Aluminum Hydraulic Manifold Machined 24% Faster Using TMAC Optimization

RESULTS - INSTALL 5947

CHALLENGE

The customer is machining a hydraulic manifold. Due to various problems with casting quality and consistency they decided to machine it from a solid cube of aluminum. This eliminated the quality issues but **increased the part cycle to approximately 17 hours.**

TECHNOLOGY

TMAC

SOLUTION

The customer implemented Caron Engineering's TMAC system, hoping to achieve 10% cycle time savings. TMAC has an adaptive control feature that automatically regulates the machine tool feed rate as the tool is cutting through the material. It optimizes cutting by learning the optimum power for each tool and then automatically adapts the feed rate in real-time through variations in material, tooling, and depth of cut.

TMAC was able to reduce cycle time by ramping up the feed rate through air cutting and lighter cuts. The results with TMAC exceeded the customer's expectations by reducing the cycle time to less than 13 hours, for an overall savings of 24%.

By maintaining a constant tool load with TMAC, the customer had the added benefit of extended tool life.

RESULTS

- *Reduced cycle time by 24%*
- *Extended tool life by maintaining a constant cutting power*

INDUSTRY

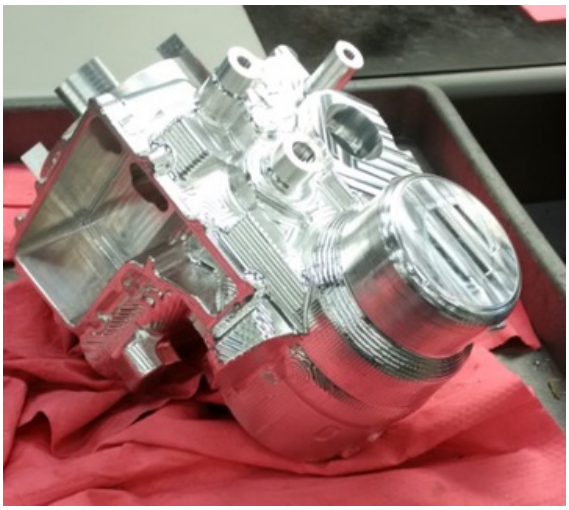
Aerospace

MACHINE TYPE

4 Axis HMC

MATERIAL

Aluminum



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