

Maxau PM 6 – the rebuilt VariTop.

Maxau PM 6 VariTop winder – All high-performance promises fulfilled!

Voith's market leadership in SC paper technology has often been proved in the past. Among the five SC production lines delivered over the past ten years is PM 6 at the Stora Enso Maxau mill (see also twogether 19). After more than two years of excellent results, it is now time to report on the VariTop winder and his part to this success.

Goals

PM 6 was “modernized” – in actual fact an almost completely new paper machine was installed in the existing building – in order to boost annual production from 140,000 to 260,000 t.p.a. as a first step and enable up to 280,000 t.p.a. later on. This clearly meant upgrading the peripheral equipment as well. Two alternatives were considered:

- Installation of a new VariTop winder in addition to the existing one, or
- Upgrading of the existing VariTop to meet PM 6 needs as far as possible.

The customer’s desire to produce in future 5 m wide jumbo rolls had also to be considered.

Feasibility study

Voith experts teamed up immediately with the Maxau specialists to work out the best alternative. The feasibility study primarily focused on three aspects:

- How far could the existing maximum speed of 2,200 m/min be increased?
- How to shorten the production outage times (for set changes, etc.)?
- Which components of the 14-year-old winder would have to be replaced due to wear and in order to meet higher demands in future?

A detailed study of these questions led to unanimous agreement: the rebuild alternative would be by far the best solution!

Solution

Voith, therefore, proposed to Stora Enso the following rebuild solution:

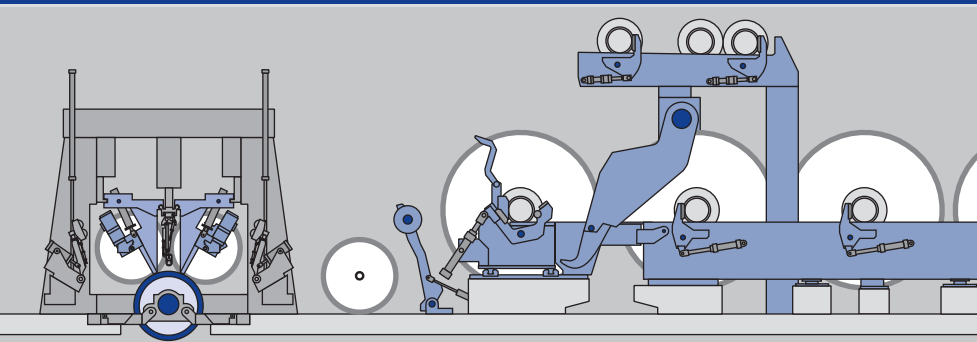
- Installation of a new parent roll unwind
- A fully automated magazine for 3 parent rolls
- A reel spool lifter system
- A magazine for empty reel spools
- Adapting the unwind splice to the new maximum diameter of the parent rolls
- Modernization of the web severing system and web tension relief roll, and of glueing at the sheet beginning and end
- Modification of the winder drum drive mechanism
- Special ElaGrip coating on the winder drum for improved winding
- Two heavy-duty stations for parent rolls up to 5 m wide
- Installation of a new cores table
- Replacement of the winder PLC controls and production parameter control system
- Siemens SPS system conversion from S5 to S7 technology
- General overhaul of the VariTop
- Dynamic balancing of all rolls for the higher operating speed of 3,000 m/min.

Project implementation

Fully satisfied with results of the project studies by our specialists, Stora Enso entrusted Voith with upgrading the VariTop as proposed. Having determined the scope of supply and performance, it “only” remained to execute the project with due care and



Carsten Wenk, Stora Enso, congratulates Dirk Cramer of Voith Paper Finishing: “Engineered reliability – all promises kept!”



VariTop after rebuild (blue = new or rebuild).

punctuality. Clearly, this was not going to be an easy job. But thanks to scrupulously detailed scheduling and continuous planning coordination between the partners, all the manufacturing and shipping, erection and commissioning went ahead without a hitch. Naturally there were some surprises during the erection procedure – with a 3-shift team of 20 men working around the clock – such as the much more complicated tubes and pipes installation than expected. However, all erection work was nevertheless completed punctually thanks to the concentrated efforts of all concerned. In order to eliminate any start-up troubles with PM 6 as far as possible, the rebuilt VariTop was first tested and commissioned with parent rolls from PM 8. And this paid off in full: right after starting up PM 6, production went ahead smoothly with the rebuilt VariTop.

Results

In response to this exemplary start-up, Stora Enso notified the author as follows: “Having so quickly attained saleable paper production at the agreed speed of 3,000 m/min with our rebuilt winder – the world’s fastest VariTop – we take this opportunity of sincerely thanking you and your team for such excellent partnership with our Project 3000”.

Current status

For more than two years now, a single upgraded VariTop winder handles all designated paper produced by PM 6. To accomplish that it has to operate continuously at extremely high speeds of 2,900 to 3,000 m/min, but paper roll quality is nevertheless first class. Carsten Wenk, Stora Enso, sums up as follows:

Customer Comment



Carsten Wenk
Stora Enso Maxau

“We had always been fully satisfied with our VariTop built in 1990, but were sure that it could achieve more. With Voith as our project partner, we were able to minimize the winder rebuild costs required for increasing production of our PM 6. Based on a joint feasibility study of the existing winder, a custom-tailored rebuild and modernization project was worked out and fully implemented. Thanks to our partner’s outstanding teamwork also in the commissioning and optimization phases, the result was an exemplary start-up. Voith engineering and our common know-how in SC jumbo roll technology have transformed our PM 6 VariTop into the world’s highest capacity SC winder. All project goals were attained in full: a superlative achievement!”

Project 3000 – the world’s highest capacity SC winder.



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