



## CASE STUDY. **Special 2-Step ICS Drill**

PROJECT PROFILE: **Ductile Iron Contract/Mining**

The end-user is manufacturing suspension components made out of Ductile Iron for the Mining industry using an Okuma Vertical Lathe with 150 PSI through tool coolant.

### + CHALLENGE:

Previously the customer was using a Sandvik 880 IC Drill, a twin bore, and a boring bar, running at the following parameters: Sandvik 880 Drill: 1819 RPM, 0.004 IPR (0,10 mm/rev), resulting in 7.28 IPM (184,9 mm/min). Twin Bore: 1410 RPM, 0.003 IPR (0,08 mm/rev), resulting in 4.23 IPM (104,4 mm/min) and the Boring bars: 1050 RPM, 0.004 IPR (0,10 mm/rev), resulting in 4.2 IPM (106,68 mm/min). They drilled a 1.26" (32 mm) diameter hole to a depth of 4.6" using the 880 IC Drill, and then counterbored to 48,1 mm with a 54,9 mm chamfer. The tools had a combined cycle time of 53.5 seconds per hole, and a tool life of 24 holes before indexing on the 880, and 60 holes on the Twin Bore prior to indexing. The customer was looking to reduce costs of manufacturing and have better control over the process.

### + OUR SOLUTION:

Allied recommended a Special 2-Step T-A<sup>®</sup> ICS Drill, using insert item 4C22H-32, and four CCMT 432 inserts. The tooling ran at a speed of 1050 RPM, 0.009 IPR (0,23 mm/rev), which resulted in 9.45 IPM (240,03 mm/min).

The results were excellent as the cycle time dropped from 53.5 seconds to 29.2 seconds, while the tool life increased to 120 holes, twice that of the Sandvik tooling and in half the time. Overall, the process was reduced from 3 steps to just 1, reinforcing the true value of the Allied step drill.

### + PROJECT DATA:

The significant reduction in cycle time resulted in the cost per hole dropping from \$2.62 to \$1.78, for a savings of over 32%, meeting the customer's requirements.



*REDUCED  
COST OF  
PRODUCTION*