Machining

Case Study: Increasing Quality On Time Machining's Productivity Through the HAIMER Shrink Fit System

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Quality On Time Machining (QOTM) is an aerospace machining company based out of Enumclaw, Washington. They had humble beginnings in 1996 as they had one machine doing mostly aluminum and 3-4 axis work, which soon after turned into seven machines. Then in 2012, they acquired more machines in order to start cutting titanium and even more machines to keep up with the demand. Now, QOTM has 14 CNC machines running three shifts, seven days a week producing 6,000 pounds of titanium chips and 4,000 pounds of aluminum every five days for the aerospace community.

While their company was expanding, they were starting to notice issues in their production. There was a decrease in runout accuracy, shorter toolholder life and an increased tool pullout rate. "In the early days, everything was side lock and we went with whatever was most cost-friendly at the time," explains Micael Parker, Senior Vice President at QOTM. "But during the switch to mostly titanium in 2012 and 50 taper machines, toolholders started to be more at the forefront battling those issues of pullout and runout causing a massive decrease in tool life and more scrap."

They soon realized that the most cost-efficient toolholders were no longer effective for their production. After some time of testing various products, they discovered HAIMER in 2017. "We found the HAIMER brand to be a superior brand compared to the other holders we were testing," states Micael. "The HAIMER toolholders solved the majority of our problems." Specifically for the aerospace industry, HAIMER toolholders offer extreme rigidity and clamping for titanium machining. The steep taper available in HAIMER chucks have a better fit between the holder and the machine spindle taper. When a toolholder has a poorer fit, more vibration is generated which directly influences toolholder life, spindle life, cutting tool life and surface finish quality. "While we were benefiting from the HAIMER chucks and with the advancement in our machining techniques with dynamic milling in titanium, we needed more," Micael explains.

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With the help of John Perigard, Regional Sales Manager for Haimer USA, QOTM decided to purchase a HAIMER Power Clamp Special Edition shrink fit machine and shrink fit chucks. For years, HAIMER has been leading in the development of inductive shrink technology for tool holders. Shrink fit technology allows for 360µ repeatable clamping, which helps eliminate tool pullout based on its high gripping torque. It also allows for excellent runout accuracy, balance repeatability, and consistent clamping.

After taking the step with shrink fit, there was no looking back. While the upfront cost for the machine and tooling was big, the return on investment happened nearly immediately for QOTM. "All the troubles we had with tool pullout, tool life and runout disappeared," Micael explains. "We had less scrap from tooling, tool life was massively improved and we purchased less toolholders because the quality HAIMER holder lasted longer."

Using shrink fit holders is the fastest and most consistent method of cutting tool clamping. In five to 10

seconds, a toolholder’s cutting tool is changed and it is repeatable the exact same way from operator to operator. “I honestly don’t think we would be as productive or have the type of work we have without it,” stated Micael. “HAIMER product is here to stay in my facility.”

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