CASE STUDY.

BT-A

PROJECT PROFILE: **4340 Aerospace**

The end-user is machining aerospace landing gear made from 4340 alloy steel, using a LeBlond Heavy Duty Lathe, with 60 GPM of oil.

REDUCED COST OF PRODUCTION

+ CHALLENGE:

Previously the customer was using two special Sandvik Ejector drills to rough a form at the bottom of the hole, then finishing the form with the 2nd BTA head running at the following parameters: 500 RPM, 0.003 IPR, (0,08 mm/rev) which resulted in 1.5 IPM (38,1 mm/min). The tool drilled out a 2.050" (52,07 mm) diameter drill point at the bottom of a 10.0" deep blind hole to a total depth of 11.0" (279,4 mm). These two tools had a cycle time of 15 minutes and a tool life of 2 holes. The Sandvik tool was high priced at $5000 per head, yet ineffective as it only lasted through two pieces. Looking for immediate overall improvements, the customer asked if Allied could provide a tool that got the job done, was durable and did not come with an exorbitant cost.

+ OUR SOLUTION:

Allied recommended the BT-A Head using #4 series special Super Cobalt T-A® form insert. The tooling ran at a speed of 125 RPM, 0.006 IPR (0,15 mm/rev) which resulted in 0.75 IPM (19,05 mm/min). BT-A eliminated 2 hours of set-up time by combining the rough & finish process into one tool, as well as eliminating 30 minutes of deburring time. BT-A performed with a cycle time of 1 minute and 20 seconds and a tool life of 43 holes per insert. The hole finish went from 250 Ra. to 125 Ra. Tighter tolerance on the 2.050" diameter was also achieved.

+ PROJECT DATA:

Most notably, BT-A was able to complete 43 pieces as compared to Sandvik's disappointing 2 pieces, and at 1/5 the cost of tooling. Allied helped to reduce the costly machine run time resulting in the cost per hole dropping from $5136.00 (what was actually spent, and lost [times 2], by the customer) to $7.89, for a considerable cost savings of 99.85%. Allied's BTA Drill paid off after only 15 parts.