

Tool Data Management System Eliminates Costly Errors Machining Pistol Barrels

CHALLENGE

A customer machining high-volume firearm parts noticed a bad surface finish on their pistol barrel component. After further inspection of the part, it was determined that the last 6 pistol barrels also had a poor surface finish. The result and disposition after a quality review was that those 6 parts were not recoverable and ultimately needed to be scrapped.

After many hours of investigating, they attributed the issue to incorrectly measuring the stick-out tool length for the ball end-mill surfacing that area. The operator had measured from the wrong point of reference, increasing the amount of stick-out for the tool. This caused deflection during cutting which accounted for the poor surface finish.



INDUSTRY:
Firearms Manufacturing

MACHINE TYPE:
Machining Center

TECHNOLOGY:
TOOL CONNECT

RESULTS

- Eliminated costly scrap and machine downtime
- Automated and error-proofed the tool load process

THE SOLUTION

The customer needed a solution to regulate this process and implemented Caron Engineering's ToolConnect, RFID Tool Data Management System. ToolConnect allows this customer to use a tool presetter to set-up tools outside of the machine. The presetter records the tool offset data and stores this data on an RFID chip inside the tool holder. When the tool is transferred to the machining center for loading, the tool is placed into an RFID read station and Caron Engineering's ToolConnect System automatically loads the data to the control offset table. This process workflow eliminates operator errors commonly caused by mis-entering data, saving significant time and money.

ToolConnect validates the tool length being loaded into the machine. In this case, where the tool was longer than it should have been due to a measurement error, ToolConnect would have prevented the tool from being registered in the machine and forced the operator to intervene.

In this one simple instance, this error resulted in a loss of over \$4,000 very quickly. In addition to the scrapped parts, by having the machine down for over 4 hours of troubleshooting, the customer was losing the revenue typically generated by continuously making chips. With ToolConnect implemented, the customer has eliminated costly errors associated with manual data input and reduced setup and cycle time by automating the tool load process and using offline tool measurement.



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