CASE STUDY.

BT-A Drill

1045 Hydraulic Cylinders

PROJECT PROFILE:

The end-user is machining cylinders made from 1045 steel using a Technidrill BTA machine, operating at 900 PSI, with semi-synthetic coolant.

INCREASED PRODUCTION EFFICIENCY

+ CHALLENGE:

Previously the customer was using an Ingersoll brazed BTA head, running at the following parameters: 800 RPM, 0.0074 IPR, (0,19 mm/rev) which resulted in 5.9 IPM (149,9 mm/min). The tool drilled a 17.7" (449,6 mm) blind hole, with a diameter of 1.375 inches (34,9 mm). The tool had a cycle time of 2 minutes and 43 seconds per hole and a tool life of 750 inches. The Ingersoll tools were having trouble drilling a straight hole, as the customer experienced a few parts where the drill actually came out of the side of cylinder.
The customer asked if Allied would test against Ingersoll, as they had heard that Allied tooling could drill a straighter hole.

+ OUR SOLUTION:

Allied recommended the BT-A drill using insert item 4C12H-0112-HE and a 1.375", 807 series BTA. The tooling ran at a speed of 750 RPM, 0.0118 IPR (0,30 mm/rev) which resulted in 8.85 IPM (224,8 mm/min). BT-A had a cycle time of 1 minute and 59 seconds per hole, a tool life of 900 inches, and delivered a straight hole in this application. Allied tools had less than a 0.010 variance in cylinder wall thickness. This part was then shown to top management.

+ PROJECT DATA:

Not only did Allied and BT-A deliver a straighter hole, the outcome impacted the final cost per hole enough to be declared the tool of choice by the customer. Allied helped to reduce the cost per hole, which dropped from $1.60 to $1.36, for a cost savings of over 15%.