

Automated Press Line Supports Kanban Stamping

In search of production flexibility, custom metalformer Luitink Mfg. Co. finds it by automating an 800-ton progressive-die press to stamp parts on a kanban system targeting one- and two-week intervals.

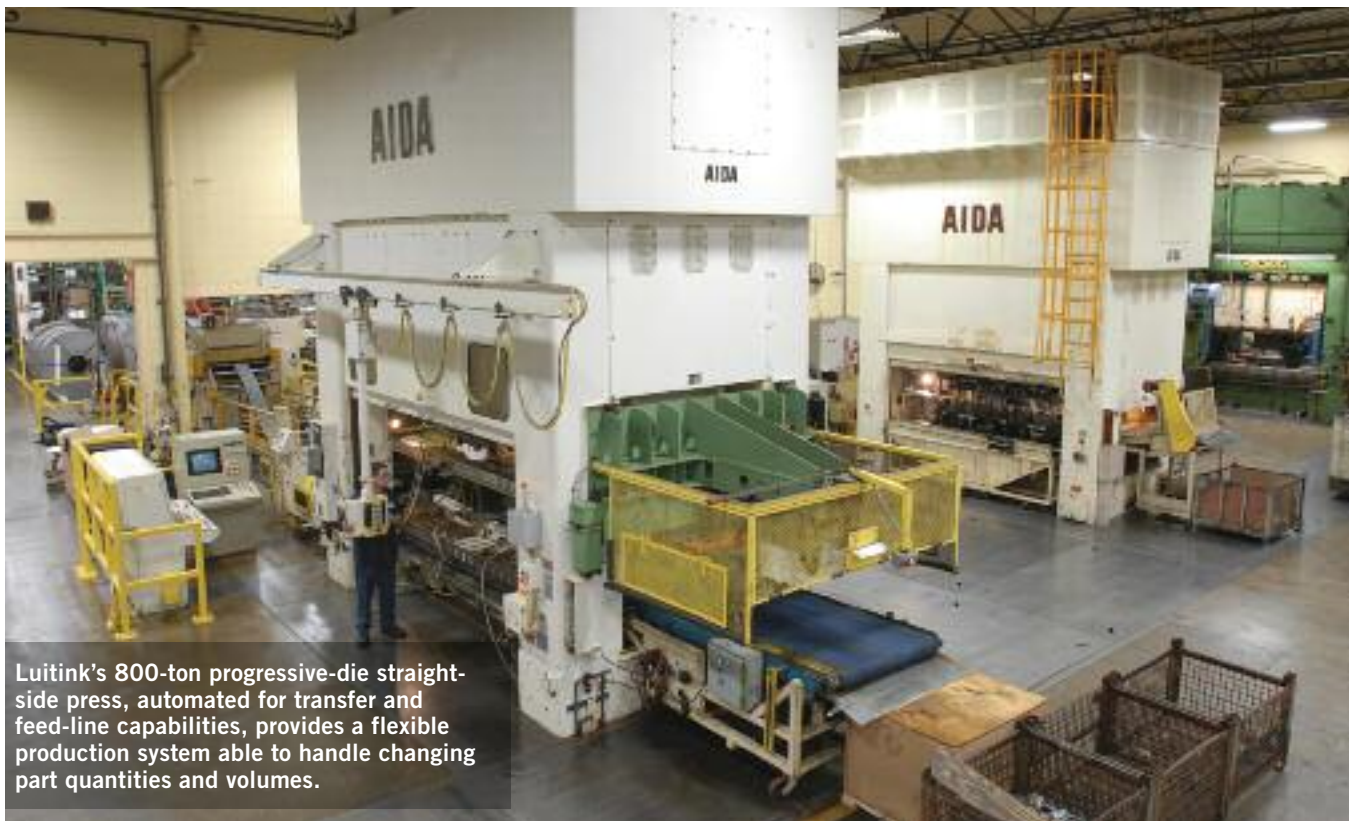
BY TIM WUTESKA

Like many stampers running lean operations, Luitink Manufacturing Co., Menomonee Falls, WI, recently went looking for flexible equipment that could handle changing part quantities and volumes. “We also needed to support a large package of automotive components that

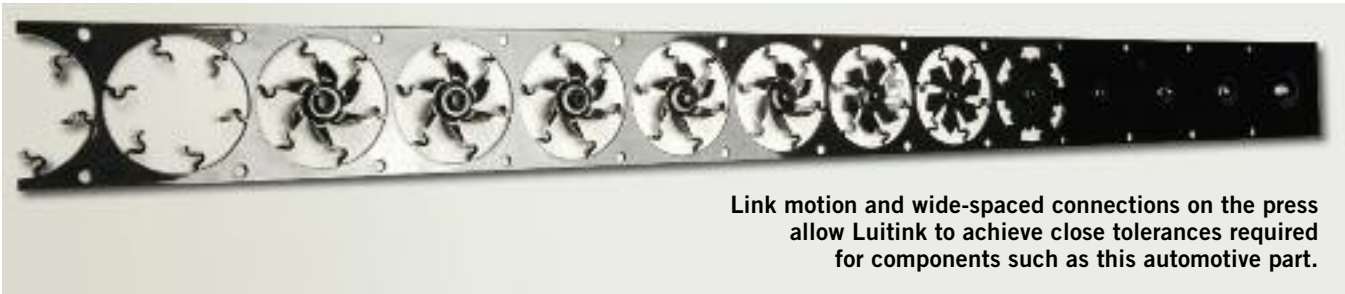
Tim Wuteska is plant superintendent, Luitink Manufacturing Co., Menomonee Falls, WI; 262/251-8800, www.luitink.com.

dictated the need for an 800-ton transfer press,” recalls Glen Luther, Luitink’s general manager. “We found a production solution that not only met our automotive-parts requirement but that allowed us to expand our capacity by taking on less-traditional work.”

The press installed at the firm, PMX 800-ton progressive-die straightside press from Aida, Dayton, OH, was automated for transfer and feed-line capabilities. The



Luitink’s 800-ton progressive-die straight-side press, automated for transfer and feed-line capabilities, provides a flexible production system able to handle changing part quantities and volumes.



Link motion and wide-spaced connections on the press allow Luitink to achieve close tolerances required for components such as this automotive part.

automation setup allows the firm to stamp parts on a kanban system targeting one- and two-week intervals.

“The ability to effectively marry the press with the right transfer mechanism and feed line in the time frame we required was an advantage,” says Luther. “In addition, Aida designed the line so that our operators can run the press and ancillary equipment through its Access 2000 control, eliminating the need for multiple controls from different suppliers.”

Once jobs are stored in the Access 2000 control, parameters can be easily recalled and sent to the transfer and feed-line equipment. In addition to maintaining a high level of communication between the press and its components, the control handles other critical functions including die protection, part and, part-out sensing and operation of end effectors. The control helps to reduce overall part-to-part change-over time by controlling all aspects of the production operation.

It Keeps Going and Going and...

Luitink specializes in medium- to high-volume progressive, transfer and drawn stampings as well as welded assemblies. A major supplier to the electric motor, lawn and garden, recreational vehicle, food service and automotive industries, the ISO/TS 16949-certified stamper initially chose the PMX for reliability and low maintenance. “In seven years, we’ve cycled the press for more than 43,000 hr. and only incurred 53 hr. of unscheduled maintenance,” Luther says.

The PMX runs three shifts per day, five days per week. In addition to automotive components, it runs parts for lawn and garden and medical applications from commercial and draw-quality carbon steels. Production jobs remain a mixture of high-volume and kanban

runs. A number of parts stamped on the PMX require tight tolerances. Designing special dies for these parts, Luitink finds that the dynamic accuracy of the press under load, bottom-dead-center

repeatability, high off-center-load capacity and link motion combine to deliver some unexpected advantages.

“We can take jobs already being run inhouse on other presses and perform

them more effectively on the PMX,” Luther shares. As an example, he describes an x-ray box housing originally produced in three separate operations. With the PMX, the firm performs all three steps at once using the transfer option, significantly reducing production costs.

Link Motion, Off-Center Capabilities Pay Off

The PMX’s link-motion design enhances metalforming operations in progressive-die work by maintaining the press slide near the bottom of the stroke for an extended period of time. It has the ability to reduce punch velocity and maintain pressure on the workpiece, keeping the material in the work portion of the stroke 30- to 40-percent longer than with a conventional crank or eccentric motion. The link drive’s modified slide motion allows the slide to regain the extra time spent at the bottom of the stroke as it travels over the top, to minimize overall cycle times. The slide motion also minimizes heat and vibration found in dies that are run in conventional crank or eccentric-shaft presses. Improved part accuracy and lower die costs result.

When operating the press under off-center-loading conditions, Luitink appreciates its wide-spaced connections that prevent tipping. It finds that the press’s connection points are at least 30-percent farther apart than on some other conventional progressive-die presses, also increasing part accuracy, die life and press reliability.

For dies requiring more time to transfer between stations than standard press-cycle times allow, the PMX’s automated single-stroke feature was initiated. “We have several dies that require extra time to move between stations but we didn’t discover this until after the dies were built,” Luther says. “The automatic single-stroke mode really saved us.”

The transfer capability also has helped to reduce material usage and allowed Luitink to take in nontraditional jobs for the electric-motor, medical and automotive markets. **MF**