



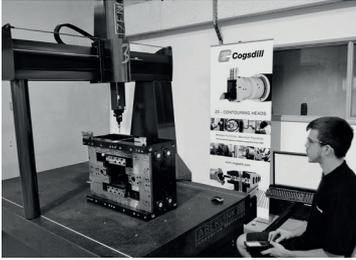
Tooling Case Study 09/2018

Company: Cogsdill

Zenith 3

Tooling Case Study

Cogsdill
Zenith 3



With manufacturing plants in both the US and the UK and a distinguished history that stretches back more than 100 years, the famous Cogsdill brand is synonymous with the design and manufacture of innovative tooling. Cogsdill tools reduces bore finishing cycle times and increases efficiencies within automated machining processes. The company specialise in deburring, burnishing, reaming, recessing, modular boring tools and facing heads. Cogsdill is also able to design and produce highly effective custom tools that meet customers' specific requirements.

The company was founded in 1914 when Stuart A. Cogsdill established a cutting tool regrinding and repair business in Detroit, Michigan. Having quickly established a reputation for developing innovative tooling solutions for tough manufacturing problems, Stuart soon began designing and manufacturing special tools for early automotive pioneers such as Henry Ford and the Dodge brothers. Currently owned and operated by the second and third generation of Stuart Cogsdill's descendants, from its two key operating units in Camden, South Carolina, USA and Nuneaton, UK, Cogsdill now offers its 21st century customers the same high levels of commitment as its founder did. Although the global automotive industry remains a major user of Cogsdill products, the company now serves a wide range of equally demanding sectors, including the oil and gas and aerospace industries.

Increased demand for the company's tools has resulted in a significant rise in production at Cogsdill's UK facility. Although the company's Nuneaton's manufacturing plant has the capacity to satisfy the raised demand, its important inspection provision began to struggle to keep-pace. Therefore, with the aim of boosting the business' inspection provision, a search was made for a CNC Coordinate Measuring Machine (CMM), that would be able to inspect multiple tools in a fully automated mode.

Cogsdill Executive Director, Lee Donaldson explained. "Whilst we were considering the need to find a more efficient way of inspecting our output and considering several alternative Coordinate Measuring Machine brands, an Aberlink related article in a trade magazine alerted us to the benefits of the company's CMMs. Soon after, a successful demonstration of an Zenith 3 CNC CMM at Aberlink's Head Quarters confirmed the suitability of the machine for our needs.

"As at that time we were waiting for a substantial capital equipment grant to be approved, rather than order the machine, to help shorten the Zenith 3's delivery time, we delivered a letter of intent to the Aberlink stand at the recent MACH 2018 exhibition. This enabled our new CMM to benefit from the grant and to be delivered soon after.

"After purchasing the Zenith 3 CMM through Aberlink's agent in the midlands, Mantech Geometrics, the machine was soon installed and fully operational. The ease of use of the Zenith 3 CMM and Aberlink's software enabled our operators to quickly master the machine's controls. In addition to substantially improving our inspection throughput speed, our new CMM has further enhanced our inspection precision capabilities.

"We now use the machine for in-process checks and for performing accurate final inspection routines. At present we are creating inspection programs using the joystick to measure a physical part (teach-and-repeat mode). To help us to realise the machines full efficient potential, we will be writing programs using the Programming from CAD software module, that will link our new CMM to our CAD system. Soon we will be able to load multiple parts onto the Zenith 3's large bed, download the relevant program and then perform fully automated, mass tool inspection routines.

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“Not only has our new Aberlink CMM removed the current potential for inspection hold-ups, due to its impressive operating speeds, fully automated CNC nature and its large bed that is able to hold multiple workpieces, it will be able to handle the inspection needs of any anticipated future rises in our production levels.”

Designed and manufactured by Aberlink, the largest UK owned Coordinate Measuring Machine manufacturer, the Zenith 3 series consists of 10 large capacity CNC machines with XYZ capacities ranging from 1000x1000x600 mm up to 1000x3000x800 mm.

The innovative Zenith 3 CNC CMM is the result of the design evolution of its predecessor, the award winning Aberlink Zenith too CMM range. The machine’s bridge and all moving parts are manufactured from advanced, strong yet lightweight materials, the resulting extremely low inertia and optimal acceleration characteristics enable the Zenith 3 to deliver extremely fast inspection times.

Thanks to innovations, such as the use of wider air bearing separation that provides greater stiffness, significantly improved accuracy has been achieved, for instance, the first term error for the Zenith 3 is now more than a micron better than its popular predecessor. Although the advanced Aberlink CMM is perfectly suited to use within environmentally controlled inspection departments, it is on the shop floor where the Zenith 3’s low thermal mass and extremely robust characteristics come to the fore. These advantageous attributes enable the accurate measurement of large components to take place nearer to the point of manufacture.

The Zenith 3’s impressive hardware is complemented by the CMM’s intuitive Windows based software. A welcome bi-product of any Zenith 3 CMM inspection routine is that a simultaneous picture of the measured component is created in real-time on the operator’s computer screen. Dimensions between the measured features, mirroring those that appear on the component drawing, are then picked off as required. In essence Aberlink’s ‘smart’ software represents an intelligent measuring system that is able to automatically recognise and define the various features being measured. A major benefit of Aberlink’s operating software is that the company provide free software updates throughout the lifetime of each of its CMMs.

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