Retrofit of a calendering line: smart safety with productivity gains

Sector: pharmaceutical industry

Reading time: three minutes

As one of the world's leading manufacturers of pharmaceutical and medical blister films, our customer offers a complete range of deep-drawing and cold-forming films. It produces coated and laminated films.

Low productivity, lack of spare parts, system safety not up to the "state of the art"

The customer faced several problems before commencement of the order:

- the line's productivity was unsatisfactory
- there were no spare parts on the market for certain ageing sections of the line
- the safety functions did not correspond to the "state of the art" – the line did not meet the requirements in the current standard

A partner was therefore required who could help the customer in all matters: who had long-standing and in-depth experience in relation to calendering lines and expertise in functional machine safety as well as in electrical engineering – LAE was the right partner to find ideal solutions to the bottlenecks.

New succession due a lack of spare parts

The complete succession to the calender was thus renewed. The customer assumed responsibility for the procurement and installation of the mechanical components.

LAE was responsible for the electrical engineering, control cabinet construction, installation and construction monitoring as well as the procurement and connection of new measuring and control technology. Drive systems with integrated safety functions were used to achieve this – which now also enable standard-compliant safety functions to be mapped. Plant safety has therefore been improved and downtimes shortened by improved system transparency.

Integration of a new cooling group for 20% more output

The key to higher productivity was to increase production speed.

LAE assumed responsibility for the electrical integration of a new, more powerful cooling group into the line control system. LAE assisted the customer in terms of consulting and implementation: in design of the drives, risk assessment for the significant change "increase in line speed" and preparation of the control-related safety measures.
A holistic view of the line, safety technology and transparent automation and plant engineering enabled the integration to be performed to their complete satisfaction.

The addition of additional cooling rollers means the film can now be cooled down faster and in a more controlled manner – which ultimately leads to 20% higher output.

Safety technology with a twist

Plant safety is a top priority for any company.

All too often a company faces the problem that 1:1 mapping and adherence to requirements in the current standards is not possible in relation to existing equipment – this is also the case for this customer. One of the main requirements was to implement the safety technology in such a way that it meets the requirements of the current C standard for the machine. Solutions had to be developed that could be mapped using the existing "ageing" technology.

The LAE team has the skill – based on long-term knowledge and deep understanding of calendering lines – to develop sophisticated and user-oriented solutions jointly with the customer.

Safe and feasible alternatives were developed. LAE started by defining a variety of selected safety functions and agreeing them with the customer. A fail-safe control system now depicts the safety-related functions that offer the required safety and yet still allow the necessary flexibility in operation.

This selective approach enabled safety precautions to be introduced that no longer result in the complete line coming to a standstill in the event of a problem. Affected parts of the plant are treated separately, the problem is fixed at this point – and best of all, other parts of the production can continue to operate in parallel.

As a result, the implemented safety measures were checked by an external safety consultant and approved without reservation. He could only confirm the high level of competence in machine safety on the part of LAE.

All-round carefree package

Reports and operational data collation have also been integrated into a control level. Because a complex processing system can only be monitored and controlled if all of the relevant data is brought together in a reliable way.

The customer therefore has a state of the art control solution with fully superordinate safety technology for an optimum production process with higher output.

LAE was able to totally convince the customer with its holistic view of the line and by providing an integral automation solution. Further orders are planned.