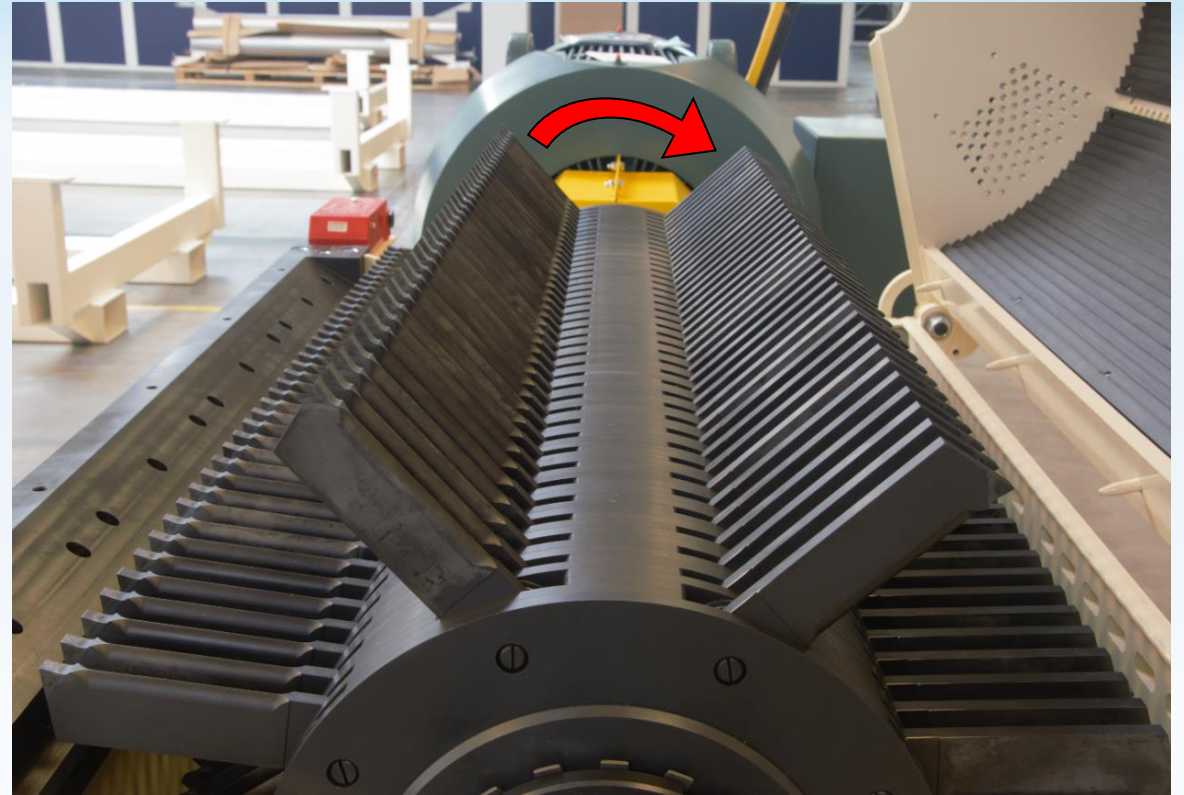


Complete defibration systems



Low energy and low RPM rotor

- Less heat and static generated
- Long lifetime of bearings
- Low maintenance
- No air/oil cooling
- Generates less dust and fines
- No vibrations
- No special foundation needed



Low energy and low RPM rotor

**Lower energy consumption - Higher throughput
Better defibration - Easy maintenance**

Limited travel distance on hammers

- No metal contamination
- No broken cutting edge

All surfaces machined to high tolerances

- No balancing issues

All surfaces rust protected

Higher strength

- No safety issues

Hammer width overlap

Simple replacement of hammers

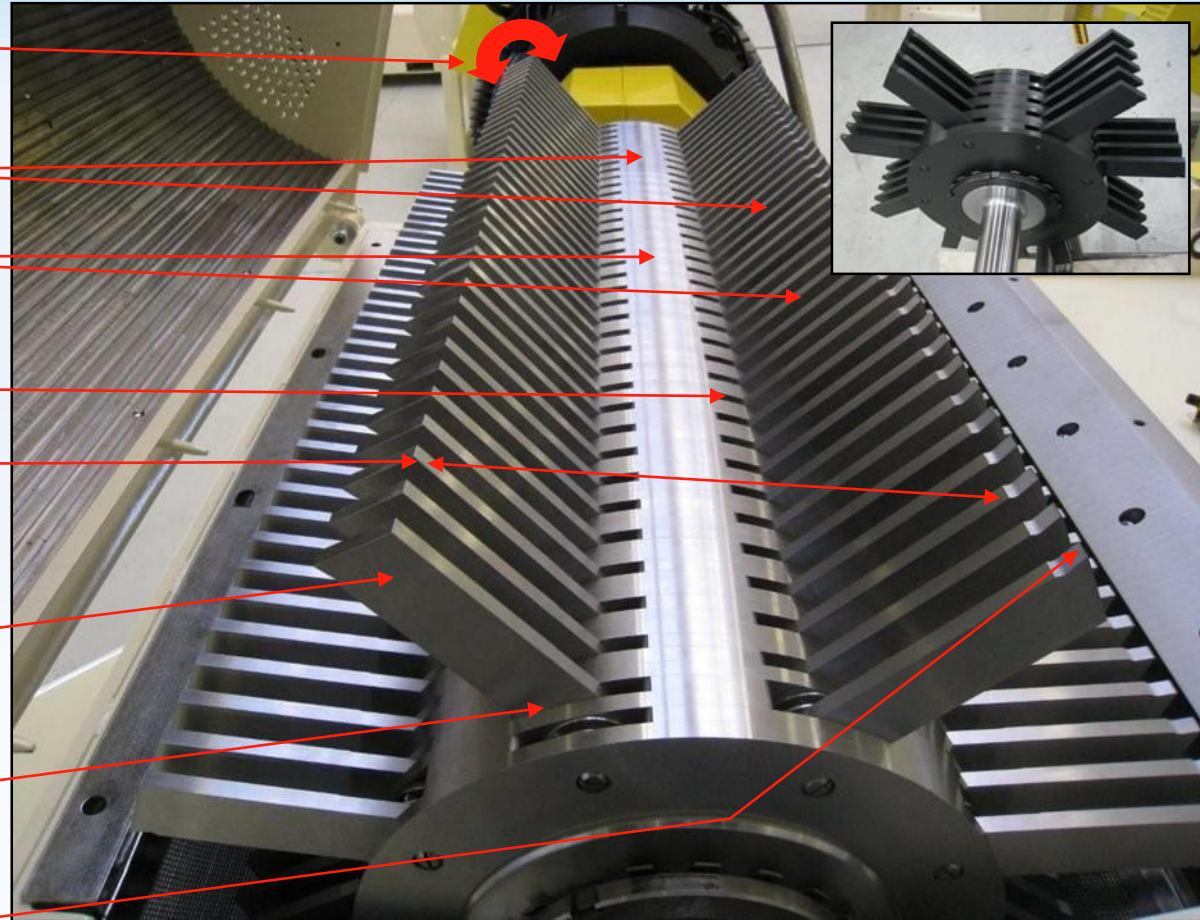
- No distance pieces between hammers
- No misplacements of hammers
- Fast change of hammers in the mill

No open areas

- No pulp build up
- No vibrations

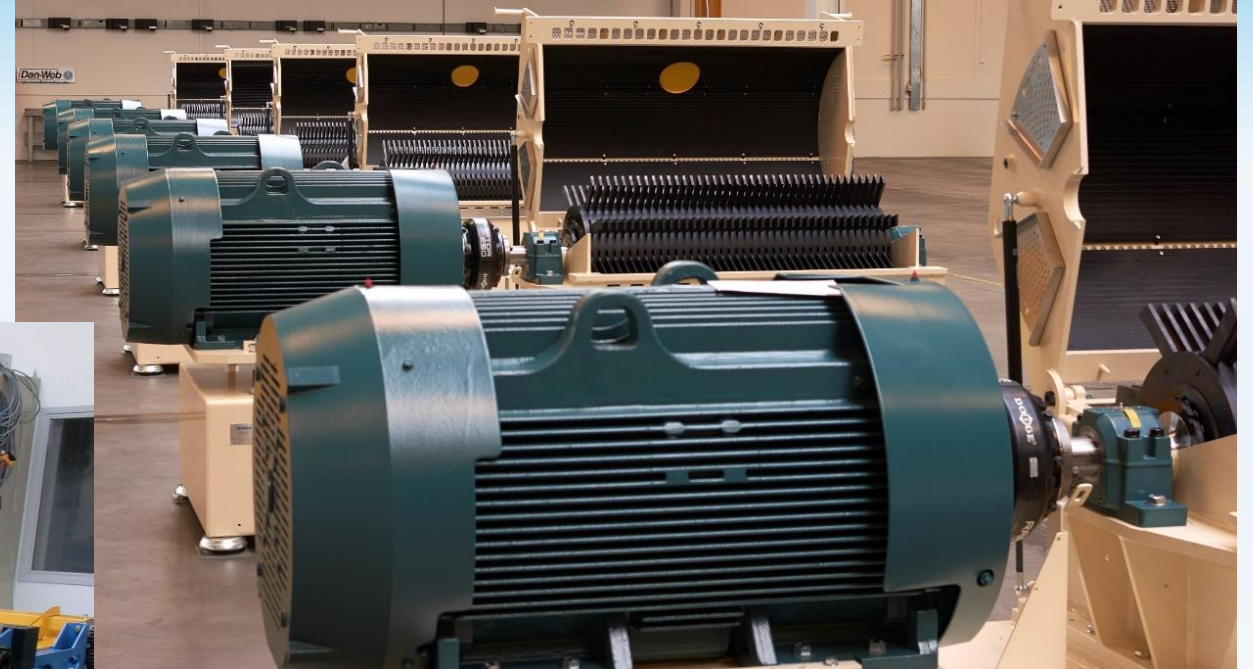
Cutting edge

- Regrindable



In house assembly and testing

All Dan-Web hammermills are assembled and tested at our own assembly facility before being shipped to our customers



Estimated lifetime of hammers, breaker bars and screens

To maintain a 85-100% efficient performance, and to keep energy consumption to a minimum, we recommend:

- Regrind Hammers after 10.000 kg untreated pulp per hammer
- Regrind Hammers after 20.000 kg treated pulp per hammer
- Turn Breaker Bar at each hammer regrind
- Regrind Breaker Bar after it has been turned 4 times
- Replace Screen at every second hammer regrind

Estimated lifetime of hammers, breaker bars and screens

Example: 508 mm Mill

Hammers:

168 Hammers x 20.000 kg treated pulp = 3.360 MT before regrinding

Breaker Bar:

4 sides x 3360 MT treated pulp = 13.440 MT before regrinding

Screen:

To be changed after: 2 x 3360 MT = 6720 MT treated pulp

Hammers can be reground approximately 3 times:

Total hammer lifetime is: 3 x 3360 MT = 10.080 MT

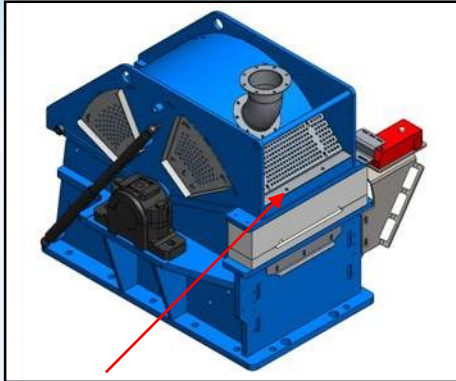
Breaker Bar can be reground 1 time:

Total breaker bar lifetime is: 2 x 10.080 MT = 20.160MT

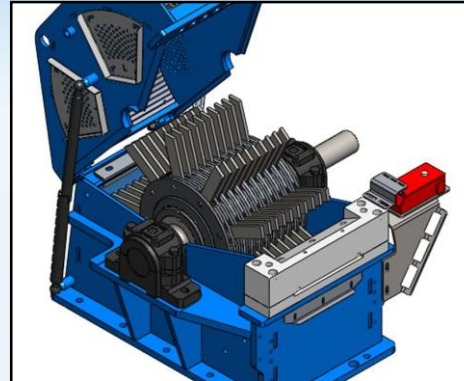
Time consumption, hammer change

Hammer change: 30-60 minutes

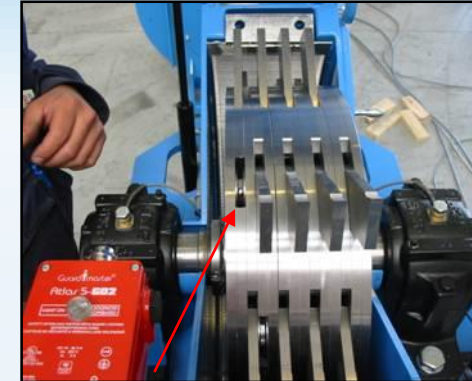
254 mm = 30 min 508 mm = 40 min 635 mm = 45 min 1016 mm = 60 min



1. Unscrew hammer mill hood



2. Lift top cover until it stops



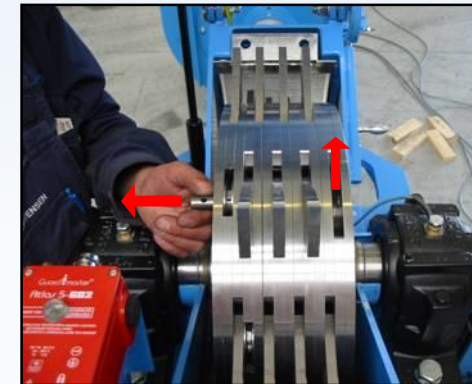
3. Rotate mill until a locking ring is up



4. Rotate lock shaft until open end of cotter pin is up



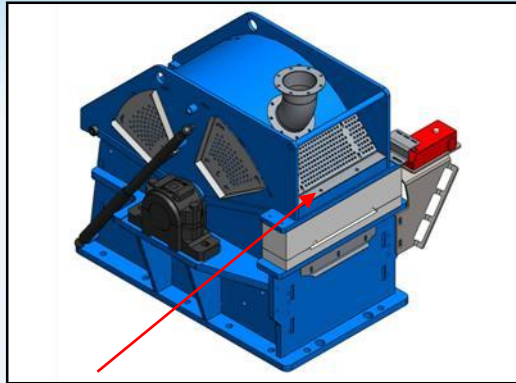
5. Unlock cotter pin



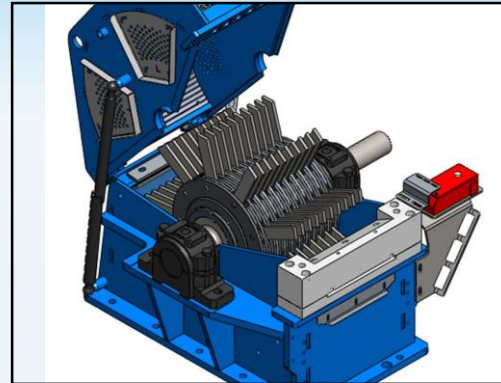
6. Pull out: cotter pin → hammer shaft → hammer(s)

Time consumption, breaker bar change

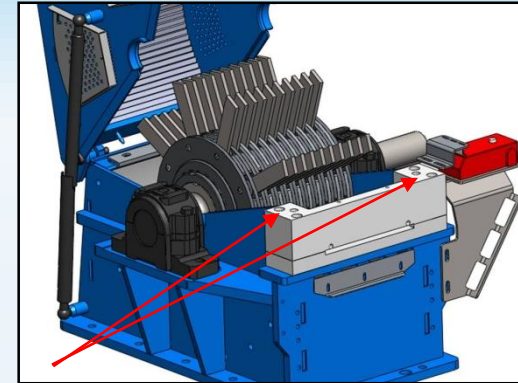
Breaker Bar change: 15 minutes



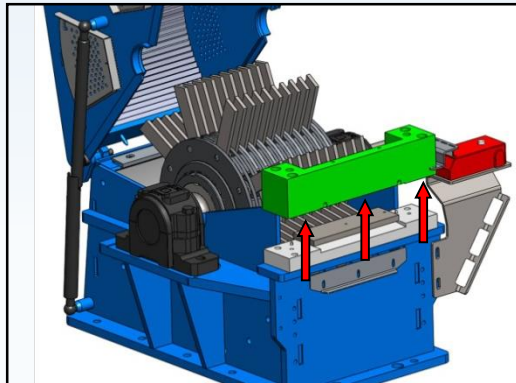
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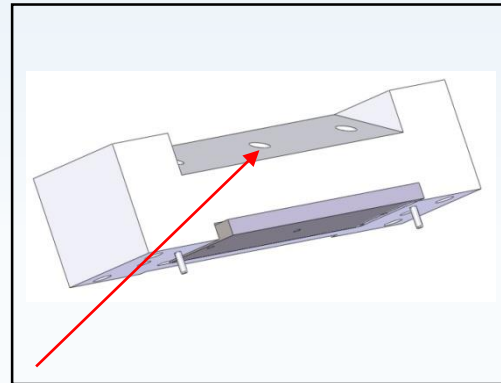
2. Lift top cover until it stops



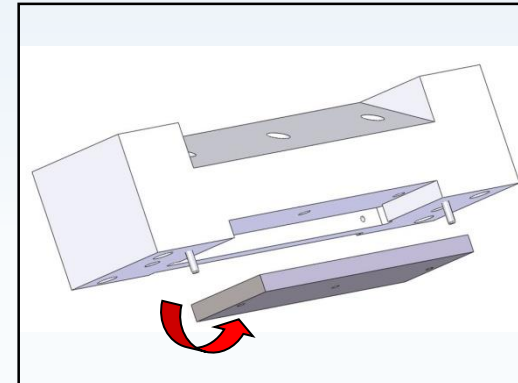
3. Loosen bolts on breaker bar unit



4. Remove breaker bar top



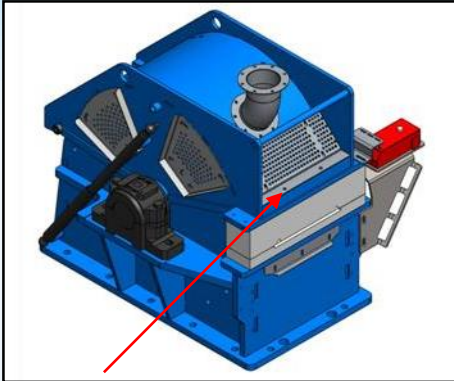
5. Loosen bolts on breaker bar unit



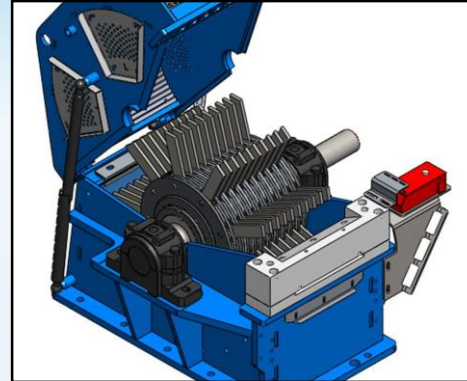
6. Change or turn the breaker bar

Time consumption, screen change

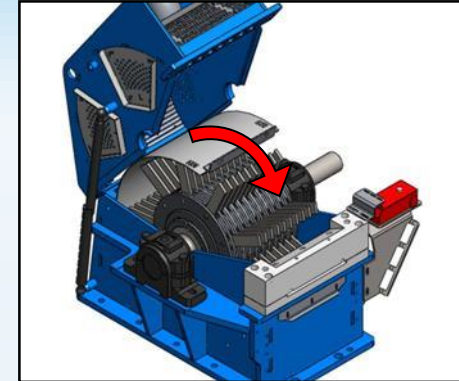
Screen change: 2 minutes



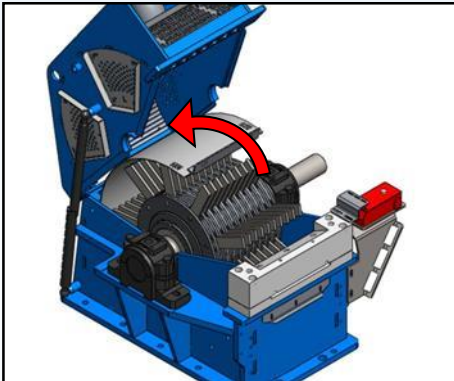
1. Unscrew hammer mill hood



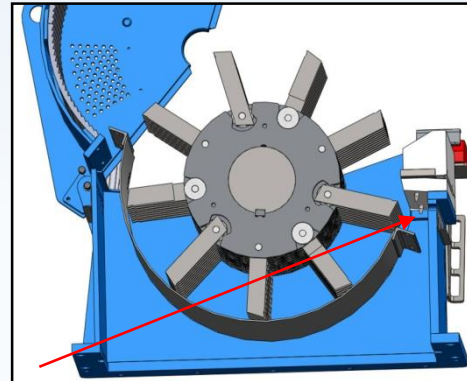
2. Lift top cover until it stops



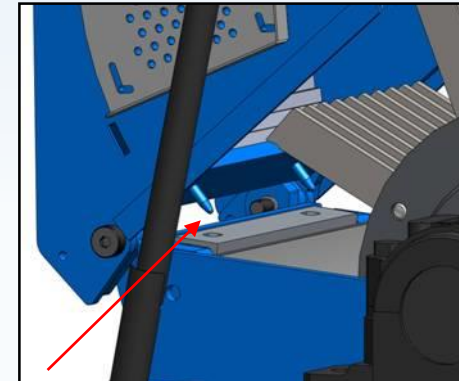
3. Lift up and rotate screen out



4. Rotate new screen down



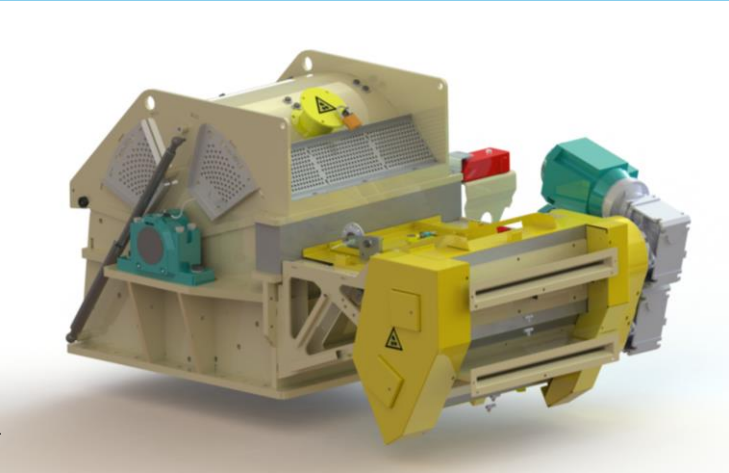
5. Align guide pins with holes



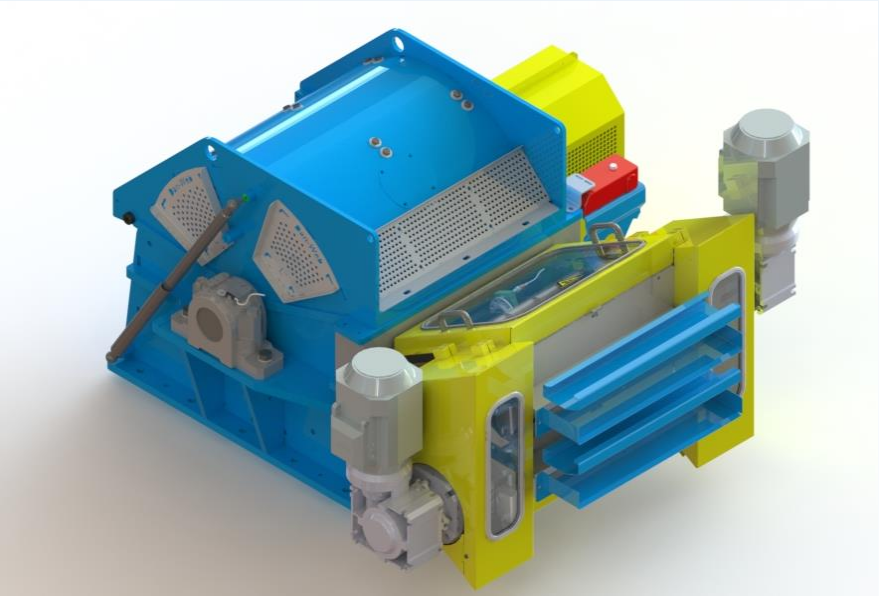
6. Align guide pins with holes

Retrofitting existing Kamas Mills

Kamas defibrators/hammermills can often be upgraded to the new Dan-Web defibration system, with new defibrator and feeding system.



Connecting piece



Lab defibration system

Stand alone Defibration System for pulp development work, quality control and pulp comparisons of 50mm wide pulp strips.

The system is supplied has a number of adjustable parameters and interchangeable screens, and settings and measurements are registered and collected in a software program.

Samples are collected in an easy accessible container for further fiber analysis.

