



30 % ENERGY SAVINGS IN HOT MELT ADHESIVE APPLICATION?

Is it possible? Tobacco company JTI Switzerland tested Robatech's new adhesive application system on a packaging line. The result was surprising for everyone.

November 2021. It is 8 am. Adrian Vonesch, Head of Maintenance & Repair at JTI Switzerland in Dagmersellen, enters the meeting room. The new Vision S melter is already on the table. The Performa heated hose lays on the demonstration cart. More than 30 % energy should be saved by the new adhesive application system during melting, delivery, and application of hot melt adhesive, according to Martin Berli, Area Sales Manager of Robatech Switzerland. JTI's Engineering department is also present at the product presentation, as the international tobacco company Japan Tobacco International (JTI) pursues a clear sustainability strategy. Environmentally friendly production and energy efficiency are important.

The JTI Packaging Lines

At its site in Dagmersellen, JTI Switzerland produces 47 million cigarettes a

day for brands such as Camel and Winston. On six packaging lines, 50 cigarette cartons each are packed into a transport carton in two-shift operation. JTI uses melters, heated hoses, and application heads from a well-known manufacturer to glue the lower and upper carton lids.

Savings Potential in Adhesive Application - the Field Test

For JTI Switzerland, the product presentation raises the question of whether a small unit such as the adhesive application system can actually offer an energy savings potential of 30% and more. "In purely physical terms, it takes about 0.1 kWh to melt 1 kg of adhesive granules," explains Adrian Vonesch. "It is always the same amount of energy. So the savings have to come from the design of the melter, the heated hose, and the application head." The



THE CUSTOMER

Japan Tobacco International (JTI) is an internationally operating tobacco group headquartered in Geneva. At its Dagmersellen site, JTI Switzerland produces 47 million cigarettes a day. This corresponds to around 4600 shipping cartons sent to over 22 countries.



Vision melter enables energy savings



50 cigarette cartons each are packed in a transport carton



"We had expected energy savings of 33 %, because we know that Robatech is careful with numbers. The fact that we would measure 48 % less power consumption at the end of the field test compared to the other manufacturer's adhesive application system surprised everyone."

Adrian Vonesch

Head of Maintenance & Repair,
JTI Switzerland

JTI Maintenance team decides to conduct a field test. Management gives their OK, because in-house collected figures provide the best arguments for successful sustainability projects.

On the Test Bench at JTI Switzerland

The boundary conditions were defined in February 2022. A separate electricity meter is installed at the test line. For 14 days, JTI employees log the current adhesive and energy consumption of the existing application system in the horizontal cartoning machine. Robatech then takes advantage of a one-day maintenance window and installs the free test system: a Vision S melter, two Performa heated hoses, and two AX Diamond jetting heads for bead application. The new application system goes into operation on the same day.

Figures are logged for 14 days. Martin Berli from Robatech remembers: "The old system still remained installed in parallel standby. That was a kind of life insurance for JTI. But I knew that the risk of production downtime was low. Our adhesive application systems have an availability of over 99 %. JTI Switzerland already has three Robatech systems for pallet stabilization in operation since September 2021. They run smoothly."

48 % Energy Savings in Hot Melt Application

In July 2022, JTI dismantled the old standby system. The Robatech system runs perfectly on the former test line. "We had expected energy savings of 33 %, because we know that Robatech is careful with numbers," summa-

izes Adrian Vonesch from JTI. "The fact that we would measure 48 % less power consumption at the end of the test compared to the other manufacturer's system surprised everyone." For Robatech, it is clear that Vision and Performa bring more energy efficiency to industrial adhesive application. "Using novel insulation techniques, our development team was able to significantly reduce heat radiation from the melting tank and heated hose," says Martin Berli. "Performa is not as hot on the outside as other hoses that you really cannot touch for long. In addition, Performa is fully insulated at the connection points and we optimally adapt the hose length to the conditions on site. In this way, we reduce unnecessary heat loss."

High System Availability

The fact that Robatech has thought about simplified maintenance and operation when developing the new system components is also felt by Adrian Vonesch's team. Six mechanics and six electricians maintain the warehouse logistics, tobacco processing, and production facilities in Dagmersellen. "That is a lot of work spread over a few people," explains the Maintenance & Repair Manager. "We depend on equipment having high availability and repairs being made quickly. Robatech is just a phone call away. This makes the company attractive to us."

Modern Melters Motivate

Adrian Vonesch's young employees find the Vision melter particularly at-



Cardboard flaps are folded (left) and then glued (right)

tractive. According to Adrian Vonesch, this is a motivating factor that should not be underestimated: "Vision is modern and interesting. The employees have fun working with the device. The arrangement of the maintenance-relevant parts is well thought-out and the functions are clear. We didn't even need training, just a quick briefing."

24 % Less Adhesive Consumption

Martin Berli from Robatech mentions in passing that since the field test, 24 % less hot melt adhesive is required for gluing the cartons on the former test line. "This is simply a question of optimum setting parameters. Our Service team knows these and can adjust them for any adhesive application system." Perhaps another optimization project for Adrian Vonesch of JTI Switzerland? For now, JTI is satisfied with 48 % energy savings. The test result has exceeded all expectations and shows: Even small units such as the adhesive application system can offer a great savings potential.

ROBATECH

Robatech optimizes the industrial hot melt and cold glue application with sustainable and innovative adhesive application systems. Since 1975, Robatech has developed and produced high-quality control systems, application heads, melters, and dosing systems that make gluing processes more environmentally friendly, safe, and straightforward. The Robatech Group, headquartered in Muri/AG, Switzerland, is represented in more than 80 countries. More than 670 dedicated employees worldwide provide personal and fast customer support in a wide range of industries.

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