



Trico Products has relocated its stamping operations to this modern manufacturing facility in Brownsville, Texas.

Trico Reduces Changeover Time With Minster System

Having manufactured one of the world's first windshield wipers in 1917, Trico Products' commitment to innovation and quality has cemented its place as an industry leader. Trico currently supplies about two-thirds of the blades and 75 percent of the wiper arms for domestic automobile manufacturers.

When you consider that each Trico wiper system can include as many as 30 different stampings, and that Trico wiper systems are standard equipment on 40 to 50 different models of new domestic and

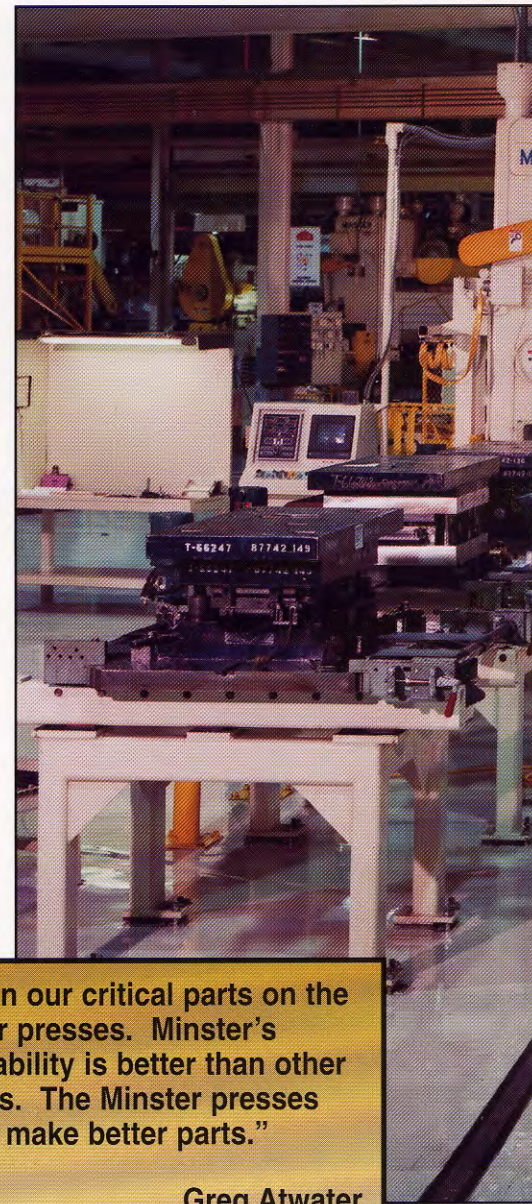
imported cars and trucks, it's easy to see how important quick die change is to the company.

"Quick changeover is imperative to our operation," said Trico Vice President and General Manager Martin Kennedy.

At its manufacturing facility in Brownsville, Texas, Trico recently went on line with a Minster-designed dual stage rotary die transfer. Integrating two Minster P2 150 presses, the die changing system enables an operator to automatically load and unload dies from either direction, allowing one transfer to service multiple presses.

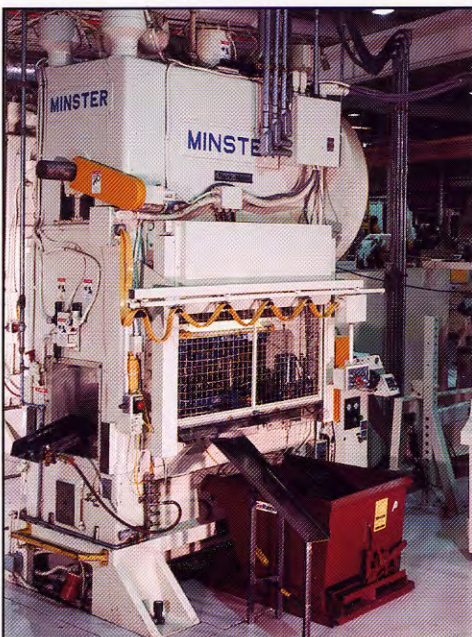
"From last good part to first good part, we're down to a 12-minute die change on this system," said Director of Manufacturing Greg Atwater. "The Minster system has definitely helped improve our production capacity."

"We went to Minster and explained what we were looking for, and they did a good job of designing a system that works for us," Kennedy added. "And we've had a good return on our investment. We dramatically reduced our changeover time and increased the uptime of the presses."



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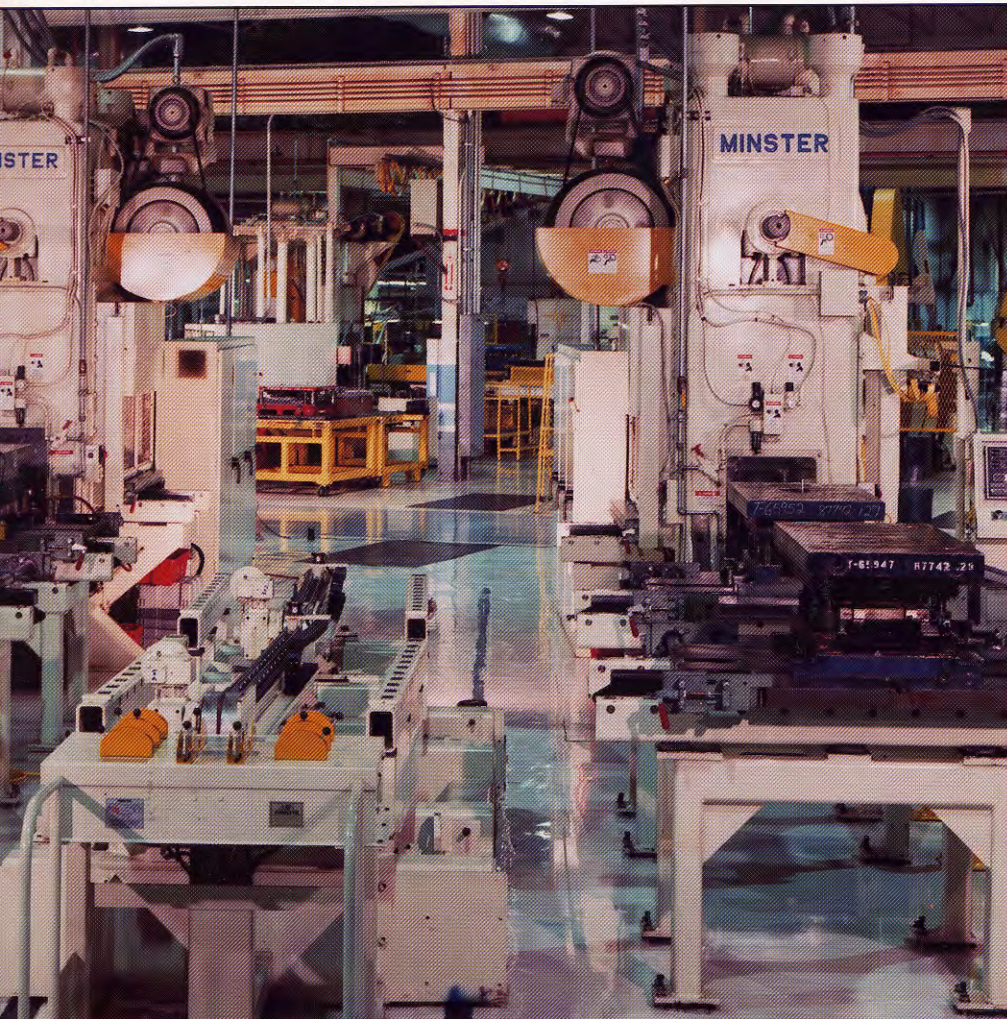
Greg Atwater
Director of Manufacturing
Trico Products Corp.



A Minster P2-150 at work at Trico Products in Brownsville, Texas.

In the last two years Kaizen teams at Trico have taken presses that took as long as three hours to go from last part to first good part to 25 minutes, and they are continually fine-tuning and reducing this time.

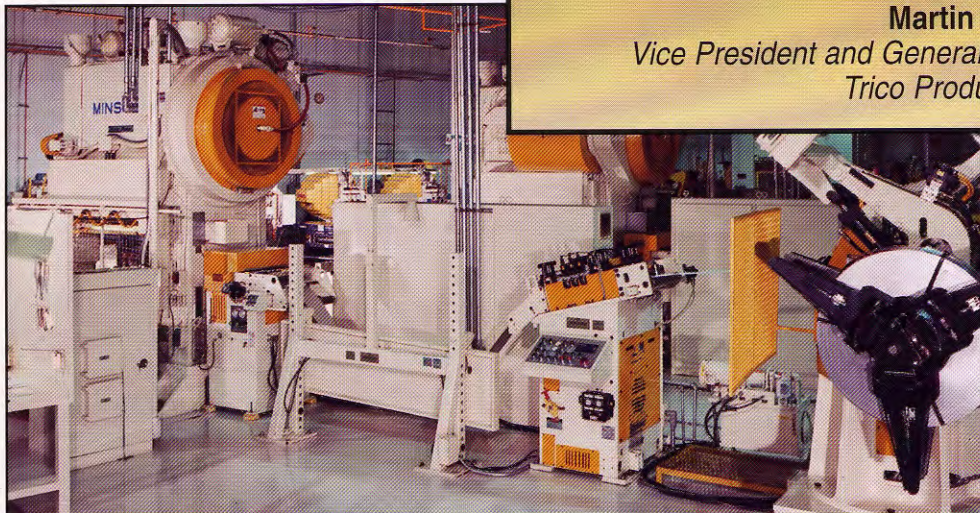
"The Stamping Department currently has 10 quick die change teams," said John Maldonado, Press Room Supervisor. "The new 150 ton Minsters have contributed greatly in our quick die changes with features like programmable set-up by tool number; pre-staging up to four tools at once; automatic adjustments for guide rolls on feeders; touch control panel and the die conveyor system."



This Minster-designed dual stage rotary die transfer system has reduced die change time to 12 minutes on the Minster P2 presses.

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New presses at Trico Products are equipped with a complete line of Minster material handling equipment, including a feed, thread table, straightener and reel.

As an OEM supplier to the “Big Three” and numerous other automakers, just-in-time delivery and quality are equally important issues for Trico. And a variety of Minster presses play a key role.

“Durability is an important factor,” Maldonado said. “JIT is affected when a press is not running. I have worked with various types of presses, and the Minsters have out-performed the others. They are easier to operate and have very little down time compared to other presses.”

“The reliability and uptime of the Minster presses are the standard of the industry,” added Manufacturing Engineer Fred Greenwood.

Because windshield wipers are an integral safety feature of an automobile, part quality is extremely important.

“We run our critical parts on the Minster presses,” Atwater said. “Minster’s repeatability is better than other presses. The Minster presses simply make better parts.”

“With the Minster presses, we tend to see a better quality part on some of our more intricate jobs with tighter tolerances,” Kennedy added. “The Minster presses are well designed, robust, finely crafted stamping lines.”

“The performance of the Minsters is excellent,” Maldonado said. “The features that these presses have are outstanding --

operating speed, feed accuracy, which affects quality and die performance, are excellent.”

Increased uptime, part quality, better die performance and innovative technologies like die transfer stations are just a few of the attributes Trico Products seeks from The Minster Machine Company as it continually improves its process of manufacturing the world’s finest wiper systems.