



CASE STUDY.

GEN2 T-A[®]

PROJECT PROFILE: **4340 Steel Contract Machining**

The end-user is machining gear blanks made of 4340, using a Hitachi-Seki Vertical machine, with 200 PSI semi-synthetic coolant.

+ CHALLENGE:

Previously the customer was using a TiN coated, HSS Precision Twist drill, running at the following parameters: 230 RPM, 0.005 IPR, (0.127 mm/rev) which resulted in 1.15 IPM (29.21 mm/min). The tool drilled a 0.748" (19 mm) diameter thru hole to a depth of 4.0 inches (101.6 mm). The tool had a cycle time of 4 minutes and 36 seconds per hole and a tool life of approximately 10 holes. There were 24 holes per part, so the total drilling time to complete one part was 110 minutes and 24 seconds. The customer wanted to find a tool that would offer better cycle times, performance and tool life, so they called Allied in to examine the problem.

+ OUR SOLUTION:

Allied recommended the GEN2 T-A[®] using insert item 451H-19 and holder #23010H-0031. The GEN2 T-A[®] ran at a speed of 500 RPM, 0.010 IPR (0.25 mm/rev) which resulted in 5.0 IPM (127 mm/min). The tool provided a greatly reduced cycle time of 55 seconds per hole while increasing the tool life to 48 holes. The total time it took GEN2 to complete one piece was 22 minutes as compared to the Precision Twist Drill that required 110 minutes and 24 seconds to reach the same outcome.

The competitive cost per hole was \$6.50, as the twist drill never was able to exceed 10 holes, but GEN2 was able to net the cost per hole down to \$0.75, due to its ability to provide nearly five times the number of completed holes, and in far less time.

+ PROJECT DATA:

Allied's GEN2 T-A[®] geometry made a measurable difference for this customer as it helped to decrease the cycle time per hole from 4 minutes and 36 seconds to just 55 seconds for a time savings of over 80%.



*REDUCED
CYCLE TIME*