



## CASE STUDY.

# GEN3SYS<sup>®</sup>

### PROJECT PROFILE: **D2 Adapters Contract Mold Making**

The end-user is manufacturing adapters made from D2 tool steel, 33-35 Rockwell C, using a Mazak vertical machining center, with 250 PSI water soluble coolant.

#### + CHALLENGE:

Previously the customer drilled the initial hole using a standard spade drill with an OD of 0.984 inches, running at the following parameters: 558 RPM, 0.005 IPR (0,13 mm/rev), which resulted in 2.8 IPM (71,12 mm/min). The tool drilled a 0.984" (25 mm) diameter thru-hole with a thickness of 0.875 inches (22,23 mm). The drill had a cycle time of 22 seconds and a tool life of 95 holes. The secondary operation involved the use of two boring bars, bringing the hole to 0.997" (25,32 mm), finished size. The running parameters were: 700 RPM, 0.005 IPR (0,13 mm/rev), which resulted in 3.5 IPM ( 88.9 mm/min). The boring bars delivered 20 holes per index. Combined with the spade drill cycle time, the total operation required approximately 62 seconds. Looking for improvements, the customer wanted to lower the cycle time while holding a hole tolerance of +/- 0.001.

#### + OUR SOLUTION:

Allied recommended the GEN3SYS<sup>®</sup> High Penetration Drill, holder item number 60324S-100F, with insert item 5C124H-9970. The tool ran at a speed of 861 RPM, 0.011 IPR (0,28 mm/rev), which resulted in 9.47 IPM (240,54 mm/min). GEN3SYS<sup>®</sup> had a cycle time of 6.34 seconds, a significant improvement over the previous multiple-operation cycle time of 62 seconds. The tool life reached 150 holes. The outcome was clearly in favor of the Allied tool which met the customer's goal of a lower cycle time, while holding a challenging hole tolerance of +/- 0.001.

#### + PROJECT DATA:

The improved cycle times and hole-tolerance made a huge difference in the overall cost of this operation. Notably, the cycle time dropped by an amazing 90%. The customer reported that 70 completed parts saved so much money, that the tools paid for themselves in one setup. The cost per hole dropped from \$2.86 to \$0.73, for an immediate cost savings of over 74%!!



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