



CASE STUDY.

GEN3SYS[®]

PROJECT PROFILE: 1018 Shaft Coupler Manufacturer

An end-user is manufacturing shaft couplers and is looking to increase tool life. They are running these parts on a 30 HP Okuma vertical machining center with through-tool coolant using water soluble oil. The part is made of 1018 material and requires 8 drilled holes at $0.754 + 0.000 - 0.001$ diameter and 1.12" deep. The true position of these holes has to be within a tolerance of 0.006".

+ CHALLENGE:

Previously the customer was using a Precision Twist Drill solid carbide coolant through drill, and then reaming the hole to size. The drill was running at 1040 RPM, 0.0077 IPR (0.196 mm/rev), which resulted in 8 IPM (203.2 mm/min). The tool life was about 90 parts before the drill had to be replaced. The customer did not have any luck with regrinds as they would crash the tool often.

+ OUR SOLUTION:

Allied suggested using the GEN3SYS[®] with insert 5C118H-.7545 and holder 60318S-100F. This tool was able to run at 1800 RPM, 0.0083 IPR (0.211 mm/rev), which resulted in 15 IPM (381 mm/min). The GEN3SYS[®] High Penetration drill was able to complete 406 parts before the tip had to be replaced. The quality of the hole was within specification and did not require reaming.

+ PROJECT DATA:

The GEN3SYS[®] High Penetration Drilling System delivered the increased tool life the customer wanted. The competitive drill was only able to achieve 90 parts (8 holes per part) for a total of 720 holes, while GEN3SYS[®] completed 406 parts for a total of 3,248 holes. Allied made a huge impact on this application by nearly doubling the penetration rates, extending the tool life by four-times and eliminating the reaming operation. All these benefits equated to a sizable annual dollar savings of over 79% for the very pleased customer.



EXTENDED TOOL LIFE