Niagara Research

Niagara College research team helps W.S. Tyler innovate through productivity improvement

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Niagara Research

Even a successful century-old manufacturer in Niagara needs a bit of help now and then in a competitive market filled with new technologies and the changing demands of customers.

W.S. Tyler is a St. Catharines-based company that has been in business for more than 125 years as a manufacturer of screening technology primarily for the aggregate and mining industries. The company also makes washing and pelletizing equipment.

When W.S. Tyler wanted to find ways to increase its internal capability to serve customers, the company turned to Niagara Research, the Research and Innovation Division of Niagara College, which works with small and medium-sized businesses to meet their innovation goals, and to keep them competitive. With funding from various provincial and federal agencies, current students and recent graduates are hired to work alongside faculty to help industry partners leap forward in the marketplace.

The Niagara Research team used lean manufacturing principles for the project by analyzing the production of wire mesh on automatic looms. During the analysis, several "waste" items were identified which had a negative impact on equipment utilization. As a result, Niagara Research facilitated Kaizen meetings – a Japanese philosophy of work which essentially means "continuous improvement" – with W.S. Tyler personnel, and an action plan with tangible activities was identified.

Over the next few months, the targeted activities were implemented, including the creation of standardized work, some tool organization, along with technical solutions such as a machine vision system. These actions were completed without adding significant cost or adding extra work to anyone's job.

From left, Wilm Schulz, Media Process & Product Engineer, W.S. Tyler; Rick Baldin, researcher and industry liaison; and Jonathan Pinchbeck and John Feenstra, research assistants, inspect the double heddle loom at W.S. Tyler.

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"When we work with these companies, we aren't focusing so much on employees working harder; it's more about everyone working smarter," notes Rick Baldin, researcher and industry liaison with Niagara Research.

Throughout the process, the Niagara Research team was hands-on at W.S. Tyler, taking the time to understand the workflow for each product from the time it is ordered until it leaves the workcell. When identifying potential efficiencies, the Niagara Research team also arranged a visit to the nearby General Motors facility, during which GM engineers assisted in the discussions by offering their expertise on lean manufacturing, specifically on the use of vision systems to verify quality products.

Based on their findings, the research team also designed new equipment and tooling, such as the double heddle frame, which works essentially like a loom for weaving the wire mesh. The modifications reduce the amount of wear and tear on the machine, in turn reducing the replacement part costs and increasing production time. A floor tension system also enhanced the ability to keep the materials taut during weaving.

With the modifications, there are early indications that W.S. Tyler is hitting its production targets 100 per cent of the time, on average.

"The bottom line is that a more productive line can reduce product cost, which turns into more sales, and more sales has the potential to bring more work and more jobs to the area," Baldin adds.

"We have a great relationship with the College, and the research team," agrees Wilm Schulz, Media Process & Product Engineer, W.S. Tyler. "We hire Niagara College graduates on a regular basis, and take them on as co-op students as well, because we have confidence in their abilities as being well-trained for the workplace environment."

This project was made possible with funding from the Applied Research and Commercialization Initiative through the Federal Economic Development Agency of Southern Ontario.

Niagara College, through its Research and Innovation Division, will continue to support collaborative research projects in various disciplines that may involve product and process applied research, engineering design, technology development, product testing, proof of concept, and piloting and problem solving. Nearby small- and medium-sized businesses can benefit from gaining access to the College's adept faculty, students, and recent graduates and exploring opportunities for innovation.

To learn more about partnership opportunities with Niagara Research, contact research@niagaracollege.ca or visit www.NiagaraCollege.ca/Research

To learn more about W.S. Tyler, contact krandall@wstyler.ca or visit www.wstyler.ca