

# TechUpdate

## New Piloting Design in Straightener

Dallas Industries, Inc., Troy, MI, has incorporated a new true piloting design into the integral pull-through straightener of its Space-Saver electronic servo press-feed system for heavy-duty applications. Designated as the toggle link motion straightener (TLMS), the unit is ideal for lines that may be used to straighten/feed materials 0.035 in. thick or greater, and where die pilot pins are critical elements of the stamping operation, such as with progressive dies. The TLMS configuration of the straightener means that all upper rolls of the mechanism are raised an equal height, releasing the tension between the upper and lower rollers of the straightener during the feed operation's pilot-pin orientation of the material, resulting in rapid feeds, accurate positioning and minimum wear on components.

The TLMS construction is in contrast to conventional pneumatic or hydraulic-actuated clamshell or alligator styles, a hinged design where typically the exit end of the straightener is lifted higher than the entry side. The clamshell design, though appropriate



for materials thinner than 0.035 in., may pinch and bind heavier materials at the entry end, a condition that may result in inaccurate material orientation and excessive wear at the hinged end. This configuration also can result in unequal downward pressure when closed so that materials may not be adequately straightened. Also, when thick materials are run, the alligator-style devices are set to try to compensate for the possible binding condition by opening even wider, which slows the feed operation and reduces press speed.

The Dallas TLMS features a centrally mounted lift shaft attached at one end to the upper roller head; the other end is a pivot point connected around a motor-driven rocker crank. As the crank moves and the lift shaft pivots, the shaft and roller head are raised, but only by the minimal distance needed to clear the material. This action results in equal tension release and, as the crank returns to the home position, equalized and uniform downward pressure to ensure consistent straightening and part quality.

When running sheet thinner than 0.035 in., or when not using true piloting and the TLMS feature is not required, the upper roller fixture can be mechanically locked in the bottom or straightening position without time-consuming shutdown procedures.

**For more information from Dallas Industries, write no. 350 on your reader response card.**

## R&D Tax Credits Assist Ohio Metalformer

Since 1981, to encourage U.S.-based research and development, the federal government has provided a tax credit in addition to tax deductions for businesses' R&D expenditures. A few years ago, rules were clarified to make the credits easier to obtain

for manufacturers. These apply to businesses large and small, and small- and medium-sized manufacturing companies can realize substantial benefits by taking part. Simply put, if a manufacturing or technical process or product is new or improved, then a project may qualify as research and development under the program.

On November 1, 2005, from 1 to 2:30 p.m. EST, the Precision Metalforming Association will offer an online seminar detailing the R&D tax credit. For more information or to register, visit [www.metalforming.com/seminars](http://www.metalforming.com/seminars) or contact PMA's Lauren Frick at tel. 216/901-8800, e-mail [lfrick@pma.org](mailto:lfrick@pma.org).

One metalformer that did take advantage of the credits is Die-Matic Corp., Brooklyn Heights, OH. Formed in 1958 as a tool-and-die builder, Die-Matic now is a high-volume stamper, boasting 20 presses in capacities to 800 tons. Industries served include automotive—electronic systems, safety systems, brake systems and fuel filters; lawn and garden; and HVAC. The company has been able to qualify for tax credits for the years 2001 to 2004—credits are retroactive to four years provided the applicant can prove its prior R&D efforts—and will continue to apply for the credits on future projects. By amending its tax returns to account for prior R&D work, Die-Matic looks to gain a six-figure tax credit or refund for 2001 to 2004.

"In a sense, it is money found," says Jerry Zeitler, Die-Matic president. "All of us in manufacturing can stand to benefit from a little cash infusion after the past few years of economic ups and downs and steel-price increases."

Through the accounting firm Pease & Associates, Die-Matic chose Black Line Group, Minneapolis, MN, which focuses on providing tax-credit expertise to small- and medium-sized businesses, to help navigate the R&D tax-credit maze. To qualify after-the fact for tax credits from 2001 to 2004, Die-Matic had to submit amended tax returns.

Pease & Associates and Black Line Group helped the company develop an R&D tax-credit study that began with an

onsite visit and data documentation. It prepared a list of qualifying projects along with a list of all employees and their gross annual wages for those years.

“We discussed each project with the appropriate managers here at Die-Matic, determining how much time the project took, how did the project deviate from an original plan or design, and who worked

on the projects,” says Zeitler. “Then we discussed materials that we used and the fees for outside consultants we may have brought in to help. Lastly, we gathered as many documents as possible to substantiate our claims—cost reports, invoices, time tickets, etc.”

What qualified for tax credits at Die-Matic?

“Gas-metal-arc welding was a new inhouse process for us,” says Zeitler. “The welding machine itself did not qualify for the credit since capital equipment isn’t applicable, but the additional development required and the time spent qualifying and testing the welder did count toward the credit.”

Also qualifying: an inhouse die-sensor program.

“We started that program about three years ago, and the wiring of presses and the development phases we undertook all qualified,” Zeitler says.

Though an in-die tapping unit, as capital equipment, did not qualify, related modification, testing and development time, as well as scrapped parts produced during trial runs, did.

Another project earning tax-credit status was the design and build of a mechanical in-die transfer unit. Its initial design was not successful, so Die-Matic scrapped it and started over. Time spent on the new design and build counted toward the credit as did the material used to build the new unit and material used for scrapped parts during trial runs.

“Through the entire experience of trying to qualify for the credits, the most important thing we learned from Black Line Group was how to keep our records straight and in order going forward so that we can apply the tax credits ourselves,” explains Zeitler, noting that Die-Matic now has the experience and expertise to apply for such tax credits on its own.

**For more information on Black Line Group tax-credit assistance, write no. 351 on your reader response card.**

## ERP System for Engineer-to-Order Metalformers

Engineer-to-order (ETO) and project-based metalforming manufacturers face business challenges that cannot be resolved by traditional manufacturing systems. Designing and building complex

products to exact customer specifications frequently involve long lead times and heavy engineering content. To win business, ETO metalforming manufacturers must provide accurate estimates and quotations to a demanding customer base. Often, payment for a project is only received after it is installed and operating on a customer's site. Following the

sale, these firms must provide warranty tracking and aftermarket services, including the sale of spare parts, which may constitute a significant share of the company's business.

Harry Major Machine & Tool Co. (HMM), Clinton, Township, MI, an automation and washer manufacturer and maker of conveyor equipment, extensively researched

better ways to bring its products to the marketplace, mainly for automotive and Tier One suppliers, including metalforming companies. To that end, the company recently implemented ETO enterprise-resource-planning software from Encompix, Cincinnati, OH, and is beginning to see substantial internal process improvements related to the implementation, according to Bill Jurek, HMM materials manager.

"This ETO ERP system has assisted in analyzing in detail the material costs, schedules and releases to the floor," he says.

That has allowed the company to build products on time and to the budgeted requirements, bringing improved timing on deliveries to customers.

While many ERP software companies claim to address the ETO characteristics, careful examination reveals that materials are still posted to inventory, a characteristic of repetitive manufacturing, according to Thomas R. Cutler, president and CEO of TR Cutler, Inc., Fort Lauderdale, FL, a manufacturing marketing firm, and lead spokesperson for the ETO Institute. The institute ([www.etoinstitute.org](http://www.etoinstitute.org)) provides resources, discussion boards and tools to assist ETO metalforming companies in overcoming their unique challenges.

Claims Cutler, quantifiable results for a metalforming conveying manufacturer such as HMM, following an ETO ERP system implementation, should include reduction in costs by 30 percent; increase in margin by 10 to 25 percent; 100-percent revenue growth with little additional indirect cost; improved change control resulting in \$250,000 in additional revenue; reduced delivery cycle times by 40 percent; greater visibility and control over project costs; reduced costs in one department by 50 percent; reduced accounting month-end closing time; and elimination of non-value-added activities resulting in savings of more than \$100,000 annually.

**For more information on ETO ERP software from Encompix, write no. 352 on your reader response card.**