



## CASE STUDY.

PROJECT PROFILE:

# Opening Drill<sup>®</sup> Alloy Steel Large Components

The end-user is manufacturing turbine components made out of chrome moly alloy steel using a Super 8 Vertical Machining Center, with water soluble coolant.

### + CHALLENGE:

Previously the customer was using a series of Kennametal Boring Bars running at the following parameters: 500 RPM, 0.005 IPR (0,127 mm/rev), which resulted in 2.5 IPM (63,5 mm/min). The tool drilled a 3.5" (88,9 mm) diameter thru hole to an 8" (203.2 mm) depth. The tools had a cycle time of 2 hours, 59 minutes and a life of 14 holes. The boring bar machining process was just moving too slowly. Looking for improvements, the customer wanted to reduce cycle time on a part that was scheduled for quick delivery.

### + OUR SOLUTION:

Allied recommended the Opening Drill, using insert item OP-05T308-H and holder OP3-1L-BT50. The tooling ran the same speed of 500 RPM, 0.005 IPR (0,127 mm/rev), which resulted in 2.5 IPM (63,5 mm/min). The outcome was excellent as an equal number of 14 holes were machined, but in half the time, lowering the cost to the customer.

### + PROJECT DATA:

In addition to allowing for fast completion of the turbine components, the Opening Drill factored in at a lower cost per hole as the cost was reduced from \$30.89 to \$18.25 per hole, for a savings of 41%. The Opening Drill met the customer's requirements by reducing the cycle time from almost three hours to 1 hour and 29.6 minutes, for a significant and impressive time savings of 50%.



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