



Subcontract Case Study 05/2018

Company: Alpha Precision Engineering

..... Xtreme

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Xtreme



Established in 1988, Alpha Precision Engineering is a subcontract precision engineering company that specialises in the manufacture of components and assemblies to customers' specifications. Soon after its formation, the company began working towards achieving all relative quality accreditations and instigated a policy of purchasing state of the art, advanced CNC machine tools and the best available inspection equipment. Alpha Precision now has Quality Approvals to BS EN ISO 9001, EN9100 and AS9100 rev C and boasts a wide range of state of the art manufacturing plant and inspection aids.

Alpha Precision is located close to Poole Harbour in two adjoining modern factory units with a combined floor area of 16,000 sq.ft. The company is able to provide a wide range of engineering services, from the manufacture of bespoke one-off components, to the production of small, medium and large batches. Currently 70% of the business' output is delivered to the Aerospace and Canning sectors. The Oil and Gas and FI industries account for the majority of the company's remaining business.

To enable Alpha Precision's inspection provision keep pace with an increase in business, and to help company maintain its reputation for the quality of its work, two Aberlink Xtreme CNC CMMs were recently installed.

Alpha Precision Quality Manager, Rob Allen explained. "Given the nature of the demanding industrial sectors we serve, the quality of our output is our number one priority. In addition to first-off checks and regular in-process measurements, the parts and assemblies we produce undergo thorough final inspection routines. To enable our staff to monitor the quality of our output throughout all stages of manufacturing, we provide our skilled production personnel and our quality staff with the latest inspection equipment. An example of this policy is our two, recently installed Aberlink Xtreme CNC CMMs.

"Our first manual Aberlink CMM has proved to be easy to use, very accurate and ultra-reliable therefore, as the launch of the Aberlink's Xtreme CMM's coincided with a sharp up-turn in our business, we placed an order for two of the advanced new CNC CMMs. As Aberlink's Xtreme CMMs feature temperature compensation and are designed to operate both in inspection departments and on the shop-floor, we have installed both of our new Xtreme CMMs in our production facility.

"Our new shop-floor Xtreme CMMs are now in regular use by our production and quality staff for in-process inspection checks and for verifying first-off parts. Rather than lose time taking machined parts to our inspection department, now fast accurate CMM inspection results can be achieved close to the point of manufacture. This quick feedback enables adjustments to be made when components' sizes deviate from nominal conditions.

"Also, the CNC nature of the new Xtreme CMMs enables our quality staff to place batches of machined components onto the CMMs' beds. The relevant program is then quickly selected and following the press of a button, a rapid, fully automated CNC measuring routine is started. In addition to storing the captured the data, related to each measured feature of each component in the batch, when required we are able to generate detailed inspection reports for each component."

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The Xtreme CNC Coordinate Measuring Machine was designed to provide accuracy, ease-of-use and speed-of-measurement in inspection departments and in production environments. The global success of the Xtreme means that Aberlink's Gloucestershire based manufacturing facility is now working flat-out to keep pace with both UK and overseas demand for this unique CMM.

The Xtreme has a novel non-Cartesian structure and makes use of linear motors and mechanical bearings, this advantageous arrangement guarantees that the CMM maintains its impressive accuracy performance at very fast measurement rates and ensures that it does not suffer from the accumulative inaccuracies that occur in conventional 3-axis Cartesian arrangements.

The inexpensive CNC Xtreme requires no compressed air and boasts the shortest learning curve of any equivalent system – An inexperienced operator is normally able to become competent in the Xtreme's use in just one day, meaning that the robust CMM represents an ideal 'plug and go' solution. In addition, the Xtreme's integral temperature compensation function ensures that accuracy levels are maintained even when the surrounding ambient temperature is not controlled.

Ensuring greater user productivity and profitability, the Xtreme utilises Aberlink's renowned 3D software. A welcome bi-product of any Aberlink 3D inspection routine is that a simultaneous picture of the measured component is created on the CMMs computer screen. Dimensions between the measured features, mirroring those that appear on the component drawing, can 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 claimed to be the easiest to use and most intuitive CMM software currently available making it ideal for use by both quality and production personnel.

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