# Hone-All Precision customer reaps the benefits of angled hole expertise

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**As a specialist provider of deep hole drilling and gundrilling services, Hone-All Precision is well aware of the challenge posed when angled holes are required to break into one another.**

"We have the capability here," says Colin Rodney, managing director, "to gundrill deep holes in different positions and at different angles in a single set-up. This saves our customers time and money, as well as avoiding the risk of introducing cumulative dimensional errors through multiple machine set-ups."

The risk when holes are being drilled at an acute angle is that the gundrill tip will 'catch' on the intersection, break off and then become wedged – which can render an expensive component scrap. This was the case recently when a company was experiencing scrap rates from another specialist provider that meant the work was no longer financially viable. On being contacted for advice, Hone-All Precision offered a solution and then agreed to machine a trial batch of components supplied as 150 mm diameter by 900 mm long billets of AISI 4145 steel.

The requirement was to bore and hone a 100 mm diameter through bore to a tolerance of 0.05 mm and a surface finish of 0.4 µm, and then to gundrill eight 10 mm diameter angled holes into the remaining wall thickness. These have to be drilled in four banks of two holes, breaking into each other and drilled to a positional accuracy of ±0.05 mm, although the hole tolerance itself is a less demanding ±0.1 mm.

"To make sure that we did not have an issue with drill breakages, our deep hole drilling engineers developed a method to support the drill as it is breaking through into the second bank of holes," explains Andrea Rodney, co-director of Hone-All Precision. "This has eradicated drill breakages and improved the quality of the intersection in terms of reducing burrs and providing a better surface finish. An additional deburring operation is no longer required and our customer no longer needs worry."

Contact for more information

**Author**
Hone-All Precision



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