ABERLINK
Innovative Metrology

Case Study

Subcontract Case Study 05/2017

Company: Pact Engineering Ltd

Xtreme

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Founded in 1980 as a specialist grinding company, through customer demand over the past 37 years, Luton, Bedfordshire based Pact Engineering Ltd has continually grown its list of competencies. Although grinding remains a key strength, the company can now truly be described as a one-stop-shop for expert sub-contract engineering services. In addition to other first-class machining facilities, Pact offers CNC turning, CNC milling, wire erosion and CNC universal grinding, all supported by an expert inspection provision.

Pact is able to deliver projects from the development and manufacture of one-off specialist parts, to the completion of long production runs to exacting standards. The company's reputation for the machining of complex components has resulted in a customer base that includes technically challenging sectors such as the Aerospace, Automotive, Formula 1, Oil and Gas, Pharmaceutical and the Medical industry.

The nature of the demanding businesses served by Pact means that a strong quality ethos permeates all of Pact's activities. In addition to stringent final inspection routines being performed by dedicated quality staff, the company's skilled production personnel take responsibility for their own in-process quality control and carry out regular CMM inspection checks.

The mainstay of Pact's inspection provision is an Aberlink Axiom Too CNC Coordinate Measuring Machine (CMM) that was purchased two years ago. In addition to being used by the company's inspection department, the ease of use of the Aberlink CMM means that Pact's machine operators have access to the machine. Production personnel are able to instantly recall the appropriate, pre-written program and to measure first-offs before beginning a production run, machine operators also make regular in-process checks on the CMM when machining long production runs.

Despite the impressive measuring speed of the Axiom Too, as a result of ever rising levels of production, the increased demands placed on the company's CMM meant that delays were recently beginning to occur. For instance, when it was needed to verify the adherence to specification of a first-off component, the Aberlink machine would be engaged in a lengthy, CNC final inspection routine on a large batch of complex components The delay incurred by the machine operator whilst waiting for the CMM to complete its task, meant that valuable production time was lost.

The accuracy and ease of use of Pact's Aberlink Axiom Too CMM meant that the company again turned to Aberlink for a solution to its mounting inspection capacity problems. The answer was found in the recently launched Aberlink Xtreme CMM.

Steve Banfield, Pact Engineering Ltd Director explained. "Our Aberlink Axiom Too has been a great success, its precision specification has enabled it to inspect even our most accurate and complex parts. Also, as well as its main use - performing final inspection routines - as it is so easy to use, our machine operators are able to make full use of it.

"Prompted by an increase in our output and to put an end to the potential for queues forming at our CMM, we contacted Aberlink. Our timing was perfect, although our original Aberlink CMM was purchased at a very cost-effective price, the company had just launched an even less expensive CNC CMM machine – the Xtreme.

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"Having recently installed the Aberlink Xtreme in our inspection department, our machine operators are now able to use our new CMM for measuring their first-offs and for in-process checks. It helps that the Xtreme uses the same software as our existing Aberlink CMM. The use of our new Xtreme CMM has freed our Axiom Too CMM to concentrate on final inspection routines and has put an end to bottlenecks in our inspection department."

The Aberlink Xtreme CNC CMM is designed with a novel non-Cartesian structure and uses linear motors and mechanical bearings. This advantageous arrangement ensures that the new Aberlink machine maintains its impressive accuracy at very fast measurement rates and does not suffer from the accumulative inaccuracies that occur in conventional 3-axis Cartesian arrangements. As its name implies, the new Xtreme CNC CMM offers customers a robust solution for undertaking precise inspection routines wherever they are required.

The Xtreme utilises 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.

The great early success of Aberlink's recently launched Xtreme CNC Coordinate Measuring Machine has triggered high levels of demand for practical demonstration. To enable potential UK Xtreme customers, who are unable to visit Aberlink's HQ or its regional demonstration facilities, to witness the cost-effective machine in action, the company has manufactured several smaller, portable versions. Aberlink Sales Representatives are now able to carry the quarter-sized technology demonstrators in their cars, visit potential customers' premises and prove the outstanding capability and speed of the Xtreme CNC CMM.

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