



CASE STUDY.

PROJECT PROFILE: **A36 Heavy / Off-Road Equipment**

Opening Drill[®]

The end-user is drilling wheel loader frames made out of A36 structural steel using a MAG Giddings & Lewis horizontal boring mill, operating at 125 HP, using 400 PSI through-tool coolant.

+ CHALLENGE:

Previously the customer was using two Sandvik twin bores each time to complete the job. These tools were run at the following parameters: 458 RPM, 0.006 IPR (0.152 mm/rev), which resulted in 2.75 IPM (69.85 mm/min). The tool drilled a 4.17" (106 mm) diameter hole to a 4.33" (110 mm) depth. The inserts had a total tool life of 4 parts.

The cycle time for each pass was 1 minute and 34 seconds, and because this application required two operations, the total cycle time was 3 minutes and 8 seconds.

Looking for improvements, the customer knew there was a better way to complete this application, so they asked Allied Machine & Engineering Corp. to bring in its best tool for testing.

+ OUR SOLUTION:

Allied recommended the Opening Drill[®]. The tooling ran at a speed of 732 RPM, 0.005 IPR (0.127 mm/rev) which resulted in 3.66 IPM (92.96 mm/min).

This process enabled the customer to eliminate the twin boring process, effectively saving time and money. The cycle time was significantly reduced from 3 minutes, 8 seconds to just 1 minute and 11 seconds.

+ PROJECT DATA:

The Allied solution proved to be the better choice for the end-user. Opening Drill[®] was able to provide a tool life of 9 parts, more than double that of the twin bore inserts. Also, the hole was completed with only one tool versus the necessary two tools required by the boring bars. Eliminating lost time due to multiple tool changes and longer cycle times saved the customer both time and money. The manufacturing cost was reduced by an amazing 62.2%.



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