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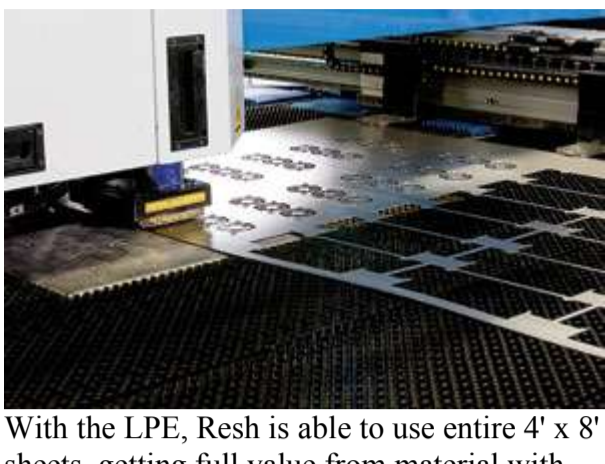
METALFORMING / BENDING / FABRICATING

Laser/Punch Combination Keeps Shop 'In The Green'

By aiming at a very specific niche in the fabrication market with current technology, a small shop keeps its machine status lights "in the green" and its balance sheet "in the black."

Resh Inc. (Franklin, MA) began operations in 1988 with three partner/owners, a few pieces of used equipment, and a commitment to a production philosophy of "Green Light Time" – the time the fabrication machines are actually producing parts.

Although implementing this philosophy was initially difficult due to the company's older-technology equipment, the three owners Scott Langley, president; Robert Saltzberg, treasurer, and Emile Charette, manufacturing engineer, never lost sight of their company's goals or its niche in the marketplace. "What sets us apart is our mode of operation," explains Langley. "Our products are four feet and under. We are known for quality work and quick turnarounds. And what allows us to provide these quick turnarounds is Green Light Time."



With the LPE, Resh is able to use entire 4' x 8' sheets, getting full value from material with almost no scrap.

Today, Resh has evolved into a respected player in the New England sheet metal fabrication industry with 25 employees in a modern 30,000 sq.-ft. facility. The company's mission statement reads: "The mission of Resh Inc. is to provide precision metal fabrications, mechanical assemblies, and services to our customers on time, at a competitive cost." Through the years of growth, the Resh management team has firmly held to the conviction that continually upgrading the company's equipment was crucial for its future success and profitability. They were right.

Turret Or Laser?

Several years ago, Resh began a search to upgrade two turret punch presses – one with a loader and the other a standalone. Extensive research was initiated in what ultimately became a two-year project. It soon became clear that turret punch presses alone would not fill the company's needs. "It would have cost us \$250,000 just to upgrade our tooling," says Langley. After much research, the decision was finally made to purchase the LPE laser/punch combination flexible manufacturing cell from Finn-Power International, Inc. (Schaumburg, IL). It was installed in July 2004.

The LPE laser/punch combination can perform laser cutting, punching, nibbling, upforming, marking, tapping, bending, sorting, and stacking – all unattended, all in a single setup. Optimum use of the combination machine means that a fabricator can use the turret punch press where it is easier or faster and the laser where it is most effective. It allows the user to look at the parts, the materials, the part design elements, the time, and the overall cost of the parts to determine the optimum process.

Making Green

According to Resh's treasurer, Saltzberg, the machine began paying dividends almost from the time of its installation. "From the beginning, it was clear that we could actually run some jobs on the LPE in the time it took to tool and setup the older machines," reflects Saltzberg. "The LPE puts us in a new production capacity, especially when running quick-turn prototype jobs. When we run a 40-hour shift, we're getting 39 hours of production from the LPE. We are now able to utilize entire 4' x 8' sheets and are getting full value from our material with almost no scrap."



Operating unattended, the LPE offers the capability to punch, upform, tap, make extrusions, and countersink or laser cut with its turret punch and laser capabilities

Other benefits that Resh management gained with the LPE include the reduction of piece part costs – faster punching time, reduction in direct labor assigned to set up and punching, reduction of number of manual operations, also utilization of full sheets while eliminating the need to shear to size blanks being processed. And very important, considering its "green light" philosophy, increased machine utilization – with the loading system, unmanned operation can be achieved from load, punch, upform, laser cut, and unload, and sorting of parts in one machine.

"The Finn-Power LPE has dramatically lowered our labor costs," continues Saltzberg. "In addition to its speed and ability to produce high-quality parts, once it is set up, the LPE runs by itself. Since secondary operations, such as deburring, have been nearly eliminated, fewer people are needed to produce a high-quality part."

Combo Capabilities

The punching part of the LPE consists of a 22-ton turret punch press that combines electrical servo technology with mechanical power transmission delivering both flexibility and amazing accuracy. Its forming capabilities are 0.630" high (16 mm) with no die interference; servo system for precise accuracy; low energy consumption; auto-index, Multi-Tool®, programmable clamp settings, and brush tables.

"...combination machines are definitely the way to go."

The laser capabilities include high-pressure cutting with a Triagon 2500-watt CO2 laser with 375 psi (25 Bar) assist gas pressure maximum. This high pressure allows for cutting materials such as stainless steel and aluminum with optimum speed and edge quality. The capacity of the laser is 8 mm (0.314") cold rolled steel and stainless steel and 6 mm (0.236") aluminum. Using a no-tools-required cartridge system, the focal length can be quickly changed to a 5", 3.75" or 7.5". Finn-Power estimates that the standard LPE laser can reduce energy costs by as much as 40% over other HF-excited lasers.

A Rofin Sinar SLAB laser is available as an option.

An important design feature is that the O-frame of the turret punch press is separate from the laser, assuring that no vibration will be transferred to the laser. This provides added reliability and uptime of the system. Also, integration of the laser and the punch is accomplished with the part piece flowing from the turret punch press to the laser without the release of the clamps. The flow of material is from the load side to the unload side, eliminating the time-consuming method of loading and unloading from the same side.

Lights Out Production

And how has the new technology been accepted on the shop floor?

Charette is the partner that runs engineering for Resh; he programs, sets up, and operates the LPE. He believes that it has more than just replaced the two older turret punch presses.

"I've been in this business for 20 years," reflects Charette. "Our LPE now has over 4,000 hours of operating time... We have run periods of 24/7 on the LPE since the first week it was installed. We just load it, turn it on, and go home."



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The shop has a diverse customer base including medical, telecommunications, decorations, motorcycles, etc. Production runs can vary from one-piece prototypes to 1,000 or more units on stainless, aluminum, and steel material from 0.03"– 0.125". With the three auto-index stations (one dedicated to just countersinking) and two 24-station Multi-Tools®, setup times have been dramatically reduced. "Setup times are almost nothing with the LPE," explains Charette. "With the laser and our turret setup, we automatically go from one job to the next. In the past we would spend up to half an hour on each setup. If you do 10 jobs a day – just do the math to appreciate the timesavings. In addition, we can tap, upform, extrude, and countersink in the LPE and only handle the part once. The time, labor, and Green Light Time savings are huge.

"What used to take us a month to produce on our old machines now takes about two to three weeks," Charette continues. "By the 20th of each month, all orders are filled and we have additional capacity. The LPE has eased anxiety of meeting production quotas by the end of each month."

Bottom Line

"The current market environment calls for smaller runs, quicker turns, and more complex contoured parts. In some applications, it may make more sense to laser cut... in others punching is more economical. When you add the ability to upform, tap, make extrusions and countersink, combination machines are definitely the way to go," explains Langley.

"We've increased our sales about 30% over the last 12 months with the LPE. This is attributable to its ability to increase our Green Light Time."

Finn-Power International, Inc.
www.rsleads.com/511mn-201

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Interesting, with information I may use
Interesting, but not applicable to my shop's operation
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