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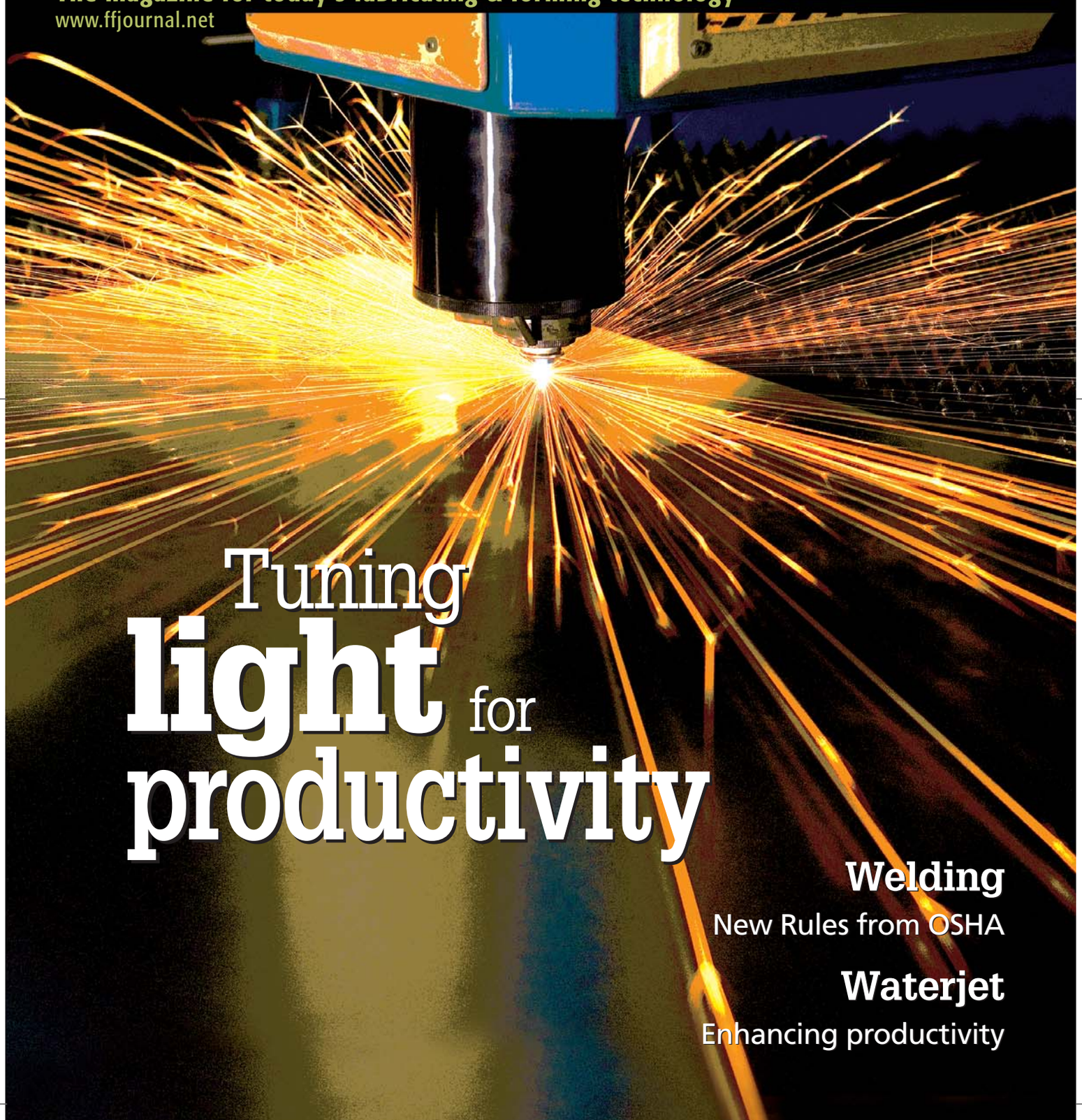

Tuning light for productivity

Welding
New Rules from OSHA

Waterjet
Enhancing productivity

Laser Technology

Automation key to increased productivity for Utah job shop

More from less

While the entire U.S. economy was adversely affected in the months and years after 9/11, things were especially rough for most sheet metal fabricators in Utah. Some experts contend it was the worst economic condition in the state since 1944. MetalFab Inc., a contract manufacturer located in West Valley City, Utah, was one of the many companies affected by the sluggish economy.

But since the last quarter of 2005, things have turned around dramatically for MetalFab. According to MetalFab president Randy Wright, the previous conditions taught MetalFab some valuable lessons. "We always had a goal to be a little more automated," explains Wright. "The weak economy was the hammer that hit home and made us realize that we had to do more with less. We put our heads together and set goals to become more automated."

MetalFab was founded in 1982 by Phil Wright, the company's CEO, and two other partners who are now retired. The company serves such industries as computer cabinets, medical, trucking, lighting, music, banking, home automation, granite building, food processing and others. Through the years MetalFab has earned a well-deserved reputation for quality and today is located in a 25,000-sq.-ft. facility in a town near Salt Lake City. MetalFab had several stand-alone turret punch presses, press brakes and welding equipment before the search for new automated equipment began.

Wright and his management team talked to MetalFab customers about their current and future needs and listened closely to their feedback. They also visited machine tool builders and other contract manufacturers who had invested in automation. After extensive research, Randy Wright narrowed his search for automation to four different machine tool builders. "I literally traveled

The L6 uses digitally controlled linear drive motor technology for high-speed operation, high acceleration and contour accuracy.

from one side of the country to the other visiting sheet-metal fabricators like ours to learn their approach to automation," he says. Ultimately, MetalFab chose the Finn-Power L6 Laser Work Center with load/unload and an 8-shelf automatic storage tower. The L6 was installed in February 2006.

The Finn-Power L6 Laser Work Center utilizes a flying optics/moving beam system driven by a linear drive motor system to achieve maximum speeds, even while cutting small notches or narrow contours.

The L6 features a 4kW fast axial flow CO_2 laser. Cutting speeds up to 60 m. per min. (2.362 ipm) are reached using nitrogen as the cutting assist gas. The L6 can process sheet sizes up to 60 in. by 120 in. and up to 0.78 in. in thickness. Performance values include a positioning speed of 11,811 ipm, acceleration over 2 g, and cutting speeds up to 2,363 ipm. Unlike conventional repositioning, where straight line movements of the cutting head waste time, Finn-Power optimizes the cutting head movement with "ping pong" repositioning. This smooth and efficient transition translates to added production speeds—up to 1,000 holes per min. are now possible. The patented L6 rigid frame design withstands all the forces of high-speed positioning and provides a solid base for stable beam delivery optics.

MetalFab cuts vinyl-coated stainless steel, hot-rolled steel, galvanized, aluminum and cold-rolled steel on the L6. The company has more than 3,500 hours on the L6 since its installation last February. Today, MetalFab has 55 shop employees working two shifts, 23 hours per day, six days per week. "Our goal is to do 50 percent more business with 30 percent fewer people," explains Wright. "The L6 laser was the first phase of what we were trying to accomplish."

Wright was very impressed with the modular capability of Finn-Power equipment. "What intrigued us the most about Finn-Power was the ability to add equipment to the existing machine or cell," he says. "This modular capability was not offered by the other machine tool builders. With Finn-Power, for example, if we purchase a stand-alone press brake, we can add a robot later. That intrigued us and highlighted another perspective of what our goal was. We want to grow and produce more with fewer people. We want to compete with China. We believe that we can get there with Finn-Power automation technology."

According to Wright, another plus to the L6 is material utilization. "Many of the parts we run on the punch press have a material utilization of between 46 and 53 percent. With the L6, I have not seen anything less than 85 percent utilization. With the cost of material, this is a huge savings."

All the bells and whistles

Other features of the L6 include:

- Linear drive technology for high speeds. The positioning technology of the flying optics L6 is based on digitally-controlled linear drive motors.
- Finn-Power's frame construction eliminates the technical problems sometimes associated with linear drives—the risk of contamination and heat generation.
- Extremely high speeds are possible due to low friction and its direct drive system.
- Rigid frame design is patented by Finn-Power. The frame withstands all the forces of high-speed positioning and provides a solid base for stable beam delivery optics

Up to 4kW laser power

The L6 features a 4kW fast axial flow CO_2 laser, with N_2 gas cutting speeds up to 2,362 ipm (60 m. per min.). The L6 laser resonator is OEM-designed in close cooperation with Finn-Power to assure it meets all the quality and performance requirements of the high-performance laser cutting center. Laser beam path protection is continuously pressurized by specially filtered and dried air. Constant cutting quality and cutting parameters are maintained by integrated adaptive optics. Fast laser power measurement has been integrated. The resonator has an extended preventative maintenance interval.

Extreme accuracy

The L6 uses digitally controlled linear drive motor technology to allow high-speed operation, high acceleration as well as the highest contour accuracy for any contour or shape.

Auto Focus Cutting Head

To minimize set-up time, an advanced, high-pressure cutting head is integrated in the system. A constant distance between material surface and the nozzle is achieved with a non-contact, capacitive, integrated sensing unit. The

cutting head doesn't have to change when a focal lens change is required. Only a new lens cartridge has to be inserted.

Material flow for productive flexibility

The productivity of the cutting system is increased by an automatic shuttle table system that allows loading and unloading of the material during the cutting operation. Positioning of the shuttle tables is possible on two sides of the machine to match plant layout or production flow requirements.

Changing times

To date, MetalFab has experienced a great deal of success in its move to automation. "Our business has increased dramatically throughout 2006," says Wright. "Since last January our business has almost doubled. Even though we grew up with another turret punch press manufacturer, it was time for a change, time to be different. We could have gone with our existing supplier, but we would have just been another shop in Utah. Our goal is to be better than our competitors. That's why we chose Finn-Power. With Finn-Power we can add on and grow with our existing system. We want to be able to move product with fewer hands touching it. Finn-Power allows us to be more efficient, more accurate and more productive."

MetalFab's game plan is to expand in stages. "Once we have all the new automated machines in place we can get rid of the older technology machines," explains Phil Wright, MetalFab's CEO. "Our intention is to get rid of everything that isn't automated."

"We laid out a time plan, and currently we are six months ahead of schedule," adds Randy Wright. "With the Finn-Power laser automation, we have exceeded our goals.

We've had some hard times, and the hard times forced us to focus on how to get better. With the changes we've made, we've put ourselves in a position to succeed."

MetalFab's next phase, which is scheduled for the first quarter of 2007, is to purchase a Shear Genius punch/shear combination machine with a buffer, sorting and a robotic press brake. "Our goal is to take a sheet and fabricate it through the system without anyone touching it," says Wright. "We will build a conveyor to our weld area so that the first people to touch the part will be welders. In the process, we will eliminate 26 steps. No one can do that but Finn-Power. We are anxious to get to the next phase."

Sample of parts made on the L6

The E Brake is designed for high precision in the most demanding production facilities.

Recently, MetalFab purchased a Finn-Power E servo electric press brake. The E Brake is designed for high precision in the most demanding production facilities. By applying mechanics and electronics, a unique patented "mechatronic" drive was developed. The result is even distribution of forces in the top beam, high accuracy, increased productivity, high reliability, less energy consumption and few maintenance requirements.

To be sure, Metalfab realizes that there are still challenges ahead. "Our biggest challenge is not technology, it is mindset," reflects Wright. "We want to be automated. We have to refocus our employees to the benefits of automation and explain that obsolete jobs will be redeployed to more critical areas within the plant. In order to be competitive, we want to avoid manual operations wherever we can." FFJ

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DO THE MATH...

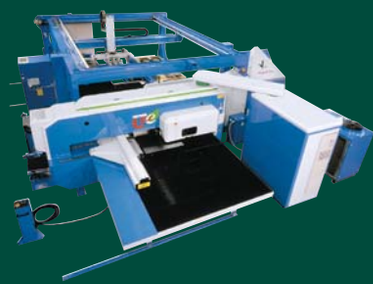
Finn-Power Turret Punch Press

1+1 EQUALS

Finn-Power Laser

- = The choice of using the turret punch press where it is easier or faster and the laser where it is more effective
- = Single handling of sheet up to 60″ x 120″ for punching, forming, marking, tapping, and laser cutting – all in a single operation
- = Transforms a full-sized sheet into finished parts with the highest possible quality and lowest cost
- = Less scrap with material yields as high as 90-95%
- = Unmanned operation dramatically reduces labor costs and material handling
- = Higher productivity and profits
- = Elimination of secondary operations
- = Elimination of micro-joints, tabs, shaker parts and skeletons
- = Upforms to .625″, utilize wheel forming technology, part marking, extrude, countersink, tap, as well as punch and laser cut in a single operation
- = Dramatic cost reduction in tooling, focus lens, nozzle and resonator maintenance
- = Higher quality
- = Faster return on investment

LP LASER / PUNCH



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LASER BRILLIANCE LINEAR DRIVE LASER / PUNCH

IT ALL ADDS UP TO INCREASED PRODUCTIVITY, QUALITY, AND PROFITS FOR YOUR COMPANY.

Contact us to learn how Finn-Power can add to your company's bottom line.

FINN-POWER®

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