



CASE STUDY.

Revolution Drill[®]

PROJECT PROFILE: **4140 Agricultural Heavy Equipment**

The end-user is machining gear blanks made from 4140, 40 Rc, using an OKUMA DSP 5000 Horizontal Mill, with flood coolant.

+ CHALLENGE:

Previously the customer was using a Mitsubishi High Feed Mill, running at the following parameters: 1000 RPM, 0.060 IPR, (15.2 mm/rev) which resulted in 60 IPM (1524 mm/min). The tool helically interpolated a 2.47" (62.74 mm) diameter thru hole to a thickness of 1.60" inches (40.6 mm). The tool had a cycle time of 3.5 minutes and a tool life of 16 holes per edge. Looking for improvements in cycle time, the customer asked if Allied could provide the solution.

+ OUR SOLUTION:

Allied recommended the Revolution Drill[®] using insert item DP-D5T308-H in holder R42X22-CV50. The tooling ran at a speed of 395 RPM, 0.006 IPR (0.15 mm/rev) which resulted in 2.3 IPM (58.40 mm/min). The tool had a cycle time of 50 seconds and a tool life of 48 holes per edge. The outcome met the customer's goals of tool performance improvements.

+ PROJECT DATA:

Revolution Drill[®] made a significant difference for the customer as the cycle time was reduced from 3.5 minutes to just 50 seconds. This significant time savings reduced the cost per hole from \$5.39 to \$1.24, for a considerable cost savings of 77%.



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