



CASE STUDY.

PROJECT PROFILE:

Revolution Drill[®]

4130 Alloy Aerospace

The end-user is machining a die slide made from 4130 Forging, 390-450 Bhn, using a 30 HP - CAT 50 horizontal boring mill, with 1000 PSI water soluble coolant.

+ CHALLENGE:

Previously the customer was using a Komet Kub drill, running at the following parameters: 525 RPM, 0.002 IPR, (0,05 mm/rev) which resulted in 1.05 IPM (26,67 mm/min). The tool drilled a 2.56" (65,02 mm) diameter thru hole to a depth of 11 inches (279,40 mm). The tool had a cycle time of 10 minutes and 29 seconds and a tool life of 2 holes.

Looking for performance improvements, the customer contacted Allied with the intent to replace the Komet Drills with the Revolution Drill[®], because of the diameter adjustability and the fact that all of the drills utilize the same insert.

+ OUR SOLUTION:

Allied provided the Revolution Drill[®], item number R42X35-150L. The tooling ran at a speed of 900 RPM, 0.003 IPR (0,08 mm/rev) which resulted in 3 IPM (76,2 mm/min). Revolution Drill[®] had a cycle time of 3 minutes and 40 seconds and a tool life of 8 holes.

+ PROJECT DATA:

The chip control was excellent, and the surface finish was within a 32 RMS with a hole tolerance of .002". This met the customer's goals of tool performance improvements. The cycle time was greatly reduced from 10 minutes and 29 seconds to just 3 minutes and 40 seconds, for a time savings of 65%. Allied Machine and the Revolution Drill[®], helped to reduce the cost per hole from \$31.50 to \$5.25, for a considerable cost savings of 84%.



TOOL PERFORMANCE IMPROVEMENTS