



CASE STUDY.

PROJECT PROFILE:

GEN3SYS[®]

Grey Cast Iron Contract Shop

The end-user is manufacturing a six-hole bolt pattern for heavy equipment made out of grey cast iron using a Haas VF-5 vertical machining center, with 250 PSI through-tool coolant.

+ CHALLENGE:

Previously the customer was using a spot drill to initiate the operation, then used a Ken-Tip drill to make holes in two steps, beginning with a 17,4 mm insert in 3xD holder for the first 2", running at the following parameters: 1692 RPM, 0.011 IPR (0,28 mm/rev) which resulted in 18.62 IPM (472,95 mm/min), then a second run, using a 17,2 mm insert in 7xD holder for final 2.5", at 1673 RPM, 0.011" IPR (28 mm/rev) resulting in 18.40 IPM (467,36 mm/min). The insert life was 1,200 linear inches, and on the second operation, 1,500 linear inches. The process then continued with a reamer to improve the straightness.

Looking for improvements in tool life as well as reduced cycle times, the customer invited Allied to demonstrate its capabilities.

+ OUR SOLUTION:

Allied recommended the GEN3SYS[®] High Penetration Drilling System, using insert item 5C217H-17.2-C1 and holder 6D717S-075F. The first 0.250" depth of cut was run at a speed of 1682 RPM, 0.0053 IPR (0,134 mm/rev) resulting in 9.0 IPM (228,6 mm/min). After the first 0.250" depth, the speed and feed was increased to 1682 RPM, 0.0107 IPR (0,272 mm/rev) resulting in 18.0 IPM (457,2 mm/min) for the remaining 4.25" of depth for a total of 4.5". This operation provided an insert life of 6,075 linear inches. As was the case with the competitive effort, this operation was also followed up using a reamer.

+ PROJECT DATA:

GEN3SYS[®] helped to meet the customer's objectives of improvements by providing 4X the tool life as well as reduced cycle times by eliminating the spot tool. These time savings resulted in the cost per hole decreasing from \$0.488 to \$0.283, for a dollar savings of \$613.64 per 500 piece lot, or 42%.



EXTENDED TOOL LIFE