

Velsen PM 2 with new drive concept – When gearwheels become superfluous



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Papierfabrik Crown Van Gelder, Velsen, Netherlands, is well known for its excellent woodfree papers, that are used for graphics as well as industrial purposes: e.g. labels, endless laser printers, boarding passes, writing and office papers. With the multi-year investment plan 2 the annual capacity will be increased by 20,000 t/year. As the first step, Voith received an order for the rebuild of PM 2 in September 2003.

The following major objectives have been achieved:

- increase in production capacity,
- distinct savings in steam through heat recovery and new drying technology,
- shortening of the threading times,
- increased automation,
- greater safety for the operators,
- downtime reduction with new drive.

The work was focused on the dryer section, but the press was also improved with the use of the mill-proven G2000 roll covers and expansion of the vacuum system. After an extremely tight delivery time of seven months plus one month installation time, PM 2 went into successful operation on June 5, 2004.

For the first time, Voith implemented the drive of the entire dryer section without gear wheels, drive shafts and gear units, but with the electric drives called “attached drive” (Fig. 3). The great advantage is that the motors are simply slipped onto the journals of rolls and dryers both on the front side and on the drive side.

As gear wheels are not used with this concept, lubrication is no longer necessary and gear wheels as wear parts no longer exist.

Finally, the noise levels have been so enormously reduced that Klaas Flens, Senior Production Engineer at Crown Van





Miklas Dronkers

**Operations Manager
Crown Van Gelder N.V.**

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Gelder says: *“Our PM 2 is now so quiet that we can even hear if a sheet break happens on PM 1 behind it.”*

Another important goal of the rebuild was the new air and drying system, which has been installed in a new, external “air house”. The esthetic design – similar to a roll of paper – has been arranged by Voith outside of the building above the offices. The enormous heat recovery system and the new air system with stabilizers allowed us to easily achieve our goals.

With this order, Voith implemented for the first time the PLP Concept (Process Line Package) in a major rebuild. Voith

was the overall supplier of all components and services inside the machine building, inclusive of mechanical and electrical drive, sectional electric drive, DCS expansion, air system and heat recovery. The advantages for the customer, such as the elimination of interfaces, one contact partner and shortening of the project time also show up in the excellent start-up curve.

The new drive technology fulfils all expectations up to now and is classified as a trendsetter for future projects. Six months after start-up all monthly results are fully according to plan.

“The rebuild of PM 2 is the largest project we have had for 15 years. As a key element of our investment Master Plan II, the rebuild will contribute to increase our production by 20,000 t/year. Just ten days after paper was wound up on the reel, the targeted production speed of 1,000 m/min was reached.

It was a great experience for all of us at the paper mill to witness how smoothly this success was achieved and how the important modernization of our PM 2, in cooperation in a spirit of partnership with Voith, was implemented.”

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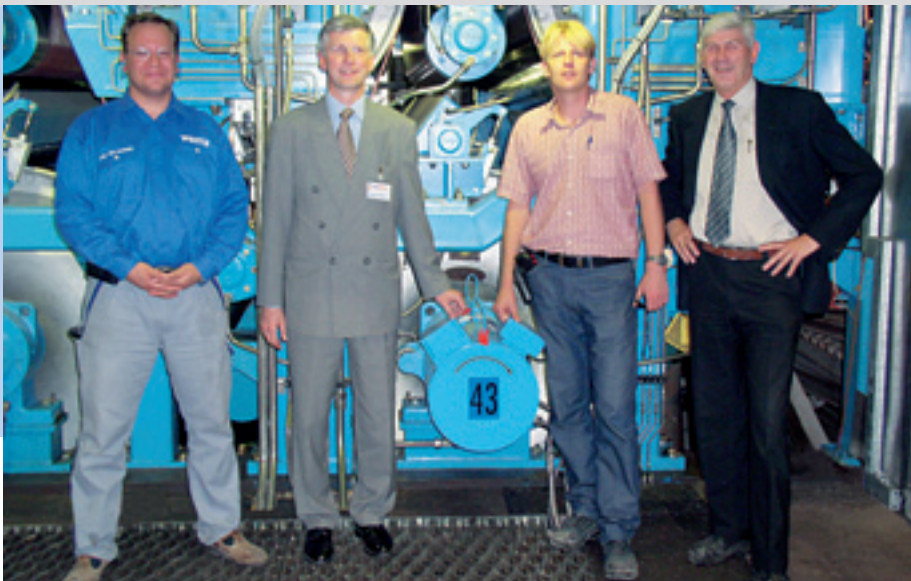


Fig. 1: Miklas Dronkers in front of the new “air house”.

Fig. 2: Velsen PM 2 after-dryer section.

Fig. 3: From the left, in front of the “attached drive” at dryer 43: Axel von Noorden, head of start-up engineers at Voith Paper; Dr. Thomas Elenz, Sales Benelux countries at Voith Paper; Miklas Dronkers, operations manager Crown Van Gelder; Andre Duiker, project manager at Crown Van Gelder.