



CASE STUDY.

PROJECT PROFILE:

EcoCut

6061 Aerospace

The end-user is machining aircraft spacers made from 6061 Aluminum using a Haas SL20 Lathe, with through-tool coolant.

+ CHALLENGE:

Previously the customer was using a mix of tooling to complete the operation. First, the customer would drill a 0.5" diameter through-hole into a 1" thick blank using a Titex solid carbide drill, then use a Prototyp end mill to plunge a counterbore, and conclude with a Seco tool for turning the OD. The operating speeds were as follows: The Titex drill ran at 1900 RPM, 0.010 IPR, (0,25 mm/rev) which resulted in 19 IPM (483 mm/min). The end mill ran at 1700 RPM, 0.0025 IPR, (0,06 mm/rev) which resulted in 4.25 IPM (107,95 mm/min). The turning segment was run at 3600 RPM, 0.004 IPR, (0,10 mm/rev) which resulted in 14.4 IPM (365,8 mm/min). This entire process took 30.34 seconds. Due to the volume of this job, the end-user asked Allied if they could provide a solution that would help to reduce the cycle time.

+ OUR SOLUTION:

Allied recommended the EcoCut 2.25 X D holder with a MasterFinish insert for aluminum. Matching the required operations of the previous three tools, EcoCut drilled at a speed of 4856 RPM, 0.003 IPR (0,08 mm/rev) which resulted in 14.57 IPM (370 mm/min). The boring stage of the operation ran at 4356 RPM, 0.003 IPR (0,08 mm/rev) resulting in 13.10 IPM (373 mm/min). Finally, the turning portion operated at 3667 RPM, 0.003 IPR (0,08 mm/rev) resulting in 11 IPM (279 mm/min). The multiple operation EcoCut tool completed the same job with a cycle time of 20.97 seconds, as compared to the three previous tools requiring 30.34 seconds. The outcome met the customer's goals of reduced cycle times.

+ PROJECT DATA:

Allied Machine and EcoCut made a significant difference for the end-user. The cycle time was cut by one third, while the Allied tool reduced the need for three tools. The elimination of the extra tooling and the considerable reduction of cycle time resulted in the cost per hole dropping from \$0.568 to \$0.386, for a cost savings of 32.15%.



**REDUCED
CYCLE TIME**