

Lincoln Electric Finds Solution to Stamping Needs

One hundred years after helping to start a revolution in powering machinery, Lincoln Electric is vowing to do it again. The Cleveland-based company celebrated its centennial by dedicating its new motor division facility June 8, 1995 in Euclid, Ohio.

Within a year, Lincoln Electric hopes to be shipping 300,000 high-quality industrial motors ranging from one-third to 1,250 horsepower from its new plant.

The new Motor Division has been equipped with state of the art manufacturing equipment, including a Minster E2-500 press -- the first 500-ton lamination press installed in the United States.

Lincoln Electric Project Engineer George Zirm and Tooling Engineer Wilson Beers said teamwork was the key in putting together a stamping system for the laminations.

"Lincoln Electric was going into a new line of energy efficient motors," Zirm said, "and our project was to produce a burr-free lamination with quick die change to allow us to economically make smaller production runs, keep our inventory lower and respond to customer needs quickly."

So Lincoln Electric engineers teamed up with The Minster Machine Company and the L-H Carbide Corp. to work on

press requirements, die designs and die change requirements.

"All three companies had to work pretty close together to get everything defined on what we needed," Zirm said. "For its part Minster has supplied the press and quick die change system."

Zirm said one of the biggest benefits from the Minster system is changeover time.

"Our changeover time has gone from an average of seven and one-half hours to 20 minutes," he said.

"Our production speed has actually doubled on our larger frame sizes because this press will actually go up to a 20-inch lamination. It also allowed us to build the dies to a close tolerance so we don't have any burring problems."

"On our old presses as soon as you'd get any wear at all in the



A Minster E2 500 press and die cart are part of

pins and bushings, you'd experience chipping, and we'd have to pull the die out and rebuild it again," Beers said. "You wouldn't experience that in a Minster press. The tightness of the ram, the stability of the press is much better so we're able to run our clearances within one-thousandths."

"So we expect tool life to probably double on the Minster Press," Zirm said.



Lincoln Electric's new Motor Division in Cleveland, Ohio.

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Lincoln Electric's new stamping system.

"At least," Beers added.

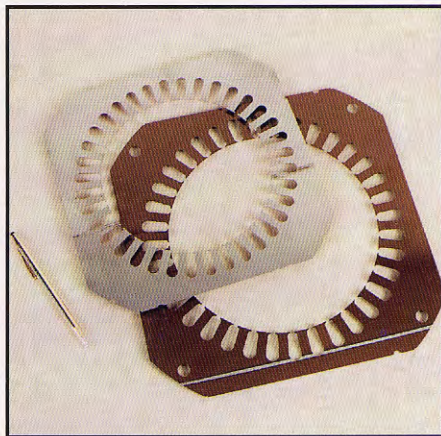
Minster's ability to meet Lincoln Electric's requirements at a competitive price was a major drawing point for Beers.

"We had other press manufacturers look at this," Beers said, "but we felt we needed a Minster press because we needed a heavy hitter with higher speed capabilities -- a feature that many press manufacturers could not deliver. We also needed the feed systems to match the speeds and again Minster delivered, so we focused right back to Minster."

Minster's reputation for quality and excellent service also attracted Lincoln Electric.

"We learned of Minster part quality by observing laminations from Minster presses at other companies," Beers said. "We took magnified pictures and found that the laminations coming off Minster presses were definitely suited for our production standards."

"We also were impressed by Minster's service reputation," Zirm added. "We know we can get a 24-hour turnaround on



The high quality lamination seam (top) produced by the coil end joiner using a Lincoln Electric Square Wave TIG 355 welder (right) assures there is no interruption to production flow.



replacement parts. And if there is a problem, the service personnel respond instantly to maximize production uptime."

Lincoln Electric, a company of many diverse products, has also contributed to the press feed line with a Square Wave TIG-355 welder on the coil end joiner.

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The welder produces a seam of such quality that it can run through the die without tool damage and eliminate rethreading each coil so there is no interruption to production flow.

Every component of the system has performed above and beyond the project's performance standards.

"That press came in, we put it in operation and I couldn't have asked for a better start-up," Zirm said. "The press has more than met our expectations."