



CASE STUDY.

PROJECT PROFILE:

GEN2 T-A[®] Cast Steel Job Shop

The end-user is machining a cast steel STG 13/4 part using a horizontal milling machine with low pressure external coolant.

+ CHALLENGE:

Previously the customer was using two different lengths of HSS twist drills in three steps. They drilled from one side with a 4xD tool to establish the hole, followed by a 7xD drill. After flipping the part, the 4xD drill intersected the existing hole. This operation ran at the following parameters: 100 RPM, 0.003 IPR, (0.08 mm/rev) which resulted in 0.30 IPM (7.6 mm/min). The completed through hole has a diameter of 2.165" (55 mm) and a total depth of 22.84" (580 mm). The tools had an overall cycle time of 1 hour per hole and a tool life of 10 holes.

The customer was unhappy with the long cycle times, and asked if Allied could provide a better solution.

+ OUR SOLUTION:

Allied recommended a GEN2 T-A using insert item 454H-55 and holder 27040S-40FM, outfitted with a Rotary Coolant Adapter. A pre-drilled hole using a 22040S-40FM holder with same insert was required due to the depth of the hole. The tooling ran at a speed of 110 RPM, 0.012 IPR (0.31 mm/rev) which resulted in 1.32 IPM (33.5 mm/min). GEN2 T-A provided a cycle time of just 17 minutes, compared to the 60 minutes required by the previous method. Notably the GEN2 T-A had a tool life of 20 holes. The outcome met the customer's goals of reduced cycle times.

+ PROJECT DATA:

The Allied GEN2 T-A showed exceptionally good chip formation and drilled a hole in just 2 steps, all in 17 minutes, saving the end-user significant time, for a 72% savings in process and throughput time. The customer enjoyed a significantly lower cost per hole, which dropped from \$7.27 to \$3.59, for a cost savings of 50.62%.



*REDUCED
CYCLE TIMES*