MTorres

Accurate unwinding and splicing with Rockwell Automation®

The paper converting division of the Spanish company MTorres, a worldwide leading manufacturer of unwinders, splicers, roll stands and paper roll transport systems, selected Rockwell Automation control and drive solutions to build the control and automation core of its new automatic unwinding splicer for the tissue industry.

'Well begun is half done'. This proverb undoubtedly fits the converters' needs, as they have to pay particular attention to the first steps of the process, in order to minimise waste and to protect paper's integrity and quality from the start to the end. The Paper Converting Industry Machinery division of the Spanish company MTorres helps converters in doing that, designing, manufacturing and installing unwinders, splicers, roll stands and paper roll transport systems that are normally placed at the beginning of production lines in corrugated, sheet cutters, printing, laminators, liquid packaging, tissue, plasterboard and others paper converting industries.

The Spanish company, headquartered in Torres de Elorz, in Navarra, began its activity in 1976 mainly serving the corrugated industry; later on, it expanded its business to other fields, becoming a well-known player on the converting scene. As

TASK

To design an automatic unwinding splicer that can reduce waste and improve production in converting lines for the tissue industry.

CHALLENGES

The challenge in doing this is to design a machine that can maintain a constant web tension in the unwinding process and an automatic splicing at "zero speed".

SOLUTION

By using Allen-Bradley Kinetix drives and Rockwell Automation ControlLogix controllers the machine can keep web tension constant, with the breakaway torque and speed control needed for start-up and operation at full power. In addition, PanelView allows the setting of parameters and control of the machine.

RESULTS

The machine does not require production to stop in order to change rolls, and can splice at different speeds depending on the material consistency and application.

Jesus Bravo, sales director, MTorres, says: "We are now focused in expanding our business in new fields, such as flexible packaging, tissue and non-woven materials".

MTorres sells its machines both to end customers, who play in the different industries mentioned above, and to machine builders, who assembly complete converting lines. "We supply just the initial units of a converting line, as our experience is very specific. Therefore, we often cooperate with other machine builders, who can not be considered as our competitors", Mr. Bravo adds.

Cooperating with technological leaders is then a good custom at MTorres, which turned to Rockwell Automation to develop the automation and control system of the UTS, one of its new automatic unwinding splicers for the tissue industry.

A new innovative range

MTorres boosts a huge number of machines installed in more than 60 countries all over the world and is recognised as specialist in controlling the web tension in automatic splicing unwinds. This peculiarity also characterises the new range of automatic unwinding splicers for the tissue industry, which the Spanish company has recently developed. "These machines figure as the last innovation to reduce waste and improve production in converting lines, and are characterised by an innovatory and own design, which allows a constant web tension in whole unwinding process and an automatic splicing at "Zero Speed", Mr. Bravo explains. With easier integration, these splicers are suitable not only for new converting lines but also for existing ones. These machines don't require stopping production for roll changes and allow the user to maximise the efficiency of the process, being reliable at 100%. "They can splice at different speeds, depending on the material consistence and on the application: "The higher the speed and the larger the paper rolls, the more MTorres becomes unique", Mr. Bravo adds.

Control and tension are constant with Rockwell Automation solutions

The UTS model is the newest machine among the new range of automatic unwinding splicers for the tissue industry. UTS is a beltless, center-driven unwind which autosplices with no stops in production. It is born as a new concept, based on a carriage system that incorporates the unwind unit and the auto splicer. It uses two carriages per ply, which can slide in and out, one is running and the other will be prepared ready to run. Thanks to its modular design, it can be manufactured to work with one and several plies.

MTorres relied on Rockwell Automation control and drive solutions to build the control and automation core of the machine, respecting the aim of keeping the web tension constant. Actually, the Spanish company needed to control the unwinding and splicing operations accurately and Rockwell Automation fully integrated control systems represented the right solution, providing the breakaway torque and speed control needed not only for the start-up phase but also for operation at full power.

The most of the MTorres unwinds incorporate a double system to control the web tension: a load cells system and a festoon working as a dancer roller. Allen-Bradley® Kinetix® drives control both the position of festoon and the torque and speed of the unwind motors while the Allen-Bradley ControlLogix® controllers control the rest of the unwind. Furthermore, a touch screen PanelView™ terminal is used to set parameters and to control the machine. The majority of the components in the electrical cabinet are from Rockwell Automation too.

Modularity helping flexibility

MTorres knows Rockwell Automation technology very well and always selects its product when working for the US and Canadian markets. "Manufacturers who are based there consider Rockwell Automation as a standard and are very familiar with its solutions", says Mr. Bravo. "But we also are very familiar with Rockwell Automation: to program a machine of ours with Rockwell Automation systems is not a big effort for us, as we've had several good experiences with its control solutions implemented on our unwind machines to control the tension".

In this case MTorres purchased single components from Rockwell Automation, but the company is now taking into consideration the adoption of an integrated solution next time, as they now are aware of the advantages that the Rockwell Automation Integrated Architecture™ can offer.

Actually, MTorres received several benefits by using Rockwell Automation components: they could help reduce their programming efforts, troubleshoot operation problems were easily solved – especially as far as drives are concerned, testing and validation were also easier and the flexibility of the machine increased.

"This last advantage is very important for us, since customisation is a must in our business and we need to build solutions that can be configured more easily for different applications", Mr. Bravo specifies. "The modularity and scalability of Rockwell Automation control and drive solutions helps us to fulfil this particular need and allows us to answer our customers' demands punctually and effectively".

Finally, the quality of Rockwell Automation support and service makes the rest: "We know we can rely on Rockwell Automation experience everywhere, as Rockwell Automation is present worldwide: our customer can always get a solution which fits his need, no matter where he is located".