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MRT Castings will get a fast payback on its Zoller presetter

# Behind the scenes

While machine tools are the bread and butter of a subcontracting service, support technology is also a critical part of the mix, as these three case studies show. Tool presetting, inspection, plus production planning and control are the three technologies making a difference here

**S**pecialist die castings manufacturer MRT Castings estimates that it is achieving a 15-minute time saving on each of up to eight daily tool set-ups, following installation of a 'smile-420' presetting unit from Zoller UK (<https://uk.zoller.com>).

Says managing Director Phil Rawson: "The smile-420 has made an instant impact. Prior to installing it, we were setting the tools on a machine and a typical set-up might have anywhere between 15 and 40 tools. We were loading every one of those into the machine, measuring them there, taking the readings and putting those into the controls of the machine.

"With the Zoller, we can be pre-setting all of our tools while the previous job is running, and all of that work can be done offline. Then, when it comes to the changeover, we can load all the tools into the magazine.

"By the end of its first week, the Zoller machine was already being used for every set-up on the shopfloor."

There's no more keying the data into machine controls either at the Andover Hampshire firm, as he goes on to explain: "We have a connectivity solution from the Zoller through our DNC software going straight into our CNC machines, so that we can actually send that data file straight from the Zoller into the CNC machine.

"What the Zoller tool pre-setter gives us is the opportunity to reduce the down time in a set-up and also increase the accuracy. It's also giving us the productivity by optimising those set-up times."

## MEASURED PERFORMANCE BENEFIT

Precisely measured and inspected tools work to their optimum level, meaning they not only last longer but also drive up part finish quality, dramatically reducing scrap. A 'right first time' guarantee saves a manufacturer valuable time and money, and it gives customers complete confidence in the reliability of a supplier's methods.

Concludes Rawson: "When we started

talking to the Zoller guys, they instantly tried to understand our application. They really got under the skin of what we were looking for. The machine is going to pay for itself very quickly and, therefore, it was an easy judgement call for us, in terms of making that investment."

Having made parts, inspecting them comes next. At Helix Precision Machining, to enable the company's inspection department to keep pace with its significant rise in production, a search was made for a large, accurate and fast-acting CNC coordinate measuring machine (CMM).

Following consideration of a number of models, the company plumped for a Zeuth 3 CMM with 1,000 by 1,500 by 600 mm envelope, supplied by UK company Abeilink (<https://uk.gel/gp/lex>).

Based in Hull, East Yorkshire, the company has recently invested in advanced machine tools, such as a 5-axis Haas VF3 YT BT50 (<https://uk.gel/gp/eng>) equipped with a Lehman 2-axis trunnion table (Avan CNC



An increase in business drove Helix Engineering's investment in the Aberdeen CMM

"Our Aberdeen's Zenith 3 has already proven to be a great success. Not only has our new CMM enabled the rapid, precise measurement of complex components, Aberdeen's Zenith 3 CMM has improved our accuracy capability and also significantly speeded up the throughput of work in our busy quality department."

#### DIGITAL TRANSFORMATION

Digital transformation is the target at Aberdeen-based James Aiken Engineering Solutions, a specialist in precision engineering and sheet metal fabrication. The addition of E-Max Enterprise Resource Planning (ERP) manufacturing software is the latest element, around which the entire planning and scheduling process now revolves. E-Max's claim is that it is designed for engineers by engineers, incorporating 20 years of best practice.

Costing £70,000 and installed following the introduction of new office and workshop procedures, together with an overhaul of the company's HSEQ management systems, E-Max touches all aspects of the firm's work, from initial enquiries to job resources and completion dates.

George Paterson, director of James Aiken Engineering Solutions, explains: "Introducing E-Max software to the business has been a watershed moment for us and the benefits are clear to see, now that we're using the system across both our engineering and machining teams.

"From operating in a traditional way to being able to analyse and interpret time spent on quotes and production work is a big step for us. It means we can identify the most effective way for our estimators to work, as well as planning and scheduling time for machining and fabrication teams on the shopfloor.

"E-Max has also enabled us to develop a 'bid to win' approach, where we can analyse the type of work that suits our operation best and proactively follow up on quotes after a set period. This helps us to keep track of our sales pipeline and how competitive we are in the market.

"The use of E-Max is seen as a gold standard and we are delighted with the transformative impact it has had on how we operate and will play a large part in our growth strategy." ■

Service, <https://is.pd/aixora/>, with this confirming the need for more inspection capacity.

Explains Helix Precision Machining director Lee Sansam: "To help prevent non-conformance situations and rework, we apply a companywide 'right first time', total quality approach to all of our processes and we make regular strategic investments in the best available inspection aids. We also constantly seek to expand our range of proficiencies and the kind of work we are able to undertake. For instance, we have recently invested in a range of BT50 heavy duty vertical mills for cutting exotic materials and we are currently machining Zirconium for a major Tier-1 supplier.

"As we anticipated the expansion of our business and the increase in the machining of complex, accurate components, whilst visiting the MACH exhibition in 2016, we witnessed demonstrations of large capacity, precise CNC CMMs from several leading companies. Having had the opportunity to compare the merits of the available machines, we agreed that, due to its large capacity, speed of operation and impressive accuracy specification, the Zenith 3 from Aberdeen was the perfect CMM for all of our future needs.

"Our output of complex, high precision components recently reached the anticipated

high levels. As this began to put strain on our existing inspection resources, we revisited the Aberdeen Zenith 3 literature. Although, given the possible progress made by other CMM manufacturers, we again compared the Aberdeen CMM with other similar specification machines. Judged against our list of criteria, once again the Zenith 3 CMM came out on top."

The Hull, East Yorkshire firm also praises the CMM's software, saying that the Zenith 3 was the easiest to use of the CMMs that the company considered. Not only that, but unlike other brands, Aberdeen provide unlimited free software updates. The final positive was that, even with these benefits, the machine was still the least expensive of the machines that Helix looked at.

Continues Sansam: "Following the CMM's installation and an Aberdeen training course, our quality staff quickly mastered our new CMM's operating system. To further exploit our new CMMs automatic CNC inspection routines, our quality personnel will soon be writing part programs for our regularly repeated machining work. We will then be able to instantly recall the relevant program, load a single large component or multiple smaller parts onto the Zenith 3, then start a fully automatic CNC measuring routine. On completion, when required, our new CMM will also generate detailed inspection reports.