



## CASE STUDY.

### PROJECT PROFILE:

# Opening Drill<sup>®</sup> 4150 Military

The end-user is manufacturing components for the Military industry. The contractor was tasked with drilling and boring large holes into 4150 steel, 30 RC, utilizing a Mazak Slant Bed lathe, with soluble coolant.

#### + CHALLENGE:

Previously the customer was using an HSS drill running at the following parameters: 100 RPM, 0.005 IPR (0,127 mm/rev), which resulted in 0.5 IPM (12.7 mm/min). The competitive tool drilled a 5.625" (142.87 mm) diameter thru-hole to a 10" (254 mm) depth. The complete process involved a cycle time of 1 hour and 26 minutes and a tool life of 10 holes. Looking for improvements, the customer called Allied Machine to provide a solution that would step up the speed at which the large holes were being drilled.

#### + OUR SOLUTION:

Allied recommended the use of a T-A<sup>®</sup> drill insert item, 457H-0400, which was run at 170 RPM and 0.008 IPR (0,203 mm/rev) resulting in 1.3 IPM (33,02 mm/min) to initiate the hole. Then the Allied Opening Drill<sup>®</sup> was brought in using insert item OP-05T308-H and holder OP4-IL-SS2.0. This tool was run at a speed of 700 RPM, 0.004 IPR (0,102 mm/rev), which resulted in 2.8 IPM (71,12 mm/min).

Allied was able to greatly reduce the cycle time by delivering the finished hole in just 10 minutes and 27 seconds. The cost per hole, dropped sharply from \$30 to just \$3.00 per hole thanks to the effective combination of the T-A<sup>®</sup> drilling system and the Allied Opening Drill<sup>®</sup>, for an amazing dollar savings of 90%.

#### + PROJECT DATA:

Opening Drill<sup>®</sup> met the customer's requirements of speeding up the hole-making process from 1 hour 26 minutes, to 10 minutes and 27 seconds, for a time savings of over 87.8%. That type of outcome always is pleasing to the end-user.



## INCREASED PRODUCTION EFFICIENCY