



Cycle Time Improvement

Cycle time improved by 13% and Production improved by 6%

Industry

Automotive Component Manufacturing Industry

Client Summary

The client is involved in the manufacturing of wheels for light motor vehicles and heavy vehicle industries. They produce up to four million wheels per year for global vehicle manufacturers such as Ford, General Motors, Honda, Hyundai-Kia, Nissan, and VW.

System Provided

-  IoT-based Digital Twin cycle analysis and improvement system for welding line.

System Provided

-  The speed of operation of machines involved in the welding line, such as the coiler and swing arm, was improved with the help of an IoT-based cycle time monitoring system.
-  Analysis of value added, non-value added, and critical path activity was conducted. Implementations comprised of system optimizations without further investment. Further optimization possible with investment.

Challenges

- Improving the cycle time of overall machines in the welding line without affecting quality and safety involved in wheel manufacturing.

Improvements Observed:

- ✓ 13% improvement in the new cycle time data compared to the old cycle time.
- ✓ Optimized the speed of operation of the Coiler, Welder Loader, and Swing Arm.
- ✓ Increased speed of operation between the SW1 and Welder Loader by reducing the operating distance between them, leading to increased productivity.
- ✓ Significant improvement (~30%) observed in the average cycle time, reducing from 8.87 seconds to 7.11 seconds.
- ✓ Standard deviation of overall cycle time improved from 64% to 38%.

Customer Feedback

Our wheel production has surged by 6%, and the 13% improvement in cycle time has streamlined our operations like never before. The impact on our efficiency and output is remarkable—this has truly transformed our manufacturing process!

About Instron Technologies

With operations in India and Canada, Instron Technologies is a leader in Process Skid Plants, Digital Factory Solutions, and Test Bench Systems. Committed to sustainability, our dynamic team develops innovative solutions that not only meet critical customer challenges but also emphasize eco-friendly practices. Serving over 200 clients in more than 10 countries, we demonstrate our dedication to innovation, operational efficiency, and environmental responsibility.

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