

# Variables: no problem

**Two laser sub-contractors have increased productivity, reduced inspection requirements and improved material utilisation on formed parts by using LVD Easy-Form Laser press brakes. *Machinery* reports**

One of the greatest advantages of laser profiling is its flexibility – it isn't affected by material variation or grain orientation – so parts can be placed anywhere on the sheet and it doesn't matter whether a batch of components all come from the same batch of material.

When it comes to forming, however, it is a very different story as these variations have a significant effect on the bend angle. The traditional way to overcome this is to check every part, ensure that material is consistent, that the parts are oriented in the same way on the sheet – and live with the fact that you might have to scrap the first-off component.

LVD's Easy-Form Laser system is designed to overcome these problems by monitoring the bend process in real time – using a non-contact laser method – and make corrections as the parts are being formed to ensure that every one is correct.

## POINT OF SALE

Leicester-based SMF runs a 6 kW laser producing components that are primarily destined for retail point-of-sale displays. Batches may run into the thousands, but are more commonly between 30- and 100-off and turnaround times are generally no more than a couple of days.

SMF has two LVD PPEB Turbo press brakes, one with a 2.5 m bed and one with a 3 m bed; both fitted with the Easy-Form Laser system.

"Small batch quantities can be made from all different off-cuts, and we aren't throwing valuable material in the bin. The grain orientation could be anywhere but it isn't an

*5750's Andy Murphy likes to see lasers on the press brake helping his laser profiling machines*

issue," explains SMF's managing director, Steve Morrison. "The thickness variation we get is ridiculous – material supposed to be 1.5 mm could be 1.44, 1.46 or even occasionally 1.51 mm, and we don't know the tensile strength – the variables are unknown.

"The Easy-Form allows you to fold to an accurate part very quickly – it's a major assist in one-off set-ups. If we can use up all the off-cuts it's good for the customer because we don't have to add a percentage to the price for wastage – and because it is right first time, we don't have to allow for scrap on set-up."

## JUST CHECKING

Another big advantage of the system is the ability to use a three-point scan to ensure that the bend angle is correct along the full length of a long component. This relies on the capabilities of LVD's Turbo system to hold the ram at a fixed point while the bend angle is checked at the left- and right-hand sides, and the centre of the component.

The machine then automatically adjusts the crowning of the bed and the relative position of the two hydraulic rams to ensure that the bend angle is consistent and correct along the length of the part.

"There are a lot of people out there who won't pay £100,000 for



a machine, but have three similar press brakes with three chaps operating them that are going to cost more than the depreciation on the machine. If you've only got three or four parts and it takes you two hours and it takes me 30 minutes I can charge £40 an hour instead of £20 and still be half the price," Mr Morrison emphasises.

Where SMF has taken advantage of the Easy-Form Laser's capabilities on small batches, 5750 Components is seeing the benefits on medium-to-large runs.

5750 Components has always tried to offer the customer something a bit above and beyond the norm, running the highest power lasers available to allow it to cut thicker material in large sizes, and investing in large and powerful bending capability to complement it.

It bought its first LVD 4 m press brake about seven years ago, and has just installed a 220-tonne Easy-Form Laser machine with a 4.2 m bed that can bend 6 mm parts up to that length and up to 15 mm on shorter components.

"We do a lot of sheet metal, but the real market for lasers is plate, which is why we bought a large tonnage press brake," says 5750 Component's Andy Murphy. "The bulk of what we process is 4 to 13 mm thick, and most

of that will be bent up. Our philosophy has always been to buy the best equipment and stay at the leading edge.

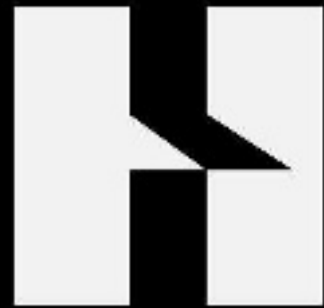
"We have always gone for the most productive machines and that is what led us to buy the Easy-Form Laser press brake. Even on the simplest components it eliminates the need for constant checking. It means we get quality assured parts every time and it boosts our productivity."

He adds that particularly on higher volume jobs, there is a problem of material variation, and even the same batch will contain material with different strengths and thicknesses. But, he says, the Easy-Form Laser eliminates the need to worry about it.

Mr Murphy says it also increases 5750's ability to dynamically nest parts on the plate in the most efficient way because rolling direction doesn't matter.

"We get better sheet utilisation, so we can make parts more quickly and improve our productivity. On top of everything else, I like the fact that it uses a laser. The success of the company has been built on lasers, and LVD's laser is making our other lasers more productive." □

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