

PAPER / TRIM HANDLING / REWINDING

## Efficient Trim Handling for **High-Speed Rewinding** at Papermill Production

A leading French machine maker for the papermill industry needed an efficient solution for their new high-speed rewinding machine line. To meet new specifications and ensure efficient trim handling, they turned to Kongskilde for an advanced solution.

### THE CHALLENGE

The company needed a solution to meet new trim width specifications at high speeds on its upgraded rewinding machine. The primary challenge was to implement a system that could handle continuous edge trims for greaseproof paper without disrupting the machine's high-speed operations.

- **Upgrade Requirements:** Implement a modern solution capable of handling varying trim widths and high-speed demands, especially during machine start-up phases.
- **High-Speed Demands:** Ensure continuous edge aspiration at speeds up to 1500m/min without interrupting the production process.
- **Material Specifics:** Efficiently manage greaseproof paper with a silicone coating, maintaining consistent quality and performance.
- **Seamless Integration:** Integrate the new system with existing machinery and control cabinets to ensure synchronized operations and minimal downtime.



**The Kongskilde solution** only requires one blower, whereas many competitor solutions propose using two blowers.

## THE FACTS

### Material specifications:

- **Material:** Greaseproof paper with silicone coating on both sides
- **Dimensions:** 2 x 15mm trims
- **Max Width:** 50-150mm (each side 25-150mm)
- **Base Weight:** 32- 70gsm
- **Max Reel Width:** 3800mm
- **Speed:** 500-1500m/min
- **Quantity:** 840kg/h max (cut 2x100mm at 1000m/min)
- **Edge size and winder speed:**  
25-50mm x 1500m/min,  
150mm x 500m/min

**50 %**

**REDUCTION**  
IN ENERGY  
CONSUMPTION



## THE SOLUTION

The chosen solution is a chopper fan system by Kongskilde, which efficiently uses a single blower to convey edge trim. This innovative solution outperforms competitors who require two blowers, offering significant energy savings and improved performance.

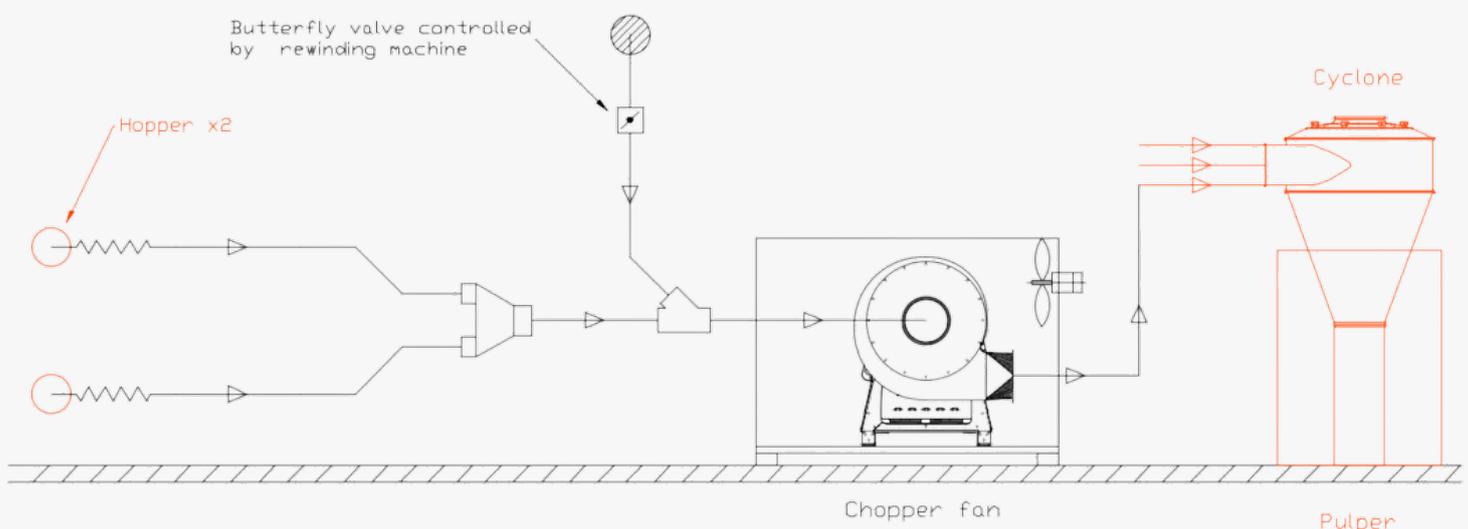
To address the company's needs, Kongskilde installed a high-speed rewinding system comprising a chopper fan, cooling fan, and butterfly valve. All the piping from the nozzles includes a damper to adjust the air speed according to the machine's operating speed. This setup ensures continuous edge aspiration for greaseproof paper at speeds up to 1500m/min. The system is integrated into the control cabinet and features:

- **Chopper Fan:** Powered by a frequency converter to maintain consistent operation.
- **Cooling Fan:** Operates concurrently with the chopper fan to prevent overheating.
- **Butterfly Valve:** Controlled via a single-phase servomotor (24V DC/AC) with a 4-20mA regulation card, ensuring precise management.

Additionally, the system includes 60 meters of ductwork with a 300mm diameter, connecting to an existing cyclone. This integration provides seamless edge evacuation, enhancing the overall efficiency of the operation.

One of the key benefits of Kongskilde's solution is significant energy savings. The new system operates using only 37 kW, compared to the previous requirement of 2 x 37 kW, resulting in a significant reduction in installed power. Also, the motor is controlled by a frequency inverter, allowing power consumption to be precisely adjusted to suction demand.

This improvement not only reduces operational costs but also contributes to a more sustainable production process. The new Kongskilde system allows the new rewinding machine to be perfectly connected to the customer's existing edge trims recycling solution (cyclone and pulper).



## THE ADVANTAGES AND BENEFITS

Upon implementing the Kongskilde system, the company swiftly reaped numerous advantages and benefits.

- **Improved Efficiency:** The new system allows for continuous edge extraction (or transport) reducing downtime and enhancing overall production efficiency.
- **Enhanced Performance:** The frequency converter-powered shredder fan and concurrent cooling fan operation ensure optimal performance and prevent overheating.
- **Seamless Integration:** The system integrates smoothly with existing machinery and control cabinets, ensuring synchronized operations and minimal disruptions.
- **Custom Control:** The butterfly valve, controlled by a single-phase servomotor with a 4-20mA regulation card, offers precise management, enhancing system reliability.
- **Adaptable Solution:** Capable of handling a range of trim widths and speeds, the solution meets the specific needs of high-speed rewinding for greaseproof paper.
- **Future-Proofing:** The advanced system prepares the production line for future upgrades and increased operational demands, ensuring long-term viability and efficiency.

