Technology

Case Study: Mitutoyo's MeasurLink® Quality Management Software Streamlines Data Management Process

Brought To You by Mitutoyo | May 01, 2023

System saves time, money and increases productivity in brake automotive manufacturing industry

Business Challenge:

In the automotive industry, disc brake calipers and ABS/Traction control systems are usually manufactured in large quantities and, in the past, it has been nearly impossible to capture data in real time. Real-time data provides a streamlined process of looking at the data that is very intuitive to quality engineering and can be interpreted in a more fluid way.

Mitutoyo America Corporation's CMMs, using MCOSMOS and GEOMeasure software, can capture manufacturing data; however, a data management software system is a more efficient way to manage a larger volume of data. Operators could use CMM reports to ensure the parts were in spec, but the operators needed to apply real-time SPC to ensure products produced maintained an acceptable Cpk/Ppk.

Solution:

Traditionally, the data was manually managed in a Microsoft Excel spreadsheet, but there were many limitations to this process including ease of importing data, inconsistencies with data and a micro process which didn't have the ability to be streamlined to expand the data to meet quality needs efficiently, safely and accurately.

Ultimately, Mitutoyo's MeasurLink® Quality Management Software was the perfect solution. The company had already been working with Mitutoyo on their other quality solutions, was familiar with the data management challenge and was able to install and customize to fit the company's needs for real-time data management.

MeasurLink® is a full partner for manufacturing process control and incorporates several customizable features for customers who want to acquire and analyze data in real-time and check variable and attribute inspection to maximize production and minimize defects.

Features include:

- Views to allow the user to create parts, and characteristics with nominal and tolerance and traceability lists.
- The data collection interface provides real-time graphics for run charts, control charts, histograms and statistics.
- Standard views include Datasheet (observations and charts), Classic View (chart windows), and 2D view (part images with callouts that include charts and statistical data), along with a customizable Info View and additional Manager Views.
- Full reporting template functionality is also provided.

Benefits and ROI:

As a result of installing MeasurLink®, there has been a major boost in productivity being able to capture and supply real-time accurate historical data up to 10 times faster than previously reported to their customers. This has been one of the most invaluable benefits of MeasurLink®'s addition. By the end of 2019, MeasurLink® will be implemented and expanded into an additional 30-50 inspection stations to support Electronic Parking Brake manufacturing.

Additionally, MeasurLink® has been expanded into a safety critical seal groove measurement process, which uses a Mitutoyo CNC Contracer® to ensure the groove geometry is correct. The data is collected by MeasurLink® and is reviewed by manufacturing engineers to ensure conformance of safety characteristics. This is an extensive measurement system that previously was a manual process and has now become a fully automated CNC process going from a 45-minute cycle time to a five-minute cycle time.

Additionally, an engineering group specifically dedicated to process improvement has been developed. This has allowed the company to evaluate, verify and stabilize internal scrap and decrease the amount of costs directly related to internal defects by nearly 60%. The addition of MeasurLink® has stabilized any data collection problems to almost zero and brought costs associated with these data mistakes down considerably. All SPC operators are now taught and trained with a standard curriculum.

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