Short-run Bespoke Thread Grinding Proves a Growing Market for GB Precision

High-accuracy subcontract thread grinding, whether in small batches or single components, forms an increasing portion of the workload for Birmingham-based GB Precision - which is why the company has invested in no less than three high-specification Studer CNC grinding machines, an S31 and two S21s.

Image- Examples of thread grinding from GB Precision machined on Studer equipment

Controlled by the company's team of highly skilled and experienced operators, this trio of grinding thoroughbreds enables the company to offer a really rapid solution for customers looking to meet tight deadlines with confidence.

Over the last 30 years, GB Precision has built its business largely through taking on the most challenging sub-contract jobs, and, using a combination of in-house skills and the latest grinding

technology, obtaining greater precision, better surface finish and improved cut-control, as well as being able to deal with difficult materials that other machining methods cannot handle.

Among challenging grinding tasks thread grinding is one of the most demanding, and becoming increasingly more so. Thread machining accuracy is specified and measured (often in microns) across many different elements of the component, including the thread pitch, helical path and helix angle as well as major, minor and pitch diameters and surface finish. In addition, the thread's lead, i.e. the distance the helix advances in one full turn of the screw, is often critical in many applications.

As MD, Paul Turner, explains; "We specialise in taking on complex grinding tasks, which often include thread grinding, hence our decision to specify the thread grinding options on our Studers. As sub-contractors, we need to work at maximum efficiency, so the fact that we can combine different grinding operations, including thread grinding, in one set up, significantly increases our productivity, as well as minimising the risk of human error, and that means we can be really responsive to our customers' needs."

Using the technical capabilities of the Studers, GB Precision can machine internal and external, standard and non-standard profiles. External thread grinding is possible up to 250mm diameter with pitches down to 0.3mm, Unified 60 degree, ISO Metric 60 degree (both with any thread and pitch), Whitworth, Acme and Aero MJ threads and other thread specifications to suit customers' specific requirements are available. This level of flexibility is ideal for machining threads for example in mould tools, where non-standard thread dimensions need to specified to include shrinkage allowances.

The components that the company grinds are destined for use in a range of industry sectors including automotive, aerospace, medical and packaging, which means having to machine a wide range of materials from structural steels, through to stainless steel and hardened materials.

Paul Turner continues; "Our speciality is to accurately grind single items or short runs of components for customers where thread grinding is a relatively small part of the overall task, and who therefore do not need or wish to purchase either dedicated machines or specific dressing wheels."

"Depending on our customers' requirements GB Precision can either machine the whole item, including the thread grinding features, or add the thread grinding to the pre-machined part. In some instances, customers "rough-in" the thread geometry before sending the component, which GB Precision then precision grinds to completion."

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