



Oil & Gas Case Study 05/2013

Company: C.S. Simmons Engineering

.....Zenith too

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From its base in Radstock, [C.S. Simmons Engineering](#) provide a comprehensive range of CNC machining services to a wide range of demanding industries, including the Oil and Gas, Valve Manufacturing and Defense sectors. The busy company is able to carry out a wide variety of machining procedures on parts up to 2.5m in length and 1.2m cubed, in materials including heavy stainless steel S316 Super Duplex UNS S32760 and 'exotic' materials such as Inconel, Hastelloy, Monel, and Waspalloy.

C.S. Simmons Engineering's efficient manufacturing and inspection activities meet the requirements of BS EN ISO 9001 2008 certification, whilst quality and performance are closely monitored through the use of established procedures and the operation of Tricorn Job Processing software.

In order to enhance the company's competitiveness and help to meet demanding delivery times, whilst maintaining high quality standards, C.S. Simmons Engineering continually invests in the latest CAD/CAM technology, high-precision CNC machine tools and state-of-the-art inspection aids.

An illustration of the company's response to market demands, and its policy of purchasing equipment to further develop its appeal to new customers, was the recent purchase of an advanced [Aberlink Zenith too 1000, CNC Coordinate Measuring Machine](#).

Company owner, Mark Simmons explained. "Driven by ever rising demand for our output, the requirements of an evolving marketplace and increasing levels of requests for comprehensive inspection reports, we recently investigated the available CNC Coordinate Measuring Machines and software systems.

"Although we were aware of the excellent reputation of Aberlink's CMMs through the recommendations of several local users, to ensure their suitability for our own particular use, we recently had an in-depth demonstration of an Aberlink Zenith too 1000 CNC CMM, as the machine's capacity of - 1000mm X-axis, 1000mm Y-axis and 600mm Z-axis was the perfect size for our manufacturing envelope.

"As Aberlink's demonstration illustrated the ease of use, speed and accuracy of the Zenith too, in addition to Aberlink's flexible report generating system, we were happy to place an order.

"Now Installed and fully operational, following a short training course our operators have quickly become conversant with the machine's controls. Aberlink's easy to use software means that we are now able to quickly write, store and recall measurement programs. This facility is perfect for our mainly short run, repeat jobs, as we are now able to load the part onto the Zenith too's component support, recall the relevant program and undertake the most complex of measuring routines in a fully automatic CNC mode.

"On completion of a measuring routine, dependant on our customers' requirements, we are now able to generate a wide variety of inspection reports, from dimensioned graphical representations to tabulated report formats, showing nominal condition, tolerances, errors, pass/fails and geometric tolerances. If required, we are also able to output full details to Excel spreadsheets.

"As the fastest of the models that we considered, our new Aberlink CMM has taken away the possibility of delays in our inspection department, in addition the Zenith too has been regarded as a significant investment in quality by our customers and has already been instrumental in C.S. Simmons being awarded additional contracts."

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Manufactured by Aberlink Innovative Metrology, the largest UK owned Coordinate Measuring Machine manufacturer, the large capacity Zenith too Coordinate Measuring Machine range consists of 10 machines with XYZ capacities from 1000x1000x600 –1000x3000x800.

The range's cutting edge, all aluminium construction, advanced drive design and raised guide-ways ensures that despite their generous measuring envelopes, the machines' extremely low inertia characteristics guarantees supreme speed of operation. Impressive accuracy and repeatability figures are further aided by the range's measuring structure being completely independent of the machine's granite surface table. Although the Aberlink series is perfectly suited to use within environmentally controlled inspection environments, it is on the shop floor where the Zenith too range's low thermal mass and extremely robust characteristics come to the fore, enabling the accurate measurement of large components to take place nearer to their point of manufacture.

The impressive hardware of the new Zenith too is complemented by the range's intuitive Windows based software. A welcome bi-product of any Zenith too 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. [Aberlink 3D is the easiest to use CMM software currently available](#), so much so, that a complete novice is usually able to perform relatively involved measurement routines after just 5 minutes training.

Aberlink supply a complete Zenith too 'turn-key' package, including a comprehensive training programme, a wide choice of motorised or manual probes, Aberlink's celebrated 3D software and not least the latest generation of high speed custom controllers, that are capable of generating true, three dimensional contours.

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