

Upping investment for fibre diversification

Sheetmetal fabrication and CNC machining subcontractor Inishowen Engineering, which has just celebrated its 25th anniversary, has dramatically increased the size of its production facility in County Donegal. It follows an €11 million investment in a new, 160,000ft² factory, which opened on the company's seven-acre site in Drumfries in early 2019.

As part of an expansion programme, which started in April 2017, Inishowen Engineering has invested an extra €19 million on new machine tools, a pair of robotic welding stations, and new finishing equipment including shot blasting booths, wet and powder painting lines and a nano pre-treatment and electrophoretic coating facility.

In addition to the replacement of a CNC tube bender and a plasma cutting machine with more modern plant and the purchase of another large machining centre, other new machines onsite include a 12m by 2m 6kW, flat-bed fibre laser cutting centre that arrived in 2018.

It joined two 4m by 2m capacity models of similar power installed in 2015 and 2017. All are BySprint Fiber Laser machines manufactured by Bystronic in Switzerland and supplied by Bystronic UK, Coventry.

Onsite also from the same source are seven press brakes as well as a machine for CO₂ laser cutting tube up to 305mm diameter by 12,500mm long. Additionally, during the spring of 2019 Bystronic supplied and installed an automated sheet storage and handling system that



The factory extension on Inishowen Engineering's seven-acre site

continually loads and unloads material to and from the three flat-bed lasers, reducing the manning requirements on these machines whilst also improving productivity.

Inishowen Engineering's owner and managing director Michael McKinney explains: "Underlying this latest round of investment is our diversification from concentrating mainly on the agricultural, quarrying and mining sectors to supplying firms manufacturing materials handling and transportation equipment, including forklifts and multi-purpose tractors.

"In all of the industries we serve, component parts and assemblies we are asked

to produce are becoming larger so that customers can minimise welding when manufacturing their products, hence the need for machines capable of processing 12m long sheet and tube."

In the case of the tube laser cutting machine in particular, which was delivered in the second quarter of 2019, he added that this new offering to customers sets the company apart from most subcontractors in Ireland and also in the UK, broadening its capability considerably and preventing work from being lost to competitors with CNC tube processing capacity.

The tube laser can complete in five minutes what might take four hours of manual milling and drilling on different metalcutting machine tools. Moreover, some components cannot be produced at all by conventional means, so OEMs' design departments now have greater design freedom, knowing that more complex parts can be produced and at an economical price.

Automation cuts bottlenecks

On the subject of the Bystronic handling system, which comprises two 10m

the only reason for the machines being idle was due to material not being fed to them quickly enough.

Now that sheet supply has been automated, it is delivered much faster to the shuttle tables, enabling virtually uninterrupted production. Mr McKinney estimates that output from the two smaller machines is up by 30 to 50%.

Previously, the subcontractor was perpetually 400 to 500 hours behind with laser cutting but within three weeks of the lasers being supplied with sheet from the Bystronic storage system, the backlog had disappeared. A further advantage of automatic material feeding is that it is now easier to promote rush jobs to the top of the queue.

The two smaller fibre laser cutting machines in Drumfries replaced models with 6kW CO₂ power sources, installed in



The Bystronic BySprint fibre laser cutting machine for processing 20m stock



Laser cutting in progress on the BySprint 20m machine

2007 and 2010. Mr McKinney advises that the former technology is five times as productive when processing 2mm mild steel, cutting at 40m/minute.

The advantage declines somewhat as sheet thickness increases – up to 12mm is regularly cut – but the sheer speed of the fibre machines across all gauges only serves to underline the need for efficient, automated delivery of material to the point of cutting.

Mr McKinney comments: “The BySprint Fibers not only cut significantly faster but also cost less to service and run, as there are no optics or need for assist gas and electricity consumption is much lower. Moreover, the greater reliability means that we are confident leaving the machines running unattended overnight.”

Press brake requirements

The increasing size of components going through the factory necessitated a press braking cell to bend up to 12m lengths, hence the installation at the start of 2019 of two Bystronic Xpert 6m, 650 tonne capacity press brakes. These machines are positioned side by side so that they can be used individually or in tandem, mirroring an earlier

purchase of a pair of 400 tonne/4m press brakes.

However, half of all profiled sheet that is folded in the factory is less than 1m in length. This was the reason for the purchase of an Xpert 40, 1m, 40-tonne capacity press brake in 2015 that Mr McKinney points out is at least one-third faster at bending smaller components than larger machines.

The extra speed translates into higher productivity and in addition, the machine does not draw as much power, just 7.5kW instead of typically 30kW for a big press brake, so electricity bills are lower.

The acquisition was so successful in raising the profitability of smaller component production that two years later the folding department added the next larger model in the Xpert range with 1.5m/80 tonnes capacity.

Invest to thrive

Summarising the latest phase of his business expansion programme, which is just coming to fruition, Mr McKinney concludes: “There is a trend towards OEMs downsizing their in-house manufacturing, reducing their capacity and outsourcing more assembly

operations in order to cut costs.

“However, for subcontractors to win this business, they need to invest in the best and most modern production equipment to satisfy customer demand and expectation. That is why we have standardised on Bystronic

laser cutting and folding machines since buying our first CO₂ BySprint in 2007.

“Smaller firms may struggle to finance the acquisition top-end machines, but only by doing so it is possible to obtain high quality coupled with competitive cost-per-part production.

“Especially when producing assemblies, which accounts for two-thirds of our throughput, accuracy in all areas of machining is essential to avoid time-consuming fit-up difficulties and the same applies in our customers’ factories.”

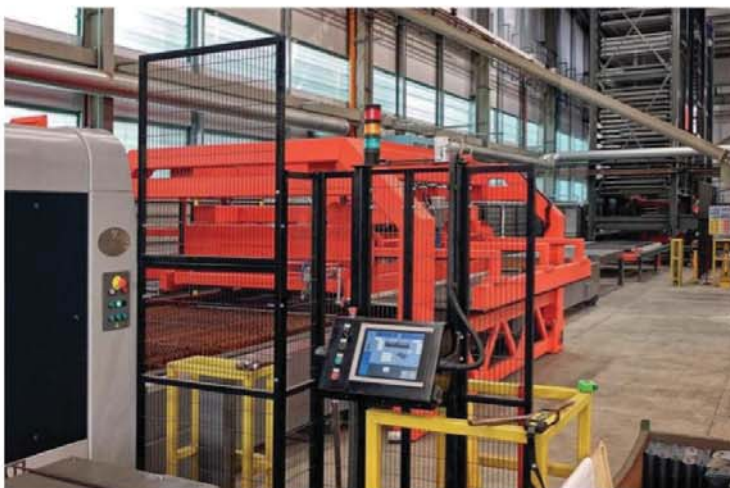
He concludes: “Inishowen Engineering’s latest €30 million investment allows us to leverage the advantages of high precision combined with competitive pricing and is a clear statement of our intention to become one of the foremost one-stop-shop fabricators in Europe.”

■ **Bystronic**
www.bystronic.com

■ **Inishowen Engineering**
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Another view of the automated storage system showing the handling arrangement serving the two other fibre laser machines



A carriage automatically conveying a 4m x 2m mild steel sheet from one of the storage towers to the fibre laser



The tandem 650 tonne press braking facility being commissioned at Inishowen Engineering