

USER CASE STUDY

Hartzell Propellers



“the right people in the right places using the right technology”

In 1875, John T. Hartzell began the company as a sawmill, cutting general hardwoods. However, things took a very significant turn when in 1917, with a strong interest in aviation, and the encouragement of none other than aviation pioneer Orville Wright, Robert N. Hartzell, John's son, left the University of Cincinnati to start the manufacture of aircraft propellers at his father's company. Today, Hartzell constant-speed propellers are manufactured for the widest range of aircraft in the industry.

Serving private, commercial, and military customers, Hartzell makes constant speed propellers, governors, and de-icing systems for propellers. Roughly 18,000 Hartzell parts and systems are used on over 2,000 makes and models of aircraft.

“We believe that products must be designed, made, and shipped right, the first time and every time at the lowest total cost. This is accomplished in part by having an intense focus on identifying, controlling, and ultimately eliminating the source of variation in our processes,” Burt Mattice, Hartzell's director of quality said. “It is this focus on variation reduction that allows our inspection procedures to concentrate on verifying that our processes are statistically under control.

Our design characteristics are defined on our drawings and in our specifications. It is these characteristics that provide a framework for the types of features that need to be verified prior to acceptance of the product. With all of this information known, we can then determine an acceptable inspection method for the feature that needs verification using tools like process and gauge capability studies.”

“We use the Hawkeye borescopes exclusively because they are easily portable, dependable, accurate, and very cost-efficient.”

Burt Mattice, Quality Director

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“When we have products where contamination, dirt, or surface finish defects are a concern, we primarily use visual inspection to verify that the product is acceptable,” Mattice said. “When we have tight locations to inspect such as small bores and blind holes, we rely on using borescopes to aid in the visual inspection.” Hartzell Propeller exclusively uses Hawkeye Precision Borescopes.

According to Mattice “We use the Hawkeye borescopes exclusively because they are easily portable, dependable, accurate, and very cost-efficient. We manufacture and service our products in multiple facilities and we can just pick up the borescope systems and move them from building to building as needed. We primarily use rigid borescopes, 7 to 22-inches in length, with a 0° direction-of-view (DOV). The Hawkeye’s can easily be changed to a 90° DOV by adding a mirror tube accessory. We also connect some borescopes to video systems for on-screen viewing and image capturing.”

“We know the key to our success is rooted in our highly skilled workforce. So, we are always striving to make sure that there are open lines of communication and that the only bad idea is the one that you did not bring up. When you couple this with always having the latest technology and a relentless pursuit of continuous improvement you have a recipe for success,” Mattice added. “You can buy the best machines and processes in the world but at the end of the day superior quality ultimately comes down to making sure you have the right people in the right places using the right technology, at the right time.”

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