

Increased Press Capacity Opens Door to Assembly Work

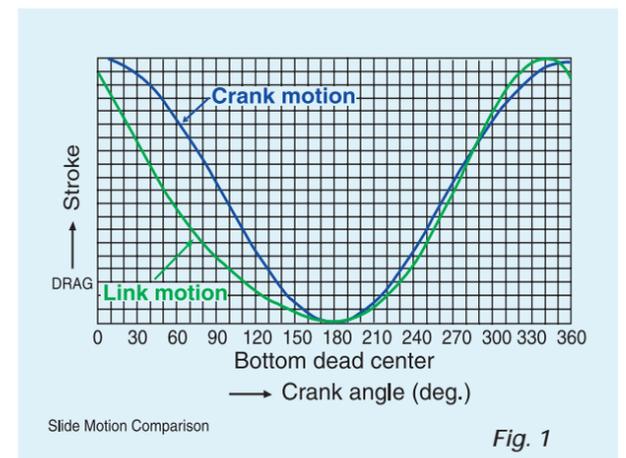
With a larger part-size capacity and flexibility to move quickly from transfer to progressive stamping, a new servo-transfer press at Midwest Stamping Company enables the stamper to provide complete assemblies to its customers in the automotive industry.

Midwest Stamping, Inc. first stepped into the automotive arena in 1952 with one plant and a commitment to meet customer needs. Forty-nine years later, Midwest Stamping has built a reputation as a worldclass first-, second- and third-tier supplier of stampings and assemblies to the automotive industry.

Recently, the company took steps to expand its capabilities and grow its ability to produce larger stampings and bring in more complete assembly work, thanks to a new transfer press from Aida-Dayton Technologies Corp.

pert, Midwest Stamping also specializes in robotic gas-metal-arc welding, resistance welding and mechanical assembly.

"One of the big trends we're responding to," says Ken Freeman, Midwest corporate tooling manager,

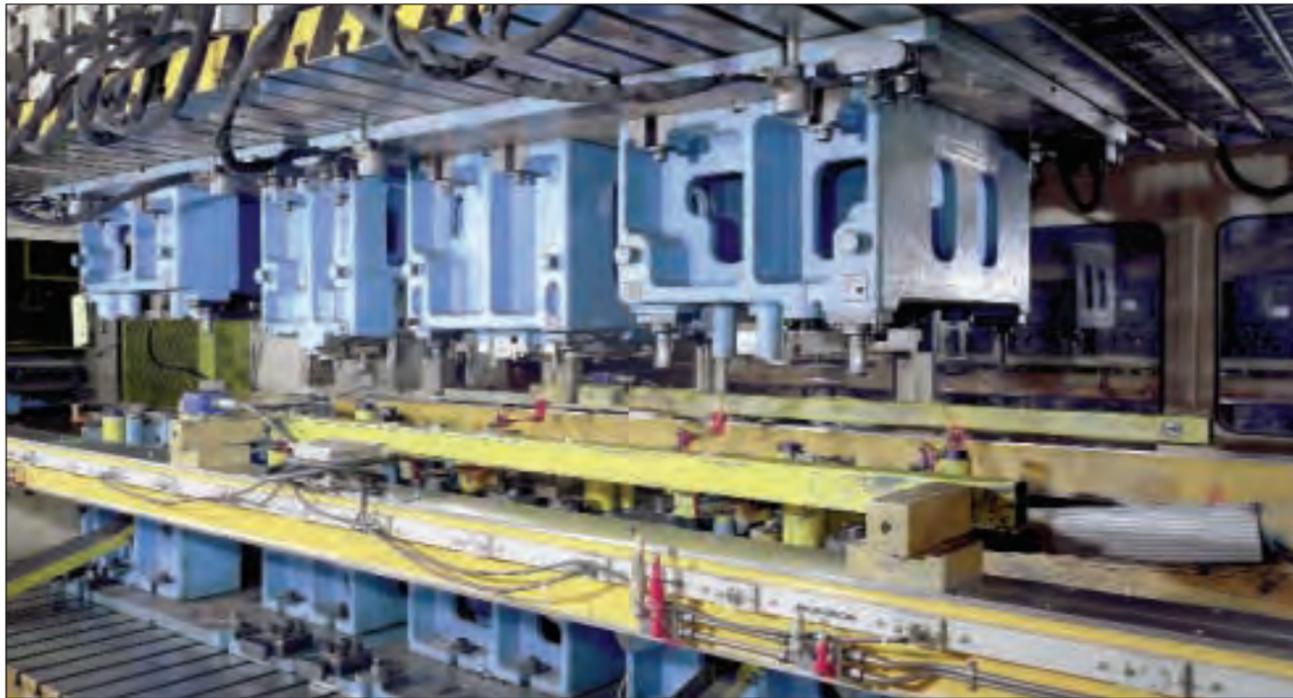


Bigger is Better for Assembly

Headquartered in Maumee, OH, Midwest Stamping has sales and engineering facilities in Dearborn, MI, and a combined manufacturing space of 340,000 sq. ft. with its plants in Sumter, SC; Springfield, KY; and Edgerton, OH. A metal-stamping ex-

"is the requirements of automotive companies for stampers to not only produce parts but to possess the capability to provide complete assemblies. In 1998, our company president, Mel Rachal, put a team together to evaluate how we would address that need, create ongoing opportu-

Midwest Stamping, Inc. installed this 1200-metric-ton Aida TMX electronic-servo transfer press in February 1999, in space built on to the firm's Edgerton, OH plant. Installed as a stand-alone work center, the press moved into high-volume production operating five days a week at 2.5 shifts and producing some 173,000 stampings per month.



The TMX press at Midwest Stamping, Inc. boasts a bed capable of handling material to 72 in. wide, accommodating large progressive dies.

nities for growth and move to the next level in manufacturing technology. As part of our evaluation process, we found we could meet all three of those objectives with a larger-capacity transfer press.”

In 1999, Midwest installed a 1200-ton (1320 U.S. ton) Aida TMX stamping press in space built on to the firm's Edgerton plant. Installed as a stand-alone work center, the press moved into high-volume production operating five days a week at two-and-one-half shifts and producing some 173,000 stampings per month. Available with a crank or link-motion drive, Midwest Stamping selected the straight crank drive for its TMX to gain the additional transfer time needed to move parts across the die to the next station (Fig. 1).

“The press, with its electronic servo-transfer system, immediately delivered increased production speeds and greater efficiencies,” says Freeman. “Our other transfer presses lacked the ability to change the motion profile for the transfer pitch, the transfer-bar clamp motion and the lift motion. With the servo setup (Fig. 2), we took six sets of parts off of our mechanical-transfer presses,

changed the motion profiles and re-timed them for each part or each job to achieve optimal operating speed.”

For example, according to Freeman, fine-tuning the transfer parameters to stamp a floor rail allowed a production increase from 14 strokes/min. on a mechanical-transfer press to 19 strokes/min. on the

Aida servo-transfer press. Midwest stores the servo-parameter programs in the press-control job memory.

New Job Opportunities

“The TMX added a whole new dimension to Midwest Stamping by allowing us to quote for opportunities we were unable to consider before,”

Freeman says. “Thanks to its 72-in. width capacity, an upgrade from our previous 60-in. capacity, we found we could produce a much wider range of parts and assemblies. Prior to installing the TMX we often were limited to stamping child parts for assemblies, so that the OEM would have to form the larger base stamping and then take our smaller parts and assemble them here.”

As a result of this increased capacity and ability to stamp complete part sets, Midwest has been able to justify the purchase and integration of three new robotic arc-welding cells. The cells are dedicated to particular assemblies.

Quick Die Change for Progressive Stamping

Midwest also realizes a cost savings through the TMX quick-die-change feature. Die changes have

been performed in less than 15 min. “Deadlines are key in the automotive market,” Freeman says. “Less time spent changing the dies means we can schedule more changeovers, run smaller lots and reduce inventory levels for our customers. The ability to eliminate downtime also is very important and we’ve experienced virtually no downtime with the TMX since it was installed.”

A tie-rod type frame gives the press good rigidity. Wide suspension-point spacing optimizes eccentric load-bearing capacity and gives Midwest flexibility in the design and layout of dies.

Another key to press flexibility is its ability to also run progressive dies for large parts at high speeds. This helps Midwest keep tooling costs at a minimum for customers while achieving part-quantity requirements. Job requirements often dictate quantities that demand operating speeds only achieved in a progressive-die

mode. A selection switch on the TMX allows Midwest to move easily from a transfer to a progressive-die mode, allowing the company to produce a much wider range of parts on a single press. “We’ve found we can gain five strokes per minute in press speed when we switch the TMX from a transfer to a progressive mode,” Freeman says.

For Midwest Stamping, new press technology has provided the company with the stepping-stone it needed to continue meeting the needs of its customers. “The automotive industry has changed a great deal in the last 50 years,” Freeman says. “As the largest press in our arsenal, the TMX has made it possible for us to move in a new direction, so we can not only meet the demands of the marketplace today, but be positioned to meet its requirements in the future.” **MF**

Information for this article provided by Aida-Dayton Technologies Corp., Dayton, OH; tel. 937/237-2382.

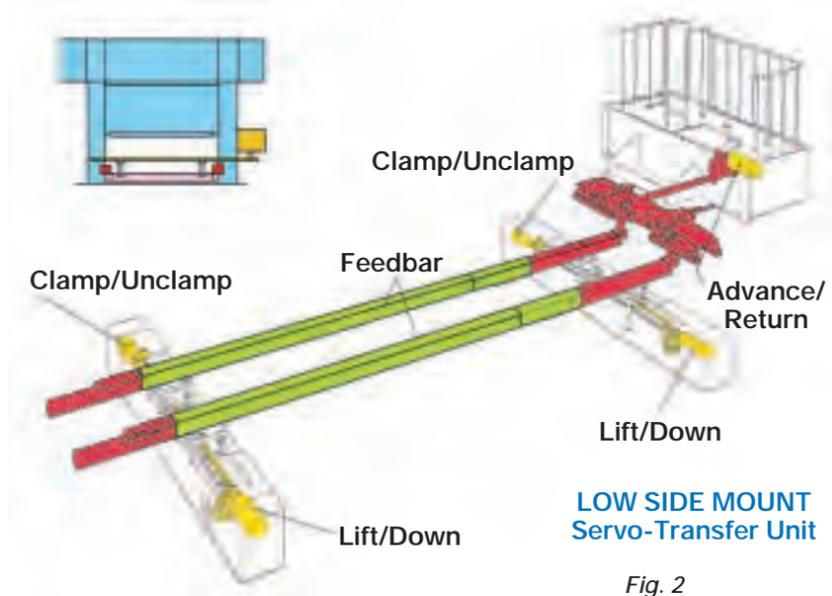


Fig. 2