

## CASE STUDY:

# InfinityQS Helps Trek Bikes Pave the Road to Cycling Excellence



**Trek Bicycle Corporation, is a global leader in bicycle design and manufacturing** with their headquarters based in Waterloo, Wisconsin. From the original hand-built steel touring frames introduced in 1976 to the revolutionary OCLV carbon fiber first introduced in 1992, Trek's passion for innovation, quality, and performance leads the industry with next-generation technology and thinking. With a record seven consecutive Tour de France titles, six straight 24-hour World Solo Mountain Bike Championships, and countless other professional wins, Trek enjoys a rich tradition of victory in the world's premier cycling events.

## Challenge

Trek needed a way to quickly and reliably monitor weights in the OCLV carbon molding area. There was no effective system in place to effectively monitor weights, and Trek was looking to automate this function. "Though weight data was already being collected in the carbon molding area, we needed to implement a paperless system to help the operators respond in real-time to out-of-control signals. Improving Trek's use of SPC in the OCLV molding area is another way of ensuring our 'Best in Class' status as a bicycle manufacturer," said Ben Fisher, Product Manufacturing Engineer at Trek.



In the aluminum machining area, measurements were being recorded with a pencil and paper—there was no electronic repository for storing these records. Calculating control limits and periodically checking the process capability were time consuming and tedious.

## Solution

Using InfinityQS ProFicient for real-time Statistical Process Control (SPC), Trek was able to automate their quality control procedures. Using bar code readers, Trek can now track instantaneously track weight data, and identify any issues in the molding area. In the machining area, basic checks such as machined IDs, offsets, and widths are monitored with ease.

Using ProFicient, operators enjoy the benefits of fast data entry using the barcode readers and direct gauge inputs. “Analyzing the data real-time allows us to separate the special causes from the common cause variation and to have the operators react only when special cause variation is present,” said Fisher. The real-time analysis ensures that the bikes meet Trek’s quality standards and will perform optimally to meet customer expectations for lightweight frames.

## Results

Trek is saving time, resources and money by automating the quality assurance process for machining and carbon molding. Converting from a paper-based system to automated data collection has made data collection and analysis much more efficient, saving the quality department over \$19,000 a year in paper costs alone. Trek is also achieving significant savings from improved quality and reduced scrap. Quality engineers are now able to track resin flow during the molding process by using a simple calculation within InfinityQS ProFicient. Most importantly, Trek is able to maintain its leadership in the market by continuing to produce high-performance bikes that meet stringent quality standards every time.

- > **Converting to automated data collection has improved efficiency and saved over \$19,000 a year**
- > **Overall scrap reduction has produced significant savings**
- > **Simple tools within ProFicient allow quality engineers to closely oversee molding process**