



Subcontract Case Study 09/2018

Company: Morgan Advanced Materials

..... Xtreme

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Xtreme



Headquartered in Windsor, UK and listed on the London Stock Exchange, Morgan Advanced Materials plc is a world-leader in advanced materials science and the engineering of ceramics, carbon and composites. Morgan Advanced Materials employ around 8,800 people serving customers in more than 100 countries and have approximately 85 manufacturing sites across more than 30 countries.

The company operate in a series of well-defined markets where its applications expertise provides its global customer base with high-specification materials, components and sub-assembly parts that solve their technical problems.

Based in Redditch, Worcestershire, the Seals and Bearings business of Morgan Advanced Materials produces a range of high specification seals, bearings and components manufactured from carbon, graphite and silicon. Given the challenging sectors the company's products are used in, including the defence, aerospace, automotive, domestic heating systems, food and drink processing and the oil and gas sectors, the quality of the company's output is of paramount importance.

To help ensure the consistent delivery of premium quality products, in addition to investing in cutting-edge production aids, the company's vital inspection equipment is regularly updated. With the intention of locating a precise, fast acting means of dimensional inspection, situated close to the means of production, a search was recently made for an accurate, 'shop-floor proof' Coordinate Measuring Machine (CMM).

Although the company's current, inspection room based, Aberlink CMM continues to deliver excellent levels of accuracy and speed, mindful of the advancements that may have been made by other CMM manufacturers, in addition to Aberlink, alternative brands were also considered. As the recent MACH exhibition represented a perfect opportunity to contrast and compare the offerings from several leading companies, whilst at the exhibition Morgan Advanced Materials, Seals and Bearings Production Manager, Martin Hanks witnessed several in-depth CMM demonstrations. Having reflected on the merits of a number of machines, it was decided that the new Aberlink Xtreme 350 CNC CMM represented the ideal answer to the company's shop-floor inspection needs.

Martin Hanks explained. "After visiting the recent MACH exhibition with the intention of finding a suitable CMM for use on our shop-floor, following demonstrations of several different machines, I was happy to discover that Aberlink staff were giving a MACH debut to the company's new Xtreme 500 CNC CMM and also demonstrating the smaller capacity Xtreme 350 CNC CMM. Having seen the smaller CMM put through its paces, examined its specification and compared it to the alternatives, I was convinced it was the correct machine for our specific needs and I was happy to place an order with Aberlink's midlands agent Mantech Geometrics.

"The Seals and Bearings business of Morgan Advanced Materials is ISO 9001 accredited, and ISO 13485 certified for the production of components for medical applications. We are also AS9100C certified for the production of components for aerospace applications and offer a range of seals, bearings and components made from our special material formulations. Our products deliver superior tribological and wear characteristics and are manufactured to extremely exacting standards. Given the nature of the industries we deal with and the challenging applications our products are used for, quality is all important to us.

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“Since the installation of our new Aberlink Xtreme 350 CNC CMM, as it is so easy to use, our production personnel are now able to quickly and accurately perform first-off checks and undertake precise in-process component inspection routines. The close proximity of our new Aberlink CMM to our machine tools has improved our efficiency by reducing the time lapse between the production of a component and dimensional checks taking place.

“Our production runs range from the manufacture of one-offs, through to relatively small series production, therefore it helps that our staff are able to use our new Aberlink CMM in a manual mode. Although, to take advantage of our new CMM’s advanced CNC capabilities, we plan to write programs related to our regularly repeated components, then, when needed we can place multiple components on to the new CMM’s bed and perform fully automatic CNC measuring routines.”

The launch of Aberlink’s extended capacity new Xtreme 500 CMM was prompted by the global success of the company’s smaller capacity Xtreme 350 CNC CMM and customer requests for an increased capacity version of the machine.

Equally at home operating in a pristine inspection department or on a shop-floor, the Xtreme 350 CNC CMM and the larger new Xtreme 500 CMM have non-Cartesian structures and use linear motors and mechanical bearings. This advantageous configuration ensures that Xtreme CMMs maintain their impressive accuracy specification at very fast measurement rates and that they do not suffer from the accumulative inaccuracies that occur in conventional 3-axis Cartesian arrangements. As the advanced CMMs’ name implies, Aberlink Xtreme machines provide a robust solution for customers who need to undertake precise inspection routines in less than perfect environments.

The cost effective Xtreme CMMs use Aberlink’s renowned 3D CNC software, ensuring greater user productivity and profitability. A welcome bi-product of any Aberlink CMM inspection routine is that a simultaneous picture of the measured component is created on the computer screen. Dimensions between the measured features, mirroring those that appear on the component drawing, can then be simply picked off as required. In essence this ‘smart’ software represents an intelligent measuring system that is able to automatically recognise and define the various features being measured. Aberlink 3D is the easiest to use and most intuitive CMM software currently available.

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