

DuoShake DG

Case Study: Paper mill improves sheet formation, increases machine speed with DuoShake DG



Summary

A paper mill in the South Central United States that produces liner board wanted to improve its product quality and production parameters, including sheet formation, appearance and strength — all while maximizing its machine speed.

Solution

Voith recommended the installation of the DuoShake DG (Digital Generation), a digitally controlled shaking unit that optimizes fiber distribution, to enable the mill to boost its paper quality and downstream processing. Additionally, Voith recommended the ProInstall service, connecting the DuoShake DG to OnCumulus live with a Voith edge device and linking the unit to the Voith Cloud in real-time.

Details

DuoShake DG takes the best elements of the long-established DuoShake and regulates the process digitally. When in operation, DuoShake DG eliminates vertical reaction forces and is suitable for all fourdrinier machines. High frequency shaking of the breast roll optimizes the fiber distribution resulting in excellent formation on almost all paper grades. The digital update (DG - Digital Generation) creates user-friendly functions for better automation, control and analysis. As a result, DuoShake DG is equipped for paper production now and into the future.

Results

With the applications of DuoShake DG, ProInstall and OnCumulus, the mill has seen the following improvements:

- Excellent sheet formation and strength, which allows for increases in production speed.
- A boost in CD properties, which enhanced sheet strength.
- Enhanced appearance of all board grades produced by the machine.
- Improved availability and service-ability.
- Optimized operating processes via quick troubleshooting with the OnCumulus connection – the mill can access the data generated by the DuoShake DG in real-time.

About DuoShake Digital Generation

DuoShake DG enables improvements in paper quality and production speed by leveraging a number of design innovations:

- **No reaction forces:** The base only needs to support the dead weight of the unit. There are no vertical reaction forces transferred to the foundation, headbox or wire section.
- **Minimal space requirements:** The design is compact, robust and enclosed.
- **Hydrostatic running surfaces:** This allows for low-wear operation.
- **Minimal maintenance:** Lubrication is ensured through a system of continuous circulation.
- **Resource efficient:** Geared motors are used to reduce power consumption during operation.

About ProInstall

The mill included ProInstall with its DuoShake DG unit. With the ProInstall service, Voith assumes responsibility for the entire project, including engineering and installation of all equipment supplied for a project. Advantages of the ProInstall service include:

- **Trusted expertise:** All service work is performed by Voith, freeing up mill staff for higher priority duties.
- **Single-source:** Using one vendor reduces interfaces, improves communication and reduces associated errors.
- **Availability:** Remote visibility enables plant operators and the Voith service team to assure that all equipment is running within parameters at all times.

- **Low risk:** Voith takes on key responsibilities to minimize the risks to the mill operator.
- **Engineering:** An engineering study is available to further reduce projected costs; the study is done as part of an overall assessment.
- **ROI:** Voith performs ROI calculations to assist in project approvals.

About OnCumulus

OnCumulus is Voith's cloud platform for data aggregation (including third party data sources) to coordinate data for visualization, analytics, and optimization. OnCumulus runs on world-class services assuring data security, availability and access. The design and operating philosophy of OnCumulus enables customers to leverage their data more efficiently and effectively to address the data, information and insights needed today and into the foreseeable future. OnCumulus supports legacy equipment and systems as well as those designed to natively connect to cloud and IIoT infrastructures. Combined with our expertise in a paper machines, Voith is uniquely qualified to support customers, their data, and the optimization of their equipment.

Why Partner with Voith?

Voith offers superior technical expertise, experienced personnel, hands-on service capabilities and ongoing presence in partner facilities. This delivers a level of service that differentiates us from our competitors. With Voith, the paper industry has a partner it can rely on to deliver quality products and services that boost mill performance.

Voith's DuoShake DG is an innovative evolution of Voith's original DuoShake design, bringing digital elements into the formation process, allowing an operator to fine-tune the process and deliver measurable improvements in production.

“Upon installation and activation of DuoShake DG, the customer noticed an immediate improvement in formation, allowing them to speed up production. With DuoShake DG, they also began to collect data that will allow them to further refine elements of sheet formation.”

— Mitch Kilmer, Director Paper Machine Applications,
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