Automated Spray System Helps Textile Manufacturer Improve Product Quality and Save Money
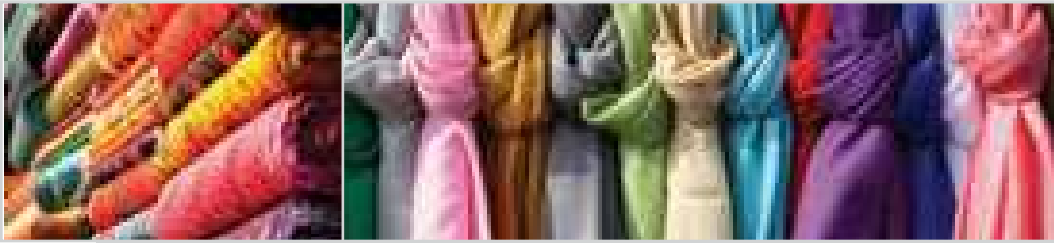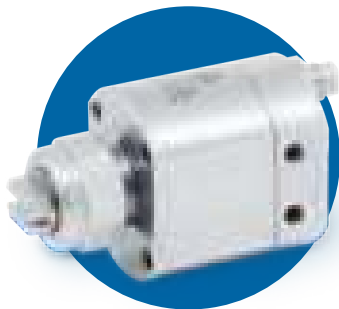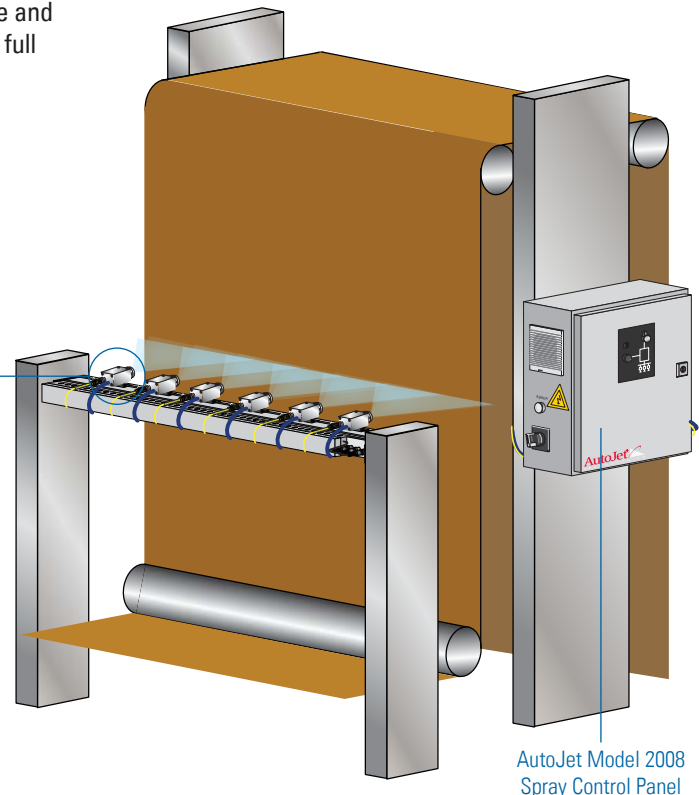

Problem:

Ultimate Textile, a family-owned and -operated business, manufactures high-quality, custom-dyed textiles. Production staff at Ultimate needed to precisely manage the moisture profile of the fabric in order to properly control the dyeing and finishing operations. Spinning discs were previously used to apply water, but performance was inconsistent and unreliable. The discs could not maintain the proper droplet size or uniform coverage across the 100" (2540 mm) width of the fabric. Frequent disc breakdowns caused excessive downtime.

Solution:

The Spraying Systems Co. solution uses an AutoJet® Model 2008 Spray Control Panel and a header with six PulsaJet® automatic spray nozzles. The spray control panel provides a convenient way to adjust the spray nozzles, enabling the system to maintain the desired 12% moisture content despite line speeds that commonly fluctuate by 20% or more. Using Precision Spray Control (PSC) instead of adjusting liquid pressure to control the flow rate ensures optimal drop size, spray angle and uniform coverage across the full width of the fabric.
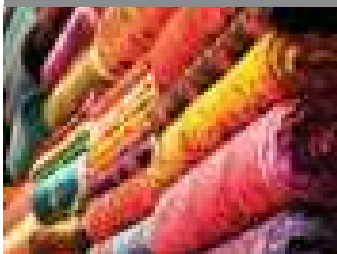

PulsaJet Automatic
Spray Nozzle

AutoJet Model 2008
Spray Control Panel

Spraying Systems Co.®

spray.com | 1.800.95.SPRAY | Intel. Tel: 1.630.665.5000

Results:

The AutoJet® Spray System has solved Ultimate Textile's production problems and provided additional benefits. The consistency of the moisture profile of the fabric has improved product quality and enabled an increase in product price. The reliability of the PulsaJet® nozzles has reduced downtime significantly and decreased the labor required to maintain the system. Higher prices, more production and less labor have combined for an annual benefit of US$19,000, providing Ultimate Textile with a payback of less than 11 months on its investment in new spray technology.
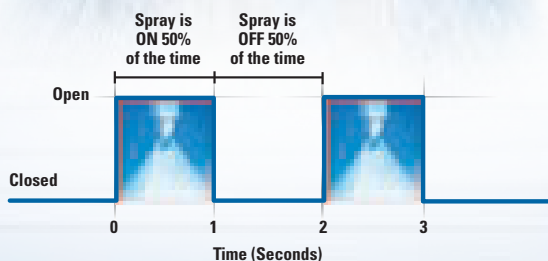
A CLOSER LOOK AT THE SYSTEM

Six PulsaJet automatic nozzles cover the width of the textile.

AutoJet Model 2008 Spray Control Panel provides easy control of nozzles and cycle times up to 18,000 cycles per minute.

Precision Spray Control

Spray is ON 50% of the time

Spray is OFF 50% of the time

Open

Closed

0   1   2   3

Time (Seconds)

Precision Spray Control (PSC) involves turning nozzles on and off very quickly to control flow rate. This cycling is so fast that the flow often appears to be constant. With traditional nozzles, flow rate adjustments require a change in liquid pressure, which also changes the nozzle's spray angle/coverage and drop size. With PSC, pressure remains constant enabling flow rate changes without changes in spray performance. PSC requires the use of electrically-actuated spray nozzles and an AutoJet spray controller.

Spraying Systems Co.®
Experts in Spray Technology