

TMAC Reduces Cycle Time and Prevents Tool Breakage on a \$150K Part

RESULTS - INSTALL 5834



CHALLENGE

The customer is drilling 100 + holes in the flange on an engine case. The part program has to incorporate a tool check process to ensure the tool isn't breaking, which is increasing the cycle time.

The customer is also profiling and scalloping the flange on the engine case. Due to the varying cutting conditions, the feed rate must be set to accommodate the worst material condition, causing a lengthy cycle time of 25 hours.



SOLUTION

Using Caron Engineering's TMAC system, the CNC program no longer requires the tool check process because TMAC monitors the tools in real-time during cutting, and alarms the machine when a drill gets dull. This eliminates the need for manual tool checks and they can confidently run the process without the concern of scrapping a \$150K part.

To help with the lengthy cycle time they implemented the adaptive control option with TMAC. This feature automatically adjusts the feed rate in real-time to speed up through air cutting and lighter cuts, and slow down through heavier cuts and as tools get dull.

With adaptive control, the scallop milling cycle time has been reduced by 60%.

In addition, the customer is also able to determine which of their vendors regrinds their tools better. TMAC displays the actual power the tool is generating allowing them to choose the vendor providing higher quality regrinds with longer cutter life.

RESULTS

- *Reduced cycle time by 60%*
- *Eliminated the need for manual tool checks*
- *Provided insights into the tool quality for vendor selection*

INDUSTRY

Aerospace

MACHINE TYPE

HMC

MATERIAL

718 Inconel (cast)

TOOLING

1/2" End Mill & Assorted Drills



SMART MANUFACTURING SOLUTIONS