

Northern Stamping Improves Efficiency in Automated Tube Manufacturing System



The Situation

Northern Stamping Inc. (NSI), a designer, developer and manufacturer of complex structural components and welded assemblies for the global automotive market, was tasked with building heavy-duty trailer hitches. In their efforts to fulfill their customer's requirements, NSI encountered problems with tube bending equipment that was frequently failing and costing several hours per day in repair time.

Wayne Trail not only resolved the frequent equipment failures and resulting down-time at NSI, but also enhanced the overall system by opening up options for future processing needs.

The Solution

NSI contacted Wayne Trail, a Lincoln Electric company, for advice about how to fix the issues with their existing tube bender. After further discussion and review of their bending process, Wayne Trail explained that replacement of the automated tube manufacturing cell was only part of what needed to happen to fix their manufacturing process. They recommended replacement of the weld fixture into which the bent trailer hitch fit, and educated NSI about the importance of ensuring that the bent materials were meeting required tolerances. The previous bender had been unable to withstand the forces required to bend the large-diameter, thick-wall tube, which caused problems with maintaining the necessary tolerances.

“The fitting of parts into a weld fixture is important, as it enables the tube assembly to be welded correctly,” said Mike Bollheimer, product manager at Wayne Trail. “Our team that built the bending equipment worked hand in hand with the team that built the weld fixture. This was a benefit to Northern Stamping since the Wayne Trail equipment could now assume sole responsibility for how the tube was formed and how it fit in the weld fixture.” The previous system had been built by two separate contractors – one for the bender and one for the weld fixtures.

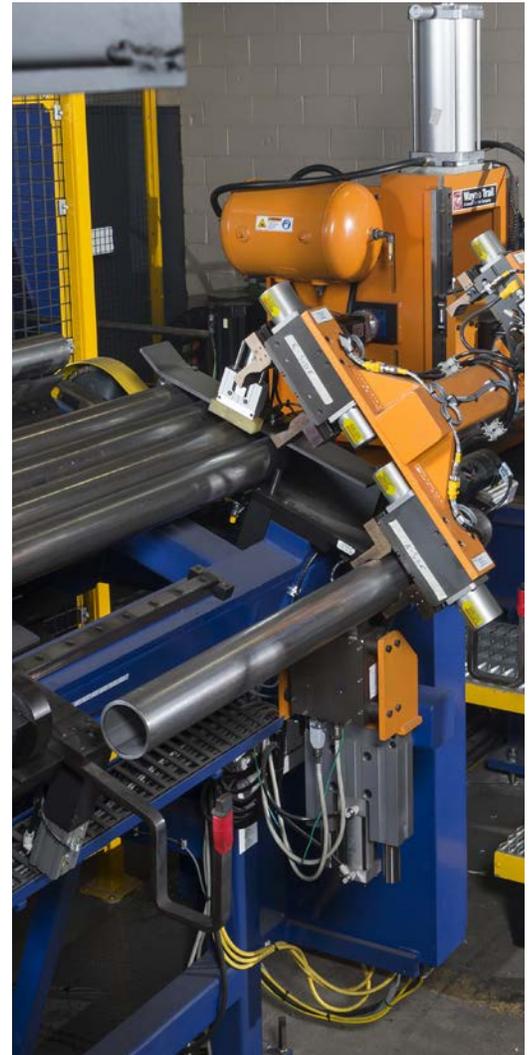
In the end, Wayne Trail not only resolved the frequent equipment failures and resulting down-time in the tube bending process, but they also enhanced the overall system by opening up options for future processing needs. Wayne Trail looked into the entire process and what NSI needed to be successful in the industry.

“Wayne Trail worked closely with NSI in the handling of several design changes over the course of the project build,” said Jeff Baxter, automation engineer, NSI. “When there was a change, and sample parts were required to do further testing, Wayne Trail helped by providing prototypes.”

Within weeks after the system installation was complete, NSI experienced improved efficiency with the new bending system built by Wayne Trail. The system performed exactly as needed, and the need for repairs was greatly diminished.

Built-in Flexibility

NSI has only begun to reap the full benefit of its partnership with Wayne Trail. Thanks to the newly installed manufacturing cell, NSI now has the flexibility to install additional manufacturing modules that could perform other tasks as needed, such as end forming, hole piercing and part separation. When the current trailer hitch program is complete, the system will be re-tooled to enable the manufacture of additional tube configurations. A variety of functions will continue to be performed at high efficiency for years to come.



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