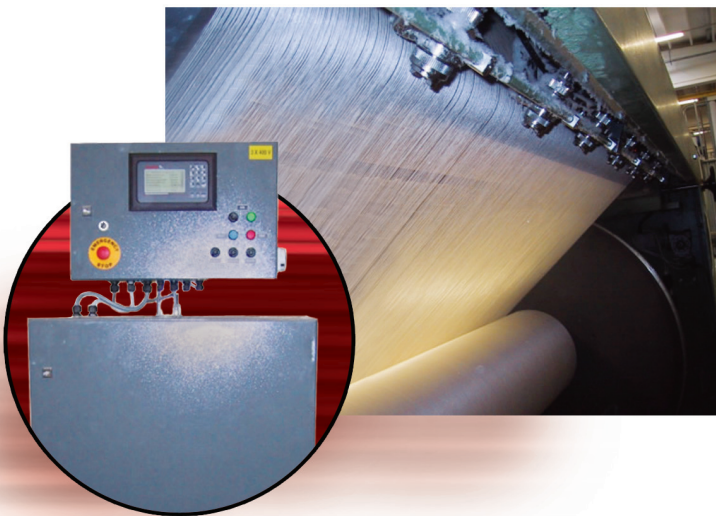


AutoJet Spray System Decreases Production Downtime by 90%

Application:

A major European carpet manufacturer needed an automated spray system to apply a lubricant on carpet fibers while spooling multiple yarns onto a master spool. This spray application is critical to the overall productivity of the carpet mill because it prevents breakage of the yarn during the weaving process on the carpet loom.



Problem:

The system needed to spray carpet fibers with an even coating of lubricant across the entire width of the spool. The system had to maintain consistent coverage despite variations in spray distance. Since the spray distance continuously decreases as the spool is filled, the spray angle must be continuously adapted to ensure coverage of the full width. For worker safety, the system needed to minimize misting, and the system needed to integrate seamlessly with the customer's existing equipment.

The AutoJet Technologies Solution:

The compact AutoJet Spray System is controlled by a Model 2250 AutoJet Spray Controller, which accepts start and stop signals from the loom. The Model 2250 controls the operation of six Spraying Systems Co. VAU automatic spray guns, which are grouped into three zones of two nozzles each at a fixed height above the spool.

VAU automatic spray guns were chosen for this application because they allow independent control of atomizing air, fan air and liquid, which means that capacity, drop size and spray pattern can be fine-tuned for precise coverage.

CUSTOMER TESTIMONIAL

"AutoJet Technologies listened to our needs and worked with us to develop an innovative solution to our problem. Their software really enhanced the performance of their spray hardware and the simplicity of their design allowed us to install the system ourselves, maximizing our budget.

AutoJet Technologies wasn't "just as good" or even "twice as good" as the other vendors we contacted about this project. **Their innovative design and customer service made them at least five times as valuable to us in this application.**

— Production Manager

How the AutoJet Spray System Works

As the spool fills with fibers, the spray height decreases from 900 mm to 300 mm. The AutoJet Spray Controller automatically compensates by adjusting the fan air pressure to the VAU spray guns, increasing the spray angle for each gun to maintain total spray coverage. At the same time, atomizing air is adjusted to minimize misting and overspray.

The spray controller provides closed loop control by monitoring the system flow rate with an inline flowmeter and adjusting as necessary. A constant flow rate is maintained by controlling the speed of the variable frequency drive pump.

Spray nozzle plugging is minimized by automatically cycling each spray gun's clean-out needle rapidly at fixed intervals to purge the orifice. The Model 2250 AutoJet Spray Controller constantly monitors system performance and generates alarms in the event of any irregularities.

Results:

Before installing the AutoJet Spray System to lubricate the fibers, yarns could break as many as 20 times per shift, bringing the production process to a halt each time. Since the commissioning of the new system, line breaks have been reduced to less than two per shift, allowing a single operator to run four machines — one more than in the past.

Model 2250 AutoJet Spray Controller



VAU Automatic Spray Gun

The AutoJet Spray System

increased annual production 2% and provided a
payback period of less than six months!



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