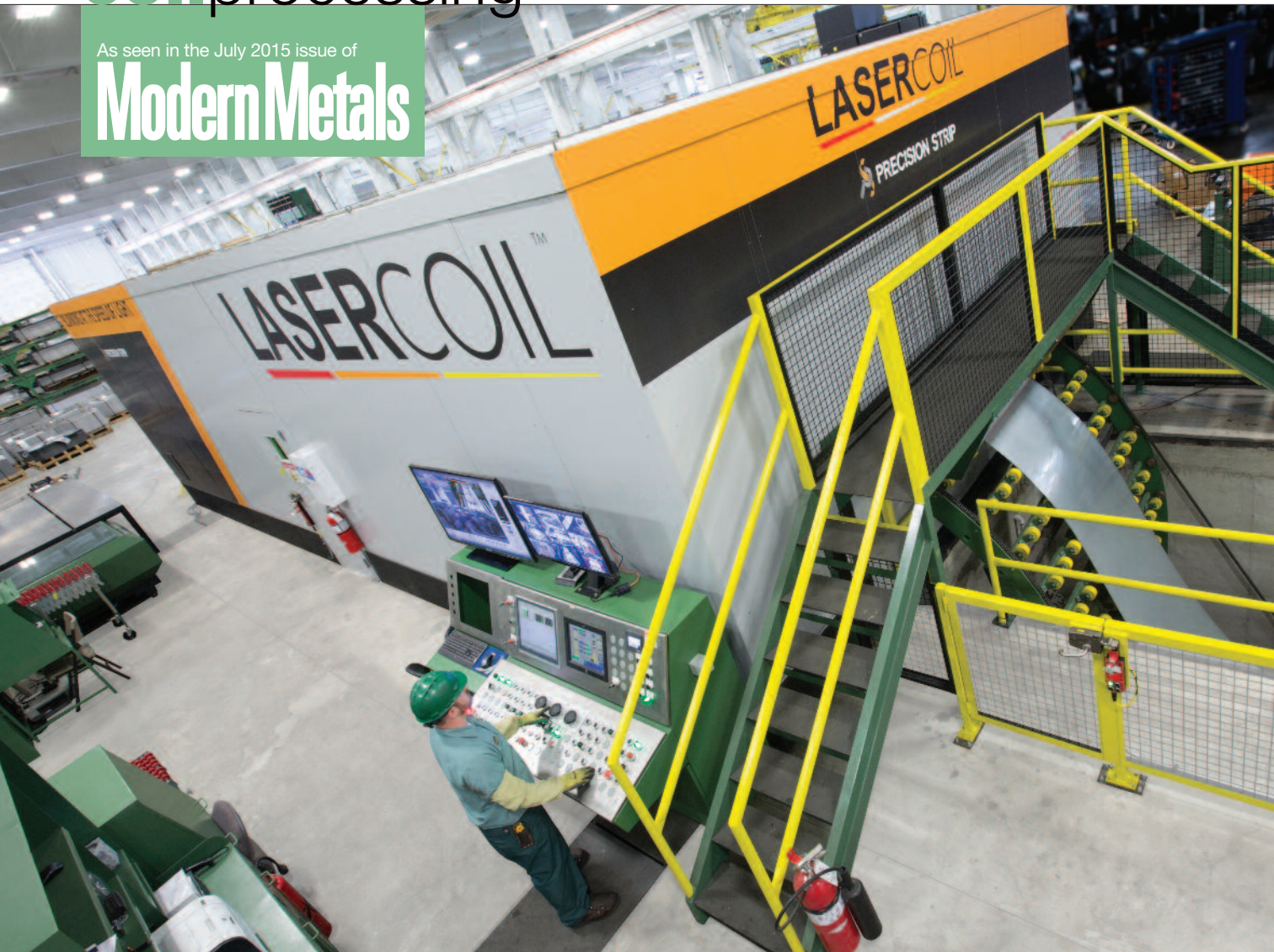


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RIDING THE STORM

To tackle low-volume jobs, toll processor invests in laser blanking technology

BY GRETCHEN SALOIS

Nature doesn't adhere to man-made plans. A week after placing an order for new equipment with LaserCoil

Technologies LLC in November 2013, Precision Strip Inc.'s plant in Perrysburg, Ohio, was hit by an F2 tornado. In the days and months to follow, the company quickly rebuilt the facility while aiming to emerge stronger.

Having spent nearly four decades performing toll processing for both mills and OEMs, Precision Strip develops engineering solutions for many applications while managing a lot of steel and aluminum for the automotive industry.

When the recession slammed the industry, Precision Strip felt the hit as much as anyone, President Joe Wolf says. Despite that, the company—which operates 50 slitting, cut-to-length and sheet blank production lines across 12 locations in six states—researched alternative technology for conventional blanking. “By 2010 and 2011 we were having discussions with OEMs on how we could better equip ourselves to handle their future blanking requirements.”

On learning laser blanking technology was being used in Europe, Precision Strip



sent its engineers overseas to see for themselves. “They found out that laser blanking was going on but [that it was] not coil fed,” Wolf says. “Blanks were made in rectangular shapes followed by a shape contouring process in a laser cell. It wasn’t game-changing technology and we knew it wouldn’t be cost efficient enough for a toll processor.”

Although the search didn’t provide the solution needed, it did get the engineers thinking. “We thought if we could put a coil up and have it come out the back as a shaped blank without the use of a press or die in the middle—it could work well,” Wolf says.

Tooling expense

Word spread that Precision Strip was looking for new technology to meet demand, says Kim Beck, president of Automatic Feed Co., Napoleon, Ohio, and owner of LaserCoil, Perrysburg, Ohio. “We started up a dialogue with Precision Strip which turned into a collaboration,” says Beck.

After learning LaserCoil had been working on laser blanking, “we got pretty excited,” Wolf says. “We could use their laser cell technology and couple that with our coil feed equipment.”

The technology held the most potential for low-volume part production. “We knew OEMs didn’t want capital expenditures on

tooling when volumes were on the low side,” says Don Tomasek, director of sales and marketing at Precision Strip. “It was the OEM interest that really drove us to LaserCoil and, after that, it was a marriage that has worked well through today.”

LaserCoil created a prototype for the new production system. “We believed it was important to have a full-scale working prototype available in the marketplace that could cut blanks,” says Jay Finn, general manager and chief technical officer of LaserCoil.

“The recession slowed down development but we realized the technology was important enough to move forward,” Au-



The LaserCoil cutting head creates cutting paths that can achieve nested, complex, curvilinear shapes.

strip exposed during cutting, allowing scrap to naturally and efficiently fall away into a conveyor or bin.

Fulfilling a need

The need for laser coil technology originated in large part because OEMs had trouble processing high-strength steel blanks. “By having to stamp and form blanks, OEMs had severe problems with cracking,” Tomasek explains. “A laser-cut coil helps with edge and fracturing problems and they can make blanks with less scrap loss.

“Even today, we have a number of production blanks we are making strictly because they cannot be made with conventional dies,” he continues. But with newer technology coming out in the automotive sector, Tomasek says OEMs have found Precision Strip can produce parts that were typically difficult to come by. They originally cut blanks to rectangles, then laser cut the rectangle to the desired shape, requiring two steps.

With the LaserCoil line, achieving orders for 300 to 400 parts was no longer a problem. One recent job required Precision Strip to produce the entire exterior of a new-model vehicle that will debut later this year. “Jobs like that are picking up steam,” Tomasek says. “We have also been in situations where we produced a blank and then produced a modified blank and were able to turn it around in a couple days. That would have been very difficult using conventional blanking.”

When it comes to servicing part work, companies like Precision Strip store a lot of old dies that sit unused over a long period of time. “When they do need them again, they have to recondition them in order to get them to run properly,” LaserCoil’s Finn explains. “That’s no longer the case since you can store a CAD file forever. You don’t have to slit coil to run it through the die to make service parts. You can make parts using maximum coil width and configure it to get the best yield.” He adds the number of master coils to run those parts can also be reduced. Having the ability to make cuts and edges—even on high-strength steel—using a tailor-welded blank process without precision shears is particularly helpful for customers.

automatic Feed’s Beck says, adding the concepts were patented in 2009 and 2010 with the first functional machine operational in 2012.

Precision Strip provided metals to LaserCoil for use in trials. “Early on we found the edge characteristics and surface quality were equal to or better than conventional blanking,” Wolf says, noting the process also allowed Precision Strip to marry the coil feeding line with the laser blanking line seamlessly. LaserCoil found Precision Strip’s feedback helpful when deciding which direction to go with product development.

With Precision Strip running material as

LaserCoil continues to innovate the process, “it really puts us each in a position to further advance the technology,” Wolf says.

LaserCoil offers a hyper-speed, linear motor-driven gantry that works well for complex motion paths. LaserCoil’s module design allows users to coordinate cutting stations. Multiple modular cutting heads allow workloads to be distributed, making production rates similar to conventional blanking methods.

Moving finished blanks and disposing of scrap are among the tasks tackled with laser coil-fed blanking. LaserCoil created individually indexed, dynamic conveyor lanes. This leaves a pathway beneath the

Beyond the prototype

As interest grows, Tomasek says having a prototype laser blanking line at the ready has been helpful for its customers concerned about what would happen if the production line goes down for any reason. "As soon as we let them know we have a second one at the ready, customer concern is eased knowing there is a comparable machine for use as a backup," he says.

Meanwhile, the capabilities of that backup line are continually tested to support ongoing innovation as the "technology is in its infancy," Wolf adds.

According to Finn, LaserCoil has received calls from potential customers asking about value-added manufacturing. "Three or four companies have contacted us needing a large number of parts that they use from a coil product that are of the same gauge but have different shapes that are put together to make a single component," he explains. "The advantage here is that we can run a kit for a number of different parts so when they get an order they

can just run a program and it will spit out all the shapes and parts they need." Precision Strip can also manufacture components for just-in-time orders.

The processor performs jobs for major automakers and their suppliers and expects to take on additional large projects. "We've got a major automotive manufacturer coming to us and we'd like others to ask us to be their processor of choice," Wolf says.

The future for laser technology in coil processing will stretch beyond automotive applications. "We've had inquiries from other industries," says Tomasek. "[Our] success will continue over time. We have

Laser cutting eliminates work hardening and micro-cracking sometimes found with the mechanical blanking of AHSS.

to be at the front end of a new design. We are looking at what markets to get into and are strategically contacting those people to explain the value laser blanking adds."

Neither Precision Strip or LaserCoil can influence Mother Nature but they share a bright outlook for the future. "We're walking, not running yet, but we're moving fast," says Tomasek. ■

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LASER BLANKING LINE:



PRECISION STRIP

- CAPABILITY** - Class 1 exposed & Class 2 unexposed
- GAUGE** - .020" - 0.135"
- WIDTH** - 18" - 82"
- LENGTH** - 18" - 180"
- MAXIMUM O.D. ENTRY** - 96"
- MAXIMUM COIL WEIGHT** - 60,000#

Interested in more information on the **LASER BLANKING LINE?**

Contact Don Tomasek at Don_Tomasek@precision-strip.com or 419-501-1412.