Buying a Laser? Have you also considered a CNC punch press?

BY PETER VISser

If you are in the sheet metal fabrication business, there are many reasons to invest in a laser machine: your business is expanding; you may be subbing work out to a contract manufacturer and feel it may be time to do this work yourself; or you are considering entering different markets. Yet, how do you know you’re making the right decision? What factors should you consider as you determine which direction to go?

There is a misplaced belief in the market place that a punch press is a “thing of the past,” and that lasers are the answer to all fabricators’ needs. Nothing could be farther from the truth. Fabricators need to be able to manufacture parts at the lowest cost by utilizing a mix of equipment to create the leanest possible downstream flow in the shop. The increasing costs of electricity, consumables, maintenance, flexibility and time have actually made punch presses even more attractive.

With more than 25 years of experience in the industry visiting more than 1,000 sheet metal fabricators, one of the greatest cost savings potential I encounter is proper use of a punch press or laser; in other words, using the right “tool” for the job.

Too often it seems easier to just “send it to the laser” without considering the effects it may have on the manufacturing process and the bottlenecks this may cause. Far too often I see thick parts being punched and thin parts being laser cut, when the opposite would be a much better choice. Perforated patterns on sheets are now widely used for decorative patterns in architectural designs, airflow and many more functions. I have seen many customers laser cut these parts with thousands of perforated holes, which is not only slow, but more costly. To give you an idea of a cost difference, here is an example: a 10 gauge mild steel part with a thousand 0.500 in. diameter round hole can be punched in a punch press using a 12 hole cluster tool in less than a quarter of the time of a laser.

Another important yet frequently overlooked consideration is the elimination of secondary operations. A punch press lends itself well to these tasks. Many shops with only laser equipment cannot form louvres, extrusions, countersinks and other features that add value to the sheet metal process. Once the laser operation is done, these shops employ secondary operations by using a press
brake or a single station stamping press. Many of these shops have spent more time and money on non-laser items such as press brake tools and stamping dies just to perform these secondary operations; this all adds up to thousands of hours being lost.

From many of my calculations, some of these shops could have purchased a new (or certainly a used) punch press and gained hundreds of hours of valuable manufacturing time, lowering their operational costs and attaining much greater throughput. In short, they could have made bundles of more money.

Here’s an example of a great success story. One of my clients had a laser machine and was spending over a million dollars annually in secondary operations spot welding electrical enclosures. When they purchased the laser, there was no talk from their supplier about a punch press, which is frequently the case. All of their parts were flat and simple, having no more than a few corner notches. The parts did not require forming tools, so it seemed like the obvious thing to do would be to buy a laser.

I entered the picture on a laser and press brake tooling sales call. As I was sitting in the production manager’s office, he was complaining to the owner about the bottleneck and cost of spot welding the boxes together. I asked them if they had ever considered a punch press, or if it was ever discussed when they bought their laser. Not surprisingly, they were never introduced to punch press technology.

After a quick introduction of punch press technology, I planned a meeting to show this client a punch press at another location, also preparing a seminar on punch press capabilities. I demonstrated to them that although the laser was a good fit for their business, a punch press could eliminate their spot welding and high cost of secondary operations. This customer has since purchased a punch press, paying for the investment within five months and saving the company almost $1 million during the first year of ownership. This machine continues to save the company more than a million dollars per year, with projected savings for of $15 million dollars over the next decade. The customer, now on year two with its first punch press, has purchased its second one.

Another important investment factor is that a punch press is generally half the purchase price of a laser, has a much longer life span, and can have a higher resale value—if maintained properly. Punch presses generally require less downtime for maintenance/repair, are offered in smaller footprints, and have a lower operational cost. Based on budget and reliability, a small fabricator starting out should consider a punch press over a laser, which can greatly reduce start-up risk.

Having purchased a laser, I know that sales people will pitch the idea that laser consumables are low or not very costly. There tends to be a misconception that punch press tooling is a massive expense that drives the cost of the investment upwards. The average spending on tooling related consumables are generally less than $10K per year. The costs for laser consumables can be much higher: helium (CO2 lasers only), nitrogen, nozzles, lenses, mirrors (CO2 lasers only), sensor cables (frequently purchased in lasers), protective splatter windows (fiber only), dross/slag removal, and other items and services that could be classified as laser consumables. Many of my customers spend more for laser consumables than their punch press consumables.

Long tooling lead times are another argument used against the punch press. It was easy to just assume the laser was quicker as a result. Over the past two decades some suppliers have shortened lead times for standard shapes to all same-day shipped tools if ordered by a specified time. Quick lead times combined with special shapes and blanking capabilities means fabricators can easily double productivity using a press brake versus a laser cutting machine.

Another thing to consider is that depending on the gases you use to
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Laser cut your parts, you may not be able to paint internal holes. This requires an investment in proper deburring equipment and/or paying another person to complete the secondary operation. Punch presses can deburr parts, as well as tap, blank, form, extrude, and much more.

I want to make myself clear: lasers are incredible technology that can do many things that a punch press cannot, such as laser welding, tube cutting and inexpensive etching. Depending on the product—material type and thickness; the product’s application—a laser may make more sense to purchase.

However, before you spend a half million to one million dollars on a laser machine, ask a third party who doesn’t sell equipment, but does sell products in all three (punch/brake/laser) categories, to get a non-biased opinion on your investment considerations.

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