



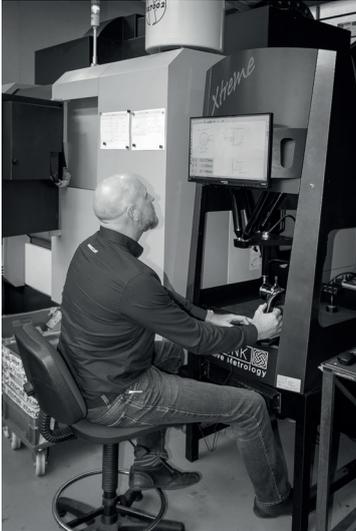
Subcontract Case Study 05/2019

Company: Ravenscourt Engineering

..... Xtreme

Subcontract Case Study

Ravenscourt Engineering
Xtreme



Ravenscourt Engineering was originally established in Bristol over 30 years ago by Managing Director, Henry Smart, a former BAE maintenance engineer, with a goal of becoming a one-stop shop for welding and machining. Due to an increasing order book and the need for further space to house both machinery and staff, the company relocated and expanded to its current site in Yate, South Gloucestershire. However, following the move, Ravenscourt found themselves faced with increasing local competition by other traditional CNC milling and turning machine shops, and a trend of under-cutting to win business, regardless of the diminishing profit margins.

A decision was made to focus company efforts, time and resources on another part of the business, Electron Beam Welding (EBW). Perhaps, still one of the greatest kept secrets in manufacturing today, Ravenscourt are one of only a handful of companies in the UK to specialise in the niche market of Electron Beam Welding.

With origins dating as far back as 1940s, Germany, EBW is a fusion welding process that utilises high-velocity electron beams within a vacuum chamber to heat and join materials together. Unlike slower traditional welding methods, this highly efficient and precise welding technology allows depths of penetration from fractions of a millimetre up towards 75mm in a single pass. Such is the power and precision of this method, which can be used across a wide range of materials, from aluminium and copper through to titanium and certain material combinations, the resulting welded parts also display extremely limited Heat affected zones and distortion compared to alternative methods.

Accredited to Aerospace standards AS9100 and NADCAP AS7003, orders for 90% of welding customers can be turned around in just 6-days. Proud of this ability to quickly produce hugely complex parts, Ravenscourt were recently presented with an award by a major, multi-national aerospace customer. It's this skilled and flexible approach to manufacturing that has found customers seeking Ravenscourt's expertise from around Europe, North America and domestically from industries such as Aerospace, Autosport, Oil and Gas and Medical.

Ravenscourt General Manager, Mark Knight, explains: "Electron Beam Welding is our core business and we can safely say that we've welded everything from the bottom of the oceans, to flying around in space... and everywhere in between. We've welded rocket engines and satellite parts, to components for deep drilling exploration" Alongside the 12 Electron Beam welding machines, Ravenscourt also continue to run their machine shop, allowing the production of machined test pieces, fixtures, jigs and development parts in support of EBW. It was in this machine shop where the need for a shop floor measurement solution was identified.

Mark continues: "Due to the need to perform rapid in-process checks without tying up our already busy quality department, we started looking at the various shop floor solutions available and during a visit to a regional manufacturing exhibition, we were introduced to the Aberlink Xtreme 350 CNC Coordinate Measuring Machine. We were immediately impressed by its compact and rugged construction, meaning the CMM could be placed directly next to our machine tools with no requirement for an air supply and more importantly, with no effect on performance. In addition, and equally impressive is just how cost-effective it was for us."

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Now installed, the Xtreme CMM is located in a production cell also consisting of a 2-axis lathe and a 5-axis mill. It's within this cell that shop floor staff are tasked with producing a family of parts (upwards of 60 of each part, each month) previously produced in China, for Ravenscourt's main aerospace customer; the Xtreme CMM is used to check any one of these vital parts, at any point in the machining process.

Commenting on their decision to invest in an Aberlink Xtreme, complete with the industry-standard Aberlink 3D measurement software, Mark said: "It's ability to do more as a CMM over other shop floor solutions is a big advantage. When we're not using the CMM for cell parts we are able to perform first-off and in-process checks for customer prototypes and development parts."

"Having previously purchased Aberlink 3D to use on an articulating measuring arm elsewhere in the company, our staff were already familiar with its features. We've used other measurement software, it's simply not as easy as Aberlink 3D. When you look at the screen it's so quick to find the required function and coupled with feature predict, it makes using it almost self-explanatory! It really is a case of measure component, generate the report -- job done."

Aberlink's cost-effective Xtreme CMM 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 a single day, making the easy to use CMM the ideal 'plug and go' shop-floor measuring solution. In addition, the Xtreme's integral temperature control function ensures that accuracy levels are maintained even when the surrounding ambient temperature is not controlled.

Now the largest UK owned CMM manufacturer, Aberlink's comprehensive range includes 40 variants of both CNC and manual CMM. Aberlink CMMs enable the precise measurement of the smallest of components, to parts of over 3metres long and up to 6 tonnes in weight. Customers can select from a wide range of probing and non-contact measurement options and on-machine fixturing. The company's wide range of available solutions allows Aberlink to offer high quality CMMs and vision measuring systems to suit all applications and budgets.

Based in Eastcombe, Gloucestershire, Aberlink has established a global reputation for its metrology products which are innovative, easy-to-use and competitively priced.

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